

PRELIMINARY DATA

QUICK REFERENCE DATA

47 cm (19 in) direct viewing television tube with metal backed screen and reinforced envelope. A separate safety screen is not required. This tube is electrically identical to the AW47-91.

Deflection	110	deg
Focusing	Electrostatic	
Light transmission	75	%
Overall length	30.9	cm

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

Vh	6.3	V
Ih	300	mA

The limits of heater voltage and current are contained in 'General Operational Recommendations - Cathode Ray Tubes'.

Note - (applies to series operation only). The surge heater voltage must not exceed 9.5 Vr.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.

OPERATING CONDITIONS

Va2 + a4	18	18	kV
Va3 (focus electrode control range)	0 to 400	0 to 400	V
Va1	400	500	V
Vg for visual extinction of focused raster	-40 to -77	-50 to -93	V
* Vk for visual extinction of focused raster	36 to 66	45 to 79	V

* For cathode modulation, all voltages are measured with respect to the grid.

SCREEN

Metal backed		
Fluorescent colour	White	
Light transmission (approx.)	75	%
Useful screen area	see pages D5 and D6	

FOCUSING

Electrostatic

The range of focus voltages shown in "OPERATING CONDITIONS" results in optimum overall focus at a beam current of 100 μ A.

DEFLECTION

Double magnetic

The deflection coils should be designed so that their internal contour is in accordance with JEDEC gauge 126, and should provide a pull-back of 4 mm on a nominal tube.

CAPACITANCES

cg - all	6.0	pF
ck - all	4.0	pF
ca2 + a4 - M	1000 to 1500	pF
ca2 + a4 - B	250	pF

EXTERNAL CONDUCTIVE COATING

This tube has an external conductive coating, M, which must be earthed, and the capacitance of this to the final anode is used to provide smoothing for the e.h.t. supply. The tube marking and warning labels are on the side of the cone opposite the final anode connector and this side should not be used for making contact to the external conductive coating.

RASTER CENTRING

See note under this heading in "General Operational Recommendations - Cathode Ray Tubes".

Centring magnet field intensity	0 to 10	G
Maximum distance of centre of centring field from reference line	57	mm

Adjustment of the centring magnet should not be such that a general reduction in brightness of the raster occurs.

REFERENCE LINE GAUGE

JEDEC 126, For details see 'General Operational Recommendations - Cathode Ray Tubes'.

MOUNTING POSITION

Any

The tube socket should not be rigidly mounted but should have flexible leads and be allowed to move freely. The bottom circumference of the base shell will fall within a circle of 40 mm diameter which is centred upon the perpendicular from the centre of the face.

This tube is fitted with a pin protector in order to avoid damage to the glass base due to bending of the base pins whilst handling the tube.

It is advisable to keep this pin protector on the base until it can be replaced by the socket after installation of the tube in any equipment.

DESIGN CENTRE RATINGS

* $V_{a2} + a_4$ max. (at $I_{a2} + a_4 = 0$)	18	kV
$V_{a2} + a_4$ min.	13	kV
+ V_{a3} max.	1.0	kV
- V_{a3} max.	500	V
**+ v_{a3} (pk) max.	2.5	kV
V_{a1} max.	700	V ←
V_{a1} min.	350	V
** - v_g (pk) max.	400	V
‡ - V_g max.	150	V
± I_{a3} max.	25	μA
± I_{a1} max.	5	μA
† V_{h-k}		
Cathode positive		
d.c. max.	250	V
pk max.	300	V
Cathode negative		
d.c. max.	135	V
pk max.	180	V
Rh - k max.	1.0	MΩ
Zk - e max. ($f = 50$ c/s)	100	kΩ

R _g - k max.	1.5	MΩ
Z _g - k max. (f = 50 c/s)	500	kΩ

* Adequate precautions should be taken to ensure that the receiver is protected from damage which may be caused by a possible high voltage flashover within the cathode ray tube.

