TELEVISION MONITOR TUBE

AW22-10

Direct viewing television tube with 9-in. diameter metal-backed screen, magnetic deflection and low voltage electrostatic focusing lens. Primarily intended for use as a television studio monitor tube.

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—CATHODE RAY TUBES, included in this volume of the handbook.

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.

CAPACITANCES

C_{g-all}	<8.0	pF
C_{k-all}	<8.0	pF
$C_{a_{2+a_4}-M}$	700	pF

SCREEN

Metal-backed		
Fluorescent colour	white	
Useful screen diameter	200	mm

FOCUSING

Low voltage electrostatic

DEFLECTION

Double magnetic

MOUNTING POSITION

Any, except vertical with the screen downward and the axis of the tube making an angle of less than 20° with the vertical.
The tube socket should not be rigidly mounted but should have flexible leads and be allowed to move freely.

TYPICAL OPERATING CONDITIONS

$V_{a_{2+a_4}}$	12	kV
V_{a_1}	300	V
**V_{a_3} (focusing electrode)	−200 to +200	V
I_{a_3}	−15 to +15	μA
V_g (for cut-off)	−30 to −70	V

**With the small change in focus spot size with variation of focus voltage the limit of −200 to +200V 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 to +300V will be required.

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LIMITING VALUES (absolute ratings)

‡$V_{a_{2+a_4}}$ max.	14	kV
$V_{a_{2+a_4}}$ min.	8.0	kV
+V_{a_3} max.	500	V
−V_{a_3} max.	500	V
V_{a_1} max.	500	V
V_{a_1} min.	200	V
*−V_g max.	200	V
−V_g min.	1.0	V
†V_{h-k} max. (cathode negative)	125	V
††$V_{h-k(pk)}$ max. (cathode positive)	410	V
†V_{h-k} max. (cathode positive)	200	V
Z_{g-k} max. (f=50c/s)	500	kΩ
R_{g-k} max.	1.5	MΩ
R_{h-k} max.	See note §	
Max. $_{a_1}$ supply source impedance	1.5	MΩ

*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_{a_2} 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 45sec.

§When the heater is in a series chain, or earthed, Z_k max. is 100kΩ, where Z_k is the 50c/s impedance between earth and the cathode. When the heater is supplied from a separate transformer R_{h-k} max. is 1MΩ.

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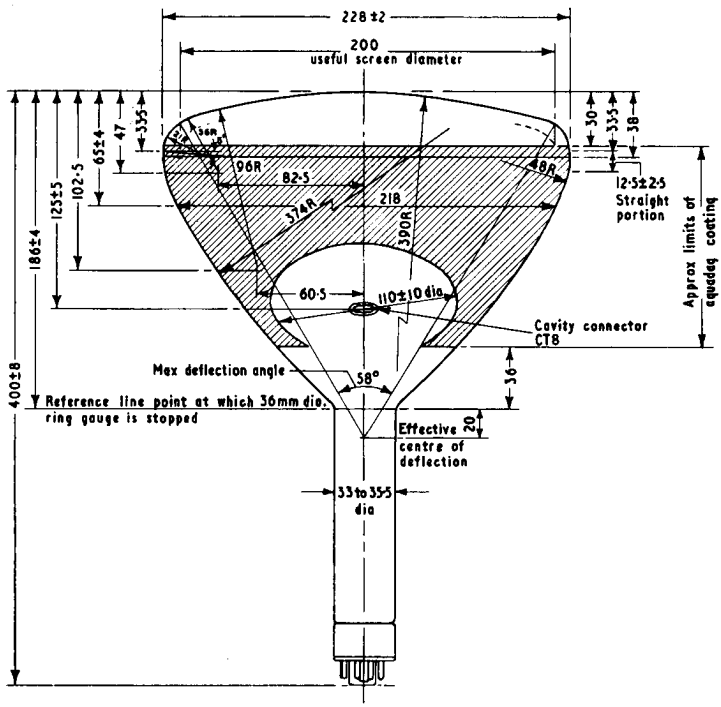
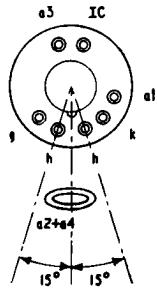
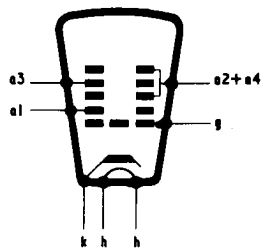




