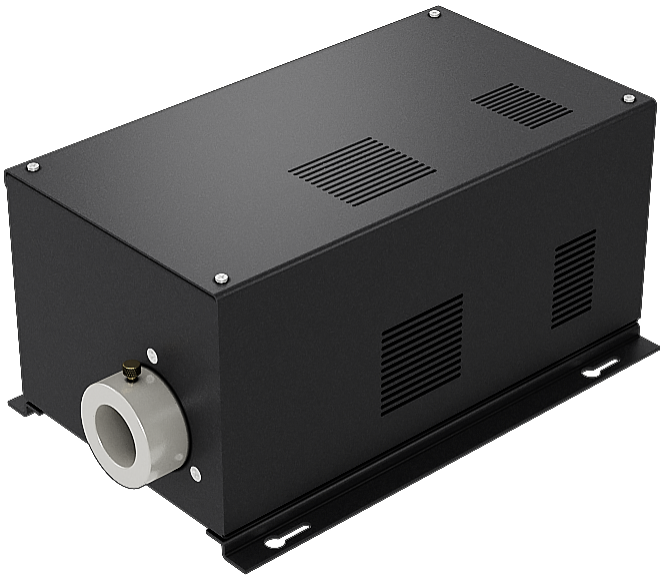
BL LIGHTING
SINCE 1986

INSTALLATION & OPERATION MANUAL

Petra

BL Fibersource



BL LIGHTING
ILLUMINATE EVERYTHING

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INTRODUCTION

Thank you for purchasing this Petra RGBW Illuminator.

Please read this Installation & Operation Manual completely prior to installation and operation of the BL Fibersource illuminator.

Please note that these instructions are guidelines only and in no way supersede any construction or installation standards. Local building and electrical codes should be consulted prior to installation.

WARNING:

There is potential danger of electrical shock when operating electrical equipment,ensure the unit is turned off and disconnected from power prior to installation.

Solid State Lighting is sensitive to power fluctuations. Surge Protection is highly recommended for all LED lighting products and should be on a designated circuit to ensure optimal service life.

- Do not attempt to open non-serviceable parts inside the illuminator
- Installation must be performed by a qualified professional in accordance with local codes.
- The illuminator should be installed in an accessible, dry, and well ventilated environment, minimum clearance of 8" (0.2M) is required from surrounding surfaces.
- BL Fibersource illuminators are equipped with a mounting plate or feet, for securing to a vertical or horizontal surface.
- Do not modify or alter the illuminator, there are no user-serviceable parts inside.
- Ensure each BL Fibersource illuminator is surge protected.
- It is recommended to bench test BL Fibersource illuminators prior to fixing into place.

Never look directly into BL Fibersource through the port aperture, and always position carefully to avoid unexpectedly staring into the BL Fibersource at a distance closer than 10ft (3M).

Petra is a high performance, white light LED illuminator, designed to integrate with BL fiberOPTIC. Options include white light only, color changing or twinkle effects. Models may be ordered equipped with optional 6 Color Wheel or Twinkle Wheel and are dimmable.

The light source is fitted with a 90W white LED in 5500K, 4000K or 3000K, and has a 50,000 hour lamp life. Manual operation is easy using the on board knob and dip switch controls, or take charge of your color changing, dimming or twinkling effects with 010V or DMX control systems.

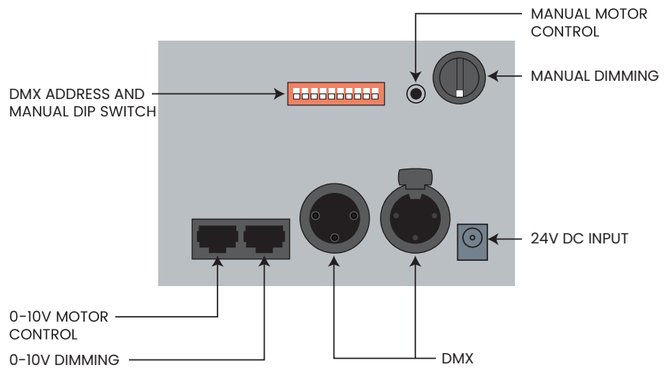
INSTALLATION

The LED illuminator is powered from a multifunction, multi-voltage, 24V/3.75A desktop LPS/Class 2 Power Supply Unit. The PSU is an IEC 100-24VAC power input device.

