

elumen8

Virtuoso 900 Par IP RGBL

User Manual



Order code: ELUM147

WARNING

FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE YOUR INITIAL START-UP!

- Before your initial start-up, please make sure that there is no damage caused during transportation.
- Should there be any damage, consult your dealer and do not use the equipment.
- To maintain the equipment in good working condition and to ensure safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this manual.
- Please note that damages caused by user modifications to this equipment are not subject to warranty.



IMPORTANT:

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorised modification to the equipment.

- Never let the power cable come into contact with other cables. Handle the power cable and all mains voltage connections with particular caution!
- Never remove warning or informative labels from the unit.
- Do not open the equipment and do not modify the unit.
- Do not connect this equipment to a dimmer pack.
- Do not switch the equipment on and off in short intervals, as this will reduce the system's life.
- Do not expose to flammable sources, liquids or gases.
- Always disconnect the power from the mains when equipment is not in use or before cleaning! Only handle the power-cable by the plug. Never pull out the plug by pulling the power-cable.
- Make sure that the available mains supply voltage is between 100~240V AC, 50/60Hz.
- Make sure that the power cable is never crimped or damaged. Check the equipment and the power cable periodically.
- If the equipment is dropped or damaged, disconnect the mains power supply immediately and have a qualified engineer inspect the equipment before operating again.
- If the equipment has been exposed to drastic temperature fluctuation (e.g. after transportation), do not connect power or switch it on immediately. The arising condensation might damage the equipment. Leave the equipment switched off until it has reached room temperature.
- If your product fails to function correctly, stop use immediately. Pack the unit securely (preferably in the original packing material), and return it to your Prolight dealer for service.
- Only use fuses of same type and rating.
- We recommend this fixture should be serviced at least once every 3 months to prevent build-up of dust, dirt and debris that could affect the fixtures operation.
- Repairs, servicing and power connection must only be carried out by a qualified technician. THIS UNIT CONTAINS NO USER SERVICEABLE PARTS.
- This lighting fixture is for professional use only - it is not designed for or suitable for household use. The product must be installed by a qualified technician in accordance with local territory regulations. The safety of the installation is the responsibility of the installer. The fixture presents risks of severe injury or death due to fire hazards, electric shock and falls.
- Warning! Risk Group 2 LED product according to EN 62471. Do not view the light output with optical instruments or any device that may concentrate the beam.
- High power lighting fixtures are capable of producing powerful, concentrated beams of light that can create a fire hazard or a risk of eye injury if the safety precautions are not followed.
- This product is only suitable for temporary outdoor installation.
- WARRANTY: Two years from date of purchase.

OPERATING DETERMINATIONS

If this equipment is operated in any other way, than those described in this manual, the product may suffer damage and the warranty becomes void. Incorrect operation may lead to danger e.g: short-circuit, burns and electric shocks etc. Do not endanger your own safety and the safety of others!

Incorrect installation or use can cause serious damage to people and/or property.

This fixture falls under Protection Class 1, therefore it has to be connected to a mains socket with a protective earthing connection.

Risk group 2, RG-2: CAUTION!

Do not stare at exposed LED in operation as it may damage/be harmful to the eyes. Avoid looking directly into the light source.

CAUTION!

The maximum ambient temperature (T_a) of 40° must not be exceeded.

CAUTION!

If the lens gets damaged ie. cracks or deep scratches so the output is impaired then it must be replaced.

CAUTION!

To avoid damage to internal parts ie. optics, frost filter, motors, belts, wiring or LEDs never expose the front lens to direct sunlight, lighting fixtures or lasers even when the fixture is not in use.

PLEASE READ THE BELOW CAREFULLY BEFORE USING THE FIXTURE IN OUTDOOR/EXTREME ENVIRONMENTS



IP Rating:

The IP (International Protection) rating classifies and rates the degree of protection provided against intrusion of foreign objects such as dust and water into housings and electrical enclosures.

The rating consists of the letters IP followed by two digits (i.e. IP65) where the numbers define the level of protection. The first digit (solids) stands for the level of protection the enclosure provides against solid bodies, whilst the second digit (liquids) stands for the degree of protection of the equipment inside the enclosure against water.

An IP65 rated fixture is one which has been designed and tested to protect from all ingress of dust (6) and water projected by low pressure jets (6.3mm) from any angle (5).



Marine/Coastal Installations:

Although this fixture has an IP rating it is NOT suitable for installation in a coastal/marine environment. Installing this fixture in a coastal/marine environment could cause corrosion and excessive wear to the internal and/or external components. Any damages, faults or performance issues resulting from the installation in one of the environments listed above will void the manufacturers warranty and will NOT be subject to any warranty claims, parts or repairs.



IMPORTANT INFORMATION!

If this fixture is installed in extreme outdoor and/or wet conditions, it **MUST** be powered ON and operated for a minimum of 30 minutes every 1-2 weeks. Excessive usage in extreme outdoor and/or wet conditions without a consistent usage cycle as described above can lead to component damage and/or a reduced fixture lifetime. Any damage to the fixture found to be a direct result of not following the above guidelines will void the manufacturers warranty and will NOT be subject to any warranty claims, parts or repairs.

Please **ENSURE** all connections are sealed with the rubber caps if provided and the correct cables are used and connected correctly to prevent dust and/or water ingress, condensation and/or corrosion.

