MILITARY SPECIFICATION SHEET

ELECTRON TUBE, CATHODE-RAY, ELECTROSTATIC DEFLECTION AND FOCUS, Type 3BGP1

Applicable paragraphs of Specification MIL-E-1, as referenced herein, form a part of this specification sheet.

Absolute Ratings

Parameter:	Ef	Ec1	ed	Eb1	Eb2	Light Output	Rg	Zd	ALt
Unit:	V	Vdc	V	Vdc	Vdc	ft.L	Meg	Meg	ft
Maximum	1.5±10%	0	550	1100	2750	--	1.5	1.0	40,000
Minimum	---	-200	---	---	1000 (Note 1)	20 (Note 2)	---	---	---
Test Conditions	1.5	Adjust	---	focus	2000	---	---	---	---

Table I

MIL-E-1 Par No	Test	Conditions	AQL (Percent Defective)	Insp Level	Limits Sym	Min	Max	Unit
	General							
3.1	Qualification Approval	Required (See note 9)	---	---	-	-	-	-
3.6	Performance		---	---	-	-	-	-
4.5	Holding period		---	---	-	-	-	-
4.6.1	Cathode-Ray tubes (Preheating)		---	---	-	-	-	-
4.9.2.1	Dimensions (for Cathode-Ray tubes) (see fig 1)		---	---	-	-	-	-
4.9.18 and 4.9.18.1.2	Container drop (Cathode-Ray tubes)	(1) Package Group 4; Container Size B						
	Qualification Inspection (See note 3)							
3.4.3	Base connections		---	---	-	-	-	-
4.9.11	Pressure	45 lb/sq. in	---	---	-	-	-	-
4.9.19.8	Cathode-Ray vibration				Width	-	1.0	mm
4.10.14	Direct Interelectrode Capacitance	g1 to all	---	---	C	-	6	uuf
		D1 to D2	---	---	C	-	4	uuf
		D3 to D4	---	---	C	-	4	uuf
		D1 to all	---	---	C	-	7.5	uuf
		D2 to all	---	---	C	-	7.5	uuf
		D3 to all	---	---	C	-	6.0	uuf
		D4 to all	---	---	C	-	6.0	uuf
4.12.4.1	Cathode Illumination		---	---	-	-	-	-

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Table I (Cont'd)

MIL-E-1 Par No	Test	Conditions	AQL (Percent Defective)	Insp Level	Limits Sym	Min	Max	Unit
	Acceptance inspection Part 1 (Production) (See note 4)							
4.12.1.1	Electrode Currents Anode No. 1 Current	EcL=0			Ibl	-15	10	uadc
4.12.1.1	Cathode Current	Light=20ft.L			Ik	-	1000	uadc
4.12.1.2	Voltage breakdown	Ef=1.65V			-	-	-	-
4.12.1.3	Voltage breakdown (electrostatic types)				-	-	-	-
4.12.2.1	†Gas "Cross"	Light=20ft.L			-	-	-	-
4.12.5.1	Blemishes			II	-	-	-	-
4.12.5.2	† Light Output	Note 2	(See Note 4)		Light	20	-	ft.L
4.12.5.3	Modulation	Light=20ft.L			ΔEcl	-	38	Vdc
4.12.7.2	Spot position (electrostatic deflection)				-	-	15.0	mm
4.12.7.3	Spot displacement (Leakage)				Displ	-	7.0	mm
4.12.9	Grid Cutoff Voltage				Ecl	-38	-67.5	Vdc
4.12.10.1	Focusing Voltage at cutoff	Ecl=Cutoff			Ebl	-	700	Vdc
4.12.10.2	Focusing Voltage, Zero-bias	Ecl=0			Ebl	400	-	Vdc
4.12.13.2	Grid No. 1 Leakage				-	-	-	-
4.12.13.5	Anode No. 2 Leakage				-	-	-	-
	Acceptance inspection Part 2 (design							
4.10.8	Heater or filament current		6.5	L6	if	126	154	mA
4.12.3.1	Alinement, Base (electrostatic types)	+3D4; Pin No.5	6.5	L6	-	-	-	-
4.12.3.2	Alinement, Side terminal	+1D2	6.5	L6	-	-	-	-
4.12.3.3	Alinement, Side terminal and Base	Pin No. 3	6.5	L6	-	-	-	-
4.12.3.4	Alinement, Neck and bulb		6.5	L6	Diam	-	1 5	in
4.12.3.5	Alinement, Neck and base		6.5	L6	-	-	-	-
4.12.3.7	Angle between traces		6.5	L6	-	89	91	Deg
-	Angle, bulb and traces	+1D2;Bulb Wall	6.5	L6	-	-	1.5	Deg
4.12.4.2	Stray Emission	Eb2=2750 Vdc	6.5	L6	-	-	-	-
4.12.6.1	Line Width"A"	Light=20ft.L	6.5	L6	Width	-	0.65	mm
4.12.6.1	Line Width "B"	Light=20ft.L	6.5	L6	Width	-	0.65	mm
-	Useful Scan	Note 5	6.5	L6	-	-	-	-
4.12.11	Deflection Factor	1D2	6.5	L6	DF	68	92	Vdc/in
4.12.11	Deflection Factor	3D4	6.5	L6	DF	28	38	Vdc/in
4.12.12	Deflection Factor Uniformity		6.5	L6	-	-	-	-

