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Defense Electronic Systems

WAVEGUIDE COMPONENT
Specifications and Design Handbook

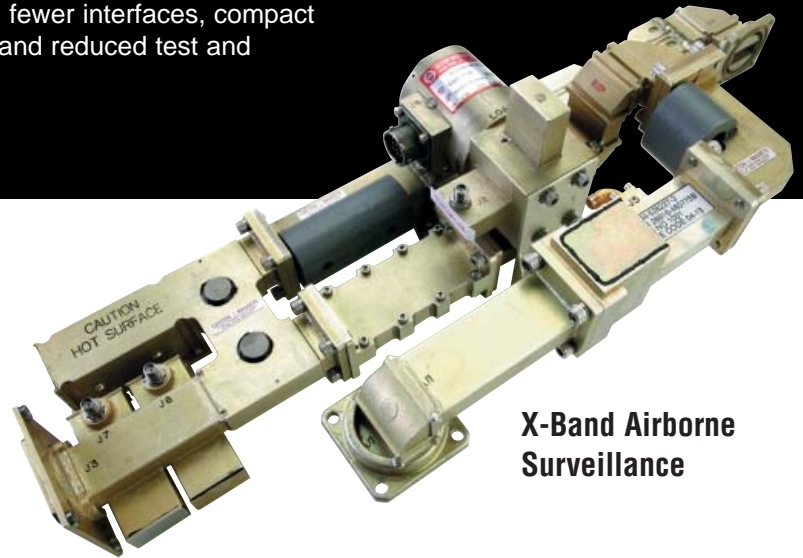
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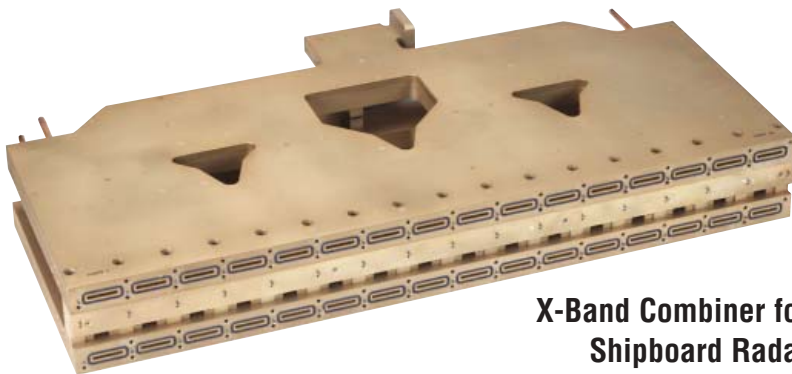
CONTINENTAL MICROWAVE DIVISION

Integrated Waveguide Assemblies

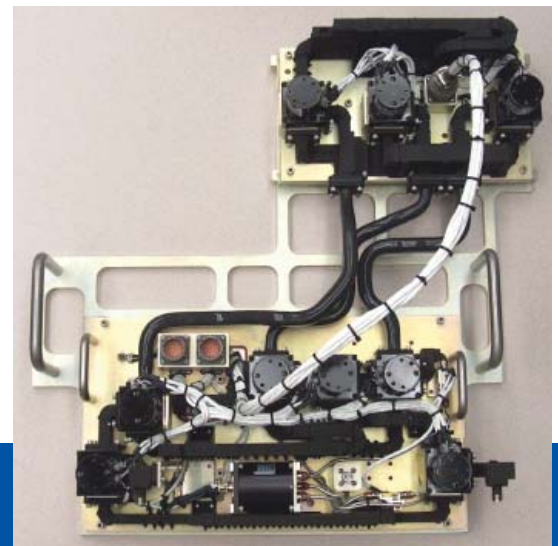
Waveguide components are just the beginning. Continental Microwave Division has the in-house resources and capabilities to design, manufacture and test custom integrated waveguide assemblies. Custom integration offers numerous benefits: enhanced system performance, fewer interfaces, compact mechanical packaging, less individual components, and reduced test and integration times.



X-Band Airborne Surveillance



X-Band Combiner for Shipboard Radar



Ku- & X-Band Airborne Common Data Link Filter Assembly



Ku-Band Airborne Satcom Filter Assembly

FLEXIBLE WAVEGUIDE

**FLEXIBLE
WAVEGUIDE**

RECTANGULAR WAVEGUIDE

**RECTANGULAR
WAVEGUIDE**

DOUBLE-RIDGE WAVEGUIDE

**DOUBLE-RIDGE
WAVEGUIDE**

SPECIAL PRODUCTS

**SPECIAL
PRODUCTS**

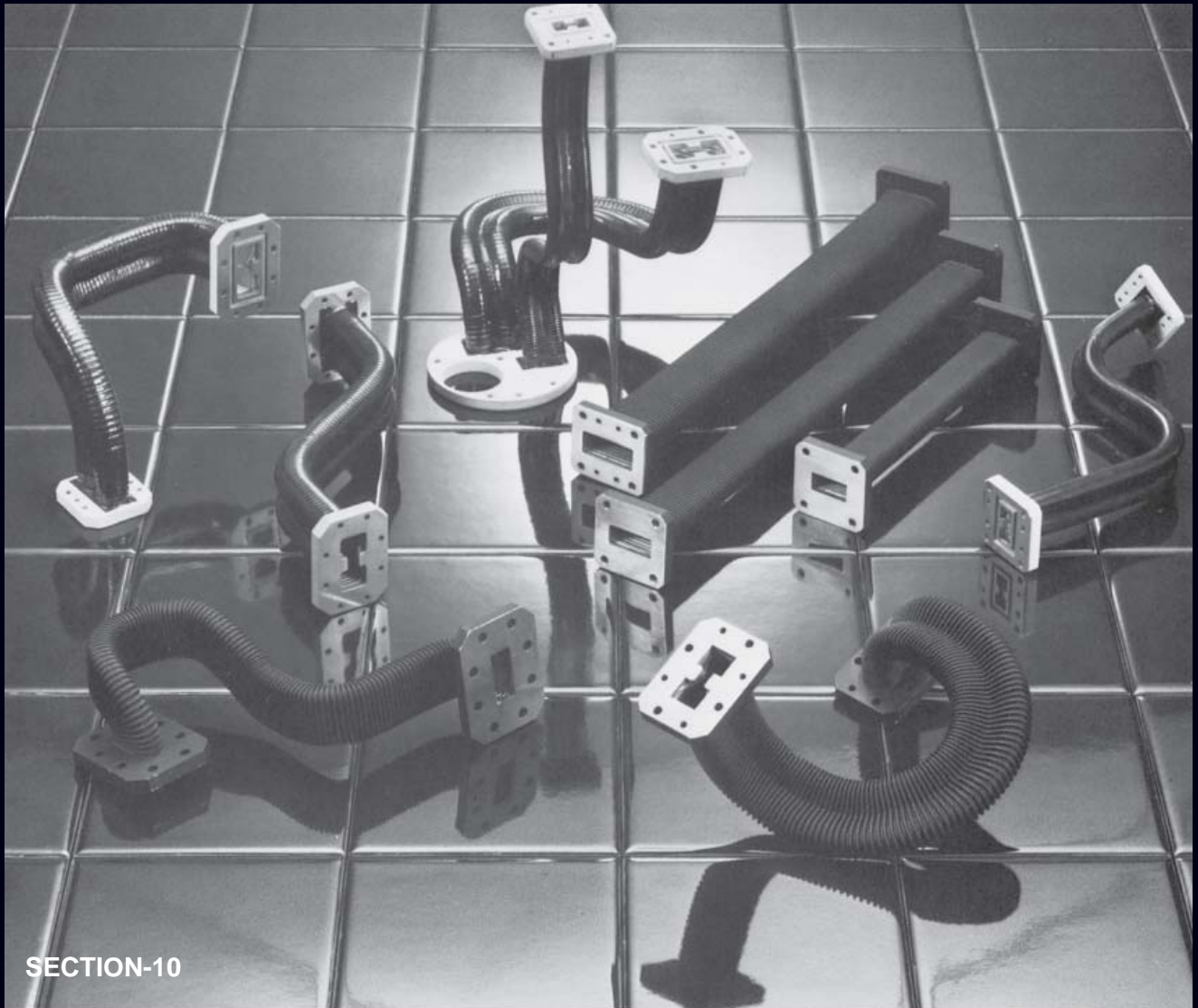
DESIGN AIDS

**DESIGN
AIDS**

FLEXIBLE WAVEGUIDE

SECTION CONTENTS

Rectangular Flexguide	DS-11
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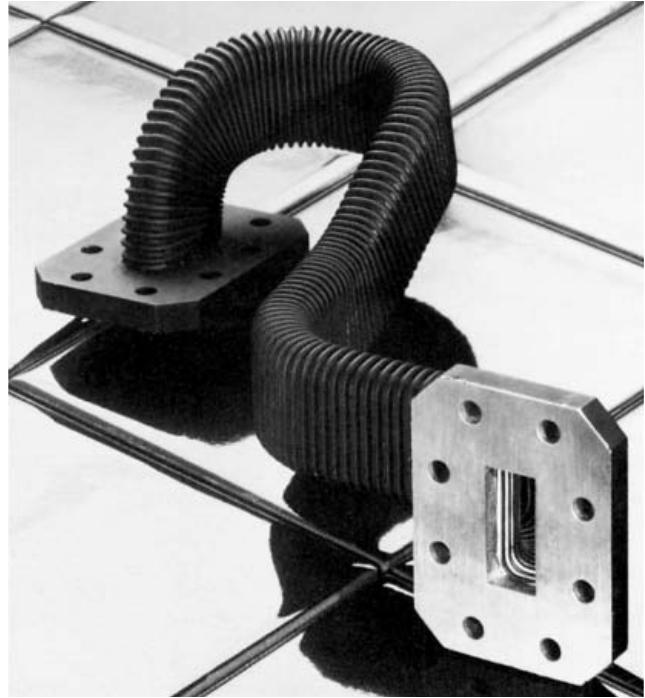
SECTION-10

RECTANGULAR SEAMLESS FLEXGUIDE

PART DESCRIPTION:

- Qualified per MIL-DTL-287/4
- Seamless beryllium copper or phosphor bronze alloy construction
- NO R.F. Leakage
- Pressure tight

CMD offers a standard product line of rectangular seamless corrugated flexible waveguide constructed of silver plated copper alloy thin wall tubing convoluted using a unique hydraulic precision forming process. All units are R-F leak free, stable during dynamic flexure, and pressure tight. Tight E & H plane bends as well as moderate twists may be preformed at CMD to customer supplied drawing.



SPECIFICATIONS:

Model No.	Waveguide Size	Frequency Range (GHz)	**Minimum Bend Radius/Displacement							Pressure PSIG Max
			E Plane Radius	H Plane Radius	Extension & Compression	E Plane Radius	H Plane Radius	Extension & Compression	In./In.	
RFG22...	WR - 22	33.00-50.00	.50	1.00	.060	2.00	4.00	.012	60	
RFG28...	WR - 28	26.50-40.00	.50	1.00	.060	2.00	4.00	.012	60	
RFG34...	WR - 34	22.00-33.00	.62	1.00	.050	2.00	4.00	.010	60	
RFG42...	WR - 42	18.00-26.50	.62	1.25	.050	2.50	5.00	.010	60	
RFG51...	WR - 51	15.00-22.00	.75	1.25	.040	3.00	5.00	.008	60	
RFG62...	WR - 62	12.40-18	.75	1.50	.040	3.00	6.00	.008	60	
RFG75...	WR - 75	10.00-15.00	.87	1.50	.030	3.50	7.00	.006	60	
RFG90...	WR - 90	8.20-12.40	1.12	1.75	.025	4.00	8.00	.005	45	
RFG102...	WR - 102	7.00-11.00	1.50	2.00	.020	4.50	9.00	.004	45	
RFG112...	WR - 112	7.05-10.00	1.50	2.00	.020	4.50	9.00	.004	45	
RFG137...	WR - 137	5.85-8.20	1.75	2.50	.020	5.00	10.00	.004	30	
RFG159...	WR - 159	4.90-7.05	2.00	3.00	.015	6.00	12.00	.003	30	
RFG187...	WR - 187	3.95-5.85	2.25	4.00	.015	7.00	14.00	.003	30	
RFG229...	WR - 229	3.30-4.90	2.50	4.50	.010	8.00	16.00	.002	30	
RFG284...	WR - 284	2.60 - 3.95	2.75	5.00	.010	8.00	16.00	.002	30	

Refer to DS-13 For Electrical Specifications

ORDERING DATA:

TYPICAL PART NO. — (example) **RFG90 - 18 - 1B - 5B - MSR**

MODEL NUMBER: _____

LENGTH: _____

FLANGE 1: _____

FLANGE 2: _____

JACKET MATERIAL: _____

See data sheet number DS-101

BSR - SILICONE RUBBER (Black) BRUSH APPLICATION PER MIL-PRF-23586
 MSR - SILICONE RUBBER (Black) MOLD APPLICATION PER MIL-PRF-23586
 HP - HIGH TEMPERATURE PAINT (Black)
 NC - NO COATING

- Flex material option of CMD unless specified
- * Available in phosphor bronze only
- ** Static bend denotes preformed bend installed by CMD during manufacture.
- Dynamic bending is continuous system application motion.
- Add (B) to P/N for beryllium. Add (P) to P/N for phosphor bronze.



Continental Microwave Division

DS-11
11-06

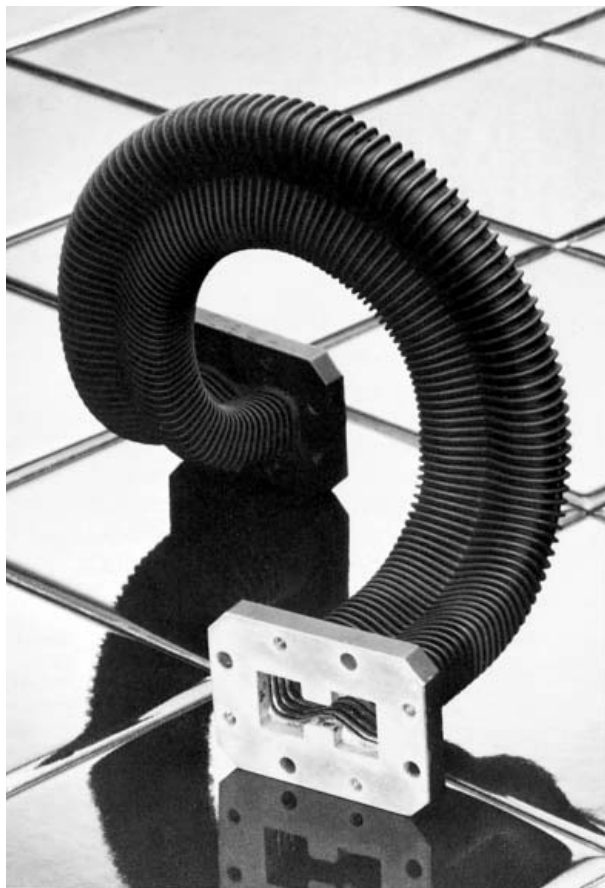
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DOUBLE-RIDGE SEAMLESS FLEXGUIDE

PART DESCRIPTION:

- Qualified per MIL-DTL-28777
- Seamless beryllium copper or phosphor bronze alloy construction
- No R.F. Leakage
- Pressure tight

CMD offers a standard product line of double-ridge seamless flexguides constructed of silver plated copper alloy thin wall tubing convoluted using a unique hydraulic precision forming process. All units are R-F leak free, stable during dynamic flexure, and pressure tight. E & H plane bends as well as moderate twists may be performed at CMD to customer supplied drawing.



SPECIFICATIONS:

Model No.	Waveguide Size	Frequency Range (GHz)	**Minimum Bend Radius/Displacement						Pressure PSIG Max
			Static			Dynamic			
			E Plane Radius	H Plane Radius	Extension & Compression (In./In.)	E Plane Radius	H Plane Radius	Extension & Compression (In./In.)	
DFG750	WRD-750	7.50-18.00	1.50	2.50	.030	4.50	9.00	.006	30
DFG650	WRD-650	6.50-18.00	1.50	2.50	.030	4.50	9.00	.006	30
DFG580	WRD-580	5.80-16.00	1.50	2.50	.030	4.50	9.00	.006	30
DFG475	WRD-475	4.75-11.00	1.50	2.50	.020	4.50	9.00	.004	15

Refer to DS-13 for Electrical Specifications

ORDERING DATA:

TYPICAL PART NO. – (example) **DFG650 - 12 - 1C - 1G - BSR**

MODEL NUMBER: _____

LENGTH: _____

FLANGE 1: _____

FLANGE 2: _____

JACKET MATERIAL: _____

See data sheet number DS-201

HP - HIGH TEMPERATURE PAINT (Black)
 BSR - SILICONE RUBBER (Black) BRUSH APPLICATION PER MIL-PRF-23586
 MSR - SILICONE RUBBER (Black) MOLD APPLICATION PER MIL-PRF-23586
 NC - NO COATING

- Flex Material option of CMD unless otherwise specified
- ** ■ Static bend denotes preformed bend installed by CMD during manufacture. Dynamic bending is continuous system application motion.
- Add (B) to P/N for beryllium. Add (P) to P/N for phosphor bronze.



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DS-12

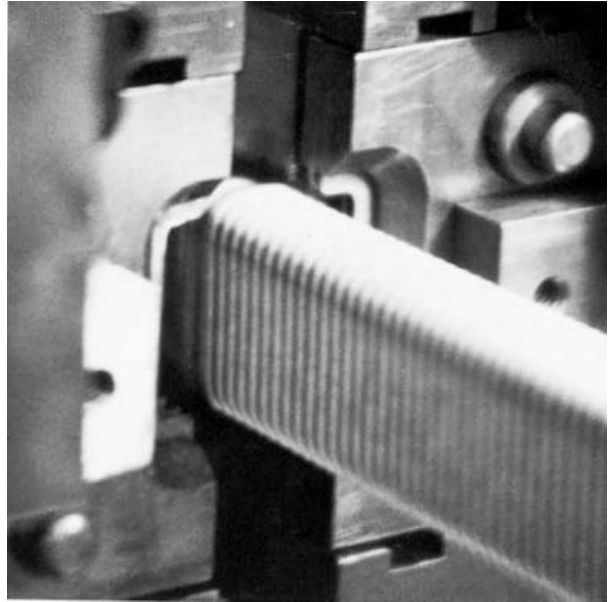
11-06

FLEXIBLE WAVEGUIDE TUBING

PART DESCRIPTION:

- Qualified per MIL-DTL-287
- NO R.F. Leakage
- Pressure tight

CMD offers a standard product line of seamless corrugated flexible waveguide constructed of thin wall tubing convoluted using a unique hydraulic precision forming process. All units are R-F leak free, stable during dynamic flexure, and pressure tight.



SPECIFICATIONS:

Model No	Waveguide Size	Material	Frequency Range (GHz)	Random Length Range (Inches)	Select Length Range (Inches)	(1) Ins. Loss Per Foot (dB)	(2)	(2)	(2)	Recommended Power Rating (at one atmosphere)	
							VSWR (TYP) 12" section	VSWR (TYP) 18" section	VSWR (TYP) 36" section	cw (KW)	peak (KW)
FWT22	WR - 22	Phosphor Bronze	33.00-50.00	4-12	2.0-12.0	.50	1.30	1.40	-	0.3	12
FWT28	WR - 28	Phosphor Bronze	26.50-40.00	6-18	2.0-18.0	.35	1.25	1.30	-	0.4	20
FWT34	WR - 34	Phosphor Bronze	22.00-33.00	12-24	2.0-24.0	.30	1.25	1.30	-	0.5	30
FWT42	WR - 42	Phosphor Bronze	18.00-26.50	12-24	2.0-24.0	.25	1.20	1.25	-	0.6	34
FWT51	WR - 51	Phosphor Bronze	15.00-22.00	12-24	2.0-24.0	.20	1.20	1.25	-	1.0	75
FWT62	WR - 62	Phosphor Bronze	12.40-18.00	12-36	2.0-36.0	.15	1.15	1.20	1.20	1.3	92
FWT75	WR - 75	Phosphor Bronze	10.00-15.00	12-36	2.0-60.0	.12	1.10	1.12	1.20	2.1	124
FWT90	WR - 90	Phosphor Bronze	8.20-12.40	12-60	2.0-60.0	.10	1.10	1.12	1.20	2.2	152
FWT102	WR - 102	Phosphor Bronze	7.00-11.00	12-60	2.0-60.0	.09	1.10	1.12	1.20	3.8	204
FWT112	WR - 112	Phosphor Bronze	7.05-10.00	12-60	2.0-60.0	.08	1.10	1.12	1.20	4.5	256
FWT137	WR - 137	Phosphor Bronze	5.85-8.20	12-60	4.0-60.0	.06	1.08	1.10	1.15	7.5	396
FWT159	WR - 159	Phosphor Bronze	4.90-7.05	12-60	4.0-60.0	.04	1.08	1.10	1.15	11.2	558
FWT187	WR - 187	Phosphor Bronze	3.95-5.85	12-60	4.0-60.0	.03	1.08	1.10	1.15	13.5	660
FWT229	WR - 229	Phosphor Bronze	3.30-4.90	12-60	4.0-60.0	.02	1.08	1.10	1.15	22	1000
FWT284	WR - 284	Phosphor Bronze	2.60-3.95	12-60	4.0-60.0	.02	1.08	1.10	1.15	33.8	1530
FWT750	WR - 750	Phosphor Bronze	7.50-18.00	12-36	4.0-36.0	.20	1.20	1.25	1.38	1.5	18
FWT650	WR - 650	Phosphor Bronze	6.50-18.00	12-36	4.0-36.0	.25	1.28	1.30	1.50	1.2	12
FWT475	WR - 475	Phosphor Bronze	4.75-11.00	12-36	4.0-36.0	.15	1.20	1.25	1.38	2.0	42

(1) Insertion loss specification as shown above is for silver plated tubing per QQ-S-365/.0005 thick.

(2) VSWR specification as shown above is for flanged waveguide sections when tuned for maximum return loss.

All flex waveguide tubing is supplied without plating.

ORDERING DATA:

MODEL NUMBER:

LENGTH:

TYPICAL PART NO. - (example)

FWT90-18



DS-13

11-06

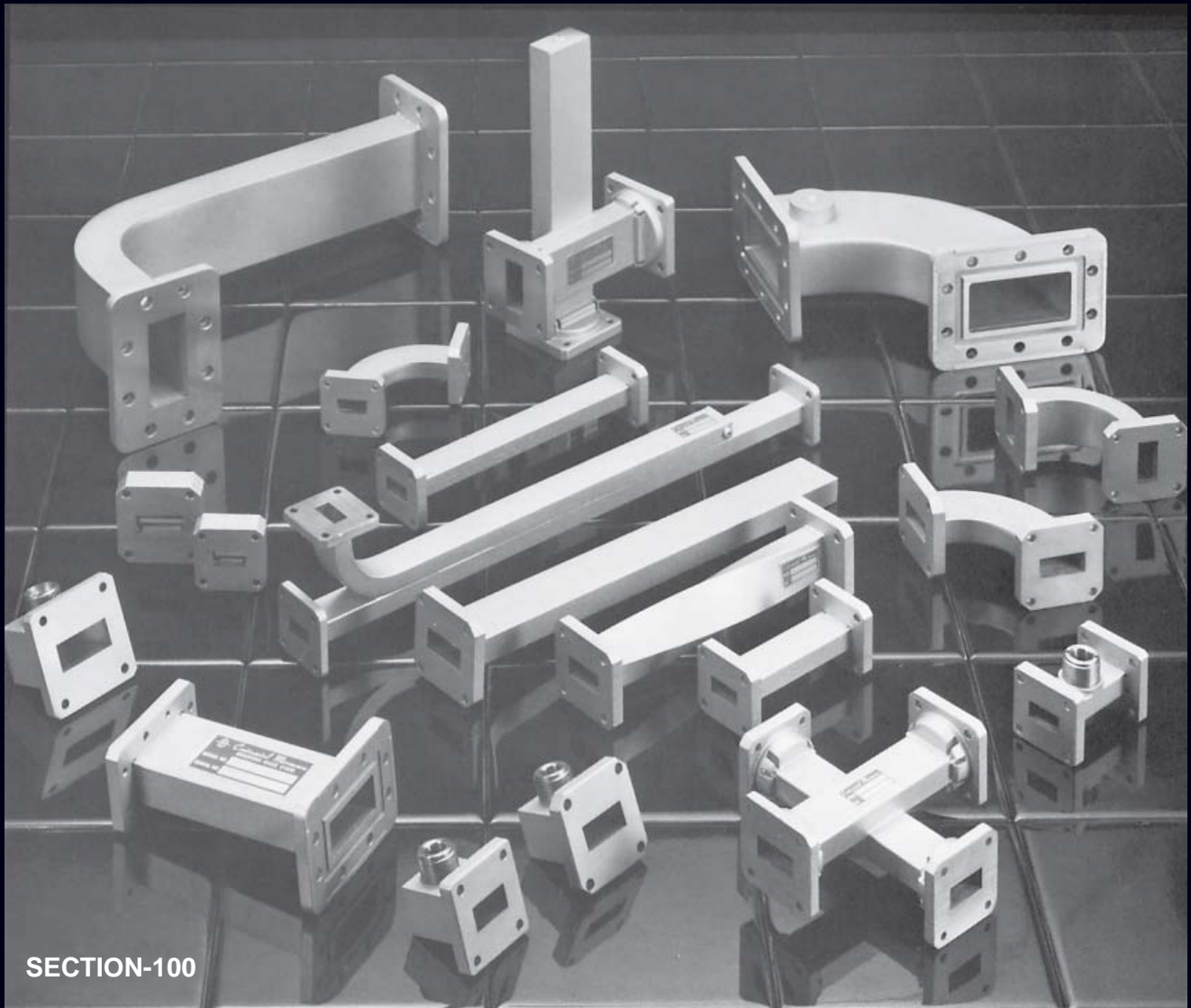
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RECTANGULAR WAVEGUIDE

SECTION CONTENTS

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Waveguide Tubing	DS-102	Directional Couplers	DS-112
Gaskets	DS-103	Hybrid Tees	DS-113
Cast Bends	DS-104	Power Samplers	DS-114
Flanged E-Plane Bends	DS-105	Terminations	DS-115
Flanged H-Plane Bends	DS-106	Pressure Units	DS-116
Twists	DS-107	Pressure Inlets	DS-117
Flanged Straight Sections	DS-108	Drain Units	DS-118
Transitions	DS-109	Pressure Drain Units	DS-119
Adapters	DS-110	Bulkhead Feed Units	DS-120



SECTION-100

FLANGES

PART DESCRIPTION:

CMD offers a standard product line of rectangular waveguide flanges for the waveguides sizes WR-22 thru WR-430. These flanges are provided in either cover, choke, or grooved configurations. Additional sizes, special configurations, and alternate materials are available on request.

RECTANGULAR WAVEGUIDE

MODEL NO.	UG STYLE									CPR STYLE									CMR STYLE			UG STD	FLANGE ILLUSTRATIONS
	COVER			CHOKE			GROOVED			GROOVED			COVER			CONTACT			COVER				
	ALL CLEAR	ALL TAP	ALT TAP & CLEAR	ALL CLEAR	ALL TAP	ALT TAP & CLEAR	ALL CLEAR	ALL TAP	ALT TAP & CLEAR	ALL CLEAR	ALL TAP	ALT TAP & CLEAR	ALL CLEAR	ALL TAP	ALT TAP & CLEAR	ALL CLEAR	ALL TAP	ALT TAP & CLEAR	ALL CLEAR	ALL TAP	ALT TAP & CLEAR		
FLG22	1*	2*	3*				7*	8*	9*													24*	DS-521-522
FLG28	1	2	3				7	8	9													24*	DS-522-523
FLG34	1	2	3				7	8	9													24*	DS-524
FLG42	1	2	3				7	8	9													24*	DS-525-526
FLG51	1	2	3	4	5	6	7	8	9														DS-526-527
FLG62	1	2	3	4	5	6	7	8	9														DS-528-529
FLG67	1	2	3				7	8	9														DS-529-530
FLG75	1	2	3				7	8	9														DS-530-533
FLG75 R/H	1R	2R	3R				7R	8R	9R														DS-533-534
FLG90	1	2	3				7	8	9	10	11	12	13	14	15	16	17	18					DS-534-537
FLG90 R/H	1R	2R	3R				7R	8R	9R														DS-538
FLG96	1	2	3				7	8	9														DS-539
FLG102	1	2	3				7	8	9														DS-540-541
FLG112	1	2	3	4	5	6	7	8	9														DS-541-544
FLG137	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		DS-545-548
FLG159										10	11	12	13	14	15	16	17	18	19	20	21		DS-548-550
FLG187										10	11	12	13	14	15	16	17	18	19	20	21		DS-550-553
FLG229										10	11	12	13	14	15	16	17	18	19	20	21		DS-554-555
FLG284										10	11	12	13	14	15	16	17	18	19	20	21		DS-556-559
FLG284 R/H										10R	11R	12R	13R	14R	15R								DS-559-560
FLG340										10	11	12	13	14	15								DS-560-560A
FLG430										10	11	12	13	14	15	16	17	18					DS-560B-560C

Shaded area indicates CMD standard product.
 *Indicates thru style only. Unless indicated, all flanges offered butt style only.
 Refer to DS-502 for equivalent MIL/JAN designations.
 All CMD flanges are designed to mate with MIL-STD interfaces.

ORDERING DATA:

TYPICAL PART NO. – (example)

FLG90 - 1 - B

MODEL NUMBER: _____

FLANGE STYLE: _____

MATERIAL: A - Aluminum B - Brass



DS-101
11-06

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RIGID WAVEGUIDE TUBING

PART DESCRIPTION:

CMD has rigid waveguide tubing in stock, available in 20 different waveguide sizes. Tubing meets MIL-DTL-85 specifications and is offered in either copper or aluminum.

SPECIFICATIONS:

Model No.*	Waveguide Size	Frequency Range (GHz)	Material (Stock)	Outside Dimensions	Wall Thickness (Nominal)	Theoretical Ins. Loss dB/100ft.
RWT22...	WR - 22	33.00 - 50.00	Copper	.304 x .192	.040	26.00
RWT28...	WR - 28	26.50 - 40.00	Copper	.360 x .220	.040	22.00
			Aluminum			27.50
RWT34...	WR - 34	22.00 - 33.00	Copper	.420 x .250	.040	18.00
			Aluminum			22.50
RWT42...	WR - 42	18.00 - 26.50	Copper	.500 x .250	.040	14.00
			Aluminum			17.50
RWT51...	WR - 51	15.00 - 22.00	Copper	.590 x .335	.040	10.00
			Aluminum			12.50
RWT62...	WR - 62	12.40 - 18.00	Copper	.702 x .391	.040	6.50
			Aluminum			8.20
RWT67...	WR - 67	11.00 - 17.00	Copper	.750 x .420	.040	5.88
			Aluminum			7.35
RWT75...	WR - 75	10.00 - 15.00	Copper	.850 x .475	.050	5.25
			Aluminum			6.50
RWT90...	WR - 90	8.20 - 12.40	Copper	1.000 x .500	.050	4.12
			Aluminum			5.50
RWT96...	WR - 96	7.00 - 17.00	Copper	1.065 x .420	.050	5.25
			Aluminum			7.35
RWT102...	WR - 102	7.00 - 11.00	Copper	1.148 x .638	.064	2.90
			Aluminum			3.70
RWT112...	WR - 112	7.05 - 10.00	Copper	1.250 x .625	.064	2.75
			Aluminum			3.50
RWT137...	WR - 137	5.85 - 8.20	Copper	1.500 x .750	.064	2.00
			Aluminum			2.50
RWT159...	WR - 159	4.90 - 7.05	Copper	1.718 x .923	.064	1.50
			Aluminum			2.10
RWT187...	WR - 187	3.95 - 5.85	Copper	2.000 x 1.000	.064	1.40
			Aluminum			1.75
RWT229...	WR - 229	3.30 - 4.90	Copper	2.418 x 1.273	.064	.93
			Aluminum			1.35
RWT284...	WR - 284	2.60 - 3.95	Copper	3.000 x 1.500	.080	.73
			Aluminum			.95
RWT284R/H...	WR - 284 R/H	2.60 - 3.95	Aluminum	3.000 x .830	.080	1.59
RWT340...	WR - 340	2.20 - 3.30	Aluminum	3.560 x 1.860	.080	.68
RWT430...	WR - 430	1.70 - 2.60	Aluminum	4.460 x 2.310	.080	.49

*Indicates Model No. See ORDERING DATA for complete part number.

