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RECTANGULAR FLEXIBLE WAVEGUIDE SPECIFICATIONS

TYPICAL ELECTRICAL SPECIFICATIONS							
EIA WR SIZE	FREQUENCY RANGE (GHz)	MCKS Flexible Non-Twistable		MTPS Flexible Twistable		MSBS Seamless (Brass)	
		*VSWR	**INSERTION LOSS	*VSWR	**INSERTION LOSS	*VSWR	**INSERTION LOSS
22	33.00 - 50.00	1.35	1.00	1.35	1.20	SEE "MILLIMETER FLEX" DATA SHEET	
28	26.50 - 40.00	1.30	0.50	1.30	0.60		
34	22.00 - 33.00	1.20	0.35	1.30	0.50	1.30	0.35
42	18.00 - 26.50	1.20	0.32	1.20	0.35	1.20	0.30
51	15.00 - 22.00	1.20	0.32	1.20	0.35	1.20	0.30
62	12.40 - 18.00	1.12	0.15	1.12	0.20	1.12	0.15
75	10.00 - 15.00	1.12	0.13	1.12	0.15	1.10	0.12
90	8.20 - 12.40	1.10	0.09	1.10	0.10	1.10	0.09
102	7.00 - 11.00	1.10	0.08	1.10	0.09	1.10	0.06
112	7.05 - 10.00	1.09	0.06	1.10	0.08	1.10	0.06
137	5.85 - 8.20	1.09	0.05	1.09	0.07	1.10	0.05
159	4.90 - 7.05	1.08	0.04	1.09	0.06	1.10	0.04
187	3.95 - 5.85	1.08	0.03	1.09	0.05	1.09	0.03
229	3.30 - 4.90	1.07	0.02	1.07	0.02	1.08	0.02
284	2.60 - 3.95	1.07	0.02	1.07	0.02	1.08	0.02
340	2.20 - 3.30	1.07	0.01	1.07	0.01	N/A	N/A
430	1.70 - 2.60	1.07	0.01	1.07	0.01	N/A	N/A
650	1.12 - 1.70	1.06	0.01	NA	NA	N/A	N/A
* VSWR is per 2 Foot Section ** INSERTION LOSS is in dB per Foot with Silver Plated waveguide							
TYPICAL MECHANICAL SPECIFICATIONS					POWER HANDLING CAPABILITY		
EIA WR SIZE	Bend Radii to Centerline				CW Power In Watts		PEAK Power In Kilowatts
	With Jacket		Without Jacket		MCK/MSB	MTP	
	E - Plane	H - Plane	E - Plane	H - Plane			
22	0.75	1.13	0.44	0.94	75	25	12
28	0.75	1.13	0.44	0.94	150	75	20
34	0.75	1.13	0.44	0.94	200	100	30
42	0.88	1.25	0.57	1.00	300	100	39
51	0.88	1.25	0.57	1.00	500	200	70
62	1.00	1.88	0.69	1.25	1,000	400	100
75	1.13	2.25	0.63	1.25	1,500	750	140
90	1.75	2.50	1.25	1.50	3,000	1,000	180
102	2.00	2.88	1.30	1.94	4,000	1,500	300
112	2.25	3.25	1.40	1.82	4,000	1,500	315
137	2.38	3.38	1.50	2.07	5,000	2,000	500
159	4.00	6.00	1.60	2.25	6,000	2,500	1,100
187	4.38	6.50	1.94	3.00	6,500	3,000	1,250
229	6.50	8.00	2.13	3.25	8,000	4,000	1,550
284	7.00	9.50	2.94	5.50	10,000	4,000	2,000
340	10.00	16.00	4.25	6.00	16,000	8,000	3,700
430	12.00	25.00	4.82	6.63	20,000	10,000	4,700
650	20.00	40.00	14.00	28.00	20,000	NA	10,700

Mechanical Specifications are for Non-Twistable Flexible Waveguide.
 Tighter Radii can be accommodated with Seamless Flexible Waveguide.
 See other Data Sheets for Double-Ridged and Millimeter Flexible Waveguide.



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EXTRA FLEXIBLE WAVEGUIDE SPECIFICATIONS

TYPICAL ELECTRICAL/MECHANICAL SPECIFICATIONS									
EIA WR SIZE	FREQUENCY RANGE (GHz)	VSWR	* INSERTION LOSS		Average Power Watts		Peak Power Kilowatts	Min. Centerline Bend Radius (inches)	
			MTES	MCES	MTES	MCES		E Plane	H Plane
22	33.0 - 50.0	1.35	1.20	1.00	25	75	12	.50	.80
28	26.5 - 40.0	1.30	0.60	0.50	75	150	20	.50	.80
34	22.0 - 33.0	1.30	0.60	0.50	100	200	30	.60	.90
42	18.0 - 26.5	1.20	0.35	0.32	100	300	39	.60	.90
51	15.0 - 22.0	1.20	0.35	0.32	200	500	70	.70	1.30
62	12.4 - 18.0	1.12	0.20	0.15	400	1000	100	.70	1.30
75	10.0 - 15.0	1.12	0.15	0.13	750	1500	140	.80	1.60

VSWR is Per 2 Foot Section
 *INSERTION LOSS is dB per foot with silver plated waveguide

- ◆ Extra-Flexible may be used where a more flexible application would prove beneficial.
- ◆ MTES = Extra-Flexible / Twistable
- ◆ MCES = Extra-Flexible / Non-Twistable
- ◆ Electrical: V.S.W.R. specifications shown are full band (frequency range). Lower values are attainable over narrower bandwidths.
- ◆ Finish: Flexible waveguide is silver-plated per QQ-S-365.
- ◆ Jacket: Flexible waveguide assemblies include a protective molded Neoprene rubber coating to the exterior of the waveguide. An optional polysulfide brush-on jacket may be supplied on all sizes.

EXAMPLE: Part No. MTES42-500-N-12B

"MTES42" is WR42 Extra-Flexible/Twistable brass waveguide.
 "500" indicates cover flange at both ends.
 "N" indicates a molded Neoprene protective jacket.
 "12" indicates 12 inches long.
 "B" indicates flange material to be brass.

- ◆ See Ordering Information page for details.

For additional frequencies, sizes, and types see "Rectangular Flexible Waveguide Specifications" Data Sheet.



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MILLIMETER SEAMLESS FLEXIBLE WAVEGUIDE SPECIFICATIONS

TYPICAL ELECTRICAL SPECIFICATIONS						
EIA WR SIZE	DEF 5351 SIZE WG	FREQUENCY RANGE (GHz)	MSNS Seamless Electro-formed		Average Power	Peak Power
			VSWR	**INSERTION LOSS	Watts	Kilowatts
10	27	75.00 - 110.00	1.15	0.25	30	2.5
12	26	60.00 - 90.00	1.12	0.20	40	3.8
15	25	50.00 - 75.00	1.10	0.11	50	5.7
19	24	40.00 - 60.00	1.10	0.08	60	10
22	23	33.00 - 50.00	1.10	0.05	75	12
28	22	26.50 - 40.00	1.10	0.04	150	20
** INSERTION LOSS is dB per Inch with silver plated waveguide.						
TYPICAL MECHANICAL SPECIFICATIONS						
EIA WR SIZE	DEF 5351 SIZE WG	Min. Centerline Bend Radius (degrees/inch)		Maximum Pressure	Compression/ Elongation	
		E Plane	H Plane	PSIG	PER INCH	
10	27	100	50	20	0.05	
12	26	100	50	20	0.05	
15	25	90	45	15	0.05	
19	24	75	35	12	0.02	
22	23	50	30	10	0.02	
28	22	40	25	10	0.02	

- ◆ **Electrical:** Specifications shown are full band (frequency range). Lower values are attainable over narrower bandwidths.
- ◆ **Jackets:** Brush applied polysulfide rubber jackets per MIL-S-8802 are standard. Silicone rubber jackets per MIL-S-23586 available on special request.
- ◆ **Flanges:** Flanges are attached to the flexible waveguide in conformance with MIL-STD-1866 using solder per QQ-S-571.
- ◆ **Finish:** Interior of flexible waveguide is silver-plated per QQ-S-365

EXAMPLE: Part No. MSNS10-500-(V)-2.25B is electro-formed Nickel over silver, cover flanges, polysulfide jacketed, and 2.25 inches long with brass flanges.

For additional frequencies, sizes, and types see "Rectangular Flexible Waveguide Specifications" Data Sheet.



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DOUBLE-RIDGED FLEXIBLE WAVEGUIDE SPECIFICATIONS

TYPICAL ELECTRICAL SPECIFICATIONS							
EIA WRD-SIZE	FREQUENCY RANGE (GHz)	MDKS Flexible Non-Twistable		MFPS Flexible Twistable		MDBS Seamless (Brass) ***MDDS Seamless (BeCu)	
		*VSWR	INSERTION LOSS	*VSWR	INSERTION LOSS	*VSWR	INSERTION LOSS
180	18.00 - 40.00	1.50	1.00	N/A	N/A	1.50	1.00
650	6.50 - 18.00	1.20	0.25	1.20	0.35	1.20	0.25
750	7.50 - 18.00	1.20	0.20	1.20	0.35	1.20	0.20
580	5.80 - 16.00	1.20	0.20	1.20	0.25	1.20	0.20
475	4.75 - 11.00	1.20	0.15	1.20	0.25	1.20	0.15
350	3.50 - 8.20	1.20	0.15	1.20	0.25	1.20	0.15
200	2.00 - 4.80	1.15	0.10	1.15	0.15	1.15	0.10
INSERTION LOSS is in dB per Foot with silver plated waveguide *** Beryllium-Copper also available							
TYPICAL MECHANICAL SPECIFICATIONS					POWER HANDLING CAPABILITY		
Bend Radii to Centerline							
EIA WRD SIZE	With Jacket (In inches)		Without Jacket (In inches)		CW Power In Watts		PEAK Power In Kilowatts
	E-Plane	H-Plane	E-Plane	H-Plane	Non- Twistable	Twistable	
180	0.75	1.13	0.50	0.90	150	50	2.75
650	1.75	3.00	0.75	1.50	600	200	12
750	1.75	3.00	0.75	1.50	750	250	16
580	1.75	3.00	0.75	1.50	1000	300	30
475	2.00	3.50	0.90	1.70	1500	500	40
350	3.00	5.00	1.75	2.25	2000	800	73
200	4.00	7.00	2.13	3.25	4000	1500	225

Mechanical Specifications are for Flexible Waveguide.
 Tighter radii can be had with Seamless Flexible Waveguide.
 See other data sheet for Rectangular Flexible Waveguides.