Table I (Cont'd)

MIL-E-1 Par No	Test	Conditions	AQL (Percent Defective)	Insp Level	Sym	Limits Min	Limits Max	Unit
	Acceptance inspection							
	Part 3 (Life)							
4.11	Life tests	Group D; Light=20ft.L; Eb2=2750 Vdc	-	-	t	50	-	hrs
4.11.4	Life test End Point							
	Line Width "A"	Light=16ft.L	-	-	width	-	0.65	mm
	Line Width "B"	Light=16ft.L	-	-	width	-	0.65	mm
	Modulation	Light=16ft.L	-	-	Δ Ec	-	38	Vdc
5	Preparation for delivery (See note 6)							

Note 1. This value is recommended only for low velocity deflecting and low ambient light levels.

Note 2. All light-dependent tests to be measured with a 1-1/8 inch vertical and 1-9/16 inch horizontal, 35 to 105 line raster. Photocell is to have one-inch active aperture and be calibrated in foot-lamberts, similar to Photovolt Corporation Type 200-A or equivalent.

Note 3. All tests listed hereon except container drop shall be performed during qualification inspection; however the five tests listed under qualification are normally performed during qualification inspection only.

Note 4. The AQL for the combined defectives for attributes in acceptance inspection, part 1 (production), excluding mechanical and blemishes, shall be 1 percent.

Note 5. The minimum usefull scan in the major dimension D1D2, shall be 2-3/4 inches. The minimum useful scan in the minor direction, D3D4, shall be 1-1/8 inches.

Note 6. Tubes shall be prepared for domestic or overseas shipment, as specified in the contract or order, in accordance with Specification MIL-E-75/4.

Note 7. Referenced documents shall be of the issue in effect on the date of invitation for bids.

