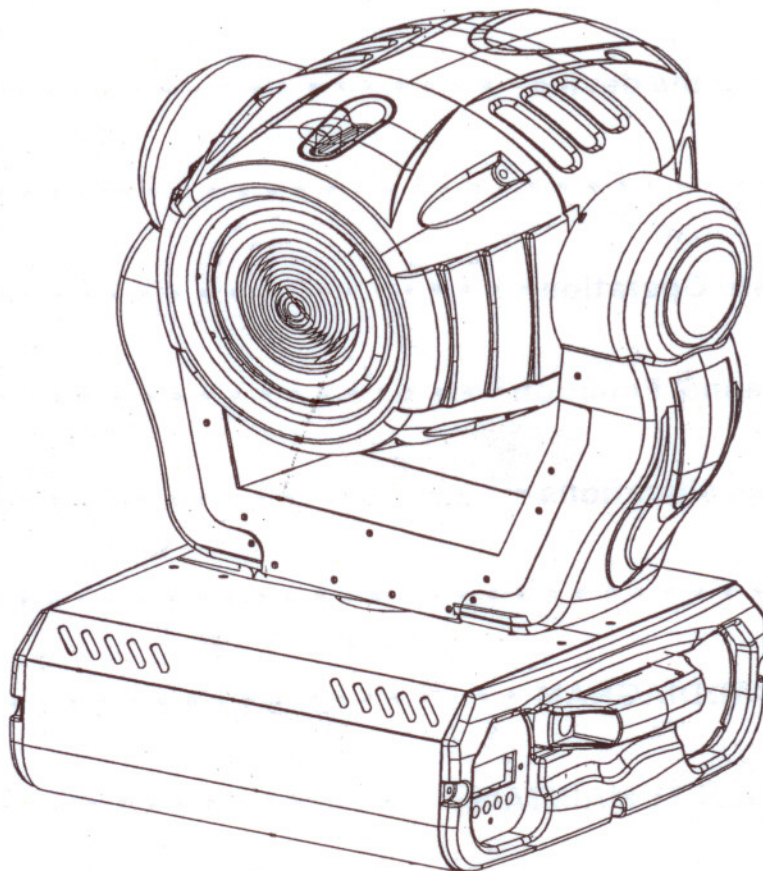


INVO LIGHT

MH 250W



USER MANUAL

Please read over this manual before operation the light 

ENGLISH INDEX

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1. Open the box and checking

Congratulations on choosing our products! Please carefully read this instruction manual in its entirety and keep it well for using reference. This manual contained about the installation and the relative using information of this products. Please according to this manual's relative speaking when using this equipment.

This equipment was made of new style, high intensity plastic . It fully shows the modem times light characteristic with beauty structure. And it was made according to CE standard. Fully up the international standard of DMX512 agreement. Master or slave in phase control. Can be use in large entertainment, theater, performing and playing hall, etc.

This product uses MSR 250/2 electrical arc lamp. When receiving this product please carefully bring and put; and check that whether this equipment has been damaged or not during transportation. And please also check the following thing was enclosed:

Signal line ----- one piece Safety string ----- one pieces
User Manual----- one set

2. Safety instructions

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

- be qualilfied
- follow the instructions of this manual

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 YOU INITIAL START - UP!
- Be careful with your operations.
- With a high voltage you can suffer a dangerous electric shock when touching the wires!
- This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes writtenin 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 device 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 accessable after installing the device.
- Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the powercord from time to time.

-
- by the plug. Never pull out the plug by tugging the power-cord.
 - This device falls under protection class I. Therefore 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 connect this device to a dimmer pack.
 - Do not switch the fixture on and off in short intervals as this would reduce the lamp s life.
 - 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.
 - Do not touch the device s housing bare hands during its operation (housing becomes hot)!
 - For replacement use lamps and fuses of same type and rating only.

CAUTION :

