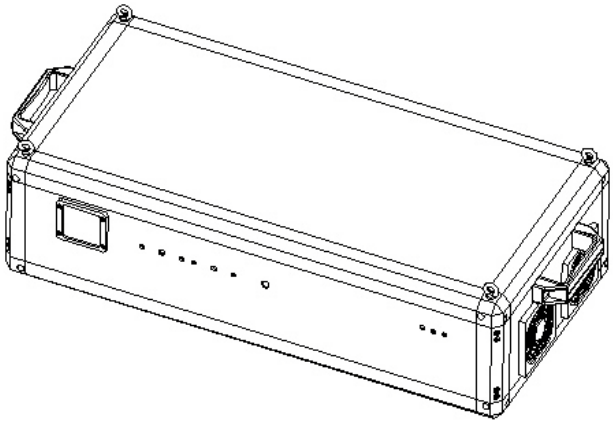
SKYRAG -7

LASER SHOW SYSTEM



VERSION: V1.0

This manual contains important laser system safety and operation information. Read and understand all instructions prior to powering on laser unit the first time, to avoid laser eye injury and to avoid breaking the law. Keep this manual in a safe place for future reference.

LASER SAFETY WARNINGS

Potential laser injury hazard exists with this product! Read these Instructions carefully, which include important information about installation, safe use and service!

Caution **Avoid direct eye contact with laser 了 light. Never intentionally expose your eyes or others to direct laser radiation.**

Caution **This laser product can potentially cause instant eye injury or blindness if laser light directly strikes the eyes.**

Caution **It is illegal and dangerous to shine this laser into audience areas, where the audience or other personnel could get direct laser beams or bright reflections into their eyes.**

Caution **It is a US Federal offense to shine any laser at aircraft.**

Caution **There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact the dealer nearest to you.**.

Caution **Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.**

NON-INTERLOCKED HOUSING WARNING

This unit contains high power laser devices internally. Do not open the laser housing, due to potential exposure to unsafe levels of laser radiation. The laser power levels accessible if the unit is opened can cause instant blindness, skin burns and fires.

LASER SAFETY AND OPERATING INSTRUCTIONS

STOP AND READ ALL LASER SAFETY DATA

Laser light is different from any other light source witch you may be familiar. The light from this product can potentially cause eyes injury if not set up and used properly.

Laser light is thousands of times more concentrated than light from any other kind of light source. This concentration of light power can cause instant eye injuries, primarily by burning the retina (the light sensitive portion at the back of the eye). Even if you can not feel “heat” from a laser beam, it can still potentially injure or blind you or your audience. Even very small amounts of laser light are potentially hazardous even at long distances. Laser eye injuries can happen quicker than you can blink.

It is incorrect to think that because these laser entertainment products split the laser into hundreds of beams or laser beam is scanned out in high speed, that an individual laser beam is safe for eye exposure. This laser product uses dozens of milliwatts of laser power (Class 3B levels internally). Many of the individual beams are potentially hazardous to the eyes.

It is also incorrect to assume that because the laser light is moving, it is safe. This is not true. Nor, do the laser beams always move. Since eye injuries can occur instantly, it is critical to prevent the possibility of any direct eye exposure. In the laser safety regulation, it is not legal to aim Class 3B lasers in areas which people can get exposed. This is true even if it is aimed below people’s faces, such as on a dance floor.

- Do not operate laser without first reading and understanding all safety and technical data in this manual.
- Always set up and install all laser effects so that all laser light is at least 3 meters (9.8 feet) above the floor on which people can stand. See “Proper Laser Set-up & Usage” section later in this manual.

- After set up, and prior to public use test laser to ensure proper function. Do not use if any defect is detected. Do not use if laser emits only one or two laser beams rather than dozens/hundreds, as this could indicate damage to the diffraction grating optic, and could allow emission of higher laser levels.
- Do not point lasers at people or animals.
- Never look into the laser aperture or laser beams.
- Do not point lasers in areas in which people can potentially get exposed. such as uncontrolled balconies, etc.
- Do not point lasers at highly reflective surfaces such as windows, mirrors and shiny metal. Even laser reflections can be hazardous
- Never point a laser at aircraft, this is a federal offense.
- Never point un-terminated laser beams into the sky.
- Do not expose the output optic (aperture) to cleaning chemicals.
- Do not use laser if the laser appears to be emitting only one or two beams.
- Do not use laser if housing is damaged or open, or if optics appear damaged in any way.
- Never open the laser housing. The high laser power levels inside of the protective housing can start fires, burn skin and will cause instant eye injury.
- Never leave this device running unattended.
- The operation of a class 3B laser show laser is only allowed if the show is controlled by a skilled and well-trained operator familiar with the data included in this manual..
- The legal requirements for using laser entertainment products vary from country to country.The user is responsible for the legal requirements at the location/country of use.
- Always use appropriate lighting safety cables when hanging lights and effects overhead.