• Refer to DS-501 for additional waveguide specifications

ORDERING DATA:

TYPICAL PART NO. – (example) **RWT90 - A - 60**

MODEL NUMBER: _____

MATERIAL: A - Aluminum C - Copper

LENGTH: IN INCHES _____



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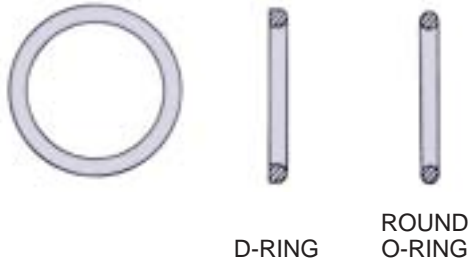
DS-102

11-06

GASKETS (UG-style)

SPECIFICATIONS:

FOR PRESSURE SEALING AND EMI APPLICATIONS



PART DESCRIPTION:

CMD stocks a wide variety of fluorosilicone and conductive silicone rectangular waveguide UG style gaskets. These gaskets are manufactured from a silicone fluorolastomer compound and are designed to mate with the CMD UG style flange series as noted per data sheet number DS-101. Available UG-styles are noted below.

Model No.*	Waveguide Size	Gasket Silicone (S)	Material Conductive (C)
GSK22...	WR - 22	S	-
GSK28...	WR - 28	S	C
GSK34...	WR - 34	S	C
GSK42...	WR - 42	S	C
GSK51...	WR - 51	S	C
GSK62...	WR - 62	S	C
GSK67...	WR - 67	S	C
GSK75-1...	WR - 75	S	C
GSK90-1...	WR - 90	S	C
GSK102...	WR - 102	S	C**
GSK112-1...	WR - 112	S	C
GSK137-1...	WR - 137	S	C**
GSK187-1...	WR - 187	S	C**
GSK284-1...	WR - 284	S	C

*Indicates Model Number. See ORDERING DATA for complete part number.

**Indicates available in Round Conductive only.

ORDERING DATA:

TYPICAL PART NO. – (example) **GSK90-1 - S**

MODEL NUMBER: _____

MATERIAL: S - SILICONE RUBBER O-RING C - CONDUCTIVE

- All Silicone Rubber O-Rings are round.
- Conductive gaskets are D-Ring with exception of WR - 102, WR - 137 and WR - 187



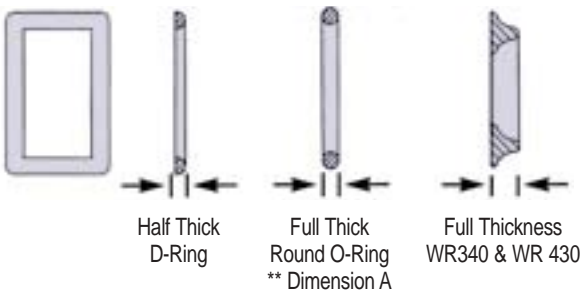
DS-103A
11-06

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GASKETS (CPR-style)

SPECIFICATIONS:

FOR PRESSURE SEALING AND EMI APPLICATIONS



PART DESCRIPTION:

CMD stocks a wide variety of fluorosilicone and conductive silicone rectangular waveguide CPR style gaskets. These gaskets are manufactured from a silicone fluorolastomer compound and are designed to mate with the CMD CPR style flange series as noted per data sheet number DS-101. Available CPR-styles are noted below.

Model No.*	Waveguide Size	Gasket Material		
		Full Thickness	Half Thickness	
GSK75-2...	WR - 75	S	S	-
GSK90-2...	WR - 90	S	S	C
GSK96...	WR - 96	N/A	S	-
GSK112-2...	WR - 112	S	S	C
GSK137-2...	WR - 137	S	S	C
GSK159...	WR - 159	S	S	C
GSK187.2...	WR - 187	S	S	C
GSK229...	WR - 229	S	S	-
GSK284-2...	WR - 284	S	S	C
GSK284 R/H...	WR - 284 R/H	-	S	-
GSK340...	WR - 340	S	S	-
GSK430...	WR - 430	S	S	-

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. - (example) **GSK90 - 2 - H - C**
GSK90 - 2 - F

MODEL NUMBER: _____

**DIMENSION A: F - FULL THICKNESS H - HALF THICKNESS

MATERIAL (HALF THICKNESS ONLY): S - SILICONE RUBBER C - CONDUCTIVE SILICONE

(FULL THICKNESS ONLY): S - SILICONE RUBBER ONLY



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DS-103B

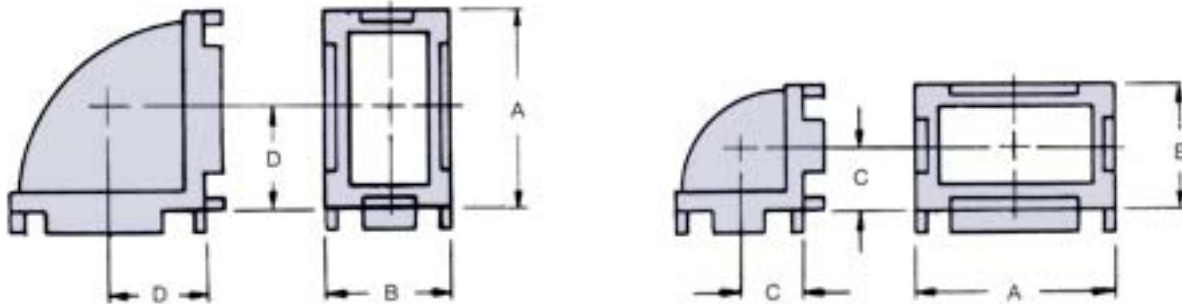
11-06

CAST BENDS

PART DESCRIPTION:

CMD offers a solution to rigid waveguide sub-assembly complex bend problems with a standard product line of E-plane and H-plane cast bends available at a 90° bend angle. Available materials are aluminum and beryllium copper.

SPECIFICATIONS:



Model No.*	Waveguide Size	Frequency Range (GHz)	Dimensions			
			A	B	C E-Plane	D H-Plane
C...B28...	WR - 28	26.50 - 40.00	.44	.30	.14	.21
C...B34...	WR - 34	22.00 - 33.00	.50	.34	.17	.26
C...B42...	WR - 42	18.00 - 26.50	.60	.35	.17	.30
C...B51...	WR - 51	15.00 - 22.00	.71	.45	.19	.31
C...B62...	WR - 62	12.40 - 18.00	.81	.50	.25	.37
C...B75...	WR - 75	10.00 - 15.00	.94	.56	.31	.50
C...B90...	WR - 90	8.20 - 12.40	1.12	.63	.33	.58
C...B102...	WR - 102	7.00 - 11.00	1.25	.83	.38	.64
C...B112...	WR - 112	7.05 - 10.00	1.38	.75	.34	.66
C...B137...	WR - 137	5.85 - 8.20	1.63	.88	.44	.81
C...B159...	WR - 159	4.90 - 7.05	1.85	1.05	.55	1.00
C...B187...	WR - 187	3.95 - 5.85	2.12	1.12	.56	1.06
C...B229...	WR - 229	3.30 - 4.90	2.55	1.41	.72	1.23
C...B284...	WR - 284	2.60 - 3.95	3.14	1.63	.78	1.53
C...B284 R/H...	WR - 284 R/H	2.60 - 3.95	3.14	.97	.46	1.53

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example)

C E B90 - A

MODEL NUMBER: E or H (BEND)

MATERIAL: A - ALUMINUM B - BERYLLIUM COPPER

■ Bend angle other than 90° available on request.



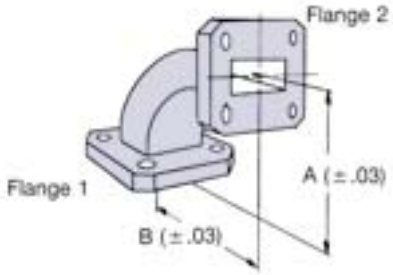
Continental Microwave Division

DS-104
11-06

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RIGID E-BEND (with flanges)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of formed E-bends covering the waveguide sizes WR - 22 thru WR - 430. VSWR is less than 1.10 maximum over the full waveguide bandwidth while insertion loss is equivalent to straight waveguide sections. Additional sizes, configurations and combinations are available on request.

Model No.*	Waveguide Size	Frequency Range (GHz)	Inside Bend Radius		Dimensions A or B(Min)	
			Aluminum	Copper	Aluminum	Copper
REB22...	WR - 22	33.00 - 50.00	-	.50	-	1.23
REB28...	WR - 28	26.50 - 40.00	.50	.50	1.24	1.24
REB34...	WR - 34	22.00 - 33.00	.50	.50	1.26	1.26
REB42...	WR - 42	18.00 - 26.50	.50	.50	1.26	1.26
REB51...	WR - 51	15.00 - 22.00	.50	.50	1.30	1.30
REB62...	WR - 62	12.40 - 18.00	.50	.50	1.33	1.33
REB75...	WR - 75	10.00 - 15.00	.62	.62	1.61	1.61
REB90...	WR - 90	8.20 - 12.40	.75	.75	1.75	1.75
REB102...	WR - 102	7.00 - 11.00	.88	.88	2.06	2.06
REB112...	WR - 112	7.05 - 10.00	.88	.88	2.06	2.06
REB137...	WR - 137	5.85 - 8.20	1.00	1.00	2.25	2.25
REB159...	WR - 159	4.90 - 7.05	1.25	1.25	2.71	2.71
REB187...	WR - 187	3.95 - 5.85	1.50	1.50	3.00	3.00
REB229...	WR - 229	3.30 - 4.90	2.00	2.00	3.64	3.64
REB284...	WR - 284	2.60 - 3.95	2.50	2.50	5.00	5.00
REB284 R/H...	WR - 284 R/H	2.60 - 3.95	2.00	-	4.04	-
REB340...	WR - 340	2.20 - 3.30	4.00	-	7.31	-
REB430...	WR - 430	1.70 - 2.60	6.00	-	9.79	-

*Indicates Model Number. See ORDERING DATA for complete part number

ORDERING DATA:

TYPICAL PART NO. - (example) **REB90 - 1A - 5A - 5.25 - 7.50 - A**

MODEL NUMBER: _____

FLANGE 1: _____

FLANGE 2: _____ See data sheet number DS-101.

DIMENSION A: _____ LENGTH IN INCHES (MIN. UP TO 120 INCHES)

DIMENSION B: _____ LENGTH IN INCHES (MIN. UP TO 120 INCHES)

MATERIAL: _____ A - ALUMINUM C - COPPER

FINISH: _____ CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Bend other than 90° available on request
- Finish coat other than noted available on request
- Refer to DS-504 for CMD bend radius standards



Continental Microwave Division

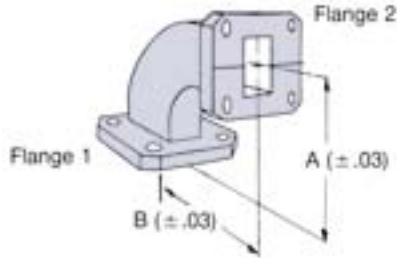
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DS-105

11-06

RIGID H-BEND (with flanges)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of formed H-bends covering the waveguide sizes WR - 22 thru WR - 430. VSWR is less than 1.10 maximum over the full waveguide bandwidth while insertion loss is equivalent to straight waveguide sections. Additional sizes, configurations and combinations are available on request.

Model No.*	Waveguide Size	Frequency Range (GHz)	Inside Bend Radius		Dimensions A or B(Min)	
			Aluminum	Copper	Aluminum	Copper
RHB22...	WR - 22	33.00 - 50.00	—	.50	—	1.28
RHB28...	WR - 28	26.50 - 40.00	.62	.62	1.31	1.31
RHB34...	WR - 34	22.00 - 33.00	.62	.62	1.34	1.34
RHB42...	WR - 42	18.00 - 26.50	.62	.62	1.38	1.38
RHB51...	WR - 51	15.00 - 22.00	.62	.62	1.55	1.55
RHB62...	WR - 62	12.40 - 18.00	.62	.62	1.60	1.60
RHB75...	WR - 75	10.00 - 15.00	.75	.75	1.93	1.93
RHB90...	WR - 90	8.20 - 12.40	.75	.75	2.00	2.00
RHB102...	WR - 102	7.00 - 11.00	1.00	1.00	2.45	2.45
RHB112...	WR - 112	7.05 - 10.00	1.00	1.00	2.50	2.50
RHB137...	WR - 137	5.85 - 8.20	1.25	1.25	2.88	2.88
RHB159...	WR - 159	4.90 - 7.05	2.00	2.00	3.86	3.86
RHB187...	WR - 187	3.95 - 5.85	2.25	2.25	4.25	4.25
RHB229...	WR - 229	3.30 - 4.90	2.50	2.50	4.71	4.71
RHB284...	WR - 284	2.60 - 3.95	3.00	3.00	6.25	6.25
RHB284 R/H...	WR - 284 R/H	2.60 - 3.95	3.50	—	6.63	—
RHB340...	WR - 340	2.20 - 3.30	6.00	—	10.16	—
RHB430...	WR - 430	1.70 - 2.60	8.00	—	12.86	—

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. – (example)	RHB90 - 1A - 5A - 5.25 - 7.50 - A
MODEL NUMBER:		
FLANGE 1:		
FLANGE 2:	See data sheet number DS-101.	
DIMENSION A:	LENGTH IN INCHES (MIN. UP TO 120 INCHES)	
DIMENSION B:	LENGTH IN INCHES (MIN. UP TO 120 INCHES)	
TUBING:	A - ALUMINUM C - COPPER	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Bend other than 90° available on request
- Finish coat other than noted available on request
- Refer to DS-504 for CMD bend radius standards



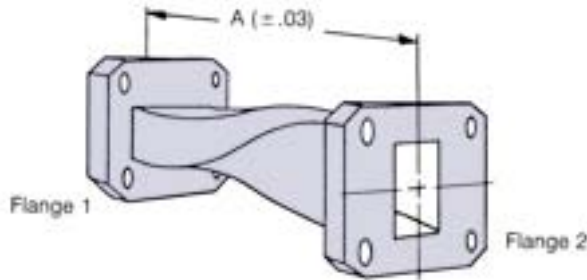
Continental Microwave Division

DS-106
11-06

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RIGID TWIST (with flanges)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of formed twist sections covering the waveguide sizes WR - 22 thru WR - 430. VSWR is less than 1.10 maximum over the full waveguide bandwidth while insertion loss is equivalent to straight waveguide sections. Additional sizes, configurations and combinations are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Minimum Angular Twist Length		Dimension A (Min)	
			Aluminum	Copper	Aluminum	Copper
RT22...	WR - 22	33.00 - 50.00	-	1.00	-	2.26
RT28...	WR - 28	26.50 - 40.00	1.00	1.00	2.26	2.26
RT34...	WR - 34	22.00 - 33.00	1.06	1.06	2.32	2.32
RT42...	WR - 42	18.00 - 26.50	1.12	1.12	2.38	2.38
RT51...	WR - 51	15.00 - 22.00	1.18	1.18	2.44	2.44
RT62...	WR - 62	12.40 - 18.00	1.25	1.25	2.51	2.51
RT75...	WR - 75	10.00 - 15.00	1.50	1.50	3.00	3.00
RT90...	WR - 90	8.20 - 12.40	1.75	1.75	3.25	3.25
RT102...	WR - 102	7.00 - 11.00	2.00	2.00	3.75	3.75
RT112...	WR - 112	7.05 - 10.00	2.00	2.00	3.75	3.75
RT137...	WR - 137	5.85 - 8.20	2.50	2.50	4.25	4.25
RT159...	WR - 159	4.90 - 7.05	3.00	3.00	5.00	5.00
RT187...	WR - 187	3.95 - 5.85	4.00	4.00	6.00	6.00
RT229...	WR - 229	3.30 - 4.90	5.00	5.00	7.50	7.50
RT284...	WR - 284	2.60 - 3.95	6.00	6.00	9.50	9.50
RT284 R/H...	WR - 284 R/H	2.60 - 3.95	6.00	-	9.50	-
RT340...	WR - 340	2.20 - 3.30	10.00	-	14.76	-
RT430...	WR - 430	1.70 - 2.60	12.00	-	17.26	-

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. - (example)	RT90 - 1A - 5A - 90° - 6.00 - A
MODEL NUMBER:	[Redacted]	
FLANGE 1:	[Redacted]	
FLANGE 2:	See data sheet number DS-101.	
ANGULAR TWIST:	SPECIFY ANGLE	
DIMENSION A:	LENGTH IN INCHES (MIN. UP TO 120 INCHES)	
MATERIAL:	A - ALUMINUM C - COPPER	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- CCW twist depicted. Twist direction option of CMD unless otherwise specified
- Finish coat other than noted available on request
- Refer to DS-504 for CMD twist length standards



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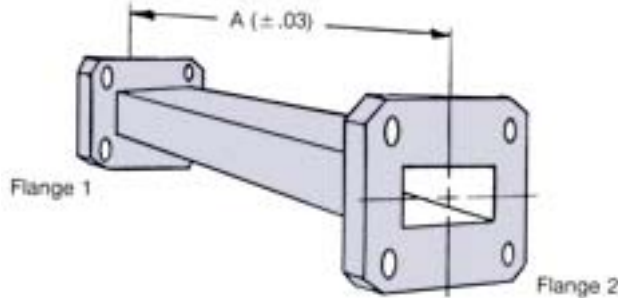
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DS-107

11-06

RIGID STRAIGHT *(with flanges)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of flanged straight sections covering the waveguide sizes WR - 22 to WR - 430. VSWR is less than 1.06 typical over the full waveguide bandwidth for most waveguide sizes while insertion loss is equivalent to waveguide tubing per MIL-W-85.

Model No. *	Waveguide Size	Frequency Range (GHz)	Materials
RS22...	WR - 22	33.00 - 50.00	Copper
RS28...	WR - 28	26.50 - 40.00	Aluminum/Copper
RS34...	WR - 34	22.00 - 33.00	Aluminum/Copper
RS42...	WR - 42	18.00 - 26.50	Aluminum/Copper
RS51...	WR - 51	15.00 - 22.00	Aluminum/Copper
RS62...	WR - 62	12.40 - 18.00	Aluminum/Copper
RS75...	WR - 75	10.00 - 15.00	Aluminum/Copper
RS90...	WR - 90	8.20 - 12.40	Aluminum/Copper
RS102...	WR - 102	7.00 - 11.00	Aluminum/Copper
RS112...	WR - 112	7.05 - 10.00	Aluminum/Copper
RS137...	WR - 137	5.85 - 8.20	Aluminum/Copper
RS159...	WR - 159	4.90 - 7.05	Aluminum/Copper
RS187...	WR - 187	3.95 - 5.85	Aluminum/Copper
RS229...	WR - 229	3.30 - 4.90	Aluminum/Copper
RS284...	WR - 284	2.60 - 3.95	Aluminum/Copper
RS284 R/H...	WR - 284 R/H	2.60 - 3.95	Aluminum
RS340...	WR - 340	2.20 - 3.30	Aluminum/Copper
RS430...	WR - 430	1.70 - 2.60	Aluminum/Copper

*Indicates Model Number. See ORDERING DATA for complete part number

ORDERING DATA:

	TYPICAL PART NO. – (example)	RS90 - 1A - 5A - 5.50 - A
MODEL NUMBER:	[Redacted]	
FLANGE 1:	[Redacted]	
FLANGE 2:	See data sheet number DS-101.	
DIMENSION A:	LENGTH IN INCHES (144.0 MAX.)	
MATERIAL:	A - ALUMINUM C - COPPER	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Flanges other than noted available on request.
- Finish other than noted available on request



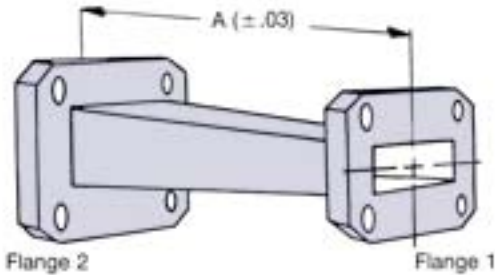
Continental Microwave Division

DS-108
11-06

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TRANSITION (*flanged*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of fabricated waveguide transitions designed to interconnect different size waveguide components in a minimum space while maintaining a VSWR of 1.10 maximum in the overlap frequency bands. The standard rectangular sizes from WR - 22 thru WR - 430 are reflected on this data sheet. Additional sizes, extended range, and custom design configurations are available on request.

Model No. *	Frequency Range (GHz)	Dim. A	Model No. *	Frequency Range (GHz)	Dim. A
WT22 - 28...	33.00 - 40.00	4.00	WT102 - 137...	7.00 - 8.20	7.00
WT28 - 34...	26.50 - 33.00	4.00	WT112 - 137...	7.05 - 8.20	7.00
WT34 - 42...	22.00 - 26.50	4.00	WT137 - 159...	5.85 - 7.05	8.00
WT42 - 51...	18.00 - 22.00	4.00	WT159 - 187...	4.90 - 5.85	9.00
WT51 - 62...	15.00 - 18.00	4.00	WT187 - 229...	3.95 - 4.90	10.00
WT62 - 75...	12.40 - 15.00	4.00	WT229 - 284	3.30 - 3.95	11.00
WT75 - 90...	10.00 - 12.40	5.00	WT284 - 284 R/H...	2.60 - 3.95	10.00
WT90 - 102...	8.20 - 11.00	6.00	WT284 - 340...	2.60 - 3.30	12.00
WT90 - 112...	8.20 - 10.00	6.00	WT340 - 430...	2.20 - 2.60	15.00
WT102 - 112...	7.05 - 10.00	6.00			

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **WT90 - 112 - 1A - 5A - A**

MODEL NUMBER: _____

FLANGE 1: _____

FLANGE 2: _____ See data sheet number DS-101.

MATERIAL: A - ALUMINUM B - BRASS

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Materials other than noted available upon request
- Finish coat other than noted available on request



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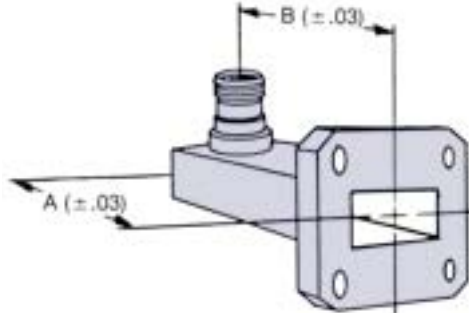
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DS-109

11-06

ADAPTER (waveguide to coax)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of precision rectangular waveguide-to-coax adapters constructed of aluminum or copper and covering the waveguide sizes WR - 22 thru WR - 430. VSWR over the full waveguide bandwidth is 1.10 typical for most models, or that of the coaxial connector selected. Additional sizes including reduced height, extended range, and custom design configurations are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions		Recommended Power Rating** Reference next page for detailed specification
			A	B	
RA22...	WR - 22	33.00 - 50.00	1.50	1.20	
RA28...	WR - 28	26.50 - 40.00	1.50	1.20	
RA34...	WR - 34	22.00 - 33.00	1.50	1.20	
RA42...	WR - 42	18.00 - 26.50	1.50	1.20	
RA51...	WR - 51	15.00 - 22.00	1.50	1.20	
RA62...	WR - 62	12.40 - 18.00	2.20	1.70	
RA75...	WR - 75	10.00 - 15.00	2.20	1.70	
RA90...	WR - 90	8.20 - 12.40	2.20	1.70	
RA102...	WR - 102	7.00 - 11.00	2.50	1.80	
RA112...	WR - 112	7.05 - 10.00	2.50	1.80	
RA137...	WR - 137	5.85 - 8.20	2.65	2.00	
RA159...	WR - 159	4.90 - 7.05	2.80	2.25	
RA187...	WR - 187	3.95 - 5.85	3.00	2.35	
RA229...	WR - 229	3.30 - 4.90	3.00	2.20	
RA284...	WR - 284	2.60 - 3.95	3.75	2.75	
RA284 R/H...	WR - 284 R/H	2.60 - 3.95	3.75	2.75	
RA340...	WR - 340	2.20 - 3.30	4.00	2.75	
RA430...	WR - 430	1.70 - 2.60	4.25	2.75	

* Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

MODEL NUMBER:	TYPICAL PART NO. - (example)	RA90 - SMA - M - 1A - A
CONNECTOR STYLE:	3.5mm-2.4mm-SMA-TNC-N-7mm-K-SC	
CONNECTOR TYPE:	M - MALE F - FEMALE	
FLANGE:	See data sheet number DS-101.	
MATERIAL:	A - ALUMINUM C - COPPER	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- WR - 22 available in copper only.
- Alternate finish available on request.
- Flange configurations other than noted available upon request.
- Standard unit provided not sealed pressure tight unless otherwise specified.
- ** Power Rating dependent on connector selection.



Continental Microwave Division

DS-110A

11-06

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SPECIFICATIONS:

Model No.	W/G Size	Freq. Range GHz	Recommended Power Rating @ one atmosphere & Connector Type										VSWR (x:1)	Insertion Loss (db)				
			2.4mm (50)		2.9mm (K)		SMA		TNC		N				7mm		SC	
			cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)		
RA22	WR-22	33-46															1.4	0.5
RA22	WR-22	33-50	10	1													1.7	0.5
RA28	WR-28	26.5-40			10	1											1.2	0.4
RA28	WR-28	26.5-40	10	1													1.35	0.4
RA34	WR-34	22-33			10	1											1.2	0.3
RA34	WR-34	22-33	10	1													1.35	0.3
RA42	WR-42	18.0-26.5			10	1											1.15	0.35
RA42	WR-42	18.0-26.5	10	1													1.35	0.35
RA42	WR-42	18.0-26.5					50	4									1.2	0.35
RA51	WR-51	15-22			10	1											1.15	0.3
RA51	WR-51	15-22	10	1													1.35	0.3
RA51	WR-51	15-22					50	2									1.15	0.3
RA62	WR-62	12.4-18	10	1													1.35	0.25
RA62	WR-62	12.4-18			10	1											1.2	0.25
RA62	WR-62	12.4-18					50	1									1.1	0.25
RA62	WR-62	12.4-18							150	2							1.2	0.25
RA62	WR-62	12.4-18								150	2						1.1	0.25
RA75	WR-75	10-15	10	1													1.35	0.25
RA75	WR-75	10-15			10	1											1.2	0.25
RA75	WR-75	10-15					50	4									1.1	0.25
RA75	WR-75	10-15							250	6							1.15	0.25
RA75	WR-75	10-15								250	6						1.1	0.25
RA75	WR-75	10-15									10	2					1.1	0.25
RA90	WR-90	8.2-12.4	10	1													1.35	0.25
RA90	WR-90	8.2-12.4			10	1											1.2	0.25
RA90	WR-90	8.2-12.4					50	1									1.1	0.25
RA90	WR-90	8.2-12.4							150	2							1.15	0.25
RA90	WR-90	8.2-12.4								150	2						1.1	0.25
RA90	WR-90	8.2-12.4									10	2					1.1	0.25
RA102	WR-102	7-11	10	1													1.35	0.25
RA102	WR-102	7-11			10	1											1.2	0.25
RA102	WR-102	7-11					50	1									1.1	0.25
RA102	WR-102	7-11							175	2							1.15	0.25
RA102	WR-102	7-11								175	2						1.1	0.25
RA102	WR-102	7-11									10	2					1.1	0.25

(continued on next page)



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DS-110A

11-06

SPECIFICATIONS:

Model No.	W/G Size	Freq. Range GHz	Recommended Power Rating @ one atmosphere & Connector Type														VSWR (x:1)	Insertion Loss (db)		
			2.4mm (50)		2.9mm (K)		SMA		TNC		N		7mm		SC					
			cw	peak	cw	peak	cw	peak	cw	peak	cw	peak	cw	peak	cw	peak	cw	peak		
			(W)	(KW)	(W)	(KW)	(W)	(KW)	(W)	(KW)	(W)	(KW)	(W)	(KW)	(W)	(KW)	(W)	(KW)		
RA112	WR-112	7.05-10	10	1															1.35	0.25
RA112	WR-112	7.05-10			10	1													1.2	0.25
RA112	WR-112	7.05-10					50	1											1.1	0.25
RA112	WR-112	7.05-10							175	2									1.15	0.25
RA112	WR-112	7.05-10								175	2								1.1	0.25
RA112	WR-112	7.05-10									10	2							1.1	0.25
RA137	WR-137	5.85-8.2					50	1											1.1	0.2
RA137	WR-137	5.85-8.2							175	2									1.1	0.2
RA137	WR-137	5.85-8.2								175	2								1.1	0.2
RA137	WR-137	5.85-8.2									10	2							1.1	0.2
RA137	WR-137	5.85-8.2												250	10				1.1	0.2
RA159	WR-159	4.9-7.05					50	1											1.1	0.2
RA159	WR-159	4.9-7.05							175	2									1.1	0.2
RA159	WR-159	4.9-7.05								175	2								1.1	0.2
RA159	WR-159	4.9-7.05									10	2							1.1	0.2
RA159	WR-159	4.9-7.05												250	10				1.1	0.2
RA187	WR-187	3.95-5.85					50	1											1.1	0.2
RA187	WR-187	3.95-5.85							175	2									1.1	0.2
RA187	WR-187	3.95-5.85								175	2								1.1	0.2
RA187	WR-187	3.95-5.85									10	2							1.1	0.2
RA187	WR-187	3.95-5.85												250	10				1.1	0.2
RA229	WR-229	3.3-4.9					50	1											1.1	0.2
RA229	WR-229	3.3-4.9							175	2									1.1	0.2
RA229	WR-229	3.3-4.9								175	2								1.1	0.2
RA229	WR-229	3.3-4.9									10	2							1.1	0.2
RA229	WR-229	3.3-4.9												200	3				1.1	0.2
RA284	WR-284	2.6-3.95					50	1											1.1	0.2
RA284	WR-284	2.6-3.95							175	2									1.1	0.2
RA284	WR-284	2.6-3.95								175	2								1.1	0.2
RA284	WR-284	2.6-3.95									10	2							1.1	0.2
RA284	WR-284	2.6-3.95												200	3				1.1	0.2
RA340	WR-340	2.2-3.3								175	2								1.1	0.2
RA430	WR-430	1.7-2.6								175	2								1.1	0.2



Continental Microwave Division

DS-110A

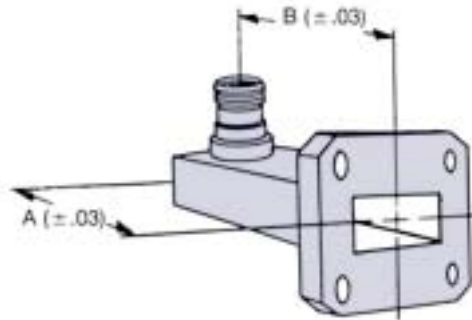
11-06

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RECTANGULAR WAVEGUIDE

ADAPTER (high power)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of high power rectangular waveguide-to-coax adapters constructed of aluminum or copper and covering the waveguide sizes WR - 28 thru WR - 430. VSWR over the full waveguide bandwidth is 1.35 typical for most models, or that of the coaxial connector selected. Additional sizes and custom design configurations are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions		Recommended Power Rating** Reference next page for detailed specification
			A	B	
RAH28...	WR - 28	26.50 - 40.00	1.50	1.20	
RAH42...	WR - 42	18.00 - 26.50	1.50	1.20	
RAH62...	WR - 62	12.40 - 18.00	2.20	1.70	
RAH75...	WR - 75	10.00 - 15.00	2.20	1.70	
RAH90...	WR - 90	8.20 - 12.40	2.20	1.70	
RAH102...	WR - 102	7.00 - 11.00	2.50	1.80	
RAH112...	WR - 112	7.05 - 10.00	2.50	1.80	
RAH137...	WR - 137	5.85 - 8.20	2.65	2.00	
RAH159...	WR - 159	4.90 - 7.05	2.80	2.25	
RAH187...	WR - 187	3.95 - 5.85	3.00	2.35	
RAH229...	WR - 229	3.30 - 4.90	3.00	2.20	
RAH284...	WR - 284	2.60 - 3.95	3.75	2.75	
RAH340...	WR - 340	2.20 - 3.30	4.00	2.75	
RAH430...	WR - 430	1.70 - 2.60	4.25	2.75	

* Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

		TYPICAL PART NO. – (example)	RAH90 - TNC - M - 1A - A
MODEL NUMBER:			
CONNECTOR	STYLE:	SC - TNC - N - K - SMA	
	TYPE:	M - MALE F - FEMALE	
	FLANGE:	See data sheet number DS-101	
	MATERIAL:	A - ALUMINUM C - COPPER	
	FINISH:	CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT	

- Alternate finish available upon request.
- Flange configurations other than noted available upon request.
- Standard unit provided not sealed pressure tight unless otherwise specified.
- ** ■ Power Rating dependent on connector selection.



