

GENERAL ELECTRIC

INDUSTRIAL AND MILITARY CATHODE RAY TUBES 7BLP7
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7BLP7 CATHODE RAY TUBE

7-INCH ROUND, GLASS	FACE PLATE - SPHERICAL, CLEAR
FOCUS - ELECTROSTATIC	LONG PERSISTENCE
DEFLECTION - ELECTROSTATIC	POST ACCELERATION
TWO GUNS	ALUMINIZED

DESCRIPTION AND RATING

The 7BLP7 is a 7-inch flat faced dual beam cathode ray tube with electrostatic-focus and deflection for radar and oscillographic applications.

GENERAL

Data and Ratings Are Per Gun Unless Otherwise Specified

ELECTRICAL

Heater Voltage 6.3 Volts
Heater Current 0.6 ± 10% Amperes

Focusing Method - Electrostatic
Deflecting Method - Electrostatic

Direct Interelectrode Capacitances, maximum

Cathode to All Other Electrodes	7 μf
Grid No. 1 to All Other Electrodes.	8 μf
D1 to D2.	6 μf
D3 to D4.	6 μf
D1 to All Other Electrodes.	11.5 μf
D2 to All Other Electrodes.	11.5 μf
D3 to All Other Electrodes.	11.5 μf
D4 to All Other Electrodes.	11.5 μf

OPTICAL

Phosphor Number	P7
Fluorescent Color	Blue-White
Phosphorescent Color	Yellow
Persistence	Long

Faceplate - Clear

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MECHANICAL

Over-all Length $21 \pm 3/8$ Inches
Greatest Bulb Diameter. $7 \pm 1/16$ Inches
Minimum Useful Screen Diameter. $.6-1/8$ Inches

Post-Accelerator Bulb Contact - Recessed Small Ball Cap - JEDEC No. J1-22

Base - 25 Pin, JEDEC No. B25-139

Basing - Special

Bulb Contact Alignment

Post-Accelerator Contact Aligns with Trace of D1-D2 ± 10 Degrees

Post-Accelerator Contact on Same Side as Pin No. 12

Base Alignment

D1-D2 Trace Aligns with Pin No. 12 and Tube Axis ± 10 Degrees

Positive Voltage on D1 Deflects Beam Approximately Toward Pin No. 12

Positive Voltage on D3 Deflects Beam Approximately Toward Pin No. 8

Angle between D3-D4 and D1-D2 Traces $.90 \pm 1$ Degrees

Angle between Corresponding Traces $.1.5$ Max. Degrees

Mounting Position - Any

MAXIMUM RATINGS

DESIGN-CENTER VALUES*

Per Gun Unless Otherwise Specified

Post-Accelerator Voltage 10,000 Max. Volts DC

Anode Voltage# 5,000 Max. Volts DC

Ratio Post-Accelerator Voltage to Anode Voltage 2.0 Max.

Anode Input † 6 Max. Watts

Focusing-Electrode Voltage 2500 Max. Volts DC

Grid No. 1 Voltage

Negative-Bias Value 200 Max. Volts DC

Positive-Bias Value 0 Max. Volts DC

Positive-Peak Value 2 Max. Volts

Peak Heater-Cathode Voltage

Heater Negative with Respect to Cathode 180 Max. Volts

Heater Positive with Respect to Cathode 180 Max. Volts

Peak Voltage between Anode and Any Deflecting Electrode. . . . 700 Max. Volts

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TYPICAL OPERATING CONDITIONS

Per Gun Unless Otherwise Specified

Post-Accelerator Voltage	6000 Volts DC
Anode Voltage	3000 Volts DC
Focusing-Electrode Voltage	800 to 1150 Volts DC
Grid No. 1 Voltage**	-50 to -90 Volts DC
Deflection Factors	
D1 and D2	70 to 92 Volts DC per Inch
D3 and D4	64 to 82 Volts DC per Inch
Focusing-Electrode Current	-15 to +10 Microamperes
Spot Position, undeflected+Within 15 mm Square
Line Width A++	0.45 Max. Millimeters
Line Width B++	0.60 Max. Millimeters
Useful Scan \diamond	
Anode No. 3 Current \boxplus	30 Max. Microamperes

MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance	1.5 Max. Megohms
Resistance in Any Deflecting Electrode Circuit	5.0 Max. Megohms

*The maximum ratings provide a ten-percent safety factor in accordance with the standard design-center system of rating cathode ray tubes. The tube will withstand the combined effects of variations in line voltage and components provided the maximum design-center values are not exceeded by more than ten percent.

#Anode, grid No. 2, and grid No. 4 which are connected together within the tube are referred to herein as anode.

**For visual extinction of focused undeflected spot.

+The undeflected spot positions shall be within 15 mm squares whose centers are located 5/8 inch from the center of the tube face, A in the +D1 direction, B in the +D2 direction.

++Measured in accordance with specification MIL-E-1 paragraph 4.12.6.1 at an anode No. 3 (post-accelerator anode) current of 2.5 microamperes d-c.

‡Anode input equals the product of anode voltage and average current measured at the terminal.

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◇ Gun A

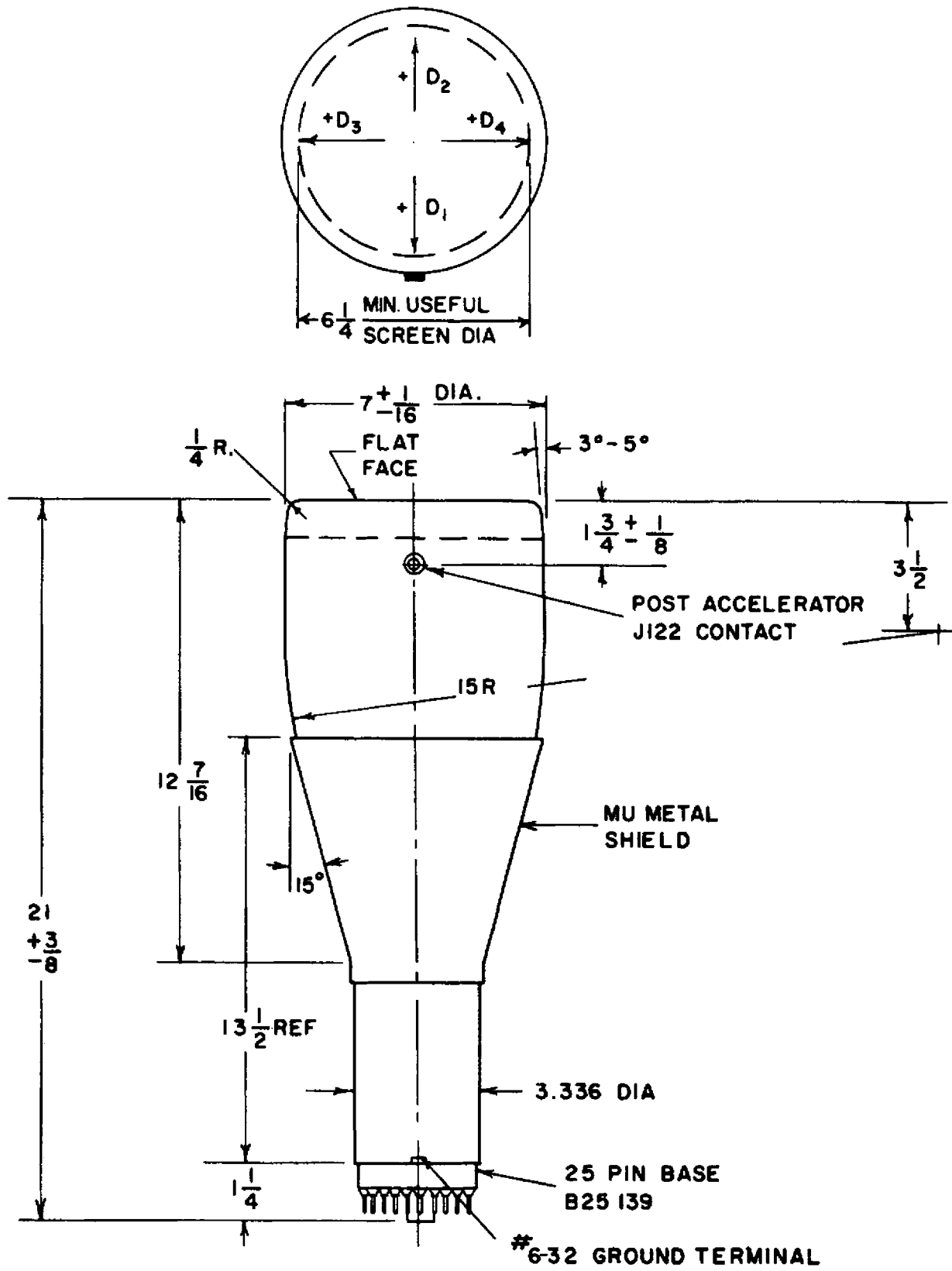
- +D2 direction - 1.5 inches from tube center
- +D1 direction - Full scan
- +D3 direction - 2 inches from tube center
- +D4 direction - 2 inches from tube center

