

PRODUCT USER GUIDE

Nebula White Light LED Illuminator



Rev: C7



PLEASE READ THIS USER GUIDE BEFORE INSTALLING, OPERATING
OR PERFORMING MAINTENANCE ON THE ILLUMINATOR UNIT



INTRODUCTION

Thank you for purchasing this UFO illuminator.

To ensure that the illuminator is set up optimally and gives a long service life, please read this user guide before installing, operating or performing any maintenance on the unit.

Please keep this user guide for future reference.

This User Guide is laid out in three sections:

- **INSTALLATION** – details how to connect your luminaire.
 - **OPERATION** – details how to programme and set up your luminaire.
 - **MAINTENANCE** – Maintenance log, Troubleshooting Guide, Technical Specification
-
- This product must be installed in accordance with the applicable installation code, by a person familiar with the construction and operation of the product, and the hazards involved.
 - These illuminators are not mains dimmable.
 - The multiport LED array and heatsink in this illuminator can be replaced when it reaches end of life. Contact UFO for details
 - **Type Y Attachment:** If the external flexible cable or cord of this luminaire or associated PSU/driver is damaged, it shall be exclusively replaced by the manufacturer or his service agent or a similar qualified person to avoid a hazard.
 - **Location:** Do not locate this illuminator closer than 200mm from any flammable surface.
 - **Clearance / Ventilation:** It is imperative that a gap of 200mm is left around the unit. This is to allow air to circulate and prevent overheating. The location must have free ventilation and must not have an ambient temperature higher than that specified for the unit.
 - **Mounting:** This luminaire comes with an integral mounting feet for securing the unit to a vertical or horizontal surface.
 - **Warning:** Always connect the fibre ferrules to the 60 LED array before power is applied to the illuminator. Never look directly at the luminaire through the fibre multi-port of the illuminator.
 - **Warning:** The luminaire should be positioned so that staring into the luminaire at a distance closer than 2.7 metres is not expected.

UFO will accept no liability for damage, or associated claims, caused by not following the installation and safety instructions contained within this user guide.

MODEL OVERVIEW

The NEBULA White Light LED illuminator (UFO NEB-WL) incorporates a multiport array of sixty, white light LEDs to provide optimum display flexibility and illumination within the following optical range.

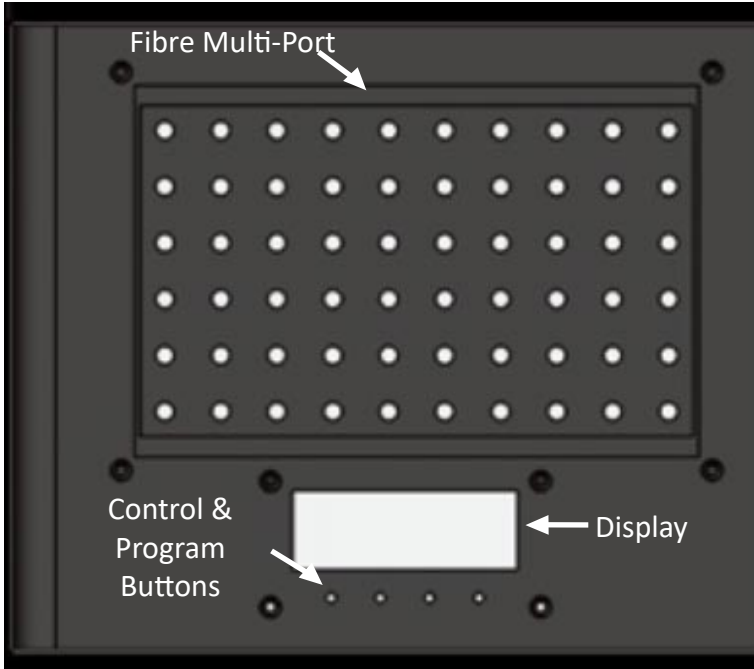
Model No.	Individual LED Power	Colour Temperature	Individual LED Lumen Output	CRI
UFO NEB-WL27	96mW	2700K	9.6lm	70 (min)
UFO NEB-WL30	96mW	3000K	9.6lm	70 (min)
UFO NEB-WL40	96mW	4000K	9.6lm	70 (min)
UFO NEB-WL57	96mW	5700K	9.6lm	70 (min)
UFO NEB-WL65	96mW	6500K	9.6lm	70 (min)

The Nebula is a 30W WL LED illuminator with all the control functionality fitted as standard. The following control functionality and configurations are available via rear panel connections, push buttons and LCD display.

CONTROL FUNCTIONALITY AND CONFIGURATION OVERVIEW

1. Manual control using top panel push button controls with status display.
2. DMX dimming – 60 channels (dimming, individual control).
3. 8 standalone showcase programmes.
4. Master slave functionality – one Nebula acting as master controlling slave Nebula luminaires via DMX links.

