Ferranti

LINEAR LIGHT SOURCES

Gas filled light sources in which the light output is proportional to the anode current. Used for phototelegraphic picture recording, sound film recording, time interval marking and stroboscopic and many other applications.

PHYSICAL DETAILS.

		CL50	CL52
Max. Overall Length	...	68	76 mm.
Max. Seated Height	...	61	69 mm.
Base (both types)	...	B7G.	
Top Cap (both types)	...	CTI.	

GAS FILLING.

CL50	...	...	...	... Mercury/Argon.
CL52	...	...	...	... Helium.

BASE CONNECTIONS.

CL50.
Pin 1—I.C.   Pin 5—Trigger.
Pin 2—Cathode.   Pin 6 ⎫ Heater. *
Pin 3 ⎫ Heater. *   Pin 7 ⎭
Pin 4 ⎭   Top Cap—Anode

CL52.
Pin 1—Trigger.   Pin 5—Trigger.
Pin 2—Cathode.   Pin 6—No connection.
Pin 3—Heater.   Pin 7—Cathode.
Pin 4—Heater.   Top Cap—Anode.

See diagrams overleaf.

LIGHT SOURCE.

The source of light is cylindrical and extends downwards from the top cap. The effective broadside dimensions are approximately :—

CL50	...	...	5 × 35 mm.
CL52	...	...	5 × 26 mm.

HEATER.

				CL50	CL52	
Heater Voltage	...	...	...	6·3	6·3	volts.
Heater Current	...	...	...	1·25	1·5	amps.

RATINGS & CHARACTERISTICS.

			CL50	CL52	
Type No.					
Gas			Hg/A	He	
†Min. Supply Voltage	...	...	375	500	volts(d.c.).
Max. Mean Anode Current	...		50	40	mA.
Max. Peak Cathode Current	...		100	90	mA.
‡Min. Cathode Current	...	...	8	10	mA.
Anode/Cathode Volt Drop	...		35	95	volts (apx).
§Min. Cathode Heating Time—See Notes on Operation.					

TYPICAL OPERATION.

A recommended simple method of operation is to connect the CL50/52 in series with a hard valve which is capable of passing sufficient current to provide the required maximum modulation of the CL50/52.

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 CL50/52 cathode current.

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

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*Pins 3 & 4 are connected to one end of the heater and the other end is connected to both pins 6 & 7. (see diagrams overleaf).
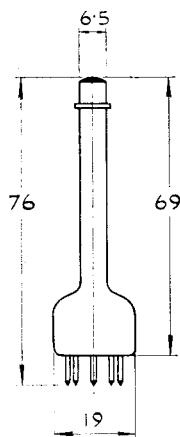
†This is the maximum voltage required to trigger the lamp.

‡In a circuit as shown overleaf this is the lowest value of current to maintain the discharge. Operation at lower values can be achieved with special circuitry.
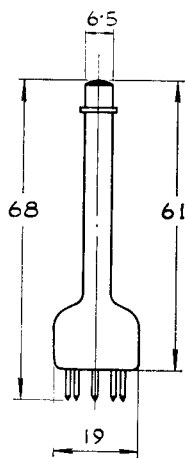
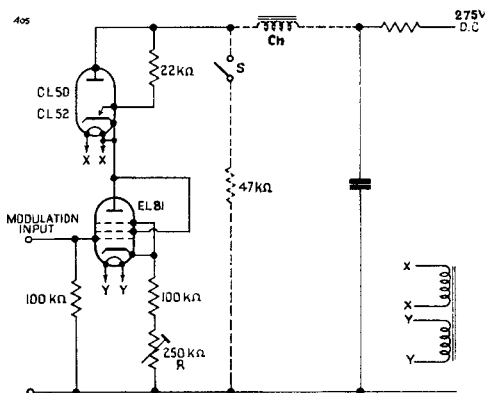§Before application of the HT supply to anode or trigger.

CL50

CL52

Dimensions are in millimetres (max.)

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TYPICAL OPERATION (cont'd).

In the circuit above the cathode current of the EL81 is limited to 100 mA for CL50 or 90 mA for CL52 by the pre-set resistance (R) in the cathode circuit.

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

After the CL50 or CL52 and EL81 have had the appropriate filament voltage applied for the necessary warm up time, (see notes on operation (2) below), the H.T. should be switched on and the switch S closed.

Switch S is then opened and the resultant surge will trigger the CL50 or CL52.

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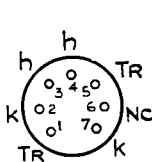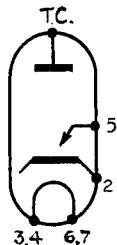
NOTES on OPERATION.

(1). The trigger electrode should be connected to anode via a resistor - 22Kohms is the recommended value.

(2). Before the application of anode or trigger voltages, the tubes must be run with heater volts only applied as indicated below.

(a). Type CL50 - When first installed or after long inoperative periods the heater should be run at full voltage for at least 5 minutes - followed by a stabilising period after application of anode voltage of say 10 minutes without modulation and anode current not exceeding 50 mA.

On subsequent occasions the heater warm up time can be reduced to 2 minutes and the stabilising period to say 5 minutes.

(b). Type CL52 - On all occasions the heater voltage should be applied at least one minute before 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.
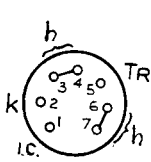
Underside view of base

CL50

Underside view of base

CL52