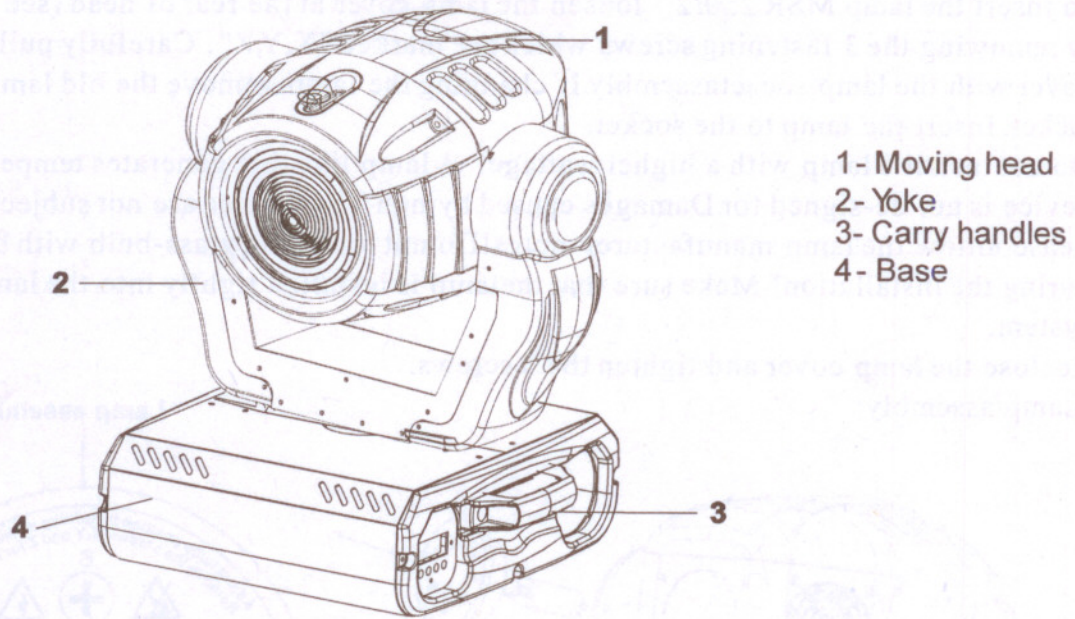
EYE DAMAGES !

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

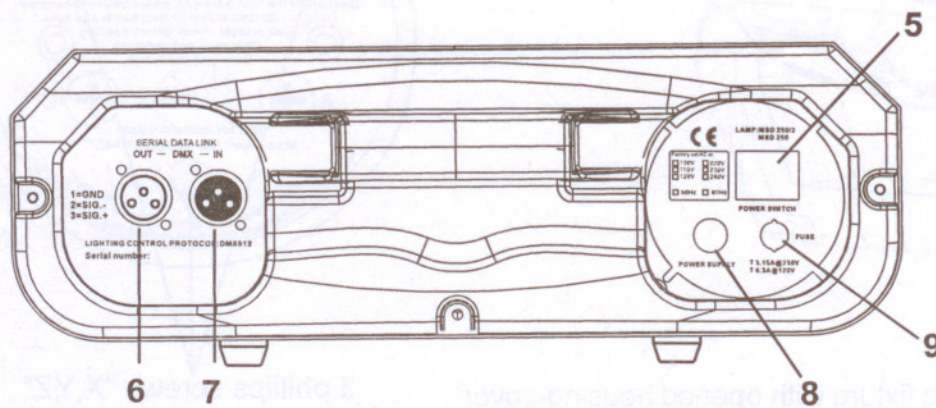
3. Operating determinations

- This device is a moving-head spot for creating decorative effects and was designed for indoor use only.
- 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.
- Never run the device without lamp!
- Do not shake the device. Avoid brute force when installing or operating the device.
- Never lift the fixture by holding it at the projector-head, as the mechanics may be damaged. Always hold the fixture at the transport handles.
- 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 light-output and the illuminated surface must be more than 2 meters.
- Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture. Always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the correct holes only.
- Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.
- The lamp must never be ignited if the objective-lens or any housing-cover is open, as discharge lamps may explode and emit a high ultraviolet radiation, which may cause burns.
- The maximum ambient temperature $t_a = 45^{\circ}\text{C}$ must never be exceeded. Otherwise, the lamp is switched off and the fixture is out of operation for 5 minutes..

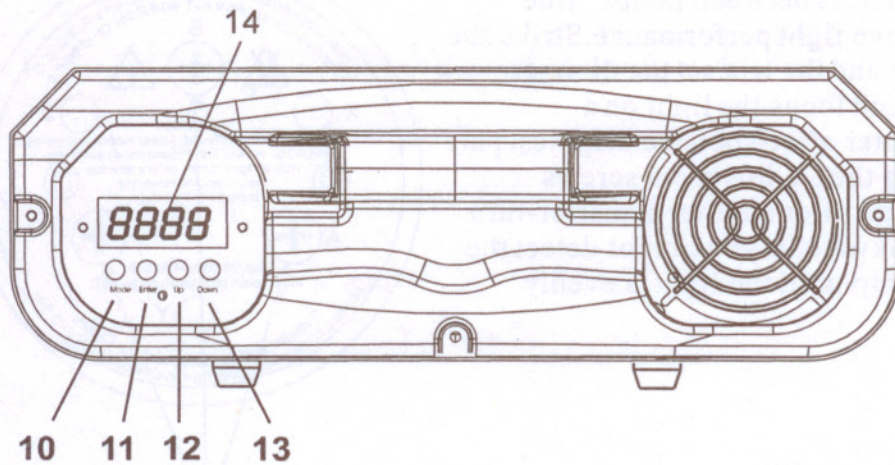
4. Description of the device



- 1 - Moving head
- 2 - Yoke
- 3 - Carry handles
- 4 - Base



- Rear panel:
- 5 - Power switch
 - 6 - DMX output
 - 7 - DMX input
 - 8 - Power cord
 - 9 - Fuse holder