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DS-110B

11-06

SPECIFICATIONS:

Model No.	W/G Size	Freq. Range GHz	Recommended Power Rating @ one atmosphere & Connector Type										VSWR (x:1)	Insertion Loss (db)	
			2.9mm (K)		SMA		TNC		N		SC				
			cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)			
RAH28	WR-28	26.5-40	10	1										1.4	0.5
RAH42	WR-42	18.0-26.5			50	2								1.35	0.4
RAH62	WR-62	12.4-18			50	2	250	3	250	3				1.35	0.25
RAH75	WR-75	10-15			50	2	300	3	300	3				1.35	0.25
RAH90	WR-90	8.2-12.4			50	2	300	4	300	2				1.35	0.25
RAH102	WR-102	7-11			50	2	300	4	300	3				1.35	0.25
RAH112	WR-112	7.05-10			50	2	350	4	350	3				1.35	0.25
RAH137	WR-137	5.85-8.2			50	2	350	4	350	3	400	6		1.35	0.25
RAH159	WR-159	4.9-7.05			50	2	350	4	350	3	500	8		1.35	0.25
RAH187	WR-187	3.95-5.85			50	2	350	4	350	3	500	8		1.35	0.25
RAH229	WR-229	3.3-4.9			50	2	350	4	350	3	500	8		1.35	0.25
RAH284	WR-284	2.6-3.95			50	2	350	4	350	3	500	8		1.35	0.25
RAH340	WR-340	2.2-3.3			50	2	350	4	350	3	500	8		1.35	0.25
RAH430	WR-430	1.7-2.6			50	2	350	4	350	3	500	8		1.35	0.25



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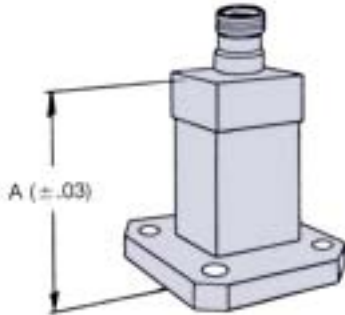
DS-110B

11-06

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ADAPTER (*high power, end-launch*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of high power rectangular end-launch adapters constructed of aluminum or copper and covering the waveguide sizes WR - 28 thru WR - 430. VSWR over the full waveguide bandwidth is 1.50 typical for most models, or that of the coaxial connector selected. Additional sizes and custom design configurations are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimension A	Recommended Power Rating** Reference next page for detailed specification
RAHE28...	WR - 28	26.50 - 40.00	1.50	
RAHE42...	WR - 42	18.00 - 26.50	2.00	
RAHE62...	WR - 62	12.40 - 18.00	2.30	
RAHE75...	WR - 75	10.00 - 15.00	2.50	
RAHE90...	WR - 90	8.20 - 12.40	3.00	
RAHE102...	WR - 102	7.00 - 11.00	3.50	
RAHE112...	WR - 112	7.05 - 10.00	4.00	
RAHE137...	WR - 137	5.85 - 8.20	4.50	
RAHE159...	WR - 159	4.90 - 7.05	5.00	
RAHE187...	WR - 187	3.95 - 5.85	6.00	
RAHE229...	WR - 229	3.30 - 4.90	7.00	
RAHE284...	WR - 284	2.60 - 3.95	8.00	
RAHE340...	WR - 340	2.20 - 3.30	10.00	
RAHE430...	WR - 430	1.70 - 2.60	12.00	

* Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **RAHE90 - TNC - M - 1A - A**

MODEL NUMBER: [REDACTED]

CONNECTOR STYLE: SC - TNC - N - K - SMA

CONNECTOR TYPE: M - MALE F - FEMALE

FLANGE: See data sheet number DS-101

MATERIAL: A - ALUMINUM C - COPPER

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

- Alternate finish available on request.
- Flange configurations other than noted available upon request.
- Unit provided not sealed pressure tight.
- ** ■ Power Rating dependent on connector selection



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DS-110C

11-06

SPECIFICATIONS:

Model No.	W/G Size	Freq. Range GHz	Recommended Power Rating @ one atmosphere & Connector Type												VSWR (x:1)	Insertion Loss (db)
			2.9mm (K)		SMA		TNC		N		SC					
			cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)				
RAHE28	WR-28	26.5-40	10	1											1.5	0.4
RAHE42	WR-42	18.0-26.5	10	1											1.5	0.35
RAHE42	WR-42	18.0-26.5			50	2									1.5	0.35
RAHE62	WR-62	12.4-18			100	2									1.5	0.3
RAHE62	WR-62	12.4-18					300	4							1.5	0.3
RAHE62	WR-62	12.4-18							300	3					1.5	0.3
RAHE75	WR-75	10-15			100	3									1.5	0.3
RAHE75	WR-75	10-15					325	4							1.5	0.3
RAHE75	WR-75	10-15							325	4					1.5	0.3
RAHE90	WR-90	8.2-12.4			100	3									1.5	0.25
RAHE90	WR-90	8.2-12.4					350	4							1.5	0.25
RAHE90	WR-90	8.2-12.4							325	4					1.5	0.25
RAHE102	WR-102	7-11			100	3									1.5	0.25
RAHE102	WR-102	7-11					375	5							1.5	0.25
RAHE102	WR-102	7-11							375	4					1.5	0.25
RAHE112	WR-112	7.05-10			100	2									1.5	0.25
RAHE112	WR-112	7.05-10					375	4							1.5	0.25
RAHE112	WR-112	7.05-10							375	3					1.5	0.25
RAHE137	WR-137	5.85-8.2			100	3									1.5	0.25
RAHE137	WR-137	5.85-8.2					375	5							1.5	0.25
RAHE137	WR-137	5.85-8.2							375	3					1.5	0.25
RAHE137	WR-137	5.85-8.2									450	6			1.5	0.25
RAHE159	WR-159	4.9-7.05			100	3									1.5	0.25
RAHE159	WR-159	4.9-7.05					375	4							1.5	0.25
RAHE159	WR-159	4.9-7.05							375	3					1.5	0.25
RAHE159	WR-159	4.9-7.05									450	6			1.5	0.25
RAHE187	WR-187	3.95-5.85			100	3									1.5	0.25
RAHE187	WR-187	3.95-5.85					375	4							1.5	0.25
RAHE187	WR-187	3.95-5.85							375	3					1.5	0.25
RAHE187	WR-187	3.95-5.85									550	8			1.5	0.25
RAHE229	WR-229	3.3-4.9			100	3									1.5	0.25
RAHE229	WR-229	3.3-4.9					375	4							1.5	0.25
RAHE229	WR-229	3.3-4.9							375	3					1.5	0.25
RAHE229	WR-229	3.3-4.9									550	8			1.5	0.25
RAHE284	WR-284	2.6-3.95			100	3									1.5	0.25
RAHE284	WR-284	2.6-3.95					375	4							1.5	0.25
RAHE284	WR-284	2.6-3.95							375	3					1.5	0.25
RAHE284	WR-284	2.6-3.95									550	8			1.5	0.25
RAHE340	WR-340	2.6-3.95							375	3					1.5	0.25
RAHE430	WR-430	2.6-3.95									550	8			1.5	0.25



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DS-110C

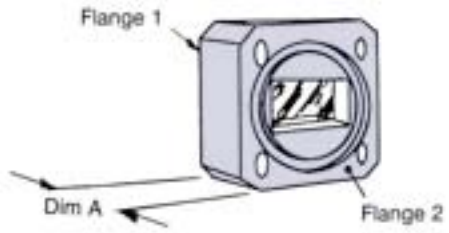
11-06

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RECTANGULAR WAVEGUIDE

PRESSURE WINDOW

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of rectangular waveguide pressure windows constructed using all clear holes, aluminum or brass, cover and groove type flanges captivating a high temperature kapton dielectric material. These units will withstand moderate SW power levels while maintaining 30 Psi pressure. VSWR is less than 1.10 typical (1.20 typical for WR - 22).

Model No. *	Waveguide Size	Frequency Range (GHz)	Power Rating		Pressure Rating (PSIG)	Dim A
			CW (Watts)	PK (kW)		
RPW22...	WR - 22	33.00 - 50.00	220	25	30	.38
RPW28...	WR - 28	26.50 - 40.00	250	40	30	.38
RPW34...	WR - 34	22.00 - 33.00	250	70	30	.38
RPW42...	WR - 42	18.00 - 26.50	250	70	30	.38
RPW51...	WR - 51	15.00 - 22.00	250	100	30	.38
RPW62...	WR - 62	12.40 - 18.00	400	160	30	.38
RPW75...	WR - 75	10.00 - 15.00	750	300	30	.38
RPW90...	WR - 90	8.20 - 12.40	1000	350	30	.38
RPW102...	WR - 102	7.00 - 11.00	1250	350	30	.38
RPW112...	WR - 112	7.05 - 10.00	1250	350	30	.38
RPW137...	WR - 137	5.85 - 8.20	1500	500	30	.38
RPW159...	WR - 159	4.90 - 7.05	1500	750	15	.38
RPW187...	WR - 187	3.95 - 5.85	1500	1000	15	.38
RPW229...	WR - 229	3.30 - 4.90	1500	1500	15	.38
RPW284...	WR - 284	2.60 - 3.95	1500	1500	15	.63
RPW284 R/H...	WR - 284 R/H	2.60 - 3.95	500	1000	15	.63
RPW340...	WR - 340	2.20 - 3.30	1500	1500	15	.63
RPW430...	WR - 430	1.70 - 2.60	1500	1500	15	.63

*Indicates Model Number. See ORDERING DATA for complete part number.
 **CMD offers cover/cover and cover/groove combinations in both UG and CPR styles as standard product.
 Alternate configurations available upon request. Flanges are provided with clearance holes only.

ORDERING DATA:

TYPICAL PART NO. – (example) **RPW90 - 1A - 7A - A**

MODEL NUMBER: [REDACTED]

**FLANGE 1: [REDACTED]

**FLANGE 2: See data sheet number DS-101. [REDACTED]

MATERIAL: A - ALUMINUM B - BRASS

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate material available upon request.
- Alternate finish available on request.



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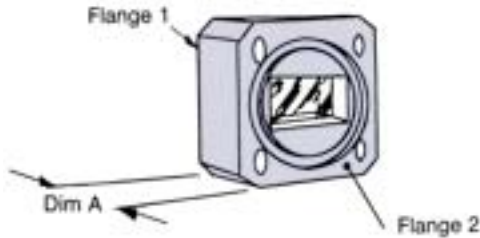
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DS-111A

11-06

PRESSURE WINDOW (high power, quartz)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of high power rectangular waveguide pressure windows constructed using all clear holes, aluminum or brass, over and groove type flanges captivating a high temperature quartz dielectric material. These units will withstand high CW power levels while maintaining 15 PSI pressure. VSWR is less than 1.15 typical for most models. In addition, units designed specifically for vacuum applications are available upon request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Power Rating		Pressure Rating (PSIG)	- V - Vacuum Rating (Torr)	Dim A
			CW (Watts)	PK (kW)			
RPWQ28...	WR - 28	26.50 - 40.00	300	40	15	10 ⁻⁶	.38
RPWQ34...	WR - 34	22.00 - 33.00	325	70	15	10 ⁻⁶	.38
RPWQ42...	WR - 42	18.00 - 26.50	325	70	15	10 ⁻⁶	.38
RPWQ51...	WR - 51	15.00 - 22.00	375	100	15	10 ⁻⁶	.38
RPWQ62...	WR - 62	12.40 - 18.00	500	150	15	10 ⁻⁶	.38
RPWQ75...	WR - 75	10.00 - 15.00	800	300	15	10 ⁻⁶	.38
RPWQ90...	WR - 90	8.20 - 12.40	1200	350	15	10 ⁻⁶	.38
RPWQ102...	WR - 102	7.00 - 11.00	1400	350	15	10 ⁻⁶	.38
RPWQ112...	WR - 112	7.05 - 10.00	1400	350	15	10 ⁻⁶	.38
RPWQ137...	WR - 137	5.85 - 8.20	1800	500	15	10 ⁻⁶	.38
RPWQ159...	WR - 159	4.90 - 7.05	2000	750	15	10 ⁻⁶	.38
RPWQ187...	WR - 187	3.95 - 5.85	2250	1000	15	10 ⁻⁶	.38
RPWQ229...	WR - 229	3.30 - 4.90	2250	1500	15	10 ⁻⁶	.38
RPWQ284...	WR - 284	2.60 - 3.95	2250	1500	15	10 ⁻⁶	.63
RPWQ284 R/H...	WR - 284 R/H	2.60 - 3.95	2250	1000	15	10 ⁻⁶	.63

*Indicates Model Number. See ORDERING DATA for complete part number.

**CMD offers cover/cover and cover/groove combinations in both UG and CPR styles as standard product.

**Alternate configurations available upon request. Flanges are provided with clearance holes only.

ORDERING DATA:

TYPICAL PART NO. – (example)

RPWQ90 - 1A - 7A - A

MODEL NUMBER:

**FLANGE 1:

See data sheet number DS-101.

**FLANGE 2:

MATERIAL: A - ALUMINUM B - BRASS

FINISH:

CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

- Alternate material available upon request.
- Alternate finish available on request
- Models with enhanced VSWR performance over partial waveguide bandwidths available upon request
- For vacuum applications, add suffix "-V" to flange designation on vacuum side of window



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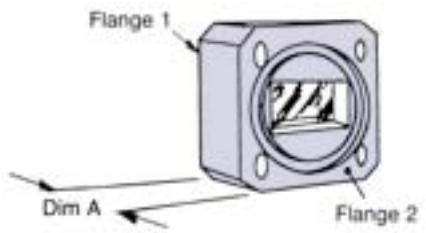
DS-111B

11-06

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PRESSURE WINDOW (high power, boron nitride)

SPECIFICATIONS:



PART DESCRIPTION:

CMD also offers a standard product line of high power pressure windows constructed similar to the high power pressure windows per DS-111B, while capturing a high temperature boron dielectric material. These units will also withstand high CW power levels while maintaining 30 PSI pressure. VSWR is less than 1.20 typical for most models.

Model No. *	Waveguide Size	Frequency Range (GHz)	Power Rating		Pressure Rating (PSIG)	Dim A
			CW (Watts)	PK (Kw)		
RPWB28...	WR - 28	26.50 - 40.00	300	40	30	.38
RPWB34...	WR - 34	22.00 - 33.00	325	70	30	.38
RPWB42...	WR - 42	18.00 - 26.50	325	70	30	.38
RPWB51...	WR - 51	15.00 - 22.00	375	100	30	.38
RPWB62...	WR - 62	12.40 - 18.00	500	150	30	.38
RPWB75...	WR - 75	10.00 - 15.00	800	300	30	.38
RPWB90...	WR - 90	8.20 - 12.40	1200	350	30	.38
RPWB102...	WR - 102	7.00 - 11.00	1400	350	30	.38
RPWB112...	WR - 112	7.05 - 10.00	1400	350	30	.38
RPWB137...	WR - 137	5.85 - 8.20	1800	500	30	.38
RPWB159...	WR - 159	4.90 - 7.05	2000	750	30	.38
RPWB187...	WR - 187	3.95 - 5.85	2500	1000	30	.38
RPWB229...	WR - 229	3.30 - 4.90	2500	1500	30	.38
RPWB284...	WR - 284	2.60 - 3.95	2500	1500	30	.63
RPWB284 R/H...	WR - 284 R/H	2.60 - 3.95	2500	1000	30	.63
RPWB340...	WR - 340	2.20 - 3.30	2500	2500	15	.63
RPWB430...	WR - 430	1.70 - 2.60	2500	2500	15	.63

*Indicates Model Number. See ORDERING DATA for complete part number.
 **CMD offers cover/cover and cover/groove combinations in both UG and CPR styles as standard product.
 Alternate configurations available upon request. Flanges are provided with clearance holes only.

ORDERING DATA:

TYPICAL PART NO. – (example) **RPWB90 - 1A - 7A - A**

MODEL NUMBER: _____

**FLANGE 1: _____

**FLANGE 2: *See data sheet number DS-101.* _____

MATERIAL: A - ALUMINUM B - BRASS

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

- Alternate material available upon request.
- Alternate finish available on request
- Models with enhanced VSWR performance over partial waveguide bandwidths available upon request.



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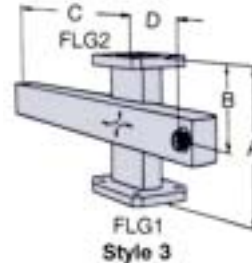
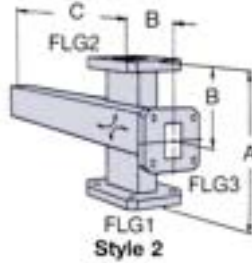
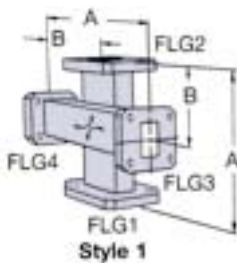
DS-111C

11-06

CROSS GUIDE COUPLERS

PART DESCRIPTION:

CMD's directional crossguide couplers utilize an ultra-flat coupling technique that exhibits high power handling characteristics while maintaining optimum electrical performance parameters over the full waveguide bandwidth. Included in the design characteristics are rugged brazed construction, minimum directivity of 20 dB, maximum VSWR of 1.10, and coupling levels available ranging from 20 to 60 dB with a mean variation less than 1.0 dB. Three design configurations are available as noted and are provided pressure sealed (style 3 pressure sealed with connector capped). Additional sizes and configurations are available on request.



Model No. *	Waveguide Size	Frequency Range (GHz)	A	B	Dimensions (± .03)		D
					C		
** RCC22...	WR - 22	33.00 - 50.00	3.00	1.50	3.50		-
RCC28...	WR - 28	26.50 - 40.00	3.00	1.50	3.50		.75
RCC34...	WR - 34	22.00 - 33.00	3.00	1.50	3.50		.75
RCC42...	WR - 42	18.00 - 26.50	3.00	1.50	3.50		.75
RCC51...	WR - 51	15.00 - 22.00	3.00	1.50	3.50		.75
RCC62...	WR - 62	12.40 - 18.00	3.00	1.50	3.50		.75
RCC75...	WR - 75	10.00 - 15.00	3.00	1.50	3.80		1.00
RCC90...	WR - 90	8.20 - 12.40	3.50	1.75	3.80		1.00
RCC102...	WR - 102	7.00 - 11.00	4.00	2.00	5.20		1.25
RCC112...	WR - 112	7.05 - 10.00	4.00	2.00	5.20		1.25
RCC137...	WR - 137	5.85 - 8.20	4.00	2.00	4.50		2.00
RCC159...	WR - 159	4.90 - 7.05	5.00	2.50	6.00		2.25
RCC187...	WR - 187	3.95 - 5.85	5.50	2.75	6.50		2.25
RCC229...	WR - 229	3.30 - 4.90	6.00	3.00	8.00		2.50
RCC284...	WR - 284	2.60 - 3.95	7.00	3.50	10.00		3.00
RCC340...	WR - 340	2.20 - 3.30	8.00	4.00	12.00		4.00
RCC430...	WR - 430	1.70 - 2.60	10.00	5.00	18.00		4.50

Termination in secondary handles 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

**Available in style 1 and 2 only.

ORDERING DATA:

		RCC90 - 1 -	- 30 - 1A - 1A - 1A - 1A - A
		RCC90 - 2 -	- 30 - 1A - 1A - 1A - A - A
		RCC90 - 3 - SMA - M -	30 - 1A - 1A - A
	TYPICAL PART NO. - (example)		
MODEL NUMBER:			
BODY STYLE:	1, 2 or 3		
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm		
CONNECTOR TYPE:	M - MALE F - FEMALE		
COUPLING:	20, 30, 40, 50, or 60 dB		
FLANGE 1:			
FLANGE 2:	} See data sheet number DS-101.		
FLANGE 3:			
FLANGE 4:			
MATERIAL:	A - ALUMINUM C - COPPER		
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT		



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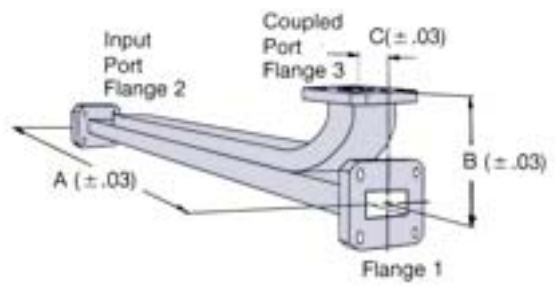
DS-112A

11-06

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BROADWALL COUPLER

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of multi-hole broad-wall directional couplers covering the waveguide sizes WR - 22 thru WR - 430. The optimum electrical characteristics of high directivity and coupling flatness are achieved utilizing a precision machined Tchebyscheff coupling hole distribution and a precision ground tapered load element in the secondary arm. Additional sizes, special configurations, and alternate finishes are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions		
			A	B	C
** RBC22...	WR - 22	33.00 - 50.00	8.00	1.00	.90
** RBC28...	WR - 28	26.50 - 40.00	9.00	1.25	.90
** RBC34...	WR - 34	22.00 - 33.00	10.50	1.25	.90
** RBC42...	WR - 42	18.00 - 26.50	10.50	1.38	.90
RBC51...	WR - 51	15.00 - 22.00	11.50	2.00	1.00
RBC62...	WR - 62	12.40 - 18.00	12.50	2.00	1.00
RBC75...	WR - 75	10.00 - 15.00	14.00	2.00	1.00
RBC90...	WR - 90	8.20 - 12.40	17.00	2.00	1.25
RBC102...	WR - 102	7.00 - 11.00	18.90	3.00	1.25
RBC112...	WR - 112	7.05 - 10.00	19.30	3.00	1.25
RBC137...	WR - 137	5.85 - 8.20	22.00	3.00	1.50
RBC159...	WR - 159	4.90 - 7.05	25.00	4.00	1.75
RBC187...	WR - 187	3.95 - 5.85	30.00	4.25	2.00
RBC229...	WR - 229	3.30 - 4.90	35.00	5.00	2.00
RBC284...	WR - 284	2.60 - 3.95	46.00	6.50	2.50
RBC340...	WR - 340	2.20 - 3.30	52.00	8.50	3.00
RBC430...	WR - 430	1.70 - 2.60	60.00	10.00	4.00

Termination in secondary handles 1 watt CW maximum.
 *Indicates Model Number. See ORDERING DATA for complete part number.
 **Couplers configured with all-choke flanges exhibit slightly degraded coupling and directivity performance.

ORDERING DATA:

TYPICAL PART NO. – (example) **RBC90 - 10 - 1A - 1A - 1A - A**

MODEL NUMBER: _____

COUPLING: 10, 20, 30, 40, 50, 60 dB

FLANGE 1: _____

FLANGE 2: See data sheet number DS-101.

FLANGE 3: _____

MATERIAL: A - ALUMINUM C - COPPER

COUPLING MEAN: ±1.0 dB

DIRECTIVITY: 40 dB MINIMUM **35 dB MINIMUM

VSWR: 1.08 MAX. PRIMARY LINE
1.12 MAX. SECONDARY LINE

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Standard unit provided not sealed pressure tight - pressure sealed units available on special order.
- RBC 284, 340, 430 available in aluminum only.



Continental Microwave Division

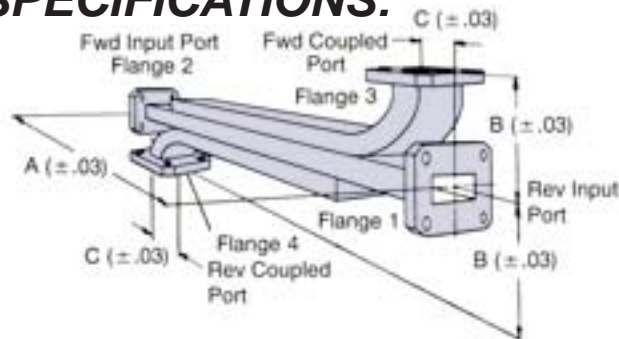
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DS-112B

11-06

DUAL BROADWALL COUPLER

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of dual arm multi-hole broadwall directional couplers covering the waveguide sizes WR - 22 thru WR - 187 and configured similar to the single arm models per DS-112B. Additional sizes, special configurations, and alternate finishes are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions		
			A	B	C
** RDBC22...	WR - 22	33.00 - 50.00	10.00	1.00	.90
** RDBC28...	WR - 28	26.50 - 40.00	12.00	1.25	.90
** RDBC34...	WR - 34	22.00 - 33.00	14.00	1.25	.90
** RDBC42...	WR - 42	18.00 - 26.50	14.50	1.38	.90
RDBC51...	WR - 51	15.00 - 22.00	16.00	2.00	1.00
RDBC62...	WR - 62	12.40 - 18.00	18.00	2.00	1.00
RDBC75...	WR - 75	10.00 - 15.00	20.00	2.00	1.00
RDBC90...	WR - 90	8.20 - 12.40	22.00	2.00	1.25
RDBC102...	WR - 102	7.00 - 11.00	24.00	3.00	1.25
RDBC112...	WR - 112	7.05 - 10.00	24.00	3.00	1.25
RDBC137...	WR - 137	5.85 - 8.20	28.00	3.00	1.50
RDBC159...	WR - 159	4.90 - 7.05	32.00	4.00	1.75
RDBC187...	WR - 187	3.95 - 5.85	36.00	4.25	2.00

Terminations in secondaries handle 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

**Couplers configured with all-choke flanges exhibit slightly degraded coupling and directivity performance.

ORDERING DATA:

	TYPICAL PART NO. – (example)	RDBC90 - 10/10 - 1A - 1A - 1A - 1A - A
MODEL NUMBER:	[Redacted]	
COUPLING:	10, 20, 30, 40, 50, 60 dB	
FLANGE 1:	[Redacted]	
FLANGE 2:	[Redacted]	
FLANGE 3:	See data sheet number DS-101.	
FLANGE 4:	[Redacted]	
MATERIAL:	A - ALUMINUM C - COPPER	
COUPLING MEAN:	±1.0 dB	
DIRECTIVITY:	35 dB MINIMUM **30 dB MINIMUM	
VSWR:	1.08 MAX. PRIMARY LINE 1.12 MAX. SECONDARY LINE	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

■ Standard unit provided not sealed pressure tight - pressure sealed units available on special order.



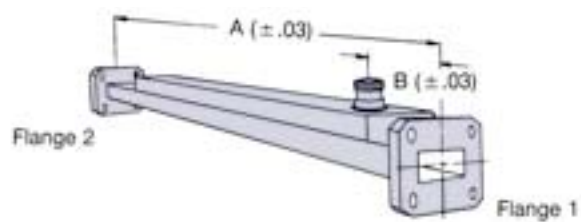
Continental Microwave Division

DS-112C
11-06

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BROADWALL COUPLER (coax secondary)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of multi-hole coax secondary broadwall couplers covering the waveguide sizes WR - 22 thru WR - 430. The optimum electrical characteristics of high directivity and coupling flatness are achieved utilizing a precision machined Tchebyscheff coupling hole distribution and a precision ground tapered load element in the secondary arm. Additional sizes, special configurations, and alternate finishes are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A	B
** RBCC22...	WR - 22	33.00 - 50.00	8.00	1.00
** RBCC28...	WR - 28	26.50 - 40.00	9.00	1.25
** RBCC34...	WR - 34	22.00 - 33.00	10.50	1.25
RBCC42...	WR - 42	18.00 - 26.50	10.50	1.25
RBCC51...	WR - 51	15.00 - 22.00	11.50	1.75
RBCC62...	WR - 62	12.40 - 18.00	12.50	1.95
RBCC75...	WR - 75	10.00 - 15.00	14.00	2.00
RBCC90...	WR - 90	8.20 - 12.40	17.00	2.25
RBCC102...	WR - 102	7.00 - 11.00	18.90	2.80
RBCC112...	WR - 112	7.05 - 10.00	19.30	2.80
RBCC137...	WR - 137	5.85 - 8.20	22.00	3.31
RBCC159...	WR - 159	4.90 - 7.05	25.00	3.70
RBCC187...	WR - 187	3.95 - 5.85	30.00	4.50
RBCC229...	WR - 229	3.30 - 4.90	35.00	5.10
RBCC284...	WR - 284	2.60 - 3.95	46.00	6.20
RBCC340...	WR - 340	2.20 - 3.30	52.00	8.20
RBCC430...	WR - 430	1.70 - 2.60	60.00	10.00

Termination in secondary handles 1 watt CW maximum.
 *Indicates Model Number. See ORDERING DATA for complete part number.
 **Couplers configured with all-choke flanges exhibit slightly degraded coupling and directivity performance.

ORDERING DATA:

	TYPICAL PART NO. - (example)	RBCC90 - SMA - M - 30 - 1A - 1A - A
MODEL NUMBER:	[Redacted]	
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	
CONNECTOR TYPE:	M - MALE F - FEMALE	
COUPLING:	10, 20, 30, 40, 50 dB	
FLANGE 1:	[Redacted]	
FLANGE 2:	See data sheet number DS-101.	
MATERIAL:	A - ALUMINUM C - COPPER	
COUPLING MEAN:	±1.0 dB NOM./±0.50 dB FREQUENCY RESPONSE	
DIRECTIVITY:	40 dB MINIMUM **35 dB MINIMUM	
VSWR:	1.08 MAX. PRIMARY LINE 1.30 MAX. SECONDARY LINE	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Standard unit provided not sealed pressure tight - pressure sealed units available on special order.
- RBCC 284, 340, 430 available in aluminum only.



Continental Microwave Division

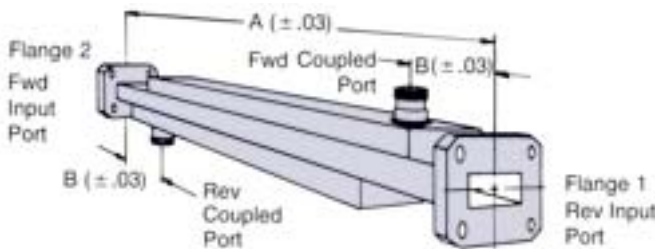
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DS-112D

11-06

DUAL BROADWALL COUPLER (coax secondaries)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of dual arm multi-hole coax secondary broadwall couplers cover the waveguide sizes WR - 22 thru WR - 430 and configured similar to the single arm models per DS-112D. Additional sizes, special configurations, and alternate finishes are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A	B
** RDBCC22...	WR - 22	33.00 - 50.00	10.00	1.00
** RDBCC28...	WR - 28	26.50 - 40.00	12.00	1.25
** RDBCC34...	WR - 34	22.00 - 33.00	14.00	1.25
** RDBCC42...	WR - 42	18.00 - 26.50	14.50	1.25
RDBCC51...	WR - 51	15.00 - 22.00	16.00	1.75
RDBCC62...	WR - 62	12.40 - 18.00	18.00	1.95
RDBCC75...	WR - 75	10.00 - 15.00	20.00	2.00
RDBCC90...	WR - 90	8.20 - 12.40	22.00	2.25
RDBCC102...	WR - 102	7.00 - 11.00	24.00	2.80
RDBCC112...	WR - 112	7.05 - 10.00	24.00	2.80
RDBCC137...	WR - 137	5.85 - 8.20	28.00	3.31
RDBCC159...	WR - 159	4.90 - 7.05	32.00	3.70
RDBCC187...	WR - 187	3.95 - 5.85	36.00	4.50
RDBCC229...	WR - 229	3.30 - 4.90	48.00	5.10
RDBCC284...	WR - 284	2.60 - 3.95	60.00	6.20
RDBCC340...	WR - 340	2.20 - 3.30	72.00	8.20
RDBCC430...	WR - 430	1.70 - 2.60	84.00	10.00

Terminations in secondaries handle 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

**Couplers configured with all-choke flanges exhibit slightly degraded coupling and directivity performance.

ORDERING DATA:

	TYPICAL PART NO. – (example)	RDBCC90 - SMA - M - 30/30 - 1A - 1A - A
MODEL NUMBER:		
CONNECTORS STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	
CONNECTORS TYPE:	M - MALE F - FEMALE	
COUPLING:	10, 20, 30, 40, 50 dB	
FLANGE 1:		
FLANGE 2:	See data sheet number DS-101.	
MATERIAL:	A - ALUMINUM C - COPPER	
COUPLING MEAN:	± 1.0 dB NOM./ ± 0.50 dB FREQUENCY RESPONSE	
DIRECTIVITY:	32 dB MINIMUM **30 dB MINIMUM	
VSWR:	1.08 MAX. PRIMARY LINE 1.30 MAX. SECONDARY LINE	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Standard unit provided not sealed pressure tight - pressure sealed units available on special order.
- RDBCC 284, 340, 430 available in aluminum only.



