



PRODUCT CATALOG

Smart Technology, Proven Reliability

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How to Earn a 60-year Reputation for Dependability

When your actions are as dependable as your words, customers learn to depend on you. When your products perform as specified—right out of the box—year after year, they know you can be counted on. When you deliver on time, as promised and precisely as ordered, they know you'll help keep their projects on track and on schedule.

In Broadcasting, time really is money. That's why thousands of broadcasters across North America and around the World rely on Myat switches, combiners, filters and transmission line systems. They know that we're specialists and leaders, and that we're never content being jacks-of-all-trades. They recognize that after 62 years of commitment and innovation, no one can match our advanced design, superior electrical performance, high-quality materials and world-class manufacturing expertise.

Or perhaps it's as simple as this:

They know we keep our word.

So if you know, as we do, that promises kept, and expectations exceeded are the true measure of success, please give us a call at **+1-201-684-0100**, or visit us online at **www.myat.com**. We'll get you the expertise, products and support you need to keep your build on time, on budget and on schedule. You can depend on us.

Depend On MYAT.



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All specifications published in this catalog are subject to change without notice:

Line Sizes Included In This Catalog, Copper Transmission Line:

Line Size	Impedance	Catalog Prefix	Typical Applications
7/8"	50 Ohm	101	AM, FM, Low Power TV, Defense, Industrial
1 5/8"	50 Ohm	201	AM, FM, Low Power TV, Defense, Industrial
3 1/8"	50 Ohm	301	AM, FM, High Power Low-VHF TV, Low Power High-VHF TV, Defense, Industrial Scientific
4 1/16"	50 Ohm	401	Multiple FM, VHF TV, Low Power UHF TV
6 1/8"	50 Ohm	601	High Power AM, Multiple FM, VHF TV, UHF TV, Scientific
6 1/8"	75 Ohm	701	Medium Power UHF TV
7 3/16"	75 Ohm	775	Multiple TV or High Power TV
8 3/16"	75 Ohm	801	Multiple TV or High Power TV, Scientific
9 3/16"	50 Ohm	901	Multiple FM, Scientific

Line sizes available from Myat, but not included in this catalog:

Information for the following line sizes can be furnished upon request.

Copper Coaxial Transmission Lines

Line Size	Impedance	Catalog Prefix	Typical Applications
8 3/16"	50 Ohm	851	Multiple TV or High Power TV, Scientific
9 3/16"	75 Ohm	971	Multiple FM, Scientific

Aluminum Coaxial Transmission Lines

Line Size	Impedance	Catalog Prefix	Typical Applications
1 5/8"	50 Ohm	211	AM, FM, Low Power TV, Defense, Industrial
3 1/8"	50 Ohm	311	AM, FM, High Power Low-VHF TV, Low Power High-VHF TV, Defense, Industrial Scientific
4 1/16"	50 Ohm	411	Multiple FM, VHF TV, Low Power UHF TV
12"	50 Ohm	1201	High Power AM, Multiple FM, VHF TV, UHF TV, Scientific

For additional information and/or technical assistance, please choose one of the following options:

Phone: 201-684-0100 Fax: 201-684-0104 Email: sales@myat.com Web: www.myat.com

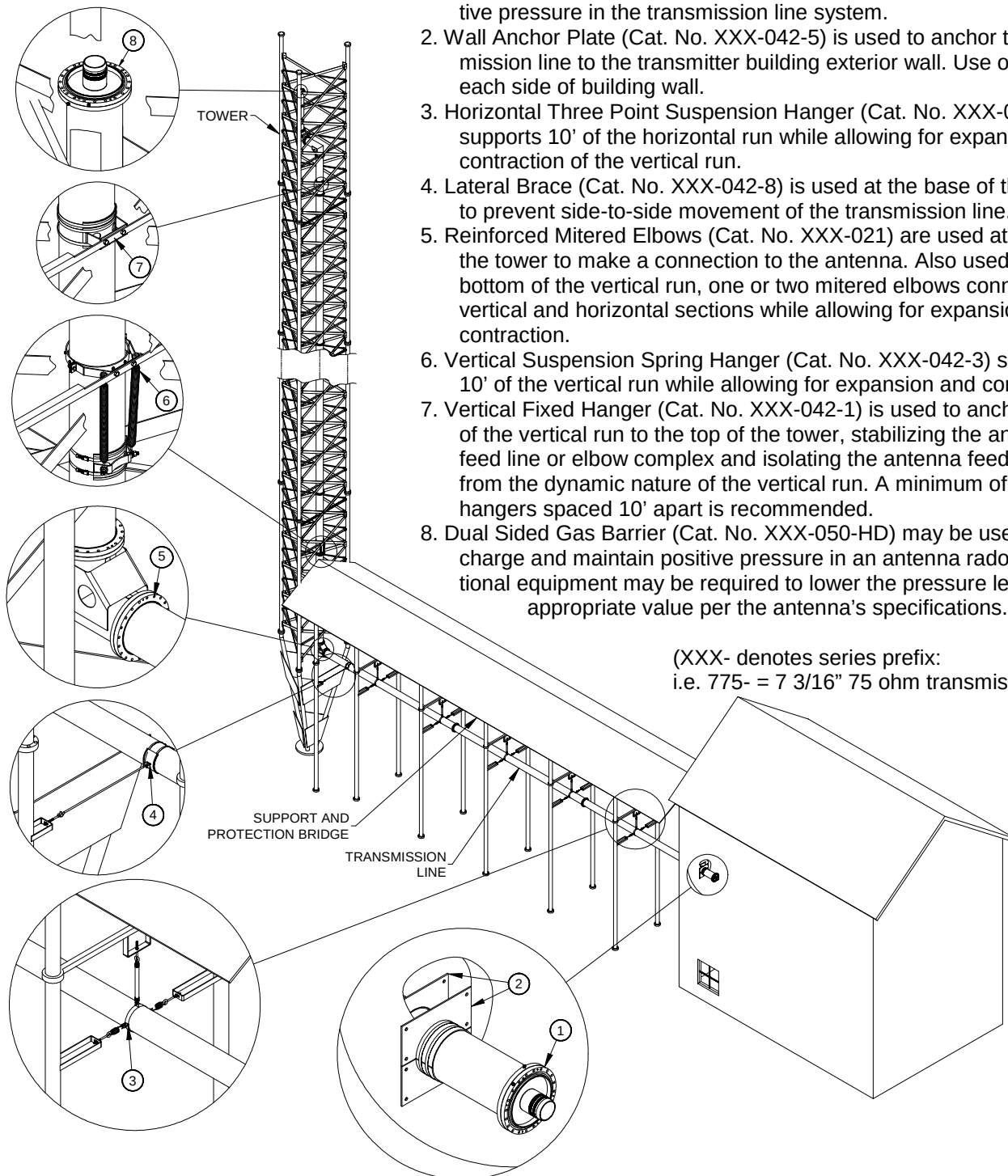
Transmission Line System Planning Guide (Typical Installation)

Advances in materials, manufacturing procedures and design techniques have greatly improved rigid coaxial transmission line performance and longevity, but transmission line installations have followed the same basic principles for many years. Use the Typical Installation pictured here, along with the sample Bill of Materials on the next page, as planning guides to determine your requirements. Each installation will differ as to tower location and orientation, distance from the tower base to the transmitter building, antenna type and orientation, etc. If your installation involves special requirements, do not hesitate to contact us. If our complete line of components and accessories does not answer your needs, our computer aided designing, testing, and manufacturing facilities can quickly produce "one-of-a-kind" custom components to meet any challenge.

Typical Components

1. Gas Barrier (Cat. No. XXX-050) is used to charge and maintain positive pressure in the transmission line system.
2. Wall Anchor Plate (Cat. No. XXX-042-5) is used to anchor the transmission line to the transmitter building exterior wall. Use one on each side of building wall.
3. Horizontal Three Point Suspension Hanger (Cat. No. XXX-042-17) supports 10' of the horizontal run while allowing for expansion and contraction of the vertical run.
4. Lateral Brace (Cat. No. XXX-042-8) is used at the base of the tower to prevent side-to-side movement of the transmission line.
5. Reinforced Mitered Elbows (Cat. No. XXX-021) are used at the top of the tower to make a connection to the antenna. Also used at the bottom of the vertical run, one or two mitered elbows connect the vertical and horizontal sections while allowing for expansion and contraction.
6. Vertical Suspension Spring Hanger (Cat. No. XXX-042-3) supports 10' of the vertical run while allowing for expansion and contraction.
7. Vertical Fixed Hanger (Cat. No. XXX-042-1) is used to anchor the top of the vertical run to the top of the tower, stabilizing the antenna feed line or elbow complex and isolating the antenna feed point from the dynamic nature of the vertical run. A minimum of two fixed hangers spaced 10' apart is recommended.
8. Dual Sided Gas Barrier (Cat. No. XXX-050-HD) may be used to charge and maintain positive pressure in an antenna radome; additional equipment may be required to lower the pressure level to an appropriate value per the antenna's specifications.

(XXX- denotes series prefix:
i.e. 775- = 7 3/16" 75 ohm transmission line.)





Bill of Materials

This guide is designed to assist you in planning a rigid coaxial transmission line system. The left-hand side of the page lists all of the components required to assemble a typical system. On the right side of the page are helpful hints and formulas for calculating the quantities of each component required to construct the system. If you have questions or require assistance in planning a specific installation, please contact MYAT at 201-684-0100 or sales@myat.com

ITEM	QTY.	MYAT CAT. NO.	DESCRIPTION	
Vertical Run				
01	___	XXX-007	Transmission line sections, expansion compensation inner conductors: ___ ft. per section, including ___ sections for horizontal run, plus one (1) section for field cuts.	To calculate the number of line sections required for the site configuration: $\frac{\text{Horz. Run (ft.)} + \text{Vert. Run (ft.)}}{\text{Line section length (ft.)}} = \text{Total \# of sections*}$ * Always round up. Add one section for field cuts
02	___	XXX-042-1	Fixed Hanger.	Used to anchor top of vertical run to tower. 2 pcs. req'd for vertical runs up to 1000 ft. 3 pcs. req'd for vertical runs up to 1500 ft. 4 pcs. req'd for vertical runs up to 2000 ft.
03	___	XXX-042-3	Vertical spring suspension hanger, spacing every 10'.	To calculate the number of vertical spring suspension hangers required: $\frac{\text{Total Vert. Run (ft.)}}{10} = \# \text{ Vertical spring hangers}$
04	___	XXX-021	Reinforced mitered elbows.	Typically four elbows are recommended: 1 at the vertical/horizontal junction, and 3 for the elbow complex at the top of the tower to the antenna input.
Horizontal Run				
05	___	XXX-042-8	Lateral brace.	2 pcs. recommended at base of vertical run to prevent lateral movement, may be located at tower end of horizontal run.
06	___	XXX-042-17	Horizontal spring suspension hanger.	To calculate the number of horizontal spring suspension hangers required: $\frac{\text{Total Horiz. Run (ft.)}}{10} = \# \text{ of horizontal spring hangers}$
07	___	XXX-042-5	Wall anchor plate	2 pcs. required, one for each side of wall.
Pressurization Equipment				
08	___	XXX-050	Gas Barrier.	1 pc. required to pressurize at transmitter building. 1 pc. optional at top of tower.
09	___	XXX-050-HD	Dual sided gas barrier.	1 pc. optional at top of tower to enable pressurization of antenna radome.
Spares & Accessories				
10	___	XXX-010	Anchor insulator connector.	At least 2 pcs. for field cut connections.
11	___	XXX-010-E	Expansion type anchor insulator connector.	At least 2 pcs. for use as spares.
12	___	XXX-011	"O" ring for flange junctions.	At least 2 pcs. as spares to cover parts lost or damaged during installation.
13	___	XXX-012	Hardware kit for flange junctions.	At least 2 kits as spares to cover parts lost or damaged during installation.
14	___	XXX-013	Field flange adapter, soft solder type, to flange field cut line.	2 pcs. recommended for flanging field cuts.
15	___	XXX-015	Cover Plate / End cap.	1 pc. required to seal line during work stoppages.
16	___	XXX-042-24	Outer conductor cut-off guide.	1 pc. required to aid in making square field cuts.
17	___	XXX-042-25	Inner conductor cut-off guide.	1 pc. required to aid in making square field cuts.

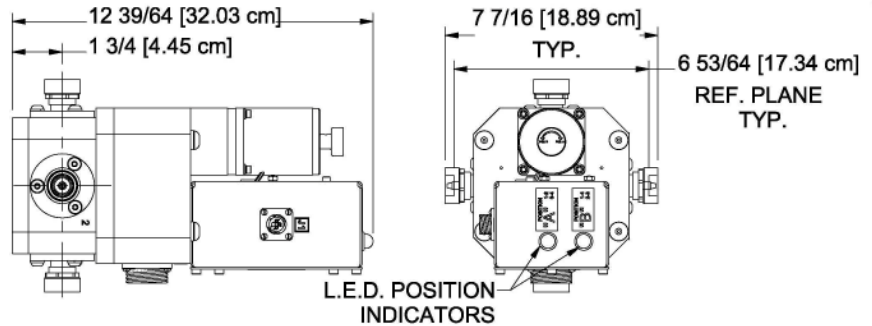
"XXX" is the MYAT line series number, See list below

901-Series, 9 3/16" 50 Ohm	401-Series, 4 1/16" 50 Ohm
801-Series, 8 3/16" 75 Ohm	301-Series, 3 1/8" 50 Ohm
775-Series, 7 3/16" 75 Ohm	201-Series, 1 5/8" 50 Ohm
701-Series, 6 1/8" 75 Ohm	101-Series, 7/8" 50 Ohm
601-Series, 6 1/8" 50 Ohm	

580 Series 7/16" Din * Switches

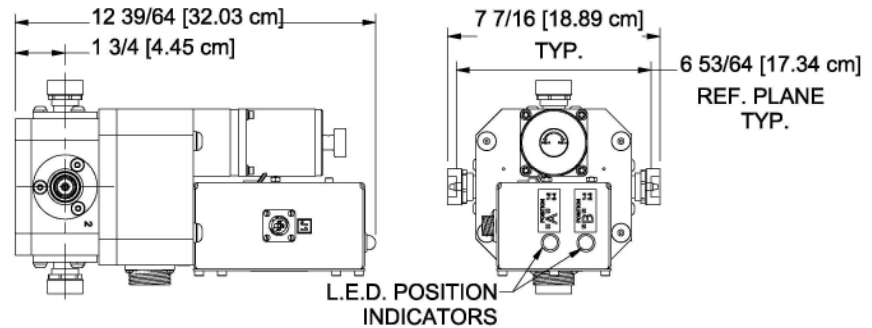
580-180-1

7/16" Din coaxial transfer switch, 4 port 115V drive 12V control. 17.5lbs



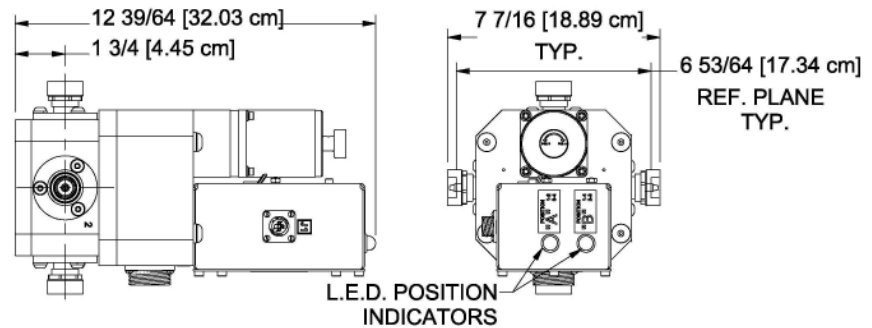
580-180-2

7/16" Din coaxial transfer switch, 4 port 115V drive 24V control. 17.5lbs



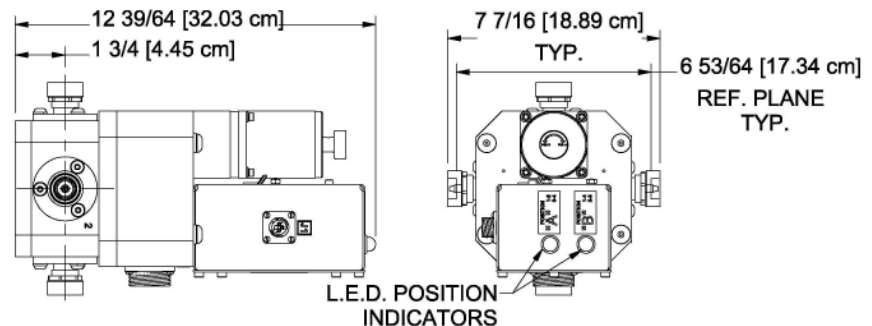
580-180-3

7/16" Din coaxial transfer switch, 4 port 230V drive 12V control. 17.5lbs



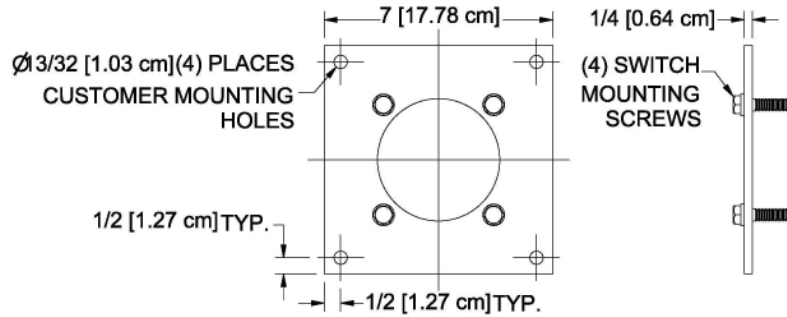
580-180-4

7/16" Din coaxial transfer switch, 4 port 230V drive 24V control. 17.5lbs



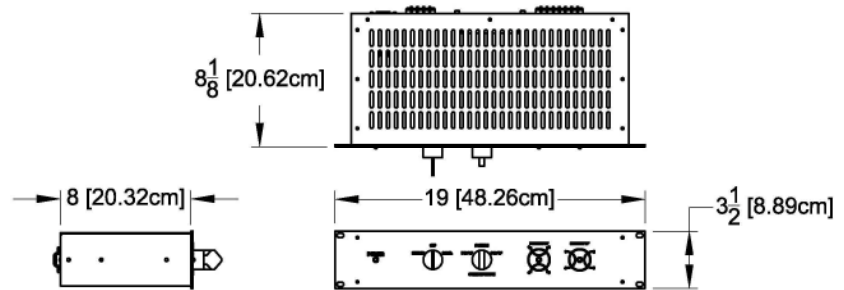
101-180-42

7/16" Din and 7/8" 50 ohm
coaxial transfer switch
mounting plate. 1.15lbs.



X01-180-X Switch Controller

Catalog Number	Number of Switches	Control Voltage
X01-180-1	1	12 VDC
X01-180-2	2	12 VDC
X01-180-3	3	12 VDC
X01-180-4	4	12 VDC
X01-180-5	1	24 VDC
X01-180-6	2	24 VDC
X01-180-7	3	24 VDC
X01-180-8	4	24 VDC



101 Series 7/8" 50 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	50 $\pm$.5 Ohms
Upper Frequency Limit:	* 6000 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	6 kV DC
Peak Power Rating	** 41 kW
VSWR:	*** 1.03:1

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	.875" (22 mm)
Inside Diameter:	.785" (20 mm)

Inner Conductor

Outside Diameter :	.341" (9 mm)
Inside Diameter:	.291" (7 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.

Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 12 lbs.

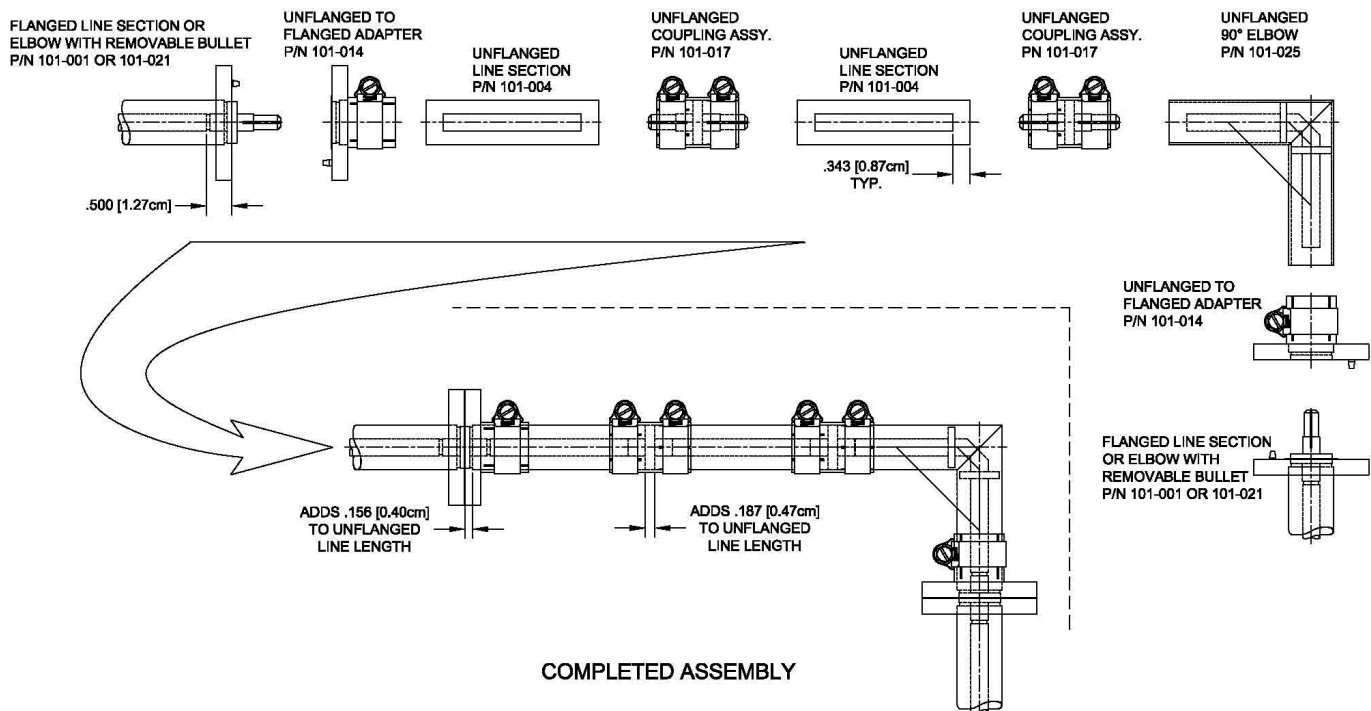
* TE₁₁ Mode useful cutoff frequency.

** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

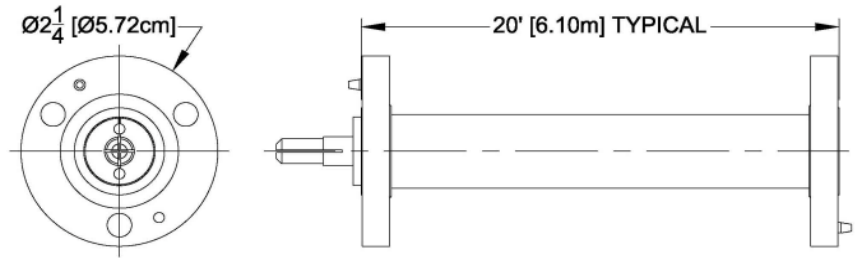
COMPONENTS TO BE ASSEMBLED,



7/8" (SERIES 101-) FLANGED TO UNFLANGED LINE SECTION

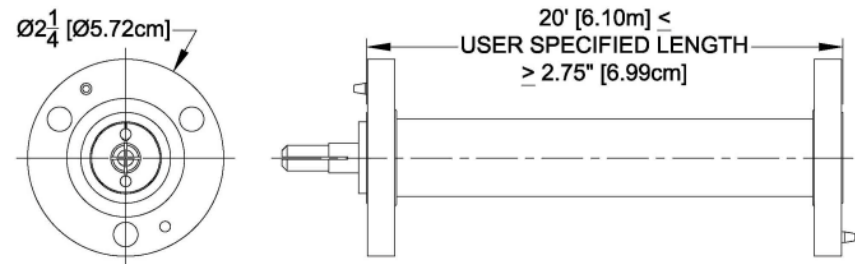
101-001

7/8" 50 ohm EIA 20' line assembly, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 12lbs.



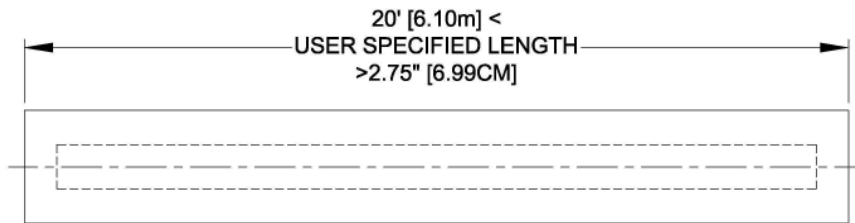
101-002

7/8" 50 ohm EIA line assembly of customer specified length, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 1lb plus 1.625lbs/ft.



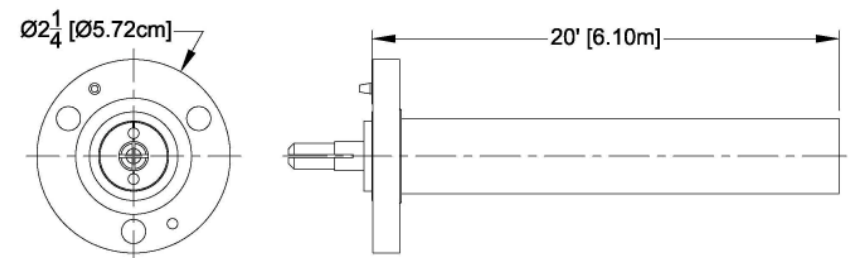
101-004

7/8" 50 ohm line assembly of customer specified length, unflanged; no connector or hardware .56lbs/ft.



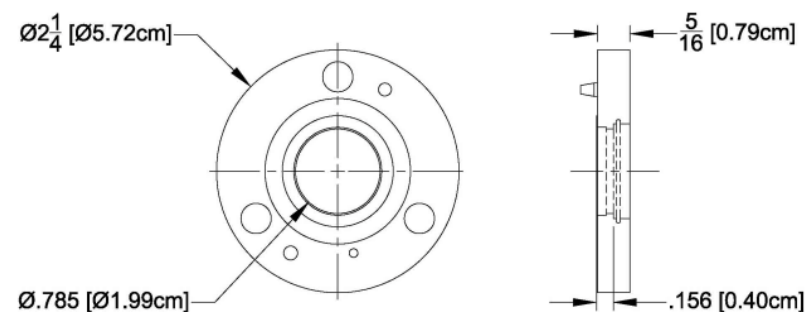
101-006

7/8" 50 ohm 20' line assembly, one end flanged: Includes anchor insulator connector, "O" ring, hardware. 11.5lbs.



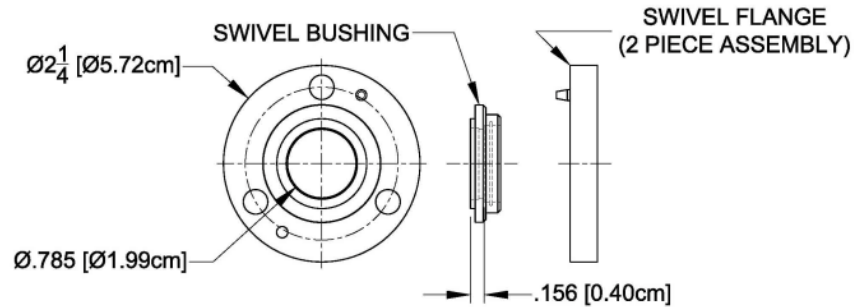
101-008

7/8" EIA brass fixed flange with silver solder ring insert, for silver brazing. .31lbs.

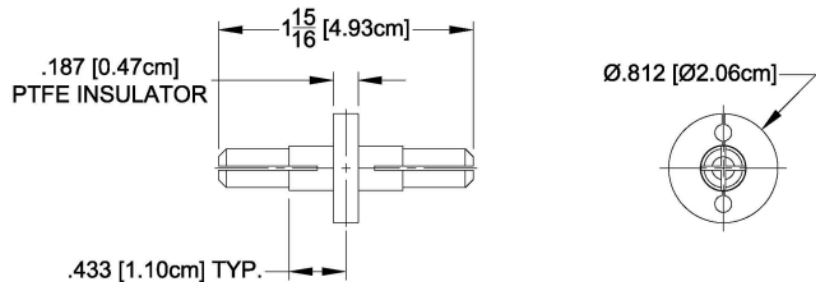


101-009

7/8" EIA brass swivel flange with silver solder ring insert, for silver brazing. .31lbs.

**101-010**

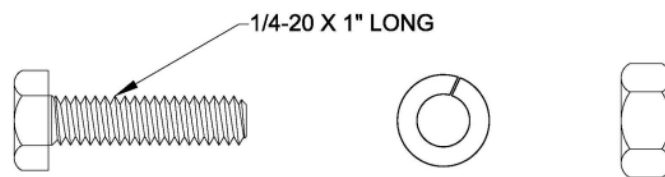
7/8" 50 ohm EIA anchor insulator connector, silver plated. 1oz.

**101-011**

7/8" "O" ring, silicone.

**101-012**

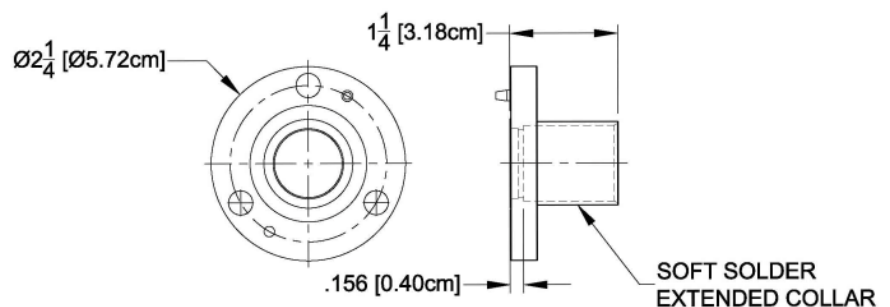
7/8" hardware set for flanges, stainless steel. .13lbs.



HARDWARE SET FOR FLANGES
3 SETS PER KIT

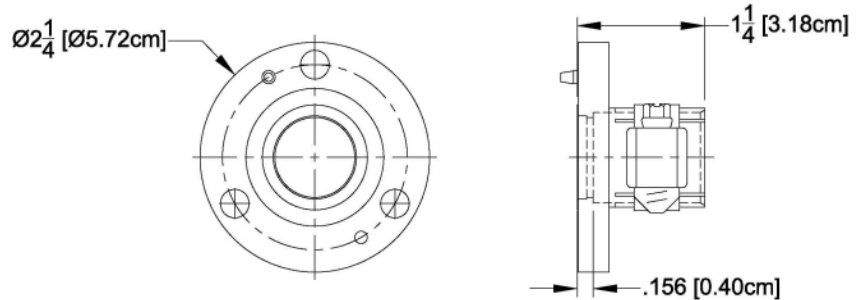
101-013

7/8" Field flange adapter, pressurized, soft solder type .42lbs.



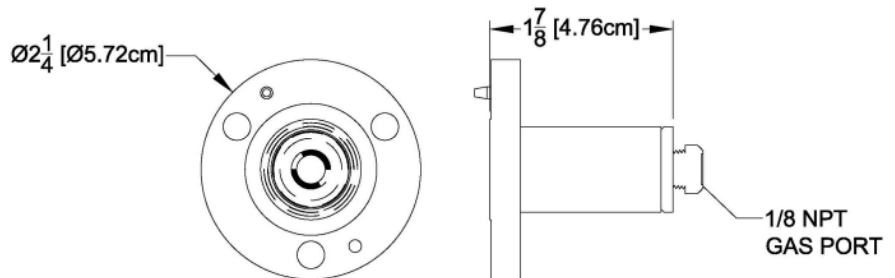
101-014

7/8" flange adapter, unpressurized clamp-type for indoor use. Includes hardware and line clamp. .56lbs.



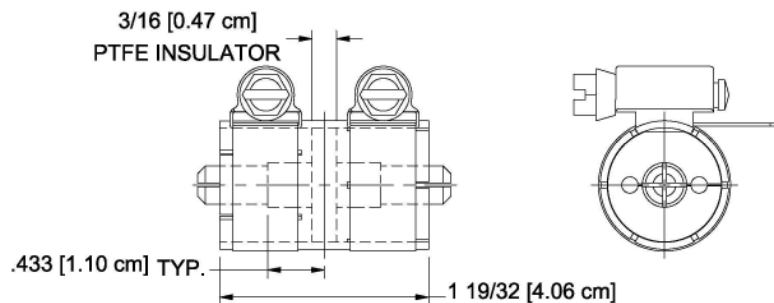
101-015

7/8" cover cap with 1/8" NPT gas inlet plug. .42lbs.



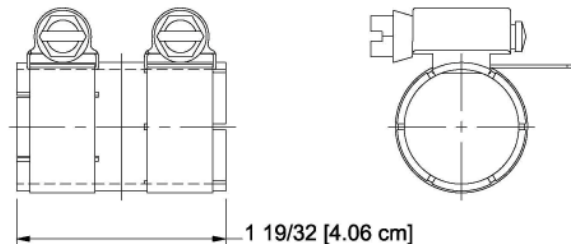
101-017

7/8" 50 ohm unpressurized coupling assembly with supported inner conductor connector and two line clamps .26lbs.



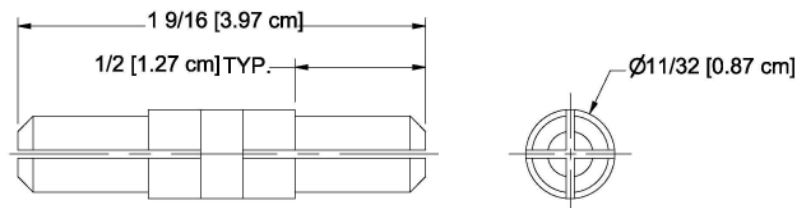
101-018

7/8" Outer Conductor coupling clamp unpressurized. Includes two line clamps. (Does not increase outer conductor length.) .1lbs.



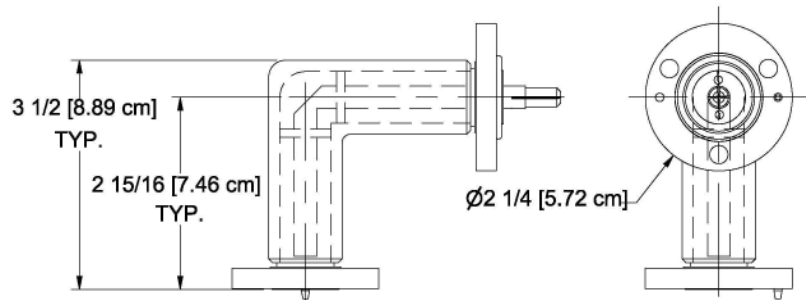
101-019

7/8" 50 ohm unsupported silver plated inner conductor connector. (Use 101-017 when support is required.) .02lbs.



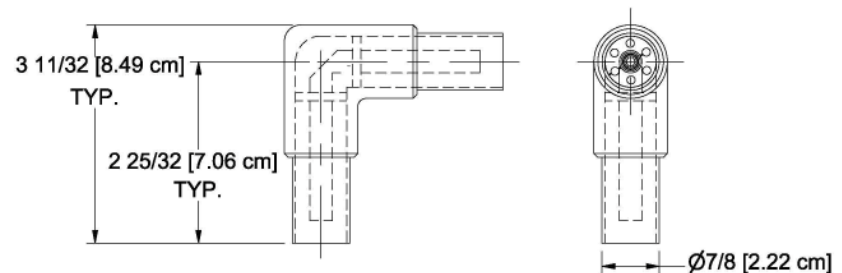
101-021

7/8" 50 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector, "O" ring, hardware. 1.3lbs.



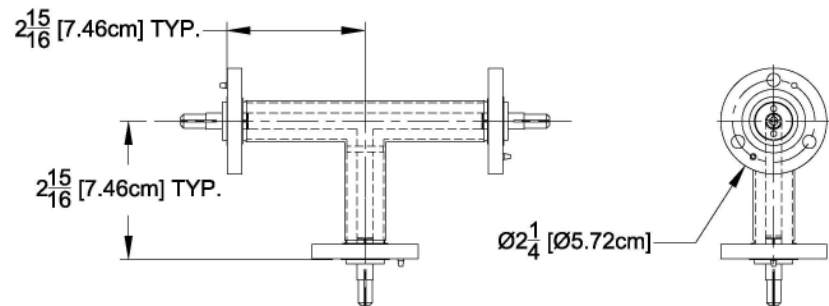
101-025

7/8" 50 ohm elbow, 90 degree, unflanged, reinforced inside and outside. .34lbs.



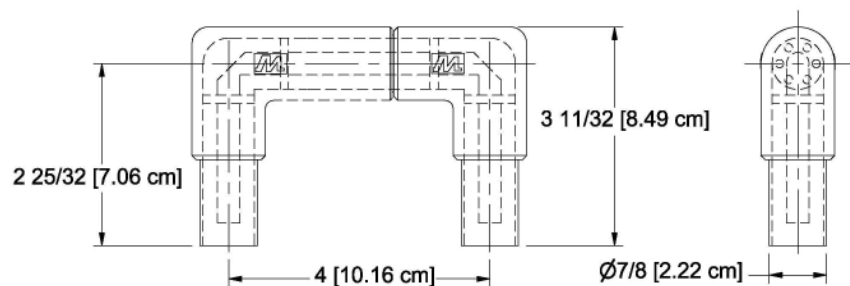
101-040

7/8" 50 ohm tee assembly, unmatched, swivel flanged, heavy wall brass construction. Includes three anchor insulator connectors, "O" rings, and hardware sets. 2lbs.



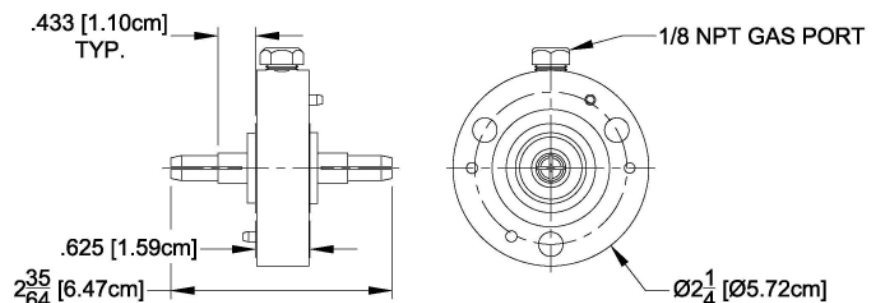
101-041

7/8" 50 ohm "U" link, female both ends, unflanged. 2lbs.



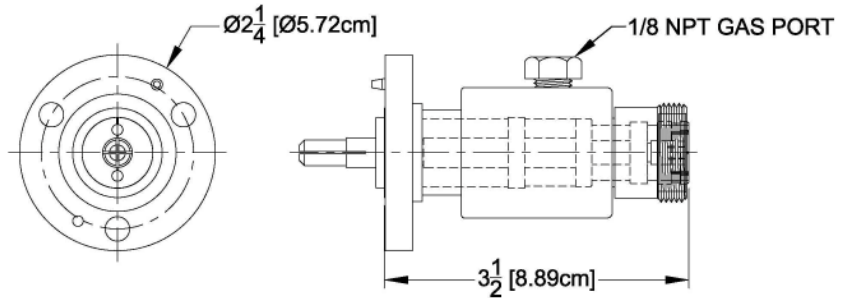
101-050

7/8" 50 ohm gas barrier with "O" ring gasket, 2" hardware, 1/8" NPT gas inlet port. 1lb.



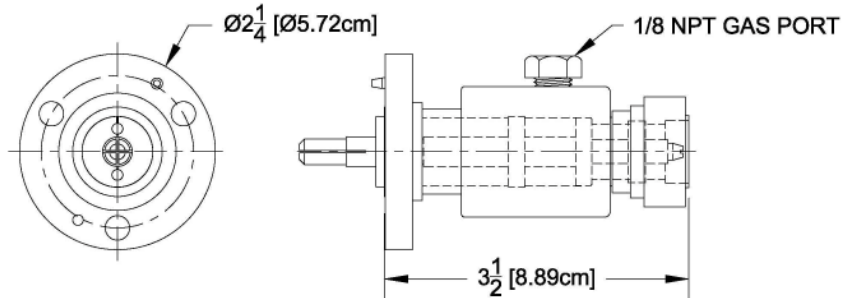
101-058-1

Reducer, 7/8" 50 ohm EIA to DIN 7-16 female, swivel flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware 1.25lbs.



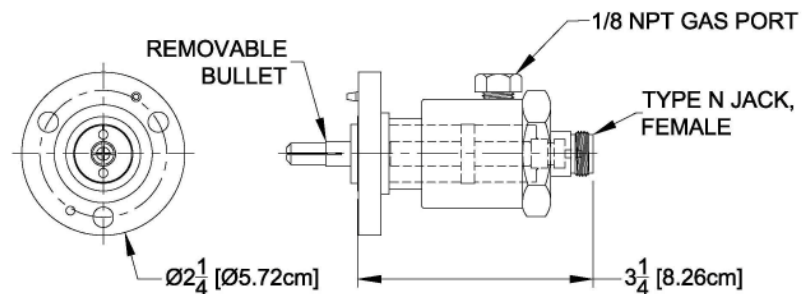
101-058-2

Reducer, 7/8" 50 ohm EIA to DIN 7-16 Male, swivel flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware 1.25lbs.



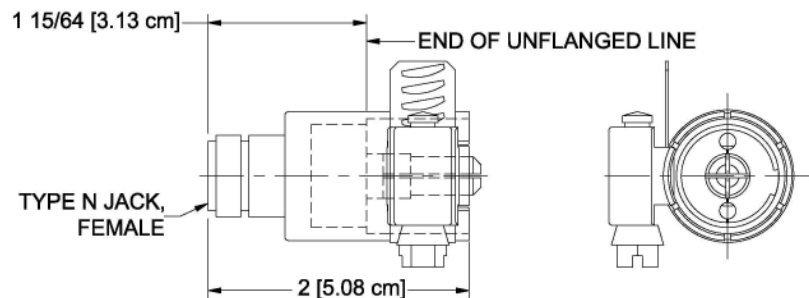
101-059

Reducer, 7/8" 50 ohm EIA to type "N" female, swivel flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware 1.46lbs.



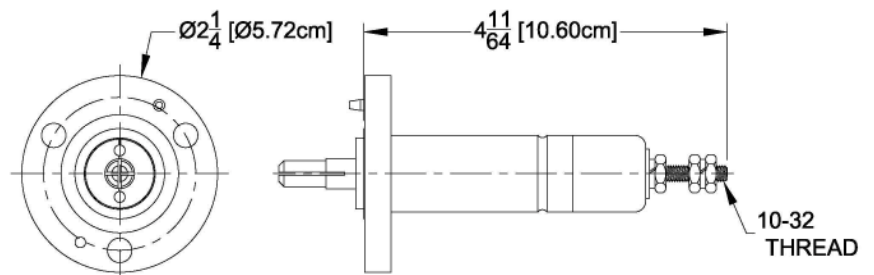
101-061

Reducer 7/8" 50 ohm coupling to type "N" female. .211lbs.



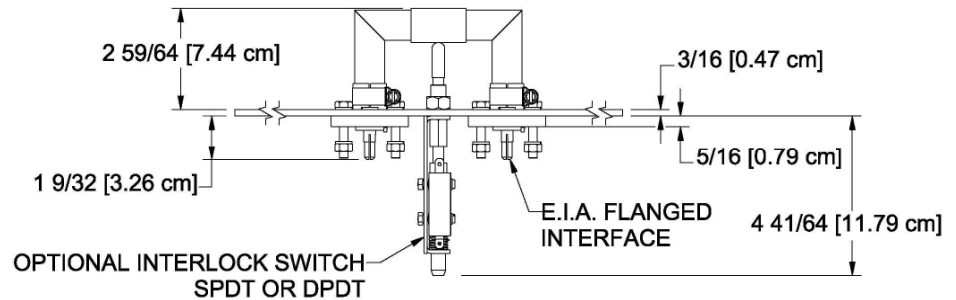
101-080

7/8" 50 ohm end seal assembly with NPT gas inlet port. Includes "O" ring gasket and hardware. .80lbs.



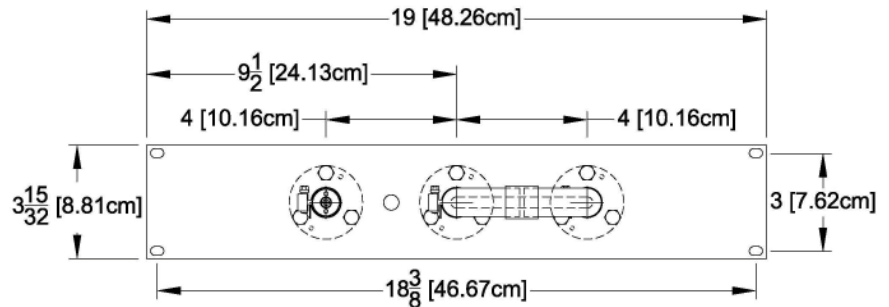
101-138-PATCH

Typical 7/8" 50 ohm patch panel interface dimensions. Back of patch panel mates with flanged transmission line. Custom patch panels available upon request



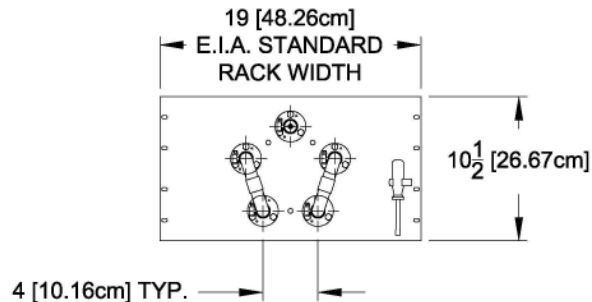
101-138-3

7/8" 50 ohm patch panel, manual, 3 pole, unpressurized. Includes 1 "U" link, anchor insulator connectors and line clamps. Rack mount. 5lbs.



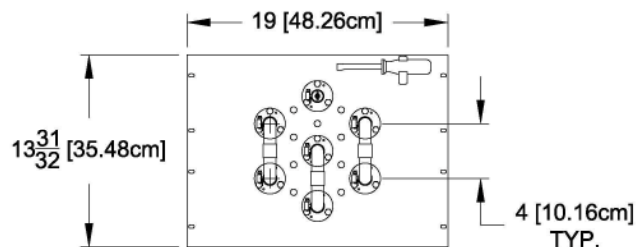
101-138-5R19

7/8" 50 ohm patch panel, manual, 5 pole, unpressurized. Includes 2 "U" links, anchor insulator connectors and line clamps. Rack mount. 10lbs.



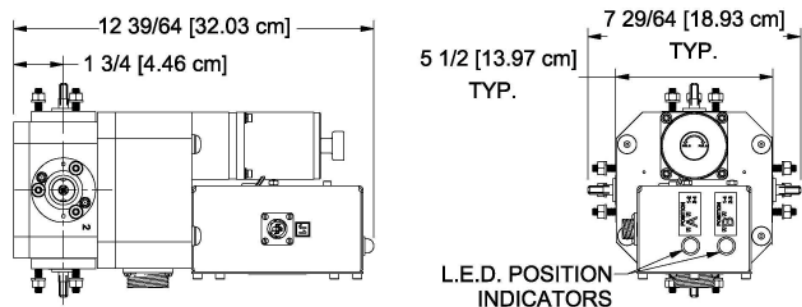
101-138-7

7/8" 50 ohm patch panel, manual, 7 pole, unpressurized. Includes 3 "U" links, anchor insulator connectors and line clamps. Rack mount. 14lbs.



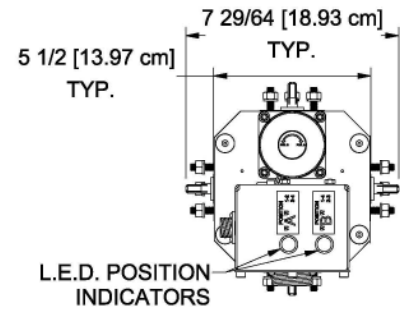
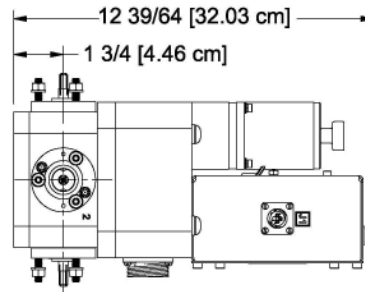
101-180-1

7/8" 50 ohm coaxial transfer switch, 4 port 115V drive 12V control. 17.5lbs.



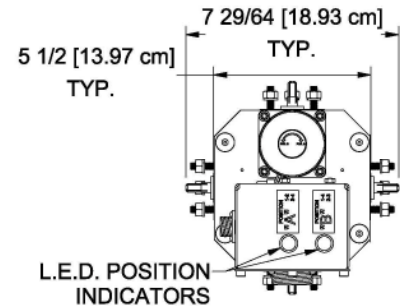
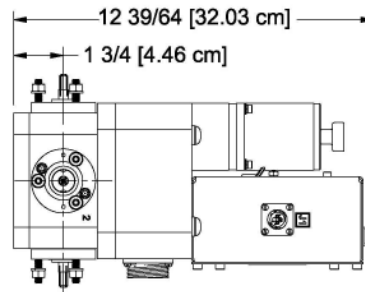
101-180-2

7/8" 50 ohm coaxial transfer switch, 4 port 115V drive 24V control. 17.5lbs.



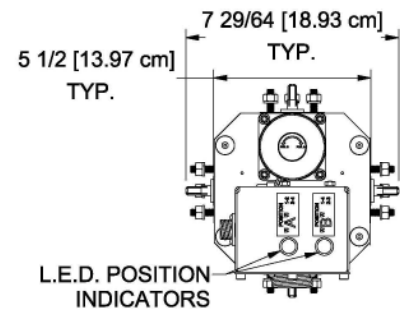
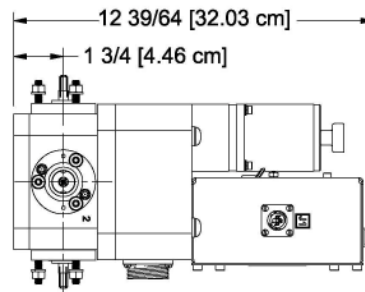
101-180-3

7/8" 50 ohm coaxial transfer switch, 4 port 230V drive 12V control. 17.5lbs.



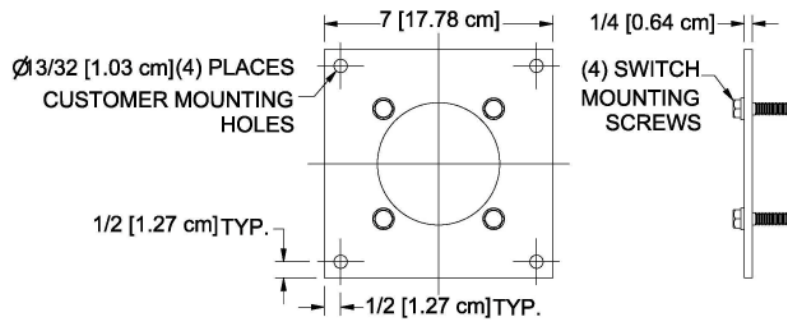
101-180-4

7/8" 50 ohm coaxial transfer switch, 4 port 230V drive 24V control. 17.5lbs.



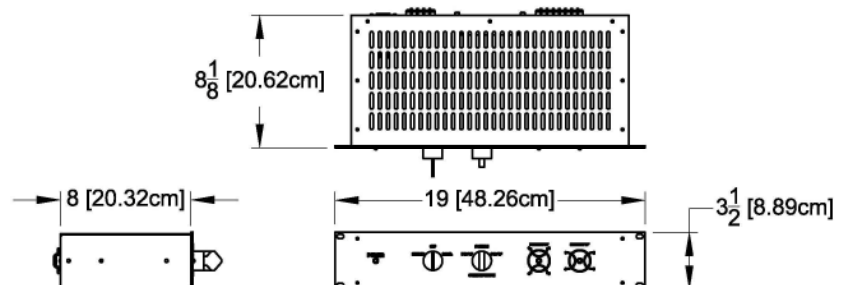
101-180-42

7/16" Din and 7/8" 50 ohm coaxial transfer switch mounting plate. 1.15lbs.



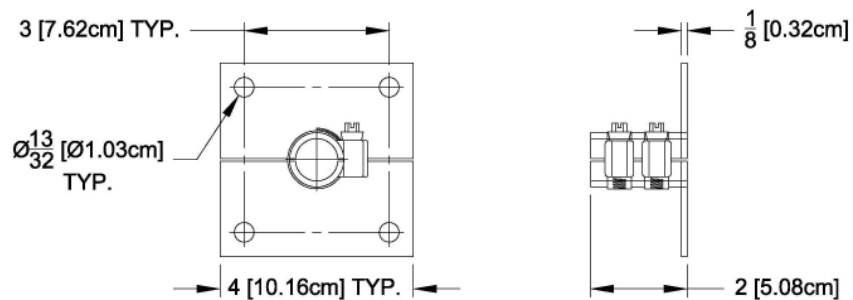
X01-180-X Switch Controller

Catalog Number	Number of Switches	Control Voltage
X01-180-1	1	12 VDC
X01-180-2	2	12 VDC
X01-180-3	3	12 VDC
X01-180-4	4	12 VDC
X01-180-5	1	24 VDC
X01-180-6	2	24 VDC
X01-180-7	3	24 VDC
X01-180-8	4	24 VDC



101-042-5

7/8" wall anchor plate, single line. Includes line clamp. One plate required for each side of wall .96lbs.





This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

201 Series 1 5/8" 50 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	50 $\pm$.5 Ohms
Upper Frequency Limit:	* 3000 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	11 kV DC
Peak Power Rating	** 132 kW
VSWR:	*** 1.03:1

Inner Conductor

Outside Diameter :	.664" (17 mm)
Inside Diameter:	.588" (15 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.

Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 28 lbs.

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	1.625" (41 mm)
Inside Diameter:	1.527" (39 mm)

* TE₁₁ Mode useful cutoff frequency.

** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

COMPONENTS TO BE ASSEMBLED,

FLANGED LINE SECTION OR
ELBOW WITH REMOVABLE BULLET
P/N 201-001 OR 201-021

UNFLANGED TO
FLANGED ADAPTER
P/N 201-014

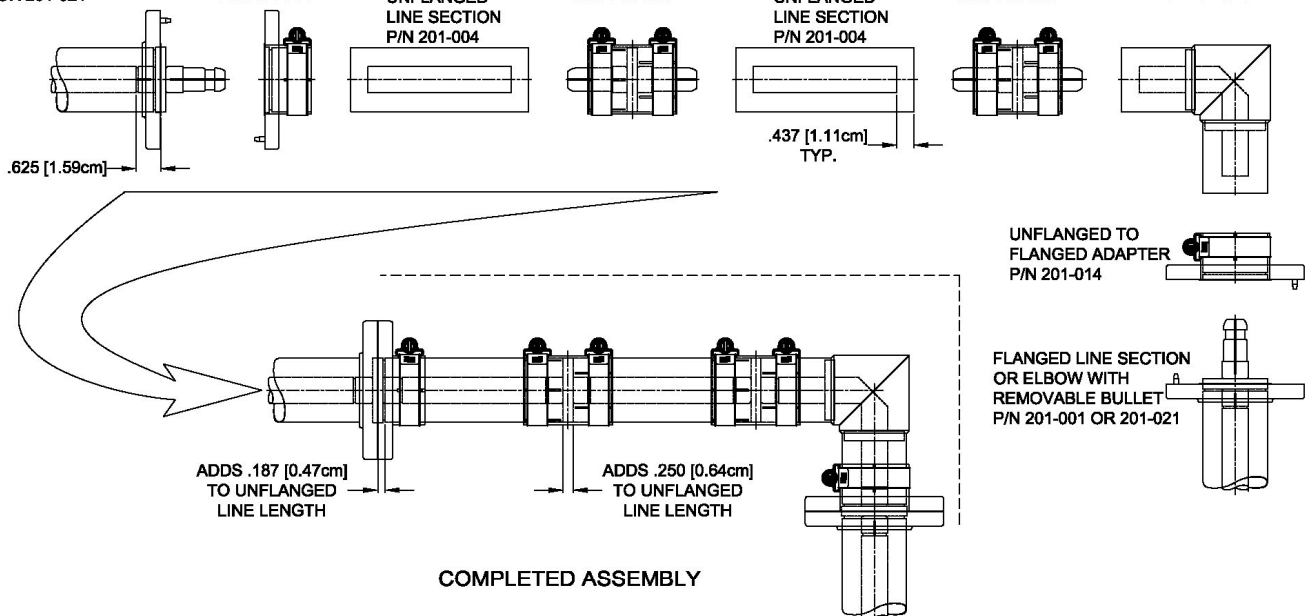
UNFLANGED
LINE SECTION
P/N 201-004

UNFLANGED
COUPLING ASSY.
P/N 201-017

UNFLANGED
LINE SECTION
P/N 201-004

UNFLANGED
COUPLING ASSY.
P/N 201-017

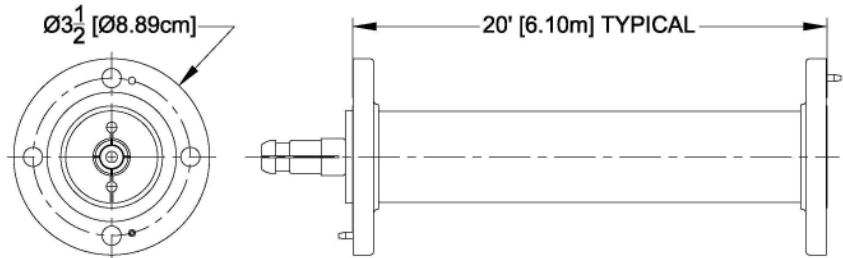
UNFLANGED
90° ELBOW
P/N 201-025



1 5/8" (SERIES 201-) FLANGED TO UNFLANGED LINE SECTION

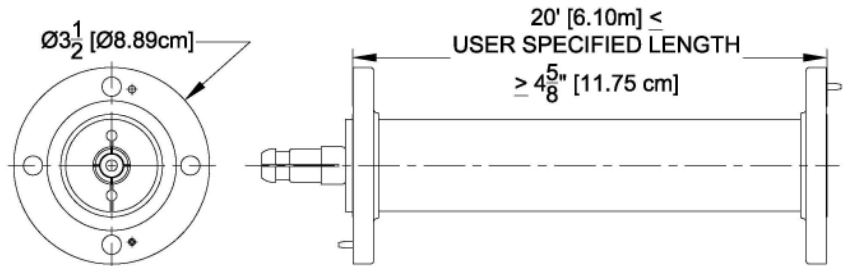
201-001

1 5/8" 50 ohm EIA 20' line assembly, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 28lbs.



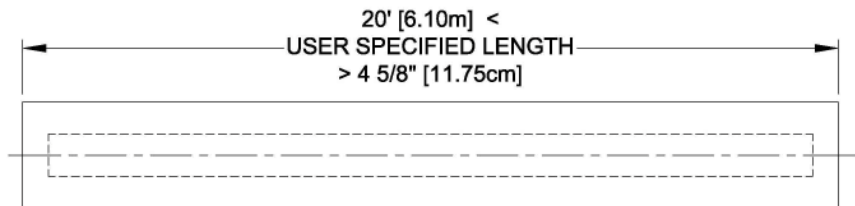
201-002

1 5/8" 50 ohm EIA line assembly of customer specified length, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 2lbs plus 1.2lbs. per foot.



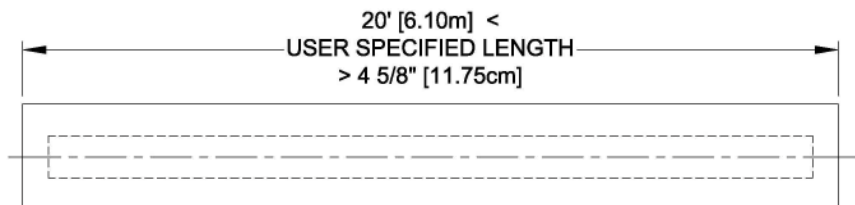
201-004

1 5/8" 50 ohm line assembly of customer specified length, unfanged, no connector or hardware. 1.25lbs/ft.



211-004

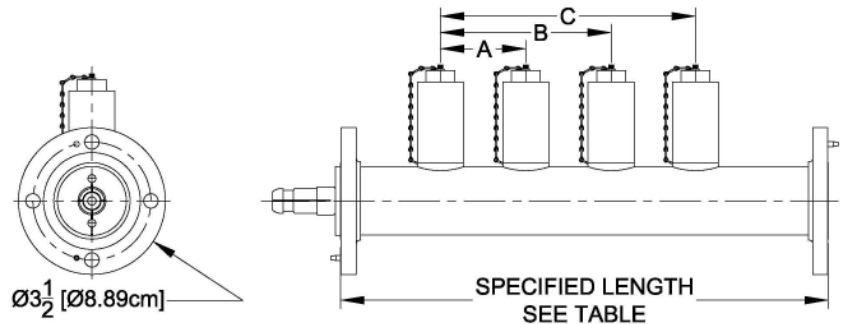
1 5/8" 50 ohm aluminum line assembly of customer specified length, unfanged, no connector or hardware. .32 lbs/ft.



201-005

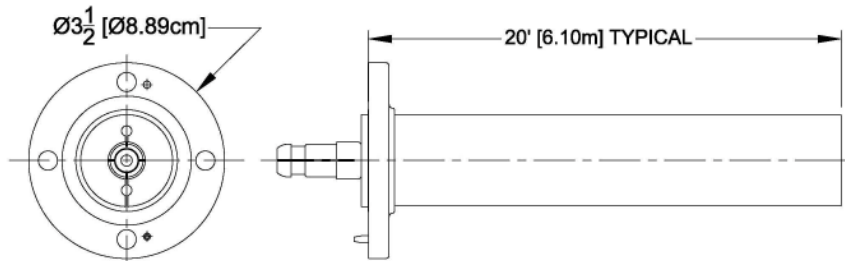
1 5/8" 50 ohm 4 probe tuning line section, specify length and frequency. includes anchor insulator with, "O" ring and hardware.

	A'	B'	C'
Frequencies < 1000 MHz	1/8	1/4	3/8
Frequencies > 1000 MHz	1/4	5/8	7/8
Minimum Specified Length: For Frequencies < 1000 MHz = 9" + 3/8 For Frequencies > 1000 MHz = 9" + 7/8			
Maximum Specified Length = 20'			



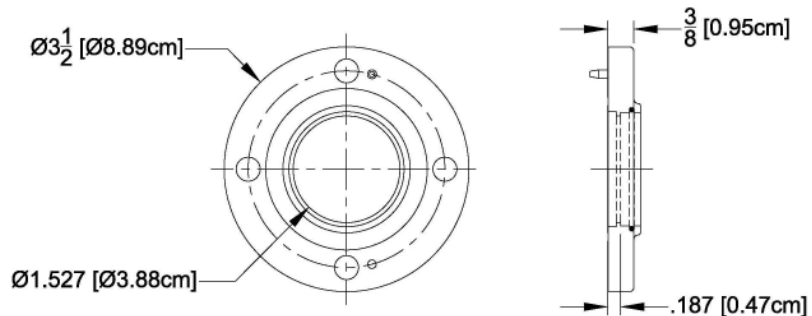
201-006

1 5/8" 50 ohm line assembly, one end flanged. Customer specified length. Includes anchor insulator connector, "O" ring, hardware. 26lbs. @ 20 feet.



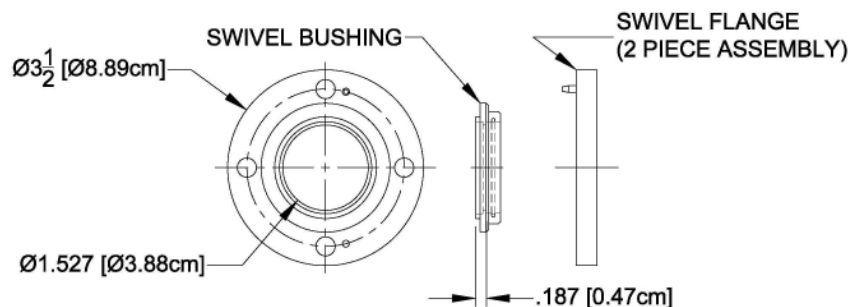
201-008

1 5/8" EIA fixed flange, brass, with silver solder ring insert, for silver brazing. .75lbs.



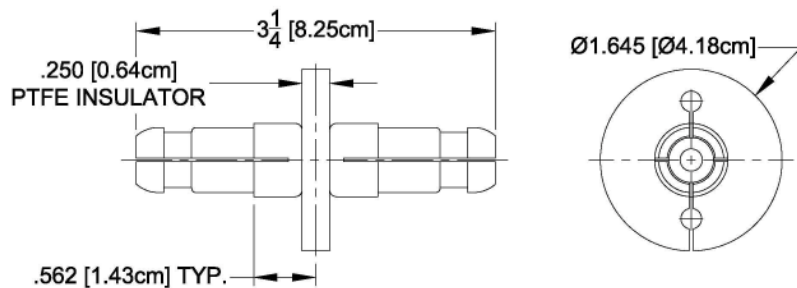
201-009

1 5/8" EIA swivel flange, brass, with silver solder ring insert, for silver brazing. .81lbs.



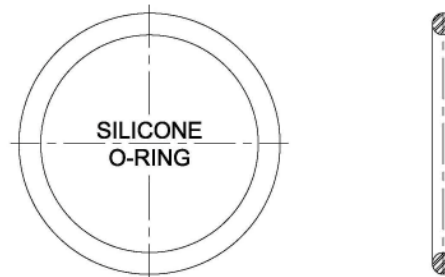
201-010

1 5/8" 50 ohm EIA anchor insulator connector, spring loaded, silver plated. .22lbs.



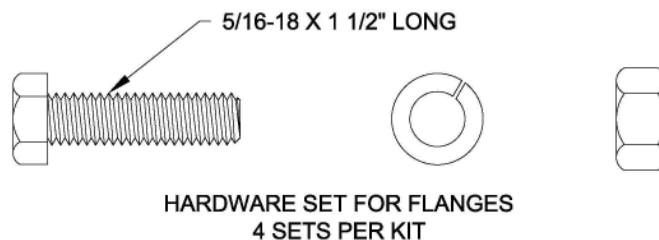
201-011

1 5/8" "O" ring, silicone.



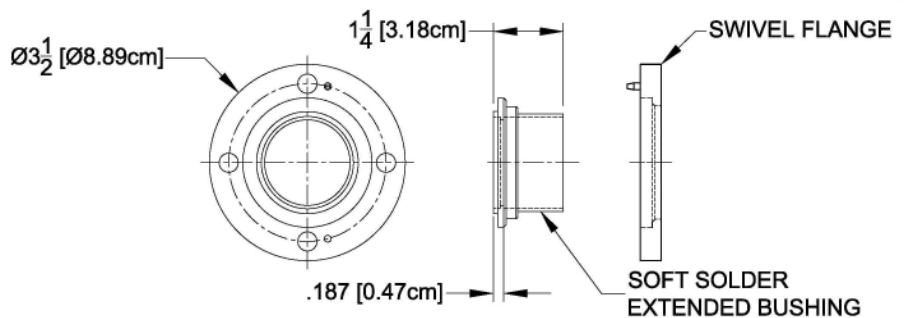
201-012

1 5/8" Hardware set for flanges, stainless steel. .53lbs.



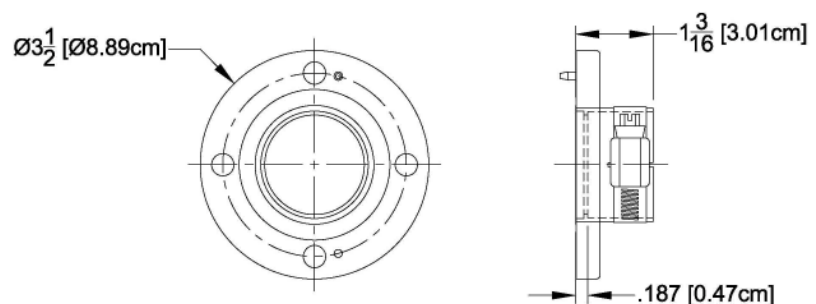
201-013

1 5/8" Field flange adapter, swivel flange, pressurized, soft solder type. 1.25lbs.



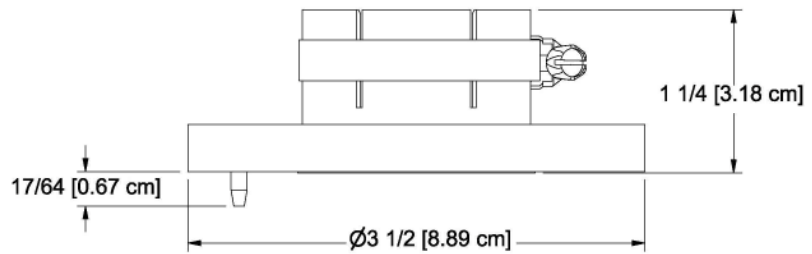
201-014

1 5/8" flange adapter, unpressurized clamp-type, for indoor use. Includes hardware and line clamp. 1.25lbs.

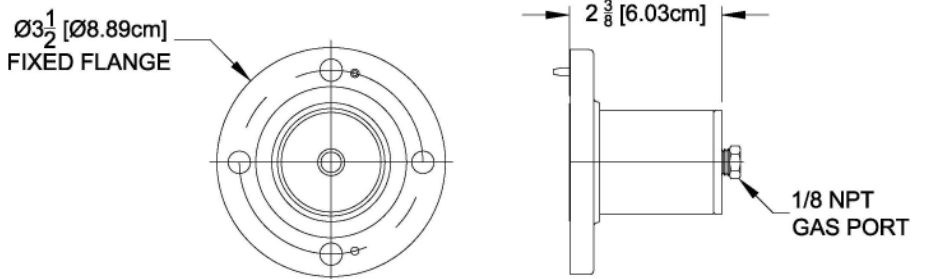


211-014

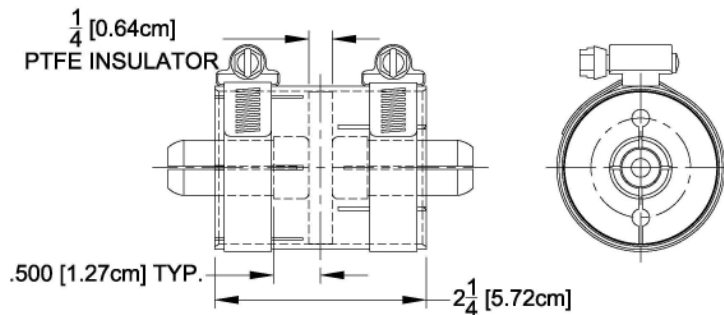
1 5/8" aluminum flange adapter, unpressurized clamp-type, for indoor use. Includes hardware and line clamp. .28lbs.

**201-015**

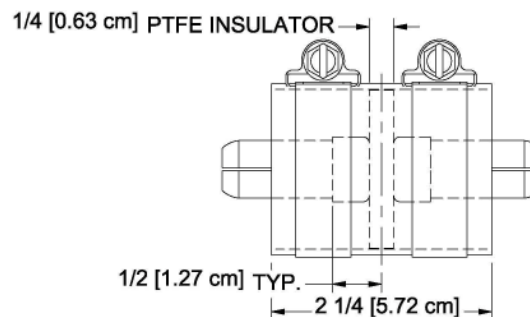
1 5/8" cover cap with 1/8" NPT gas inlet plug. 1.14lb.

**201-017**

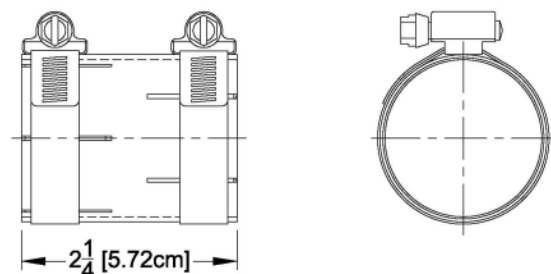
1 5/8" 50 ohm unpressurized coupling assembly with supported inner conductor connector and two line clamps. .63lbs.

**211-017**

1 5/8" 50 ohm aluminum unpressurized coupling assembly with supported inner conductor connector and two line clamps. .32lbs.

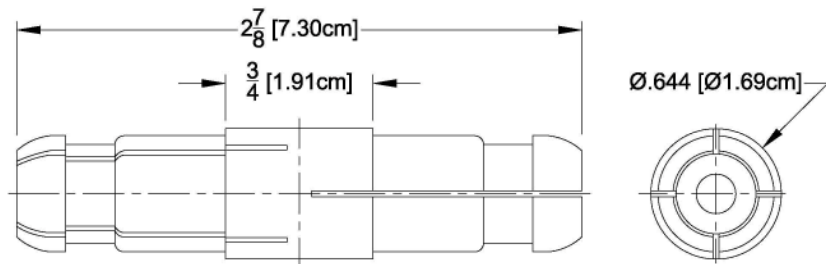
**201-018**

1 5/8" Outer conductor coupling clamp unpressurized. Includes two line clamps. (Does not increase outer conductor length.) .34lbs.



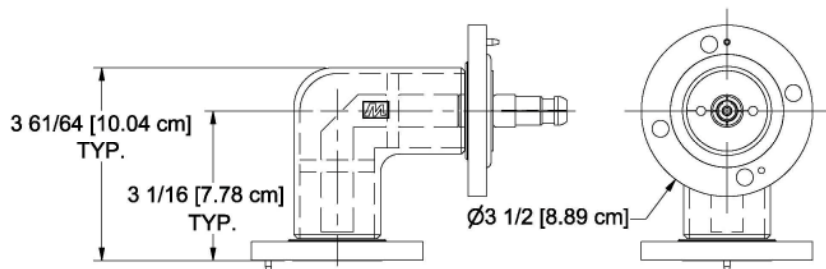
201-019

1 5/8" 50 ohm unsupported silver-plated spring loaded inner conductor connector. (Use 201-017 when support is required.) .16lbs.



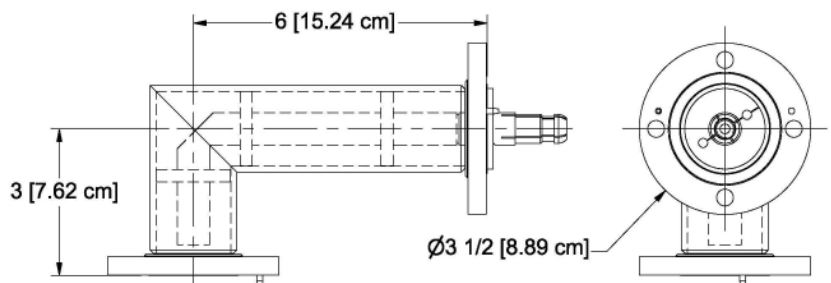
201-021

1 5/8" 50 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector, "O" ring, hardware. 3.3lbs.



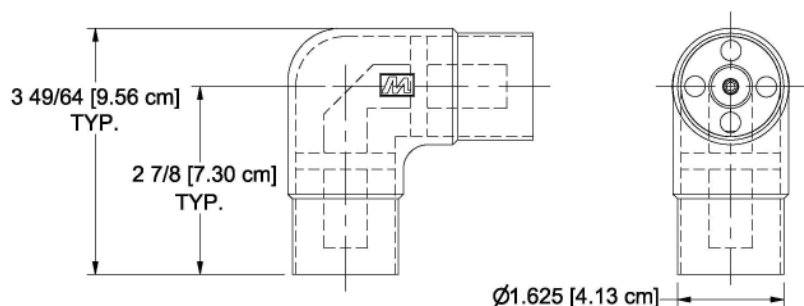
201-023

1 5/8" 50 ohm elbow 90 degree, swivel flanged, unequal leg, reinforced inside and outside. Includes anchor insulator connector, "O" ring, hardware. 4.19lbs.



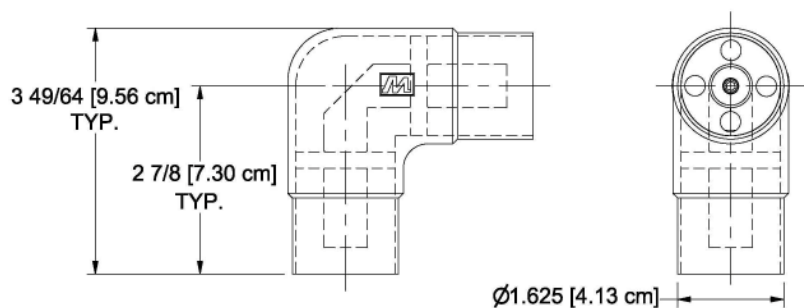
201-025

1 5/8" 50 ohm elbow, 90 degree, unflanged, reinforced outside. .94lbs.



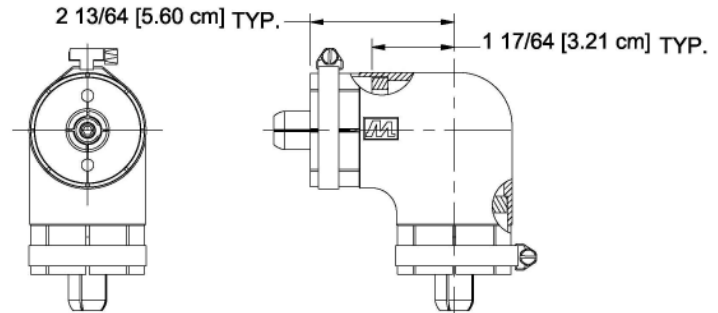
211-025

1 5/8" 50 ohm aluminum elbow, 90 degree, unflanged, reinforced outside. .59lbs.

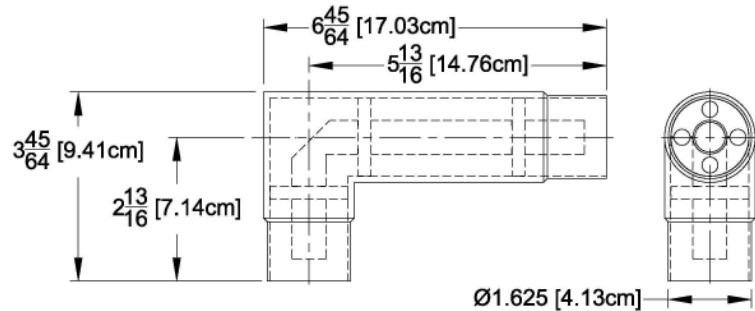


211-026

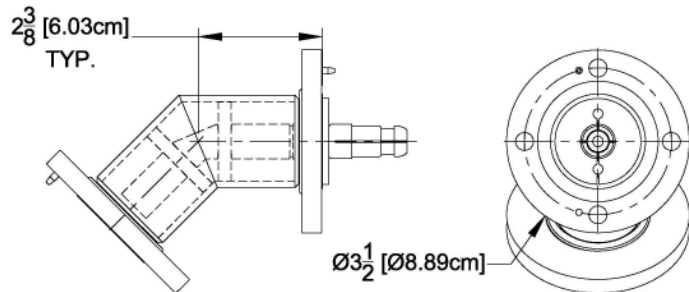
1 5/8" 50 ohm aluminum elbow, 90 degree, unflanged with integrated coupling, reinforced outside. .59lbs.

**201-027**

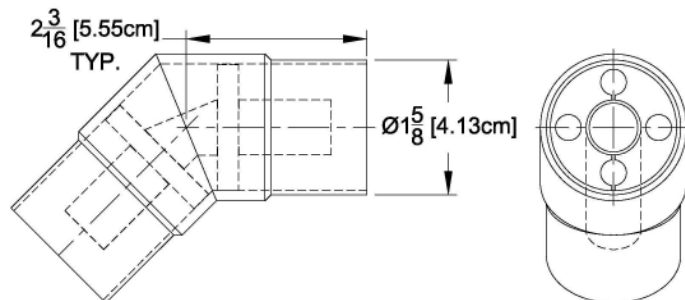
1 5/8" 50 ohm elbow, 90 degree unequal leg, unflanged, reinforced inside and outside. 2lbs.

**201-031**

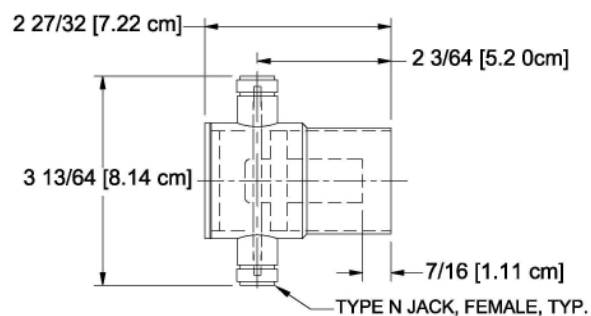
1 5/8" 50 ohm elbow, 45 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware 2.54lbs.

**201-035**

1 5/8" 50 ohm elbow, 45 degree, unflanged, reinforced inside and outside. .88lbs.

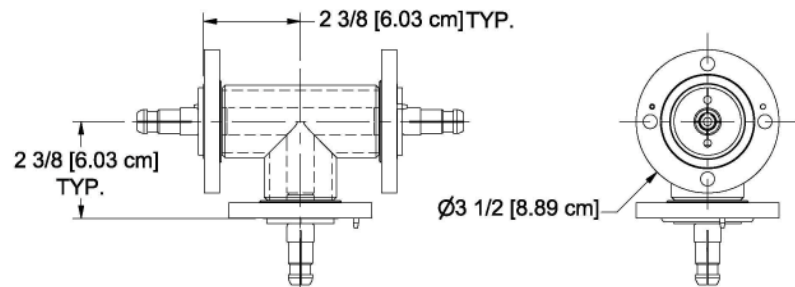
**201-039N**

Unmatched Tee Reducer, 1 5/8 50 Ohm unflanged to two type "N" female 50 Ohm. Weight .90lbs.



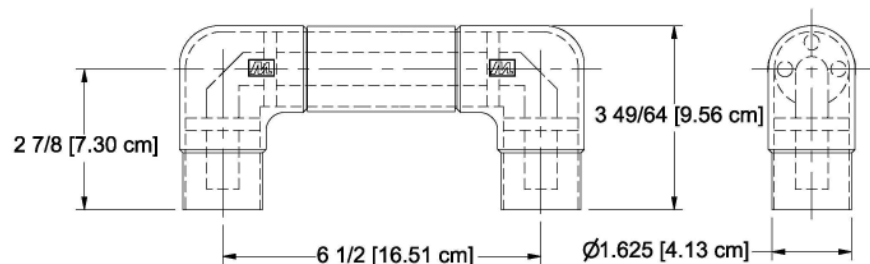
201-040

1 5/8" 50 ohm tee assembly, unmatched, swivel flanged, reinforced outside. Includes three anchor insulator connectors, "O" rings, and hardware sets. 6lbs.



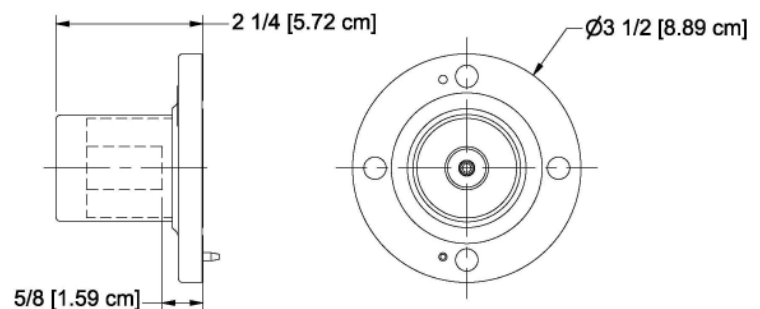
201-041

1 5/8" 50 ohm "U" link, female both ends, unflanged. 3lbs.



