

RADAR CATHODE RAY TUBE with rectangular metal backed screen, electrostatic focusing, 90° magnetic deflection and ion trap

HEATING

Indirect by A.C. or D.C.; series or parallel supply

Heater voltage $V_f = 6.3 \text{ V}$

Heater current $I_f = 300 \text{ mA}$

When the tube is used in a series heater chain, the heater voltage must not exceed 9.5 V when the supply is switched on. A current limiting device may be necessary for this purpose

CAPACITANCES

Grid No.1 to all other elements $C_{G1} < 8 \text{ pF}$

Cathode to all other elements $C_k < 6 \text{ pF}$

Grid No.4 and 6 to outer coating $C_{(G4+G6)-m} = 250-350 \text{ pF}$

The capacitance between grids No.4 and 6 and the outer coating may be used to provide smoothing for the E.H.T. supply

SCREEN: metal backed

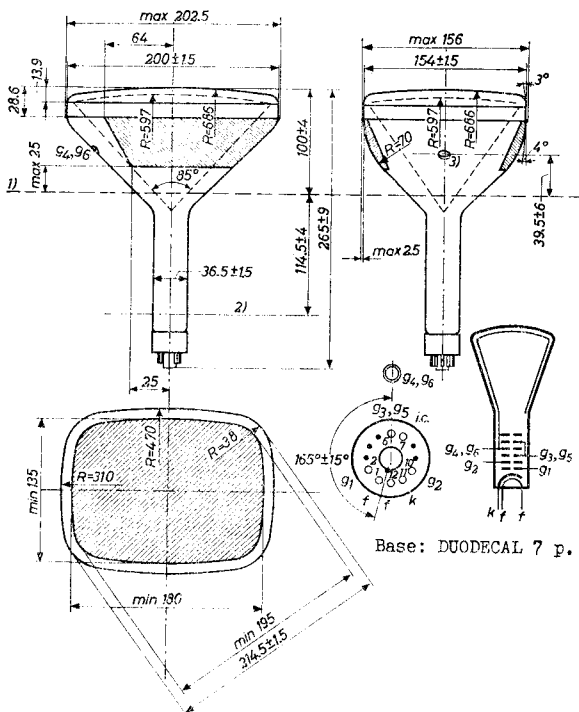
Colour	orange with orange afterglow
Useful diagonal	min. 195 mm
Useful width	min. 180 mm
Useful height	min. 135 mm

For curves of the screen properties please refer to front of this section

FOCUSING: electrostatic

DEFLECTION: double magnetic

Dimensions in mm

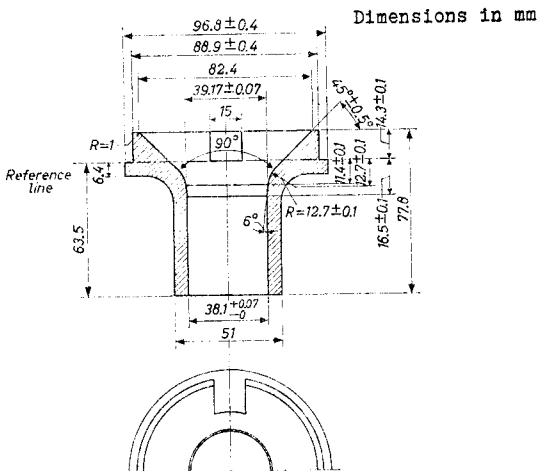


Mounting position: arbitrary

The socket should not be rigidly mounted; it should have flexible leads and be allowed to move freely. The bottom circumference of the base shell will fall within a circle of 55 mm diameter, which is centred upon the perpendicular from the centre of the face

- 1) Reference line, see page 3
- 2) Centre of grid
- 3) Cavity contact

REMARK. The tube marking and warning labels are on the side of the cone opposite to the final anode connector and this side should not be used for making contact to the external conductive coating.



REFERENCE LINE GAUGE. The reference line of the tube is determined by the plane of the upper edge of the flange of the gauge when it is resting on the cone.

The inner surface of the deflection coils must not extend into the interior of the gauge.

ION TRAP MAGNET.

Field intensity

45-65 gaussess

The space between a point 114.5 mm from the reference line along the neck of the tube and the edge of the base should be kept clear for the ion trap magnet.

The ion trap magnet assembly should be earthed. For the procedure of adjusting the magnet please refer to the "Application Directions" in front of the section "Cathode Ray Tubes". The south pole of the magnet should be adjacent to the spigot of the base.

OPERATING CHARACTERISTICS

Grids No.4 and 6 voltage	$V_{g4,g6} =$	9.0 kV
Grids No.3 and 5 voltage	$V_{g3,g5} =$	-30 to +200 V
Grid No.2 voltage	$V_{g2} =$	400 V
Grid No.1 voltage for visual cut-off	$V_{g1} =$	-40 to -80 V

Within the quoted range optimum focus at the screen centre can be obtained at a current of 100 μ A ($I_{g4,g6} = 100 \mu$ A). For a greater uniformity of the focus over the whole screen the focusing voltage should be increased by 100 to 200 V

LIMITING VALUES (Design centre limits)

Grids No.4 and 6 voltage	$V_{g4,g6} =$	max. 10 kV ¹⁾
	$=$	min. 7 kV
Grids No.3 and 5 voltage	$V_{g3,g5} =$	max. 500 V
Negative grids No.3 and 5 voltage	$-V_{g3,g5} =$	max. 500 V
Grid No.2 voltage	$V_{g2} =$	max. 500 V 2)
	$=$	min. 200 V
Negative grid No.1 voltage	$-V_{g1} =$	max. 150 V
Positive grid No.1 voltage	$+V_{g1} =$	max. 0 V 3)
Peak positive grid No.1 voltage	$+V_{g1p} =$	max. 2 V 4)
Grid No.1 circuit resistance	$R_{g1} =$	max. 1.5 M Ω
Grid No.1 circuit impedance at 50 c/s	$Z_{g1} =$	max. 0.5 M Ω

1) The product of the grids No.4 and 6 voltage and the average beam current for the whole screen should not exceed 6 W

2) Max. supply source resistance 1.5 M Ω

3) Immediately after switching on or off, the grid bias is allowed to rise to +1 V

4) At a grid bias of +2 V a grid current of about 2 mA may be expected

LIMITING VALUES (Design centre limits; continued)

Voltage between heater and cathode

cathode negative $V_{kf} = \text{max. } 125 \text{ V } ^1)$ cathode positive $V_{kf} = \text{max. } 195 \text{ V } ^1)$ cathode positive $V_{kf} = \text{max. } 410 \text{ V } ^2)$ Circuit resistance between heater and cathode $R_{kf} = \quad \quad \quad ^3)$

¹⁾ In order to avoid excessive hum, the A.C. component of V_{kf} should be as low as possible and should not exceed 20 V (R.M.S.)

²⁾ During a warming-up period not exceeding 45 sec.

³⁾ When the heater is supplied from a separate transformer $R_{kf} = \text{max. } 1 \text{ M}\Omega$. When the heater is in a series chain or earthed, $Z_k = \text{max. } 100 \text{ k}\Omega$, where Z_k is the 50 c/s impedance between earth and cathode.

PHILIPS



*Electronic
Tube*

HANDBOOK

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1	1	1962.12.12
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