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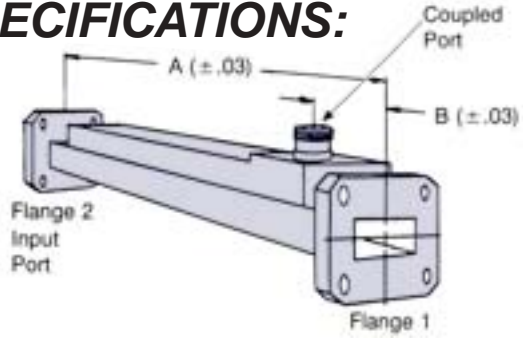
DS-112E

11-06

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BROADWALL COUPLER (short length, coax secondary)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of short-length coax secondary broadwall couplers covering the waveguide sizes WR -28 thru WR -430. The optimum electrical characteristics of high directivity and coupling flatness are achieved utilizing a precision machined Tchebyscheff coupling hole distribution and a precision ground tapered load element in the secondary arm. Additional sizes, special configurations, and alternate finishes are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A	B
** RBCCSL28...	WR - 28	26.50 - 40.00	5.50	.93
** RBCCSL34...	WR - 34	22.00 - 33.00	6.60	.93
** RBCCSL42...	WR - 42	18.00 - 26.50	6.70	.93
RBCCSL51...	WR - 51	15.00 - 22.00	7.20	.93
RBCCSL62...	WR - 62	12.40 - 18.00	8.20	1.05
RBCCSL75...	WR - 75	10.00 - 15.00	9.30	1.15
RBCCSL90...	WR - 90	8.20 - 12.40	11.50	1.15
RBCCSL102...	WR - 102	7.00 - 11.00	12.10	1.15
RBCCSL112...	WR - 112	7.05 - 10.00	12.40	1.17
RBCCSL137...	WR - 137	5.85 - 8.20	13.40	1.30
RBCCSL159...	WR - 159	4.90 - 7.05	15.20	1.35
RBCCSL187...	WR - 187	3.95 - 5.85	17.40	1.37
RBCCSL229...	WR - 229	3.30 - 4.90	21.00	1.62
RBCCSL284...	WR - 284	2.60 - 3.95	25.00	1.97
RBCCSL340...	WR - 340	2.20 - 3.30	36.00	3.50
RBCCSL430...	WR - 430	1.70 - 2.60	48.00	4.50

Termination in secondary handles 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

**Couplers configured with all-choke flanges exhibit slightly degraded coupling and directivity performance.

ORDERING DATA:

	TYPICAL PART NO. – (example)	RBCCSL90 - SMA - M - 30 - 1A - 1A - A
MODEL NUMBER:	[Redacted]	
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	
TYPE:	M - MALE F - FEMALE	
COUPLING:	30, 40, 50 dB	
FLANGE 1:	[Redacted]	
FLANGE 2:	See data sheet number DS-101.	
MATERIAL:	A - ALUMINUM C - COPPER	
COUPLING MEAN:	±1.0 dB NOM./±1.0 dB FREQUENCY RESPONSE	
DIRECTIVITY:	27 dB MINIMUM **23 dB MINIMUM	
VSWR:	1.08 MAX. PRIMARY LINE 1.50 MAX. SECONDARY LINE	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Standard unit provided **not sealed pressure tight** - pressure sealed units available on special order.
- RBCCSL 284, 340, 430 available in aluminum only.



Continental Microwave Division

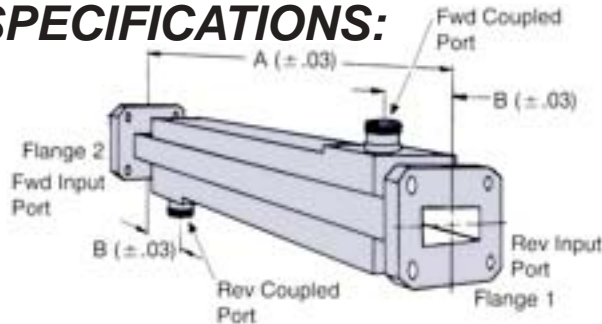
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DS-112F

11-06

DUAL BROADWALL COUPLER (short length, coax secondaries)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of dual arm short length coax secondary broadwall couplers covering the waveguide sizes WR - 28 thru WR - 187 and configured similar to the single arm models per DS-112F. Additional sizes, special configurations, and alternate finishes are available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A	B
** RDBCCSL28...	WR - 28	26.50 - 40.00	5.50	.93
** RDBCCSL34...	WR - 34	22.00 - 33.00	6.60	.93
** RDBCCSL42...	WR - 42	18.00 - 26.50	6.70	.93
RDBCCSL51...	WR - 51	15.00 - 22.00	7.20	.93
RDBCCSL62...	WR - 62	12.40 - 18.00	8.20	1.05
RDBCCSL75...	WR - 75	10.00 - 15.00	9.30	1.15
RDBCCSL90...	WR - 90	8.20 - 12.40	11.50	1.15
RDBCCSL102...	WR - 102	7.00 - 11.00	12.10	1.15
RDBCCSL112...	WR - 112	7.05 - 10.00	12.40	1.17
RDBCCSL137...	WR - 137	5.85 - 8.20	13.40	1.30
RDBCCSL159...	WR - 159	4.90 - 7.05	15.20	1.35
RDBCCSL187...	WR - 187	3.95 - 5.85	17.40	1.37

Terminations in secondaries handle 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

**Couplers configured with all-choke flanges exhibit slightly degraded coupling and directivity performance.

ORDERING DATA:

	TYPICAL PART NO. - (example)	RDBCCSL90 - SMA - M - 30/30 - 1A - 1A - A
MODEL NUMBER:	[Redacted]	
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	
CONNECTOR TYPE:	M - MALE F - FEMALE	
COUPLING:	30, 40, 50 dB	
FLANGE 1:	[Redacted]	
FLANGE 2:	See data sheet number DS-101.	
MATERIAL:	A - ALUMINUM C - COPPER	
COUPLING MEAN:	±1.0 dB NOM./±1.0 dB FREQUENCY RESPONSE	
DIRECTIVITY:	27 dB MINIMUM **23 dB MINIMUM	
VSWR:	1.08 MAX. PRIMARY LINE 1.50 MAX. SECONDARY LINE	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

■ Standard unit provided not sealed pressure tight - pressure sealed units available on special order.



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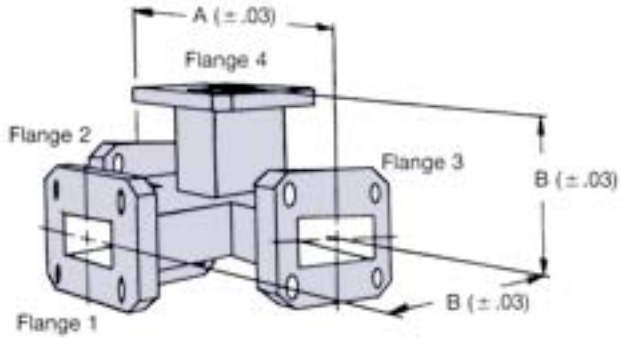
DS-112G

11-06

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HYBRID TEE

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of isolated four-port Hybrid Power Dividers covering the waveguide sizes WR - 28 thru WR - 284. VSWR is maintained at 1.3 nominal and 1.5 maximum while power split is controlled within ± 0.3 dB. Isolation is optimized to 30 dB minimum E to H ports and 15 dB minimum between collinear arms.

Model No. *	Waveguide Size	**Frequency Range (GHz)	Dimensions	
			A	B
HTR28...	WR - 28	26.50 - 40.00	2.00	1.00
HTR34...	WR - 34	22.00 - 33.00	2.00	1.00
HTR42...	WR - 42	18.00 - 26.50	2.00	1.00
HTR51...	WR - 51	15.00 - 22.00	2.50	1.25
HTR62...	WR - 62	12.40 - 18.00	2.50	1.25
HTR75...	WR - 75	10.00 - 15.00	2.50	1.25
HTR90...	WR - 90	8.20 - 12.40	3.00	1.50
HTR102...	WR - 102	7.00 - 11.00	3.50	1.75
HTR112...	WR - 112	7.05 - 10.00	3.50	1.75
HTR137...	WR - 137	5.85 - 8.20	5.00	2.50
HTR159...	WR - 159	4.90 - 7.05	5.50	2.75
HTR187...	WR - 187	3.95 - 5.85	6.00	3.00
HTR229...	WR - 229	3.30 - 4.90	8.00	4.00
HTR284...	WR - 284	2.60 - 3.95	10.00	5.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **HTR90 - 8.20 - 9.25 - 1A - 1A - 1A - 1A - A**

MODEL NUMBER: _____

FREQUENCY: **Specify frequency band (25% max.) _____

FLANGE 1: _____

FLANGE 2: _____

FLANGE 3: See data sheet number DS-101. _____

FLANGE 4: _____

MATERIAL: A - ALUMINUM C - COPPER _____

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

■ Alternate finish available upon request



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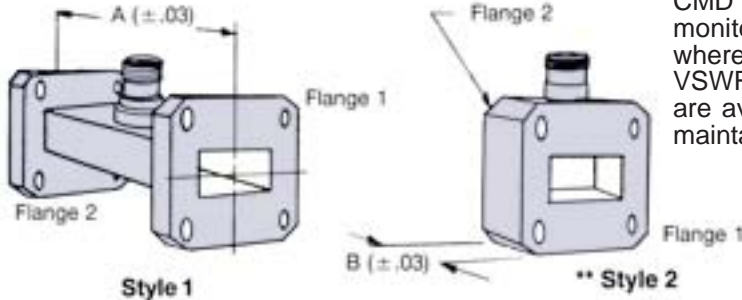
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DS-113

11-06

POWER SAMPLER

SPECIFICATIONS:



PART DESCRIPTION:

CMD power samplers offer a low cost approach to monitoring power in matched waveguide systems where high directivity is not a concern. Main line VSWR is 1.10 maximum and standard couples values are available from 30 to 60 dB with coupling flatness maintained ± 1.0 dB.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A (Style1)	B (Style 2)
RPS28...	WR - 28	26.50 - 40.00	2.00	.75
RPS34...	WR - 34	22.00 - 33.00	2.00	.75
RPS42...	WR - 42	18.00 - 26.50	2.00	.75
RPS51...	WR - 51	15.00 - 22.00	2.00	.75
RPS62...	WR - 62	12.40 - 18.00	2.00	.75
RPS75...	WR - 75	10.00 - 15.00	2.00	.75
RPS90...	WR - 90	8.20 - 12.40	2.00	.75
RPS102...	WR - 102	7.00 - 11.00	2.00	.75
RPS112...	WR - 112	7.05 - 10.00	2.00	.75
RPS137...	WR - 137	5.85 - 8.20	2.50	.75
RPS159...	WR - 159	4.90 - 7.05	2.50	.75
RPS187...	WR - 187	3.95 - 5.85	3.00	.75
RPS229...	WR - 229	3.30 - 4.90	3.00	N/A
RPS284...	WR - 284	2.60 - 3.95	3.00	N/A
RPS284 R/H...	WR - 284 R/H	2.60 - 3.95	3.00	N/A
RPS340...	WR - 340	2.20 - 3.30	6.00	N/A
RPS430...	WR - 430	1.70 - 2.60	6.00	N/A

*Indicates Model Number. See ORDERING DATA for complete part number.

**CMD offers an option for all clear or all tapped cover/cover and cover/groove combinations in both UG and CPR styles for body style 2.

ORDERING DATA:

	TYPICAL PART NO. – (example)	RPS90 - 1 - N - F - 30 - 1A - 1A - A
MODEL NUMBER:	[Redacted]	
** BODY STYLE:	1 or 2	
CONNECTOR STYLE:	SMA - TNC - N - K	
CONNECTOR TYPE:	M - MALE F - FEMALE	
COUPLING:	30 to 60 dB	
FLANGE 1:	[Redacted]	
FLANGE 2:	See data sheet number DS-101.	
MATERIAL:	A - ALUMINUM C - COPPER	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Finish other than noted available on request.
- Units provided pressure sealed (with connector capped).
- RPS 229, 284, 284 R/H, 340, 430 available in style 1 only.
- RPS 340, 430 available in aluminum only.



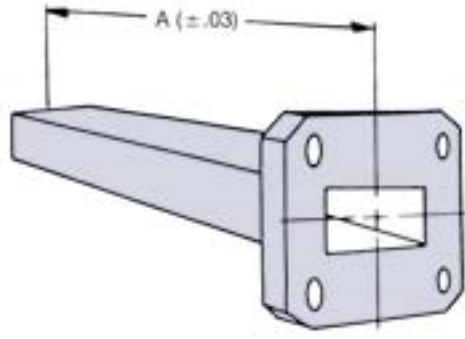
Continental Microwave Division

DS-114
11-06

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TERMINATION (*low power*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of low power terminations use custom machined load elements for optimum electrical performance. This series of terminations is designed for low power inputs. VSWR is less than 1.05 maximum over the full waveguide bandwidth.

Model No. *	Waveguide Size	Frequency Range (GHz)	PWR Max (Watts)	Dimension A
LPT22...	WR - 22	33.00 - 50.00	2	2.00
LPT28...	WR - 28	26.50 - 40.00	2	2.00
LPT34...	WR - 34	22.00 - 33.00	2	3.00
LPT42...	WR - 42	18.00 - 26.50	2	3.00
LPT51...	WR - 51	15.00 - 22.00	2	3.00
LPT62...	WR - 62	12.40 - 18.00	2	4.00
LPT75...	WR - 75	10.00 - 15.00	2	4.00
LPT90...	WR - 90	8.20 - 12.40	2	6.00
LPT102...	WR - 102	7.00 - 11.00	2	6.00
LPT112...	WR - 112	7.05 - 10.00	2	6.00
LPT137...	WR - 137	5.85 - 8.20	3	6.50
LPT159...	WR - 159	4.90 - 7.05	4	7.50
LPT187...	WR - 187	3.95 - 5.85	5	8.50
LPT229...	WR - 229	3.30 - 4.90	5	10.00
LPT284...	WR - 284	2.60 - 3.95	5	10.50
LPT284 R/H...	WR - 284 R/H	2.60 - 3.95	5	10.50
LPT340...	WR - 340	2.20 - 3.30	5	12.00
LPT430...	WR - 430	1.70 - 2.60	5	16.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **LPT90 - 1A - A**

MODEL NUMBER: [Redacted]

FLANGE: See data sheet number DS-101.

MATERIAL: A - ALUMINUM C - COPPER

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate finish available upon request.
- Standard unit provided not sealed pressure tight - pressure sealed units available on special order.
- LPT 340, 430 available in aluminum only.



Continental Microwave Division

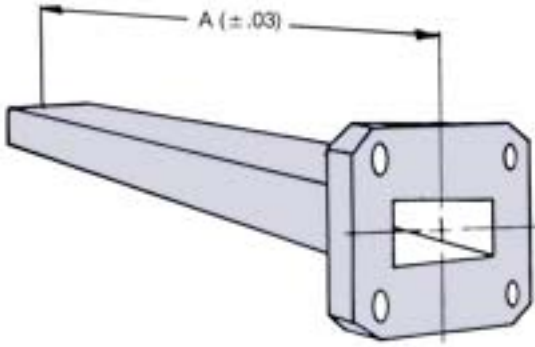
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DS-115A

11-06

TERMINATION *(low power, precision)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of precision low power terminators are constructed using custom machined load elements for optimum electrical performance. VSWR is less than 1.02 maximum over the full waveguide bandwidth.

Model No. *	Waveguide Size	Frequency Range (GHz)	PWR Max (Watts)	Dimension A
PLPT22...	WR - 22	33.00 - 50.00	2	4.00
PLPT28...	WR - 28	26.50 - 40.00	2	6.00
PLPT34...	WR - 34	22.00 - 33.00	2	6.00
PLPT42...	WR - 42	18.00 - 26.50	2	6.00
PLPT51...	WR - 51	15.00 - 22.00	2	6.00
PLPT62...	WR - 62	12.40 - 18.00	2	8.00
PLPT75...	WR - 75	10.00 - 15.00	2	8.00
PLPT90...	WR - 90	8.20 - 12.40	2	10.00
PLPT102...	WR - 102	7.00 - 11.00	2	10.00
PLPT112...	WR - 112	7.05 - 10.00	2	10.00
PLPT137...	WR - 137	5.85 - 8.20	3	12.00
PLPT159...	WR - 159	4.90 - 7.05	4	12.00
PLPT187...	WR - 187	3.95 - 5.85	5	12.00
PLPT229...	WR - 229	3.30 - 4.90	5	14.00
PLPT284...	WR - 284	2.60 - 3.95	5	18.00
PLPT284 R/H...	WR - 284 R/H	2.60 - 3.95	5	18.00
PLPT340...	WR - 340	2.20 - 3.30	5	18.00
PLPT430...	WR - 430	1.70 - 2.60	5	18.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

MODEL NUMBER: TYPICAL PART NO. - (example) **PLPT90 - 1A - A**

FLANGE: See data sheet number DS-101.

MATERIAL: A - ALUMINUM C - COPPER

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate finish available upon request.
- Standard unit provided *not sealed pressure tight* - pressure sealed units available on special order.
- PLPT 229, 284, 284 R/H, 340, 430 available in aluminum only.



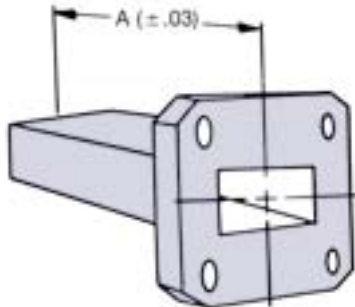
Continental Microwave Division

DS-115B
11-06

11 Continental Drive • Exeter, NH 03833 • Tel: 603-775-5200 • Fax: 603-775-5201

TERMINATION *(low power, short length)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of short-length low power terminations are constructed using custom machined load elements for optimum electrical performance. VSWR is less than 1.10 maximum over the full waveguide bandwidth.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR Max (Watts)	Dimension A
LPTSL22...	WR - 22	33.00 - 50.00	2	1.00
LPTSL28...	WR - 28	26.50 - 40.00	2	1.00
LPTSL34...	WR - 34	22.00 - 33.00	2	1.00
LPTSL42...	WR - 42	18.00 - 26.50	2	1.50
LPTSL51...	WR - 51	15.00 - 22.00	2	1.50
LPTSL62...	WR - 62	12.40 - 18.00	2	2.00
LPTSL75...	WR - 75	10.00 - 15.00	2	2.00
LPTSL90...	WR - 90	8.20 - 12.40	2	3.00
LPTSL102...	WR - 102	7.00 - 11.00	2	3.00
LPTSL112...	WR - 112	7.05 - 10.00	2	3.00
LPTSL137...	WR - 137	5.85 - 8.20	3	3.50
LPTSL159...	WR - 159	4.90 - 7.05	4	3.50
LPTSL187...	WR - 187	3.95 - 5.85	5	4.00
LPTSL229...	WR - 229	3.30 - 4.90	5	5.00
LPTSL284...	WR - 284	2.60 - 3.95	5	6.00
LPTSL284 R/H...	WR - 284 R/H	2.60 - 3.95	5	6.00
LPTSL340...	WR - 340	2.20 - 3.30	5	10.00
LPTSL430...	WR - 430	1.70 - 2.60	5	12.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **LPTSL90 - 1A - A**

MODEL NUMBER: [Redacted]

FLANGE: See data sheet number DS-101.

MATERIAL: A - ALUMINUM C - COPPER [Redacted]

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate finish available upon request.
- Standard unit provided not sealed pressure tight - pressure sealed units available on special order.
- LPTSL 229, 284, 284 R/H, 340, 430 available in aluminum only.



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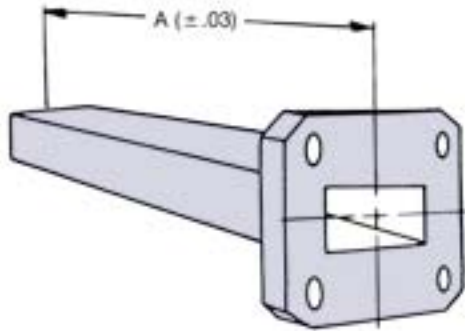
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DS-115C

11-06

TERMINATION (*low-medium power*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of low-medium power terminations use custom machined load elements for optimum electrical performance. This series of terminations is designed for low-medium power inputs. VSWR is less than 1.15 maximum over the full waveguide bandwidth.

Model No. *	Waveguide Size	Frequency Range(GHz)	PWR.Max** (Watts-CW)		Air Flow (CFM)	Dimension A
			A	B		
LMPT22...	WR - 22	33.00 - 50.00	13	25	35	3.77
LMPT28...	WR - 28	26.50 - 40.00	15	27	35	3.77
LMPT34...	WR - 34	22.00 - 33.00	17	33	35	3.77
LMPT42...	WR - 42	18.00 - 26.50	24	45	35	3.77
LMPT51...	WR - 51	15.00 - 22.00	35	66	35	4.56
LMPT62...	WR - 62	12.40 - 18.00	50	94	35	5.23
LMPT75...	WR - 75	10.00 - 15.00	71	156	35	6.00
LMPT90...	WR - 90	8.20 - 12.40	100	200	35	6.90
LMPT102...	WR - 102	7.00 - 11.00	128	259	70	7.68
LMPT112...	WR - 112	7.05 - 10.00	143	294	70	8.17
LMPT137...	WR - 137	5.85 - 8.20	259	455	70	9.73
LMPT159...	WR - 159	4.90 - 7.05	294	556	70	11.29
LMPT187...	WR - 187	3.95 - 5.85	405	750	70	12.98
LMPT229...	WR - 229	3.30 - 4.90	484	938	120	12.98
LMPT284...	WR - 284	2.60 - 3.95	714	1364	120	12.98
LMPT284 R/H...	WR - 284 R/H	2.60 - 3.95	556	1071	120	12.98
LMPT340...	WR - 340	2.20 - 3.30	789	1500	120	16.34
LMPT430...	WR - 430	1.70 - 2.60	938	1875	120	18.92

*Indicates Model Number. See ORDERING DATA for complete part number.

**Power condition - A reflects still air @ 25°C. Condition - B reflects forced air per indicated CFM level. CMD does not recommend operation above indicated input power levels for extended duration.

ORDERING DATA:

TYPICAL PART NO. – (example) **LMPT90 - 1A**

MODEL NUMBER: [Redacted]

FLANGE: See data sheet number DS-101.

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



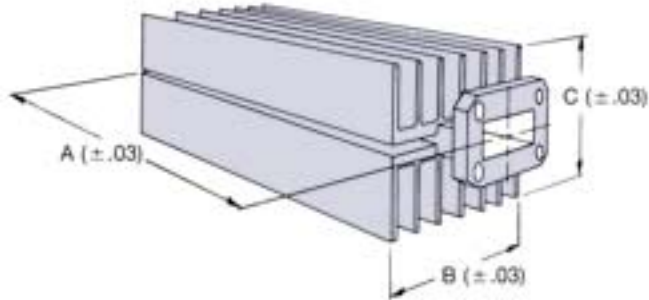
Continental Microwave Division

DS-115D
11-06

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TERMINATION (*medium power*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of medium power terminations are constructed of heavy wall 6061 aluminum waveguide and extruded heat sink material. The load elements are custom ground silicon carbide spears tapered for optimum VSWR response (1.15 maximum) while maintaining moderate power handling characteristics.

Model No. *	Waveguide Size	Frequency Range(GHz)	PWR.Max** (Watts-CW)		Air Flow (CFM)	Dimensions		
			A	B		A	B	C
MPT22...	WR - 22	33.00 - 50.00	18	25	35	3.77	.85	1.21
MPT28...	WR - 28	26.50 - 40.00	21	29	35	3.77	.85	1.24
MPT34...	WR - 34	22.00 - 33.00	30	41	35	3.77	.85	1.27
MPT42...	WR - 42	18.00 - 26.50	38	53	35	3.77	1.11	1.32
MPT51...	WR - 51	15.00 - 22.00	66	92	35	4.56	1.11	2.29
MPT62...	WR - 62	12.40 - 18.00	96	134	35	5.23	1.28	2.35
MPT75...	WR - 75	10.00 - 15.00	174	273	35	6.00	1.52	2.82
MPT90...	WR - 90	8.20 - 12.40	250	350	35	6.90	1.87	2.60
MPT102...	WR - 102	7.00 - 11.00	326	455	70	7.68	1.87	2.95
MPT112...	WR - 112	7.05 - 10.00	366	517	70	8.17	1.87	2.94
MPT137...	WR - 137	5.85 - 8.20	577	750	70	9.73	2.28	3.99
MPT159...	WR - 159	4.90 - 7.05	714	1000	70	11.29	2.28	4.12
MPT187...	WR - 187	3.95 - 5.85	833	1154	70	12.98	3.11	4.54
MPT229...	WR - 229	3.30 - 4.90	1071	1500	120	12.98	3.67	5.42
MPT284...	WR - 284	2.60 - 3.95	1364	1875	120	12.98	4.57	5.85
MPT284 R/H...	WR - 284 R/H	2.60 - 3.95	1250	1668	120	12.98	4.57	5.18
MPT340...	WR - 340	2.20 - 3.30	1500	2143	120	16.34	5.89	6.54
MPT430...	WR - 430	1.70 - 2.60	1668	2500	120	18.92	6.67	7.34

*Indicates Model Number. See ORDERING DATA for complete part number.

**Power condition - A reflects still air @ 25°C. Condition - B reflects forced air per indicated CFM level.

CMD does not recommend operation above indicated input power levels for extended duration.

ORDERING DATA:

TYPICAL PART NO. – (example) **MPT90 - 1A**

MODEL NUMBER: [Redacted]

FLANGE: See data sheet number DS-101.

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



Continental Microwave Division

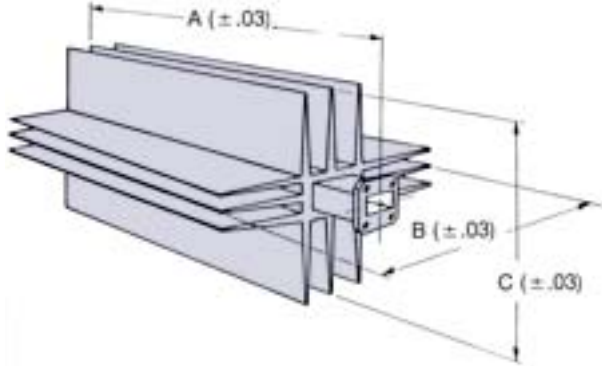
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DS-115E

11-06

TERMINATION *(high power)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of high power terminations are constructed of heavy wall 6061 aluminum waveguide and extruded heat sink material. The load elements are custom ground silicon carbide spears shaped for optimum power handling and heat transfer while maintaining 1.15 maximum VSWR.

Model No. *	Waveguide Size	Frequency Range(GHz)	PWR.Max** (Watts-CW)		Air Flow (CFM)	Dimensions		
			A	B		A	B	C
HPT22...	WR - 22	33.00 - 50.00	43	68	35	3.77	2.27	2.16
HPT28...	WR - 28	26.50 - 40.00	54	68	35	3.77	2.25	2.05
HPT34...	WR - 34	22.00 - 33.00	72	103	35	3.77	2.31	2.08
HPT42...	WR - 42	18.00 - 26.50	86	118	35	3.77	2.82	2.57
HPT51...	WR - 51	15.00 - 22.00	143	205	35	4.56	2.91	2.66
HPT62...	WR - 62	12.40 - 18.00	183	263	35	5.23	3.02	2.71
HPT75...	WR - 75	10.00 - 15.00	221	395	35	6.00	3.99	3.68
HPT90...	WR - 90	8.20 - 12.40	300	500	35	6.90	4.02	3.70
HPT102...	WR - 102	7.00 - 11.00	395	652	70	7.68	4.26	3.75
HPT112...	WR - 112	7.05 - 10.00	429	750	70	8.17	4.36	3.74
HPT137...	WR - 137	5.85 - 8.20	682	1071	70	9.73	5.16	4.41
HPT159...	WR - 159	4.90 - 7.05	882	1500	70	11.29	5.38	4.58
HPT187...	WR - 187	3.95 - 5.85	1000	1682	70	12.98	6.11	5.10
HPT229...	WR - 229	3.30 - 4.90	1250	2055	120	12.98	6.90	5.75
HPT284...	WR - 284	2.60 - 3.95	1613	2381	120	12.98	7.69	6.09
HPT340...	WR - 340	2.20 - 3.30	1786	2679	120	16.34	8.58	6.88
HPT430...	WR - 430	1.70 - 2.60	1974	3061	120	18.92	9.83	7.68

*Indicates Model Number. See ORDERING DATA for complete part number.

**Power condition - A reflects still air @ 25°C. Condition - B reflects forced air per indicated CFM level.

CMD does not recommend operation above indicated input power levels for extended duration.

ORDERING DATA:

TYPICAL PART NO. – (example) **HPT90 - 1A**

MODEL NUMBER: [Redacted]

FLANGE: See data sheet number DS-101.

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



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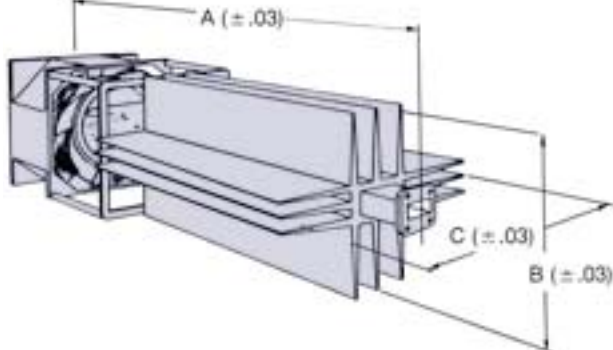
DS-115F

11-06

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TERMINATION *(high power, air cooled)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of high power air cooled terminations constructed of 6061 aluminum bodies and flanges. The load elements are custom ground silicon carbide spears shaped for optimum power handling and heat transfer while maintaining 1.15 maximum VSWR. This series of terminations is designed with a cooling fan(**) to enhance heat dissipation, and increase power handling performance.

Model No. *	Waveguide Size	Frequency Range(GHz)	Air Flow (CFM)	PWR.Max (Watts-CW)	Dimensions		
					A	B	C
HPTAC28...	WR - 28	26.50 - 40.00	35	80	6.77	3.14	3.14
HPTAC34...	WR - 34	22.00 - 33.00	35	118	6.77	3.14	3.14
HPTAC42...	WR - 42	18.00 - 26.50	35	130	6.77	3.14	3.14
HPTAC51...	WR - 51	15.00 - 22.00	35	225	7.56	3.14	3.14
HPTAC62...	WR - 62	12.40 - 18.00	35	290	8.23	3.14	3.14
HPTAC75...	WR - 75	10.00 - 15.00	35	450	9.00	3.99	3.68
HPTAC90...	WR - 90	8.20 - 12.40	35	600	9.90	4.02	3.70
HPTAC102...	WR - 102	7.00 - 11.00	70	715	11.28	4.69	4.69
HPTAC112...	WR - 112	7.05 - 10.00	70	825	11.77	4.69	4.69
HPTAC137...	WR - 137	5.85 - 8.20	70	1180	13.33	5.16	4.69
HPTAC159...	WR - 159	4.90 - 7.05	70	1650	14.89	5.38	4.69
HPTAC187...	WR - 187	3.95 - 5.85	70	1850	16.58	6.11	5.10
HPTAC229...	WR - 229	3.30 - 4.90	120	2260	16.58	6.90	5.75
HPTAC284...	WR - 284	2.60 - 3.95	120	2620	16.58	7.69	6.09
HPTAC340...	WR - 340	2.20 - 3.30	120	2950		8.58	6.88
HPTAC430...	WR - 430	1.70 - 2.60	120	3350		9.83	7.68

*Indicates Model Number. See ORDERING DATA for complete part number.
 CMD does not recommend operation above indicated input power levels for extended duration.
 (**)Cooling fan specifications: 115v-50 to 60 Hz - two wire hookup.
 Fan designation for fan voltage within part number: i.e. HPTAC 90 (115v), HPTAC 90 (230v)

ORDERING DATA:

TYPICAL PART NO. – (example) **HPTAC90 - 1A**

MODEL NUMBER: [Redacted]

FLANGE: See data sheet number DS-101.