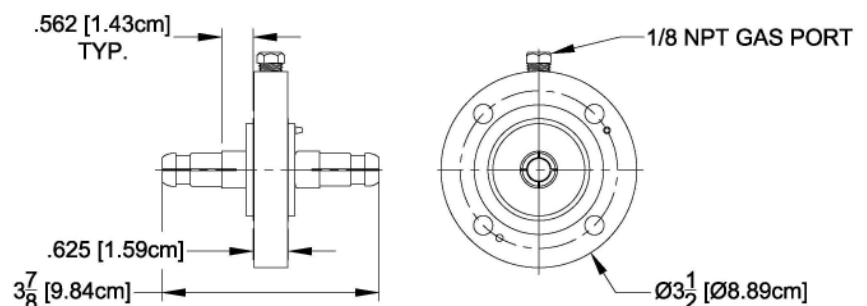
201-045

1 5/8" 50 ohm short assembly female. 1.2lbs.



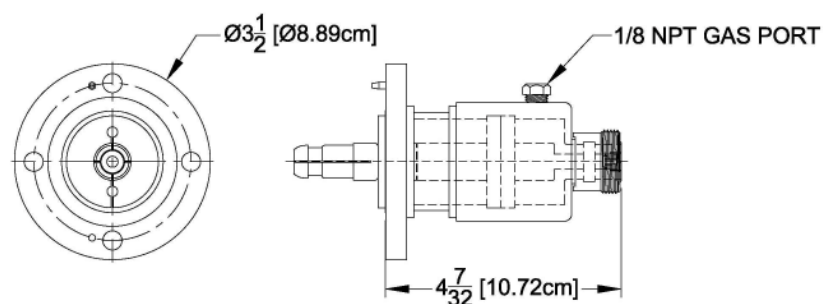
201-050

1 5/8" 50 ohm gas barrier with "O" ring gasket, 2" hardware, 1/8" NPT gas inlet port. 2lbs.



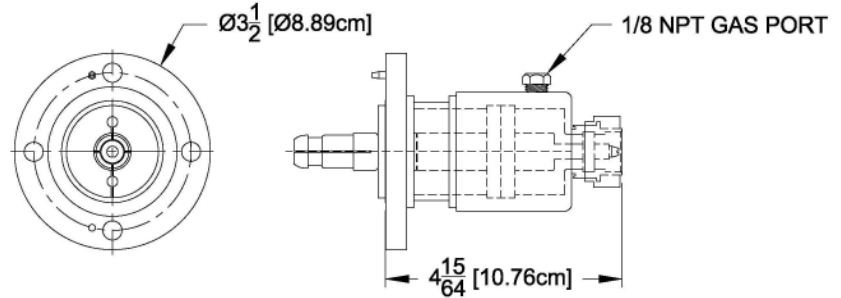
201-058-1

Reducer, 1 5/8" 50 ohm EIA to DIN 7-16 female, swivel flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware 1.25lbs.



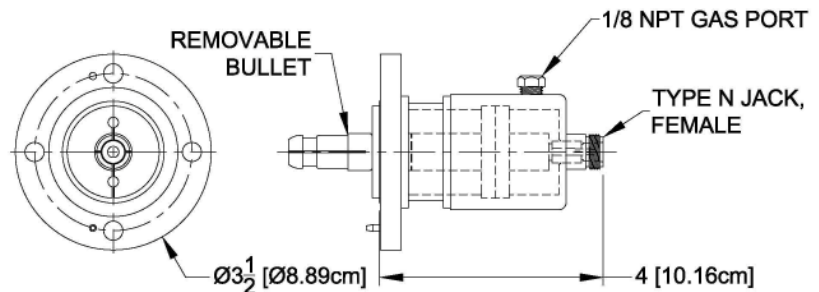
201-058-2

Reducer, 1 5/8" 50 ohm EIA to DIN 7-16 Male, swivel flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware 1.25lbs.



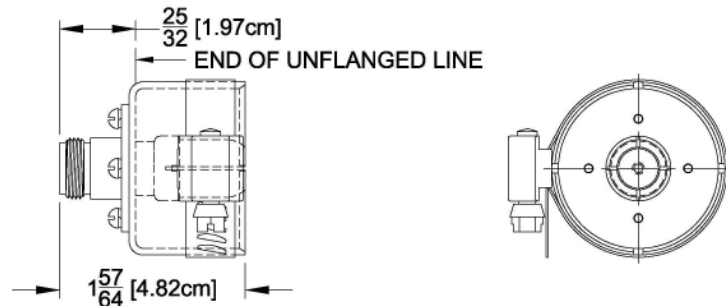
201-059

Reducer, 1 5/8" 50 ohm EIA to type "N" female, swivel flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware. 3.02lbs.



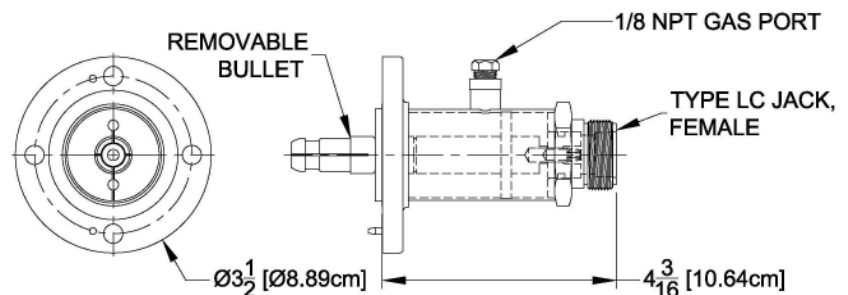
201-061

Reducer 1 5/8" 50 ohm coupling to type "N" female. .40lbs.



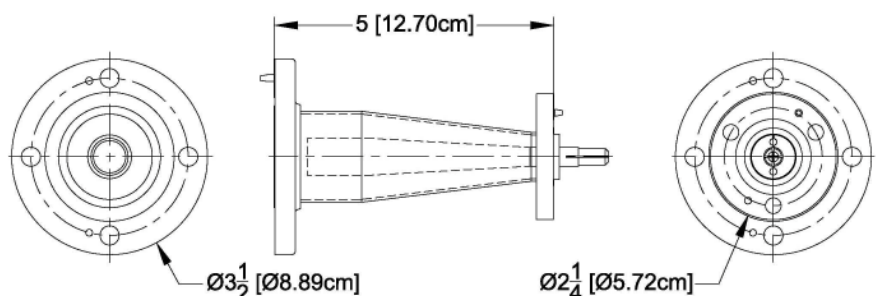
201-063

Step reducer: 1 5/8" 50 ohm to "LC" female (UG-215/U). Includes 1/8" NPT gas inlet port, anchor insulator connector, "O" ring, hardware. 2.25lbs.



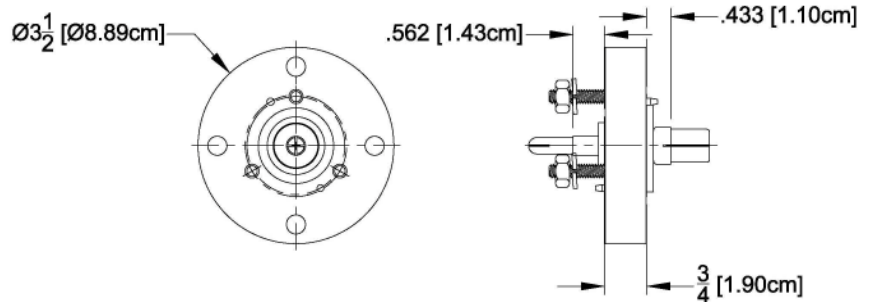
201-064

Reducer taper, flanged: 1 5/8" 50 ohm to 7/8" 50 ohm. Includes 7/8" anchor insulator connector, "O" ring, hardware. 2 lbs.



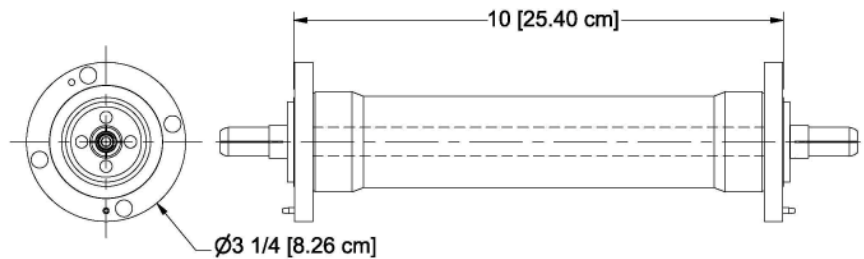
201-065

Step reducer, flanged: 1 5/8" 50 ohm step reducer, "plate" type: 1 5/8" 50 ohm to 7/8" 50ohm. Includes "O" ring, hardware. 2.36lbs.



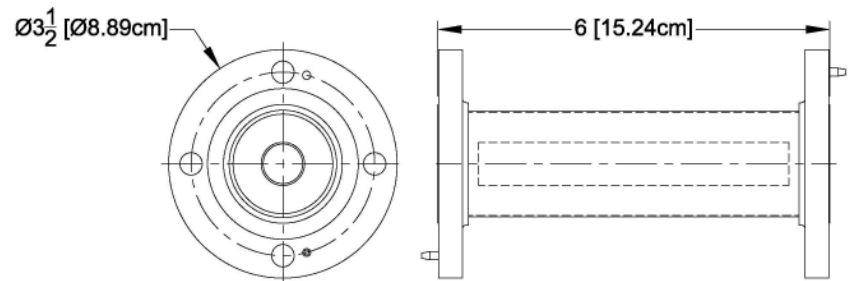
201-075-10

1 5/8" 50 ohm 10" flexible line assembly. Includes EIA swivel flanges. Accommodates bends up to +/- 15 degrees. 4lbs.



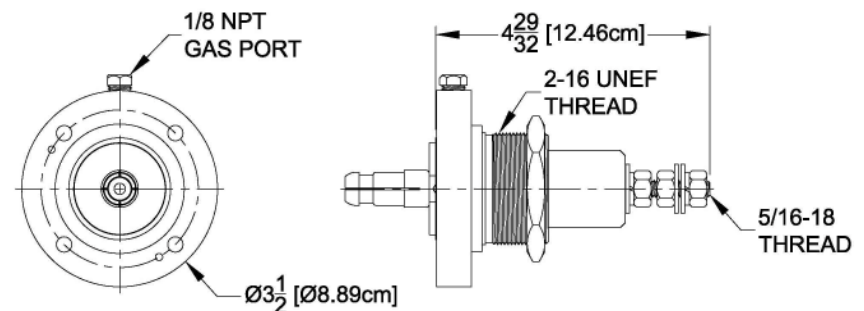
201-078

1 5/8" 50 ohm EIA adapter, male to male, with fixed flanges and unsupported inner conductor. Includes "O" ring gasket and hardware. 2.63lbs.



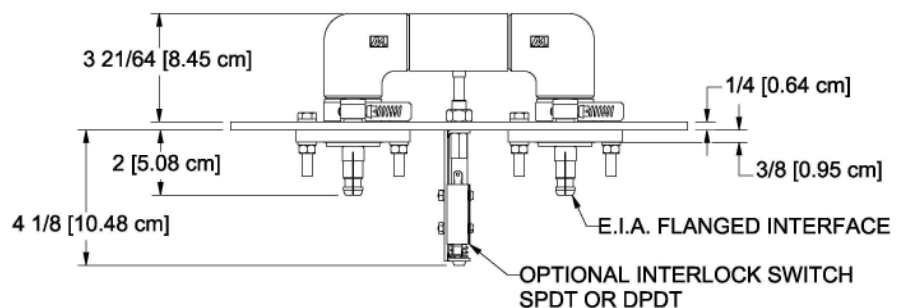
201-080

1 5/8" 50 ohm end seal assembly with NPT gas inlet port. Includes "O" ring gasket and hardware. 3.38lbs.



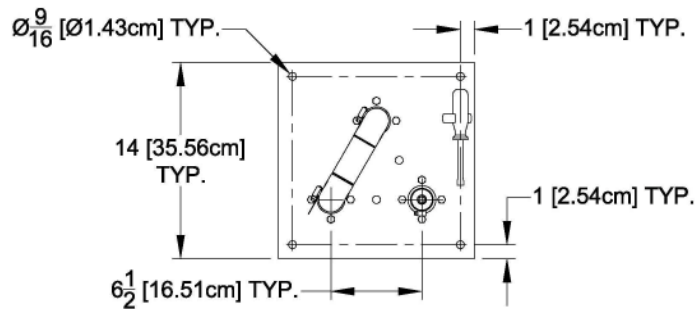
201-138-PATCH

Typical 1 5/8" 50 ohm patch panel interface dimensions. Back of patch panel mates with flanged transmission line. Custom patch panels available upon request



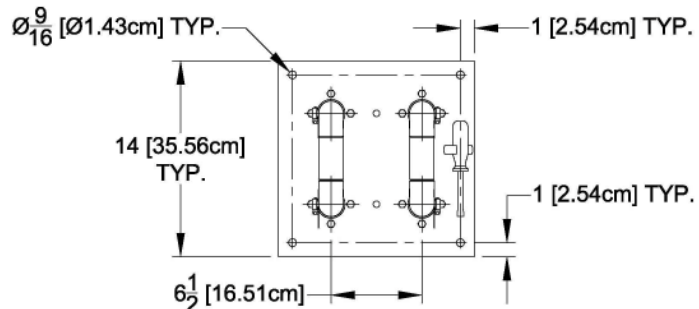
201-138-3

1 5/8" 50 ohm patch panel,
manual, 3 pole, unpressurized.
Includes 1 "U" link, anchor
insulator connectors, line
clamps, screwdriver. 11lbs.



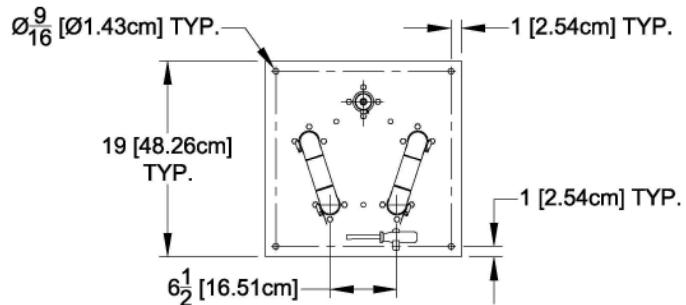
201-138-4

1 5/8" 50 ohm patch panel,
manual, 4 pole, unpressurized.
Includes 2 "U" links, anchor
insulator connectors, line
clamps, screwdriver. 12lbs.



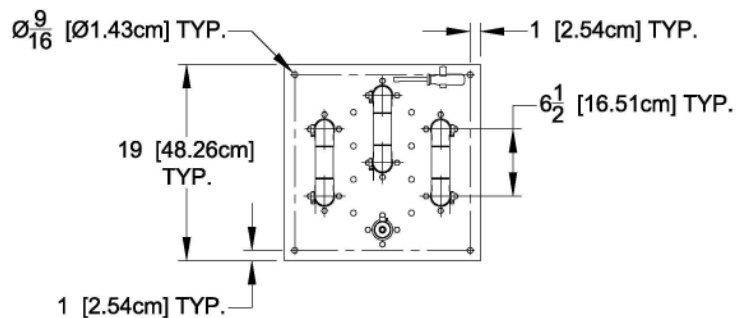
201-138-5

1 5/8" 50 ohm patch panel,
manual, 5 pole, unpressurized.
Includes 2 "U" links, anchor
insulator connector, line
clamps, screwdriver. 13lbs.



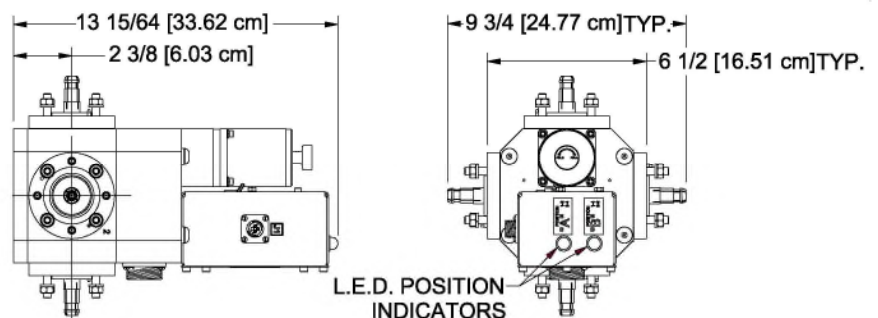
201-138-7

1 5/8" 50 ohm patch panel,
manual, 7 pole, unpressurized.
Includes 3 "U" links, anchor
insulator connectors, line
clamps, screwdriver. 16lbs.



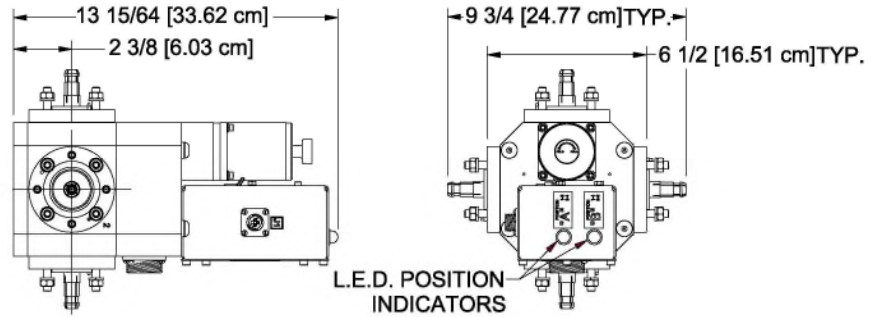
201-180-1

1 5/8" 50 ohm coaxial transfer
switch, 4 port 115V drive 12V
control. 24lbs.



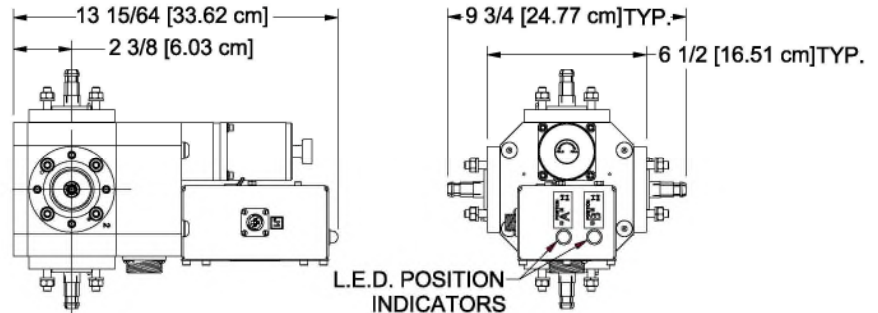
201-180-2

1 5/8" 50 ohm coaxial transfer switch, 4 port 115V drive 24V control. 24lbs.



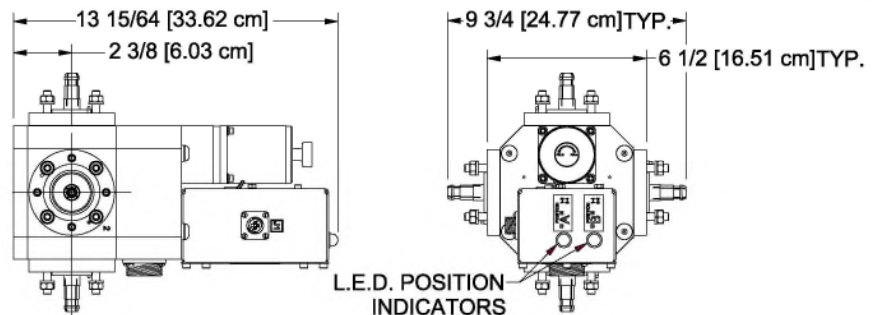
201-180-3

1 5/8" 50 ohm coaxial transfer switch, 4 port 230V drive 12V control. 24lbs.



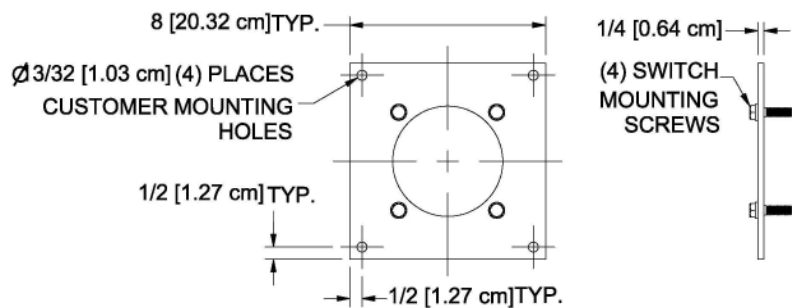
201-180-4

1 5/8" 50 ohm coaxial transfer switch, 4 port 230V drive 24V control. 24lbs.



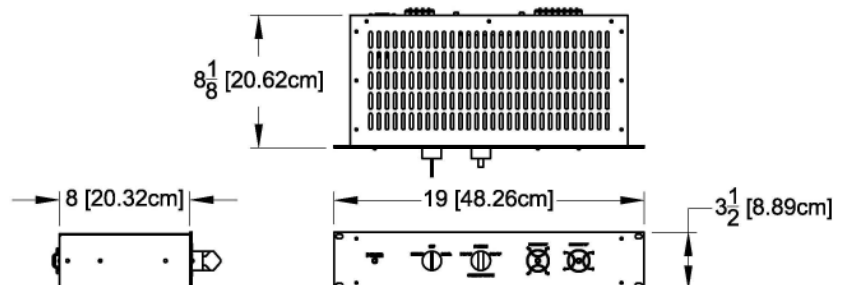
201-180-42

1 5/8" 50 ohm coaxial transfer switch mounting plate. 1.4lbs.



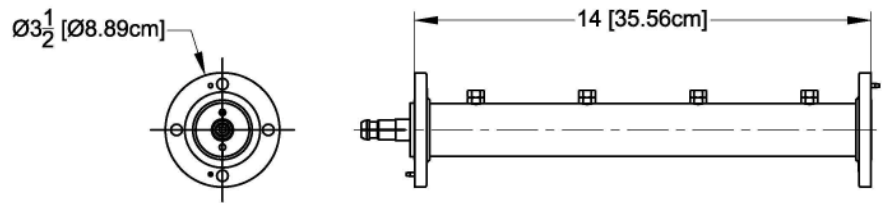
X01-180-X Switch Controller

Catalog Number	Number of Switches	Control Voltage
X01-180-1	1	12 VDC
X01-180-2	2	12 VDC
X01-180-3	3	12 VDC
X01-180-4	4	12 VDC
X01-180-5	1	24 VDC
X01-180-6	2	24 VDC
X01-180-7	3	24 VDC
X01-180-8	4	24 VDC



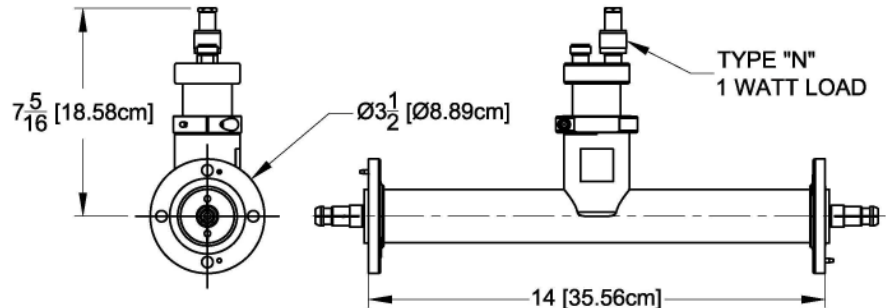
201-327-000

1 5/8" 50 ohm fine matcher
unpressurized - channel
specific, includes anchor
insulator connector, "O" ring,
and hardware. 3.23lbs.



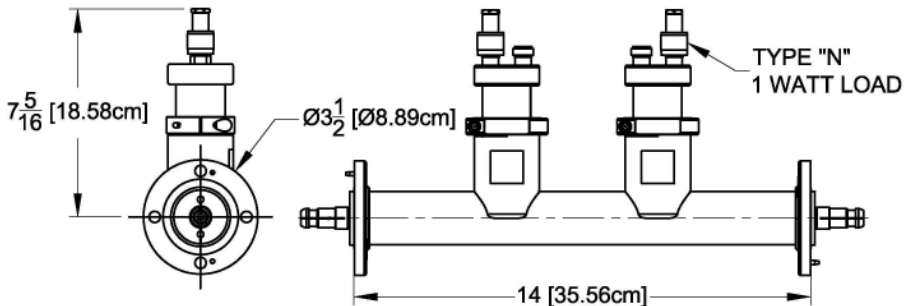
201-356-1-000

1 5/8" 50 ohm UHF directional
coupler - single coupler,
includes 2 anchor insulator
connectors, "O" ring, and
hardware. 6.46lbs.



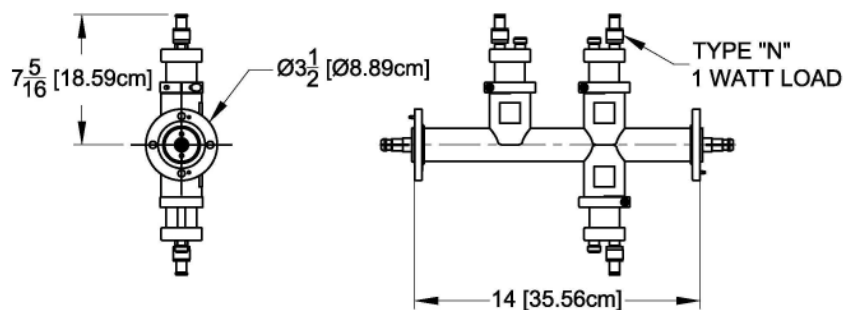
201-356-2-000

1 5/8" 50 ohm UHF directional
coupler - dual coupler, includes
2 anchor insulator connectors,
"O" ring, and hardware.
9.66lbs.



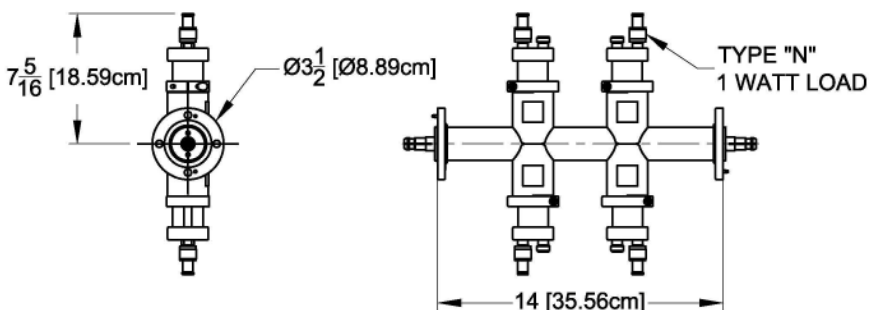
201-356-3-000

1 5/8" 50 ohm UHF directional
coupler - triple coupler, includes
2 anchor insulator connectors,
"O" ring, and hardware.
12.86lbs.



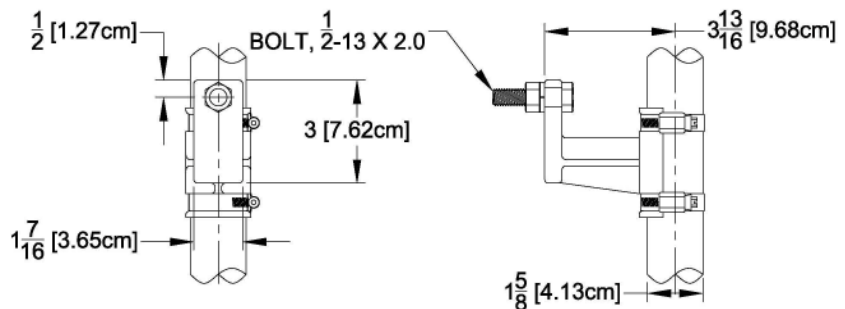
201-356-4-000

1 5/8" 50 ohm UHF directional
coupler - quad coupler,
includes 2 anchor insulator
connectors, "O" ring, and
hardware. 16lbs.



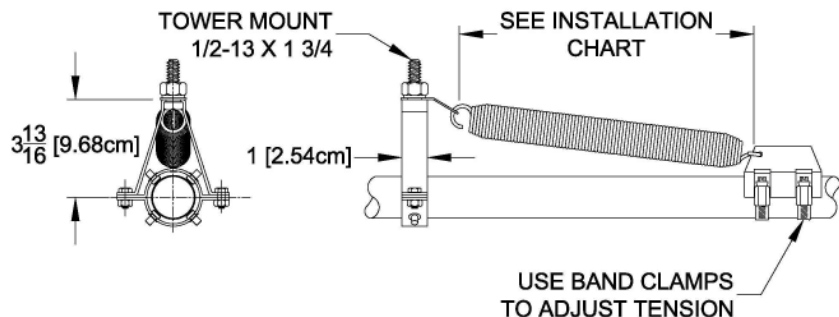
201-042-1

1 5/8" fixed hanger, single line. Includes line clamps and hardware. 9/16" mounting hole. Use one fixed hanger at top of tower for ea. 300 ft of vertical run, (min. requirement, 2 hangers). 1.25lb.



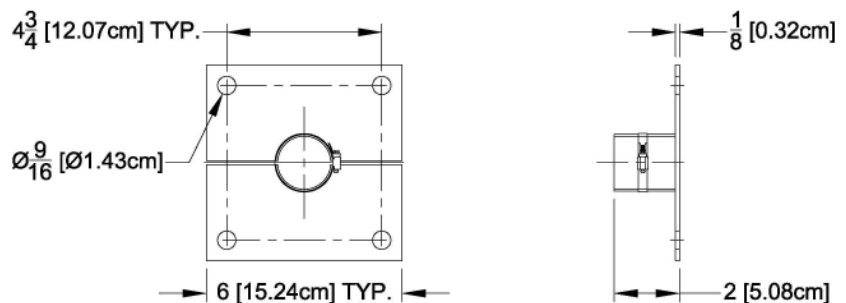
201-042-3

1 5/8" vertical spring suspension hanger, single line, stainless steel. Includes line clamps and hardware. 9/16" mounting hole. 3.17lbs.



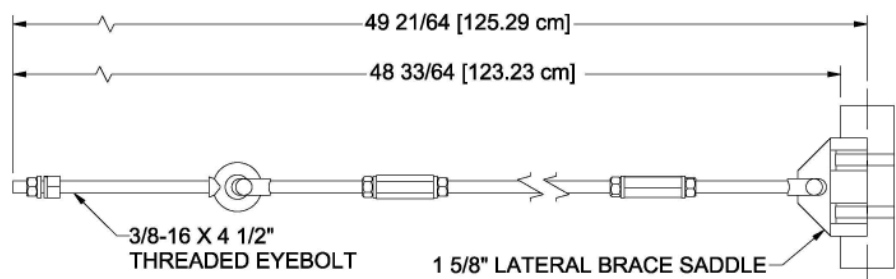
201-042-5

1 5/8" wall anchor plate, single line. Includes line clamp. One plate required for each side of wall. 2.63lbs.



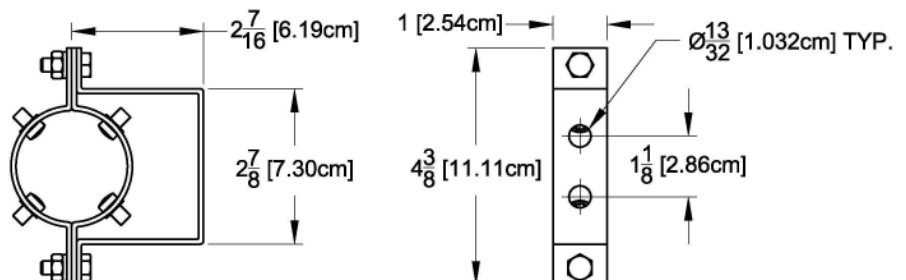
201-042-8

1 5/8" lateral brace for use at base of tower. Includes two line clamps. 3lbs.



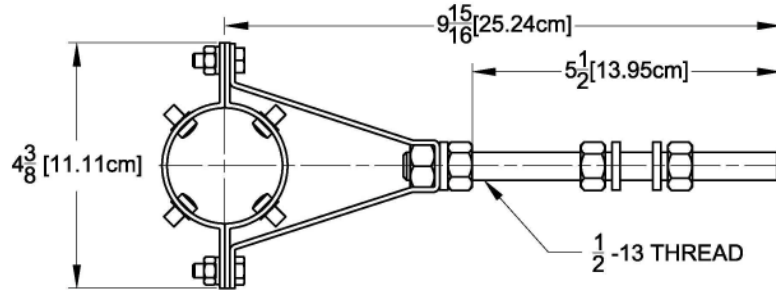
201-042-11

1 5/8" slip hanger, flange mounted for indoor use. Permits expansion. 1.90lbs.



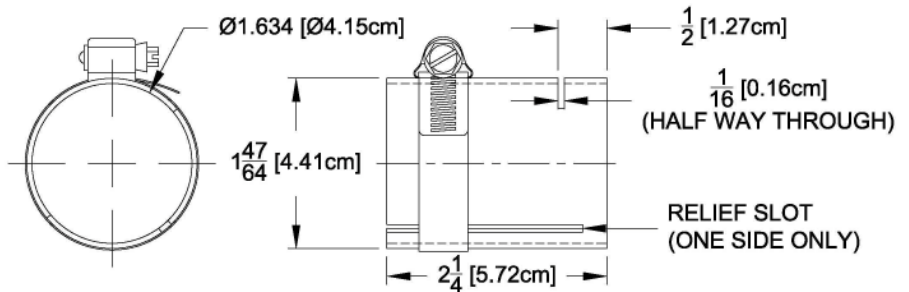
201-042-12

1 5/8" slip hanger, 7" stud mounted. 1.19lbs.



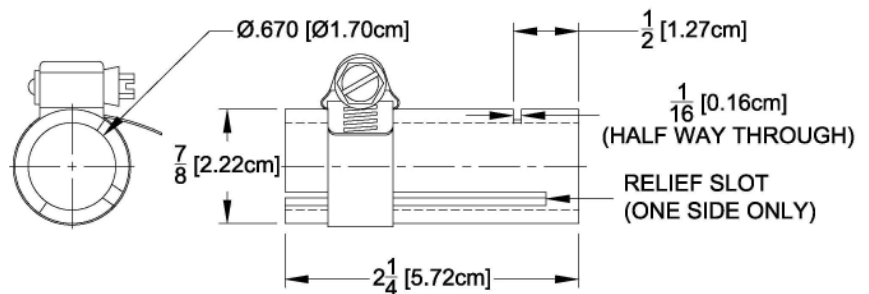
201-042-24

1 5/8" outer conductor cutoff guide. Includes line clamp. .25lbs.



201-042-25

1 5/8" inner conductor cutoff guide. Includes line clamp. .20lbs.





This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

301 Series 3 1/8" 50 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	50 $\pm$.5 Ohms
Upper Frequency Limit:	* 1600 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	19 kV DC
Peak Power Rating	** 440 kW
VSWR:	*** 1.03:1

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	3.125" (79 mm)
Inside Diameter:	3.027" (77 mm)

Inner Conductor

Outside Diameter :	1.315" (33 mm)
Inside Diameter:	1.231" (31 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.
Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 55.2 lbs.

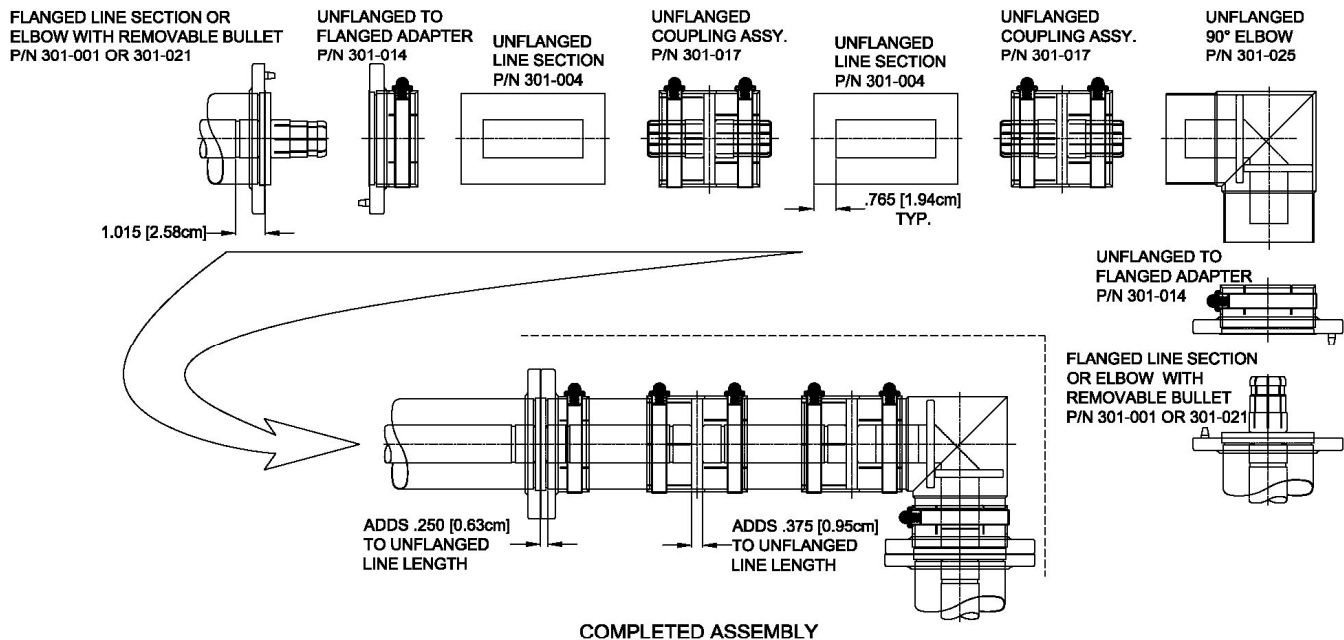
* TE11 Mode useful cutoff frequency.

** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

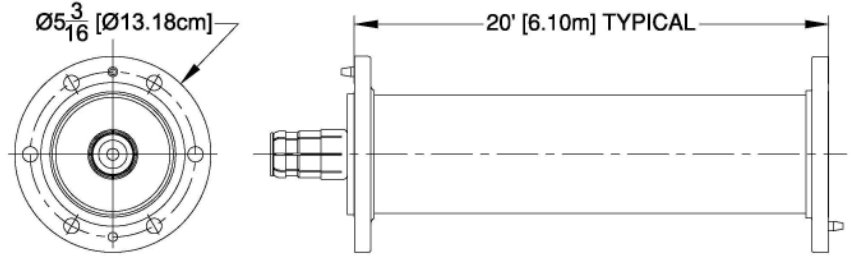
COMPONENTS TO BE ASSEMBLED,



3 1/8" (SERIES 301-) FLANGED TO UNFLANGED LINE SECTION

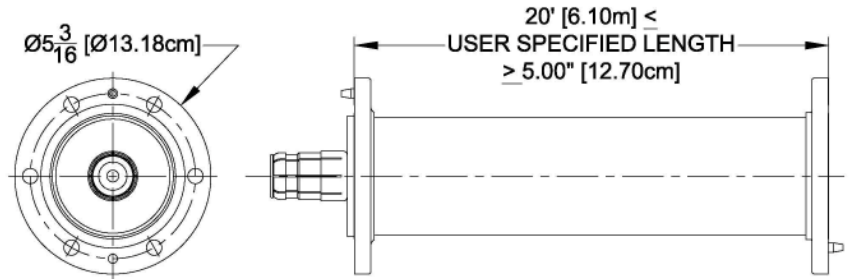
301-001

3 1/8" 50 ohm EIA 20' line assembly, random pin spacing, flanged: Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 55.2lbs.



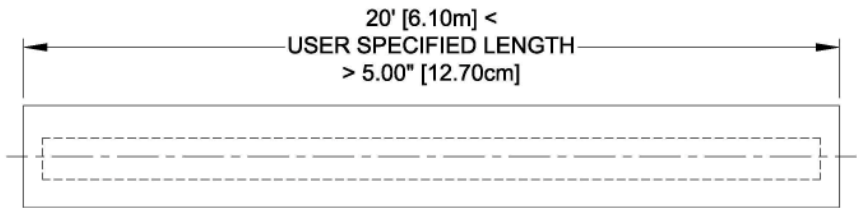
301-002

3 1/8" 50 ohm EIA line assembly of customer specified length, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 4.5lbs plus 2.6lbs. per foot.



301-004

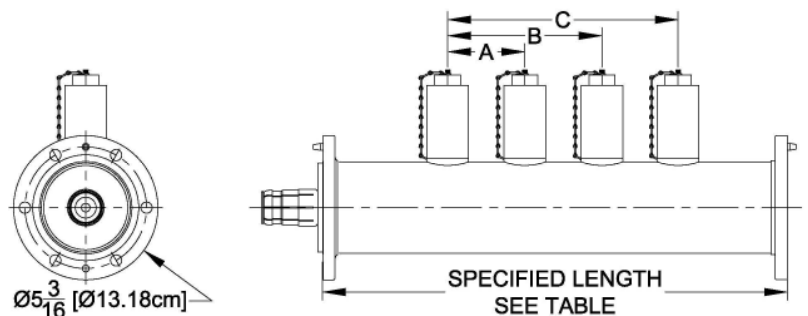
3 1/8" 50 ohm line assembly of customer specified length, unflanged, no connector or hardware. 2.5lbs/ft.



301-005

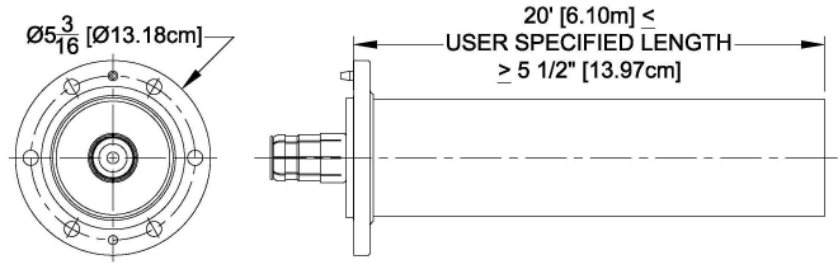
3 1/8" 50 ohm 4 probe tuning line section, Specify length and Frequency. Includes anchor insulator with anti-splitting device, "O" ring and hardware.

	A'	B'	C'
Frequencies < 738 MHz	1/8	1/4	3/8
Frequencies > 738 MHz	1/4	5/8	7/8
Minimum Specified Length:			
For Frequencies < 738 MHz = 9" + 3/8			
For Frequencies > 738 MHz = 9" + 7/8			
Maximum Specified Length = 20'			



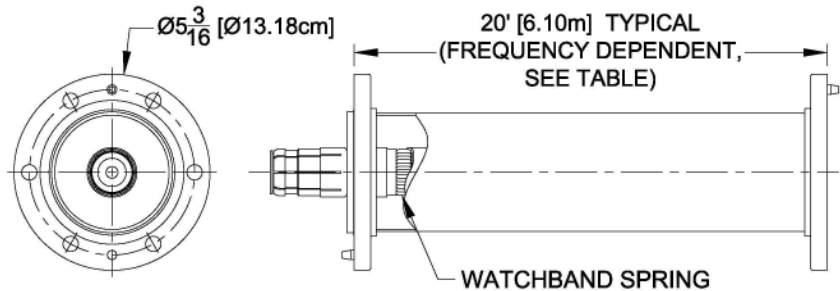
301-006

3 1/8" 50 ohm line assembly, one end flanged. Customer specified length. Includes anchor insulator connector with anti splitting device, "O" ring, hardware. 54lbs. @ 20 feet.



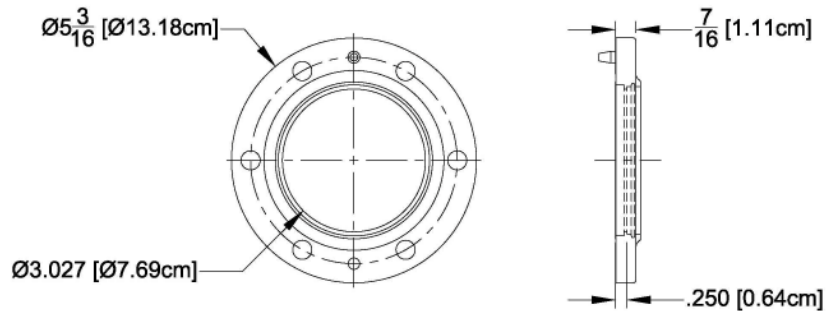
301-007

3 1/8" 50 ohm 20' expansion line assembly, flanged. Includes anchor insulator, "O" ring, hardware. 55.5lbs. @ 20' See table in engineering section for line length selection.



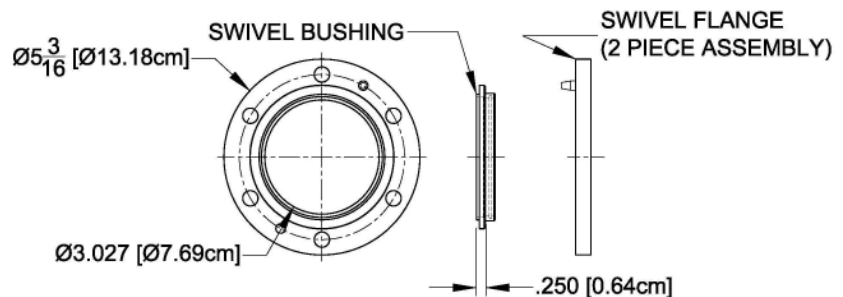
301-008

3 1/8" EIA fixed flange, brass, with silver solder ring insert, for silver brazing. 1.7lbs.



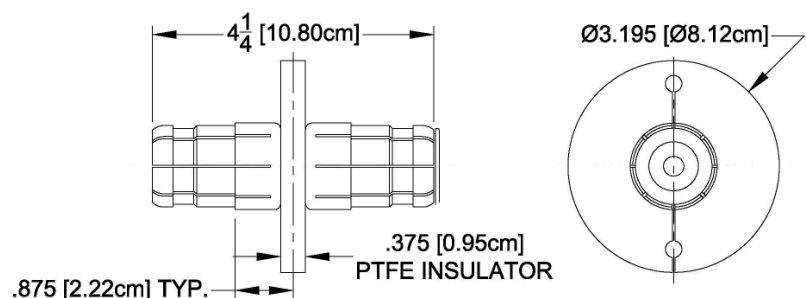
301-009

3 1/8" EIA swivel flange, brass, with silver solder ring insert, for silver brazing. 1.7lbs.



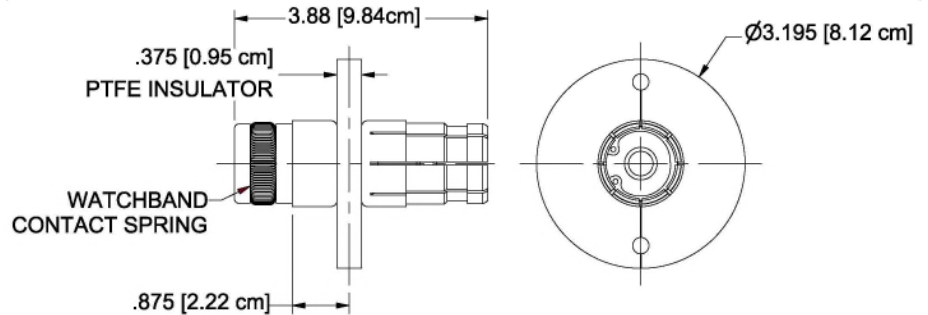
301-010

3 1/8" 50 ohm EIA anchor insulator connector with anti-splitting device, spring loaded, silver plated. .75lbs.



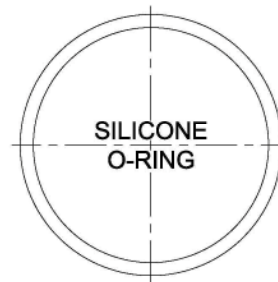
301-010-E

3 1/8" anchor insulator connector, expansion type, for use as a spare with 301-007 expansion line only. 1lb.



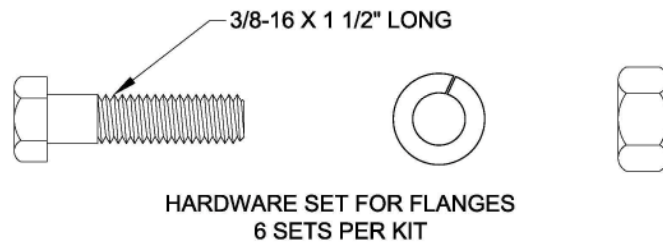
301-011

3 1/8" "O" ring, silicone.



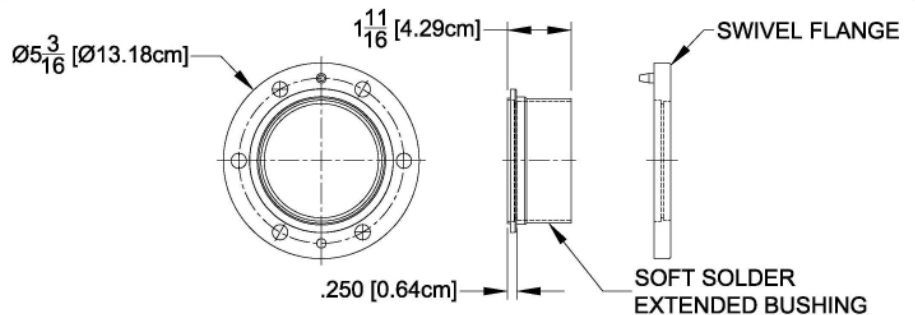
301-012

3 1/8" Hardware set for flanges, stainless steel. .53lbs.



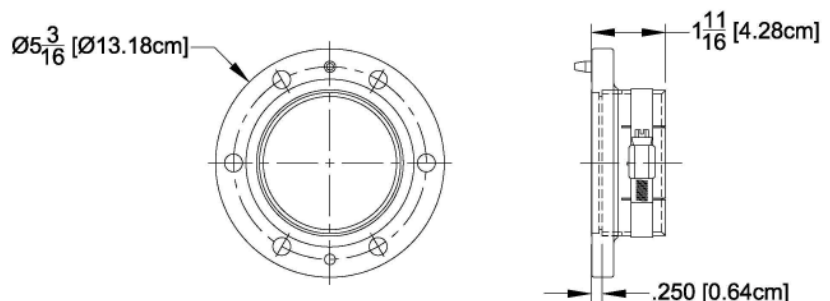
301-013

3 1/8" field flange adapter, swivel flange, pressurized, soft solder type. 2lbs.



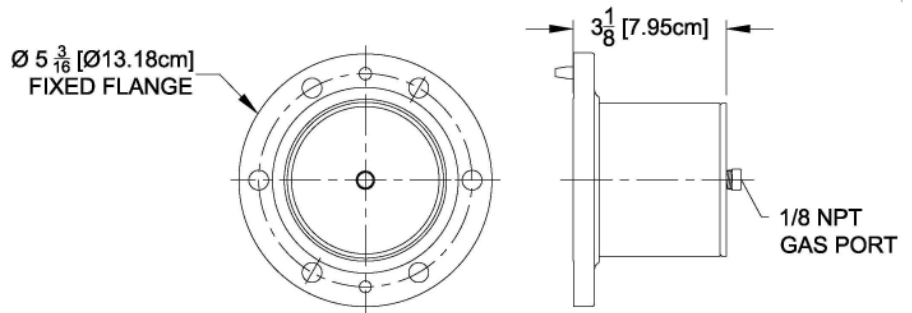
301-014

3 1/8" flange adapter, unpressurized clamp-type, for indoor use. Includes hardware and line clamp. 2.65lbs.

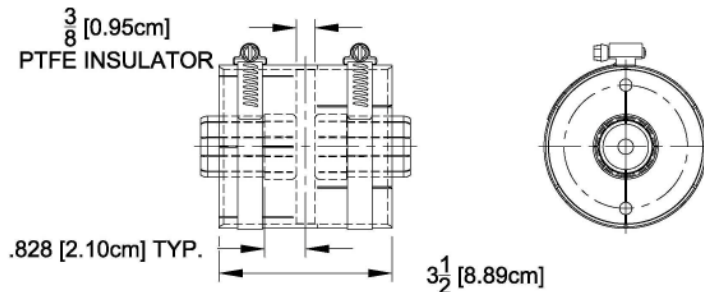


301-015

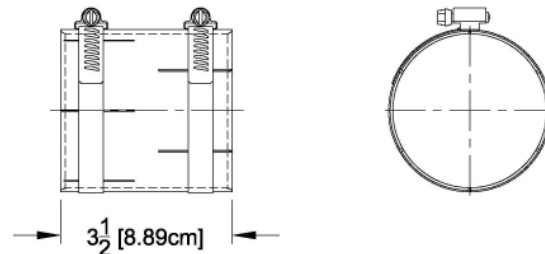
3 1/8" cover cap, with 1/8" NPT gas inlet plug. 2.2lbs.

**301-017**

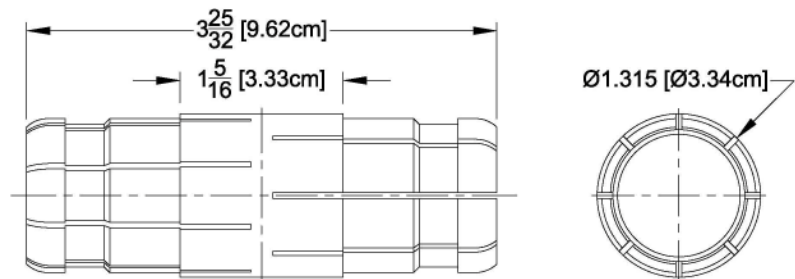
3 1/8" 50 ohm unpressurized coupling assembly with supported inner conductor connector and two line clamps. 2lbs.

**301-018**

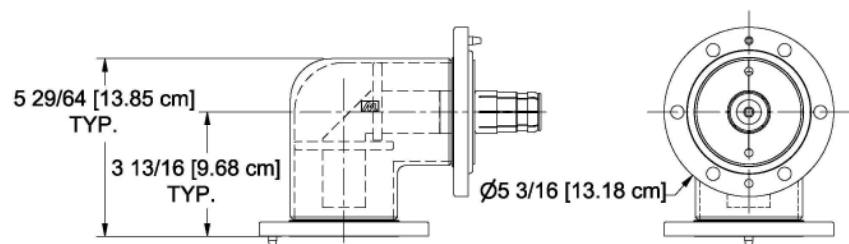
3 1/8" Outer conductor coupling clamp unpressurized. Includes two line clamps. (Does not increase outer conductor length.) 1.25lbs.

**301-019**

3 1/8" 50 ohm inner conductor connector, silver plated, spring loaded. Unsupported (Use 301-017 when support is required.) .38lbs.

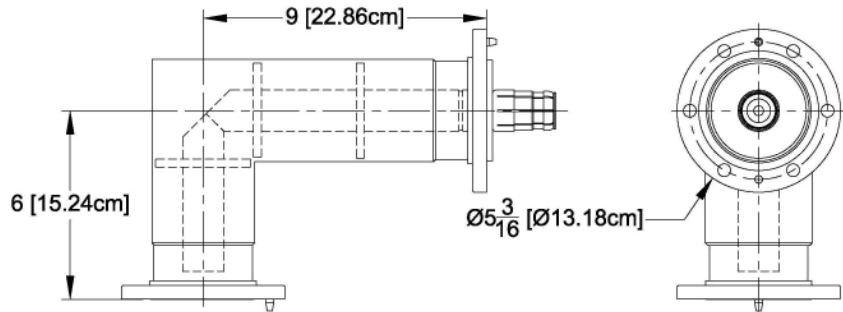
**301-021**

3 1/8" 50 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 8.8lbs.



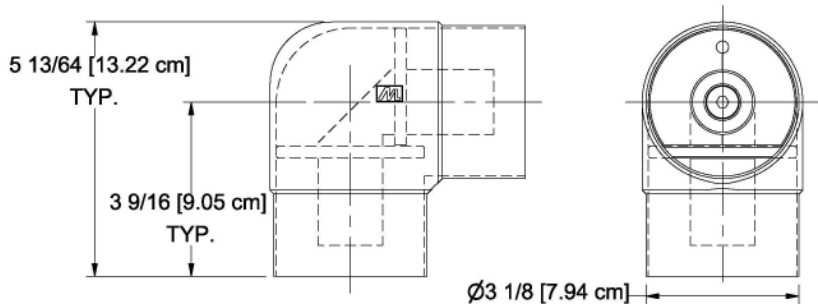
301-023

3 1/8" 50 ohm elbow, 90 degree, swivel flanged, unequal leg, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 12lbs.



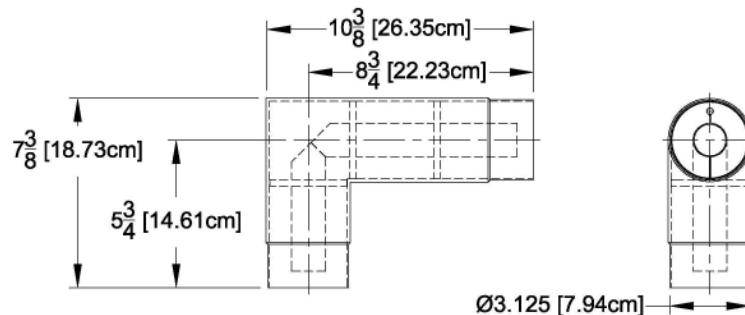
301-025

3 1/8" 50 ohm elbow, 90 degree, unflanged, reinforced inside and outside. 3.25lbs.



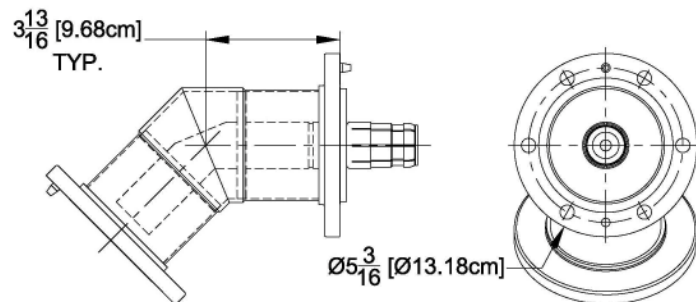
301-027

3 1/8" 50 ohm elbow, 90 degree unequal leg, unflanged, reinforced inside and outside. 8.6lbs.



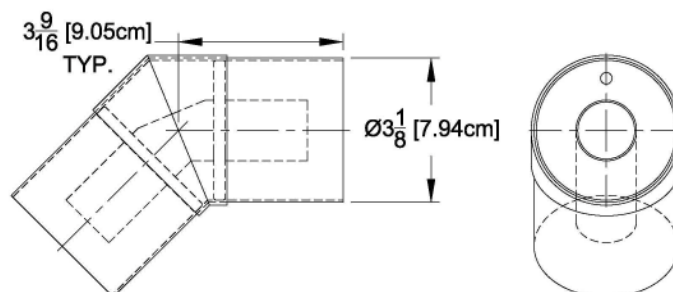
301-031

3 1/8" 50 ohm elbow, 45 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 7.88lbs.



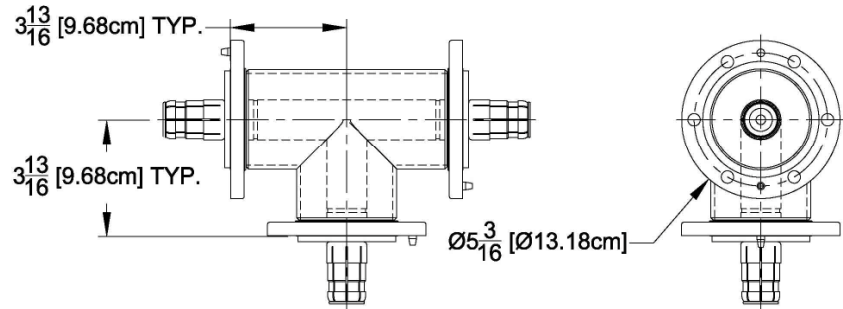
301-035

3 1/8" 50 ohm elbow, 45 degree, unflanged, reinforced inside and outside. 3.7lbs.



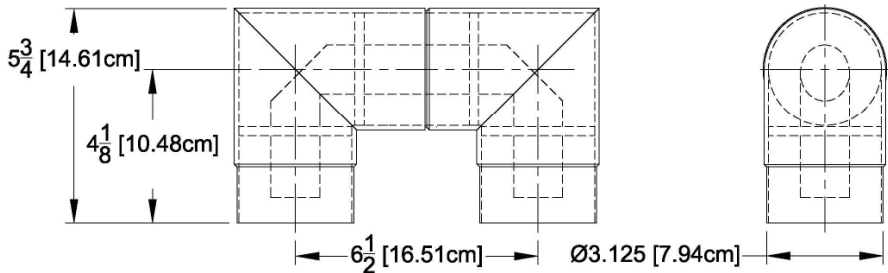
301-040

3 1/8" 50 ohm tee assembly, unmatched, swivel flanged, reinforced outside. Includes three anchor insulator connectors with anti-splitting devices, "O" rings, and hardware sets. 13lbs.



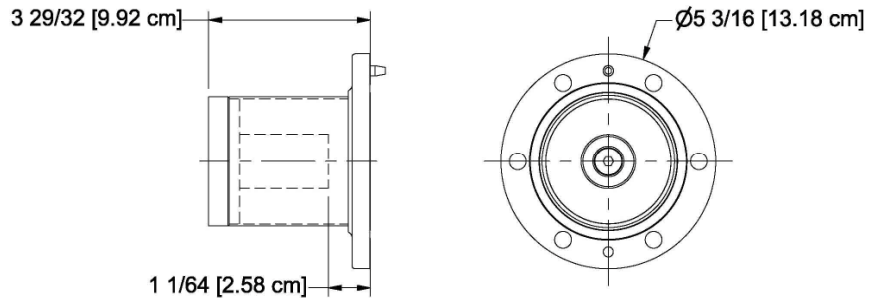
301-041

3 1/8" 50 ohm "U" link, female both ends, unflanged. 8lbs.



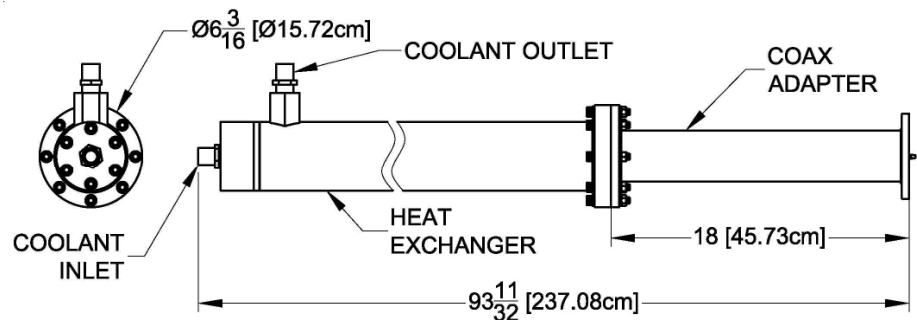
301-045

3 1/8" 50 ohm short assembly female. 4lbs.



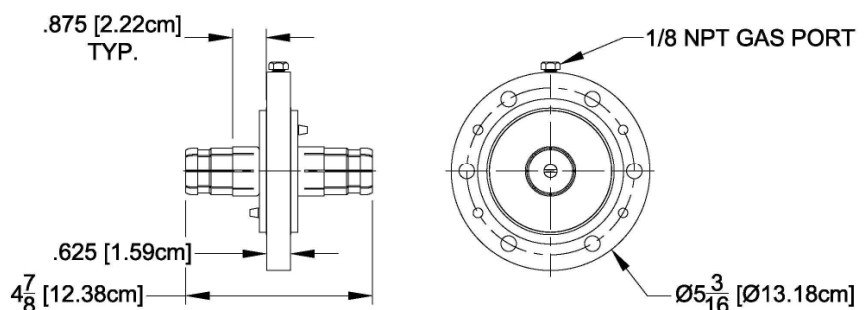
301-046-000

3 1/8" 50 ohm water cooled load UHF - channel specific. 73.3lbs.



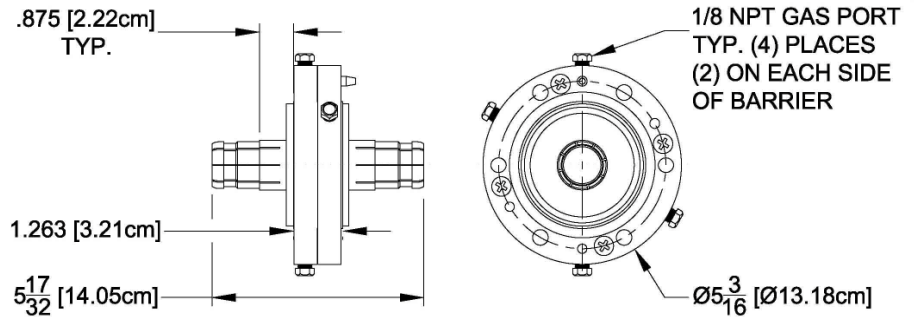
301-050

3 1/8" 50 ohm gas barrier with "O" ring gasket, 2 1/2" hardware, 1/8" NPT gas inlet port. 4.5lbs.



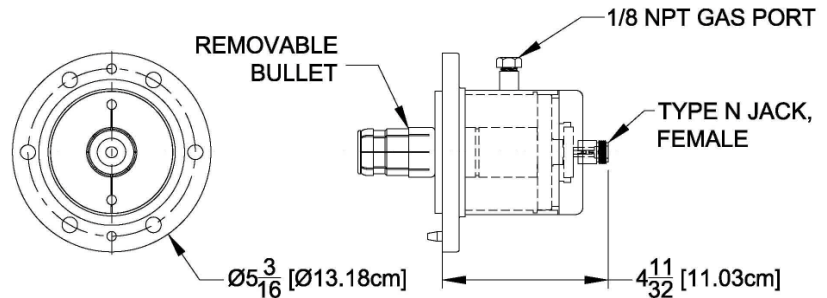
301-050-HD

3 1/8" 50 ohm gas barrier with "O" ring gasket, 3 1/4" hardware, (4) 1/8" NPT gas inlet ports, 2 on each side. 7lbs.



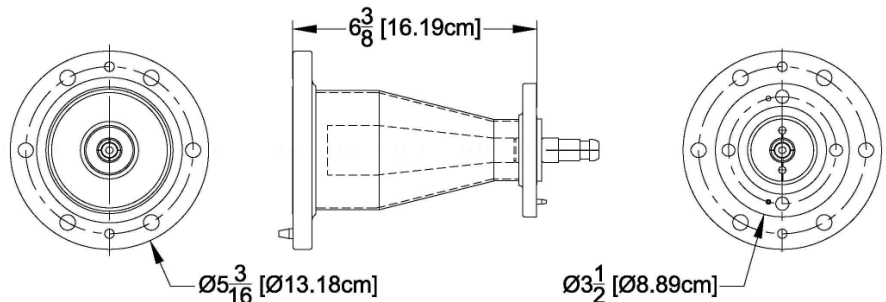
301-059

Reducer, 3 1/8" 50 ohm EIA to type "N" female, fixed flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware. 3.02lbs.



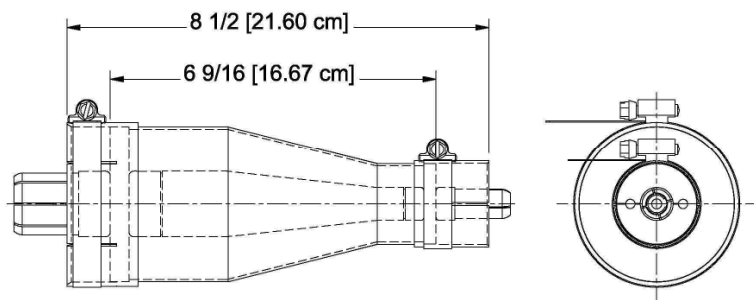
301-064

Reducer taper, flanged: 3 1/8" 50 ohm to 1 5/8" 50 ohm. Includes 1 5/8" anchor insulator connector, "O" ring, hardware. 3lbs.



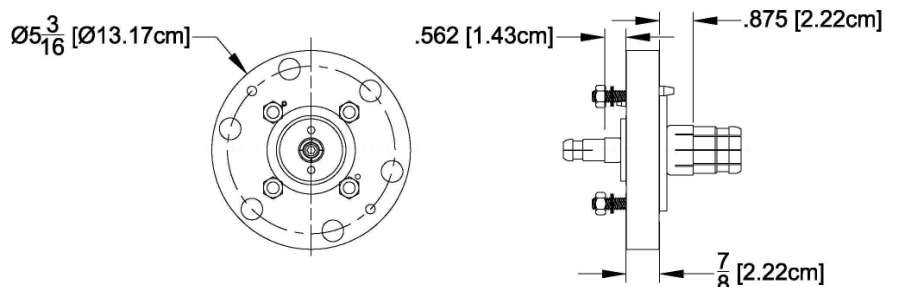
301-064-46-1

Reducer taper unflanged 3 1/8" to 1 5/8" supplied with connectors, for indoor use. 3lbs.



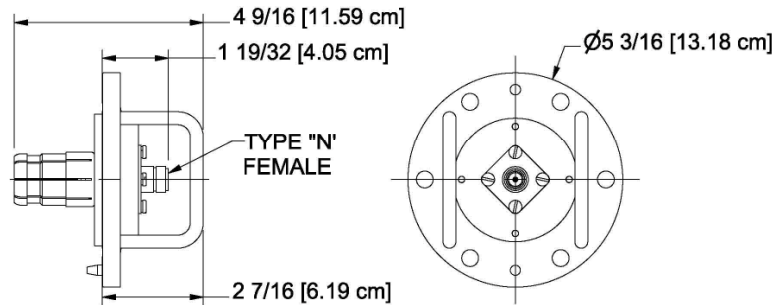
301-065

Step reducer, flanged: 3 1/8" 50 ohm step reducer, "plate" type: 3 1/8" 50 ohm to 1 5/8" 50 ohm. Includes "O" rings, hardware. 5.3lbs.

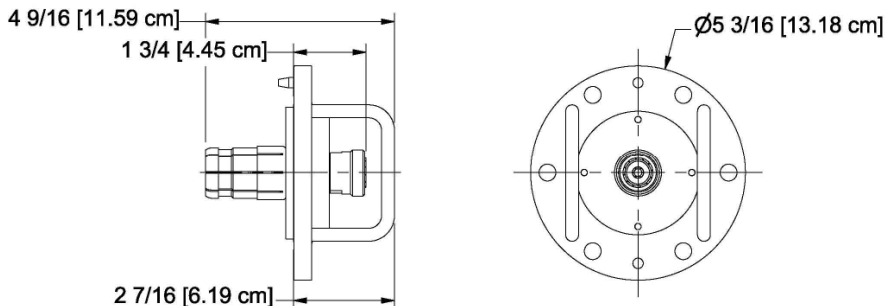


311-066

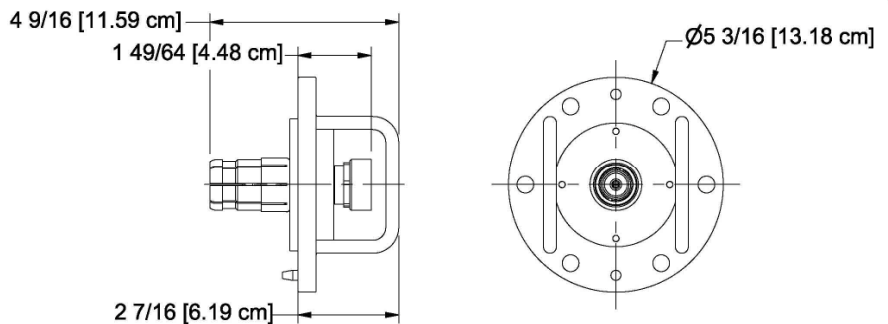
3 1/8" 50 ohm to type "N"
female plate reducer. 1.47lbs.

**311-580-1**

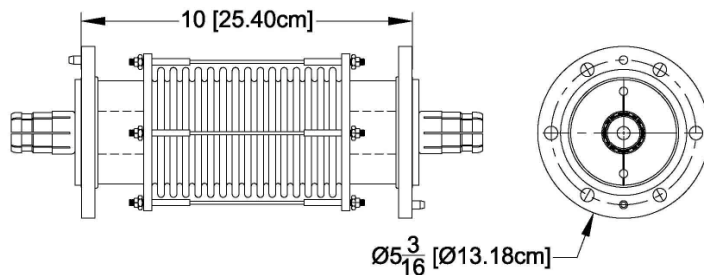
3 1/8" 50 ohm to 7/16" DIN
female plate reducer. 1.6lbs.

**311-580-2**

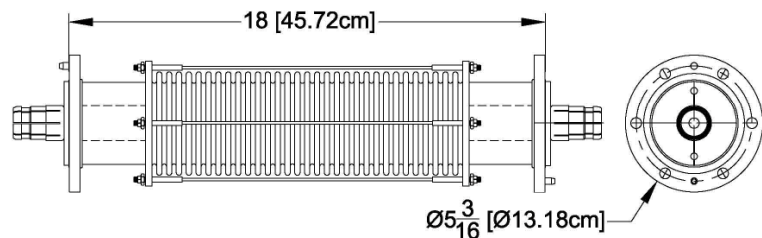
3 1/8" 50 ohm to 7/16" DIN
male plate reducer. 1.6lbs.

**301-075-10**

3 1/8" 50 ohm 10" flexible line
assembly. Includes EIA swivel
flanges, "O" ring, and hardware
kit. Accommodates bends up to
+/- 7.5 degrees. 11lbs.

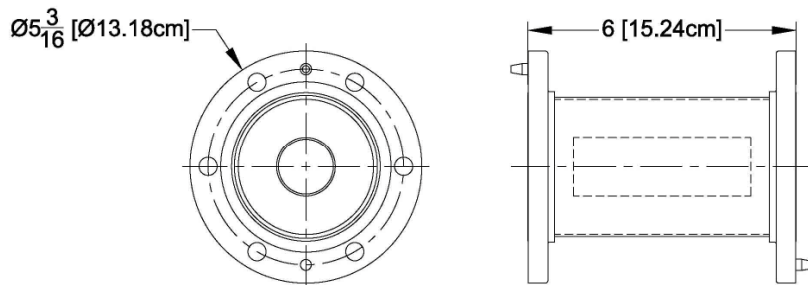
**301-075-18**

3 1/8" 50 ohm 18" flexible line
assembly. Includes EIA swivel
flanges, "O" ring, and hardware
kit. Accommodates bends up to
+/- 15 degrees. 13lbs.



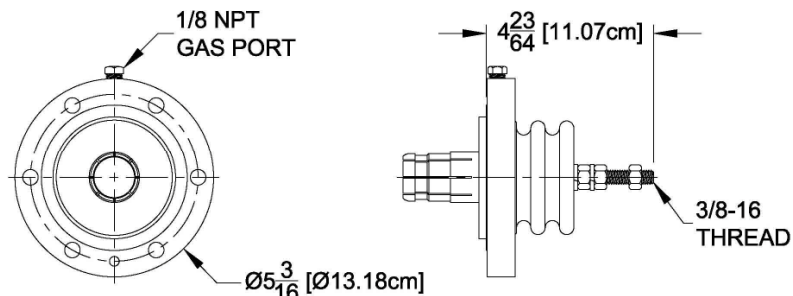
301-078

3 1/8" 50 ohm EIA adapter, male to male, with fixed flanges and unsupported inner conductor. Includes "O" ring gasket and hardware. 5.5lbs.



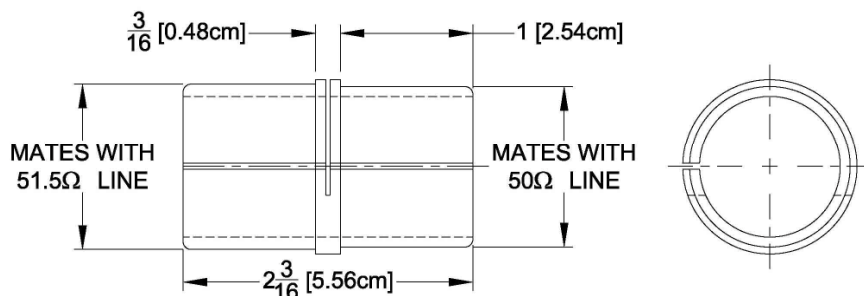
301-080

3 1/8" 50 ohm end seal assembly with NPT gas inlet port. Includes "O" ring gasket and hardware. 5.5lbs.



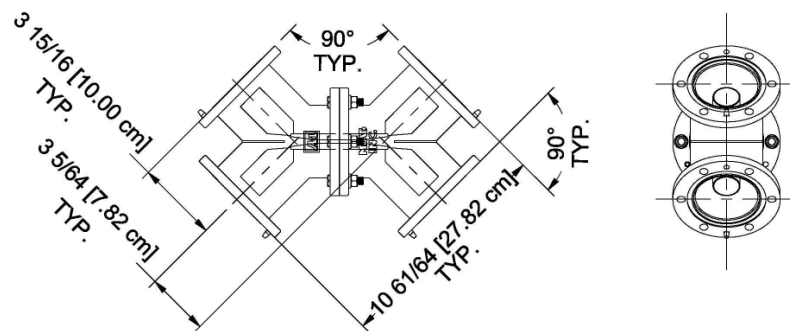
301-081

3 1/8" 51.5 - 50 ohm adapter bullet "whiskey cup". Unsupported. 4oz.



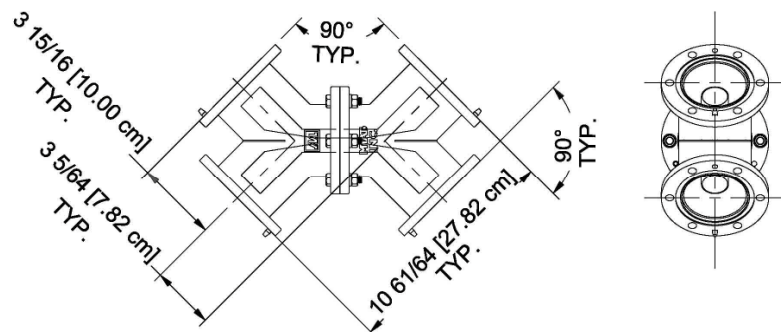
301-090

3 1/8" 50 ohm all UHF -3.01dB hybrid. 9.75lbs.



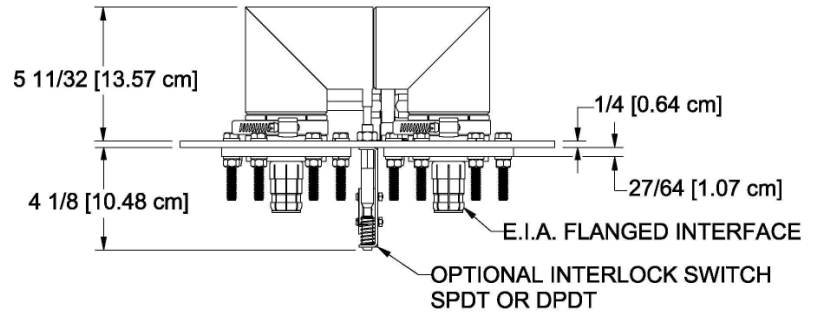
301-090-6

3 1/8" 50 ohm all UHF -4.77dB hybrid. 10.33lbs.



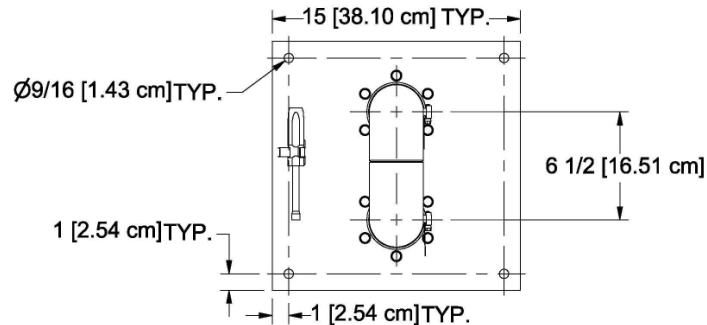
301-138-PATCH

Typical 3 1/8" 50 ohm patch panel interface dimensions.
Back of patch panel mates with flanged transmission line.
Custom patch panels available upon request.



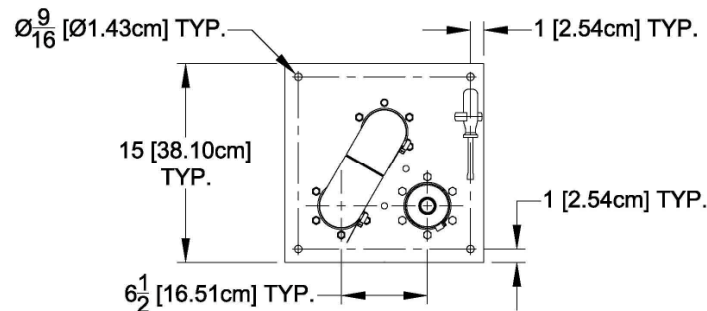
301-138-2

3 1/8" 50 ohm patch panel, manual, 2 pole, unpressurized. Includes 1 "U" link, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 24lbs.



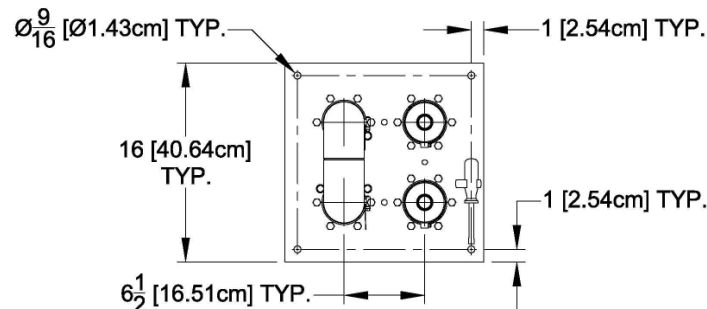
301-138-3

3 1/8" 50 ohm patch panel, manual, 3 pole, unpressurized. Includes 1 "U" link, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 24lbs.



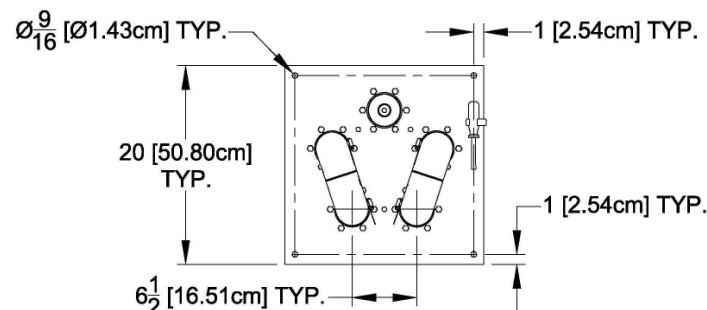
301-138-4

3 1/8" 50 ohm patch panel, manual, 4 pole, unpressurized. Includes 2 "U" links, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 35.38lbs.



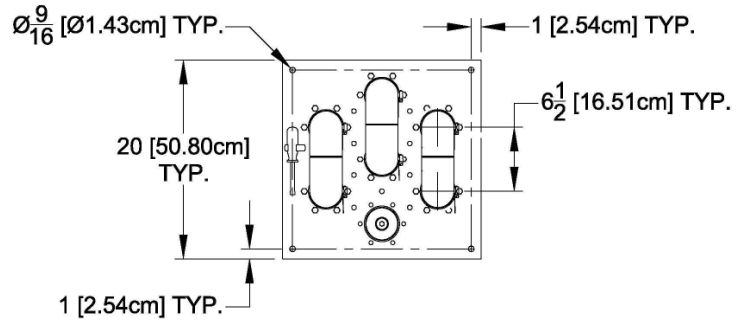
301-138-5

3 1/8" 50 ohm patch panel, manual, 5 pole, unpressurized. Includes 2 "U" links, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 41.6lbs.