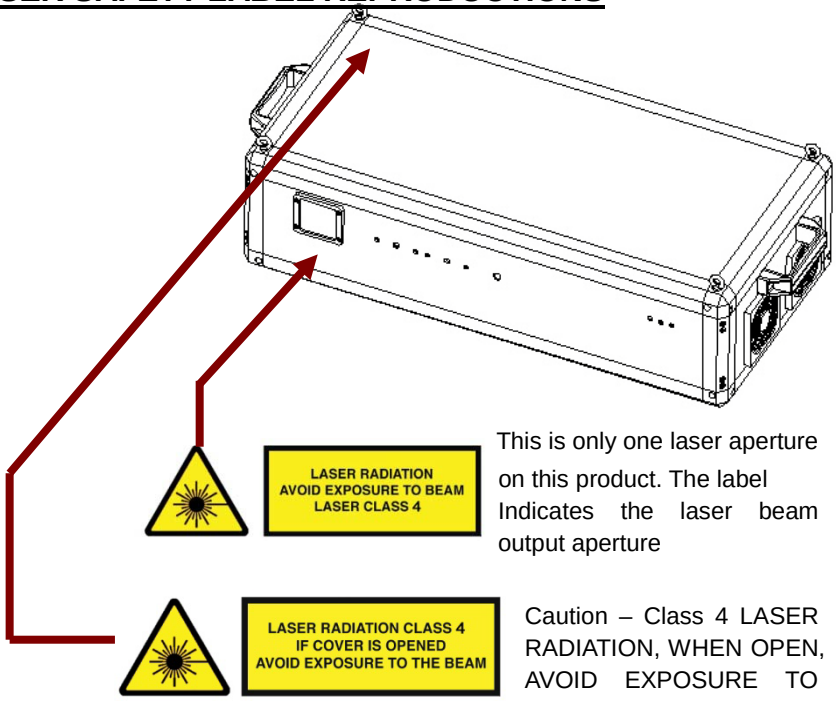
LASER EXPOSURE WARNING

LASER LIGHT

AROVID DIRECT EYE EXPOSURE

Further guidelines and safety programs for safe use of lasers can be found in the ANSI Z136.1 Standard “For Safe Use of Lasers”, available from “www.laserinstitute.org”. Many local governments, corporations, agencies, military and others, require all lasers to be used under the guidelines of ANSI Z136.1. Laser Display guidance can be obtained via the International Laser Display Association, www.laserist.org.

LASER SAFETY LABEL REPRODUCTIONS



This is only one laser aperture on this product. The label Indicates the laser beam output aperture

Caution – Class 4 LASER RADIATION, WHEN OPEN, AVOID EXPOSURE TO BEAM

LASER EMISSION DATA

Laser Classification	Class 4B
Green Laser Medium	DPSS Nd:YVO4,532nm
Red Laser Medium	LD GaAlAs 640nm,typical
Blue Laser Medium	LD InGaN 445nm, typical
Beam Diameter	<5mm at aperture
Divergence(each beam)	<12 mrad
Divergence(total light)	<90 degrees
Laser power	R>1000mW, G>1000mW, B>1000mW
Transverse Beam Mode	TEM_{00}
Cooling	TEC & Fan Cooling
Scanning	ILDA Standard: 35Kpps

* As measured under IEC measurement conditions for classification.

LASER COMPLIANCE STATEMENT

This laser product complies with EN/IEC 60825-1 Ed 2,2007-03.

GENERAL SAFETY INSTRUCTIONS

Every person involved with installation and maintenance of this device have to

- Be qualified.
- Follow the instructions of this manual.

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

This device has left out premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this manual.

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.

- Please consider that damages caused by manual modifications to the devise are not subject to warranty.
- Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!
- Make sure that the available voltage is not higher than stated on the rear panel.
- Always plug in the power plug least. Make sure that the power-switch is set to off-position before you connect the device to the mains. The power-plug has to be accessed after installing the device.
- Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

- Always disconnect from the mains, when the devise is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.
- It is essential to connect the yellow/green conductor to earth.
- The electric connection, repairs and servicing must be carried out by a qualified employee.
- Do not switch the fixture on and off in short intervals as this would reduce the laser diode life.
- For replacement, please use fuses of same type and rating only.
- If the device has been exposed to drastic temperature fluctuation, 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..
- Do not shake the device. Avoid brute force when installing or operating the device.
- When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!
- The minimum distance between the fixture and surrounding walls must be more than 50cm.
- Always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the safety-rope only.
- The ambient temperature must be between 10℃ to 40℃.
- Please use the original packaging if the device is to be transported.
- Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

CAUTION! **Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation**

CAUTION! **If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the warranty word.**

BEFORE OPERATION

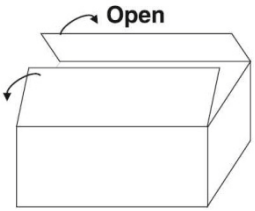
Unpacking Instructions

CAUTION! Immediately upon receiving a fixture, carefully unpack the carton, check the contents to ensure that all parts are present, and have been received in good condition. Notify the shipper immediately and retain packing material for inspection if any parts appear damage from shipping or the package itself shows signs of mishandling. Save the package 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.