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



Continental Microwave Division

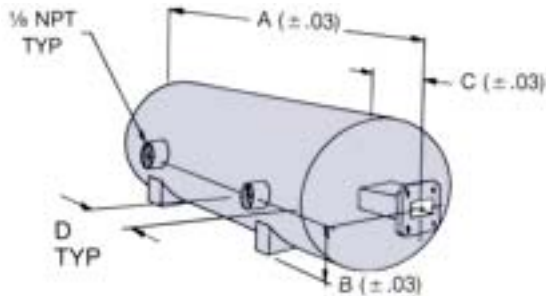
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DS-115G

11-06

TERMINATION *(high power, water cooled)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of high power water cooled terminations constructed of 6061 aluminum bodies and flanges. The load elements are custom ground silicon carbide spears shaped for optimum power handling and heat transfer while maintaining 1.15 maximum VSWR. This series of terminations is designed with input/output ports for water circulation, to enhance heat dissipation and increase power handling performance.

Model No. *	Waveguide Size	Frequency Range(GHz)	PWR.Max** (Watts-CW)	Dimensions			
				A	B	C	D
HPTW22...	WR - 22	33.00 - 50.00	248	3.77	1.40	1.00	.50
HPTW28...	WR - 28	26.50 - 40.00	263	3.77	1.40	1.00	.50
HPTW34...	WR - 34	22.00 - 33.00	303	3.77	1.40	1.00	.50
HPTW42...	WR - 42	18.00 - 26.50	329	3.77	1.40	1.00	.50
HPTW51...	WR - 51	15.00 - 22.00	568	4.56	1.75	1.25	.50
HPTW62...	WR - 62	12.40 - 18.00	694	5.23	1.75	1.25	.50
HPTW75...	WR - 75	10.00 - 15.00	877	6.00	1.75	1.25	.50
HPTW90...	WR - 90	8.20 - 12.40	1000	6.90	1.75	1.25	1.00
HPTW102...	WR - 102	7.00 - 11.00	1136	7.68	1.75	1.25	1.00
HPTW112...	WR - 112	7.05 - 10.00	1250	8.17	1.75	1.25	1.00
HPTW137...	WR - 137	5.85 - 8.20	2083	9.73	2.00	1.25	1.00
HPTW159...	WR - 159	4.90 - 7.05	3333	11.29	2.50	1.50	1.00
HPTW187...	WR - 187	3.95 - 5.85	4167	12.98	2.50	1.50	1.00
HPTW229...	WR - 229	3.30 - 4.90	5000	12.98	3.25	1.50	1.00
HPTW284...	WR - 284	2.60 - 3.95	5000	12.98	3.25	1.50	1.00
HPTW340...	WR - 340	2.20 - 3.30	7500	16.34	4.25	1.75	1.00
HPTW430...	WR - 430	1.70 - 2.60	8000	18.92	5.25	1.75	1.00

*Indicates Model Number. See ORDERING DATA for complete part number.

**Power condition reflects water flow rate @ 2 GPM.

ORDERING DATA:

TYPICAL PART NO. – (example) **HPTW90 - 1A**

MODEL NUMBER: [REDACTED]

FLANGE: See data sheet number DS-101.

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



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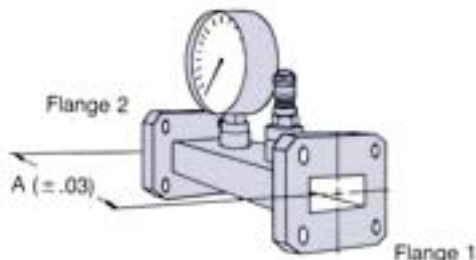
DS-115H

11-06

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PRESSURE UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of pressure units with cover or gasket flanges, covering the waveguide sizes WR - 28 to WR - 430. VSWR is less than 1.10. Gauge reads 30 psig maximum. A 60 psig gauge is available on request.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimension A
RPU28...	WR - 28	26.50 - 40.00	4.00
RPU34...	WR - 34	22.00 - 33.00	4.00
RPU42...	WR - 42	18.00 - 26.50	4.00
RPU51...	WR - 51	15.00 - 22.00	6.00
RPU62...	WR - 62	12.40 - 18.00	6.00
RPU75...	WR - 75	10.00 - 15.00	6.00
RPU90...	WR - 90	8.20 - 12.40	6.00
RPU102...	WR - 102	7.00 - 11.00	6.00
RPU112...	WR - 112	7.05 - 10.00	6.00
RPU137...	WR - 137	5.85 - 8.20	6.00
RPU159...	WR - 159	4.90 - 7.05	6.00
RPU187...	WR - 187	3.95 - 5.85	6.00
RPU229...	WR - 229	3.30 - 4.90	6.00
RPU284...	WR - 284	2.60 - 3.95	6.00
RPU340...	WR - 340	2.20 - 3.30	8.00
RPU430...	WR - 430	1.70 - 2.60	8.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **RPU90 - 1A - 5A - A**

MODEL NUMBER: _____

FLANGE 1: _____ See data sheet number DS-101.

FLANGE 2: _____

MATERIAL: A - ALUMINUM C - COPPER

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Finish other than noted available on request.
- RPU 229, 284, 340, 430 available in aluminum only.



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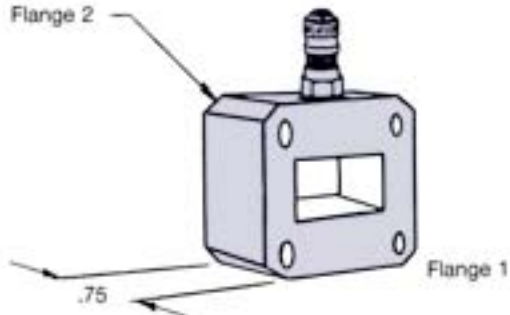
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DS-116

11-06

PRESSURE INLET

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of rectangular waveguide pressure inlets constructed using a combination of all clear or all tapped, aluminum or brass, cover or groove type flanges and covering the waveguide sizes WR - 28 to WR - 187. VSWR is less than 1.10.

Model No. *	Waveguide Size	Frequency Range (GHz)
PI28...	WR - 28	26.50 - 40.00
PI34...	WR - 34	22.00 - 33.00
PI42...	WR - 42	18.00 - 26.50
PI51...	WR - 51	15.00 - 22.00
PI62...	WR - 62	12.40 - 18.00
PI75...	WR - 75	10.00 - 15.00
PI90...	WR - 90	8.20 - 12.40
PI102...	WR - 102	7.00 - 11.00
PI112...	WR - 112	7.05 - 10.00
PI137...	WR - 137	5.85 - 8.20
PI159...	WR - 159	4.90 - 7.05
PI187...	WR - 187	3.95 - 5.85

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **PI90 - 1A - 7A - A**

MODEL NUMBER: _____

FLANGE 1: _____

FLANGE 2: _____ See data sheet number DS-101.

MATERIAL: A - ALUMINUM B - BRASS

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate material available upon request.
- Alternate finish available upon request.



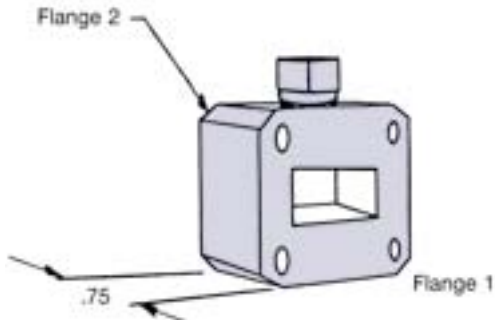
DS-117
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DRAIN UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of rectangular waveguide drain units constructed using a combination of all clear or all tapped, aluminum or brass, cover or groove type flanges and covering the waveguide sizes WR - 28 to WR - 187. VSWR is less than 1.10.

Model No. *	Waveguide Size	Frequency Range (GHz)
DU28...	WR - 28	26.50 - 40.00
DU34...	WR - 34	22.00 - 33.00
DU42...	WR - 42	18.00 - 26.50
DU51...	WR - 51	15.00 - 22.00
DU62...	WR - 62	12.40 - 18.00
DU75...	WR - 75	10.00 - 15.00
DU90...	WR - 90	8.20 - 12.40
DU102...	WR - 102	7.00 - 11.00
DU112...	WR - 112	7.05 - 10.00
DU137...	WR - 137	5.85 - 8.20
DU159...	WR - 159	4.90 - 7.05
DU187...	WR - 187	3.95 - 5.85

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **DU90 - 1A - 7A - A**

MODEL NUMBER: _____

FLANGE 1: _____

FLANGE 2: _____ See data sheet number DS-101.

MATERIAL: A - ALUMINUM B - BRASS

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate material available upon request.
- Alternate finish available upon request.



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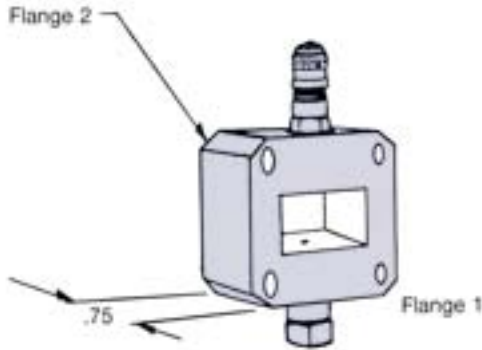
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DS-118

11-06

PRESSURE DRAIN UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of rectangular waveguide pressure drain units constructed using a combination of all clear or all tapped, aluminum or brass, cover or groove type flanges and covering the waveguide sizes WR - 28 to WR - 187. VSWR is less than 1.10.

Model No. *	Waveguide Size	Frequency Range (GHz)
PDU28...	WR - 28	26.50 - 40.00
PDU34...	WR - 34	22.00 - 33.00
PDU42...	WR - 42	18.00 - 26.50
PDU51...	WR - 51	15.00 - 22.00
PDU62...	WR - 62	12.40 - 18.00
PDU75...	WR - 75	10.00 - 15.00
PDU90...	WR - 90	8.20 - 12.40
PDU102...	WR - 102	7.00 - 11.00
PDU112...	WR - 112	7.05 - 10.00
PDU137...	WR - 137	5.85 - 8.20
PDU159...	WR - 159	4.90 - 7.05
PDU187...	WR - 187	3.95 - 5.85

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

MODEL NUMBER:	TYPICAL PART NO. - (example) PDU90 - 1A - 7A - A
FLANGE 1:	See data sheet number DS-101.
FLANGE 2:	
MATERIAL:	A - ALUMINUM B - BRASS
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate material available upon request.
- Alternate finish available upon request.



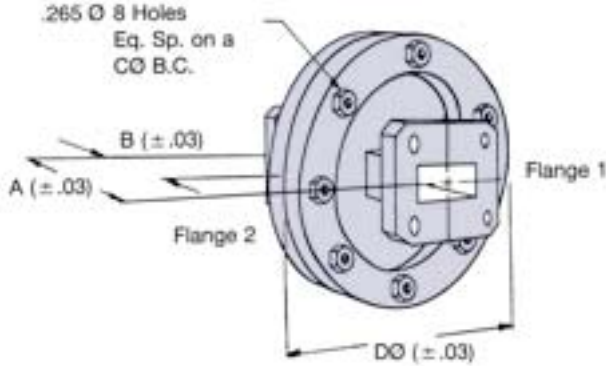
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DS-119
11-06

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BULKHEAD FEED UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of bulkhead units with cover or gasket flanges, covering the waveguide sizes WR-22 to WR-187. Assemblies include hardware and silicone rubber bulkhead gasket for mounting purposes. VSWR is less than 1.10.

Model No. *	Waveguide Size	Frequency Range (GHz)	Dimensions			
			A	B	CØ	DØ
BFU22...	WR - 22	33.00 - 50.00	3.00	1.00	2.00	2.50
BFU28...	WR - 28	26.50 - 40.00	3.00	1.00	2.50	3.00
BFU34...	WR - 34	22.00 - 33.00	3.00	1.00	2.50	3.00
BFU42...	WR - 42	18.00 - 26.50	3.00	1.00	2.50	3.00
BFU51...	WR - 51	15.00 - 22.00	3.00	1.00	2.63	3.25
BFU62...	WR - 62	12.40 - 18.00	3.00	1.00	2.63	3.25
BFU75...	WR - 75	10.00 - 15.00	3.75	1.38	2.88	3.50
BFU90...	WR - 90	8.20 - 12.40	3.75	1.38	2.88	3.50
BFU102...	WR - 102	7.00 - 11.00	4.25	1.63	3.25	4.00
BFU112...	WR - 112	7.05 - 10.00	4.25	1.63	3.25	4.00
BFU137...	WR - 137	5.85 - 8.20	4.25	1.63	4.00	4.75
BFU159...	WR - 159	4.90 - 7.05	4.25	1.63	5.25	6.00
BFU187...	WR - 187	3.95 - 5.85	4.25	1.63	5.25	6.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **BFU90 - 3A - 6A - A**

MODEL NUMBER: [Redacted]

FLANGE 1: [Redacted]

FLANGE 2: [Redacted]

MATERIAL: A - ALUMINUM C - COPPER

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

■ Finish other than noted available on request.



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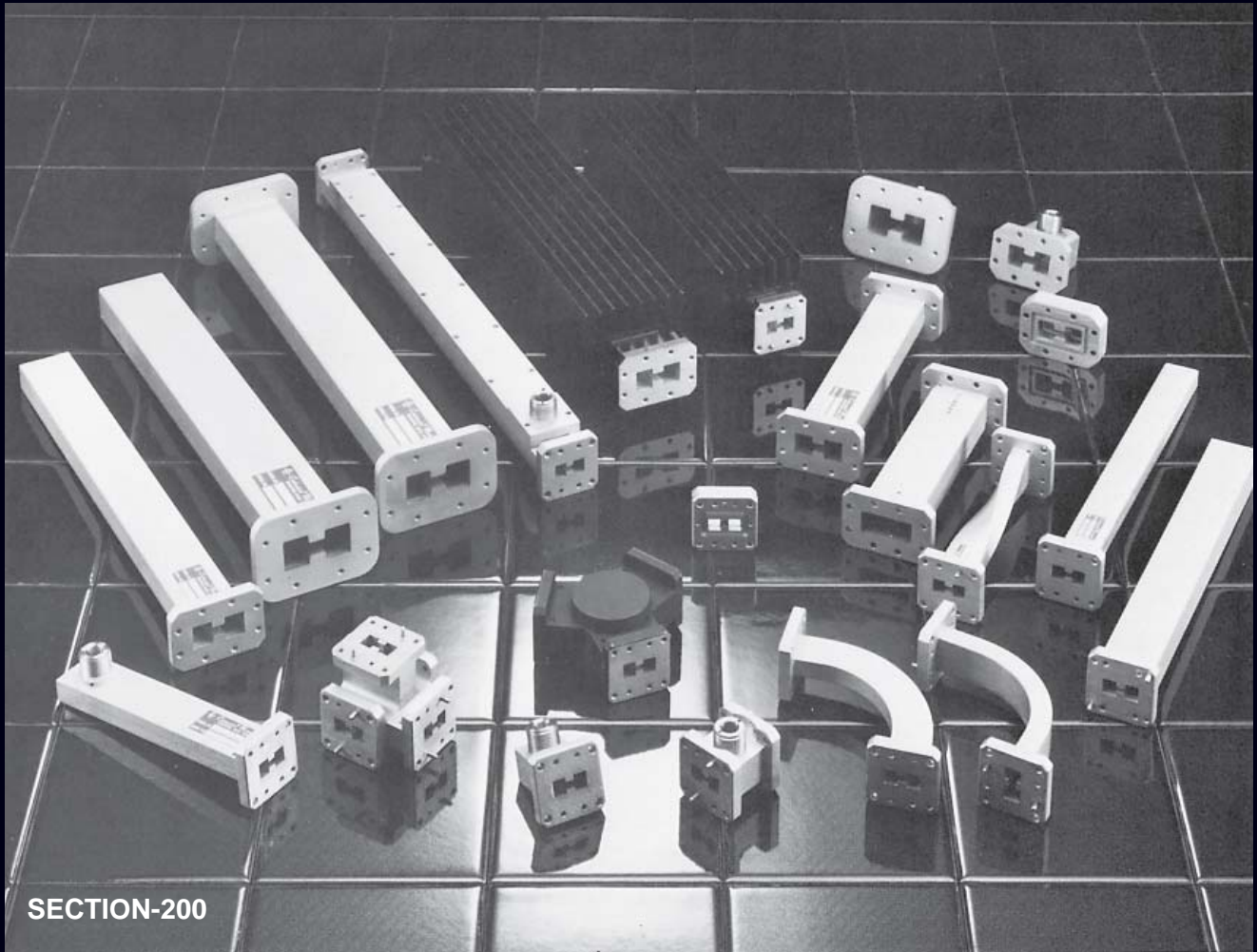
DS-120

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DOUBLE-RIDGE WAVEGUIDE

SECTION CONTENTS

Flanges	DS-201	Directional Couplers	DS-211
Waveguide Tubing	DS-202	Hybrid Tees	DS-212
Gaskets	DS-203	Power Samplers	DS-214
Flanged E-Plane Bends	DS-204	Terminations	DS-215
Flanged H-Plane Bends	DS-205	Mismatches	DS-216
Twists	DS-206	Pressure Units	DS-217
Flanged Straight Sections	DS-207	Pressure Inlets	DS-218
Transitions	DS-208	Drain Units	DS-219
Adapters	DS-209	Pressure Drain Units	DS-220
Pressure Windows	DS-210	Bulkhead Feed Units	DS-221



SECTION-200

FLANGES

PART DESCRIPTION:

CMD offers a standard product line of double-ridge waveguide flanges for the waveguide sizes WRD180 thru WRD250 per Mil-W-23351. These flanges are available in aluminum and are provided in either cover or gasket configurations. Alternate materials and configurations are available on request.

Model No. *	Cover Type			Gasket Type			Flange Illustrations
	Alt Tap & Clear	All Clear	All Tap	Alt Tap & Clear	All Clear	All Tap	
FLG180	1-C	2-C	3-C	1-G	2-G	3-G	DS - 561
FLG110	1-C	2-C	3-C	1-G	2-G	3-G	DS - 562
FLG750	1-C	2-C	3-C	1-G	2-G	3-G	DS - 563
FLG750 S/L	-	2-C	3-C	-	2-G	3-G	DS - 564
FLG650	1-C	2-C	3-C	1-G	2-G	3-G	DS - 567
FLG650 S/L	-	2-C	3-C	-	2-G	3-G	DS - 568
FLG580	1-C	2-C	3-C	1-G	2-G	3-G	DS - 569
FLG475	1-C	2-C	3-C	1-G	2-G	3-G	DS - 571
FLG350	1-C	2-C	3-C	1-G	2-G	3-G	DS - 572
FLG250	1-C	2-C	3-C	1-G	2-G	3-G	DS - 573

Shaded area indicates CMD standard product
 Excluding FLG180 & 110, all flanges offered butt style only. FLG180 & 110 offered thru style only.
 Refer to DS-502 for equivalent MIL designations
 All CMD flanges are designed to mate with MIL-STD interfaces.

ORDERING DATA:

TYPICAL PART NO. – (example) **FLG650 - 1 - C**

MODEL NUMBER: _____

FLANGE CONFIGURATION: 1, 2, or 3

FLANGE STYLE: C - COVER G - GASKET

MATERIAL: 6061 ALUMINUM



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DS-201
11-06

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DOUBLE-RIDGE WAVEGUIDE

RIGID WAVEGUIDE TUBING

PART DESCRIPTION:

CMD has rigid waveguide tubing in stock, available in 9 different double ridge waveguide sizes. Tubing meets MIL-DTL-23351 specifications.

SPECIFICATIONS:

Model No. *	Waveguide Size	Frequency Range (GHz)	Outside Dimensions	Wall Thickness (Nominal)	Theoretical Ins. Loss dB/100 FT
RWT180...	WRD - 180C24	18.00 - 40.00	.368 X .214	.040	35.80
RWT110...	WRD - 110C24	11.00 - 26.50	.551 X .299	.040	17.10
RWT750...	WRD - 750D24	7.50 - 18.00	.791 X .421	.050	9.64
RWT650...	WRD - 650D28	6.50 - 18.00	.821 X .421	.050	10.60
RWT580...	WRD - 580D28	5.80 - 16.00	.880 X .470	.050	10.00
RWT475...	WRD - 475D24	4.75 - 11.00	1.190 X .606	.050	4.87
RWT350...	WRD - 350D24	3.50 - 8.20	1.608 X .816	.064	3.07

*Indicated Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **RWT650 - 60**

MODEL NUMBER:

LENGTH: IN INCHES

MATERIAL: 6061 ALUMINUM

■ Refer to DS-503 for additional waveguide specifications.



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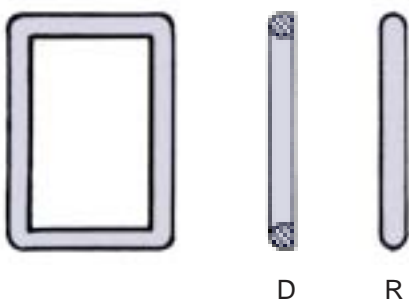
DS-202

11-06

GASKETS

SPECIFICATIONS:

R.F. and pressure
Sealing Applications



PART DESCRIPTION:

CMD stocks a series of conductive silicone double-ridge waveguide grooved-flange gaskets. These gaskets are manufactured from a silver impregnated silicone fluorolastomer compound and are designed to mate with the CMD flange series as noted per data sheet number DS-201.

Model No.*	Waveguide Size	Mating Flange
GSK180...	WRD - 180C24	FLG180 - G
GSK110...	WRD - 110C24	FLG110 - G
* GSK750...	WRD - 750D24	FLG750 - G
* GSK650...	WRD - 650D28	FLG650 - G
GSK580...	WRD - 580D28	FLG580 - G
GSK475...	WRD - 475D24	FLG475 - G
GSK350...	WRD - 350D24	FLG350 - G
GSK250...	WRD - 250D30	FLG250 - G
GSK200...	WRD - 200D24	FLG200 - G

*Available in "D" or "R" styles.

ORDERING DATA:

SPECIFY MODEL NUMBER

- All gaskets are provided in D-Style
- For round (R) gaskets, add "-R" to part number
- Round gaskets and "D"-Gaskets are interchangeable



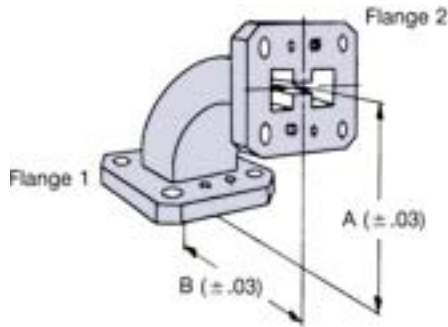
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DS-203
11-06

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RIGID E-BEND (with flanges)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of formed E-bends covering the waveguide sizes WRD - 180 thru WRD - 350. VSWR is less than 1.15 maximum over the full waveguide bandwidth while insertion loss is equivalent to straight waveguide sections. Additional sizes, configurations and combinations are available on request.

Model No.*	Waveguide Size	Frequency Range (GHz)	Inside Bend Radius	Dimension A or B (Min.)
REB180...	WRD - 180C24	18.00 - 40.00	1.00	1.80
REB110...	WRD - 110C24	11.00 - 26.50	1.00	1.84
REB750...	WRD - 750D24	7.50 - 18.00	1.50	2.77
REB650...	WRD - 650D28	6.50 - 18.00	1.50	2.78
REB580...	WRD - 580D28	5.80 - 16.00	1.50	2.82
REB475...	WRD - 475D24	4.75 - 11.00	2.00	3.30
REB350...	WRD - 350D24	3.50 - 8.20	3.00	5.41

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **REB650 - 1C - 1G - 3.50 - 6.00**

MODEL NUMBER: _____

FLANGE 1: _____

FLANGE 2: _____ See data sheet number DS-201.

DIMENSION A: _____ LENGTH IN INCHES

DIMENSION B: _____ LENGTH IN INCHES

MATERIAL: _____ 6061 ALUMINUM

FINISH: _____ CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Bends other than 90° available on request.
- Finish coat other than noted available on request.
- Refer to DS-504 for CMD bend radius standards



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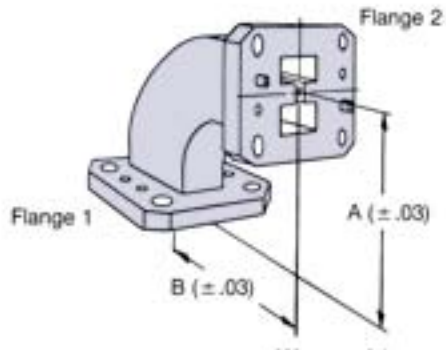
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DS-204

11-06

RIGID H-BEND (with flanges)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of formed H-bends covering the waveguide sizes WRD - 180 thru WRD - 350. VSWR is less than 1.15 maximum over the full waveguide bandwidth while insertion loss is equivalent to straight waveguide sections. Additional sizes, configurations and combinations are available

Model No.*	Waveguide Size	Frequency Range (GHz)	Inside Bend Radius	Dimension A or B (Min.)
RHB180...	WRD - 180C24	18.00 - 40.00	2.00	2.88
RHB110...	WRD - 110C24	11.00 - 26.50	2.00	2.97
RHB750...	WRD - 750D24	7.50 - 18.00	2.00	3.27
RHB650...	WRD - 650D28	6.50 - 18.00	2.00	3.29
RHB580...	WRD - 580D28	5.80 - 16.00	2.00	3.32
RHB475...	WRD - 475D24	4.75 - 11.00	3.00	5.00
RHB350...	WRD - 350D24	3.50 - 8.20	4.00	5.80

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example)

RHB650 - 1C - 1G - 3.50 - 6.00

MODEL NUMBER:

FLANGE 1:

FLANGE 2:

DIMENSION A:

DIMENSION B:

MATERIAL:

FINISH:

See data sheet number DS-201.

- Bends other than 90° available on request.
- Finish coat other than noted available on request.
- Refer to DS-504 for CMD bend radius standards



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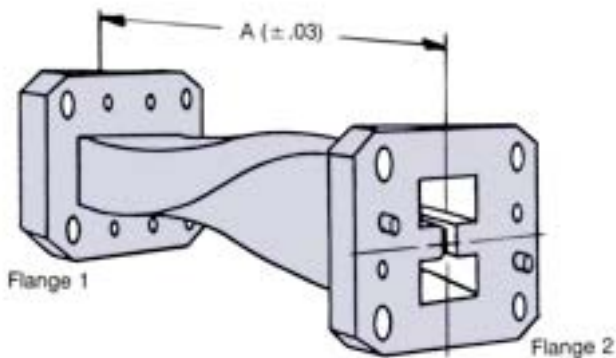
DS-205
11-06

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DOUBLE-RIDGE WAVEGUIDE

RIGID TWIST *(with flanges)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of formed twist sections covering the waveguide sizes WRD - 180 thru WRD - 350. VSWR is less than 1.15 maximum over the full waveguide bandwidth while insertion loss is equivalent to straight waveguide sections. Additional sizes, configurations and combinations are available on request.

Model No.*	Waveguide Size	Frequency Range (GHz)	Angular Twist Length	Dimension A or B (Min.)
DRT180...	WRD - 180C24	18.00 - 40.00	3.00	4.38
DRT110...	WRD - 110C24	11.00 - 26.50	3.00	4.38
DRT750...	WRD - 750D24	7.50 - 18.00	4.00	5.75
DRT650...	WRD - 650D28	6.50 - 18.00	4.00	5.75
DRT580...	WRD - 580D28	5.80 - 16.00	4.00	5.75
DRT475...	WRD - 475D24	4.75 - 11.00	6.00	8.00
DRT350...	WRD - 350D24	3.50 - 8.20	8.00	10.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **DRT650 - 1C - 1G - 90° - 5.00**

MODEL NUMBER: _____

FLANGE 1: _____

FLANGE 2: _____ See data sheet number DS-201.

ANGULAR TWIST: SPECIFY ANGLE _____

DIMENSION A: LENGTH IN INCHES _____

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- CCW twist depicted. Twist direction option of CMD unless otherwise specified
- Finish other than noted available upon request.
- Refer to DS-504 for CMD twist length standards



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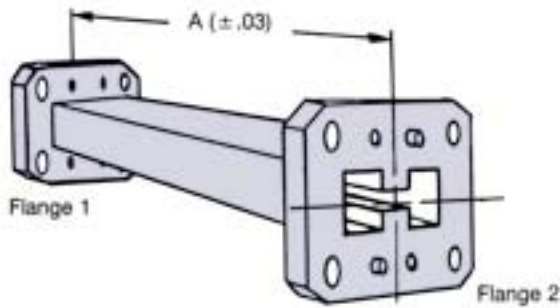
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DS-206

11-06

RIGID STRAIGHT *(with flanges)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of straight sections with cover or gaskets flanges, covering the waveguide sizes WRD - 180 thru WRD - 350. VSWR is less than 1.10 typical over the full waveguide bandwidth for most waveguide sizes while insertion loss is equivalent to waveguide tubing per Mil-W-23351.

Model No.*	Waveguide Size	Frequency Range (GHz)
DRS180...	WRD - 180C24	18.00 - 40.00
DRS110...	WRD - 110C24	11.00 - 26.50
DRS750...	WRD - 750D24	7.50 - 18.00
DRS650...	WRD - 650D28	6.50 - 18.00
DRS580...	WRD - 580D28	5.80 - 16.00
DRS475...	WRD - 475D24	4.75 - 11.00
DRS350...	WRD - 350D24	3.50 - 8.20

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. – (example)	DRS650 - 1C - 1G - 6.00
MODEL NUMBER:		
FLANGE 1:		
FLANGE 2:	See data sheet number DS-201.	
DIMENSION A:	LENGTH IN INCHES (144.0 MAX)	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

■ Alternate finish available upon request.



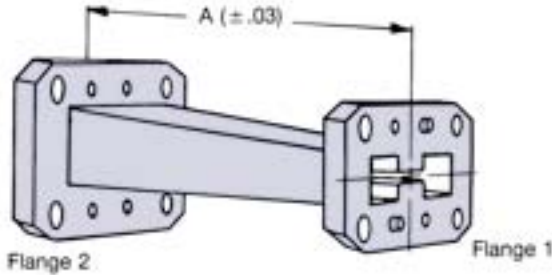
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DS-207
11-06

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TRANSITION (flanged)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of fabricated waveguide transitions designed to connect different size components in a minimum space while maintaining a VSWR of 1.15 maximum in the overlap frequency bands. The standard double-ridged sizes from WRD - 180 thru WRD - 250 are reflected on this data sheet. Additional sizes, extended range, and custom designs are available upon request.

Model No.*	Frequency Range (GHz)	Dim. A	Model No.*	Frequency Range (GHz)	Dim. A	Model No.*	Frequency Range (GHz)	Dim. A
WT180-22	33.00 - 40.00	3.50	WT750-102	7.50 - 11.00	6.50	WT475-75	10.00 - 11.00	6.00
WT180-28	26.50 - 40.00	3.50	WT750-112	7.50 - 10.00	6.50	WT475-90	8.20 - 11.00	6.00
WT180-34	22.00 - 33.00	4.00	WT650-62	12.40 - 18.00	4.00	WT475-102	7.00 - 11.00	6.50
WT180-42	18.00 - 26.50	4.50	WT650-75	10.00 - 15.00	4.50	WT475-112	7.05 - 10.00	6.50
WT180-110	18.00 - 26.50	4.50	WT650-90	8.20 - 12.40	6.00	WT475-137	5.85 - 8.20	8.00
WT180-51	18.00 - 22.00	4.50	WT650-580	6.50 - 16.00	6.00	WT350-102	7.00 - 8.20	8.00
WT110-34	22.00 - 26.50	4.50	WT650-102	7.00 - 11.00	6.50	WT350-112	7.05 - 8.20	8.00
WT110-42	18.00 - 26.50	4.50	WT650-112	7.05 - 10.00	6.50	WT350-137	5.85 - 8.20	8.00
WT110-51	15.00 - 22.00	4.50	WT580-62	12.40 - 16.00	4.00	WT350-159	4.90 - 7.05	9.00
WT110-62	12.40 - 18.00	4.50	WT580-75	10.00 - 15.00	4.50	WT350-250	3.50 - 7.80	8.00
WT750-62	12.40 - 18.00	4.00	WT580-90	8.20 - 12.40	6.00	WT250-159	4.90 - 7.05	10.00
WT750-75	10.00 - 15.00	4.50	WT580-102	7.00 - 11.00	6.50	WT250-187	3.95 - 5.85	12.00
WT750-90	8.20 - 12.40	6.00	WT580-112	7.05 - 10.00	6.50	WT250-229	3.30 - 4.90	12.00
WT750-650	7.50 - 18.00	6.00	WT580-137	5.85 - 8.20	7.00	WT250-284	2.60 - 3.95	12.00
WT750-580	7.50 - 16.00	6.00	WT580-475	5.80 - 11.00	6.00	WT250-340	2.60 - 3.30	12.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example) **WT650 - 90 - 1C - 1A**

MODEL NUMBER: [REDACTED]

FLANGE 1: For Double-Ridge Waveguide, see data sheet number DS-201.