CONNECTIONS AND CONTROLS OVERVIEW

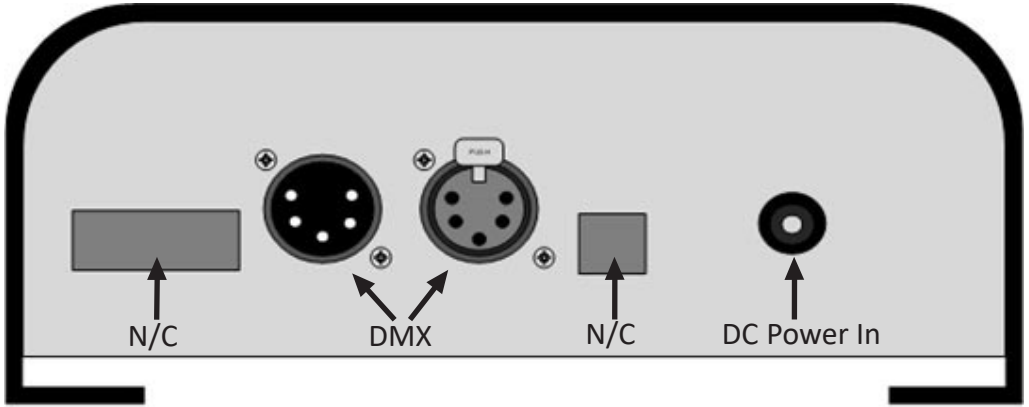


LED PORT NUMBERING

The 60 LEDs in the fibre multi-port array as displayed above are numbered as detailed below. These numbers relate to DMX channels for control purposes.

- LD06 ○ LD12 ○ LD18 ○ LD24 ○ LD30 ○ LD36 ○ LD42 ○ LD48 ○ LD54 ○ LD60 ○
- LD05 ○ LD11 ○ LD17 ○ LD23 ○ LD29 ○ LD35 ○ LD41 ○ LD47 ○ LD53 ○ LD59 ○
- LD04 ○ LD10 ○ LD16 ○ LD22 ○ LD28 ○ LD34 ○ LD40 ○ LD46 ○ LD52 ○ LD58 ○
- LD03 ○ LD09 ○ LD15 ○ LD21 ○ LD27 ○ LD33 ○ LD39 ○ LD45 ○ LD51 ○ LD57 ○
- LD02 ○ LD08 ○ LD14 ○ LD20 ○ LD26 ○ LD32 ○ LD38 ○ LD44 ○ LD50 ○ LD56 ○
- LD01 ○ LD07 ○ LD13 ○ LD19 ○ LD25 ○ LD31 ○ LD37 ○ LD43 ○ LD49 ○ LD55 ○

CONNECTION PANEL OVERVIEW



CONNECTION - FOR MANUAL OPERATION

There are two connections required – the fibre multi-port and the DC input jack plug.

The fibre multi-port should be connected first before the DC supply. Connect all the individual fibre optic ferrule connectors securely into the correct aperture in the fibre optic multi-port on the top of the unit. Ensure each fibre optic connector is fully inserted into the correct numbered aperture as detailed on the preceding page.

Never run the luminaire with the fibre optic ferrule connectors out of the multi-port apertures.

Plug the IEC connector into the IEC socket of the DC power supply unit and then plug the mains connector into a local mains supply.

Switch on power and the illuminator is ready for use.

If, after using the control and program buttons and display as detailed in the operation section of this manual, no light is produced consult the troubleshooting section in this manual.

CONNECTION - FOR DMX CONTROL OPERATION

There are three connections required – the fiber multi-port, the DMX cables and the mains supply cable.

The fiber multi-port should be connected first before the mains supply. Connect all the individual fiber optic ferrule connectors securely into the correct aperture in the fiber optic multi-port on the top of the unit. Ensure each fiber optic connector is fully inserted into the correct numbered aperture as detailed on page 4.

Never run the luminaire with the fiber optic ferrule connectors out of the multi-port apertures.

Wire up using the DMX cable from the DMX control system. Solder the cables to the 5 pin XLR male and female plug and socket using pin outs as detailed below and plug in to the connectors on the rear of the luminaire. The image below shows the pin orientation of the connectors actually fitted to the illuminator.

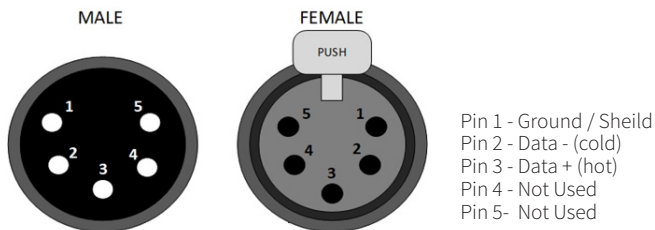
Plug the IEC connector into the IEC socket of the DC power supply unit and then plug the mains connector into a local mains supply.

Switch on power and the illuminator is ready for use.

If after using the control and program buttons and display as detailed in the operation section of this manual, no light is produced consult the TROUBLESHOOTING section in this manual.

