

Aug. 1, 1942

GOVERNMENT CONFIDENTIAL

3CPL-S1/1808-P1

TENTATIVE CHARACTERISTICS and RATINGS

HEATER VOLTAGE (A.C. or D.C.)	6.3	Volts
HEATER CURRENT	0.6	Ampere
FOCUSING METHOD	Electrostatic	
DEFLECTION METHOD	Electrostatic	

Electrodes DJ1 and DJ2 are nearest to screen and designated "upper."

DJ1 is on same side of tube as pin No. 4.

Electrodes DJ3 and DJ4 are nearest to base and designated "lower."

DJ3 is on same side of tube as pin No. 1.

Radial Deflection Electrode is aligned with tube axis.

PHOSPHOR	No. 1
FLUORESCENT COLOR	Green
PERSISTENCE	Medium

DIRECT INTERELECTRODE CAPACITANCES (Approx.):

Grid No. 1 to All Other Electrodes	8.0	μmf
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Deflecting Electrode DJ1 to Deflecting Electrode DJ2	1.2	μmf
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Deflecting Electrode DJ3 to Deflecting Electrode DJ4	0.7	μmf
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Deflecting Electrode DJ1 to All Other Electrodes	7.0	μmf
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Deflecting Electrode DJ3 to All Other Electrodes	8.5	μmf
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Deflecting Electrode DJ1 to All Other Electrodes		
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except Deflecting Electrode DJ2	6.0	μmf
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Deflecting Electrode DJ2 to All Other Electrodes		
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except Deflecting Electrode DJ1	5.0	μmf
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Deflecting Electrode DJ3 to All Other Electrodes		
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except Deflecting Electrode DJ4	8.5	μmf
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Deflecting Electrode DJ4 to All Other Electrodes		
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except Deflecting Electrode DJ3	6.0	μmf
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Radial Deflecting Electrode DJ5 to Anode No. 2	2.2	μmf
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OVERALL LENGTH	10-3/8" $\pm 5/16$ "
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GREATEST DIAMETER of BULB	3" $\pm 1/16$ "
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MINIMUM USEFUL SCREEN DIAMETER	2-3/4"
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BASE	Medium Magnal 11-Pin
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RMA BASING DESIGNATION	11C
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MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

Maximum Ratings Are Absolute Values

ANODE No. 2 (High-Voltage Electrode) VOLTAGE	2200 max. Volts
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ANODE No. 1 (Focusing Electrode) VOLTAGE	1100 max. Volts
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GRID (Control Electrode) VOLTAGE	Never positive
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PEAK VOLTAGE BETWEEN ANODE No. 2 and ANY	
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DEFLECTING ELECTRODE	550 max. Volts
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GRID-CIRCUIT RESISTANCE	1.5 max. Megohms
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IMPEDANCE of ANY DEFLECTING-ELECTRODE CIRCUIT	
at HEATER-SUPPLY FREQUENCY	1.0 max. Megohm

TYPICAL OPERATION:

Anode No. 2 Voltage*	1500	2000	Volts
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Anode No. 1 Voltage for Focus at 75% of			
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Grid Voltage for Cut-Off**	430	575	Volts
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Grid Voltage for Visual Cut-Off*	-45	-60	Volts
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Values subject to variation of	± 10	± 50	Per cent
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TYPICAL OPERATION: (continued)

Deflection Sensitivity:

Electrodes DJ1 and DJ2	0.153	0.115 mm/volt D.C.
Electrodes DJ3 and DJ4	0.205	0.154 mm/volt D.C.
Radial Deflection Electrode DJ5	2.89	2.17 ##

Deflection Factor:

Electrodes DJ1 and DJ2	165.5	221 volts D.C./in.
Values subject to variation of	±20	±20 Per cent
Electrodes DJ3 and DJ4	124	165 volts D.C./in.
Radial Deflection Electrode DJ5	221	296 ###
Ratio of DJ1-DJ2 to DJ3-DJ4 Factor	1.34	1.34
Values subject to variation of	±15.5	±15.5 Per cent

- * Brilliance and definition decrease with decreasing anode No. 2 voltage. In general, anode No. 2 voltage should not be less than 1500 volts.
- ** Individual tubes may require between +20% and -35% of these values with grid voltage between zero and cut-off.
- # Visual extinction of stationary focused spot.
- ## mm/volt for unit circle diameter in mm. Since deflection sensitivity is inversely proportional to circle diameter, sensitivity for any desired circle diameter is unit value/D(in mm).
- ### Volts D.C./inch for unit circle diameter in inches. Since deflection factor is directly proportional to circle diameter, deflection factor for any desired circle diameter is unit value x D (in inches).

