This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—CATHODE RAY TUBES which precede this section of the handbook.

HEATER

Suitable for series or parallel operation
\[ V_h = 6.3 \text{ V} \]
\[ I_h = 300 \text{ mA} \]

CAPACITANCES

\[ C_{g-a11} < 8.0 \text{ pF} \]
\[ C_{k-a11} < 8.0 \text{ pF} \]
\[ C_{b2+a4-M} = 700 \text{ pF} \]

SCREEN

Metal-backed
Fluorescent colour orange with orange afterglow
Useful screen diameter 200 mm

PERSISTENCE

F screen very long
L screen long

See curves included in this section of the handbook for screen types F and L.

FOCUSBING

Low voltage electrostatic

DEFLECTION

Double magnetic
MOUNTING POSITION

Any, except vertical with the screen downwards and the axis of the tube making an angle of less than 20° with the vertical.

OPERATING CONDITIONS

\[
\begin{align*}
V_{a2,a4} & \quad 12 \quad \text{kV} \\
\dagger V_{a3} \text{ (focus electrode)} & \quad -200 \text{ to } +200 \quad \text{V} \\
V_{a1} & \quad 300 \quad \text{V} \\
I_{a3} & \quad -15 \text{ to } +15 \quad \mu\text{A} \\
V_g \text{ for cut-off} & \quad -30 \text{ to } -70 \quad \text{V}
\end{align*}
\]

\[\dagger\text{With the small change in focus spot size with variation of focus voltage the limit of } -200 \text{ to } +200\text{V is such that an acceptable focus quality is obtained within this range. If it is required to pass through the point of focus a voltage of at least } -300 \text{ to } +300\text{V will be required.}\]

LIMITING VALUES (absolute ratings)

\[
\begin{align*}
V_{a2,a4} \text{ max.} & \quad 14 \quad \text{kV} \\
V_{a2,a4} \text{ min.} & \quad 8.0 \quad \text{kV} \\
+ V_{a3} \text{ max.} & \quad 500 \quad \text{V} \\
- V_{a3} \text{ max.} & \quad 500 \quad \text{V} \\
V_{a1} \text{ max.} & \quad 500 \quad \text{V} \\
V_{a1} \text{ min.} & \quad 200 \quad \text{V} \\
- V_k \text{ max.} & \quad 200 \quad \text{V} \\
- V_k \text{ min.} & \quad 1.0 \quad \text{V} \\
Z_{k-k} \text{ max.} \quad (f = 50\text{c/s}) & \quad 500 \quad \text{k}\Omega \\
R_{k-k} \text{ max.} & \quad 1.5 \quad \text{M}\Omega \\
V_{h-k} \text{ max.} & \quad \pm 150 \quad \text{V} \\
R_{h-k} \text{ max.} & \quad \text{See note}\ast
\end{align*}
\]

*When the heater is supplied from a separate transformer \(R_{h-k} \text{ max. is } 1\text{M}\Omega.\)

When the heater is in a series chain or earthed \(Z_k \text{ max. is } 100\text{k}\Omega\) where \(Z_k\) is the 50c/s impedance between earth and cathode.
FINAL ANODE CURRENT PLOTTED AGAINST GRID VOLTAGE

Vg (V)
-60 -40 -20 0

Vg=500V

AF22-10
AL22-10

6238

Ig2+g4 (µA)
0 100 200 300 400 500

Vg2+g4 = 8 to 14 kV
LIMITS OF GRID CUT-OFF VOLTAGE FOR FIRST ANODE VOLTAGES FROM 200 TO 500V