



LED Orbit III

V2

ORDERCODE 41362



SHOWELECTRONICS FOR PROFESSIONALS

Congratulations!

You have bought a great, innovative product from Showtec.

The Showtec LED Orbit III brings excitement to any venue. Whether you want simple plug-&-play action or a sophisticated DMX show, this product provides the effect you need.

You can rely on Showtec, for more excellent lighting products.

We design and manufacture professional light equipment for the entertainment industry.

New products are being launched regularly. We work hard to keep you, our customer, satisfied.

For more information: iwant@showtec.info

You can get some of the best quality, best priced products on the market from Showtec.

So next time, turn to Showtec for more great lighting equipment.

Always get the best -- with Showtec !

Thank you!



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WARNING

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

Unpacking Instructions

Immediately upon receiving this product, carefully unpack the carton and check the contents to ensure that all parts are present, and have been received in good condition. Notify the dealer immediately and retain packing material for inspection if any parts appear damaged from shipping or the carton itself shows signs of mishandling. Save the carton and all packing materials. In the event that a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing.

Your shipment includes:

- Showtec LED Orbit III including hanging bracket
- IEC powercable 1,5m
- 2x brackets
- User manual



LED Expected Lifespan

LEDs gradually decline in brightness over time. HEAT is the dominant factor that leads to the acceleration of this decline. Packaged in clusters, LEDs exhibit higher operating temperatures than in ideal or singular optimum conditions. For this reason when all color LEDs are used at their fullest intensity, life of the LEDs is significantly reduced. It is estimated that a viable lifespan of 40,000 to 50,000 hours will be achieved under normal operational conditions. If improving on this lifespan expectancy is of a higher priority, place care in providing for lower operational temperatures. This may include climatic-environmental and the reduction of overall projection intensity.

WARNING



 **CAUTION!** 
**Keep this device away from rain and moisture!
Unplug mains lead before opening the housing!**

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

SAFETY INSTRUCTIONS

Every person involved with the installation, operation and maintenance of this device have to:

- be qualified
- follow the instructions of this manual

 **CAUTION! Be careful with your operations.** 
**With a dangerous voltage you can suffer
a dangerous electric shock when touching the wires!**

Before your initial start-up, please make sure that there is no damage caused by transportation. Should there be any, consult your dealer and do not use the device.

To maintain perfect condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual.

Please consider that damages caused by manual modifications to the device are not subject to warranty.

This device contains no user-serviceable parts. Refer servicing to qualified technicians only.

IMPORTANT:

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

- Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!
- Never remove warning or informative labels from the unit.
- Never use anything to cover the ground contact.
- Do not insert objects into air vents.
- Do not connect this device to a dimmerpack.
- Never look directly into the light source
- Do not switch the device on and off in short intervals, as this would reduce the lamp's life.
- Do not touch the device's housing bare-handed during its operation (housing becomes very hot).
- Only use device indoor, avoid contact with water or other liquids.
- Avoid flames and do not put close to flammable liquids or gases.
- Always keep case closed while operating.
- Always allow free air space of at least 50 cm around the unit for ventilation.
- Always disconnect power from the mains, when device is not used, before cleaning or when replacing lamp! Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.
- Make sure that the available voltage is not higher than stated on the rear panel.
- Make sure that the power-cord is never crimped or damaged. Check the device and the power-cord from time to time.
- If device is dropped or struck, disconnect mains power supply immediately. Have a qualified engineer inspect for safety before operating.
- If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.
- If your Showtec device fails to work properly, discontinue use immediately. Pack the unit securely (preferably in the original packing material), and return it to your Showtec dealer for service.
- For replacement use lamps and fuses of same type and rating only.
- Allow time to cool down, before replacing lamp.
- This device falls under protection class I. Therefore it is essential to connect the yellow/green conductor to earth.
- During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.
- Repairs, servicing and electric connection must be carried out by a qualified technician.
- WARRANTY: Till one year after date of purchase.



CAUTION ! EYEDAMAGES !
Avoid looking directly into the light source.
(meant especially for epileptics) !



OPERATING DETERMINATIONS

This device is not designed for permanent operation. Consistent operation breaks will ensure that the device will serve you for a long time without defects.

The minimum distance between light-output and the illuminated surface must be more than 0,5 meters.

The maximum ambient temperature $t_a = 45^\circ\text{C}$ must never be exceeded.

The relative humidity must not exceed 50 % with an ambient temperature of 45°C .

If this device is operated in any other way, than the one described in this manual, the product may suffer damages and the warranty becomes void.

Any other operation may lead to dangers like short-circuit, burns, electric shock, lamp explosion, crash etc.

You endanger your own safety and the safety of others!