- Front panel:
- 10 - Mode-button
 - 11 - Enter-button
 - 12 - Up-button
 - 13 - Down-button
 - 14 - Display

5. Installation

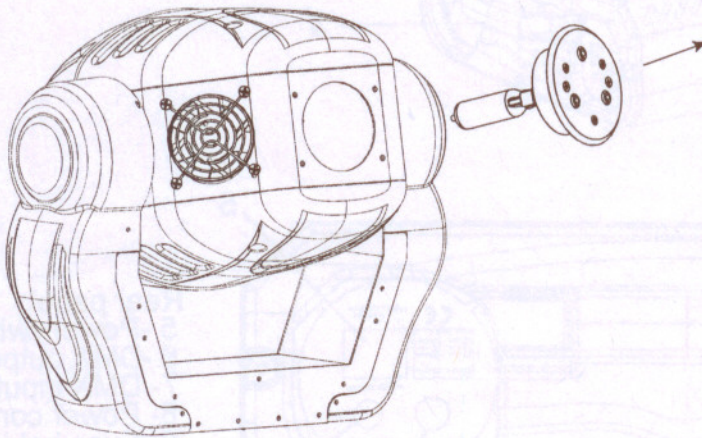
5.1 Fitting the lamp

To insert the lamp MSR 250/2 loosen the lamp cover at the rear of head (see the drawings) by removing the 3 fastening screws which are marked "X,Y,Z" . Carefully pull out the cover with the lamp socket assembly. If changing the lamp, remove the old lamp from the socket. Insert the lamp to the socket.

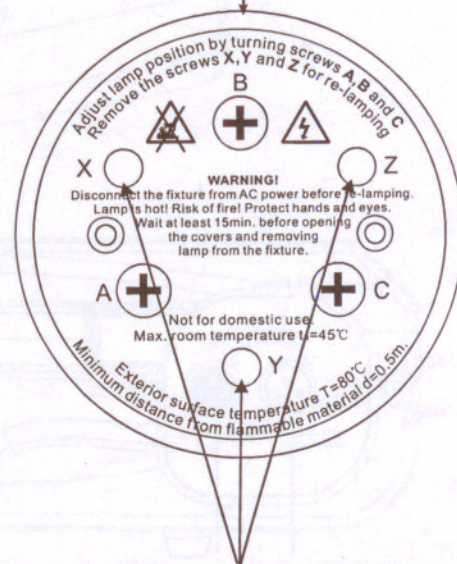
Do not install a lamp with a higher wattage! A lamp like this generates temperatures the device is not de-signed for. Damages caused by non-observance are not subject to warranty. Please follow the lamp manufacturer notes! Do not touch the glass-bulb with bare hands during the installation! Make sure that the lamp is installed tightly into the lampholder system.

Reclose the lamp cover and tighten the 3 screws.

.Lamp assembly:



Lamp assembly



3 phillips screws "X,Y,Z"

Do not operate this fixture with opened housing-cover!

5.2 Lamp adjust

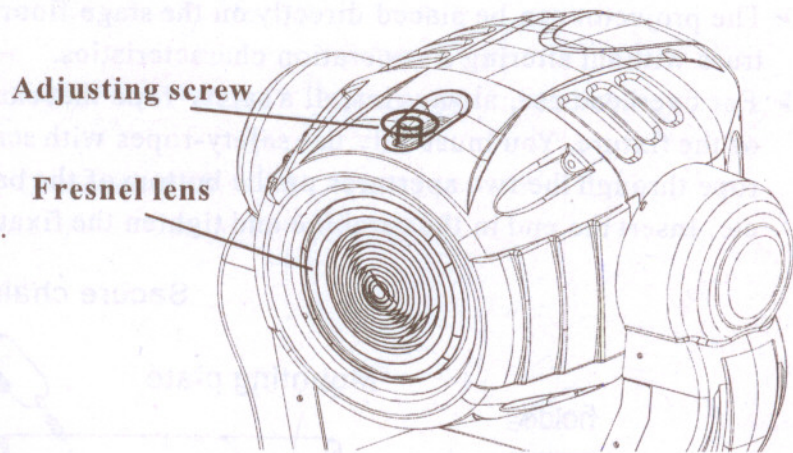
The WASH 250 lampholder is aligned at the factory. Due to differences between lamps , fine adjustment may improve light performance. Strike the lamp, open the shutter and the iris, set the dimmer intensity onto 100% and focus the light on a flat surface (wall). Center a hot-spot (the brightest part of the image) by using the 3 adjustment screws "A,B,C" . Turn one screw after another a quarter-turn clockwise (counter-clockwise). If you cannot detect the hot-spot, adjust the lamp until the light is evenly distributed.