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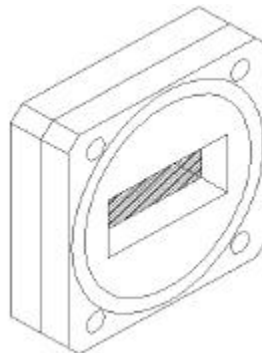
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PRESSURE WINDOW SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS									
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	INS. LOSS (dB)	PEAK POWER (kW)	PSIG Max	FLANGE TYPE	FLANGE MATERIAL	OVERALL LENGTH (Max. Inches)
22	239859	33.00 - 50.00	1.20	0.20	12	45	Cover	Brass	0.25
28	228584	26.50 - 40.00	1.18	0.15	15	45	Cover	Brass	0.25
34	239860	22.00 - 33.00	1.15	0.15	20	45	Cover	Brass	0.25
42	228585	18.00 - 26.50	1.05	0.14	30	45	Cover	Brass	0.25
51	239861	15.00 - 22.00	1.10	0.15	20	45	Cover	Brass	0.25
62	219816	12.40 - 18.00	1.15	0.12	100	45	Cover	Brass	0.25
75	219817	10.00 - 15.00	1.10	0.10	125	45	Cover	Brass	0.25
90	219818	8.20 - 12.40	1.10	0.08	150	45	Cover	Brass	0.25
102	219819	7.00 - 11.00	1.10	0.05	250	45	Cover	Brass	0.25
112	219820	7.05 - 10.00	1.10	0.05	250	45	Cover	Brass	0.50
137	219821	5.85 - 8.20	1.07	0.04	400	40	Cover	Brass	0.50
159	219822	4.90 - 7.05	1.05	0.03	750	30	CPRF	Brass	0.50
187	219823	3.95 - 5.85	1.08	0.03	1000	15	Cover	Brass	0.50
229	219824	3.30 - 4.90	1.07	0.03	1800	15	CPRF	Brass	0.50
284	219825	2.60 - 3.95	1.06	0.02	2000	15	CPRF	Aluminum	0.50
430	219826	1.70 - 2.60	1.05	0.02	2500	10	CPRF	Aluminum	0.50
650	233141	1.12 - 1.70	1.05	0.02	4000	5	CPRF	Aluminum	0.75

Note: Other configurations and specifications are available upon request. Contact the factory with your requirement.

Note : All Flanges will have clear holes.



Microtech's Pressure Windows are used where it is desirable to environmentally isolate a section of transmission line or component, to increase power-handling capacity, or to prevent corrosion in high ambient humidity or dusty conditions.



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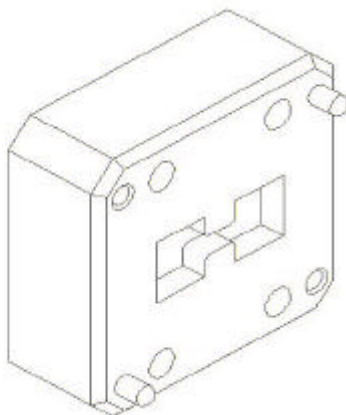
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DOUBLE-RIDGED PRESSURE WINDOW SPECIFICATIONS

<i>TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS</i>									
MIL-W-23351/4	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	INS. LOSS (dB)	PEAK POWER (kW)	PSIG Max	FLANGE TYPE	FLANGE MATERIAL	OVERALL LENGTH
WRD-180	239862	18.00 - 40.00	1.20	0.20	3	45	Cover / Gasket	Alum.	0.375
WRD-750	239863	7.50 - 18.00	1.07	0.10	15	30	Cover / Gasket	Alum.	0.375
WRD-650	239864	6.50 - 18.00	1.10	0.12	12	30	Cover / Gasket	Alum.	0.375
WRD-580	239865	5.80 - 16.00	1.10	0.12	20	30	Cover / Gasket	Alum.	0.375
WRD-475	239866	4.75 - 11.00	1.07	0.05	40	30	Cover / Gasket	Alum.	0.375
WRD-350	239867	3.50 - 8.20	1.05	0.04	70	20	Cover / Gasket	Alum.	0.375
WRD-200	239868	2.00 - 4.80	1.03	0.03	200	15	Cover / Gasket	Alum.	0.375

Note: Other configurations and specifications are available upon request. Contact the factory with your requirement.
 Note : All Flanges will have clear holes.



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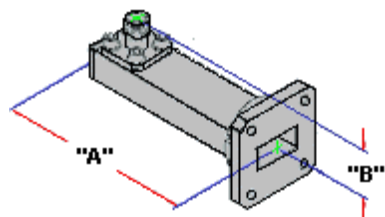


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WAVEGUIDE TO COAX ADAPTER SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS									
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	INSERTION LOSS (dB)	CONNECTOR TYPE *	FLANGE EQUIV.	MATERIAL	"A" DIMENSION (Max. Inches)	"B" DIMENSION (Max. Inches)
22	234923	33.00 - 50.00	1.35	0.40	2.9mm/2.4mm	Square	BRASS	1.50	0.70
28	229665	26.50 - 40.00	1.30	0.35	2.9mm/2.4mm	Cover	BRASS	1.00	0.70
34	240023	22.00 - 33.00	1.30	0.35	2.4mm/2.9mm	Cover	BRASS	1.25	.80
42	228100	18.00 - 26.50	1.25	0.30	2.9mm/3.5mm/SMA	Cover	BRASS	1.25	0.80
51	240024	15.00 - 22.00	1.25	0.30	2.9mm/3.5mm/SMA	Cover	BRASS	1.50	0.90
62	207194	12.40 - 18.00	1.25	0.20	SMA/N/TNC	Cover	BRASS	1.50	0.90
75	229666	10.00 - 15.00	1.25	0.20	SMA/N/TNC	Cover	BRASS	1.75	1.00
90	206998	8.20 - 12.40	1.25	0.20	SMA/N/TNC	Cover	BRASS	1.75	1.30
102	204874	7.00 - 11.00	1.25	0.15	SMA/N/TNC	Cover	BRASS	2.00	2.25
112	206477	7.05 - 10.00	1.25	0.15	SMA/N/TNC	Cover	BRASS	2.25	2.25
137	206476	5.85 - 8.20	1.25	0.10	SMA/N/TNC	Cover	BRASS	2.50	2.40
159	226325	4.90 - 7.05	1.25	0.10	SMA/N/TNC	CPRF	BRASS	3.00	2.50
187	206475	3.95 - 5.85	1.25	0.10	SMA/N/TNC	Cover	BRASS	2.75	1.55
229	219863	3.30 - 4.90	1.25	0.10	N	CPRF	BRASS	4.00	3.50
284	206474	2.60 - 3.95	1.25	0.10	N	Cover	BRASS	4.10	4.25
340	229667	2.20 - 3.30	1.20	0.05	N	CPRF	BRASS	4.10	4.50
430	207801	1.70 - 2.60	1.20	0.05	N	CPRF	ALUM	4.25	5.00
650	213002	1.12 - 1.70	1.20	0.05	N	CPRG	ALUM	5.25	7.25

*Standard Waveguide to Coax Adapters are supplied with a female connector.
 Customer to Specify by adding desired connector to part number as a suffix. Example: 206998-SMA.



Microtech Inc. Waveguide to Coax Adapters are made from a precision extruded tubing with the end caps silver or dip brazed to give you a precise and durable unit for both lab and systems use over the full specified operating band, with a minimum VSWR and Insertion Loss. These units can be built to be pressure tight on request.

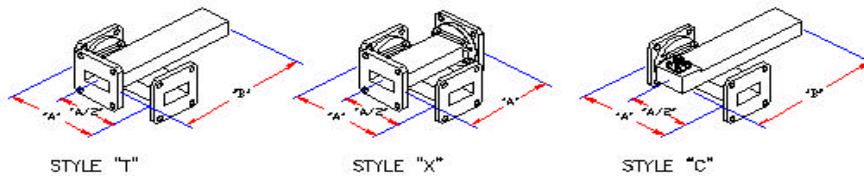
Note: Other configurations and specifications available upon request.
 Adapters that conform to MIL-DTL-22641 are also available.
 Contact the factory with your requirements.



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CROSSGUIDE COUPLER SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WR SIZE	MODEL No. (see notes)	FREQUENCY RANGE (GHz)	PRIMARY ARM VSWR Max.	COUPLING VARIATION + or - (dB)	FLANGE EQUIV.	"A" DIMENSION (Max. inches)	"B" DIMENSION (Max. inches)	STYLE "C" JACK
22	233317	33.00 - 50.00	1.10	3.0	Cover	2.25	3.38	2.9
28	219764	26.50 - 40.00	1.10	2.0	Cover	2.25	3.38	2.9
42	219765	18.00 - 26.50	1.10	2.0	Cover	2.25	3.38	SMA
62	219766	12.40 - 18.00	1.10	1.5	Cover	2.50	3.50	SMA
75	219767	10.00 - 15.00	1.10	1.5	Cover	3.00	4.50	SMA
90	219768	8.20 - 12.40	1.10	1.5	Cover	3.00	4.50	SMA
112	219769	7.05 - 10.00	1.10	1.5	Cover	4.00	6.00	SMA
137	219770	5.85 - 8.20	1.10	1.0	Cover	5.00	7.50	N
159	219771	4.90 - 7.05	1.10	1.0	CPRF	5.00	7.50	N
187	219772	3.95 - 5.85	1.10	1.0	CPRF	5.00	7.50	N
229	219773	3.30 - 4.90	1.10	1.0	CPRF	6.00	9.00	N
284	219774	2.60 - 3.95	1.10	1.0	CPRF	8.00	12.00	N
340	236944	2.20 - 3.30	1.10	1.0	CPRF	10.00	15.00	N



Notes:

- Standard couplings available are 20, 30, 40, 50, and 60. Others values available on special order. Specify by adding coupling and style desired as a suffix to the part number. Example: 233317X-20.
- Coaxial secondary outputs are also available. Contact the factory or our local Manufacturer's Representative for details.
- Nominal directivity is 20 dB.
- Couplers that conform to MIL-C-15370 are also available.

