

# LE CATHOSCOPE FRANÇAIS

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

23AXP4

Cathode Ray tube

## GENERAL DESCRIPTION

The 23AXP4 is an electrostatic focus and magnetic deflection, direct viewing, rectangular picture tube. Feature of this tube include a very short overall length, a small neck diameter, an aluminized screen and a non-ion trap gun.

### Heater, for unipotential cathode

|                                     |                   |
|-------------------------------------|-------------------|
| Heater voltage (a.c. or d.c.) ..... | 6,3 volts         |
| Heater current at 6.3 volts .....   | 0.3 $\pm$ 5% amp. |
| Warm-up time (average) .....        | 11 seconds (*)    |

### Direct interelectrode capacitances

|                                        |          |
|----------------------------------------|----------|
| Grid n°1 to all other electrodes ..... | 6 uuF    |
| Cathode to all other electrodes .....  | 5 uuF    |
| External conductive coating to anode   |          |
| maximum .....                          | 2500 uuF |
| minimum .....                          | 2000 uuF |

### Phosphor : P4 sulfide type

|                       |       |
|-----------------------|-------|
| Fluorescence .....    | white |
| Phosphorescence ..... | white |
| Persistence .....     | short |

Focusing methode : 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" $\pm$ 5/16" (355,5 $\pm$ 8mm)       |
| greatest width .....  | 20 1/2" $\pm$ 1/8" (520,5 $\pm$ 3,2 mm) |
| greatest height ..... | 16 1/2" $\pm$ 1/8" (419 $\pm$ 3,2 mm)   |
| Diagonal .....        | 23 25/64" $\pm$ 1/8" (595 $\pm$ 3,2 mm) |
| Neck length .....     | 4 1/4" $\pm$ 1/8" (107,5 $\pm$ 3,2 mm)  |

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## Screen dimensions (minimum)

|                        |                                     |
|------------------------|-------------------------------------|
| Greatest width .....   | 19.1/4" (489 mm)                    |
| Greatest height .....  | 15 1/8" (385 mm)                    |
| Diagonal .....         | 22 5/16" (566 mm)                   |
| Projected area .....   | 280 sq. in. (1806 cm <sup>2</sup> ) |
| Weight (approx.) ..... | 26 lbs (12 kg)                      |
| Bulb .....             | (See drawing)                       |
| Cap .....              | Recossed 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                        |
| 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 c 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 periode 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 volts  
Grid n°2 to grid n°1 voltage ..... 400 volts  
Grid n°2 current ..... -15 to +15 ua  
Grid n°4 to grid n°1 voltage (1) ..... 0 to 400 volts  
Grid n°4 current ..... -25 to +25 ua  
Cathode to grid n°1 voltage for visual extinction of focused  
raster ..... 42 to 72 volts  
Field strength of adjustable centering magnet. .... 0 to 8 gauss

- (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 a potentiometer for adjusting the focusing voltage.

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## NOTES for DIMENSIONAL OUTLINE