Petra is equipped with control functionality and configurable via rear panel dip switches and control knob.

Rear Panel View

DIP Switch 10 ON (down) for manual or 0-10V
DIP Switch 10 OFF (up) for DMX operation



MANUAL OPERATION

Connection - For Manual Operation

There are two connections required - the fiber port aperture and the main power supply. The fiber port aperture should be connected prior to connection to the main power supply.

Connect and secure the fiber optic connector into the collar in the front of the unit, and secure using the M5 locking screw, ensuring the connector is fully inserted before tightening the screw.

Never run BL Fibersource with the fiber port connector out of the illuminator aperture.

Connect the IEC power cord into the 24VDC input connector on the back of BL Fibersource, and plug the unit into the surge protected main power electrical socket. Switch on power, the PSU indicator will illuminate, and BL Fibersource is ready for use. If no light is produced consult the troubleshooting section.

All **Petra** models in the range can be manually controlled as detailed in the following sections.

Normal Manual Operation - Standard White Light Dimming

For normal manual operation DIP switch 10 must be ON

During normal manual white light operation **Petra** can be dimmed from 0 to 100% using the Manual Dimming Control on the side panel.

Normal Operation - Emergency Light White Light Dimming

For normal manual operation DIP switch 10 must be ON

During normal manual white light operation the Emergency Light configured **Petra** can be dimmed from maximum light at 0%, to no light at 10%, and then again up to maximum light at 100% using the Manual Dimming Control on the side panel.

Normal Manual Operation - Color And / Or Twinkle Wheel Control - No Sensor

For normal manual operation DIP switch 10 must be ON

During normal manual Color Wheel or Twinkle Wheel operation **Petra** can be dimmed from 0 to 100% using the Manual Dimming Control and the motor can be controlled from stop to 5 speeds (see table below) using the push button Manual Motor Control on the side panel.

NOTE: When manually selecting stop (switch position 6) the wheel will stop instantly, on a random color on the Color Wheel, or a random section of the Twinkle Wheel.

Manual Operation

Switch Position	1	2	3	4	5	6
Speed	0.5	1.2	2.4	4	7.5	Stop

Normal Manual Operation - Color Wheel Control With Sensor

For normal manual operation DIP switch 10 must be ON

During normal manual Color Wheel operation the BL fiberOPTIC Petra can be dimmed from 0 to 100% using the Manual Dimming Control and the motor can be controlled from stop to 4 speeds (see table below) using the push button Manual Motor Control on the side panel.

NOTE: When manually selecting stop (switch position 5) the Color Wheel will automatically return to color 1 (white, on a standard 6-Color Wheel)

Switch Position	1	2	3	4	5
Speed	1.6	2.6	3.75	5.5	Stop

Normal Manual Operation - Twinkle Wheel Control With Sensor

For normal manual operation DIP switch 10 must be ON

During normal Twinkle Wheel operation the Light Source can be dimmed from 0 to 100% using the Manual Dimming Control and the motor can be controlled with stop + 5 speeds ranging from very slow to fast using the push button Manual Motor Control on the side panel.

NOTE: for this configuration of a Twinkle Wheel with sensor, the wheel is supplied with a cut out segment. The wheel in motion will give an uninterrupt- ed twinkle by rotating backwards and forwards either side of the segment. When stop is selected the wheel will come to rest at the segment giving unob- structed white light output.

010V OPERATION

Connection - 010V Operation

There are three connections required - the fiber port aperture, the 010V cable, and the main power supply. The fiber port aperture should be connected first, prior to connection to the main power supply.

