

Ferranti

LINEAR LIGHT SOURCE

A Neon filled, end viewing, light source which can be modulated. The light output is proportional to the anode current.

PHYSICAL DETAILS.

Base	...	...	International Octal
Max. Overall Diameter	...	...	29.5 mm. (1.16")
Max. Seated Height	...	...	75 mm. (2.95")
Max. Overall Length	...	...	90 mm. (3.55")
Mounting Position	...	...	Any

BASE CONNECTIONS.

Pin 1—No Connection	Pin 5—Trigger
Pin 2—Heater	Pin 6—No Pin
Pin 3—Anode	Pin 7—Heater
Pin 4—No Connection	Pin 8—Cathode

LIGHT SOURCE.

The end aperture is circular and approx. 4.0 mm. diameter. The tube is designed for end viewing applications, but the light may be viewed broadside if desired.

HEATER.

Suitable parallel operation only, AC. or DC.		
Heater Voltage	...	6.3 volts
Heater Current	...	1.5 amps

RATINGS.

*Min. Supply Voltage	...	400 volts (d.c.)
Max. Mean Anode Current	...	40 mA
Max. Peak Anode Current	...	90 mA
§Min. Cathode Heating Time	...	60 secs

CHARACTERISTICS.

†Max. Trigger Voltage	...	400 volts (d.c.)
‡Min. Cathode Current	...	10 mA
Max. Modulation Frequency	...	15 Kc/s
Max. Anode/Cathode Volt Drop	...	55 volts

NOTES ON OPERATION.

(1) The trigger electrode should be connected to anode via a resistor—20 kΩ is the minimum value.

(2) Before the application of anode or trigger voltages, the tubes must be run with heater volts only applied for a period of at least one minute before application of H.T. voltage. For use as a modulated light source this period should be followed by an unmodulated stabilising period of 5 minutes during which time the anode current should be near 40 mA.

(3) For optimum stability the anode supply should be derived from a stabilised DC. power pack and the stabilising period mentioned in (2) increased to say 15 minutes.

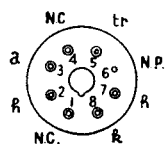
*If the supply voltage is below this value the valve may not trigger unless special circuitry is used as indicated on the circuit diagram on Page 2.

§Before application of the H.T. supply to anode or trigger. See 'Notes on Operation (2)'

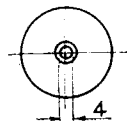
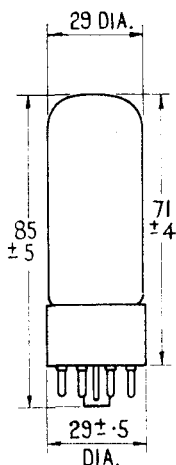
†With trigger electrode connected to anode via a 22 kΩ resistor.

‡In a circuit similar to that shown overleaf this is the lowest value of current to maintain the discharge. Operation at lower values can be achieved with special circuitry.

CL44



Base
Connections
Underside View
of Base



Light Aperture

Dimensions are in
millimetres

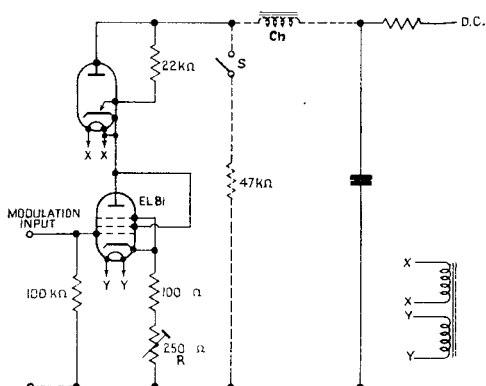
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TYPICAL OPERATION.

A recommended simple method of operation as a modulated light source is to connect the CL44 in series with a hard valve which is capable of passing sufficient current to provide the required maximum modulation.

The modulating signal is applied to the grid of this series valve and the resultant changes in anode current of this valve produce corresponding variations in the CL44 cathode current.

A typical circuit of this type is shown below.



In this circuit the resistance (R) in the cathode circuit of the EL81 is pre-set to limit the cathode current of the EL81 to the maximum rated peak current of the CL44 (i.e. 90 mA).

This circuit is designed to operate from a d.c. supply voltage which is lower than the necessary trigger voltage. The method of operation is as follows:—

After the CL44 and EL81 have had the appropriate filament voltage applied for the necessary warm up time, (see 'Notes on Operation'), the H.T. should be switched on with the switch 'S' closed.

Switch 'S' is then opened and the resultant surge will trigger the CL44.

If the D.C. supply voltage is higher than the trigger voltage, the choke, switch and resistor shown dotted may be omitted from the circuit.