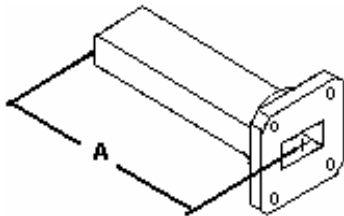


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LOW POWER TERMINATION SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS							
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	FLANGE EQUIV.	MATERIAL	AVG. POWER HANDLING (Max. Watts)	"A" DIMENSION (Max. Inches)
22	229664	33.00 - 50.00	1.05	Cover	Br/Alu	0.25	2.25
28	219828	26.50 - 40.00	1.04	Cover	Br/Alu	0.5	2.25
34	239869	22.00 - 33.00	1.04	Cover	Br/Alu	0.5	3.00
42	219829	18.00 - 26.50	1.02	Cover	Br/Alu	0.5	3.00
51	239837	15.00 - 22.00	1.02	Cover	Br/Alu	1.0	4.00
62	219830	12.40 - 18.00	1.02	Cover	Br/Alu	1.5	4.00
75	219831	10.00 - 15.00	1.02	Cover	Br/Alu	2.5	5.00
90	219832	8.20 - 12.40	1.02	Cover	Br/Alu	4	6.00
112	219833	7.05 - 10.00	1.02	Cover	Br/Alu	5	6.50
137	219834	5.85 - 8.20	1.02	Cover	Br/Alu	6	6.75
159	219835	4.90 - 7.05	1.02	CPRG	Br/Alu	7	7.00
187	219836	3.95 - 5.85	1.02	Cover	Br/Alu	8	7.25
229	219837	3.30 - 4.90	1.02	CPRF	Br/Alu	10	7.75
284	219838	2.60 - 3.95	1.02	Cover	Alum	10	11.00
340	233312	2.20 - 3.30	1.02	CPRF	Alum	12	12.00
430	233313	1.70 - 2.60	1.03	CPRG	Alum	13	14.00
650	233314	1.12 - 1.70	1.03	CPRF	Alum	13	15.00

Note: Other configurations, specifications, and power ratings available upon request as well as a large variety of high-power loads available to MIL-D-3954. Contact the factory with your requirements.



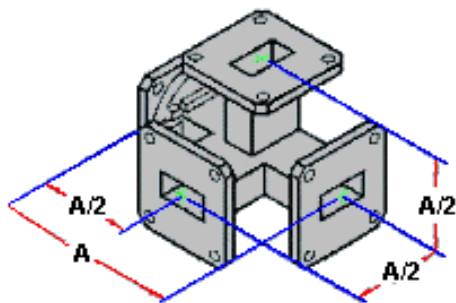
Microtech, Inc. low power fixed terminations are designed where a matched load is desired to terminate a waveguide transmission line in a dissipative, nonreflecting component. Also used as standard matched load for the termination of waveguide components.



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MAGIC TEE SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS						
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	FLANGE EQUIVALENT	MATERIAL	MAXIMUM UNBALANCED dB	A DIMENSION (Max. Inches)
28	219786	34.00 - 37.00	Cover	Brass	0.25	2.25
34	239892	24.00 - 26.00	Cover	Brass	0.25	2.25
42	219787	20.00 - 23.00	Cover	Brass	0.25	2.25
51	235013	18.50 - 20.50	Cover	Brass	0.25	2.50
62	219788	14.00 - 15.00	Cover	Brass	0.20	2.50
75	219789	13.50 - 14.50	Cover	Brass	0.15	3.00
90	219790	9.00 - 10.00	Cover	Brass	0.10	3.00
112	219791	7.90 - 8.40	Cover	Brass	0.10	4.00
137	219792	5.90 - 6.40	CPRF	Brass	0.10	5.00
159	219793	5.90 - 6.40	CPRF	Brass	0.10	5.00
187	219794	4.40 - 5.00	CPRF	Brass	0.10	5.00
229	219795	3.70 - 4.20	CPRF	Brass	0.10	6.00
284	219796	2.90 - 3.20	CPRF	Brass	0.10	8.00

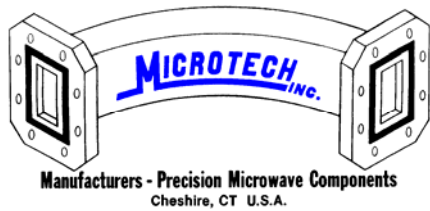


GENERAL SPECIFICATIONS

- ◆ VSWR : H-Arm, 1.30; E-Arm 1.50
- ◆ ISOLATION : H & E Arms, 30 dB
Co-linear Arms, 16 dB.

Electrical Specifications are for a reduced Frequency Range. Contact factory for any other Frequency Range requests.

Microtech, Inc. offers a full line of standard and special application Magic Tees. Designed to be used for power division as well as for combining and antenna subsystems, they can meet your impedance bridging, balanced mixer and duplexer needs as well. The copper alloy waveguide construction and exacting specification compliance result in long and economical service life.



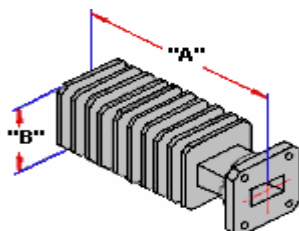
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MEDIUM POWER TERMINATION SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	FLANGE EQUIV.	AVG. POWER HANDLING (Max. Watts)	Material	"A" DIMENSION (Max inches)	"B" DIMENSION (Max. inches)
22	235557	33.00-50.00	1.10	Cover	40	Br/Alu	4.00	1.5
28	235558	26.50-40.00	1.10	Cover	60	Br/Alu	5.00	1.5
34	239870	22.00-33.00	1.10	Cover	100	Br/Alu	5.00	2.25
42	235559	18.00-26.50	1.10	Cover	120	Br/Alu	5.00	2.25
51	239871	15.00-22.00	1.10	Cover	150	Br/Alu	5.00	2.25
62	235560	12.40-18.00	1.07	Cover	200	Br/Alu	5.00	3.0
75	235561	10.00-15.00	1.07	Cover	200	Br/Alu	6.00	3.0
90	235562	8.20-12.40	1.10	Cover	250	Br/Alu	9.00	3.25
112	235563	7.05-10.00	1.07	Cover	375	Br/Alu	8.00	3.25
137	235564	5.85-8.20	1.05	Cover	700	Br/Alu	9.00	4.25
159	235565	4.90-7.05	1.07	CPRF	750	Br/Alu	11.00	4.25
187	235566	3.95-5.85	1.07	Cover	1,100	Br/Alu	11.00	4.25
229	235567	3.30-4.90	1.10	CPRF	1,000	Br/Alu	13.00	5.0
284	235568	2.60-3.95	1.10	Cover	1,200	Br/Alu	14.00	5.0
340	235569	2.20-3.30	1.15	CPRF	1,500	Alum	17.00	6.0
430	235570	1.70-2.60	1.15	CPRG	1,800	Alum	20.00	7.5
650	235571	1.12-1.70	1.15	CPRF	2,000	Alum	26.00	9.0

Note: Other configurations, specifications, and power ratings available upon request as well as a large variety of lower and higher-power loads available to MIL-D-3954. Contact the factory with your requirements.



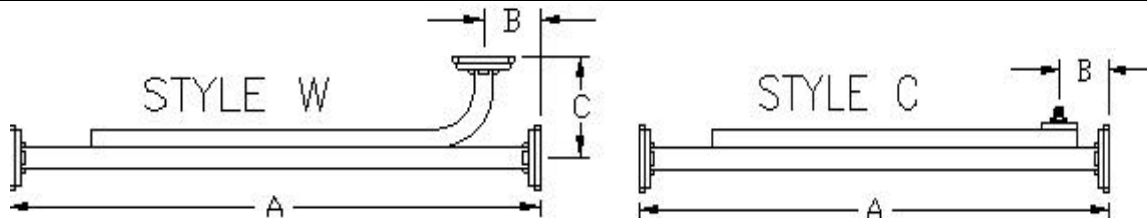
Microtech, Inc. medium power fixed terminations are designed where a matched load is desired to terminate a waveguide transmission line in a dissipative, nonreflecting component. These units require no additional cooling at the rated power level. The fins can be mounted vertically on the unit for optimum convection cooling when the unit is mounted vertically.



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BROADWALL COUPLER SPECIFICATIONS

TYPICAL ELECTRICAL SPECIFICATIONS						
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	COUPLING SENSITIVITY +/- (dB)	COUPLING AVERAGE +/- (dB)	PRIMARY ARM VSWR (Max.)	MINIMUM DIRECTIVITY (dB)
22	233209	33.00 - 50.00	0.85	0.80	1.05	35
28	219775	26.50 - 40.00	0.75	0.70	1.05	40
42	219776	18.00 - 26.50	0.65	0.60	1.05	40
62	219777	12.40 - 18.00	0.50	0.50	1.05	40
75	219778	10.00 - 15.00	0.50	0.50	1.05	40
90	219779	8.20 - 12.40	0.50	0.50	1.05	40
112	219780	7.05 - 10.00	0.50	0.50	1.05	40
137	219781	5.85 - 8.20	0.50	0.50	1.05	40
159	219782	4.90 - 7.05	0.50	0.50	1.05	40
187	219783	3.95 - 5.85	0.50	0.50	1.05	40
229	219784	3.30 - 4.90	0.50	0.50	1.05	40
284	219785	2.60 - 3.95	0.50	0.50	1.05	40
TYPICAL MECHANICAL SPECIFICATIONS						
EIA WR SIZE	MODEL No.	"A" Dim. Max. Inches	"B" Dim. Inches	"C" Dim. Inches	FLANGE TYPE	COAX STYLE JACK
22	233209	8.00	0.50	1.25	COVER	2.4
28	219775	9.00	1.06	1.25	COVER	2.9
42	219776	11.00	1.25	1.75	COVER	SMA
62	219777	14.00	1.00	2.00	COVER	SMA
75	219778	17.00	1.25	2.25	COVER	SMA
90	219779	19.00	1.50	2.50	COVER	SMA
112	219780	22.00	1.75	3.00	COVER	N
137	219781	26.00	1.75	3.00	CPRG	N
159	219782	32.00	2.00	3.25	CMR	N
187	219783	34.00	2.50	3.75	COVER	N
229	219784	40.00	2.75	5.00	CPRF	N
284	219785	47.00	3.25	6.00	COVER	N



Sidewall Couplers are also available upon request.