B12A Base



2036

All dimensions in mm

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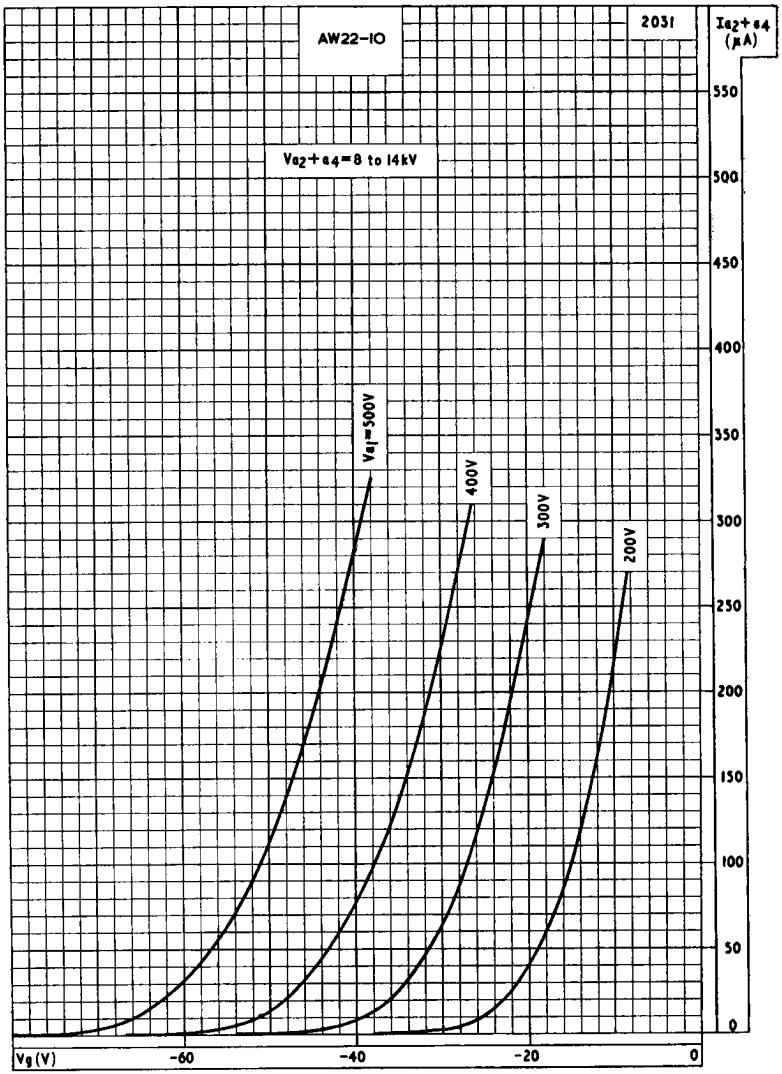

FINAL ANODE CURRENT PLOTTED AGAINST GRID VOLTAGE

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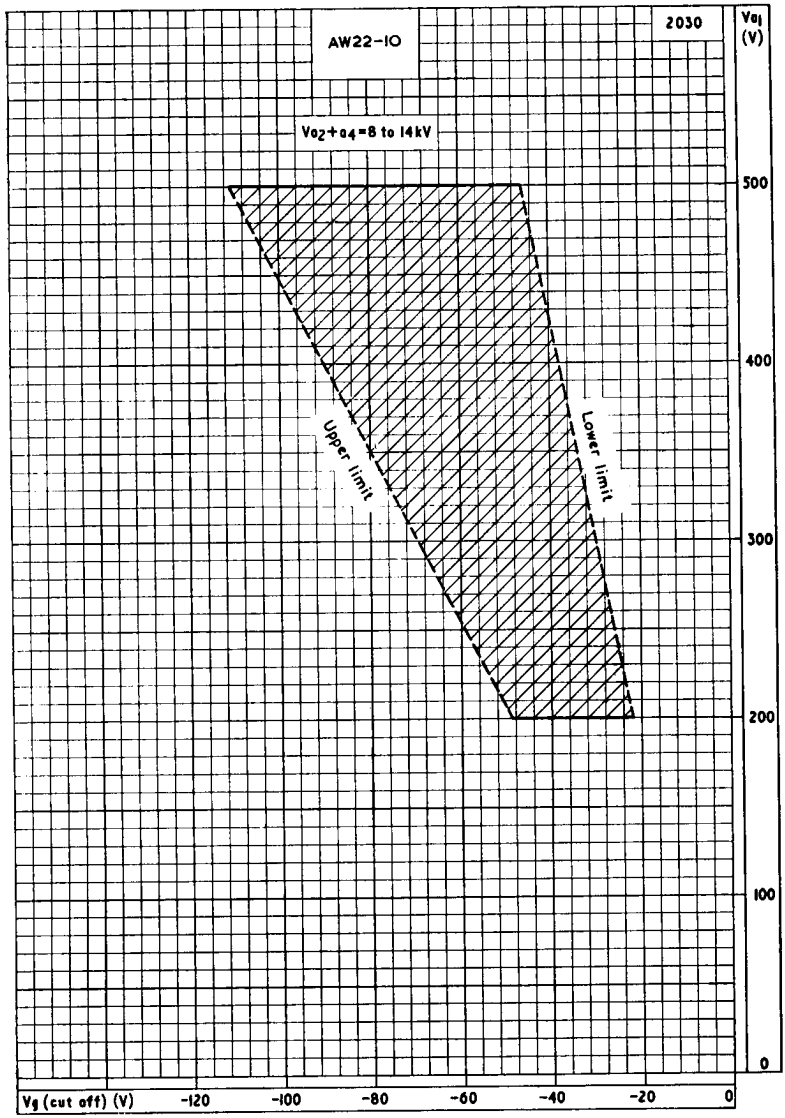