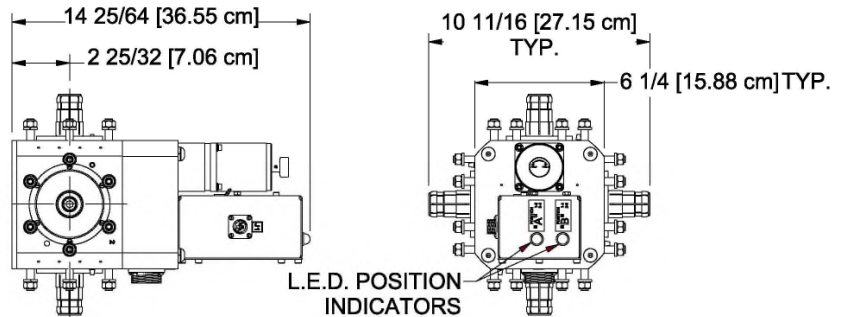
301-138-7

3 1/8" 50 ohm patch panel, manual, 7 pole, unpressurized. Includes 3 "U" links, anchor insulator connectors with anti-splitting devices, line clamps. screwdriver. 49.5lbs.



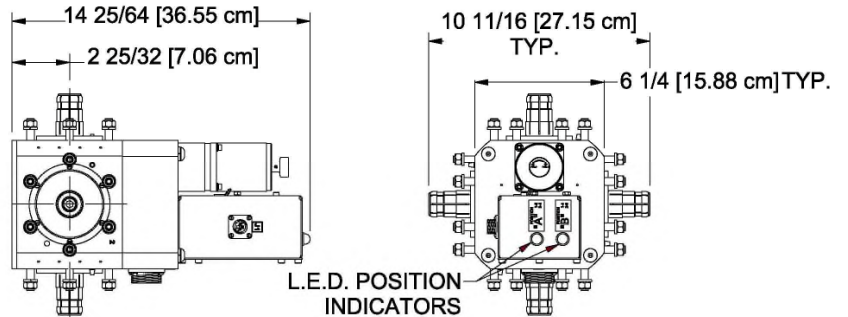
301-180-1

3 1/8" 50 ohm coaxial transfer switch, 4 port 115V drive 12V control. 27lbs.



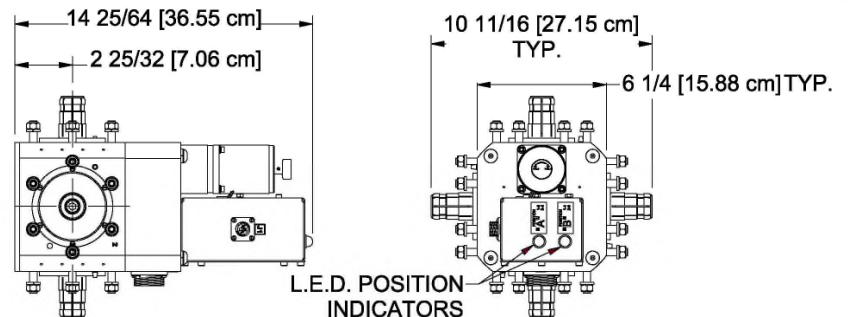
301-180-2

3 1/8" 50 ohm coaxial transfer switch, 4 port 115V drive 24V control. 27lbs.



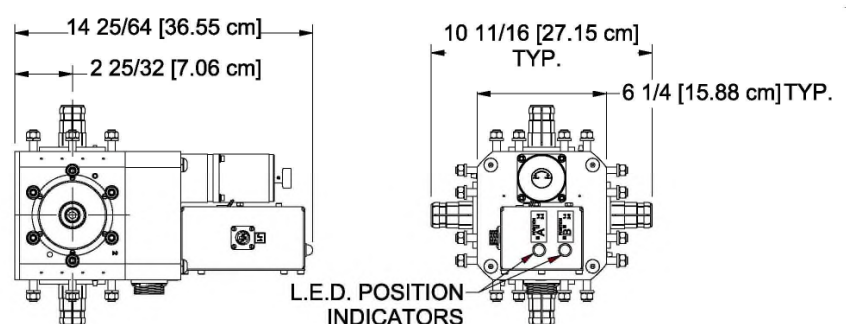
301-180-3

3 1/8" 50 ohm coaxial transfer switch, 4 port 230V drive 12V control. 27lbs.



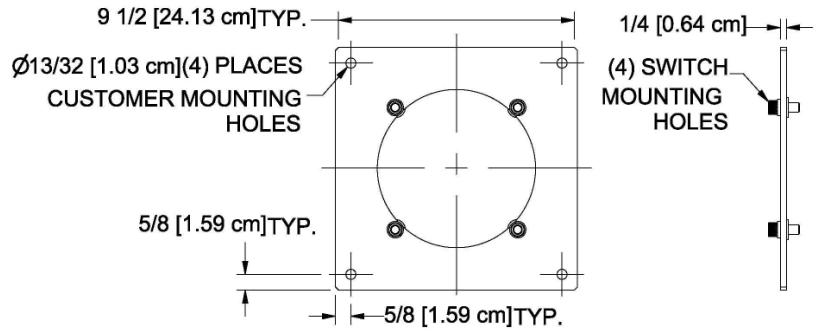
301-180-4

3 1/8" 50 ohm coaxial transfer switch, 4 port 230V drive 24V control. 27lbs.



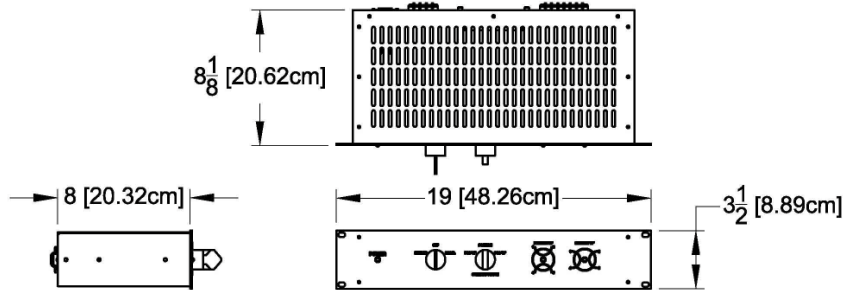
301-180-42

3 1/8" 50 ohm coaxial transfer switch mounting plate. 1.76lbs.



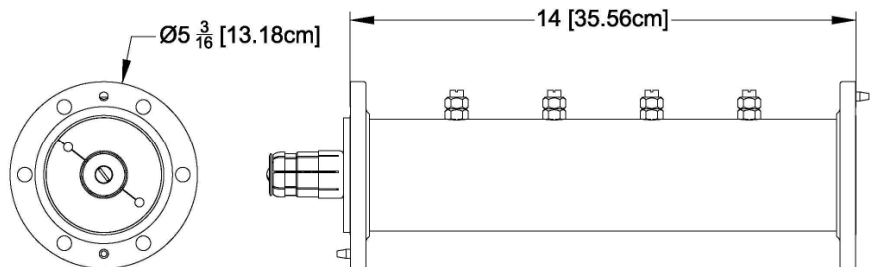
X01-180-X Switch Controller

Catalog Number	Number of Switches	Control Voltage
X01-180-1	1	12 VDC
X01-180-2	2	12 VDC
X01-180-3	3	12 VDC
X01-180-4	4	12 VDC
X01-180-5	1	24 VDC
X01-180-6	2	24 VDC
X01-180-7	3	24 VDC
X01-180-8	4	24 VDC



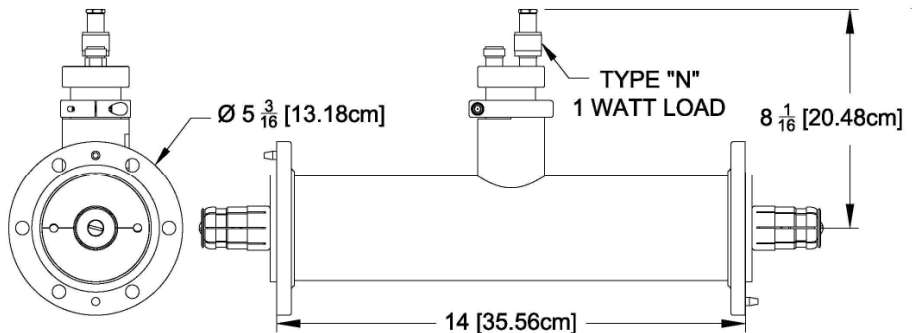
301-327-000

3 1/8" 50 ohm fine matcher unpressurized - channel specific, includes anchor insulator connector, "O" ring, and hardware. 6.93lbs.



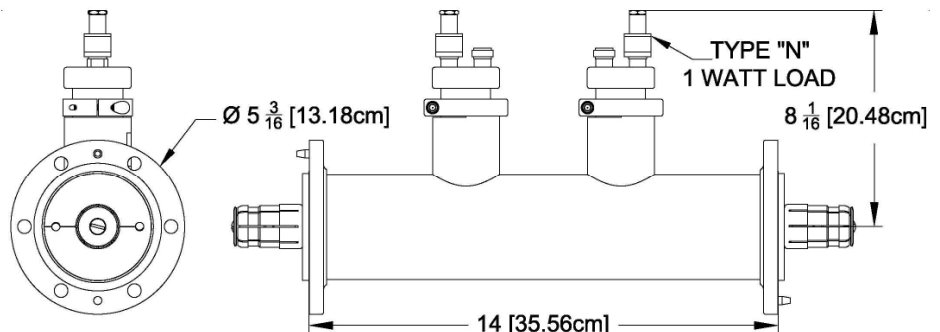
301-356-1-000

3 1/8" 50 ohm UHF directional coupler - single coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 10.3lbs.



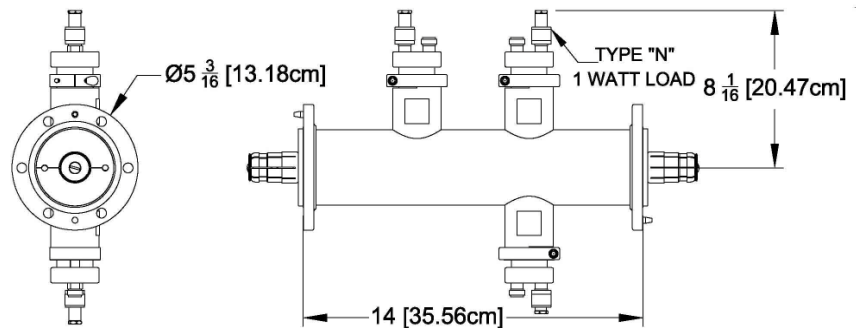
301-356-2-000

3 1/8" 50 ohm UHF directional coupler - dual coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 13.41lbs.



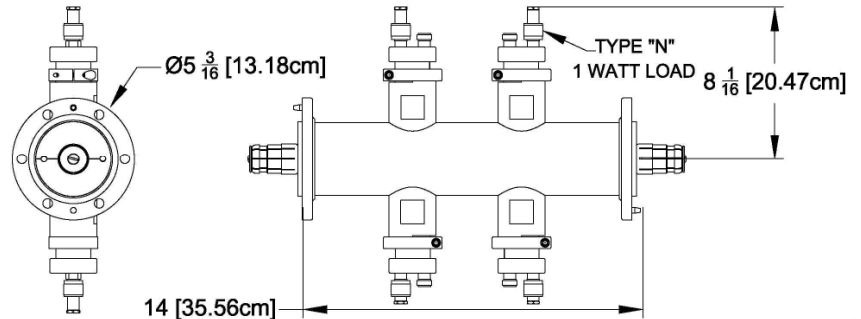
301-356-3-000

3 1/8" 50 ohm UHF directional coupler - triple coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 16.52lbs.



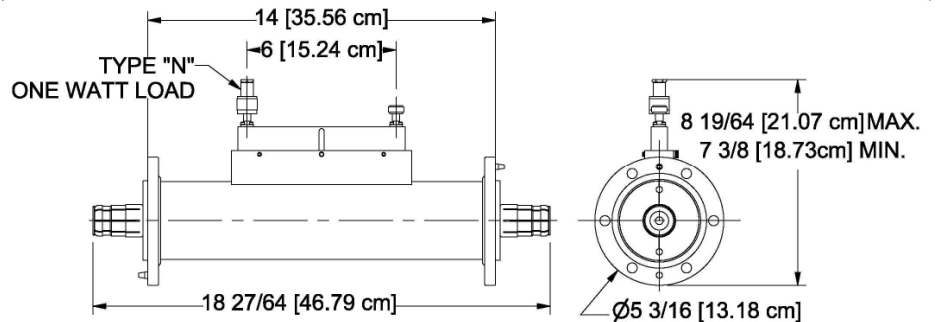
301-356-4-000

3 1/8" 50 ohm UHF directional coupler - quad coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 19.63lbs.



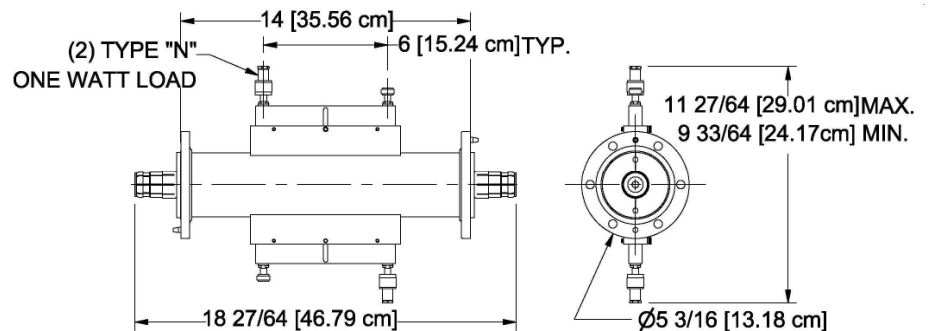
301-357-1-000

3 1/8" 50 ohm Low Frequency (VHF and FM) directional coupler - single coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 9.31lbs.



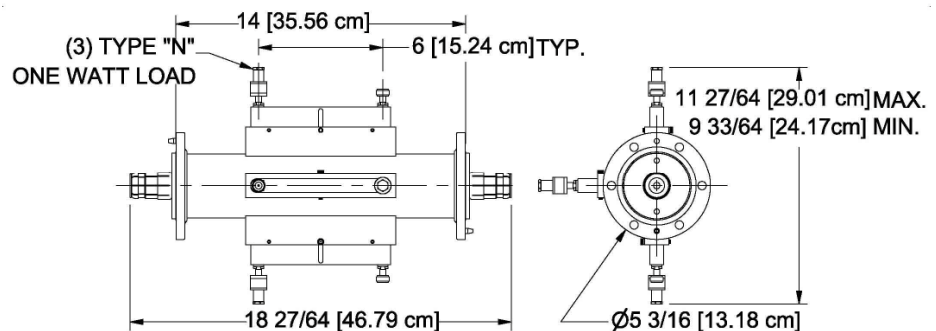
301-357-2-000

3 1/8" 50 ohm Low Frequency (VHF and FM) directional coupler - dual coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 11.43lbs.



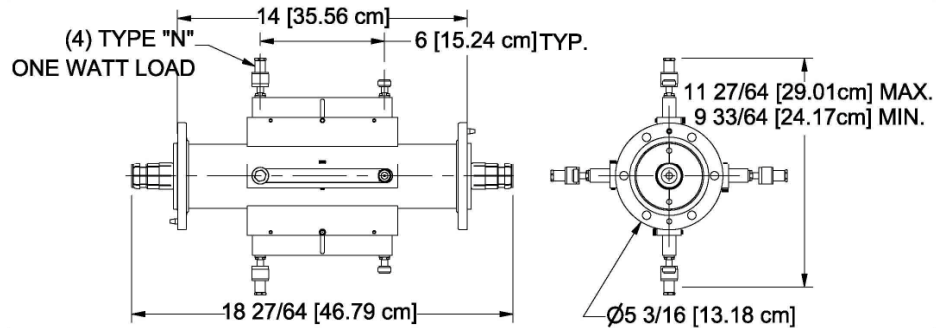
301-357-3-000

3 1/8" 50 ohm Low Frequency (VHF and FM) directional coupler - triple coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 13.54lbs.



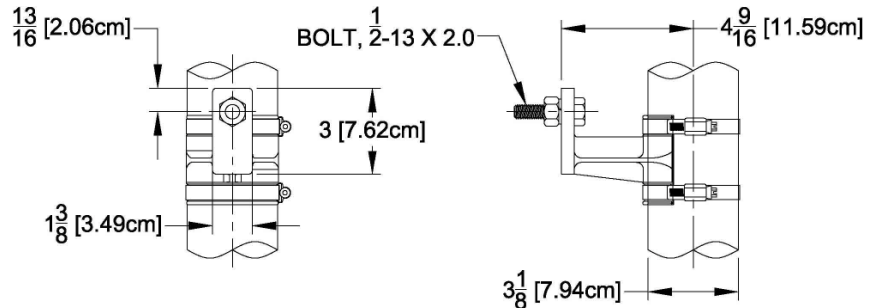
301-357-4-000

3 1/8" 50 ohm Low Frequency (VHF and FM) directional coupler - quad coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 15.66lbs.



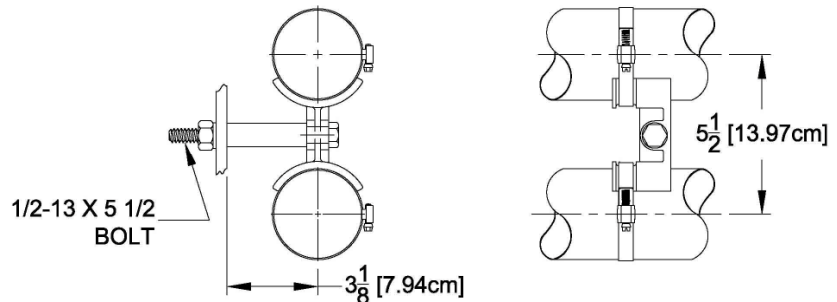
301-042-1

3 1/8" fixed hanger, single line. Includes line clamps and hardware. 9/16" mounting hole. Use one fixed hanger at top of tower for ea. 400 ft. of vertical run, (min. requirement, 2 hangers). 2.75lbs.



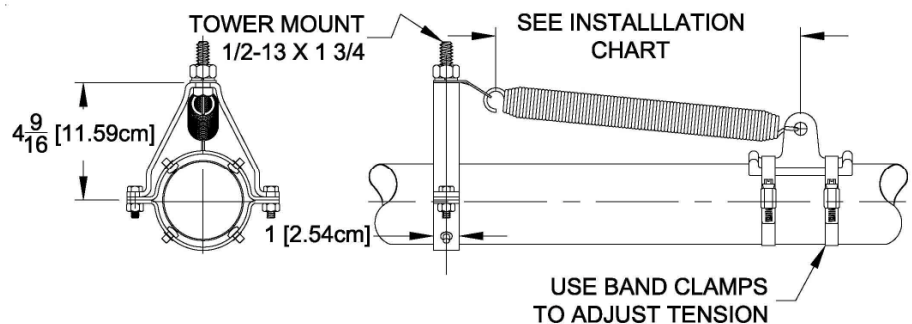
301-042-2

Fixed hanger, dual line. Includes line clamps and hardware. 9/16" mounting hole. 2.5lbs.



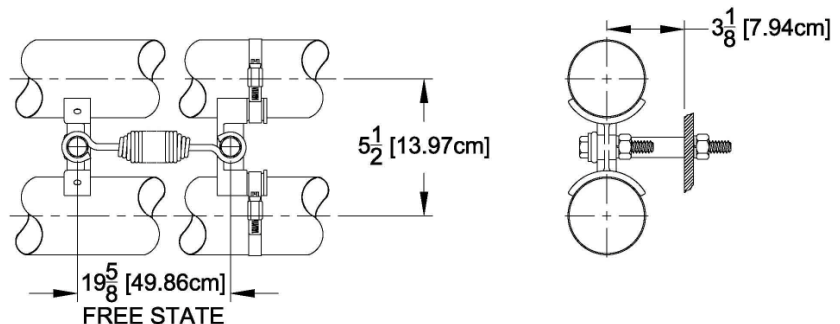
301-042-3

3 1/8" vertical spring suspension hanger, single line, stainless steel. Includes line clamps and hardware. 9/16" mounting hole. 2.85lbs.



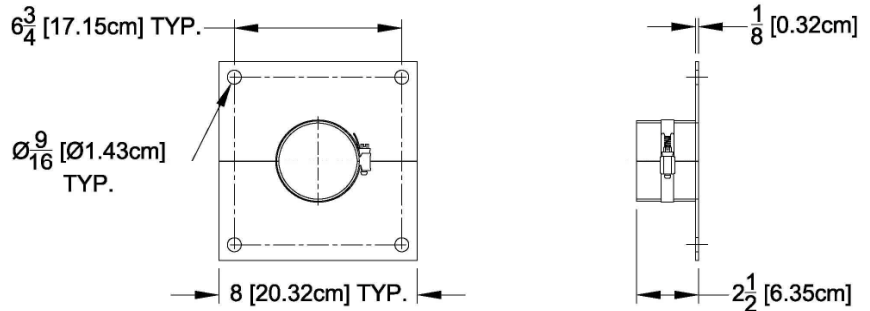
301-042-4

3 1/8" hanger, dual spring suspension. Includes line clamps and hardware. 9/16" mounting hole. 4.5lbs.



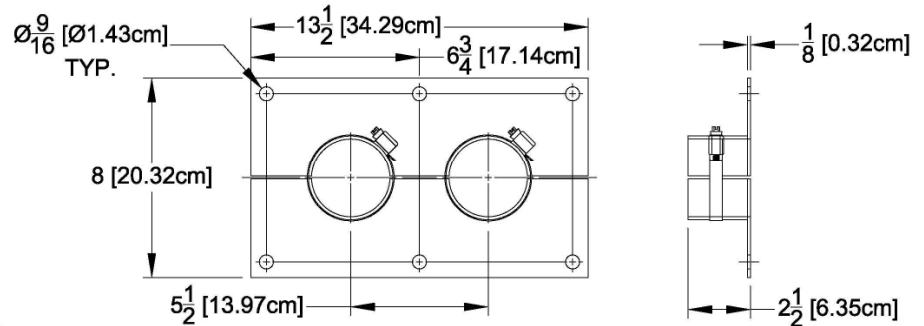
301-042-5

3 1/8" wall anchor plate, single line. Includes line clamp. One plate required for each side of wall. 3.25lbs.



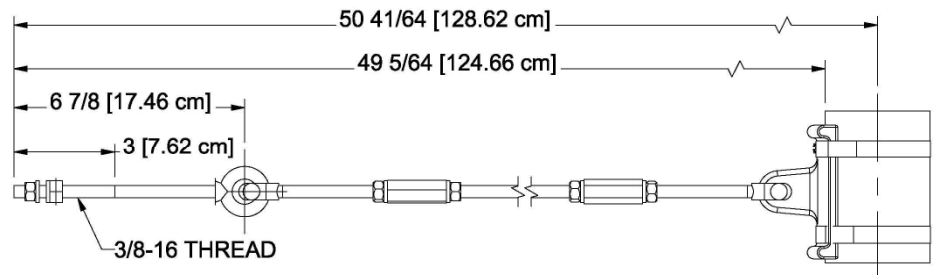
301-042-6

3 1/8" wall anchor plate, dual line. Includes line clamp. One plate required for each side of wall. 5.5lbs.



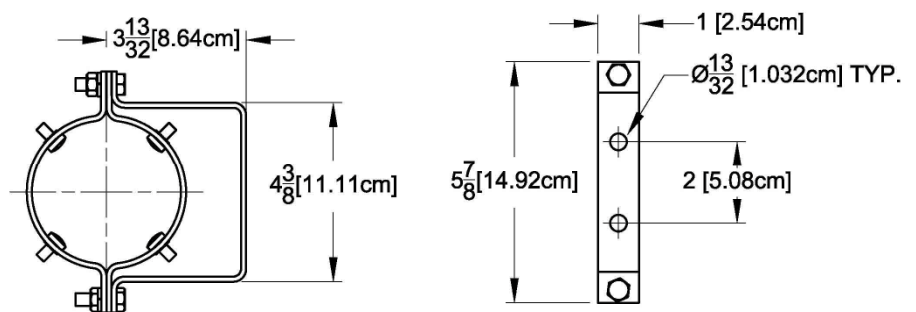
301-042-8

3 1/8" lateral brace for use at base of tower. Includes two line clamps. 2.31lbs.



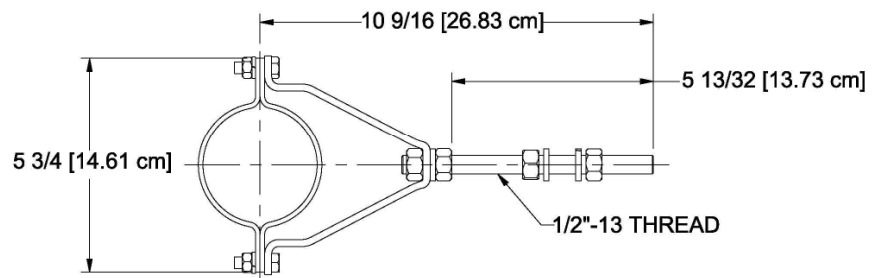
301-042-11

3 1/8" slip hanger, flange mounted for indoor use. Permits expansion. 2lbs.



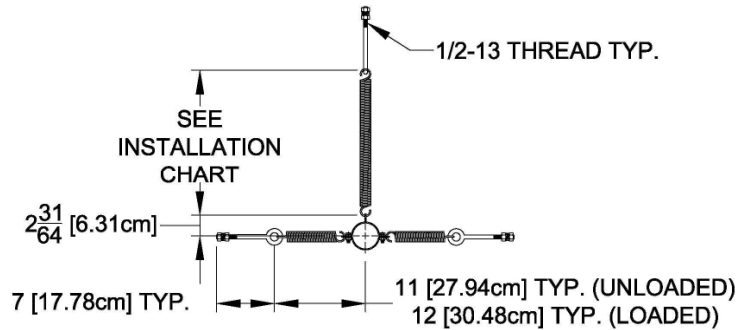
301-042-12

3 1/8" slip hanger, 7" stud mounted. 2.25lbs.

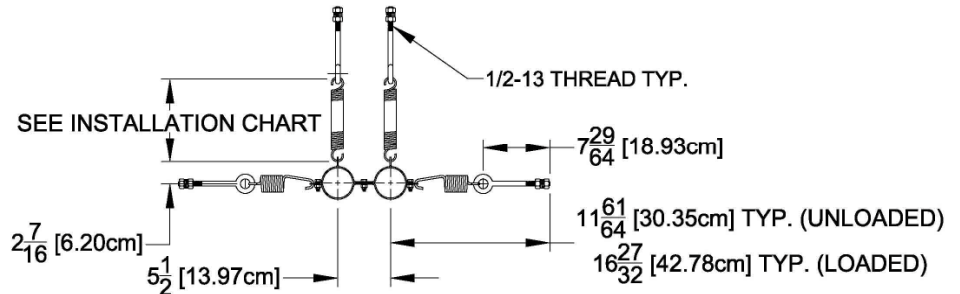


301-042-17

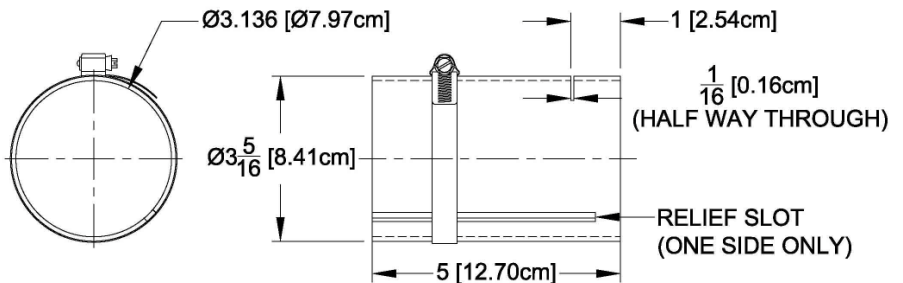
3 1/8" 3 point suspension hanger, single line, stainless steel. Supports 10 ft of horizontal run. 5.8lbs.

**301-042-18**

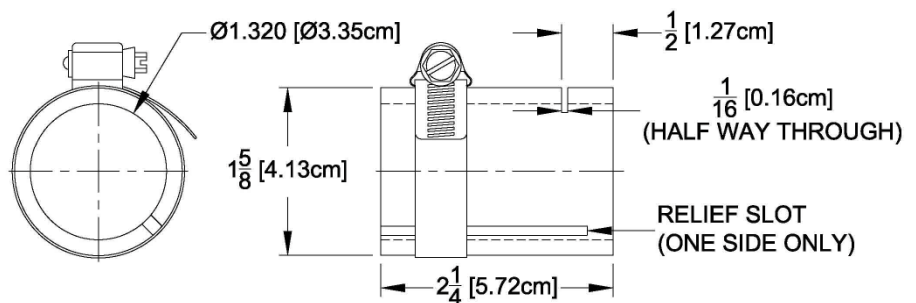
3 1/8" 4 point suspension hanger, dual line, stainless steel. Supports 10 feet of horizontal run. 6.5lbs.

**301-042-24**

3 1/8" outer conductor cutoff guide. Includes line clamp. 1.75lb.

**301-042-25**

3 1/8" inner conductor cutoff guide. Includes line clamp. .75lbs.





This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

401 Series 4 1/16" 50 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	50 $\pm$.5 Ohms
Upper Frequency Limit:	* 1262 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	24 kV DC
Peak Power Rating	** 710 kW
VSWR:	*** 1.03:1

Inner Conductor

Outside Diameter :	1.711" (43 mm)
Inside Diameter:	1.631" (41 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.

Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 83 lbs.

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	4.062" (103 mm)
Inside Diameter:	3.935" (100 mm)

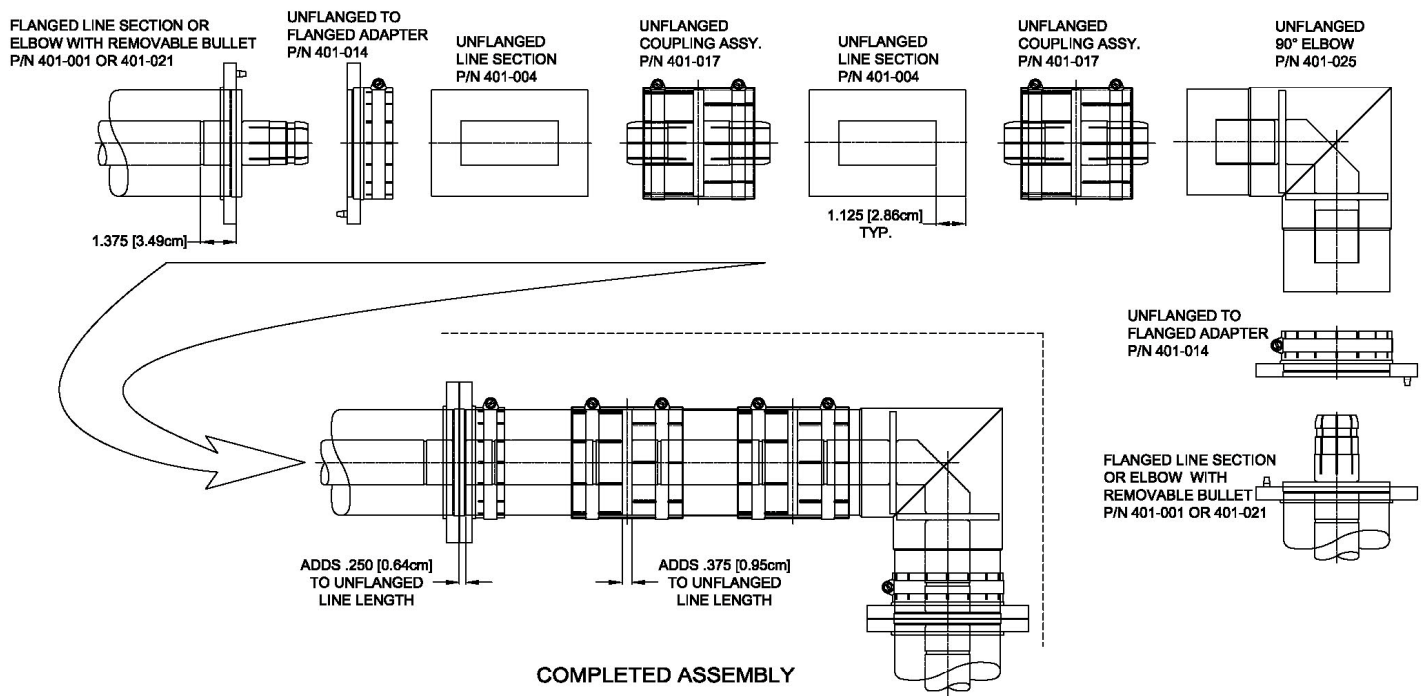
* TE11 Mode useful cutoff frequency.

** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

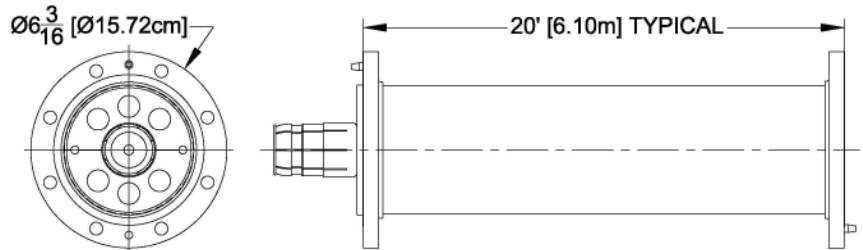
COMPONENTS TO BE ASSEMBLED,



4 1/16" (SERIES 401-) FLANGED TO UNFLANGED LINE SECTION

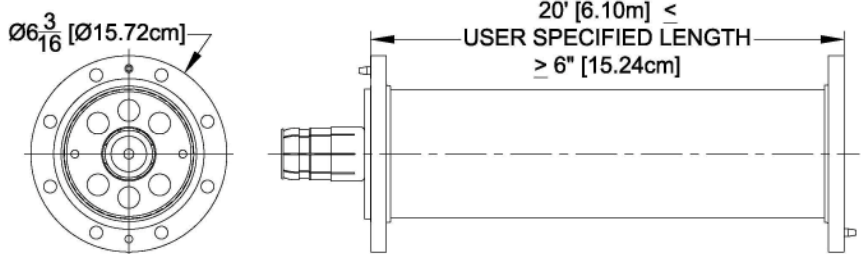
401-001

4 1/16" 50 ohm 20' line assembly, random pin spacing, flanged: Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 83lbs.



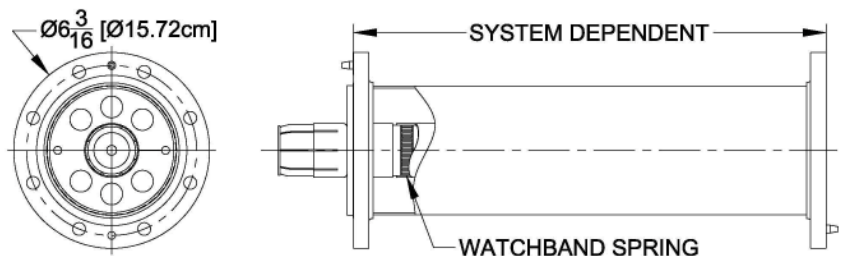
401-002

4 1/16" 50 ohm line assembly of customer specified length, flanged both ends: Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 6lbs. plus 4lbs. per foot.



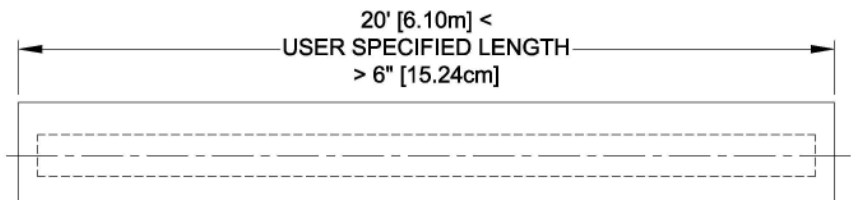
401-003

4 1/16" 50 ohm Spectraline Broadband expansion line assembly, flanged: Includes, "O" ring, hardware. Please refer to the Spectraline information section.



401-004

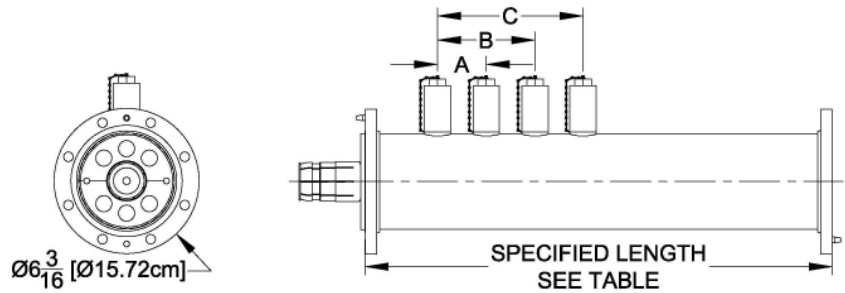
4 1/16" 50 ohm line assembly of customer specified length, unflanged, no connector or hardware. 3.8lbs/ft.



401-005

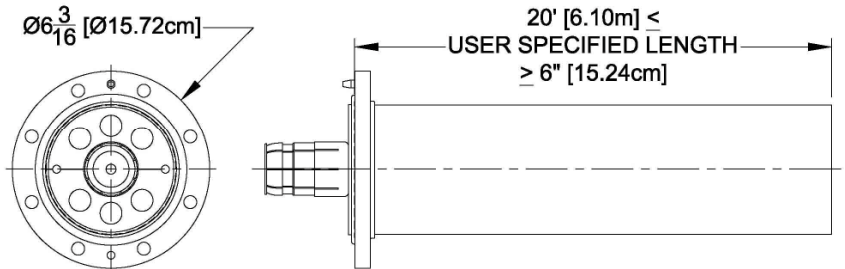
4 1/16" 50 Ohm 4 probe tuning line section, Specify length and Frequency. Includes anchor insulator with anti-splitting device, "O" ring and hardware.

	A'	B'	C'
Frequencies < 738 MHz	1/8	1/4	3/8
Frequencies > 738 MHz	1/4	5/8	7/8
Minimum Specified Length:			
For Frequencies < 738 MHz = 9" + 3/8			
For Frequencies > 738 MHz = 9" + 7/8			
Maximum Specified Length = 20'			



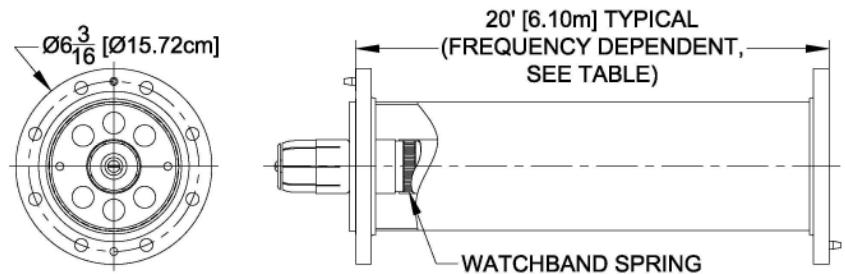
401-006

4 1/16" 50 ohm line assembly, one end flanged: Customer specified length Includes anchor insulator connector with anti splitting device, "O" ring, hardware. 79lbs. @20 feet.



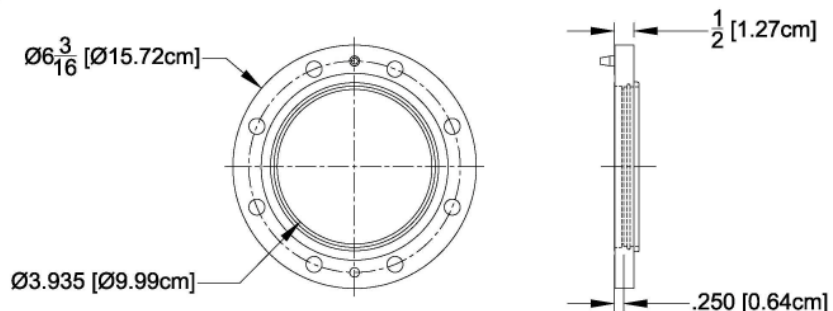
401-007

4 1/16" 50 ohm 20' expansion line assembly, flanged. Includes anchor insulator, "O" ring, hardware. 84lbs. @ 20' See table in engineering section for line length selection.



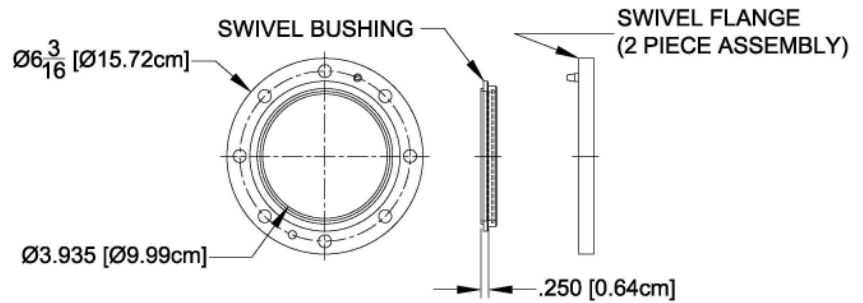
401-008

4 1/16" EIA fixed flange, brass, with silver solder ring insert, for silver brazing. 2.25lbs.



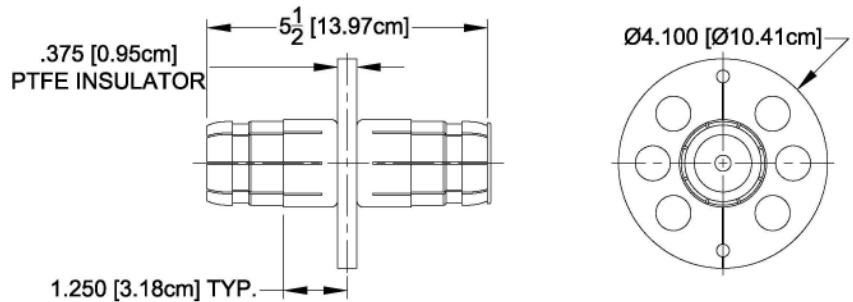
401-009

4 1/16" swivel flange, brass, with silver solder ring insert, for silver brazing. 2.25 lbs.



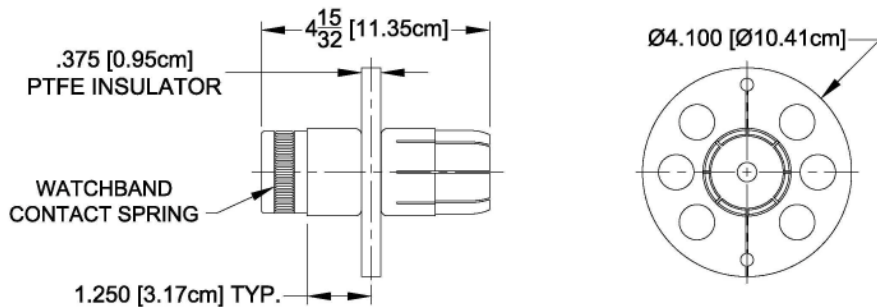
401-010

4 1/16" 50 ohm anchor insulator connector with anti-splitting device, spring loaded, silver plated. 1.25lbs.



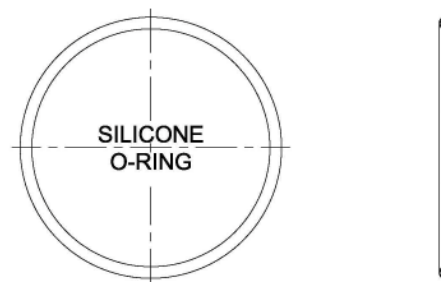
401-010-E

4 1/16" 50 ohm anchor insulator connector, expansion type, for use as a spare with 401-007 expansion line only. 2lbs.



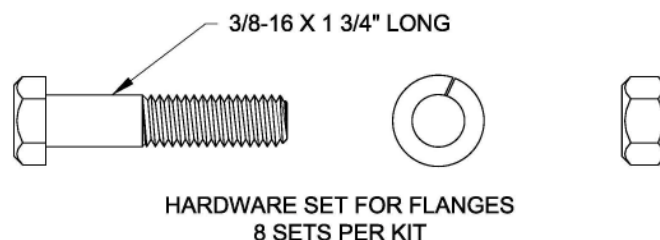
401-011

4 1/16" "O" ring, silicone.



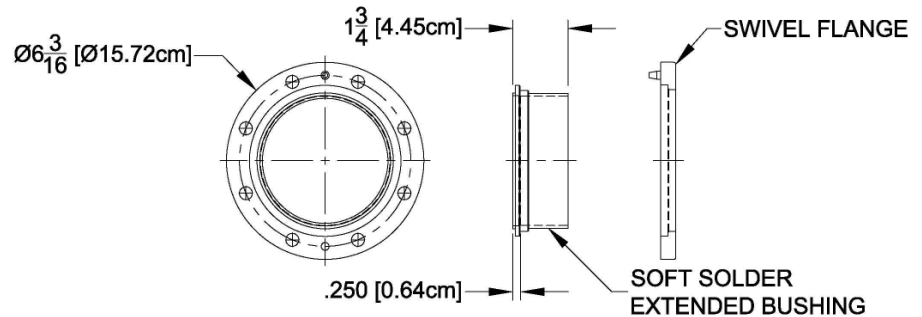
401-012

4 1/16" hardware set for flanges, stainless steel. .53lbs.

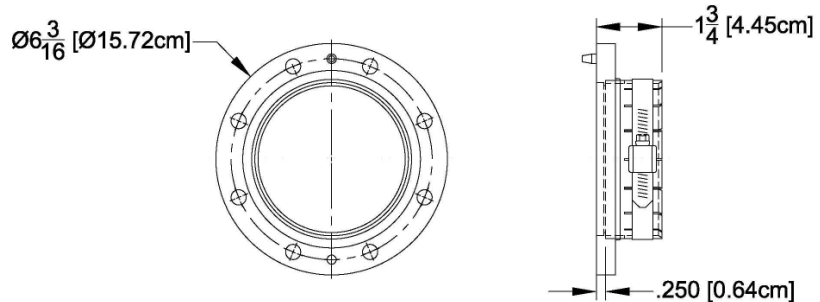


401-013

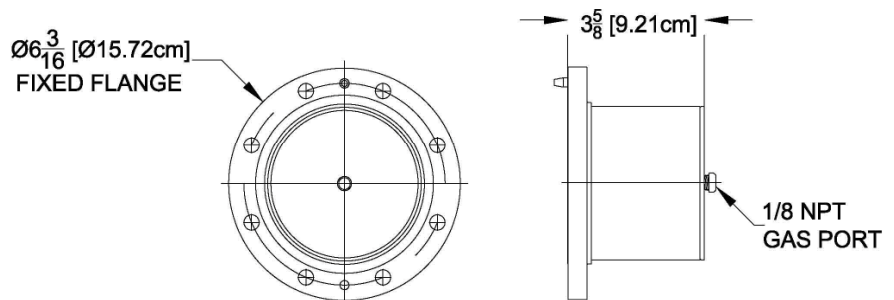
4 1/16" field flange adapter, swivel flange, pressurized, soft solder type. 3lbs.

**401-014**

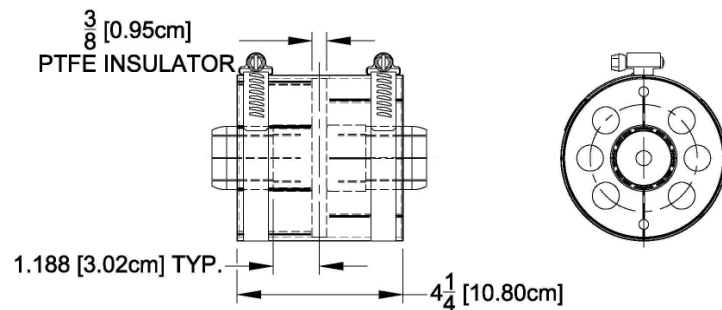
4 1/16" flange adapter, unpressurized clamp-type, for indoor use. Includes hardware and line clamp. 3.6lbs.

**401-015**

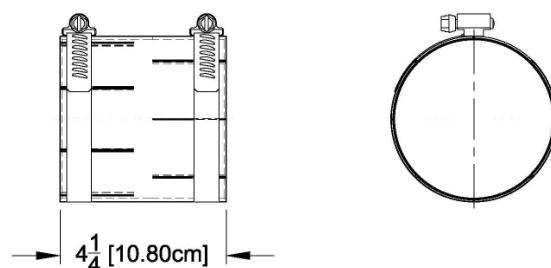
4 1/16" cover cap, with 1/8" NPT gas inlet plug. 3.6 lbs.

**401-017**

4 1/16" 50 ohm unpressurized coupling assembly with supported inner conductor connector and two line clamps. 3.5lbs.

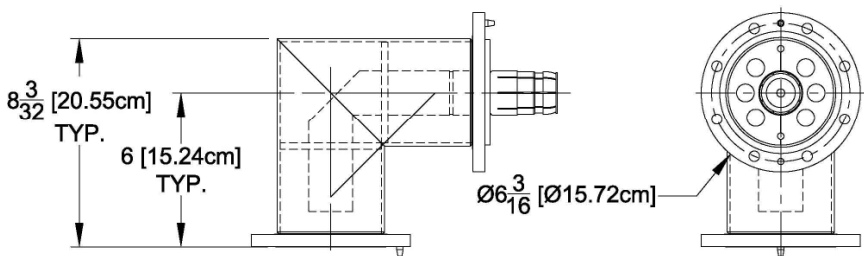
**401-018**

4 1/16" Outer conductor coupling clamp unpressurized. Includes two line clamps. (Does not increase outer conductor length.) 2.25lbs.



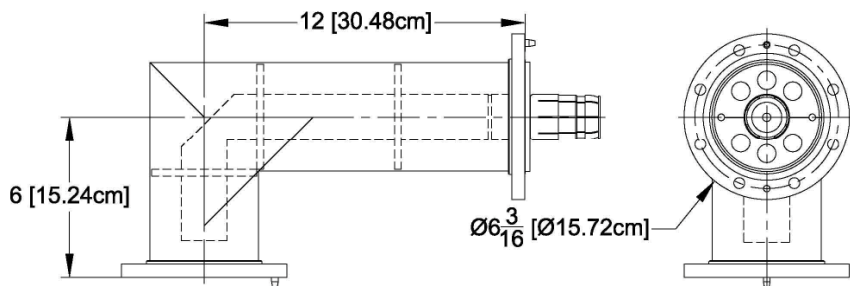
401-021

4 1/16" 50 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 15lbs.



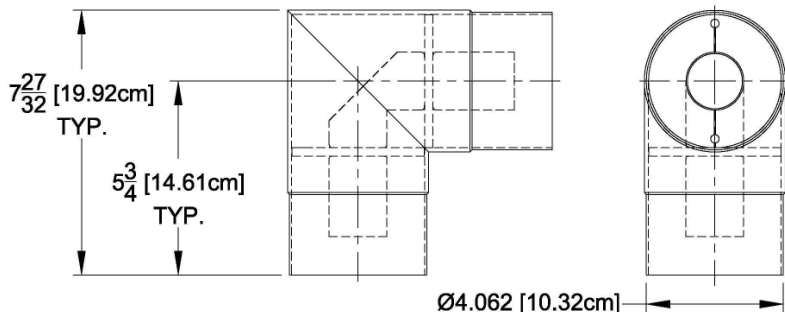
401-023

4 1/16" 50 ohm elbow, 90 degree, swivel flanged, unequal leg, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 18.5lbs.



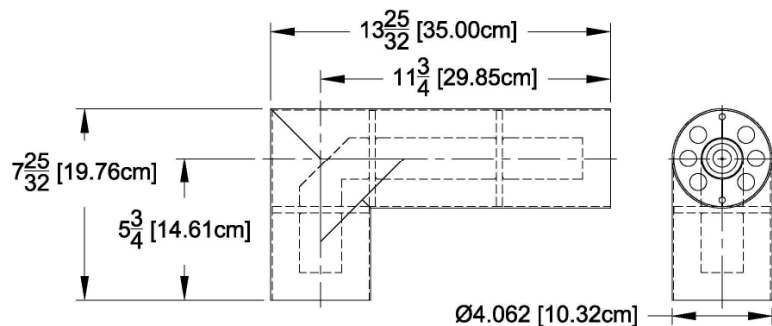
401-025

4 1/16" 50 ohm elbow, 90 degree, unflanged, reinforced inside and outside. 7.5lbs.



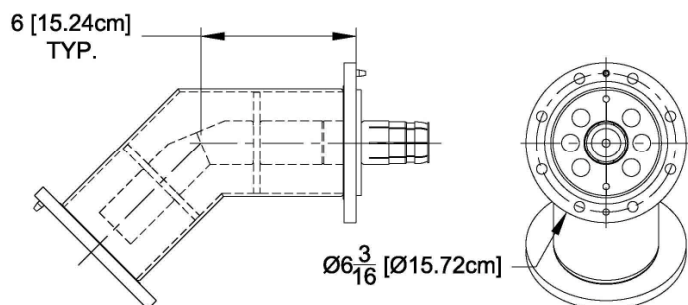
401-027

4 1/16" 50 ohm elbow, 90 degree unequal leg, unflanged, reinforced inside and outside. 9.2lbs.



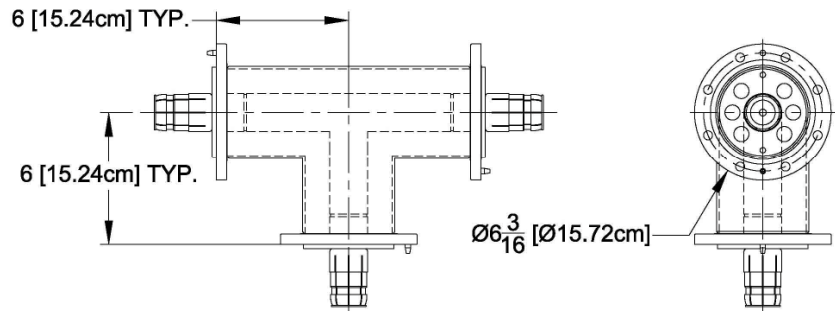
401-031

4 1/16" 50 ohm elbow, 45 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 16.5lbs.

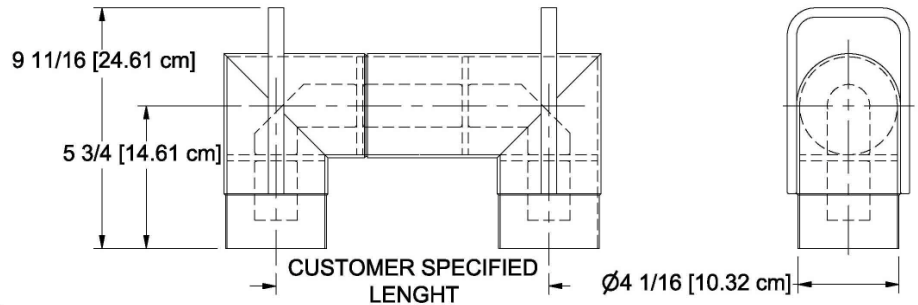


401-040

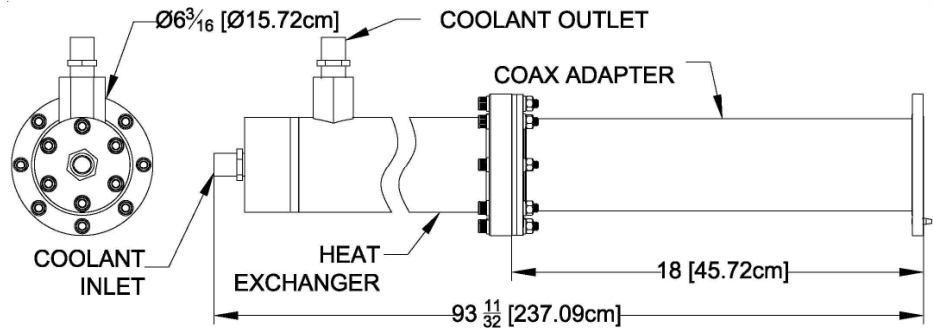
4 1/16" 50 ohm tee assembly, unmatched, swivel flanged, reinforced outside. Includes three anchor insulator connectors with anti-splitting devices, "O" rings, and hardware sets. 26lbs.

**401-041**

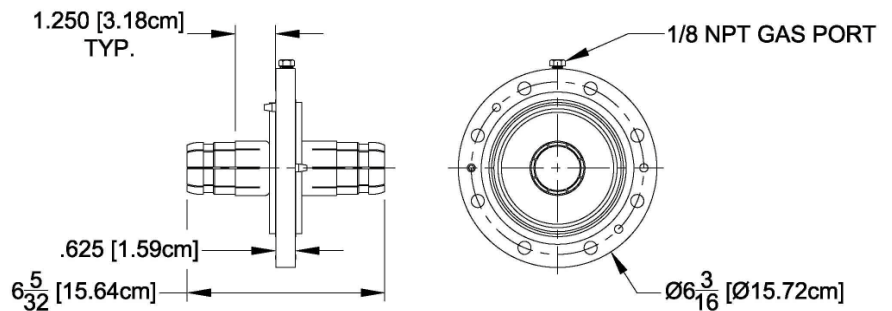
4 1/16" 50 ohm "U" link, female both ends, unflanged, with handles. 23.64lbs.

**401-046-000**

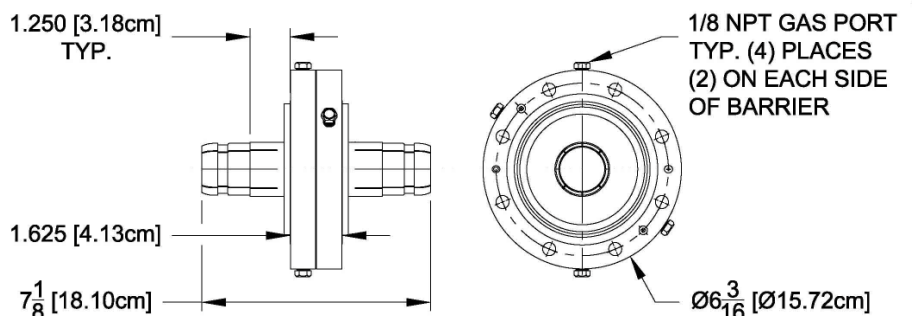
4 1/16" 50 ohm water cooled load UHF - channel specific. 76.2lbs.

**401-050**

4 1/16" 50 ohm gas barrier with "O" ring gasket, 2, 1/2" hardware, 1/8" NPT gas inlet port. 6.42lbs.

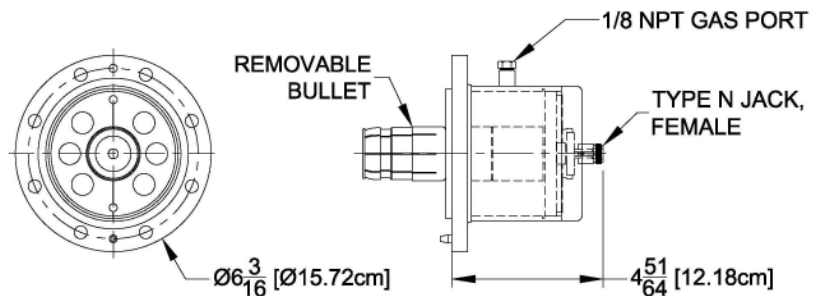
**401-050-HD**

4 1/16" 50 ohm gas barrier with "O" ring gasket, 3 1/4" hardware, (4) 1/8" NPT gas inlet ports, 2 on each side. 7lbs.



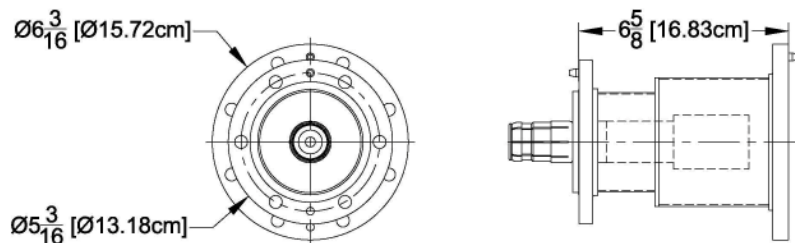
401-059

Reducer, 4 1/16" 50 ohm to type "N" female, fixed flange, 1/8" NPT gas inlet port. Includes anchor insulator assembly, "O" ring and hardware. 9.6lbs.



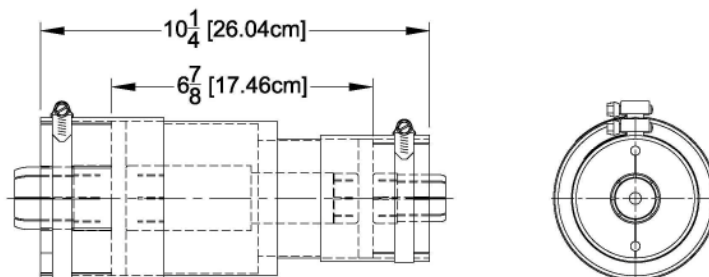
401-065

Step reducer, flanged: 4 1/16" to 3 1/8". Includes 3 1/8" anchor insulator connector with anti-splitting device, "O" ring and hardware. 11.5lbs.



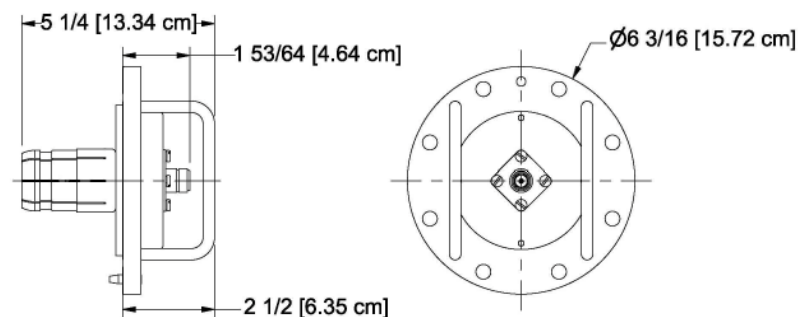
401-065-46-1

Reducer taper unflanged 4 1/16" to 3 1/8" supplied with connectors, for indoor use. 6.7lbs.



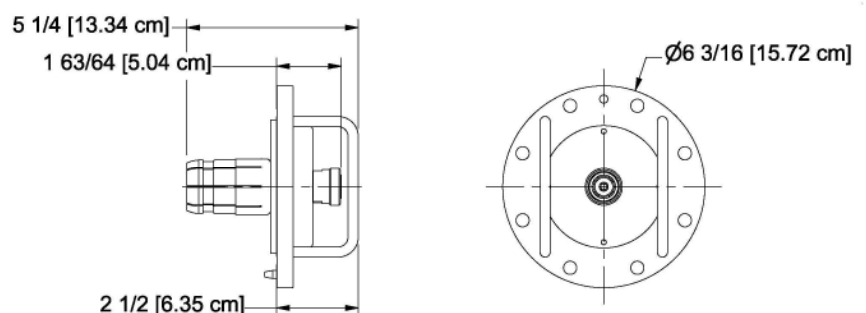
411-066

4 1/16" 50 ohm to type "N" female plate reducer. 2.4lbs.



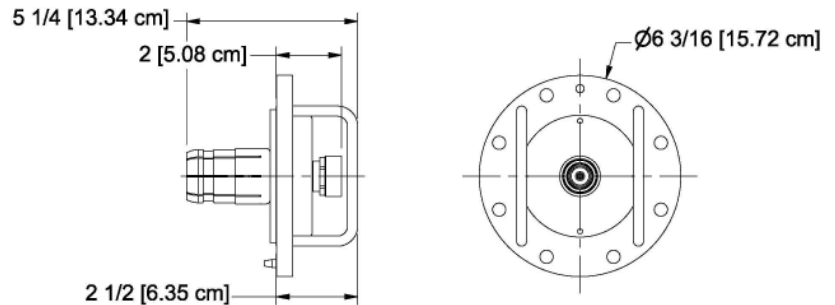
411-580-1

4 1/16" 50 ohm to 7/16" DIN female plate reducer. 2.6lbs.

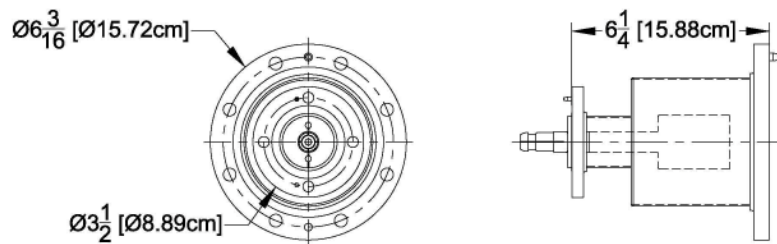


411-580-2

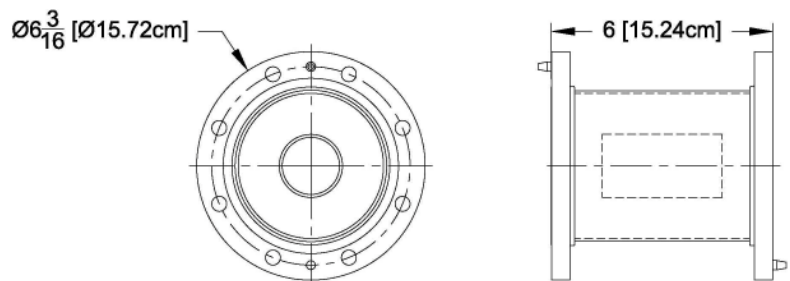
4 1/16" 50 ohm to 7/16" DIN
male plate reducer. 2.6lbs.

**401-068**

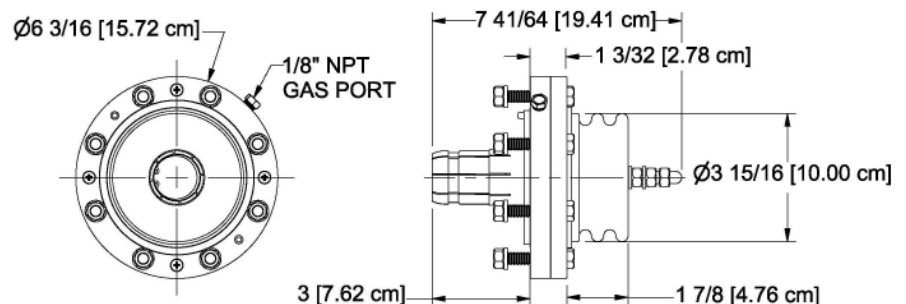
4 1/16" 50 ohm reducer to 1
5/8" 50 ohm. Includes 1 5/8"
anchor insulator connector, "O"
ring and hardware. 6.84lbs.

**401-078**

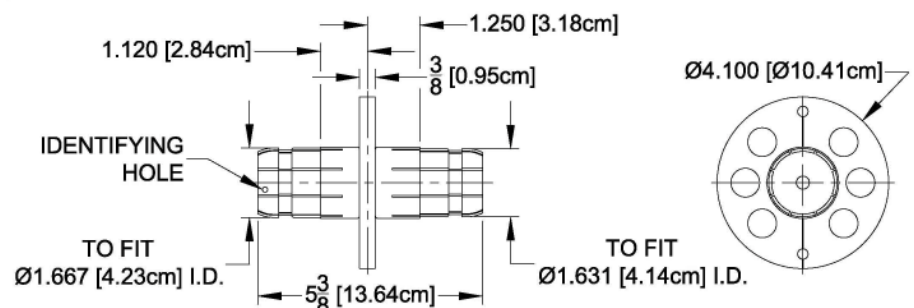
4 1/16" 50 ohm EIA adapter,
male to male, with fixed flanges
and unsupported inner
conductor. Includes "O" ring
gasket and hardware. 7.3lbs.

**401-080**

4 1/16" 50 ohm end seal
assembly with NPT gas inlet
port. Includes "O" ring gasket
and hardware. 9lbs.

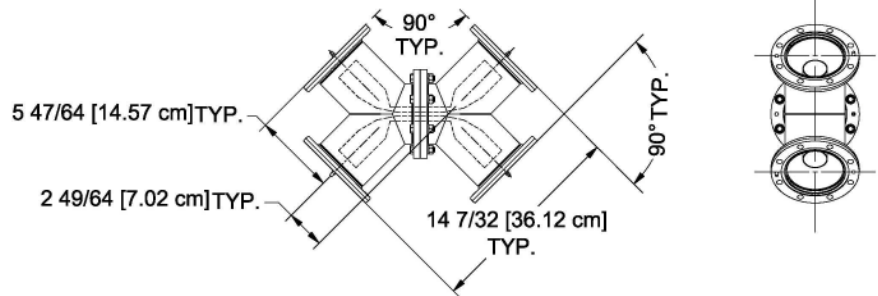
**401-081**

4 1/16" 50 ohm anchor insulator
connector with anti-splitting
device, standard wall to thin
wall inner conductor, spring
loaded, silver plated. 1.25lbs.



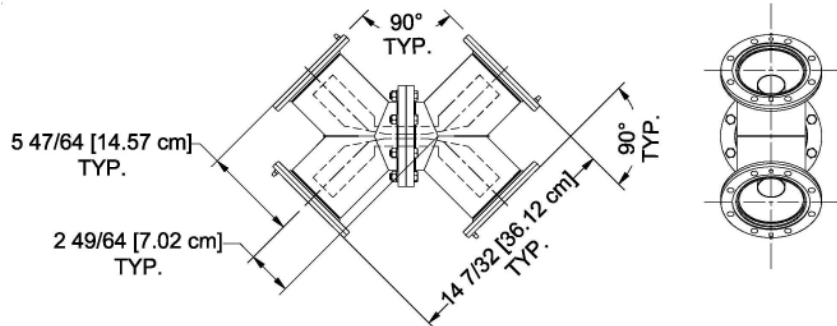
401-090

4 1/16" Hybrid -3dB, Y-Type, all UHF band 470-860MHz, 50 OHM, unpressurized. 32.59 lbs.



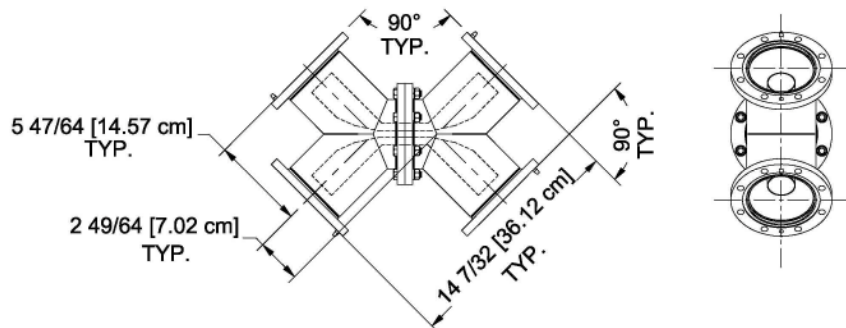
401-090-3

4 1/16" Hybrid -3.98dB, Y-Type, all UHF band 470-860MHz, 50 OHM, 32.36 lbs.



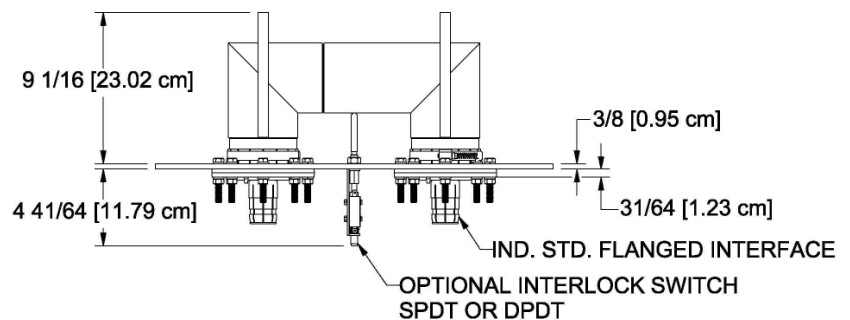
401-090-6

4 1/16" Hybrid -4.77dB, Y-Type, all UHF Band 470-860MHz, 50 OHM, 17.60 lbs.



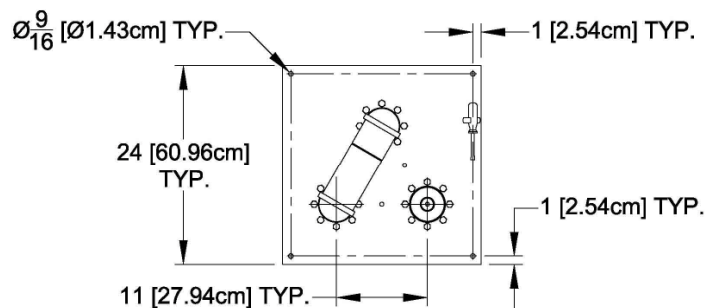
401-138-PATCH

Typical 4 1/16" 50 ohm patch panel interface dimensions. Back of patch panel mates with flanged transmission line. Custom patch panels available upon request



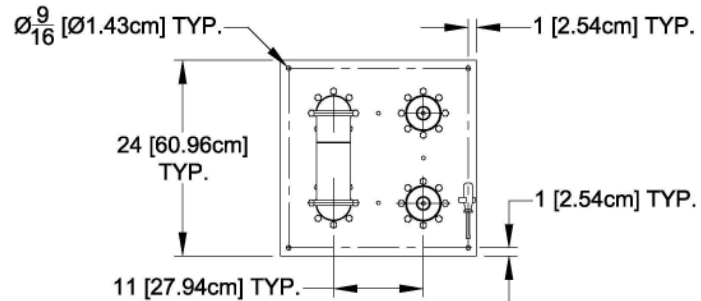
401-138-3

4 1/16" 50 ohm patch panel, manual, 3 pole, unpressurized. Includes 1 "U" link with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 57lbs.



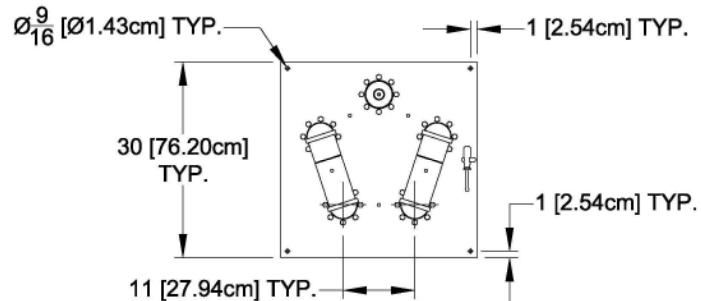
401-138-4

4 1/16" 50 ohm patch panel, manual, 4 pole, unpressurized. Includes 2 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 84.35lbs.



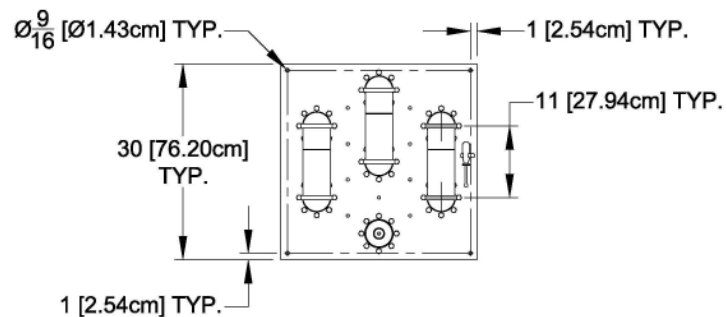
401-138-5

4 1/16" 50 ohm patch panel, manual, 5 pole, unpressurized. Includes 2 "U" links with handles, anchor insulator connectors with anti-splitting device, line clamps, screwdriver. 77.32lbs.



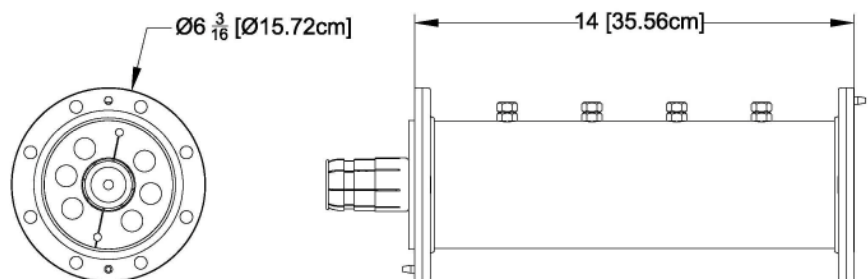
401-138-7

4 1/16" 50 ohm patch panel, manual, 7 pole, unpressurized. Includes 3 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 132.3lbs.



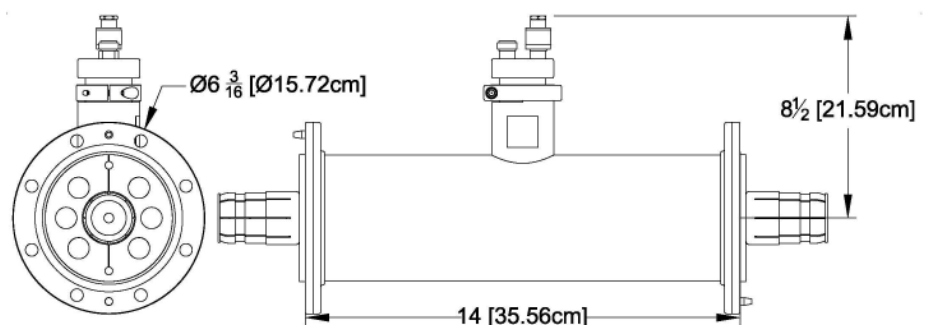
401-327-000

4 1/16" 50 ohm fine matcher unpressurized - channel specific, includes anchor insulator connector, "O" ring, and hardware.



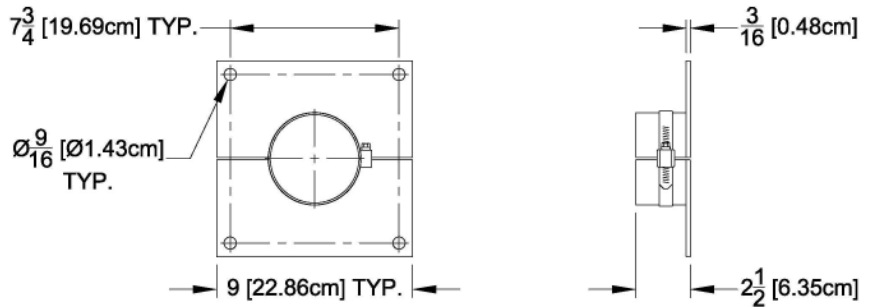
401-356-1-000

4 1/16" 50 ohm UHF directional coupler - single coupler, includes 2 anchor insulator connectors, "O" ring, and hardware. 14.43lbs.

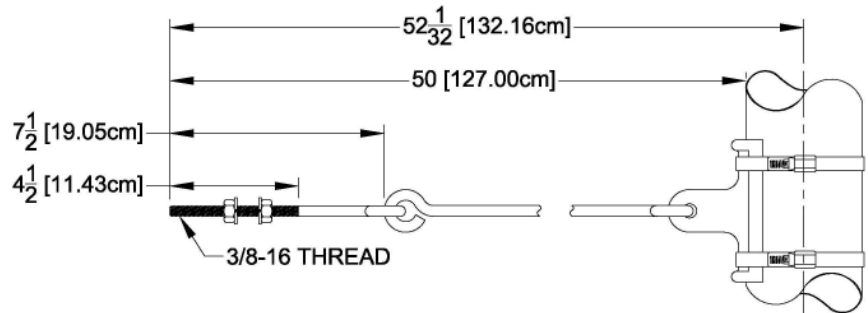


401-042-5

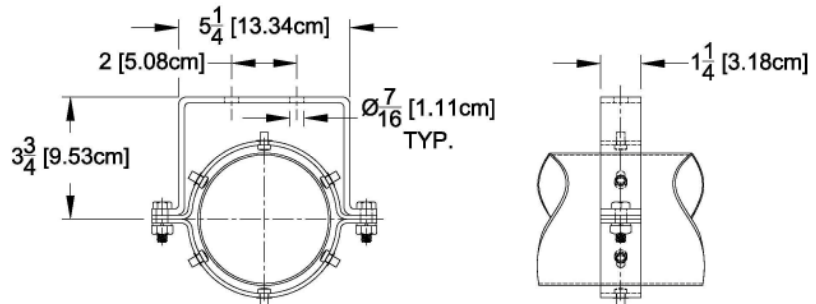
4 1/16" wall anchor plate, single line. Includes line clamp. One plate required for each side of wall. 5.5lbs.

**401-042-8**

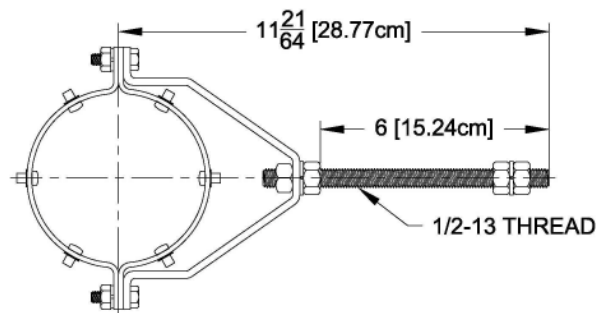
4 1/16" lateral brace for use at base of tower. Includes two line clamps. 5.5lbs.

**401-042-11**

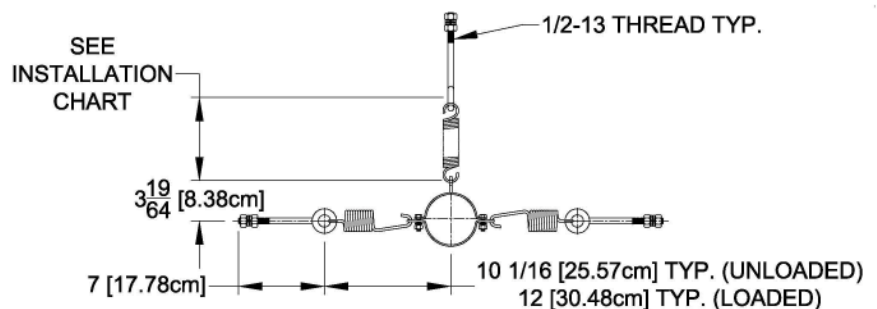
4 1/16" slip hanger, flange mounted for indoor use. Permits expansion. 2lbs.

**401-042-12**

4 1/16" slip hanger, 7" stud mounted. 2.4lbs.

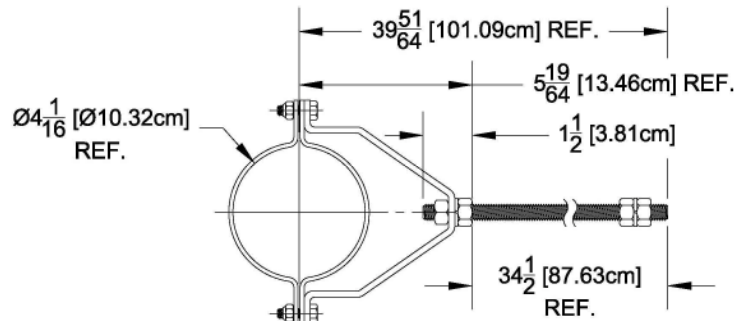
**401-042-17**

4 1/16" 3-point suspension hanger, single line, stainless steel. Supports 10 feet of horizontal run. 8lbs.