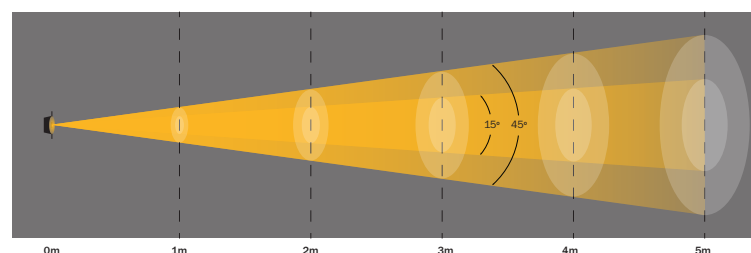
Virtuoso 900 Par IP RGBL

The Elumen8 Virtuoso 900 RGBL is a powerful 200W quad-colour COB LED (RGBL) IP rated par, perfect for both indoor and outdoor applications. A clever twist to this fixture is an adjustable silent, motor-free 15-45 degree beam angle via the variable frosted glass. The fixture offers all the features you would expect from the Virtuoso range, including a high CRI of 85 for accurate colour rendering, a dim to warm function, variable colour temperature presets, selectable refresh rates, RDM, and 3 selectable fan modes. The robust IP65 rated housing features quick-release omega clamp, Seetronic PowerTwist TR1 and 5-Pin DMX inputs and outputs to facilitate a problem-free connection.

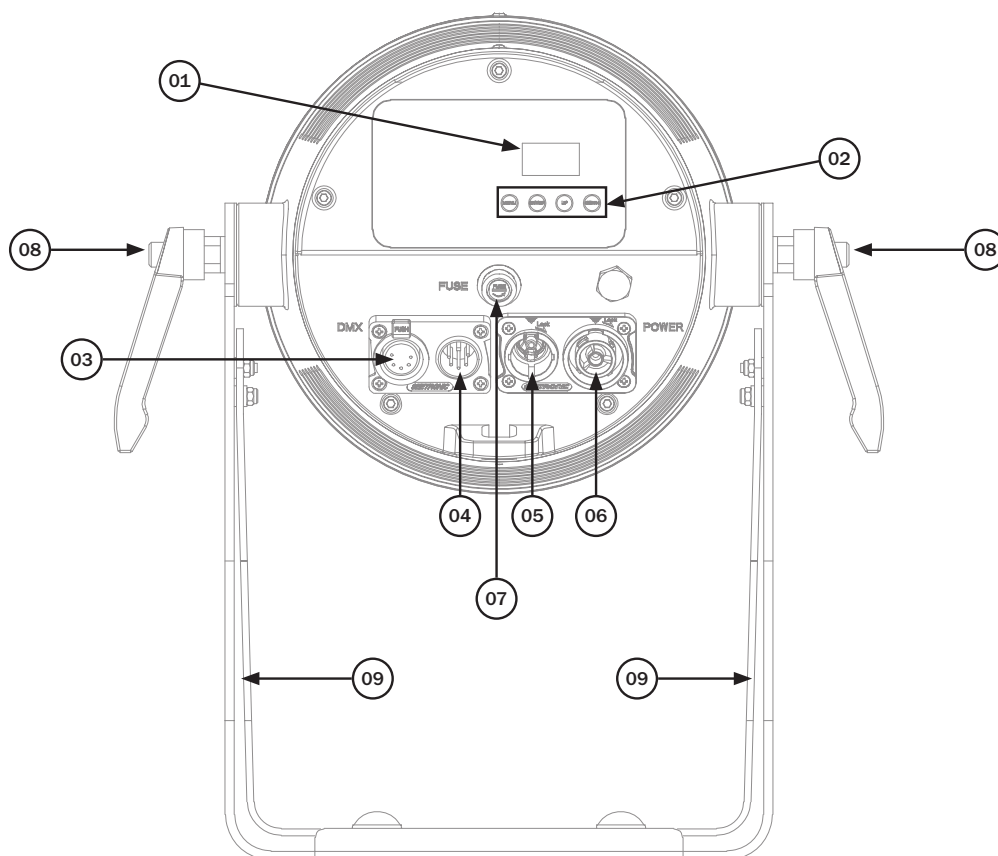
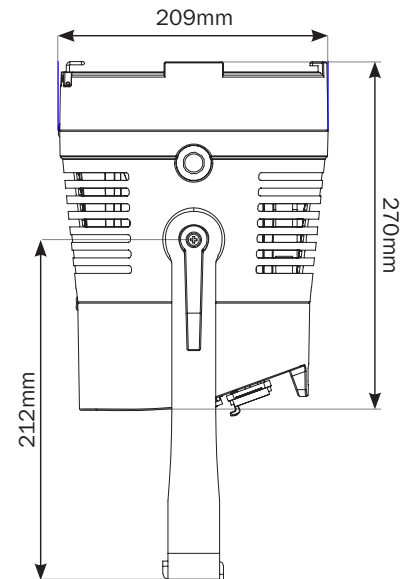
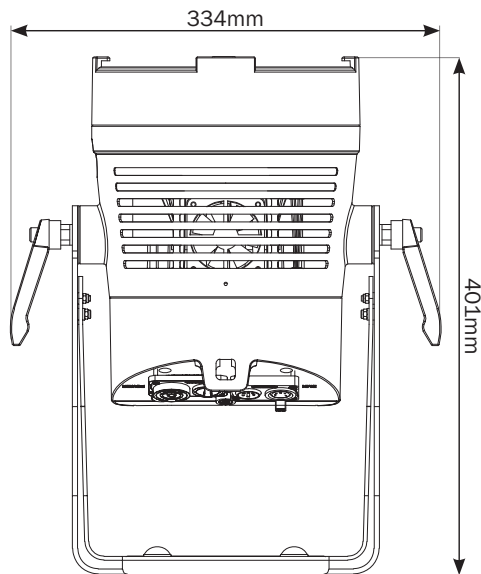
- 2 year warranty
- 1 x 200W quad-colour COB LED (RGBL)
- Beam angle: 15° - 45° via intelligent glass
- 15° - 12,500 Lux @ 2m, 45° - 1,113 Lux @ 2m
- Refresh rate: 1.2kHz–25kHz (5 presets)
- Colour temperature: 1,800K–10,000K
- DMX channels: 4/7/8/11/12/17 selectable
- RDM (Remote Device Management)
- Auto, static colour, preset & primary/secondary modes
- CRI: ≥85
- 0–100% 8 or 16-bit dimming
- Variable strobe
- 4 dimming curves: Linear, square law, inverse square law, S-curve
- Dim to warm function
- Quick release omega clamp included
- 4 button menu with OLED display
- PowerTwist TR1 input/output
- IP rated 5-Pin XLR input/output
- 3 selectable fan modes