DMX NOTES:

- Always use an approved DMX cable
- 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 two Nebula units to a single DMX universe unless configured for master/slave operation (master/slave - Nebula units using the same address).
- Always terminate the last device on a DMX universe by connecting a 120 ohm resistor across DMX+ and DMX- across the last output connector
- This is a 60 channel DMX device always ensure sufficient channels are available after the first address



CONNECTION - FOR MASTER/SLAVE OPERATION

There are three connections required – the fiber multi-port, the DMX cables and the mains supply cable.

The fiber multi-port should be connected first before the mains supply. Connect all the individual fiber optic ferrule connectors securely into the correct aperture in the fiber optic multi-port on the top of the unit. Ensure each fiber optic connector is fully inserted into the correct numbered aperture as detailed on page 4.

Never run the luminaire with the fiber optic ferrule connectors out of the multi-port apertures.

Wire up using the DMX cable from the DMX control system to the master illuminator and then the cable from the master to the first slave unit, continuing until all slaves are connected. Solder the cables to the 5 pin XLR male and female plug and socket using pin outs as detailed below and plug in to the connectors on the rear of the luminaire. The image below shows the pin orientation of the connectors actually fitted to the illuminator.

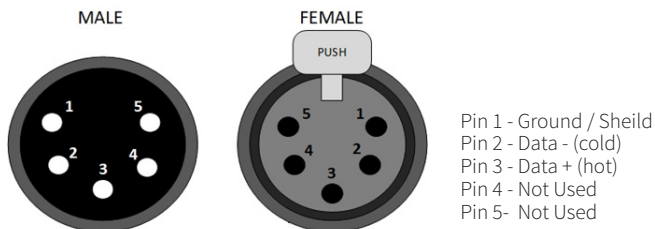
Plug the IEC connector into the IEC socket of the DC power supply unit and then plug the mains connector into a local mains supply.

Switch on power and the illuminator is ready for use.

If after using the control and program buttons and display as detailed in the operation section of this manual, no light is produced consult the TROUBLESHOOTING section in this manual.

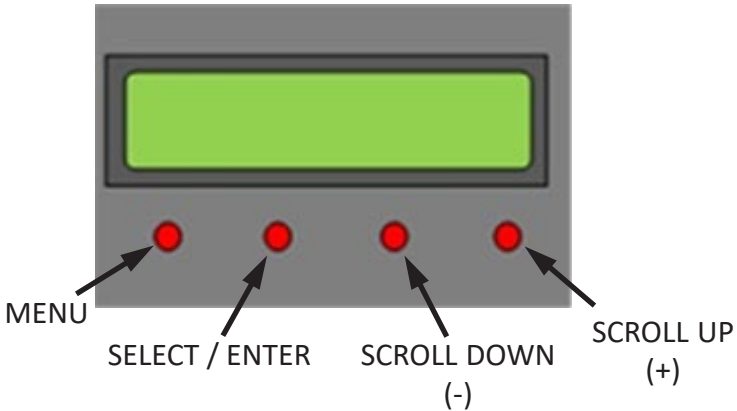
DMX NOTES:

- Always use an approved DMX cable
- 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 Nebula Master/Slave units on a single DMX universe.
- Always terminate the last device on a DMX universe by connecting a 120 ohm resistor across DMX+ and DMX- across the last output connector
- This is a 60 channel DMX device always ensure sufficient channels are available after the first address



USER CONTROLS

Operation of the Nebula RGB model is carried out via the top panel display and associated push button controls as detailed below:



On power up the display will momentarily display “Universal Fibre Optics” then the current model version letter, then the firmware version, before going into initialisation whilst it checks the unit before displaying the current status (example below).



Displayed momentarily



Displayed momentarily



Display indicating status on power up (example shows the factory default setting after a Reset)

Once the luminaire is powered up, user controlled manual functions and all programming features are available via the four top panel pushbuttons as detailed in the figure above and the following table.

IMPORTANT NOTE: Once programmed the luminaire will always revert to the programmed settings when power is recycled. However, if manual reset is selected, via Default Setting YES/NO option, the luminaire will revert to factory default settings as detailed below:

PROGRAMMABLE FUNCTION TABLE

MAIN MENU	SUB MENU	DESCRIPTION	INSTRUCTIONS
Control Mode MASTER	-	Allows manual control of the illuminator	Press Menu button to locate press Enter button to select. Press Menu button to scroll through sub menus
Control Mode MASTER	Master Program: 1 > Strips X	Showcase program number 1	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Master Program: 2 > Strips Y	Showcase program number 2	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Master Program: 3 > Strips Fd	Showcase program number 3	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Master Program: 4 > Random 1	Showcase program number 4	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Master Program: 5 > Random 2	Showcase program number 5	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Master Program: 6 > Random 3	Showcase program number 6	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Master Program: 7 > Worms	Showcase program number 7	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Master Program: 8 > Square	Showcase program number 8	Press Scroll up/Scroll down buttons to locate press Enter button to select.
Control Mode MASTER	Set Step Speed: 1 Seconds	Controls the time a program stays on the current step	Press Scroll up/Scroll down buttons to select the speed (between 1 and 60 seconds) press Enter button to select
Control Mode MASTER	Master Dimmer: 100%	Controls the light output	Press Scroll up/Scroll down buttons to select the light output required (between 1% and 100%) press Enter button to select
Control Mode MASTER	Default Settings: NO	Resets the illuminator to default factory settings	Press Scroll up/Scroll down buttons to select either YES or NO press Enter button to select
Control Mode DMX	-	Allows DMX control of the illuminator	Press Menu button to locate press Enter button to select. Press Menu button to scroll through sub menus
Control Mode DMX	Set DMX Address: 1	Sets the DMX address	Press Scroll up/Scroll down buttons to select the address (between 1 and 512) press Enter button to select
Control Mode DMX	DMX Channel Mode: 3 Channel	Allows DMX control of a single LED channel for each DMX address when set to 60, or all 60 channels for a single DMX address when set to 1	Press Scroll up/Scroll down buttons to select the number of channels (either 1 or 60) press Enter button to select
Control Mode DMX	Master Dimmer: 100%	Controls the light output	Press Scroll up/Scroll down buttons to select the light output required (between 1% and 100%) press Enter button to select
Control Mode DMX	Default Settings: NO	Resets the illuminator to default factory settings	Press Scroll up/Scroll down buttons to select either YES or NO press Enter button to select

MANUAL OPERATION

All Nebula models in the range can be manually controlled via the MENU, SELECT/ENTER, SCROLL UP and SCROLL DOWN buttons, in a variety of ways as detailed in the Programmable Function Table in the preceding section and in the following sections.

NOTES:

- For all manual operation modes the luminaire must be programmed to master
- Repeated pressing of MENU button accesses sub menus
- Refer to Programmable Function Table for Menu and Sub Menu availability for each model

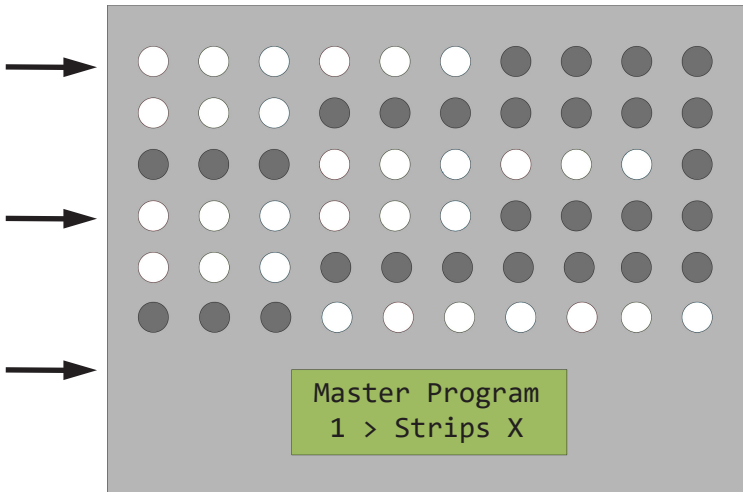
MENU > **Control Mode
Master** > **Scroll UP/DOWN
to access, ENTER to accept**

SHOWCASE PROGRAMS:

With the luminaire in Master Control Mode, one of eight programs as detailed below can be selected.

PROGRAM 1 - STRIPS X

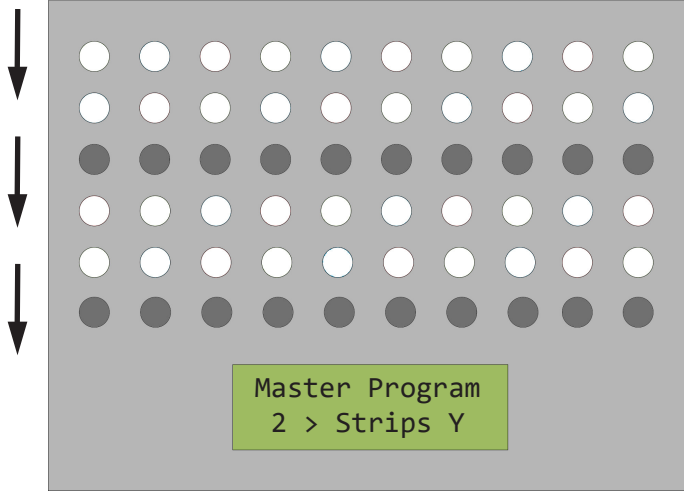
MENU > **Control Mode
Master** > MENU > **Master Program
1 > Strips X** > **Scroll UP/DOWN
to access, ENTER to accept**