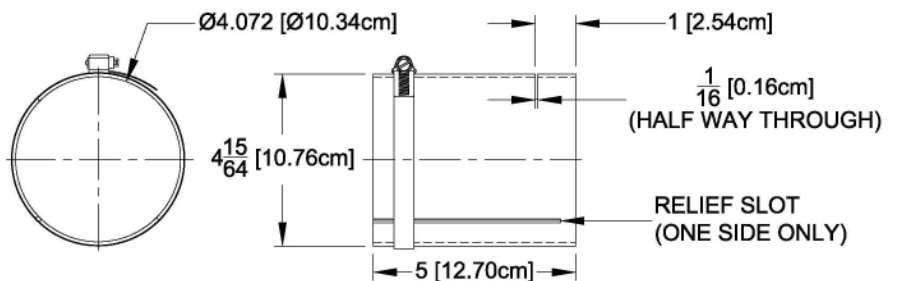
401-042-19

4 1/16" fixed hanger, stud
mount 3lbs.



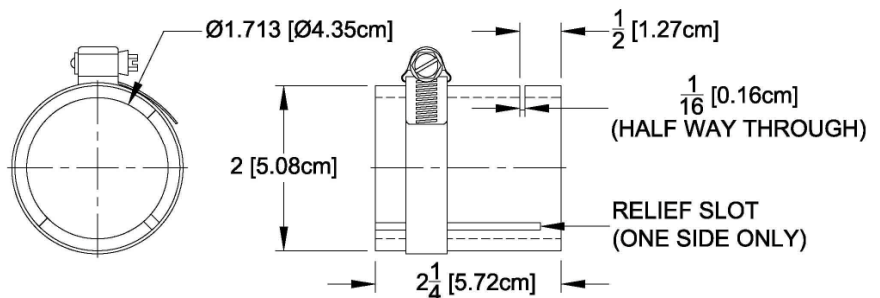
401-042-24

4 1/16" outer conductor cutoff
gauge. Includes line clamp.
2.5lbs.



401-042-25

4 1/16" inner conductor cutoff
guide. Includes line clamp.
.75lbs. Also sold as catalog
#701-042-25



601 Series 6 1/8" 50 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	50 $\pm$.5 Ohms
Upper Frequency Limit:	* 806 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	35 kV DC
Peak Power Rating	** 1536 kW
VSWR:	*** 1.03:1

Inner Conductor

Outside Diameter :	2.600" (66 mm)
Inside Diameter:	2.520" (64 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.
Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 142.5 lbs.

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	6.125" (155 mm)
Inside Diameter:	5.981" (151 mm)

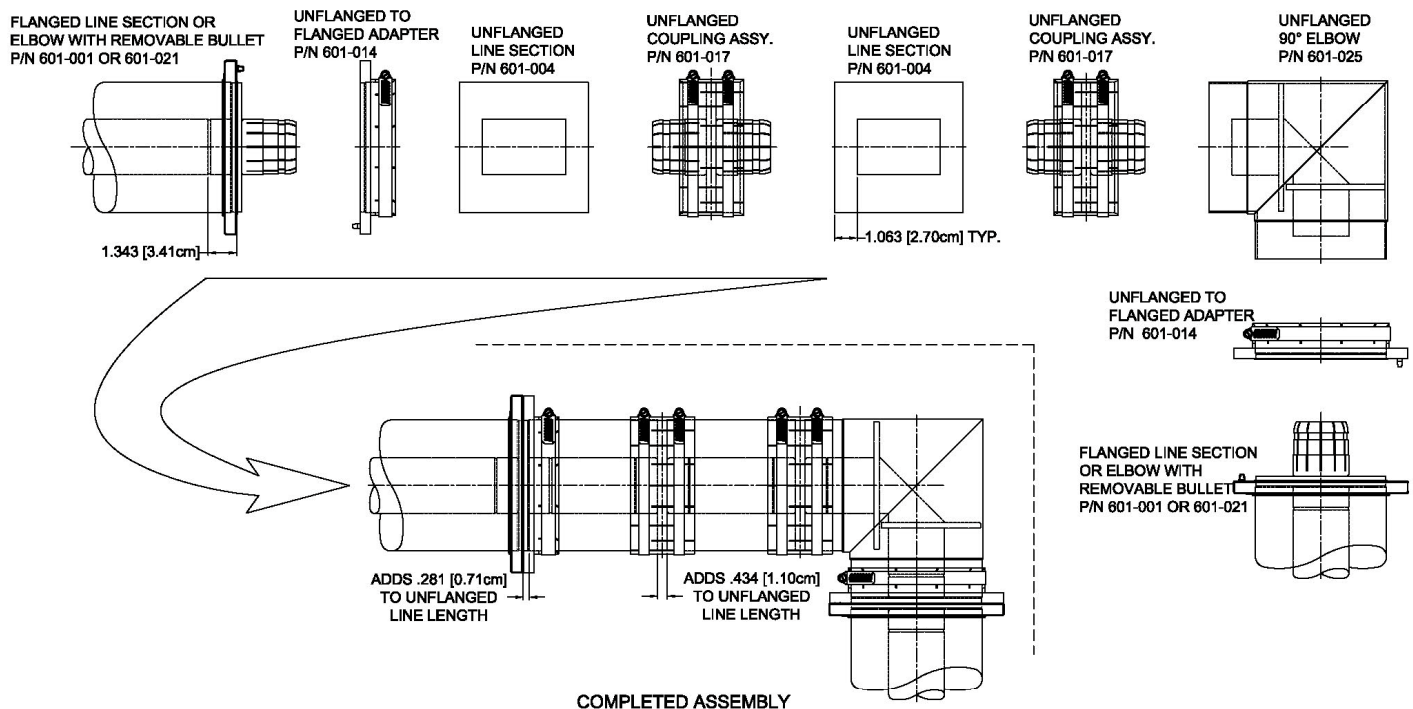
* TE₁₁ Mode useful cutoff frequency.

** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

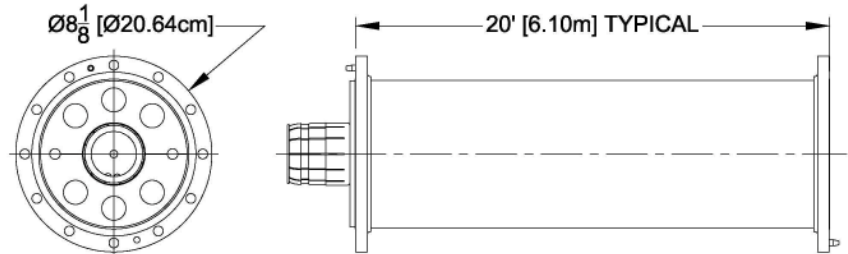
COMPONENTS TO BE ASSEMBLED,



6 1/8" (SERIES 601-) FLANGED TO UNFLANGED LINE SECTION

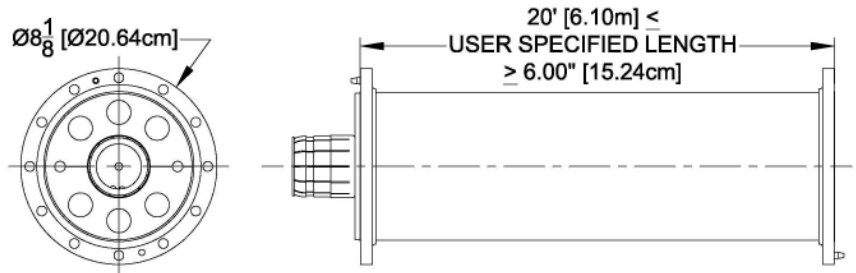
601-001

6 1/8" 50 ohm 20' line assembly, random pin spacing, flanged: Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 142.5lbs.



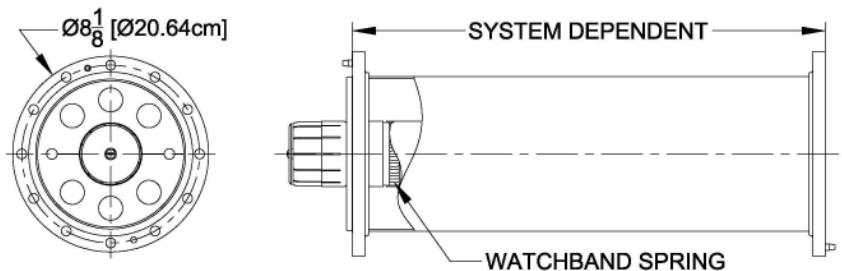
601-002

6 1/8" 50 ohm EIA line assembly of customer specified length, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 8lbs plus 6.7lbs. per foot.



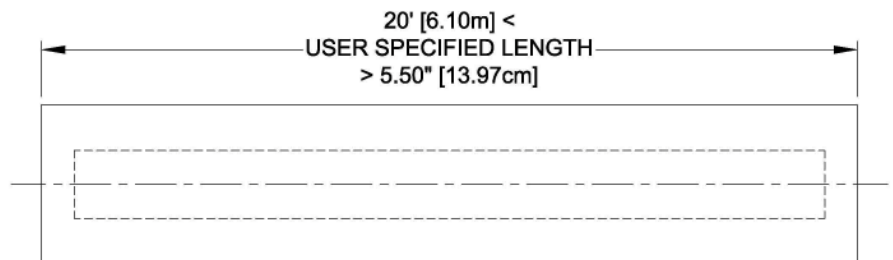
601-003

6 1/8" 50 ohm Spectraline Broadband expansion line assembly, flanged: Includes, "O" ring, hardware. Please refer to the Spectraline information section.



601-004

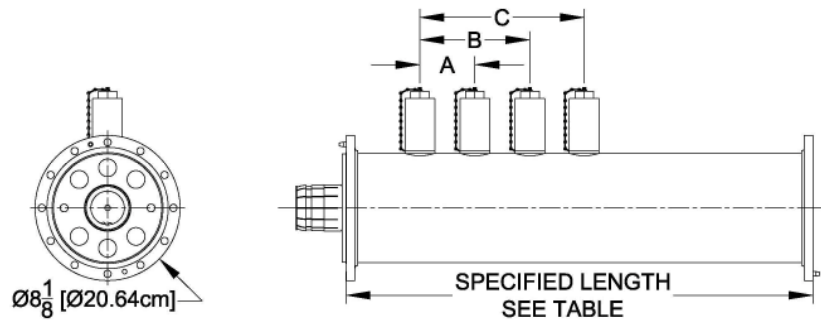
6 1/8" 50 ohm line assembly of customer specified length, unflanged, no connector or hardware. 7lbs/ft.



601-005

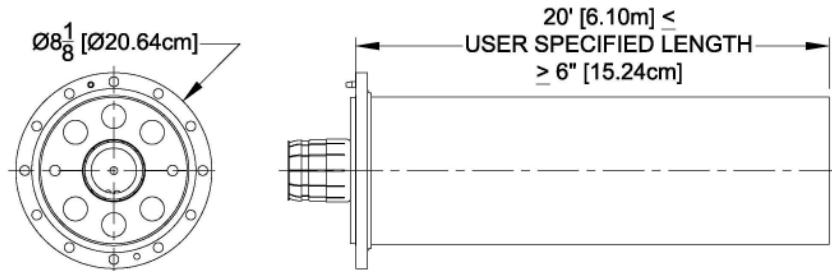
6 1/8" 50 Ohm 4 probe tuning line section, specify length and frequency. Includes anchor insulator with anti-splitting device, "O" ring and hardware.

	A'	B'	C'
Frequencies < 590 MHz	1/8	1/4	3/8
Frequencies > 590 MHz	1/4	5/8	7/8
Minimum Specified Length:			
For Frequencies < 590 MHz = 9" + 3/8			
For Frequencies > 590 MHz = 9" + 7/8			
Maximum Specified Length = 20'			



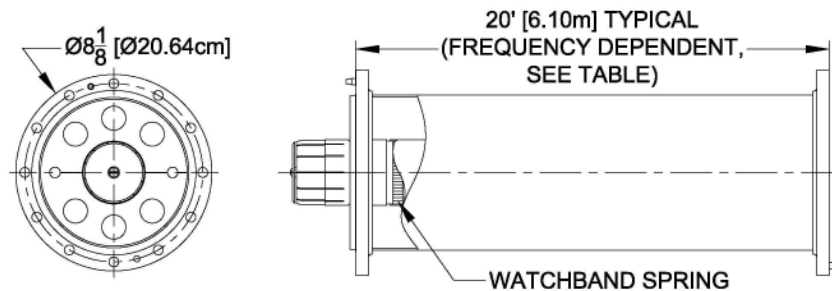
601-006

6 1/8" 50 ohm 20' line assembly, one end flanged. Customer specified length. Includes anchor insulator connector with anti splitting device, "O" ring, hardware. 140lbs. @ 20'



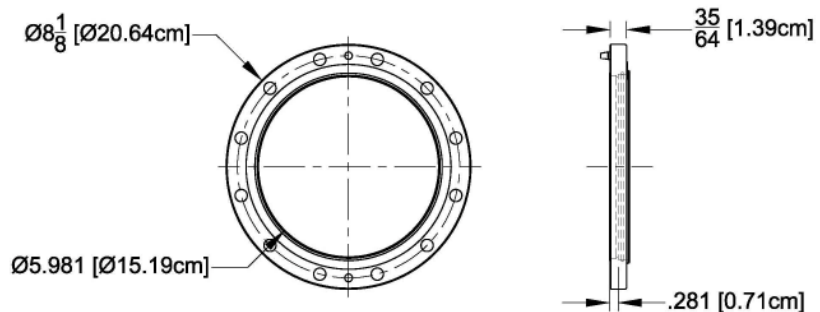
601-007

6 1/8" 50 ohm 20' expansion line assembly, flanged. Includes anchor insulator, "O" ring, hardware. 154lbs. @ 20' See table in engineering section for line length selection.



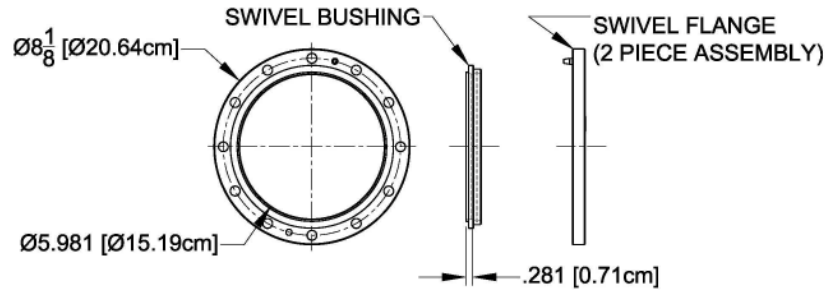
601-008

6 1/8" EIA fixed flange, brass, with silver solder ring insert, for silver brazing. 3.4lbs.



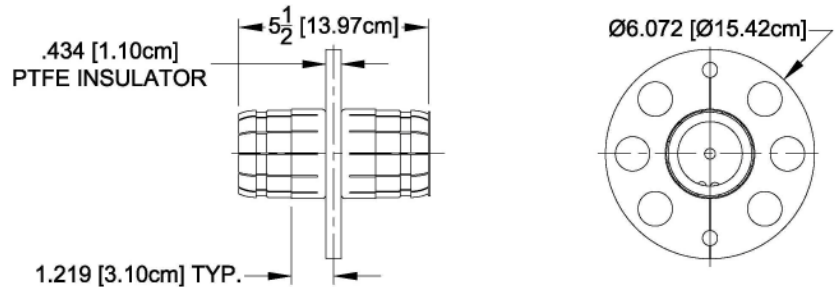
601-009

6 1/8" EIA swivel flange, brass, with silver solder ring insert, for silver brazing. 3.5lbs.



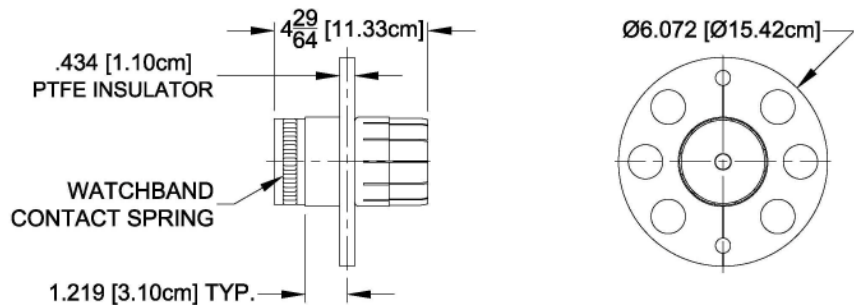
601-010

6 1/8" 50 ohm EIA anchor insulator connector with anti-splitting device, spring loaded, silver plated. 2.8lbs.



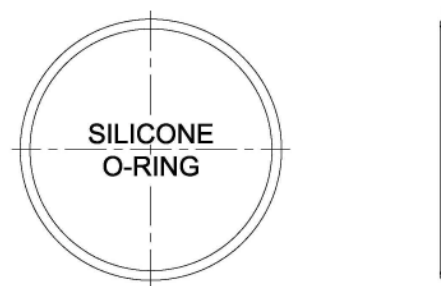
601-010-E

6 1/8" 50 ohm anchor insulator connector, expansion type, for use as a spare with 601-007 expansion lines only. 3lbs.



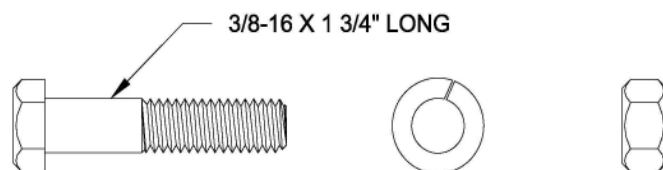
601-011

6 1/8" "O" ring, silicone.



601-012

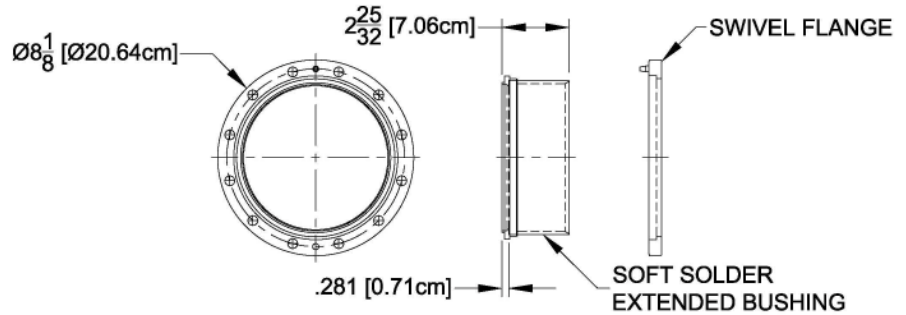
6 1/8" hardware set for flanges, stainless steel. 1lb.



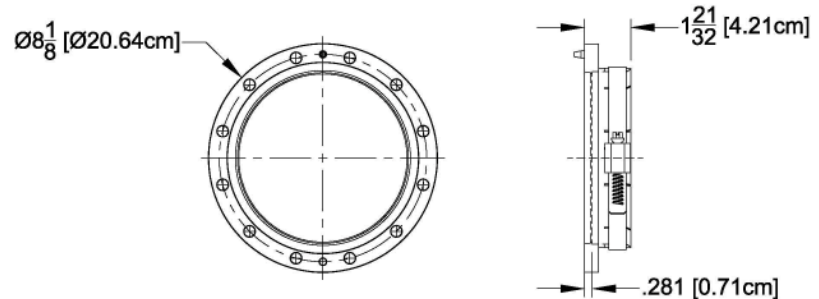
HARDWARE SET FOR FLANGES
12 SETS PER KIT

601-013

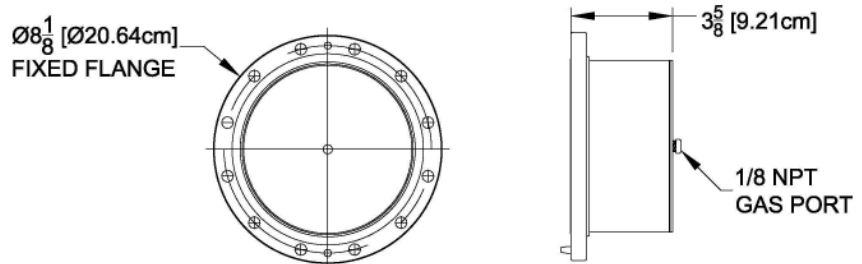
6 1/8" field flange adapter, swivel flange, pressurized, soft solder type. 5.5lbs.

**601-014**

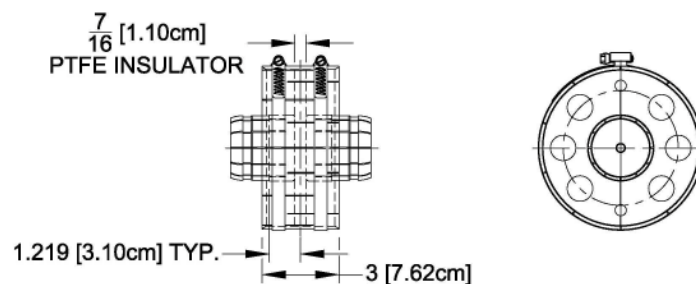
6 1/8" flange adapter, unpressurized clamp-type, for indoor use. Includes hardware and line clamp. 6.5lbs.

**601-015**

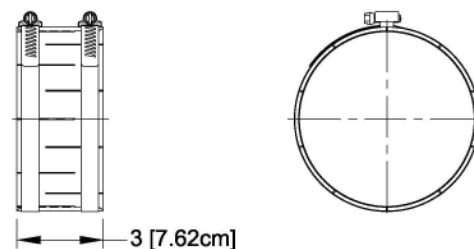
6 1/8" cover cap, with 1/8" NPT gas inlet plug. 6lbs.

**601-017**

6 1/8" 50 ohm unpressurized coupling assembly with supported inner conductor connector and two line clamps. 8.2lbs.

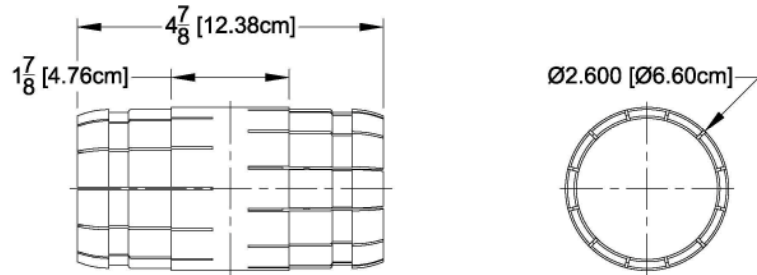
**601-018**

6 1/8" Outer conductor coupling clamp unpressurized. Includes two line clamps. (Does not increase outer conductor length.) 5lbs.



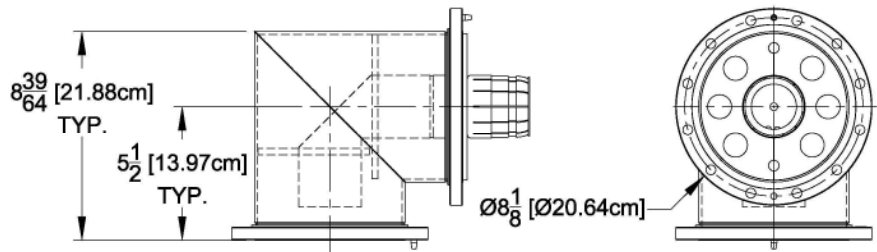
601-019

6 1/8" 50 ohm inner conductor connector, silver-plated, spring loaded. Unsupported (use 601-017 when support is required). 1.15lbs.



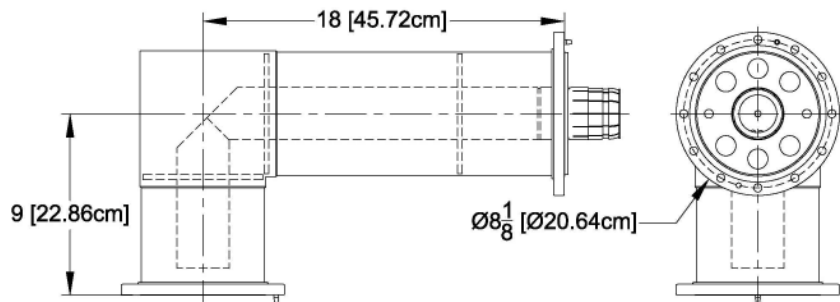
601-021

6 1/8" 50 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 25lbs.



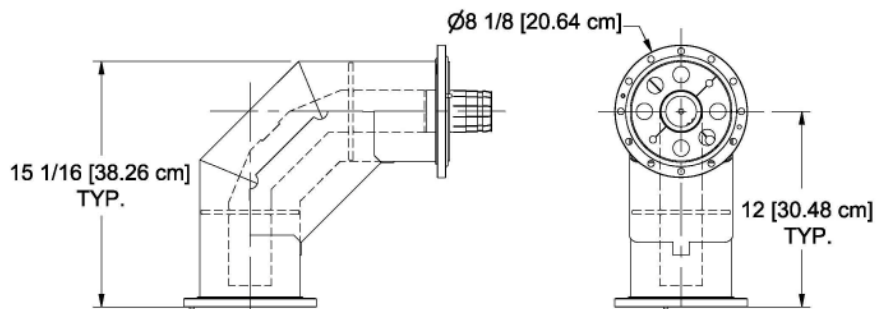
601-023

6 1/8" 50 ohm elbow, 90 degree, swivel flanged, unequal leg, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 50lbs.



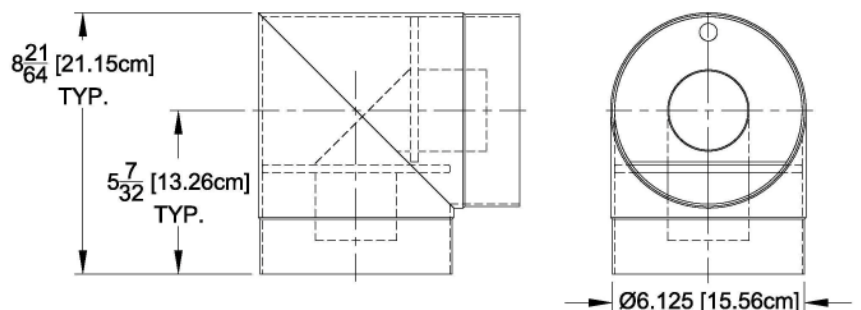
601-024

6 1/8" 50 ohm Spectraline Broadband elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 30lbs.



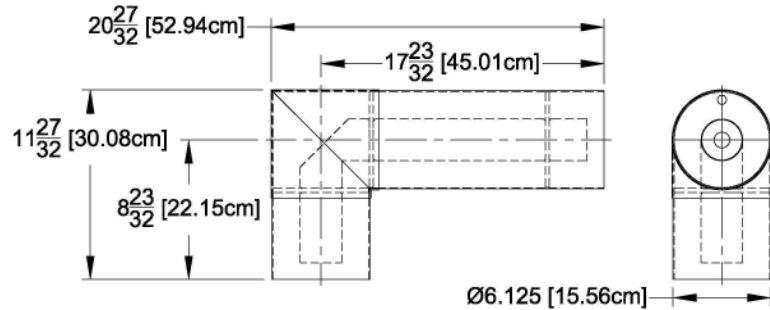
601-025

6 1/8" 50 ohm elbow, 90 degree, unflanged, reinforced outside. 14.5lbs.

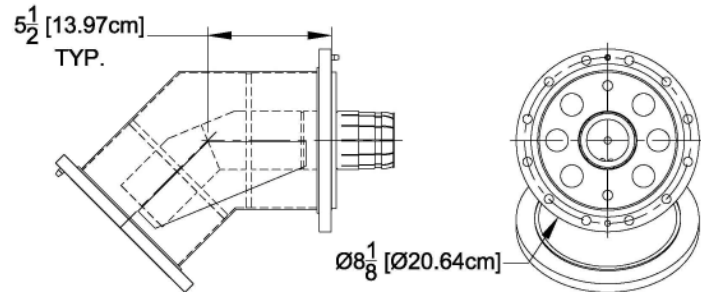


601-027

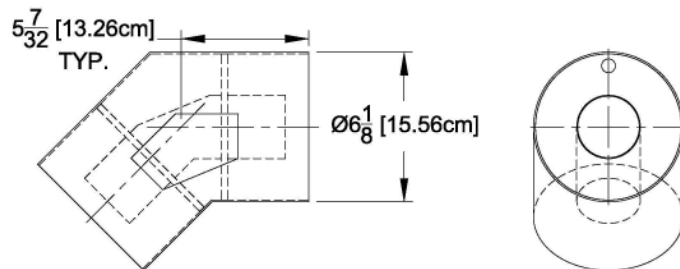
6 1/8" 50 ohm elbow, 90 degree unequal leg, unflanged, reinforced inside and outside. 16lbs.

**601-031**

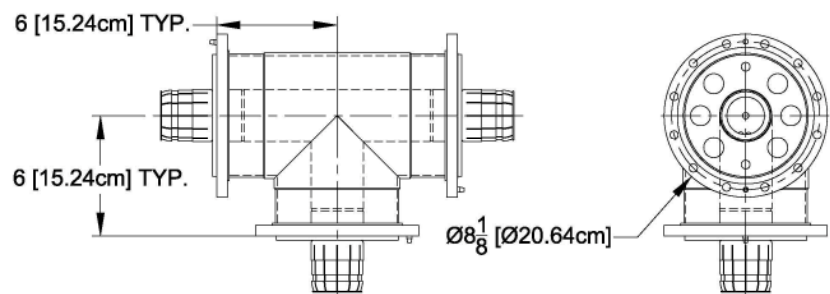
6 1/8" 50 ohm elbow, 45 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 26lbs.

**601-035**

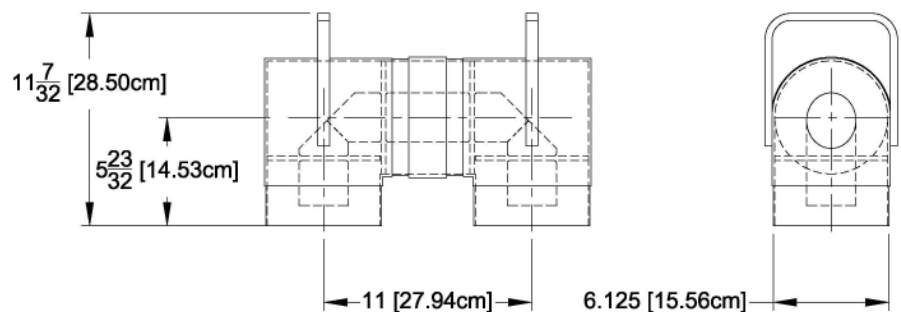
6 1/8" 50 ohm elbow, 45 degree, unflanged, reinforced inside and outside. 15lbs.

**601-040**

6 1/8" 50 ohm tee assembly, unmatched, swivel flanged, reinforced outside. Includes three anchor insulator connectors with anti-splitting devices, "O" rings, and hardware sets. 35lbs.

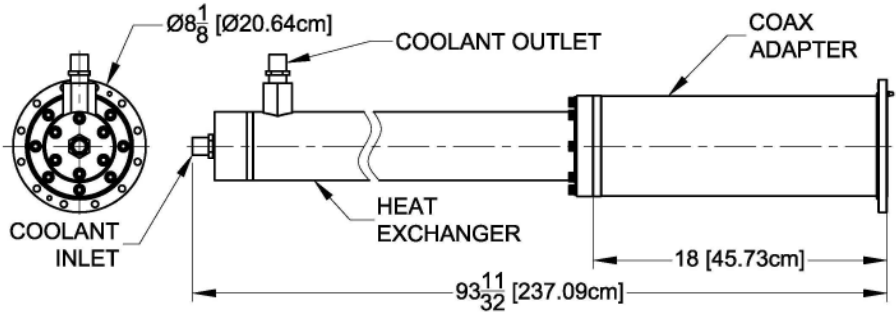
**601-041**

6 1/8" 50 ohm "U" link, female both ends, unflanged with handles. 38lbs.



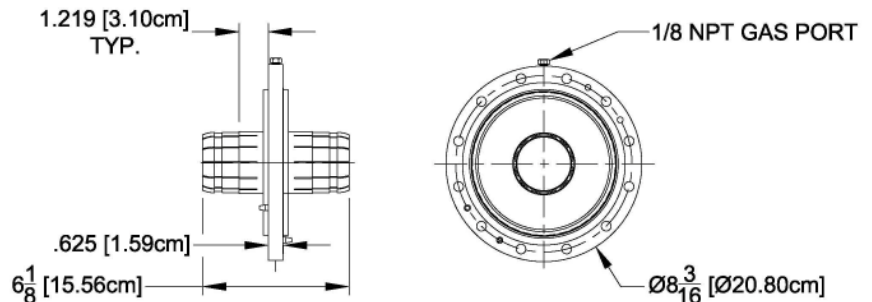
601-046-000

6 1/8" 50 ohm water cooled
load UHF - channel specific.
83.43lbs.



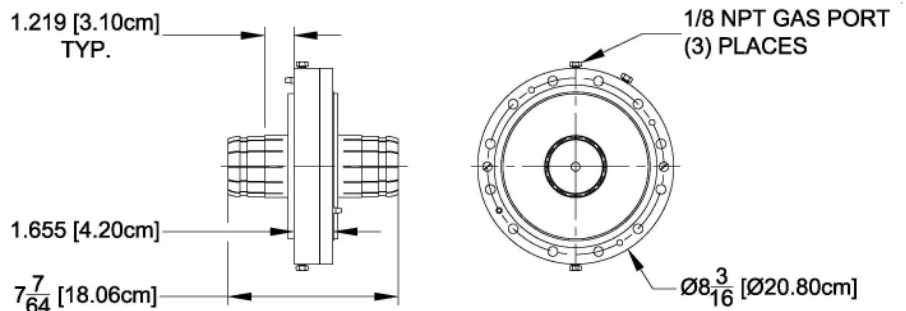
601-050

6 1/8" 50 ohm gas barrier, with
"O" ring gasket, 2 1/4"
hardware, 1/8" NPT gas inlet
port. 11lbs.



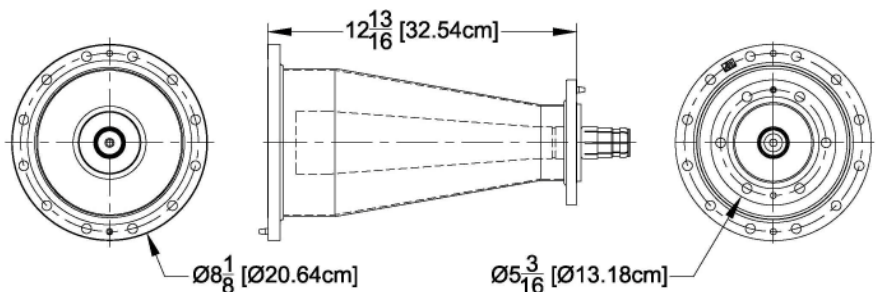
601-050-HD

6 1/8" 50 ohm heavy duty gas
barrier, with "O" ring gasket, 3
1/2" hardware, three 1/8" NPT
gas inlet ports, (two on one side
of barrier, one on the opposite
side). 17lbs.



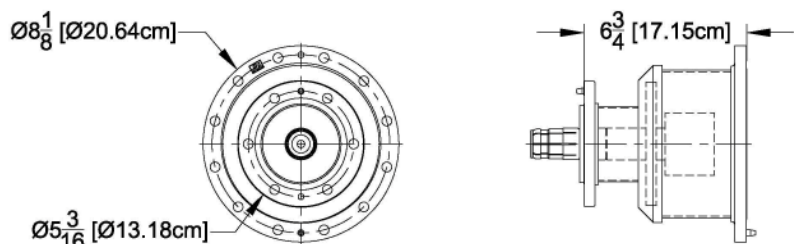
601-064

Reducer taper flanged: 6 1/8"
50 ohm to 3 1/8" 50 ohm.
Includes 3 1/8" anchor insulator
connector with anti-splitting
device, "O" ring, hardware
11.5lbs.



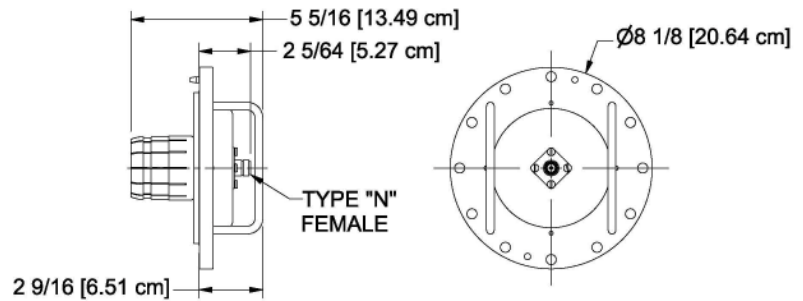
601-065

Step reducer, flanged: 6 1/8" to
3 1/8". Includes 3 1/8" anchor
insulator connector with anti-
splitting device, "O" ring,
hardware. 16lbs.

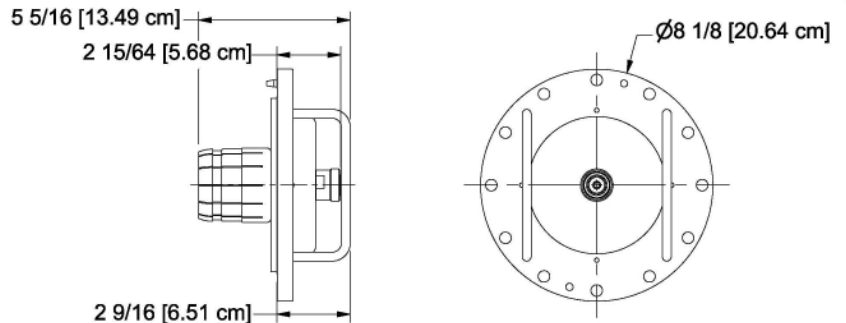


611-066

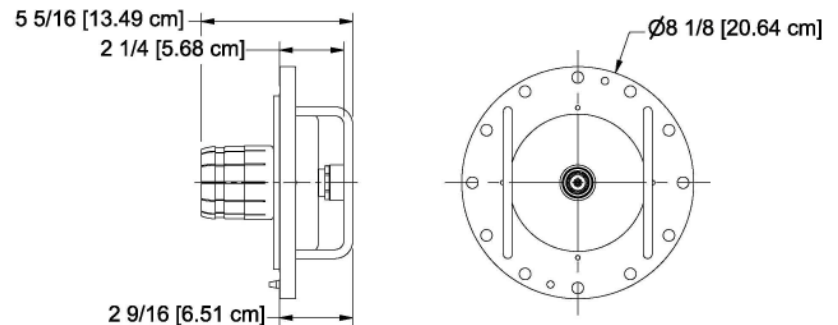
6 1/8" 50 ohm to type "N" plate reducer. 4.4lbs.

**611-580-1**

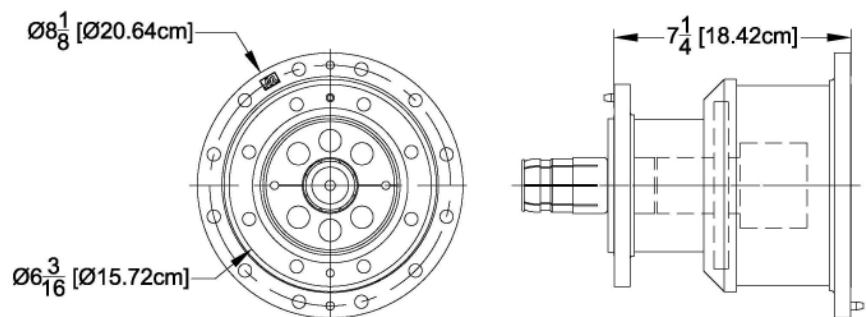
6 1/8" 50 ohm to 7/16" DIN female plate reducer. 4.7lbs.

**611-580-2**

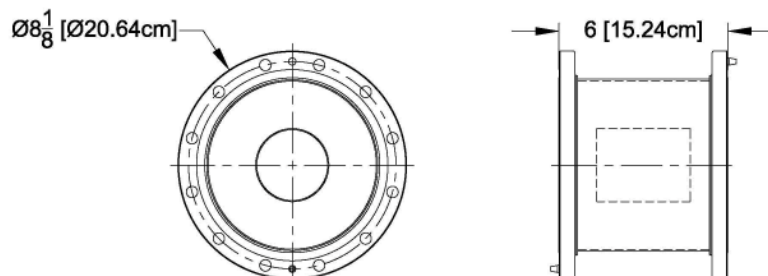
6 1/8" 50 ohm to 7/16" DIN male plate reducer. 4.7lbs.

**601-067**

Reducer, flanged: 6 1/8" 50 ohm to 4 1/16" 50 ohm. Includes 4 1/16" anchor insulator connector with anti-splitting device, "O" ring, hardware. 17lbs.

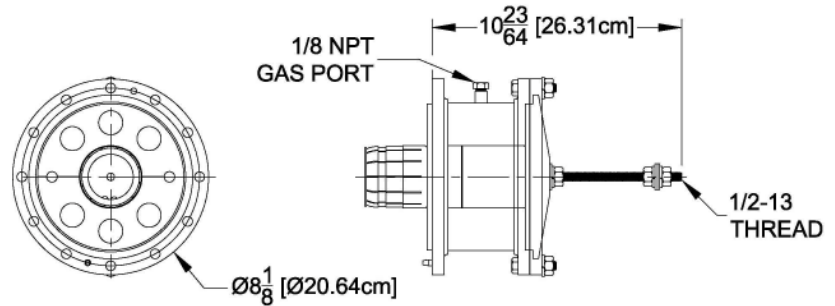
**601-078**

6 1/8" 50 ohm adapter, male to male, with fixed flanges and unsupported inner conductor. Includes "O" ring gasket and hardware. 11lbs.



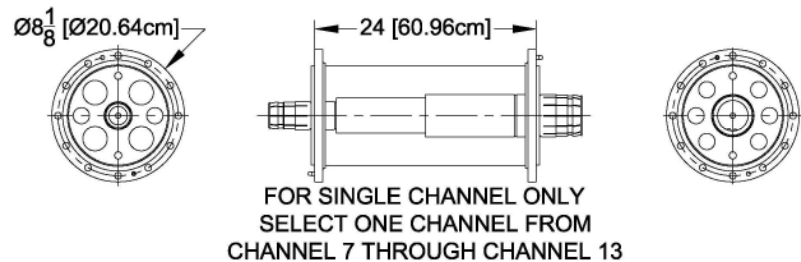
601-080

6 1/8" 50 ohm end seal assembly with NPT gas inlet port. Includes "O" ring gasket and hardware. 21lbs.



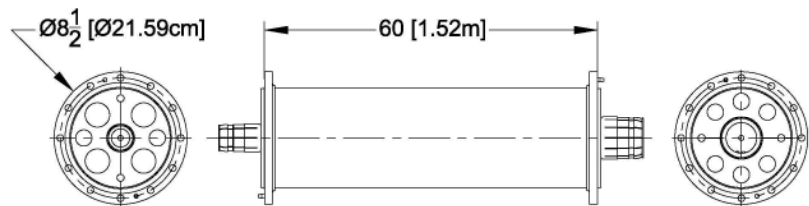
601-086

6 1/8" transformer, single channel, quarter wave, 50 ohm to 75 ohm, channels 7-13. Includes anchor insulator connectors, "O" ring, and hardware. 28.5 lbs.



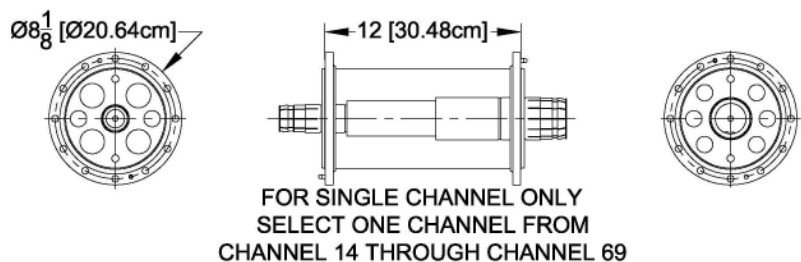
601-086-WB

6 1/8" transformer, wide band, three quarter wave, 50 ohm to 75 ohm, high band VHF 174Mhz-216Mhz. Includes anchor insulator connectors, "O" ring, and hardware. 40 lbs.



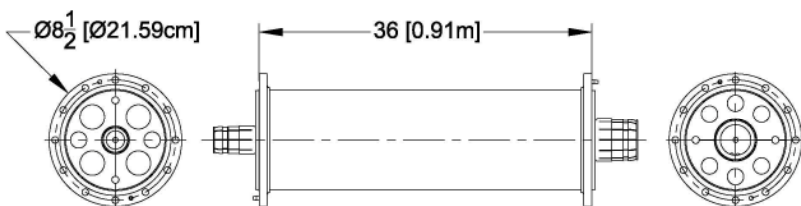
601-087

6 1/8" transformer, single channel, quarter wave, 50 ohm to 75 ohm, channels 14-69. Includes anchor insulator connectors, "O" ring, and hardware. 22 lbs.



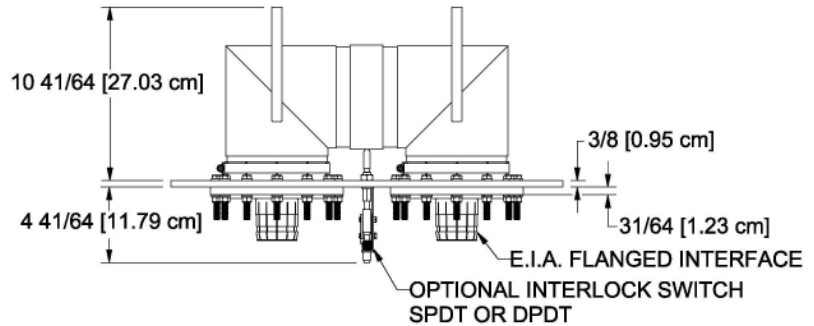
601-088-WB

6 1/8" transformer, wide band, five quarter wave, 50 ohm to 75 ohm, high band VHF 470Mhz-806Mhz. Includes anchor insulator connectors, "O" ring, and hardware. 35 lbs.



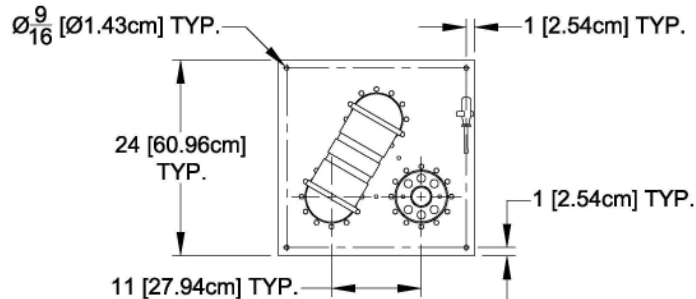
601-138-PATCH

Typical 6 1/8" 50 ohm patch panel interface dimensions.
Back of patch panel mates with flanged transmission line.
Custom patch panels available upon request



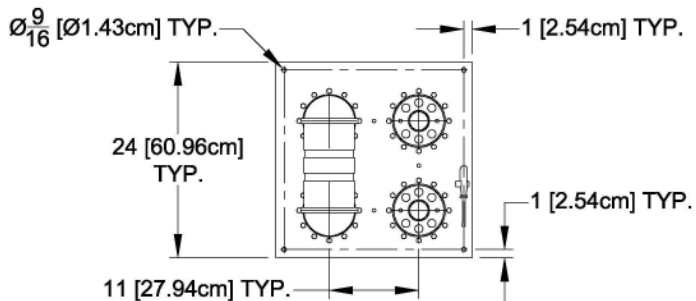
601-138-3

6 1/8" 50 ohm patch panel, manual, 3 pole, unpressurized. Includes 1 "U" link with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 77.5lbs.



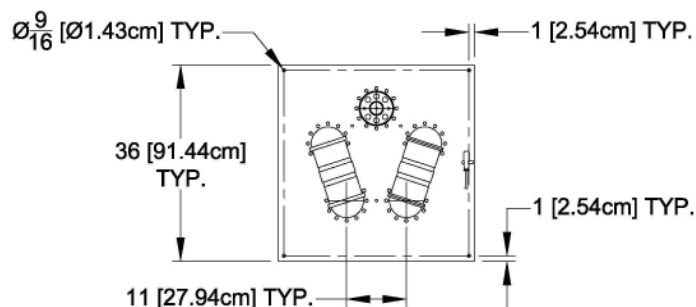
601-138-4

6 1/8" 50 ohm patch panel, manual, 4 pole, unpressurized. Includes 2 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 119.8lbs.



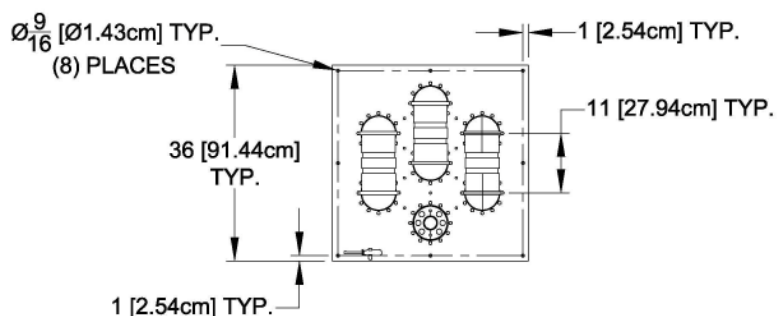
601-138-5

6 1/8" 50 ohm patch panel, manual, 5 pole, unpressurized. Includes 2 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 153.2lbs.



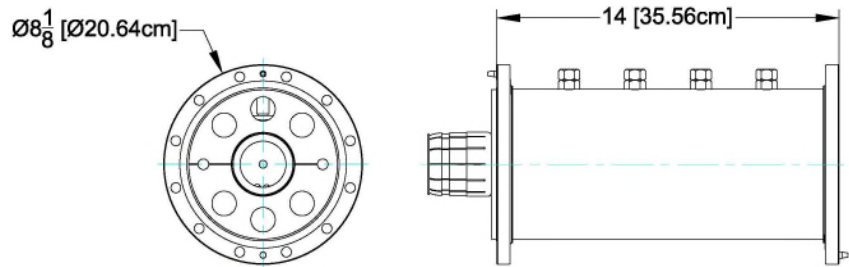
601-138-7

6 1/8" 50 ohm patch panel, manual, 7 pole, unpressurized. Includes 3 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 202.5lbs.



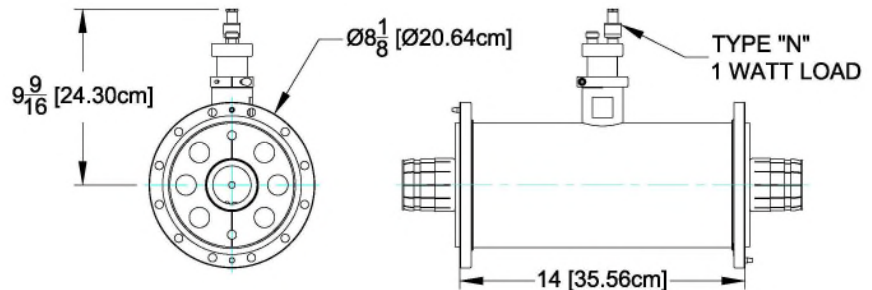
601-327-000

6 1/8" 50 ohm fine matcher
unpressurized - channel
specific, includes anchor
insulator connector, "O" ring,
and hardware. 17.9lbs.



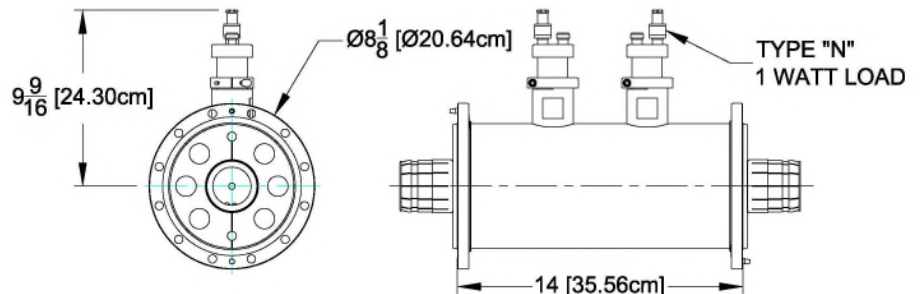
601-356-1-000

6 1/8" 50 ohm UHF directional
coupler - single coupler,
includes 2 anchor insulator
connectors, "O" ring, and
hardware. 22.6lbs.



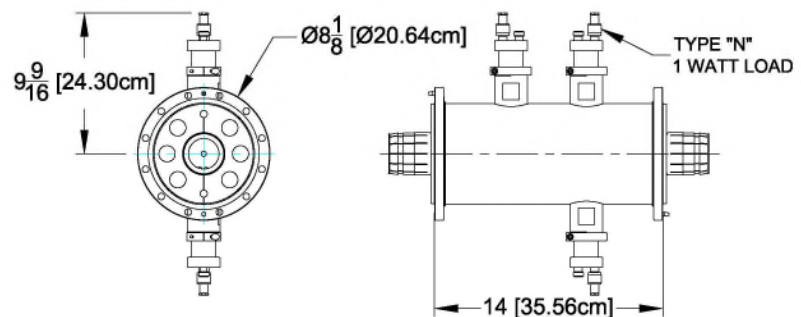
601-356-2-000

6 1/8" 50 ohm UHF directional
coupler - dual coupler, includes
2 anchor insulator connectors,
"O" ring, and hardware.
25.7lbs.



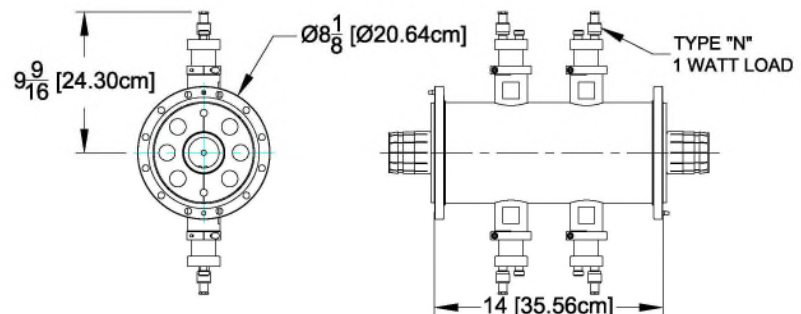
601-356-3-000

6 1/8" 50 ohm UHF directional
coupler - triple coupler, includes
2 anchor insulator connectors,
"O" ring, and hardware.
28.8lbs.



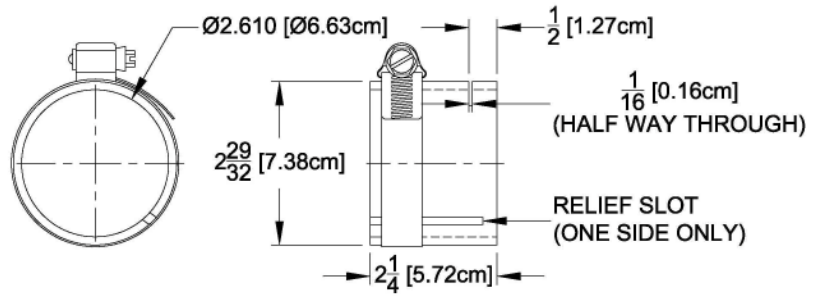
601-356-4-000

6 1/8" 50 ohm UHF directional
coupler - quad coupler,
includes 2 anchor insulator
connectors, "O" ring, and
hardware. 31.8lbs.



601-042-25

6 1/8" 50 ohm inner conductor
cutoff guide. Includes line
clamp. .75lbs.





This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

701 Series 6 1/8" 75 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	75 ± .5 Ohms
Upper Frequency Limit:	* 830 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	36 kV DC
Peak Power Rating	** 1069 kW
VSWR:	*** 1.03:1

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	6.125" (155 mm)
Inside Diameter:	5.981" (151 mm)

Inner Conductor

Outside Diameter :	1.711" (43 mm)
Inside Diameter:	1.631" (41 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.
Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 136 lbs.

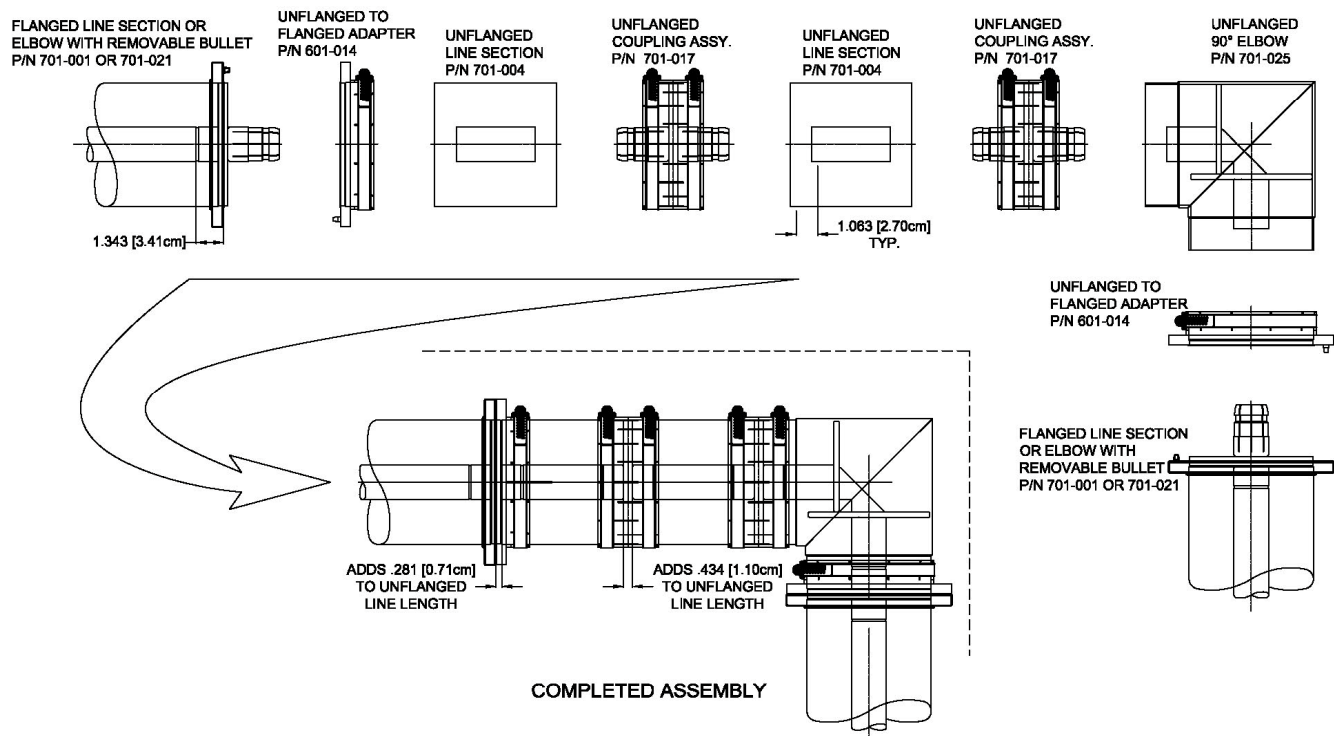
* TE11 Mode useful cutoff frequency.

** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

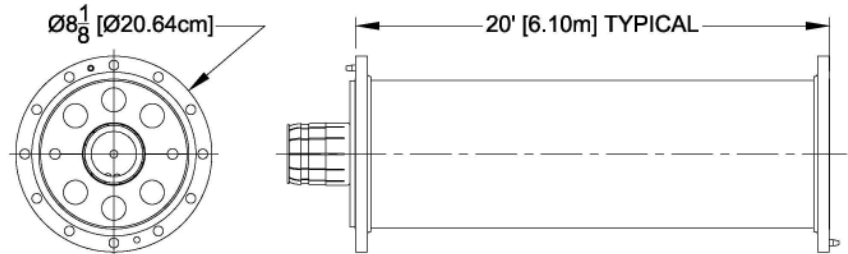
COMPONENTS TO BE ASSEMBLED,



6 1/8" (SERIES 701-) FLANGED TO UNFLANGED LINE SECTION

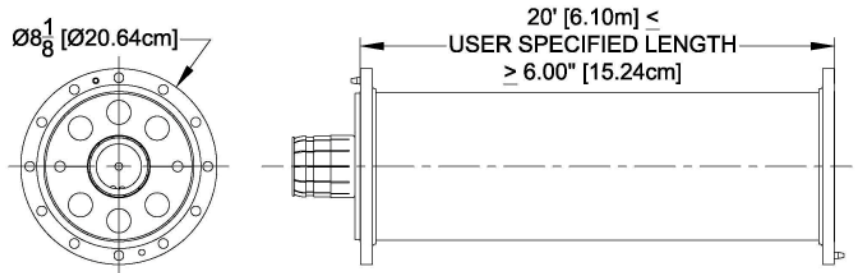
701-001

6 1/8" 75 ohm 20' line assembly, random pin spacing, flanged: Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 136lbs.



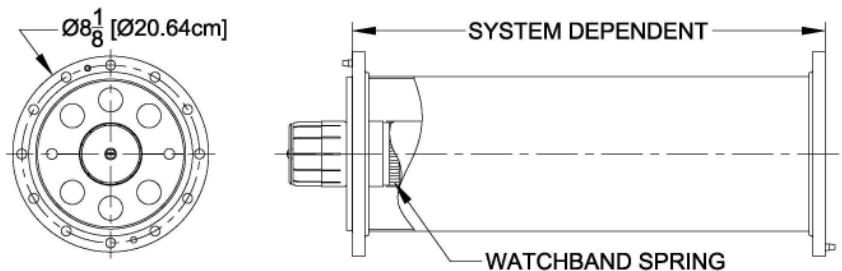
701-002

6 1/8" 75 ohm EIA line assembly of customer specified length, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 9.7lbs. plus 6.3lbs. per foot.



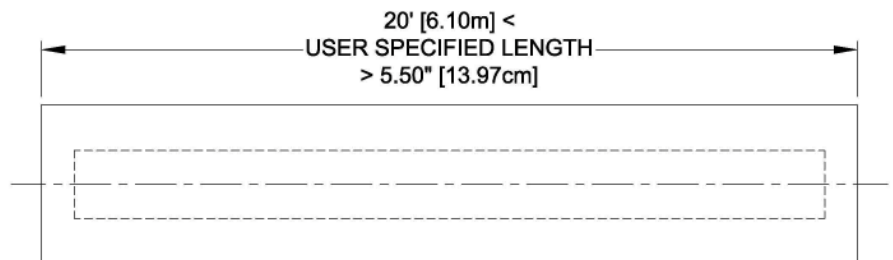
701-003

6 1/8" 75 ohm Spectraline Broadband expansion line assembly, flanged: Includes, "O" ring, hardware. Please refer to the Spectraline information section.



701-004

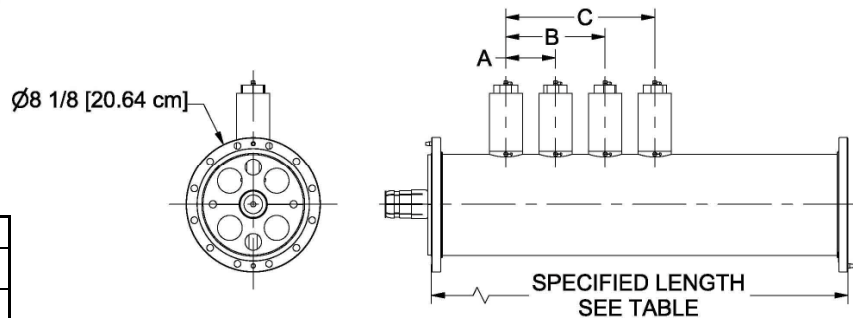
6 1/8" 75 ohm line assembly of customer specified length, unflanged, no connector or hardware. 6.5lbs/ft.



701-005

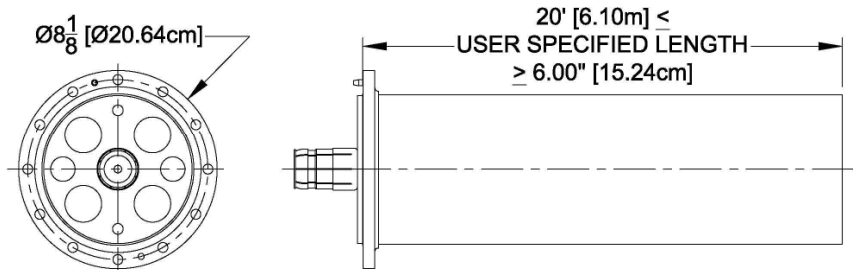
6 1/8" 75 Ohm 4 probe tuning line section, specify length and frequency. Includes anchor insulator with anti-splitting device, "O" ring and hardware.

	A'	B'	C'
Frequencies < 590 MHz	1/8	1/4	3/8
Frequencies > 590 MHz	1/4	5/8	7/8
Minimum Specified Length: For Frequencies < 590 MHz = 9" + 3/8 For Frequencies > 590 MHz = 9" + 7/8			
Maximum Specified Length = 20'			



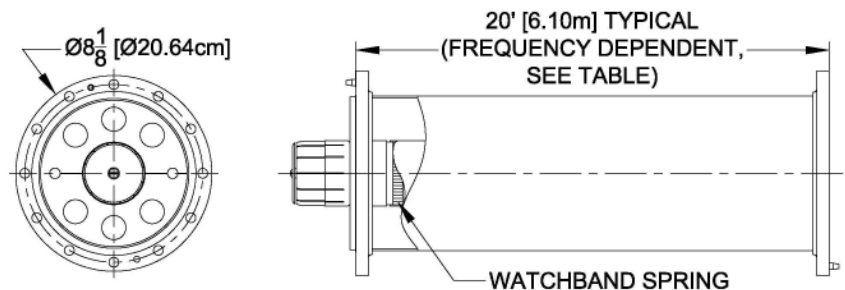
701-006

6 1/8" 75 ohm 20' line assembly, one end flanged. Customer specified length. Includes anchor insulator connector with anti splitting device, "O" ring, hardware. 133lbs. @ 20'



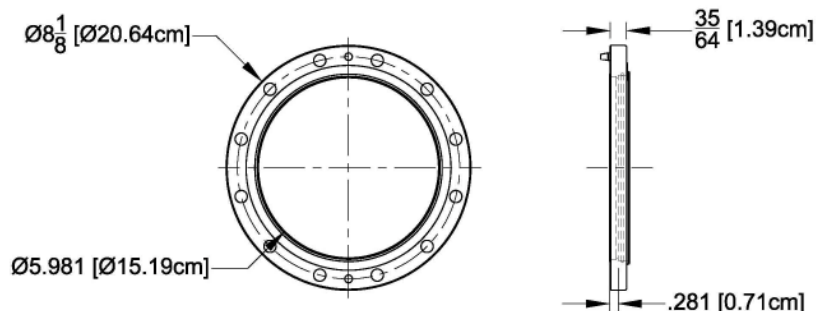
701-007

6 1/8" 75 ohm 20' expansion line assembly, flanged. Includes anchor insulator, "O" ring, hardware. 133lbs. @ 20' See table in engineering section for line length selection.



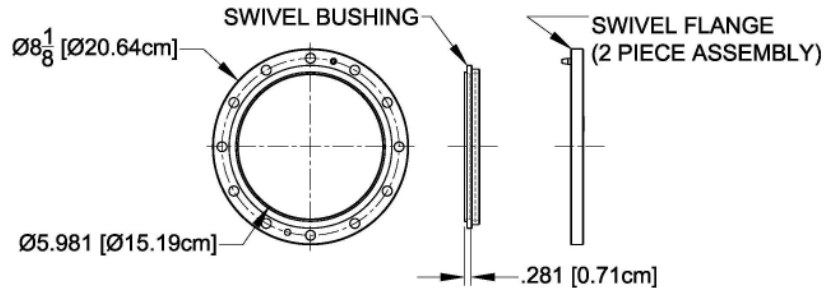
701-008

6 1/8" EIA fixed flange, brass, with silver solder ring insert, for silver brazing. Sold as catalog #601-008 3.4lbs.



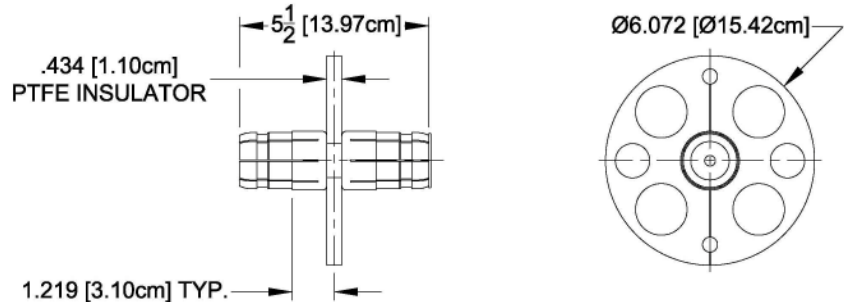
701-009

6 1/8" EIA swivel flange, brass, with silver solder ring insert, for silver brazing. Sold as catalog #601-009 3.5lbs.



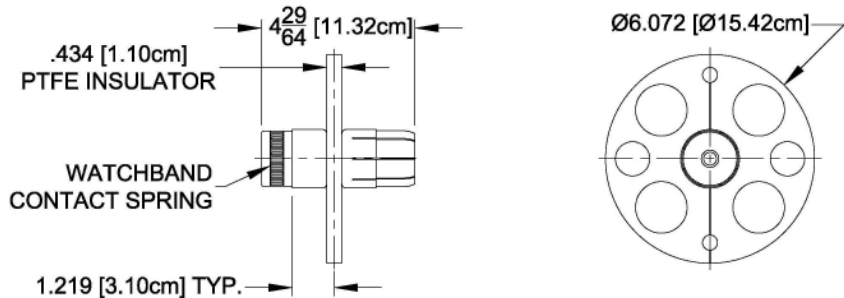
701-010

6 1/8" 75 ohm anchor insulator connector with anti-splitting device, silver plated. 1.5lbs.



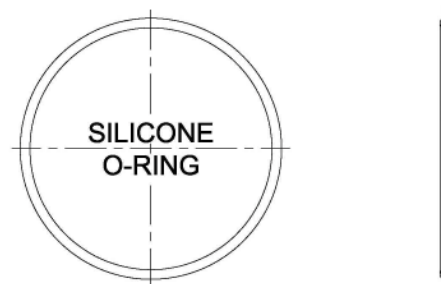
701-010-E

6 1/8" 75 ohm anchor insulator connector, expansion type for use as a spare with 701-007 expansion lines only. 2.5lbs.



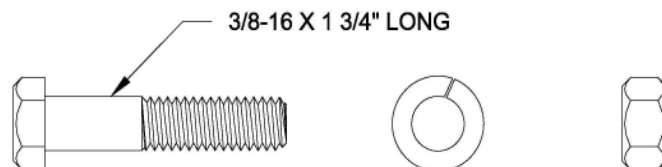
701-011

6 1/8" "O" ring, silicone. Sold as catalog #601-011.



701-012

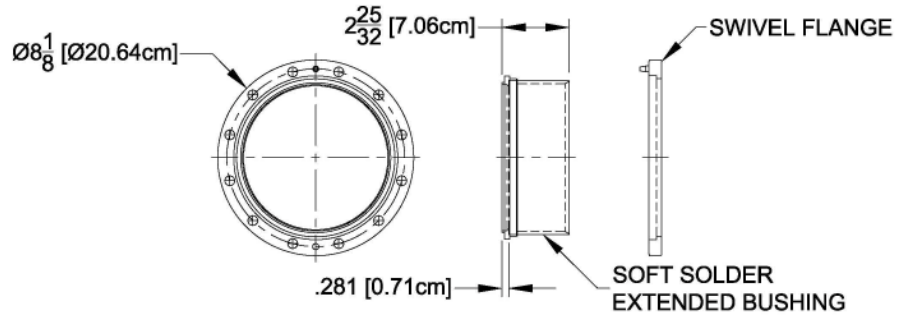
6 1/8" hardware set for flanges, stainless steel. Sold as catalog #601-012. 1lb.



HARDWARE SET FOR FLANGES
12 SETS PER KIT

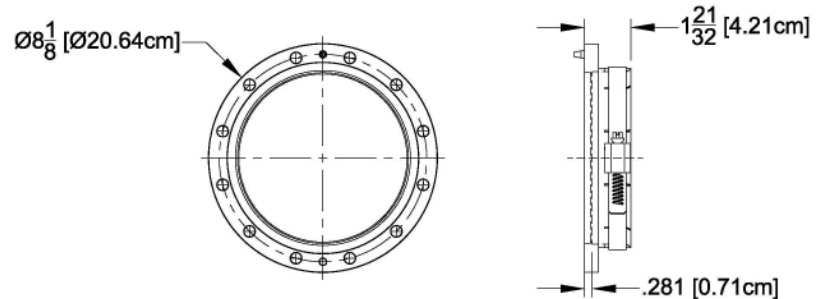
701-013

6 1/8" field flange adapter, swivel flange, pressurized, soft solder type. Sold as catalog #601-013. 5.5lbs.



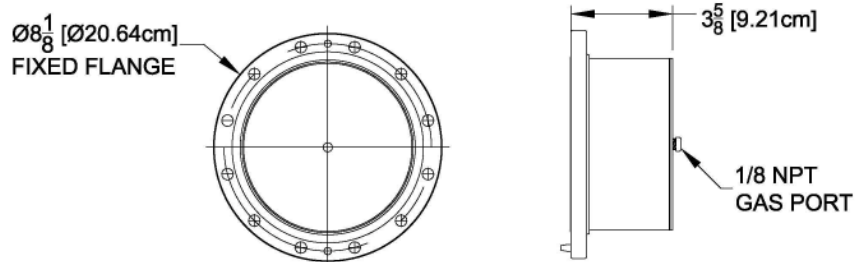
701-014

6 1/8" flange adapter, unpressurized clamp-type, for indoor use. Includes hardware and line clamp. Sold as catalog #601-014. 6.5lbs.



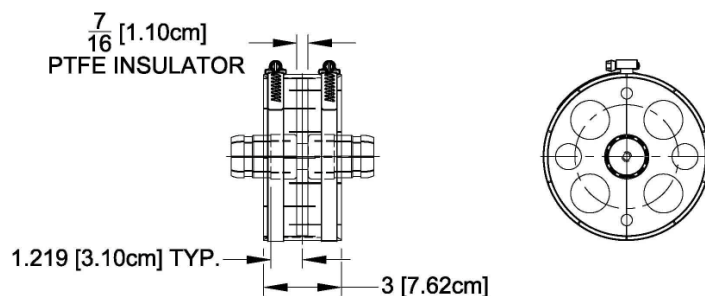
701-015

6 1/8" cover cap, with 1/8" NPT gas inlet plug. Sold as catalog #601-015. 6lbs.



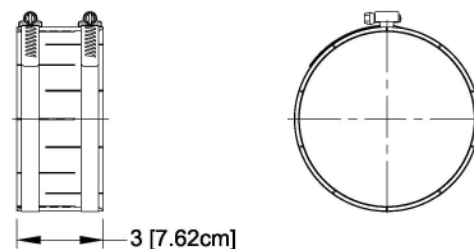
701-017

6 1/8" 75 ohm unpressurized coupling assembly with supported inner conductor connector and two line clamps. 7.9lbs.



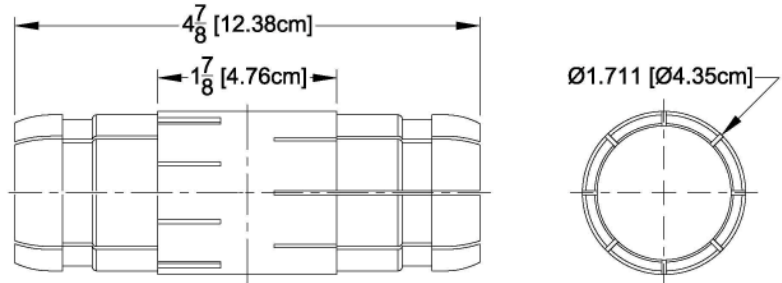
701-018

6 1/8" Outer conductor coupling clamp unpressurized. Includes two line clamps. (Does not increase outer conductor length.) Sold as catalog #601-018. 5lbs.



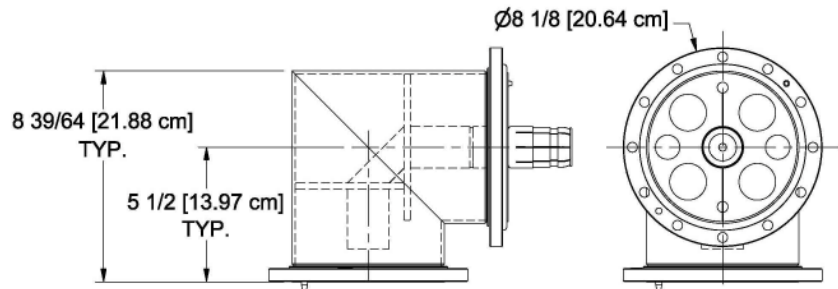
701-019

6 1/8" 75 ohm inner conductor connector, silver-plated, spring loaded, unsupported. 1.1lbs.



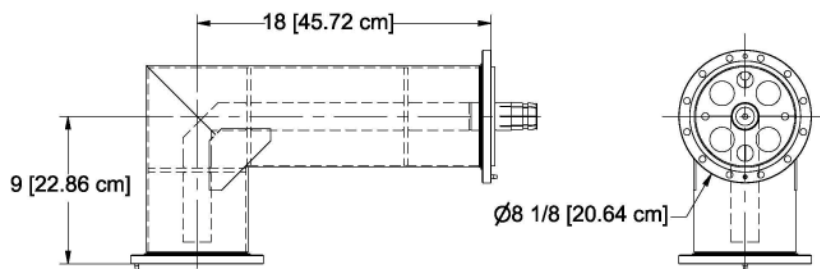
701-021

6 1/8" 75 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 22lbs.



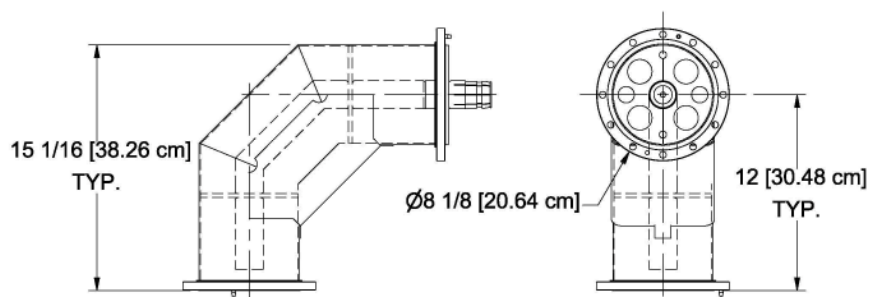
701-023

6 1/8" 75 ohm elbow, 90 degree, swivel flanged, unequal leg, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 50lbs.



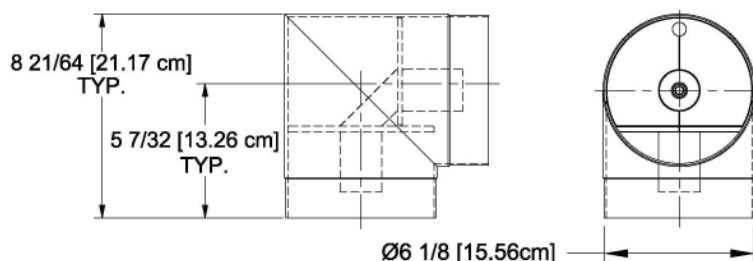
701-024

6 1/8" 75 ohm Spectraline Broadband elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 30lbs.



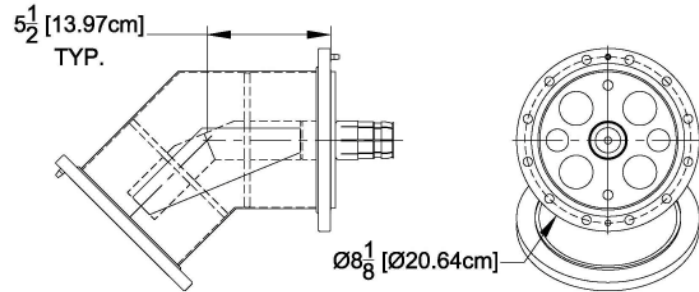
701-025

6 1/8" 75 ohm elbow, 90 degree, unflanged, reinforced inside and outside. 11.5lbs.



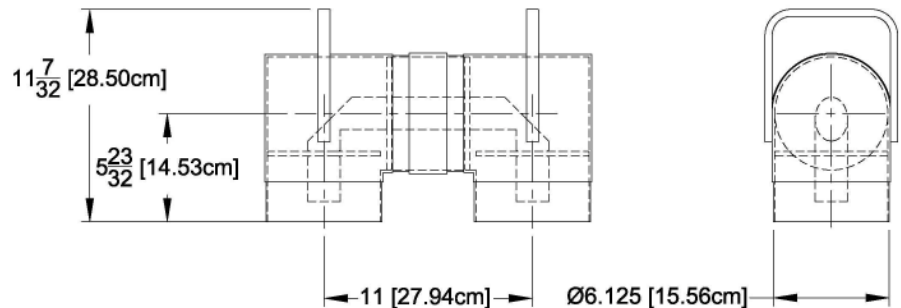
701-031

6 1/8" 75 ohm elbow, 45 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 21lbs.



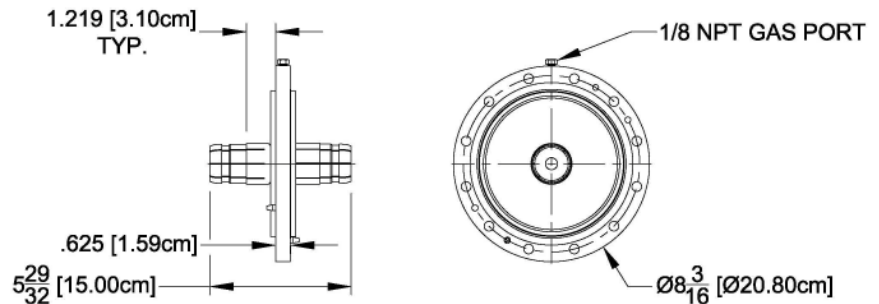
701-041

6 1/8" 75 ohm "U" link, female both ends, unflanged with handles. 35.2lbs.



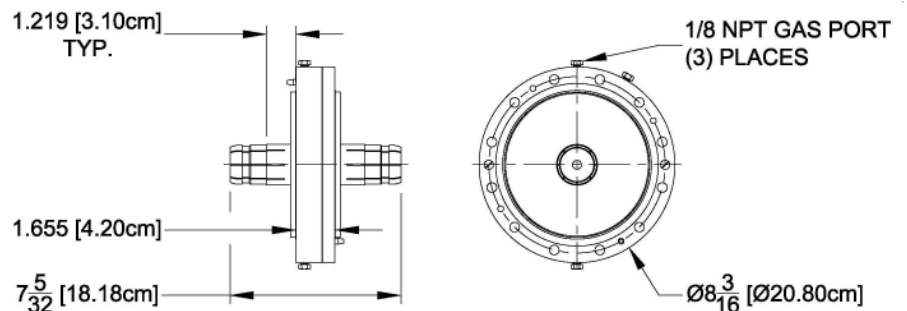
701-050

6 1/8" 75 ohm gas barrier with "O" ring gasket, 2 1/4" hardware, 1/8" NPT gas inlet port. 8.5lbs.



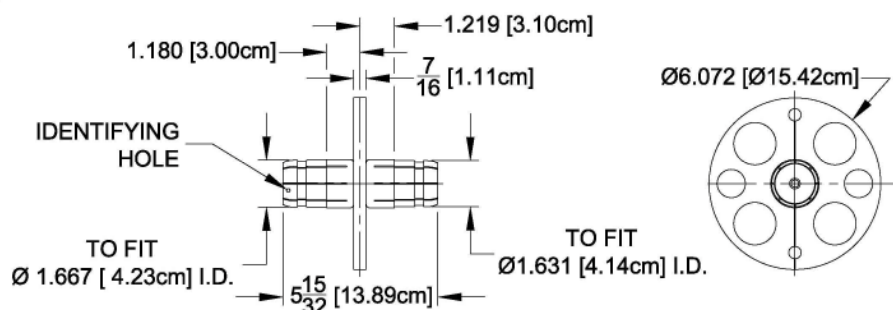
701-050-HD

6 1/8" 75 ohm heavy duty gas barrier, with "O" ring gasket, 3 1/2" hardware, three 1/8" NPT gas inlet ports, (two on one side of barrier, one on the opposite side. 17lbs.