Gun B

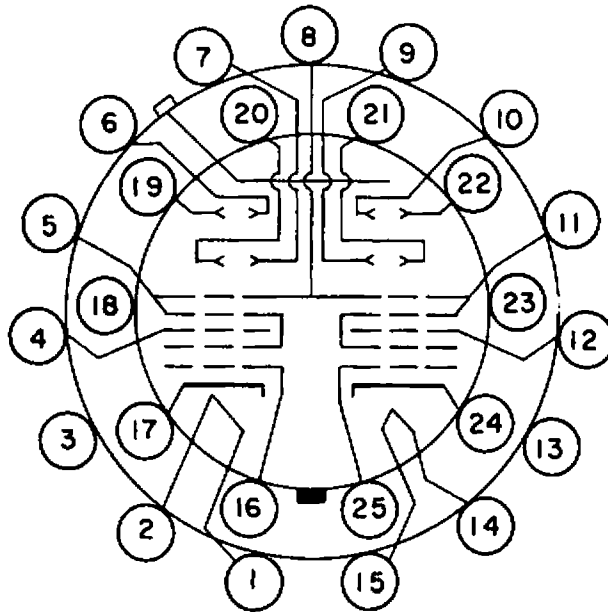
- +D1 direction - 1.5 inches from tube center
- +D2 direction - Full scan
- +D3 direction - 2 inches from tube center
- +D4 direction - 2 inches from tube center

- ⊞ When the tube is cut off (no beam current), the post accelerator anode (A3) will draw 30 μ Adc maximum.

Electronic Components Division
Cathode Ray Tube Department
Electronics Park - Syracuse, New York



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BOTTOM VIEW

UNIT A

UNIT B

PIN NO

ELEMENT

14	HEATER
15	HEATER
24	CATHODE
25	GRID NO. 1
12	FOCUSING ELECTRODE
22	DEFLECTOR D3
10	DEFLECTOR D4
9	DEFLECTOR D1
21	DEFLECTOR D2
11	ANODE
13	NO CONNECTION
23	NO CONNECTION

PIN NO

ELEMENT

1	HEATER
2	HEATER
17	CATHODE
16	GRID NO. 1
4	FOCUSING ELECTRODE
6	DEFLECTOR D3
19	DEFLECTOR D4
20	DEFLECTOR D1
7	DEFLECTOR D2
5	ANODE
3	NO CONNECTION
18	NO CONNECTION
8	SHIELD

CAP - POST ACCELERATOR

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