

INCH-POUND

MIL-W-3970/23B
 20 August 2014
 SUPERSEDING
 MIL-W-3970/23A
 3 February 2009

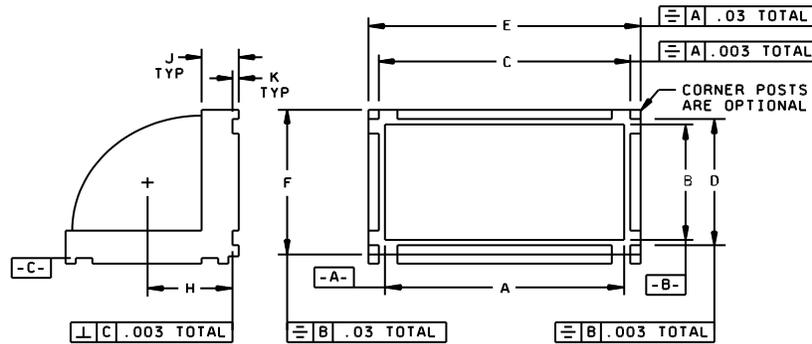
DETAIL SPECIFICATION SHEET

WAVEGUIDE ASSEMBLIES, RIGID, CAST, 90-DEGREE E-PLANE BEND,
 MITER AND RADIUS-BACK MITER, FULL CORRAL

This specification is approved for use by all Departments and
 Agencies of the Department of Defense.

Inactive for new design
 after 18 September 1998.

The requirements for acquiring the waveguide assemblies described
 herein shall consist of this document and MIL-DTL-3970.

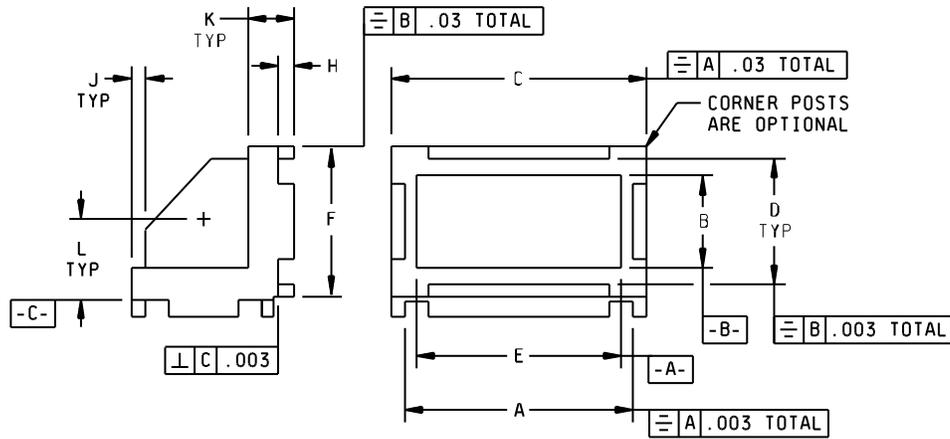


inches	mm	Letter	Dimension are in inches for Figure 1
.003	.08	A	1.872 ± .005
.005	.13	B	.872 ± .005
.010	.25	C	2.04 +.005 -.000
.02	.5	D	1.004 +.005 -.000
.03	.8	E	2.18 ± .03
.08	2.0	F	1.18 ± .03
.30	7.6	H	.593 ± .010
.593	15.06	J	.30 ± .02
.872	22.15	K	.08 ± .02
1.004	25.50		
1.18	30.0		
1.872	47.55		
2.004	50.90		
2.18	55.4		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are determined from 1.00 inch = 25.4 mm.
3. Dimensions are in accordance with ASME Y14.5M.

FIGURE 1. Dimensions for radius-back miter configuration, for dash numbers 001 and 002.



Letter	Dimensions are in inches figure 2
A	1.002 + .005 - .000
B	.400 ± .003
C	1.13 ± .03
D	.502 +.003 - .000
E	.900 ± .003
F	.63 ± .03
H	.10 ± .06
J	.05 -.03 +.00
K	.20 ± .03
L	.325 ±.003

Inches	mm	Inches	mm	Inches	mm
.003	.08	.06	1.5	.502	12.75
.005	.13	.10	2.5	.63	16.0
.030	.76	.20	5.1	.900	22.9
.03	.8	.325	8.26	1.002	25.45
.05	1.3	.400	10.16	1.13	28.7

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based on 1.00 inch = 25.4 mm.

FIGURE 2. Dimensions for miter configuration, for dash number 003.

TABLE 1. Dash numbers and electrical and physical characteristics.

Dash no.	Frequency range TE ₁₀ mode GHz	VSWR max	Peak power kW max	Average power kW max	Operating temperature range	Pressurization lb _f /in ² gage	Figure	Material	Mating waveguide M85/
001	4.0 - 5.9	1.05	<u>1/</u>	<u>1/</u>	0° to +60°C	20	1	Aluminum alloy, D712.0, temper F, in accordance with ASTM-B26/B26M or C712.1 in accordance with ASTM-B179	1-053 1-054 1-174
002	4.0 - 5.9	1.05	<u>1/</u>	<u>1/</u>	0° to +60°C	20	1	Beryllium copper, alloy	1-051 1-055
003	8.2 - 12.4	1.05	250	10	-55° to +200°C	45	2	Aluminum alloy, D712.0, temper F, in accordance with ASTM-B26/B26M or C712.1 in accordance with ASTM-B179	1-077 1-078 1-178

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1/ Assemblies shall have the same power handling capabilities as their mating waveguides.

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REQUIREMENTS:

Physical characteristics.

Dimensions and configuration: See figures 1 and 2.

Operating temperature range: See table I.

Material: See table I.

Surfaces (sandblasting after machining permissible):

Internal: $\sqrt[6]{3}$ microinches in accordance with ASME - B46.1.

External: $\sqrt[12]{5}$ microinches in accordance with ASME - B46.1.

Fungus resistance: Materials nutrient to fungus shall not be used.

Pressurization: See table I.

Penetrant inspection. No indication of any cracks at any location when tested in accordance with ASTM-E1417, type I, method B.

Electrical characteristics:

Frequency range: See table I.

VSWR: See table I.

Power

Peak - See table I.

Average - See table I.

Part number: M3970/23- (dash number from table I).

Referenced documents. In addition to MIL-DTL-3970, this specification sheet references ASTM-B26/B26M, ASTM-B179, ASME-B46.1, ASME Y14.5M, and ASTM-E1417.

Marginal notations are not used on this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:
Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5985-2014-028)

Army - MI
Navy - AS, CG, MC, OS
Air Force - 19

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.dla.mil/>.