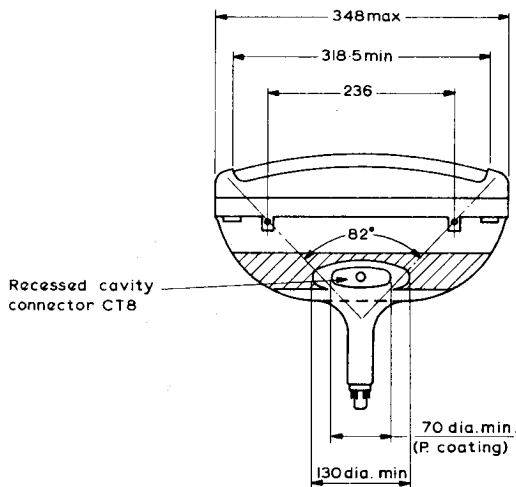
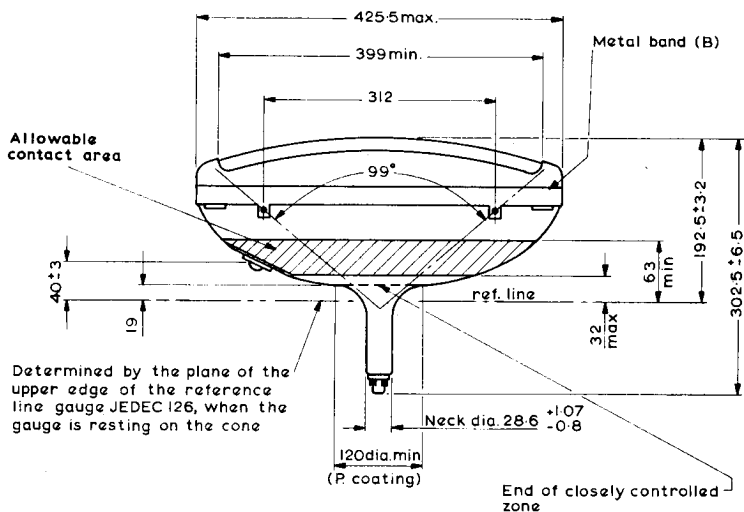
** Maximum pulse duration 22 % of a cycle with a maximum of 1.5 ms.

‡ The d.c. value of bias must not be such as to allow the grid 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 + 2V. It is advisable to limit the positive excursion of the video signal to + 5V (pk) max. This may be achieved automatically by the series connection of a 10kΩ resistor.

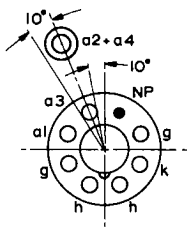
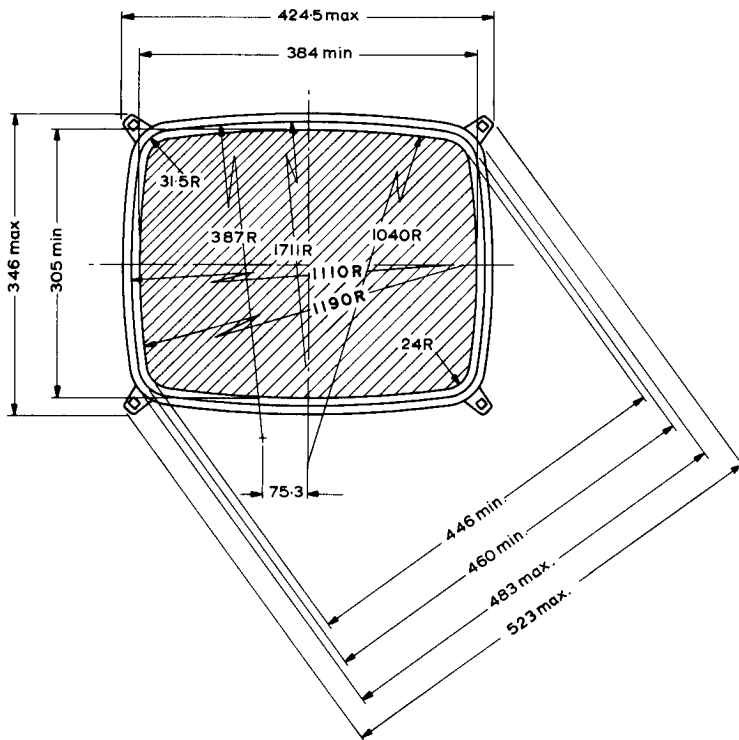
† During an equipment warm-up period not exceeding 15 seconds v_{h-k} (pk) max. (cathode positive) is allowed to rise to 410V. Between 15 and 45 seconds after switching-on a decrease in v_{h-k} (pk) max. (cathode positive) proportional with time from 410V to 250V is permissible.

Note. - The metal band (B) must be connected to the chassis via a 2 MΩ resistor, soldering tags are provided for this purpose.
The mounting lugs will not necessarily be in electrical contact with the metal band.

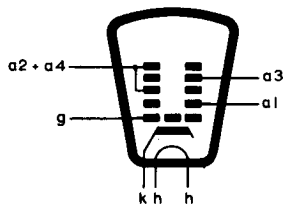




All dimensions in mm.



B8H Base



All dimensions in mm