Note: Standard coupling values are 3dB, 6dB, 10dB, 20dB, 30dB, and 40 dB. Other values and configurations available upon request. Contact the factory with your requirements.

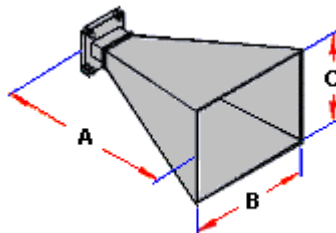


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STANDARD GAIN HORN SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS										
EIA WR/ WRD SIZE	MODEL No.	FREQUENCY RANGE (GHz)	H.P.B.W. (Nom.Deg.)	GAIN (dBi)			FLANGE EQUIV.	"A" DIM	"B" DIM	"C" DIM
				@FL	@FM	@FH				
28	HWR28	26.50 - 40.00	15	19.2	20.8	22.1	Brass-Cover	3.00	1.06	1.20
42	HWR42	18.00 - 26.50	15	18.8	20.4	21.7	Brass-Cover	4.50	2.26	1.60
62	HWR62	12.40 - 18.00	15	19.0	20.5	21.8	Brass-Cover	6.45	3.36	2.55
75	HWR75	10.00 - 15.00	15	19.0	20.6	21.9	Brass-Cover	7.89	4.15	3.12
90	HWR90	8.20 - 12.40	18	17.4	19.0	20.3	Brass-Cover	6.15	4.25	3.15
112	HWR112	7.05 - 10.00	20	17.2	18.5	19.8	Brass-Cover	6.89	4.80	3.57
137	HWR137	5.85 - 8.20	20	17.3	18.7	19.8	Brass-Cover	8.65	5.90	4.35
159	HWR159	4.90 - 7.05	24	15.5	16.8	18.0	Brass-CPRF	5.90	5.73	4.25
187	HWR187	3.95 - 5.85	32	12.4	14.2	15.7	Brass-Cover	6.38	4.80	3.42
229	HWR229	3.30 - 4.90	32	13.0	14.8	16.1	Brass-CPRF	6.38	6.15	4.48
284	HWR284	2.60 - 3.95	32	13.2	14.8	16.2	Brass-Cover	7.65	7.94	5.75
340	HWR340	2.20 - 3.30	34	13.1	14.7	16.3	Alum-CPRF	9.70	9.50	6.85
430	HWR430	1.70 - 2.60	32	13.3	15.2	16.5	Alum-CPRG	11.55	12.00	8.70
650	HWR650	1.12 - 1.70	32	13.1	15.1	16.2	Alum-CPRF	17.50	18.14	13.15
D-180	HWRD180	18.00 - 40.00	18	15.2	18.9	21.3	Alum-Plate	2.47	1.48	1.09
D-750	HWRD750	7.50 - 18.00	18	15.3	19.3	21.7	Alum-Plate	5.85	3.59	2.55
D-650	HWRD650	6.50 - 18.00	18	14.1	19.0	21.8	Alum-Plate	5.85	3.60	2.55
D-475	HWRD475	4.75 - 11.00	18	15.2	19.1	21.4	Alum-Plate	9.14	5.55	4.00
D-350	HWRD350	3.50 - 8.20	25	12.1	16.0	18.3	Alum-Plate	5.14	5.25	3.85

Note: Special Gain values also available. Dust covers and radomes are available on request Coaxial inputs available. Please contact the factory with your requirements.



Microtech, Inc. precision Standard Gain Horns are engineered, designed, and manufactured "in-house" utilizing computer aided design (CAD) and computer aided manufacturing (CAM) in our state of the art production facilities. We feature rugged dip or silver brazed construction, all at a reasonable cost. If you need a special configuration just contact the factory or our area Manufacturer's Representative with your requirements.

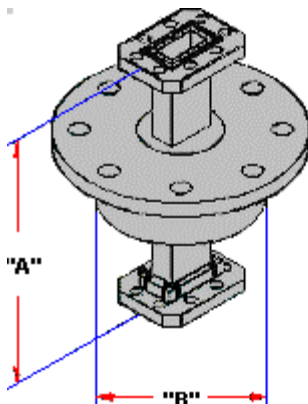


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"I" STYLE ROTARY JOINT SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Maximum	INSERTION LOSS Maximum	FLANGE EQUIV.	MATERIAL	"A" DIMENSION	"B" DIMENSION
22	233655	33.00 - 50.00	2.00	1.00	Cover	Brass	6.00	1.75
28	233656	26.50 - 40.00	2.00	1.00	Cover	Brass	3.50	2.00
42	233657	18.00 - 26.50	1.75	0.75	Cover	Brass	3.50	2.00
62	233658	12.40 - 18.00	1.60	0.50	Cover	Brass	3.00	1.81
75	239910	10.00 - 15.00	1.50	0.40	Cover	Brass	3.25	1.81
90	233660	8.20 - 12.40	1.50	0.40	Cover	Brass	3.25	1.81
112	233661	7.05 - 10.00	1.50	0.40	Cover	Brass	4.00	2.25
137	239911	5.85 - 8.20	1.50	0.40	CPRG	Brass	5.00	2.75
159	233663	4.90 - 7.05	1.50	0.40	CPRG	Brass	5.75	3.00
187	233664	3.95 - 5.85	1.50	0.40	CPRF	Brass	6.50	3.00
229	233665	3.30 - 4.90	1.50	0.40	CPRG	Brass	7.50	3.50
284	233666	2.60 - 3.95	1.50	0.40	CPRF	Brass	10.00	4.63
340	233667	2.20 - 3.30	1.50	0.40	CPRF	Brass	12.00	5.00

Notes: Maximum VSWR WOW = .10 typical. Maximum Insertion Loss WOW = .10 dB typical. Improved VSWR values can be obtained over a reduced portion of the band.



Designed for long life under extreme operating conditions, Microtech, Inc. rotary joints feature rugged construction, minimum phase WOW, stable phase linearity and designs that lend themselves to high power applications, all at a reasonable cost. If you need a special configuration or a multi-channel rotary joint just contact the factory or our area representative with your requirements. Our complete in-house engineering and production facility is at your disposal.

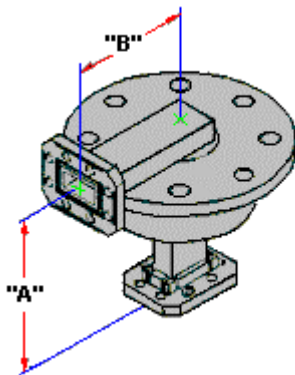


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“L” STYLE ROTARY JOINT SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Maximum	INSERTION LOSS Maximum	FLANGE EQUIV.	MATERIAL	“A” DIMENSION	“B” DIMENSION
22	233681	33.00 - 50.00	2.00	1.00	Cover	Brass	3.00	2.00
28	233682	26.50 - 40.00	2.00	1.00	Cover	Brass	3.00	2.00
42	233683	18.00 - 26.50	1.75	.75	Cover	Brass	2.50	2.00
62	233684	12.40 - 18.00	1.60	.50	Cover	Brass	2.50	1.38
75	233685	10.00 - 15.00	1.50	.40	Cover	Brass	2.50	1.38
90	233686	8.20 - 12.40	1.50	.40	Cover	Brass	2.75	1.38
112	233687	7.05 - 10.00	1.50	.40	Cover	Brass	3.25	2.00
137	233688	5.85 - 8.20	1.50	.40	CPRG	Brass	4.12	3.00
159	233689	4.90 - 7.05	1.50	.40	CPRG	Brass	5.00	3.25
187	233690	3.95 - 5.85	1.50	.40	CPRF	Brass	5.25	3.50
229	233691	3.30 - 4.90	1.50	.40	CPRG	Brass	6.50	5.00
284	233692	2.60 - 3.95	1.50	.40	CPRF	Brass	8.50	6.00
340	233693	2.20 - 3.30	1.50	.40	CPRF	Brass	9.00	6.00

Notes: Maximum VSWR WOW = .10 typical. Maximum Insertion Loss WOW = .10 dB typical. Improved VSWR values can be obtained over a reduced portion of the band.



Designed for long life under extreme operating conditions, Microtech, Inc. rotary joints feature rugged construction, minimum phase WOW, stable phase linearity and designs that lend themselves to high power applications, all at a reasonable cost. If you need a special configuration or a multi-channel rotary joint just contact the factory or our area representative with your requirements. Our complete in-house engineering and production facility is at your disposal.

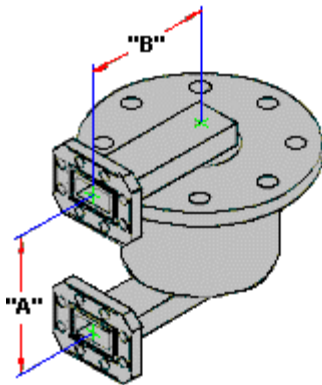


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“U” STYLE ROTARY JOINT SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Maximum	INSERTION LOSS Maximum	FLANGE EQUIV.	MATERIAL	"A" DIMENSION	"B" DIMENSION
22	233668	33.00 - 50.00	2.00	1.00	Cover	Brass	1.50	2.00
28	233669	26.50 - 40.00	2.00	1.00	Cover	Brass	1.50	2.00
42	233670	18.00 - 26.50	1.80	0.75	Cover	Brass	2.00	2.00
62	233671	12.40 - 18.00	1.60	0.50	Cover	Brass	2.00	2.00
75	233672	10.00 - 15.00	1.60	0.50	Cover	Brass	1.60	2.13
90	233673	8.20 - 12.40	1.50	0.40	Cover	Brass	2.00	3.00
112	233674	7.05 - 10.00	1.50	0.40	Cover	Brass	2.88	4.00
137	233675	5.85 - 8.20	1.50	0.40	CPRG	Brass	2.88	3.00
159	233676	4.90 - 7.05	1.50	0.40	CPRG	Brass	4.00	4.00
187	233677	3.95 - 5.85	1.50	0.40	CPRF	Brass	4.13	3.50
229	233678	3.30 - 4.90	1.50	0.40	CPRG	Brass	5.00	4.00
284	233679	2.60 - 3.95	1.50	0.40	CPRF	Brass	7.00	4.00
340	233680	2.20 - 3.30	1.50	0.40	CPRF	Brass	7.00	5.00

Notes: Maximum VSWR WOW = .10 typical. Maximum Insertion Loss WOW = .10 dB typical. Improved VSWR values can be obtained over a reduced portion of the band.



