

# LE CATHOSCOPE FRANÇAIS

50, Rue J.-P. Timbaud - COURBEVOIE - FRANCE

23DEP4

Cathode Ray tube

## GENERAL DESCRIPTION

The picture tube 23DEP4 is sealed into a steel sheath surrounding the splice and moldmatch zones in order to protect it against any implosion. This sheath is provided with four holes for mounting into the cabinet. The bulb of this picture tube is the same as the bulb of the 23DFP4.

### Heater, for unipotential cathode

Heater voltage (a.c. or d.c.) .....	6.3 volts
Heater current at 6.3 volts .....	0.3 ± 5% amp.
Warm-up time (average) .....	11 seconds (*)

### Direct interelectrode capacitances

Grid n°1 to all other electrodes .....	6 pF
Cathode to all other electrodes .....	5 pF
External conductive coating to anode	
maximum .....	2000pF
minimum .....	1500 pF

### Optical Data

Phosphor Number .....	Aluminized P4
Light Transmittance at Center, Approximate .....	53 Percent
Fluorescence .....	white
Phosphorescence .....	white
Persistence .....	short

Focusing method : electrostatic

Deflecting method : magnetic

Deflection angle (approx.)

diagonal .....	110°
horizontal .....	99°
vertical .....	82°

Electron gun : type requiring non ion-trap magnet.

### Tube dimensions

overall length .....	14" ± 5/16" (355,5 ± 8 mm)
greatest width .....	21 3/8" (543 mm)
greatest height .....	17 21/64" (440 mm)
Diagonal .....	26 7/64" (663 mm)
Neck length .....	4 1/4" ± 1/8" (107,5 ± 3,2 mm)

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## Minimum Useful Screen Dimensions (Projected)

Horizontal axis .....	19 1/4" (489 mm)
Vertical axis .....	15 1/8" (385 mm)
Diagonal .....	22 5/16" (566 mm)
Area .....	280 sq. in. (1806 cm <sup>2</sup> )
Weight (approx.) .....	32 lbs (14.5 kg)
Bulb .....	(See drawing)
Cap .....	Recessed small cavity J1-21
Base .....	B7-208
Basing .....	8HR

## Socket connections

Pin n°1 =	heater
Pin n°2 =	grid n°1
Pin n°3 =	grid n°2
Pin n°4 =	grid n°4 (focus)
Pin n°6 =	grid n°1
Pin n°7 =	cathode
Pin n°8 =	heater
Cap =	grid n°3 - grid n°5 - collector

(\* The time required for the voltage across the heater to reach 80 per cent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

## MAXIMUM RATINGS

Absolute maximum Values  
Cathode Drive Service

Unless otherwise specified, voltage values are positive with respect to grid n°1.

Anode to grid n°1 voltage .....	20000 max. volts
	14000 min. volts
Grid n°4 to grid n°1 voltage	
positive value .....	1100 max. volts
negative value .....	550 max. volts
Grid n°2 to grid n°1 voltage .....	700 max. volts
Grid n°2 to cathode voltage .....	550 max. volts
Cathode to grid n°1 voltage	
Positive peak value .....	220 max. volts
Positive bias value .....	154 max. volts
Negative bias value .....	0 max. volt
Negative peak value .....	2 max. volts

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## Peak heater cathode voltage

- Heater negative with respect to cathode :	
during equipment warm-up period not	
exceeding 15 seconds .....	450 max. volts
After equipment warm-up period .....	200 max. volts
- Heater positive with respect to cathode .	200 max. volts
Grid n°1 circuit resistance .....	1.5 max. megohms

## TYPICAL OPERATING CONDITIONS

### Cathode drive Service

Anode to grid n°1 voltage .....	16 000	18 000	volts
Grid n°2 to grid n°1 voltage .....	400	400 500	volts
Grid n°2 current .....	-15 to +15	-15 to +15	ua
Grid n°4 to grid n°1 voltage (1) .....	0 to 400	0 to 400	volts
Grid n°4 current .....	-25 to +25	-25 to +25	ua
Cathode to grid n°1 voltage for visual			
extinction of focused raster .....	42 to 78	42 to 78 47 to 92	volts
Field strength of adjustable centering			
magnet. ....	0 to 8	0 to 8 0 to 8	gausses

(1) The grid n°4 voltage required for optimum focus of any individual tube may have a value anywhere between 0 and 400 volts. It is independent of anode current and will remain essentially constant for values of anode voltage or grid n°2 voltage within design ranges shown for these items.