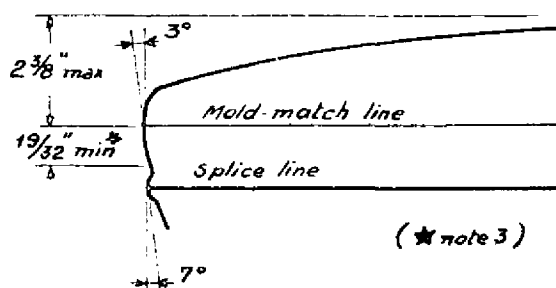
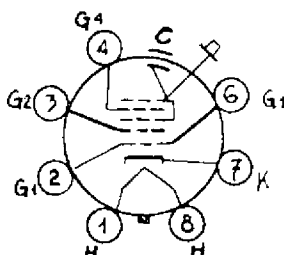
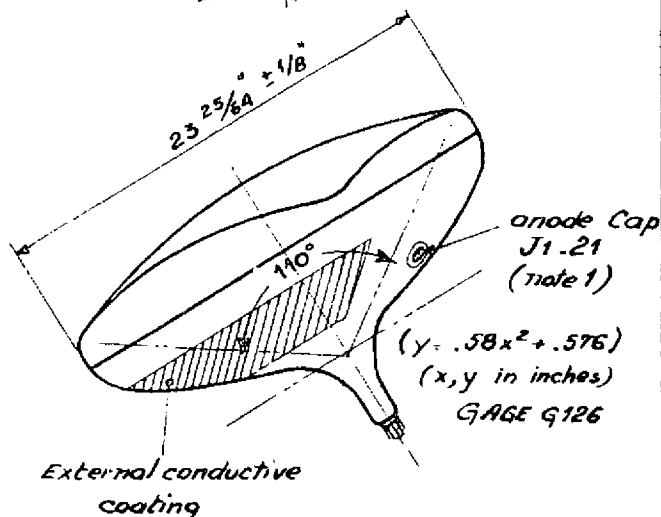
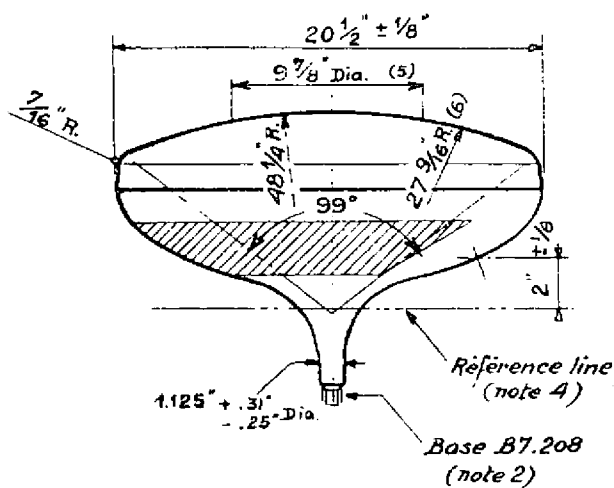
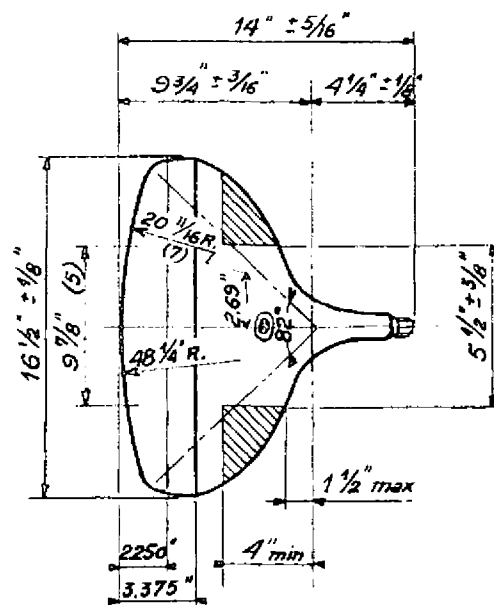
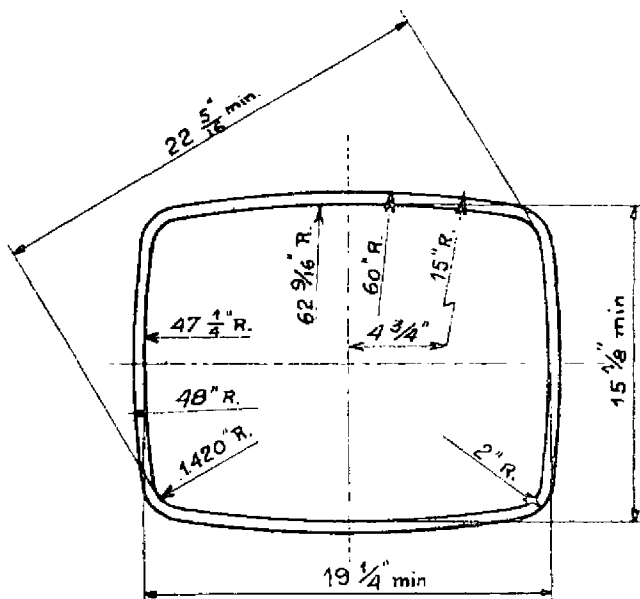
- Note 1 - The plane through the tube axis and pin 4 may vary from the plane through the tube axis and anode terminal by angular tolerance (measured about the axis) of  $\pm 30^\circ$ . Anode terminal is on same side as pin 4.
- Note 2 - Socket for this base should not be rigidly mounted; it should have 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 - Width of undisturbed region between mold-match line and splice line is  $19/32$ " minimum. This should be the maximum width of tube support band.
- Note 4 - 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.
- Note 5 - This surface has a radius of  $48 \frac{1}{4}$ ".

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C: External conductive coating

Cap : G3 - G5 - Collector