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WAVEGUIDE TORSIONAL JOINT SPECIFICATIONS

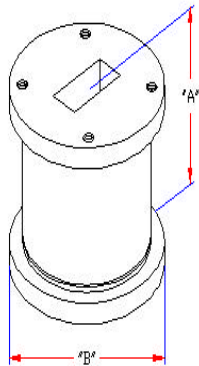
TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS							
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max. 20% Bandwidth	INSERTION LOSS Maximum	FLANGE EQUIV.	"A" DIMENSION	"B" Dia Max.
22	235014	33.00 - 50.00	1.40	0.40	Round	1.00	1.13
28	235015	26.50 - 40.00	1.20	0.30	Cover	1.25	0.98
42	235016	18.00 - 26.50	1.10	0.20	Round	1.50	1.13
62	235017	12.40 - 18.00	1.10	0.20	Round	1.50	1.75
75	235018	10.00 - 15.00	1.10	0.10	Round	1.75	1.94
90	235019	8.20 - 12.40	1.10	0.10	Round	2.12	2.13
112	235020	7.05 - 10.00	1.10	0.08	Round	2.75	2.50
137	235021	5.85 - 8.20	1.10	0.08	CPRF	3.25	3.05
159	235022	4.90 - 7.05	1.10	0.06	CPRF	3.85	3.80
187	235023	3.95 - 5.85	1.10	0.06	CPRF	4.50	4.06
229	235024	3.30 - 4.90	1.10	0.05	CPRF	5.53	4.52
284	235025	2.60 - 3.95	1.10	0.05	CPRF	6.87	5.09
340	235026	2.20 - 3.30	1.10	0.05	CPRF	8.25	6.42

Notes: Units are Silver Plated Brass. Aluminum is also available.

Standard configuration covers 20% of the Band.

Normal motion is +or- 50 Degrees rotation. Other values available upon request.

Units have tapped holes for Mounting.



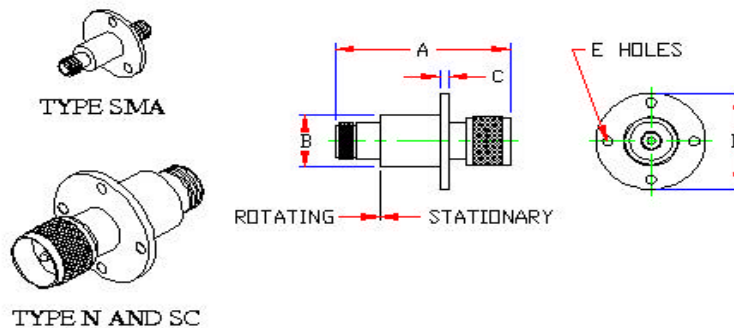
Microtech, Inc. Torsional Joints will help shield your system from torsional stresses. Low VSWR, low Insertion Loss, and High Power Handling are achieved through the use of infinitely variable one-quarter wavelength (1/4) steps. Presenting a more economical solution than a rotary joint, our rugged construction affords you long life under extreme operating conditions. Microtech, Inc. Torsional Joints feature minimum phase WOW, stable phase linearity and designs that lend themselves to high power applications, all at a reasonable cost. If you need a special configuration or a multi-channel rotary joint just contact the factory or our area representative with your requirements. Our complete in-house engineering and production facility is at your disposal.



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BROADBAND COAXIAL ROTARY JOINT SPECIFICATIONS

ELECTRICAL REQUIREMENTS								
COAX SIZE	Model No.	Frequency Range GHz	VSWR Max.	Insertion Loss dB	Peak Power	Average Power		
"N"	235323	DC - 12.4	1.50	0.50	10 kW	1 kW		
"SMA"	235324	DC - 18.0	1.60	0.50	3 kW	50 W		
"SC"	233213	2.0 - 6.0	1.35	0.30	15 kW	1 kW		
MECHANICAL REQUIREMENTS								
COAX SIZE	Model No.	Weight Ozs.	"A" Dim.	"B" Dim.		"C" Dim.	"D" Dim.	"E" Holes
"N"	235323	4.5	2.62	0.88		0.12	1.62	.156 Dia. (4 X) 1.25 Dia. B.C.
"SMA"	235324	0.84	1.38	0.50		0.06	1.00	.130 Dia. (3 X) .75 Dia. B.C.
"SC"	233213	5.5	2.25	0.75		0.12	1.62	.156 Dia. (4 X) 1.25 Dia. B.C.



**TYPE N & SC ARE PLUG/JACK
 TYPE SMA IS JACK/JACK**

Note: Other configurations available on special request. Contact the factory with your requirements.

These Broadband Coaxial Rotary Joints feature rugged construction to withstand tough environmental conditions while delivering premium performance. If you need a special configuration or size, contact the factory with your requirements.



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RECTANGULAR RIGID WAVEGUIDE SPECIFICATIONS

TYPICAL ELECTRICAL SPECIFICATIONS							
EIA WR SIZE	FREQUENCY RANGE (GHz)	MRH ALUMINUM		MRC OFHC COPPER		MRF COMMERCIAL BRONZE	
		*VSWR	**ATTEN.	*VSWR	**ATTEN.	*VSWR	**ATTEN.
22	33.00-50.00	1.05	0.485	1.05	0.310	N/A	
28	26.50-40.00	1.05	0.344	1.05	0.219		
42	18.00-26.50	1.04	0.207	1.04	0.132		
62	12.40-18.00	1.04	0.097	1.04	0.062	1.04	0.085
75	10.00-15.00	1.03	0.077	1.03	0.049	1.03	0.062
90	8.20-12.40	1.03	0.065	1.03	0.041	1.03	0.056
102	7.00-11.00	1.03	0.054	1.03	0.034	1.03	0.048
112	7.05-10.00	1.03	0.042	1.03	0.027	1.03	0.037
137	5.85-8.20	1.02	0.030	1.02	0.019	1.02	0.029
159	4.90-7.05	1.02	0.023	1.02	0.015	1.02	0.020
187	3.95-5.85	1.02	0.021	1.02	0.013	1.02	0.019
229	3.30-4.90	1.02	0.014	1.02	0.009	1.02	0.012
284	2.60-3.95	1.02	0.011	1.02	0.007	1.02	0.009
340	2.20-3.30	1.02	0.009	1.02	0.006	N/A	N/A
430	1.70-2.60	1.02	0.006	1.02	0.004	N/A	N/A
650	1.12-1.70	1.02	0.003	1.02	0.002	N/A	N/A
* VSWR is per 2 Foot Section ** Attenuation is in dB per Foot							

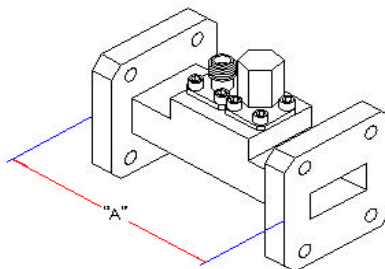
[Ask about Double-ridge Rigid Waveguide and Millimeter Rigid Waveguide.](#)



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LOOP COUPLER SPECIFICATIONS

<i>TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS</i>							
EIA WR SIZE	MODEL No. (see notes)	FREQUENCY RANGE (GHz)	PRIMARY ARM VSWR Max.	COUPLING VARIATION + or - (dB)	FLANGE EQUIV.	"A" DIMENSION (Max. inches)	CONNECTOR
22	240169	33.00- 50.00	1.10	3.0	Cover	3.50	2.9
28	240170	26.50 - 40.00	1.10	2.0	Cover	2.50	2.9
34	240201	22.00 - 33.00	1.10	2.0	Cover	2.50	2.9
42	240171	18.00 - 26.50	1.10	2.0	Cover	2.25	SMA
51	240202	15.00 - 22.00	1.10	1.5	Cover	2.50	SMA
62	240172	12.40 - 18.00	1.10	1.5	Cover	2.50	SMA
75	240173	10.00 - 15.00	1.10	1.5	Cover	3.00	SMA
90	240174	8.20 - 12.40	1.10	1.5	Cover	3.00	SMA
112	240175	7.05 - 10.00	1.10	1.5	Cover	4.00	SMA
137	240176	5.85 - 8.20	1.10	1.0	Cover	5.00	N
159	240177	4.90 - 7.05	1.10	1.0	CPRF	5.00	N
187	240178	3.95 - 5.85	1.10	1.0	CPRF	5.00	N
229	240179	3.30 - 4.90	1.10	1.0	CPRF	6.00	N
284	240180	2.60 - 3.95	1.10	1.0	CPRF	8.00	N
340	240181	2.20 - 3.30	1.10	1.0	CPRF	10.00	N



Notes:

- Standard couplings available are 30, 40, 50, and 60 +/-1dB. Others values available on special order. Specify by adding coupling and style desired as a suffix to the part number. Example: 233317-30.
- Nominal directivity is 15 dB min.

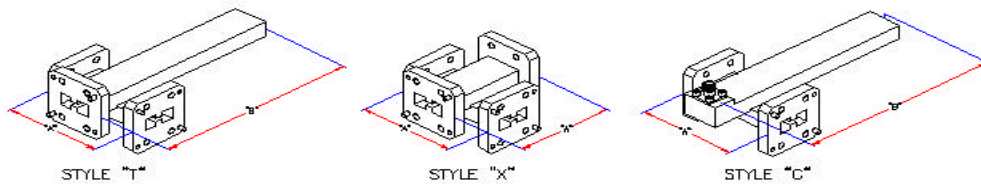


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DOUBLE RIDGED CROSSGUIDE COUPLER SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WRD SIZE	MODEL No. (see notes)	FREQUENCY RANGE (GHz)	PRIMARY ARM VSWR Max.	COUPLING VARIATION + or - (dB)	FLANGE EQUIV.	"A" DIMENSION (Max. inches)	"B" DIMENSION (Max. inches)	STYLE "C" JACK
180	240109	18.0 – 40.0	1.20	5.0	Cover	4.0	6.00	2.9
650	240110	6.5 – 18.0	1.10	5.0	Cover	4.0	8.00	SMA
750	240111	7.5 – 18.0	1.10	4.0	Cover	4.0	8.00	SMA
580	240112	5.8 – 16.0	1.10	4.0	Cover	4.0	8.00	SMA
475	240113	4.75 – 11.0	1.10	3.5	Cover	5.00	9.00	SMA
350	240114	3.5 – 8.2	1.10	3.5	Cover	6.00	12.00	N
200	240115	2.0 – 4.8	1.10	3.5	Cover	10.00	16.00	N



Notes:

- Standard couplings available are 30, 40, 50, and 60. Others values available on special order. Specify by adding coupling and style desired as a suffix to the part number. Example: 240109 -30.
- Coaxial secondary outputs are also available. Contact the factory or our local Manufacturer's Representative for details.
- Nominal directivity is 12 dB.
- Material is 6061/6063 Aluminum.