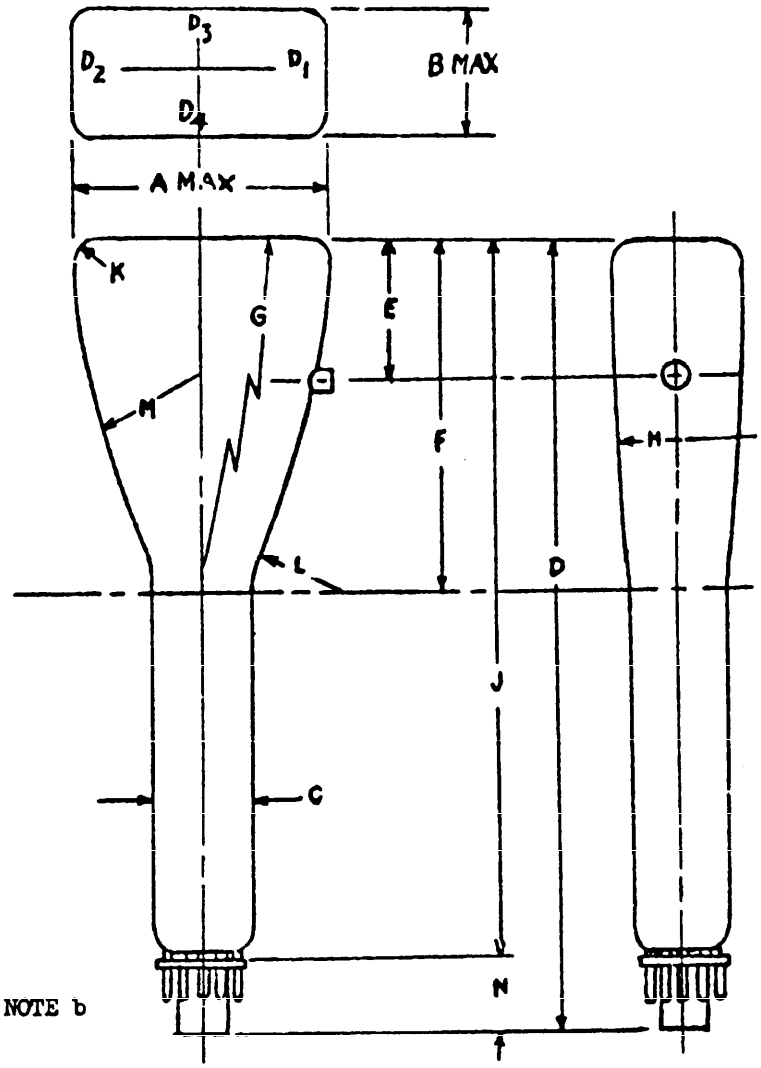
Note 8. Electron devices which have passed Government inspection and meet all the requirements of this specification shall be marked "USA-Qualification Approval Code and type designation," if any specification requirement has been waived or changed, the letters "USA" and the Qualification Approval Code shall not be used. The letters JAN or any abbreviations thereof shall not be used.

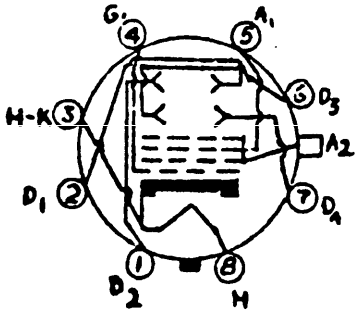
Note 9. Qualification.- With respect to products requiring qualification, awards will be made only for products that have, prior to the time set for opening of bids, been tested and approved for inclusion in Qualified Products List QPL-1 (Army) whether or not such products have actually so listed by that date. The attention of suppliers is called to this requirement, and manufacturers are urged to arrange to have the products they propose to offer to the Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the

Note 9. (Cont'd)
products covered by this specification. Information pertaining to qualification of products covered by this specification sheet may be obtained from Standardization Division, U. S. Army Signal Equipment Support Agency, Fort Monmouth, New Jersey.

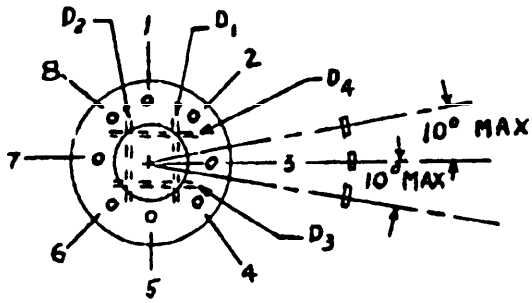
REF	DIMENSION	
	MAX.	MIN.
A (SEE NOTE a)	3 3/64	2 63/64
B (SEE NOTE a)	1 33/64	1 15/32
C	1 5/32	1 3/32
D	9 3/8	9 1/8
E	1 5/8	1 3/8
F	4 1/8	
G	60 R	
H	30 R	
J	8 5/16	
K	3/32 R	
L	1 R	
M	10 R	
N	15/16	

ALL DIMENSIONS IN INCHES





8FK BASING



BACKVIEW

Note a: The minimum useful screen area shall be a rectangle 2 3/4 inches by 1 1/8 inches centered on the geometric center of the face and with the sides of the rectangle parallel to the axes of deflection.

Note b: The base be JEDEC B8-181.

OUTLINE AND DIMENSIONS
FIG. 1