FLANGE 2: For Rectangular Waveguide, see data sheet number DS-101.

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

■ Finish other than noted available upon request.



Continental Microwave Division

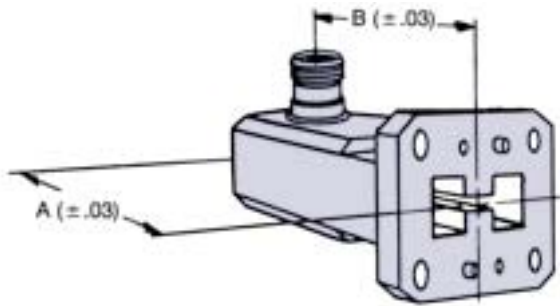
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DS-208

11-06

ADAPTER (waveguide to coax)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of precision double-ridge waveguide-to-coax adapters constructed of 6061 aluminum covering the waveguide sizes WRD-180 thru WRD-250. VSWR over the full waveguide bandwidth is 1.20 typical for most models, or that of the coaxial connector selected. Additional sizes including extended range, and custom design configurations are available on request.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR Rating** Reference next page for detailed specification	Dimensions	
				A	B
DRA180 ...	WRD - 180C24	18.00 - 40.00		1.00	.75
DRA110 ...	WRD - 110C24	11.00 - 26.50		1.00	.75
DRA750 ...	WRD - 750D24	7.50 - 18.00		1.28	.75
DRA650 ...	WRD - 650D28	6.50 - 18.00		1.95	1.43
DRA580 ...	WRD - 580D28	5.80 - 16.00		1.28	.75
DRA475 ...	WRD - 475D24	4.75 - 11.00		1.80	1.31
DRA350 ...	WRD - 350D24	3.50 - 8.20		1.63	1.13
DRA250 ...	WRD - 250D30	2.60 - 7.80		2.00	1.40

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. - (example)	DRA650 - SMA - M - 1C
MODEL NUMBER:	[Redacted]	
CONNECTOR STYLE:	SMA - TNC - N - 7mm - 2.4mm - 3.5mm	
CONNECTOR TYPE:	M - MALE F - FEMALE	
FLANGE:	See data sheet number DS-201.	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Finish other than noted available upon request.
- ** ■ Power Rating dependent on connector selection
- Standard unit provided not sealed pressure tight - pressure sealed units (with connector capped) available on special order.



Continental Microwave Division

DS-209A
11-06

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DOUBLE-RIDGE WAVEGUIDE

SPECIFICATIONS:

Model No.	W/G Size	Freq. Range GHz	Recommended Power Rating @ one atmosphere & Connector Type												VSWR (x:1)	Insertion Loss (db)
			2.4mm (50)		2.9mm (K)		SMA		TNC		N		7mm			
			cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)		
DRA180	WRD-180	18-40	10	1											1.8	0.5
DRA180	WRD-180	18-40			10	1									1.35	0.5
DRA110	WRD-110	11-26.5	10	1											1.8	0.4
DRA110	WRD-110	11-26.5			10	1									1.35	0.4
DRA110	WRD-110	11-26.5					25	2							1.4	0.4
DRA750	WRD-750	7.5-18					50	1							1.2	0.25
DRA750	WRD-750	7.5-18							150	2					1.25	0.25
DRA750	WRD-750	7.5-18								150	2				1.2	0.25
DRA750	WRD-750	7.5-18									10	2			1.2	0.25
DRA650	WRD-650	6.5-18					50	1							1.2	0.25
DRA650	WRD-650	6.5-18							150	2					1.25	0.25
DRA650	WRD-650	6.5-18								150	2				1.2	0.25
DRA650	WRD-650	6.5-18									10	2			1.2	0.25
DRA580	WRD-580	5.8-16					50	1							1.2	0.25
DRA580	WRD-580	5.8-16							150	2					1.25	0.25
DRA580	WRD-580	5.8-16								150	2				1.2	0.25
DRA580	WRD-580	5.8-16									10	2			1.2	0.25
DRA475	WRD-475	4.75-11					50	1							1.2	0.25
DRA475	WRD-475	4.75-11							175	2					1.25	0.25
DRA475	WRD-475	4.75-11								175	2				1.2	0.25
DRA475	WRD-475	4.75-11									10	2			1.2	0.25
DRA350	WRD-350	3.5-8.2					50	1							1.2	0.25
DRA350	WRD-350	3.5-8.2							175	2					1.25	0.25
DRA350	WRD-350	3.5-8.2								175	2				1.2	0.25
DRA350	WRD-350	3.5-8.2									10	2			1.2	0.25
DRA250	WRD-250	2.6-7.8					50	1							1.25	0.3
DRA250	WRD-250	2.6-7.8							175	2					1.25	0.3
DRA250	WRD-250	2.6-7.8								175	2				1.25	0.3
DRA250	WRD-250	2.6-7.8									10	2			1.25	0.3

DOUBLE-RIDGE WAVEGUIDE



Continental Microwave Division

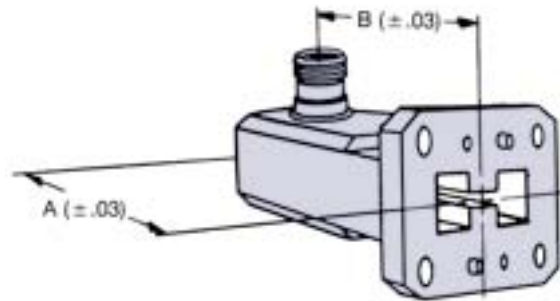
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DS-209A

11-06

ADAPTER (*high power*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of high power double-ridge waveguide-to-coax adapters constructed of 6061 aluminum covering bands WRD-750 thru WRD-250. VSWR over the full waveguide bandwidth is 1.50 typical for most models, or that of the coaxial connector selected. Custom design configurations are available on request.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR Rating** Reference next page for detailed specification	Dimensions	
				A	B
DRAH750 ...	WRD - 750D24	7.50 - 18.00		1.28	.75
DRAH650 ...	WRD - 650D28	6.50 - 18.00		1.95	1.43
DRAH580 ...	WRD - 580D28	5.80 - 16.00		1.28	.75
DRAH475 ...	WRD - 475D24	4.75 - 11.00		1.80	1.31
DRAH350 ...	WRD - 350D24	3.50 - 8.20		1.63	1.13
DRAH250 ...	WRD - 250D30	2.60 - 7.80		2.00	1.40

* Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

		TYPICAL PART NO. - (example)	DRA650 - TNC - M - 1C
MODEL NUMBER:			
CONNECTOR	STYLE:	TNC - N - SC	
	TYPE:	M - MALE F - FEMALE	
	FLANGE:	See data sheet number DS-201	
	MATERIAL:	6061 ALUMINUM	
	FINISH:	CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT	

- *Finish other than noted available upon request.*
- ** ■ *Power Rating dependent on connector selection*
- *Standard unit provided not sealed pressure tight - pressure sealed units (with connector capped) available on special order.*



DS-209B
11-06

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SPECIFICATIONS:

Model No.	W/G Size	Freq. Range GHz	Recommended Power Rating @ one atmosphere & Connector Type								VSWR (x:1)	Insertion Loss (db)
			SMA		TNC		N		SC			
			cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)		
DRAH750	WRD-750	7.5-18					250	3			1.5	0.25
DRAH750	WRD-750	7.5-18			250	4					1.5	0.25
DRAH750	WRD-750	7.5-18	50	2							1.5	0.25
DRAH650	WRD-650	6.5-18					250	3			1.5	0.25
DRAH650	WRD-650	6.5-18			250	4					1.5	0.25
DRAH650	WRD-650	6.5-18	50	2							1.5	0.25
DRAH580	WRD-580	5.8-16					250	3			1.5	0.25
DRAH580	WRD-580	5.8-16			250	4					1.5	0.25
DRAH580	WRD-580	5.8-16	50	2							1.5	0.25
DRAH475	WRD-475	4.75-11					350	3			1.5	0.25
DRAH475	WRD-475	4.75-11			350	4					1.5	0.25
DRAH475	WRD-475	4.75-11	50	2							1.5	0.25
DRAH350	WRD-350	3.5-8.2							550	8	1.5	0.25
DRAH350	WRD-350	3.5-8.2					350	3			1.5	0.25
DRAH350	WRD-350	3.5-8.2			350	4					1.5	0.25
DRAH350	WRD-350	3.5-8.2	50	2							1.5	0.25
DRAH250	WRD-250	2.6-7.8							550	8	1.5	0.25
DRAH250	WRD-250	2.6-7.8					350	3			1.5	0.25
DRAH250	WRD-250	2.6-7.8			350	4					1.5	0.25
DRAH250	WRD-250	2.6-7.8	50	2							1.5	0.25

DOUBLE-RIDGE WAVEGUIDE



Continental Microwave Division

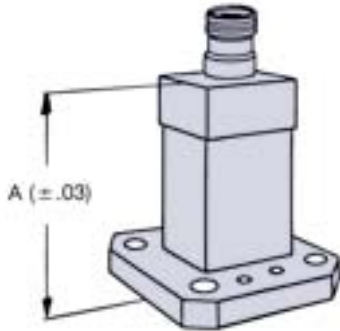
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DS-209B

11-06

ADAPTER *(high power, end launch)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of precision high power double-ridge waveguide-to-coax end-launch adapters constructed of 6061 aluminum covering the waveguide sizes WRD-750 thru WRD-250. VSWR over the full waveguide bandwidth is 1.50 typical for most models, or that of the coaxial connector selected.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR Rating** Reference next page for detailed specification	Dimensions A
DRAHE750 ...	WRD - 750D24	7.50 - 18.00		2.88
DRAHE650 ...	WRD - 650D28	6.50 - 18.00		2.88
DRAHE580 ...	WRD - 580D28	5.80 - 16.00		2.88
DRAHE475 ...	WRD - 475D24	4.75 - 11.00		4.10
DRAHE350 ...	WRD - 350D24	3.50 - 8.20		5.67
DRAHE250 ...	WRD - 250D30	2.60 - 7.80		8.15

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. - (example)	DRAHE650 - TNC - M - 1C
MODEL NUMBER:	[Redacted]	
CONNECTOR STYLE:	TNC - N - SC	
TYPE:	M - MALE	F - FEMALE
FLANGE:	See data sheet number DS-201.	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT	

- *Finish other than noted available upon request.*
- ** ■ *Power Rating dependent on connector selection*
- *Standard unit provided not sealed pressure tight - pressure sealed units (with connector capped) available on special order.*



Continental Microwave Division

DS-209C
11-06

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DOUBLE-RIDGE WAVEGUIDE

SPECIFICATIONS:

Model No.	W/G Size	Freq. Range GHz	Recommended Power Rating @ one atmosphere & Connector Type								VSWR (x:1)	Insertion Loss (db)	
			SMA		TNC		N		SC				
			cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)	cw (W)	peak (KW)			
DRAHE750 WRD-750		7.5-18						300	3			1.5	0.25
DRAHE750 WRD-750		7.5-18			300	4						1.5	0.25
DRAHE750 WRD-750		7.5-18	100	2								1.5	0.25
DRAHE650 WRD-650		6.5-18						300	3			1.5	0.25
DRAHE650 WRD-650		6.5-18			300	4						1.5	0.25
DRAHE650 WRD-650		6.5-18	100	2								1.5	0.25
DRAHE580 WRD-580		5.8-16						300	3			1.5	0.25
DRAHE580 WRD-580		5.8-16			300	3						1.5	0.25
DRAHE580 WRD-580		5.8-16	100	2								1.5	0.25
DRAHE475 WRD-475		4.75-11						375	3			1.5	0.25
DRAHE475 WRD-475		4.75-11			375	4						1.5	0.25
DRAHE475 WRD-475		4.75-11	100	2								1.5	0.25
DRAHE350 WRD-350		3.5-8.2								550	8	1.5	0.25
DRAHE350 WRD-350		3.5-8.2						375	3			1.5	0.25
DRAHE350 WRD-350		3.5-8.2			375	4						1.5	0.25
DRAHE350 WRD-350		3.5-8.2	100	2								1.5	0.25
DRAHE250 WRD-250		2.6-7.8								600	8	1.5	0.25
DRAHE250 WRD-250		2.6-7.8						375	3			1.5	0.25
DRAHE250 WRD-250		2.6-7.8			375	4						1.5	0.25
DRAHE250 WRD-250		2.6-7.8	100	2								1.5	0.25

DOUBLE-RIDGE WAVEGUIDE



Continental Microwave Division

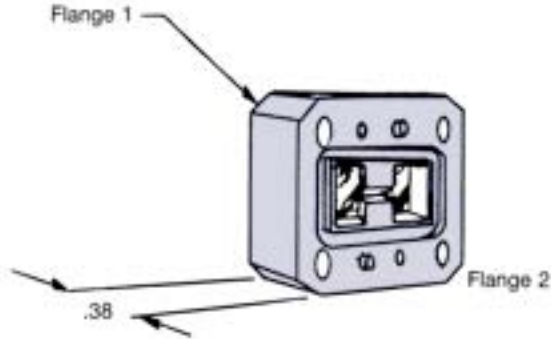
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DS-209C

11-06

PRESSURE WINDOW

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of double-ridge waveguide pressure windows constructed using all clear holes, cover and gasket type aluminum flanges captivating a high temperature kapton dielectric material. These units will withstand moderate CW power levels while maintaining 30 PSI pressure.

Model No.*	Waveguide Size	Frequency Range (GHz)	VSWR Max.	PWR** Rating (cw)
DRPW180 ...	WRD - 180C24	18.00 - 40.00	1.20	50
DRPW110 ...	WRD - 110C24	11.00 - 26.50	1.20	75
DRPW750 ...	WRD - 750D24	7.50 - 18.00	1.10	500
DRPW650 ...	WRD - 650D28	6.50 - 18.00	1.10	500
DRPW580 ...	WRD - 580D28	5.80 - 16.00	1.15	500
DRPW475 ...	WRD - 475D24	4.75 - 11.00	1.10	750
DRPW350 ...	WRD - 350D24	3.50 - 8.20	1.10	1000
DRPW250 ...	WRD - 250D30	2.60 - 7.80	1.20	1000

*Indicates Model Number. See ORDERING DATA for complete part number.

** CMD offers cover/cover and cover/groove combinations as standard product. Alternate configurations available upon request. .

ORDERING DATA:

	TYPICAL PART NO.-(example)	DRPW650 - 3C - 3G
MODEL NUMBER	[Redacted]	
**FLANGE 1:	[Redacted]	
**FLANGE 2:	See data sheet number DS-201.	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Alternate finish available upon request.
- Flanges are provided with clearance holes only



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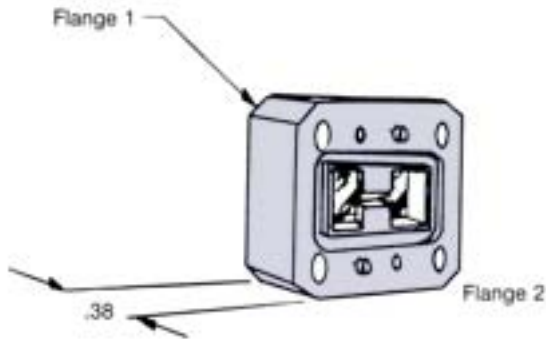
DS-210A
11-06

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DOUBLE-RIDGE WAVEGUIDE

PRESSURE WINDOW *(high power, boron nitride)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD also offers a standard product line of high power pressure windows constructed similar to the pressure windows per DS-210A, while captivating a high temperature boron dielectric material. These units will also withstand high CW power levels while maintaining 30 PSI pressure.

Model No.*	Waveguide Size	Frequency Range (GHz)	VSWR Max.	PWR** Rating (cw)
DRPWB180 ...	WRD - 180C24	18.00 - 40.00	1.35	100
DRPWB110 ...	WRD - 110C24	11.00 - 26.50	1.30	150
DRPWB750 ...	WRD - 750D24	7.50 - 18.00	1.25	1000
DRPWB650 ...	WRD - 650D28	6.50 - 18.00	1.25	750
DRPWB580 ...	WRD - 580D28	5.80 - 16.00	1.25	750
DRPWB475 ...	WRD - 475D24	4.75 - 11.00	1.25	1000
DRPWB350 ...	WRD - 350D24	3.50 - 8.20	1.25	1500
DRPWB250 ...	WRD - 250D30	2.60 - 7.80	1.30	1500

*Indicates Model Number. See ORDERING DATA for complete part number.

** CMD offers cover/cover and cover/groove combinations as standard product. Alternate configurations available upon request.

ORDERING DATA:

TYPICAL PART NO.-(example) **DRPWB650 - 3C -3G**

MODEL NUMBER [REDACTED]

**FLANGE 1: [REDACTED]

**FLANGE 2: *See data sheet number DS-201.* [REDACTED]

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

- Alternate finish available upon request.
- Flanges are provided with clearance holes only



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DS-210C

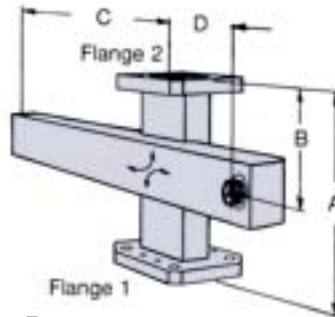
11-06

CROSS GUIDE COUPLERS

SPECIFICATIONS:

PART DESCRIPTION:

CMD's directional crossguide couplers utilize an ultra flat coupling technique that exhibits high power handling characteristics while maintaining optimum electrical parameters over octave waveguide bandwidths. Included in the design characteristics are rugged dip-brazed construction, minimum directivity of 15 dB, maximum VSWR of 1.20, and coupling levels available ranging from 35 to 60 dB with a mean variation less than ± 1.0 dB



Model No.*	Waveguide Size	Frequency Range (GHz)	Dimensions			
			A	B	C	D
DRCC180 ...	WRD - 180C24	18.00 - 40.00	2.50	1.25	3.00	1.00
DRCC110 ...	WRD - 110C24	11.00 - 26.50	2.50	1.25	3.00	1.00
DRCC750 ...	WRD - 750D24	7.50 - 18.00	3.50	1.75	3.75	1.00
DRCC650 ...	WRD - 650D28	6.50 - 18.00	3.50	1.75	3.75	1.00
DRCC580 ...	WRD - 580D28	5.80 - 16.00	3.50	1.75	3.75	1.00
DRCC475 ...	WRD - 475D24	4.75 - 11.00	4.50	2.25	4.50	1.50
DRCC350 ...	WRD - 350D24	3.50 - 8.20	5.00	2.50	5.25	2.25
DRCC250 ...	WRD - 250D30	2.60 - 7.80	7.00	3.50	10.50	3.00

Termination in secondary handles 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. - (example) **DRCC650 - SMA - M - 40 - 6.5 - 10.5 - 3C - 3G**

MODEL NUMBER:	[REDACTED]
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm
CONNECTOR TYPE:	M - MALE F - FEMALE
COUPLING:	35, 40, 50 OR 60 dB
OCTAVE BANDWIDTH:	SPECIFY RANGE DESIRED
FLANGE 1:	[REDACTED]
FLANGE 2:	See data sheet number DS-201.
MATERIAL:	6061 ALUMINUM
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Finish other than noted available upon request.
- Standard Unit provided pressure tight (with connector capped)



Continental Microwave Division

DS-211A

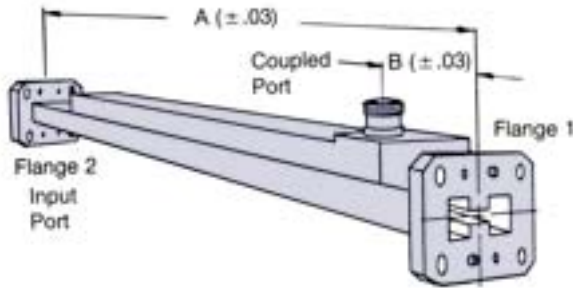
11-06

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DOUBLE-RIDGE WAVEGUIDE

BROADWALL COUPLER (coax secondary)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of multi-hole coax secondary broadwall couplers covering the waveguide sizes WRD-180 thru WRD-250. The optimum waveguide characteristics of high directivity and coupling flatness are achieved utilizing a precision machined Tchebyscheff coupling hole distribution and a precision ground tapered load element in the secondary arm.

Model No.*	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A	B
** DBCC180 ...	WRD - 180C24	18.00 - 40.00	11.00	1.40
** DBCC110 ...	WRD - 110C24	11.00 - 26.50	15.00	1.40
DBCC750 ...	WRD - 750D24	7.50 - 18.00	19.00	1.50
DBCC650 ...	WRD - 650D28	6.50 - 18.00	19.00	1.50
DBCC580 ...	WRD - 580D28	5.80 - 16.00	21.00	1.50
DBCC475 ...	WRD - 475D24	4.75 - 11.00	28.00	1.75
DBCC350 ...	WRD - 350D24	3.50 - 8.20	36.00	1.82
DBCC250 ...	WRD - 250D30	2.60 - 7.80	36.00	2.00

Termination in secondary handles 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO.-(example)	DBCC650 - SMA - M - 30 - 1C - 1G
MODEL NUMBER:	[Redacted]	[Redacted]
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	[Redacted]
CONNECTOR TYPE:	M - MALE F - FEMALE	[Redacted]
COUPLING:	10, 20, 30, 40, or 50 dB	[Redacted]
FLANGE 1:	[Redacted]	[Redacted]
FLANGE 2:	See data sheet number DS-201.	[Redacted]
MATERIAL:	6061 ALUMINUM	[Redacted]
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	[Redacted]
DIRECTIVITY:	35 dB min. **30 dB min.	[Redacted]
COUPLING:	±1.0 dB NOM/ ±0.75 dB FREQUENCY RESPONSE (±1.5 dB WRD 700, 500)	[Redacted]
VSWR:	PRIMARY: 1.10 max SECONDARY: 1.50 typ.	[Redacted]

- Alternate finish available upon request.
- Alternate configurations available upon request.
- Standard unit provided not sealed pressure tight - pressure sealed units (with connector capped) available on special order.



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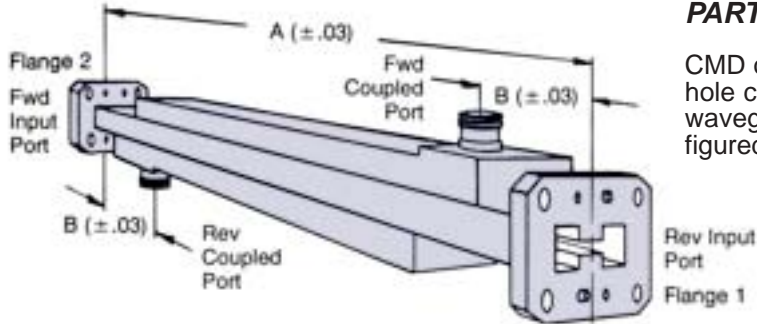
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DS-211B

11-06

DUAL BROADWALL COUPLER (coax secondaries)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of dual arm multi-hole coax secondary broadwall couplers covering the waveguide sizes WRD-180 thru WRD-475 and configured similar to the single arm models per DS-211B.

Model No.*	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A	B
** DDBCC180 ...	WRD - 180C24	18.00 - 40.00	14.00	1.40
** DDBCC110 ...	WRD - 110C24	11.00 - 26.50	19.00	1.40
DDBCC750 ...	WRD - 750D24	7.50 - 18.00	21.00	1.50
DDBCC650 ...	WRD - 650D28	6.50 - 18.00	21.00	1.50
DDBCC580 ...	WRD - 580D28	5.80 - 16.00	23.00	1.50
DDBCC475 ...	WRD - 475D24	4.75 - 11.00	30.00	1.75

Termination in secondary handles 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO.-(example)	DDBCC650 - SMA - M - 30/30 - 1C - 1G
MODEL NUMBER:		
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	
TYPE:	M - MALE F - FEMALE	
COUPLING:	10, 20, 30, 40, or 50 dB	
FLANGE 1:	See data sheet number DS-201.	
FLANGE 2:		
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	
DIRECTIVITY:	30 dB min. **25 dB min.	
COUPLING:	± 1.0 dB NOM/ ± 0.75 dB FREQUENCY RESPONSE (± 1.5 dB WRD 700, 500)	
VSWR:	PRIMARY: 1.10 max SECONDARY: 1.50 typ.	

- Alternate finish available upon request.
- Alternate configurations available upon request.
- Standard unit provided not sealed pressure tight - pressure sealed units (with connector capped) available on special order.



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DS-211C

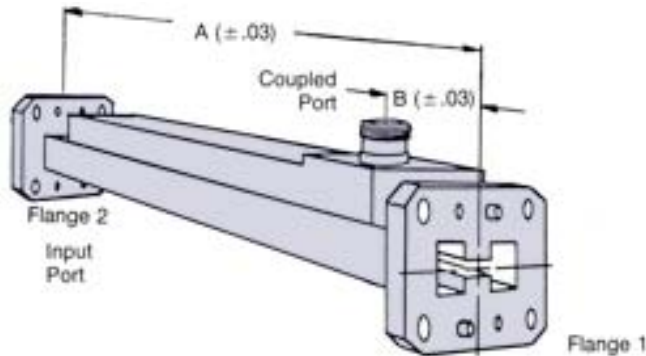
11-06

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DOUBLE-RIDGE WAVEGUIDE

BROADWALL COUPLER (short length, coax secondary)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of short length coax secondary broadwall couplers covering the waveguide sizes WRD-180 thru WRD-250. The optimum electrical characteristics of high directivity and coupling flatness are achieved utilizing a precision machined Tchebyscheff coupling hole distribution and a precision ground tapered load element in the secondary arm.

Model No.*	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A	B
** DBCCSL180 ...	WRD - 180C24	18.00 - 40.00	7.00	1.00
** DBCCSL110 ...	WRD - 110C24	11.00 - 26.50	8.50	1.05
DBCCSL750 ...	WRD - 750D24	7.50 - 18.00	10.00	1.11
DBCCSL650 ...	WRD - 650D28	6.50 - 18.00	10.00	1.11
DBCCSL580 ...	WRD - 580D28	5.80 - 16.00	12.00	1.26
DBCCSL475 ...	WRD - 475D24	4.75 - 11.00	14.00	1.26
DBCCSL350 ...	WRD - 350D24	3.50 - 8.20	17.00	1.35
DBCCSL250 ...	WRD - 250D30	2.60 - 7.80	18.00	1.31

Termination in secondaries handle 1 watt CW maximum.

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO.-(example)	DBCCSL650 - SMA - M - 30 - 3C - 3G
MODEL NUMBER:		
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	
CONNECTOR TYPE:	M - MALE F - FEMALE	
COUPLING:	30, 40, 50 dB	
FLANGE 1:		
FLANGE 2:	See data sheet number DS-201.	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	
DIRECTIVITY:	25 dB min. **23 dB min.	
COUPLING:	± 1.0 dB NOM/ ± 1.0 dB FREQUENCY RESPONSE (± 1.5 dB WRD 700, 500)	
VSWR:	PRIMARY: 1.10 max SECONDARY: 1.50 typ.	

- Alternate finish available upon request.
- Alternate configurations available upon request.
- Standard unit provided not sealed pressure tight - pressure sealed units (with connector capped) available on special order.



Continental Microwave Division

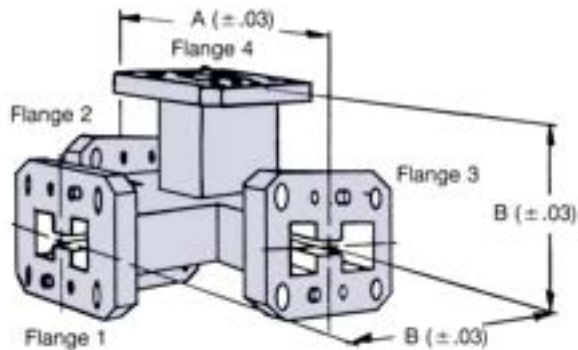
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DS-211D

11-06

HYBRID TEE

SPECIFICATIONS:



PART DESCRIPTION:

CMD has developed a product line of isolated four-port hybrid power dividers covering the waveguide sizes WRD-180 thru WRD-475. VSWR is maintained at 1.40 nominal while power split is controlled within ± 0.25 dB. Isolation is optimized to 25 dB typical E to H ports and 15 dB typical between collinear arms. See below for additional typical component specifications.

Model No.*	Frequency Range (GHz)	**VSWR Max.				Ins. Loss (dB Max.)	***Power Split (dB)	Isolation (db min)		Power Handling (kw)		Dimensions	
		Port 1	Port 2	Port 3	Port 4			E to H	Collinear	Avg.	Peak	A	B
HTD180...	18.00 - 40.00	1.80	1.80	1.80	1.80	0.35	3.1 \pm 0.50	20	12	0.25	1	1.50	1.00
HTD110...	11.00 - 26.50	1.80	1.80	1.80	1.80	0.35	3.1 \pm 0.50	20	12	0.50	3	1.50	1.00
HTD750...	7.50 - 18.00	1.40	1.40	1.40	1.40	0.20	3.1 \pm 0.25	25	15	1.25	12	2.06	1.25
HTD650...	6.50 - 18.00	1.40	1.40	1.40	1.40	0.20	3.1 \pm 0.25	25	15	1.00	8	2.06	1.25
HTD580...	5.80 - 16.00	1.50	1.50	1.50	1.50	0.20	3.1 \pm 0.25	25	15	1.25	12	2.60	1.50
HTD475...	4.75 - 11.00	1.40	1.40	1.40	1.40	0.20	3.1 \pm 0.25	25	15	1.25	12	3.25	1.99

*Indicates Model Number. See ORDERING DATA for complete part number.

** The specified VSWR is maintained over a selected 95% of full waveguide bandwidth. Allow slight VSWR degradation for full waveguide band operation.

*** Power split includes insertion loss and amplitude imbalance.

ORDERING DATA:

TYPICAL PART NO.-(example) **HTD650 - 7.0 TO 18.0 -2C - 2C - 2C - 2C**

MODEL NUMBER: _____

FREQUENCY RANGE: _____ GHz (SPECIFY OPERATING FREQUENCY BAND)

FLANGE 1: _____

FLANGE 2: _____

FLANGE 3: _____

FLANGE 4: _____

MATERIAL: _____

FINISH: _____

} See data sheet number DS-201.

- Alternate finish available upon request.
- Alternate configurations available upon request.



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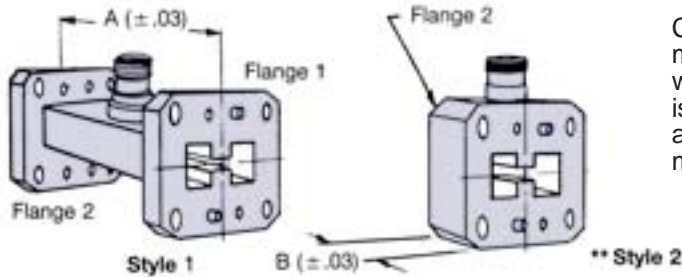
DS-212
11-06

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DOUBLE-RIDGE WAVEGUIDE

POWER SAMPLER

SPECIFICATIONS:



PART DESCRIPTION:

CMD power samplers offer a low cost approach to monitoring power in matched waveguide systems where high directivity is not a concern. Mainline VSWR is 1.10 maximum and standard coupling values are available from 30 to 60 dB with coupling flatness maintained ± 1.0 dB.

