H30359 **Stroboscope** **NFU 623**

Purpose

The stroboscope uses a high power Xenon-filled tube rated at 20W. The reflector is designed to give a relatively even spread of illumination. The flash duration is of the order of 30 µs, so that even fast moving objects will give sharp images, for example in photographic applications.

There are 3 ranges of operation, in each of which the energy emitted per flash is virtually constant across the range. In terms of electrical energy input per flash:

Range (Hz)	Energy input per flash (J)
1 – 10	1.3
10 – 100	0.2
100 – 250	0.1

In photographic recording of motion, for example, alteration of the stroboscope rate within a range would not necessitate alteration of the exposure setting. Frequency accuracy is typically ± 2% when warm.

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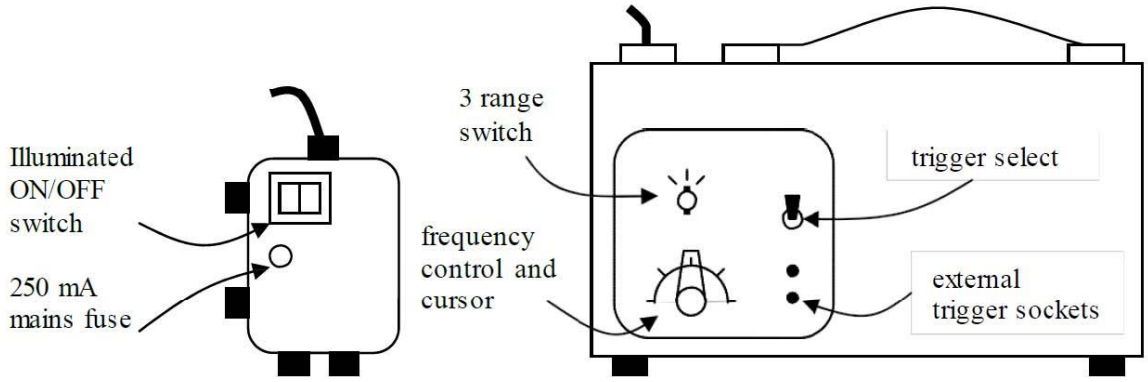
Controls

The unit may be used in the vertical position, or horizontally, in which case the angle of tilt may be adjusted by the 'adjust tilt' screw.



External Trigger

By selecting 'external trigger', the stroboscope can be made to flash at a rate determined by a suitable device connected to the 'external trigger' sockets.

Do not drive the stroboscope from the external trigger at a rate greater than indicated on the RANGE switch.

The external trigger will cause a flash whenever the stop socket is pulled down to the bottom (earth) socket, e.g. by a dead short, and then allowed to float high to +5V. The flash occurs when the voltage at the top socket returns to +5V.

Applications of External Triggering

1. Mechanical switches, rotating cams etc. will trigger the stroboscope on 'break'.

2. An illuminated phototransistor or photodiode placed across the external trigger sockets will cause a flash when the light is obstructed.

3. A 5V square wave from a signal generator will causes flashes in exact synchronisation with any device driven by the signal generator.

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Related Products

Power Signal Generator G85793

Capable of producing fixed amplitude 5V square wave (TTL) signals between with a frequency range of 0.1Hz – 110KHz.

Vibration Generator H30701

Powered by the Power Signal Generator, the vibration generator is ideal for studying waves and resonance in various mechanical systems using an accessory kit H30920.

Vibration Generator Accessory Kit H30920

For use with the Power Signal Generator, the kit contains a coil spring, thick and thin rubber chords, a tapered rubber strip, a Chladni plate, a loop of piano wire and steel strips. All these can demonstrate longitudinal, transverse and two-dimensional waves. Also included are a tall transparent tube and 20 coloured plastic balls to model molecules in a gas or liquid. There is also a transparent dish with single and double point dippers, a bar dipper and obstructions which can be used with an overhead projector.

The stroboscope enhances these demonstrations in a darkened room by “slowing down” the system.

Warnings

For your safety, this product should be used in accordance with these instructions, otherwise the protection provided may be impaired.

In all work with flashing lights, teachers must be aware of any student suffering from photo-induced epilepsy. Ensure a full risk assessment is prepared and refer to the CLEAPSS Laboratory Handbook section 12.19.

Periodic testing

Check the mains lead and plugs at both ends for any damage.

Periodically check the earth bonding and insulation, by performing a Portable Appliance Test (PAT). Most schools and local authorities have a regular schedule for such testing.

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Warranty, repairs and spare parts

The Stroboscope is guaranteed for a period of one year from the date of delivery to the customer. This warranty does not apply to defects resulting from the action of a user such as misuse, improper wiring, any operations outside of its specification, improper maintenance or repair, or unauthorized modification.

Our liability is limited to repair or replacement of the product. Any failure during the warranty period should be referred to Customer Services.

Please contact Customer Services or techsupport@philipharris.co.uk for advice

Instructions for authorized service technicians

Ensure that any replaceable mains cord is of the correct rating.

Ensure that all earth conductors and protective earth bonding is maintained after service work.

Please refer to the detailed service procedures, safe servicing and continued safety – contact techsupport@philipharris.co.uk for advice.

For any manufacturer specific parts please refer to our recommended repairer.

Please refer to product specific risks that may affect service personnel, the protective measures and verification of the safe state after repair.

Supplier details

Philip Harris Education, 2 Gregory Street, Hyde, Cheshire SK14 4RH

Orders and Information Tel: 0845 120 4521

Fax: 0800 138 8881

Repairs Tel: 0845 120 3211

E-mail: techsupport@philipharris.co.uk

Website: www.philipharris.co.uk

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