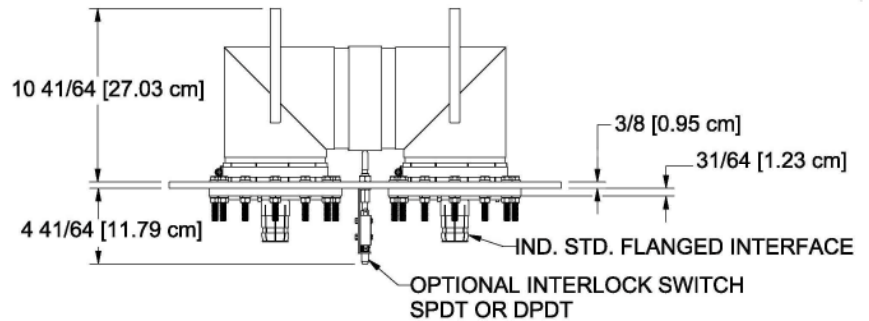
701-081

6 1/8" 75 ohm adapter anchor insulator connector, silver plated. Used to connect 75 ohm industry standard to thin wall inner. 2lbs.



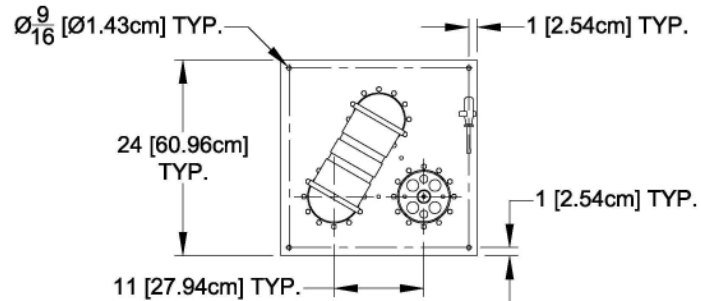
701-138-PATCH

Typical 6 1/8" 75 ohm patch panel interface dimensions.
Back of patch panel mates with flanged transmission line.
Custom patch panels available upon request



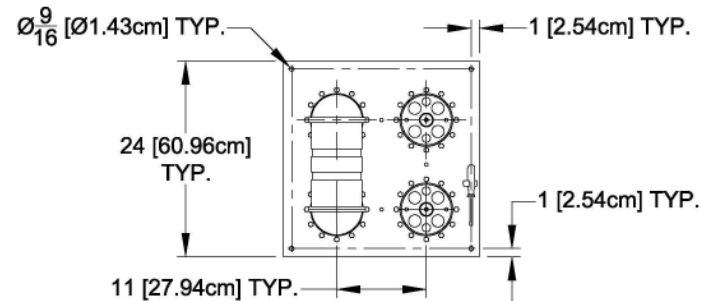
701-138-3

6 1/8" 75 ohm patch panel, manual, 3 pole, unpressurized. Includes 1 "U" link with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 66lbs.



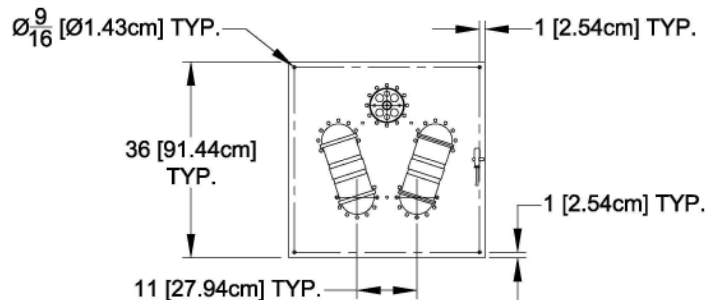
701-138-4

6 1/8" 75 ohm patch panel, manual, 4 pole, unpressurized. Includes 2 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 100lbs.



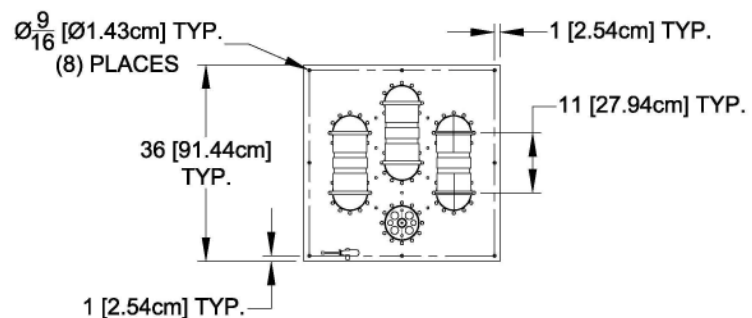
701-138-5

6 1/8" 75 ohm patch panel, manual, 5 pole, unpressurized. Includes 2 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 132.6lbs.



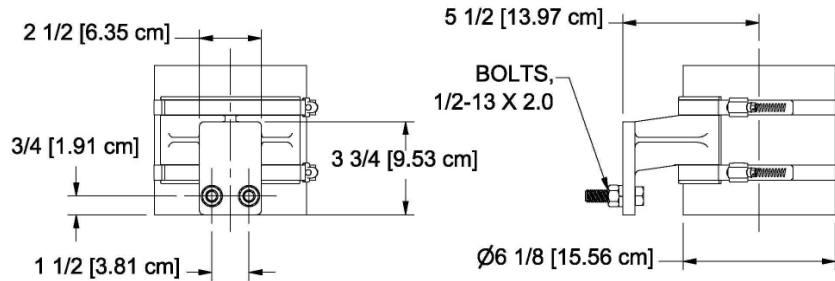
701-138-7

6 1/8" 75 ohm patch panel, manual, 7 pole, unpressurized. Includes 3 "U" links with handles, anchor insulator connectors with anti-splitting devices, line clamps, screwdriver. 171.4lbs.



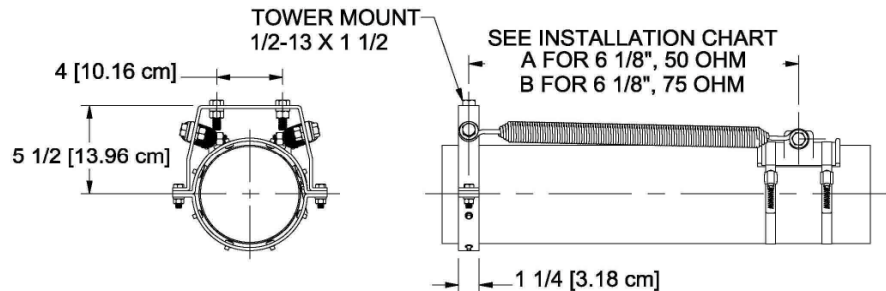
701-042-1

6 1/8" fixed hanger, single line. Includes line clamps and hardware. 9/16" mounting holes. Use one fixed hanger at top of tower for ea. 400 ft of vertical run, (min. requirement, 2 hangers). 4.4lbs.



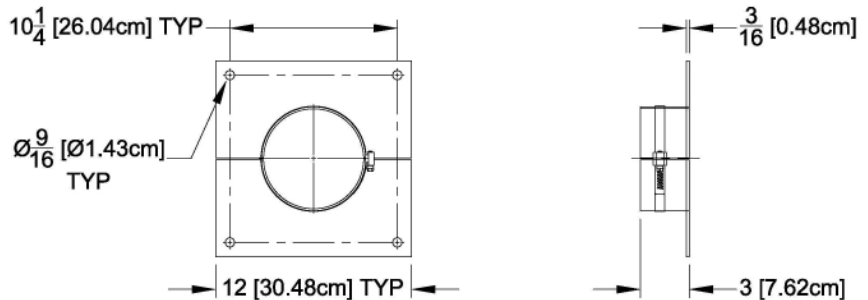
701-042-3

6 1/8" vertical spring suspension hanger, single line, stainless steel. Includes line clamps and hardware. 9/16" mounting hole. 7.5lbs.



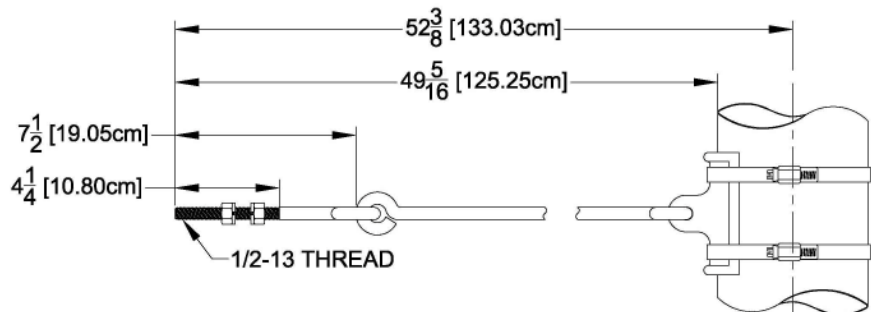
701-042-5

6 1/8" wall anchor plate, single line. Includes line clamp. One plate required for each side of wall. 10lbs.



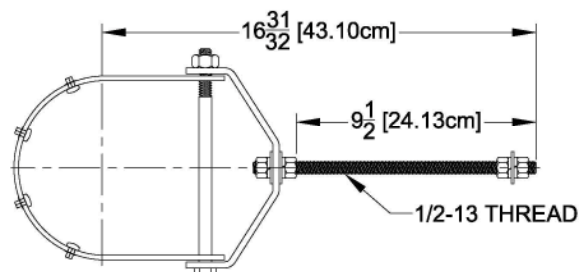
701-042-8

6 1/8" lateral brace for use at base of tower. Includes two line clamps. 5.25lbs.



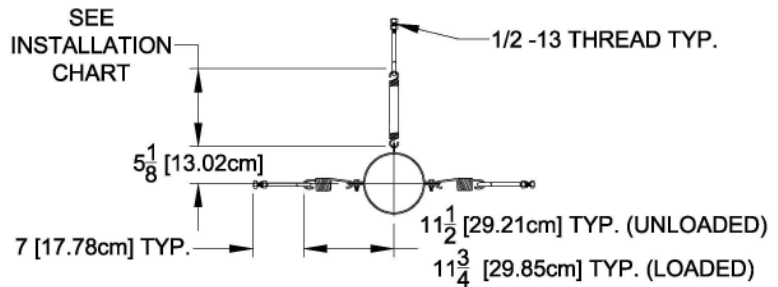
701-042-12

6 1/8" slip hanger, 10" stud mounted. 4lbs.



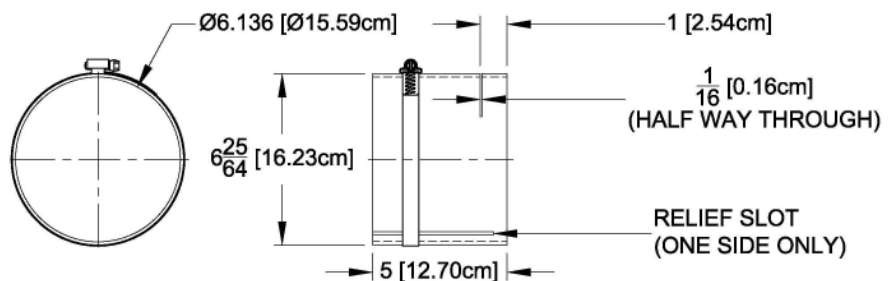
701-042-17

6 1/8" 3-point suspension hanger, single line, stainless steel. Supports 10 ft of horizontal run. 6.6lbs.



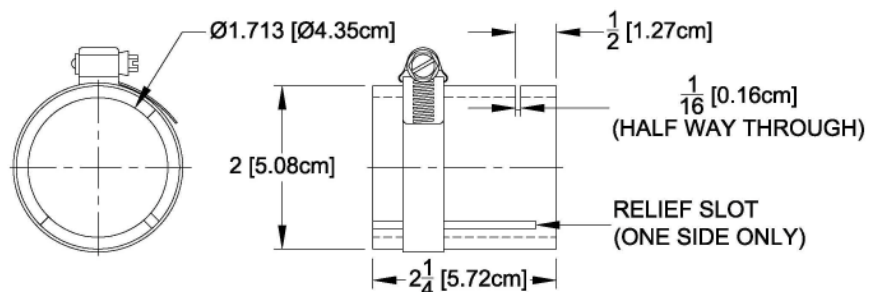
701-042-24

6 1/8" outer conductor cut-off guide. Includes line clamp. 4.4lbs. Also sold as catalog #601-042-24



701-042-25

6 1/8" 75 ohm inner conductor cut-off guide. Includes line clamp. .6lb.



775 Series 7 3/16" 75 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	75 $\pm$.5 Ohms
Upper Frequency Limit:	* 752 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	42 kV DC
Peak Power Rating	** 1426 kW
VSWR:	*** 1.03:1

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	7.150" (182 mm)
Inside Diameter:	7.000" (178 mm)

Inner Conductor

Outside Diameter :	2.000" (51 mm)
Inside Diameter:	1.920" (49 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.
Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 166 lbs.

* TE11 Mode useful cutoff frequency.

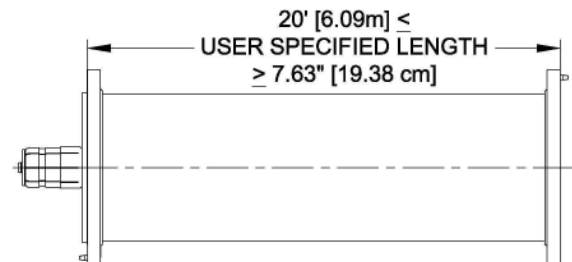
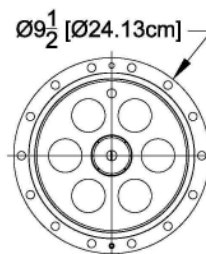
** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

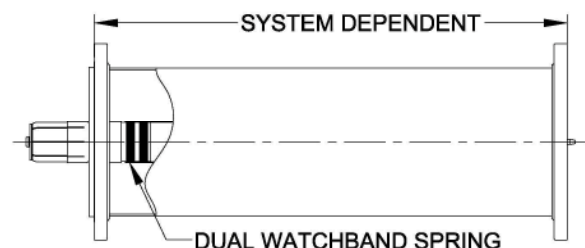
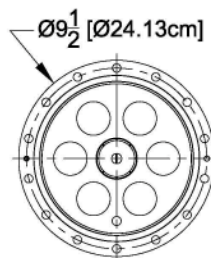
775-002

7 3/16" 75 ohm EIA line assembly of customer specified length, flanged both ends: Includes anchor insulator connector, "O" ring, hardware. 14.9lbs plus 7.6lbs. per foot.



775-003

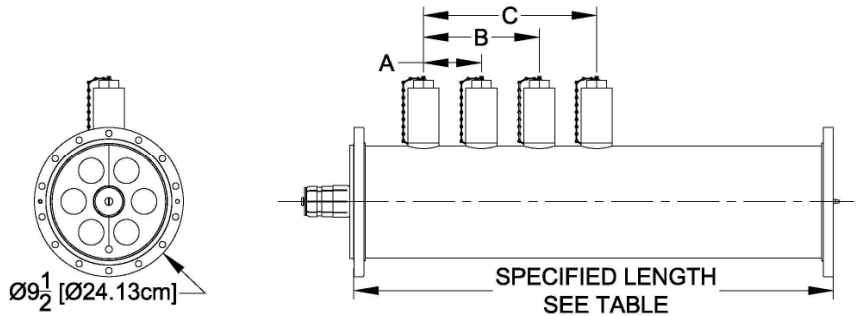
7 3/16" 75 ohm Spectraline Broadband expansion line assembly, flanged: Includes, "O" ring, hardware. Please refer to the Spectraline information section.



775-005

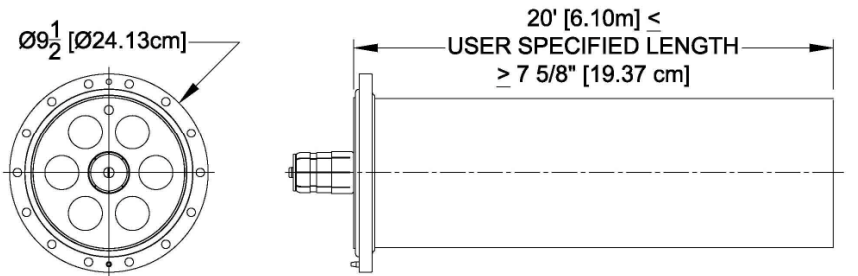
7 3/16" 75 Ohm 4 probe tuning line section, specify length and frequency. Includes anchor insulator with anti-splitting device, "O" ring and hardware.

	A'	B'	C'
Frequencies < 590 MHz	1/8	1/4	3/8
Frequencies > 590 MHz	1/4	5/8	7/8
Minimum Specified Length:			
For Frequencies < 590 MHz = 9" + 3/8			
For Frequencies > 590 MHz = 9" + 7/8			
Maximum Specified Length = 20'			



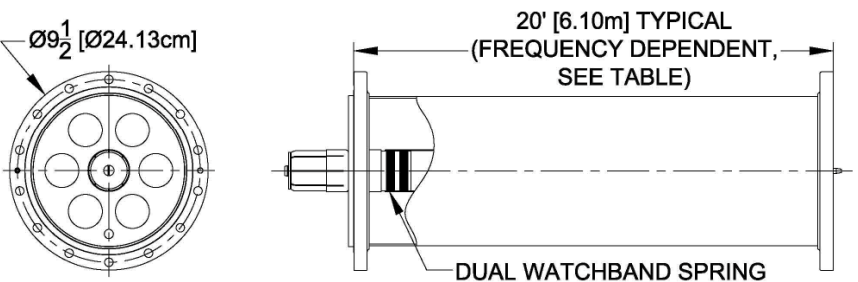
775-006

7 3/16" 75 ohm 20' line assembly, one end flanged. Includes anchor insulator connector with anti splitting device, "O" ring, hardware.



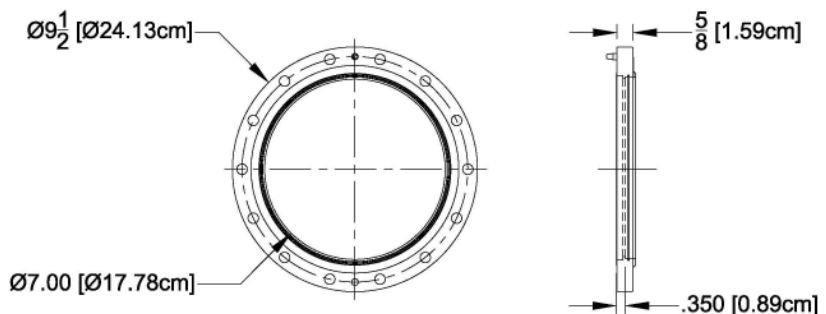
775-007

7 3/16" 75 ohm 20' expansion line assembly, flanged. Includes anchor insulator, "O" ring, hardware. 166lbs. @ 20' See table in engineering section for line length selection.



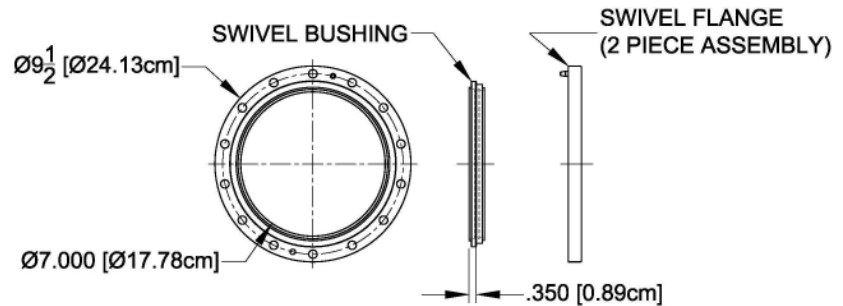
775-008

7 3/16" fixed flange, brass, with silver solder ring insert, for silver brazing. 5.5lbs.

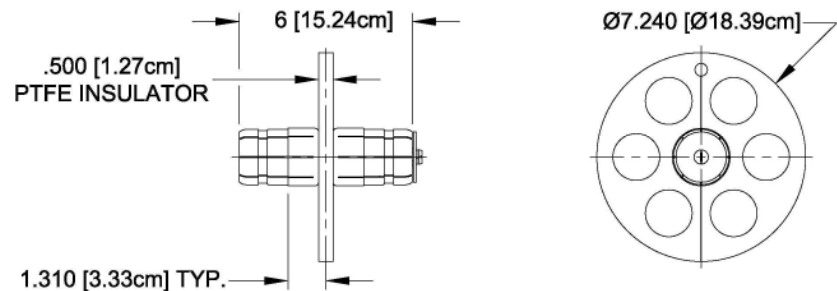


775-009

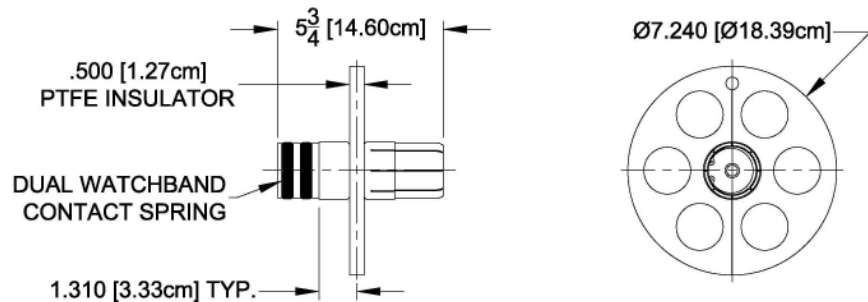
7 3/16" swivel flange, brass, with silver solder ring insert, for silver brazing. 5.5lbs.

**775-010**

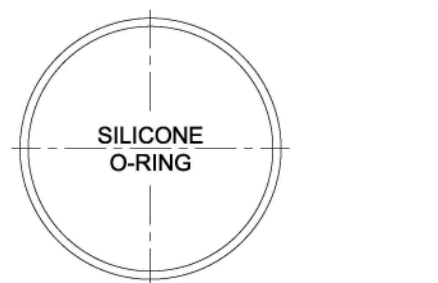
7 3/16" 75 ohm anchor insulator connector with anti-splitting device, silver plated. 2.66lbs.

**775-010-E**

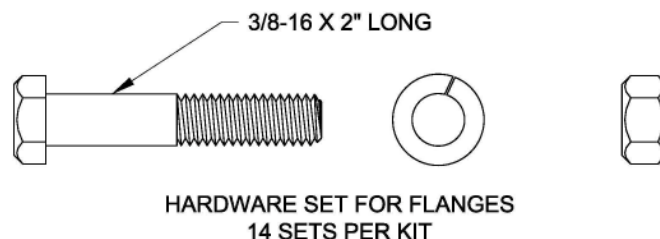
7 3/16" 75 ohm anchor insulator connector, expansion type for use as a spare with 775-007 expansion lines only. 3.55lbs.

**775-011**

7 3/16" "O" ring, silicone.

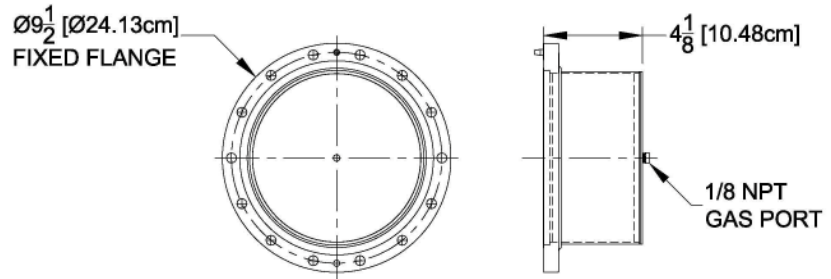
**775-012**

7 3/16" hardware set for flanges, stainless steel. 1.3lbs.



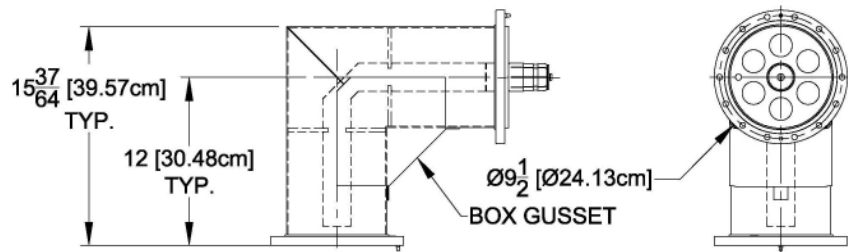
775-015

7 3/16" cover cap, with 1/8" NPT gas inlet plug. 11.82lbs.



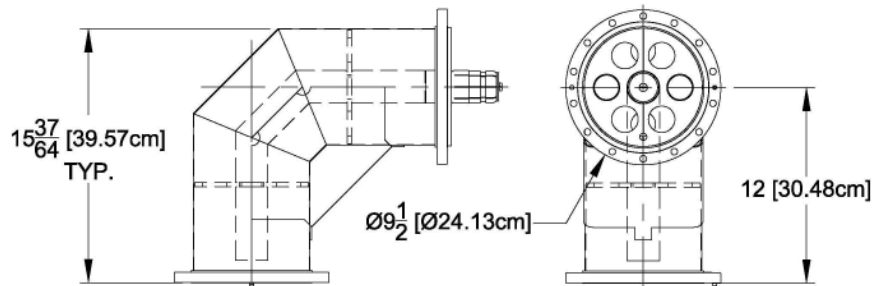
775-021

7 3/16" 75 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 43.1lbs.



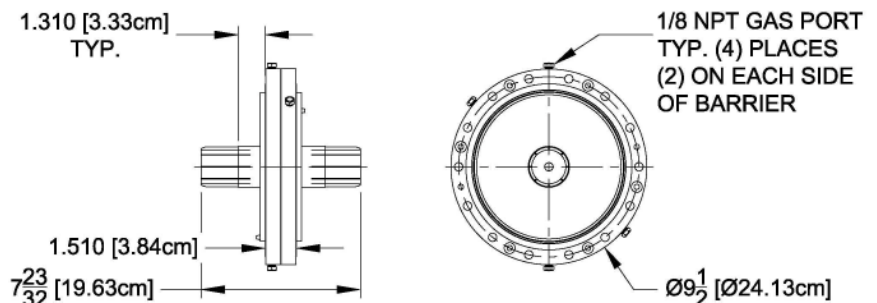
775-024

7 3/16" 75 ohm Spectraline Broadband elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 48lbs.



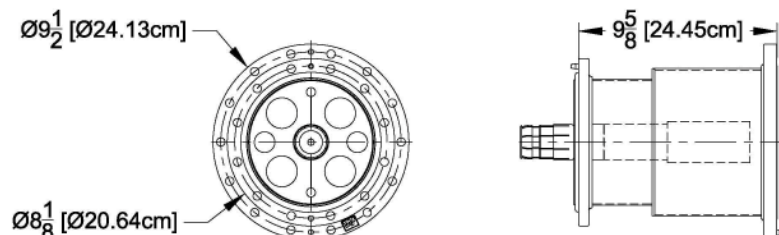
775-050-HD

7 3/16" 75 ohm heavy duty gas barrier, with "O" ring gasket, four 1/8" NPT gas inlet ports, (two on each side of barrier). 18lbs.



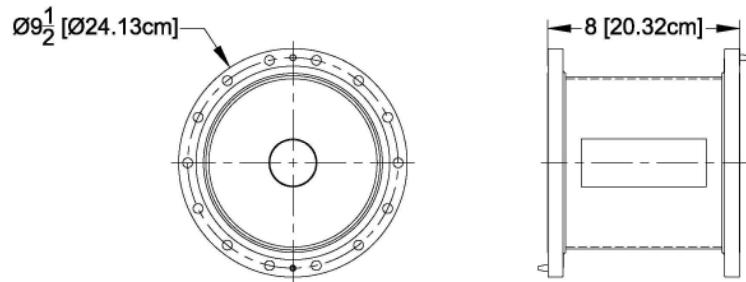
775-065

Step reducer, flanged: 7 3/16" to 6 1/8" 75ohm. Includes 6 1/8" anchor insulator connector with anti-splitting device, "O" ring, hardware. 18.8lbs.



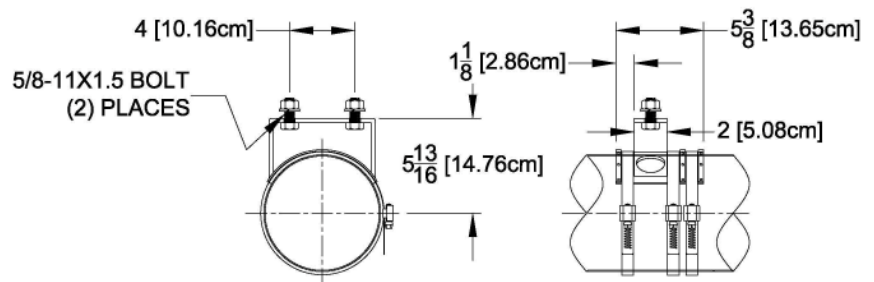
775-078

7 3/16" 75 ohm adapter, male to male, with fixed flanges and unsupported inner conductor. Includes "O" ring gasket and hardware. 16.6lbs.



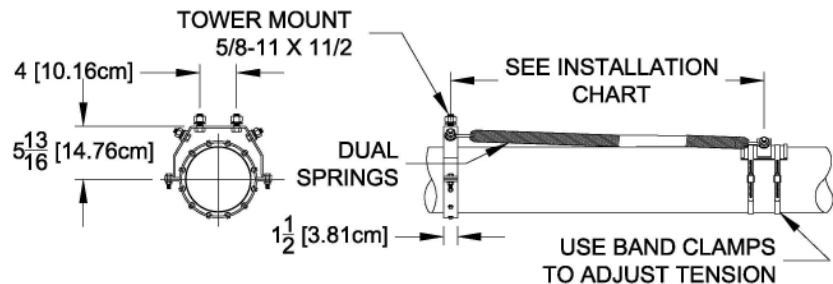
775-042-1

7 3/16" fixed hanger, single line. Includes line clamps and hardware. 9/16" mounting holes. Use one fixed hanger at top of tower for ea. 400 ft of vertical run, (min. requirement, 2 hangers). 5lbs.



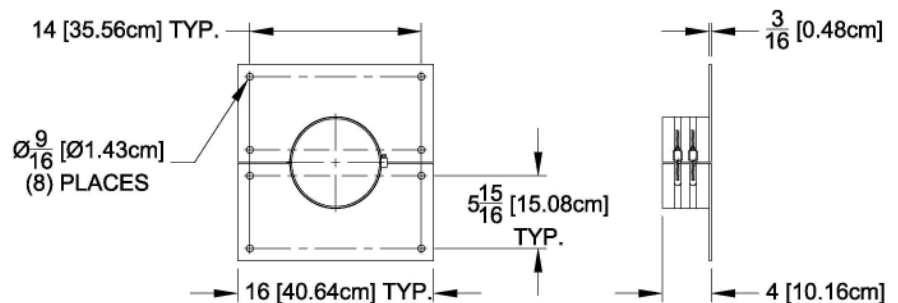
775-042-3

7 3/16" vertical spring suspension hanger, single line, stainless steel. Includes line clamps and hardware. 11.3lbs.



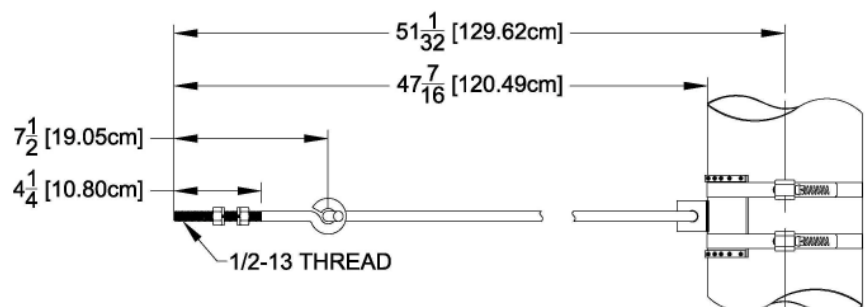
775-042-5

7 3/16" wall anchor plate, single line. Includes line clamp. One plate required for each side of wall. 14.5lbs.



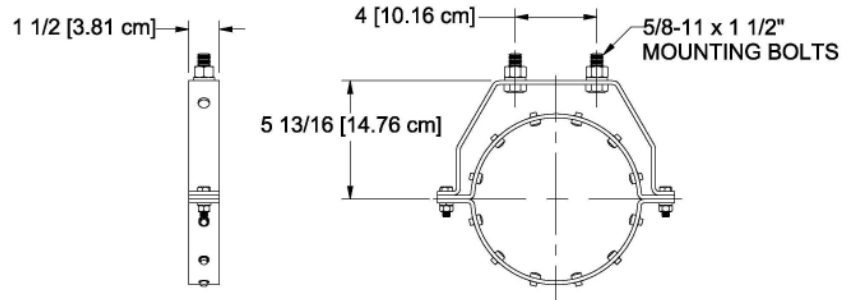
775-042-8

7 3/16" lateral brace for use at base of tower. Includes two line clamps. 5.72lbs.



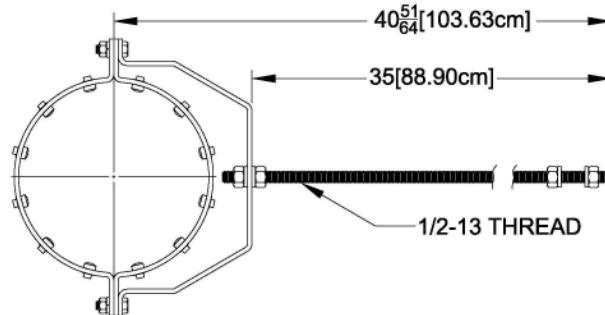
775-042-11

7 3/16" slip hanger, flange mounted. 4.6lbs.



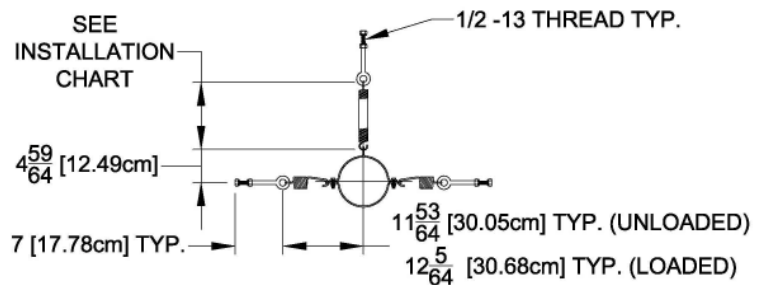
775-042-12

7 3/16" slip hanger, 10" stud mounted. 6.4lbs.



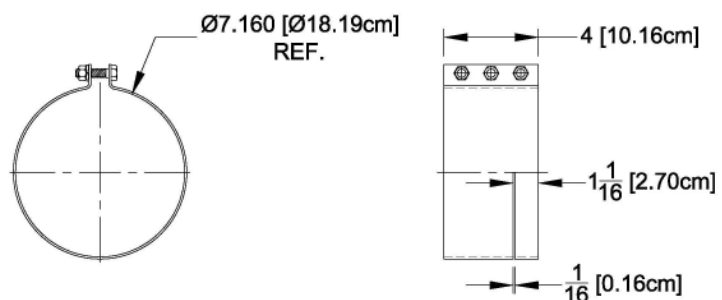
775-042-17

7 3/16" 3-point suspension hanger, single line, stainless steel. Supports 10 ft of horizontal run. 6.9lbs.



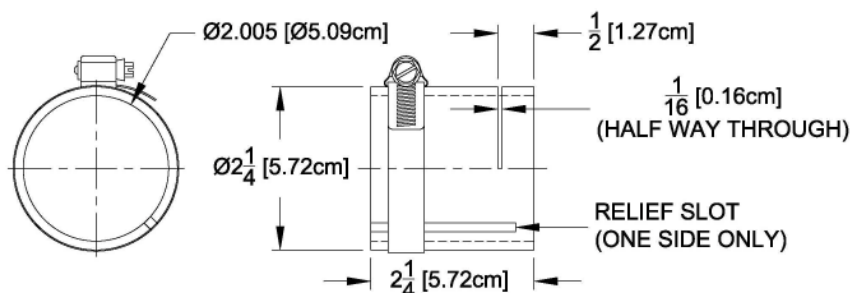
775-042-24

7 3/16" outer conductor cut-off guide. Includes line clamp. 2.7lbs.



775-042-25

7 3/16" 75 ohm inner conductor cut-off guide. Includes line clamp. .7lb.



801 Series 8 3/16" 75 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	75 $\pm$.5 Ohms
Upper Frequency Limit:	* 704 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	47 kV DC
Peak Power Rating	** 1825 kW
VSWR:	*** 1.03:1

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	8.150" (207 mm)
Inside Diameter:	8.000" (203 mm)

Inner Conductor

Outside Diameter :	2.290" (58 mm)
Inside Diameter:	2.236" (57 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.
Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 200 lbs.

* TE11 Mode useful cutoff frequency.

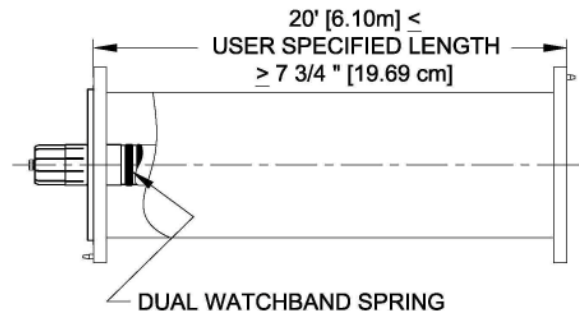
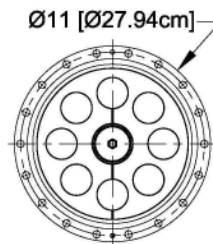
** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

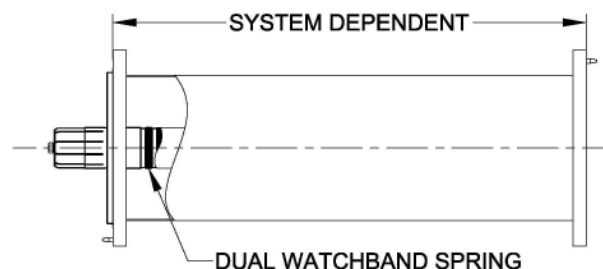
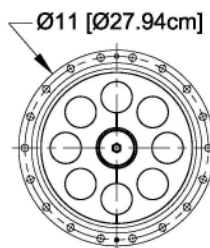
801-002

8 3/16" 75 ohm expansion line assembly of customer specified length, flanged: Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 20.3lbs. plus 9lbs per foot.



801-003

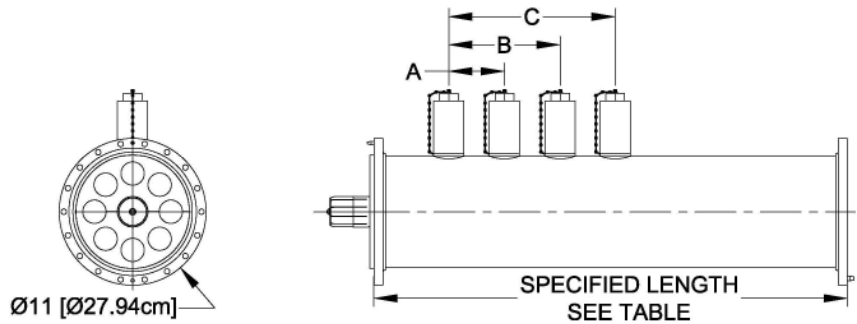
8 3/16" 75 ohm Spectraline Broadband expansion line assembly, flanged: Includes, "O" ring, hardware. Please refer to the Spectraline information section.



801-005

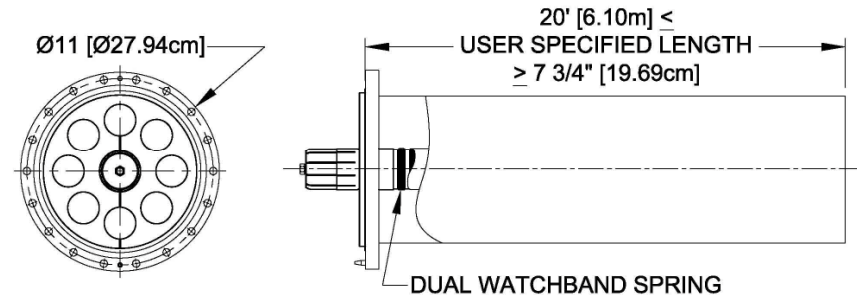
8 3/16" 75 Ohm 4 probe tuning line section, specify length and frequency. Includes anchor insulator with anti-splitting device, "O" ring and hardware.

	A'	B'	C'
Frequencies < 590 MHz	1/8	1/4	3/8
Frequencies > 590 MHz	1/4	5/8	7/8
Minimum Specified Length:			
For Frequencies < 590 MHz = 9" + 3/8			
For Frequencies > 590 MHz = 9" + 7/8			
Maximum Specified Length = 20'			



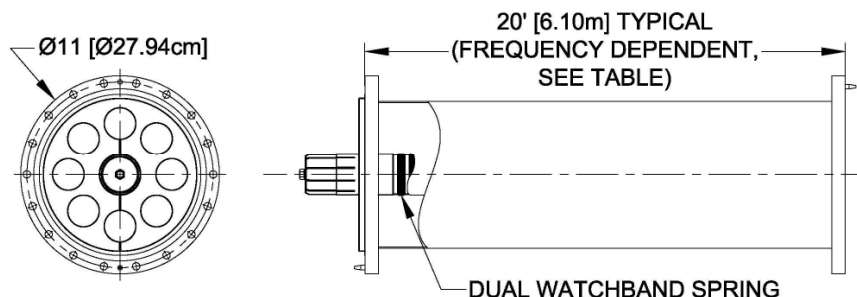
801-006

8 3/16" 75 ohm 20' line assembly, one end flanged. Customer specified length. Includes anchor insulator connector with anti splitting device, "O" ring, hardware. 193lbs.



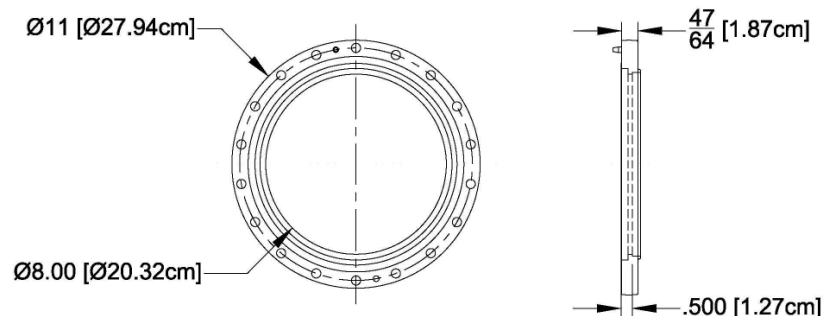
801-007

8 3/16" 75 ohm 20' expansion line assembly, flanged. Includes anchor insulator, "O" ring, hardware. 200lbs. @ 20' See table in engineering section for line length selection.



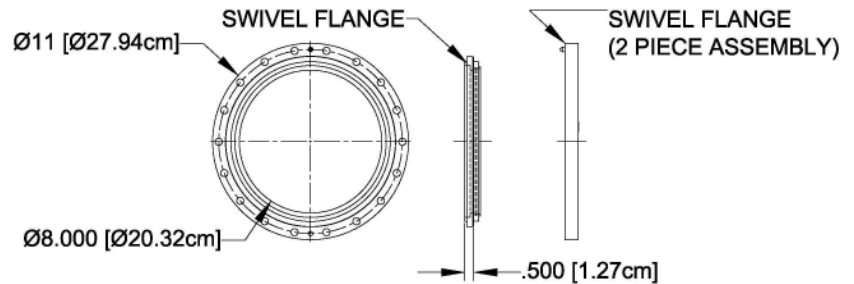
801-008

8 3/16" fixed flange. 7.5lbs.

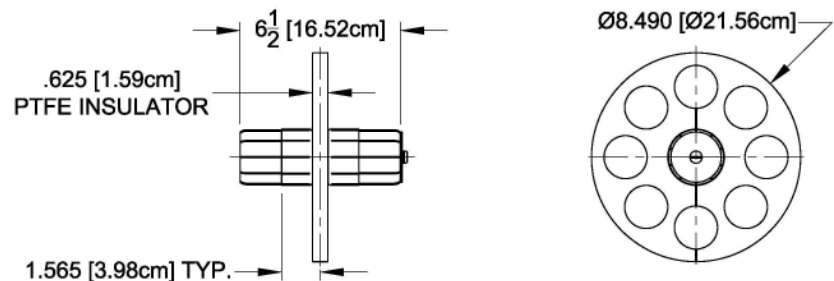


801-009

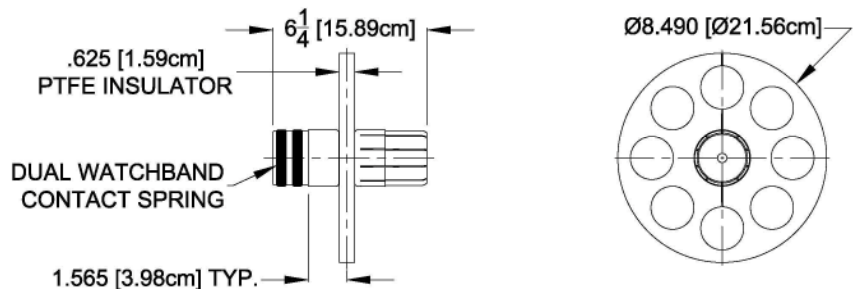
8 3/16" swivel flange. 7.5lbs.

**801-010**

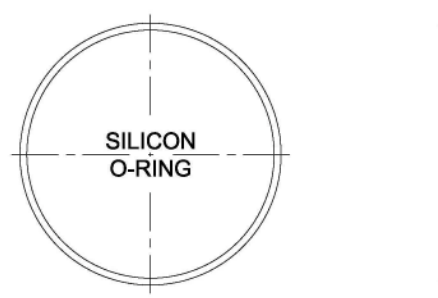
8 3/16" 75 ohm anchor insulator connector with anti-splitting device, silver plated. 5.25lbs.

**801-010-E**

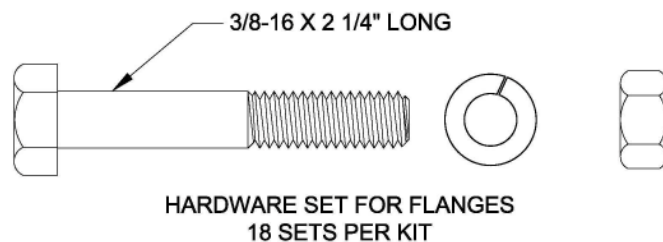
8 3/16" 75 ohm anchor insulator connector, expansion type for use as a spare with 775-007 expansion lines only. 3.55lbs.

**801-011**

8 3/16" "O" ring, silicone.

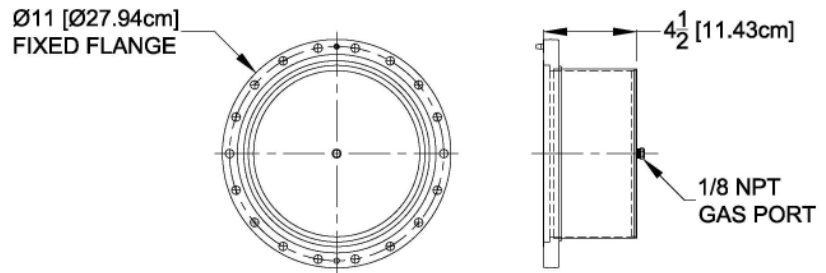
**801-012**

8 3/16" hardware set for flanges, stainless steel. 2lbs.



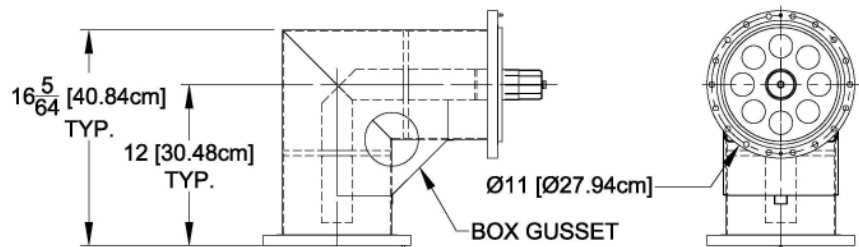
801-015

8 3/16" cover cap with 1/8" NPT gas inlet plug. Weight 11lbs.



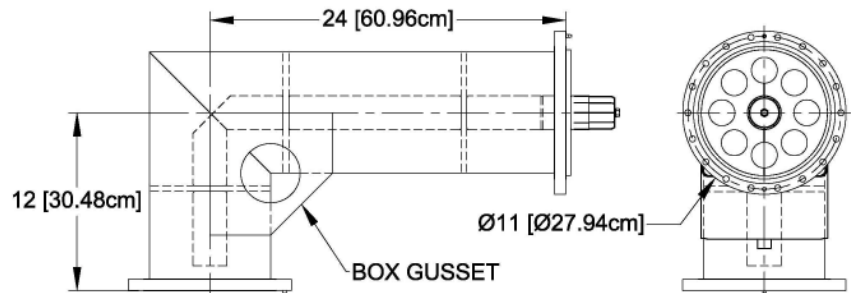
801-021

8 3/16" 75 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 55lbs.



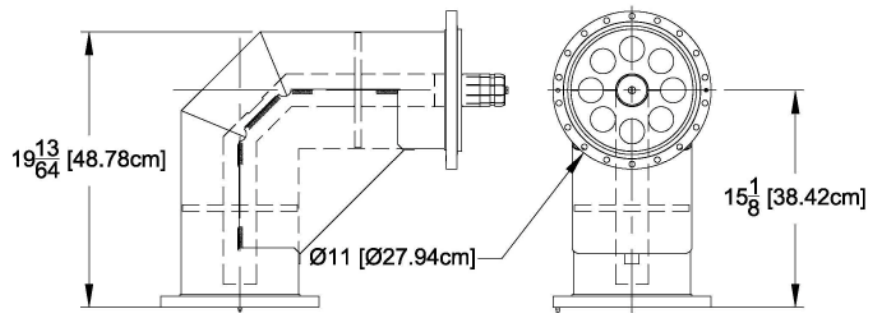
801-023

8 3/16" 75 ohm elbow, 90 degree, swivel flanged, unequal leg, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 60lbs.



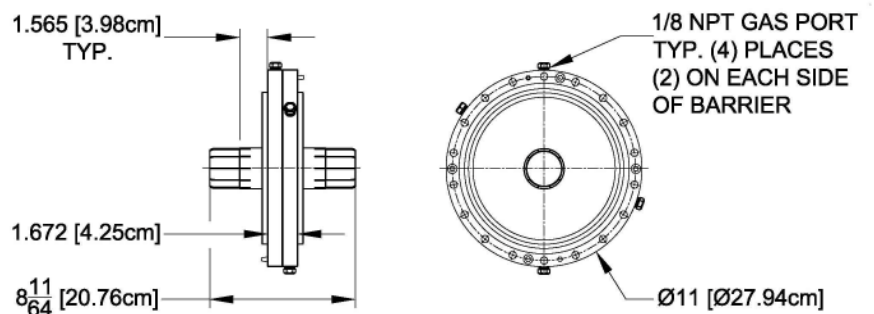
801-024

8 3/16" 75 ohm Spectraline Broadband elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 48lbs.



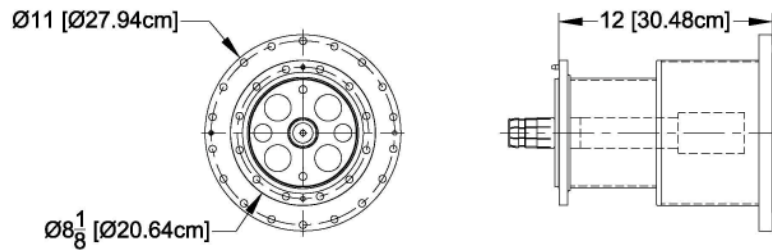
801-050-HD

8 3/16" 75 ohm heavy duty gas barrier, with "O" ring gasket, four 1/8" NPT gas inlet ports, (two on each side of barrier). 18lbs.



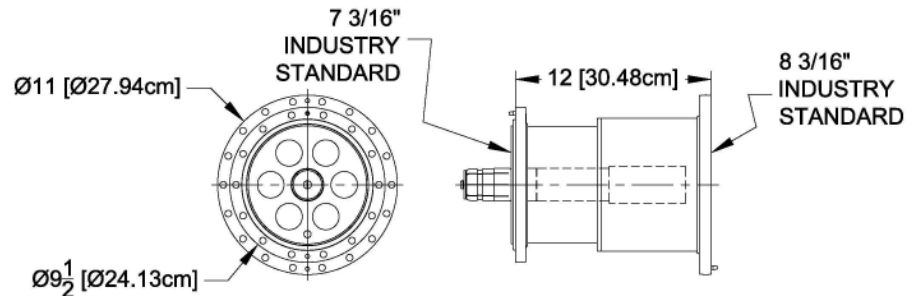
801-065

Step reducer, flanged: 8 3/16" 75 ohm to 6 1/8" 75 ohm. Includes 6 1/8" 75 ohm anchor insulator connector with anti-splitting device, "O" ring, hardware. 47lbs.



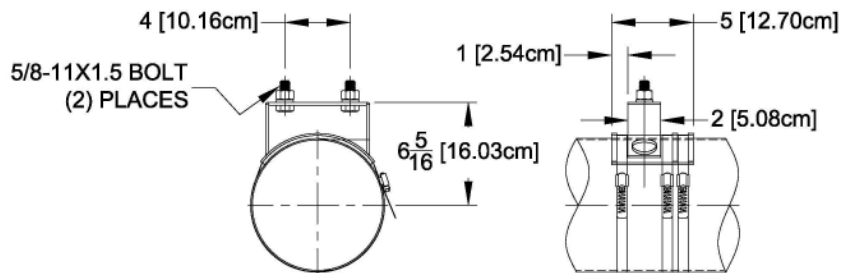
801-067

Reducer, flanged: 8 3/16" 75 ohm to 7 3/16" 75 ohm. Includes 7 3/16" anchor insulator connector with anti-splitting device, "O" ring, hardware. 28.5lbs.



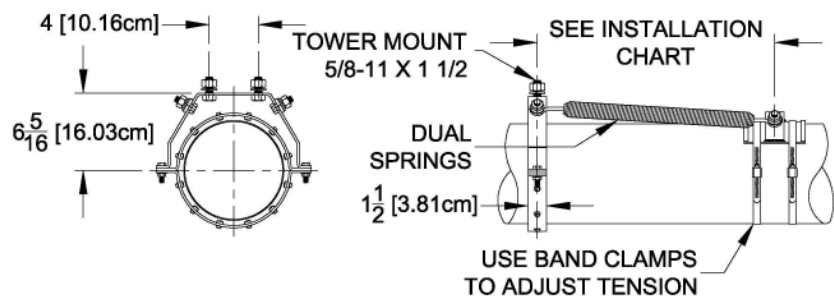
801-042-1

8 3/16" Vertical fixed hanger, single line. Includes line clamps and hardware. Use one fixed hanger at top of tower for ea. 400 ft of vertical run, (min. requirement, 2 hangers). 4.4lbs.



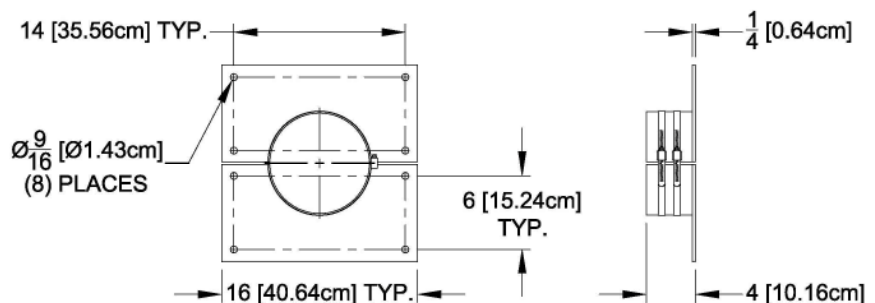
801-042-3

8 3/16" vertical spring suspension hanger, single line, stainless steel. Includes line clamps and hardware. Two 11/16 mounting holes, centers 4.00" apart. 13.15 lbs.



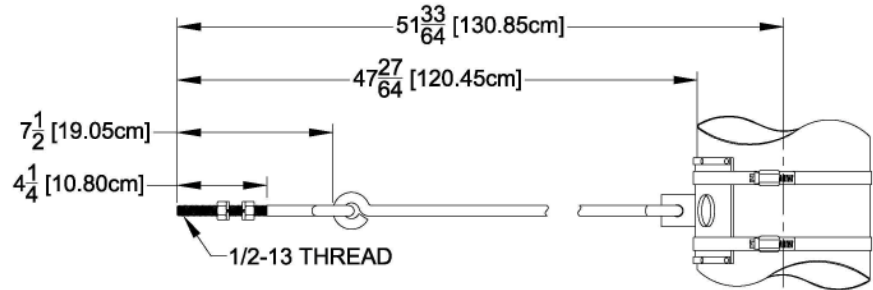
801-042-5

8 3/16" wall anchor plate, single line. Includes line clamps. One plate required for each side of wall. 12lbs.



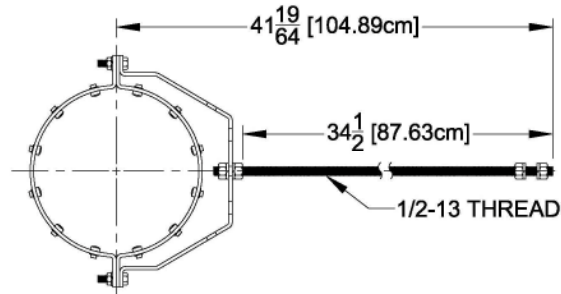
801-042-8

8 3/16" lateral brace for use at base of tower. Includes two line clamps.



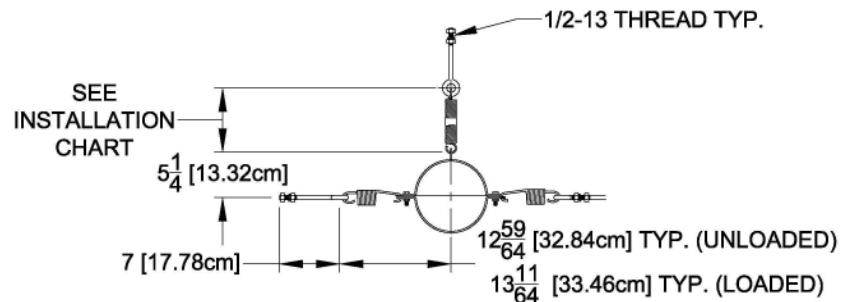
801-042-12

8 3/16" slip hanger, stud mounted. 6.8lbs.



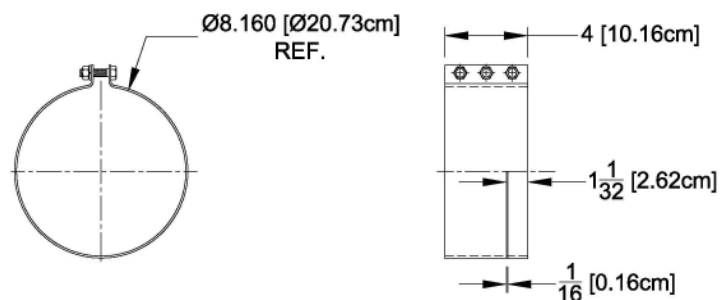
801-042-17

8 3/16" 3-point suspension hanger, single line, stainless steel. Supports 10 ft of horizontal run. 8lbs.



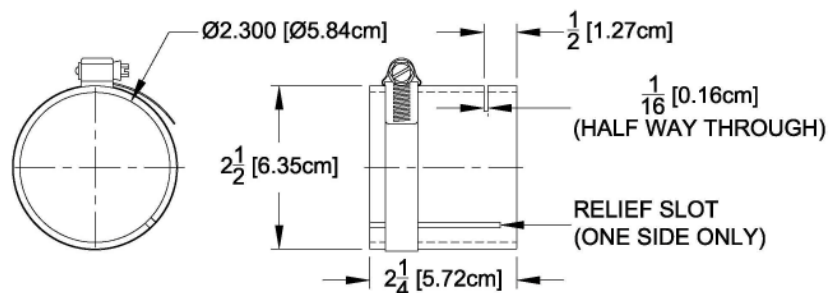
801-042-24

8 3/16" outer conductor cut-off guide. Includes line clamp. 2.7lbs.



801-042-25

8 3/16" 75 ohm inner conductor cut-off guide. Includes line clamp. .7lb.



901 Series 9 3/16" 50 Ohm * Rigid Coaxial * Transmission Line and Components

Electrical Characteristics

Impedance:	50 $\pm$.5 Ohms
Upper Frequency Limit:	* 552 MHz
Velocity of Propagation:	99.8% free space
Production Test Voltage:	52 kV DC
Peak Power Rating	** 3296 kW
VSWR:	*** 1.03:1

Inner Conductor

Outside Diameter :	3.910" (99 mm)
Inside Diameter:	3.812" (97 mm)

Insulator Supports: Virgin PTFE locked Teflon cross pins, spaced according to frequency.
Locked pin design ensures concentricity, eliminates sagging.

20' Line Assembly Net Weight: 215 lbs.

Mechanical Characteristics

High conductivity hard drawn copper tube.

Outer Conductor

Outside Diameter :	9.166" (232 mm)
Inside Diameter:	9.000" (228 mm)

* TE11 Mode useful cutoff frequency.

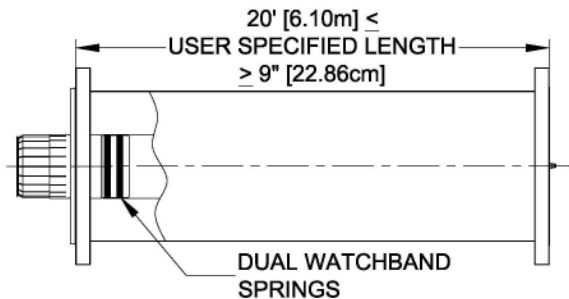
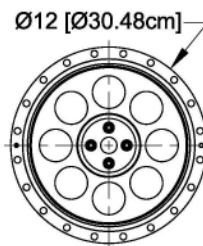
** Based on Production Test Voltage, dry air at sea level atmospheric pressure and includes a safety factor of 2.

*** Typical, 100', matched load @ 450 MHz

Note: Metric dimensions are rounded off conversions for reference purposes. Component drawings not to scale.

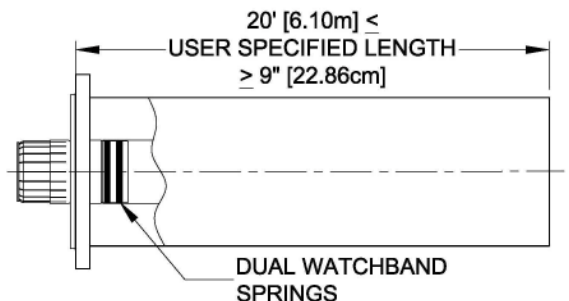
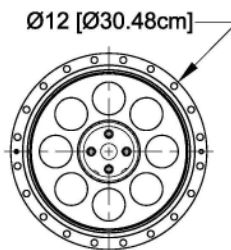
901-002

9 3/16" 50 ohm expansion line assembly of customer specified length, flanged: Includes anchor insulator connector with anti-splitting device, "O" ring, hardware. 9.7lbs. plus 6.3lbs. per foot.



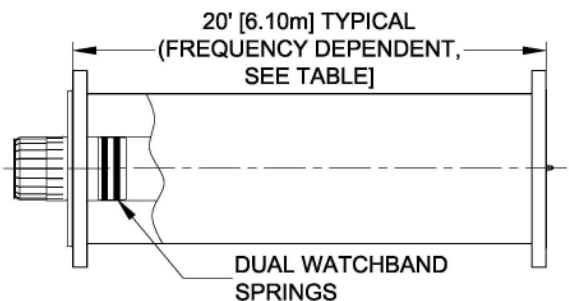
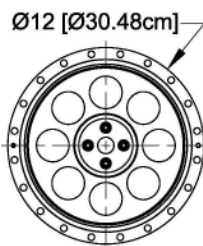
901-006

9 3/16" 50 ohm 20' line assembly of customer specified length, one end flanged: Includes anchor insulator connector with anti splitting device, "O" ring, hardware. 207.5lbs.



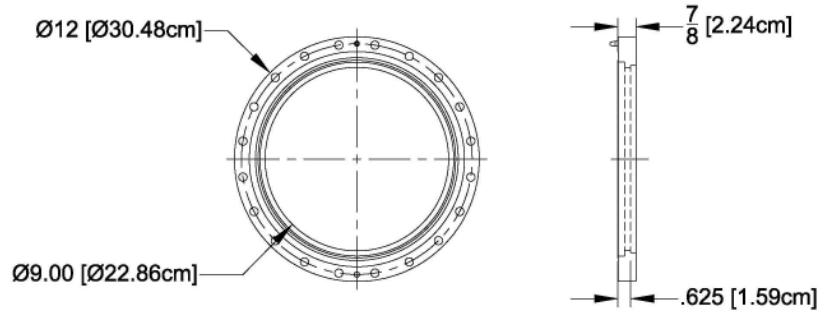
901-007

9 3/16" 50 ohm 20' expansion line assembly, flanged. Includes anchor insulator, "O" ring, hardware. 215lbs. @ 20' See table in engineering section for line length selection.



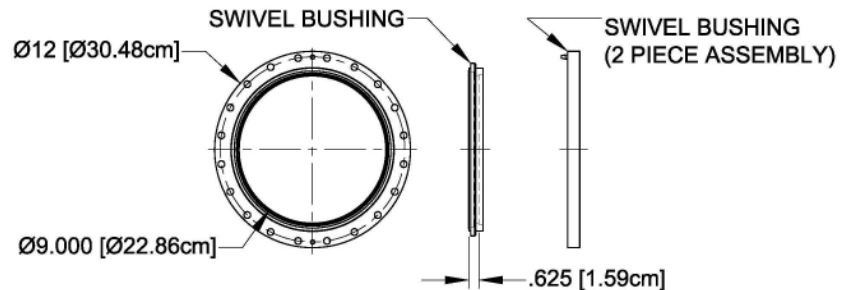
901-008

9 3/16" fixed flange. 8.15lbs.



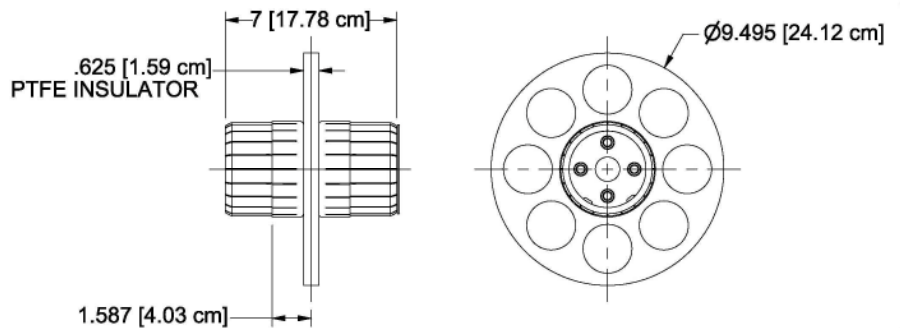
901-009

9 3/16" swivel flange. 8.15lbs.



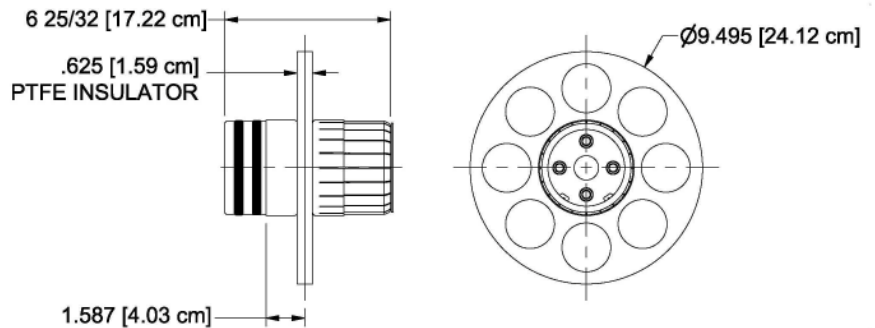
901-010

9 3/16" 50 ohm anchor insulator connector, silver plated. 10.5lbs.



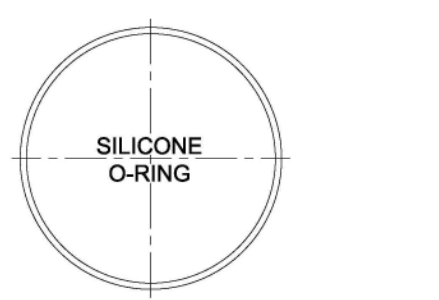
901-010-E

9 3/16" 50 ohm anchor insulator connector, expansion type, for use as a spare with 901-007 expansion lines only. 11lbs.



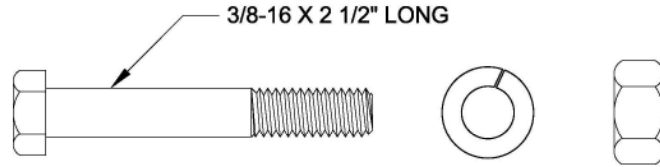
901-011

9 3/16" "O" ring, silicone.



901-012

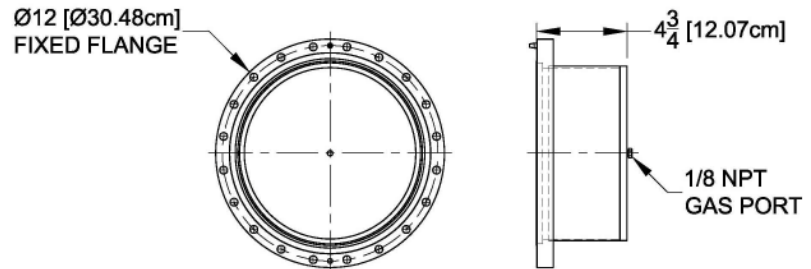
9 3/16" hardware set for flanges, stainless steel. 2lbs.



HARDWARE SET FOR FLANGES
20 SETS PER KIT

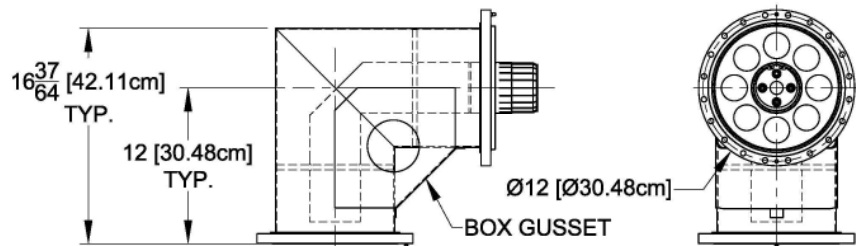
901-015

9 3/16" cover cap with 1/8" NPT gas inlet plug. Weight 11lbs.



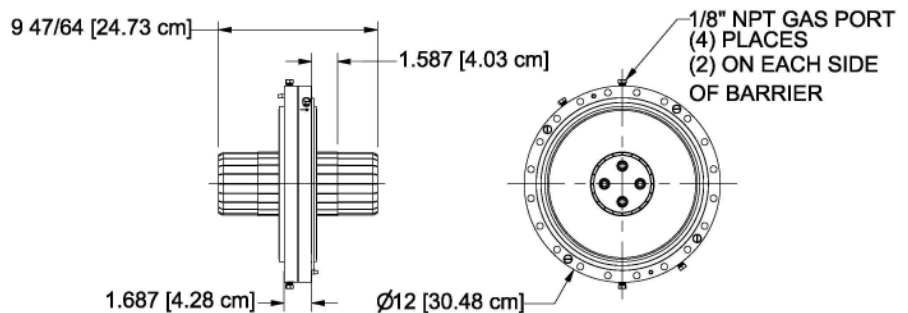
901-021

9 3/16" 50 ohm elbow, 90 degree, swivel flanged, reinforced inside and outside. Includes watchband type anchor insulator connector, "O" ring, hardware. 81lbs.



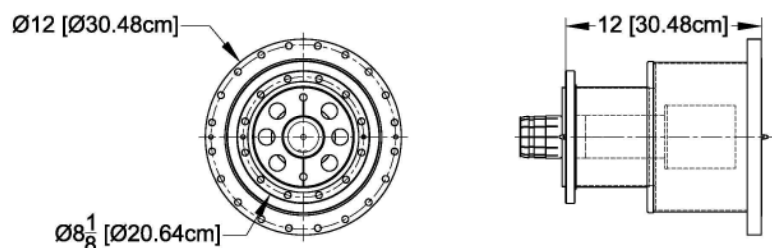
901-050-HD

9 3/16" 50 ohm heavy duty gas barrier, with "O" ring gasket, four 1/8" NPT gas inlet ports, (two on each side of barrier). 18lbs.



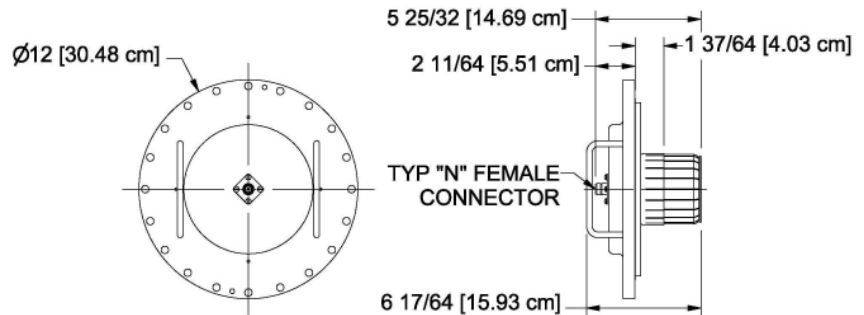
901-065

Step reducer, flanged: 9 3/16" 50 ohm to 6 1/8" 50 ohm. Includes 6 1/8" 50 ohm anchor insulator connector with anti-splitting device, "O" ring, hardware. 34lbs.



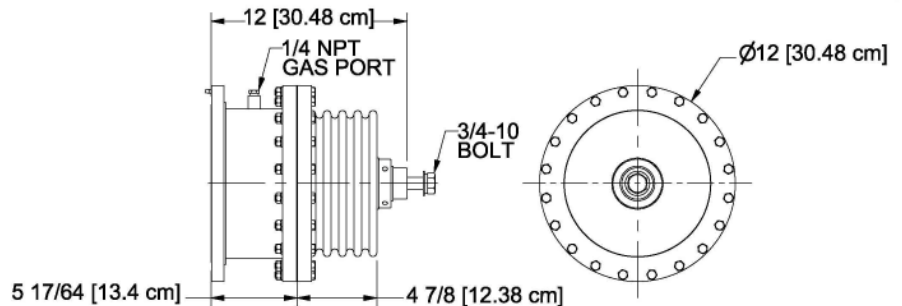
911-066

9 3/16" 50 ohm to type 'N' plate reducer. 12lbs.



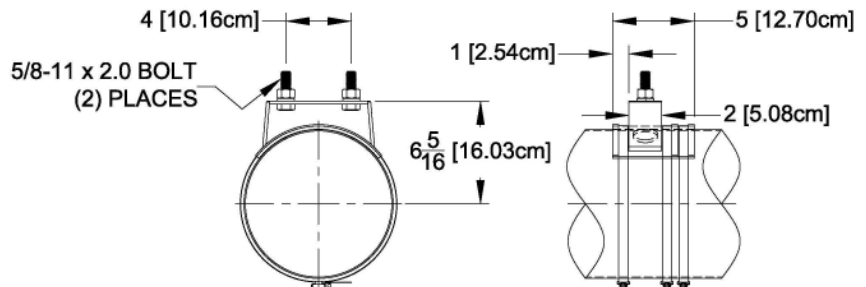
901-080

9 3/16" 50 ohm end seal assembly with NPT gas inlet port. Includes "O" ring gasket and hardware. 61lbs.



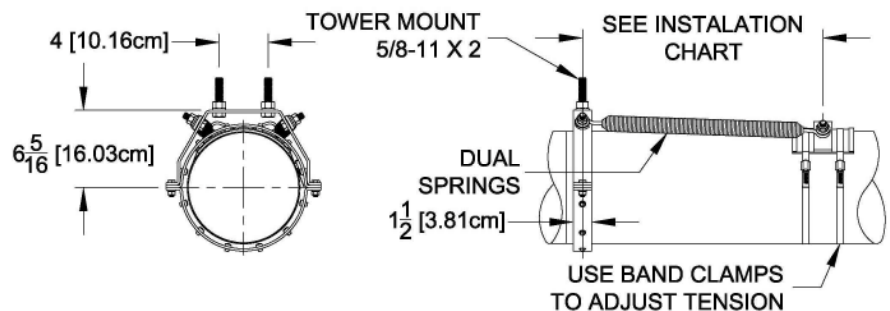
901-042-1

9 3/16" Vertical fixed hanger, single line. Includes line clamps and hardware. Use one fixed hanger at top of tower for each 400' of vertical run, (min. requirement, 2 hangers). 4.4lbs.



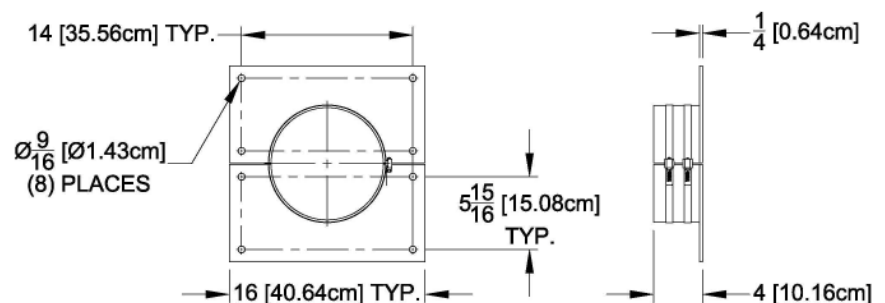
901-042-3

9 3/16" vertical spring suspension hanger, single line, stainless steel. Includes line clamps and hardware. Two 11/16 mounting holes, centers 4.00" apart. 12 lbs.



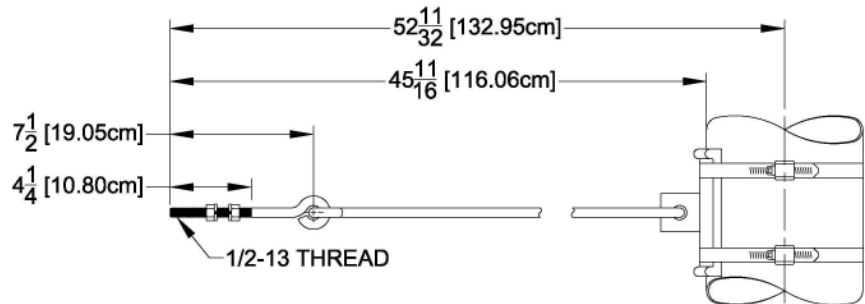
901-042-5

9 3/16" wall anchor plate, single line. Includes line clamps. One plate required for each side of wall. 14.25lbs.



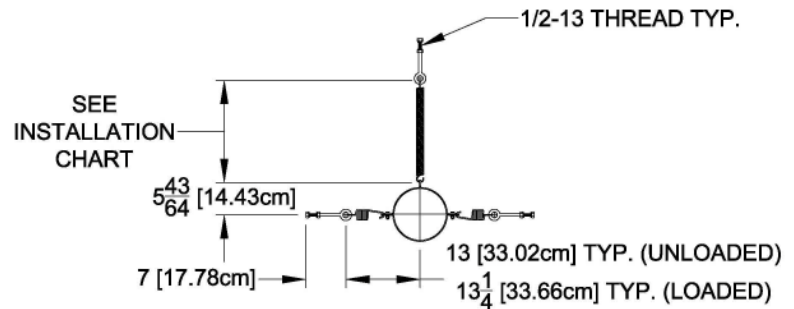
901-042-8

9 3/16" lateral brace for use at base of tower. Includes two line clamps.



901-042-17

9 3/16" 3-point suspension hanger, single line, stainless steel. Supports 10 ft of horizontal run. 8.5lbs.



Standard WR1150 Rectangular Waveguide Components

- High Power UHF Applications
- Indoor Unpressurized Applications Only
- Low Insertion Loss
- Used in Filter System and Power Combiner and Channel Combiner applications
- Aluminum Alloy 6061-T6, RoHS Chemical Film compliant protected

Specifications:

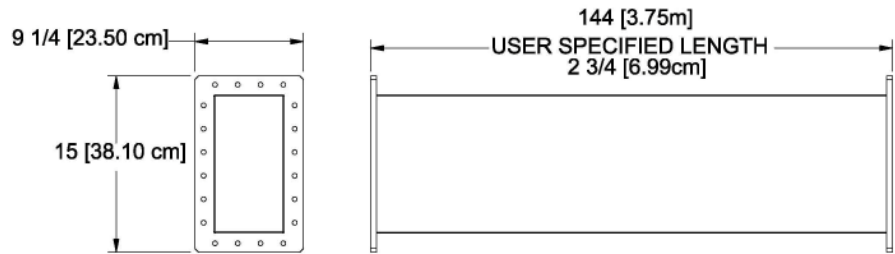
Recommended Frequency Range	650 – 880MHz
Peak Power at Sea Level	35 Megawatts
Maximum Altitude	10,000 feet
Maximum Average Power @ 653 MHz	652 Kilowatts
Attenuation @ 653 MHz, see note 1	0.1307 dB/100ft
Maximum Average Power @ 731 MHz	302 Kilowatts
Attenuation @ 731 MHz, see note 1	0.1108 dB/100ft
Maximum Average Power @ 803 MHz	302 Kilowatts
Attenuation @ 803 MHz, see note 1	0.1015 dB/100ft

Notes:

1. Attenuation based on 40°C (104°F) ambient temperature at sea level atmospheric pressure, VSWR = 1.0:1

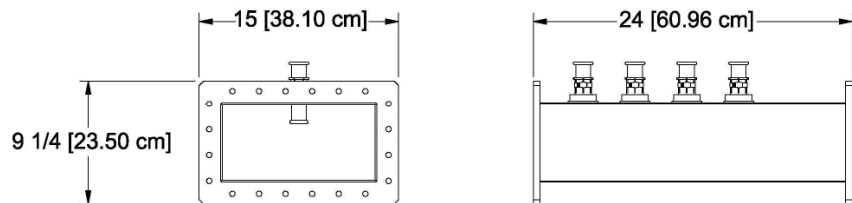
WR1150-002-000

WR1150 straight line section of user specified length.