What is included

The carton or flight case contain following items:

NAME	QTY
Laser Light	1 PCS
KEYs (for key switch)	2PCS
Power Cord	1 PCS
Interlock Connector	1 PCS
20m DB25 ILDA Cable	1 PCS
USER MANUAL	1 PCS
Flight Case	1PCS

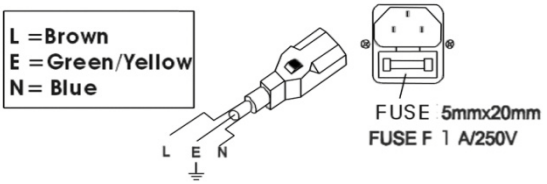


Power Supply

To determine the power requirements for a particular fixture, see the label affixed to the back plate of the fixture of refer to the fixture's specifications chart. A fixture's listed current rating is its average current draw under normal conditions. All fixtures must be powered directly off a switched circuit and cannot be run off a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer

channel is used solely for a 0% to 100% switch. Before applying power to a fixture, check that the source voltage matches the fixture's requirement.

The unit is supplied with a power plug appropriate to its voltage and destination. Should any other connections be required they must be carried out with the following configuration.

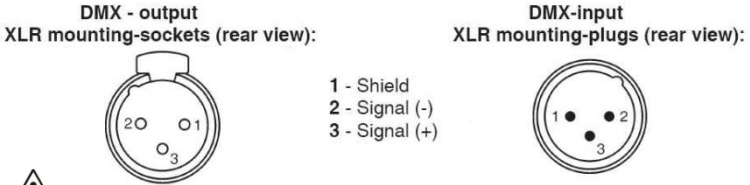


Cable(EU)	Cable(US)	Pin	International
Brown	Black	Live	L
Liht blue	White	Neutral	N
Yellow/Green	Green	Earth	⏚

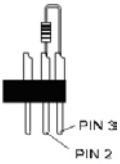
DMX-512 connection between fixtures

The fixture is equipped with 2-pin XLR sockets for DMX input and output. The sockets are wired in parallel. Only use a shielded twisted-pair cable designed for 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

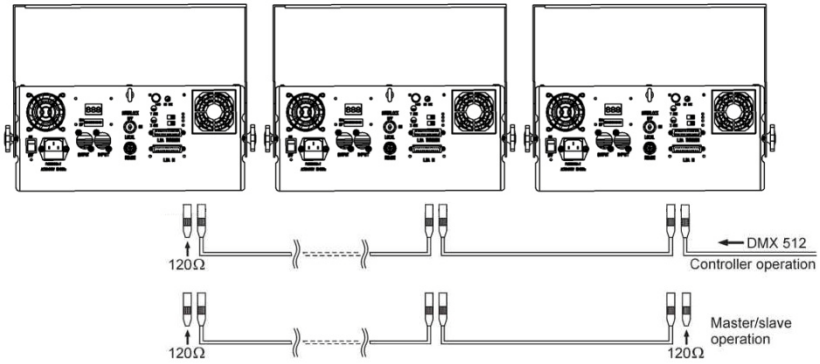
Occupation of the XLR-connection



Caution: At the laser fixture, the DMX-cable has to terminated with a terminator. Solder a 120 Ohm resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug and plug it in the DMX-output of the last fixture.



Building a serial DMX-chain

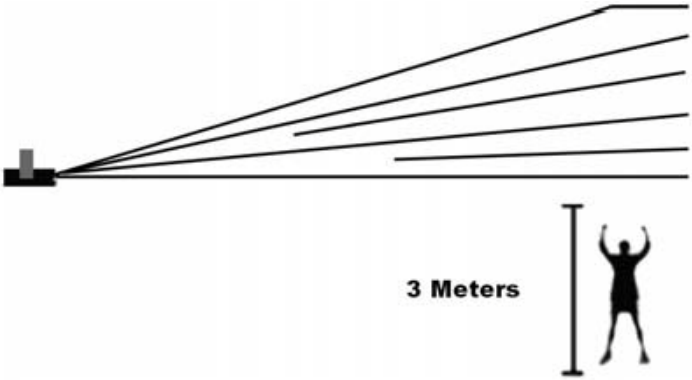


- If you are using the standard DMX-controllers, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter cables.
- Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect output with the input of the next fixture until all fixtures are connected.
- If you use a controller with 5 pins DMX connector, you need to use a 5 to 3 pins adpter
- At last fixture, the DMX cable has to be terminated with a terminator. Solder a 120 Ohm 1/4W resistor between pin 2(DMX-) and pin 3(DMX+) into a 3 pins XLR-plug and plug it in the DMX-output of the last fixture.
- Connect the fixture together in a daisy chain by XLR plug cable from the output of the fixture to the input of the next fixture. The cable cannot be branched or split to a Y cable. DMX 512 is a very high speed signal. Inadequate or damaged cables, soldered joints or corroded connectors can easily distort the signal and shut down the system.
- The DXM output and input connectors are pass-through to maintain the DMX circuit, when power is disconnected to the unit.
- Each fixture needs to have a DMX address to receive the data from the controller. The DMX address number which could be read from rear panel of each fixture is between 000~511.
- The end of the DMX 512 chain should be terminated to reduce signal errors.