Rigging

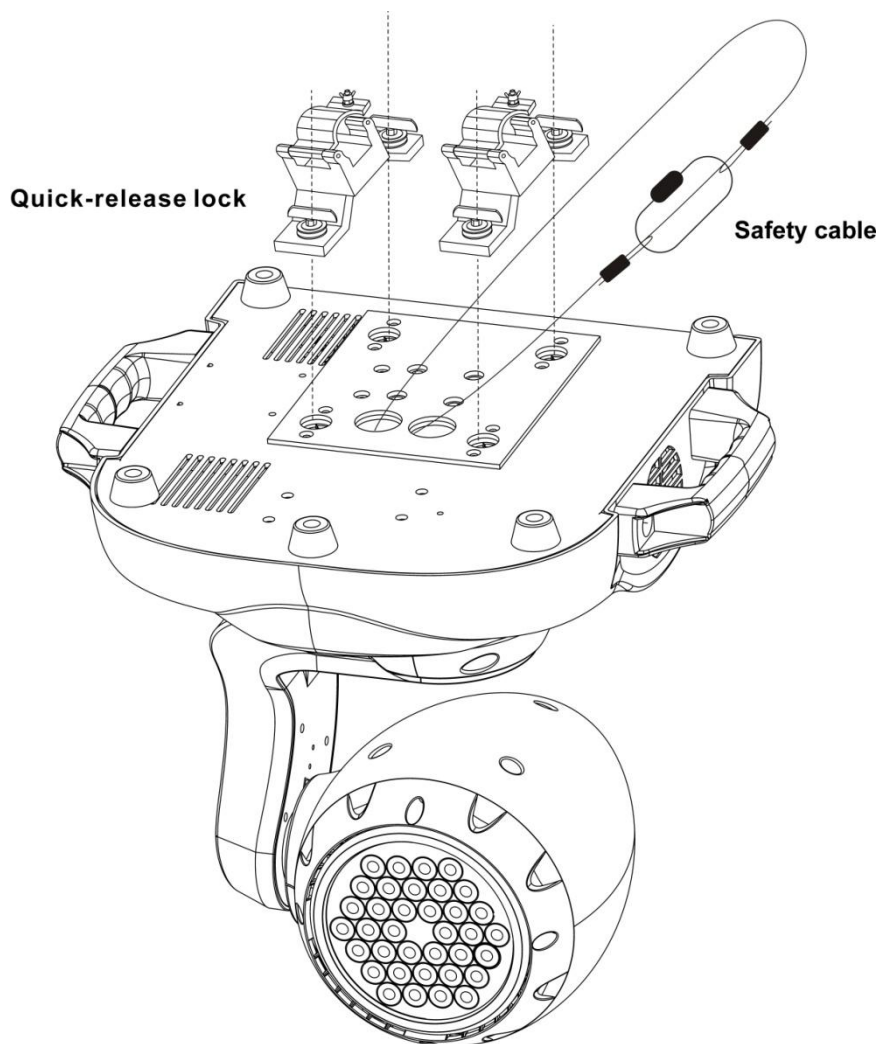
Please follow the European and national guidelines concerning rigging, trussing and all other safety issues.

Do not attempt the installation yourself !

Always let the installation be carried out by an authorized dealer !

Procedure:

- If the projector is lowered from the ceiling or high joists, professional trussing systems have to be used.
- Use a clamp to mount the projector, with the mounting-bracket, to the trussing system.
- The projector must never be fixed swinging freely in the room.
- The installation must always be secured with a safety attachment, e.g. an appropriate safety net or safety-cable.
- When rigging, derigging or servicing the projector, always make sure, that the area below the installation place is blocked and staying in the area is forbidden.




The LED Orbit III can be placed on a flat stage floor or mounted to any kind of truss by a clamp.

Improper installation can cause serious damage to people and property !

Connection with the mains

Connect the device to the mains with the power-plug.
Always pay attention, that the right color cable is connected to the right place.

International	EU Cable	UK Cable	US Cable	Pin
L	BROWN	RED	YELLOW/COPPER	FASE
N	BLUE	BLACK	SILVER	NUL
	YELLOW/GREEN	GREEN	GREEN	EARTH

Make sure that the device is always connected properly to the earth!



Return Procedure

Returned merchandise must be sent prepaid and in the original packing, call tags will not be issued. Package must be clearly labeled with a Return Authorization Number (RMA number). Products returned without an RMA number will be refused. Highlite will not accept the returned goods or any responsibility. Call Highlite 0031-455667723 or mail aftersales@highlite.nl and request an RMA prior to shipping the fixture. Be prepared to provide the model number, serial number and a brief description of the cause for the return. Be sure to properly pack fixture, any shipping damage resulting from inadequate packaging is the customer's responsibility. Highlite reserves the right to use its own discretion to repair or replace product(s). As a suggestion, proper UPS packing or double-boxing is always a safe method to use.

Note: If you are given an RMA number, please include the following information on a piece of paper inside the box:

- 1) Your name
- 2) Your address
- 3) Your phone number
- 4) A brief description of the symptoms

Claims

The client has the obligation to check the delivered goods immediately upon delivery for any shortcomings and/or visible defects, or perform this check after our announcement that the goods are at their disposal. Damage incurred in shipping is the responsibility of the shipper; therefore the damage must be reported to the carrier upon receipt of merchandise.

It is the customer's responsibility to notify and submit claims with the shipper in the event that a fixture is damaged due to shipping. Transportation damage has to be reported to us within one day after receipt of the delivery.

Any return shipment has to be made post-paid at all times. Return shipments must be accompanied with a letter defining the reason for return shipment. Non-prepaid return shipments will be refused, unless otherwise agreed in writing.

Complaints against us must be made known in writing or by fax within 10 working days after receipt of the invoice. After this period complaints will not be handled anymore.

Complaints will only then be considered if the client has so far complied with all parts of the agreement, regardless of the agreement of which the obligation is resulting.

Description of the device

Features

The Showtec LED Orbit III is a one-arm moving-head with high output and great effects.

- 36x 1W LEDs (12x Red, 12x Green, 12x Blue)
- DMX-control via standard DMX-controller
- 10 DMX-control channels required
- Strobe-effect with adjustable speed (1 - 25 flashes/sec.)
- Beam Angle 15°
- 16-bit resolution
- RGB color mixing
- Dimmer 0-100%
- Master/Slave function
- Stand alone function
- Pan 0° -- 540°
- Tilt 0° -- 270°

NOTE: Knowledge of DMX is required to fully utilize this unit.