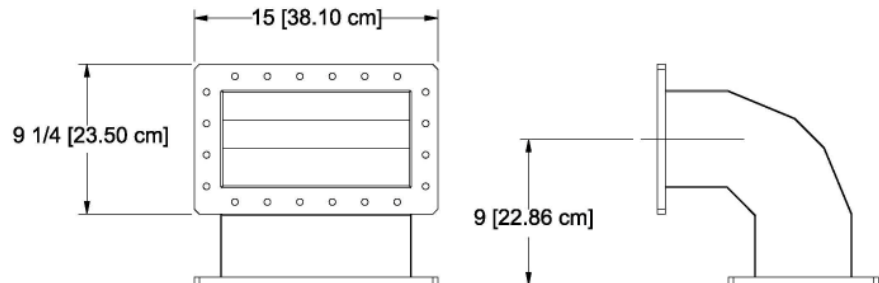
WR1150-U05-000

WR1150 fine matcher section



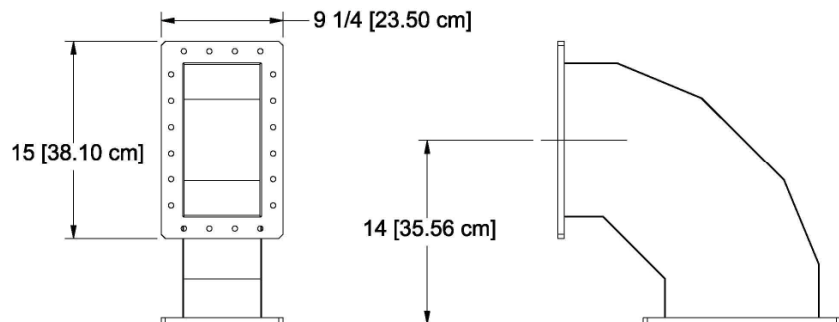
WR1150-E22

WR1150 double mitered broadband "E" plane 90 deg. elbow



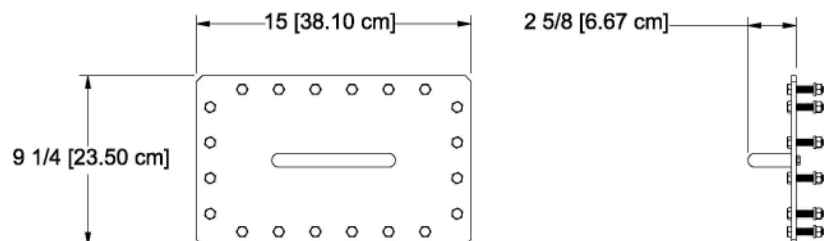
WR1150-H22

WR1150 double mitered broadband "H" plane 90 deg. Elbow



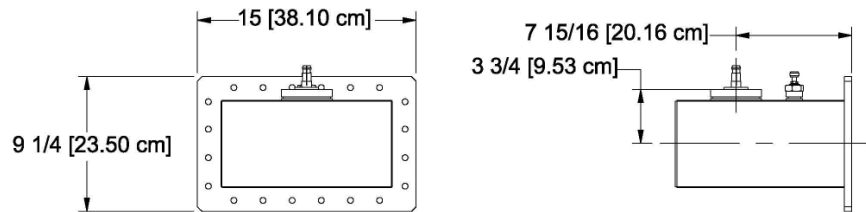
WR1150-015

WR1150 shorting plate



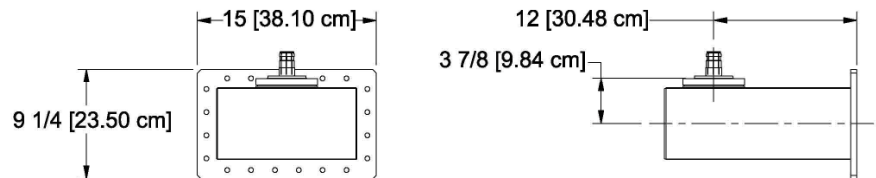
WR1150-055-2S

WR1150 side fire transition
1 5/8 EIA with voltage probe



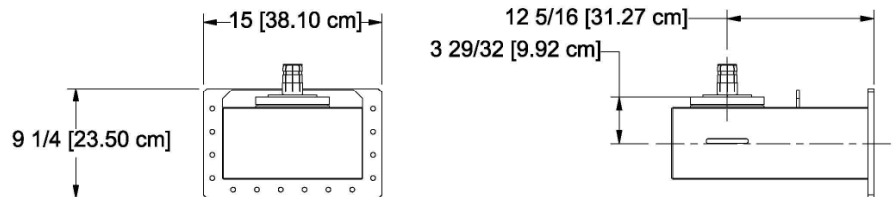
WR1150-055-3S

WR1150 side fire transition
3 1/8 EIA



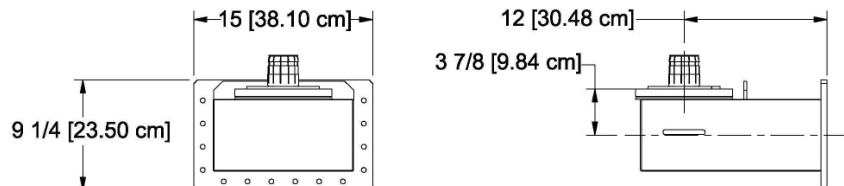
WR1150-055-4S

WR1150 side fire transition
4 1/16 EIA



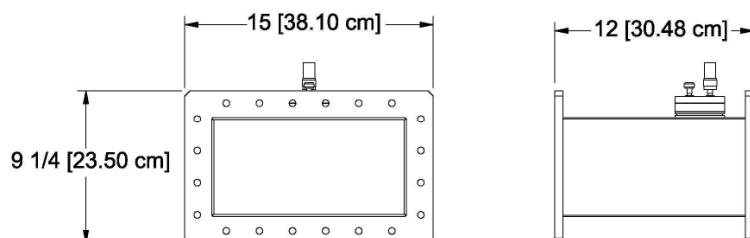
WR1150-055-5S

WR1150 side fire transition
6 1/8 50ohm EIA



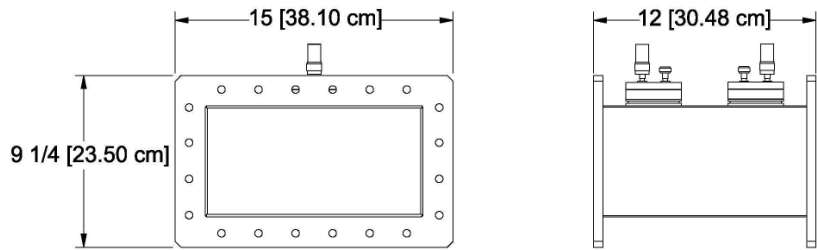
WR1150-100-1

WR1150 single coupler section
high directivity



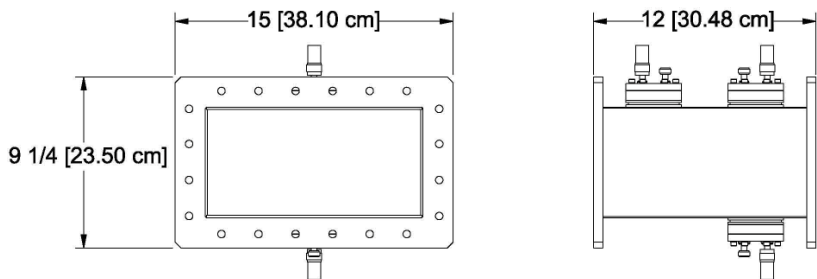
WR1150-100-2

WR1150 dual coupler section
high directivity



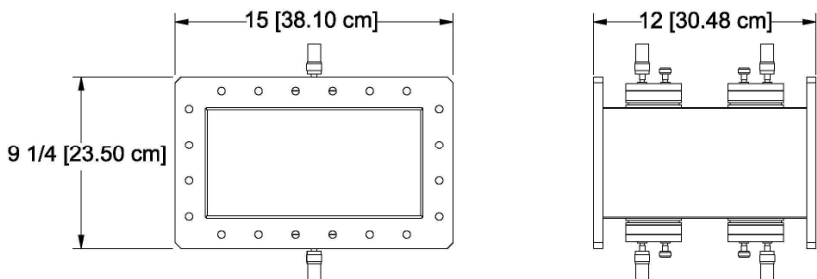
WR1150-100-3

WR1150 triple coupler section
high directivity



WR1150-100-4

WR1150 quad coupler section
high directivity



Standard WR1500 Rectangular Waveguide Components

- High Power UHF Applications
- Indoor Unpressurized Applications Only
- Low Insertion Loss
- Used in Filter System and Power Combiner and Channel Combiner applications
- Aluminum Alloy 6061-T6, RoHS Chemical Film compliant protected

Specifications:

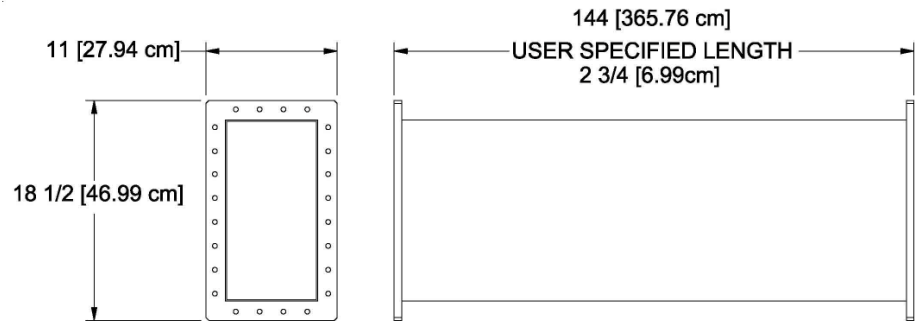
Recommended Frequency Range	494 – 680MHz
Peak Power at Sea Level	55 Megawatts
Maximum Altitude	10,000 feet
Maximum Average Power @ 509 MHz	1300 Kilowatts
Attenuation @ 509 MHz, see note 1	0.0851 dB/100ft
Maximum Average Power @ 569 MHz	975 Kilowatts
Attenuation @ 569 MHz, see note 1	0.0731 dB/100ft
Maximum Average Power @ 629 MHz	650 Kilowatts
Attenuation @ 629 MHz, see note 1	0.0671 dB/100ft

Notes:

1. Attenuation based on 40°C (104°F) ambient temperature at sea level atmospheric pressure, VSWR = 1.0:1

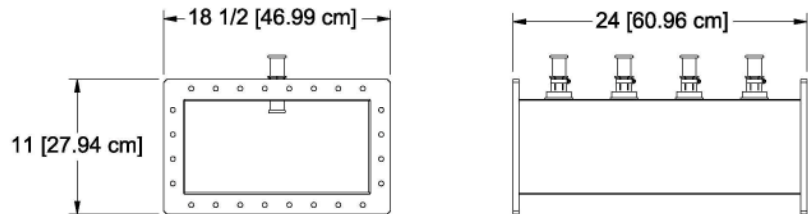
WR1500-002-000

WR1500 straight line section of user specified length.



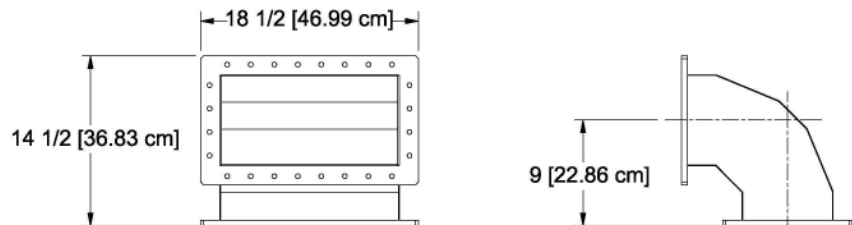
WR1500-U05-000

WR1500 fine matcher section



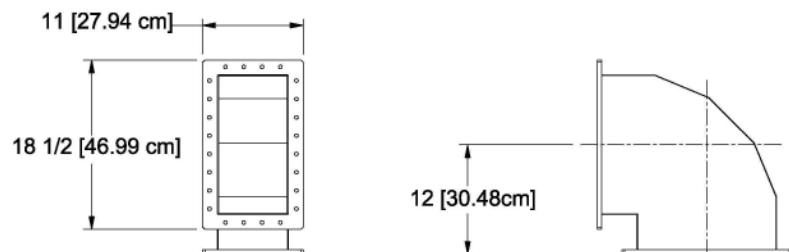
WR1500-E22

WR1500 double mitered broadband "E" plane 90 deg. elbow



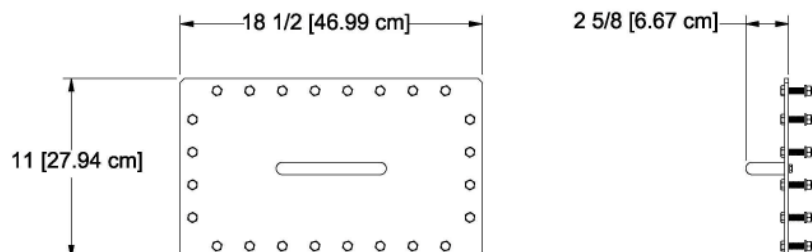
WR1500-H22

WR1500 double mitered broadband "H" plane 90 deg. Elbow



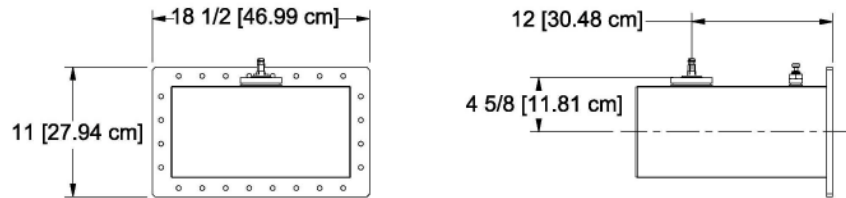
WR1500-015

WR1500 shorting plate



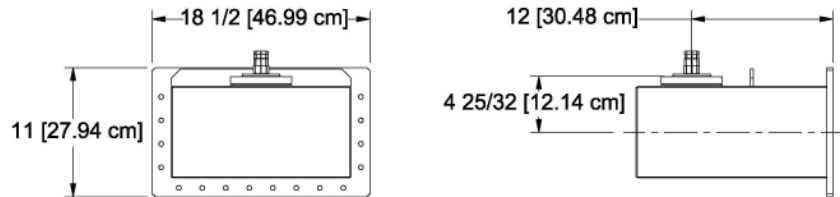
WR1500-055-2S

WR1500 side fire transition
1 5/8 EIA with voltage probe



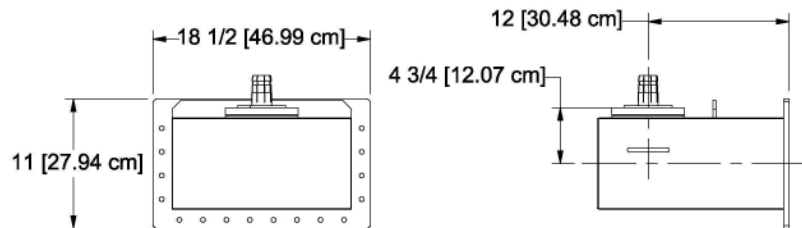
WR1500-055-3S

WR1500 side fire transition
3 1/8 EIA



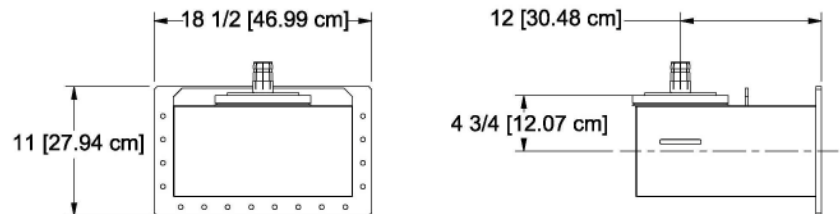
WR1500-055-4S

WR1500 side fire transition
4 1/16 EIA



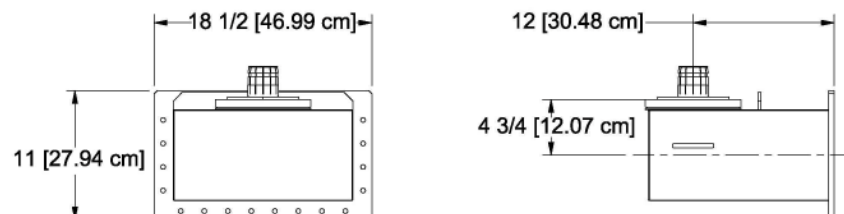
WR1500-055-5S

WR1500 side fire transition
6 1/8 75ohm EIA



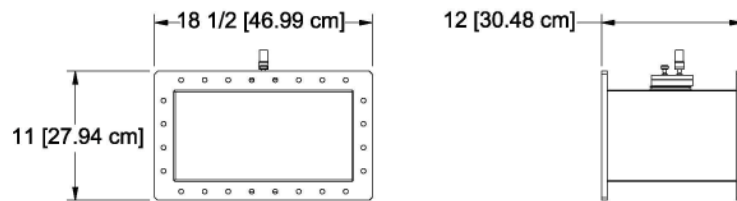
WR1500-055-6S

WR1500 side fire transition
6 1/8 50ohm EIA



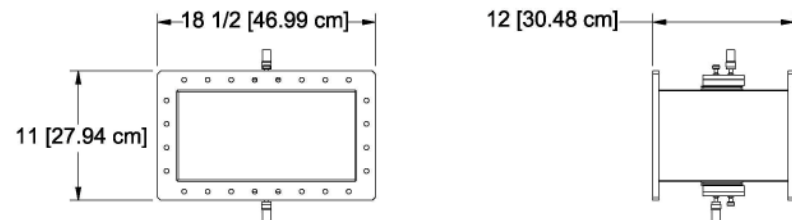
WR1500-100-1

WR1500 single coupler
section high directivity



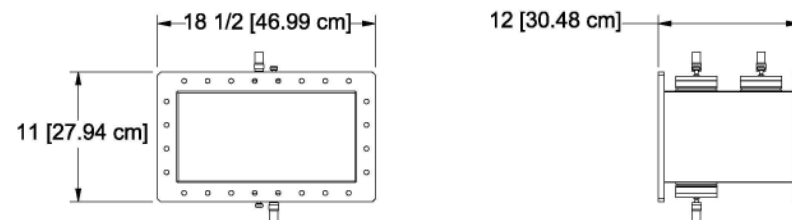
WR1500-100-2

WR1500 dual coupler
section high directivity



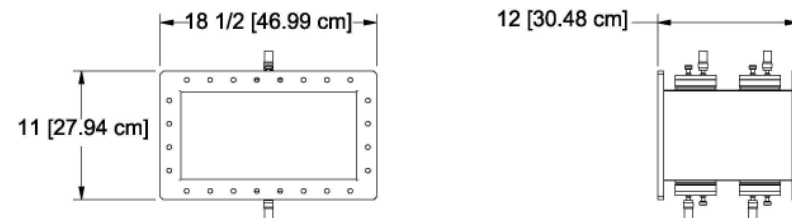
WR1500-100-3

WR1500 triple coupler
section high directivity



WR1500-100-4

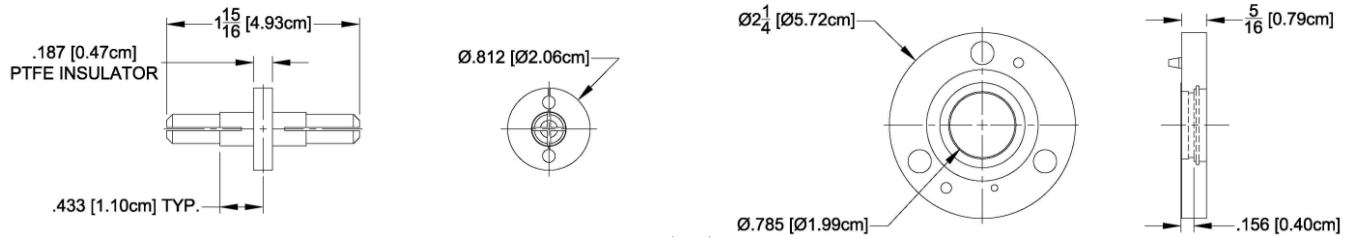
WR1500 quad coupler
section high directivity



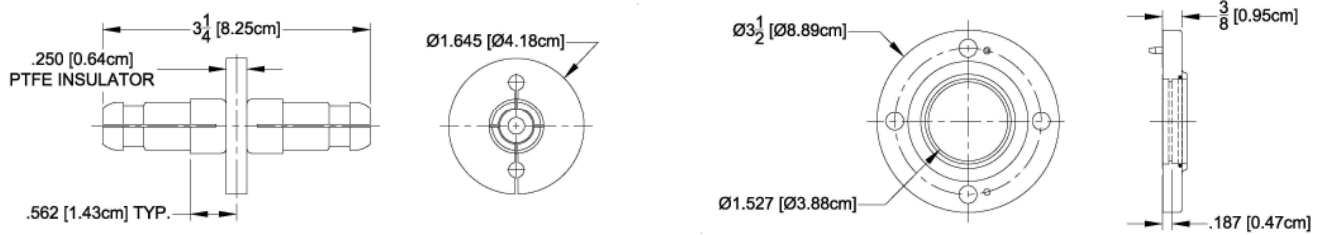
[illegible]

Connectors & Flanges

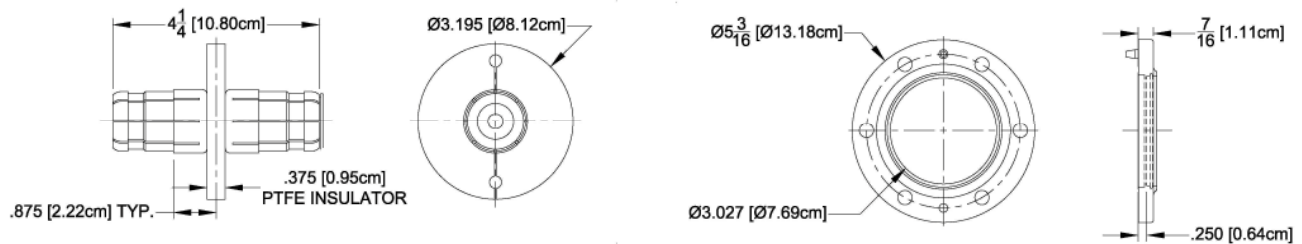
7/8, 50 Ohm



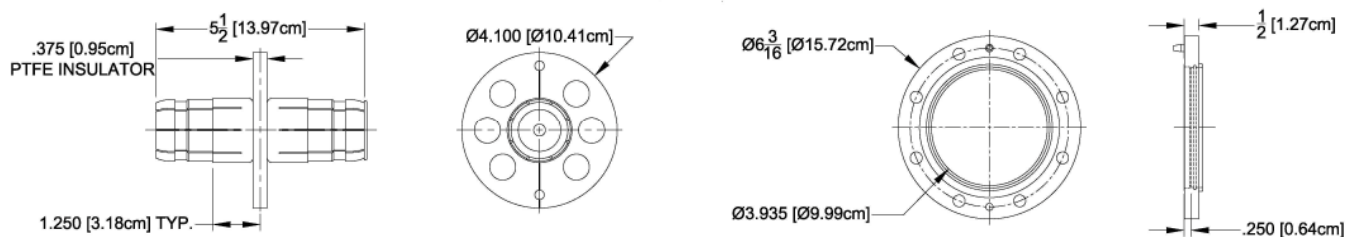
1 5/8, 50 Ohm



3 1/8, 50 Ohm

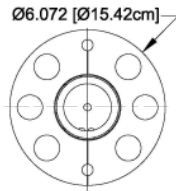
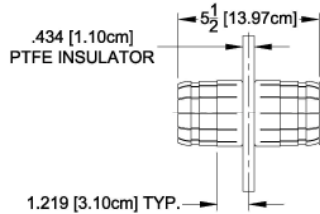


4 1/16, 50 Ohm

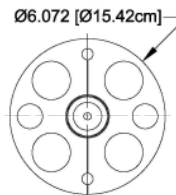
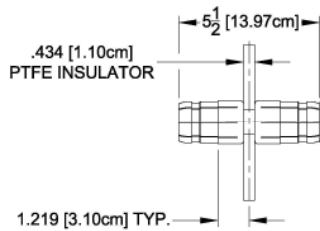
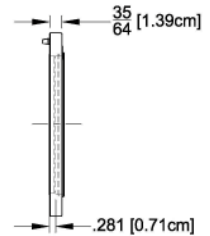
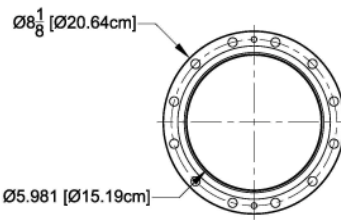


Connectors & Flanges

6 1/8

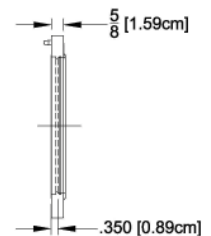
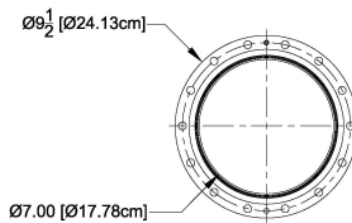
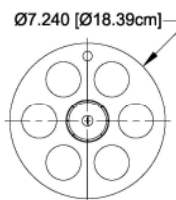
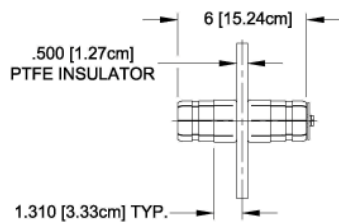


6 1/8 50 Ohm

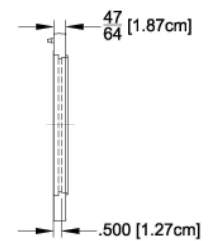
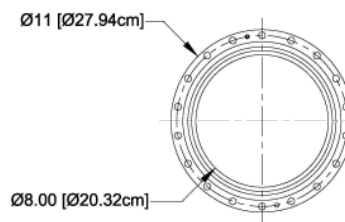
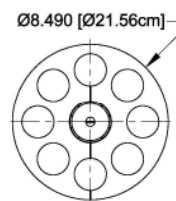
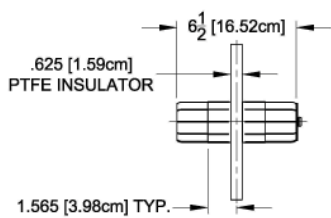


6 1/8 75 Ohm

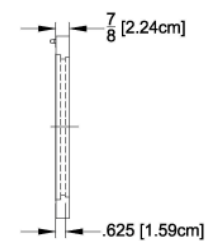
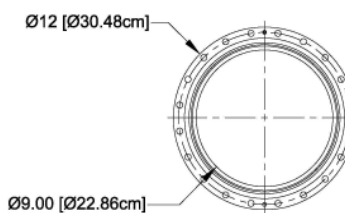
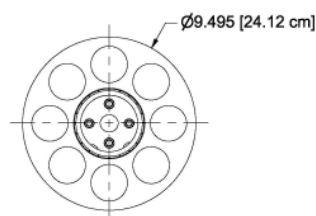
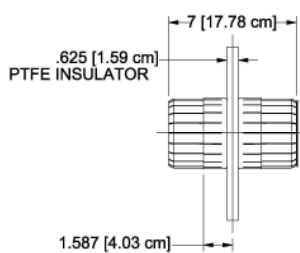
7 3/16 75 Ohm



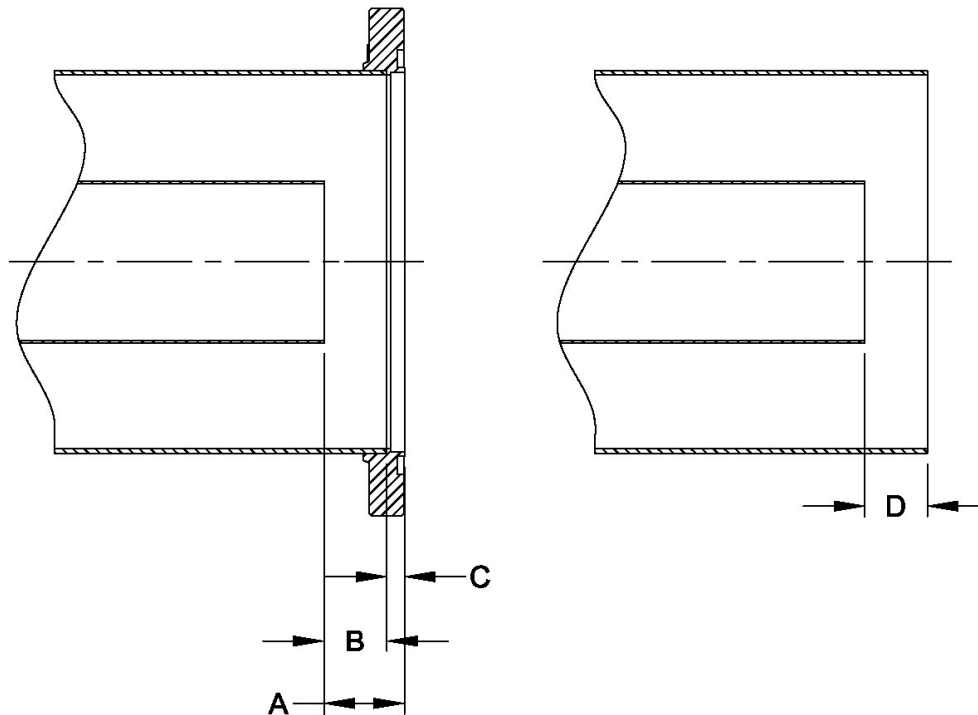
8 3/16 50 Ohm



9 3/16 50 Ohm

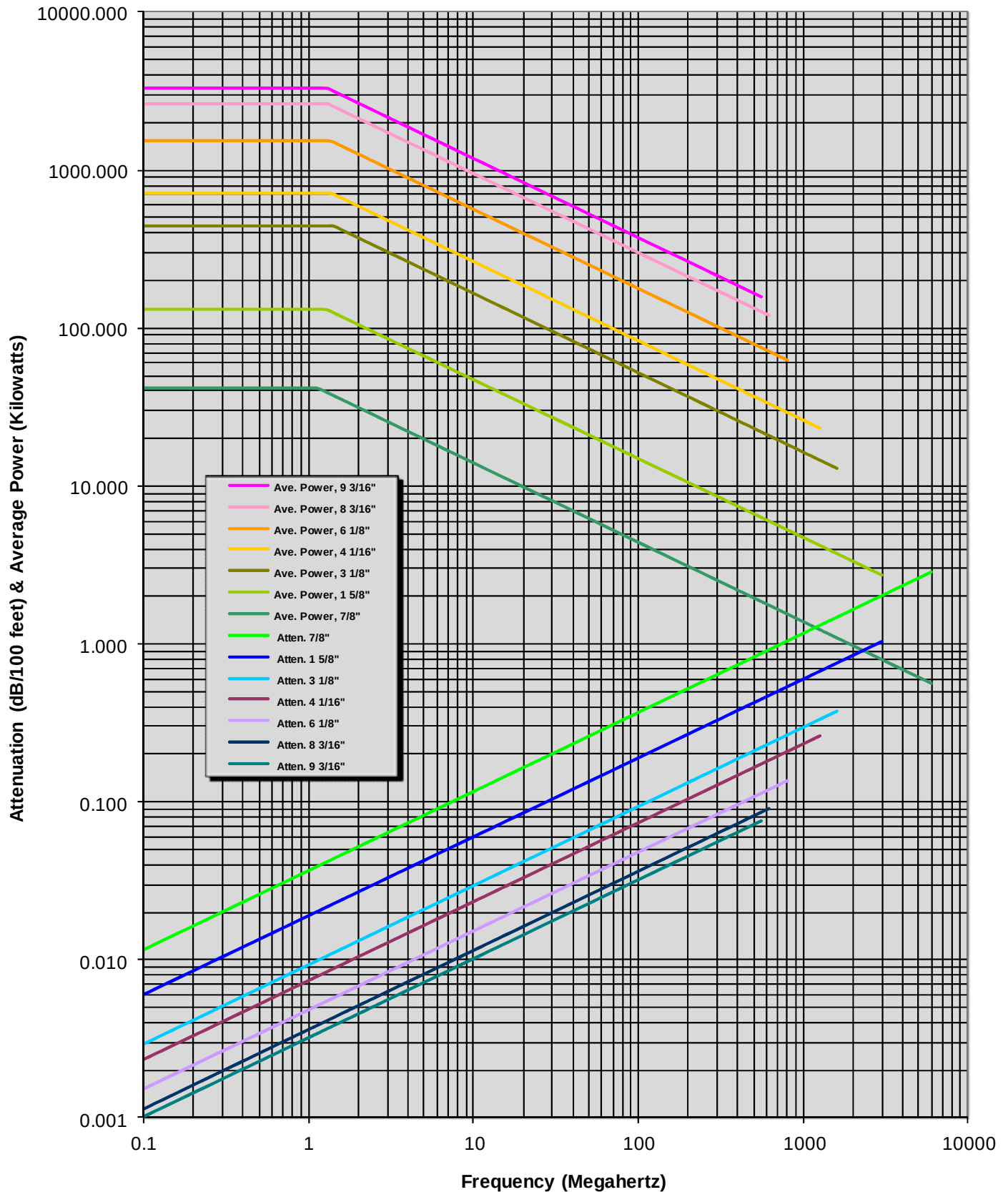


CUT-BACK DIMENSIONS COPPER OR ALUMINUM RIGID LINE

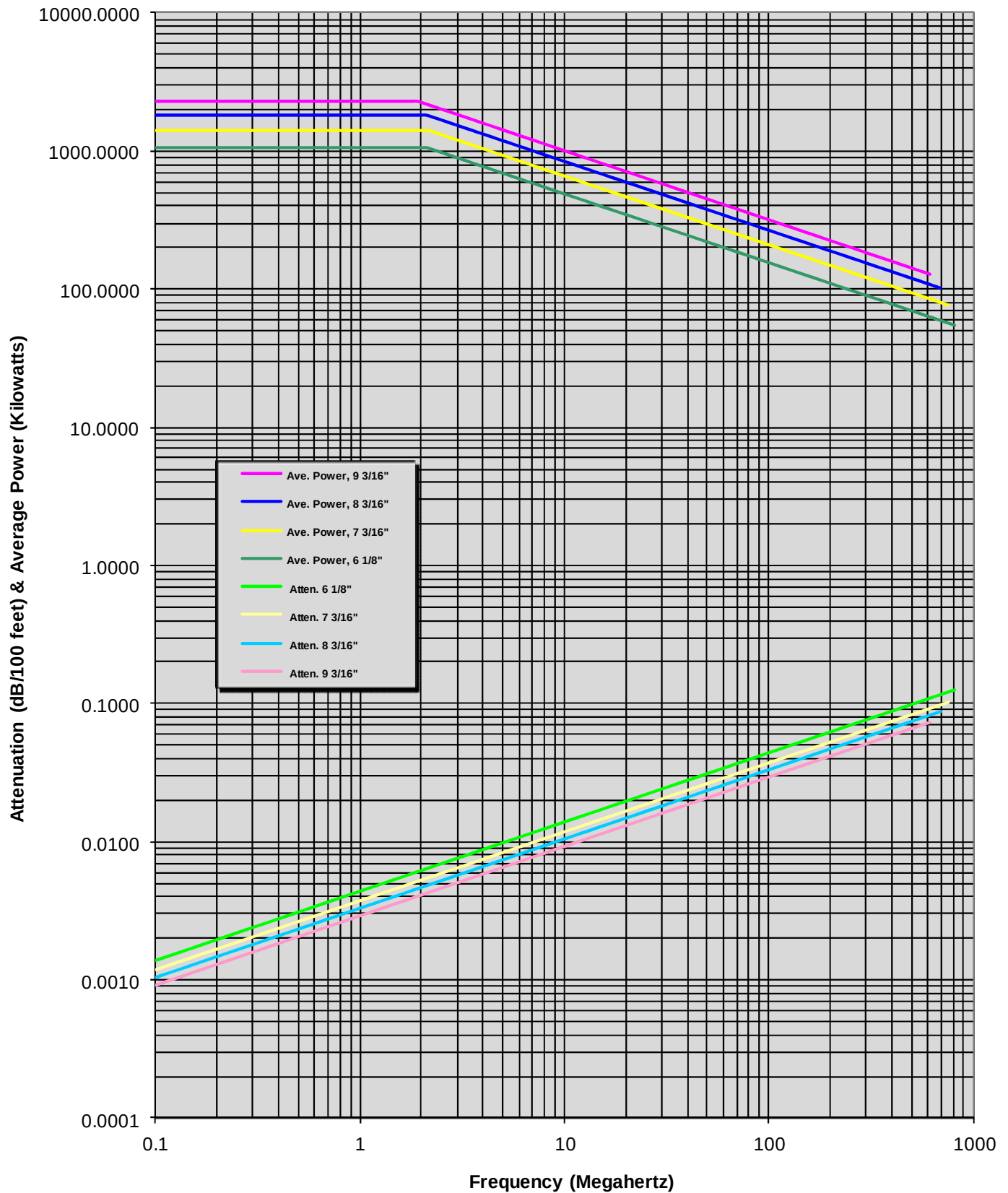


NOMINAL LINE SIZE		7/8	1 5/8	3 1/8	4 1/16	6 1/8	7 3/16	8 3/16	9 3/16
CUT-BACK	A	.500 [1.27cm]	.625 [1.59cm]	1.015 [2.58cm]	1.375 [3.49cm]	1.343 [3.41cm]	1.410 [3.58cm]	1.664 [4.23cm]	1.687 [4.28cm]
	B	.344 [.87cm]	.438 [1.11cm]	.765 [1.94cm]	1.125 [2.86cm]	1.062 [2.70cm]	1.060 [2.69cm]	1.164 [2.96cm]	1.062 [2.70cm]
	C	.156 [.40cm]	.187 [.47cm]	.250 [.64cm]	.250 [.64cm]	.281 [.71cm]	.350 [.89cm]	.500 [1.27cm]	.625 [1.59cm]
	D	.344 [.87cm]	.438 [1.11cm]	.765 [1.94cm]	1.125 [2.86cm]	1.063 [2.70cm]			

MYAT 50 Ohm Rigid Coaxial Transmission Lines



MYAT 75 Ohm Rigid Coaxial Transmission Lines



7/8" 50 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
2	54	0.271	6.010	98.45	96.92	95.42	93.94	92.49	91.05	89.64	88.25
3	60	0.286	5.701	98.37	96.76	95.18	93.63	92.10	90.59	89.11	87.66
4	66	0.300	5.436	98.29	96.61	94.95	93.33	91.73	90.16	88.61	87.10
5	76	0.322	5.066	98.16	96.36	94.59	92.86	91.15	89.48	87.84	86.22
6	82	0.334	4.877	98.09	96.22	94.39	92.59	90.83	89.09	87.40	85.73
7	174	0.487	3.348	97.24	94.55	91.93	89.39	86.92	84.52	82.18	79.91
8	180	0.495	3.292	97.19	94.46	91.80	89.22	86.71	84.27	81.90	79.60
9	186	0.504	3.238	97.14	94.37	91.67	89.05	86.51	84.04	81.63	79.30
10	192	0.512	3.187	97.10	94.28	91.54	88.89	86.31	83.80	81.37	79.01
11	198	0.520	3.139	97.05	94.19	91.42	88.72	86.11	83.57	81.11	78.72
12	204	0.527	3.092	97.01	94.11	91.30	88.57	85.92	83.35	80.86	78.44
13	210	0.535	3.048	96.97	94.03	91.17	88.41	85.73	83.13	80.61	78.16
14	470	0.800	2.037	95.50	91.20	87.09	83.17	79.42	75.85	72.43	69.17
15	476	0.806	2.024	95.47	91.14	87.01	83.07	79.31	75.71	72.28	69.01
16	482	0.811	2.012	95.44	91.09	86.94	82.97	79.19	75.58	72.13	68.85
17	488	0.816	1.999	95.41	91.04	86.86	82.88	79.08	75.45	71.99	68.69
18	494	0.821	1.987	95.39	90.98	86.79	82.78	78.96	75.32	71.84	68.53
19	500	0.826	1.975	95.36	90.93	86.71	82.69	78.85	75.19	71.70	68.37
20	506	0.831	1.963	95.33	90.88	86.64	82.59	78.74	75.06	71.56	68.22
21	512	0.835	1.952	95.30	90.83	86.56	82.50	78.63	74.93	71.42	68.06
22	518	0.840	1.940	95.28	90.78	86.49	82.41	78.52	74.81	71.28	67.91
23	524	0.845	1.929	95.25	90.73	86.42	82.31	78.41	74.68	71.14	67.76
24	530	0.850	1.918	95.22	90.68	86.35	82.22	78.30	74.56	71.00	67.61
25	536	0.855	1.908	95.20	90.63	86.28	82.13	78.19	74.43	70.86	67.46
26	542	0.860	1.897	95.17	90.58	86.20	82.04	78.08	74.31	70.72	67.31
27	548	0.864	1.887	95.15	90.53	86.13	81.95	77.98	74.19	70.59	67.16
28	554	0.869	1.876	95.12	90.48	86.06	81.86	77.87	74.07	70.46	67.02
29	560	0.874	1.866	95.09	90.43	85.99	81.78	77.76	73.95	70.32	66.87
30	566	0.878	1.856	95.07	90.38	85.92	81.69	77.66	73.83	70.19	66.73
31	572	0.883	1.847	95.04	90.33	85.86	81.60	77.56	73.71	70.06	66.59
32	578	0.888	1.837	95.02	90.28	85.79	81.51	77.45	73.59	69.93	66.44
33	584	0.892	1.827	94.99	90.24	85.72	81.43	77.35	73.48	69.80	66.30
34	590	0.897	1.818	94.97	90.19	85.65	81.34	77.25	73.36	69.67	66.16
35	596	0.901	1.809	94.94	90.14	85.58	81.26	77.15	73.25	69.54	66.03

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	175 ft	200 ft
36	602	0.906	1.800	94.92	90.10	85.52	81.17	77.05	73.13	69.42	65.89
37	608	0.910	1.791	94.89	90.05	85.45	81.09	76.95	73.02	69.29	65.75
38	614	0.915	1.782	94.87	90.00	85.38	81.00	76.85	72.91	69.17	65.62
39	620	0.919	1.774	94.85	89.96	85.32	80.92	76.75	72.79	69.04	65.48
40	626	0.924	1.765	94.82	89.91	85.25	80.84	76.65	72.68	68.92	65.35
41	632	0.928	1.757	94.80	89.86	85.19	80.76	76.55	72.57	68.80	65.22
42	638	0.933	1.748	94.77	89.82	85.12	80.67	76.46	72.46	68.67	65.08
43	644	0.937	1.740	94.75	89.77	85.06	80.59	76.36	72.35	68.55	64.95
44	650	0.941	1.732	94.73	89.73	85.00	80.51	76.27	72.24	68.43	64.82
45	656	0.946	1.724	94.70	89.68	84.93	80.43	76.17	72.13	68.31	64.69
46	662	0.950	1.716	94.68	89.64	84.87	80.35	76.08	72.03	68.19	64.57
47	668	0.954	1.709	94.65	89.60	84.81	80.27	75.98	71.92	68.08	64.44
48	674	0.959	1.701	94.63	89.55	84.74	80.19	75.89	71.81	67.96	64.31
49	680	0.963	1.694	94.61	89.51	84.68	80.12	75.80	71.71	67.84	64.18
50	686	0.967	1.686	94.59	89.46	84.62	80.04	75.70	71.60	67.73	64.06
51	692	0.971	1.679	94.56	89.42	84.56	79.96	75.61	71.50	67.61	63.94

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

7/8" 50 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	200 ft	300 ft
88.1	0.3466	4.705	98.02	96.09	94.19	92.33	90.51	88.72	85.25	78.71
88.3	0.3470	4.700	98.02	96.08	94.18	92.32	90.50	88.71	85.23	78.69
88.5	0.3474	4.694	98.02	96.08	94.18	92.31	90.49	88.69	85.22	78.67
88.7	0.3477	4.689	98.02	96.08	94.17	92.31	90.48	88.68	85.20	78.65
88.9	0.3481	4.684	98.02	96.07	94.17	92.30	90.47	88.67	85.19	78.62
89.1	0.3485	4.679	98.01	96.07	94.16	92.29	90.46	88.66	85.17	78.60
89.3	0.3489	4.673	98.01	96.06	94.15	92.28	90.45	88.65	85.16	78.58
89.5	0.3493	4.668	98.01	96.06	94.15	92.27	90.43	88.63	85.14	78.56
89.7	0.3497	4.663	98.01	96.05	94.14	92.26	90.42	88.62	85.13	78.54
89.9	0.3501	4.658	98.00	96.05	94.13	92.26	90.41	88.61	85.11	78.52
90.1	0.3505	4.653	98.00	96.05	94.13	92.25	90.40	88.60	85.10	78.50
90.3	0.3509	4.647	98.00	96.04	94.12	92.24	90.39	88.59	85.08	78.48
90.5	0.3513	4.642	98.00	96.04	94.11	92.23	90.38	88.58	85.06	78.46
90.7	0.3516	4.637	98.00	96.03	94.11	92.22	90.37	88.56	85.05	78.43
90.9	0.3520	4.632	97.99	96.03	94.10	92.21	90.36	88.55	85.03	78.41
91.1	0.3524	4.627	97.99	96.02	94.10	92.21	90.35	88.54	85.02	78.39
91.3	0.3528	4.622	97.99	96.02	94.09	92.20	90.34	88.53	85.00	78.37
91.5	0.3532	4.617	97.99	96.02	94.08	92.19	90.33	88.52	84.99	78.35
91.7	0.3536	4.612	97.99	96.01	94.08	92.18	90.32	88.50	84.97	78.33
91.9	0.3540	4.607	97.98	96.01	94.07	92.17	90.31	88.49	84.96	78.31
92.1	0.3543	4.602	97.98	96.00	94.06	92.16	90.30	88.48	84.94	78.29
92.3	0.3547	4.597	97.98	96.00	94.06	92.16	90.29	88.47	84.93	78.27
92.5	0.3551	4.592	97.98	95.99	94.05	92.15	90.28	88.46	84.91	78.25
92.7	0.3555	4.587	97.97	95.99	94.05	92.14	90.27	88.45	84.90	78.23
92.9	0.3559	4.582	97.97	95.99	94.04	92.13	90.26	88.43	84.88	78.21
93.1	0.3563	4.577	97.97	95.98	94.03	92.12	90.25	88.42	84.87	78.18
93.3	0.3566	4.572	97.97	95.98	94.03	92.12	90.24	88.41	84.85	78.16
93.5	0.3570	4.567	97.97	95.97	94.02	92.11	90.23	88.40	84.84	78.14
93.7	0.3574	4.562	97.96	95.97	94.01	92.10	90.22	88.39	84.82	78.12
93.9	0.3578	4.558	97.96	95.96	94.01	92.09	90.21	88.38	84.81	78.10
94.1	0.3582	4.553	97.96	95.96	94.00	92.08	90.20	88.36	84.79	78.08
94.3	0.3586	4.548	97.96	95.96	94.00	92.08	90.19	88.35	84.78	78.06
94.5	0.3589	4.543	97.96	95.95	93.99	92.07	90.18	88.34	84.76	78.04
94.7	0.3593	4.538	97.95	95.95	93.98	92.06	90.17	88.33	84.75	78.02
94.9	0.3597	4.533	97.95	95.94	93.98	92.05	90.17	88.32	84.73	78.00
95.1	0.3601	4.529	97.95	95.94	93.97	92.04	90.16	88.31	84.72	77.98
95.3	0.3605	4.524	97.95	95.94	93.97	92.04	90.15	88.29	84.71	77.96
95.5	0.3608	4.519	97.94	95.93	93.96	92.03	90.14	88.28	84.69	77.94
95.7	0.3612	4.514	97.94	95.93	93.95	92.02	90.13	88.27	84.68	77.92
95.9	0.3616	4.510	97.94	95.92	93.95	92.01	90.12	88.26	84.66	77.90
96.1	0.3620	4.505	97.94	95.92	93.94	92.00	90.11	88.25	84.65	77.88
96.3	0.3623	4.500	97.94	95.91	93.93	92.00	90.10	88.24	84.63	77.86
96.5	0.3627	4.496	97.93	95.91	93.93	91.99	90.09	88.23	84.62	77.84
96.7	0.3631	4.491	97.93	95.91	93.92	91.98	90.08	88.21	84.60	77.82
96.9	0.3635	4.486	97.93	95.90	93.92	91.97	90.07	88.20	84.59	77.80
97.1	0.3638	4.482	97.93	95.90	93.91	91.96	90.06	88.19	84.57	77.78
97.3	0.3642	4.477	97.93	95.89	93.90	91.96	90.05	88.18	84.56	77.76
97.5	0.3646	4.473	97.92	95.89	93.90	91.95	90.04	88.17	84.54	77.74
97.7	0.3650	4.468	97.92	95.89	93.89	91.94	90.03	88.16	84.53	77.72
97.9	0.3653	4.463	97.92	95.88	93.89	91.93	90.02	88.15	84.51	77.70

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	25 ft	50 ft	75 ft	100 ft	125 ft	150 ft	200 ft	300 ft
98.1	0.3657	4.459	97.92	95.88	93.88	91.92	90.01	88.13	84.50	77.68
98.3	0.3661	4.454	97.91	95.87	93.87	91.92	90.00	88.12	84.49	77.66
98.5	0.3665	4.450	97.91	95.87	93.87	91.91	89.99	88.11	84.47	77.64
98.7	0.3668	4.445	97.91	95.86	93.86	91.90	89.98	88.10	84.46	77.62
98.9	0.3672	4.441	97.91	95.86	93.86	91.89	89.97	88.09	84.44	77.60
99.1	0.3676	4.436	97.91	95.86	93.85	91.88	89.96	88.08	84.43	77.58
99.3	0.3679	4.432	97.90	95.85	93.84	91.88	89.95	88.07	84.41	77.56
99.5	0.3683	4.427	97.90	95.85	93.84	91.87	89.94	88.05	84.40	77.54
99.7	0.3687	4.423	97.90	95.84	93.83	91.86	89.93	88.04	84.38	77.52
99.9	0.3690	4.419	97.90	95.84	93.83	91.85	89.92	88.03	84.37	77.50
100.1	0.3694	4.414	97.90	95.84	93.82	91.85	89.91	88.02	84.36	77.48
100.3	0.3698	4.410	97.89	95.83	93.81	91.84	89.90	88.01	84.34	77.46
100.5	0.3702	4.405	97.89	95.83	93.81	91.83	89.89	88.00	84.33	77.44
100.7	0.3705	4.401	97.89	95.82	93.80	91.82	89.88	87.99	84.31	77.42
100.9	0.3709	4.397	97.89	95.82	93.80	91.81	89.87	87.98	84.30	77.40
101.1	0.3713	4.392	97.89	95.82	93.79	91.81	89.87	87.97	84.28	77.38
101.3	0.3716	4.388	97.88	95.81	93.78	91.80	89.86	87.95	84.27	77.36
101.5	0.3720	4.384	97.88	95.81	93.78	91.79	89.85	87.94	84.26	77.34
101.7	0.3724	4.379	97.88	95.80	93.77	91.78	89.84	87.93	84.24	77.32
101.9	0.3727	4.375	97.88	95.80	93.77	91.78	89.83	87.92	84.23	77.30
102.1	0.3731	4.371	97.88	95.80	93.76	91.77	89.82	87.91	84.21	77.28
102.3	0.3735	4.366	97.87	95.79	93.75	91.76	89.81	87.90	84.20	77.26
102.5	0.3738	4.362	97.87	95.79	93.75	91.75	89.80	87.89	84.19	77.24
102.7	0.3742	4.358	97.87	95.78	93.74	91.74	89.79	87.88	84.17	77.22
102.9	0.3745	4.354	97.87	95.78	93.74	91.74	89.78	87.87	84.16	77.20
103.1	0.3749	4.349	97.86	95.78	93.73	91.73	89.77	87.85	84.14	77.18
103.3	0.3753	4.345	97.86	95.77	93.72	91.72	89.76	87.84	84.13	77.16
103.5	0.3756	4.341	97.86	95.77	93.72	91.71	89.75	87.83	84.11	77.15
103.7	0.3760	4.337	97.86	95.76	93.71	91.71	89.74	87.82	84.10	77.13
103.9	0.3764	4.333	97.86	95.76	93.71	91.70	89.73	87.81	84.09	77.11
104.1	0.3767	4.328	97.85	95.76	93.70	91.69	89.72	87.80	84.07	77.09
104.3	0.3771	4.324	97.85	95.75	93.70	91.68	89.71	87.79	84.06	77.07
104.5	0.3774	4.320	97.85	95.75	93.69	91.68	89.71	87.78	84.04	77.05
104.7	0.3778	4.316	97.85	95.74	93.68	91.67	89.70	87.77	84.03	77.03
104.9	0.3782	4.312	97.85	95.74	93.68	91.66	89.69	87.76	84.02	77.01
105.1	0.3785	4.308	97.84	95.74	93.67	91.65	89.68	87.74	84.00	76.99
105.3	0.3789	4.304	97.84	95.73	93.67	91.65	89.67	87.73	83.99	76.97
105.5	0.3793	4.300	97.84	95.73	93.66	91.64	89.66	87.72	83.97	76.95
105.7	0.3796	4.296	97.84	95.72	93.65	91.63	89.65	87.71	83.96	76.93
105.9	0.3800	4.292	97.84	95.72	93.65	91.62	89.64	87.70	83.95	76.91
106.1	0.3803	4.287	97.83	95.72	93.64	91.62	89.63	87.69	83.93	76.90
106.3	0.3807	4.283	97.83	95.71	93.64	91.61	89.62	87.68	83.92	76.88
106.5	0.3810	4.279	97.83	95.71	93.63	91.60	89.61	87.67	83.91	76.86
106.7	0.3814	4.275	97.83	95.70	93.63	91.59	89.60	87.66	83.89	76.84
106.9	0.3818	4.271	97.83	95.70	93.62	91.58	89.59	87.65	83.88	76.82
107.1	0.3821	4.267	97.82	95.70	93.61	91.58	89.59	87.64	83.86	76.80
107.3	0.3825	4.263	97.82	95.69	93.61	91.57	89.58	87.63	83.85	76.78
107.5	0.3828	4.259	97.82	95.69	93.60	91.56	89.57	87.61	83.84	76.76
107.7	0.3832	4.256	97.82	95.68	93.60	91.55	89.56	87.60	83.82	76.74
107.9	0.3835	4.252	97.82	95.68	93.59	91.55	89.55	87.59	83.81	76.73

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

1 5/8" 50 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power	200 ft	300 ft	400 ft	500 ft	600 ft	700 ft	800 ft	900 ft
2	54	0.140	20.344	93.78	90.81	87.94	85.16	82.46	79.86	77.33	74.89
3	60	0.147	19.300	93.45	90.34	87.33	84.42	81.61	78.89	76.26	73.72
4	66	0.154	18.402	93.14	89.89	86.75	83.73	80.80	77.98	75.26	72.63
5	76	0.166	17.148	92.66	89.19	85.86	82.65	79.55	76.58	73.71	70.96
6	82	0.172	16.509	92.39	88.80	85.35	82.04	78.85	75.79	72.85	70.02
7	174	0.251	11.333	89.10	84.11	79.40	74.95	70.74	66.78	63.04	59.50
8	180	0.255	11.143	88.93	83.86	79.08	74.58	70.33	66.32	62.54	58.98
9	186	0.259	10.962	88.76	83.62	78.78	74.22	69.92	65.87	62.06	58.46
10	192	0.263	10.789	88.59	83.38	78.48	73.86	69.52	65.43	61.59	57.96
11	198	0.267	10.624	88.42	83.14	78.18	73.52	69.13	65.00	61.12	57.48
12	204	0.271	10.467	88.26	82.91	77.89	73.18	68.75	64.58	60.67	57.00
13	210	0.275	10.316	88.10	82.69	77.61	72.84	68.37	64.17	60.23	56.53
14	470	0.412	6.896	82.73	75.25	68.44	62.25	56.62	51.50	46.84	42.60
15	476	0.414	6.852	82.63	75.11	68.28	62.06	56.42	51.28	46.62	42.37
16	482	0.417	6.809	82.53	74.98	68.11	61.88	56.21	51.07	46.39	42.15
17	488	0.420	6.767	82.43	74.84	67.95	61.69	56.01	50.85	46.17	41.92
18	494	0.422	6.726	82.33	74.71	67.79	61.51	55.81	50.64	45.95	41.70
19	500	0.425	6.686	82.24	74.58	67.63	61.33	55.62	50.44	45.74	41.48
20	506	0.427	6.646	82.14	74.45	67.47	61.15	55.42	50.23	45.52	41.26
21	512	0.430	6.607	82.05	74.32	67.31	60.97	55.23	50.03	45.31	41.04
22	518	0.432	6.568	81.95	74.19	67.16	60.80	55.04	49.82	45.10	40.83
23	524	0.435	6.531	81.86	74.06	67.01	60.62	54.85	49.62	44.90	40.62
24	530	0.437	6.494	81.76	73.93	66.85	60.45	54.66	49.43	44.69	40.41
25	536	0.440	6.457	81.67	73.81	66.70	60.28	54.47	49.23	44.49	40.21
26	542	0.442	6.421	81.58	73.68	66.55	60.11	54.29	49.04	44.29	40.00
27	548	0.445	6.386	81.49	73.56	66.40	59.94	54.11	48.84	44.09	39.80
28	554	0.447	6.351	81.40	73.43	66.25	59.77	53.93	48.65	43.89	39.60
29	560	0.449	6.317	81.30	73.31	66.10	59.61	53.75	48.46	43.70	39.40
30	566	0.452	6.284	81.22	73.19	65.96	59.44	53.57	48.28	43.51	39.21
31	572	0.454	6.251	81.13	73.07	65.81	59.28	53.39	48.09	43.31	39.01
32	578	0.457	6.218	81.04	72.95	65.67	59.12	53.22	47.91	43.13	38.82
33	584	0.459	6.186	80.95	72.83	65.53	58.96	53.04	47.72	42.94	38.63
34	590	0.461	6.155	80.86	72.71	65.39	58.80	52.87	47.54	42.75	38.44
35	596	0.464	6.124	80.77	72.60	65.24	58.64	52.70	47.36	42.57	38.26

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power	200 ft	300 ft	400 ft	500 ft	600 ft	700 ft	800 ft	900 ft
36	602	0.466	6.093	80.69	72.48	65.11	58.48	52.53	47.19	42.39	38.07
37	608	0.468	6.063	80.60	72.36	64.97	58.33	52.36	47.01	42.21	37.89
38	614	0.471	6.033	80.52	72.25	64.83	58.17	52.20	46.84	42.03	37.71
39	620	0.473	6.004	80.43	72.13	64.69	58.02	52.03	46.66	41.85	37.53
40	626	0.475	5.975	80.35	72.02	64.56	57.87	51.87	46.49	41.67	37.36
41	632	0.477	5.947	80.26	71.91	64.42	57.71	51.71	46.32	41.50	37.18
42	638	0.480	5.919	80.18	71.79	64.29	57.56	51.54	46.15	41.33	37.01
43	644	0.482	5.891	80.10	71.68	64.15	57.42	51.38	45.99	41.16	36.83
44	650	0.484	5.864	80.01	71.57	64.02	57.27	51.23	45.82	40.99	36.66
45	656	0.486	5.837	79.93	71.46	63.89	57.12	51.07	45.66	40.82	36.49
46	662	0.489	5.810	79.85	71.35	63.76	56.97	50.91	45.49	40.65	36.33
47	668	0.491	5.784	79.77	71.24	63.63	56.83	50.76	45.33	40.49	36.16
48	674	0.493	5.758	79.69	71.14	63.50	56.69	50.60	45.17	40.32	36.00
49	680	0.495	5.733	79.61	71.03	63.37	56.54	50.45	45.01	40.16	35.83
50	686	0.497	5.708	79.53	70.92	63.25	56.40	50.30	44.86	40.00	35.67
51	692	0.500	5.683	79.45	70.82	63.12	56.26	50.15	44.70	39.84	35.51

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

1 5/8" 50 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	300 ft	350 ft	400 ft	450 ft	500 ft	550 ft	600 ft	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	300 ft	350 ft	400 ft	450 ft	500 ft	550 ft	600 ft
88.1	0.1783	15.927	90.25	88.41	86.62	84.86	83.14	81.45	79.79	78.17	98.1	0.1881	15.094	89.74	87.82	85.93	84.09	82.29	80.53	78.80	77.12
88.3	0.1785	15.909	90.24	88.40	86.60	84.84	83.12	81.43	79.77	78.15	98.3	0.1883	15.078	89.73	87.80	85.92	84.08	82.28	80.51	78.78	77.09
88.5	0.1787	15.891	90.23	88.39	86.59	84.83	83.10	81.41	79.75	78.13	98.5	0.1885	15.063	89.72	87.79	85.91	84.06	82.26	80.49	78.77	77.07
88.7	0.1789	15.873	90.22	88.38	86.58	84.81	83.08	81.39	79.73	78.11	98.7	0.1887	15.048	89.71	87.78	85.89	84.05	82.24	80.48	78.75	77.05
88.9	0.1791	15.855	90.21	88.37	86.56	84.80	83.07	81.37	79.71	78.08	98.9	0.1889	15.032	89.70	87.77	85.88	84.03	82.23	80.46	78.73	77.03
89.1	0.1793	15.838	90.20	88.35	86.55	84.78	83.05	81.35	79.69	78.06	99.1	0.1891	15.017	89.69	87.76	85.87	84.02	82.21	80.44	78.71	77.01
89.3	0.1795	15.820	90.18	88.34	86.53	84.76	83.03	81.33	79.67	78.04	99.3	0.1892	15.002	89.68	87.75	85.85	84.00	82.19	80.42	78.69	76.99
89.5	0.1797	15.802	90.17	88.33	86.52	84.75	83.01	81.31	79.65	78.02	99.5	0.1894	14.987	89.67	87.73	85.84	83.99	82.18	80.40	78.67	76.97
89.7	0.1799	15.785	90.16	88.32	86.51	84.73	83.00	81.30	79.63	78.00	99.7	0.1896	14.972	89.66	87.72	85.83	83.97	82.16	80.39	78.65	76.95
89.9	0.1801	15.767	90.15	88.30	86.49	84.72	82.98	81.28	79.61	77.98	99.9	0.1898	14.957	89.65	87.71	85.82	83.96	82.15	80.37	78.63	76.93
90.1	0.1803	15.749	90.14	88.29	86.48	84.70	82.96	81.26	79.59	77.95	100.1	0.1900	14.942	89.64	87.70	85.80	83.95	82.13	80.35	78.61	76.91
90.3	0.1805	15.732	90.13	88.28	86.46	84.69	82.94	81.24	79.57	77.93	100.3	0.1902	14.927	89.63	87.69	85.79	83.93	82.11	80.33	78.59	76.89
90.5	0.1807	15.715	90.12	88.27	86.45	84.67	82.93	81.22	79.55	77.91	100.5	0.1904	14.912	89.62	87.68	85.78	83.92	82.10	80.32	78.58	76.87
90.7	0.1809	15.697	90.11	88.26	86.44	84.66	82.91	81.20	79.53	77.89	100.7	0.1906	14.898	89.61	87.67	85.76	83.90	82.08	80.30	78.56	76.85
90.9	0.1811	15.680	90.10	88.24	86.42	84.64	82.89	81.18	79.51	77.87	100.9	0.1908	14.883	89.60	87.65	85.75	83.89	82.06	80.28	78.54	76.83
91.1	0.1813	15.663	90.09	88.23	86.41	84.62	82.88	81.16	79.49	77.85	101.1	0.1910	14.868	89.59	87.64	85.74	83.87	82.05	80.26	78.52	76.81
91.3	0.1815	15.646	90.08	88.22	86.39	84.61	82.86	81.15	79.47	77.83	101.3	0.1911	14.853	89.58	87.63	85.72	83.86	82.03	80.25	78.50	76.79
91.5	0.1817	15.629	90.07	88.21	86.38	84.59	82.84	81.13	79.45	77.80	101.5	0.1913	14.839	89.57	87.62	85.71	83.84	82.02	80.23	78.48	76.77
91.7	0.1819	15.611	90.06	88.19	86.37	84.58	82.83	81.11	79.43	77.78	101.7	0.1915	14.824	89.56	87.61	85.70	83.83	82.00	80.21	78.46	76.75
91.9	0.1821	15.594	90.05	88.18	86.35	84.56	82.81	81.09	79.41	77.76	101.9	0.1917	14.810	89.55	87.60	85.68	83.81	81.98	80.19	78.44	76.73
92.1	0.1823	15.578	90.04	88.17	86.34	84.55	82.79	81.07	79.39	77.74	102.1	0.1919	14.795	89.54	87.59	85.67	83.80	81.97	80.18	78.43	76.71
92.3	0.1825	15.561	90.03	88.16	86.33	84.53	82.77	81.05	79.37	77.72	102.3	0.1921	14.781	89.53	87.57	85.66	83.79	81.95	80.16	78.41	76.69
92.5	0.1827	15.544	90.02	88.15	86.31	84.52	82.76	81.04	79.35	77.70	102.5	0.1923	14.766	89.52	87.56	85.65	83.77	81.94	80.14	78.39	76.67
92.7	0.1828	15.527	90.01	88.13	86.30	84.50	82.74	81.02	79.33	77.68	102.7	0.1925	14.752	89.51	87.55	85.63	83.76	81.92	80.13	78.37	76.65
92.9	0.1830	15.510	90.00	88.12	86.28	84.49	82.72	81.00	79.31	77.66	102.9	0.1926	14.737	89.50	87.54	85.62	83.74	81.90	80.11	78.35	76.63
93.1	0.1832	15.494	89.99	88.11	86.27	84.47	82.71	80.98	79.29	77.63	103.1	0.1928	14.723	89.49	87.53	85.61	83.73	81.89	80.09	78.33	76.61
93.3	0.1834	15.477	89.98	88.10	86.26	84.45	82.69	80.96	79.27	77.61	103.3	0.1930	14.709	89.48	87.52	85.59	83.71	81.87	80.07	78.31	76.59
93.5	0.1836	15.460	89.97	88.09	86.24	84.44	82.67	80.94	79.25	77.59	103.5	0.1932	14.695	89.47	87.51	85.58	83.70	81.86	80.06	78.30	76.57
93.7	0.1838	15.444	89.96	88.07	86.23	84.42	82.66	80.93	79.23	77.57	103.7	0.1934	14.680	89.46	87.49	85.57	83.68	81.84	80.04	78.28	76.55
93.9	0.1840	15.428	89.95	88.06	86.22	84.41	82.64	80.91	79.21	77.55	103.9	0.1936	14.666	89.46	87.48	85.56	83.67	81.83	80.02	78.26	76.53
94.1	0.1842	15.411	89.94	88.05	86.20	84.39	82.62	80.89	79.19	77.53	104.1	0.1938	14.652	89.45	87.47	85.54	83.66	81.81	80.00	78.24	76.51
94.3	0.1844	15.395	89.93	88.04	86.19	84.38	82.61	80.87	79.17	77.51	104.3	0.1940	14.638	89.44	87.46	85.53	83.64	81.79	79.99	78.22	76.49
94.5	0.1846	15.378	89.92	88.03	86.18	84.36	82.59	80.85	79.15	77.49	104.5	0.1941	14.624	89.43	87.45	85.52	83.63	81.78	79.97	78.20	76.47
94.7	0.1848	15.362	89.91	88.01	86.16	84.35	82.57	80.83	79.13	77.47	104.7	0.1943	14.610	89.42	87.44	85.50	83.61	81.76	79.95	78.18	76.45
94.9	0.1850	15.346	89.90	88.00	86.15	84.33	82.56	80.82	79.11	77.45	104.9	0.1945	14.596	89.41	87.43	85.49	83.60	81.75	79.94	78.17	76.44
95.1	0.1852	15.330	89.89	87.99	86.13	84.32	82.54	80.80	79.09	77.42	105.1	0.1947	14.582	89.40	87.42	85.48	83.58	81.73	79.92	78.15	76.42
95.3	0.1854	15.314	89.88	87.98	86.12	84.30	82.52	80.78	79.07	77.40	105.3	0.1949	14.568	89.39	87.40	85.47	83.57	81.72	79.90	78.13	76.40
95.5	0.1856	15.298	89.87	87.97	86.11	84.29	82.51	80.76	79.05	77.38	105.5	0.1951	14.555	89.38	87.39	85.45	83.56	81.70	79.89	78.11	76.38
95.7	0.1858	15.282	89.86	87.96	86.09	84.27	82.49	80.74	79.03	77.36	105.7	0.1953	14.541	89.37	87.38	85.44	83.54	81.68	79.87	78.09	76.36
95.9	0.1860	15.266	89.85	87.94	86.08	84.26	82.47	80.73	79.02	77.34	105.9	0.1954	14.527	89.36	87.37	85.43	83.53	81.67	79.85	78.07	76.34
96.1	0.1862	15.250	89.84	87.93	86.07	84.24	82.46	80.71	79.00	77.32	106.1	0.1956	14.513	89.35	87.36	85.41	83.51	81.65	79.83	78.06	76.32
96.3	0.1864	15.234	89.83	87.92	86.05	84.23	82.44	80.69	78.98	77.30	106.3	0.1958	14.500	89.34	87.35	85.40	83.50	81.64	79.82	78.04	76.30
96.5	0.1866	15.218	89.82	87.91	86.04	84.21	82.42	80.67	78.96	77.28	106.5	0.1960	14.486	89.33	87.34	85.39	83.48	81.62	79.80	78.02	76.28
96.7	0.1868	15.203	89.81	87.90	86.03	84.20	82.41	80.65	78.94	77.26	106.7	0.1962	14.473	89.32	87.33	85.38	83.47	81.61	79.78	78.00	76.26
96.9	0.1869	15.187	89.80	87.89	86.01	84.18	82.39	80.64	78.92	77.24	106.9	0.1964	14.459	89.31	87.32	85.36	83.46	81.59	79.77	77.98	76.24
97.1	0.1871	15.171	89.79	87.87	86.00	84.17	82.37	80.62	78.90	77.22	107.1	0.1965	14.446	89.30	87.30	85.35	83.44	81.58	79.75	77.97	76.22
97.3	0.1873	15.156	89.78	87.86	85.99	84.15	82.36	80.60	78.88	77.20	107.3	0.1967	14.432	89.29	87.29	85.34	83.43	81.56	79.73	77.95	76.20
97.5	0.1875	15.140	89.77	87.85	85.97	84.14	82.34	80.58	78.86	77.18	107.5	0.1969	14.419	89.28	87.28	85.33	83.41	81.54	79.72	77.93	76.18
97.7	0.1877	15.125	89.76	87.84	85.96	84.12	82.32	80.56	78.84	77.16	107.7	0.1971	14.405	89.27	87.27	85.31	83.40	81.53	79.70	77.91	76.16
97.9	0.1879	15.109	89.75	87.83	85.95	84.11	82.31	80.55	78.82	77.14	107.9	0.1973	14.392	89.27	87.26	85.30	83.39	81.51	79.68	77.89	76.14

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

3 1/8" 50 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.068	71.210	96.14	92.44	88.87	85.45	82.15	78.98	75.94	73.01
3	60	0.072	67.556	95.94	92.04	88.31	84.72	81.28	77.98	74.82	71.78
4	66	0.076	64.412	95.75	91.67	87.77	84.04	80.46	77.04	73.76	70.63
5	76	0.081	60.025	95.44	91.09	86.94	82.98	79.20	75.59	72.14	68.85
6	82	0.084	57.787	95.27	90.76	86.47	82.38	78.48	74.77	71.24	67.87
7	174	0.123	39.670	93.19	86.83	80.92	75.40	70.26	65.48	61.01	56.86
8	180	0.125	39.003	93.07	86.63	80.62	75.04	69.84	65.00	60.50	56.31
9	186	0.127	38.369	92.96	86.42	80.34	74.68	69.43	64.54	60.00	55.78
10	192	0.129	37.765	92.85	86.22	80.06	74.34	69.02	64.09	59.51	55.26
11	198	0.131	37.188	92.75	86.02	79.78	74.00	68.63	63.65	59.03	54.75
12	204	0.133	36.637	92.64	85.83	79.51	73.66	68.24	63.22	58.57	54.26
13	210	0.135	36.110	92.54	85.63	79.25	73.33	67.86	62.80	58.11	53.78
14	470	0.202	24.137	89.05	79.29	70.61	62.88	55.99	49.86	44.40	39.53
15	476	0.203	23.985	88.98	79.18	70.45	62.69	55.78	49.64	44.17	39.30
16	482	0.204	23.835	88.92	79.06	70.30	62.51	55.58	49.42	43.94	39.07
17	488	0.205	23.688	88.85	78.95	70.14	62.32	55.38	49.20	43.72	38.84
18	494	0.207	23.544	88.79	78.83	69.99	62.14	55.18	48.99	43.50	38.62
19	500	0.208	23.402	88.72	78.72	69.84	61.97	54.98	48.78	43.28	38.40
20	506	0.209	23.263	88.66	78.61	69.69	61.79	54.78	48.57	43.06	38.18
21	512	0.210	23.126	88.60	78.49	69.54	61.61	54.59	48.36	42.85	37.96
22	518	0.212	22.992	88.53	78.38	69.40	61.44	54.39	48.16	42.64	37.75
23	524	0.213	22.860	88.47	78.27	69.25	61.27	54.20	47.95	42.43	37.54
24	530	0.214	22.730	88.41	78.16	69.10	61.10	54.01	47.75	42.22	37.33
25	536	0.215	22.602	88.35	78.05	68.96	60.93	53.83	47.56	42.01	37.12
26	542	0.216	22.477	88.29	77.95	68.82	60.76	53.64	47.36	41.81	36.91
27	548	0.218	22.354	88.23	77.84	68.68	60.59	53.46	47.16	41.61	36.71
28	554	0.219	22.232	88.17	77.73	68.53	60.42	53.27	46.97	41.41	36.51
29	560	0.220	22.113	88.11	77.63	68.40	60.26	53.09	46.78	41.22	36.31
30	566	0.221	21.995	88.05	77.52	68.26	60.10	52.91	46.59	41.02	36.12
31	572	0.222	21.880	87.99	77.42	68.12	59.94	52.74	46.40	40.83	35.92
32	578	0.223	21.766	87.93	77.31	67.98	59.78	52.56	46.22	40.64	35.73
33	584	0.225	21.654	87.87	77.21	67.85	59.62	52.39	46.03	40.45	35.54
34	590	0.226	21.543	87.81	77.11	67.71	59.46	52.21	45.85	40.26	35.35
35	596	0.227	21.435	87.75	77.01	67.58	59.30	52.04	45.67	40.08	35.17

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
36	602	0.228	21.327	87.70	76.91	67.45	59.15	51.87	45.49	39.89	34.98
37	608	0.229	21.222	87.64	76.81	67.31	58.99	51.70	45.31	39.71	34.80
38	614	0.230	21.118	87.58	76.71	67.18	58.84	51.53	45.13	39.53	34.62
39	620	0.231	21.016	87.53	76.61	67.05	58.69	51.37	44.96	39.35	34.44
40	626	0.233	20.915	87.47	76.51	66.92	58.54	51.20	44.79	39.17	34.27
41	632	0.234	20.815	87.41	76.41	66.79	58.39	51.04	44.61	39.00	34.09
42	638	0.235	20.717	87.36	76.31	66.67	58.24	50.88	44.44	38.83	33.92
43	644	0.236	20.620	87.30	76.22	66.54	58.09	50.72	44.28	38.65	33.75
44	650	0.237	20.525	87.25	76.12	66.41	57.94	50.56	44.11	38.48	33.58
45	656	0.238	20.431	87.19	76.03	66.29	57.80	50.40	43.94	38.31	33.41
46	662	0.239	20.338	87.14	75.93	66.17	57.66	50.24	43.78	38.15	33.24
47	668	0.240	20.246	87.08	75.84	66.04	57.51	50.08	43.61	37.98	33.08
48	674	0.241	20.156	87.03	75.74	65.92	57.37	49.93	43.45	37.82	32.91
49	680	0.242	20.067	86.98	75.65	65.80	57.23	49.77	43.29	37.65	32.75
50	686	0.243	19.979	86.92	75.56	65.68	57.09	49.62	43.13	37.49	32.59
51	692	0.245	19.892	86.87	75.46	65.56	56.95	49.47	42.98	37.33	32.43

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

3 1/8" 50 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.0872	55.751	95.10	90.44	86.01	81.80	77.79	73.98	70.36	66.91
88.3	0.0873	55.687	95.10	90.43	86.00	81.78	77.77	73.96	70.33	66.88
88.5	0.0874	55.624	95.09	90.42	85.98	81.76	77.75	73.93	70.30	66.85
88.7	0.0875	55.562	95.09	90.41	85.97	81.74	77.73	73.91	70.27	66.82
88.9	0.0876	55.499	95.08	90.40	85.95	81.73	77.70	73.88	70.25	66.79
89.1	0.0877	55.437	95.07	90.39	85.94	81.71	77.68	73.86	70.22	66.76
89.3	0.0878	55.375	95.07	90.38	85.93	81.69	77.66	73.83	70.19	66.73
89.5	0.0879	55.313	95.06	90.37	85.91	81.67	77.64	73.81	70.16	66.70
89.7	0.0880	55.251	95.06	90.36	85.90	81.65	77.62	73.78	70.14	66.67
89.9	0.0881	55.190	95.05	90.35	85.88	81.63	77.59	73.76	70.11	66.64
90.1	0.0882	55.128	95.05	90.34	85.87	81.61	77.57	73.73	70.08	66.61
90.3	0.0883	55.067	95.04	90.33	85.85	81.60	77.55	73.71	70.05	66.58
90.5	0.0884	55.006	95.04	90.32	85.84	81.58	77.53	73.68	70.02	66.55
90.7	0.0885	54.946	95.03	90.31	85.82	81.56	77.51	73.66	70.00	66.52
90.9	0.0886	54.885	95.03	90.30	85.81	81.54	77.49	73.63	69.97	66.49
91.1	0.0887	54.825	95.02	90.29	85.79	81.52	77.46	73.61	69.94	66.46
91.3	0.0888	54.765	95.02	90.28	85.78	81.50	77.44	73.58	69.91	66.43
91.5	0.0889	54.705	95.01	90.27	85.77	81.49	77.42	73.56	69.89	66.40
91.7	0.0890	54.645	95.01	90.26	85.75	81.47	77.40	73.53	69.86	66.37
91.9	0.0891	54.586	95.00	90.25	85.74	81.45	77.38	73.51	69.83	66.34
92.1	0.0892	54.527	94.99	90.24	85.72	81.43	77.36	73.48	69.81	66.31
92.3	0.0893	54.467	94.99	90.23	85.71	81.41	77.33	73.46	69.78	66.28
92.5	0.0894	54.408	94.98	90.22	85.69	81.40	77.31	73.43	69.75	66.25
92.7	0.0895	54.350	94.98	90.21	85.68	81.38	77.29	73.41	69.72	66.22
92.9	0.0896	54.291	94.97	90.20	85.67	81.36	77.27	73.39	69.70	66.19
93.1	0.0897	54.233	94.97	90.19	85.65	81.34	77.25	73.36	69.67	66.16
93.3	0.0898	54.175	94.96	90.18	85.64	81.32	77.23	73.34	69.64	66.13
93.5	0.0899	54.117	94.96	90.17	85.62	81.31	77.21	73.31	69.62	66.11
93.7	0.0900	54.059	94.95	90.16	85.61	81.29	77.18	73.29	69.59	66.08
93.9	0.0901	54.001	94.95	90.15	85.59	81.27	77.16	73.26	69.56	66.05
94.1	0.0902	53.944	94.94	90.14	85.58	81.25	77.14	73.24	69.54	66.02
94.3	0.0903	53.887	94.94	90.13	85.57	81.23	77.12	73.22	69.51	65.99
94.5	0.0904	53.830	94.93	90.12	85.55	81.22	77.10	73.19	69.48	65.96
94.7	0.0905	53.773	94.93	90.11	85.54	81.20	77.08	73.17	69.45	65.93
94.9	0.0906	53.716	94.92	90.10	85.52	81.18	77.06	73.14	69.43	65.90
95.1	0.0906	53.660	94.92	90.09	85.51	81.16	77.04	73.12	69.40	65.87
95.3	0.0907	53.603	94.91	90.08	85.50	81.14	77.01	73.09	69.37	65.84
95.5	0.0908	53.547	94.91	90.07	85.48	81.13	76.99	73.07	69.35	65.82
95.7	0.0909	53.491	94.90	90.06	85.47	81.11	76.97	73.05	69.32	65.79
95.9	0.0910	53.435	94.89	90.05	85.45	81.09	76.95	73.02	69.29	65.76
96.1	0.0911	53.380	94.89	90.04	85.44	81.07	76.93	73.00	69.27	65.73
96.3	0.0912	53.324	94.88	90.03	85.43	81.06	76.91	72.98	69.24	65.70
96.5	0.0913	53.269	94.88	90.02	85.41	81.04	76.89	72.95	69.22	65.67
96.7	0.0914	53.214	94.87	90.01	85.40	81.02	76.87	72.93	69.19	65.64
96.9	0.0915	53.159	94.87	90.00	85.38	81.00	76.85	72.90	69.16	65.61
97.1	0.0916	53.104	94.86	89.99	85.37	80.99	76.83	72.88	69.14	65.59
97.3	0.0917	53.049	94.86	89.98	85.36	80.97	76.80	72.86	69.11	65.56
97.5	0.0918	52.995	94.85	89.97	85.34	80.95	76.78	72.83	69.08	65.53
97.7	0.0919	52.941	94.85	89.96	85.33	80.93	76.76	72.81	69.06	65.50
97.9	0.0920	52.887	94.84	89.95	85.31	80.91	76.74	72.79	69.03	65.47

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.0921	52.833	94.84	89.94	85.30	80.90	76.72	72.76	69.01	65.44
98.3	0.0922	52.779	94.83	89.93	85.29	80.88	76.70	72.74	68.98	65.42
98.5	0.0923	52.725	94.83	89.92	85.27	80.86	76.68	72.71	68.95	65.39
98.7	0.0923	52.672	94.82	89.91	85.26	80.84	76.66	72.69	68.93	65.36
98.9	0.0924	52.619	94.82	89.90	85.25	80.83	76.64	72.67	68.90	65.33
99.1	0.0925	52.565	94.81	89.89	85.23	80.81	76.62	72.64	68.88	65.30
99.3	0.0926	52.513	94.81	89.88	85.22	80.79	76.60	72.62	68.85	65.27
99.5	0.0927	52.460	94.80	89.88	85.20	80.78	76.58	72.60	68.82	65.25
99.7	0.0928	52.407	94.80	89.87	85.19	80.76	76.56	72.57	68.80	65.22
99.9	0.0929	52.355	94.79	89.86	85.18	80.74	76.54	72.55	68.77	65.19
100.1	0.0930	52.302	94.79	89.85	85.16	80.72	76.52	72.53	68.75	65.16
100.3	0.0931	52.250	94.78	89.84	85.15	80.71	76.50	72.50	68.72	65.14
100.5	0.0932	52.198	94.78	89.83	85.14	80.69	76.47	72.48	68.70	65.11
100.7	0.0933	52.146	94.77	89.82	85.12	80.67	76.45	72.46	68.67	65.08
100.9	0.0934	52.095	94.77	89.81	85.11	80.65	76.43	72.43	68.64	65.05
101.1	0.0935	52.043	94.76	89.80	85.09	80.64	76.41	72.41	68.62	65.02
101.3	0.0936	51.992	94.76	89.79	85.08	80.62	76.39	72.39	68.59	65.00
101.5	0.0936	51.940	94.75	89.78	85.07	80.60	76.37	72.37	68.57	64.97
101.7	0.0937	51.889	94.75	89.77	85.05	80.59	76.35	72.34	68.54	64.94
101.9	0.0938	51.838	94.74	89.76	85.04	80.57	76.33	72.32	68.52	64.91
102.1	0.0939	51.787	94.74	89.75	85.03	80.55	76.31	72.30	68.49	64.89
102.3	0.0940	51.737	94.73	89.74	85.01	80.53	76.29	72.27	68.47	64.86
102.5	0.0941	51.686	94.73	89.73	85.00	80.52	76.27	72.25	68.44	64.83
102.7	0.0942	51.636	94.72	89.72	84.99	80.50	76.25	72.23	68.41	64.80
102.9	0.0943	51.586	94.72	89.71	84.97	80.48	76.23	72.20	68.39	64.78
103.1	0.0944	51.536	94.71	89.70	84.96	80.47	76.21	72.18	68.36	64.75
103.3	0.0945	51.486	94.71	89.69	84.95	80.45	76.19	72.16	68.34	64.72
103.5	0.0946	51.436	94.70	89.68	84.93	80.43	76.17	72.14	68.31	64.69
103.7	0.0947	51.386	94.70	89.68	84.92	80.42	76.15	72.11	68.29	64.67
103.9	0.0947	51.337	94.69	89.67	84.91	80.40	76.13	72.09	68.26	64.64
104.1	0.0948	51.288	94.69	89.66	84.89	80.38	76.11	72.07	68.24	64.61
104.3	0.0949	51.238	94.68	89.65	84.88	80.37	76.09	72.05	68.21	64.59
104.5	0.0950	51.189	94.68	89.64	84.87	80.35	76.07	72.02	68.19	64.56
104.7	0.0951	51.140	94.67	89.63	84.85	80.33	76.05	72.00	68.16	64.53
104.9	0.0952	51.092	94.67	89.62	84.84	80.32	76.03	71.98	68.14	64.51
105.1	0.0953	51.043	94.66	89.61	84.83	80.30	76.01	71.95	68.11	64.48
105.3	0.0954	50.994	94.66	89.60	84.81	80.28	75.99	71.93	68.09	64.45
105.5	0.0955	50.946	94.65	89.59	84.80	80.26	75.97	71.91	68.06	64.42
105.7	0.0956	50.898	94.65	89.58	84.79	80.25	75.95	71.89	68.04	64.40
105.9	0.0957	50.850	94.64	89.57	84.77	80.23	75.93	71.86	68.01	64.37
106.1	0.0957	50.802	94.64	89.56	84.76	80.21	75.91	71.84	67.99	64.34
106.3	0.0958	50.754	94.63	89.55	84.75	80.20	75.89	71.82	67.97	64.32
106.5	0.0959	50.706	94.63	89.54	84.73	80.18	75.87	71.80	67.94	64.29
106.7	0.0960	50.659	94.62	89.53	84.72	80.16	75.85	71.78	67.92	64.26
106.9	0.0961	50.611	94.62	89.53	84.71	80.15	75.83	71.75	67.89	64.24
107.1	0.0962	50.564	94.61	89.52	84.69	80.13	75.81	71.73	67.87	64.21
107.3	0.0963	50.517	94.61	89.51	84.68	80.12	75.80	71.71	67.84	64.18
107.5	0.0964	50.470	94.60	89.50	84.67	80.10	75.78	71.69	67.82	64.16
107.7	0.0965	50.423	94.60	89.49	84.65	80.08	75.76	71.66	67.79	64.13
107.9	0.0966	50.376	94.59	89.48	84.64	80.07	75.74	71.64	67.77	64.10