Proper Laser Set Up & Usage

This fixture has been designed to be hung. It is recommended for safety purposes, your lighting effect are properly mounted using a suitable hanging clamp and safety cable. Items appropriate for safe and effective mounting are easily sourced from your lighting vendor.

International laser safety regulations require that lasers must be operated in the fashion illustrated below, with a minimum of 3 meters (9.8 ft) of vertical separation between the floor and the lowest laser light vertically. Additionally, 2.5 meters of horizontal separation is required between laser light and audience or other public spaces.



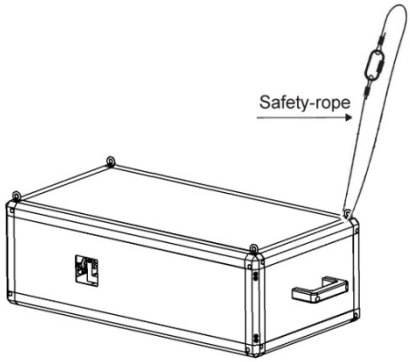
CAUTION: Use of controls, adjustments, or performance of procedures other than what is specified herein may result in hazardous radiation exposure

Rigging the Fixture

CAUTION! Please consider the respective national norms during the installation! The installation must only be carried out by an authorized employee or dealers!

- The installation of the fixture has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation..
- The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.
- Make sure the area below the installation place is free from unwanted persons during rigging, de-rigging and servicing.
- The operator has to make sure that safety-relating and machine-technical installations are approved by an expert before taking into operation for the first time and after changes before taking into operation another time.
- The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.
- The fixture should be installed in the position where persons cannot reach and where persons may walk by or be seated.

CAUTION! When installing the device, make sure there is no highly in inflammable material (decoration articles, etc.) in between a distance of min 0.5 meter.



PRODUCT OVERVIEW

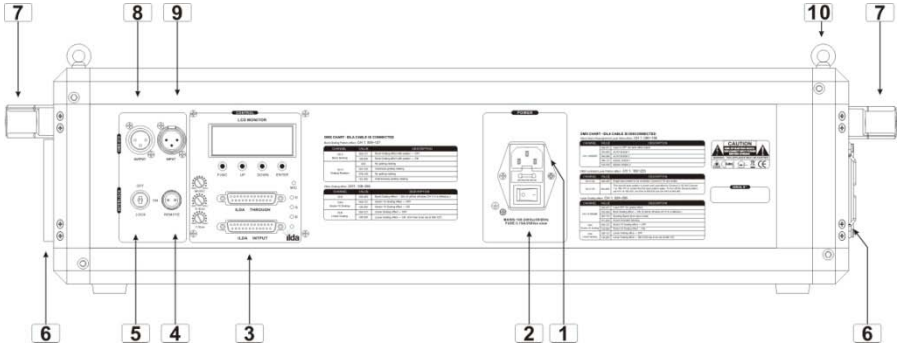
- This device has left out premise in absolutely perfect condition. In order to maintain this condition and to ensure safe operation, it is necessary for the user to follow the safety instructions and warning notes written in this manual.
- The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

Features

- STABLE TE COOLED LASER DIODE
- HIGH SPEED 40KHz SCANNER
- 2 x AUTO SHOW + 2 x MUSIC SHOW
- 128 ANIMATED GRAPHIC SHOW PATTERNS
- HUNDRES PREPROGRAMED BEAM EFFECT
- MULTIMODE REAL WAVE EFFECT
- PERFECT WHITE COLOR BALANCE
- LCD CONTROL MONITOR
- SMART PRESS BUTTON CONTROL PANEL
- AUTO SELF CHECKING SYSTEM
- AUTO, MUSIC, SOUND, DMX, ILDA & MUTIPLE GRATING
- 3 DMX MODES & 19DMX CHANNELS
- AUTO DETECTED ILDA SIGNAL INTERFACE
- EXACTLY 3D ADJUSTABL COLOR MIXER
- KEY SWITCH & INTERLOCK
- 100% LASER SAFETY REGULATION
- BEAM, WAVE, TEXT, ANIMATION, LOGO & GRATING

