



RFS manufactures a range of unflanged and flanged rigid coaxial transmission lines and accessories to meet all commonly used EIA/IEC standards from 1-5/8" to 8-3/16".

4-1/2" unflanged rigid line is a rigid coaxial transmission line, ideal for indoor connections between RF broadcasting equipment.

**FEATURES / BENEFITS**

- Inner and outer conductors are made from the highest purity copper (99.95% for inner, 99.9% for outer) for minimum attenuation and lowest operating temperature.
- Manufactured from hard drawn copper, milled to exact dimensions to ensure strict compliance with specifications and stable characteristic impedance
- All spacers/insulators are of virgin PTFE for highest physical and electrical insulation properties.
- The outer conductor is painted for a high quality long lasting finish, which also aids in heat dissipation



4 1/2" Unflanged Rigid Line

**Technical features**

**STRUCTURE**

<b>Product Line</b>		Rigid Line
<b>Product Type</b>		Unflanged rigid line, copper
<b>Size</b>		4-1/2"
<b>Feeder Type</b>		Rigid coaxial transmission line (unflanged)
<b>Outer Conductor Material</b>		C110000 Copper, 99.9% pure
<b>Outer Conductor OD</b>	mm (in)	106 (4.173)
<b>Outer Conductor ID</b>	mm (in)	103 (4.055)
<b>Inner Conductor Material</b>		C102000 Copper, 99.95% pure
<b>Inner Conductor OD</b>	mm (in)	44.8 (1.764)
<b>Inner Conductor ID</b>	mm (in)	42.8 (1.685)
<b>Dielectric Material</b>		Air, with PTFE spacers

**ELECTRICAL SPECIFICATIONS**

<b>Maximum Frequency</b>	MHz	1230
<b>Impedance</b>	Ω	50 +/- 0.5
<b>Relative Propagation Velocity</b>	%	99.8
<b>Peak Power Rating</b>	kW	1586
<b>RF Peak Voltage</b>	kV	12.6

**MECHANICAL SPECIFICATIONS**

<b>Weight</b>	kg/m (lb/ft)	5.5 (3.69)
<b>Finish</b>		Acrylic paint
<b>Recommended clamp spacing</b>	m (ft)	2 (6.5)

**ORDERING INFORMATION**

<b>Standard Lengths</b>	mm (ft)	2750, 5500 (9, 18) [Note 3]
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**ENVIRONMENTAL SPECIFICATIONS**

<b>Ambient Temperature Range</b>	°C(°F)	-40 to + 60 (-40 to 140)
<b>Humidity</b>		95%, non condensing



**ATTENUATION AND POWER RATING**

Frequency, MHz	Attenuation, dB/ 100m	Attenuation, dB/ 100ft	Average Power kW (Note 1)	Average Power kW (Note 2)
50	0.17	0.052	119	159
88	0.22	0.068	90	120
98	0.24	0.072	85	114
108	0.25	0.076	81	108
150	0.29	0.089	69	92
174	0.32	0.096	64	85
202	0.34	0.104	59	79
240	0.37	0.113	54	73
300	0.41	0.126	48	65
400	0.48	0.146	42	56
470	0.52	0.158	39	52
500	0.53	0.163	38	50
520	0.55	0.166	37	49
600	0.59	0.178	34	46
665	0.62	0.188	33	44
719	0.64	0.195	31	42
800	0.68	0.206	30	40
820	0.68	0.209	29	39
862	0.70	0.214	29	38

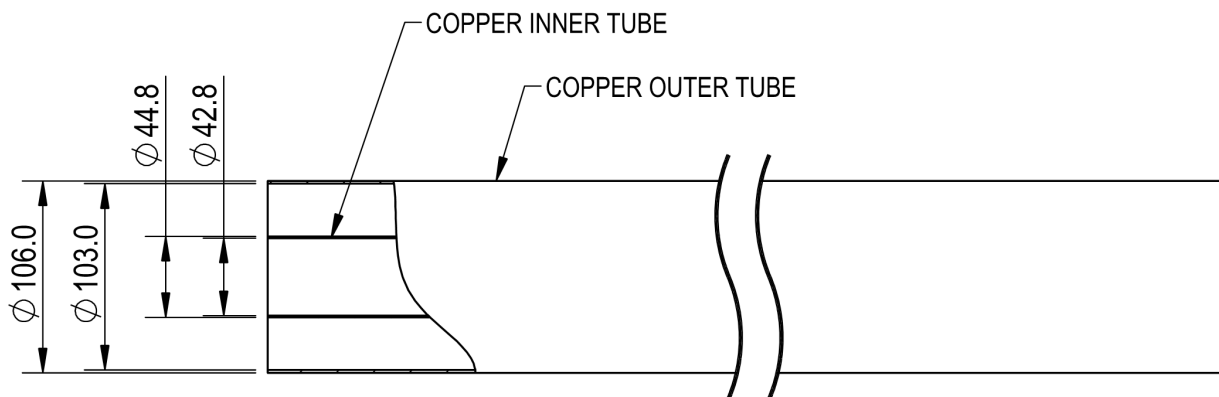
Attenuation at 20°C (68°F)

