

TELEVISION TUBE

AW36-20Z

Direct viewing television tube with 14-in. diagonal rectangular metal-backed grey-glass screen. This tube has electrostatic focusing and 70° magnetic deflection.

HEATER

Suitable for series or parallel operation.

V_h	6.3	V
I_h	300	mA

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

C_{g-all}	< 8.0	pF
C_{k-all}	< 6.0	pF
$C_{a3+a5-M}$	900	pF

SCREEN

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

REFERENCE LINE

See 'General operational recommendations—cathode ray tubes'

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.

RASTER CENTRING

See note 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	70	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 perpendicular from the centre of the face.

TYPICAL OPERATING CONDITIONS

V_{a3+a5}	12	kV
$V_{a2, a4}$ (focus electrode)	-55 to +145	V
V_{a1}	300	V
V_g for cut-off	-40 to -80	V

LIMITING VALUES (design centre ratings)

** V_{a3+a5} max.	14	kV
V_{a3+a5} min.	9.0	kV
† $V_{a2, a4}$ max.	500	V
- $V_{a2, a4}$ max.	500	V
V_{a1} max.	410	V
V_{a1} min.	200	V
*- V_g max.	150	V
± $I_{a2, a4}$ max.	15	mA
† V_{h-k} max. (cathode negative)	125	V
† V_{h-k} max. (cathode positive)	200	V
‡ $V_{h-k(pk)}$ max. (cathode positive)	410	V
R_{b-k} max.	See note §	
Max. a_1 supply source impedance	1.5	MΩ
R_{g-k} max.	1.5	MΩ
Z_{g-k} max. (f=50Hz)	500	kΩ

*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 $V_{a3, a5}$ 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 max. is 100kΩ where Z_k is the 50Hz impedance between earth and the cathode. When the heater is supplied from a separate transformer R_{h-k} max. is 1.0MΩ.