3 adjustment screws "A,B,C"

5.3 Adjusting beam angle

The Fresnel lens system can be configured in the range between 8° and 22° . To set the desired beam angle, and loose 2 adjusting screws on the Fresnel lens unit and adjust the required beam angle. Tighten the adjusting screws again and fix back the front cover.

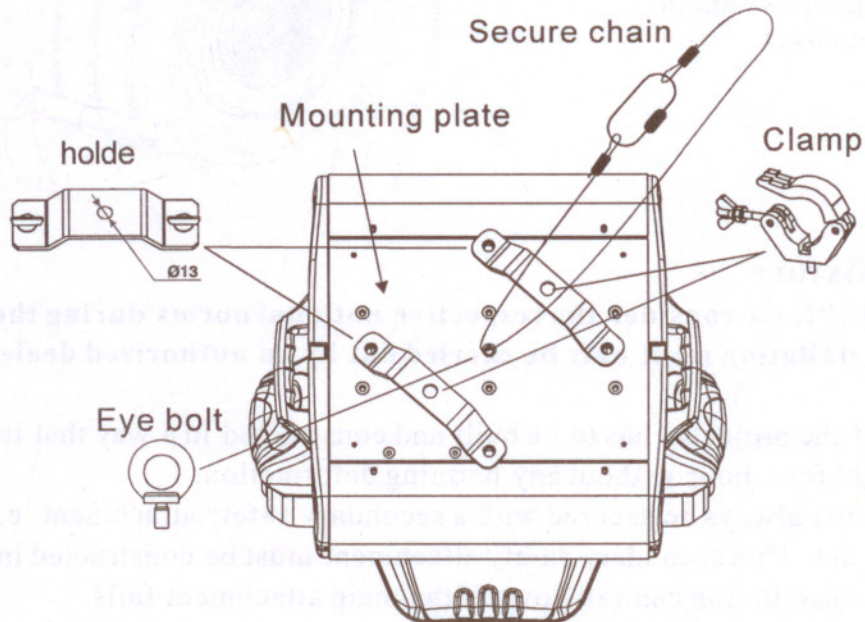


5.4 Rigging the fixture

DANGER TO LIFE: Please consider the respective national norms during the installation! The installation must only be carried out by an authorized dealer!

- The installation of the projector 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.
- When rigging, derigging or servicing the fixture staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.
- 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 an expert after every four year in the course of an acceptance test.
- The operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.
- The projector should be installed outside areas where persons may walk by or be seated.
- **IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE**, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the projector. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury and or damage to property.
- The projector has to be installed out of the reach of people.
- If the projector shall be lowered from the ceiling or high joists, professional trussing systems have to be used. The projector must never be fixed swinging freely in the room.
- **Caution:** Projectors may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do NOT install the projector!
- Before rigging make sure that the installation area can hold a minimum point load of 10 times the projector s weight.

- The projector can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics.
- For overhead use, always install a safety-rope that can hold at least 10 times the weight of the fixture. You must only use safety-ropes with screw-on carabines. Pull the safety-rope through the two apertures on the bottom of the base and over the trussing system etc. Insert the end in the carabine and tighten the fixation screw.



5.5 Connection to the mains

Verify the power supply settings before applying power!

If you wish to change the power supply settings, see the chapter Appendix.

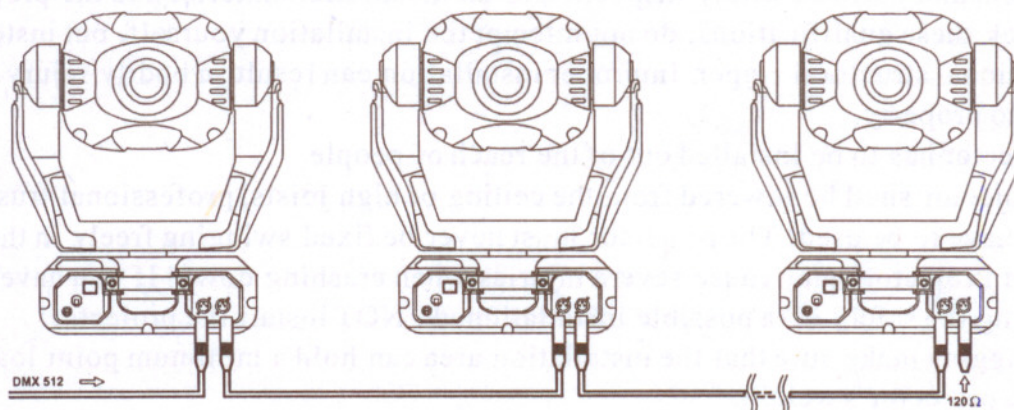
Connect the fixture to the mains with the enclosed power cable and plug.

