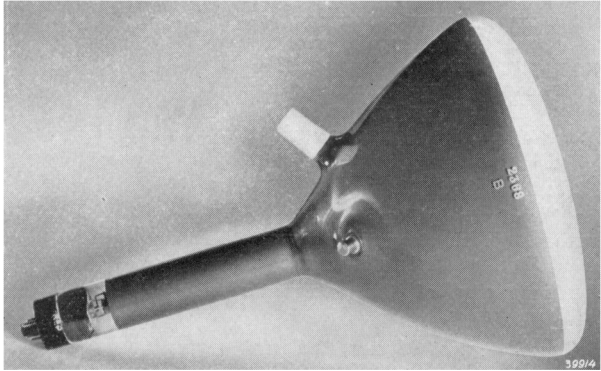


PHILIPS

"Miniwatt" SPECIAL VALVES

TELEVISION ELECTRON-RAY TUBE

MW 22-3



CHARACTERISTICS

Heater voltage	V_f	= 2.0	V
Heater current	I_f	= 1.2	A
Anode voltage	V_a	= 5000	V
Grid voltage	V_g	= 0 to -55	V
Grid to cathode capacity	C_g	= 6	pF
Deflection			magnetic
Focusing			magnetic
Colour of spot			white

SPECIAL ADVANTAGES

1. Very bright picture
2. Small size
3. Great clarity, right up to the edge of the screen

DESCRIPTION

The MW 22-3 is a television electron-ray tube with a screen of about 22 cm in diameter; it is for magnetic deflection. In relation to the size of the screen the tube is very short, and it is therefore practicable to mount it in a small, relatively inexpensive cabinet.

The beam is concentrated to a certain extent by the electrode system, but

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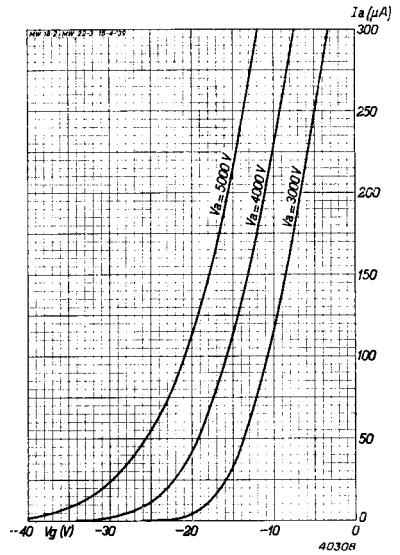
focusing proper is effected with the aid of a coil placed round the neck of the tube. The current necessary for focusing depends on the shape and position of the coil; with the middle of the spool 8 cm from the end of the neck, the number of ampère-turns should be about 500-700 if the anode voltage is 5000 V. By this means, very good concentration of the beam is achieved, and the picture is very sharp, right to its edges. The jet of electrons is also deflected magnetically. If the centres of the deflection coils are 203 mm from the screen, the deflection of the beam is given by:

$$D(\text{mm}) = 0.09 LH,$$

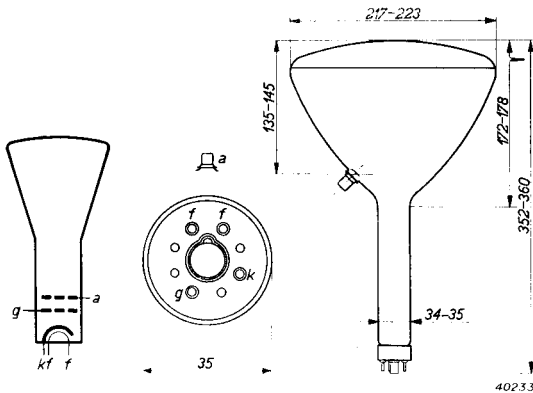
where L = the length in millimetres of the path of an electron in the magnetic field of deflection, and

H = the intensity of the magnetic field in gauss.

In order to deflect the spot 90 mm, the product $L \times H$ will be about 1000, so that with a coil 50 mm long, a maximum intensity of field of about 20 gauss is required. The electrode system being of the triode type, pictures of high contrast are readily obtained.



Anode current shown against negative grid bias.



Arrangement of electrodes, connections and maximum dimensions in millimetres.