Model No.*	Waveguide Size	Frequency Range (GHz)	Dimensions	
			A (Style 1)	B (Style 2)
DRPS180 ...	WRD - 180C24	18.00 - 40.00	1.50	.75
DRPS110 ...	WRD - 110C24	11.00 - 26.50	1.50	.75
DRPS750 ...	WRD - 750D24	7.50 - 18.00	2.00	.75
DRPS650 ...	WRD - 650D28	6.50 - 18.00	2.00	.75
DRPS580 ...	WRD - 580D28	5.80 - 16.00	2.00	.75
DRPS475 ...	WRD - 475D24	4.75 - 11.00	2.00	.75
DRPS350 ...	WRD - 350D24	3.50 - 8.20	2.50	NA
DRPS250 ...	WRD - 250D30	2.60 - 7.80	3.00	NA

*Indicates Model Number. See ORDERING DATA for complete part number.

** CMD offers an option for all clear or all tapped cover/cover and cover/groove combinations for body style 2.

DRPS 350, 250 not available in style 2.

ORDERING DATA:

	TYPICAL PART NO.-(example)	DRPS650 - 1 - N - F - 30 - 3C - 3G
MODEL NUMBER:	[Redacted]	
**BODY STYLE:	1 or 2	
CONNECTOR STYLE:	SMA - TNC - N - 7mm - K - 2.4mm - 3.5mm	
CONNECTOR TYPE:	M - MALE F - FEMALE	
COUPLING:	30 to 60 dB	
FLANGE 1:	See data sheet number DS-201.	
FLANGE 2:	[Redacted]	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	

- Alternate finish available upon request.
- Units provided pressure sealed (with connector capped).



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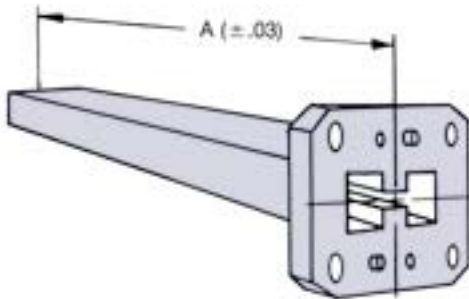
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DS-214

11-06

TERMINATION *(low power, precision)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of precision low power terminations are constructed of 6061 aluminum bodies and flanges and use custom machined load elements for optimum electrical performance. VSWR is less than 1.05 for most models.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR.Max Watts-CW	Dimensions A
PLPT180 ...	WRD - 180C24	18.00 - 40.00	2	4.00
PLPT110 ...	WRD - 110C24	11.00 - 26.50	2	6.00
PLPT750 ...	WRD - 750D24	7.50 - 18.00	5	8.80
PLPT650 ...	WRD - 650D28	6.50 - 18.00	5	8.80
PLPT580 ...	WRD - 580D28	5.80 - 16.00	5	8.80
PLPT475 ...	WRD - 475D24	4.75 - 11.00	5	12.80
PLPT350 ...	WRD - 350D24	3.50 - 8.20	10	13.80
PLPT250 ...	WRD - 250D30	2.60 - 7.80	10	15.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO.– (example) **PLPT650 - 1C**

MODEL NUMBER: _____

FLANGE: *See data sheet number DS-201.*

FINISH: **CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT**

- *Alternate finish available upon request.*
- *Standard unit provided not sealed pressure tight - pressure sealed units available on special order.*



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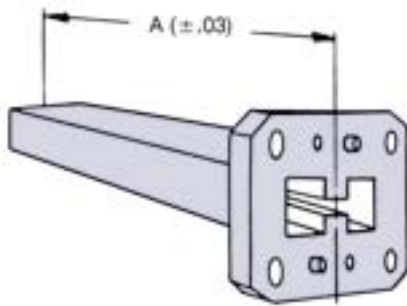
DS-215A
11-06

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DOUBLE-RIDGE WAVEGUIDE

TERMINATION (*low-medium power*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of low-medium power terminations are constructed of 6061 aluminum bodies and flanges and use custom machined load elements for optimum electrical performance. This series of terminations is designed for low-medium power inputs, with typical VSWR of less than 1.15.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR.Max** (Watts-CW)		Air Flow (CFM)	Dimension A
			A	B		
LMPT180 ...	WRD - 180C24	18.00 - 40.00	57	113	35	4.50
LMPT110 ...	WRD - 110C24	11.00 - 26.50	82	165	35	6.63
LMPT750 ...	WRD - 750D24	7.50 - 18.00	125	250	35	9.50
LMPT650 ...	WRD - 650D28	6.50 - 18.00	127	250	35	9.50
LMPT580 ...	WRD - 580D28	5.80 - 16.00	149	273	35	9.50
LMPT475 ...	WRD - 475D24	4.75 - 11.00	326	652	70	12.25
LMPT350 ...	WRD - 350D24	3.50 - 8.20	484	938	70	13.75
LMPT250 ...	WRD - 250D30	2.60 - 7.80	519	1005	70	13.75

*Indicates Model Number. See ORDERING DATA for complete part number.

** Power condition - A reflects still air @25°C. Condition - B reflects forced air per indicated CFM level.

CMD does not recommend operation above indicated input power levels for extended duration.

ORDERING DATA:

TYPICAL PART NO.- (example)

LMPT 650 - 1C

MODEL NUMBER:

FLANGE:

FINISH:

See data sheet number DS-201.

CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



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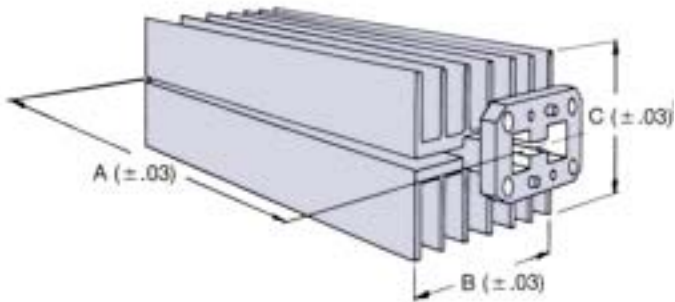
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DS-215B

11-06

TERMINATION *(medium power)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of medium power terminations are constructed of heavy wall 6061 waveguide and extruded heat sink material. The load material is custom ground silicon carbide tapered for optimum VSWR response of less than 1.15 while maintaining moderate power handling characteristics.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR.Max** (Watts-CW)		Air Flow (CFM)	Dimensions		
			A	B		A	B	C
MPT180 ...	WRD - 180C24	18.00 - 40.00	65	124	35	4.50	.88	1.14
MPT110 ...	WRD - 110C24	11.00 - 26.50	92	176	35	6.63	1.11	1.37
MPT750 ...	WRD - 750D24	7.50 - 18.00	250	480	35	9.50	1.45	2.43
MPT650 ...	WRD - 650D28	6.50 - 18.00	254	480	35	9.50	1.45	2.43
MPT580 ...	WRD - 580D28	5.80 - 16.00	263	500	35	9.50	1.45	2.48
MPT475 ...	WRD - 475D24	4.75 - 11.00	441	833	70	12.25	1.94	3.63
MPT350 ...	WRD - 350D24	3.50 - 8.20	517	1000	70	13.75	2.77	4.35
MPT250 ...	WRD - 250D30	2.60 - 7.80	682	1364	70	13.75	2.77	4.38

*Indicates Model Number. See ORDERING DATA for complete part number.

** Power condition - A reflects still air @25°C. Condition - B reflects forced air per indicated CFM level. CMD does not recommend operation above indicated input power levels for extended duration.

ORDERING DATA:

TYPICAL PART NO.- (example)

MPT 650 - 1C

MODEL NUMBER:

FLANGE:

FINISH:

See data sheet number DS-201.

CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



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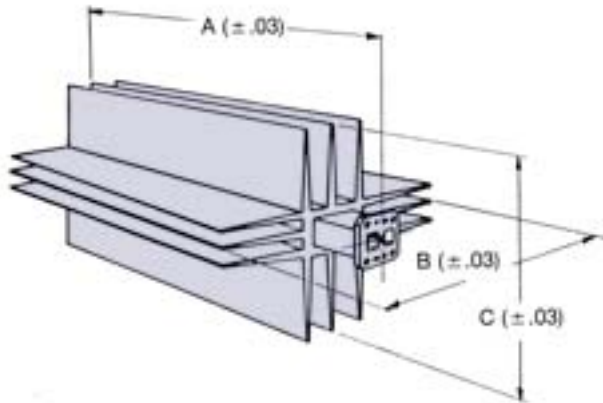
DS-215C

11-06

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TERMINATION *(high power)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of high power terminations are constructed of heavy wall 6061 aluminum and extruded heat sink material. The load element is custom ground silicon carbide shaped for optimum power handling and heat transfer while maintaining 1.15 maximum VSWR.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR.Max** (Watts-CW)		Air Flow (CFM)	Dimensions		
			A	B		A	B	C
HPT180 ...	WRD - 180C24	18.00 - 40.00	90	128	35	4.50	2.24	2.08
HPT110 ...	WRD - 110C24	11.00 - 26.50	128	232	35	6.63	2.72	2.67
HPT750 ...	WRD - 750D24	7.50 - 18.00	350	595	35	9.50	3.80	3.43
HPT650 ...	WRD - 650D28	6.50 - 18.00	357	595	35	9.50	3.83	3.43
HPT580 ...	WRD - 580D28	5.80 - 16.00	366	595	35	9.50	3.89	3.48
HPT475 ...	WRD - 475D24	4.75 - 11.00	625	1062	70	12.25	4.65	4.08
HPT350 ...	WRD - 350D24	3.50 - 8.20	789	1500	70	13.75	5.38	4.59
HPT250 ...	WRD - 250D30	2.60 - 7.80	1000	1500	70	13.75	5.56	4.62

*Indicates Model Number. See ORDERING DATA for complete part number.

** Power condition - A reflects still air @25°C. Condition - B reflects forced air per indicated CFM level. CMD does not recommend operation above indicated input power levels for extended duration.

ORDERING DATA:

TYPICAL PART NO.- (example)

HPT650 - 1C

MODEL NUMBER:

FLANGE: *See data sheet number DS-201.*

FINISH:

■ Alternate finish available upon request.



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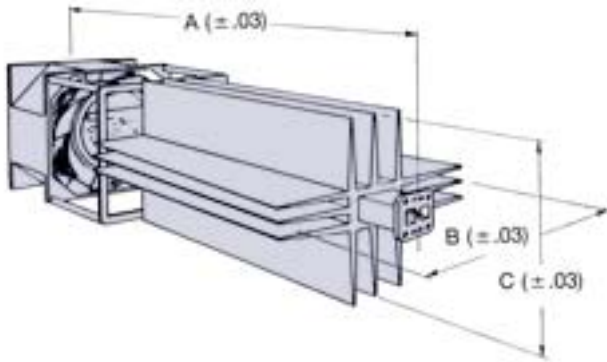
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DS-215D

11-06

TERMINATION *(high power, air cooled)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of high power air-cooled terminations are constructed of heavy wall 6061 aluminum and extruded heat sink material. The load element is custom ground silicon carbide shaped for optimum power handling and heat transfer while maintaining 1.15 maximum VSWR. This series of terminations is designed with a cooling fan(**) to enhance heat dissipation and increase power handling performance.

Model No.*	Waveguide Size	Frequency Range (GHz)	Air Flow (CFM)	PWR.Max (Watts-CW)	Dimensions		
					A	B	C
HPTAC180 ...	WRD - 180C24	18.00 - 40.00	35	128	7.50	3.14	3.14
HPTAC110 ...	WRD - 110C24	11.00 - 26.50	35	232	9.63	3.14	3.14
HPTAC750 ...	WRD - 750D24	7.50 - 18.00	35	595	12.50	3.80	3.43
HPTAC650 ...	WRD - 650D28	6.50 - 18.00	35	595	12.50	3.83	3.43
HPTAC580 ...	WRD - 580D28	5.80 - 16.00	35	595	12.50	3.89	3.48
HPTAC475 ...	WRD - 475D24	4.75 - 11.00	70	1062	15.85	4.69	4.69
HPTAC350 ...	WRD - 350D24	3.50 - 8.20	70	1500	17.35	5.38	4.69
HPTAC250 ...	WRD - 250D30	2.60 - 7.80	70	1500	17.35	5.56	4.69

*Indicates Model Number. See ORDERING DATA for complete part number.

CMD does not recommend operation above indicated input power levels for extended duration.

(**)Cooling fan specifications: 115v-50 to 60Hz-two wire hookup

Fan designation for fan voltage within part number: i.e. HPTAC 650 (115v), HPTAC 650 (230v)

ORDERING DATA:

TYPICAL PART NO.- (example)

HPTAC 650 - 1C

MODEL NUMBER:

FLANGE:

FINISH:

See data sheet number DS-201.

CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



Continental Microwave Division

DS-215E

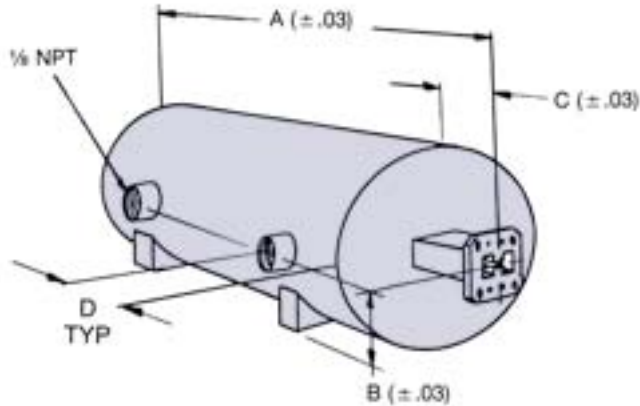
11-06

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DOUBLE-RIDGE WAVEGUIDE

TERMINATION *(high power, water cooled)*

SPECIFICATIONS:



PART DESCRIPTION:

CMD's standard product line of high power water cooled terminations are constructed of 6061 aluminum bodies and flanges and use custom machined silicon carbide load elements shaped for optimum power handling and heat transfer. VSWR is maintained at 1.15 maximum. This series of terminations is designed with input/output ports for water circulation, to enhance heat dissipation and increase power handling performance.

Model No.*	Waveguide Size	Frequency Range (GHz)	PWR.Max (Watts-CW)	Dimensions			
				A	B	C	D
HPTW180 ...	WRD - 180C24	18.00 - 40.00	168	4.50	1.40	1.00	.50
HPTW110 ...	WRD - 110C24	11.00 - 26.50	300	6.63	1.40	1.25	.50
HPTW750 ...	WRD - 750D24	7.50 - 18.00	675	9.50	1.75	1.25	.50
HPTW650 ...	WRD - 650D28	6.50 - 18.00	675	9.50	1.75	1.25	.50
HPTW580 ...	WRD - 580D28	5.80 - 16.00	675	9.50	1.75	1.25	.50
HPTW475 ...	WRD - 475D24	4.75 - 11.00	938	12.25	1.75	1.25	1.00
HPTW350 ...	WRD - 350D24	3.50 - 8.20	1000	13.75	2.00	1.25	1.00
HPTW250 ...	WRD - 250D30	2.60 - 7.80	1000	13.75	2.00	1.25	1.00

*Indicates Model Number. See ORDERING DATA for complete part number.

** Power condition reflects water flow rate @ 2 GPM.

ORDERING DATA:

TYPICAL PART NO.-(example)

HPTW650 - 3C

MODEL NUMBER: [REDACTED]
 FLANGE: See data sheet number DS-201.
 FINISH: CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

■ Alternate finish available upon request.



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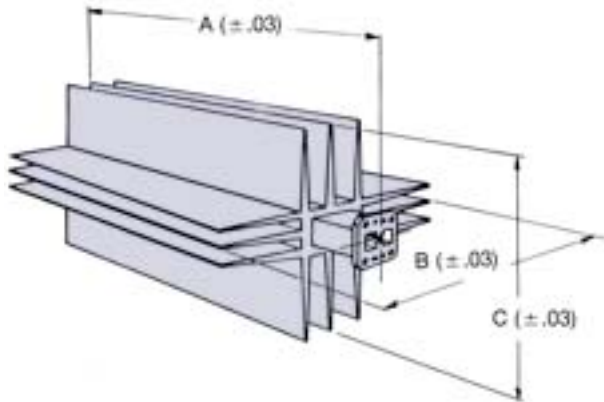
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DS-215F

11-06

MISMATCH (*high power*)

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of high power mismatched terminations constructed of 6061 aluminum waveguide and extruded heat sink material. The load element is custom machined for optimum electrical performance. These units are designed for ultra-flat return loss and are available in four standard configurations.

Model No.*	Waveguide Size	Frequency Range (GHz)	Air Flow (CFM)	PWR. Max.**		Dimension		
				A	B	A	B	C
HPM180 ...	WRD - 180C24	18.00 - 40.00	35	90	128	4.50	2.24	2.08
HPM110 ...	WRD - 110C24	11.00 - 26.50	35	128	232	6.63	2.72	2.67
HPM750 ...	WRD - 750D24	7.50 - 18.00	35	350	595	9.50	3.80	3.43
HPM650 ...	WRD - 650D28	6.50 - 18.00	35	357	595	9.50	3.83	3.43
HPM580 ...	WRD - 580D28	5.80 - 16.00	35	366	595	9.50	3.89	3.48
HPM475 ...	WRD - 475D24	4.75 - 11.00	70	625	1062	12.25	4.65	4.08
HPM350 ...	WRD - 350D24	3.50 - 8.20	70	789	1500	13.75	5.38	4.59
HPM250 ...	WRD - 250D30	2.60 - 7.80	70	1000	1500	13.75	5.56	4.62

*Indicates Model Number. See ORDERING DATA for complete part number.

**Power condition-A reflects still air @25°C. Condition-B reflects forced air per indicated CFM level.

CMD does not recommend operation above indicated input power levels for extended duration.

ORDERING DATA:

TYPICAL PART NO. - (example)

HPM650 - 14 - 1C

MODEL NUMBER:	[Redacted]
RETURN LOSS:	14, 9.6, 7.3, 6dB ±1.0dB
FLANGE:	See data sheet number DS-201.
FINISH:	CORROSION PROTECTION PLUS HI-TEMP FLAT BLACK TOP COAT

- Return loss other than noted available on request.
- Finish other than noted available upon request.



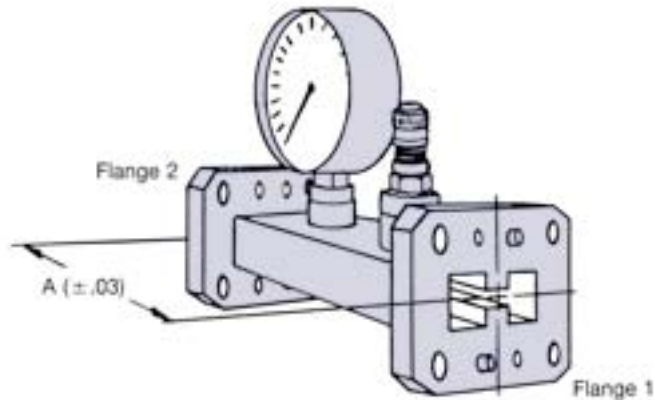
Continental Microwave Division

DS-216D
11-06

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PRESSURE UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of double-ridge pressure units covering the waveguide sizes WRD-180 thru WRD-250. VSWR is less than 1.10. Gauge reads 30 psig maximum, 60 psig gauge available.

Model No.*	Waveguide Size	Frequency Range (GHz)	Dimension A
DRPU180 ...	WRD - 180C24	18.00 - 40.00	4.00
DRPU110 ...	WRD - 110C24	11.00 - 26.50	4.00
DRPU750 ...	WRD - 750D24	7.50 - 18.00	6.00
DRPU650 ...	WRD - 650D28	6.50 - 18.00	6.00
DRPU580 ...	WRD - 580D28	5.80 - 16.00	6.00
DRPU475 ...	WRD - 475D24	4.75 - 11.00	6.00
DRPU350 ...	WRD - 350D24	3.50 - 8.20	6.00
DRPU250 ...	WRD - 250D30	2.60 - 7.80	6.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. - (example) **DRPU650 - 1C - 2G**

MODEL NUMBER: _____

FLANGE 1: _____

FLANGE 2: *See data sheet number DS-201.* _____

MATERIAL: 6061 ALUMINUM

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT



Continental Microwave Division

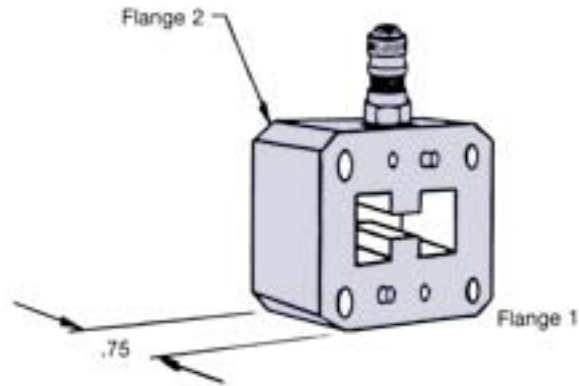
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DS-217

11-06

PRESSURE INLET

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of double-ridge waveguide pressure inlets constructed using a combination of all clear or all tapped, cover or gasket type aluminum flanges and covering the waveguide sizes WRD-180 thru WRD-475. VSWR is less than 1.10.

Model No.*	Waveguide Size	Frequency Range (GHz)
PI180 ...	WRD - 180C24	18.00 - 40.00
PI110 ...	WRD - 110C24	11.00 - 26.50
PI750 ...	WRD - 750D24	7.50 - 18.00
PI650 ...	WRD - 650D28	6.50 - 18.00
PI580 ...	WRD - 580D28	5.80 - 16.00
PI475 ...	WRD - 475D24	4.75 - 11.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. - (example)	PI650 - 3C - 3G
MODEL NUMBER:		
FLANGE 1:		
FLANGE 2:	<i>See data sheet number DS-201.</i>	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	



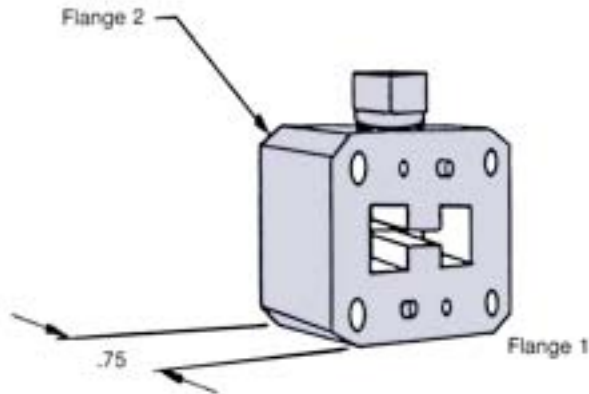
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DS-218
11-06

11 Continental Drive • Exeter, NH 03833 • Tel: 603-775-5200 • Fax: 603-775-5201

DRAIN UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of double-ridge waveguide drain units constructed using a combination of all clear or all tapped, cover or gasket type aluminum flanges and covering the waveguide sizes WRD-180 thru WRD-475. VSWR is less than 1.10.

Model No.*	Waveguide Size	Frequency Range (GHz)
DU180 ...	WRD - 180C24	18.00 - 40.00
DU110 ...	WRD - 110C24	11.00 - 26.50
DU750 ...	WRD - 750D24	7.50 - 18.00
DU650 ...	WRD - 650D28	6.50 - 18.00
DU580 ...	WRD - 580D28	5.80 - 16.00
DU475 ...	WRD - 475D24	4.75 - 11.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. – (example)	DU650 - 3C - 3G
MODEL NUMBER:		
FLANGE 1:		
FLANGE 2:	<i>See data sheet number DS-201.</i>	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	



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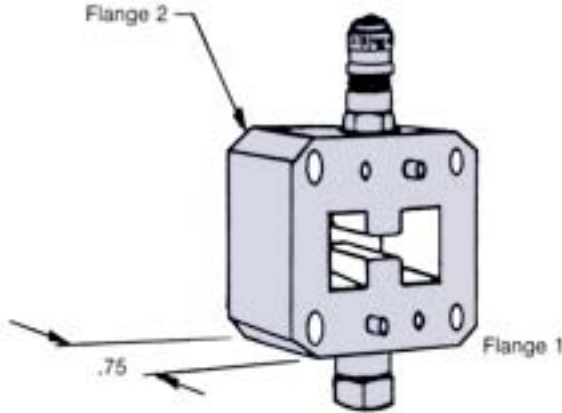
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DS-219

11-06

PRESSURE DRAIN UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of double-ridge waveguide pressure drain units constructed using a combination of all clear or all tapped, cover or gasket type aluminum flanges and covering the waveguide sizes WRD-180 thru WRD-475. VSWR is less than 1.10.

Model No.*	Waveguide Size	Frequency Range (GHz)
PDU180 ...	WRD - 180C24	18.00 - 40.00
PDU110 ...	WRD - 110C24	11.00 - 26.50
PDU750 ...	WRD - 750D24	7.50 - 18.00
PDU650 ...	WRD - 650D28	6.50 - 18.00
PDU580 ...	WRD - 580D28	5.80 - 16.00
PDU475 ...	WRD - 475D24	4.75 - 11.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

	TYPICAL PART NO. – (example)	PDU650 - 3C - 3G
MODEL NUMBER:		
FLANGE 1:		
FLANGE 2:	<i>See data sheet number DS-201.</i>	
MATERIAL:	6061 ALUMINUM	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT	



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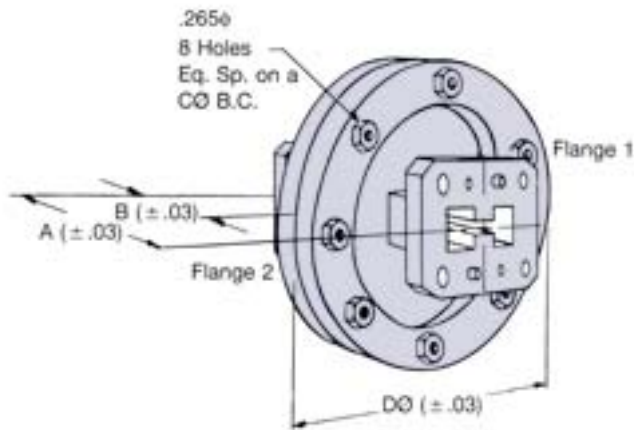
DS-220
11-06

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DOUBLE-RIDGE WAVEGUIDE

BULKHEAD FEED UNIT

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of double-ridge bulkhead units covering the waveguide sizes WRD-180 thru WRD-475. Assemblies include hardware and silicone rubber bulkhead gasket for mounting purposes. VSWR is less than 1.10.

Model No.*	Waveguide Size	Frequency Range (GHz)	Dimensions			
			A	B	CØ	DØ
BFU180 ...	WRD - 180C24	18.00 - 40.00	3.00	1.00	2.50	3.00
BFU110 ...	WRD - 110C24	11.00 - 26.50	3.00	1.00	2.50	3.00
BFU750 ...	WRD - 750D24	7.50 - 18.00	3.75	1.38	2.88	3.50
BFU650 ...	WRD - 650D28	6.50 - 18.00	3.75	1.38	2.88	3.50
BFU580 ...	WRD - 580D28	5.80 - 16.00	3.75	1.38	2.88	3.50
BFU500 ...	WRD - 500D36	5.00 - 18.00	3.75	1.38	2.88	3.50
BFU475 ...	WRD - 475D24	4.75 - 11.00	4.25	1.63	3.25	4.00

*Indicates Model Number. See ORDERING DATA for complete part number.

ORDERING DATA:

TYPICAL PART NO. – (example)

BFU650 - 1C - 1G

MODEL NUMBER:

FLANGE 1:

FLANGE 2:

MATERIAL: 6061 ALUMINUM

FINISH:



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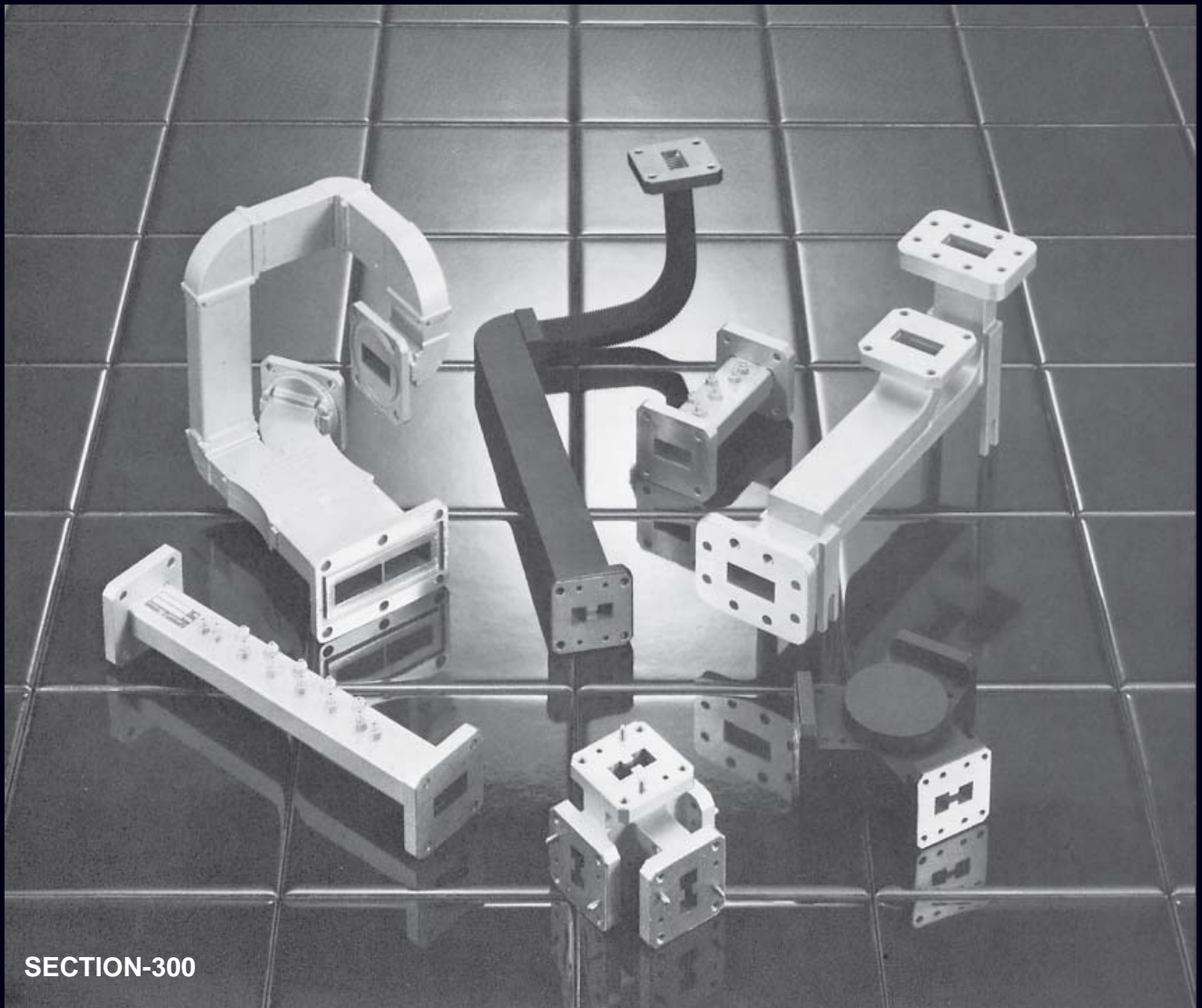
DS-221

11-06

SPECIAL PRODUCTS

SECTION CONTENTS

Waveguide Sub-systems	DS-301
Test Range Horn Antennas	DS-302
Specialized Design to Spec Components	DS-303
Thin Wall Waveguide Tubing and Flanges	DS-304
Waveguide Shims	DS-305
Waveguide Short Plates	DS-306
Waveguide Offset Shorts	DS-307
Waveguide Calibration Kits	DS-308



SECTION-300

WAVEGUIDE SUB-SYSTEMS



Continental Microwave Division offers the expert services of our design engineering and manufacturing departments to respond to specialized customer specifications. Continental Microwave Division has available the staff and the facilities to design, prototype, and manufacture custom waveguide components and sub-systems from rigid waveguide runs to advanced state-of-the-art E.W. designs.



Continental Microwave Division

DS-301

11-06

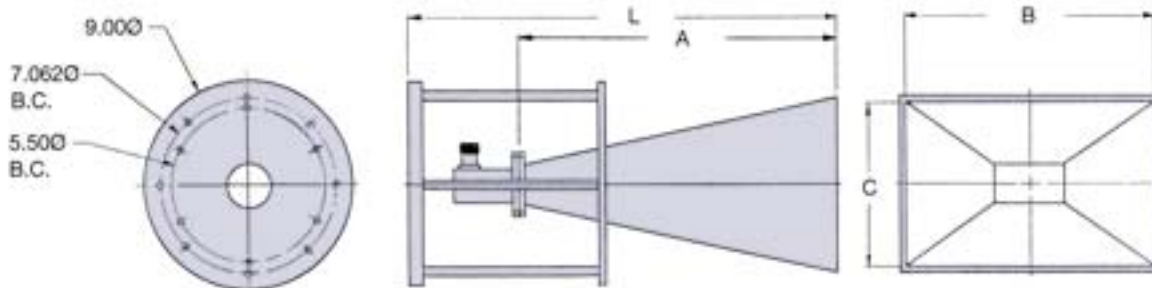
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LINEAR HORN ANTENNA (*optimum gain*)

PART DESCRIPTION:

- RX or TX capability
- Lightweight aluminum construction
- Standard antenna test range mounting provisions
- Precision N-F input connector
- Corrosion protection plus silver grey epoxy top coat.