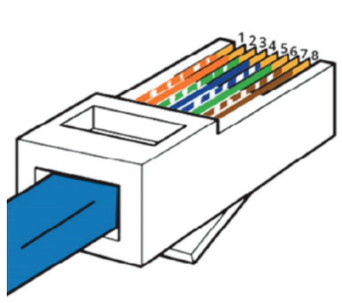
Connect and secure the fiber optic connector into the collar in the front of the unit, and secure using the M5 locking screw, ensuring the connector is fully inserted before tightening the screw.

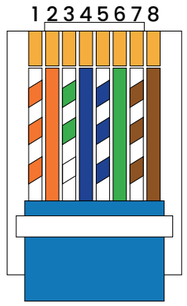
Never run BL Fibersource with the fiber port connector out of the illuminator aperture.

Connect the IEC power cord into the 24VDC input connector on the back of BL Fibersource, and plug the unit into the surge protected main power electrical socket. Switch on power, the PSU indicator will illuminate, and BL Fibersource is ready for use. If no light is produced consult the troubleshooting section.

Connect the 010V RJ45 as detailed below using CAT5 cable.

NOTE: for Emergency Light functionality, the main power supply for the light source must be maintained so that failure of the main power supply to the 010V controller will result in BL Fibersource illuminating at maximum output.





Pin	Wire Color
1	White / Orange
2	Orange
3	White / Green
4	Blue
5	White / Blue
6	Green
7	White / Brown
8	Brown

0-10V RJ45 Connections:
-VE RJ45 Brown/White (Pin 7)
+VE RJ45 Blue/White (Pin 5)

010V Operation - Standard White Light Dimming

For 010V dimming operation DIP switch 10 must be ON, the Manual Dimming Control on the side panel must be turned to minimum (fully counter clock- wise), and the RJ45 plug must be plugged into the right hand RJ45 socket on the side panel.

The light source can be dimmed from 0 (0 Volts DC) to 100% (10V DC) with a receiving 010V signal.

010V Operation - Emergency White Light Dimming

For 010V dimming operation DIP switch 10 must be ON, the Manual Dimming Control on the side panel must be turned to minimum (fully counter clock- wise), and the RJ45 plug must be plugged into the right hand RJ45 socket on the side panel.

Petra can be dimmed with a receiving 010V signal as detailed in the table below.

Function	Value DC	Description
Maximum Light	0V	Default Control, Emergency Main Power Supply Failure, Max. Light Output
Maximum Light	1V	Normal Dimming Control, Min. Light Output
Maximum Light	10V	Normal Dimming Control, Max. Light Output

NOTE: in this configuration when the mains supply to the 010V controller fails, BL Fibersource will illuminate fully as an emergency light source.

010V Operation - Color/twinkle Wheel Control - No Sensor

For 010V wheel control DIP switch 10 must be ON, and the RJ45 plug must be plugged into the left hand RJ45 socket on the side panel.

The BL Fibersource Color/Twinkle Wheel can be controlled with a receiving 010V signal from stop at OV to 7.5rpm at 10V.

NOTE: for this configuration of a Twinkle Wheel without sensor, the Twinkle Wheel is solid with NO cut out segment, for full Twinkle Wheel effects.

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010V Operation - Color / Twinkle Wheel Control with Sensor

For 010V wheel control DIP switch 10 must be ON, and the RJ45 plug must be plugged into the left hand RJ45 socket on the side panel.

The BL Fibersource Color/Twinkle can be controlled with a receiving 010V signal as detailed in the folowing table.

Function	Value	Description
Color Wheel	**0V**	White (Color1)
Color Wheel	**0.7V**	Yellow (Color2)
Color Wheel	**1.0V**	Green (Color3)
Color Wheel	**1.4V**	Green (Color4)
Color Wheel	**1.8V**	Green (Color5)
Color Wheel	**2.3V**	Green (Color6)
Color Wheel	**3V**	Green (Color5)
Color Wheel	**3.4V**	Green (Color4)
Color Wheel	**3.7V**	Green (Color3)
Color Wheel	**4.1V**	Green (Color2)
Color Wheel	**4.6V**	Green (Color1)
Color Wheel	**5.0V to 7.3V**	Slow to fast colockwise
Color Wheel	**7.4V to 10V**	Fast counterclockwise

NOTE: for available wheel types see Color Wheel section

010V Operation - Twinkle Wheel Control with Sensor

For 010V wheel control DIP switch 10 mst be ON, and the RJ45 plug must be plugged into the left hand RJ45 socket on the side panel.