DMX Channel Summary

DMX Mode	Channel	Description
	1	Pan
	2	Tilt
	3	Pan/Tilt Speed
	4	Red
	5	Green
	6	Blue
	7	RGB Macro, Auto-macro & White
	8	Dimmer
	9	Strobe
	10	Control Mode

Overview



Fig. 1

1) Lens

Backside



Fig. 2

- 2) DMX signal connector (OUT)
- 3) DMX signal connector (IN)
- 4) Power Select 110V/ 220V
- 5) ON/OFF
- 6) Volex IEC power connector + Fuse 6A
- 7) Microphone
- 8) Display

Set Up and Operation

Follow the directions below, as they pertain to your preferred operation mode.

Before plugging the unit in, always make sure that the power supply matches the product specification voltage. Do not attempt to operate a 120V specification product on 230V power, or vice versa.

Fixture Linking

You will need a serial data link to run light shows of one or more fixtures using a DMX-512 controller or to run synchronized shows on two or more fixtures set to a master/slave operating mode. The combined number of channels required by all the fixtures on a serial data link determines the number of fixtures the data link can support.

The LED Orbit III uses 10 channels.

Important: Fixtures on a serial data link must be daisy chained in one single line. To comply with the EIA-485 standard no more than 32 devices should be connected on one data link. Connecting more than 32 fixtures on one serial data link without the use of a DMX optically isolated splitter may result in deterioration of the digital DMX signal.

Maximum recommended serial data link distance: 500 meters

Maximum recommended number of Arc-Bars on a serial data link: 32 fixtures

Data Cabling

To link fixtures together you must obtain data cables. You can purchase DAP Audio certified DMX cables directly from a dealer/distributor or construct your own cable. If you choose to create your own cable please use data-grade cables that can carry a high quality signal and are less prone to electromagnetic interference.

DAP Audio Certified DMX Data Cables

- DAP Audio Basic microphone cable for allround use. bal. XLR/M 3 p. > XLR/F 3 p.
Ordercode FL01150 (1,5m.), FL013 (3m.), FL016 (6m.), FL0110 (10m.), FL0115 (15m.), FL0120 (20m.).
- DAP Audio cable for the demanding user with exceptional audio-qualities and connector made by Neutrik®. **Ordercode** FL71150 (1,5m.), FL713 (3m.), FL716 (6m.), FL7110 (10m.).



One LED Orbit III

1. Fasten the moving head onto firm trussing (Use a proper clamp fastened onto the LED Orbit III).
Leave at least 1 meter on all sides for air circulation.
2. Plug one end of the electric mains power cord into the IEC socket on the unit.
Then plug the other end of the cord into a proper electric power supply socket.
3. To set the program to be played, see page 9 for the menu settings

Multiple LED Orbits

1. Fasten the effect light onto firm trussing (Use a proper clamp fastened onto the LED Orbit III).
Leave at least 1 meter on all sides for air circulation.
2. Use a 3-p XLR cable to connect the LED Orbits and other devices.
The pins:



1. Earth
2. Signal -
3. Signal +

3. Link the units as shown in (figure 3), Connect a DMX signal cable from the first unit's DMX "out" socket to the second unit's "in" socket. Repeat this process to link the second, third, and fourth units.
4. Supply electric power: Plug electric mains power cords into each unit's IEC socket, then plug the other end of the mains power cord into proper electric power supply sockets, starting with the first unit.
Do not supply power before the whole system is set up and connected properly.