The earth has to be connected!

The occupation of the connection-cables is as follows:

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

5.5 DMX-512 connection/connection between fixtures



Only use a stereo shielded cable and 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:

**DMX-OUTPUT
XLR mounting-socket:**

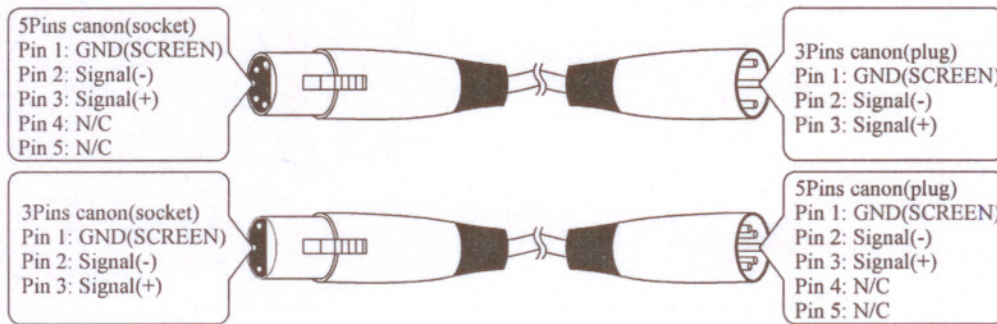


**DMX-input
XLR mounting-plug:**



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

The transform of the controller line of 3 pins and 5 pins (plug and socket)

