

FERRANTI TUNING INDICATOR

Type EM81 is an electron beam tube designed for use as a tuning indicator in F.M. or A.M. radio receivers, or as a level indicator in tape recorders. The display is green and has a dark fan shaped area in the centre, this being viewed through the side of the bulb.

PHYSICAL DETAILS.

Base	B9A (Noval).
Max. Overall Length	67.5 mm. ($2\frac{3}{4}$ in.)
Max. Seated Height	60.5 mm. ($2\frac{3}{8}$ in.).
Max. Diameter	22.2 mm. ($\frac{7}{8}$ in.).
Mounting Position	Any.

For dimensions and location of display area see outline drawing.

BASE CONNECTIONS.

Pin 1—Grid.	Pin 5—Heater.
Pin 2—Cathode.	Pin 6—Internal Connection.
Pin 3—Internal Connection.	Pin 7—Anode.
Pin 4—Heater.	Pin 8—Internal Connection.
	Pin 9—Target.

HEATER.

Heater Voltage	6.3 volts.
Heater Current	0.3 amp.

RATINGS.

Max. Anode Supply Voltage ...	550 volts.
Max. Anode Voltage	300 volts.
Max. Anode Dissipation	0.2 watt.
Max. Target Supply Voltage ...	550 volts.
Max. Target Voltage	300 volts.
Min. Target Voltage	165 volts.
Max. Negative Grid Voltage ...	1.3 volts.
Max. Grid Resistor	3.0 MΩ
Max. Total Cathode Current ...	3.0 mA.
Max. Heater-Cathode Voltage ...	100 volts.
Max. Insulation Resistance Heater-Cathode	20000 ohms.

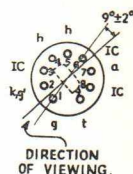
TYPICAL OPERATION

*Anode Supply Voltage ...	250	250	volts.
Target Voltage	250	250	volts.
Grid Resistor	3.0	3.0	MΩ
Grid Voltage	-1	-10.5	volts.
†Light Angle β	65	5	degrees.
Anode Current	370	20	μA.
Target Current	2.0	2.3	mA.

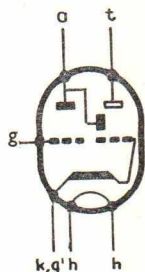
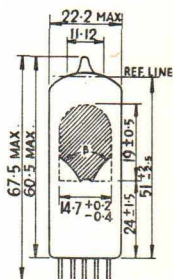
*Applied through an anode load resistor of 0.5 MΩ

†The width of the dark area is determined by the voltage of a deflector which is mounted in an accelerated electron stream. The Deflector Voltage is derived from the anode of the Triode the Grid of which is connected to the AGC line of the Receiver. As the AGC voltage becomes more negative, the Deflector Voltage rises and the width of the dark area is decreased, indicating correct tuning.

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Base Connections Underside View of Base



All dimensions
shown are in
millimetres



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