Mean power rating at 40°C (104°F) ambient temperature

Note 1. Outer temp rise 23°C (73°F), Inner temp rise 60°C (140°F)

Note 2. Outer temp rise 30°C (86°F), Inner temp rise 80°C (176°F)

Note 3. Custom lengths are available on request



4-1/2" Unflanged Outer and Inner Dimensions

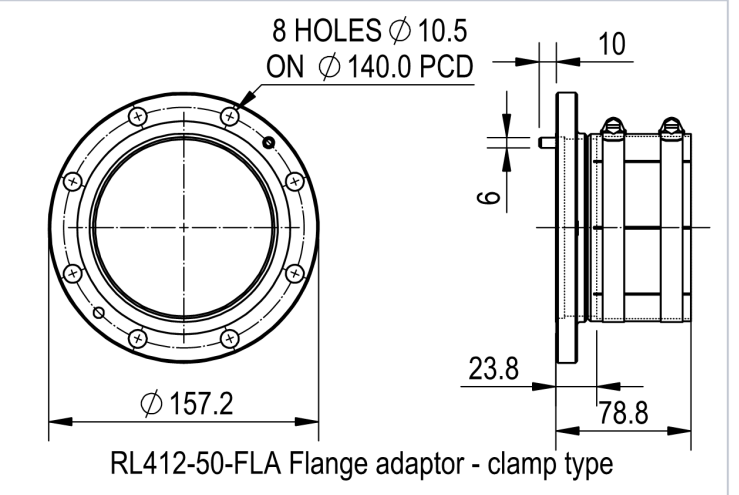
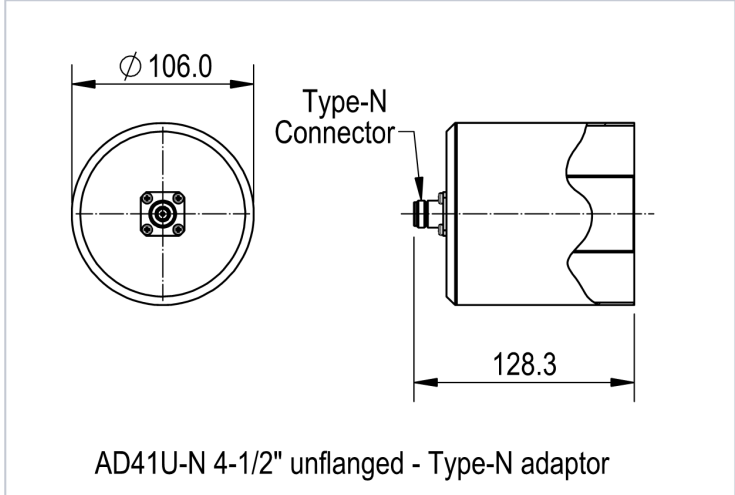
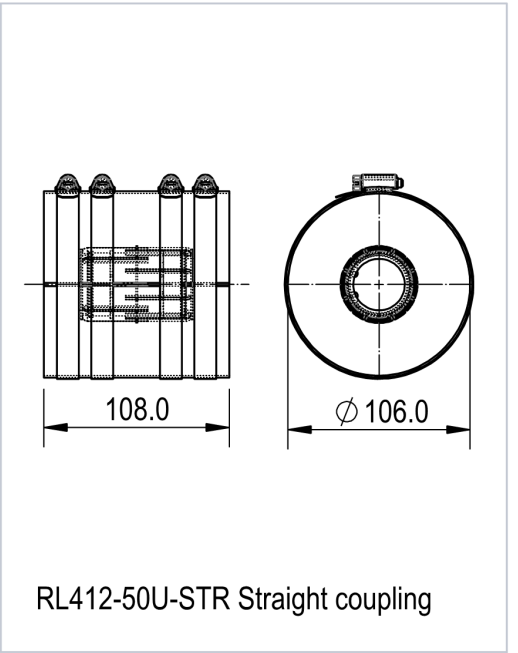
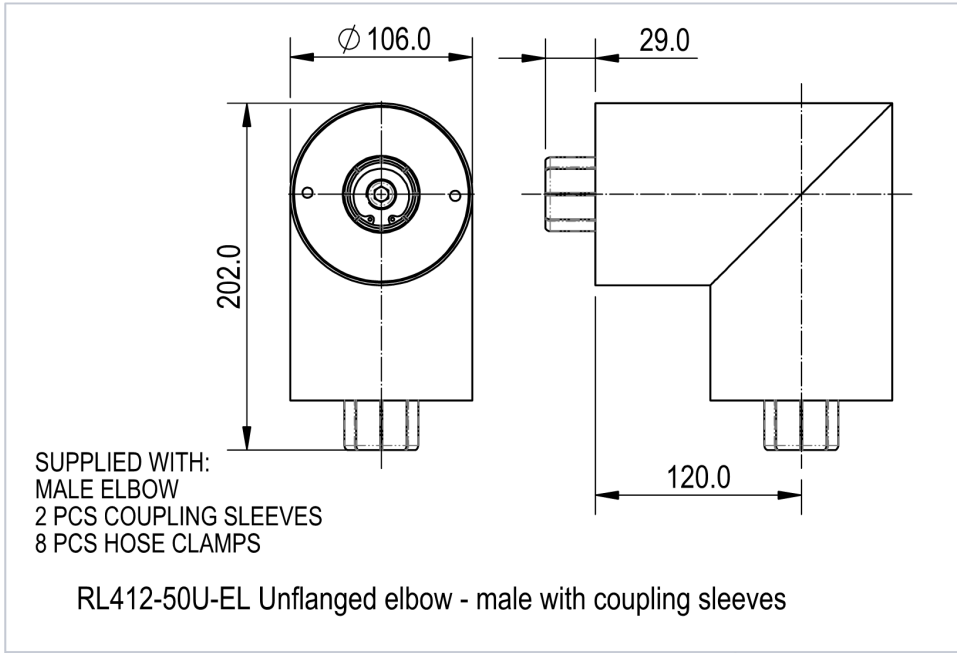


