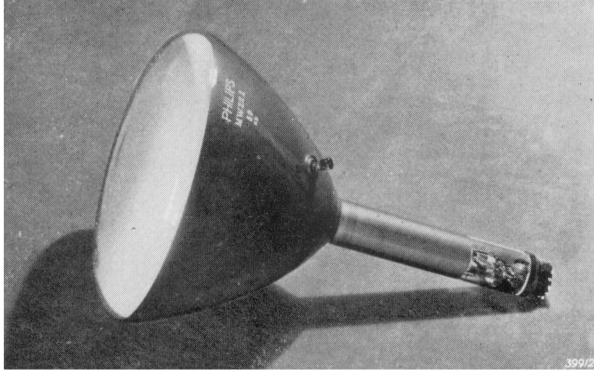


PHILIPS *Miniwatt* SPECIAL VALVES

CAT. SHEET
C 16-1 Eng.

TELEVISION ELECTRON RAY TUBE

MW 22-1



CHARACTERISTICS

Heater voltage	V_f	=	4.0	V
Heater current	I_f	=	1.0	A
Anode voltage	V_{a_2}	=	5000	5000 V
Auxiliary anode voltage	V_{a_1}	=	250	125 V
Grid bias	V_g	=	0 to -100	0 to -50 V
Grid to cathode capacity	C_g	=		13 pF
Deflection				magnetic
Focusing				magnetic
Colour of spot				white

SPECIAL ADVANTAGES

1. Very bright picture
2. Small dimensions
3. Great clarity, right up to the edges of the screen
4. Hexode system; in consequence a small input to the grid suffices for full modulation

DESCRIPTION

The MW 22-1 is a television electron ray tube with a screen 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.

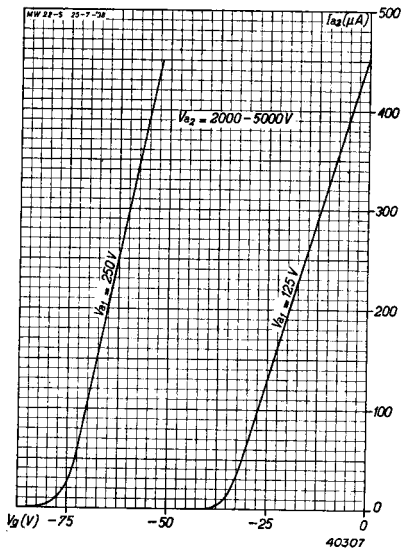
PHILIPS "MINIWATT" SPECIAL VALVES

The beam is concentrated to a certain extent by the electrode system, but 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 above 500-700 if the anode voltage is 5000 V. By this means, excellent focusing of the beam is achieved, and the picture is very sharp, right to the edges of the screen. The beam is also deflected magnetically. If the axis of the deflecting coils is 203 mm from the screen, the deflection of the beam is given by:

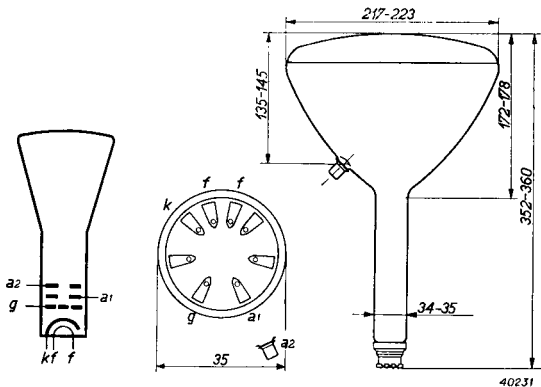
$$D \text{ (mm)} = 0,09 \text{ LH}$$

where L is the length in millimetres of the path of an electron through the magnetic field of deflection, and H is the intensity of the magnetic field in gauss. In order to deflect the lightspot 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 20 gauss is required.

The electrode system is of the hexode type, and the I_a/V_g characteristic has a high slope; in consequence a comparatively small voltage from the associated wide-band amplifier suffices for complete control of the brightness of the spot. The omplifier may in consequence be of quite simple design.



Anode current shown against negative grid bias.



Arrangement of electrodes, connections and maximum dimensions in millimetres.