OPERATION

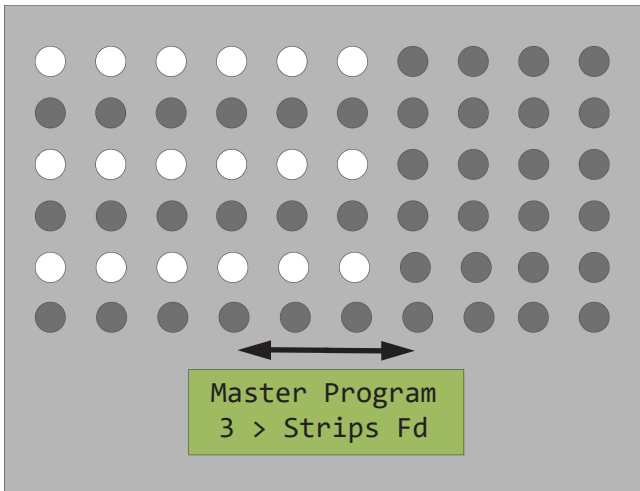
PROGRAM 2 - STRIPS Y

MENU > **Control Mode
Master** > MENU > **Master Program
2 > Strips Y** > Scroll UP/DOWN
to access, ENTER to accept



PROGRAM 3 - STRIPS Fd

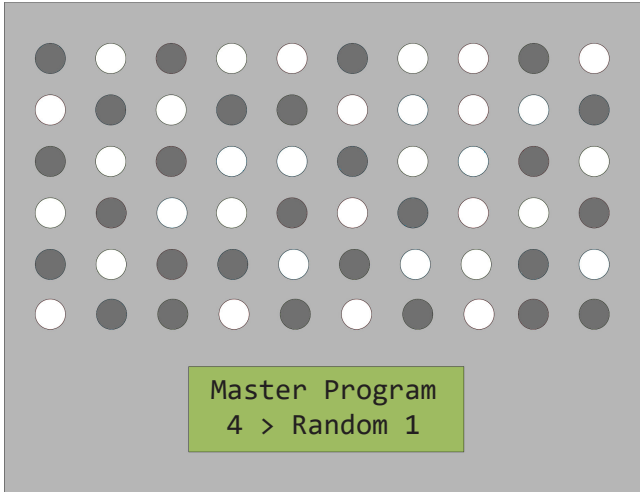
MENU > **Control Mode
Master** > MENU > **Master Program
3 > Strips Fd** > Scroll UP/DOWN
to access, ENTER to accept



OPERATION

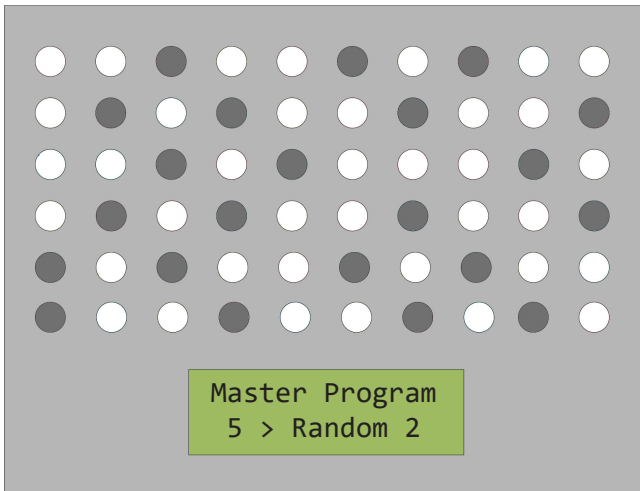
PROGRAM 4 - RANDOM 1

MENU > **Control Mode
Master** > MENU > **Master Program
4 > Random 1** > Scroll UP/DOWN
to access, ENTER to accept



PROGRAM 5 - RANDOM 2

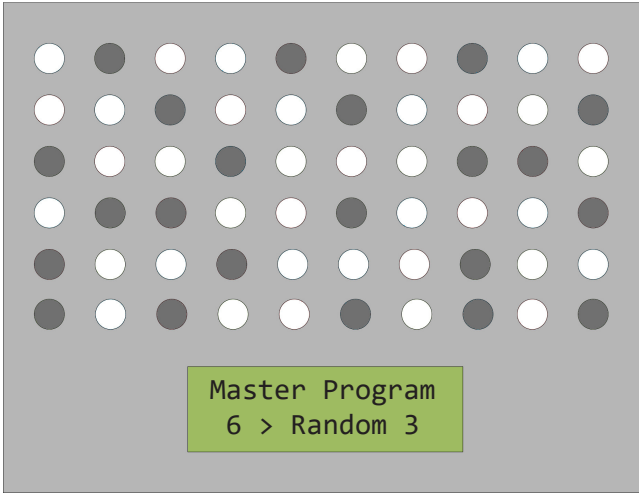
MENU > **Control Mode
Master** > MENU > **Master Program
5 > Random 2** > Scroll UP/DOWN
to access, ENTER to accept



