



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".

3-1/8" unflanged rigid line is a 50-ohm rigid coaxial transmission line, and is ideal for indoor connections between RF broadcasting equipment.

**FEATURES / BENEFITS**

- Inner conductor is of 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 rigid line is painted for a high quality long lasting finish, which also aids in heat dissipation.



3 1/8" Unflanged rigid Line

**Technical features**

**STRUCTURE**

<b>Product Line</b>		Rigid Line
<b>Product Type</b>		Unflanged rigid line, copper
<b>Size</b>		3-1/8"
<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)	79.4 (3.125)
<b>Outer Conductor ID</b>	mm (in)	76.8 (3.023)
<b>Inner Conductor Material</b>		C102000 Copper, 99.95% pure
<b>Inner Conductor OD</b>	mm (in)	33.4 (1.315)
<b>Inner Conductor ID</b>	mm (in)	31.3 (1.232)
<b>Dielectric Material</b>		Air, with PTFE spacers

**ELECTRICAL SPECIFICATIONS**

<b>Maximum Frequency</b>	MHz	1600
<b>Impedance</b>	Ω	50 +/- 0.5
<b>Relative Propagation Velocity</b>	%	99.8
<b>Peak Power Rating</b>	kW	920
<b>RF Peak Voltage</b>	kV	9.6

**MECHANICAL SPECIFICATIONS**

<b>Weight</b>	kg/m (lb/ft)	3.8 (2.6)
<b>Finish</b>		Acrylic paint
<b>Recommended clamp spacing</b>	m (ft)	2 (6)

**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	0.23	0.069	71	96
88	0.30	0.092	54	72
98	0.32	0.097	51	68
108	0.33	0.101	49	65
150	0.39	0.119	41	55
202	0.45	0.139	36	48
240	0.50	0.151	33	44
300	0.55	0.169	29	39
400	0.64	0.195	25	34
470	0.69	0.212	23	31
500	0.72	0.218	23	30
520	0.73	0.222	22	30
600	0.78	0.239	21	28
665	0.83	0.252	20	26
719	0.86	0.262	19	25
800	0.91	0.276	18	24
820	0.92	0.279	18	24
862	0.94	0.286	17	23

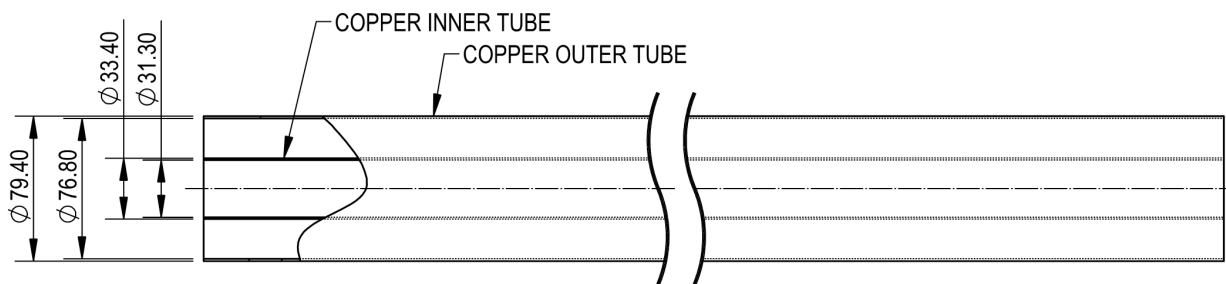
Attenuation at 20°C (68°F)

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



3-1/8" Unflanged Outer and Inner Dimensions

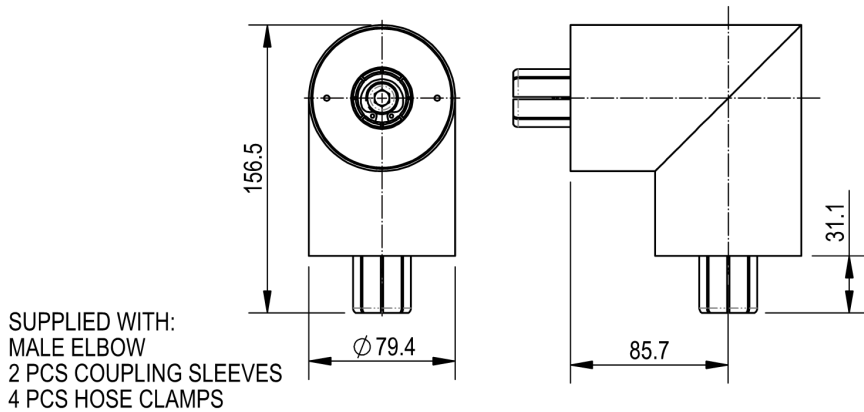


**ELBOWS**

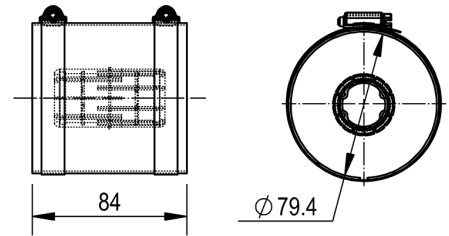
Elbow Model No		RL318-50U-EL
Elbow Type		3-1/8" Unflanged Elbow - male with coupling sleeves
Elbow Weight	kg (lb)	2.22 (4.89)