SPECIFICATIONS:



Model No.	Frequency Range (GHz)	Fc (GHz)	H.P.B.W. (Nom. Deg.)	V.S.W.R.	Typical Gain (dBi)			Dimensions			
					@F _L	@F _C	@F _H	A	B	C	L
* LHAO28...	26.50 - 40.00	33.25	10	1.50	23.3	24.5	24.7	5.94	2.91	2.27	8.94
* LHAO42...	18.00 - 26.50	22.25	10	1.50	23.3	24.5	24.9	8.89	4.10	3.20	11.89
LHAO62...	12.40 - 18.00	15.20	15	1.50	19.1	20.5	21.8	6.43	3.36	2.54	10.13
LHAO75...	10.00 - 15.00	12.50	15	1.50	19.0	20.6	21.9	7.88	4.13	3.11	11.58
LHAO90...	8.20 - 12.40	10.30	15	1.50	18.9	20.6	21.9	9.52	4.97	3.76	13.22
LHAO112...	7.05 - 10.00	8.50	30	1.50	15.3	17.0	18.2	6.31	3.74	2.78	10.31
LHAO137...	5.85 - 8.20	7.03	30	1.50	16.5	17.1	18.3	7.76	4.58	3.44	11.91
LHAO159...	4.90 - 7.05	5.98	30	1.50	16.4	17.1	18.4	9.16	5.38	4.04	13.46
LHAO187...	3.95 - 5.85	4.90	30	1.50	14.8	16.6	18.0	10.47	6.21	4.67	14.97
LHAO229...	3.30 - 4.90	4.10	30	1.50	14.9	16.7	18.2	12.56	7.48	5.63	17.06
LHAO284...	2.60 - 3.95	3.28	30	1.50	14.8	16.7	18.2	15.82	9.39	7.03	21.07
* LHAO180...	18.00 - 40.00	29.00	10	1.80	19.9	22.9	24.0	4.85	2.65	1.98	7.35
LHAO750...	7.50 - 18.00	12.75	18	1.80	15.4	19.1	22.0	6.82	3.59	2.54	9.60
LHAO650...	6.50 - 18.00	12.25	18	1.80	14.1	19.2	22.0	6.82	3.59	2.54	10.27
LHAO580...	5.80 - 16.00	10.90	18	1.80	14.3	19.3	22.2	7.84	4.13	2.88	10.62
LHAO475...	4.75 - 11.00	7.88	30	1.80	12.2	16.5	19.1	6.59	3.88	2.84	9.89
LHAO350...	3.50 - 8.20	5.85	30	1.80	12.2	16.6	19.2	8.91	5.24	3.84	12.04
LHAO250...	2.50 - 8.00	5.25	30	1.80	9.8	15.6	19.0	8.91	5.24	3.84	12.41

* These models provided with K-F connector

ORDERING DATA:

SPECIFY MODEL NUMBER



Continental Microwave Division

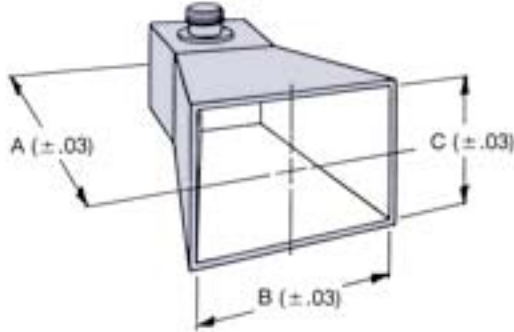
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DS-302A

11-06

PROBE ANTENNA

SPECIFICATIONS:



PART DESCRIPTION:

- RX or TX capability
- Lightweight aluminum construction
- Precision N-F input connector
- VSWR < 1.5:1
- Corrosion protection plus silver grey epoxy top coat

Model No.	Frequency Range	H.P.B.W. (Nom Deg)	Gain (Nom dBi)	Dimensions			Model No.	Frequency Range	H.P.B.W. (Nom Deg)	Gain (Nom dBi)	Dimensions		
				A	B	C					A	B	C
* PA28-6...	26.50 - 40.00			.46	.28	.21	PA580-10...	5.80 - 16.00	52	10	2.26	1.28	1.05
PA42-6...	18.00 - 26.50			.69	.42	.32	PA475-10...	4.75 - 11.00	≈64@F _L	≈8@F _L	3.47	1.93	1.57
PA62-6...	12.40 - 18.00	80	6	1.00	.62	.47	PA350-10...	3.50 - 8.20	≈45@F _H	≈12@F _H	4.36	2.42	1.98
PA75-6...	10.00 - 15.00	≈95@F _L	≈4@F _L	1.22	.75	.60	* PA28-12...	26.50 - 40.00			.93	.51	.43
PA90-6...	8.20 - 12.40	≈64@F _H	≈8@F _H	1.50	.90	.69	PA42-12...	18.00 - 26.50			1.38	.77	.64
PA112-6...	7.05 - 10.00			1.80	1.12	.83	PA62-12...	12.40 - 18.00			2.03	1.13	.93
* PA28-8...	26.50 - 40.00			.61	.34	.28	PA75-12...	10.00 - 15.00			2.46	1.37	1.13
PA42-8...	18.00 - 26.50			.91	.50	.41	PA90-12...	8.20 - 12.40	45	12	3.02	1.67	1.39
PA62-8...	12.40 - 18.00			1.33	.74	.61	PA112-12...	7.05 - 10.00	≈52@F _L	≈10@F _L	3.63	2.01	1.67
PA75-8...	10.00 - 15.00			1.61	.90	.74	* PA180-12...	18.00 - 40.00	≈30@F _H	≈14@F _H	1.06	.59	.49
PA90-8...	8.20 - 12.40	64	8	1.98	1.10	.90	PA750-12...	7.50 - 18.00			2.42	1.34	1.11
PA112-8...	7.05 - 10.00	≈80@F _L	≈6@F _L	2.37	1.32	1.08	PA650-12...	6.50 - 18.00			2.52	1.40	1.16
* PA180-8...	18.00 - 40.00	≈52@F _H	≈10@F _H	.70	.46	.24	PA580-12...	5.80 - 16.00			2.74	1.54	1.28
PA750-8...	7.50 - 18.00			1.58	1.17	.56	PA475-12...	4.75 - 11.00			4.19	2.33	1.93
PA650-8...	6.50 - 18.00			1.65	1.32	.58	PA350-12...	3.50 - 8.20			5.26	2.92	2.42
PA475-8...	4.75 - 11.00			2.74	1.84	.96	* PA28-15...	26.50 - 40.00			1.25	.69	.57
PA350-8...	3.50 - 8.20			3.45	2.53	1.21	PA42-15...	18.00 - 26.50			1.86	1.04	.85
* PA28-10...	26.50 - 40.00			.77	.43	.35	PA62-15...	12.40 - 18.00			2.72	1.51	1.24
PA42-10...	18.00 - 26.50			1.15	.64	.52	PA75-15...	10.00 - 15.00			3.31	1.84	1.51
PA62-10...	12.40 - 18.00	52	10	1.68	.93	.76	PA90-15...	8.20 - 12.40	32	15	4.05	2.25	1.85
PA75-10...	10.00 - 15.00	≈64@F _L	≈8@F _L	2.04	1.13	.93	PA112-15...	7.05 - 10.00	≈40@F _L	≈13@F _L	4.87	2.71	2.22
PA90-10...	8.20 - 12.40	≈45@F _H	≈12@F _H	2.50	1.39	1.13	* PA180-15...	18.00 - 40.00	≈25@F _H	≈17@F _H	1.43	.79	.65
PA112-10...	7.05 - 10.00			3.00	1.67	1.36	PA750-15...	7.50 - 18.00			3.25	1.80	1.48
* PA180-10...	18.00 - 40.00			.88	.49	.40	PA650-15...	6.50 - 18.00			3.38	1.88	1.54
PA750-10...	7.50 - 18.00			2.00	1.11	.91	PA580-15...	5.80 - 16.00			3.70	2.07	1.70
PA650-10...	6.50 - 18.00			2.08	1.16	.94	PA475-15...	4.75 - 11.00			5.63	3.13	2.57
							PA350-15...	3.50 - 8.20			7.08	3.93	3.23

*These models provided with K-F connector.

ORDERING DATA:

SPECIFY MODEL NUMBER



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DS-302C

11-06

CUSTOM WAVEGUIDE ASSEMBLIES



Continental Microwave Division provides a wide variety of custom waveguide assemblies that are designed, manufactured and tested to customer specification requirements. Continental Microwave Division is a totally self contained engineering, manufacturing and test facility that offers in excess of a combined 1800 man years of microwave component experience that has and will continue to demonstrate the highest level of product reliability, quality, cost effectiveness, and timely delivery response unsurpassed in our marketplace.



Defense Electronic Systems

Continental Microwave Division

DS-303

11-06

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RIGID WAVEGUIDE THIN WALL TUBING

PART DESCRIPTION:

CMD offers a standard product line of thin wall rectangular waveguide tubing and completed assemblies for system applications where minimum weight without performance degradation is specified. All CMD thin wall waveguide will withstand 30 PSIG without performance compromise.

SPECIFICATIONS:

Model No. *	Waveguide Size	Frequency Range(GHz)	Inside Dimensions	Tol± Std.	Wall Thickness	Wt/Ft (oz.)
RWTWT28...	WR - 28	26.50 - 40.00	.280 x .140	.002	.020/.025	.43
RWTWT42...	WR - 42	18.00 - 26.50	.420 x .170	.002	.020/.025	.55
RWTWT62...	WR - 62	12.40 - 18.00	.622 x .311	.002	.020/.025	.84
RWTWT75...	WR - 75	10.00 - 15.00	.750 x .375	.003	.020/.025	1.00
RWTWT90...	WR - 90	8.20 - 12.40	.900 x .400	.003	.030/.035	1.68
RWTWT112...	WR - 112	7.05 - 10.00	1.122 x .497	.004	.040/.045	2.73

**Indicates Model Number. See ORDERING DATA for complete part number.*

ORDERING DATA:

TYPICAL PART NO. – (example) **RWTWT90 - 60**

MODEL NUMBER:

LENGTH: IN INCHES

MATERIAL:

■ See reverse side of this data sheet for thin wall tubing flanges

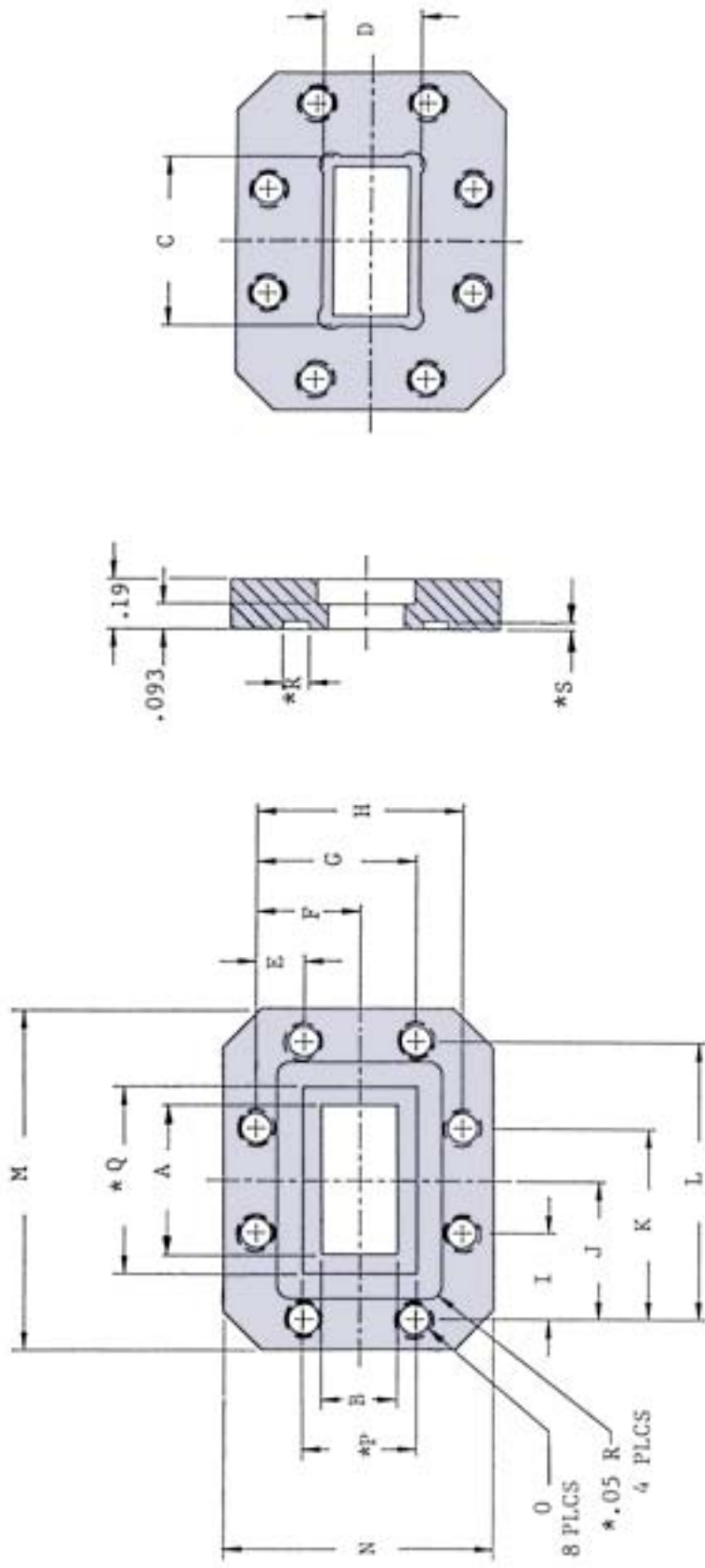


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DS-304A

11-06



Model No.	COVER FLANGE														GASKET FLANGE					
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	CLEAR	O TAP	P	Q	R	S
TWFLG28	.280	.140	.340	.200	.143	.310	.477	.620	.242	.390	.538	.780	.98	.82	.114/.118Ø	#4-40 UNC	.219	.373	.096	.04
TWFLG42	.420	.170	.480	.230	.163	.355	.547	.710	.298	.480	.662	.960	1.16	.91	.114/.118Ø	#4-40 UNC	.306	.558	.096	.04
TWFLG62	.662	.311	.682	.371	.200	.435	.670	.870	.385	.620	.855	1.240	1.47	1.10	.143/.147Ø	#6-32 UNC	.440	.810	.096	.04
TWFLG75	.750	.375	.810	.435	.234	.507	.780	1.014	.432	.694	.956	1.389	1.70	1.33	.143/.147Ø	#6-32 UNC	.561	.936	.125	.04
TWFLG90	.900	.400	.980	.480	.266	.578	.891	1.156	.516	.828	1.141	1.656	2.09	1.59	.143/.147Ø	#6-32 UNC	.624	1.124	.141	.04
TWFLG112	1.122	.622	1.222	.722	.328	.640	.953	1.281	.578	.953	1.328	1.906	2.50	1.75	.143/.147Ø	#6-32 UNC	.747	1.372	.141	.04

*Indicates dimensions for gasket flange only

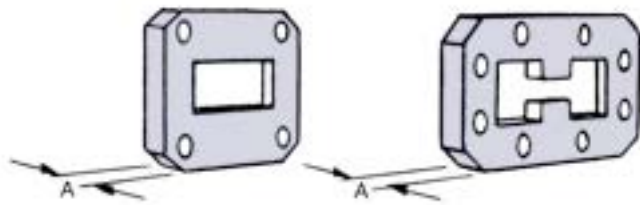
ORDERING DATA: SPECIFY MODEL NUMBER AND INDICATE COVER OR GASKET TYPE



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WAVEGUIDE SHIMS

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of fabricated waveguide shims available in both rectangular and double ridge waveguide sizes. Rectangular shims are available in 3 different styles. CMD offers a cover, all-clear configuration as a standard product. Alternate materials and configurations are available upon request.

Model No. *	Waveguide Size	Frequency Range(GHz)
** WS22...	WR - 22	33.00 - 50.00
** WS28...	WR - 28	26.50 - 40.00
** WS34...	WR - 34	22.00 - 33.00
** WS42...	WR - 42	18.00 - 26.50
WS51...	WR - 51	15.00 - 22.00
WS62...	WR - 62	12.40 - 18.00
WS75...	WR - 75	10.00 - 15.00
WS90...	WR - 90	8.20 - 12.40
WS102...	WR - 102	7.00 - 11.00
WS112...	WR - 112	7.05 - 10.00
WS137...	WR - 137	5.85 - 8.20
WS159...	WR - 159	4.90 - 7.05
WS187...	WR - 187	3.95 - 5.85

Model No. *	Waveguide Size	Frequency Range(GHz)
WS229...	WR - 229	3.30 - 4.90
WS284...	WR - 284	2.60 - 3.95
WS284 R/H...	WR - 284 R/H	2.60 - 3.95
WS340...	WR - 340	2.20 - 3.30
WS430...	WR - 430	1.70 - 2.60
WS180...	WRD - 180C24	18.00 - 40.00
WS110...	WRD - 110C24	11.00 - 26.50
WS750...	WRD - 750D24	7.50 - 18.00
WS650...	WRD - 650D28	6.50 - 18.00
WS580...	WRD - 580D28	5.80 - 16.00
WS475...	WRD - 475D24	4.75 - 11.00
WS350...	WRD - 350D24	3.50 - 8.20
WS250...	WRD - 250D30	2.60 - 7.80

*Indicates Model Number. See ORDERING DATA for complete part number.

**Flange style "24" indicates Mil-F-3922/67 circular type.

ORDERING DATA:

TYPICAL PART NO. – (example)

WS90 - UG - .125 - A

MODEL NUMBER:	[REDACTED]		
FLANGE STYLE:	**24 - UG - CPR - CMR (Rectangular Waveguide Only)		
DIMENSION A:	.030 MIN to .750 MAX	xxx = ±.005	xx = ±.010
MATERIAL:	A - ALUMINUM	B - BRASS	
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT		



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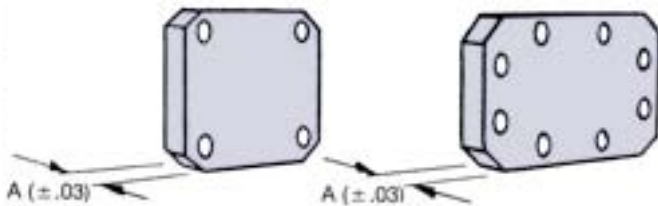
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DS-305

11-06

WAVEGUIDE SHORT PLATES

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of fabricated waveguide short plates available in both rectangular and double ridge waveguide sizes. Rectangular short plates are available in 3 different styles. CMD offers a cover, all-clear configuration as a standard product. Alternate materials and configurations are available upon request.

Model No. *	Waveguide Size	Frequency Range(GHz)	Dim.A
** WSP22	WR - 22	33.00 - 50.00	.19
** WSP28	WR - 28	26.50 - 40.00	.19
** WSP34	WR - 34	22.00 - 33.00	.19
** WSP42	WR - 42	18.00 - 26.50	.19
WSP51	WR - 51	15.00 - 22.00	.19
WSP62	WR - 62	12.40 - 18.00	.25
WSP75	WR - 75	10.00 - 15.00	.25
WSP90	WR - 90	8.20 - 12.40	.25
WSP102	WR - 102	7.00 - 11.00	.25
WSP112	WR - 112	7.05 - 10.00	.25
WSP137	WR - 137	5.85 - 8.20	.25
WSP159	WR - 159	4.90 - 7.05	.25
WSP187	WR - 187	3.95 - 5.85	.25

Model No. *	Waveguide Size	Frequency Range(GHz)	Dim.A
WSP229	WR - 229	3.30 - 4.90	.25
WSP284	WR - 284	2.60 - 3.95	.25
WSP284 R/H	WR - 284 R/H	2.60 - 3.95	.25
WSP340	WR - 340	2.20 - 3.30	.25
WSP430	WR - 430	1.70 - 2.60	.25
WSP180	WRD - 180C24	18.00 - 40.00	.19
WSP110	WRD - 110C24	11.00 - 26.50	.19
WSP750	WRD - 750D24	7.50 - 18.00	.25
WSP650	WRD - 650D28	6.50 - 18.00	.25
WSP580	WRD - 580D28	5.80 - 16.00	.25
WSP475	WRD - 475D24	4.75 - 11.00	.25
WSP350	WRD - 350D24	3.50 - 8.20	.25
WSP250	WRD - 250D30	2.60 - 7.80	.25

*Indicates Model Number. See ORDERING DATA for complete part number.

**Flange style "24" indicates MIL-DTL-3922/67 circular type.

ORDERING DATA:

TYPICAL PART NO. – (example)

WSP90 - UG - A

MODEL NUMBER:

FLANGE STYLE:

MATERIAL:

FINISH:

_____ **WSP90 - UG - A**

**24 - UG - CPR - CMR (Rectangular Waveguide Only)

A - ALUMINUM B - BRASS

CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT



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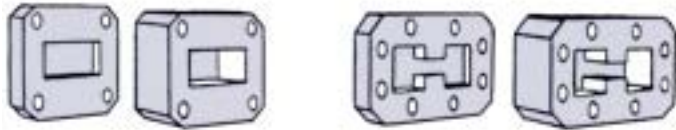
DS-306
11-06

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SPECIAL PRODUCTS

WAVEGUIDE OFFSET SHORTS

SPECIFICATIONS:



PART DESCRIPTIONS:

CMD offers a standard product line of fabricated waveguide offset shorts available in both rectangular and double ridge waveguide sizes. Rectangular offset shorts are available in 3 different styles. CMD offers a cover, all-clear configuration as a standard product. Alternate materials and configurations are available upon request.

Model No. *	Waveguide Size	Frequency Range(GHz)	Model No. *	Waveguide Size	Frequency Range(GHz)
** WOS22...	WR - 22	33.00 - 50.00	WOS229...	WR - 229	3.30 - 4.90
** WOS28...	WR - 28	26.50 - 40.00	WOS284...	WR - 284	2.60 - 3.95
** WOS34...	WR - 34	22.00 - 33.00	WOS284 R/H...	WR - 284 R/H	2.60 - 3.95
** WOS42...	WR - 42	18.00 - 26.50	WOS340...	WR - 340	2.20 - 3.30
WOS51...	WR - 51	15.00 - 22.00	WOS430...	WR - 430	1.70 - 2.60
WOS62...	WR - 62	12.40 - 18.00	WOS180...	WRD - 180C24	18.00 - 40.00
WOS75...	WR - 75	10.00 - 15.00	WOS110...	WRD - 110C24	11.00 - 26.50
WOS90...	WR - 90	8.20 - 12.40	WOS750...	WRD - 750D24	7.50 - 18.00
WOS102...	WR - 102	7.00 - 11.00	WOS650...	WRD - 650D28	6.50 - 18.00
WOS112...	WR - 112	7.05 - 10.00	WOS580...	WRD - 580D28	5.80 - 16.00
WOS137...	WR - 137	5.85 - 8.20	WOS475...	WRD - 475D24	4.75 - 11.00
WOS159...	WR - 159	4.90 - 7.05	WOS350...	WRD - 350D24	3.50 - 8.20
WOS187...	WR - 187	3.95 - 5.85	WOS250...	WRD - 250D30	2.60 - 7.80

*Indicates Model Number. See ORDERING DATA for complete part number.

**Flange style "24" indicates MIL-DTL-3922/67 circular type.

***CMD's standard product length of offset = 1/8, 1/4 and 3/8 waveguide wavelength (λ_g)

$$\lambda_g = 2 \left(\frac{\lambda_{LOW} \times \lambda_{HIGH}}{\lambda_{LOW} + \lambda_{HIGH}} \right)$$

ORDERING DATA:

TYPICAL PART NO. – (example)

WOS90 - 1/8 - UG - A

MODEL NUMBER:	[REDACTED]
*** LENGTH:	1/8 - 1/4 - 3/8
FLANGE STYLE:	**24 - UG - CPR - CMR (Rectangular Waveguide Only)
MATERIAL:	A - ALUMINUM B - BRASS
FINISH:	CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT



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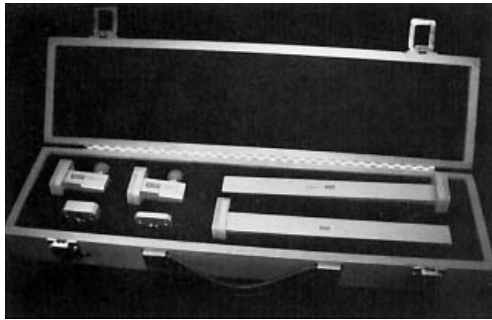
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DS-307

11-06

WAVEGUIDE CALIBRATION KITS

SPECIFICATIONS:



PART DESCRIPTION:

CMD offers a standard product line of waveguide calibration kits, available in 32 different waveguide sizes ranging from WR - 22 thru WRD - 250. Kits come complete with wooden instrument case and include:

- 1 each model WOS 1/8 and 3/8 offset shorts
 - 2 each model RA or DRA precision tuned waveguide-to-coax adapters (type N-F up to 18 GHz, K-F above 18 GHz,
 - 2 each model PLPT precision terminations
 - 6 each precision index pins
- Alternate kit variations are available upon request.

Calibration Kit Model No.	Waveguide Size	Frequency Range(GHz)	Material
WCK22-CMT	WR - 22	33.00 - 50.00	Copper
WCK28-CMT	WR - 28	26.50 - 40.00	Copper
WCK34-CMT	WR - 34	22.00 - 33.00	Copper
WCK42-CMT	WR - 42	18.00 - 26.50	Copper
WCK51-CMT	WR - 51	15.00 - 22.00	Copper
WCK62-CMT	WR - 62	12.40 - 18.00	Copper
WCK75-CMT	WR - 75	10.00 - 15.00	Copper
WCK90-CMT	WR - 90	8.20 - 12.40	Copper
WCK96-CMT	WR - 96	7.00 - 17.00	Copper
WCK102-CMT	WR - 102	7.00 - 11.00	Copper
WCK112-CMT	WR - 112	7.05 - 10.00	Copper
WCK137-CMT	WR - 137	5.85 - 8.20	Copper
WCK159-CMT	WR - 159	4.90 - 7.05	Copper
WCK187-CMT	WR - 187	3.95 - 5.85	Copper

Calibration Kit Model No.	Waveguide Size	Frequency Range(GHz)	Material
WCK229-CMT	WR - 229	3.30 - 4.90	Copper
WCK284-CMT	WR - 284	2.60 - 3.95	Copper
WCK284 R/H-CMT	WR - 284 R/H	2.60 - 3.95	Aluminum
WCK340-CMT	WR - 340	2.20 - 3.30	Aluminum
WCK430-CMT	WR - 430	1.70 - 2.60	Aluminum
WCK180-CMT	WRD - 180C24	18.00 - 40.00	Aluminum
WCK110-CMT	WRD - 110C24	11.00 - 26.50	Aluminum
WCK750-CMT	WRD - 750D24	7.50 - 18.00	Aluminum
WCK650-CMT	WRD - 650D28	6.50 - 18.00	Aluminum
WCK580-CMT	WRD - 580D28	5.80 - 16.00	Aluminum
WCK475-CMT	WRD - 475D24	4.75 - 11.00	Aluminum
WCK350-CMT	WRD - 350D24	3.50 - 8.20	Aluminum
WCK250-CMT	WRD - 250D30	2.60 - 7.80	Aluminum

Unless otherwise specified, Cal Kit flange styles provided as noted:

- UG* Cover-All Clear for Rectangular Waveguide (*CPR for WR 159, 229, 340, 430)
- Cover-All Clear for Double Ridge Waveguide.

ORDERING GUIDE:

SPECIFY MODEL NUMBER

WCK_CMT

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate flanges available upon request
- Alternate connector type available upon request.
- Alternate materials available upon request.
- Alternate finish available upon request.



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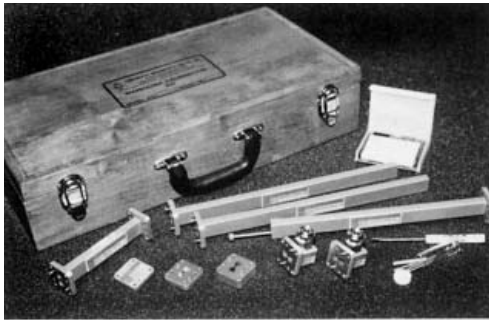
DS-308A

11-06

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WAVEGUIDE CALIBRATION KITS (for Hewlett Packard's 8510 & 8720 V.N.A.s)

SPECIFICATIONS:



PART DESCRIPTION:

CMD also offers a standard product line of waveguide calibration kits for Hewlett Packard's model numbers 8510 A/B/C and 8720 A/B Vector Network Analyzers. Kits are available in 29 waveguide sizes ranging from WR -42 thru WRD - 250, and also contain the components and software necessary for a bi-directional, 2 port, 12 term error corrected calibration. Standard kits come complete with wooden instrument case and include:

- 1 each model WOS 1/8 and 3/8 offset shorts
- 1 each model WSP short plate
- 2 each model RA or DRA precision tuned waveguide-to-coax adapters (7mm up to 18 GHz, 3.5mm up to 26.5 GHz)
- 2 each model PLPT precision terminations
- 1 each model LPTS sliding termination
- 1 each RS-5" straight section
- 6 each precision index pins
- 1 each calibration cartridge or diskette

Calibration Kit Model No.	Waveguide Size	Frequency Range(GHz)	Material
WCK42-HP	WR - 42	18.00 - 26.50	Copper
WCK51-HP	WR - 51	15.00 - 22.00	Copper
WCK62-HP	WR - 62	12.40 - 18.00	Copper
WCK75-HP	WR - 75	10.00 - 15.00	Copper
WCK90-HP	WR - 90	8.20 - 12.40	Copper
WCK102-HP...	WR - 102	7.00 - 11.00	Copper
WCK112-HP	WR - 112	7.05 - 10.00	Copper
WCK137-HP	WR - 137	5.85 - 8.20	Copper
WCK159-HP	WR - 159	4.90 - 7.05	Copper
WCK187-HP	WR - 187	3.95 - 5.85	Copper
WCK229-HP	WR - 229	3.30 - 4.90	Copper
WCK284-HP	WR - 284	2.60 - 3.95	Copper

Calibration Kit Model No.	Waveguide Size	Frequency Range(GHz)	Material
WCK284 R/H-HP	WR - 284 R/H	2.60 - 3.95	Aluminum
WCK340-HP	WR - 340	2.20 - 3.30	Aluminum
WCK430-HP	WR - 430	1.70 - 2.60	Aluminum
WCK180-HP	WRD - 180C24	18.00 - 40.00	Aluminum
WCK110-HP	WRD - 110C24	11.00 - 26.50	Aluminum
WCK750-HP	WRD - 750D24	7.50 - 18.00	Aluminum
WCK650-HP	WRD - 650D28	6.50 - 18.00	Aluminum
WCK580-HP	WRD - 580D28	5.80 - 16.00	Aluminum
WCK475-HP	WRD - 475D24	4.75 - 11.00	Aluminum
WCK350-HP	WRD - 350D24	3.50 - 8.20	Aluminum
WCK250-HP	WRD - 250D30	2.60 - 7.80	Aluminum

Unless otherwise specified, Cal-Kit flange styles provided as noted:

-UG* Cover-All Clear for Rectangular Waveguide (*CPR for WR 159, 229, 340, 430)

-Cover-All Clear for Double Ridge Waveguide.

ORDERING DATA:

TYPICAL PART NO. - (example) **WCK90 - HP - C**

MODEL NUMBER: _____

SOFTWARE: C - CARTRIDGE D - DISKETTE

FINISH: CORROSION PROTECTION PLUS SILVER GREY EPOXY TOP COAT

- Alternate flanges, materials, connector type, and/or finish available upon request.
- Alternate kit variations, including options for TRL calibration, are available upon request.



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DS-308B

11-06