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PHOTON BEARD HIGHLIGHT Dimmable models

Instructions for use

These instructions cover the following models:

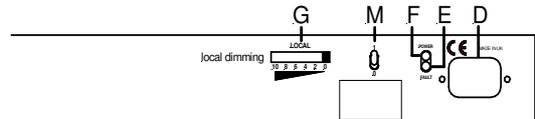
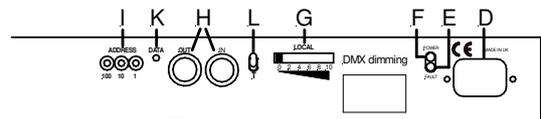
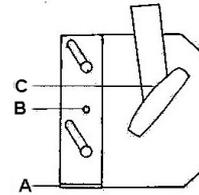
2 lamp types	A8623 Phase Control	A8624 Local Control	A8622 DMX Control
4 lamp types	A8643 Phase Control	A8644 Local Control	A8642 DMX Control*
6 lamp types	A8663 Phase Control	A8664 Local Control	A8662 DMX Control*
8 lamp types	A8683 Phase Control	A8684 Local Control	A8682 DMX Control*

*See page 3 for DMX multi-channel set-up

Please read these instructions carefully before using you Highlight. By following them you will ensure the maximum performance and life from the unit, and ensure safety for the user.

Principal Controls

- A) Accessory Latch
- B) Release Button
- C) Tilt Clamp
- D) Power Input Socket
- E) 'Power on' indicator (green)
- F) 'Fault' indicator (red)
- G) Local Dimming Control - DMX 512 Dimming
- H) Remote Control Sockets - DMX 512 Dimming
- I) Address selector - DMX 512 Dimming
- K) 'DATA' indicator (green) - DMX 512 Dimming
- L) Terminator switch – DMX 512 Dimming
- M) 'Power On' switch – Local & Phase Control Dimming
- N) 'Ballast Resistor ON' switch – Phase Control Dimming



Before using your Highlight

Highlights are available in two voltage ranges, 90-130 volts AC and 200-260 volts AC (AC = 50-60Hz).

90-130 volt models carry the letters 'USA' in the serial number.

The operating voltage is clearly marked on the rating plate, ensure the indicated voltage is correct for the power supply you are using.

If power is being supplied by a generator it is **essential** that the chassis of the generator is earthed for the safety of the user.

A detachable mains cable is supplied with your Highlight to suit the model:

200-250 volts:

UK Model: The cable is fitted with a fused plug for connection to a standard UK 13 amp mains socket.

Continental Europe Model: The cable is fitted with a Schuko style 16 amp European plug.

If the prewired plug is replaced it should be done by a competent person following the European standard colour code used for the Highlight mains cable:

BROWN - LIVE

BLUE - NEUTRAL

GREEN/YELLOW - EARTH

90-130 volts:

The cable is fitted with a NEMA5-15P 3 pin plug for connection to a standard North American style socket.

If the prewired plug is replaced it should be done by a competent person following the North American standard colour code used for the Highlight mains cable:

BLACK - LIVE

WHITE - NEUTRAL

GREEN - EARTH (GROUND)

It is **essential** that the mains supply circuit is earthed and protected by a circuit breaker and fuse.

All models have a green "power on" indicator to show that power is connected

Fusing

Fusing is by cartridge fuse situated on the power PCB. If the fuse blows the red 'fault' indicator will operate and the lamphood will not work. This will happen only if there is a serious fault within the lamphood which will need rectifying before the unit is put back into service.

All models use a standard IEC127-2 (BS EN60127-2) 5 amp anti-surge ceramic fuse 5x20mm.

Lamps for Highlights

The following lamps are the only ones recommended for use in Highlights:

Osram DULUX L Lumilux Deluxe 950 (C12) 5400K (Osram ref: DL5595)
 Osram DULUX L Lumilux Deluxe 930 (C32) 3000K (Osram ref: DL5593)
 These lamps have the highest colour rendering index (Ra98) with a lumen output 2,900.

Osram DULUX L Lumilux Cool White 4000K (Osram ref: DL5584)
 Osram DULUX L Lumilux White 3500K (Osram ref: DL5535)
 Osram DULUX L Lumilux Warm White 3000K (Osram ref: DL5583)
 These lamps have a lower colour rendering index (Ra85) but have a higher lumen output of 4,800.

Dulux lamps should last upwards of 8,000 hours; lamp life is directly related to how many times lamps are switched on and off.

GE CINEPLUS 55W/3200 3200K
 GE CINEPLUS 55W/5500 5500K
 These lamps are specially designed for film, TV and video recording to blend with HMI and tungsten halogen lamps. They have a rated life of 8,000 hours and a lumen output of 2,600.

Lamps will not give their best performance until they have been burned for approximately 40 hours. During this burn-in time lamps may be unstable at dimming levels below 20% brightness.