Multiple LED Orbits Set Up

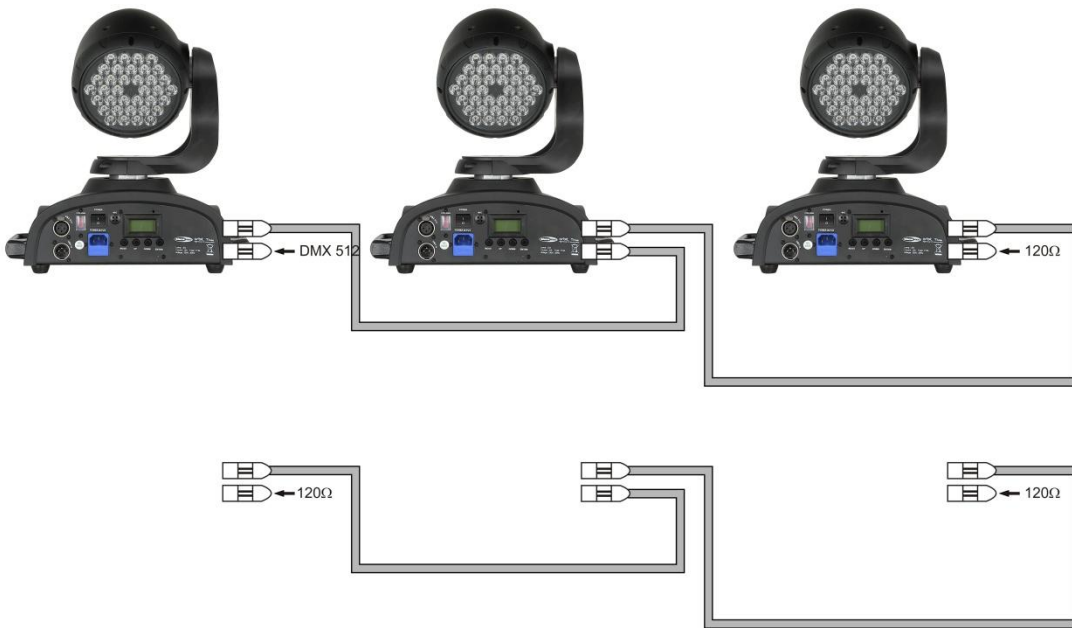
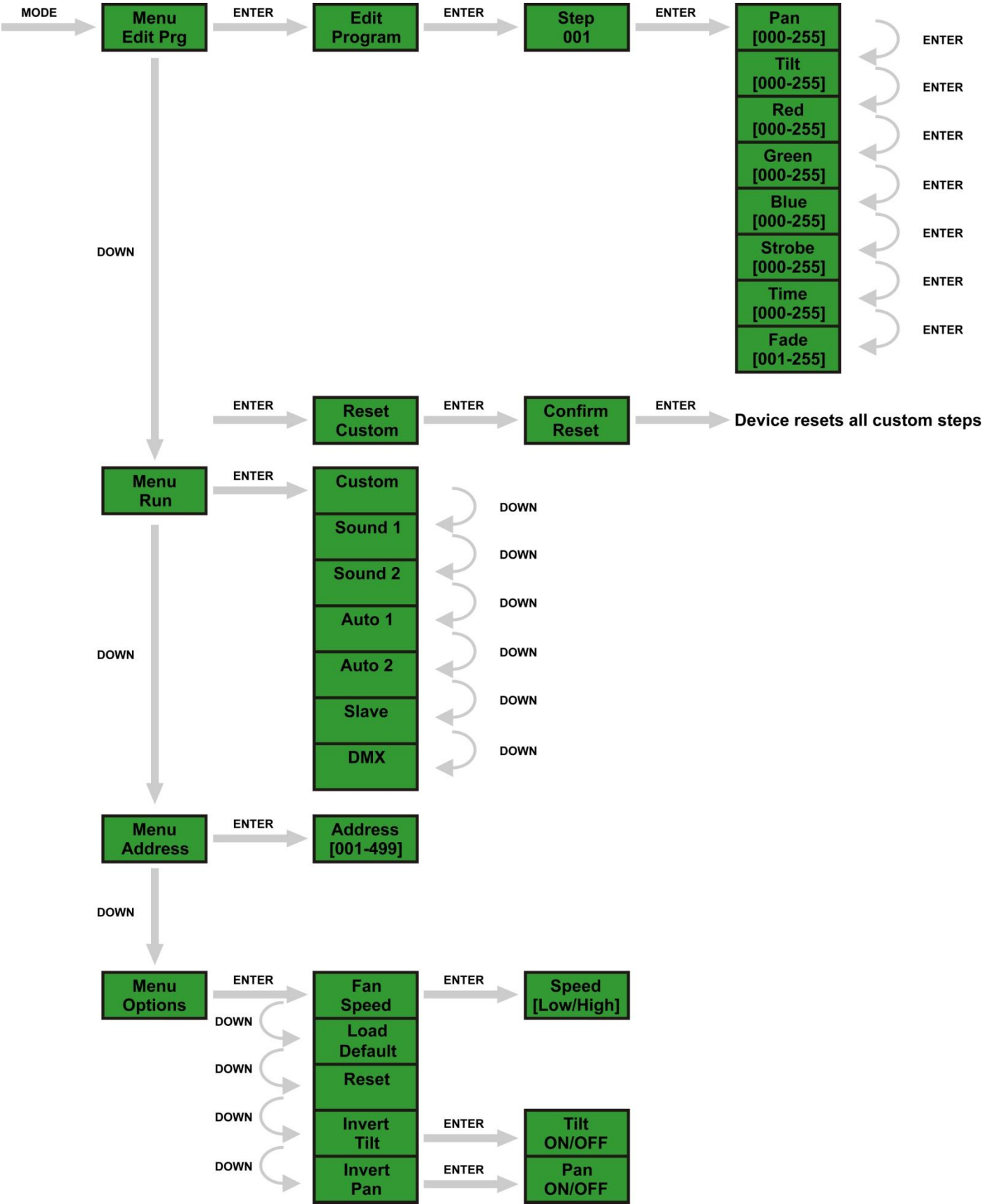