15° LUX	12624	3156	1403	789	505	Red
45° LUX	880	220	98	55	35	Red
15° LUX	23260	5815	2584	1454	930	Green
45° LUX	1740	435	193	109	70	Green
15° LUX	4008	1002	445	251	160	Blue
45° LUX	288	72	32	18	12	Blue
15° LUX	37428	9357	4159	2339	1497	Line
45° LUX	2632	658	292	165	105	Line
15° LUX	72080	18020	8009	4505	2883	Fall on
45° LUX	5052	1263	561	316	202	Fall on



Specifications	Virtuoso 900 Par IP RGBL
Power consumption	236W
Fuse	T4A 250V
Power supply	100~240V, 50/60Hz
Dimensions	206 x 294 x 401mm
Weight	5.4kg
Order code	ELUM147



01 - OLED display
02 - Function buttons
03 - 5-Pin DMX input
04 - 5-Pin DMX output

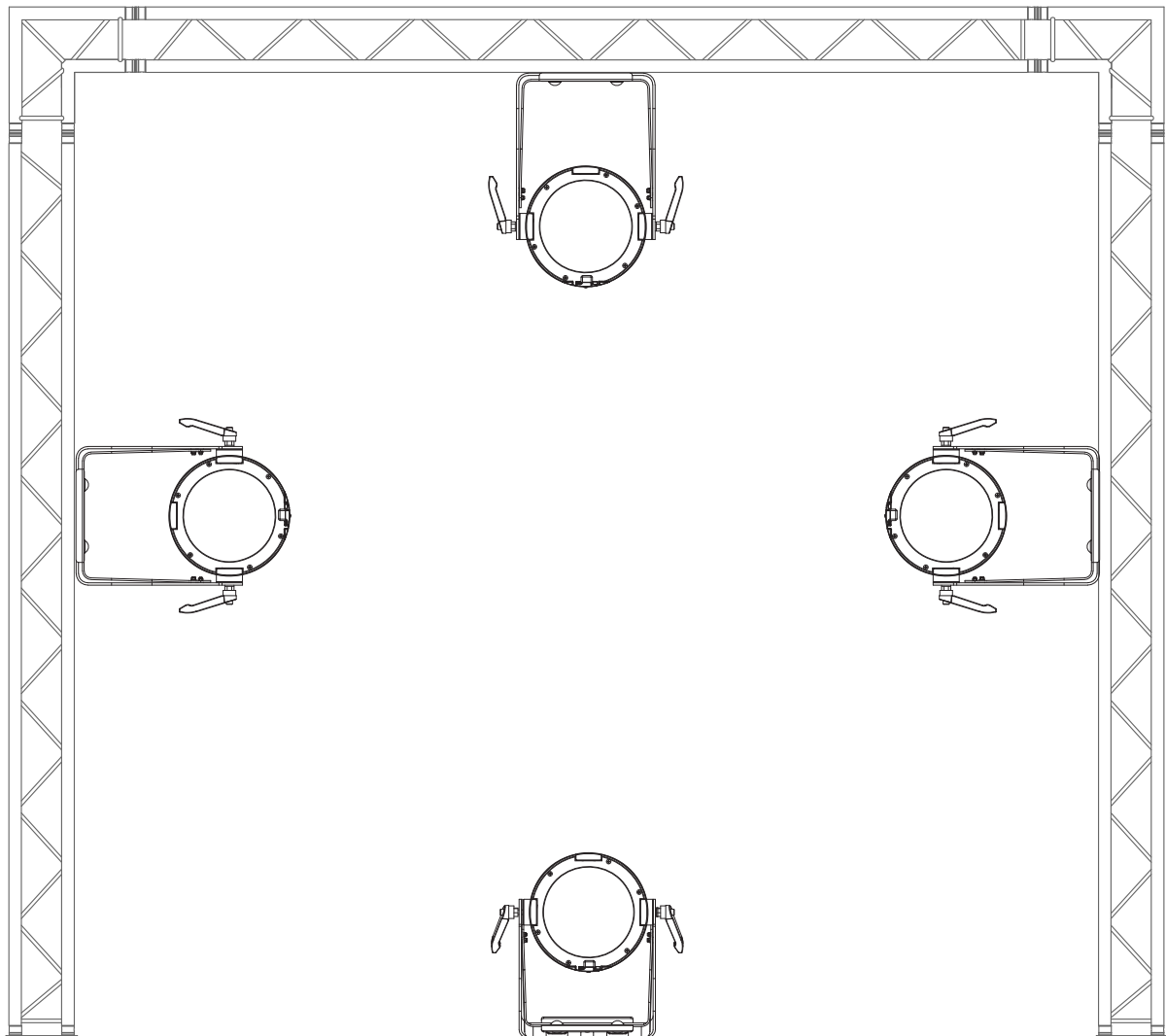
05 - PowerTwist TR1 input
06 - PowerTwist TR1 output
07 - Fuse: T4A 250V
08 - Bracket adjustment knob

09 - Hanging Bracket

In the box: **1 x fixture,**
1 x omega clamp,
& 1 x power cable

Before installing the fixture, the supporting structure (ie. truss) must be able to hold a minimum of 10 times the fixtures weight without any deformation (eg. 15kg - 150kg point load). The fixture must be secured with a secondary safety attachment when being installed (ie. an appropriate safety cable). Never stand directly below the fixture when mounting, removing, and/or servicing.

Overhead installation requires experience and qualifications to calculate working load limits, the material being used at the installation area and periodic safety inspections of the fixture and installation material. If you do not have the relevant experience and/or qualifications please do not attempt the installation yourself. The installation should be checked annually by a qualified person.