There is a slight reduction in colour temperature and brightness when a lamp nears the end of its life. When one lamp in a lamphood fails all the lamps should be replaced. Highlights are supplied with either 950 5400K lamps or 930 3000K lamps. GE CINEPLUS lamps are available to special order.

Fitting the lamps

- 1) Ensure the power supply is disconnected by removing the mains power plug from the lamphood.
- 2) Remove the intensifier or honeycomb grid (if fitted) by operating the accessory latch and sliding it out of its guide rails.
- 3) Remove the safety screen (if fitted) by sliding it out of its guide rails.
- 4) Disengage the first lamp from its spring clip and withdraw it from the lampholder.
- 5) Repeat 4) for the other lamps.
- 6) Carefully enter the first replacement lamp into its lampholder and then into its spring clip.
- 7) Repeat 6) for the other replacement lamps.
- 8) Refit the safety screen (if required) by sliding it into its guide rails.
- 9) Refit the intensifier by sliding it into its guide rails.
- 10) Refit the mains power plug into the lamphood.

Using your Highlight

If your Highlight is subject to a lot of handling or is to be used in an area where objects can enter the front of the lamphouse we recommend that one of the following safety screens is fitted.

A8710 Colour frame with wire safety screen for Highlight 110

A8711 Colour frame with wire safety screen for Highlight 220

A8712 Colour frame with wire safety screen for Highlight 330

A8716 Colour frame with wire safety screen for Highlight 440

A8713 Clear polycarbonate safety screen for Highlight 110

A8714 Clear polycarbonate safety screen for Highlight 220

A8715 Clear polycarbonate safety screen for Highlight 330

A8717 Clear polycarbonate safety screen for Highlight 440

Highlights are fitted with high frequency ballasts to drive the fluorescent lamps. These ensure flicker free light output suitable for all film, television, digital imaging and still photographic applications.

Highlights are supplied with either 5400K high colour rendering lamps which are balanced to natural daylight, or 3000K high colour rendering lamps which are compatible with tungsten light sources. Photography using silver halide film (ie. conventional photographic film) will probably require the use of a pale magenta filter to eliminate a possible green cast. Different types of film have different sensitivity, we recommend the use of a 3.75cc magenta, which may be on the lights or the camera, according to the shooting conditions. The following magenta lighting filters are available: 3.75cc (ref: 279S), 7.5cc (ref: 249S), 15cc (ref: 248S), 30cc (ref: 247S)

GE CINEPLUS lamps are the best lamps to use with photographic film, but are more expensive to buy.

Higher light output lamps with poorer colour rendition may be used for less demanding applications; use only the lamps recommended above.

3)

Highlight 110,220 and 330 manual versions are fitted with the international standard 16mm (5/8") hollow fitting to suit most available lighting stands and overhead mounts. **Always ensure that the stand or overhead mount you are using is of sufficient strength and stability.** Highlights with pole operation, and all 440 models are fitted with 28mm Euro spigots.

If a Highlight is hanging from an overhead mount **ensure a safety bond is fitted** to prevent the lamphead accidentally falling.

You may use Highlights outdoors but remember they are not weatherproof. **DO NOT USE IN RAIN OR SPRAY CONDITIONS.** On no account should moisture be allowed to contact the lamps or any other electrical part.

Dimmer Control

Highlights all share the same dimming options of which there are three types: Local Control only, Phase Control (via a dimmer rack), and DMX512.

Local Control Dimming

These lampheads have a simple linear fader on the control panel to vary the light output. Remote control is not possible.

Phase Control Dimming

These lampheads are powered by a dimmed supply from a conventional leading edge triac/ thyristor dimmer or IGBT dimmer, and are ideal for replacing tungsten lampheads in an existing studio installation. The minimum brightness level is approximately 8% of maximum.

These lampheads are designed for leading edge systems only, and are not suitable for trailing edge(reverse phase) mode IGBT (see below) or the new "full sine wave" dimming systems.

The lamps will strike at approximately 3-4 on the fader scale and will increase in brightness as the fader is pushed up the scale. Similarly as the fader is brought down the scale the lamps will dim, until 3-4 on the scale is reached, when the lamps will extinguish.

Triac dimmers require a resistive ballast load to ensure stable dimming. Each lamphead incorporates 37 watts of ballasting which is switchable [P] above]. For most dimmers 25 watts per channel is adequate, so if more than one lamphead is connected to a channel only one of them needs the ballast resistor switched on.

DMX Dimming

Operates on the industry standard USITT DMX512 system.

Local dimming is available using the linear fader on the unit; this can also be used to set the lowest dimming level to prevent lamps extinguishing. When remote control is required this control is normally set to 0. Minimum brightness level is approximately 1% of maximum.