NOTE: for this configuration of a Twinkle Wheel with sensor, the wheel is supplied with a cut out segment, for full white light output operation.

The Petra Twinkle Wheel can be controlled with a receiving 010V signal to give stop (0V DC) to varying speeds (0.5 to 10V DC) ranging from very slow to fast.

NOTE:

for this configuration of a Twinkle Wheel with sensor, the wheel is supplied with a cut out segment , for full white light operation. The wheel in motion will give an uninterrupted twinkle by rotating backwards and forwards either side of the segment. When 0V is selected the wheel will come to rest at the segment giving unobstructed white light output.

Petra DMX OPERATION

Connection - DMX Operation

There are three connections required: the fiber port aperture, the main power supply cable, and the DMX control cable. The fiber port aperture should be connected first, prior to connection with the main power supply.

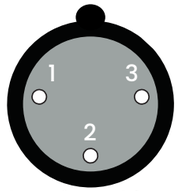
Connect and secure the fiber optic connector into the collar in the front of the unit, and secure using the M5 locking screw, ensuring the connector is fully inserted before tightening the screw.

Never run BL Fibersource with the fiber port connector out of the illuminator aperture.

Connect to the 3 pin XLR sockets on the side panel as detailed below using an approved DMX cable.

Connect the IEC power cord into the 24VDC input connector on the back of BL Fibersource, and plug the unit into the surge protected main power electrical socket. Switch on power, the PSU indicator will illuminate, and BL Fibersource is ready for use. If no light is produced consult the troubleshooting section.

Socket pins



Plug viewed from rear (inside)

Pin	Description
1	Screen
2	Data -
3	Data +

NOTE:

It is recommended that a 120ohm terminating resistor be connected across DMX + and DMX- on the last illuminator on the DMX universe or cable run.

Always ‘daisy chain’ a DMX cable or universe.

Never use a T joint on a DMX cable or universe, unless using an approved interface or splitter.

Never connect more than 30 devices to a single DMX universe unless using an approved interface or splitter.

DMX Channels

Each **Petra** occupies 3 DMX channels as detailed in the follow- ing tables.

When selecting DMX addresses 3 channels must be available, for example if the first **Petra** is addressed to 009, the next must be 012, the next must be 015 and so on.

Setting the DMX Address

The DMX address of each illuminator is set manually using the DIP switch accessible on the side panel as shown below. Each switch number 1-9 indicates a binary number which added together make up the DMX address. Alternatively, use an online ‘dip switch calculator’ or app.

Switch Number	1	2	3	4	5	6	7	8	9	10
Function	DMX Address	DMX Address	DMX Address	DMX Address	DMX Address	DMX Address	DMX Address	DMX Address	DMX Address	Function select ON - manual or 0-10V Off - DMX
Value	1	2	4	8	16	32	64	128	256	Data -
Addresses are additive for example, switches 2,5,7 on = address 082										

DMX Operation - White Light Dimming

For DMX dimming operation DIP switch 10 must be OFF and the XLR plug(s) must be plugged into the XLR sockets on the side panel.

The light source can be dimmed on DMX channel 1 as shown in the DMX table overleaf.

DMX Operation - Color/Twinkle Wheel Control - No Sensor

NOTE:

for this configuration of a Twinkle Wheel without sensor, the Twinkle Wheel is solid with NO cut out segment, for full Twinkle Wheel effects.

For DMX wheel control DIP switch 10 must be OFF and the XLR plug(s) must be plugged into the XLR sockets on the side panel.