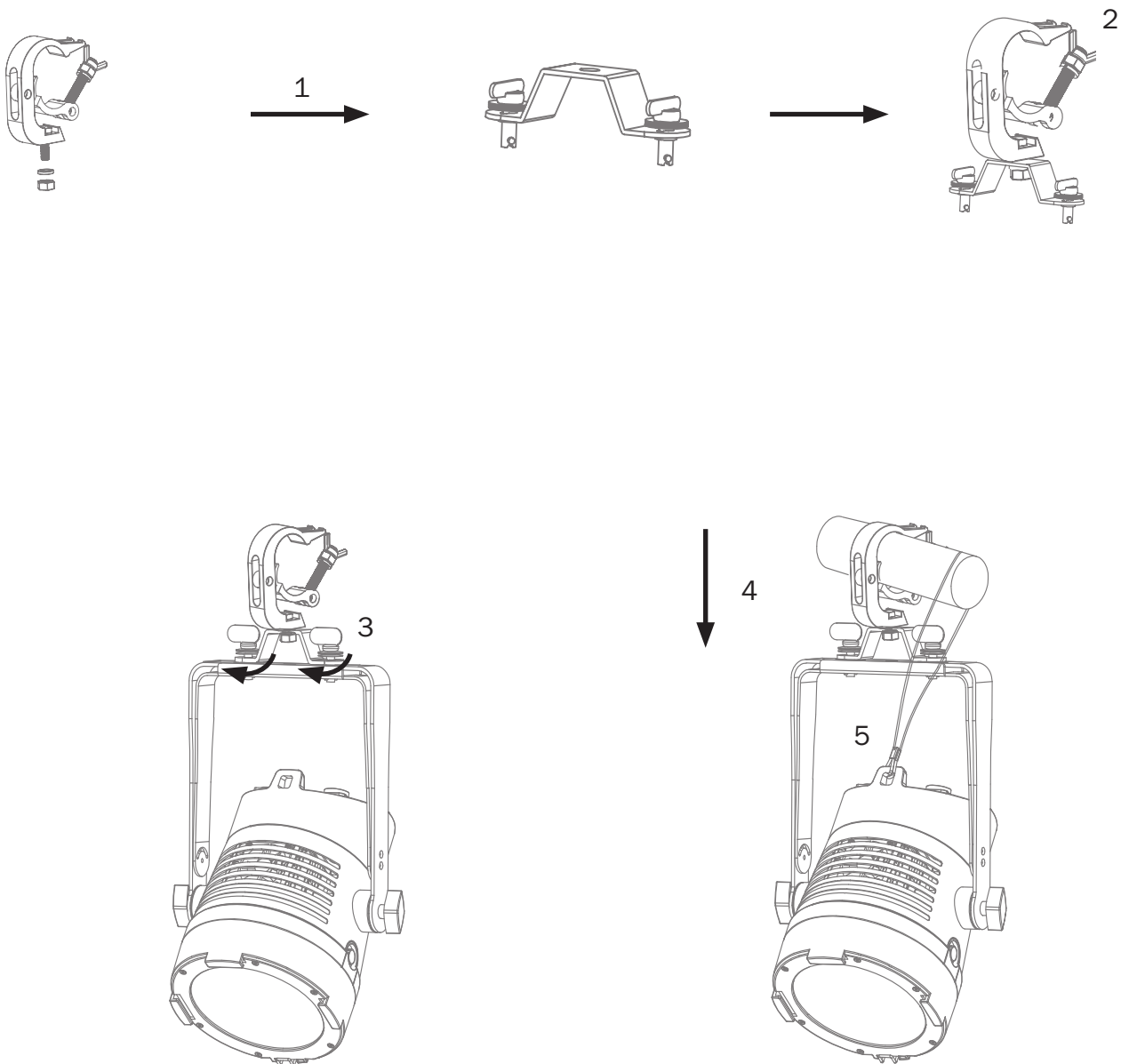


The Elumen8 Virtuoso 900 Par IP RGBL can be operated in a number of mounting positions as shown in the diagram above, hanging upside-down from the ceiling or truss, mounting sideways on truss or stood upright on a flat level surface. Always use a safety wire as an extra safety precaution to prevent damage/injury in the event a clamp fails (see the next page for clamp installation).

Never use the carry handles for secondary attachments.

Installation:

1. Fasten a clamp to the omega clamp with a bolt and lock nut through the hole in the omega clamp.
2. Align and insert the omega clamp quick-lock fasteners with the respective holes on the bottom of the unit.
3. Tighten both locking fasteners clockwise on an omega clamp ensuring it's fully secure.
4. Mount the fixture onto your truss system via the clamps and tighten to ensure secure.
5. Pull the safety cable through the safety cable holes located on the metal base plate on the underside of the fixture and around the truss.



Control Panel Menu:

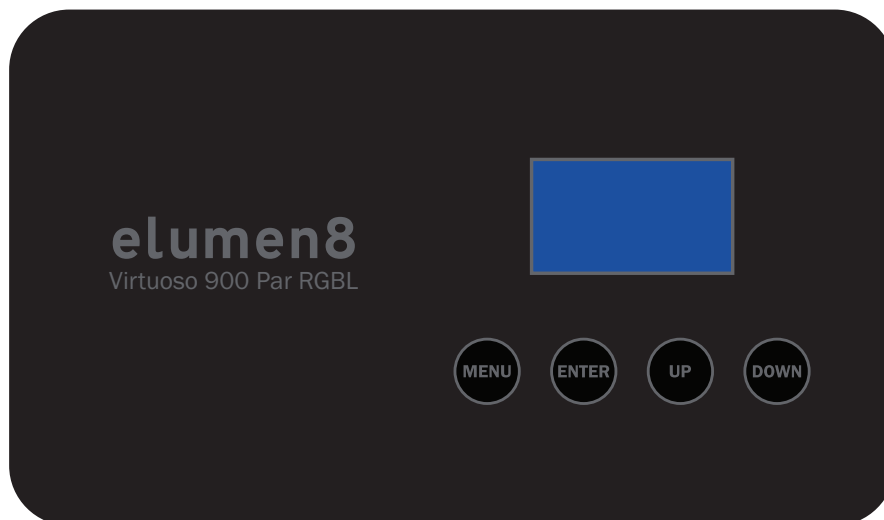
The OLED control panel situated on the back of the fixture allows the user to access the menu system to adjust the fixtures settings.

