TELEVISION MONITOR TUBE

MW22-22

Direct viewing television tube with 9-in. diameter metal-backed screen. 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	pF
C_{k-all}	<8	pF

SCREEN

Metal-backed		
Fluorescent colour	White	
Useful screen diameter	214	mm

FOCUSING

Magnetic

DEFLECTION

Double magnetic

MOUNTING POSITION

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

TYPICAL OPERATING CONDITIONS

V_{a_2}	9.0	kV
V_{a_1}	300	V
*V_g for cut-off	−30 to −70	V

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LIMITING VALUES (Absolute ratings)

**V_{a_2} max.	14	kV ←
V_{a_2} min.	7.0	kV
V_{a_1} max.	410	V
V_{a_1} min.	200	V
*$-V_g$ max.	150	V
†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_{g-k} max.	1.5	MΩ ←
Z_{g-k} max. (f = 50 c/s)	500	kΩ ←
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 45 sec.

§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.

WEIGHT

Tube alone — 2 kg / 4lb 6 oz

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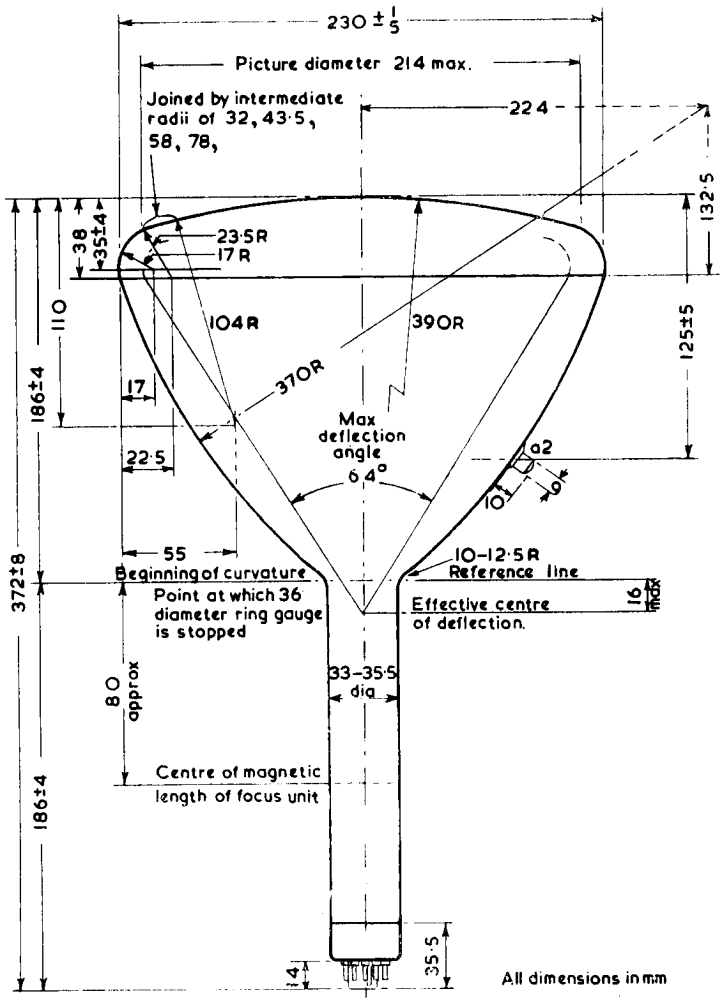

This drawing shows the blown bulb. Some tubes are made with a pressed bulb. A detailed drawing showing the points of difference of the pressed bulb is given on page 4. The base connections are also shown on that page. 2512

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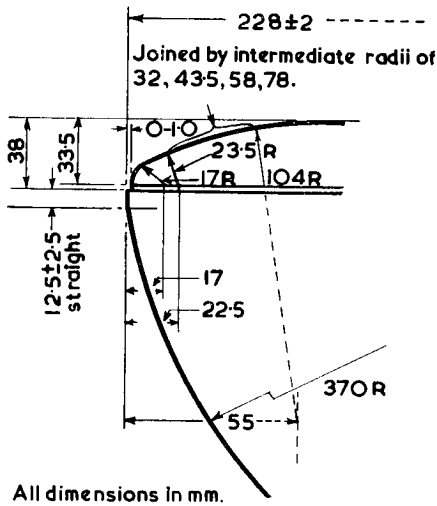
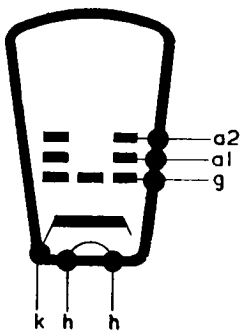
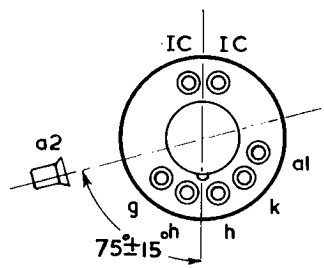
2513



All dimensions in mm.

