

# Flexible Waveguide



World class manufacturing certified to ISO9002; Flexible waveguide available from WR28 to WR284 with North American or European Flange configurations.

## ELECTRICAL SPECIFICATIONS FOR TWISTABLE M1640 & NON-TWISTABLE M1650

Dash No.	IEC-R ( )	E/A Size	Matching Rigid W/G Internal Dimensions	Operation Freq Band	Nominal Test Freq. For Attenuation	Maximum IL Attenuation	Maximum VSWR CPR/CPR/ OR COV./ Cover Flanges	Maximum VSWR Plain/ Choke Flanges CW	Power Rating M1640	Power Rating M1650
		WR	(in.)	(GHz)	(GHz)	(dB/ft.)	<36' >36'	<36" >36"	CW (kW)	CW (kW)
01	32	284	2.840 X 1.340	2.60 - 3.95	3.15	0.03	1.03 1.07	1.07 1.10	6.5	8.5
02	40	229	2.290 X 1.145	3.30 - 4.90	3.85	0.03	1.03 1.07	- -	-	-
03	48	187	1.872 X 0.872	3.95 - 5.85	4.75	0.04	1.04 1.07	1.07 1.10	3.00	3.40
04	58	159	1.590 X 0.795	4.90 - 7.05	5.90	0.05	1.04 1.08	1.08 1.10	2.5	2.50
05	70	137	1.372 X 0.622	5.85 - 8.20	6.45	0.06	1.04 1.09	1.09 1.10	2.00	1.70
06	84	112	1.122 X 0.497	7.05 - 10.00	9.40	0.07	1.06 1.10	1.10 1.13	1.26	0.80
07	100	90	0.900 X 0.400	8.20 - 12.40	9.40	0.09	1.06 1.10	1.10 1.13	0.96	0.62
08	120	75	0.750 X 0.375	10.00 - 15.00	13.70	0.13	1.08 1.10	1.10 1.13	0.75	0.50
09	140	62	0.622 X 0.311	12.40 - 18.00	14.00	0.16	1.09 1.13	1.13 1.16	0.22	0.30
10	180	51	0.510 X 0.255	15.00 - 22.00	18.50	0.35	1.12 1.18	1.17 1.20	0.14	0.23
11	220	42	0.420 X 0.170	18.00 - 26.50	22.00	0.38	1.17 1.23	1.20 1.25	0.10	0.12
13	320	28	0.280 X 0.140	26.50 - 40.00	34.00	0.60	1.19	1.30-36"	0.10	N/A

### ORDERING INFORMATION

Part No.	W/G Size	Length (in. or mms)	Jacket	*Flanges & Flange Finish
M1640	07	12	N	06 - 07 - U

#### PART NUMBER – M1640-07-12-N-06-07-U

The above is a WR90 Flex Twist 12"-long neoprene jacket with cover and choke flanges – flanges unplated irridited & polished.

Specify flanges – flange numeric codes (see page 30)

\*Brass unless otherwise requested

JACKET/PAINT	FLANGE FINISH CODES	
	Code	Finish
P = Black Paint (M1650 only)	C	Both flanges cadmium-plated and passivated
S = Silicone	U	Both flanges unplated irridited and polished
N= Neoprene	S	Both flanges sliver-plated
	T	Both flanges tin-plated

# Flexible Waveguide (cont.)



## MECHANICAL SPECIFICATIONS FOR TWISTABLE M1640 & NON- TWISTABLE M1650

Dash NO	IEC-R ( )	EIA Size	Twist & Non- Twist (M1640 & M1650)				Twist Only (M1640)			Maximum Operating Pressure			
			Bending Rating				Twisting Rating			M1640 psig	M1650 psig		
			Static		Repeated		Static	Repeated	Length				
			E-plane Rad (in.)	H-plane Rad (in.)	E-plane Rad (in.)	H-plane Rad (in.)	Tolerance (±deg./ft.)	Twist (±deg./ft.)	Non- twist (±in./ft.)				
01	32	284	7.0	14.0	28.0	56.0	32	8	1/8	20	40		
02	40	229	6.5	13.0	26.0	52.0	40	10	1/8	30	40		
03	48	187	6.5	13.0	26.0	52.0	48	12	1/8	30	40		
04	58	1579	5.0	10.0	20.0	40.0	56	14	1/8	30	40		
05	70	137	4.0	8.0	16.0	32.0	64	16	1/8	30	40		
06	84	112	3.0	6.0	12.0	24.0	80	20	1/8	35	50		
07	100	90	2.5	5.0	10.0	20.0	96	24	1/8	45	50		
08	120	75	2.5	4.5	10.0	20.0	112	28	1/8	45	50		
09	140	62	2.0	4.0	8.0	16.0	136	34	1/8	45	50		
10	180	51	2.0	4.0	8.0	16.0	136	34	1/8	45	60		
11	220	42	1.5	3.0	6.0	12.0	155	45	1/8	45	60		
13	320	28	T.B.A										

### CONSTRUCTION

The basic construction of the guide is similar for both twistable and non-twistable versions and, irrespective of size or individual specification, consists of an inner core, two connecting flanges soft-soldered into position, and a protective outer jacket.

### THE CORE

The core is manufactured from pre-convoluted brass strip helically wound to extremely close tolerances around a rectangular mandrel.

Twistable cores (M1640) are silver-clad and are locked by a plated copper sealing wire inserted into their seam during winding.

At this stage pressurization is not possible. In order to hold pressure the flexible twistable waveguide must be encased in a rubber jacket.

Non-twistable cores (M1650) are also silver-clad and are locked by solder wire which is then melted to form a continuous solder fillet running the entire length of the seam. (M1650) can be pressurized without a rubber jacket.

### NEOPRENE

- Shore hardness: 45° -50°
- Operating temp.: -50°C to + 100°C

### SILICONE

- Shore hardness: 50° -55°
- Operating temp.: -55°C to + 135°C