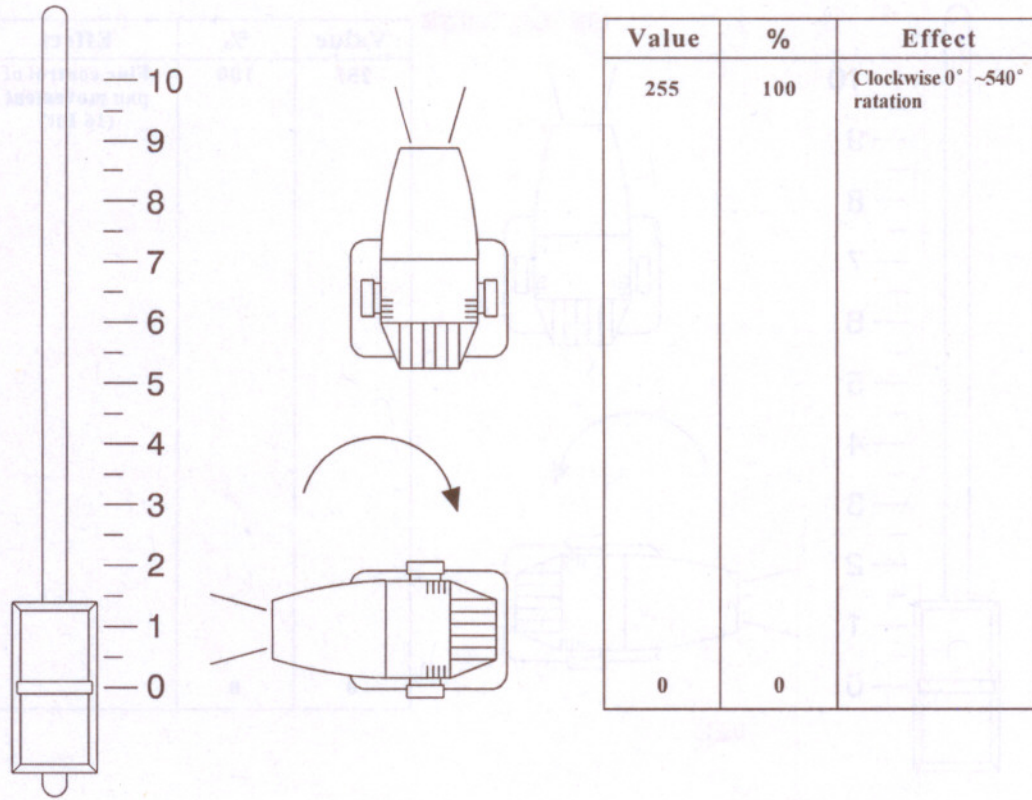


6. Control board Operation

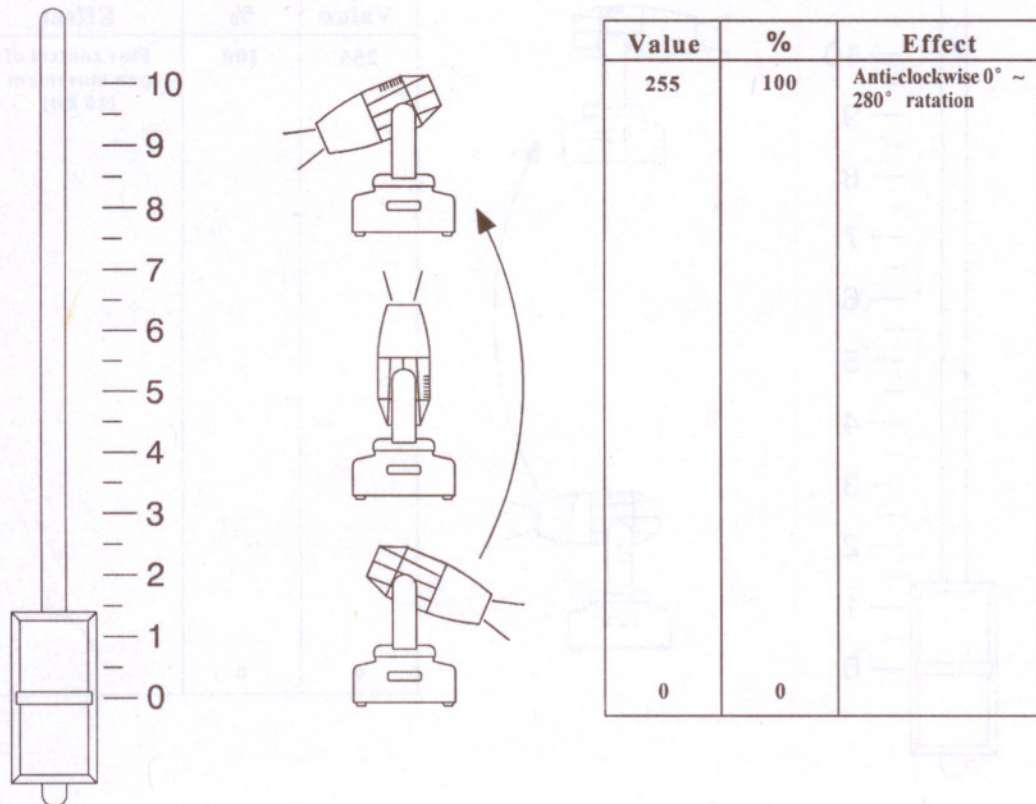
Control board Function :

MODE	FUNCTION	CONDITION
<i>PAN</i>	Pan movement in positive or negative direction	YES--negative direction
<i>TILT</i>	Vertical movement in positive or negative direction	YES--negative direction
<i>Addr</i>	Address code set	
<i>RESET</i>	Reset	YES--reset
<i>RUN</i>	Working mode	<i>OFF</i> DMX512 mode
		<i>PT6</i> Automatic
		<i>SLAE</i> Slave mode
<i>LAMP</i>	Lamp switch	<i>ON</i> Lamp on
		<i>OFF</i> Lamp off
<i>VER</i>	Software version	
<i>HEAT</i>	Lamp hot	
<i>LA.Er</i>	Lamp error	

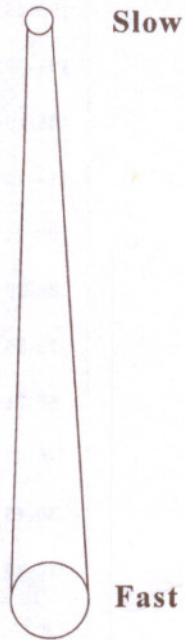
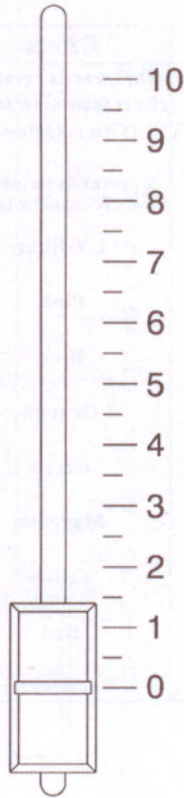
CHANNEL 1: PAN