The pressed bulb has the same dimensions as the blown bulb (page 3) apart from the differences shown in the detailed drawing above.





B12A Base

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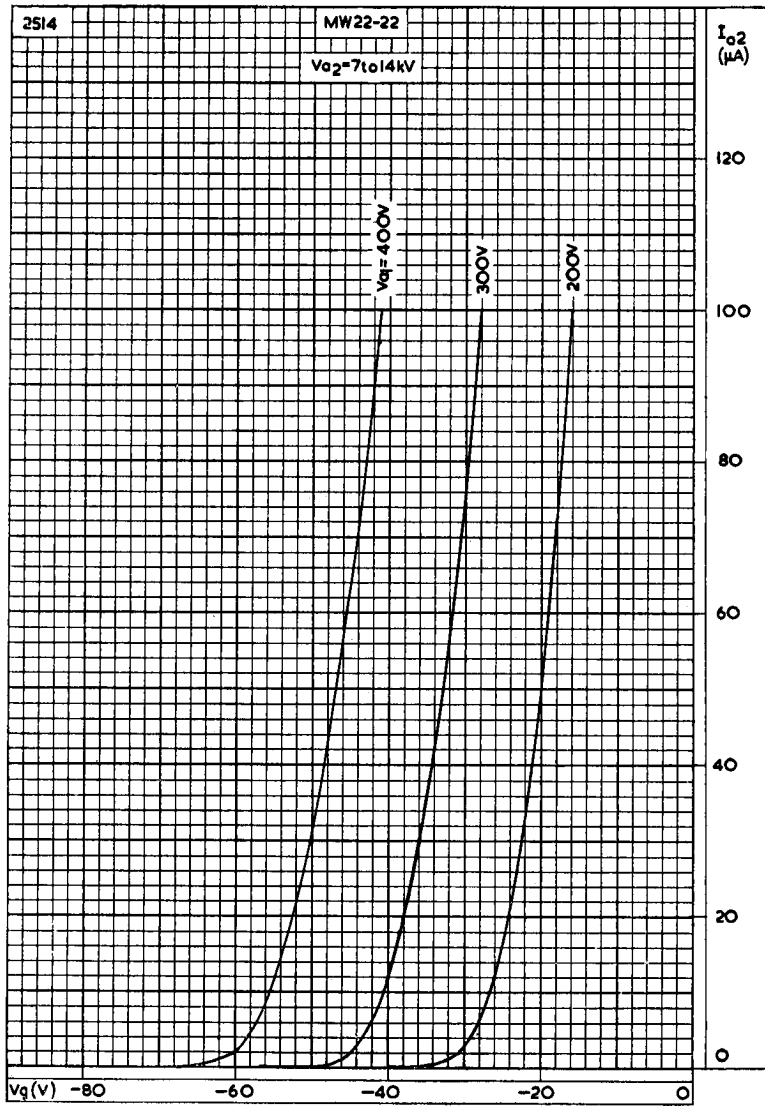

