

FERRANTI

LINEAR LIGHT SOURCES

Mercury-Argon filled light sources in which the light output is proportional to the anode current. The many uses include phototelegraphic picture recording, sound film recording, time interval marking and stroboscopic applications.

PHYSICAL DETAILS.

Base	International Octal.
Max. Overall Diameter	33 mm. ($1\frac{1}{4}$ in.).
Max. Seated Height	85 mm. ($3\frac{1}{4}$ in.).
Max. Overall Length	100 mm. ($3\frac{7}{8}$ in.).
Mounting Position	Should not be declined more than 45° below horizontal.

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.

RATINGS.

Heater Voltage	6.3 volts.
Heater Current	1.2 amp.
Max. Anode Voltage	600 volts.
*Min. Trigger Supply Voltage	350 volts.
Min. Cathode Current to maintain glow	5 mA.
Volt Drop Across Tube (During Operation)	30 (approx.).
Max. Modulation Frequency	20 kc/s.
Max. Cathode Current	100 mA.
Heating Time ... (see "Notes on Operation" overleaf).	

LIGHT SOURCE.

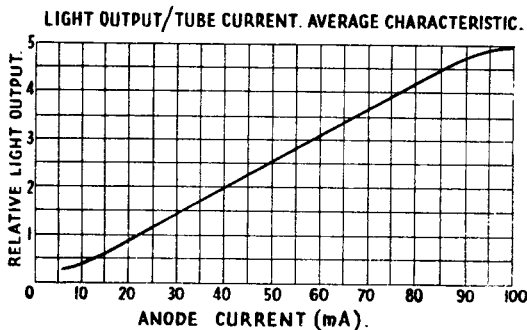
CL40. The End aperture is circular and approx. 3.2 mm. diameter.

CL41. The End aperture is in the form of a slit of length 3.0 mm. and width 0.5 mm.

On both types the column of light viewed broadside presents an area approximately 24×5 mm.

TYPICAL OPERATING CONDITIONS.

Heater Voltage	6.3
†Anode and Trigger Supply Voltage	400
Mean Anode Current	50 mA.
Current Modulation	50 %

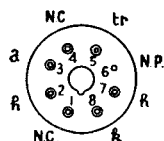


*See "Notes on Operation" overleaf.

†It is recommended that the Trigger be connected to the anode by an external resistance of 22,000 ohms.

CL40

CL41



Base Connections
Underside View of Base

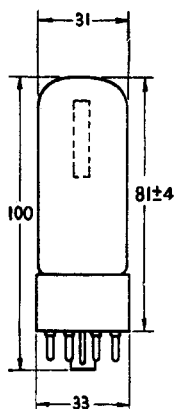
Light Apertures



CL40



CL41



All dimensions shown are in millimetres.





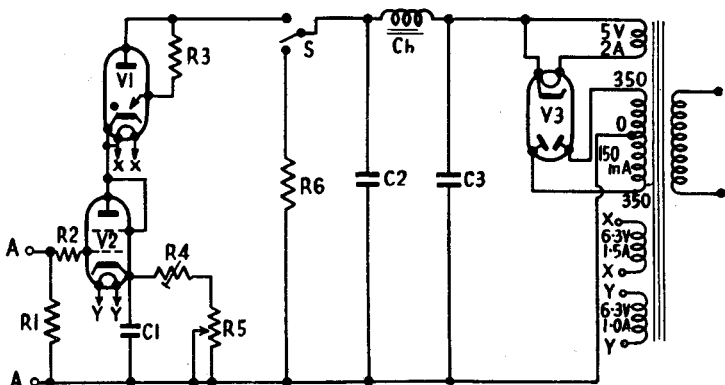
CL40

CL41

NOTES ON OPERATION.

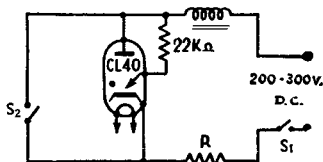
A recommended method of operation is to connect the CL40 in series with a hard valve which is capable of passing sufficient current to provide the required maximum modulation of the CL40.

The modulating signal is applied to the grid of this series valve at A.A. and the resultant changes in anode current of this valve produce corresponding variations in the CL40 anode current. In the typical circuit shown below, the potentiometer R4 should be preset to limit the 807 cathode current to 100 mA. When R5 is at minimum resistance, R5 should then be adjusted so that the CL40 is operating at the required mean current.



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|----|---------------|----|------------------------|----|----------------------|
| R1 | 220k Ω | R5 | 2k Ω Pot. 3W. | C3 | 8 μ F. 500V Wkg. |
| R2 | 10k Ω | R6 | 47k Ω 5W. | V1 | Ferranti CL40/1 |
| R3 | 22k Ω | Ch | 20 Henries. | V2 | Ferranti 807. |
| R4 | 300 Ω | C1 | 50 μ F. 50V. Wkg. | V3 | Ferranti R52. |
| | Preset 3W. | C2 | 16 μ F. 500V. Wkg. | | |

Under circumstances where only a limited DC. voltage is available it is possible to run the CL40 by utilising surge voltage to trigger the valve in a manner indicated in the following circuit diagram. The choke is not critical, a normal radio smoothing choke would be suitable but the resistor R should be chosen to limit the valve current to 100mA. Triggering is achieved by opening switch S₂.



IMPORTANT.

When the lamp is first installed or after a long period of rest, the heater should be operated at 6.3 volts for at least 5 mins. without the application of anode and striker voltages. Anode and striker potentials should then be applied and the lamp given a preliminary operating run for 15 mins. with anode current not greater than 50 mA.

On subsequent occasions before the lamp is put to normal use, it should have an initial run for 2 mins. at a heater voltage of 6.3 volts without the application of anode voltage, followed by a further period of 5 mins. during which the anode current is limited to 50 mA.

For applications where optimum stability of light output is required this second period should be extended to 10-15 mins.