Fig. 3

Note : Link all cables before connecting electric power

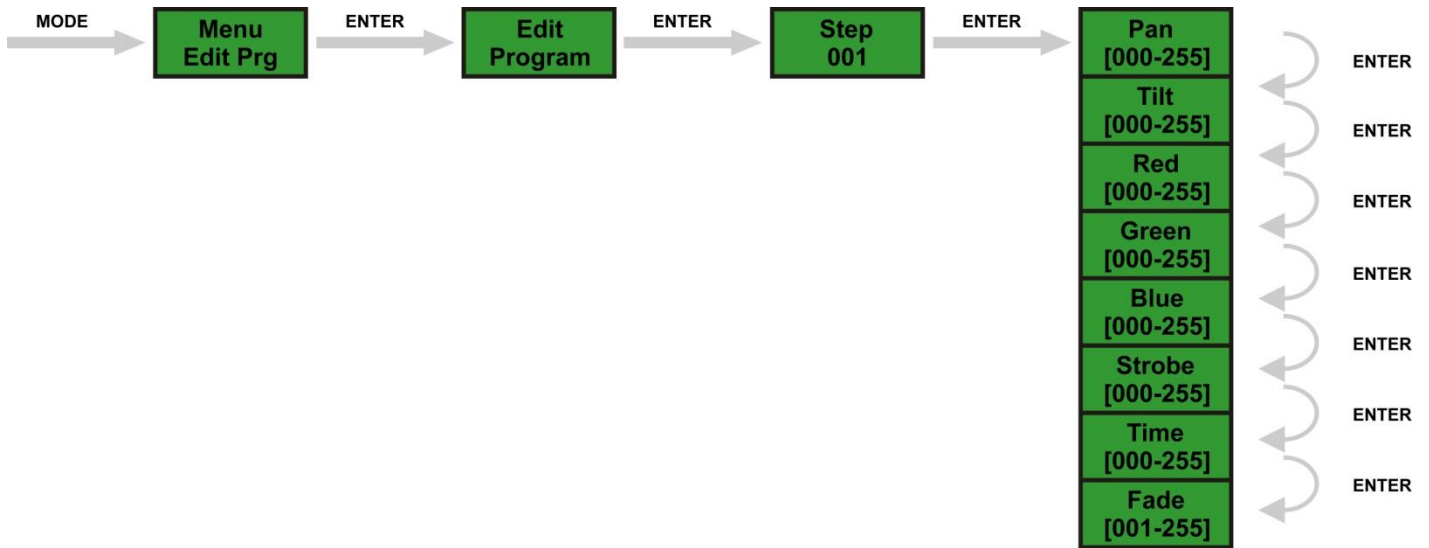
MENU OVERVIEW



Press the UP/DOWN buttons to scroll through 4 options of the menu:

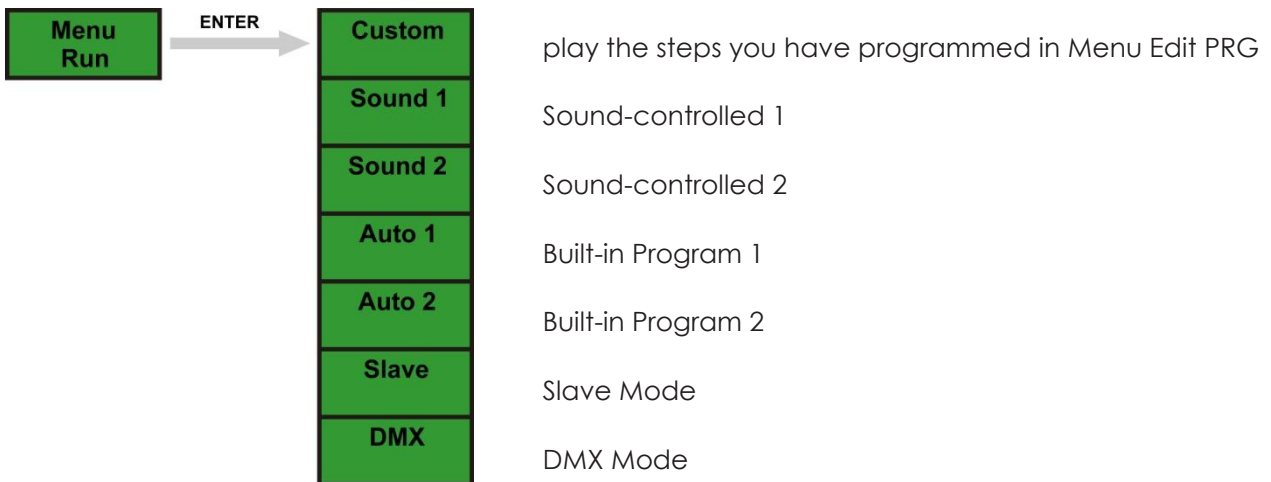
- Menu Edit Prg
- Menu Run
- Menu Address
- Menu Options

Menu Edit Program



When you press ENTER in menu Edit Program, you can create your own steps (001-100). When you press ENTER again, you can customize each of the steps (Pan, Tilt, Red, Green, Blue, Strobe, Time, Fade).

Menu RUN

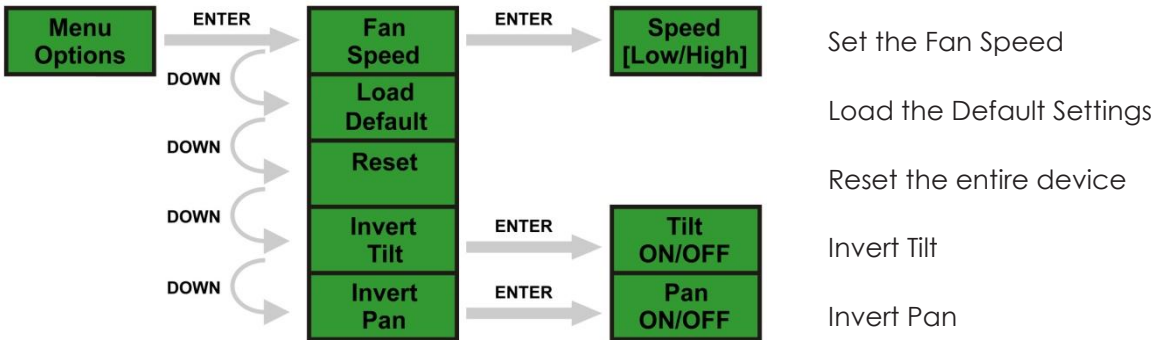


DMX 512 Address



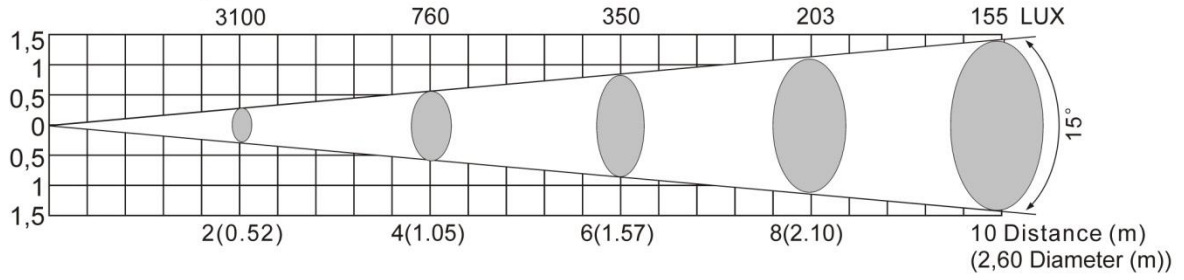
When you press SET in menu DMX 512 address to set the DMX address.
You can choose your DMX address between 0-499.