When the unit has been powered on the display will show “Status”, “Software” and then “Pass code”. All passwords of this product are **UP, DOWN, UP, DOWN, ENTER**.

Pressing the “**MENU**” button once will take the user to the fixtures main menu. Using the “**UP**” and “**DOWN**” buttons you can then navigate between the different options in the main menu. Pressing the “**ENTER**” button on one of these options allows you to access the sub menu where you can use the “**UP**” and “**DOWN**” buttons to select option/value required. Once the option/value has been selected press the “**ENTER**” button once more to confirm the setting.

To exit out of any of the above options, press and hold the “**MENU**” button.

The OLED control panel can be used via the internal battery. To access this press and hold the “**MENU**” button for 5 seconds until the fixtures home screen is displayed. The OLED display will automatically shut off after 20 seconds of inactivity.



Main Menu	Sub Menu (Default Settings in BOLD)	Options/Values (Default Settings in BOLD)	Description
STATIC	RED	000-255	Manual mode
	GREEN	000-255	
	BLUE	000-255	
	LIME	000-255	
	STROBE	000-025	
	FROST	000-255	
	CCT	1800K	Colour temperature presets
		2200K	
		2700K	
		3000K	
		3200K	
		4000K	
		4500K	
		5000K	
		5600K	
		6000K	
		6500K	
		7000K	
		8000K	
		10000K	
	PRESET COLOUR	COLOUR 1	Colour Macros
		COLOUR 2	
		...	
		COLOUR 24	
	CMY	CYAN	
		MAGENTA	
		YELLOW	
ADDRESS	001-512		DMX Address settings
RUN MODE	DMX		Run mode settings
	SLAVE		
PERSONALITY	BASIC		DMX channel mode settings
	SSP		
	TOUR		
	TR16		
	HSIC		
	CMY		
AUTO PROGRAM	AUTO 1	000-255	Auto/custom programs
	AUTO 2	000-255	
	...	000-255	
	AUTO 10	000-255	
	PR 1		
	PR 2		

Main Menu	Sub Menu (Default Settings in BOLD)	Options/Values (Default Settings in BOLD)		Description
EDIT	PROGRAM 1-2	SCENE 01-10	RED	Custom program settings
			GREEN	
			BLUE	
			LIME	
			FROST	
			STROBE	
			CCT	
			PRESET COLOUR	
			TIME	
			FADE	
	UPLOAD	NO YES	SEND	Send custom programs to secondary fixtures
SETTING	RESET	NO YES	RESET	Restore factory settings
	DIMMER SPEED	HALOGEN LED		Dimming speed settings
	DIMMER CURVE	LINEAR		Dimmer curves settings
		SQUARE LAW		
		INV. SQUARE LAW		
		S-CURVE		
	DIM TO WARM	ON OFF		Dim to warm settings
	DMX ERROR	SAVE BLACK		DMX fail settings
	PWM_RATE	1200HZ 2400HZ 4000HZ 6000HZ 25000HZ		Refresh rate settings
	PERFORM	LIVE POWER STUDIO		Fan speed settings
	DISP KEY	ON OFF		Display lock settings (Pass code is : <UP>,<DOWN>,<UP>,<DOWN>,<ENTER>).
	DISP TIME	ON 10S 30S 2MIN		Display backlight settings

Main Menu	Sub Menu	Options/Values (Default Settings in BOLD)		Description
SETTING	COLOUR CALI	OFF		Colour calibration Setting
		USER CALIBRATION	RED (0-255)	
			GREEN (0-255)	
			BLUE (0-255)	
			LIME (0-255)	
		FACTORY CALIBRATION		
INFO	FIXTURE HOURS			Fixture hours
	VERSION			Software version
	RDM	UID	0x9A5xxxxxxxx	Fixture UID
		LABEL	ELUMEN8 VIRTUOSO 900 PAR RGBL	Fixture model

*All pass code of this product are: **<UP>**, **<DOWN>**, **<UP>**, **<DOWN>**, **<ENTER>**.

DMX channel modes:

Basic 4CH	SSP 7CH	TOUR 12CH	TR16 17CH	Value	Function
CH1	CH1	CH1	CH1	000-255	Master dimmer (0-100%)
-	-	-	CH2	000-255	Dimmer fine
-	CH2	CH2	CH3	000-255	Red dimmer (0-100%)
-	-	-	CH4	000-255	Red fine
-	CH3	CH3	CH5	000-255	Green dimmer (0-100%)
-	-	-	CH6	000-255	Green fine
-	CH4	CH4	CH7	000-255	Blue dimmer (0-100%)
-	-	-	CH8	000-255	Blue fine
-	CH5	CH5	CH9	000-255	Lime dimmer (0-100%)
-	-	-	CH10	000-255	Lime fine
CH2	-	CH6	CH11	Colour macros (see page 16)	
				000-255	Preset colour
CH3	-	CH7	CH12	Colour temperature presets	
				000-009	No function
				010-024	1800K
				025-039	2200K
				040-054	2700K
				055-069	3000K
				070-084	3200K
				085-099	4000K
				100-114	4500K
				115-129	5000K
				130-144	5600K
				145-159	6000K
				160-174	6500K
				175-189	7000K
				190-204	8000K
				205-255	10000K
-	-	CH8	CH13	Auto/custom programs	
				000-040	No function
				041-050	AUTO1
				051-060	AUTO2
				061-070	AUTO3
				071-080	AUTO4
				081-090	AUTO5
				091-100	AUTO6
				101-110	AUTO7
				111-120	AUTO8