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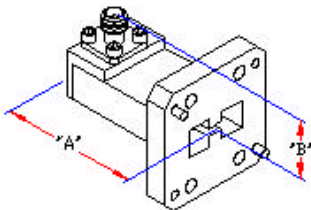
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DOUBLE RIDGED WAVEGUIDE TO COAX ADAPTER SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS									
EIA WRD SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	INSERTION LOSS (dB)	CONNECTOR TYPE *	FLANGE EQUIV.	MATERIAL	"A" DIMENSION (Max. Inches)	"B" DIMENSION (Max. Inches)
180	240130	18.0 – 40.0	1.60	.75	2.9mm/2.4mm	Cover	Aluminum	1.50	0.7
650	240131	6.5 – 18.0	1.25	.50	SMA	Cover	Aluminum	2.0	1.0
750	240132	7.5 – 18.0	1.25	.50	SMA	Cover	Aluminum	2.0	1.0
580	240133	5.8 – 16.0	1.25	.35	SMA	Cover	Aluminum	2.0	1.0
475	240134	4.75 – 11.0	1.25	.35	SMA/N/TNC	Cover	Aluminum	3.0	1.5
350	240135	3.5 – 8.2	1.25	.30	SMA/N/TNC	Cover	Aluminum	5.0	2.0
200	240136	2.0 – 4.8	1.25	.30	SMA/N/TNC	Cover	Aluminum	8.0	3.0

*Standard Waveguide to Coax Adapters are supplied with a female connector.
 Customer to Specify by adding desired connector to part number as a suffix. Example: 240132 -SMA.



Microtech Inc. Waveguide to Coax Adapters are made from a precision extruded tubing with the end caps silver or dip brazed to give you a precise and durable unit for both lab and systems use over the full specified operating band, with a minimum VSWR and Insertion Loss. These units can be built to be pressure tight on request.

Note: Other configurations and specifications available upon request.

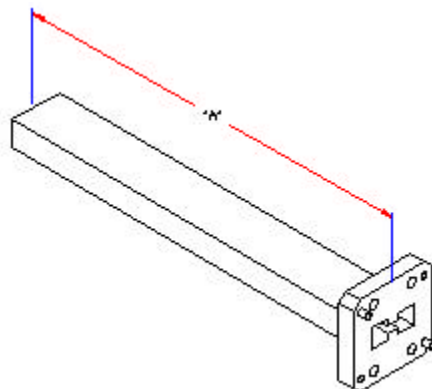
Adapters that conform to MIL-DTL-22641 are also available.
 Contact the factory with your requirements.



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DOUBLE RIDGED LOW POWER TERMINATION SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS							
EIA WRD SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	FLANGE EQUIV.	MATERIAL	AVG. POWER HANDLING (Max. Watts)	"A" DIMENSION (Max. Inches)
180	240116	18.0 – 40.0	1.05	Cover	Aluminum	0.5	6.0
650	240117	6.5 – 18.0	1.03	Cover	Aluminum	3.0	10.0
750	240118	7.5 – 18.0	1.03	Cover	Aluminum	3.0	10.0
580	240119	5.8 – 16.0	1.03	Cover	Aluminum	3.0	12.0
475	240120	4.75 – 11.0	1.03	Cover	Aluminum	3.0	12.0
350	240121	3.5 – 8.2	1.02	Cover	Aluminum	6.0	15.0
200	240122	2.0 – 4.8	1.02	Cover	Aluminum	10.0	24.0



Note: Other configurations, specifications, and power ratings available upon request as well as a large variety of high-power loads available to MIL-D-3954. Contact the factory with your requirements.

Microtech, Inc. low power fixed terminations are designed where a matched load is desired to terminate a waveguide transmission line in a dissipative, nonreflecting component. Also used as standard matched load for the termination of waveguide components.



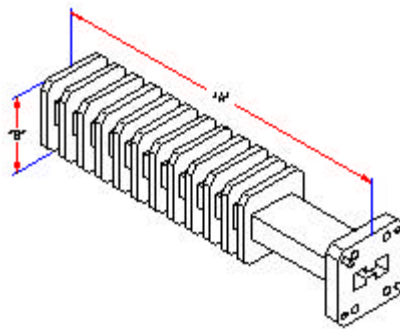
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DOUBLE RIDGED MEDIUM POWER TERMINATION SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WRD SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	FLANGE EQUIV.	AVG. POWER HANDLING (Max. Watts)	Material	"A" DIMENSION (Max inches)	"B" DIMENSION (Max. inches)
180	240123	18.0 – 40.0	1.10	Cover	200	ALUM	6.0	1.00
650	240134	6.5 – 18.0	1.10	Cover	500	ALUM	10.0	1.50
750	240125	7.5 – 18.0	1.10	Cover	500	ALUM	10.0	1.50
580	240126	5.8 – 16.0	1.10	Cover	600	ALUM	12.0	1.50
475	240127	4.75 – 11.0	1.10	Cover	600	ALUM	12.0	2.00
350	240128	3.5 – 8.2	1.07	Cover	1000	ALUM	15.0	3.00
200	240129	2.0 – 4.8	1.07	Cover	1500	ALUM	24.0	5.00



Microtech, Inc. medium power fixed terminations are designed where a matched load is desired to terminate a waveguide transmission line in a dissipative, nonreflecting component. These units require no additional cooling at the rated power level. The fins can be mounted vertically on the unit for optimum convection cooling when the unit is mounted vertically.

Note: Other configurations, specifications, and power ratings available upon request as well as a large variety of lower and higher-power loads available to MIL-D-3954. Contact the factory with your requirements.



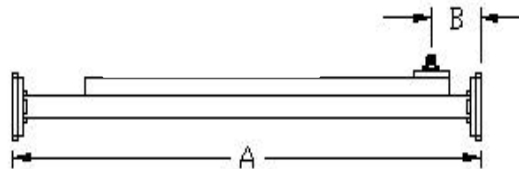
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DOUBLE RIDGED BROADWALL COUPLER SPECIFICATIONS

TYPICAL ELECTRICAL SPECIFICATIONS						
EIA WRD SIZE	MODEL No.	FREQUENCY RANGE (GHz)	COUPLING SENSITIVITY +/- (dB)	COUPLING AVERAGE +/- (dB)	PRIMARY ARM VSWR (Max.)	MINIMUM DIRECTIVITY (dB)
180	240102	18.0 – 40.0	2.0	1.0	1.10	30
650	240103	6.5 – 18.0	1.5	1.0	1.05	35
750	240104	7.5 – 18.0	1.5	1.0	1.05	35
580	240105	5.8 – 16.0	1.5	1.0	1.05	35
475	240106	4.75 – 11.0	1.2	1.0	1.05	35
350	240107	3.5 – 8.2	1.2	1.0	1.05	37
200	240108	2.0 – 4.8	1.2	1.0	1.05	37

TYPICAL MECHANICAL SPECIFICATIONS					
EIA WRD SIZE	MODEL No.	"A" Dim. Max. Inches	"B" Dim. Inches	FLANGE TYPE	COAX STYLE JACK
180	240102	10.0	1.0	Cover	2.4
650	240103	14.0	1.5	Cover	SMA
750	240104	14.0	1.5	Cover	SMA
580	240105	16.0	1.5	Cover	SMA
475	240106	21.0	2.0	Cover	SMA
350	240107	24.0	2.0	Cover	N
200	240108	36.0	3.0	Cover	N



Note: Standard coupling values are 10dB, 20dB, 30dB, and 40dB. Other values and configurations are available upon request. Specify coupling by adding as a suffix. Example 240102-30. Contact factory with your requirements.

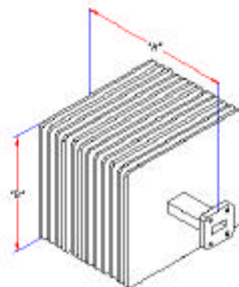


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HIGH POWER TERMINATION SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	FLANGE EQUIV.	AVG. POWER HANDLING (Max. Watts)	Material	"A" DIMENSION (Max inches)	"B" DIMENSION (Max. inches)
22	235557	33.00-50.00	1.10	Cover	150	Brass	6.00	1.50
28	235558	26.50-40.00	1.10	Cover	200	Brass	8.00	1.50
34	239870	22.00-33.00	1.10	Cover	250	Brass	8.00	1.50
42	235559	18.00-26.50	1.10	Cover	250	Brass	8.00	2.00
51	239871	15.00-22.00	1.10	Cover	300	Brass	10.00	2.00
62	235560	12.40-18.00	1.07	Cover	350	Brass	10.00	3.00
75	235561	10.00-15.00	1.07	Cover	400	Brass	10.00	3.00
90	235562	8.20-12.40	1.10	Cover	400	Brass	12.00	4.00
112	235563	7.05-10.00	1.07	Cover	700	Brass	14.00	4.00
137	235564	5.85-8.20	1.05	Cover	1000	Brass	16.00	6.00
159	235565	4.90-7.05	1.06	CPRF	1500	Brass	20.00	6.00
187	235566	3.95-5.85	1.07	Cover	2000	Brass	20.00	8.00
229	235567	3.30-4.90	1.10	CPRF	2000	Brass	22.00	8.00
284	235568	2.60-3.95	1.10	Cover	3000	Alum	24.00	10.00
340	235569	2.20-3.30	1.10	CPRF	4500	Alum	30.00	10.00
430	235570	1.70-2.60	1.10	CPRG	5000	Alum	32.00	10.00
650	235571	1.12-1.70	1.10	CPRF	10000	Alum	36.00	10.00

Note: Other configurations, specifications, and power ratings available upon request as well as a large variety of lower and higher-power loads available to MIL-D-3954. Contact the factory with your requirements.