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

4 1/16" 50 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.054	113.030	96.93	93.96	91.07	88.28	85.57	82.94	80.40	77.93
3	60	0.057	107.230	96.77	93.64	90.61	87.68	84.85	82.11	79.45	76.88
4	66	0.060	102.240	96.61	93.34	90.18	87.12	84.17	81.32	78.56	75.90
5	76	0.064	95.276	96.37	92.87	89.50	86.25	83.12	80.10	77.19	74.39
6	82	0.067	91.724	96.23	92.60	89.11	85.76	82.52	79.41	76.42	73.54
7	174	0.097	62.968	94.56	89.41	84.55	79.94	75.59	71.48	67.59	63.91
8	180	0.099	61.909	94.47	89.24	84.30	79.64	75.23	71.07	67.14	63.42
9	186	0.101	60.903	94.38	89.07	84.07	79.34	74.88	70.67	66.70	62.95
10	192	0.102	59.943	94.29	88.91	83.83	79.05	74.50	70.28	66.27	62.48
11	198	0.104	59.028	94.21	88.75	83.60	78.76	74.23	69.90	65.85	62.03
12	204	0.105	58.154	94.12	88.59	83.38	78.48	73.86	69.52	65.43	61.59
13	210	0.107	57.317	94.04	88.43	83.16	78.20	73.54	69.15	65.03	61.15
14	470	0.160	38.313	91.21	83.20	75.89	69.22	63.14	57.59	52.53	47.91
15	476	0.161	38.070	91.16	83.10	75.76	69.06	62.95	57.39	52.32	47.69
16	482	0.162	37.833	91.11	83.00	75.62	68.90	62.77	57.19	52.10	47.47
17	488	0.163	37.599	91.05	82.91	75.49	68.74	62.59	56.99	51.89	47.25
18	494	0.164	37.370	91.00	82.81	75.36	68.58	62.41	56.79	51.68	47.03
19	500	0.165	37.146	90.95	82.72	75.23	68.42	62.23	56.60	51.48	46.82
20	506	0.166	36.925	90.90	82.63	75.11	68.27	62.06	56.41	51.27	46.61
21	512	0.167	36.708	90.85	82.53	74.98	68.12	61.88	56.22	51.07	46.40
22	518	0.168	36.494	90.80	82.44	74.85	67.96	61.71	56.03	50.87	46.19
23	524	0.169	36.285	90.75	82.35	74.73	67.81	61.54	55.84	50.67	45.98
24	530	0.170	36.079	90.70	82.26	74.60	67.66	61.37	55.66	50.48	45.78
25	536	0.171	35.876	90.65	82.17	74.48	67.51	61.20	55.47	50.28	45.58
26	542	0.172	35.677	90.60	82.08	74.36	67.36	61.03	55.29	50.09	45.38
27	548	0.173	35.481	90.55	81.99	74.24	67.22	60.86	55.11	49.90	45.18
28	554	0.173	35.289	90.50	81.90	74.12	67.07	60.70	54.93	49.71	44.99
29	560	0.174	35.099	90.45	81.81	74.00	66.93	60.54	54.75	49.52	44.79
30	566	0.175	34.913	90.40	81.72	73.88	66.78	60.37	54.58	49.34	44.60
31	572	0.176	34.729	90.35	81.63	73.76	66.64	60.21	54.40	49.15	44.41
32	578	0.177	34.548	90.30	81.55	73.64	66.50	60.05	54.23	48.97	44.22
33	584	0.178	34.370	90.26	81.46	73.52	66.36	59.89	54.06	48.79	44.04
34	590	0.179	34.195	90.21	81.38	73.41	66.22	59.74	53.89	48.61	43.85
35	596	0.180	34.023	90.16	81.29	73.29	66.08	59.58	53.72	48.43	43.67

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
36	602	0.181	33.853	90.11	81.21	73.18	65.95	59.43	53.55	48.26	43.49
37	608	0.182	33.685	90.07	81.12	73.07	65.81	59.27	53.39	48.08	43.31
38	614	0.183	33.520	90.02	81.04	72.95	65.67	59.12	53.22	47.91	43.13
39	620	0.183	33.358	89.98	80.96	72.84	65.54	58.97	53.06	47.74	42.95
40	626	0.184	33.197	89.93	80.87	72.73	65.41	58.82	52.90	47.57	42.78
41	632	0.185	33.039	89.88	80.79	72.62	65.27	58.67	52.74	47.40	42.61
42	638	0.186	32.884	89.84	80.71	72.51	65.14	58.52	52.58	47.23	42.43
43	644	0.187	32.730	89.79	80.63	72.40	65.01	58.38	52.42	47.07	42.26
44	650	0.188	32.579	89.75	80.55	72.29	64.88	58.23	52.26	46.90	42.09
45	656	0.189	32.429	89.70	80.47	72.18	64.75	58.08	52.10	46.74	41.93
46	662	0.190	32.282	89.66	80.39	72.08	64.62	57.94	51.95	46.58	41.76
47	668	0.190	32.137	89.62	80.31	71.97	64.50	57.80	51.80	46.42	41.60
48	674	0.191	31.994	89.57	80.23	71.86	64.37	57.66	51.64	46.26	41.43
49	680	0.192	31.852	89.53	80.15	71.76	64.24	57.52	51.49	46.10	41.27
50	686	0.193	31.712	89.48	80.07	71.65	64.12	57.38	51.34	45.94	41.11
51	692	0.194	31.575	89.44	80.00	71.55	63.99	57.24	51.19	45.79	40.95

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

4 1/16" 50 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.06917	88.492	96.10	92.35	88.74	85.28	81.95	78.75	75.67	72.72
88.3	0.06925	88.392	96.09	92.34	88.73	85.26	81.93	78.73	75.65	72.69
88.5	0.06933	88.292	96.09	92.33	88.72	85.25	81.91	78.71	75.63	72.67
88.7	0.06941	88.192	96.08	92.32	88.70	85.23	81.89	78.68	75.60	72.64
88.9	0.06948	88.093	96.08	92.31	88.69	85.21	81.87	78.66	75.58	72.62
89.1	0.06956	87.994	96.07	92.30	88.68	85.20	81.86	78.64	75.56	72.59
89.3	0.06964	87.895	96.07	92.30	88.67	85.18	81.84	78.62	75.53	72.56
89.5	0.06972	87.797	96.07	92.29	88.66	85.17	81.82	78.60	75.51	72.54
89.7	0.06980	87.699	96.06	92.28	88.64	85.15	81.80	78.58	75.48	72.51
89.9	0.06987	87.602	96.06	92.27	88.63	85.14	81.78	78.56	75.46	72.49
90.1	0.06995	87.504	96.05	92.26	88.62	85.12	81.76	78.54	75.44	72.46
90.3	0.07003	87.407	96.05	92.25	88.61	85.11	81.75	78.52	75.41	72.43
90.5	0.07011	87.311	96.04	92.25	88.60	85.09	81.73	78.49	75.39	72.41
90.7	0.07018	87.214	96.04	92.24	88.59	85.08	81.71	78.47	75.37	72.38
90.9	0.07026	87.118	96.04	92.23	88.57	85.06	81.69	78.45	75.34	72.36
91.1	0.07034	87.023	96.03	92.22	88.56	85.05	81.67	78.43	75.32	72.33
91.3	0.07042	86.927	96.03	92.21	88.55	85.03	81.65	78.41	75.30	72.30
91.5	0.07049	86.832	96.02	92.20	88.54	85.02	81.64	78.39	75.27	72.28
91.7	0.07057	86.738	96.02	92.20	88.53	85.00	81.62	78.37	75.25	72.25
91.9	0.07065	86.643	96.01	92.19	88.51	84.99	81.60	78.35	75.23	72.23
92.1	0.07072	86.549	96.01	92.18	88.50	84.97	81.58	78.33	75.20	72.20
92.3	0.07080	86.455	96.01	92.17	88.49	84.96	81.56	78.31	75.18	72.18
92.5	0.07088	86.362	96.00	92.16	88.48	84.94	81.55	78.29	75.16	72.15
92.7	0.07095	86.268	96.00	92.16	88.47	84.93	81.53	78.27	75.13	72.13
92.9	0.07103	86.176	95.99	92.15	88.46	84.91	81.51	78.24	75.11	72.10
93.1	0.07111	86.083	95.99	92.14	88.44	84.90	81.49	78.22	75.09	72.08
93.3	0.07118	85.991	95.99	92.13	88.43	84.88	81.47	78.20	75.06	72.05
93.5	0.07126	85.899	95.98	92.12	88.42	84.87	81.46	78.18	75.04	72.02
93.7	0.07134	85.807	95.98	92.12	88.41	84.85	81.44	78.16	75.02	72.00
93.9	0.07141	85.715	95.97	92.11	88.40	84.84	81.42	78.14	74.99	71.97
94.1	0.07149	85.624	95.97	92.10	88.39	84.82	81.40	78.12	74.97	71.95
94.3	0.07156	85.533	95.96	92.09	88.37	84.81	81.39	78.10	74.95	71.92
94.5	0.07164	85.443	95.96	92.08	88.36	84.79	81.37	78.08	74.93	71.90
94.7	0.07172	85.353	95.96	92.08	88.35	84.78	81.35	78.06	74.90	71.87
94.9	0.07179	85.263	95.95	92.07	88.34	84.76	81.33	78.04	74.88	71.85
95.1	0.07187	85.173	95.95	92.06	88.33	84.75	81.31	78.02	74.86	71.82
95.3	0.07194	85.084	95.94	92.05	88.32	84.73	81.30	78.00	74.83	71.80
95.5	0.07202	84.994	95.94	92.04	88.31	84.72	81.28	77.98	74.81	71.77
95.7	0.07209	84.906	95.93	92.04	88.29	84.70	81.26	77.96	74.79	71.75
95.9	0.07217	84.817	95.93	92.03	88.28	84.69	81.24	77.94	74.77	71.72
96.1	0.07224	84.729	95.93	92.02	88.27	84.68	81.23	77.92	74.74	71.70
96.3	0.07232	84.641	95.92	92.01	88.26	84.66	81.21	77.90	74.72	71.67
96.5	0.07239	84.553	95.92	92.00	88.25	84.65	81.19	77.88	74.70	71.65
96.7	0.07247	84.465	95.91	92.00	88.24	84.63	81.17	77.86	74.68	71.62
96.9	0.07254	84.378	95.91	91.99	88.23	84.62	81.16	77.84	74.65	71.60
97.1	0.07262	84.291	95.91	91.98	88.21	84.60	81.14	77.82	74.63	71.58
97.3	0.07269	84.205	95.90	91.97	88.20	84.59	81.12	77.80	74.61	71.55
97.5	0.07277	84.118	95.90	91.96	88.19	84.57	81.10	77.78	74.59	71.53
97.7	0.07284	84.032	95.89	91.96	88.18	84.56	81.09	77.76	74.56	71.50
97.9	0.07292	83.946	95.89	91.95	88.17	84.54	81.07	77.74	74.54	71.48

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.07299	83.860	95.89	91.94	88.16	84.53	81.05	77.72	74.52	71.45
98.3	0.07307	83.775	95.88	91.93	88.15	84.52	81.03	77.70	74.50	71.43
98.5	0.07314	83.690	95.88	91.92	88.13	84.50	81.02	77.68	74.47	71.40
98.7	0.07321	83.605	95.87	91.92	88.12	84.49	81.00	77.66	74.45	71.38
98.9	0.07329	83.521	95.87	91.91	88.11	84.47	80.98	77.64	74.43	71.35
99.1	0.07336	83.436	95.86	91.90	88.10	84.46	80.96	77.62	74.41	71.33
99.3	0.07344	83.352	95.86	91.89	88.09	84.44	80.95	77.60	74.39	71.31
99.5	0.07351	83.268	95.86	91.89	88.08	84.43	80.93	77.58	74.36	71.28
99.7	0.07358	83.185	95.85	91.88	88.07	84.41	80.91	77.56	74.34	71.26
99.9	0.07366	83.102	95.85	91.87	88.06	84.40	80.90	77.54	74.32	71.23
100.1	0.07373	83.019	95.84	91.86	88.04	84.39	80.88	77.52	74.30	71.21
100.3	0.07381	82.936	95.84	91.85	88.03	84.37	80.86	77.50	74.27	71.19
100.5	0.07388	82.853	95.84	91.85	88.02	84.36	80.84	77.48	74.25	71.16
100.7	0.07395	82.771	95.83	91.84	88.01	84.34	80.83	77.46	74.23	71.14
100.9	0.07403	82.689	95.83	91.83	88.00	84.33	80.81	77.44	74.21	71.11
101.1	0.07410	82.607	95.82	91.82	87.99	84.31	80.79	77.42	74.19	71.09
101.3	0.07417	82.525	95.82	91.82	87.98	84.30	80.78	77.40	74.16	71.06
101.5	0.07425	82.444	95.82	91.81	87.97	84.29	80.76	77.38	74.14	71.04
101.7	0.07432	82.363	95.81	91.80	87.96	84.27	80.74	77.36	74.12	71.02
101.9	0.07439	82.282	95.81	91.79	87.94	84.26	80.73	77.34	74.10	70.99
102.1	0.07446	82.201	95.80	91.78	87.93	84.24	80.71	77.32	74.08	70.97
102.3	0.07454	82.121	95.80	91.78	87.92	84.23	80.69	77.30	74.06	70.95
102.5	0.07461	82.041	95.80	91.77	87.91	84.22	80.67	77.28	74.03	70.92
102.7	0.07468	81.961	95.79	91.76	87.90	84.20	80.66	77.26	74.01	70.90
102.9	0.07476	81.881	95.79	91.75	87.89	84.19	80.64	77.24	73.99	70.87
103.1	0.07483	81.802	95.78	91.75	87.88	84.17	80.62	77.22	73.97	70.85
103.3	0.07490	81.723	95.78	91.74	87.87	84.16	80.61	77.21	73.95	70.83
103.5	0.07497	81.644	95.78	91.73	87.86	84.14	80.59	77.19	73.93	70.80
103.7	0.07505	81.565	95.77	91.72	87.84	84.13	80.57	77.17	73.90	70.78
103.9	0.07512	81.486	95.77	91.72	87.83	84.12	80.56	77.15	73.88	70.76
104.1	0.07519	81.408	95.76	91.71	87.82	84.10	80.54	77.13	73.86	70.73
104.3	0.07526	81.330	95.76	91.70	87.81	84.09	80.52	77.11	73.84	70.71
104.5	0.07533	81.252	95.76	91.69	87.80	84.07	80.51	77.09	73.82	70.69
104.7	0.07541	81.174	95.75	91.68	87.79	84.06	80.49	77.07	73.80	70.66
104.9	0.07548	81.097	95.75	91.68	87.78	84.05	80.47	77.05	73.78	70.64
105.1	0.07555	81.020	95.74	91.67	87.77	84.03	80.46	77.03	73.75	70.62
105.3	0.07562	80.943	95.74	91.66	87.76	84.02	80.44	77.01	73.73	70.59
105.5	0.07569	80.866	95.74	91.65	87.75	84.01	80.42	76.99	73.71	70.57
105.7	0.07577	80.789	95.73	91.65	87.74	83.99	80.41	76.98	73.69	70.55
105.9	0.07584	80.713	95.73	91.64	87.72	83.98	80.39	76.96	73.67	70.52
106.1	0.07591	80.637	95.72	91.63	87.71	83.96	80.37	76.94	73.65	70.50
106.3	0.07598	80.561	95.72	91.62	87.70	83.95	80.36	76.92	73.63	70.48
106.5	0.07605	80.485	95.72	91.62	87.69	83.94	80.34	76.90	73.61	70.45
106.7	0.07612	80.410	95.71	91.61	87.68	83.92	80.32	76.88	73.58	70.43
106.9	0.07619	80.335	95.71	91.60	87.67	83.91	80.31	76.86	73.56	70.41
107.1	0.07627	80.260	95.70	91.59	87.66	83.89	80.29	76.84	73.54	70.38
107.3	0.07634	80.185	95.70	91.59	87.65	83.88	80.27	76.82	73.52	70.36
107.5	0.07641	80.110	95.70	91.58	87.64	83.87	80.26	76.80	73.50	70.34
107.7	0.07648	80.036	95.69	91.57	87.63	83.85	80.24	76.79	73.48	70.31
107.9	0.07655	79.962	95.69	91.56	87.62	83.84	80.23	76.77	73.46	70.29

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, V

6 1/8" 50 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.036	243.099	97.97	95.99	94.04	92.13	90.27	88.44	86.64	84.89
3	60	0.038	230.624	97.86	95.77	93.73	91.73	89.77	87.85	85.97	84.14
4	66	0.039	219.891	97.76	95.57	93.43	91.34	89.30	87.30	85.34	83.43
5	76	0.042	204.914	97.60	95.26	92.97	90.74	88.56	86.43	84.36	82.33
6	82	0.044	197.275	97.51	95.08	92.71	90.40	88.14	85.95	83.80	81.72
7	174	0.064	135.427	96.39	92.91	89.56	86.32	83.21	80.20	77.31	74.52
8	180	0.065	133.151	96.33	92.79	89.39	86.11	82.95	79.90	76.97	74.14
9	186	0.066	130.985	96.27	92.68	89.22	85.89	82.69	79.61	76.64	73.78
10	192	0.067	128.923	96.21	92.57	89.06	85.69	82.44	79.32	76.31	73.42
11	198	0.068	126.954	96.15	92.46	88.90	85.48	82.19	79.03	75.99	73.07
12	204	0.069	125.073	96.10	92.35	88.74	85.28	81.95	78.75	75.68	72.73
13	210	0.070	123.273	96.04	92.24	88.59	85.08	81.71	78.48	75.37	72.39
14	470	0.105	82.401	94.14	88.62	83.42	78.53	73.92	69.59	65.51	61.67
15	476	0.106	81.880	94.10	88.55	83.32	78.41	73.78	69.43	65.33	61.48
16	482	0.106	81.368	94.06	88.48	83.23	78.29	73.64	69.27	65.16	61.29
17	488	0.107	80.867	94.03	88.41	83.13	78.17	73.50	69.11	64.99	61.10
18	494	0.108	80.374	93.99	88.35	83.04	78.05	73.36	68.96	64.81	60.92
19	500	0.108	79.890	93.96	88.28	82.95	77.93	73.23	68.80	64.64	60.74
20	506	0.109	79.415	93.92	88.21	82.85	77.82	73.09	68.65	64.48	60.56
21	512	0.110	78.949	93.89	88.15	82.76	77.70	72.95	68.49	64.31	60.38
22	518	0.110	78.490	93.85	88.08	82.67	77.59	72.82	68.34	64.14	60.20
23	524	0.111	78.039	93.82	88.02	82.58	77.48	72.69	68.19	63.98	60.02
24	530	0.111	77.596	93.78	87.96	82.49	77.36	72.55	68.04	63.82	59.85
25	536	0.112	77.161	93.75	87.89	82.40	77.25	72.42	67.90	63.65	59.68
26	542	0.113	76.733	93.72	87.83	82.31	77.14	72.29	67.75	63.49	59.50
27	548	0.113	76.311	93.68	87.77	82.22	77.03	72.16	67.60	63.33	59.33
28	554	0.114	75.897	93.65	87.70	82.13	76.92	72.03	67.46	63.18	59.17
29	560	0.115	75.489	93.62	87.64	82.05	76.81	71.91	67.32	63.02	59.00
30	566	0.115	75.088	93.58	87.58	81.96	76.70	71.78	67.18	62.87	58.83
31	572	0.116	74.693	93.55	87.52	81.87	76.59	71.65	67.03	62.71	58.67
32	578	0.116	74.305	93.52	87.46	81.79	76.49	71.53	66.89	62.56	58.50
33	584	0.117	73.922	93.49	87.40	81.70	76.38	71.41	66.75	62.41	58.34
34	590	0.118	73.545	93.45	87.34	81.62	76.28	71.28	66.62	62.26	58.18
35	596	0.118	73.174	93.42	87.28	81.54	76.17	71.16	66.48	62.11	58.02

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
36	602	0.119	72.808	93.39	87.22	81.45	76.07	71.04	66.34	61.96	57.86
37	608	0.119	72.448	93.36	87.16	81.37	75.96	70.92	66.21	61.81	57.71
38	614	0.120	72.093	93.33	87.10	81.29	75.86	70.80	66.07	61.66	57.55
39	620	0.121	71.744	93.30	87.04	81.20	75.76	70.68	65.94	61.52	57.39
40	626	0.121	71.399	93.26	86.98	81.12	75.66	70.56	65.81	61.38	57.24
41	632	0.122	71.059	93.23	86.92	81.04	75.56	70.44	65.68	61.23	57.09
42	638	0.122	70.724	93.20	86.87	80.96	75.46	70.33	65.55	61.09	56.94
43	644	0.123	70.394	93.17	86.81	80.88	75.36	70.21	65.42	60.95	56.79
44	650	0.123	70.068	93.14	86.75	80.80	75.26	70.10	65.29	60.81	56.64
45	656	0.124	69.747	93.11	86.69	80.72	75.16	69.98	65.16	60.67	56.49
46	662	0.125	69.431	93.08	86.64	80.64	75.06	69.87	65.03	60.53	56.34
47	668	0.125	69.118	93.05	86.58	80.56	74.96	69.75	64.91	60.39	56.20
48	674	0.126	68.810	93.02	86.53	80.49	74.87	69.64	64.78	60.26	56.05
49	680	0.126	68.505	92.99	86.47	80.41	74.77	69.53	64.66	60.12	55.91
50	686	0.127	68.205	92.96	86.42	80.33	74.68	69.42	64.53	59.99	55.77
51	692	0.127	67.909	92.93	86.36	80.25	74.58	69.31	64.41	59.85	55.62

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

6 1/8" 50 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.04545	190.323	97.42	94.90	92.45	90.06	87.74	85.47	83.27	81.12
88.3	0.04550	190.107	97.41	94.90	92.44	90.05	87.73	85.46	83.25	81.10
88.5	0.04555	189.892	97.41	94.89	92.44	90.04	87.71	85.44	83.23	81.08
88.7	0.04560	189.678	97.41	94.89	92.43	90.03	87.70	85.43	83.21	81.06
88.9	0.04565	189.465	97.41	94.88	92.42	90.02	87.69	85.41	83.20	81.04
89.1	0.04570	189.252	97.40	94.87	92.41	90.01	87.67	85.40	83.18	81.02
89.3	0.04576	189.040	97.40	94.87	92.40	90.00	87.66	85.38	83.16	81.00
89.5	0.04581	188.829	97.40	94.86	92.39	89.99	87.65	85.37	83.15	80.98
89.7	0.04586	188.618	97.39	94.86	92.39	89.98	87.63	85.35	83.13	80.96
89.9	0.04591	188.408	97.39	94.85	92.38	89.97	87.62	85.34	83.11	80.94
90.1	0.04596	188.199	97.39	94.85	92.37	89.96	87.61	85.32	83.09	80.92
90.3	0.04601	187.990	97.39	94.84	92.36	89.95	87.60	85.31	83.08	80.91
90.5	0.04606	187.782	97.38	94.84	92.35	89.94	87.58	85.29	83.06	80.89
90.7	0.04611	187.575	97.38	94.83	92.35	89.93	87.57	85.28	83.04	80.87
90.9	0.04616	187.369	97.38	94.82	92.34	89.92	87.56	85.26	83.03	80.85
91.1	0.04621	187.163	97.37	94.82	92.33	89.91	87.55	85.25	83.01	80.83
91.3	0.04627	186.958	97.37	94.81	92.32	89.89	87.53	85.23	82.99	80.81
91.5	0.04632	186.754	97.37	94.81	92.31	89.88	87.52	85.22	82.97	80.79
91.7	0.04637	186.550	97.37	94.80	92.30	89.87	87.51	85.20	82.96	80.77
91.9	0.04642	186.347	97.36	94.80	92.30	89.86	87.49	85.19	82.94	80.75
92.1	0.04647	186.144	97.36	94.79	92.29	89.85	87.48	85.17	82.92	80.74
92.3	0.04652	185.942	97.36	94.79	92.28	89.84	87.47	85.16	82.91	80.72
92.5	0.04657	185.741	97.35	94.78	92.27	89.83	87.46	85.14	82.89	80.70
92.7	0.04662	185.541	97.35	94.77	92.26	89.82	87.44	85.13	82.87	80.68
92.9	0.04667	185.341	97.35	94.77	92.26	89.81	87.43	85.11	82.86	80.66
93.1	0.04672	185.142	97.35	94.76	92.25	89.80	87.42	85.10	82.84	80.64
93.3	0.04677	184.943	97.34	94.76	92.24	89.79	87.41	85.08	82.82	80.62
93.5	0.04682	184.745	97.34	94.75	92.23	89.78	87.39	85.07	82.81	80.60
93.7	0.04687	184.548	97.34	94.75	92.22	89.77	87.38	85.05	82.79	80.59
93.9	0.04692	184.351	97.34	94.74	92.22	89.76	87.37	85.04	82.77	80.57
94.1	0.04697	184.155	97.33	94.74	92.21	89.75	87.36	85.02	82.76	80.55
94.3	0.04702	183.960	97.33	94.73	92.20	89.74	87.34	85.01	82.74	80.53
94.5	0.04707	183.765	97.33	94.73	92.19	89.73	87.33	85.00	82.72	80.51
94.7	0.04712	183.571	97.32	94.72	92.19	89.72	87.32	84.98	82.71	80.49
94.9	0.04717	183.378	97.32	94.71	92.18	89.71	87.30	84.97	82.69	80.48
95.1	0.04722	183.185	97.32	94.71	92.17	89.70	87.29	84.95	82.67	80.46
95.3	0.04727	182.992	97.32	94.70	92.16	89.69	87.28	84.94	82.66	80.44
95.5	0.04732	182.801	97.31	94.70	92.15	89.68	87.27	84.92	82.64	80.42
95.7	0.04737	182.610	97.31	94.69	92.15	89.67	87.26	84.91	82.62	80.40
95.9	0.04742	182.419	97.31	94.69	92.14	89.66	87.24	84.89	82.61	80.38
96.1	0.04747	182.229	97.30	94.68	92.13	89.65	87.23	84.88	82.59	80.37
96.3	0.04752	182.040	97.30	94.68	92.12	89.64	87.22	84.86	82.57	80.35
96.5	0.04756	181.851	97.30	94.67	92.11	89.63	87.21	84.85	82.56	80.33
96.7	0.04761	181.663	97.30	94.67	92.11	89.62	87.19	84.84	82.54	80.31
96.9	0.04766	181.475	97.29	94.66	92.10	89.61	87.18	84.82	82.53	80.29
97.1	0.04771	181.288	97.29	94.66	92.09	89.60	87.17	84.81	82.51	80.27
97.3	0.04776	181.102	97.29	94.65	92.08	89.59	87.16	84.79	82.49	80.26
97.5	0.04781	180.916	97.29	94.64	92.08	89.58	87.14	84.78	82.48	80.24
97.7	0.04786	180.731	97.28	94.64	92.07	89.57	87.13	84.76	82.46	80.22
97.9	0.04791	180.546	97.28	94.63	92.06	89.56	87.12	84.75	82.44	80.20

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.04796	180.362	97.28	94.63	92.05	89.55	87.11	84.74	82.43	80.18
98.3	0.04801	180.178	97.27	94.62	92.04	89.54	87.09	84.72	82.41	80.17
98.5	0.04806	179.995	97.27	94.62	92.04	89.53	87.08	84.71	82.40	80.15
98.7	0.04810	179.813	97.27	94.61	92.03	89.52	87.07	84.69	82.38	80.13
98.9	0.04815	179.631	97.27	94.61	92.02	89.51	87.06	84.68	82.36	80.11
99.1	0.04820	179.450	97.26	94.60	92.01	89.49	87.05	84.66	82.35	80.09
99.3	0.04825	179.269	97.26	94.60	92.01	89.48	87.03	84.65	82.33	80.08
99.5	0.04830	179.089	97.26	94.59	92.00	89.47	87.02	84.64	82.31	80.06
99.7	0.04835	178.909	97.26	94.59	91.99	89.46	87.01	84.62	82.30	80.04
99.9	0.04840	178.730	97.25	94.58	91.98	89.45	87.00	84.61	82.28	80.02
100.1	0.04844	178.551	97.25	94.58	91.97	89.45	86.99	84.59	82.27	80.00
100.3	0.04849	178.373	97.25	94.57	91.97	89.44	86.97	84.58	82.25	79.99
100.5	0.04854	178.195	97.24	94.56	91.96	89.43	86.96	84.56	82.23	79.97
100.7	0.04859	178.018	97.24	94.56	91.95	89.42	86.95	84.55	82.22	79.95
100.9	0.04864	177.842	97.24	94.55	91.94	89.41	86.94	84.54	82.20	79.93
101.1	0.04869	177.666	97.24	94.55	91.94	89.40	86.92	84.52	82.19	79.92
101.3	0.04873	177.490	97.23	94.54	91.93	89.39	86.91	84.51	82.17	79.90
101.5	0.04878	177.315	97.23	94.54	91.92	89.38	86.90	84.49	82.15	79.88
101.7	0.04883	177.141	97.23	94.53	91.91	89.37	86.89	84.48	82.14	79.86
101.9	0.04888	176.967	97.23	94.53	91.91	89.36	86.88	84.47	82.12	79.84
102.1	0.04893	176.794	97.22	94.52	91.90	89.35	86.86	84.45	82.11	79.83
102.3	0.04897	176.621	97.22	94.52	91.89	89.34	86.85	84.44	82.09	79.81
102.5	0.04902	176.448	97.22	94.51	91.88	89.33	86.84	84.42	82.08	79.79
102.7	0.04907	176.276	97.21	94.51	91.88	89.32	86.83	84.41	82.06	79.77
102.9	0.04912	176.105	97.21	94.50	91.87	89.31	86.82	84.40	82.04	79.76
103.1	0.04916	175.934	97.21	94.50	91.86	89.30	86.80	84.38	82.03	79.74
103.3	0.04921	175.764	97.21	94.49	91.85	89.29	86.79	84.37	82.01	79.72
103.5	0.04926	175.594	97.20	94.49	91.84	89.28	86.78	84.35	82.00	79.70
103.7	0.04931	175.424	97.20	94.48	91.84	89.27	86.77	84.34	81.98	79.69
103.9	0.04935	175.255	97.20	94.48	91.83	89.26	86.76	84.33	81.97	79.67
104.1	0.04940	175.087	97.20	94.47	91.82	89.25	86.75	84.31	81.95	79.65
104.3	0.04945	174.919	97.19	94.47	91.81	89.24	86.73	84.30	81.93	79.63
104.5	0.04950	174.752	97.19	94.46	91.81	89.23	86.72	84.29	81.92	79.62
104.7	0.04954	174.585	97.19	94.46	91.80	89.22	86.71	84.27	81.90	79.60
104.9	0.04959	174.418	97.19	94.45	91.79	89.21	86.70	84.26	81.89	79.58
105.1	0.04964	174.252	97.18	94.45	91.78	89.20	86.69	84.24	81.87	79.56
105.3	0.04969	174.087	97.18	94.44	91.78	89.19	86.67	84.23	81.86	79.55
105.5	0.04973	173.921	97.18	94.44	91.77	89.18	86.66	84.22	81.84	79.53
105.7	0.04978	173.757	97.18	94.43	91.76	89.17	86.65	84.20	81.82	79.51
105.9	0.04983	173.593	97.17	94.42	91.75	89.16	86.64	84.19	81.81	79.50
106.1	0.04987	173.429	97.17	94.42	91.75	89.15	86.63	84.18	81.79	79.48
106.3	0.04992	173.266	97.17	94.41	91.74	89.14	86.62	84.16	81.78	79.46
106.5	0.04997	173.103	97.16	94.41	91.73	89.13	86.60	84.15	81.76	79.44
106.7	0.05002	172.941	97.16	94.40	91.73	89.12	86.59	84.14	81.75	79.43
106.9	0.05006	172.779	97.16	94.40	91.72	89.11	86.58	84.12	81.73	79.41
107.1	0.05011	172.617	97.16	94.39	91.71	89.10	86.57	84.11	81.72	79.39
107.3	0.05016	172.456	97.15	94.39	91.70	89.09	86.56	84.09	81.70	79.38
107.5	0.05020	172.296	97.15	94.38	91.70	89.08	86.55	84.08	81.69	79.36
107.7	0.05025	172.136	97.15	94.38	91.69	89.07	86.53	84.07	81.67	79.34
107.9	0.05030	171.976	97.15	94.37	91.68	89.06	86.52	84.05	81.65	79.32

Standard Conditions:

Attenuation: Ambient Temperature 20°C (

6 1/8" 75 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.032	211.687	98.16	96.35	94.58	92.84	91.13	89.45	87.81	86.19
3	60	0.034	200.824	98.06	96.16	94.29	92.47	90.67	88.91	87.19	85.50
4	66	0.036	191.478	97.97	95.98	94.02	92.11	90.24	88.41	86.61	84.85
5	76	0.038	178.437	97.82	95.69	93.60	91.56	89.57	87.61	85.70	83.84
6	82	0.040	171.785	97.74	95.52	93.36	91.25	89.18	87.17	85.19	83.26
7	174	0.058	117.928	96.72	93.55	90.48	87.51	84.64	81.87	79.18	76.58
8	180	0.059	115.946	96.67	93.44	90.33	87.31	84.40	81.59	78.87	76.24
9	186	0.060	114.060	96.61	93.34	90.17	87.12	84.16	81.31	78.56	75.89
10	192	0.061	112.264	96.56	93.23	90.02	86.93	83.93	81.04	78.25	75.56
11	198	0.062	110.550	96.51	93.13	89.88	86.74	83.71	80.78	77.96	75.23
12	204	0.063	108.912	96.45	93.03	89.73	86.55	83.48	80.52	77.67	74.91
13	210	0.064	107.345	96.40	92.93	89.59	86.37	83.26	80.27	77.38	74.60
14	470	0.095	71.753	94.67	89.62	84.84	80.31	76.03	71.98	68.14	64.50
15	476	0.096	71.300	94.63	89.56	84.75	80.20	75.90	71.82	67.97	64.32
16	482	0.096	70.855	94.60	89.49	84.66	80.09	75.77	71.68	67.81	64.14
17	488	0.097	70.418	94.57	89.43	84.57	79.98	75.64	71.53	67.64	63.97
18	494	0.098	69.989	94.54	89.37	84.49	79.87	75.51	71.38	67.48	63.79
19	500	0.098	69.568	94.50	89.31	84.40	79.76	75.38	71.24	67.32	63.62
20	506	0.099	69.154	94.47	89.25	84.32	79.65	75.25	71.09	67.16	63.45
21	512	0.099	68.747	94.44	89.19	84.23	79.55	75.12	70.95	67.00	63.28
22	518	0.100	68.348	94.41	89.13	84.15	79.44	75.00	70.81	66.85	63.11
23	524	0.101	67.956	94.38	89.07	84.06	79.34	74.87	70.66	66.69	62.94
24	530	0.101	67.570	94.35	89.01	83.98	79.23	74.75	70.52	66.54	62.78
25	536	0.102	67.191	94.32	88.95	83.90	79.13	74.63	70.39	66.38	62.61
26	542	0.102	66.818	94.28	88.90	83.81	79.02	74.51	70.25	66.23	62.45
27	548	0.103	66.451	94.25	88.84	83.73	78.92	74.39	70.11	66.08	62.28
28	554	0.103	66.090	94.22	88.78	83.65	78.82	74.27	69.98	65.93	62.12
29	560	0.104	65.735	94.19	88.72	83.57	78.72	74.15	69.84	65.78	61.96
30	566	0.104	65.386	94.16	88.67	83.49	78.62	74.03	69.71	65.64	61.81
31	572	0.105	65.042	94.13	88.61	83.41	78.52	73.91	69.57	65.49	61.65
32	578	0.106	64.703	94.10	88.55	83.33	78.42	73.79	69.44	65.35	61.49
33	584	0.106	64.370	94.07	88.50	83.25	78.32	73.68	69.31	65.20	61.34
34	590	0.107	64.042	94.04	88.44	83.18	78.22	73.56	69.18	65.06	61.19
35	596	0.107	63.719	94.01	88.39	83.10	78.12	73.45	69.05	64.92	61.03

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
36	602	0.108	63.401	93.99	88.33	83.02	78.03	73.33	68.92	64.78	60.88
37	608	0.108	63.087	93.96	88.28	82.94	77.93	73.22	68.80	64.64	60.73
38	614	0.109	62.778	93.93	88.22	82.87	77.84	73.11	68.67	64.50	60.58
39	620	0.109	62.473	93.90	88.17	82.79	77.74	73.00	68.54	64.36	60.44
40	626	0.110	62.173	93.87	88.12	82.72	77.65	72.89	68.42	64.23	60.29
41	632	0.110	61.878	93.84	88.06	82.64	77.55	72.78	68.30	64.09	60.14
42	638	0.111	61.586	93.81	88.01	82.57	77.46	72.67	68.17	63.95	60.00
43	644	0.111	61.298	93.79	87.96	82.49	77.37	72.56	68.05	63.82	59.85
44	650	0.112	61.015	93.76	87.91	82.42	77.27	72.45	67.93	63.69	59.71
45	656	0.112	60.735	93.73	87.85	82.34	77.18	72.34	67.81	63.56	59.57
46	662	0.113	60.459	93.70	87.80	82.27	77.09	72.24	67.69	63.42	59.43
47	668	0.114	60.187	93.67	87.75	82.20	77.00	72.13	67.57	63.29	59.29
48	674	0.114	59.919	93.65	87.70	82.13	76.91	72.02	67.45	63.16	59.15
49	680	0.115	59.654	93.62	87.65	82.06	76.82	71.92	67.33	63.04	59.01
50	686	0.115	59.392	93.59	87.60	81.98	76.73	71.82	67.21	62.91	58.88
51	692	0.116	59.134	93.57	87.55	81.91	76.64	71.71	67.10	62.78	58.74

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

6 1/8" 75 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.04122	165.731	97.66	95.37	93.13	90.94	88.81	86.73	84.70	82.71
88.3	0.04127	165.543	97.65	95.36	93.12	90.94	88.80	86.72	84.68	82.69
88.5	0.04132	165.356	97.65	95.35	93.11	90.93	88.79	86.70	84.66	82.67
88.7	0.04136	165.169	97.65	95.35	93.11	90.92	88.78	86.69	84.65	82.66
88.9	0.04141	164.984	97.64	95.34	93.10	90.91	88.76	86.67	84.63	82.64
89.1	0.04146	164.798	97.64	95.34	93.09	90.90	88.75	86.66	84.62	82.62
89.3	0.04150	164.614	97.64	95.33	93.08	90.89	88.74	86.65	84.60	82.60
89.5	0.04155	164.430	97.64	95.33	93.08	90.88	88.73	86.63	84.58	82.59
89.7	0.04159	164.246	97.63	95.32	93.07	90.87	88.72	86.62	84.57	82.57
89.9	0.04164	164.063	97.63	95.32	93.06	90.86	88.71	86.60	84.55	82.55
90.1	0.04169	163.881	97.63	95.31	93.05	90.85	88.69	86.59	84.54	82.53
90.3	0.04173	163.700	97.63	95.31	93.05	90.84	88.68	86.58	84.52	82.52
90.5	0.04178	163.519	97.62	95.30	93.04	90.83	88.67	86.56	84.51	82.50
90.7	0.04183	163.338	97.62	95.30	93.03	90.82	88.66	86.55	84.49	82.48
90.9	0.04187	163.158	97.62	95.29	93.02	90.81	88.65	86.54	84.47	82.46
91.1	0.04192	162.979	97.62	95.29	93.02	90.80	88.63	86.52	84.46	82.45
91.3	0.04196	162.801	97.61	95.28	93.01	90.79	88.62	86.51	84.44	82.43
91.5	0.04201	162.623	97.61	95.28	93.00	90.78	88.61	86.49	84.43	82.41
91.7	0.04206	162.445	97.61	95.27	92.99	90.77	88.60	86.48	84.41	82.39
91.9	0.04210	162.268	97.61	95.27	92.99	90.76	88.59	86.47	84.40	82.38
92.1	0.04215	162.092	97.60	95.26	92.98	90.75	88.58	86.45	84.38	82.36
92.3	0.04219	161.916	97.60	95.26	92.97	90.74	88.56	86.44	84.37	82.34
92.5	0.04224	161.741	97.60	95.25	92.97	90.73	88.55	86.43	84.35	82.32
92.7	0.04228	161.567	97.60	95.25	92.96	90.72	88.54	86.41	84.33	82.31
92.9	0.04233	161.393	97.59	95.24	92.95	90.71	88.53	86.40	84.32	82.29
93.1	0.04238	161.219	97.59	95.24	92.94	90.70	88.52	86.38	84.30	82.27
93.3	0.04242	161.046	97.59	95.23	92.94	90.69	88.51	86.37	84.29	82.25
93.5	0.04247	160.874	97.59	95.23	92.93	90.68	88.49	86.36	84.27	82.24
93.7	0.04251	160.702	97.58	95.22	92.92	90.68	88.48	86.34	84.26	82.22
93.9	0.04256	160.531	97.58	95.22	92.91	90.67	88.47	86.33	84.24	82.20
94.1	0.04260	160.360	97.58	95.21	92.91	90.66	88.46	86.32	84.23	82.19
94.3	0.04265	160.190	97.57	95.21	92.90	90.65	88.45	86.30	84.21	82.17
94.5	0.04269	160.021	97.57	95.20	92.89	90.64	88.44	86.29	84.20	82.15
94.7	0.04274	159.851	97.57	95.20	92.88	90.63	88.43	86.28	84.18	82.13
94.9	0.04278	159.683	97.57	95.19	92.89	90.62	88.41	86.26	84.16	82.12
95.1	0.04283	159.515	97.56	95.19	92.87	90.61	88.40	86.25	84.15	82.10
95.3	0.04287	159.347	97.56	95.18	92.86	90.60	88.39	86.24	84.13	82.08
95.5	0.04292	159.181	97.56	95.18	92.86	90.59	88.38	86.22	84.12	82.07
95.7	0.04296	159.014	97.56	95.17	92.85	90.58	88.37	86.21	84.10	82.05
95.9	0.04301	158.848	97.55	95.17	92.84	90.57	88.36	86.20	84.09	82.03
96.1	0.04305	158.683	97.55	95.16	92.83	90.56	88.35	86.18	84.07	82.02
96.3	0.04310	158.518	97.55	95.16	92.83	90.55	88.33	86.17	84.06	82.00
96.5	0.04314	158.354	97.55	95.15	92.82	90.54	88.32	86.16	84.04	81.98
96.7	0.04319	158.190	97.54	95.15	92.81	90.53	88.31	86.14	84.03	81.96
96.9	0.04323	158.026	97.54	95.14	92.81	90.52	88.30	86.13	84.01	81.95
97.1	0.04328	157.864	97.54	95.14	92.80	90.52	88.29	86.12	84.00	81.93
97.3	0.04332	157.701	97.54	95.13	92.79	90.51	88.28	86.10	83.98	81.91
97.5	0.04337	157.539	97.53	95.13	92.78	90.50	88.27	86.09	83.97	81.90
97.7	0.04341	157.378	97.53	95.13	92.78	90.49	88.25	86.08	83.95	81.88
97.9	0.04345	157.217	97.53	95.12	92.77	90.48	88.24	86.06	83.94	81.86

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.04350	157.057	97.53	95.12	92.76	90.47	88.23	86.05	83.92	81.85
98.3	0.04354	156.897	97.52	95.11	92.76	90.46	88.22	86.04	83.91	81.83
98.5	0.04359	156.738	97.52	95.11	92.75	90.45	88.21	86.02	83.89	81.81
98.7	0.04363	156.579	97.52	95.10	92.74	90.44	88.20	86.01	83.88	81.80
98.9	0.04368	156.420	97.52	95.10	92.73	90.43	88.19	86.00	83.86	81.78
99.1	0.04372	156.262	97.51	95.09	92.73	90.42	88.18	85.98	83.85	81.76
99.3	0.04376	156.105	97.51	95.09	92.72	90.41	88.16	85.97	83.83	81.75
99.5	0.04381	155.948	97.51	95.08	92.71	90.40	88.15	85.96	83.82	81.73
99.7	0.04385	155.792	97.51	95.08	92.71	90.40	88.14	85.95	83.80	81.71
99.9	0.04390	155.636	97.50	95.07	92.70	90.39	88.13	85.93	83.79	81.70
100.1	0.04394	155.480	97.50	95.07	92.69	90.38	88.12	85.92	83.77	81.68
100.3	0.04398	155.325	97.50	95.06	92.69	90.37	88.11	85.91	83.76	81.66
100.5	0.04403	155.170	97.50	95.06	92.68	90.36	88.10	85.89	83.74	81.65
100.7	0.04407	155.016	97.49	95.05	92.67	90.35	88.09	85.88	83.73	81.63
100.9	0.04411	154.862	97.49	95.05	92.66	90.34	88.08	85.87	83.71	81.62
101.1	0.04416	154.709	97.49	95.04	92.66	90.33	88.06	85.85	83.70	81.60
101.3	0.04420	154.556	97.49	95.04	92.65	90.32	88.05	85.84	83.68	81.58
101.5	0.04425	154.404	97.49	95.03	92.64	90.31	88.04	85.83	83.67	81.57
101.7	0.04429	154.252	97.48	95.03	92.64	90.30	88.03	85.82	83.66	81.55
101.9	0.04433	154.101	97.48	95.02	92.63	90.30	88.02	85.80	83.64	81.53
102.1	0.04438	153.950	97.48	95.02	92.62	90.29	88.01	85.79	83.63	81.52
102.3	0.04442	153.799	97.48	95.01	92.62	90.28	88.00	85.78	83.61	81.50
102.5	0.04446	153.649	97.47	95.01	92.61	90.27	87.99	85.76	83.60	81.48
102.7	0.04451	153.499	97.47	95.01	92.60	90.26	87.98	85.75	83.58	81.47
102.9	0.04455	153.350	97.47	95.00	92.60	90.25	87.97	85.74	83.57	81.45
103.1	0.04459	153.201	97.47	95.00	92.59	90.24	87.95	85.73	83.55	81.44
103.3	0.04464	153.053	97.46	94.99	92.58	90.23	87.94	85.71	83.54	81.42
103.5	0.04468	152.905	97.46	94.99	92.57	90.22	87.93	85.70	83.52	81.40
103.7	0.04472	152.757	97.46	94.98	92.57	90.21	87.92	85.69	83.51	81.39
103.9	0.04477	152.610	97.46	94.98	92.56	90.21	87.91	85.67	83.49	81.37
104.1	0.04481	152.464	97.45	94.97	92.55	90.20	87.90	85.66	83.48	81.35
104.3	0.04485	152.317	97.45	94.97	92.55	90.19	87.89	85.65	83.47	81.34
104.5	0.04489	152.172	97.45	94.96	92.54	90.18	87.88	85.64	83.45	81.32
104.7	0.04494	152.026	97.45	94.96	92.53	90.17	87.87	85.62	83.44	81.31
104.9	0.04498	151.881	97.44	94.95	92.53	90.16	87.86	85.61	83.42	81.29
105.1	0.04502	151.737	97.44	94.95	92.52	90.15	87.85	85.60	83.41	81.27
105.3	0.04507	151.592	97.44	94.94	92.51	90.14	87.83	85.59	83.39	81.26
105.5	0.04511	151.449	97.44	94.94	92.51	90.13	87.82	85.57	83.38	81.24
105.7	0.04515	151.305	97.43	94.93	92.50	90.13	87.81	85.56	83.37	81.23
105.9	0.04519	151.162	97.43	94.93	92.49	90.12	87.80	85.55	83.35	81.21
106.1	0.04524	151.020	97.43	94.93	92.49	90.11	87.79	85.54	83.34	81.19
106.3	0.04528	150.878	97.43	94.92	92.48	90.10	87.78	85.52	83.32	81.18
106.5	0.04532	150.736	97.42	94.92	92.47	90.09	87.77	85.51	83.31	81.16
106.7	0.04536	150.595	97.42	94.91	92.46	90.08	87.76	85.50	83.29	81.15
106.9	0.04541	150.454	97.42	94.91	92.46	90.07	87.75	85.48	83.28	81.13
107.1	0.04545	150.313	97.42	94.90	92.45	90.06	87.74	85.47	83.27	81.11
107.3	0.04549	150.173	97.42	94.90	92.44	90.05	87.73	85.46	83.25	81.10
107.5	0.04553	150.033	97.41	94.89	92.44	90.04	87.72	85.45	83.24	81.08
107.7	0.04558	149.894	97.41	94.89	92.43	90.04	87.71	85.43	83.22	81.07
107.9	0.04562	149.755	97.41	94.88	92.42	90.03	87.70	85.42	83.21	81.05

Standard Conditions:

Att

7 3/16" 75 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.028	285.461	98.43	96.88	95.35	93.85	92.37	90.92	89.48	88.07
3	60	0.029	270.812	98.34	96.71	95.10	93.53	91.97	90.45	88.95	87.47
4	66	0.030	258.209	98.26	96.55	94.87	93.22	91.60	90.01	88.44	86.90
5	76	0.033	240.623	98.13	96.30	94.51	92.74	91.01	89.32	87.65	86.02
6	82	0.034	231.652	98.06	96.16	94.30	92.47	90.68	88.93	87.20	85.51
7	174	0.049	159.026	97.19	94.46	91.81	89.23	86.72	84.29	81.92	79.62
8	180	0.050	156.353	97.14	94.37	91.67	89.05	86.51	84.04	81.64	79.31
9	186	0.051	153.811	97.10	94.28	91.54	88.88	86.30	83.80	81.37	79.00
10	192	0.052	151.389	97.05	94.19	91.41	88.72	86.10	83.56	81.10	78.71
11	198	0.053	149.077	97.01	94.10	91.29	88.55	85.90	83.33	80.84	78.42
12	204	0.054	146.869	96.96	94.02	91.16	88.39	85.71	83.10	80.58	78.13
13	210	0.054	144.755	96.92	93.93	91.04	88.23	85.51	82.88	80.32	77.85
14	470	0.081	96.760	95.43	91.06	86.89	82.92	79.13	75.51	72.05	68.75
15	476	0.082	96.148	95.40	91.01	86.82	82.82	79.01	75.37	71.90	68.59
16	482	0.082	95.548	95.37	90.95	86.74	82.72	78.89	75.24	71.75	68.43
17	488	0.083	94.959	95.34	90.90	86.66	82.62	78.77	75.10	71.60	68.27
18	494	0.083	94.380	95.31	90.84	86.59	82.53	78.66	74.97	71.46	68.11
19	500	0.084	93.812	95.28	90.79	86.51	82.43	78.55	74.84	71.31	67.95
20	506	0.084	93.254	95.26	90.74	86.44	82.34	78.43	74.71	71.17	67.79
21	512	0.085	92.706	95.23	90.69	86.36	82.24	78.32	74.58	71.03	67.64
22	518	0.085	92.168	95.20	90.64	86.29	82.15	78.21	74.46	70.88	67.48
23	524	0.086	91.639	95.18	90.58	86.21	82.05	78.10	74.33	70.74	67.33
24	530	0.086	91.118	95.15	90.53	86.14	81.96	77.99	74.20	70.60	67.18
25	536	0.087	90.607	95.12	90.48	86.07	81.87	77.88	74.08	70.46	67.03
26	542	0.087	90.104	95.10	90.43	86.00	81.78	77.77	73.95	70.33	66.88
27	548	0.088	89.609	95.07	90.38	85.93	81.69	77.66	73.83	70.19	66.73
28	554	0.088	89.123	95.04	90.33	85.85	81.60	77.55	73.71	70.06	66.58
29	560	0.089	88.644	95.02	90.28	85.78	81.51	77.45	73.59	69.92	66.44
30	566	0.089	88.173	94.99	90.23	85.71	81.42	77.34	73.47	69.79	66.29
31	572	0.090	87.709	94.97	90.18	85.64	81.33	77.24	73.35	69.65	66.15
32	578	0.090	87.253	94.94	90.14	85.57	81.24	77.13	73.23	69.52	66.00
33	584	0.091	86.804	94.91	90.09	85.50	81.16	77.03	73.11	69.39	65.86
34	590	0.091	86.361	94.89	90.04	85.44	81.07	76.93	72.99	69.26	65.72
35	596	0.092	85.925	94.86	89.99	85.37	80.98	76.82	72.88	69.13	65.58

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
36	602	0.092	85.496	94.84	89.94	85.30	80.90	76.72	72.76	69.01	65.44
37	608	0.093	85.073	94.81	89.90	85.23	80.81	76.62	72.65	68.88	65.31
38	614	0.093	84.656	94.79	89.85	85.17	80.73	76.52	72.53	68.75	65.17
39	620	0.093	84.246	94.76	89.80	85.10	80.64	76.42	72.42	68.63	65.03
40	626	0.094	83.841	94.74	89.75	85.03	80.56	76.32	72.31	68.50	64.90
41	632	0.094	83.442	94.71	89.71	84.97	80.48	76.22	72.19	68.38	64.76
42	638	0.095	83.049	94.69	89.66	84.90	80.39	76.12	72.08	68.26	64.63
43	644	0.095	82.661	94.67	89.62	84.84	80.31	76.03	71.97	68.13	64.50
44	650	0.096	82.279	94.64	89.57	84.77	80.23	75.93	71.86	68.01	64.37
45	656	0.096	81.902	94.62	89.53	84.71	80.15	75.83	71.75	67.89	64.24
46	662	0.097	81.530	94.59	89.48	84.64	80.07	75.74	71.64	67.77	64.11
47	668	0.097	81.163	94.57	89.44	84.58	79.99	75.64	71.54	67.65	63.98
48	674	0.097	80.800	94.55	89.39	84.52	79.91	75.55	71.43	67.53	63.85
49	680	0.098	80.443	94.52	89.35	84.45	79.83	75.46	71.32	67.42	63.72
50	686	0.098	80.091	94.50	89.30	84.39	79.75	75.36	71.22	67.30	63.60
51	692	0.099	79.743	94.48	89.26	84.33	79.67	75.27	71.11	67.18	63.47

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

7 3/16" 75 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.03522	223.489	97.99	96.03	94.10	92.21	90.36	88.55	86.77	85.03
88.3	0.03526	223.236	97.99	96.02	94.09	92.20	90.35	88.53	86.76	85.01
88.5	0.03530	222.983	97.99	96.02	94.09	92.19	90.34	88.52	86.74	85.00
88.7	0.03534	222.732	97.99	96.01	94.08	92.18	90.33	88.51	86.73	84.98
88.9	0.03538	222.481	97.98	96.01	94.07	92.18	90.32	88.50	86.71	84.97
89.1	0.03542	222.231	97.98	96.00	94.07	92.17	90.31	88.49	86.70	84.95
89.3	0.03546	221.982	97.98	96.00	94.06	92.16	90.30	88.47	86.69	84.93
89.5	0.03550	221.734	97.98	96.00	94.05	92.15	90.29	88.46	86.67	84.92
89.7	0.03554	221.487	97.98	95.99	94.05	92.14	90.28	88.45	86.66	84.90
89.9	0.03558	221.240	97.97	95.99	94.04	92.13	90.27	88.44	86.64	84.89
90.1	0.03562	220.994	97.97	95.98	94.03	92.13	90.26	88.42	86.63	84.87
90.3	0.03566	220.750	97.97	95.98	94.03	92.12	90.25	88.41	86.62	84.86
90.5	0.03570	220.506	97.97	95.97	94.02	92.11	90.24	88.40	86.60	84.84
90.7	0.03574	220.262	97.96	95.97	94.02	92.10	90.23	88.39	86.59	84.83
90.9	0.03578	220.020	97.96	95.96	94.01	92.09	90.22	88.38	86.58	84.81
91.1	0.03581	219.778	97.96	95.96	94.00	92.08	90.21	88.35	86.56	84.80
91.3	0.03585	219.537	97.96	95.96	94.00	92.08	90.19	88.35	86.55	84.78
91.5	0.03589	219.297	97.96	95.95	93.99	92.07	90.18	88.34	86.53	84.76
91.7	0.03593	219.058	97.95	95.95	93.98	92.06	90.17	88.33	86.52	84.75
91.9	0.03597	218.820	97.95	95.94	93.98	92.05	90.16	88.32	86.51	84.73
92.1	0.03601	218.582	97.95	95.94	93.97	92.04	90.15	88.30	86.49	84.72
92.3	0.03605	218.345	97.95	95.93	93.96	92.03	90.14	88.29	86.48	84.70
92.5	0.03609	218.109	97.94	95.93	93.96	92.03	90.13	88.28	86.47	84.69
92.7	0.03613	217.873	97.94	95.93	93.95	92.02	90.12	88.27	86.45	84.67
92.9	0.03617	217.639	97.94	95.92	93.95	92.01	90.11	88.26	86.44	84.66
93.1	0.03621	217.405	97.94	95.92	93.94	92.00	90.10	88.25	86.43	84.64
93.3	0.03624	217.172	97.94	95.91	93.93	91.99	90.09	88.23	86.41	84.63
93.5	0.03628	216.939	97.93	95.91	93.93	91.98	90.08	88.22	86.40	84.61
93.7	0.03632	216.708	97.93	95.90	93.92	91.98	90.07	88.21	86.38	84.60
93.9	0.03636	216.477	97.93	95.90	93.91	91.97	90.06	88.20	86.37	84.58
94.1	0.03640	216.246	97.93	95.90	93.91	91.96	90.05	88.19	86.36	84.57
94.3	0.03644	216.017	97.92	95.89	93.90	91.95	90.04	88.17	86.34	84.55
94.5	0.03648	215.788	97.92	95.89	93.89	91.94	90.03	88.16	86.33	84.54
94.7	0.03652	215.560	97.92	95.88	93.89	91.94	90.02	88.15	86.32	84.52
94.9	0.03655	215.333	97.92	95.88	93.88	91.93	90.01	88.14	86.30	84.51
95.1	0.03659	215.107	97.92	95.87	93.88	91.92	90.00	88.13	86.29	84.49
95.3	0.03663	214.881	97.91	95.87	93.87	91.91	89.99	88.12	86.28	84.48
95.5	0.03667	214.656	97.91	95.87	93.86	91.90	89.98	88.10	86.26	84.46
95.7	0.03671	214.431	97.91	95.86	93.86	91.90	89.97	88.09	86.25	84.45
95.9	0.03675	214.207	97.91	95.86	93.85	91.89	89.96	88.08	86.24	84.43
96.1	0.03678	213.984	97.90	95.85	93.85	91.88	89.95	88.07	86.22	84.42
96.3	0.03682	213.762	97.90	95.85	93.84	91.87	89.94	88.06	86.21	84.40
96.5	0.03686	213.540	97.90	95.85	93.83	91.86	89.93	88.05	86.20	84.39
96.7	0.03690	213.320	97.90	95.84	93.83	91.85	89.92	88.03	86.18	84.37
96.9	0.03694	213.099	97.90	95.84	93.82	91.85	89.91	88.02	86.17	84.36
97.1	0.03698	212.880	97.89	95.83	93.81	91.84	89.90	88.01	86.16	84.34
97.3	0.03701	212.661	97.89	95.83	93.81	91.83	89.89	88.00	86.14	84.33
97.5	0.03705	212.443	97.89	95.82	93.80	91.82	89.88	87.99	86.13	84.31
97.7	0.03709	212.225	97.89	95.82	93.80	91.81	89.87	87.98	86.12	84.30
97.9	0.03713	212.008	97.89	95.82	93.79	91.81	89.87	87.96	86.10	84.28

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.03717	211.792	97.88	95.81	93.78	91.80	89.86	87.95	86.09	84.27
98.3	0.03720	211.576	97.88	95.81	93.78	91.79	89.85	87.94	86.08	84.25
98.5	0.03724	211.361	97.88	95.80	93.77	91.78	89.84	87.93	86.07	84.24
98.7	0.03728	211.147	97.88	95.80	93.77	91.77	89.83	87.92	86.05	84.23
98.9	0.03732	210.934	97.87	95.79	93.76	91.77	89.82	87.91	86.04	84.21
99.1	0.03735	210.721	97.87	95.79	93.75	91.76	89.81	87.90	86.03	84.20
99.3	0.03739	210.508	97.87	95.79	93.75	91.75	89.80	87.88	86.01	84.18
99.5	0.03743	210.297	97.87	95.78	93.74	91.74	89.79	87.87	86.00	84.17
99.7	0.03747	210.086	97.87	95.78	93.73	91.73	89.78	87.86	85.99	84.15
99.9	0.03750	209.875	97.86	95.77	93.73	91.73	89.77	87.85	85.97	84.14
100.1	0.03754	209.665	97.86	95.77	93.72	91.72	89.76	87.84	85.96	84.12
100.3	0.03758	209.456	97.86	95.77	93.72	91.71	89.75	87.83	85.95	84.11
100.5	0.03762	209.248	97.86	95.76	93.71	91.70	89.74	87.82	85.93	84.09
100.7	0.03765	209.040	97.86	95.76	93.70	91.69	89.73	87.80	85.92	84.08
100.9	0.03769	208.833	97.85	95.75	93.70	91.69	89.72	87.79	85.91	84.07
101.1	0.03773	208.626	97.85	95.75	93.69	91.68	89.71	87.78	85.90	84.05
101.3	0.03777	208.420	97.85	95.75	93.69	91.67	89.70	87.77	85.88	84.04
101.5	0.03780	208.214	97.85	95.74	93.68	91.66	89.69	87.76	85.87	84.02
101.7	0.03784	208.010	97.85	95.74	93.67	91.66	89.68	87.75	85.86	84.01
101.9	0.03788	207.805	97.84	95.73	93.67	91.65	89.67	87.74	85.84	83.99
102.1	0.03792	207.602	97.84	95.73	93.66	91.64	89.66	87.73	85.83	83.98
102.3	0.03795	207.399	97.84	95.72	93.66	91.63	89.65	87.71	85.82	83.96
102.5	0.03799	207.196	97.84	95.72	93.65	91.62	89.64	87.70	85.81	83.95
102.7	0.03803	206.994	97.83	95.72	93.64	91.62	89.63	87.69	85.79	83.94
102.9	0.03806	206.793	97.83	95.71	93.64	91.61	89.62	87.68	85.78	83.92
103.1	0.03810	206.592	97.83	95.71	93.63	91.60	89.61	87.67	85.77	83.91
103.3	0.03814	206.392	97.83	95.70	93.63	91.59	89.60	87.66	85.75	83.89
103.5	0.03817	206.193	97.83	95.70	93.62	91.59	89.59	87.65	85.74	83.88
103.7	0.03821	205.994	97.82	95.70	93.61	91.58	89.59	87.64	85.73	83.86
103.9	0.03825	205.796	97.82	95.69	93.61	91.57	89.58	87.62	85.72	83.85
104.1	0.03828	205.598	97.82	95.69	93.60	91.56	89.57	87.61	85.70	83.84
104.3	0.03832	205.401	97.82	95.68	93.60	91.55	89.56	87.60	85.69	83.82
104.5	0.03836	205.204	97.82	95.68	93.59	91.55	89.55	87.59	85.68	83.81
104.7	0.03840	205.008	97.81	95.68	93.58	91.54	89.54	87.58	85.67	83.79
104.9	0.03843	204.812	97.81	95.67	93.58	91.53	89.53	87.57	85.65	83.78
105.1	0.03847	204.617	97.81	95.67	93.57	91.52	89.52	87.56	85.64	83.77
105.3	0.03851	204.423	97.81	95.66	93.57	91.52	89.51	87.55	85.63	83.75
105.5	0.03854	204.229	97.81	95.66	93.56	91.51	89.50	87.54	85.62	83.74
105.7	0.03858	204.036	97.80	95.66	93.55	91.50	89.49	87.53	85.60	83.72
105.9	0.03861	203.843	97.80	95.65	93.55	91.49	89.48	87.51	85.59	83.71
106.1	0.03865	203.651	97.80	95.65	93.54	91.48	89.47	87.50	85.58	83.69
106.3	0.03869	203.459	97.80	95.64	93.54	91.48	89.46	87.49	85.57	83.68
106.5	0.03872	203.268	97.80	95.64	93.53	91.47	89.45	87.48	85.55	83.67
106.7	0.03876	203.077	97.79	95.64	93.53	91.46	89.44	87.47	85.54	83.65
106.9	0.03880	202.887	97.79	95.63	93.52	91.45	89.43	87.46	85.53	83.64
107.1	0.03883	202.698	97.79	95.63	93.51	91.45	89.43	87.45	85.52	83.62
107.3	0.03887	202.509	97.79	95.62	93.51	91.44	89.42	87.44	85.50	83.61
107.5	0.03891	202.320	97.79	95.62	93.50	91.43	89.41	87.43	85.49	83.60
107.7	0.03894	202.132	97.78	95.62	93.50	91.42	89.40	87.42	85.48	83.58
107.9	0.03898	201.945	97.78	95.61	93.49	91.42	89.39	87.40	85.47	83.57

Standard Conditions:

Attenuation: Ambient Temperature 20

8 3/16" 75 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.024	362.077	98.62	97.26	95.92	94.60	93.29	92.00	90.74	89.48
3	60	0.025	343.496	98.55	97.11	95.70	94.31	92.94	91.59	90.26	88.95
4	66	0.027	327.511	98.48	96.98	95.50	94.04	92.61	91.20	89.81	88.44
5	76	0.029	305.204	98.37	96.76	95.18	93.62	92.09	90.59	89.11	87.65
6	82	0.030	293.826	98.30	96.63	94.99	93.38	91.80	90.24	88.71	87.20
7	174	0.043	201.708	97.54	95.14	92.79	90.51	88.28	86.11	83.99	81.92
8	180	0.044	198.318	97.50	95.05	92.67	90.35	88.09	85.89	83.74	81.64
9	186	0.045	195.093	97.46	94.98	92.56	90.20	87.91	85.67	83.49	81.37
10	192	0.045	192.020	97.42	94.90	92.44	90.05	87.73	85.46	83.25	81.10
11	198	0.046	189.088	97.38	94.82	92.33	89.91	87.55	85.25	83.01	80.83
12	204	0.047	186.287	97.34	94.74	92.22	89.76	87.37	85.05	82.78	80.58
13	210	0.048	183.606	97.30	94.67	92.11	89.62	87.20	84.85	82.55	80.32
14	470	0.071	122.729	95.99	92.13	88.43	84.88	81.47	78.20	75.06	72.05
15	476	0.072	121.953	95.96	92.08	88.36	84.79	81.37	78.08	74.93	71.90
16	482	0.072	121.192	95.94	92.04	88.29	84.71	81.26	77.96	74.79	71.75
17	488	0.073	120.445	95.91	91.99	88.23	84.62	81.16	77.84	74.66	71.60
18	494	0.073	119.711	95.89	91.94	88.16	84.53	81.05	77.72	74.52	71.46
19	500	0.073	118.991	95.86	91.89	88.09	84.45	80.95	77.60	74.39	71.31
20	506	0.074	118.283	95.84	91.85	88.02	84.36	80.85	77.48	74.26	71.17
21	512	0.074	117.588	95.81	91.80	87.96	84.28	80.75	77.37	74.13	71.02
22	518	0.075	116.905	95.79	91.76	87.89	84.19	80.65	77.25	74.00	70.88
23	524	0.075	116.234	95.77	91.71	87.83	84.11	80.55	77.14	73.87	70.74
24	530	0.076	115.574	95.74	91.67	87.76	84.03	80.45	77.02	73.74	70.60
25	536	0.076	114.925	95.72	91.62	87.70	83.94	80.35	76.91	73.62	70.46
26	542	0.076	114.287	95.70	91.58	87.63	83.86	80.25	76.80	73.49	70.33
27	548	0.077	113.660	95.67	91.53	87.57	83.78	80.15	76.68	73.37	70.19
28	554	0.077	113.043	95.65	91.49	87.51	83.70	80.06	76.57	73.24	70.05
29	560	0.078	112.436	95.63	91.44	87.44	83.62	79.96	76.46	73.12	69.92
30	566	0.078	111.838	95.60	91.40	87.38	83.54	79.86	76.35	73.00	69.79
31	572	0.079	111.250	95.58	91.36	87.32	83.46	79.77	76.24	72.87	69.65
32	578	0.079	110.671	95.56	91.31	87.26	83.38	79.68	76.14	72.75	69.52
33	584	0.079	110.101	95.54	91.27	87.19	83.30	79.58	76.03	72.63	69.39
34	590	0.080	109.540	95.51	91.23	87.13	83.22	79.49	75.92	72.52	69.26
35	596	0.080	108.987	95.49	91.18	87.07	83.15	79.40	75.82	72.40	69.13
36	602	0.081	108.442	95.47	91.14	87.01	83.07	79.30	75.71	72.28	69.00
37	608	0.081	107.906	95.45	91.10	86.95	82.99	79.21	75.61	72.16	68.88
38	614	0.081	107.378	95.42	91.06	86.89	82.92	79.12	75.50	72.05	68.75
39	620	0.082	106.857	95.40	91.02	86.83	82.84	79.03	75.40	71.93	68.63
40	626	0.082	106.343	95.38	90.98	86.77	82.77	78.94	75.30	71.82	68.50
41	632	0.083	105.837	95.36	90.93	86.71	82.69	78.85	75.19	71.70	68.38
42	638	0.083	105.339	95.34	90.89	86.66	82.62	78.76	75.09	71.59	68.25
43	644	0.083	104.847	95.32	90.85	86.60	82.54	78.68	74.99	71.48	68.13
44	650	0.084	104.362	95.30	90.81	86.54	82.47	78.59	74.89	71.37	68.01
45	656	0.084	103.883	95.27	90.77	86.48	82.40	78.50	74.79	71.26	67.89
46	662	0.084	103.411	95.25	90.73	86.43	82.32	78.42	74.69	71.15	67.77
47	668	0.085	102.946	95.23	90.69	86.37	82.25	78.33	74.59	71.04	67.65
48	674	0.085	102.487	95.21	90.65	86.31	82.18	78.24	74.50	70.93	67.53
49	680	0.086	102.034	95.19	90.61	86.25	82.11	78.16	74.40	70.82	67.42
50	686	0.086	101.586	95.17	90.57	86.20	82.04	78.07	74.30	70.71	67.30
51	692	0.086	101.145	95.15	90.53	86.14	81.96	77.99	74.21	70.61	67.18
52	698	0.087	100.709	95.13	90.50	86.09	81.89	77.91	74.11	70.50	67.07

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

8 3/16" 75 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.03082	283.472	98.24	96.51	94.82	93.15	91.51	89.90	88.32	86.77
88.3	0.03085	283.150	98.24	96.51	94.81	93.14	91.50	89.89	88.31	86.75
88.5	0.03089	282.830	98.24	96.51	94.81	93.13	91.49	89.88	88.30	86.74
88.7	0.03092	282.511	98.24	96.50	94.80	93.13	91.48	89.87	88.28	86.73
88.9	0.03096	282.193	98.23	96.50	94.79	93.12	91.47	89.86	88.27	86.71
89.1	0.03099	281.876	98.23	96.49	94.79	93.11	91.47	89.85	88.26	86.70
89.3	0.03103	281.561	98.23	96.49	94.78	93.10	91.46	89.84	88.25	86.69
89.5	0.03106	281.246	98.23	96.49	94.78	93.10	91.45	89.83	88.23	86.67
89.7	0.03110	280.932	98.23	96.48	94.77	93.09	91.44	89.82	88.22	86.66
89.9	0.03113	280.619	98.22	96.48	94.77	93.08	91.43	89.81	88.21	86.64
90.1	0.03117	280.308	98.22	96.48	94.76	93.08	91.42	89.79	88.20	86.63
90.3	0.03120	279.997	98.22	96.47	94.75	93.07	91.41	89.78	88.19	86.62
90.5	0.03124	279.688	98.22	96.47	94.75	93.06	91.40	89.77	88.17	86.60
90.7	0.03127	279.379	98.22	96.46	94.74	93.05	91.39	89.76	88.16	86.59
90.9	0.03130	279.072	98.21	96.46	94.74	93.05	91.38	89.75	88.15	86.57
91.1	0.03134	278.765	98.21	96.46	94.73	93.04	91.37	89.74	88.14	86.56
91.3	0.03137	278.460	98.21	96.45	94.73	93.03	91.37	89.73	88.12	86.55
91.5	0.03141	278.155	98.21	96.45	94.72	93.02	91.36	89.72	88.11	86.53
91.7	0.03144	277.852	98.21	96.44	94.71	93.02	91.35	89.71	88.10	86.52
91.9	0.03148	277.549	98.20	96.44	94.71	93.01	91.34	89.70	88.09	86.51
92.1	0.03151	277.248	98.20	96.44	94.70	93.00	91.33	89.69	88.08	86.49
92.3	0.03154	276.947	98.20	96.43	94.70	92.99	91.32	89.68	88.06	86.48
92.5	0.03158	276.647	98.20	96.43	94.69	92.99	91.31	89.67	88.05	86.47
92.7	0.03161	276.349	98.20	96.43	94.69	92.98	91.30	89.66	88.04	86.45
92.9	0.03165	276.051	98.19	96.42	94.68	92.97	91.29	89.65	88.03	86.44
93.1	0.03168	275.755	98.19	96.42	94.68	92.96	91.28	89.64	88.02	86.42
93.3	0.03172	275.459	98.19	96.41	94.67	92.96	91.28	89.62	88.00	86.41
93.5	0.03175	275.164	98.19	96.41	94.66	92.95	91.27	89.61	87.99	86.40
93.7	0.03178	274.870	98.19	96.41	94.66	92.94	91.26	89.60	87.98	86.38
93.9	0.03182	274.577	98.19	96.40	94.65	92.94	91.25	89.59	87.97	86.37
94.1	0.03185	274.285	98.18	96.40	94.65	92.93	91.24	89.58	87.96	86.36
94.3	0.03188	273.994	98.18	96.40	94.64	92.92	91.23	89.57	87.94	86.34
94.5	0.03192	273.704	98.18	96.39	94.64	92.91	91.22	89.56	87.93	86.33
94.7	0.03195	273.415	98.18	96.39	94.63	92.91	91.21	89.55	87.92	86.32
94.9	0.03199	273.127	98.18	96.38	94.63	92.90	91.20	89.54	87.91	86.30
95.1	0.03202	272.840	98.17	96.38	94.62	92.89	91.20	89.53	87.90	86.29
95.3	0.03205	272.553	98.17	96.38	94.61	92.89	91.19	89.52	87.88	86.28
95.5	0.03209	272.268	98.17	96.37	94.61	92.88	91.18	89.51	87.87	86.26
95.7	0.03212	271.983	98.17	96.37	94.60	92.87	91.17	89.50	87.86	86.25
95.9	0.03215	271.699	98.17	96.37	94.60	92.86	91.16	89.49	87.85	86.24
96.1	0.03219	271.416	98.16	96.36	94.59	92.86	91.15	89.48	87.84	86.22
96.3	0.03222	271.134	98.16	96.36	94.59	92.85	91.14	89.47	87.82	86.21
96.5	0.03225	270.853	98.16	96.35	94.58	92.84	91.13	89.46	87.81	86.20
96.7	0.03229	270.573	98.16	96.35	94.58	92.84	91.13	89.45	87.80	86.18
96.9	0.03232	270.294	98.16	96.35	94.57	92.83	91.12	89.44	87.79	86.17
97.1	0.03235	270.015	98.15	96.34	94.57	92.82	91.11	89.43	87.78	86.16
97.3	0.03239	269.737	98.15	96.34	94.56	92.81	91.10	89.42	87.76	86.14
97.5	0.03242	269.461	98.15	96.34	94.55	92.81	91.09	89.41	87.75	86.13
97.7	0.03245	269.185	98.15	96.33	94.55	92.80	91.08	89.40	87.74	86.12
97.9	0.03249	268.910	98.15	96.33	94.54	92.79	91.07	89.39	87.73	86.10

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.03252	268.635	98.15	96.33	94.54	92.79	91.06	89.38	87.72	86.09
98.3	0.03255	268.362	98.14	96.32	94.53	92.78	91.06	89.37	87.71	86.08
98.5	0.03259	268.089	98.14	96.32	94.53	92.77	91.05	89.36	87.69	86.06
98.7	0.03262	267.817	98.14	96.31	94.52	92.76	91.04	89.34	87.68	86.05
98.9	0.03265	267.547	98.14	96.31	94.52	92.76	91.03	89.33	87.67	86.04
99.1	0.03269	267.276	98.14	96.31	94.51	92.75	91.02	89.32	87.66	86.03
99.3	0.03272	267.007	98.13	96.30	94.51	92.74	91.01	89.31	87.65	86.01
99.5	0.03275	266.739	98.13	96.30	94.50	92.74	91.00	89.30	87.64	86.00
99.7	0.03279	266.471	98.13	96.30	94.50	92.73	91.00	89.29	87.62	85.99
99.9	0.03282	266.204	98.13	96.29	94.49	92.72	90.99	89.28	87.61	85.97
100.1	0.03285	265.938	98.13	96.29	94.48	92.71	90.98	89.27	87.60	85.96
100.3	0.03288	265.673	98.12	96.28	94.48	92.71	90.97	89.26	87.59	85.95
100.5	0.03292	265.408	98.12	96.28	94.47	92.70	90.96	89.25	87.58	85.93
100.7	0.03295	265.145	98.12	96.28	94.47	92.69	90.95	89.24	87.57	85.92
100.9	0.03298	264.882	98.12	96.27	94.46	92.69	90.94	89.23	87.56	85.91
101.1	0.03301	264.620	98.12	96.27	94.46	92.68	90.94	89.22	87.54	85.90
101.3	0.03305	264.358	98.12	96.27	94.45	92.67	90.93	89.21	87.53	85.88
101.5	0.03308	264.098	98.11	96.26	94.45	92.67	90.92	89.20	87.52	85.87
101.7	0.03311	263.838	98.11	96.26	94.44	92.66	90.91	89.19	87.51	85.86
101.9	0.03314	263.579	98.11	96.26	94.44	92.65	90.90	89.18	87.50	85.84
102.1	0.03318	263.320	98.11	96.25	94.43	92.65	90.89	89.17	87.49	85.83
102.3	0.03321	263.063	98.11	96.25	94.43	92.64	90.88	89.16	87.47	85.82
102.5	0.03324	262.806	98.10	96.25	94.42	92.63	90.88	89.15	87.46	85.81
102.7	0.03327	262.550	98.10	96.24	94.42	92.62	90.87	89.14	87.45	85.79
102.9	0.03331	262.295	98.10	96.24	94.41	92.62	90.86	89.13	87.44	85.78
103.1	0.03334	262.040	98.10	96.23	94.41	92.61	90.85	89.12	87.43	85.77
103.3	0.03337	261.787	98.10	96.23	94.40	92.60	90.84	89.11	87.42	85.75
103.5	0.03340	261.534	98.10	96.23	94.39	92.60	90.83	89.10	87.41	85.74
103.7	0.03344	261.281	98.09	96.22	94.39	92.59	90.82	89.09	87.40	85.73
103.9	0.03347	261.030	98.09	96.22	94.38	92.58	90.82	89.08	87.38	85.72
104.1	0.03350	260.779	98.09	96.22	94.38	92.58	90.81	89.07	87.37	85.70
104.3	0.03353	260.529	98.09	96.21	94.37	92.57	90.80	89.06	87.36	85.69
104.5	0.03356	260.279	98.09	96.21	94.37	92.56	90.79	89.05	87.35	85.68
104.7	0.03360	260.030	98.08	96.21	94.36	92.56	90.78	89.04	87.34	85.67
104.9	0.03363	259.782	98.08	96.20	94.36	92.55	90.77	89.03	87.33	85.65
105.1	0.03366	259.535	98.08	96.20	94.35	92.54	90.77	89.02	87.32	85.64
105.3	0.03369	259.289	98.08	96.20	94.35	92.54	90.76	89.01	87.30	85.63
105.5	0.03373	259.043	98.08	96.19	94.34	92.53	90.75	89.00	87.29	85.61
105.7	0.03376	258.797	98.08	96.19	94.34	92.52	90.74	88.99	87.28	85.60
105.9	0.03379	258.553	98.07	96.18	94.33	92.51	90.73	88.98	87.27	85.59
106.1	0.03382	258.309	98.07	96.18	94.33	92.51	90.72	88.98	87.26	85.58
106.3	0.03385	258.066	98.07	96.18	94.32	92.50	90.72	88.97	87.25	85.56
106.5	0.03388	257.824	98.07	96.17	94.32	92.49	90.71	88.96	87.24	85.55
106.7	0.03392	257.582	98.07	96.17	94.31	92.49	90.70	88.95	87.23	85.54
106.9	0.03395	257.341	98.06	96.17	94.31	92.48	90.69	88.94	87.21	85.53
107.1	0.03398	257.100	98.06	96.16	94.30	92.47	90.68	88.93	87.20	85.51
107.3	0.03401	256.861	98.06	96.16	94.30	92.47	90.67	88.92	87.19	85.50
107.5	0.03404	256.622	98.06	96.16	94.29	92.46	90.67	88.91	87.18	85.49
107.7	0.03407	256.383	98.06	96.15	94.29	92.45	90.66	88.90	87.17	85.48
107.9	0.03411	256.146	98.06	96.15	94.28	92.45	90.65	88.89	87.16	85.46