The **Petra** Twinkle Wheel can be controlled on DMX channel 2 as shown in the following DMX table.

Petra DMX Channels-Table 1
Each **Petra** occupies 3 DMX channels as detailed below.

Channel	Function	Value	Description
1	Dimming	0-255	From off at 0 to brightest at 255
2	Color / Twnkle Wheel	0	Wheel at stop
2	Color / Twnkle Wheel	1-255	Varying rotating speeds from very slow to 7.5rpm at maximum 2
3	LED & fan	0-250	LED and fan on
3	LED & fan	251-255	LED and fan off

DMX Operation - Color Wheel Control with Sensor

For DMX wheel control DIP switch 10 must be OFF and the XLR plug(s) must be plugged into the XLR sockets on the side panel.

The **Petra** Color Wheel can be controlled on DMX channel 2 as shown in the following DMX table.

DMX Operation - LED/Faan Control

For DMX LED and fan control, switch 10 must be OFF and the XLR plug(s) must be plugged into the XLR sockets on the side panel.

The **Petra** LED and Fan can be controlled on DMX channel 3 as shown in the following DMX table.

Petra DMX Channels-Table 2
Each **Petra** occupies 3 DMX channels as detailed below.

Channel	Function	Value	Description
1	Dimming	0-255	From off at 0 to brightest at 255
2	Color wheel	0-10	White snap to color (color 1)
2	Color wheel	11	Yellow - snap to color (color 2)
2	Colorwheel	21	Green - snap to color (color 3)
2	Color wheel	31	Orange - snap to color (color 4)
2	Color wheel	41	Magenta - snap to color (color 5)
2	Color wheel	51-70	Blue - snap to color (color 6)
2	Color wheel	71	Magenta - snap to color (color 5)
2	Color wheel	81	Orange - snap to color (color 4)
2	Color wheel	91	Green - Snap to color (color 3)
2	Color wheel	101	Yellow - Snap to color (color 2)
2	Color wheel	111	White - Snap to color (color 1)
2	Color wheel	128-188	Slow to fast rotation clockwise
2	Color wheel	189-255	Fast to slow rotation counter clockwise
3	Color wheel	0-250	LED & Fan on
3	Color wheel	251-255	LED & Fan off

Color Wheels

The standard Color Wheel has 6 glass segments as follows: White (Clear), Yellow, Green, Orange, Magenta, Blue.

Alternatively, a 6 segment or 4 segment Custom Color Wheel can be fitted providing the following color segment options:

FIRE O08	Orange O18	Golden Amber O59	Apricot O14
Canary Y89	Green G78	Jade G96	Turquoise C47
Italian Blue C45	Brilliant Blue B06	Bright Blue B28	Congo B93
Violet V43	Magenta M56	Pink M63	Clear - Outputs white light

DMX Operation - Twinkle Wheel Control - with Sensor

For DMX wheel control DIP switch 10 must be OFF and the XLR plug(s) must be plugged into the XLR sockets on the side panel.

The BL Fibersource Twinkle Wheel can be controlled on DMX channel 2 as shown in the following DMX table.

NOTE:
for this configuration of a Twinkle Wheel with sensor, the wheel is supplied with a cut out segment. The wheel in motion will give an uninterrupted twinkle by rotating backwards and forwards either side of the segment. When OV is selected the wheel will come to rest at the segment giving unobstructed white light output.

DMX Operation - LED / Fan Control

For DMX LED and fan control, switch 10 must be OFF and the XLR plug(s) must be plugged into the XLR sockets on the side panel.

The **Petra** LED and Fan can be controlled on DMX channel 3 as shown in the following DMX table.

Petra DMX CHANNELS - TABLE 3

Each **Petra** occupies 3 DMX channels as detailed below.