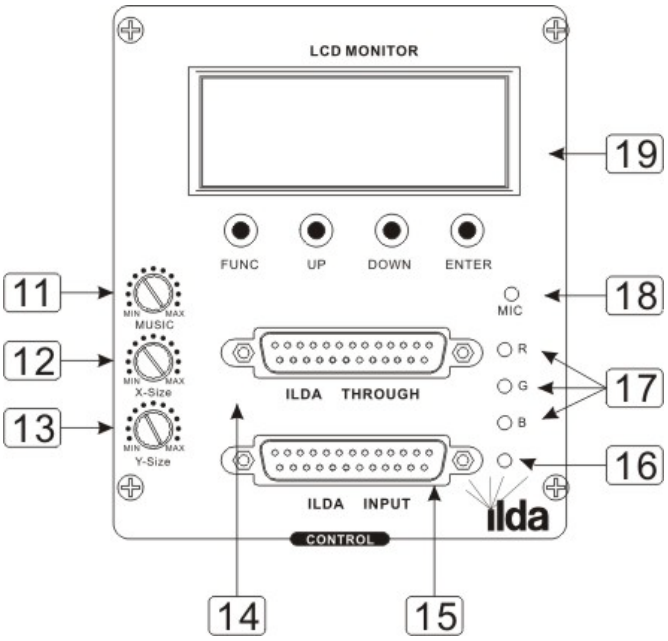
RODUCT OVERVIEW

Rear Panel



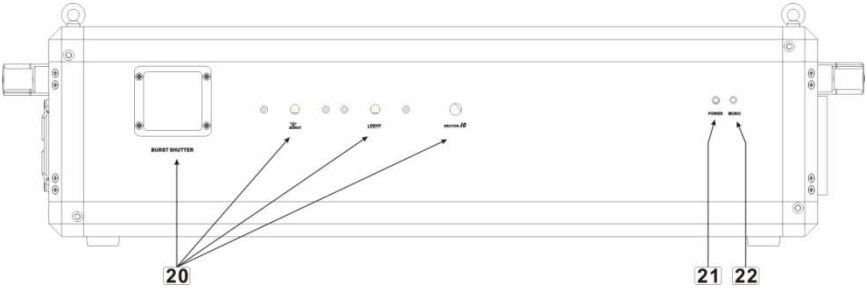
NO	NAME	FUNCTION
1	**Mains input**	With socket and integrated fuse holder
2	**Switch**	Switch on and off the power
3	**LCD control Panel**	Intelligent LCD control panel of the system
4	**Urgent and safe switch**	Switch off the laser manually if error occurs
5	**Key switch**	Make sure the professional person use
6	**Cooling fan**	Cooling and never cover this fan outlet
7	**HANDING BAND**	Product handing band
8	**DMX output**	3PIN Female XLR port，using for DMX
9	**DMX input**	3PIN Male XLR port, using for DMX
10	**Safety eye**	Attach the safety cable

ILDA / Hardware Setting Panel



NO	NAME	FUNCTION
11	**MUISC**	Turn the knob to adjust the audio respond sensitivity.
12	**X SIZE**	The Size of X axis adjustment
13	**Y SIZE**	The Size of Y axis adjustment
14	**ILDA THROUGH**	Standard ILDA DB25 Output(through)
15	**ILDA INPUT**	Standard ILDA DB25 Input
16	**ILDA**	ILDA connection indicator LED. Red is connection and green is disconnection.
17	**R G B**	Laser beam output indicator LED.
18	**MIC**	Microphone. Turn the knob to adjust the sound activated sensitivity.
19	**LCD control Panel**	Intelligent LCD control panel of the system

Front Panel



NO	NAME	FUNCTION
20	**Laser output**	Laser output aperture.
21	**POWER**	Main power indicated LED. Red is ON.
22	**MUSIC**	Synchronize to detected music signal
22	**MUSIC**	Synchronize to detected music signal

IMPORTANT

For your own safely and full laser safety Regulation, we do strongly recommend You to take this optional switch!

CONTROL & FUNCTION

- Regular breaks during operation are essential to maximize the life of this device as it is not designed for continual use.
- Do not switch the unit on and off in short time intervals
- Always unplug the unit when it is not used for a longer time. Or before replacing the bulb or start servicing.
- In the event of serious operation problems, stop using the fixture and contact your dealer immediately.

Attention **Laser will be output from laser aperture in 5 seconds after the unit is powered on.**

Operating Mode

Attention **Once after every power on laser, the VERSION and MANUFACTURE INFORMATION will be shown in LCD monitor of rear panel.**

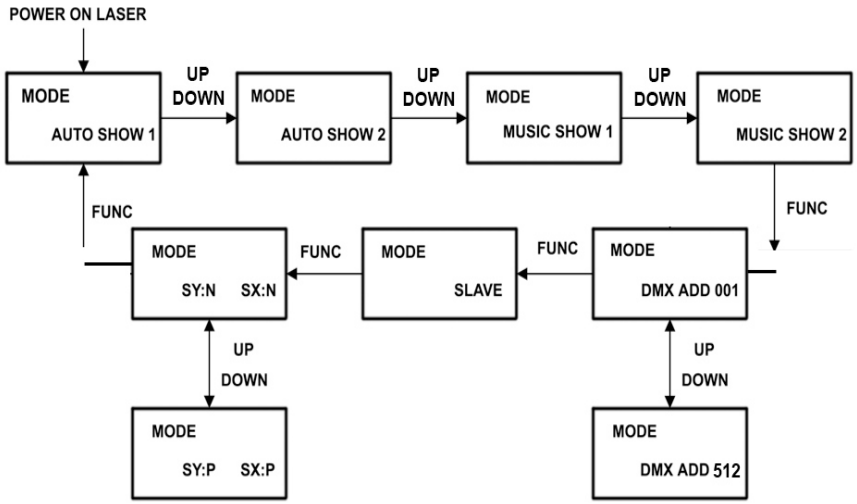
When laser is powered on, LCD monitor on rear panel shows the current operating standalone mode or DMX address of DMX mode. With help of LCD control panel, is very easy to set and change the operating mode of laser. After every resetting and saved, the new mode information will be shown on LCD monitor at next power on.