DMX channel modes:

Basic 4CH	SSP 7CH	TOUR 12CH	TR16 17CH	Value	Function	
-	-	CH8	CH13	121-130	AUT09	
				131-140	AUTO10	
				141-150	PR1	
				151-160	PR2	
				161-255	No function	
-	-	CH9	CH14	000-255	Auto speed adjustment (slow-fast)	
-	CH6	CH10	CH15	Strobe		
				000-009	No function	
				010-099	Strobe (slow-fast)	
				100-109	No function	
				110-179	Lighting strobe (slow-fast)	
				180-189	No function	
				190-255	Random strobe (slow-fast)	
CH4	CH7	CH11	CH16	000-255	Frost (0-100%)	
-	-	CH12	CH17	Control (execute after 3 seconds)		
				000-060	No function	
				061-070	Studio	Fan modes
				071-080	Power	
				081-090	Live	
				091-095	Off	Dimmer speed
				096-100	Halogen	
				101-105	On	Dim to warm
				106-110	Off	
				111-120	Linear	Dimming curves
				121-130	Square law	
				131-140	Inv. Square law	
				141-150	S-curve	
				151-160	1200Hz	Refresh rate
				161-170	2400Hz	
				171-180	4000Hz	
				181-190	6000Hz	
				191-200	25000Hz	
				201-210	Fixture reset	
				211-255	No function	

HSIC 8 channel modes:

Channel	Value	Function
CH1	000-255	Intensity
CH2	000-255	Hue
CH3	000-255	Hue fine
CH4	000-255	Saturation
CH5	Colour temperature presets	
	000-009	No function
	010-024	1800K
	025-039	2200K
	040-054	2700K
	055-069	3000K
	070-084	3200K
	085-099	4000K
	100-114	4500K
	115-129	5000K
	130-144	5600K
	145-159	6000K
	160-174	6500K
	175-189	7000K
	190-204	8000K
	205-255	10000K
CH6	Strobe	
	000-009	No function
	010-099	Strobe (slow-fast)
	100-109	No function
	110-179	Lighting strobe (slow-fast)
	180-189	No function
	190-255	Random strobe (slow-fast)
CH7	000-255	Frost (0-100%)
CH8	Control (execute after 3 seconds)	
	000-060	No function
	061-070	Studio
	071-080	Power
	081-090	Live
	091-095	Off
	096-100	Halogen
	101-105	On
	106-110	Off
	111-120	Linear
	121-130	Square law
	131-140	Inv. Square law
	141-150	S-curve

Channel	Value	Function
CH8	151-160	1200Hz
	161-170	2400Hz
	171-180	4000Hz
	181-190	6000Hz
	191-200	25000Hz
	201-210	Fixture reset
	211-255	No function

CMY 11 channel modes:

Channel	Value	Function
CH1	000-255	Master Dimmer (0-100%)
CH2	000-255	Cyan
CH3	000-255	Magenta
CH4	000-255	Yellow
CH5	Preset colour (see page 16)	
	000-255	Preset colour
CH6	Colour temperature presets	
	000-009	No function
	010-024	1800K
	025-039	2200K
	040-054	2700K
	055-069	3000K
	070-084	3200K
	085-099	4000K
	100-114	4500K
	115-129	5000K
	130-144	5600K
	145-159	6000K
	160-174	6500K
	175-189	7000K
	190-204	8000K
	205-255	10000K
CH7	Auto/custom programs	
	000-040	No function
	041-050	AUTO1
	051-060	AUTO2
	061-070	AUTO3
	071-080	AUTO4
	081-090	AUTO5
	091-100	AUTO6
	101-110	AUTO7
	111-120	AUTO8
	121-130	AUTO9
	131-140	AUTO10
	141-150	PR1
	151-160	PR2
	161-255	No function
CH8	000-255	Auto speed adjustment (slow-fast)

Channel	Value	Function	
CH9	Strobe		
	000-009	No function	
	010-099	Strobe (slow-fast)	
	100-109	No function	
	110-179	Lighting strobe (slow-fast)	
	180-189	No function	
	190-255	Random strobe (slow-fast)	
CH10	000-255	Frost (0-100%)	
CH11	Control (execute after 3 seconds)		
	000-060	No function	
	061-070	Studio	Fan modes
	071-080	Power	
	081-090	Live	
	091-095	Off	Dimmer speed
	096-100	Halogen	
	101-105	On	Dim to warm
	106-110	Off	
	111-120	Linear	Dimming curves
	121-130	Square law	
	131-140	Inv. Square law	
	141-150	S-curve	
	151-160	1200Hz	Refresh rate
	161-170	2400Hz	
	171-180	4000Hz	
	181-190	6000Hz	
	191-200	25000Hz	
	201-210	Fixture reset	
	211-255	No function	

Preset colour:

Colour	Value	Colour names	
	000-015	No function	
Colour 1	016-020	R40	Light Salmon
Colour 2	021-025	L24	Scarlet
Colour 3	026-030	L164	Flame Red
	031-040	No function	
Colour 4	041-045	L08	Dark Salmon
Colour 5	046-050	L25	Sunset Red
	051-055	No function	
Colour 6	056-060	L237	CID (To Tungsten)
Colour 7	061-065	R321	Soft Golden Amber
Colour 8	066-070	L652	Urban Sodium
	071-075	No function	
Colour 9	076-080	L765	LEE Yellow
Colour 10	081-085	L513	Ice and a Slice
	086-105	No function	
Colour 11	106-110	L90	Dark Yellow Green
	111-115	No function	
Colour 12	116-120	R92	Turquoise
	121-135	No function	
Colour 13	136-140	L728	Steel Green
Colour 14	141-145	L117	Steel Blue
Colour 15	146-150	L354	Special Steel Blue
	151-155	No function	
Colour 16	156-160	L501	New Colour Blue
Colour 17	161-165	L174	Dark Steel Blue
	166-180	No function	
Colour 18	181-185	L142	Pale Violet
	186-195	No function	
Colour 19	196-200	L794	Pretty'n Pink
Colour 20	201-205	L328	Follies Pink
	206-215	No function	
Colour 21	216-220	L127	Smokey Pink
Colour 22	221-225	L192	Flesh Pink
	226-235	No function	
Colour 23	236-240	L157	Pink
Colour 24	241-245	R332	Cherry Rose
	246-255	No function	

