

# HITACHI PICTURE TUBE 12BAP4

# 110° Deflection Squared Corner Type

The Hitachi 12BAP4 is a directly viewed, squared corner type rectangular 12" glass picture tube having aluminized screen 7-11/16"×9-13/16" with nearly area of 71 square inches.

The 12BAP4 features an envelope having relatively flat, compound radius faceplate that minimizes the obstruction of outer light reflection and make the picture clearer.

Other design features of the 12BAP4 include a very short electron gun that minimizes deflection distortion and requires no ion trap magnet; a neck diameter of 1-1/8"; and "neoeighter" 7-pin base of the integral glass button type having straight through leads fitted with an indexing plug.

#### **ELECTRICAL DATA**

Focusing MethodEl	ectrostatic
Deflection Angles (approx.)	
Horizontal10	1 Degrees
Vertical 8	2 Degrees
Diagonal11	0 Degrees
Direct Interelectrode Capacitances	
Cathode to All Other Electrodes (approx.)	5 μμ <b>f</b>
Grid No. 1 to All Other Electrodes (approx.)	6 μμ <b>f</b>
External Conductive Coating to Anode90	$0 \mu\mu f \max$
40	0 <i>μμ</i> f min.
Heater Characteristics	
Heater Voltage 6.	3 Volts
Heater Current	3 Amperes
Heater Warm up Time 1	1 Seconds

# OPTICAL DATA

Phosphor Number	P4-Sulfide	Туре,	Aluminized
Light Transmittance at Center (approx.)			.78 Percent

# MECHANICAL DATA

Overall Length9-5/16 $\pm$ 1/4	Inches
Minimum Useful Screen Dimensions (projected)	
Diagonal11-5/16	Inches
Horizontal Axis9-13/16	Inches
Vertical Axis	Inches
Area71	$Sq.\ Inches$
Neck Length	Inches
Bulb ContactJEDEC	No. J1-21
BaseJEDEC	No. B7-208
Basing	8HR
Bulb Contact Alignment with Pin Position No. 730	Degrees
Weight (approx.)	Pounds

# MAXIMUM RATINGS (Design Maximum Values)

Unless otherwise specified, voltage values are positive and measured with respect to cathode.

Maximum Anode Voltage14,000 Volts	
Minimum Anode Voltage9,000 Volts	
Maximum Grid No. 4 (Focusing Electrode) Voltage+1,100 Volts	
–550 Volts	
Maximum Grid No. 2 Voltage550 Volts	
Minimum Grid No. 2 Voltage	
Grid No. 1 Voltage	
Maximum Negative Value154 Volts	
Maximum Negative Peak Value	
Maximum Positive Value	
Maximum Positive Peak Value	
Maximum Heater-Cathode Voltage	
Heater Negative with Respect to Cathode during	
Warm-up Period not to Exceed 15 Seconds	
After Equipment Warm-up Period200 Volts	
Heater Positive with Respect to Cathode	

# TYPICAL OPERATING CONDITION

### Grid Drive Service

Unless otherwise specified, all voltage values are positive with respect to cathode.

Anode Voltage	Volts
Grid No. 4 Voltage (Focusing Electrode) (Notes 2 & 3)0 to 400	Volts
Grid No. 2 Voltage	Volts
Grid No. 1 Voltage (Note 1)	Volts

#### Cathode Drive Service

Unless otherwise specified, all voltage values are positive with respect to
Grid No. 1.
Anode Voltage10,000 Volts
Grid No. 4 Voltage (Focusing Electrode) (Note 2 & 3)0 to 400 Volts
Grid No. 2 Voltage
Cathode Voltage (Note 1)

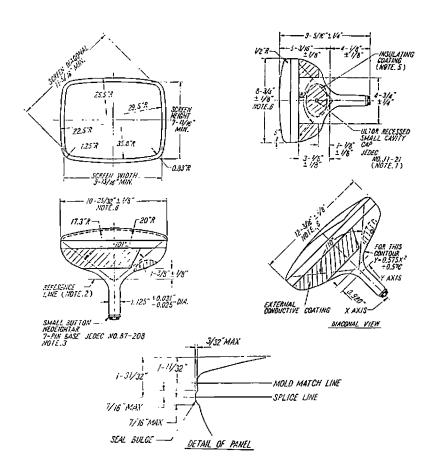
#### Maximum Circuit Value

Maximum Grid No. 1 Circuit Resistance	1.5 Megohoms
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- Note 1. Visual extinction of focused raster.
- Note 2. With the combined grid No. 1 bias voltage and video-signal valtage adjusted to give an anode current of 100 microamperes on a 7-11/16" ×9-13/16" pattern from RCA 2F21 Monoscope or equivalent.
- Note 3. Individual tubes will have satisfactory focus at some value between 0 and +400 Volts.

#### Warning

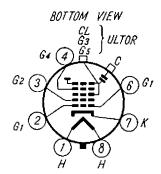
X-ray radiation shielding may be necessary to protect against possible danger of personal injury from prolonged exposure at close range if this tube is operated at higher than the manufacturer's Maximum Rated Anode Voltage or 16,000 Volts, whichever is less.



## SOCKET CONNECTIONS

Pin. 1: Heater

Pin. 2: Grid No. 1 Pin. 3: Grid No. 2 Pin. 4: Grid No. 4 Pin, 6: Grid No. 1



8 HR

Pin. 7: Cathode Pin. 8: Heater

Cap: Ultor (Grid No. 3,

Grid No. 5 Collector) C: External Conduc-

tive Coating

NOTE 1: The plane through the tube axis and pin No. 4 may vary from the plane through the tube axis and ultor terminal by angular tolerance (measured about the tube axis) of  $\pm 30^{\circ}$ . Ultor terminal is on same side as pin No. 4.

NOTE 2: With tube neck inserted through flared end of reference-line gauge JEDEC No. 126 and with tube seated in gauge, the reference-line is determined by the intersection of the plane CC' of the gauge with the glass funnel.

NOTE 3: Socket for this base should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The design of the socket should be such that the circuit wiring cannot impress lateral strains through the socket contacts on the base pins. Bottom circumference of base wafer will fall within a circle concentric with bulb axis and having a diameter of 1-3/4''.

NOTE 4: External conductive coating must be grounded.

**NOTE 5:** To clean this area, wipe only with soft dry lintless cloth.

**NOTE 6:** Measured at the mold match line.



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