FUNC Mode Option, to choose the operating mode of laser.

ENTER Confirmation, to confirm the laser to show the present mode at the next operation.

UP

DOWN UP/DOWN, to change operating mode, parameter or DMX address.

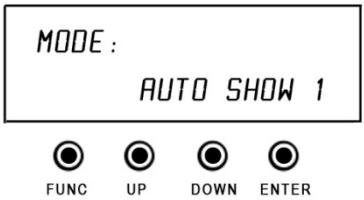


OPERATION

AUTO SHOW 1

- Press FUNC to enter MODE OPTION
- Till to AUTO SHOW 1 shown on LCD monitor.

  The laser is set at AUTO SHOW 1 standalone mode and it will play the preprogrammed show until next setting is changed. AUTO SHOW 1 is fast and hot show which is better for DISCO.

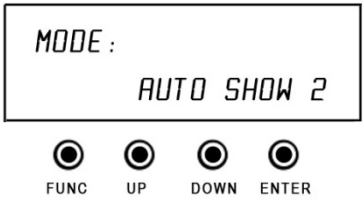


- Press ENTER to confirm the laser to show the present mode at the next operation.

AUTO SHOW 2

- Press FUNC to enter MODE OPTION
- Till to AUTO SHOW 2 shown on LCD monitor.

  The laser is set at AUTO SHOW 2 standalone mode and it will play the preprogrammed show until next setting is changed. AUTO SHOW 2 is slow and soft show which is better for MUSIC BAR.



- Press ENTER to confirm the laser to show the present mode at the next operation.

MUSIC SHOW 1

- Press FUNC to enter MODE OPTION
- Till to MUSIC SHOW 1 shown on LCD monitor.

  The laser is set at MUSIC SHOW 1 standalone mode and it will play the preprogrammed show until next setting is changed. MUSIC SHOW 1 is fast and hot show which is better for DISCO.

- Press ENTER to confirm the laser to show the present mode at the next operation.

MUSIC SHOW 2

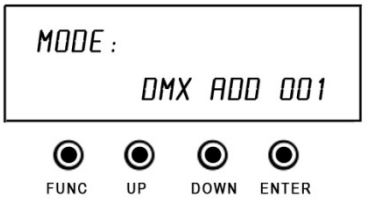
- Press FUNC to enter MODE OPTION
- Till to MUSIC SHOW 2 shown on LCD monitor.

  The laser is set at MUSIC SHOW 2 standalone mode and it will play the preprogrammed show until next setting is changed. MUSIC SHOW 2 is slow and soft show which is better for MUSIC BAR.
- Press ENTER to confirm the laser to show the present mode at the next operation.

Attention **In preprogrammed standalone MUSIC SHOW mode, the laser beam will be blank-out in 3 seconds without AUDIO/MIC activated signal.**

DMX MODE

- Press FUNC to enter MODE OPTION
- Till to DMX address shown on LCD monitor.
- Press UP/DOWN to change the DMX address that you wanted.
- Press ENTER to confirm the laser to show the present mode at the next operation.



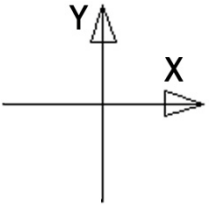
Attention **When the laser is connected with DMX controlled or under control by DMX signal, the DMX indicated LED on front panel is in RED.**

SLAVE MODE

- Press FUNC to enter MODE OPTION
- Till to SLAVE shown on LCD monitor.

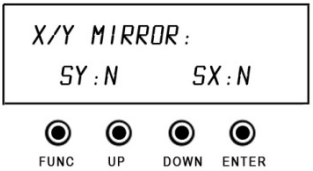
  Connect MASTER and SLAVE lasers with DMX cable. The SLAVE lasers are in SLAVE MODE. Check **XLR Control cable connection** section for your reference.
- Press ENTER to confirm the laser to show the present mode at the next operation.

Scanned World Mirror Setting



- Press FUNC to enter MODE OPTION
- Till to MIRROR shown on LCD monitor.
- Press UP/DOWN to change scanned world mirror.

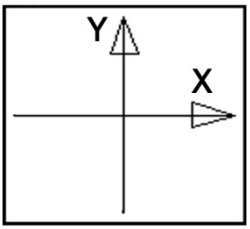
  UP is for Y direction mirror setting and DOWN is for X direction mirror setting.
- Press ENTER to confirm the laser to show the present mode at the next operation.



Attention **The X/Y scanned world mirror setting could be done by both LCD control panel and ILDA setting panel.**

Scanned World Testing

- Press FUNC to enter MODE OPTION
- Till to TESTING shown on LCD monitor.
- Turn the ILDA control panel X/Y sizing knob to change the scanned world size of laser
- Press ENTER to confirm the laser to show the present mode at the next operation.



