

**E220J****FLEXWELL® Standard Elliptical Waveguide**

FLEXWELL® elliptical waveguide is constructed of longitudinally continuous seam welded, highly conductive copper tube, corrugated and precision formed into an elliptical cross section. It is manufactured in continuous lengths using a special seam welding process developed by the RFS organization.

The corrugation design achieves high transverse stability, flexibility and crush strength for superior handling and forming at an installation. The inherent strength and flexibility of FLEXWELL® waveguide allows on location, a continuous length of waveguide to be run directly from a tower-mounted antenna to the equipment building.

A FLEXWELL® elliptical waveguide feeder requires less planning and reduces installation costs when compared to a feeder system using a rigid rectangular waveguide.

FLEXWELL® waveguide is available cut to length with factory attached connectors or in continuous lengths for termination in the field.

Features / Benefits

- Designed for optimum system performance
- Excellent electrical performance
- Low loss and low VSWR (low return loss)
- Electrical test made on every waveguide during manufacturing
- Every waveguide undergoes 24 hour pressure test
- Reduced installation cost compared to rigid rectangular waveguides due to flexibility
- No need of flange joints, twist section and bends
- Easy transportation in coils or on drums
- Cutting at exact length and connectorizing in the field

Technical Features

GENERAL SPECIFICATIONS

Performance	Standard
Jacket	J (Polyethylene black)

ELECTRICAL SPECIFICATIONS

Typical Operating Band	21.2 - 23.6 GHz	
Max. VSWR / Return Loss	VSWR Max.	Return Loss dB
	1.15	23.1
Cut-off Frequency	13.36 GHz	



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MECHANICAL SPECIFICATIONS

Dimension over Jacket	18 x 12mm (0.7 x 0.5in)
Weight	0.2kg/m (0.13lb/ft)
Min. Single Bending Radius E Plane	110mm (4in)
Min. Single Bending Radius H Plane	230mm (9in)
Min. Multiple Bending Radius E Plane	130mm (5in)
Min. Multiple Bending Radius H Plane	250mm (10in)
Maximum Twist	8°/m (2.4°/ft)
Max. Operating Pressure	0.5bar (7psi)
Max. Pulling Length per Hoisting Grip	100m (305ft)
Standard Hanger Spacing	0.6m (2ft)
Air Volume	0.08l/m (0.0009ft³/ft)

TEMPERATURE SPECIFICATIONS

Installation Temperature	-40°C to 60°C (-40°F to 140°F)
Storage Temperature	-70°C to 85°C (-94°F to 185°F)
Operation Temperature	-50°C to 85°C (-58°F to 185°F)

**ATTENUATION AND POWER RATING**

Frequency (GHz)	Attenuation dB/100m	Attenuation dB/100ft	Avarage Power (KW)	Group velocity (%c)	Group Delay (ns/100m)	Group Delay (ns/100ft)
21.2	28.78	8.77	0.3	77.6	429.6	130.9
21.3	28.73	8.76	0.3	77.9	428.3	130.5
21.4	28.67	8.74	0.3	78.1	427	130.1
21.5	28.63	8.73	0.3	78.3	425.7	129.8
21.6	28.58	8.71	0.3	78.6	424.5	129.4
21.7	28.54	8.7	0.3	78.8	423.3	129
21.8	28.5	8.69	0.31	79	422.1	128.7
21.9	28.46	8.67	0.31	79.2	421	128.3
22	28.42	8.66	0.31	79.4	419.8	128
22.1	28.39	8.65	0.31	79.7	418.7	127.6
22.2	28.36	8.64	0.31	79.9	417.7	127.3
22.3	28.33	8.63	0.31	80.1	416.6	127
22.4	28.3	8.63	0.31	80.3	415.6	126.7
22.5	28.27	8.62	0.31	80.5	414.6	126.4
22.6	28.25	8.61	0.31	80.7	413.6	126.1
22.7	28.23	8.6	0.31	80.8	412.6	125.8
22.8	28.21	8.6	0.31	81	411.6	125.5
22.9	28.19	8.59	0.31	81.2	410.7	125.2
23	28.17	8.59	0.31	81.4	409.8	124.9
23.1	28.15	8.58	0.31	81.6	408.9	124.6
23.2	28.14	8.58	0.31	81.8	408	124.4
23.3	28.13	8.57	0.31	81.9	407.1	124.1
23.4	28.11	8.57	0.31	82.1	406.3	123.8
23.5	28.1	8.57	0.31	82.3	405.5	123.6
23.6	28.09	8.56	0.31	82.4	404.6	123.3

Note

Standard Conditions:
For attenuation: VSWR 1.0, ambient temperature 20°C (68°F).
For average power: VSWR 1.0 and 42°C (108°F) temperature rise over 40°C (104°F) ambient . No solar loading.

External Document Links**Notes**

VSWR values include connectors and are valid for frequency band of connectors.

Max. Operating Band: 16.70 - 23.60 GHz