Setting the DMX address:

The DMX mode enables the use of a universal DMX controller. Each fixture requires a “start address” from 1- 512. A fixture requiring one or more channels for control begins to read the data on the channel indicated by the start address. For example, a fixture that occupies or uses 7 channels of DMX and was addressed to start on DMX channel 100, would read data from channels: 100, 101, 102, 103, 104, 105 and 106. Choose a start address so that the channels used do not overlap. E.g. the next unit in the chain starts at 107.

DMX 512:

DMX (Digital Multiplex) is a universal protocol used as a form of communication between intelligent fixtures and controllers. A DMX controller sends DMX data instructions from the controller to the fixture. DMX data is sent as serial data that travels from fixture to fixture via the DATA “IN” and DATA “OUT” XLR terminals located on all DMX fixtures (most controllers only have a data “out” terminal).

DMX linking:

DMX is a language allowing all makes and models of different manufactures to be linked together and operate from a single controller, as long as all fixtures and the controller are DMX compliant. To ensure proper DMX data transmission, when using several DMX fixtures try to use the shortest cable path possible. The order in which fixtures are connected in a DMX line does not influence the DMX addressing. For example; a fixture assigned to a DMX address of 1 may be placed anywhere in a DMX line, at the beginning, at the end, or anywhere in the middle. When a fixture is assigned a DMX address of 1, the DMX controller knows to send DATA assigned to address 1 to that unit, no matter where it is located in the DMX chain.

DATA cable (DMX cable) requirements (for DMX operation):

This fixture can be controlled via DMX-512 protocol. The DMX address is set on the back of the unit. Your unit requires a standard 5-pin XLR connector for data input/output, see images below.



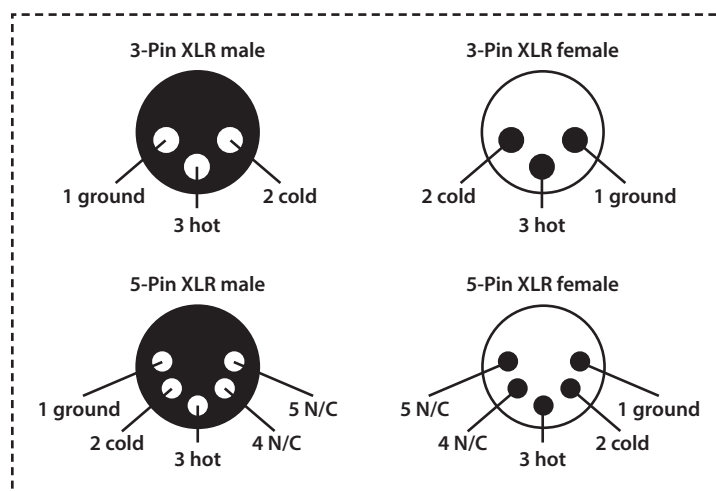
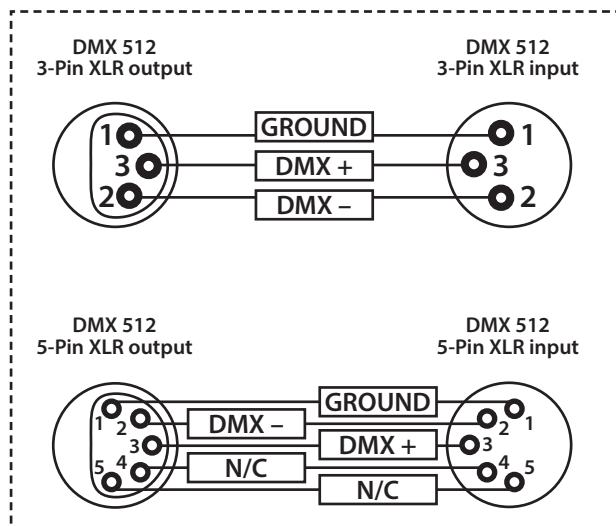
Further DMX cables can be purchased from all good sound and lighting suppliers or Prolight Concepts dealers.
Please quote: 5-Pin: **CABL185 – 2m** **CABL187 – 5m** **CABL188 – 10m**

Also remember that DMX cable must be daisy chained and cannot be split.

Notice:

Be sure to follow the diagrams below when making your own cables. Do not connect the cables shield conductor to the ground lug or allow the shield conductor to come in contact with the XLRs outer casing. Grounding the shield could cause a short circuit and erratic behaviour.

Pin Configuration	
3-Pin	5-Pin
	Pin 1 - Ground
	Pin 2 - Negative
	Pin 3 - Positive
-	Pin 4 - N/C
-	Pin 5 - N/C



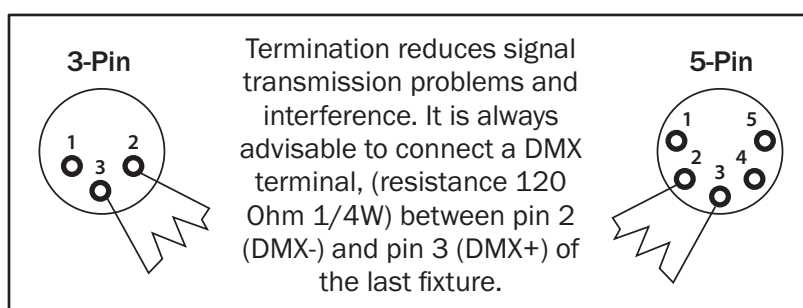
Line termination:

When longer runs of cable are used, you may need to use a terminator on the last unit to avoid erratic behaviour.