LDA Control Mode

- This unit has the ILDA DB25 port, and it can be controlled by the PC, There is auto transform set in the inside of the unit to transform the ILDA and preprogrammed show. when connecting by the 25 pin cable, the unit will be control by PC, when disconnect the unit, it will be preprogrammed program control。
- In the theory, as long as it is ILDA B25， It can control this unit, but in the reality, some of the software can not control this unit, for the 4 pin and the 17 pin of the output card has not connect. In fact this is an easy problem. As long as you connect them. It can control this unit.

DMX Channels Chart When ILDA is connected

CHANNEL	VALUE	DESCRIPTION
CH 1 MODES	000-127	ILDA control with Burst Grating Wheel Shutter
	128-255	GRATING EFFECT

ILDA CONTROL MODE

CHANNEL	VALUE	DESCRIPTION
CH2 Grating Effect	000-127	Burst Grating Effect with pattern --- OFF
	128-255	Burst Grating Effect with pattern --- ON
CH3 Grating Rotation	000	No grating rotating
	001-075	Clockwise grating rotating
	076-150	No grating rotating
	151-255	Anticlockwise grating rotating

GRATING EFFECT MODE

CHANNEL	VALUE	DESCRIPTION
CH2		NONE (not applied)
CH3 Grating 2	000-127	GRATING EFFECT 2 OFF
	128-255	GRATING EFFECT 2 ON
CH4 Grating 3	000-127	GRATING EFFECT 3 OFF
	128-255	GRATING EFFECT 3 ON

DMX Channels Chart

Several optional operating modes were preprogrammed set into this laser projector at DMX channel 1. Before control other DMX channels, please be sure that the channel 1 was set in proper mode (value).

DMX CHANNEL 1 CHART

CHANNEL	VALUE	DESCRIPTION
CH 1	000-031	Laser OFF

MODES	032-063	AUTO SHOW 1（None Function on other channels）
	064-095	AUTO SHOW 2（None Function on other channels）
	096-127	MUSIC SHOW 1（None Function on other channels）
	128-159	MUSIC SHOW 2（None Function on other channels）
	160-191	One Pattern Mode
	192-223	Second Pattern Show UP (Other channels are controlling the second pattern)
	224-255	Grating Effect Mode

GRATING EFFECT MODE

CHANNEL	VALUE	DESCRIPTION
CH 2 STROBE	000-031	OFF
	032-063	ON --- Grating Effect 1 Priority
	064-191	Strobing Speed
	191-255	Sound Activated Strobing
CH3 Grating 2	000-127	GRATING EFFECT 2 OFF
	128-255	GRATING EFFECT 2 ON
CH4 Grating 3	000-127	GRATING EFFECT 3 OFF
	128-255	GRATING EFFECT 3 ON (CH3 has to be set as 000-127)

PATTERN EFFECT MODE

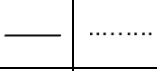
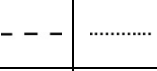
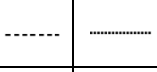
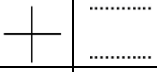
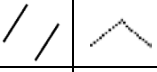
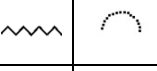
CHANNEL	VALUE	DESCRIPTION
CH 2 GROUP	000-255	Every 16 value for 1 group, total 8 groups.
CH 3 PATTERN	000-255	Every 16 value for 1 pattern, total 16 patterns.
CH4 COLOR	000-007	Original

	008-015	Red
	016-023	Green
	024-031	Yellow
	032-039	Blue
	040-047	Purple
	048-055	Light Blue
	056-063	White
	064-111	Color Rolling
	112-159	Color Jumping
	160-127	Color Moving
	208-255	Strobing
CH 5 CLIPING	000	Full pattern without clipping
	001-127	0%~99% fixed pattern clipped
	128-255	slow to fast pattern clipping
CH 6 ZOOMING	000-127	100%-5% fixed pattern zoomed
	128-169	Slow to fast pattern zooming OUT
	170-209	Slow to fast pattern zooming IN
	210-255	Zooming IN and then zooming OUT
CH 7 ZOOMSPEED	000-255	Slow to fast
CH 8 Y AXIS ROLLING	000-127	0°~359°fixed pattern rolled
	128-191	Slow to fast clockwise rolling
	192-255	Slow to fast anticlockwise rolling

CH 9 ROLLSPEED	0-255	Slow to fast
CH 10 X AXIS ROLLING	000-127	0°~359°fixed pattern rolled
	128-191	Slow to fast clockwise rolling
	192-255	Slow to fast anticlockwise rolling
CH 11 ROLLSPEED	0-255	Slow to fast
CH 12 Z AXIS ROLLING	000-127	0°~359°fixed pattern rolled
	128-191	Clockwise rolling
	192-255	Anticlockwise rolling
CH 13 ROLLSPEED	0-255	Slow to fast
CH 14 Y AXIS MOVING	000-127	128 different fixed position on X axis
	128-191	Clockwise moving
	192-255	Anticlockwise moving
CH 15 MOVESPEED	0-255	Slow to fast
CH 16 X AXIS MOVING	000-127	128 different fixed position on Y axis
	128-191	Clockwise moving
	192-255	Anticlockwise moving
CH 17 MOVESPEED	0-255	Slow to fast
CH18 Grating Effect	000-127	Burst Grating Effect with pattern --- OFF
	128-255	Burst Grating Effect with pattern --- ON
CH19 Grating Rotation	000	No grating rotating
	001-075	Clockwise grating rotating
	076-150	No grating rotating
	151-255	Anticlockwise grating rotating

Attention To shut off the second pattern, set CH1 at 192-223, set CH2 at 000-032 and set CH3 at 000-005.