OPERATION

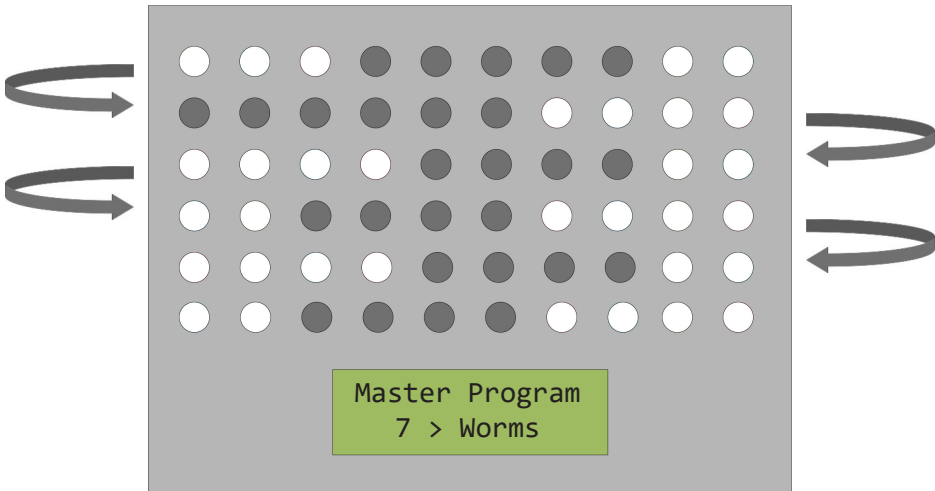
PROGRAM 6 - RANDOM 3

MENU > **Control Mode
Master** > MENU > **Master Program
6 > Random 3** > Scroll UP/DOWN
to access, ENTER to accept



PROGRAM 7 - WORMS

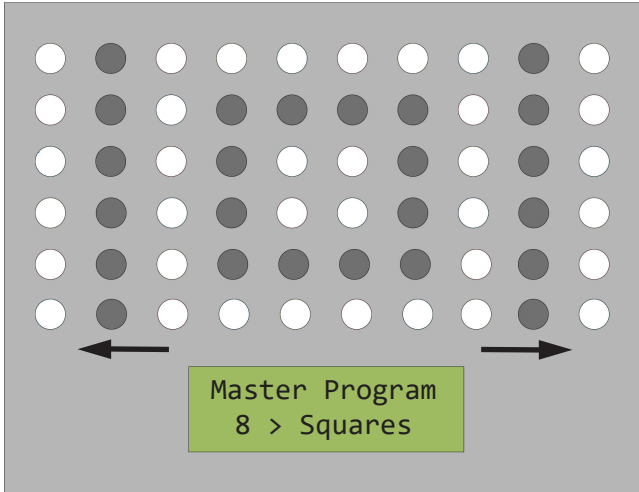
MENU > **Control Mode
Master** > MENU > **Master Program
7 > Worms** > Scroll UP/DOWN
to access, ENTER to accept



OPERATION

PROGRAM 8 - SQUARES

MENU > **Control Mode
Master** > MENU > **Master Program
8 > Squares** > Scroll UP/DOWN
to access, ENTER to accept



DIMMING

With the luminaire in Master Control Mode, the light output of all LEDs can be dimmed using rear panel controls from 1% (minimum light output) to 100% (maximum light output).

SET STEP SPEED

With the luminaire in Master Control Mode, the time a program stays on the current step before moving on can be adjusted from 1 second to 60 seconds.

MENU > **Set Step Speed:
1 Seconds** > Scroll UP/DOWN to adjust time > ENTER to accept

DEFAULT SETTINGS

With the luminaire in Master Control Mode, the illuminator can be defaulted to factory settings.

MENU > **Default Settings:
NO** > Scroll UP/DOWN to select YES or NO > ENTER to accept

NOTES:

- Default factory setting is displayed as detailed right
- DMX address set to 001
- DMX channels to 60

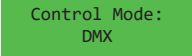
DMX Mode A001
Master Dim 100%

DMX OPERATION

All Nebula models in the range can be DMX controlled as detailed in the following sections.

NOTES:

- For all DMX operation modes, the luminaire must be programmed to DMX.
- Repeated pressing of MENU button accesses sub menus.
- Refer to Programmable Function Table for Menu and Sub Menu availability for each model.

MENU >  > ENTER to accept

DMX ADDRESS

With the luminaire in DMX Control Mode, the address can be set between 001 and 512

MENU >  > Scroll UP/DOWN to set address > ENTER to accept

NOTES:

- For Master slave operation all Slaves must be addressed 001.
- This is a 60 channel DMX device (see table on following page) always ensure sufficient channels are available after the address.

DMX CHANNEL

With the luminaire in DMX Control Mode, the number of DMX controlled channels available can be set to either 1 (single address controlling all channels) or 60 (60 addresses controlling individual channels)

MENU >  > Scroll UP/DOWN to select 1 or 180 > ENTER to accept

MASTER DIMMER

With the luminaire in DMX Control Mode, the maximum brightness of the 60 LEDs can be set between 1% (minimum) or 100% (maximum)

MENU >  > Scroll UP/DOWN to select value > ENTER to accept

DEFAULT SETTINGS

With the luminaire in Master Control Mode, the illuminator can be defaulted to factory settings.

MENU >  > Scroll UP/DOWN to select YES or NO > ENTER to accept

See opposite page for default factory settings display.

