

RADAR TUBE

AF31-10 AL31-10

Direct-viewing radar tube with 12-in. diameter metal-backed magnesium fluoride screen, magnetic deflection and low voltage electrostatic focusing lens.

This data should be read in conjunction with GENERAL OPERATIONAL RECOMMENDATIONS—CATHODE RAY TUBES which precede this section of the handbook.

HEATER

Suitable for series or parallel operation

V_h	6.3	V
I_h	300	mA

CAPACITANCES

C_{g-a11}	<8.0	pF
C_{k-a11}	<8.0	pF
$C_{a2+a4-M}$	1200	pF

SCREEN

Metal-backed		
Fluorescent colour	orange with orange afterglow	
Useful screen diameter	265	mm

PERSISTENCE

F screen	very long
L screen	long
See curves included in this section of the handbook for screen types F and L.	

FOCUSING

Low voltage electrostatic

DEFLECTION

Double magnetic

MOUNTING POSITION

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

OPERATING CONDITIONS

$V_{a2, a4}$	12	kV
† V_{a3} (focus electrode)	-200 to +200	V
V_{a1}	300	V
I_{a3}	-15 to +15	μA
V_g for cut-off	-30 to -70	V

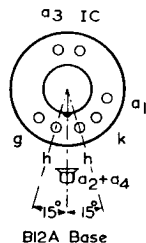
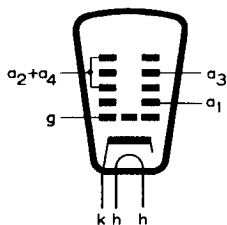
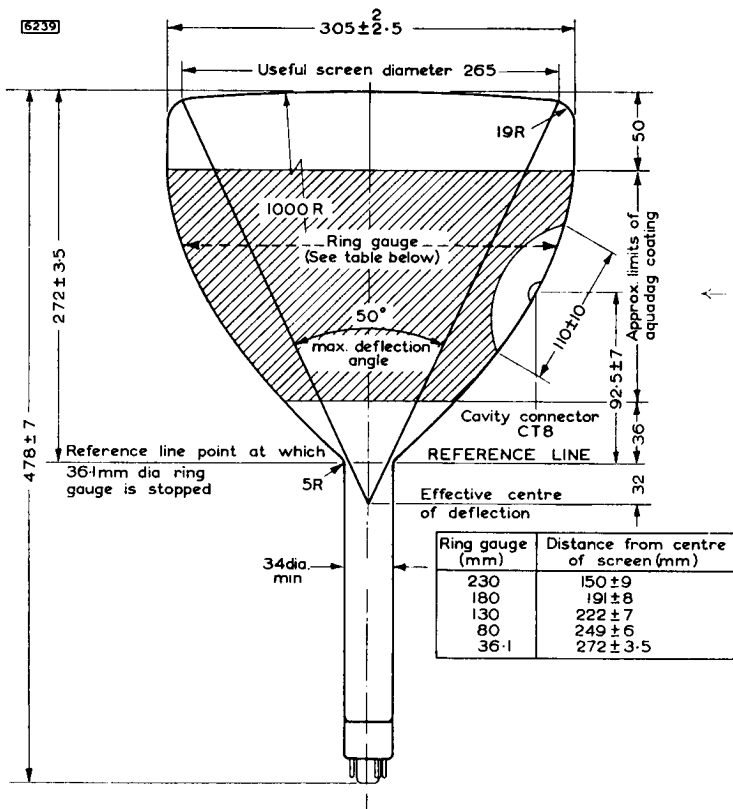
†With the small change in focus spot size with variation of focus voltage the limit of -200V to +200V is such that an acceptable focus quality is obtained within this range. If it is required to pass through the point of focus a voltage of at least -300V to +300V will be required.

LIMITING VALUES (absolute ratings)