PATTERN LIST

DMX	1 tunnel	2 pole	3 curve	4 line	5 dot	6 graphic	7 Numbe	8 text
000-015								
016-031								
032-047								
048-063								
064-079								
080-095								
096-111								
112-127								
128-143								
144-159								
160-175								
176-191								
192-207								
208-223								
224-239								
240-255								

MAINTENANCE

- Make sure the area below the installation place is free from unwanted persons during servicing
- Switch off the unit , unplug the mains cable and wait until the unit has been cooled down.
- Housings, fixations and installations spots(ceiling, truss, suspensions) should be totally free from any deformation
- When an optical lens is visibly damaged due to cracks or deep scratches, it must be replaced
- The mains cables must be in impeccable condition and should be replaced immediately when even a small problem is detected
- In order to protect the device from overheat the cooling fans(if any) and ventilation openings should be cleaned monthly.
- The interior of the device should be cleaned annually using a vacuum cleaner or air-jet.
- The cleaning of internal and external optical lenses and / or mirrors must be carried out periodically to optimize light output. Cleaning frequency depends on the environment in which the fixture operates: damp. smoky or particularly dirty surroundings can cause greater accumulation of dirt on the unit's optics
  1. Clean with a soft cloth using normal glass cleaning products.
  2. Always dry the parts carefully.
  3 . Clean the external optics at least once every 30 days
  4. Clean the internal optics at least very 90 days.

ATTENTION! We strongly recommend internal cleaning to be carried out by qualified personnel!

TROUBLE SHOOTING

Following are a few common problems that may occur during operation. Here are some suggestions for easy troubleshooting.

- The fixture does not work, no laser and the fan does not work.

1) Check the connect power and main fuse.
2) Measure the mains voltage on the main connector.
3) Check the power on indicated LED.

- The fixture is power on, but no laser coming out from aperture.

1) Check the laser aperture cover.
2) Check the key switch.
3) Check the remote interlock or interlock connector
4) Wait for at least 30 minutes to warm up in low temperature.
5) Check whether it is in music mode without sound signal.
6) Check whether it is in Slave mode.
7) Check whether it is in DMX without DMX signal.

- The laser effect power is very weak.

1) Wait for at least 30 minutes to warm up in low temperature.
2) Clean the scanner mirror with alcohol.
3) Clean the aperture glass with alcohol.
4) Check whether it is in DMX with high strobe frequency.

- The laser is on, but the pattern is not moving.

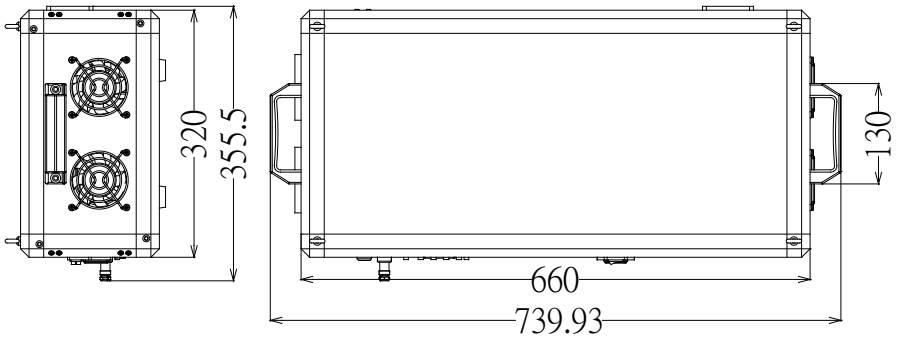
1) Check to see whether it is in Music/Sound mode without detecting sound signal.
2) Check to see whether it is in DMX mode with further DMX control
3) Try to change the fixture to another stand alone mode
4) Try to control the fixture with DMX to see the laser effect system.

- No responding to DMX controller

1) Check the DMX address settings and DMX polarity
2) If you have intermittent DMX signal problems, check the pins on connectors of the fixture or the previous one.
3) Try to use another DMX controller.
4) Check to see if the DMX cables run near or run alongside to high voltage cables that may cause damage or interference to DMX interface circuit.

SPECIFICTAIONS

Mains Input:	AC100~240V, 50/60Hz
Fuse:	250V 3.15A Slow Blow (20mm Glass)
Total Power:	210W
X/Y Axis Beam Angle:	±25°
Music Control:	Audio / Sound Activated
Laser Power:	1000mW 532nm Green CW 1000mW 640 Red CW 1000mW 455 Blue CW
Laser Classification:	Class 4B
Laser Safety Standard:	EN60825-1 2007
Condition Temperature:	10~40℃
DMX Connections:	3 pins XLR Male/Female
DMX Channels	Max 19 channels
Measurement:	See picture below
N Weight:	21Kg



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