FINAL ANODE CURRENT PLOTTED AGAINST GRID VOLTAGE

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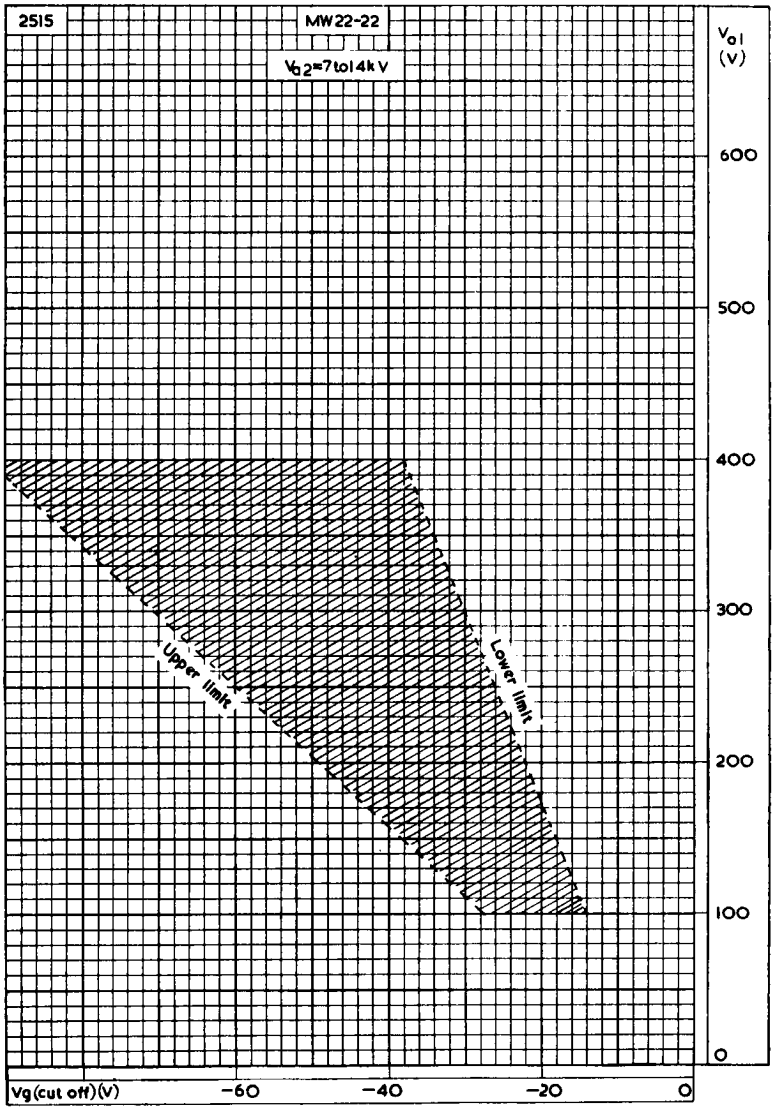

LIMITS OF GRID CUT-OFF VOLTAGE FOR FIRST ANODE VOLTAGES FROM 100 TO 400V

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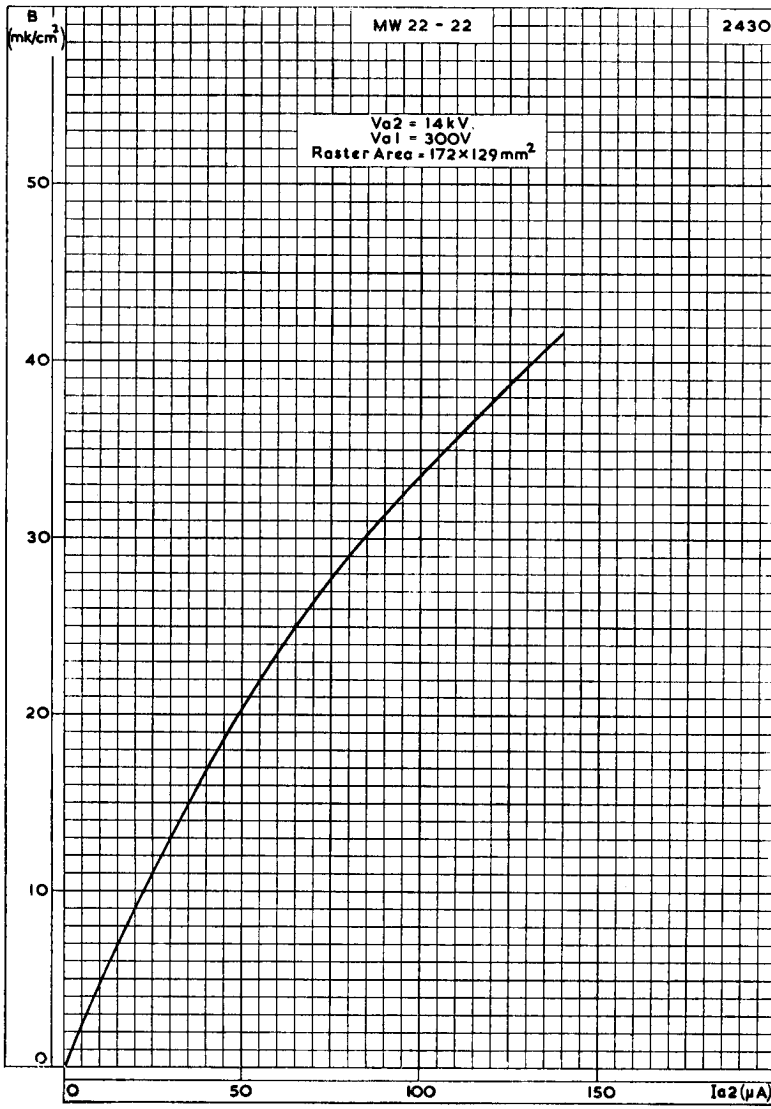

LIGHT OUTPUT PLOTTED AGAINST FINAL ANODE CURRENT

(1mk/cm² = 2.9e.f.c. = 2.9ft. – lambert)