99049

Photon Beard Radiant Softspot switch & dimmer control lampheads

Instructions for use

These instructions cover the following models:

Radiant 170 softspot 4 lamp types A8540 switch control
Radiant 170 softspot 4 lamp types A8541 analogue dimmable, A8542 DMX512 dimmable, A8543 phase control dimmable

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

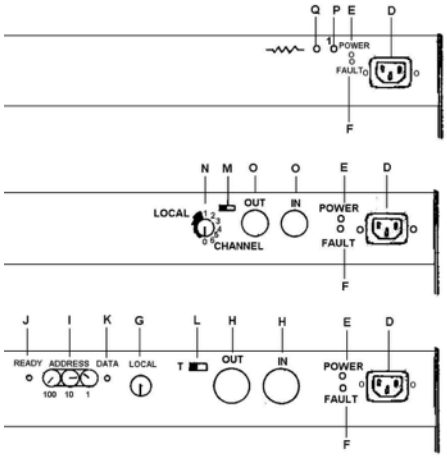
Principal Controls

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
J) 'READY' indicator (yellow) - DMX 512 Dimming
K) 'DATA' indicator (green) - DMX 512 Dimming
L) Terminator switch – DMX 512 Dimming
M) DIM/OFF Selector Switch - Analogue Dimming
N) Rotary Selector Switch - Analogue Dimming
O) Remote Control Sockets - Analogue Dimming
P) 'Power On' switch - Phase Control Dimming
Q) 'Ballast Resistor ON' switch – Phase Control Dimming

Phase control

Analogue control

DMX512 control



Before using your Radiant

Radiants are suitable for use on electrical supplies with alternating current (AC) 50-60Hz and a voltage of 200-250 v. 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 Radiant to suit the model:
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 Radiant mains cable:

BROWN - LIVE **BLUE - NEUTRAL** **GREEN/YELLOW - EARTH**

It is ***essential*** that the mains supply circuit is earthed and protected by a circuit breaker and fuse.
There is a green "mains on" indicator to show that power is connected

Fusing: The correct fuse rating for Radiants is shown on the unit rating plate:
2 amps BS4265 (IEC127) HBC anti-surge (T) fuses 5 x 20mm.

Lamps for Radiants

The Radiant 170 softspot is fitted with multi-lamp ballasts which permit a choice of lamp power. As supplied lampheads are fitted with either:

Osram DULUX T/E 42w Cool White 4000K (Osram ref:DTE424)
Osram DULUX T/E 42w Warm White 3000K (Osram ref: DTE423)
These lamps have a good colour rendering index (Ra85) with a lumen output 3,200

If you require less light output it is possible to fit:

Osram DULUX T/E 32w Cool White 4000K (Osram ref:DTE324)
Osram DULUX T/E 32w Warm White 3000K (Osram ref: DTE323)
These lamps also have a good colour rendering index (Ra85) with a lumen output of 2,400.

When changing lamps ensure all the lamps are of the same wattage.

There is a slight reduction in colour temperature and brightness when a lamp nears the end of its life. When one lamp in a lamphead fails all the lamps should be replaced.

Fitting the lamps

1. Ensure the power supply is disconnected by removing the mains plug from the lamphead.
2. Remove the honeycomb grid (if fitted) by lifting the button of the spring lock, then lifting to disengage from the rim of the reflector, and lifting clear.
3) Carefully enter the first lamp into its lampholder and then push until the spring clip engages.
4) Repeat for the other lamps.
5) Refit the honeycomb grid (if required) by entering it onto the reflector rim at the top, then moving it inwards so that the spring lock engages behind the reflector rim.
6) Refit the mains plug into the lamphead.

Using your Radiant

Radiants 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.

Radiants are supplied with either 4000K high colour rendering lamps 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 caste. 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)

Radiants are fitted with the international standard 16mm (5/8") hollow fitting to suit most available lighting stands and overhead mounts. Alternatively this can be replaced with a 29mm spigot if required (Part No.60149 available separately).
Always ensure that the stand or overhead mount you are using is of sufficient strength and stability.
If a Radiant is hanging from an overhead mount ***ensure a safety bond is fitted*** to prevent the lamphead accidentally falling.

You may use Radiants 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.

Take care with the mains cable. Route it carefully so that people will not trip or push wheeled equipment over it. Never release a plug from its socket by tugging the cable; you will only damage it.

Switch control
Switch control models are fitted with a single switch to control all four lamps

Dimmer Control
There are three types of dimming available in the Radiant: phase control (via a dimmer rack), analogue and digital (DMX512).

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 6% of maximum.

These lampheads are not suitable for use with 'trailing edge' IGBT dimmers or sine wave dimmers IGBT dimmers should be switched to leading edge (forward phase) dimming mode.