**ACCESSORIES**

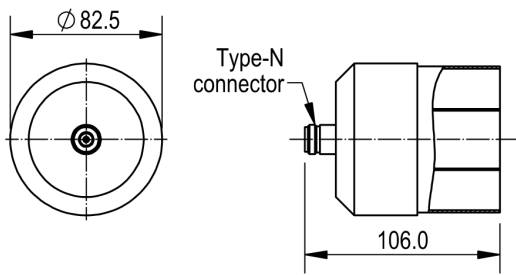
Accessory Model No		RL318-50U-STR	AD31U-N	RL318-50-FLA	RL318-50-IJK	RL318-50-SHR
Accessory Description		Straight Coupling - Inner & Outer	3-1/8" u/f - Type N Adaptor	Flange Adaptor- Clamp Type	EIA Inner Joining Kit	Suspension Hanger
Accessory Weight	kg (lb)	0.33 (0.73)	1.2 (2.65)	0.98 (2.16)	0.98 (2.16)	1.11 (2.25)



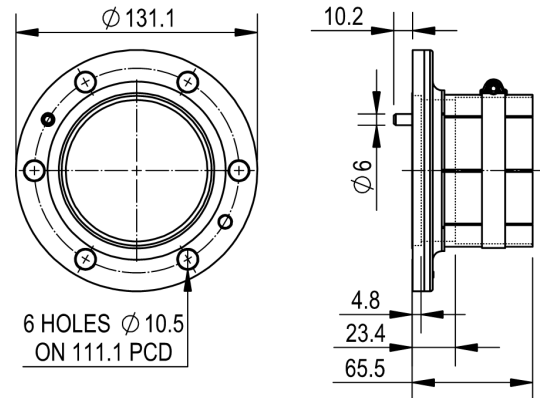
RL318-50U-EL Unflanged elbow - male with coupling sleeves



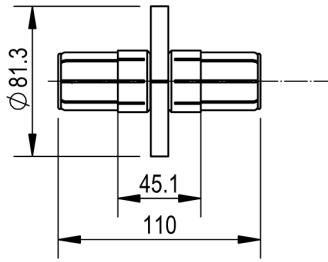
RL318-50U-STR Straight coupling



AD31U-N 3-1/8" unflanged - Type-N adaptor

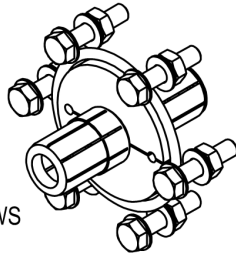


RL318-50-FLA Flange adaptor - clamp type

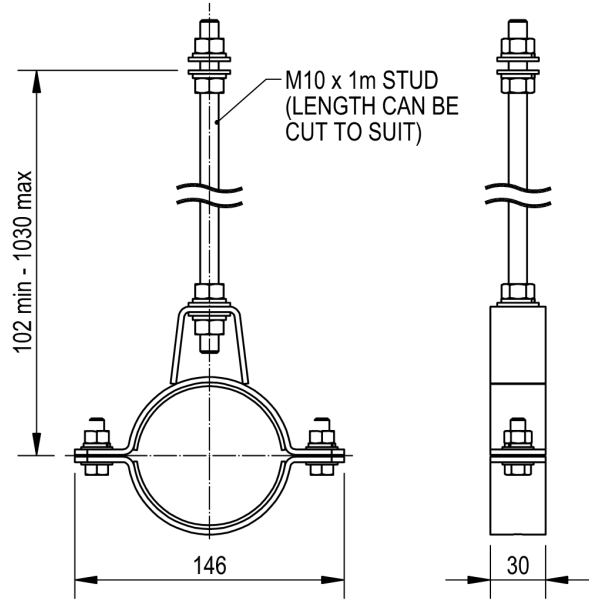


SUPPLIED WITH:

- SPIGOT
- SPACER
- O-RING
- 6 PCS M10 x 45 HEX HEAD SCREWS
- 6 PCS M10 SPRING WASHERS
- 12 PCS M10 FLAT WASHERS
- 6 PCS M10 HEX NUTS



RL318-50-IJK EIA Inner joining kit



RL318-50-SHR Suspension hanger

External Document Links

[RL318-50ALU datasheet](#)

[RL318-50 datasheet](#)