It is necessary to provide means such <sup>as</sup> a potentiometer for adjusting the focusing voltage.

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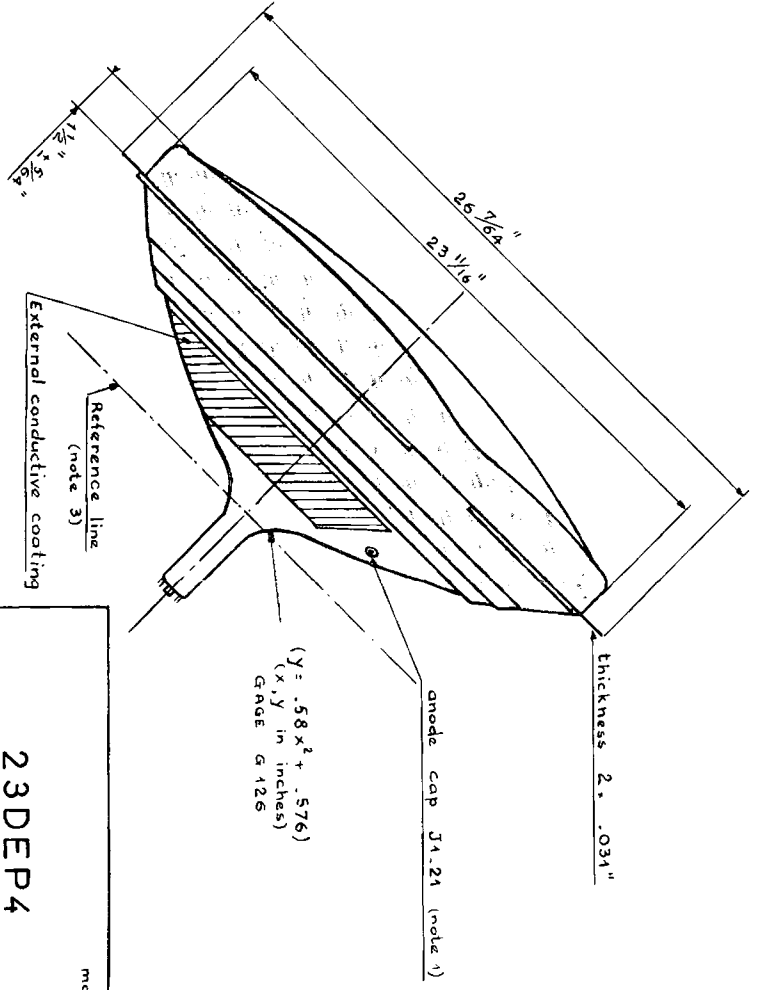
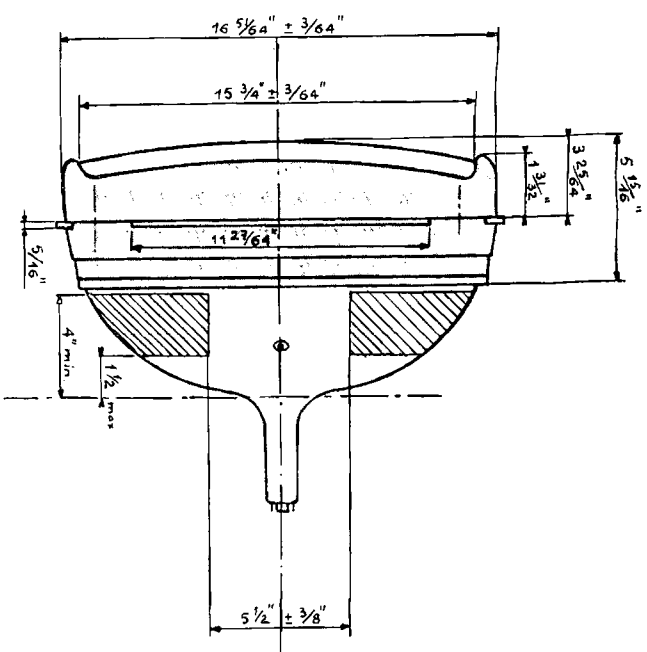
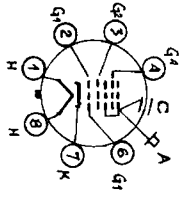
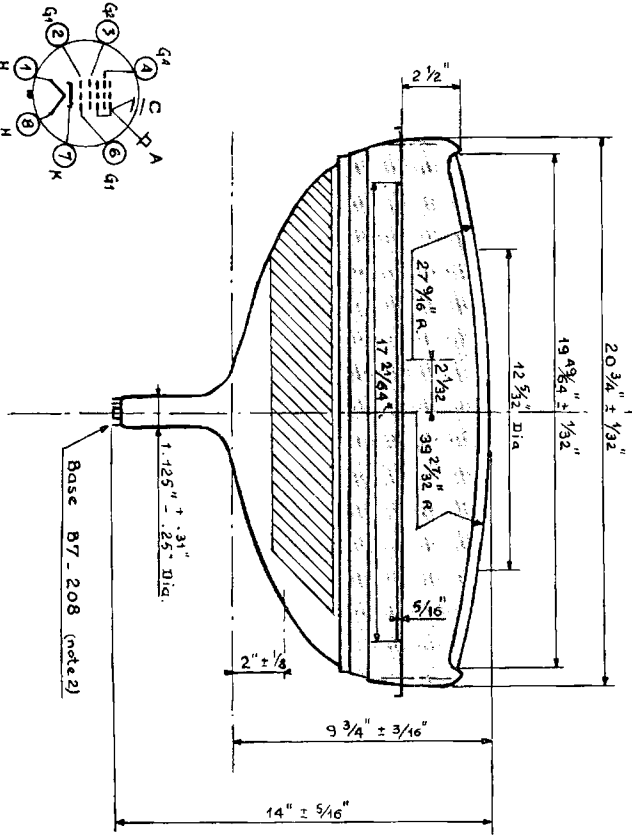
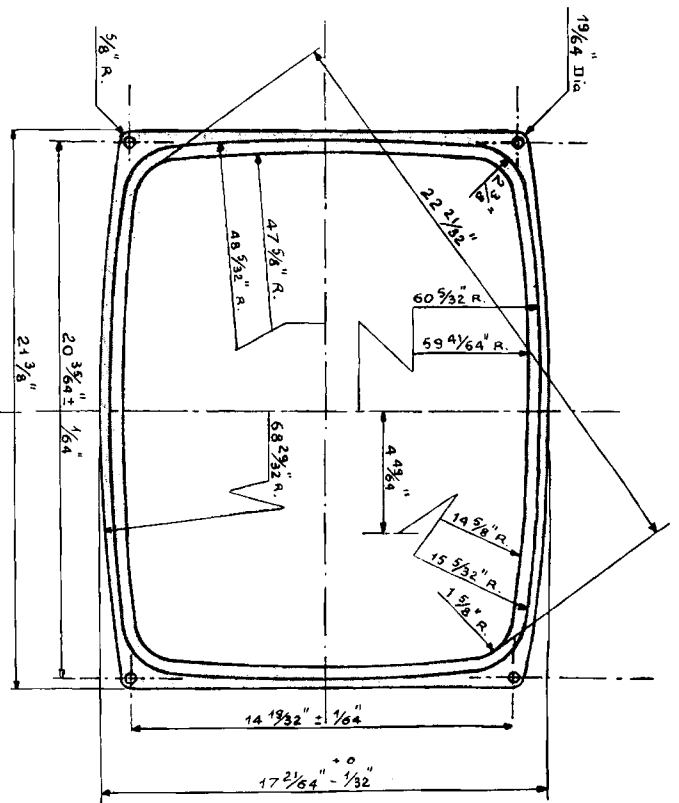
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## NOTES for DIMENSIONAL OUTLINE

- Note 1 - The plane through the tube axis and pin 4 may vary from the plane through the tube axis and anode terminal by angular tolerance (measured about the axis) of  $\pm 30^\circ$ . Anode terminal is on same side as pin 4.
- Note 2 - 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  $1 \frac{3}{4}$ ".
- Note 3 - With tube neck inserted through flared end of the reference-line gauge JEDEC G.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.

11th May 1962



C: External conductive coating.  
 Caps: G3 - G5 - collector.

LCF - SLT - COURBEVOIE, FRANCE  
 23DEP4  
 march 24, 1962