TELEVISION TUBE

Direct viewing television tube with 17-in. diagonal rectangular metal-backed grey-glass screen. This tube has electrostatic focusing and 90° magnetic deflection.

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—CATHODE RAY TUBES

HEATER

Suitable for series or parallel operation

\[
\begin{align*}
V_h &= 6.3 \text{ V} \\
I_h &= 300 \text{ mA}
\end{align*}
\]

Note—(applies to series operation only). The surge heater voltage must not exceed 9.5V_{r.m.s.} when the supply is switched on. When used in a series heater chain a current limiting device may be necessary in the circuit to ensure that this voltage is not exceeded.

EXTERNAL CONDUCTIVE COATING

This tube has an external conductive coating, M, and the capacitance of this to the final anode may be used to provide smoothing for the e.h.t. supply. The tube marking and warning labels are on the side of the cone opposite the final anode connector and this side should not be used for making contact to the external conductive coating.

CAPACITANCES

\[
\begin{align*}
C_{g,all} &= 7.0 \text{ pF} \\
C_{k,all} &= 4.0 \text{ pF} \\
C_{a2-a5-M} &= 1200 \text{ pF}
\end{align*}
\]

SCREEN

Metal-backed
Fluorescent colour white
Light transmission 70 %
Useful screen area See drawing on p. 3

FOCUSING

Electrostatic
The range of focus voltage shown under “typical operating conditions” results in optimum focus at the centre of the screen. An increase in focus voltage of 100 to 200V in the positive direction will give a greater uniformity of focus over the whole screen.

DEFLECTION

Double magnetic

ION TRAP

This tube does not use an external ion trap magnet. When used as a replacement for ion trap types, the ion trap magnet and any lead connected to it should be discarded.

REFERENCE LINE GAUGE

See 'General operational recommendations—cathode ray tubes.'
RASTER CENTRING
See notes under this heading in 'General operational recommendations—
cathode ray tubes."
Centring magnet field intensity 0 to 10 G
Maximum distance of centre of centring field from reference line 75 mm
Adjustment of the centring magnet should not be such that a general
reduction in brightness or shading of the raster occurs.

MOUNTING POSITION
Any
The tube socket should not be rigidly mounted but should have flexible
leads and be allowed to move freely. The bottom circumference of the base
shell will fall within a circle of 55mm which is centred upon the perpendicu-
lar from the centre of the face.

TYPICAL OPERATING CONDITIONS
\[ V_{a5+a6} \] 16 kV
\[ V_{a5+a6} \text{ (focus electrode)} \] 0 to +210 V
\[ V_{a1} \] 300 V
\[ V_g \text{ for cut-off} \] -40 to -80 V

LIMITING VALUES (design centre ratings)
**\[ V_{a5+a6} \text{ max.} \]** 16 kV
\[ V_{a5+a6} \text{ min.} \] 12 kV
\[ +V_{a5+a6} \text{ max.} \] 500 V
\[ -V_{a5+a6} \text{ max.} \] 500 V
\[ V_{a1} \text{ max.} \] 500 V
\[ V_{a1} \text{ min.} \] 200 V
\[ -V_g \text{ max.} \] 150 V
\[ +V_{a5+a6} \text{ max.} \] 10 \( \mu \)A
\[ V_{h-k} \text{ max. (cathode negative)} \] 125 V
\[ V_{h-k} \text{ max. (cathode positive)} \] 200 V
\[ V_{h-k} \text{ (C.C.) max. (cathode positive)} \] 410 V
\[ R_{h-k} \text{ max.} \] See note §
Max. a5 supply source impedance 1.5 M\( \Omega \)
Rg-k max. 1.5 M\( \Omega \)
Zg-k max. (f=50Hz) 500 k\( \Omega \)

*The d.c. value of grid bias must not be allowed to become positive with
respect to the cathode, except during the period immediately after
switching the receiver on or off when it may be allowed to rise to +1V.
The maximum positive grid excursion of the video signal may reach 2V and
at this voltage the grid current may be expected to be approximately 2mA.

**The product of \[ V_{a5+a6} \] and \( I_t \) (average value for the whole screen) must
not exceed 6W.

†In order to avoid excessive hum the a.c. component of \[ V_{h-k} \] should be as
low as possible (<20V_{r.m.s.}).

‡During a warming-up period not exceeding 45s.

§When the heater is in a series chain, or earthed, \( Z_k \text{ max.} \) is 100k\( \Omega \) where \( Z_k \)
is the 50Hz impedance between earth and the cathode. When the heater is
supplied from a separate transformer \( R_{h-k} \text{ max.} \) is 1.0M\( \Omega \).
The indicated radius of faceplate curvature is not an exact but an average value.