SPOT POSITION

The undeflected focused spot will fall within a 10-mm square centered at the geometric center of the tube face and having one side parallel to the trace produced by DJ1 and DJ2.

Suitable test conditions are: anode No. 2 voltage, 2000 volts; anode No. 1 voltage, adjusted for focus; deflecting-electrode resistors, 1 megohm each, connected to anode No. 2; the tube shielded from all extraneous fields. To avoid damage to the tube, make the test with grid voltage near cut-off.

BASING and DEFLECTING ELECTRODE ALIGNMENT

The angle between the trace produced by DJ1 and DJ2 and its intersection with the plane through the tube axis and pin No. 1 will not exceed 10°.

The angle between the trace produced by DJ1 and DJ2 and the trace produced by DJ3 and DJ4 will be 90° ±30°.

With DJ1 (pin 3) positive with respect to DJ2 (pin 8), the spot will be deflected toward pin 4; likewise, with DJ3 (pin 9) positive with respect to DJ4 (pin 6), the spot will be deflected toward pin 1.

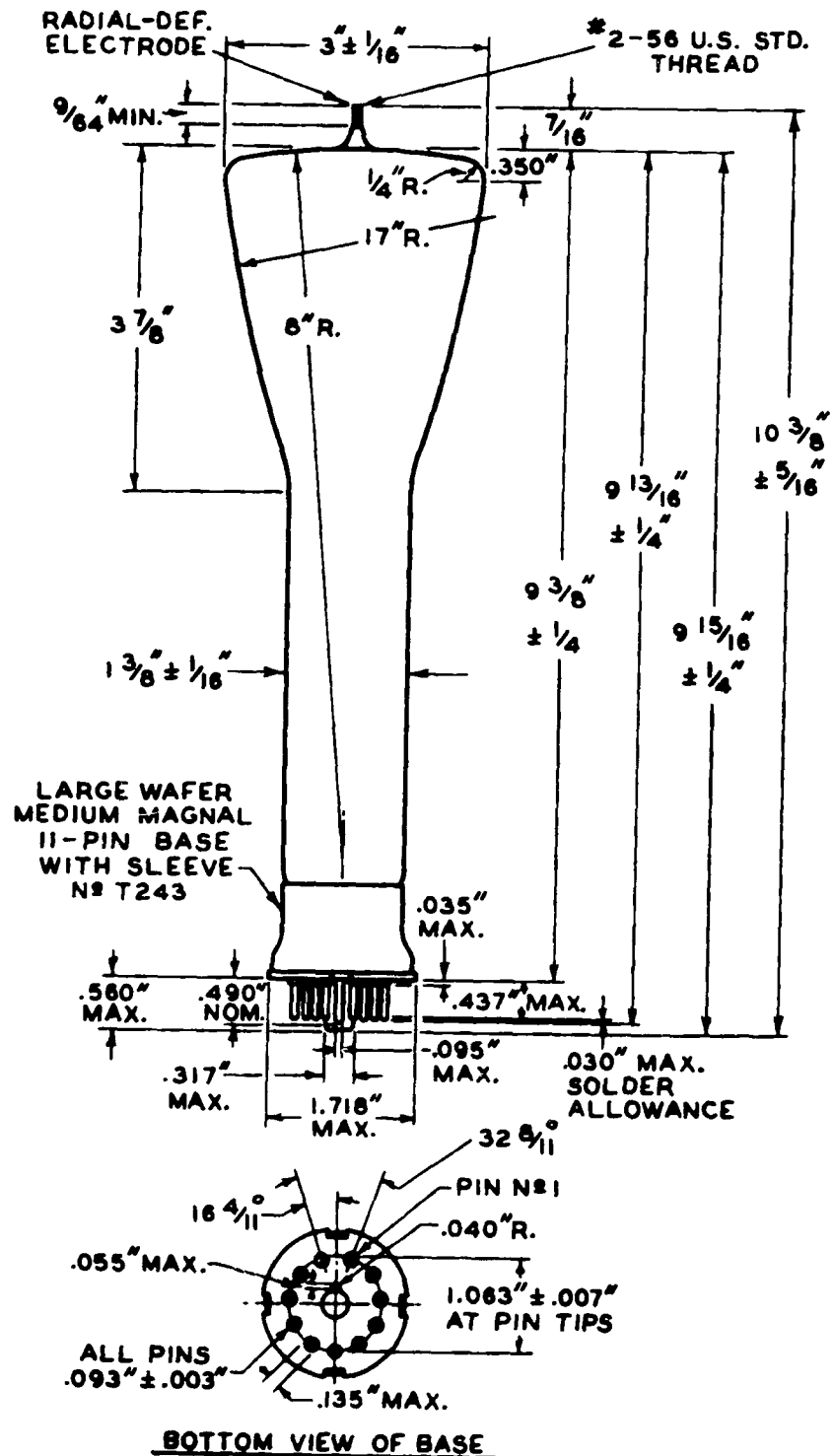
ANODE No. 2 CURRENT vs GRID VOLTAGE CHARACTERISTIC