Microtech, Inc. High power fixed terminations are designed where a matched load is desired to terminate a waveguide transmission line in a dissipative, nonreflecting component. These units require no additional cooling at the rated power level. The fins can be mounted vertically on the unit for optimum convection cooling when the unit is mounted vertically.

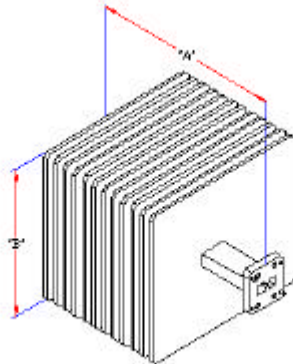


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HIGH POWER DOUBLE RIDGED TERMINATION SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS								
EIA WRD SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	FLANGE EQUIV.	AVG. POWER HANDLING (Max. Watts)	Material	"A" DIMENSION (Max inches)	"B" DIMENSION (Max. inches)
180	240203	18.0 – 40.0	1.20	Cover	300	Aluminum	8.00	3.00
650	240204	6.5 – 18.0	1.10	Cover	1500	Aluminum	12.00	5.00
750	240205	7.5 – 18.0	1.10	Cover	1500	Aluminum	12.00	5.00
580	240206	5.8 – 16.0	1.10	Cover	2000	Aluminum	14.00	6.00
475	240207	4.75 – 11.0	1.10	Cover	2000	Aluminum	16.00	6.00
350	240208	3.5 – 8.2	1.07	Cover	2500	Aluminum	18.00	8.00
200	240209	2.0 – 4.8	1.07	Cover	3500	Aluminum	24.00	10.00

Note: Other configurations, specifications, and power ratings available upon request as well as a large variety of lower and higher-power loads available to MIL-D-3954. Contact the factory with your requirement.



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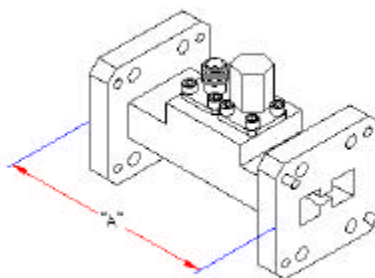
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DOUBLE RIDGED LOOP COUPLER SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS							
EIA WRD SIZE	MODEL No. (see notes)	FREQUENCY RANGE (GHz)	PRIMARY ARM VSWR Max.	COUPLING VARIATION + or - (dB)	FLANGE EQUIV.	"A" DIMENSION (Max. inches)	CONNECTOR
180	240182	18.0 – 40.0	1.30	3.0	Cover	2.50	2.9
650	240183	6.5 – 18.0	1.15	2.0	Cover	2.50	SMA
750	240184	7.5 – 18.0	1.15	2.5	Cover	2.50	SMA
580	240185	5.8 – 16.0	1.10	2.0	Cover	2.50	SMA
475	240186	4.75 – 11.0	1.10	2.0	Cover	4.00	SMA
350	240187	3.5 – 8.2	1.10	2.0	Cover	5.00	SMA
200	240188	2.0 – 4.8	1.10	2.0	Cover	8.00	SMA



Notes:

- Standard couplings available are 30, 40, 50, and 60 +/-1dB. Others values available on special order. Specify by adding coupling and style desired as a suffix to the part number. Example: 233317-30.
- Directivity is 10 dB min.

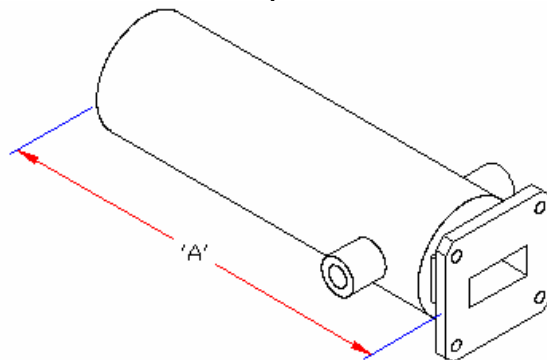


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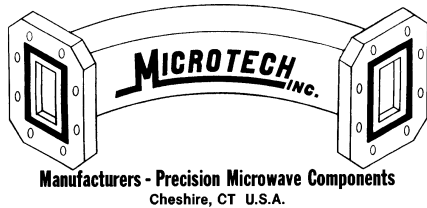
HIGH POWER WATER COOLED TERMINATION SPECIFICATIONS

EIA WR SIZE	MODEL No.	FREQUENCY RANGE (GHz)	VSWR Max.	FLANGE EQUIV.	AVG. POWER HANDLING (Max. Watts)	"A" DIMENSION Max inches)
22	240265	33.00-50.00	1.10	Cover	250	6.00
28	240266	26.50-40.00	1.10	Cover	400	6.00
34	240267	22.00-33.00	1.10	Cover	500	6.00
42	240268	18.00-26.50	1.10	Cover	750	6.00
51	240269	15.00-22.00	1.10	Cover	750	6.00
62	240270	12.40-18.00	1.10	Cover	1000	6.00
75	240271	10.00-15.00	1.10	Cover	1000	7.00
90	240272	8.20-12.40	1.10	Cover	1500	7.00
112	240273	7.05-10.00	1.10	Cover	2000	8.00
137	240274	5.85-8.20	1.10	Cover	3000	9.00
159	240275	4.90-7.05	1.10	CPRF	3000	13.00
187	240276	3.95-5.85	1.10	Cover	4000	13.00
229	240277	3.30-4.90	1.10	CPRF	4000	18.00
284	240278	2.60-3.95	1.10	Cover	5000	18.00

Note: Other configurations, specifications, and power ratings available upon request as well as a large variety of lower and higher-power loads available to MIL-D-3954. Contact the factory with your requirements.



Microtech, Inc. High power water- cooled terminations are designed where a matched load is desired to terminate a waveguide transmission line in a dissipative, nonreflecting component. Add suffix to part number for material. A = Aluminum. B = Brass. Coolant input and output location and size, may vary.



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ORDERING INFORMATION

EXAMPLE - FLEXIBLE WAVEGUIDE ASSEMBLY

MTPS284CHN120B is a straight WR284 Flexible/Twistable waveguide assembly with silver-plated flex, choke to cover flange combination, with a molded neoprene jacket, 120 inches long with brass flanges. See chart below.

EXAMPLE - RIGID WAVEGUIDE ASSEMBLY

MRH112CHP144A is a straight WR112 rigid waveguide assembly, chrome finish overall, with choke and plate flanges, painted, length of 144 inches, with aluminum flanges.

EXAMPLE - RIGID WAVEGUIDE BEND ASSEMBLY

Bends are specified by placing the Degree of the bend and the Plane (E or H) in the fourth grouping of letters. Leg symmetry is specified in the last grouping. For bend assemblies with uneven leg symmetry and flange combinations, flange type on each leg must be specified on the order.

MRC 62 HHI 90E 12 x 6B is a WR62 rigid waveguide bend assembly, OFHC copper, brass iridite finish overall, cover to choke flange combination, 90 degree E-plane bend with a leg symmetry of 12 inches center-line to flange face by 6 inches center-line to flange face, with brass flanges. Flange type on each leg shall be specified on order.

EXAMPLE - RIGID WAVEGUIDE TWIST

Twists are specified by placing the Degree of twist, the letter "T", and the Direction of the twist (CW = clockwise, CCW = counter-clockwise) in the fourth grouping of letters. Overall length is specified in the last grouping of letters.

MRF137GGI 45TCW 6B is a straight WR137 rigid waveguide assembly, commercial bronze, CPRG flanges at both ends, brass iridite finish overall 45 degree twist in the clockwise direction, 6 inches long, with brass flanges.

ORDERING INFORMATION
EXAMPLE: FLEX-WAVEGUIDE ASSEMBLY
MTPS284CHN12BT

*Is a WR284 Flex/Twist waveguide assy.
with silver-plated flex, choke/plate flange,
molded neoprene jacket, 12 in. long, brass flange, Tin finish*

MTPS 284 CH N 12 BT

Waveguide Type

FLEXIBLE
MTPS-FLEXIBLE/TWISTABLE
MCKS-FLEX/NON-TWISTABLE
MSB-SEAMLESS FLEXIBLE- BRASS
MSD-SEAMLESS FLEXIBLE-BERYLLIUM COPPER
MTES-EXTRA FLEXIBLE/TWISTABLE-BRASS
MSN SEAMLESS ELECTROFORMED
MSP SEAMLESS-PHOSPHOR BRONZE
S- Following waveguide type Designates Silver Plate

RIGID
MRH-ALUMINUM 6061
MRA-ALUMINUM 1100
MRC-OFHC COPPER
MRF-COMMERCIAL BRONZE
MRT-COIN SILVER
Rigid assemblies are not jacketed.
All Alum/Bronze & OFHC receive Chromate coating

**WAVEGUIDE
SIZE
284**

JACKET
N - NEOPRENE
S - SILICONE
V - VINYL (8802)
B - BRUSH-ON SILICONE
A - UNJACKETED
P - PAINT (SPECIFY)

FLANGE PLATING	
S- SILVER	N- NICKEL
R- RHODIUM	C- CADMIUM
T- TIN	
Non plated flanges will be Chromated	