DMX OPERATION

60 CHANNEL DMX CONTROL

Chan No.	LED No.	DMX Value	Effect
01	LD1	0-255	Min to Max Output
02	LD2	0-255	Min to Max Output
03	LD3	0-255	Min to Max Output
04	LD4	0-255	Min to Max Output
05	LD5	0-255	Min to Max Output
06	LD6	0-255	Min to Max Output
07	LD7	0-255	Min to Max Output
08	LD8	0-255	Min to Max Output
09	LD9	0-255	Min to Max Output
10	LD10	0-255	Min to Max Output
11	LD11	0-255	Min to Max Output
12	LD12	0-255	Min to Max Output
13	LD13	0-255	Min to Max Output
14	LD14	0-255	Min to Max Output
15	LD15	0-255	Min to Max Output
16	LD16	0-255	Min to Max Output
17	LD17	0-255	Min to Max Output
18	LD18	0-255	Min to Max Output
19	LD19	0-255	Min to Max Output
20	LD20	0-255	Min to Max Output
21	LD21	0-255	Min to Max Output
22	LD22	0-255	Min to Max Output
23	LD23	0-255	Min to Max Output
24	LD24	0-255	Min to Max Output
25	LD25	0-255	Min to Max Output
26	LD26	0-255	Min to Max Output
27	LD27	0-255	Min to Max Output
28	LD28	0-255	Min to Max Output
29	LD29	0-255	Min to Max Output
30	LD30	0-255	Min to Max Output

Chan No.	LED No.	DMX Value	Effect
31	LD31	0-255	Min to Max Output
32	LD32	0-255	Min to Max Output
33	LD33	0-255	Min to Max Output
34	LD34	0-255	Min to Max Output
35	LD35	0-255	Min to Max Output
36	LD36	0-255	Min to Max Output
37	LD37	0-255	Min to Max Output
38	LD38	0-255	Min to Max Output
39	LD39	0-255	Min to Max Output
40	LD40	0-255	Min to Max Output
41	LD41	0-255	Min to Max Output
42	LD42	0-255	Min to Max Output
43	LD43	0-255	Min to Max Output
44	LD44	0-255	Min to Max Output
45	LD45	0-255	Min to Max Output
46	LD46	0-255	Min to Max Output
47	LD47	0-255	Min to Max Output
48	LD48	0-255	Min to Max Output
49	LD49	0-255	Min to Max Output
50	LD50	0-255	Min to Max Output
51	LD51	0-255	Min to Max Output
52	LD52	0-255	Min to Max Output
53	LD53	0-255	Min to Max Output
54	LD54	0-255	Min to Max Output
55	LD55	0-255	Min to Max Output
56	LD56	0-255	Min to Max Output
57	LD57	0-255	Min to Max Output
58	LD58	0-255	Min to Max Output
59	LD59	0-255	Min to Max Output
60	LD60	0-255	Min to Max Output

The address number selected must have sufficient DMX address channels behind it to accommodate the remaining 59 Nebula DMX channels

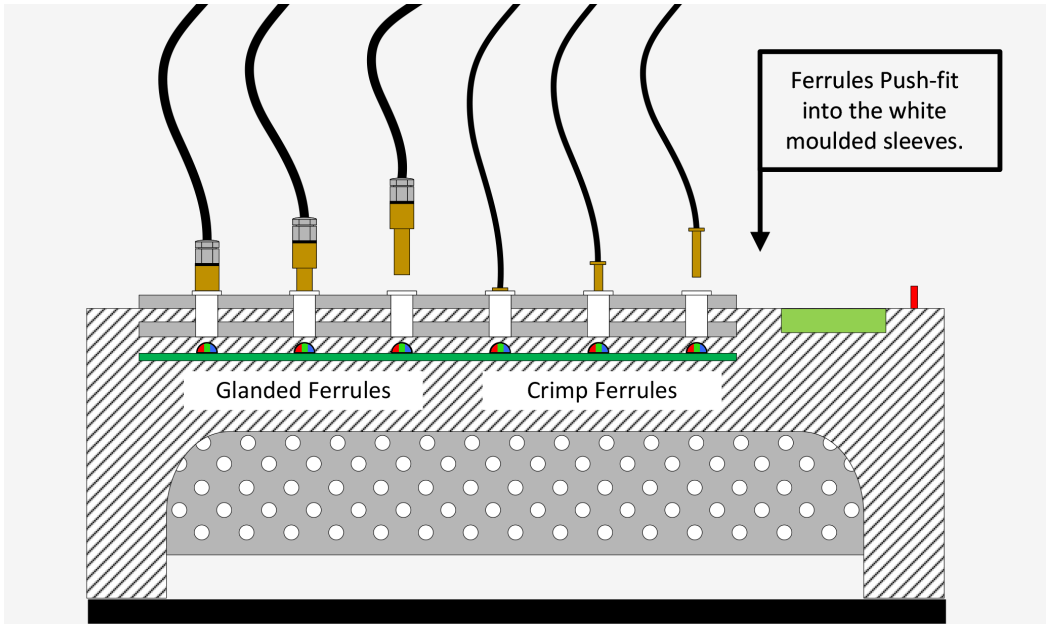
FIBER INSTALLATION AND FERRULE TYPES

OVERVIEW

The Nebula is compatible with 2 types of ferrules - crimp and glanded.