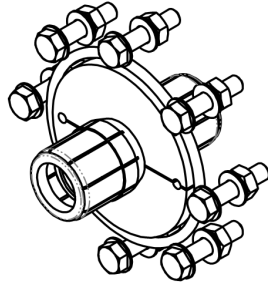
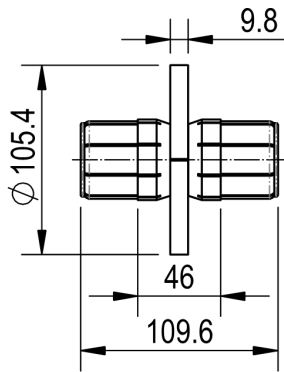
**ELBOWS**

Elbow Model No		RL412-50U-EL
Elbow Type		4-1/2" Unflanged Elbow - male with coupling sleeves
Elbow Weight	kg (lb)	2.39 (5.27)

**ACCESSORIES**

Accessory Model No		RL412-50U-STR	AD41U-N	RL412-50-FLA	RL412-50-IJK	RL412-50-SHR
Accessory Description		Straight Coupling - Inner & Outer	4-1/2"u/f - Type N Adaptor	Flange Adaptor - Clamp Type	IEC Inner Joining Kit	Suspension Hanger
Accessory Weight	kg (lb)	0.7 (1.54)	2.41 (5.31)	1.36 (3.0)	1.06 (2.34)	1.15 (2.54)

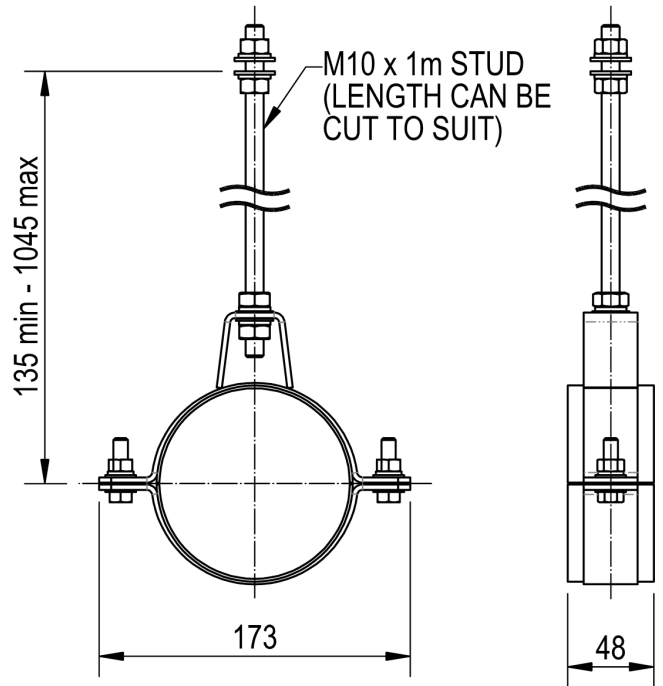




SUPPLIED WITH:  
SPIGOT  
SPACER  
O-RING

- 8 PCS M10 x 45 HEX HEAD SCREWS
- 8 PCS M10 SPRING WASHERS
- 16 PCS M10 FLAT WASHERS
- 8 PCS M10 HAX NUTS

RL412-50-IJK IEC Inner joining kit



RL412-50-SHR Suspension hanger

External Document Links

[RL412-50 datasheet](#)