Menu Option

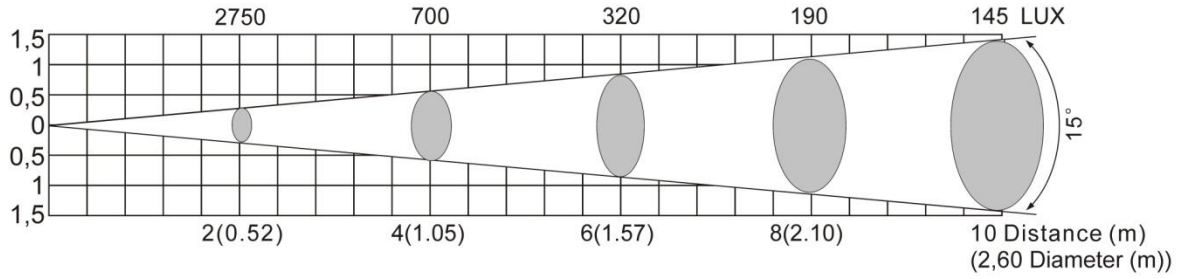


Beam Angles

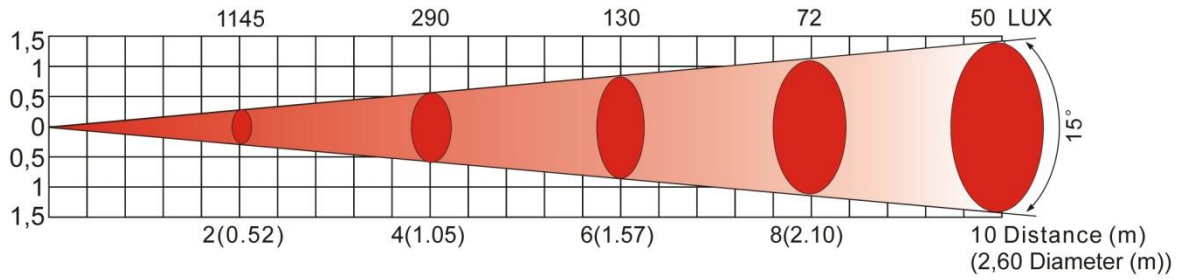
RGB 100%



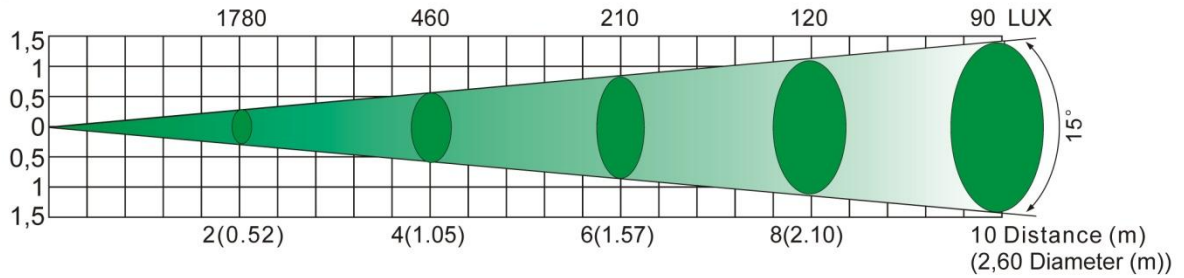
WHITE



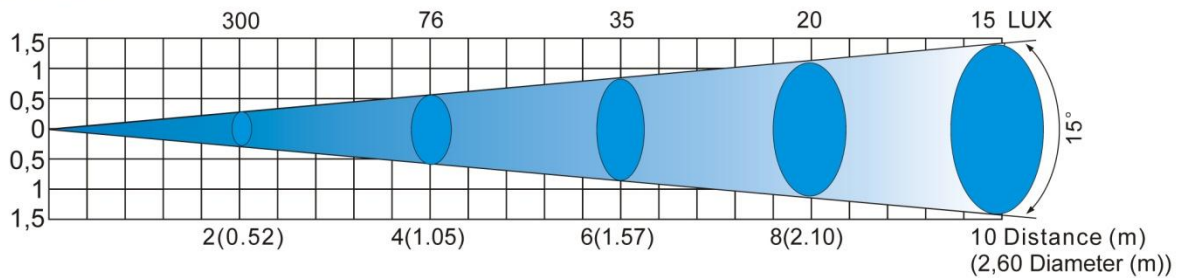
RED



GREEN



BLUE



DMX Protocol

Channel 1 - Horizontal movement (Pan)

Push the slider up, in order to move head horizontally (PAN).
 Gradual head adjustment from one end of the slider to the other (0-255, 128-center).
 The head can be turned by 540° and stopped at any position you wish.

Channel 2 - Vertical movement (Tilt)

Push the slider, up in order to move head vertically (TILT).
 Gradual head adjustment from one end of the slider to the other (0-255, 128-center).
 The head can be turned by 270° and stopped at any position you wish.