Crimp ferrules are supplied factory terminated on the fiber harness and are simply pushed into the white moulded sleeves on the top of the illuminator.

Glanded ferrules are suitable for termination on site either by UFO installers or by third parties. The fiber is pushed through the gland, the gland is tightened and then the fiber is trimmed flush at the bottom of the ferrule. The ferrules are then pushed fully into the moulded sleeves. Each ferrule sits directly above an LED which illuminates each fiber individually.



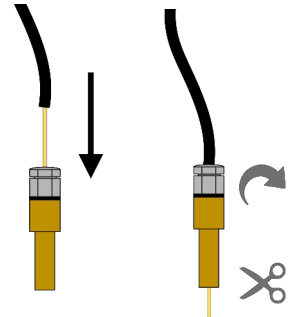
GLANDED FERRULE FIBER FITMENT

Ensure fiber sheathing is trimmed back so that at least 38mm of bare fiber is visible.

Feed the fiber through the gland and out the base of the ferrule.

Tighten the gland to secure the fiber sheathing and then trim the bare fiber so it is flush with the base of the ferrule.

The ferrule is now ready to be plugged into the illuminator.



MAINTENANCE

To ensure a long working life and the safe, reliable operation of the illuminator, it is very important to maintain it properly and ensure it is installed in an appropriate and safe location.

Before performing any maintenance on the illuminator it should be disconnected from the power supply and allowed to cool down.

- The illuminator fans and vents should be blown out with compressed air at least every 12 months, or more often if located in a dusty environment.
- Do not allow dust to build up on internal pcb's & components as this will increase heat within the illuminator and lead to failure. Units should be checked regularly and all dust must be vacuumed off. Failure caused by excessive dust will not be covered under warranty.
- After the illuminator has been installed, check the fans and vents to ensure they are clear of dust and debris. Blow out with compressed air if required.
- The body of the illuminator can be cleaned using a soft damp cloth. Do not use any abrasives on the unit.

Note that a record of all maintenance **MUST** be kept in the table below, indicating what maintenance was undertaken. This must be dated and is required for warranty purposes.

SAFETY GUIDANCE

- A gap of 200mm (8") **MUST** be left around the unit. This is to allow air to circulate and prevent overheating. The location must have free ventilation and must not have an ambient temperature higher than that specified for the luminaire.
- The outer body of the illuminator may become hot - keep away from all combustible materials and **DO NOT** locate this light source within 200mm (8") of any flammable surface.
- The illuminator must not be run without the fiber optic harness fitted.

MAINTENANCE LOG

Date	Maintenance Undertaken

Problem	Probable Cause(s)	Remedy
Unit is dead - no light output; mains power indicator & LCD display is out	Mains supply off	Check supply and reinstate
	Loose connector(s)	Check plugs & sockets are fully mated
	Blown fuse or circuit tripped	Check fuse/trip & replace/reset if necessary. If problem persists, isolate mains supply and contact UFO
	Mains supply cable faulty	Get replacement cable from UFO
Unit is dead - no light output from any port, power indicator on PSU & display are lit	Unit in DMX control mode but all channel values set 0 on DMX controller	Increase DMX controller value
	Failed internal component	Contact UFO
In DMX mode, no light output from some of the LED ports.	The channels in question have DMX channel values set to 0	Increase channel values on DMX controller to >0
	Failed internal component	Contact UFO
	Not sufficient DMX addresses available for 180 channels	Check DMX address and channel availability on DMX controller and reprogram
In DMX or Manual mode, no light output from all the LED ports dim.	Master Dimmer control set low	Program Master Dimmer to required level as detailed in the Operation section of this manual
In DMX mode, no DMX control over dimming and other DMX functions – data LED inside the unit steady (not flickering)	Indicates unit is not receiving a DMX signal from controller or Master NEBULA	Check DMX controller or Master NEBULA settings.
	Faulty DMX cable	Check DMX cabling and repair/replace
No DMX control over dimming	Unit not in DMX control mode	Set to DMX in the Control Mode sub menu

TECHNICAL SPECIFICATIONS

Description	Details
UFO Product Code	UFO-NEB-WLXX Where XX = 27 / 30 / 40 / 57 / 65
No. of Port Connectors	60
Fibre Type	Glass / PMMA
Material	Sheet steel / Aluminium
Dimensions (L x W x H)	200mm x 260mm x 88mm
Operating Environment	Indoor only
Ambient Temperature	Min. -10°C to Max. 45°C
PSU Output	12V DC 30W (maximum)
PSU Type	Desktop Class II listed
Mains Input	100-240V AC 50-60Hz
Individual LED Power	96mW
Individual LED Lumen Output	9.6lm
Colour Temperature Options	2700K, 3000K, 4000K, 5700K, 6500K
CRI	70 (minimum)
LED Life	50,000 hours (typical)
Dimming & Output Control	DMX plus manual dimming and demo mode
DMX Connection	5 pin XLR sockets



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