Standard Conditions:

8 3/16" 50 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.02658	410.631	98.48	96.99	95.51	94.06	92.63	91.23	89.84	88.48
3	60	0.02802	389.559	98.40	96.83	95.28	93.75	92.25	90.78	89.32	87.89
4	66	0.02939	371.430	98.32	96.67	95.05	93.46	91.89	90.35	88.83	87.34
5	76	0.03154	346.132	98.20	96.43	94.70	93.00	91.32	89.68	88.07	86.48
6	82	0.03276	333.228	98.13	96.30	94.50	92.73	91.00	89.30	87.63	86.00
7	174	0.04772	228.757	97.29	94.65	92.09	89.59	87.17	84.81	82.51	80.27
8	180	0.04853	224.912	97.24	94.57	91.96	89.43	86.96	84.57	82.24	79.97
9	186	0.04934	221.255	97.20	94.48	91.83	89.26	86.76	84.33	81.97	79.68
10	192	0.05013	217.770	97.16	94.39	91.71	89.10	86.57	84.10	81.71	79.39
11	198	0.05090	214.445	97.11	94.31	91.58	88.94	86.37	83.88	81.46	79.10
12	204	0.05167	211.268	97.07	94.22	91.46	88.78	86.18	83.66	81.20	78.82
13	210	0.05242	208.228	97.03	94.14	91.34	88.63	85.99	83.44	80.96	78.55
14	470	0.07843	139.187	95.59	91.37	87.33	83.48	79.79	76.27	72.90	69.69
15	476	0.07893	138.307	95.56	91.31	87.26	83.38	79.68	76.14	72.76	69.53
16	482	0.07942	137.444	95.53	91.26	87.18	83.29	79.57	76.01	72.61	69.37
17	488	0.07991	136.596	95.50	91.21	87.11	83.19	79.45	75.88	72.47	69.21
18	494	0.08040	135.764	95.48	91.16	87.04	83.10	79.34	75.75	72.33	69.05
19	500	0.08089	134.947	95.45	91.11	86.96	83.01	79.23	75.62	72.18	68.90
20	506	0.08137	134.145	95.42	91.06	86.89	82.91	79.12	75.50	72.04	68.75
21	512	0.08186	133.356	95.40	91.01	86.82	82.82	79.01	75.37	71.90	68.59
22	518	0.08233	132.582	95.37	90.96	86.75	82.73	78.90	75.25	71.77	68.44
23	524	0.08281	131.821	95.34	90.91	86.67	82.64	78.79	75.13	71.63	68.29
24	530	0.08328	131.072	95.32	90.86	86.60	82.55	78.69	75.00	71.49	68.15
25	536	0.08375	130.337	95.29	90.81	86.53	82.46	78.58	74.88	71.36	68.00
26	542	0.08422	129.613	95.27	90.76	86.46	82.37	78.47	74.76	71.22	67.85
27	548	0.08468	128.902	95.24	90.71	86.39	82.28	78.37	74.64	71.09	67.71
28	554	0.08515	128.202	95.22	90.66	86.33	82.20	78.26	74.52	70.96	67.56
29	560	0.08561	127.513	95.19	90.61	86.26	82.11	78.16	74.40	70.83	67.42
30	566	0.08606	126.835	95.17	90.57	86.19	82.02	78.06	74.29	70.69	67.28
31	572	0.08652	126.168	95.14	90.52	86.12	81.94	77.96	74.17	70.57	67.14
32	578	0.08697	125.512	95.12	90.47	86.05	81.85	77.85	74.05	70.44	67.00
33	584	0.08742	124.865	95.09	90.43	85.99	81.77	77.75	73.94	70.31	66.86
34	590	0.08787	124.229	95.07	90.38	85.92	81.68	77.65	73.82	70.18	66.72
35	596	0.08832	123.602	95.04	90.33	85.85	81.60	77.55	73.71	70.06	66.58
36	602	0.08876	122.984	95.02	90.29	85.79	81.52	77.46	73.60	69.93	66.45
37	608	0.08920	122.376	94.99	90.24	85.72	81.43	77.36	73.49	69.81	66.31
38	614	0.08964	121.777	94.97	90.19	85.66	81.35	77.26	73.37	69.68	66.18

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

8 3/16" 50 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.03395	321.485	98.06	96.17	94.30	92.48	90.69	88.93	87.21	85.52
88.3	0.03399	321.121	98.06	96.16	94.30	92.47	90.68	88.92	87.20	85.51
88.5	0.03403	320.758	98.06	96.16	94.29	92.46	90.67	88.91	87.19	85.49
88.7	0.03407	320.396	98.06	96.15	94.29	92.45	90.66	88.90	87.17	85.48
88.9	0.03411	320.035	98.06	96.15	94.28	92.45	90.65	88.89	87.16	85.46
89.1	0.03415	319.676	98.05	96.14	94.27	92.44	90.64	88.88	87.15	85.45
89.3	0.03419	319.318	98.05	96.14	94.27	92.43	90.63	88.86	87.13	85.43
89.5	0.03422	318.961	98.05	96.14	94.26	92.42	90.62	88.85	87.12	85.42
89.7	0.03426	318.605	98.05	96.13	94.25	92.41	90.61	88.84	87.10	85.40
89.9	0.03430	318.250	98.04	96.13	94.25	92.41	90.60	88.83	87.09	85.39
90.1	0.03434	317.897	98.04	96.12	94.24	92.40	90.59	88.82	87.08	85.37
90.3	0.03438	317.545	98.04	96.12	94.24	92.39	90.58	88.80	87.06	85.36
90.5	0.03441	317.194	98.04	96.12	94.23	92.38	90.57	88.79	87.05	85.34
90.7	0.03445	316.844	98.04	96.11	94.22	92.37	90.56	88.78	87.04	85.33
90.9	0.03449	316.495	98.03	96.11	94.22	92.37	90.55	88.77	87.02	85.31
91.1	0.03453	316.147	98.03	96.10	94.21	92.36	90.54	88.76	87.01	85.30
91.3	0.03457	315.801	98.03	96.10	94.21	92.35	90.53	88.75	87.00	85.28
91.5	0.03460	315.455	98.03	96.09	94.20	92.34	90.52	88.73	86.98	85.27
91.7	0.03464	315.111	98.03	96.09	94.19	92.33	90.51	88.72	86.97	85.25
91.9	0.03468	314.768	98.02	96.09	94.19	92.33	90.50	88.71	86.96	85.24
92.1	0.03472	314.426	98.02	96.08	94.18	92.32	90.49	88.70	86.95	85.22
92.3	0.03475	314.085	98.02	96.08	94.17	92.31	90.48	88.69	86.93	85.21
92.5	0.03479	313.746	98.02	96.07	94.17	92.30	90.47	88.68	86.92	85.20
92.7	0.03483	313.407	98.01	96.07	94.16	92.29	90.46	88.67	86.91	85.18
92.9	0.03487	313.069	98.01	96.07	94.16	92.29	90.45	88.65	86.89	85.17
93.1	0.03490	312.733	98.01	96.06	94.15	92.28	90.44	88.64	86.88	85.15
93.3	0.03494	312.398	98.01	96.06	94.14	92.27	90.43	88.63	86.87	85.14
93.5	0.03498	312.063	98.01	96.05	94.14	92.26	90.42	88.62	86.85	85.12
93.7	0.03502	311.730	98.00	96.05	94.13	92.25	90.41	88.61	86.84	85.11
93.9	0.03505	311.398	98.00	96.04	94.13	92.25	90.40	88.60	86.83	85.09
94.1	0.03509	311.067	98.00	96.04	94.12	92.24	90.39	88.59	86.81	85.08
94.3	0.03513	310.737	98.00	96.04	94.11	92.23	90.38	88.57	86.80	85.06
94.5	0.03517	310.408	98.00	96.03	94.11	92.22	90.37	88.56	86.79	85.05
94.7	0.03520	310.080	97.99	96.03	94.10	92.21	90.36	88.55	86.77	85.03
94.9	0.03524	309.753	97.99	96.02	94.10	92.21	90.35	88.54	86.76	85.02
95.1	0.03528	309.427	97.99	96.02	94.09	92.20	90.34	88.53	86.75	85.00
95.3	0.03531	309.102	97.99	96.02	94.08	92.19	90.34	88.52	86.74	84.99
95.5	0.03535	308.778	97.99	96.01	94.08	92.18	90.33	88.51	86.72	84.98
95.7	0.03539	308.456	97.98	96.01	94.07	92.17	90.32	88.49	86.71	84.96
95.9	0.03543	308.134	97.98	96.00	94.07	92.17	90.31	88.48	86.70	84.95
96.1	0.03546	307.813	97.98	96.00	94.06	92.16	90.30	88.47	86.68	84.93
96.3	0.03550	307.493	97.98	96.00	94.05	92.15	90.29	88.46	86.67	84.92
96.5	0.03554	307.174	97.98	95.99	94.05	92.14	90.28	88.45	86.66	84.90
96.7	0.03557	306.857	97.97	95.99	94.04	92.14	90.27	88.44	86.65	84.89
96.9	0.03561	306.540	97.97	95.98	94.04	92.13	90.26	88.43	86.63	84.87
97.1	0.03565	306.224	97.97	95.98	94.03	92.12	90.25	88.42	86.62	84.86
97.3	0.03568	305.909	97.97	95.98	94.02	92.11	90.24	88.40	86.61	84.85
97.5	0.03572	305.595	97.96	95.97	94.02	92.10	90.23	88.39	86.59	84.83
97.7	0.03576	305.282	97.96	95.97	94.01	92.10	90.22	88.38	86.58	84.82
97.9	0.03579	304.970	97.96	95.96	94.01	92.09	90.21	88.37	86.57	84.80

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.03583	304.659	97.96	95.96	94.00	92.08	90.20	88.36	86.56	84.79
98.3	0.03587	304.349	97.96	95.95	93.99	92.07	90.19	88.35	86.54	84.77
98.5	0.03590	304.040	97.95	95.95	93.99	92.07	90.18	88.34	86.53	84.76
98.7	0.03594	303.732	97.95	95.95	93.98	92.06	90.17	88.33	86.52	84.75
98.9	0.03598	303.424	97.95	95.94	93.98	92.05	90.16	88.32	86.51	84.73
99.1	0.03601	303.118	97.95	95.94	93.97	92.04	90.15	88.30	86.49	84.72
99.3	0.03605	302.813	97.95	95.93	93.96	92.03	90.14	88.29	86.48	84.70
99.5	0.03608	302.508	97.94	95.93	93.96	92.03	90.14	88.28	86.47	84.69
99.7	0.03612	302.205	97.94	95.93	93.95	92.02	90.13	88.27	86.45	84.68
99.9	0.03616	301.902	97.94	95.92	93.95	92.01	90.12	88.26	86.44	84.66
100.1	0.03619	301.600	97.94	95.92	93.94	92.00	90.11	88.25	86.43	84.65
100.3	0.03623	301.299	97.94	95.91	93.94	92.00	90.10	88.24	86.42	84.63
100.5	0.03627	300.999	97.93	95.91	93.93	91.99	90.09	88.23	86.40	84.62
100.7	0.03630	300.700	97.93	95.91	93.92	91.98	90.08	88.22	86.39	84.61
100.9	0.03634	300.402	97.93	95.90	93.92	91.97	90.07	88.21	86.38	84.59
101.1	0.03637	300.105	97.93	95.90	93.91	91.97	90.06	88.19	86.37	84.58
101.3	0.03641	299.808	97.93	95.89	93.91	91.96	90.05	88.18	86.35	84.56
101.5	0.03645	299.513	97.92	95.89	93.90	91.95	90.04	88.17	86.34	84.55
101.7	0.03648	299.218	97.92	95.89	93.89	91.94	90.03	88.16	86.33	84.54
101.9	0.03652	298.925	97.92	95.88	93.89	91.94	90.02	88.15	86.32	84.52
102.1	0.03655	298.632	97.92	95.88	93.88	91.93	90.01	88.14	86.30	84.51
102.3	0.03659	298.340	97.92	95.88	93.88	91.92	90.00	88.13	86.29	84.49
102.5	0.03662	298.048	97.91	95.87	93.87	91.91	90.00	88.12	86.28	84.48
102.7	0.03666	297.758	97.91	95.87	93.87	91.91	89.99	88.11	86.27	84.47
102.9	0.03670	297.468	97.91	95.86	93.86	91.90	89.98	88.10	86.25	84.45
103.1	0.03673	297.180	97.91	95.86	93.85	91.89	89.97	88.09	86.24	84.44
103.3	0.03677	296.892	97.91	95.86	93.85	91.88	89.96	88.07	86.23	84.42
103.5	0.03680	296.605	97.90	95.85	93.84	91.87	89.95	88.06	86.22	84.41
103.7	0.03684	296.319	97.90	95.85	93.84	91.87	89.94	88.05	86.21	84.40
103.9	0.03687	296.033	97.90	95.84	93.83	91.86	89.93	88.04	86.19	84.38
104.1	0.03691	295.749	97.90	95.84	93.82	91.85	89.92	88.03	86.18	84.37
104.3	0.03694	295.465	97.90	95.84	93.82	91.84	89.91	88.02	86.17	84.35
104.5	0.03698	295.182	97.89	95.83	93.81	91.84	89.90	88.01	86.16	84.34
104.7	0.03702	294.900	97.89	95.83	93.81	91.83	89.89	88.00	86.14	84.33
104.9	0.03705	294.619	97.89	95.82	93.80	91.82	89.88	87.99	86.13	84.31
105.1	0.03709	294.339	97.89	95.82	93.80	91.82	89.88	87.98	86.12	84.30
105.3	0.03712	294.059	97.89	95.82	93.79	91.81	89.87	87.97	86.11	84.29
105.5	0.03716	293.780	97.88	95.81	93.78	91.80	89.86	87.96	86.09	84.27
105.7	0.03719	293.502	97.88	95.81	93.78	91.79	89.85	87.95	86.08	84.26
105.9	0.03723	293.225	97.88	95.80	93.77	91.79	89.84	87.93	86.07	84.25
106.1	0.03726	292.948	97.88	95.80	93.77	91.78	89.83	87.92	86.06	84.23
106.3	0.03730	292.673	97.88	95.80	93.76	91.77	89.82	87.91	86.05	84.22
106.5	0.03733	292.398	97.87	95.79	93.76	91.76	89.81	87.90	86.03	84.20
106.7	0.03737	292.123	97.87	95.79	93.75	91.76	89.80	87.89	86.02	84.19
106.9	0.03740	291.850	97.87	95.79	93.74	91.75	89.79	87.88	86.01	84.18
107.1	0.0374	291.577	97.87	95.78	93.74	91.74	89.78	87.87	86.00	84.16
107.3	0.0375	291.306	97.87	95.78	93.73	91.73	89.78	87.86	85.99	84.15
107.5	0.0375	291.034	97.86	95.77	93.73	91.73	89.77	87.85	85.97	84.14
107.7	0.0375	290.764	97.86	95.77	93.72	91.72	89.76	87.84	85.96	84.12
107.9	0.0376	290.494	97.86	95.77	93.72	91.71	89.75	87.83	85.95	84.11

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F

9 3/16" 50 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.024	508.072	98.65	97.32	96.00	94.70	93.42	92.16	90.91	89.69
3	60	0.025	482.000	98.58	97.17	95.79	94.42	93.08	91.75	90.45	89.16
4	66	0.026	459.569	98.51	97.04	95.59	94.16	92.75	91.37	90.01	88.66
5	76	0.028	428.268	98.40	96.82	95.27	93.75	92.25	90.77	89.32	87.88
6	82	0.029	412.302	98.34	96.70	95.09	93.51	91.96	90.43	88.93	87.45
7	174	0.042	283.040	97.59	95.23	92.93	90.69	88.50	86.37	84.28	82.25
8	180	0.043	278.283	97.55	95.15	92.82	90.54	88.32	86.15	84.04	81.98
9	186	0.044	273.757	97.51	95.07	92.70	90.39	88.14	85.94	83.80	81.71
10	192	0.045	269.446	97.47	95.00	92.59	90.25	87.96	85.73	83.56	81.44
11	198	0.045	265.332	97.43	94.92	92.48	90.10	87.78	85.53	83.33	81.18
12	204	0.046	261.401	97.39	94.85	92.37	89.96	87.61	85.33	83.10	80.93
13	210	0.047	257.640	97.35	94.77	92.27	89.82	87.44	85.13	82.87	80.68
14	470	0.070	172.216	96.07	92.28	88.65	85.17	81.81	78.59	75.50	72.53
15	476	0.070	171.127	96.04	92.24	88.59	85.08	81.71	78.47	75.37	72.38
16	482	0.071	170.059	96.02	92.19	88.52	84.99	81.61	78.35	75.23	72.24
17	488	0.071	169.010	95.99	92.14	88.45	84.91	81.50	78.24	75.10	72.09
18	494	0.071	167.980	95.97	92.10	88.38	84.82	81.40	78.12	74.97	71.95
19	500	0.072	166.970	95.94	92.05	88.32	84.74	81.30	78.00	74.84	71.80
20	506	0.072	165.977	95.92	92.01	88.25	84.65	81.20	77.89	74.71	71.66
21	512	0.073	165.001	95.90	91.96	88.19	84.57	81.10	77.77	74.58	71.52
22	518	0.073	164.043	95.87	91.92	88.12	84.49	81.00	77.66	74.45	71.38
23	524	0.074	163.101	95.85	91.87	88.06	84.40	80.90	77.54	74.33	71.24
24	530	0.074	162.175	95.83	91.83	88.00	84.32	80.80	77.43	74.20	71.10
25	536	0.074	161.265	95.80	91.78	87.93	84.24	80.71	77.32	74.07	70.97
26	542	0.075	160.370	95.78	91.74	87.87	84.16	80.61	77.21	73.95	70.83

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

9 3/16" 50 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.03019	397.772	98.28	96.58	94.92	93.28	91.68	90.10	88.54	87.02
88.3	0.03023	397.321	98.28	96.58	94.91	93.28	91.67	90.09	88.53	87.01
88.5	0.03026	396.872	98.27	96.58	94.91	93.27	91.66	90.08	88.52	86.99
88.7	0.03030	396.424	98.27	96.57	94.90	93.26	91.65	90.07	88.51	86.98
88.9	0.03033	395.978	98.27	96.57	94.90	93.25	91.64	90.05	88.50	86.96
89.1	0.03036	395.534	98.27	96.56	94.89	93.25	91.63	90.04	88.48	86.95
89.3	0.03040	395.090	98.27	96.56	94.89	93.24	91.62	90.03	88.47	86.94
89.5	0.03043	394.649	98.26	96.56	94.88	93.23	91.61	90.02	88.46	86.92
89.7	0.03047	394.209	98.26	96.55	94.87	93.23	91.60	90.01	88.45	86.91
89.9	0.03050	393.770	98.26	96.55	94.87	93.22	91.60	90.00	88.44	86.90
90.1	0.03053	393.333	98.26	96.55	94.86	93.21	91.59	89.99	88.42	86.88
90.3	0.03057	392.897	98.26	96.54	94.86	93.20	91.58	89.98	88.41	86.87
90.5	0.03060	392.462	98.25	96.54	94.85	93.20	91.57	89.97	88.40	86.86
90.7	0.03064	392.029	98.25	96.53	94.85	93.19	91.56	89.96	88.39	86.84
90.9	0.03067	391.598	98.25	96.53	94.84	93.18	91.55	89.95	88.37	86.83
91.1	0.03070	391.168	98.25	96.53	94.84	93.17	91.54	89.94	88.36	86.81
91.3	0.03074	390.739	98.25	96.52	94.83	93.17	91.53	89.93	88.35	86.80
91.5	0.03077	390.312	98.24	96.52	94.82	93.16	91.52	89.92	88.34	86.79
91.7	0.03080	389.886	98.24	96.52	94.82	93.15	91.52	89.91	88.33	86.77
91.9	0.03084	389.461	98.24	96.51	94.81	93.15	91.51	89.90	88.32	86.76
92.1	0.03087	389.038	98.24	96.51	94.81	93.14	91.50	89.89	88.30	86.75
92.3	0.03090	388.617	98.24	96.50	94.80	93.13	91.49	89.88	88.29	86.73
92.5	0.03094	388.196	98.23	96.50	94.80	93.12	91.48	89.87	88.28	86.72
92.7	0.03097	387.777	98.23	96.50	94.79	93.12	91.47	89.86	88.27	86.71
92.9	0.03100	387.360	98.23	96.49	94.79	93.11	91.46	89.84	88.26	86.69
93.1	0.03104	386.943	98.23	96.49	94.78	93.10	91.45	89.83	88.24	86.68
93.3	0.03107	386.528	98.23	96.49	94.78	93.10	91.45	89.82	88.23	86.67
93.5	0.03110	386.115	98.23	96.48	94.77	93.09	91.44	89.81	88.22	86.65
93.7	0.03114	385.703	98.22	96.48	94.76	93.08	91.43	89.80	88.21	86.64
93.9	0.03117	385.292	98.22	96.47	94.76	93.07	91.42	89.79	88.20	86.63
94.1	0.03120	384.882	98.22	96.47	94.75	93.07	91.41	89.78	88.18	86.61
94.3	0.03124	384.474	98.22	96.47	94.75	93.06	91.40	89.77	88.17	86.60
94.5	0.03127	384.066	98.22	96.46	94.74	93.05	91.39	89.76	88.16	86.59
94.7	0.03130	383.661	98.21	96.46	94.74	93.05	91.38	89.75	88.15	86.58
94.9	0.03134	383.256	98.21	96.46	94.73	93.04	91.38	89.74	88.14	86.56
95.1	0.03137	382.853	98.21	96.45	94.73	93.03	91.37	89.73	88.13	86.55
95.3	0.03140	382.451	98.21	96.45	94.72	93.02	91.36	89.72	88.11	86.54
95.5	0.03144	382.050	98.21	96.45	94.72	93.02	91.35	89.71	88.10	86.52
95.7	0.03147	381.651	98.20	96.44	94.71	93.01	91.34	89.70	88.09	86.51
95.9	0.03150	381.253	98.20	96.44	94.71	93.00	91.33	89.69	88.08	86.50
96.1	0.03153	380.856	98.20	96.43	94.70	93.00	91.32	89.68	88.07	86.48
96.3	0.03157	380.460	98.20	96.43	94.69	92.99	91.31	89.67	88.06	86.47
96.5	0.03160	380.066	98.20	96.43	94.69	92.98	91.31	89.66	88.04	86.46
96.7	0.03163	379.672	98.20	96.42	94.68	92.98	91.30	89.65	88.03	86.44
96.9	0.03167	379.280	98.19	96.42	94.68	92.97	91.29	89.64	88.02	86.43
97.1	0.03170	378.890	98.19	96.42	94.67	92.96	91.28	89.63	88.01	86.42
97.3	0.03173	378.500	98.19	96.41	94.67	92.95	91.27	89.62	88.00	86.41
97.5	0.03176	378.112	98.19	96.41	94.66	92.95	91.26	89.61	87.99	86.39
97.7	0.03180	377.724	98.19	96.41	94.66	92.94	91.25	89.60	87.97	86.38
97.9	0.03183	377.338	98.18	96.40	94.65	92.93	91.25	89.59	87.96	86.37

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.03186	376.953	98.18	96.40	94.65	92.93	91.24	89.58	87.95	86.35
98.3	0.03189	376.570	98.18	96.39	94.64	92.92	91.23	89.57	87.94	86.34
98.5	0.03193	376.187	98.18	96.39	94.64	92.91	91.22	89.56	87.93	86.33
98.7	0.03196	375.806	98.18	96.39	94.63	92.91	91.21	89.55	87.92	86.31
98.9	0.03199	375.426	98.18	96.38	94.63	92.90	91.20	89.54	87.91	86.30
99.1	0.03202	375.047	98.17	96.38	94.62	92.89	91.20	89.53	87.89	86.29
99.3	0.03205	374.669	98.17	96.38	94.61	92.88	91.19	89.52	87.88	86.28
99.5	0.03209	374.292	98.17	96.37	94.61	92.88	91.18	89.51	87.87	86.26
99.7	0.03212	373.917	98.17	96.37	94.60	92.87	91.17	89.50	87.86	86.25
99.9	0.03215	373.542	98.17	96.37	94.60	92.86	91.16	89.49	87.85	86.24
100.1	0.03218	373.169	98.16	96.36	94.59	92.86	91.15	89.48	87.84	86.22
100.3	0.03222	372.796	98.16	96.36	94.59	92.85	91.14	89.47	87.83	86.21
100.5	0.03225	372.425	98.16	96.36	94.58	92.84	91.14	89.46	87.81	86.20
100.7	0.03228	372.055	98.16	96.35	94.58	92.84	91.13	89.45	87.80	86.19
100.9	0.03231	371.686	98.16	96.35	94.57	92.83	91.12	89.44	87.79	86.17
101.1	0.03234	371.319	98.16	96.34	94.57	92.82	91.11	89.43	87.78	86.16
101.3	0.03238	370.952	98.15	96.34	94.56	92.82	91.10	89.42	87.77	86.15
101.5	0.03241	370.586	98.15	96.34	94.56	92.81	91.09	89.41	87.76	86.14
101.7	0.03244	370.222	98.15	96.33	94.55	92.80	91.09	89.40	87.75	86.12
101.9	0.03247	369.858	98.15	96.33	94.55	92.80	91.08	89.39	87.74	86.11
102.1	0.03250	369.496	98.15	96.33	94.54	92.79	91.07	89.38	87.72	86.10
102.3	0.03254	369.134	98.14	96.32	94.54	92.78	91.06	89.37	87.71	86.09
102.5	0.03257	368.774	98.14	96.32	94.53	92.78	91.05	89.36	87.70	86.07
102.7	0.03260	368.415	98.14	96.32	94.53	92.77	91.04	89.35	87.69	86.06
102.9	0.03263	368.057	98.14	96.31	94.52	92.76	91.04	89.34	87.68	86.05
103.1	0.03266	367.699	98.14	96.31	94.52	92.76	91.03	89.33	87.67	86.03
103.3	0.03269	367.343	98.14	96.31	94.51	92.75	91.02	89.32	87.66	86.02
103.5	0.03273	366.988	98.13	96.30	94.51	92.74	91.01	89.31	87.65	86.01
103.7	0.03276	366.634	98.13	96.30	94.50	92.73	91.00	89.30	87.63	86.00
103.9	0.03279	366.281	98.13	96.30	94.49	92.73	90.99	89.29	87.62	85.98
104.1	0.03282	365.929	98.13	96.29	94.49	92.72	90.99	89.28	87.61	85.97
104.3	0.03285	365.578	98.13	96.29	94.48	92.71	90.98	89.27	87.60	85.96
104.5	0.03288	365.228	98.12	96.28	94.48	92.71	90.97	89.26	87.59	85.95
104.7	0.03291	364.879	98.12	96.28	94.47	92.70	90.96	89.25	87.58	85.94
104.9	0.03295	364.531	98.12	96.28	94.47	92.69	90.95	89.24	87.57	85.92
105.1	0.03298	364.184	98.12	96.27	94.46	92.69	90.94	89.23	87.56	85.91
105.3	0.03301	363.838	98.12	96.27	94.46	92.68	90.94	89.22	87.55	85.90
105.5	0.03304	363.493	98.12	96.27	94.45	92.67	90.93	89.22	87.53	85.89
105.7	0.03307	363.149	98.11	96.26	94.45	92.67	90.92	89.21	87.52	85.87
105.9	0.03310	362.806	98.11	96.26	94.44	92.66	90.91	89.20	87.51	85.86
106.1	0.03313	362.464	98.11	96.26	94.44	92.65	90.90	89.19	87.50	85.85
106.3	0.03317	362.123	98.11	96.25	94.43	92.65	90.90	89.18	87.49	85.84
106.5	0.03320	361.782	98.11	96.25	94.43	92.64	90.89	89.17	87.48	85.82
106.7	0.03323	361.443	98.11	96.25	94.42	92.63	90.88	89.16	87.47	85.81
106.9	0.03326	361.105	98.10	96.24	94.42	92.63	90.87	89.15	87.46	85.80
107.1	0.03329	360.768	98.10	96.24	94.41	92.62	90.86	89.14	87.45	85.79
107.3	0.03332	360.431	98.10	96.24	94.41	92.61	90.85	89.13	87.44	85.77
107.5	0.03335	360.096	98.10	96.23	94.40	92.61	90.85	89.12	87.42	85.76
107.7	0.03338	359.761	98.10	96.23	94.40	92.60	90.84	89.11	87.41	85.75
107.9	0.03341	359.428	98.09	96.23	94.39	92.59	90.83	89.10	87.40	85.74

Standard Conditions:

9 3/16" 75 Ohm Rigid Coaxial Transmission line, TV Ratings and Efficiency in Percent

CH #	Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
2	54	0.0214	428.393	98.77	97.56	96.36	95.18	94.01	92.86	91.72	90.59
3	60	0.0226	406.410	98.71	97.43	96.17	94.93	93.70	92.49	91.29	90.11
4	66	0.0237	387.496	98.64	97.31	95.99	94.69	93.40	92.14	90.89	89.66
5	76	0.0254	361.104	98.55	97.11	95.70	94.31	92.94	91.59	90.26	88.94
6	82	0.0264	347.642	98.49	97.00	95.54	94.10	92.67	91.28	89.90	88.54
7	174	0.0385	238.652	97.81	95.66	93.57	91.52	89.51	87.55	85.63	83.75
8	180	0.0392	234.641	97.77	95.59	93.46	91.38	89.34	87.35	85.40	83.50
9	186	0.0398	230.825	97.73	95.52	93.36	91.24	89.17	87.15	85.18	83.25
10	192	0.0404	227.190	97.70	95.45	93.25	91.11	89.01	86.96	84.96	83.01
11	198	0.0411	223.721	97.66	95.38	93.15	90.98	88.85	86.78	84.75	82.77
12	204	0.0417	220.407	97.63	95.31	93.05	90.85	88.69	86.59	84.54	82.53
13	210	0.0423	217.235	97.59	95.25	92.96	90.72	88.54	86.41	84.33	82.30
14	470	0.0633	145.208	96.42	92.97	89.65	86.44	83.35	80.37	77.49	74.72
15	476	0.0637	144.290	96.40	92.93	89.59	86.36	83.25	80.26	77.37	74.58
16	482	0.0641	143.389	96.38	92.89	89.52	86.28	83.16	80.15	77.24	74.45
17	488	0.0645	142.505	96.36	92.85	89.46	86.20	83.06	80.04	77.12	74.31
18	494	0.0649	141.637	96.33	92.80	89.40	86.12	82.97	79.93	77.00	74.17
19	500	0.0653	140.784	96.31	92.76	89.34	86.05	82.87	79.82	76.88	74.04
20	506	0.0657	139.947	96.29	92.72	89.28	85.97	82.78	79.71	76.75	73.91
21	512	0.0660	139.125	96.27	92.68	89.22	85.89	82.69	79.60	76.63	73.78
22	518	0.0664	138.317	96.25	92.64	89.16	85.82	82.60	79.50	76.52	73.64
23	524	0.0668	137.523	96.23	92.60	89.10	85.74	82.51	79.39	76.40	73.51
24	530	0.0672	136.742	96.21	92.56	89.04	85.67	82.42	79.29	76.28	73.39
25	536	0.0676	135.974	96.18	92.52	88.99	85.59	82.33	79.18	76.16	73.26
26	542	0.0679	135.220	96.16	92.48	88.93	85.52	82.24	79.08	76.05	73.13
27	548	0.0683	134.477	96.14	92.44	88.87	85.44	82.15	78.98	75.93	73.00
28	554	0.0687	133.747	96.12	92.40	88.81	85.37	82.06	78.88	75.82	72.88
29	560	0.0691	133.029	96.10	92.36	88.76	85.30	81.97	78.78	75.71	72.75
30	566	0.0694	132.322	96.08	92.32	88.70	85.22	81.88	78.68	75.59	72.63
31	572	0.0698	131.626	96.06	92.28	88.64	85.15	81.80	78.58	75.48	72.51
32	578	0.0702	130.941	96.04	92.24	88.59	85.08	81.71	78.48	75.37	72.39
33	584	0.0705	130.267	96.02	92.20	88.53	85.01	81.63	78.38	75.26	72.27
34	590	0.0709	129.603	96.00	92.16	88.48	84.94	81.54	78.28	75.15	72.15
35	596	0.0713	128.949	95.98	92.12	88.42	84.87	81.46	78.18	75.04	72.03
36	602	0.0716	128.304	95.96	92.09	88.37	84.80	81.37	78.09	74.93	71.91
37	608	0.0720	127.670	95.94	92.05	88.31	84.73	81.29	77.99	74.83	71.79

Standard Conditions:

Attenuation: Ambient Temperature 20°C (68°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0, 0KW

Average Power: Ambient Temperature 40°C (104°F), Inner Conductor Temperature 100°C (212°F), Dry Air, Sea Level Atmospheric Pressure, VSWR 1.0

9 3/16" 75 Ohm Rigid Coaxial Transmission line, FM Ratings and Efficiency in Percent

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
88.1	0.02740	335.391	98.44	96.90	95.38	93.89	92.42	90.97	89.55	88.15
88.3	0.02743	335.011	98.43	96.89	95.37	93.88	92.41	90.96	89.54	88.13
88.5	0.02746	334.632	98.43	96.89	95.37	93.87	92.40	90.95	89.53	88.12
88.7	0.02749	334.255	98.43	96.88	95.36	93.87	92.39	90.94	89.51	88.11
88.9	0.02752	333.879	98.43	96.88	95.36	93.86	92.38	90.93	89.50	88.10
89.1	0.02755	333.504	98.43	96.88	95.35	93.85	92.38	90.92	89.49	88.08
89.3	0.02758	333.130	98.42	96.87	95.35	93.85	92.37	90.91	89.48	88.07
89.5	0.02761	332.758	98.42	96.87	95.34	93.84	92.36	90.90	89.47	88.06
89.7	0.02764	332.387	98.42	96.87	95.34	93.83	92.35	90.89	89.46	88.05
89.9	0.02767	332.017	98.42	96.86	95.33	93.83	92.34	90.88	89.45	88.03
90.1	0.02770	331.648	98.42	96.86	95.33	93.82	92.34	90.87	89.44	88.02
90.3	0.02774	331.280	98.42	96.86	95.32	93.81	92.33	90.87	89.43	88.01
90.5	0.02777	330.914	98.41	96.85	95.32	93.81	92.32	90.86	89.41	88.00
90.7	0.02780	330.549	98.41	96.85	95.31	93.80	92.31	90.85	89.40	87.98
90.9	0.02783	330.185	98.41	96.85	95.31	93.79	92.30	90.84	89.39	87.97
91.1	0.02786	329.823	98.41	96.84	95.30	93.79	92.29	90.83	89.38	87.96
91.3	0.02789	329.461	98.41	96.84	95.30	93.78	92.29	90.82	89.37	87.95
91.5	0.02792	329.101	98.41	96.84	95.29	93.77	92.28	90.81	89.36	87.94
91.7	0.02795	328.742	98.40	96.83	95.29	93.77	92.27	90.80	89.35	87.92
91.9	0.02798	328.384	98.40	96.83	95.28	93.76	92.26	90.79	89.34	87.91
92.1	0.02801	328.027	98.40	96.83	95.28	93.75	92.25	90.78	89.33	87.90
92.3	0.02804	327.672	98.40	96.82	95.27	93.75	92.25	90.77	89.32	87.89
92.5	0.02807	327.317	98.40	96.82	95.27	93.74	92.24	90.76	89.30	87.87
92.7	0.02810	326.964	98.40	96.82	95.26	93.73	92.23	90.75	89.29	87.86
92.9	0.02813	326.612	98.39	96.81	95.26	93.73	92.22	90.74	89.28	87.85
93.1	0.02816	326.261	98.39	96.81	95.25	93.72	92.21	90.73	89.27	87.84
93.3	0.02819	325.911	98.39	96.81	95.25	93.71	92.21	90.72	89.26	87.82
93.5	0.02822	325.562	98.39	96.80	95.24	93.71	92.20	90.71	89.25	87.81
93.7	0.02825	325.214	98.39	96.80	95.24	93.70	92.19	90.70	89.24	87.80
93.9	0.02828	324.868	98.39	96.80	95.23	93.70	92.18	90.69	89.23	87.79
94.1	0.02831	324.523	98.38	96.79	95.23	93.69	92.17	90.68	89.22	87.78
94.3	0.02834	324.178	98.38	96.79	95.22	93.68	92.17	90.67	89.21	87.76
94.5	0.02837	323.835	98.38	96.79	95.22	93.68	92.16	90.67	89.20	87.75
94.7	0.02840	323.493	98.38	96.78	95.21	93.67	92.15	90.66	89.19	87.74
94.9	0.02843	323.152	98.38	96.78	95.21	93.66	92.14	90.65	89.17	87.73
95.1	0.02846	322.812	98.37	96.78	95.20	93.66	92.13	90.64	89.16	87.72
95.3	0.02849	322.473	98.37	96.77	95.20	93.65	92.13	90.63	89.15	87.70
95.5	0.02852	322.135	98.37	96.77	95.19	93.64	92.12	90.62	89.14	87.69
95.7	0.02855	321.798	98.37	96.77	95.19	93.64	92.11	90.61	89.13	87.68
95.9	0.02858	321.463	98.37	96.76	95.18	93.63	92.10	90.60	89.12	87.67
96.1	0.02861	321.128	98.37	96.76	95.18	93.62	92.09	90.59	89.11	87.65
96.3	0.02864	320.794	98.36	96.76	95.17	93.62	92.09	90.58	89.10	87.64
96.5	0.02867	320.462	98.36	96.75	95.17	93.61	92.08	90.57	89.09	87.63
96.7	0.02870	320.130	98.36	96.75	95.16	93.60	92.07	90.56	89.08	87.62
96.9	0.02873	319.800	98.36	96.75	95.16	93.60	92.06	90.55	89.07	87.61
97.1	0.02876	319.470	98.36	96.74	95.15	93.59	92.06	90.54	89.06	87.59
97.3	0.02879	319.141	98.36	96.74	95.15	93.59	92.05	90.53	89.05	87.58
97.5	0.02882	318.814	98.35	96.74	95.14	93.58	92.04	90.53	89.04	87.57
97.7	0.02885	318.488	98.35	96.73	95.14	93.57	92.03	90.52	89.03	87.56
97.9	0.02888	318.162	98.35	96.73	95.14	93.57	92.02	90.51	89.01	87.55

Freq. MHz	ATTEN. in dB/100 ft	Average Power (Kilowatts)	250 ft	500 ft	750 ft	1000 ft	1250 ft	1500 ft	1750 ft	2000 ft
98.1	0.02891	317.838	98.35	96.73	95.13	93.56	92.02	90.50	89.00	87.54
98.3	0.02894	317.514	98.35	96.72	95.13	93.55	92.01	90.49	88.99	87.52
98.5	0.02897	317.192	98.35	96.72	95.12	93.55	92.00	90.48	88.98	87.51
98.7	0.02900	316.870	98.34	96.72	95.12	93.54	91.99	90.47	88.97	87.50
98.9	0.02903	316.549	98.34	96.71	95.11	93.53	91.99	90.46	88.96	87.49
99.1	0.02906	316.230	98.34	96.71	95.11	93.53	91.98	90.45	88.95	87.48
99.3	0.02908	315.911	98.34	96.71	95.10	93.52	91.97	90.44	88.94	87.46
99.5	0.02911	315.594	98.34	96.70	95.10	93.52	91.96	90.43	88.93	87.45
99.7	0.02914	315.277	98.34	96.70	95.09	93.51	91.95	90.42	88.92	87.44
99.9	0.02917	314.961	98.33	96.70	95.09	93.50	91.95	90.42	88.91	87.43
100.1	0.02920	314.646	98.33	96.69	95.08	93.50	91.94	90.41	88.90	87.42
100.3	0.02923	314.332	98.33	96.69	95.08	93.49	91.93	90.40	88.89	87.41
100.5	0.02926	314.020	98.33	96.69	95.07	93.48	91.92	90.39	88.88	87.39
100.7	0.02929	313.708	98.33	96.68	95.07	93.48	91.92	90.38	88.87	87.38
100.9	0.02932	313.396	98.33	96.68	95.06	93.47	91.91	90.37	88.86	87.37
101.1	0.02935	313.086	98.32	96.68	95.06	93.47	91.90	90.36	88.85	87.36
101.3	0.02938	312.777	98.32	96.67	95.05	93.46	91.89	90.35	88.84	87.35
101.5	0.02941	312.469	98.32	96.67	95.05	93.45	91.88	90.34	88.83	87.34
101.7	0.02943	312.161	98.32	96.67	95.04	93.45	91.88	90.33	88.82	87.32
101.9	0.02946	311.855	98.32	96.66	95.04	93.44	91.87	90.32	88.81	87.31
102.1	0.02949	311.549	98.32	96.66	95.03	93.43	91.86	90.32	88.80	87.30
102.3	0.02952	311.245	98.32	96.66	95.03	93.43	91.85	90.31	88.78	87.29
102.5	0.02955	310.941	98.31	96.66	95.02	93.42	91.85	90.30	88.77	87.28
102.7	0.02958	310.638	98.31	96.65	95.02	93.42	91.84	90.29	88.76	87.27
102.9	0.02961	310.336	98.31	96.65	95.02	93.41	91.83	90.28	88.75	87.25
103.1	0.02964	310.035	98.31	96.65	95.01	93.40	91.82	90.27	88.74	87.24
103.3	0.02966	309.734	98.31	96.64	95.01	93.40	91.82	90.26	88.73	87.23
103.5	0.02969	309.435	98.31	96.64	95.00	93.39	91.81	90.25	88.72	87.22
103.7	0.02972	309.137	98.30	96.64	95.00	93.39	91.80	90.24	88.71	87.21
103.9	0.02975	308.839	98.30	96.63	94.99	93.38	91.79	90.23	88.70	87.20
104.1	0.02978	308.542	98.30	96.63	94.99	93.37	91.79	90.23	88.69	87.18
104.3	0.02981	308.246	98.30	96.63	94.98	93.37	91.78	90.22	88.68	87.17
104.5	0.02984	307.951	98.30	96.62	94.98	93.36	91.77	90.21	88.67	87.16
104.7	0.02986	307.657	98.30	96.62	94.97	93.35	91.76	90.20	88.66	87.15
104.9	0.02989	307.363	98.29	96.62	94.97	93.35	91.76	90.19	88.65	87.14
105.1	0.02992	307.071	98.29	96.61	94.96	93.34	91.75	90.18	88.64	87.13
105.3	0.02995	306.779	98.29	96.61	94.96	93.34	91.74	90.17	88.63	87.12
105.5	0.02998	306.488	98.29	96.61	94.95	93.33	91.73	90.16	88.62	87.10
105.7	0.03001	306.198	98.29	96.60	94.95	93.32	91.73	90.15	88.61	87.09
105.9	0.03004	305.909	98.29	96.60	94.95	93.32	91.72	90.15	88.60	87.08
106.1	0.03006	305.620	98.28	96.60	94.94	93.31	91.71	90.14	88.59	87.07
106.3	0.03009	305.333	98.28	96.59	94.94	93.31	91.70	90.13	88.58	87.06
106.5	0.03012	305.046	98.28	96.59	94.93	93.30	91.70	90.12	88.57	87.05
106.7	0.03015	304.760	98.28	96.59	94.93	93.29	91.69	90.11	88.56	87.04
106.9	0.03018	304.474	98.28	96.59	94.92	93.29	91.68	90.10	88.55	87.03
107.1	0.03021	304.190	98.28	96.58	94.92	93.28	91.67	90.09	88.54	87.01
107.3	0.03023	303.906	98.27	96.58	94.91	93.28	91.67	90.08	88.53	87.00
107.5	0.03026	303.624	98.27	96.58	94.91	93.27	91.66	90.08	88.52	86.99
107.7	0.03029	303.341	98.27	96.57	94.90	93.26	91.65	90.07	88.51	86.98
107.9	0.03032	303.060	98.27	96.57	94.90	93.26	91.64	90.06	88.50	86.97

Standard Conditions:

Attenuation: Ambient Temperature 20°C

Applying Coaxial Transmission Line Ratings To Various Broadcasting Services

Defining Service Requirements

The first requirement for selecting a suitable rigid air coaxial transmission line for a broadcasting service application is to know the extreme environmental conditions at the transmitter site. In broadcasting applications, coaxial transmission lines are installed both inside and outside of a transmitter building. The ability of a transmission line to dissipate heat is dependent on ambient temperature and atmospheric density.

The power handling capability of rigid air coaxial transmission line is frequency dependent therefore the frequency of the broadcasting service application must be identified.

The following information must be identified to select a suitable rigid coaxial transmission line:

- Operating frequency
- Modulation scheme
- Maximum average power required
- Maximum peak power required
- Environmental extremes

Critical Frequencies of Transmission Line, Selecting a Transmission Line Length

All rigid coaxial connectors have a minor deviation from the characteristic impedance of the transmission line. The deviation results in a minute amount of power to be reflected back towards the source commonly measured as a Voltage Standing Wave Ratio (VSWR). A transmission line system, utilizing a fixed line length, will cause a VSWR buildup that must not occur at or near the frequencies of operation. The following equation identifies the critical frequencies:

$$F_c = \frac{490.4}{L_{ft}} n$$

F_c = Critical Frequency
 L_{ft} = Line Length in Feet
 n = An Integer

The response is a distribution similar to a band stop filter, repeating at each critical frequency. All critical frequencies must be a minimum of 2 MHz away from any operating frequency. Rigid air coaxial transmission lines are normally supplied in standard lengths of 20', 19 ¾', 19 ½', 19', and 17.5' to accommodate the broadcasters needs. Selection of the proper line length for a given frequency will insure a transmission line system with low VSWR. The table below is used to find the correct line length for United States television and FM radio channel assignments

TV Channels requiring 20' line sections										
2	3	4	5	6	7	8	11	12	14	15
18	19	22	23	27	31	35	39	43	44	47
48	51	52	55	56	60	64	68			
TV Channels requiring 19 ¾' line sections										
16	20	24	28	32	36	40	41	45	49	53
57	61	65	66	69						
TV Channels requiring 19 ½' line sections										
9	10	13	17	21	25	26	29	30	33	34
37	38	42	46	50	54	58	59	62	63	67
FM frequencies requiring 20' line sections										
88.1 through 95.9 MHz and 100.1 through 107.9 MHz										
FM frequencies requiring 19' line sections										
96.1 through 99.9 MHz										
All FM frequencies can be used on 17 ½' line sections										

The table that follows shows the critical frequencies for the standard line lengths in the frequency range for U.S. broadcasting. Approximately 75% of any combined two channel application can be accommodated with a standard line length.

Critical Frequencies of Transmission Lines in MHz.					
N	20.00'	19.75'	19.50'	19.00'	17.50'
1	24.52	24.83	25.15	25.81	28.02
2	49.04	49.66	50.30	51.62	56.05
3	73.56	74.49	75.45	77.43	84.07
4	98.08	99.32	100.59	103.24	112.09
5	122.60	124.15	125.74	129.05	140.11
6	147.12	148.98	150.89	154.86	168.14
7	171.64	173.81	176.04	180.67	196.16
8	196.16	198.64	201.19	206.48	224.18
9	220.68	223.47	226.34	232.29	252.21
10	245.20	248.30	251.49	258.11	280.23
11	269.72	273.13	276.64	283.92	308.25
12	294.24	297.96	301.78	309.73	336.27
13	318.76	322.79	326.93	335.54	364.30
14	343.28	347.63	352.08	361.35	392.32
15	367.80	372.46	377.23	387.16	420.34
16	392.32	397.29	402.38	412.97	448.37
17	416.84	422.12	427.53	438.78	476.39
18	441.36	446.95	452.68	464.59	504.41
19	465.88	471.78	477.83	490.40	532.43
20	490.40	496.61	502.97	516.21	560.46
21	514.92	521.44	528.12	542.02	588.48
22	539.44	546.27	553.27	567.83	616.50
23	563.96	571.10	578.42	593.64	644.53
24	588.48	595.93	603.57	619.45	672.55
25	613.00	620.76	628.72	645.26	700.57
26	637.52	645.59	653.87	671.07	728.59
27	662.04	670.42	679.02	696.88	756.62
28	686.56	695.25	704.16	722.69	784.64
29	711.08	720.08	729.31	748.51	812.66
30	735.60	744.91	754.46	774.32	840.69
31	760.12	769.74	779.61	800.13	868.71
32	784.64	794.57	804.76	825.94	896.73
33	809.16	819.40	829.91	851.75	924.75
34	833.68	844.23	855.06	877.56	952.78

When multiple channels are to be used on a single transmission line and a standard line length is not suitable for the application, then a non-standard length line can be utilized for the application. MYAT uses a computer algorithm to determine the best line length for any number and combination of channels.

Broad Band Rigid Coaxial Transmission Line

When the application frequency is subject to be moved to an unknown channel allocation, as is the case for some U.S. broadcasters who were allocated a channel outside the core spectrum, a Broad Band Rigid Coaxial Transmission Line is needed.

MYAT engineers have developed patented computer algorithms, which determine the optimum dimensions for each line section and component in your site configuration. Only MYAT's design algorithms include horizontal run, elbows, elbow complexes, vertical run, and typical expected field cuts. The result is high power handling capability, minimum VSWR, and the industries highest efficiency, across the entire NTSC and DTV UHF band. The *SpectraLine™* system you install today will serve equally well even if a channel change becomes necessary in the future. Please refer to our *Spec-*

Selecting the Correct Line Size

All services that will be utilizing the transmission line system must be considered when selecting a suitable line size. The total length of a transmission line run from transmitter output to antenna input is needed to estimate the attenuation of each signal, and as a result, the power delivered to the load or antenna. Larger diameter transmission lines have lower attenuation, higher average power, and higher peak power ratings. For a given line size, a 75 ohm characteristic impedance has lower attenuation and lower power handling than a 50 ohm characteristic impedance. Selecting the largest line size available for an application will minimize operating costs.

The dominant mode of propagation for coaxial transmission lines is TEM (Transverse-Electro-Magnetic). Both electric and magnetic fields are perpendicular to the direction of propagation. This mode is the most efficient for coaxial lines. Coaxial line will also support higher order waveguide modes where only the electric (TE) or magnetic (TM) field is transverse (perpendicular) with the direction of propagation. The first higher order waveguide mode is the TE₁₁. Each line size has a cut-off frequency, $F_{cut-off}$, below which waveguide modes will not propagate and disrupt the transmission characteristics of the dominant TEM mode. Larger diameter transmission lines have lower cut-off frequencies. The theoretical cut-off frequency is calculated using the formula below and adjusted to a useful cut-off frequency limit, accounting for elbows normally present, to a point where other modes of propagation do not occur. When selecting a coaxial line size, all frequencies must be below the useful cut-off frequency for systems that normally include elbows and elbow complexes. It should be understood that a system that is comprised of only straight-line sections could achieve up to 95% of the theoretical TE₁₁ cut-off frequency.

$$F_{cut-off} = \frac{7500}{\sqrt{E}(D + d)}$$

$F_{cut-off}$ = Theoretical Cut-off Frequency
 E = Insulation Dielectric Constant, Air = 1.0006
 D = I.D. of Outer Conductor
 d = O.D. of Inner Conductor

Line Size	Calculated Cut-Off, MHz	Useful Cut-Off, MHz	Outer I.D. (in)	Inner O.D. (in)
7/8" 50 ohm	6658.749	6000	0.785	0.341
1 5/8" 50 ohm	3422.068	3000	1.527	0.664
3 1/8" 50 ohm	1726.797	1600	3.027	1.315
4 1/16" 50 ohm	1327.976	1262	3.935	1.711
6 1/8" 50 ohm	873.762	806	5.981	2.600
6 1/8" 75 ohm	974.747	830	5.981	1.711
7 3/16" 75 ohm	833.083	752	7.000	2.000
8 3/16" 75 ohm	728.644	704	8.000	2.290
9 3/16" 50 ohm	580.771	552	9.000	3.910
9 3/16" 75 ohm	647.474	615	9.000	2.580

Average Power Considerations

The weighted average power is the average power, plus reflected power from the highest expected VSWR, which may appear on the transmission line. A worst-case VSWR is used as a margin of safety to account for system accumulation (source, line, and load), and unforeseen problems, such as, increased VSWR due to ice forming on an antenna. This value is used to estimate the heat rise of the inner conductor for each service. All MYAT rigid air coaxial transmission lines are designed and rated for an ambient temperature of 40°C (104°F) and limiting the inner conductor to 100°C (212°F). The formula below is used to estimate the heat rise of the inner conductor for the average power of each service. The sum of all heat rises must not exceed 60°C (highest ambient of 40°C + maximum heat rise of 60°C = 100°C limit for the inner conductor), for a reliable long-term system service life to be realized for MYAT standard transmission line designs.

For Amplitude Modulation (AM), the peak power rating of a coaxial transmission line is the limiting factor.

$$H_{RISE} = \frac{P_{AVE_SERVICE}}{P_{AVE@RATING_FREQ.}} 60^{\circ}C$$

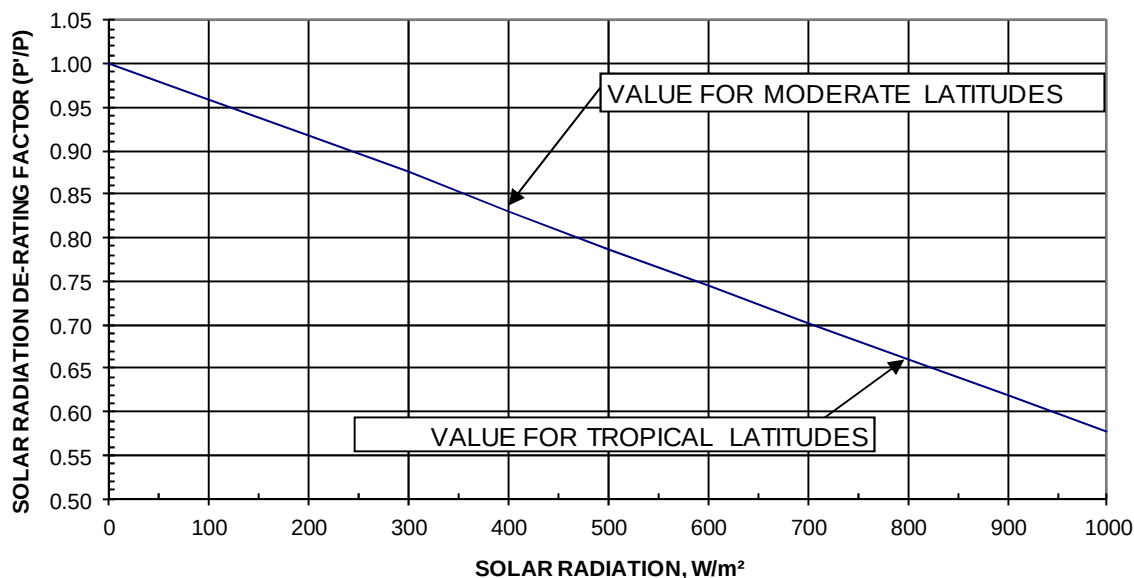
H_{RISE} = Heat Rise Due to One applied Service (°C)
 $P_{AVE_SERVICE}$ = Weighted Average Power For One Service
 $P_{AVE@RATING_FREQ.}$ = Power Rating Limit At Service Frequency

The standard average power rating and the standard transmission line design can be used at other than the 40°C highest ambient temperature rating. No special considerations or higher power handling designs are required provided that the standard average power rating is not exceeded. Observing the rating limit insures an inner conductor heat rise no greater than 60°C above the highest ambient temperature with a proper use of the transmission line design for differential expansion between the inner and outer conductors. MYAT's standard transmission line designs and ratings will provide for reliable long-term service for a vast majority of broadcast applications.

De-rating Average Power for Solar Radiation

Solar radiation plays an important roll in applying the average power rating. Radiant energy from the sun will add to the heat buildup of a coaxial transmission line. When the exterior surface of a copper coaxial transmission line is bright, heat conduction by radiation is poor. When the copper becomes oxidized over time, heat conduction by radiation is greater. The emissivity value from bright to oxidized copper changes from approximately 0.03 to 0.8 respectively. The de-rating factor on the chart below is for solar radiation and is applied where direct sunlight is perpendicular to the transmission line in its oxidized state. The solar radiation value, for de-rating purposes, should be the mean solar radiation at the angle of incidence for the site of application. For the United States, this information can be obtained from the National Meteorological Center. Oxidation of copper in an outdoor environment cannot be avoided. Applying a special coating can improve the emissivity value to approximately 0.95, and minimize solar absorption to 0.3, but should only be considered when there is no alternative. In addition, relying on a coated surface for power handling ability results in a coating maintenance issue dependant on the atmospheric condition at the site of installation. Both MYAT standard and custom engineered transmission line systems can be supplied with MYAT **Solar Coat**™, which increases the transmission line dissipation of heat while minimizing solar absorption. This coating can yield an average power rating gain of 28% for 50 ohm lines and 23% for 75 ohm lines.

AVERAGE POWER DE-RATING FACTOR FOR SOLAR RADIATION

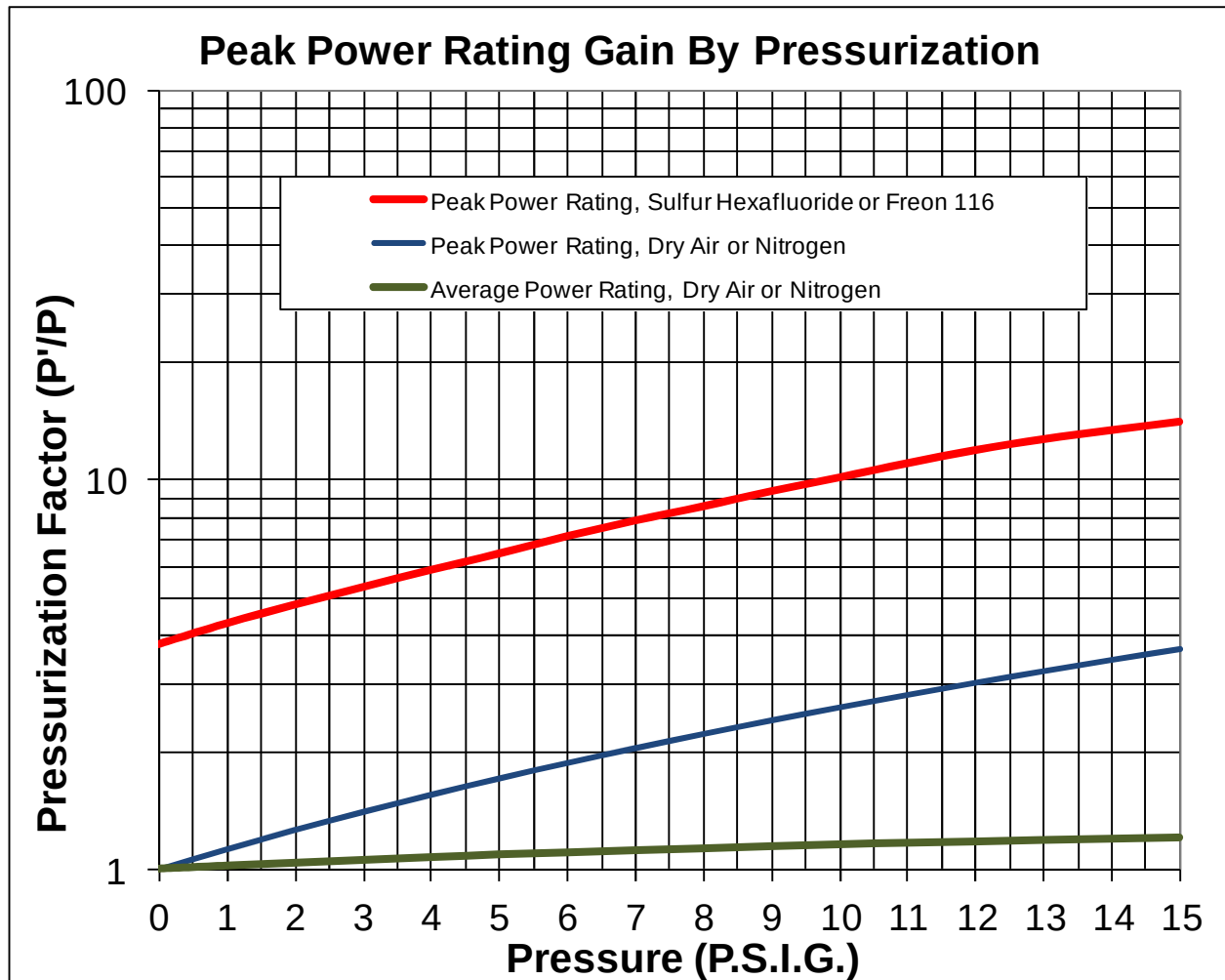


Pressurization of Transmission Line

Pressurization of a rigid air coaxial transmission line can improve both the average power rating and the peak power rating. Temperature changes and humidity in the environment will cause water to condense inside of a transmission line that is not under pressure. Water will cause an increase in VSWR and as a result, poor signal quality. Water and humidity can also cause voltage breakdown and catastrophic failure. All transmission lines cannot be perfectly isolated from the environment. It is recommended that all lines be purged and pressurized with dry air or nitrogen gas to a positive pressure after installation is complete, and must be perpetually maintained. A system relying on average power rating improvements as a result of pressurization should only be considered with a fault tolerant pressurization system design and a rigorous maintenance program. MYAT recommends a minimum of 2 to 5 PSIG to be continuously maintained. The table below is used to calculate the average power rating improvement with pressurization.

Average Power Rating Gain Due To Pressurization		
Pressure (P.S.I.G.)	P'/P Factor for 50 Ohm Line	P'/P Factor for 75 Ohm Line
0	1.00	1.00
5	1.09	1.08
10	1.16	1.15
15	1.21	1.22

The peak power rating for rigid coaxial transmission lines can only be improved through pressurization. The chart below can be used to calculate the corrected peak power rating for pressurization with dry air or nitrogen. Sulfur hexafluoride exhibits much higher dielectric coefficient than dry air or nitrogen. Caution must be used when inspecting a voltage breakdown where sulfur hexafluoride is the dielectric medium. A voltage breakdown in sulfur hexafluoride can create toxic oxides of fluorine. Relying on a peak power rating improvement as a result of pressurization should only be considered with a fault tolerant pressurization system design and a regimented maintenance program.



Each broadcasting service, AM, FM, IBOC, NTSC Television, and DTV, has different requirements for estimating the peak and average power that will be present on a transmission line. When multiple services will be present on a coaxial transmission line, the sum of the peak voltage for each service should be used to calculate the maximum applied peak power. The maximum peak power should be less than or equal to the peak power rating of the selected coaxial transmission line size, and the sum of the heat rise due to the average power for each service, should not exceed 60°C. The equations below are organized by broadcast service type for considering the peak and average power for each.

Application of Applied Average Power and Total System VSWR

Total applied average power to a transmission line is the sum of forward and reflected average power due to worst case system VSWR. When considering multiple combined channels, total applied average power is the sum of each channel, forward and reflected applied average power. The sum of all worst case applied forward and reflected power must not exceed transmission line ratings.

Calculating Application Applied Peak Power Considering Total System VSWR

MYAT recommends calculating the applied peak power considering the service modulation and worst case system VSWR. This should be based on the sum of all peak voltages when multiple channels are applied. Applied peak power is modulation dependant, see the appropriate following sections for recommended calculation method for each.

AM or MW Service

For an amplitude-modulated service (530-1610kHz) coaxial transmission lines are limited by the peak power rating. The following equation is used for estimating the peak power requirement for an amplitude-modulated service. From this equation it can be seen that 100% modulation increases the peak power requirement by a factor of 4; also, the peak power in a transmission line increases directly with VSWR. It is common to consider a total system VSWR of 3.0 for an AM service.

$$P_{PEAK} = P_T (1 + M)^2 VSWR$$

P_{PEAK} = AM or MW Applied Peak Power Requirement (kW)
 P_T = Transmission Power (kW)
 M = Amplitude Modulation (decimal percentage: 100%=1.0)
 $VSWR$ = Expected total system Voltage Standing Wave Ratio

FM Analog Service

For a frequency-modulated service (88-108MHz) coaxial transmission lines are limited by the average power rating. The transmitter average power rating, or maximum average power that will be present at the output of the transmitter should be used in selecting a coaxial transmission line size. The peak power that will be present will always be less than the lines peak power rating. The peak power can be calculated using the equation below.

$$V_{PEAK} = 1.414 \sqrt{P_A Z_o}$$

V_{PEAK} = Peak Voltage Requirement (kV)
 P_A = FM Average Power (kW)
 Z_o = Characteristic Impedance (Ohms)

$$P_{PEAK} = \frac{\left(\frac{(V_{PEAK})^2}{Z_o} \right)}{VSWR}$$

$VSWR$ = Worst Case Total System VSWR
 P_{PEAK} = FM Applied Peak Power Requirement (kW)

FM IBOC Digital Service

For FM IBOC digital only or FM analog plus digital service, the total applied peak power is dependent on many factor. The IBOC portion is based on the transmitter design, crest factor, peak to average power ratio (PAPR), possible peak to average power ration reduction techniques, insertion ratio (-10dBc to -20dBc) and combining techniques and worst case total system VSWR. MYAT recommends using a consultant skilled in IBOC applications to ensure that the peak power rating of transmission line is not exceeded.

NTSC Service

NTSC television transmitter ratings are based on sync peak video power. The maximum peak sync video power of the transmitter that will be applied should be used in selecting a transmission line, or when multiple services are to be combined in one line. The maximum average power for the application is equivalent to 60% of the sync peak video power for visual signal, plus 10% to 20% of the sync peak video power to account for the aural signal.

$$P_{AVE_VISUAL} = 0.6P_{PEAK_SYNC_VIDEO}$$

$$P_{AVE_VISUAL} = \text{Visual Average Power (kW)}$$

$$P_{AVE_AURAL} = K_{AURAL} P_{PEAK_SYNC_VIDEO}$$

$$P_{AVE_AURAL} = \text{Aural Average Power (kW)}$$

$$P_{AVE_TOTAL} = P_{AVE_VISUAL} + P_{AVE_AURAL}$$

$$K_{AURAL} = \text{Percentage Aural (10\%=0.1, 15\%=0.15)}$$

$$P_{PEAK_SYNC_VIDEO} = \text{Peak Sync Video Power (kW)}$$

$$V_{P_VISUAL} = 1.414\sqrt{P_{PEAK_SYNC_VIDEO} Z_o}$$

$$V_{P_VISUAL} = \text{Visual Peak Voltage}$$

$$V_{P_AURAL} = 1.414\sqrt{P_{AVE_AURAL} Z_o}$$

$$V_{P_AURAL} = \text{Aural Peak Voltage}$$

$$V_{P_TOTAL} = V_{P_VISUAL} + V_{P_AURAL}$$

$$V_{P_TOTAL} = \text{Total Peak Voltage}$$

$$P_{PEAK_EQUVALENT} = \frac{V_{P_TOTAL}^2}{Z_o}$$

$$Z_o = \text{Characteristic Impedance}$$

$$P_{PEAK_EQUVALENT} = \text{Equivalent Applied Peak Power}$$

DTV, Digital Television Service

The digital television service approved by the FCC for the United States uses an 8-VSB, (Eight Vestigial Side Band), modulation scheme. The peak power requirement for the transmission line is four to five times the average power requirement and is directly related to the model of transmitter to be used. Both peak and average power ratings should be considered when selecting a transmission line for DTV, or when combining with other services. The equation below is used for estimating the transmission line requirements for DTV.

$$P_{AVE_DTV} = \frac{P_{PEAK_DTV}}{R_{transmitter}}$$

$$P_{PEAK_DTV} = \text{Transmitter Peak Power Output or System Requirement (kW)}$$

$$R_{transmitter} = \text{Peak to Average Power Ratio of Transmitter, (5 if unknown)}$$

Multiple Service Guidelines

When combining multiple services check that the sum of heat rise due to the average power of each service, does not exceed the transmission line rating or the adjusted rating for application; also, the equivalent peak power for all services does not exceed the transmission line rating or the adjusted rating for application. Below is an example for combining a DTV service with a NTSC service.

$$H_{RISE_TOTAL_AVE_NTSC_POWER} + H_{RISE_AVE_DTV_POWER} = H_{RISE_TOTAL}$$

$$V_{PEAK_NTSC_VISUAL} + V_{PEAK_NTSC_AURAL} + V_{PEAK_DTV} = V_{PEAK_TOTAL}$$

$$Equivalent_Peak_Power = \frac{V_{PEAK_TOTAL}^2}{Z_o}$$

$$V_{PEAK} = 1.414\sqrt{P_A Z_o}$$

$$V_{PEAK} = \text{Peak Voltage Requirement (kV)}$$

$$P_A = \text{FM Average Power (kW)}$$

$$Z_o = \text{Characteristic Impedance (Ohms)}$$

$$VSWR = \text{Worst Case Total System VSWR}$$

$$P_{PEAK} = \frac{\left(\frac{(V_{PEAK})^2}{Z_o} \right)}{VSWR}$$

$$P_{PEAK} = \text{FM Applied Peak Power Requirement (kW)}$$

Planning and Installation Requirements

The tables below must be used to accommodate the differential of expansion and contraction between a broadcast tower and the transmission line. A minimum horizontal run length is required to minimize the stress on the elbow at the base of the tower. The distance between the tower base to the transmitter building should be planned to accommodate the largest horizontal run requirement for the tower height and the largest transmission line size and type to be installed. The minimum distance to the first vertical hanger is required to permit expansion and contraction of the horizontal run to minimize the stress on the elbow at the base of the tower .

Minimum Horizontal Run Length vs. Vertical Run Length						
Vertical Run / Line Size	3 1/8"	4 1/16"	6 1/8"	7 3/16"	8 3/16"	9 3/16"
250'	18'	20'	24'	26'	28'	30'
500'	20'	28'	34'	37'	39'	40'
750'	30'	33'	41'	43'	46'	50'
1000'	40'	38'	48'	51'	54'	60'
1500'	45'	50'	60'	64'	67'	70'
2000'	50'	60'	68'	72'	77'	80'

Minimum Vertical Distance to First Vertical Spring Hanger Above Horizontal Run							
Line Size / Horizontal Run	20'	30'	40'	50'	60'	70'	80'
3 1/8"	5.5'	6'	7'	8'	-	-	-
4 1/16"	7'	9.5'	11'	12.5'	14'	-	-
6 1/8"	8'	10.5'	13'	14.5'	16'	17'	-
7 3/16"	10'	12.5'	15'	16.5'	18'	19'	20'
8 3/16"	10'	12.5'	15'	16.5'	18'	19'	20'
9 3/16"	10'	12.5'	15'	16.5'	18'	19'	20'

Install the first vertical spring hanger the recommended distance above the base elbow so that the first section of line can move as the horizontal run expands and contracts. Lateral braces are used to control side-to-side movement.

Horizontal three point suspension spring hangers absorb the movement induced by expansion and contraction of the vertical run. Seasonal and daily temperature changes will cause several inches of movement relative to the tower due to the difference in thermal coefficient of expansion of the steel tower and copper transmission line. The temperature of the transmission line under operation will be different than the ambient and tower temperature.

All vertical spring hangers should have the spring tension set to accommodate the local mean temperature. The hanger spring tension charts, supplied for temperature changes, are to be used as a guide. Free movement is essential and should be verified by tracking expansion and contraction through a daily cycle.

Transmission Line Materials

All MYAT copper coaxial transmission lines are fabricated using the purest hard drawn seamless copper tubing for low attenuation. Outer Conductors: Alloy CDA110, Inner conductors: Alloy CDA102

Inner conductors for connectors, transformers, elbows, power combiners and dividers, etc., are silver plated to military specifications to insure superior performance.

Inner conductor supporting structures are manufactured only from pure virgin PTFE (Teflon) to insure proper performance under peak power conditions.

Standard fixed, swivel and gas barrier flanges are manufactured from non-porous forgings (CDA377) or non-porous continuous cast tube (CDA857).

Field Cut Line Sections

Flanging an un-pressurized line section can be done with ordinary tools using a MYAT clamp type flange adapter, (Catalog Suffix # -014). When flanging a field cut line section for pressure, one of three methods can be used; soldering, brazing or welding.

Soldering

MYAT field flange adapters (Catalog Suffix # -013) are designed for torch soldering using filler metals such as:

- 60/40 Tin/Lead, general purpose, melting range 361°F to 374°F
- 50/50 Tin/Lead, general purpose, melting range 361°F to 421°F
- 40/60 Tin/Lead, general purpose, melting range 361°F to 460°F
- 30/70 Tin/Lead, torch soldering, melting range 361°F to 491°F
- High Temp Alloy 97.5/1.5/1 Lead/Silver/Tin, melting temperature 588°F
- Extra strong Solder 54/45/1 Lead/Tin /Silver, melting range 361°F to 440°F

An appropriate soldering flux for torch soldering each of these filler metals is commonly available. Both solder filler metals and flux can be found at any welding supply house and most hardware stores.

Brazing

MYAT standard brass Fixed and Swivel flanges (Catalog Suffix # -008 and -009 respectively) can be brazed using a silver-bearing brazing alloy filler metal and silver brazing flux. Three commonly used types of silver filler metal are:

- Alloy 560 Silver Filler Metal, wire diameter 0.062", does not contain cadmium.
- Easy-Flo 45 Silver Filler Metal, wire diameter 0.062", contains cadmium.
- Silvaloy 45 Silver Filler Metal, wire diameter 0.062", contains cadmium.

Cadmium, an EPA controlled metal believed to be carcinogenic, is unfortunately the element that facilitates easy brazing. Some welders are unable and or unwilling to use filler materials containing cadmium. A filler metal that contains cadmium is also easy to bend as compared to alloy 560. It is recommended to have a qualified welder well versed in silver brazing of copper/brass alloys for the best results. Both brazing filler metals and flux can be found at any welding supply house.

Gas Tungsten Arc Welding, (TIG Welding)

MYAT standard brass Fixed and Swivel flanges (Catalog Suffix # -008 and -009 respectively) can be Gas Tungsten Arc Welded using a Copper Phosphorus Silver grade filler metal conforming to AWS:A.5.8 classification BCuP-5. It is recommended to have a qualified welder well versed in Gas Tungsten Arc Welding of copper/brass alloys for the best results.

Peak Power rating and Production Test Voltages

The following table lists current peak power rating for all MYAT transmission lines with the following standard conditions: VSWR=1:1, zero modulation and one atmosphere absolute dry air pressure at sea level (0 lb. PSIG or 14.7 PSIA).

LINE SIZE	Zo	Production test voltage @ 20°C	RF Voltage Limit	Peak Power (watts)
7/8"	50	5825	1442	41600
1 5/8"	50	10409	2576	132700
3 1/8"	50	18971	4695	440900
4 1/16"	50	24076	5959	710100
6 1/8"	50	35411	8764	1536100
6 1/8"	75	36179	8954	1069000
7 3/16"	75	41788	10342	1426100
8 3/16"	75	47273	11699	1825000
8 3/16"	50	46460	11498	2644200
9 3/16"	50	51879	12839	3296900
9 3/16"	75	52730	13050	2270700
12"	50	68336	16912	5720500

Production Test Voltage Equation

$$E_p = 3.17(10)^4 a \delta \left(\log_{10} \frac{b}{a} \right) \left(1 + \frac{0.273}{\sqrt{a \delta}} \right)$$

E_p = Production Test Voltage DC or Peak AC

a = Inner conductor O.D. in inches

b = Outer conductor I.D. in inches

δ = Air density factor = 3.92B/T

Where B = Absolute pressure in cm of mercury

T = Temperature in °K

δ = 1.0168 for B = 76 cm
(29.92") and T = 293°K, (20°C)(68°)

Radio Frequency Operating Voltage Equation

$$E_{rf} = \frac{0.7 E_p}{SF \sqrt{2}}$$

E_{rf} = RF Operating Voltage, maximum operating voltage

E_p = Production Test Voltage DC or Peak AC

SF = Safety factor, industry standard = 2

Peak Power Rating Equation

$$P_{PK} = \frac{E_{rf}^2}{Z_o}$$

P_{PK} = Peak Power Rating in Watts

E_{rf} = RF operating voltage, maximum operating voltage

Z_o = Characteristic Impedance

Wavelength Equation

Wavelength in Feet

$$\lambda = \frac{984}{f_{MHz}}$$

Wavelength in meters

$$\lambda = \frac{300}{f_{MHz}}$$

Skin Depth Equation

$$\delta = \frac{1}{2\pi} \sqrt{\frac{\lambda P}{30\mu}}$$

δ = Skin Depth at rating temperature (cm)

λ = Free Space wavelength (cm) at frequency of interest

P = Material Resistivity (Ohm-cm) at rating temperature

μ = Permeability of Conductor (Unity for non-magnetic)

Attenuation Due To Conductor Losses Equation

$$\alpha_c = \frac{13.6}{\lambda} \left(\frac{\delta_a \mu_a}{a} + \frac{\delta_b \mu_b}{b} \right) \frac{\sqrt{\epsilon}}{\ln \frac{b}{a}} \text{ dB / unitlength}$$

α_c = Attenuation due to conductor losses, db/unit length

δ_a = Skin Depth at frequency and rating temperature of inner conductor

μ_a = Permeability of inner conductor,
(unity for copper and aluminum, non-magnetic)

δ_b = Skin Depth at frequency and rating temperature of outer conductor

μ_b = Permeability of outer conductor,
(unity for copper and aluminum, non-magnetic)

λ = Free Space Wavelength

a = Radius of outside of inner conductor

b = Radius of inside of outer conductor

ϵ = Dielectric Constant of air (1.0006)

Average Power Rating

$$P_{av} = \frac{16380 \sigma D}{\alpha_{appl}}$$

P_{av} = Calculated average power

σ = Heat Transfer coefficient of specific line size & design

D = Outside diameter of outer conductor

α_{appl} = Attenuation in dB/100' for application

1. At rating temperature
2. Corrected value for application temperature
3. Measured value under power at equalized temperature

Heat Transfer Coefficient Of Specific Line Size and Design

Line Size	Zo	MYAT Catalog Series	Outer I.D.	σ	Inner Material	Outer Material
7/8"	50	101	0.785	0.1280	Copper	Copper
1 5/8"	50	201	1.527	0.1200	Copper	Copper
3 1/8"	50	301	3.027	0.1070	Copper	Copper
4 1/16"	50	401	3.935	0.1035	Copper	Copper
6 1/8"	50	601	5.981	0.0970	Copper	Copper
6 1/8"	75	701	5.981	0.0770	Copper	Copper
7 3/16"	75	775	7.000	0.0760	Copper	Copper
8 3/16"	75	801	8.000	0.0740	Copper	Copper
8 3/16"	50	851	8.000	0.0920	Copper	Copper
9 3/16"	50	901	9.000	0.0900	Copper	Copper
9 3/16"	75	971	9.000	0.0692	Copper	Copper
12"	50	1201	12.000	0.0860	Copper	Aluminum

Efficiency

$$Efficiency = \frac{100}{10^{\left(\frac{dB}{10}\right)}} \%$$

dB = Total System Attenuation, Calculated or measured

Characteristic Impedance

$$Z_0 = \frac{138}{\sqrt{\epsilon_{eff}}} \log_{10} \frac{D}{d}$$

D = Dielectric Constant of air (1.0006)

d = Outside diameter of inner conductor

ϵ_{eff} = Effective dielectric constant

Impedance Matching Quarter-Wave Transformer

$$Z_T = \sqrt{Z_I Z_O}$$

Z_T = Transformer Impedance

Z_I = Input Impedance

Z_O = Output Impedance

Impedance Matching Two Quarter-Wave Transformers

$$Z_1 = \sqrt[4]{Z_I^3 Z_O}$$

Z_1 = Transformer 1 Impedance

Z_I = Input Impedance

Z_O = Output Impedance

$$Z_2 = \sqrt[4]{Z_I Z_O^3}$$

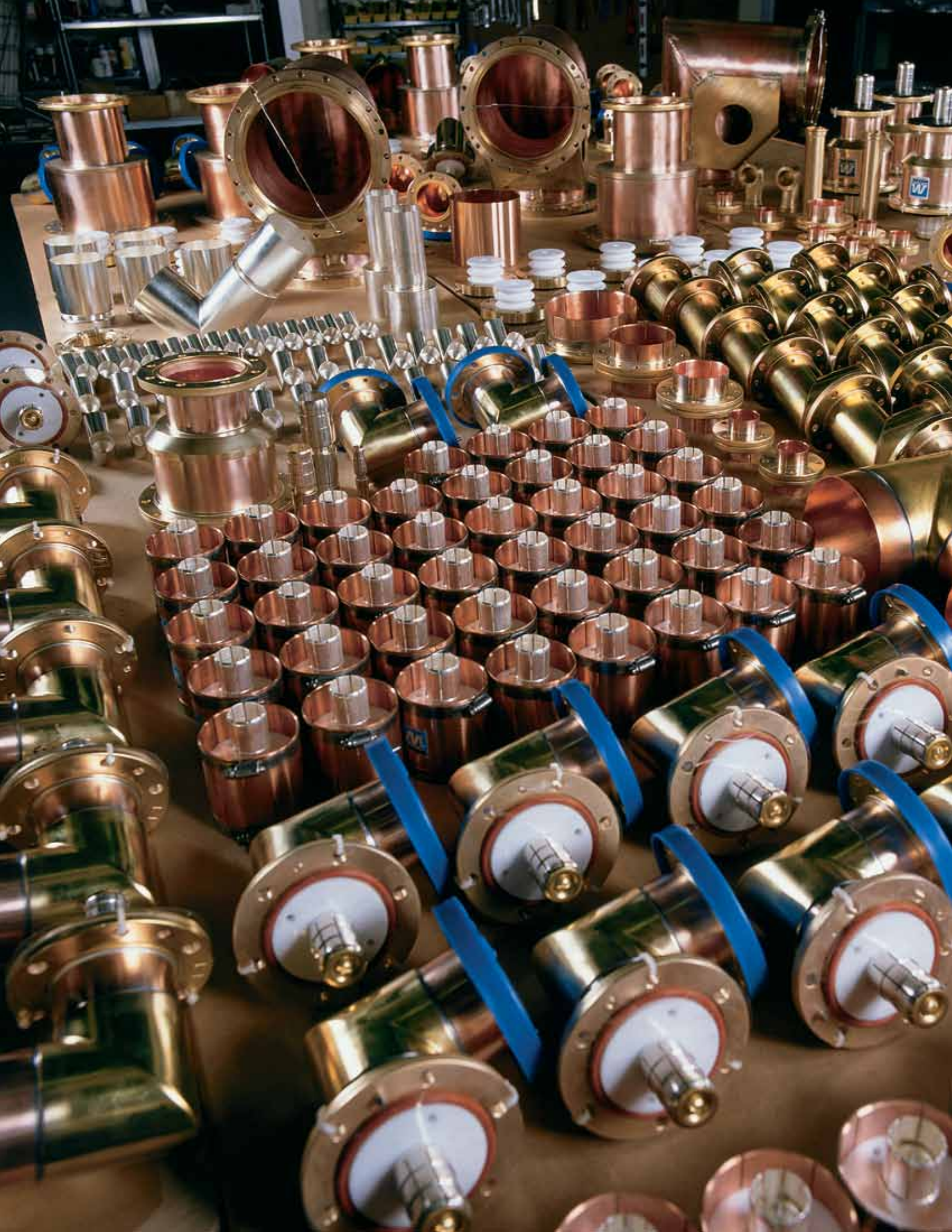
Z_2 = Transformer 2 Impedance

Z_I = Input Impedance

Z_O = Output Impedance



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