Channel 3 – Pan/Tilt Speed

0-255	From Max Speed (0) to Min. Speed (255) in vector mode
-------	---

Channel 4 – Red

0-255	Gradual adjustment Red from 0 – 100%
-------	--------------------------------------

Channel 5 – Green

0-255	Gradual adjustment Green from 0 – 100%
-------	--

Channel 6 – Blue

0-255	Gradual adjustment Blue from 0 – 100%
-------	---------------------------------------

Channel 7 – RGB Macro, Auto Macro & White

0-5	No Function
6-35	Red 100% / Green Up / Blue 0%
36-65	Red Down / Green 100% / Blue 0%
66-95	Red 0% / Green 100% / Blue Up
96-125	Red 0% / Green Down / Blue 100%
126-155	Red Down / Green 0% / Blue 100%
156-185	Red 100% / Green 0% / Blue Down
186-215	Red 100% / Green Up / Blue Up
216-240	Red Up / Green Down / Blue 100%
241-250	Auto Macro
251-255	White

Channel 8 – Dimmer intensity

0-255	From black to brightest
-------	-------------------------

Channel 9 – Strobe

0-5	Full On
6-255	Strobe effect, from slow to fast (0-10 flashes/sec.)

Channel 10 – Control Mode

0-45	Normal Operation
46-55	Reset (After 3 seconds)
56-95	Auto 1 (After 3 seconds)
96-135	Auto 2 (After 3 seconds)
136-175	Sound 1 (After 3 seconds)
176-215	Sound 2 (After 3 seconds)
216-255	Custom (After 3 seconds)

Control Panel

When the indicator light is on, means the LED Orbit III is working

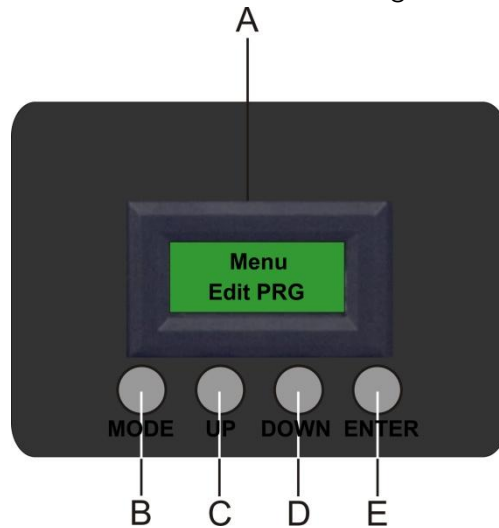


Fig. 6

- A. Display
- B. [MODE] Button
- C. UP Button
- D. Down Button
- E. ENTER Button

Control Mode

The fixtures are individually addressed **ADDR1 - ADDR11** on a data-link and connected to the controller. The fixtures respond to the DMX signal from the controller. (When you select the DMX address and save it, the controller will display the saved DMX address the next time.)

DMX Addressing

The control panel on the front side of the base allows you to assign the DMX fixture address, which is the first channel from which the LED Orbit will respond to the controller.

Please note when you use the controller, the unit has **10** channels.

When using multiple LED Orbits, make sure you set the DMX addresses right.

Therefore, the DMX address of the first LED Orbit should be **1(A001)**; the DMX address of the second LED Orbit should be **1+10=11 (A011)**; the DMX address of the third LED Orbit should be **11+10=21 (A021)**, etc. Please, be sure that you don't have any overlapping channels in order to control each LED Orbit correctly.

If two or more LED Orbits are addressed similarly, they will work similarly.

For address settings, please refer to the instructions under "Addressing" (menu **ADDR1**)

Controlling:

After having addressed all LED Orbit fixtures, you may now start operating these via your lighting controller.

Note: After switching on, the LED Orbit will automatically detect whether DMX 512 data is received or not. If there is no data received at the DMX-input, the "LED" on the control panel will not flash.

The problem may be:

- The XLR cable from the controller is not connected with the input of the LED Orbit.
- The controller is switched off or defective, the cable or connector is defective, or the signal wires are swapped in the input connector.

Note: It's necessary to insert a XLR termination plug (with 120 Ohm) in the last fixture in order to ensure proper transmission on the DMX data link.

DMX 512 Channel settings for LED Orbit III

Light No.	Start Channels
1	A001
2	A011
3	A021
4	A031
5	A041
6	A051
7	A061
8	A071
9	A081
10	A091
11	A101
12	A111
13	A121
14	A131
15	A141
16	A151
17	A161
18	A171
19	A181
20	A191
21	A201
22	A211
23	A221
24	A231
25	A241
26	A251
27	A261
28	A271
29	A281
30	A291
31	A301
32	A311
33	A321
34	A331
35	A341
36	A351
37	A361
38	A371
39	A381
40	A391

Light No.	Start Channels
41	A401
42	A411
43	A421
44	A431
45	A441
46	A451
47	A461
48	A471
49	A481
50	A491
51	A501
52	A511
53	A521
54	A531
55	A541
56	A551
57	A561
58	A571
59	A581
60	A591
61	A601
62	A611
63	A621
64	A631
65	A641
66	A651
67	A661
68	A671
69	A681
70	A691
71	A701
72	A711
73	A721
74	A731
75	A741
76	A751
77	A761
78	A771
79	A781
80	A791

Maintenance

The Showtec LED Orbit III requires almost no maintenance. However, you should keep the unit clean. Otherwise, the fixture's light-output will be significantly reduced. Disconnect the mains power supply, and then wipe the cover with a damp cloth. Do not immerse in liquid. Do not use alcohol or solvents. The lens will require weekly cleaning, as smoke-fluid tends to build up residues, reducing the light-output very quickly.

Please clean internal components once a year with a light brush and vacuum cleaner.

Keep connections clean. Disconnect electric power, and then wipe the connections with a damp cloth. Make sure connections are thoroughly dry before linking equipment or supplying electric power.

The operator has to make sure that safety-relating and machine-technical installations are to be inspected by an expert after every four years in the course of an acceptance test.

