STROBOSCOPIC LIGHT SOURCE

A gas filled cold cathode arc discharge lamp intended primarily for use as a stroboscopic light source for frequencies of up to 250 c/s. It emits a white light.

PHYSICAL DETAILS.

Base: Small Edison Screw Type.
Max. Overall Height: 127 mm. (5 ins.).
Max. Diameter: 29 mm. (1 1/4 ins.).
Mounting Position: Any.

RATINGS (Absolute).

Max. Anode Voltage: 900 volts.
Min. Anode Voltage: 650 volts.
Min. Charging Resistor: 3 kΩ.
Max. Discharge Capacitor: 10 μF.
Max. Flashing Frequency: 250 c/s.

CHARACTERISTICS.

†Trigger Voltage: 2 to 4 kV.
Peak Luminous Intensity: The discharge of a 10 μF capacitor charged to 800 volts produces a flash with peak luminous flux of approx. 900,000 lumens.

TYPICAL OPERATION.

D.C. Supply Voltage: 750 volts.
Charging Resistor:
Up to 150 c/s: 3.3 kΩ
150 to 250 c/s: 5.0 kΩ

Discharge Capacitor:
0—25 c/s: 6.0 μF
25—50 c/s: 3.0 μF
50—150 c/s: 1.5 μF
150—250 c/s: 0.5 μF

A typical circuit of a Stroboscope for operation up to 250 c/s in four ranges is shown overleaf.

*See Notes on Operation overleaf.
†The Peak Pulse Voltage. A suitable Pulse Transformer is Ferranti type PT56.
Typical Operation (Cont.)

FOUR RANGE STROBOSCOPE.

The circuit below is for a Stroboscope covering frequencies from approx. 8 c/s. to 250 c/s in four ranges. Switches S1, S2, S4 and S5 are preferably ganged. Switch S3 is included to switch off the flash unit whilst keeping the multivibrator synchronising pulse generator running in order to avoid frequency drift during warming up periods.

V1 Ferranti Valve Type ECC81.
V2 Ferranti Valve Type EN10.
V3 Ferranti Valve Type EN60.
T1 Ferranti Pulse Transformer Type PT56.
R1 47 kΩ
R2 47 kΩ
R3 50 kΩ
R4 50 kΩ
R5 2 × 100 kΩ—Ganged
R6
R7 100 kΩ
R8 100 kΩ
R9 5 kΩ 8W.
R10 56 kΩ 5W.
R11 10 kΩ 5W.
R12 100 kΩ
R13 3·3 kΩ 25W.
R14 5·0 kΩ 25W.
C1 25 μF.
C2 25 μF.
C3 1 μF.
C4 1 μF.
C5 0·3 μF.
C6 0·3 μF.
C7 0·1 μF.
C8 0·1 μF.
C9 8 μF.
C10 2 μF.
C11 6 μF.
C12 3 μF.
C13 1·5 μF.
C14 0·5 μF.
C15 1000 pF.
TYPICAL FLASH CHARACTERISTIC

\[ V_a = 800 \text{V} \]
\[ V_a = 700 \text{V} \]
\[ C = 2 \mu \text{F} \]

LUMINOUS FLUX (MEGA-LUMENS)

FLASH DURATION (\mu\text{SECS})
TYPICAL PEAK LUMINOUS FLUX

LUMINOUS FLUX (MEGA-LUMENS)

DISCHARGE CAPACITOR (uF)

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