Anode No. 2 Voltage.....2000 volts

Anode No. 1 Voltage.....adjusted for focus

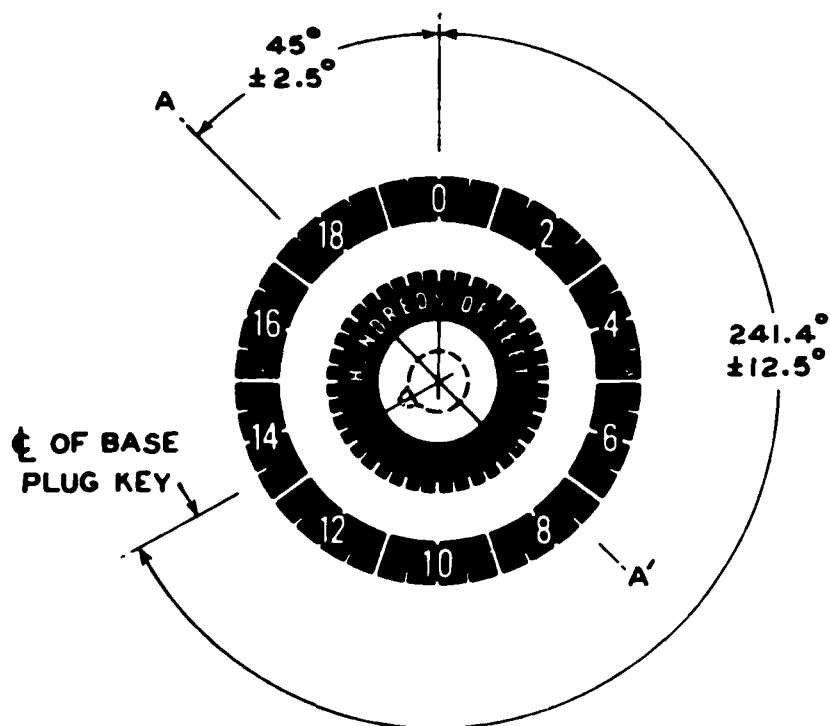
Anode No. 2 Current, Milliamperes	Grid Voltage
1.50	0
3.00	15
4.50	30
6.00	45
7.50	60

RADIAL-DEFLECTION ELECTRODE TERMINAL MAY BE ECCENTRIC WITH RESPECT TO THE TUBE AXIS BY $\frac{1}{16}$ " MAX.



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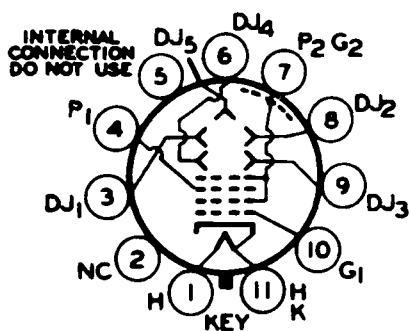
TRANSPARENT SCALE FOR 3CPI-SI/1808-PI



TRACE PRODUCED BY DEFLECTING
ELECTRODES DJ₁ AND DJ₂
IS ALONG LINE A-A'

TRANSPARENT SCALE MAY BE ECCENTRIC WITH
RESPECT TO THE TUBE AXIS BY 1/16" MAX.

BOTTOM VIEW of SOCKET CONNECTIONS



- PIN 1 - HEATER
- PIN 2 - NO CONNECTION
- PIN 3 - DEFLECTING ELECTRODE DJ₁
- PIN 4 - ANODE NO.1
- PIN 5 - INTERNAL CONNECTION - DO NOT USE
- PIN 6 - DEFLECTING ELECTRODE DJ₂
- PIN 7 - ANODE NO.2, GRID NO.2
- PIN 8 - DEFLECTING ELECTRODE DJ₃
- PIN 9 - DEFLECTING ELECTRODE DJ₄
- PIN 10 - GRID NO.1
- PIN 11 - HEATER, CATHODE
- THREADED TERMINAL - DEFLECTING ELECTRODE DJ₅