The operator has to make sure that safety-relating and machine-technical installations are to be inspected by a skilled person once a year.

The following points have to be considered during the inspection:

1. All screws used for installing the device or parts of the device have to be tightly connected and must not be corroded.
2. There may not be any deformations on housings, fixations and installation spots.
3. Mechanically moving parts like axles, eyes and others may not show any traces of wearing.
4. The electric power supply cables must not show any damages or material fatigue.

Replacing a Fuse

Power surges, short-circuit or inappropriate electrical power supply may cause a fuse to burn out. If the fuse burns out, the product will not function whatsoever. If this happens, follow the directions below to do so.

1. Unplug the unit from electric power source.
2. Insert a flat-head screwdriver into a slot in the fuse cover. Gently pry up the fuse cover.
3. Remove the used fuse. If brown or unclear, it is burned out.
4. Insert the replacement fuse into the holder where the old fuse was. Reinsert the fuse cover. Products are packed with a replacement fuse. If your replacement fuse is missing, a new one can be purchased at an electric appliance store. Be sure to use a fuse of the same type and specification. See the product specification label for details.

Troubleshooting

No Light, No Movement - All Products

This troubleshooting guide is meant to help solve simple problems. If a problem occurs, carry out the steps below in sequence until a solution is found. Once the unit operates properly, do not carry out following steps.

If the light effect does not operate properly, refer servicing to a technician.

Response: Suspect three potential problem areas: the power supply, the lamp, the fuse.

1. Power supply. Check that the unit is plugged into an appropriate power supply.
2. The LEDs. Return the LED Orbit 1 LED to your Showtec dealer.
3. The fuse. Replace the fuse. See page 16 for replacing the fuse.

No Response to DMX

Response: Suspect the DMX cable or connectors, a controller malfunction, a light effect DMX card malfunction.

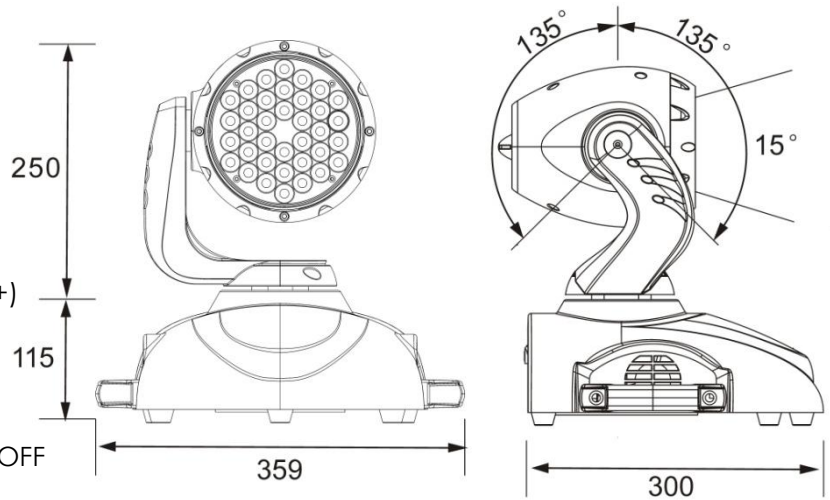
1. Check the DMX cable: Unplug the unit; change the DMX cable; then reconnect to electrical power. Try your DMX control again.
2. Determine whether the controller or light effect is at fault. Does the controller operate properly with other DMX products? If not, take the controller in for repair. If so, take the DMX cable and the light effect to a qualified technician.

Product Specification

Model: Showtec LED Orbit III
 Voltage: 230V-50Hz (CE)
 Fuse: 10A / 250V
 Dimensions: 359x300x365mm (LxWxH)
 Weight: 9,08 kg

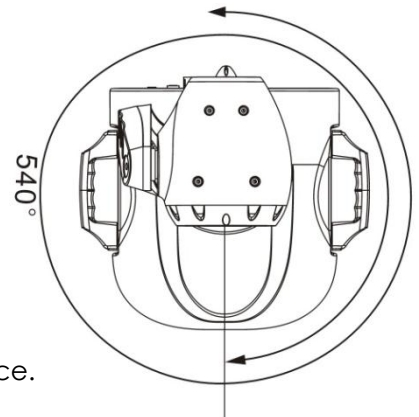
Operation and Programming

Signal pin OUT : pin 1 earth, pin 2 (-), pin 3 (+)
 Set Up and Addressing : LED control panel
 DMX Channels: 10
 Signal input 3-pin XLR male
 Signal output 3-pin XLR female
 Control: Automatic and DMX remote ON / OFF



Electro-mechanical effects

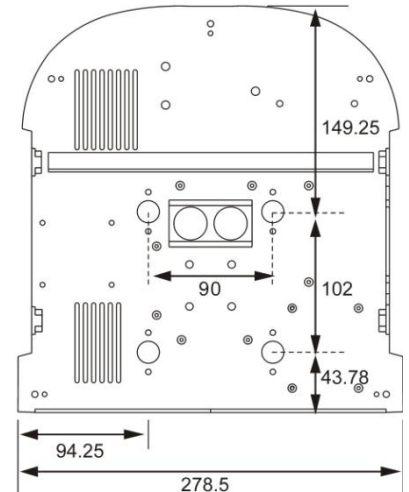
Dimmer : 0 – 100% linear dimmer
 Strobe-effect with variable speed (1 flash -- 10 flashes/sec.)
 DMX-control via standard DMX-controller
 Pan 0° -- 540°
 Tilt 0° -- 270°
 Wheel control : auto-electronic reset
 Cooling: Fan cooled



Design and product specifications are subject to change without prior notice.



Website: www.Showtec.info
 Email: service@highlite.nl





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