The lamp ballasts are not energised until there is sufficient voltage available to strike the lamps. This is an essential safety feature to protect the ballasts from destructive under-voltage.
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 phase control lamphead incorporates 37 watts of ballasting which is switchable [Q) 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.

Analogue Dimming

The light output is controlled either locally (ie. from the lamphead) or remotely via most existing analogue control systems using the 0/+10v standard. Power to the lamphead is indicated by a green LED indicator on the control panel.
Local control is by the rotary selector switch on the control panel, which is used to set the brightness level. Position 0 = off, then progressive clockwise turning of the knob will increase the brightness in steps equal to 20%, 30%, 45%, 67% & 100% brightness (ie. rising by half of an f.stop each step).

Remote control follows the conventional analogue practice of six channels per control cable. Radiants are "daisy-chained" together (with Highlights and Skylights from the Photon Beard range, if required), each chain carrying the control signals for six channels. Chains are created using the IN and OUT sockets on the control panel.. The channel required for any lamphead on the chain is selected using the rotary switch. Any lamphead in the chain can be turned off by selecting 0 without affecting other lampheads in the chain. When connected to a remote controller the lampheads can be dimmed down to approximately 6% brightness, which is the minimum reliable level for the lamps used.

Moving a fader control below the 6% level will cause the lamps to extinguish, whereupon power to the ballasts is automatically cut so that no power is consumed. Therefore when the lampheads are no longer in use the control faders are simply set to zero and the lampheads automatically switch off.
However, if you specifically want the lampheads to remain at the lowest brightness level instead of switching off when the control fader is brought to zero, this can be done by resetting the OFF/DIM switch on the control panel to DIM. In this case it will be necessary for the mains power supply to the system to be fitted with an on/off switch so that the lampheads can be turned off.

Each Radiant produces a power supply of 60 milliamps, sufficient to drive any analogue system. Most analogue control systems receive their power supply via the connector socket controlling channels 1-6, so sufficient lampheads must be connected onto the daisy chain for channels 1-6 to provide power for the control system. For most systems a single lamphead providing 60 milliamps will be sufficient. Up to 32 lampheads may be linked to the same channel, any number can be linked into a system.

Daisy-chains are made from link cables fitted with an 8 pin DIN locking plug at each end. These are available from your Photon Beard dealer, or you can make up your own using the following protocol:

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PIN	FUNCTION
1	Control channel 1
2.	Control channel 2
3.	Control channel 3
4.	Control channel 4
5.	Control channel 5
6	Control channel 6
7	Positive Supply
8	0 volts

Cable Spec: 8 core unscreened, each core at least 0.055sq.mm (7/0.1mm)

Digital Dimming

Operates on the industry standard USITT DMX512 system.

Local dimming is available using the rotary control on the unit; this can also be used to set the lowest dimming level to prevent lamps extinguishing. When remote control is required this rotary control is normally set to off. 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 [K) 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.***
There is a yellow LED 'READY' indicator [I) above] which lights to show the DMX decoder is operational.
When valid DMX data is received a green 'DATA' indicator lights [J) above]; if data is lost the 'DATA' indicator stays alight for two seconds, then goes out, and the last light level is maintained.
If a channel beyond 512 is selected the green indicator will flash to show that DMX is out of range.

Master & slave lampheads: in a fixed installation where there are a string of lampheads permanently running on the same channel, such as cyclorama lighting, it is more economical to use a master DMX controlled lamphead linked to a string of interlinked slave analogue lampheads. To facilitate this Pin 4 of the DMX output socket is connected to the analogue output of the DMX decoder in order that the analogue signal can be passed down the analogue chain. In this arrangement the master DMX lamphead is best placed at the end of a DMX chain, so that the output socket can be fitted with a special adaptor lead to link the master to the first slave. Slave lampheads are ordinary analogue dimming lampheads as described under 'Analogue Dimming' above.

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 lamphead. They are not required to operate the DMX512 system, but they should be connected to improve the mechanical strength of the cable connection.
Should through connection be required for another DMX device in the chain then through connections for Pins 4 & 5 should be made by adding wire links, taking care to disconnect the link from Pin 4 of the output socket to the PCB
Operates on the industry standard USITT DMX512 system, with modified in/out connections to permit an analogue output for "slaving" (see "Analogue Slaving" below).

Although Pins 4 & 5 are described in the USITT standard their use is not defined. We recommend that these conductors are connected in link cables to improve the mechanical strength of the assembly.

Accessories for your Radiant
Honeycomb grid: narrows the beam angle to increase the spot effect and to eliminate side spill, particularly useful for back lighting.

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 this equipment should only be disposed of through approved recycling facilities and not through landfill waste disposal. If you are within the European Economic Community and you wish Photon Beard to dispose of this equipment on your behalf please contact the company.

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