CHANNEL 2: TILT

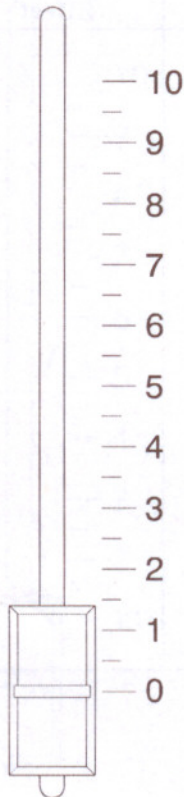


CHANNEL 5: Speed of PAN/TILT movement



Value	%	Effect
255	100	Slow
0	0	Fast

CHANNEL 6: Lamp on/off & reset

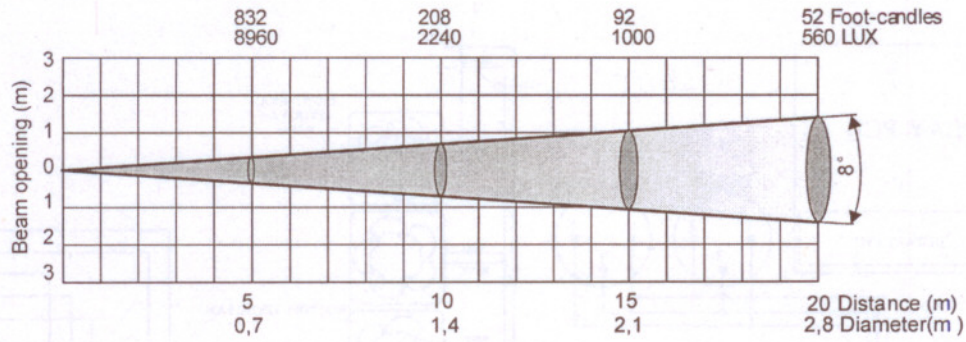


Value	%	Effect
240-255	94-100	No function
230-239	90-93	Lamp off after 3 seconds
140-229	55-89	No function
128-139	50-54	Lamp on after 3 seconds, Reset
0-127	0-49	No function

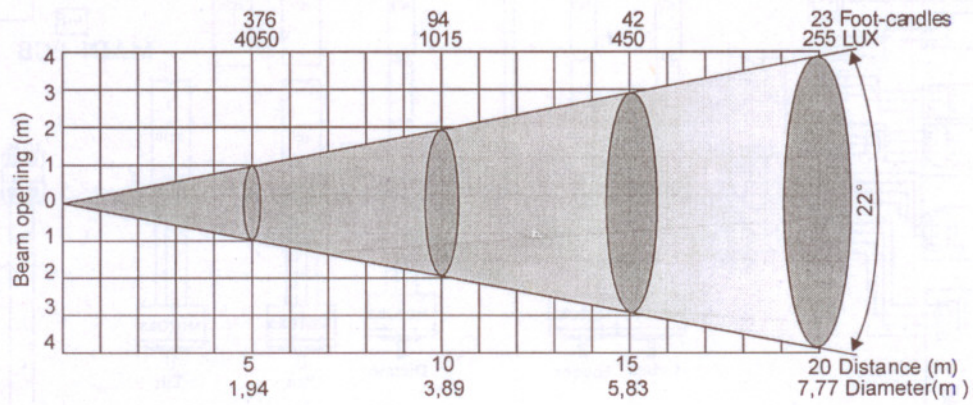
Beampath:

Min. beam angle 8°

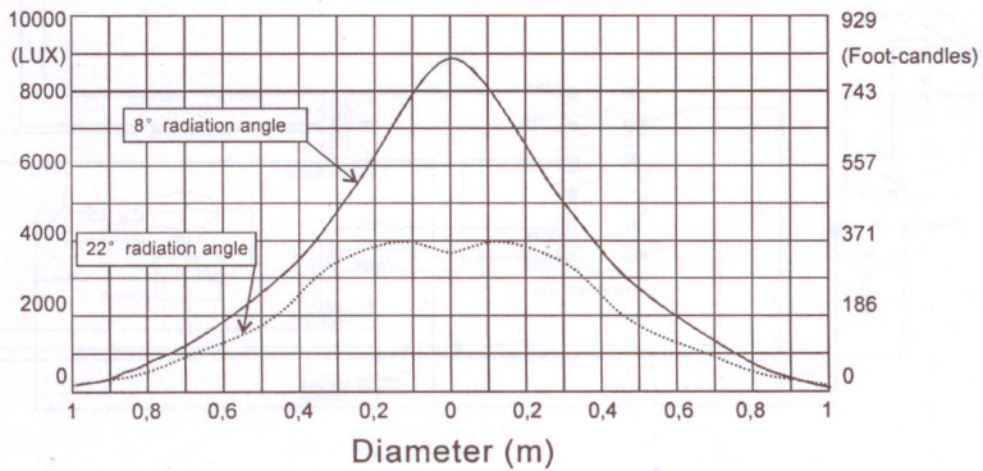
Min. beam angle 8°



Max. beam angle 22°



Distance=5m



COMMEN FAULTY MAINTAIN

FAULTY PHONMENON		FAULTY ANALYSIS		FAULTY PART	PART No		
WHOLE LIGHT CANN'T WORK		POWER PLUG LOOSE		PLUG CABLE	27-00-0010-04		
				FUSE	09-00-3151-00		
		POWER SWITCH FAULTY		POWER SWITCH	08-05-0400-03		
NO LIGHT FROM BULB		REACH THE LIFESPAN OR BED QUALITY OF BULB		MSD 250/2	07-07-0250-02		
		TRIGGER FAULTY		B ELECTRONIC TRIGGER	11-10-0010-00		
		TEMPERATURE SWITCH B FAULTY		110°C 10A/250V TEMPERATURE SWITCH	08-07-0020-00		
		BALLAST FAULTY		250W BALLAST	06-03-Z025-00		
		MAIN BOARD FAULTY		MAIN PCB	26-2A-2107XY-00		
		SHOW BOARD FAULTY		SHOW BOARD	26-2A-2107DI-00		
		TRANSFORMER FAULTY		TRANSFORMER (110V)	06-00-B006-00		
TRANSFORMER (230V)	06-00-B002-00						
CAN NOT TURN OFF THE LIGHT		REALY OF MAIN BOARD FAULTY		REALY FAULTY	11-01-0002-00		
		MAIN BOARD OPTCOUPLER FAULTY		4N25 OPTOCOUPLER	00-4N25-00		
BULB LIGHTING AND WHOLE LIGHT NORMAL BUT FANS CAN NOT WORK		FAN ON HEAD OF LIGHT FAULTY		80×80×25 12VDC FAN	16-00-0008-04		
		FAN ON BOTTOM OF LIGHT FAULTY		80×80×25 12VDC FAN	16-00-0008-04		
BULE LIGHTING FANS NORMAL	COMPLETE LIGHT RESEAT BUT CAN NOT BE CONTROLLED		SHOW BOARD FAULTY		SHOW BOARD FAULTY	26-2A-2108DI-00	
			WHETHER THE SIGNAL CABLE GOOD OR NOT		5 METERS CABLE SETS	27-04-0010-00	
	CAN NOT ADJEST PAN		MOTOR FOR PAN FAULTY		23HS0001-02MOTOR	15-00-0076-00	
			STRAP OF PAN BREAK		420HTD/GT 3M OR RPP3 WEIGHT6mm	18-06-0009-02	
	CAN NOT ADJEST TITL		MOTOR FOR TILT FAULTY		23HS0001-02MOTOR	15-00-0076-00	
			STRAP OF TILT BREAK		447HTD/GT 3M OR RPP3 WEIGHT6mm	18-06-0009-01	
	COLOR WHEEL CAN NOT CHANGE COLOR		2108L BOARD FOR MOTOR FAULTY	MOTOR FOR COLOR WHEEL FAULTY		42BYGH026-2MOTOR	15-00-0073-00
	EFFECT WHEEL CAN NOT ROTATION			MOTOR FOR EFFECT WHEEL FAULTY		42BYGH026-1MOTOR	15-00-0033-00
	CAN NOT DIMMER			MOTOR FOR DIMMER FAULTY		42BYGH026-2MOTOR	15-00-0073-00
	STROBE CAN NOT WORK			MOTOR FOR STROBE FAULTY		42BYGH004-01MOTOR	15-00-0033-00
	CAN NOT AUTOMATISM		DISPLAY FAULTY		DISPLAY	26-2A-2108DI-00	
					DISPLAYCPU	00-89S8252-00	

9. Maintenance and cleaning

It is absolutely essential that the fixture is kept clean and that dust, dirt and smoke-fluid residues must not buildup on or within the fixture. Otherwise, the fixtures light-output will be significantly reduced. Regular cleaning will not only ensure the maximum light-output, but will also allow the fixture to function reliably throughout its life. A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

DANGER : Disconnect from the mains before starting any maintenance work

The front objective lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.

The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.

The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.

To ensure a proper function of the gobo-wheel, we recommend lubrication in six month intervals. The quantity of oil must not be excessive in order to avoid that oil runs out when the gobo-wheel rotates.

There are no serviceable parts inside the device except for the lamp and the fuse. Please refer to the instructions under "Fitting/Exchanging the lamp". Maintenance and service operations are only to be carried out by authorized dealers.

Replacing the fuse

If the lamp burns out, the fine-wire fuse of the device might fuse, too. Only replace the fuse by a fuse of same type and rating. Before replacing the fuse, unplug mains lead.

Procedure:

- 1) Unscrew the fuseholder on the rear panel of the base with a fitting screwdriver from the housing (anti- clockwise).
- 2) Remove the old fuse from the fuseholder.
- 3) Install the new fuse in the fuseholder.
- 4) Replace the fuseholder in the housing and fix it.