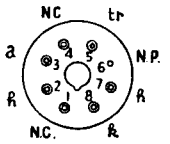
Ferranti

CL42

LINEAR LIGHT SOURCE

A Helium filled, end viewing, light source in which the light output is proportional to the anode current. The low noise content of this light source makes it particularly suitable for use in sound-on film recording, interferometers and many other applications.



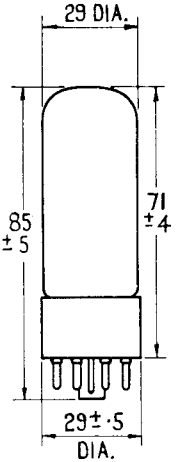
Base Connections Underside View of Base

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 tube is designed for end viewing applications.
The end aperture is circular and approx. 4·0 mm. diameter

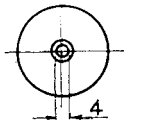
HEATER.

Suitable parallel operation only, a.c. or d.c.

Heater Voltage	6·3 volts
Heater Current	1·2 amps

RATINGS & CHARACTERISTICS.

*Max. Trigger Voltage	500 volts (d.c.)
Max. Mean Anode Current ...	40 mA
Max. Peak Anode Current ...	90 mA.
‡Min. Cathode Current	10 mA
Max. Anode/Cathode Volt Drop	110 volts
§Min. Cathode Heating Time ...	60 secs



Light Aperture

Dimensions are in millimetres

NOTES ON OPERATION.

(1). The trigger electrode should be connected to anode via a resistor—22 kΩ is the recommended 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, 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 D.C. power pack and the stabilising period mentioned in (2) increased to say 15 minutes.

*With trigger electrode connected to anode via a 22 kΩ resistor. If the supply voltage is below this value the valve may not trigger unless special circuitry is used as indicated on page 2.

‡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.

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

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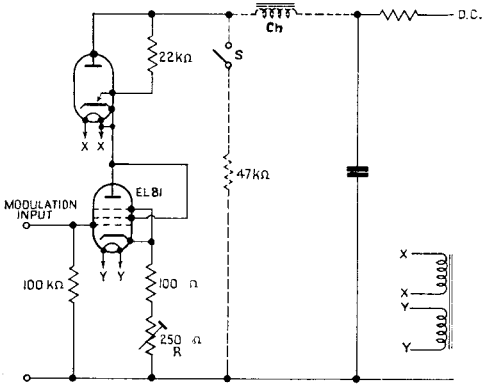
TYPICAL OPERATION.

A recommended simple method of operation is to connect the CL42 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 CL42 cathode current.

A diagram of a typical circuit of this type is shown below.



In the circuit above the cathode current of the EL81 is limited to the maximum rated peak current of the CL42 (i.e. 90 mA) by the pre-set resistance (R) in the cathode circuit.

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

After the CL42 and EL81 have had the appropriate filament voltage applied for the necessary warm up time, (see 'Notes on Operation' below), the H.T. should be switched on with the switch 'S' closed.

Switch 'S' is then opened and the resultant surge will trigger the CL42.

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