Lampheads are inter-connected by daisy-chain; only one daisy-chain is required for an entire system of up to 512 channels, although signal boosters may be required. Connection is by XLR5 plug and socket, address selection is by rotary switches.

It is possible to set an address without power being applied to the lamphead, eg. prior to rigging. Daisy chains must be terminated with a 120 ohm resistor; this is incorporated into the lamphead and can be selected by operating the Terminator switch [L] above] by moving the lever towards the letter 'T'. ***SPECIAL NOTE: apparent DMX malfunction is most often caused by the terminator switched on in a lamphead which is not at the end of the chain.***

When valid DMX data is received a green 'DATA' indicator lights [K] above]; if data is lost the 'DATA' indicator stays on for two seconds, then goes off.

Multi – Channel DMX Control

Highlight 220,330,and 440 lampheads are capable of having all lamps controlled from one channel of DMX, or each pair of lamps controlled by separate channels of DMX. In each configuration, lamps will switch on and off silently at a threshold of approximately 10%. **Please note that the factory default setting is for single channel operation.** Highlight 440 has a third option, splitting the head into 2 DMX channels, each controlling half of the head (4 lamps).

The unit is programmed using the address switches, setting them to either of the combinations listed below dependant on the required function. With the correct number combination set, connect power to the unit, and it is programmed. The unit will remain programmed, even if power is disconnected, until the chip is re-programmed using the address settings.

1/ To set the unit to be controlled from one channel:-

Disconnect power, set DMX address to **881**, connect power, and the chip is now programmed to provide single channel control. Now set the DMX address to the desired channel and all lamps will be controlled simultaneously.

2/ To set the unit so that each pair of lamps can be controlled from separate sequential channels:-

Disconnect power, set DMX address to **880**, connect power and set the address to the first of the channels to be used. Each pair of lamps will now be controlled separately.

3/ (440 only) To set the unit to operate as two separate halves:-

Disconnect power, set DMX address to **882**, connect power and set the address to the first of the channels to be used. Each half of the head will now be controlled separately from consecutive channels.

Hold Last Frame

This Highlight can be set to hold the last DMX 'frame' in the event of a DMX failure or disconnection. ***Please note that the factory default setting is to revert to zero in the event of DMX loss.*** To change this to 'hold last frame', set DMX address to 884 and power up. Once the address is changed back to the desired dimming channel, the unit will remain set to this function until re-programmed using the same 884 address and connecting power.

DMX Control Link cables

Link cables are available from your Photon Beard distributor, or can be made using the following USITT DMX512 protocol:

Connectors: Input XLR5 Male, Output XLR5 Female

Cable: for EIA485(RS485) use, with one or more low capacitance twisted pairs, with overall braid and foil shielding. 24AWG (0.2sq.mm) (7/0.2mm)

PIN	FUNCTION
1	Signal Common (drain wire)
2	Dimmer Drive Complement (Data 1 -)
3	Dimmer Drive True (Data 1 +)
4	Optional Second Data Link Complement (Data 2 -)
5	Optional Second Data Link True (Data 2 +)

The shield must not be connected to the shell of the connectors because the chassis mounted connectors are connected to mains ground and this could cause problems with ground loop currents. Although Pins 4 & 5 are described in the USITT standard their use is not defined, and there is no through connection in the lamphed.

They are not required to operate the DMX512 system, but they should be connected to improve the mechanical strength of the cable connection.

Pins 4 & 5 are through connected via PCB links which can be removed if required.

Accessories for your Highlight

There is an extensive range of light control accessories available for the Highlight range, please view our website or contact our sales office or your Photon Beard distributor.

Service and spare parts

We operate a full repair service at our headquarters. We can also supply spare parts for people wishing to carry out their own repairs. When ordering spare parts please quote the serial number shown on the rating plate.

Warranty

Photon Beard Products are guaranteed against faulty materials and workmanship for a period of one year from the date of the original user's purchase, and is limited to repair or replacement at our discretion. This guarantee does not cover product misuse or any consequential loss arising from product failure. Your statutory rights are not affected.

Conformity

Photon Beard products conform to appropriate European standards, specifically:

73/23/EEC 1995 Low voltage directive

93/68/EEC 1995 CE marking directive

89/336/EEC EMC directive

Standards applied: EN60950, EN 50081-2, EN55014, EN55022

RoHS Photon Beard products do not contain more than the maximum permitted levels of hazardous substances as laid down in the European directive on the restriction of use of certain hazardous substances

WEEE Under the European directive on the disposal of waste electrical and electronic equipment Highlights should only be disposed of through approved recycling facilities and not through landfill waste disposal.



Photon Beard Ltd., Unit K3 Cherry Court Way, Stanbridge Road, Leighton Buzzard, Beds. LU7 4UH, UK.

Tel: +44 (0)1525 850911 Fax: +44 (0)1525 850922 Email: info@photonbeard.com Web: www.photonbeard.com