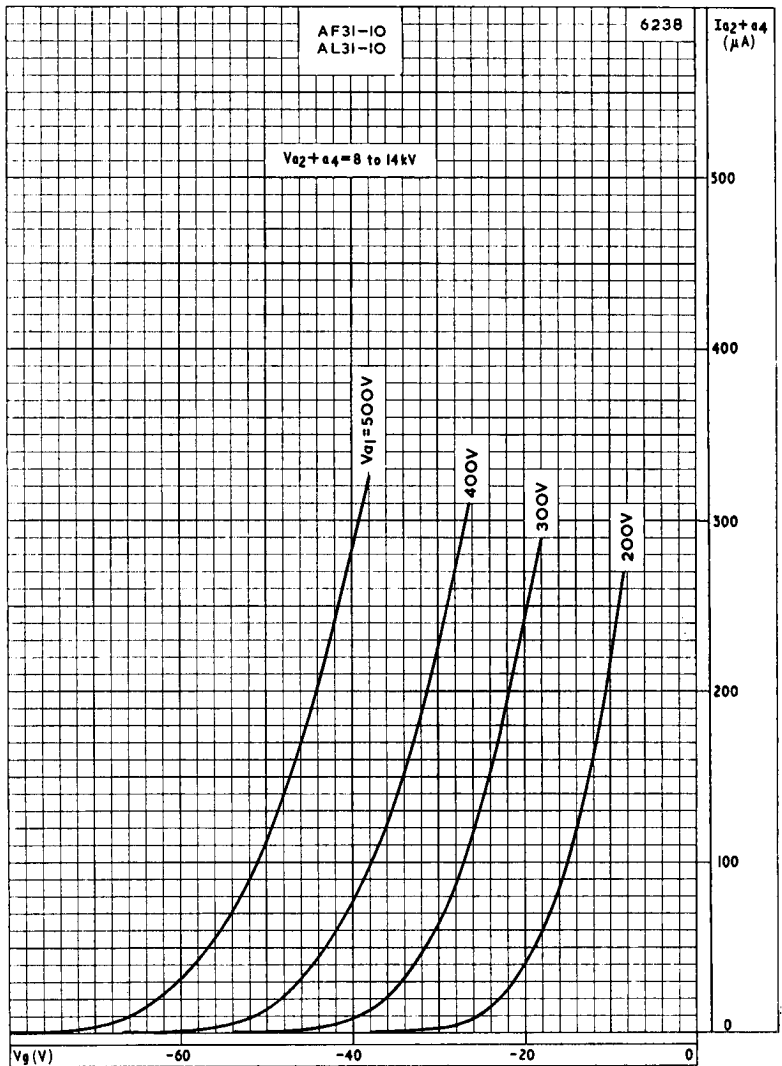
$V_{a2, a4}$ max.	18	kV<
$V_{a2, a4}$ min.	8.0	kV
+ V_{a3} max.	500	V
- V_{a3} max.	500	V
V_{a1} max.	500	V
V_{a1} min.	200	V
- V_g max.	200	V
- V_g min.	1.0	V
Z_{g-k} max. (f = 50c/s)	500	kΩ
R_{g-k} max.	1.5	MΩ
V_{h-k} max.	±150	V
R_{h-k} max.	See note*	

*When the heater is supplied from a separate transformer R_{h-k} max. is 1.0MΩ.

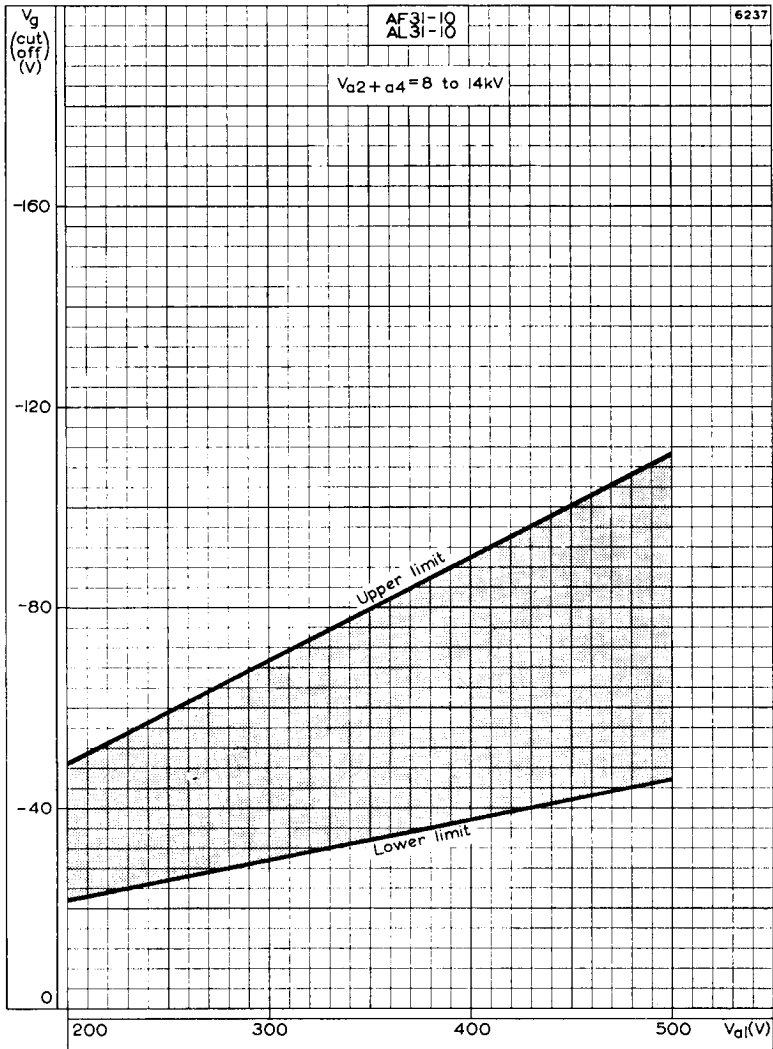
When the heater is in a series chain or earthed, Z_k max. is 100kΩ where Z_k is the 50c/s impedance between earth and cathode.



All dimensions in mm



FINAL ANODE CURRENT PLOTTED AGAINST GRID VOLTAGE



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