Channel	Function	Value	Desiered Effect
01	Dimming	0-255	From off at 0 to bright at 255
02	Twinkle wheel	0	Wheel at stop at cut out segment giving full white light
03	Twinkle wheel	1-255	Varying backwards and forward rotation from very slow to 7.5rpm at maximum
04	LED and Fan	0-250	LED & Fan on
05	LED and Fan	251-255	LED & Fan off

TROUBLE SHOOTING

Problem	Probable Cause(s)	Remedy
Unit is dead - no light output and PSU power indicator is out	Mains supply off	Check supply and reinstate
	Loose mains plug	Check plugs
	PSU failed	Replace PSU
Unit is dead - no light output but PSU power indicator is lit [1]	Dimming control at minimum	Adjust brightness on dimmer control
	DIP switch no. 10 not switched ON	Switch DIP switch 10 ON
	LED array or drive failure	Replace light source
Color / Twinkle Wheel not truing [2]	Motor control at minimum	Adjust motor control
	DIP switch no. 10 not switched ON	Switch DIP switch 10 ON
	Driver circuit or motor failure	Replace Illuminator
Unit is not responding to DMX control [3]	DIP switch no. 10 is switched ON	Switch DIP switch no. 10 OFF
	DMX address not correctly set	Set correct DMX address
	No DMX signal from controller	Check DMX controller settings
	Wiring fault on DMX cables	Check cables and repair/replace
	Driver circuit failure	Replace illuminator
Not responding [4]	DIP switch no. 10 not switched ON	Switch DIP switch 10 ON
	No 0-10V signal at light source due to cable or controller fault	Check input to light source using a DMM set to correct range & rectify cable/controller fault
Wheel rotates between 0V & 0.25V [4]	Manuual motor control (page 3) not set to stop	Set manual motor control to stop
Responding on wrong channels [4]	RJ45 connector in wrong socket on light source	Plug into correct socket
Not responding [5]	Manual dimming control not set to minimum	Turn manual dimmer control fully counter clockwise
Not responding [6]	If none of above, driver circuit failure	Replace light source
Poor light output on fibre	Light source dimmed manually or by 0-10V or DMX control	Check and increase dimmer settings
	LED driver / array failure	Replace light source

[1] - white light manual dimming version
[2] - decorative manual motor version
[3] - for DMX only
[4] - decorative or dimming 0-10V control
[5] - dimming 0-10V control
[6] - 0-10V control

TECHNICAL SPECIFICATION

Description	Details
Port Aperture Size	1-3/16 " (30mm) / M30
Input Voltage	100-240V AC, 47-63 Hz. 0.58A
PSU Output	24V DC, 3.75A, 90W Maximum
LED Type	LED engine LZP 24 die emitter
LED Power	90W
Main Current	400mA Max.
VA Rating	96VA
Motor Type	Rotalink 25C13/YS0LPSL3E 12V 60:1
Power Cord	Standard IEC
PSU Type	LPS or Class 2
LED Type/Model	White light with optional effect wheel
LED Life	40,000 hours
5500K LED	75CRI, 5700lm
4000K LED	82CRI, 5300lm
3000K LED	83CRI, 4650lm
DMX	User addressable (0-255) dimming, effects wheel control and on/off
Control Functionality	Manual, 0-10V dimming, DMX
Operating Environment	Indoor / Dry
Min. Ambient Temperature	14°F (-10°C)
Max. Ambient Temperature	86°F (30°C)
Material	Aluminium
Colour	Grey
Size (Static White Light Only Models) (L x W x H)	278mm x 152mm x 93mm (10.95" x 6.1" x 3.7")
Size (with Color / Twinkle Wheel) (L x W x H)	278mm x 152mm x 127mm (10.95" x 6.1" x 5.0")

INSTALLATION & MAINTENANCE LOG

For warranty purposes, a dated record od installation, maintenance, troubleshooting and testing steps taken must be kept in the table below.

Date of Installation: _____

No.	Date	Maintenance

Solid State Lighting is sensitive to power fluctuations
Surge protection is highly recommended for all LED lighting products and should be on a designated circuit to protect against premature failure
Lack of surge protection may void your warranty

Specifications subject to change without notice.
Please refer to our website at bllighting.com for current technical data.