Using a cable terminator will decrease the possibilities of erratic behaviour.

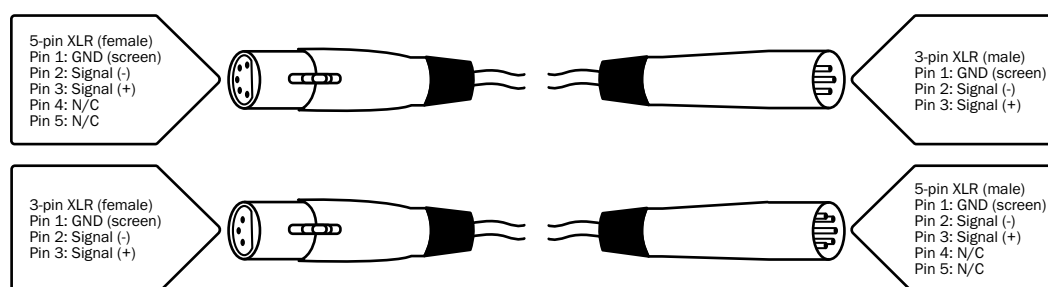
(3-pin - Order ref: CABL90,

5-pin - Order ref: CABL89)



5-pin XLR DMX connectors:

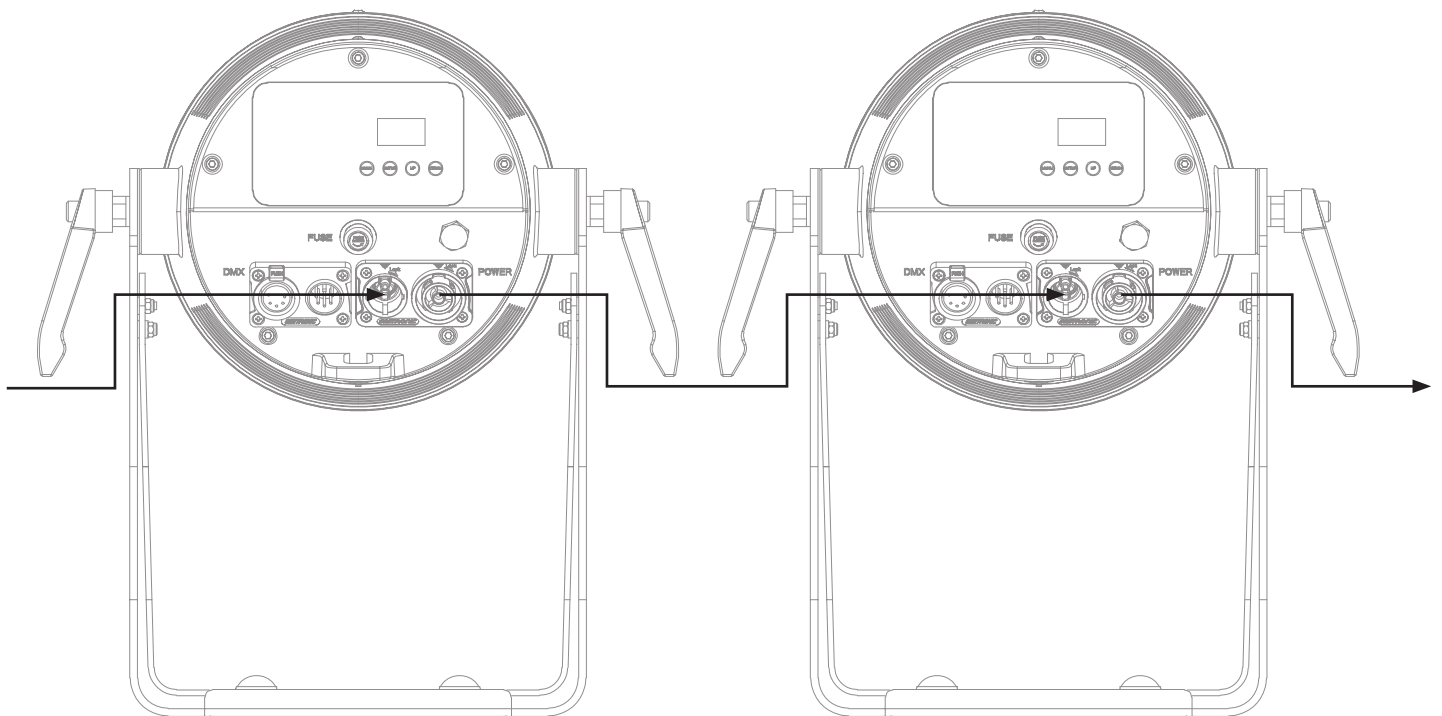
Some manufactures use 5-pin XLR connectors for data transmission in place of 3-pin. 5-pin XLR fixtures may be implemented in a 3-pin XLR DMX line. When inserting standard 5-pin XLR connectors in to a 3-pin line a cable adaptor must be used. The diagram below details the correct cable conversion.



Power linking:

This fixture provides power linking via the power output on the rear allowing multiple units to be connected together. The maximum number of fixtures that can be connected via a 13A mains input is 11 fixtures @ 240V or 5 fixtures @ 120V (including the first fixture). After the maximum number of fixtures are connected a new power run will need to be started.

Please note: Caution should be used when power linking other fixtures to the Virtuoso 900 Par IP RGBL as the power consumption of other fixtures will vary. Fixtures fitted with lamps often require 2/3 times more current on startup, these may require their own power source.





***Correct Disposal of this Product
(Waste Electrical & Electronic Equipment)***

**(Applicable in the European Union and other European countries
with separate collection systems)**

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