LIMITS OF GRID CUT-OFF VOLTAGE FOR FIRST ANODE VOLTAGES FROM 200 to 500V

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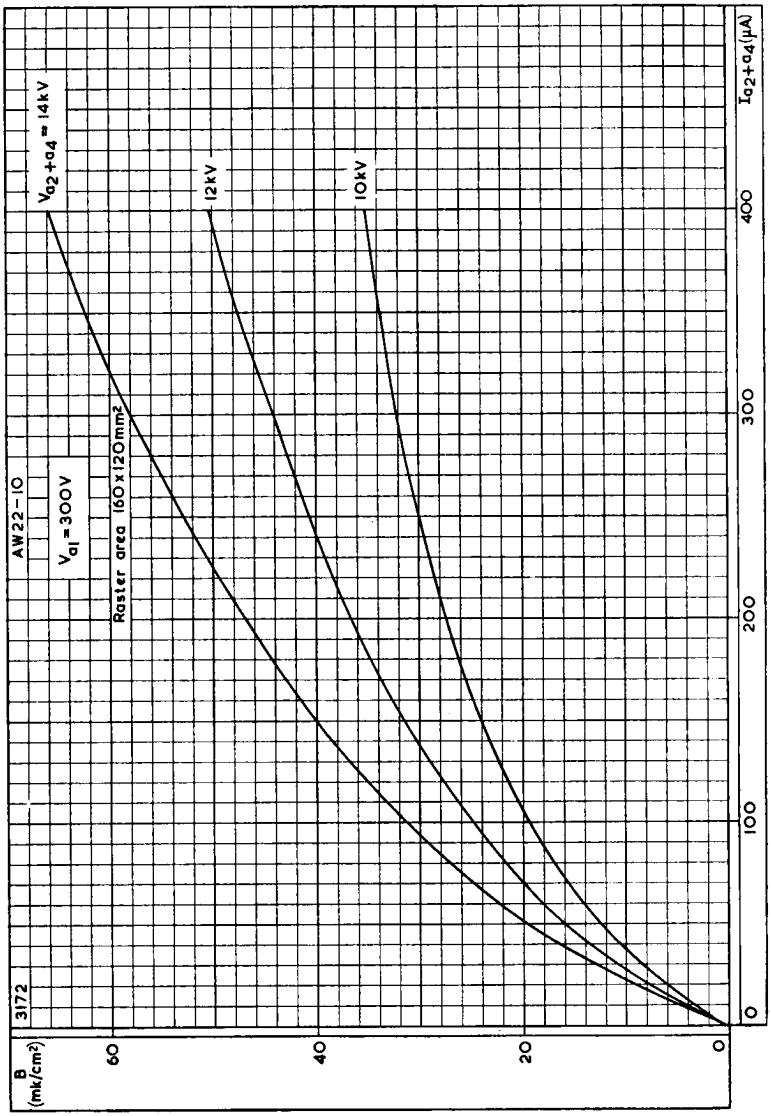

LIGHT OUTPUT PLOTTED AGAINST FINAL ANODE CURRENT
(1mk/cm² = 2.9 e.f.c. = 2.9 ft-lambert)