FLANGE MATERIAL
A - ALUMINUM
B - BRASS

LENGTH
12 INCHES

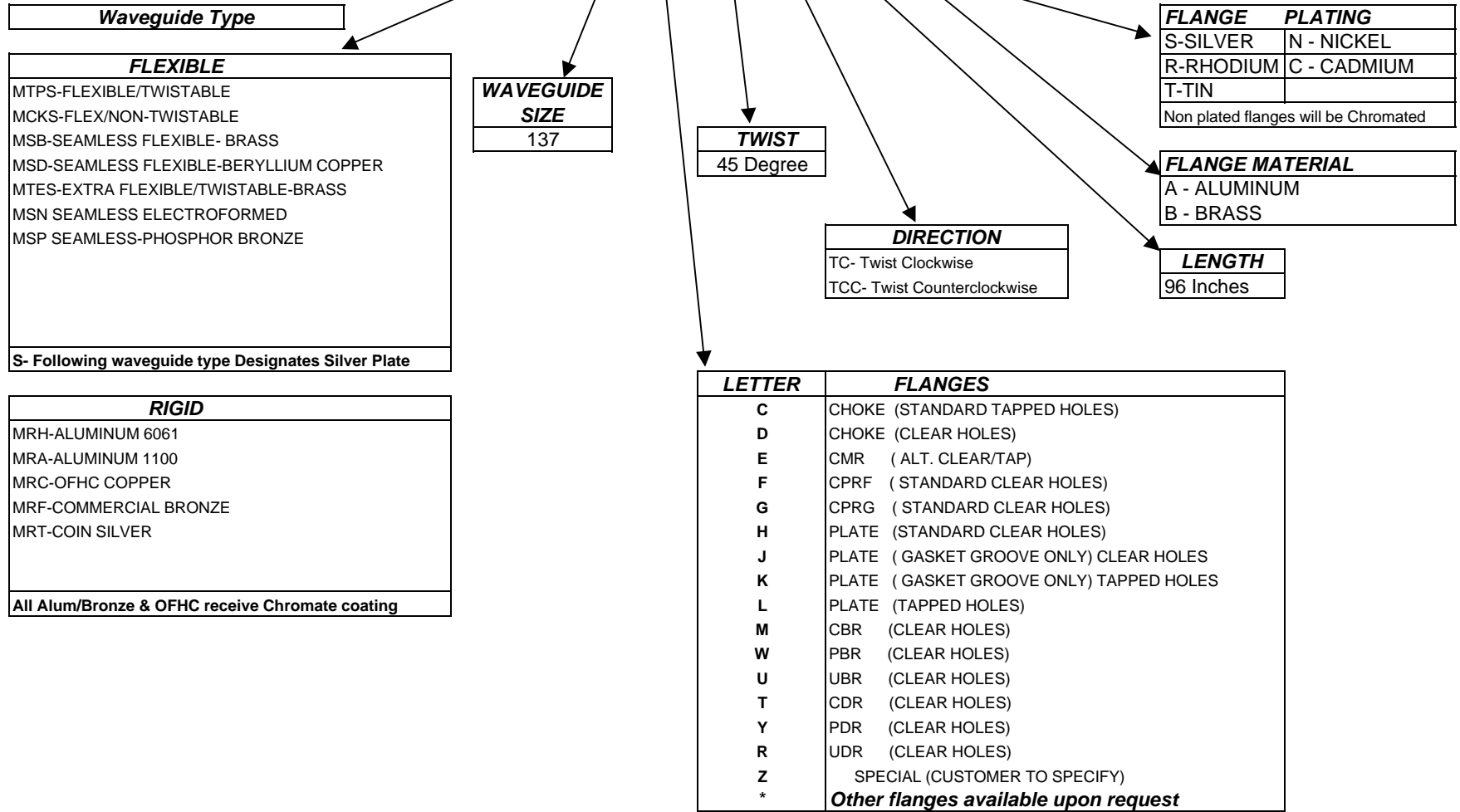
LETTER	FLANGES
C	CHOKE (STANDARD TAPPED HOLES)
D	CHOKE (CLEAR HOLES)
E	CMR (ALT. CLEAR/TAP)
F	CPRF (STANDARD CLEAR HOLES)
G	CPRG (STANDARD CLEAR HOLES)
H	PLATE (STANDARD CLEAR HOLES)
J	PLATE (GASKET GROOVE ONLY) CLEAR HOLES
K	PLATE (GASKET GROOVE ONLY) TAPPED HOLES
L	PLATE (TAPPED HOLES)
M	CBR (CLEAR HOLES)
W	PBR (CLEAR HOLES)
U	UBR (CLEAR HOLES)
T	CDR (CLEAR HOLES)
Y	PDR (CLEAR HOLES)
R	UDR (CLEAR HOLES)
Z	SPECIAL (CUSTOMER TO SPECIFY)
*	Other flanges available upon request

ORDERING PAGE 1

FOR DOUBLE RIDGED SEE PAGE 3

ORDERING INFORMATION
EXAMPLE; RIGID/TWIST-WAVEGUIDE ASSEMBLY
MRHC137FG45TC96BC
Is a WR137 Rigid waveguide assy.
with a CPRF/CPRG flanges with a 45 degree Twist
Clockwise, 96 in. long, with brass flanges, Cadmium Plate

MRC 137 FG 45 TC 96 BC



ORDERING INFORMATION
EXAMPLE-DOUBLE RIDGED FLEX ASSEMBLY
MFPS750AEN12BS
Is a WRD750 Flex/Twist assembly.
with silver-plated flex,gasket/plate flanges
molded neoprene jacket, 12 in.long, with brass flanges plated Silver.

DOUBLE RIDGED ASSEMBLIES

MFPS 750 AE N 12 BS

Waveguide Type

DOUBLE RIDGED FLEXIBLE
MFPS-DOUBLE RIDGED-FLEX/TWIST-BRASS
MDK - DOUBLE RIDGED-NON/TWIST-BRASS
MDB - DOUBLE RIDGED-SEAMLESS-BRASS
MDD-DOUBLE RIDGED-SEAMLESS-BERYLLIUM COPPER
S- Following waveguide type Designates Silver Plate

WAVEGUIDE SIZE
750

JACKET
N - NEOPRENE
S - SILICONE
V - VINYL (8802)
B - BRUSH-ON SILICONE
A - UNJACKETED
P - PAINT (SPECIFY)

FLANGE	PLATING
S-SILVER	N - NICKEL
R-RHODIUM	C-CADMIUM
T-TIN	
Non plated flanges will be Chromated	

FLANGE MATERIAL
A - ALUMINUM
B - BRASS

LENGTH
12 INCHES

DOUBLE RIDGED WAVEGUIDE
MPA-ALUMINUM DOUBLE RIDGED
MPF-BRONZE-DOUBLE RIDGED

All Alum/Bronze & OFHC receive Chromate coating
All Double Ridged Rigid assemblies are not jacketed

LETTER	FLANGES
A	GASKET (ALL TAPPED HOLES)
B	GASKET (ALL CLEAR HOLES)
C	GASKET (ALTERNATE TAP/CLEAR)
D	PLATE (ALL TAPPED HOLES)
E	PLATE (ALL CLEAR HOLES)
F	PLATE (ALTERNATE TAP/CLEAR)
*	Other flanges available upon request



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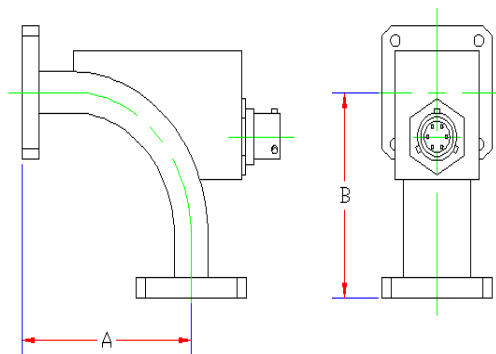
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WAVEGUIDE ARC DETECTORS SPECIFICATIONS

TYPICAL ELECTRICAL / MECHANICAL SPECIFICATIONS									
EIA WR SIZE	MODEL NO.	FREQUENCY RANGE (GHZ)	VSWR MAX.	INSERTION LOSS (DB)	PEAK POWER HANDLING (MIN)	FLANGE EQUIV.	MATERIAL	"A" DIMENSION (MAX. INCHES)	"B" DIMENSION (MAX. INCHES)
22	243209	33.00 - 50.00	1.15	<0.15	40KW	UG383/U	CU ALLOY	2.00	2.00
28	243210	26.50 - 40.00	1.15	<0.15	75KW	UG599/U	CU ALLOY	2.00	2.00
34	243211	22.00 - 33.00	1.15	<0.15	100KW	UG1530/U	CU ALLOY	2.00	2.00
42	243212	18.00 - 26.50	1.15	<0.15	150KW	UG596/U	CU ALLOY	2.00	2.00
51	243213	15.00 - 22.00	1.15	<0.15	200KW	WR 51	CU ALLOY	2.00	2.00
62	243214	12.40 - 18.00	1.15	<1.10	250KW	UG419/U	CU ALLOY	2.00	2.00
75	243215	10.00 - 15.00	1.10	<1.10	325KW	WR 75	CU ALLOY	2.00	2.00
90	243216	8.20 - 12.40	1.10	<1.10	350KW	UG39/U	CU ALLOY	2.00	2.00
102	243217	7.00 - 11.00	1.10	<1.10	400KW	UG1493/U	CU ALLOY	2.00	2.00
112	243218	7.05 - 10.00	1.10	<1.10	400KW	UG51/U	CU ALLOY	2.00	2.00
137	243219	5.85 - 8.20	1.10	<1.10	500KW	UG344/U	CU ALLOY	2.00	2.00
159	243220	4.90 - 7.05	1.10	<1.10	500KW	CPR159F	CU ALLOY	2.50	2.50
187	243221	3.95 - 5.85	1.10	<1.10	700KW	UG1498A/U	AL ALLOY	3.00	3.00
229	243222	3.30 - 4.90	1.10	<1.10	800KW	CPR229F	AL ALLOY	3.00	3.00
284	243223	2.60 - 3.95	1.05	<1.05	1.0MW	UG53	AL ALLOY	3.50	3.50
340	243224	2.20 - 3.30	1.05	<1.05	1.2MW	UG1713/U	AL ALLOY	3.50	3.50
430	243225	1.70 - 2.60	1.05	<1.05	1.5MW	UG1711/U	AL ALLOY	4.00	4.00
650	243226	1.12 - 1.70	1.05	<1.05	2.0MW	UG1714/U	AL ALLOY	6.00	6.00



Microtech Arc Detectors will provide a fault or fired output signal effecting a shut-down of the system prior to damage to your very expensive power source. Microtech has pioneered a method utilizing optics allowing arc detection in a straight waveguide unit when your system might not have space for a more traditional bend.

These detectors are available in waveguide sizes ranging from WR650 to WR22.

They are made available with numerous options. They can be ordered with a led check circuit and also a TTL output with or without a latching circuit. Many popular materials and flange configurations are also available. Consult the factory with your specific design needs. Adapters that conform to MIL-DTL-22641 are also available