



NOVA

PR-2013D

This product manual contains important information about the safe installation and use of this projector. Please read and follow these instructions carefully and keep this manual in a safe place for future reference.

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INDEX

SAFE USAGE OF THE PROJECTOR	3
INSTALLING THE PROJECTOR	4
FITTING THE LAMP	4
POWER SUPPLY – MAINS	5
OPERATION	5
STAND-ALONE MODE	6
XLR CONNECTORS AND TERMINATOR	6
MASTER/SLAVE SYNCHRO MODE	7
CONTROLLER MODE - DMX OPERATION	8
DMX CONTROL CHANNEL FUNCTIONS	8
INSERTING OR EXCHANGING THE SLIDES	9
MAINTENANCE	9
KEEPING THE PROJECTOR CLEAN	9
TROUBLESHOOTING	10
TECHNICAL DATA	10
ELECTRICAL DIAGRAM	11

Please note that as part of our ongoing commitment to continuous product development, specifications are subject to change without notice. Whilst every care is taken in the preparation of this manual we reserve the right to change specifications in the course of product improvement. The publishers cannot be held responsible for the accuracy of the information herein, or any consequence arising from them.

Every apparatus is tested completely and packed properly by the manufacturer. Please make sure the packing and / or the apparatus is in good condition before your installation and use. Should there be any damage caused by transportation, consult your dealer and do not use the apparatus. But any damage caused by improper use will not be assumed by the manufacturer and / or dealer.

ACCESSORIES

THESE ITEMS ARE PACKED TOGETHER WITH THE PROJECTOR

- Lenses for 20° light beam (1 SET)
- Mounting Bracket (1 PCS)
- M8 Knob for mounting bracket (2 PCS)
- Safety cord (1 PCS)
- Power-cord (1 PCS)
- XLR plug (1 PCS)
- XLR socket (1 PCS)
- Slide of pearl river logo (1 PCS)
- Slide of colour temperature (6000K) (1 PCS)
- Slide of frost (1 PCS)
- This manual (1 PCS)

INTRODUCTION

Thank you for purchasing our product NOVA, PR-2013D.

The NOVA complies to CE norms and standards and uses international protocol DMX-512. The outline of housing is elegant, lovable and portable, which features its special character compared with conventional luminaire. It is convenient to hang the unit and the angle of the body is easy to be adjusted, and the unit even can be carried by hand. You can insert or exchange the slides easily for different light beam effect or advertising function, and you can change a set of lenses provided to change the light beam angle. The NOVA may be controlled by sound, auto programmes having been set or a controller, and it may be used as a stand-alone unit, linked with each other for multi-units synchronously running, or linked to a controller, so it is suitable for many different applications.

The NOVA features two independent devices both of adjustable strobe/shutter and auto thermal cut-off. It can be setup easily with the touch-switches and a digital display screen.

SAFE USAGE OF THE PROJECTOR

The following points are important for safety as well as for the smooth installation and performance of the unit

When unpacking and before disposing of the carton check there is no transportation damage before using the projector. Should there be any damage caused by transportation, consult your dealer and do not use the apparatus.

The projector is for Indoor use only, IP20. Use only in dry locations. Keep this device away from rain and moisture, excessive heat, humidity and dust. Do not allow contact with water or any other fluids, or metallic objects.

The projector is not designed or intended to be mounted directly on to inflammable surfaces.



The projector is only intended for installation, operation and maintenance by qualified personnel.

The projector must be installed in a location with adequate ventilation, at least 50cm from adjacent surfaces. Be sure that no ventilation slots are blocked.

Do not project the beam onto inflammable surfaces, minimum distance is 3m. \sphericalangle 3m E

Avoid direct exposure to the light from the lamp. The light is harmful to the eye.

Do not attempt to dismantle and / or modify the projector in any way.

Electrical connection must only be carried out by qualified personnels.

Before installation, ensure that the voltage and frequency of power supply match the power requirements of the projector.

It is essential that each projector is correctly earthed and that electrical installation conforms to all relevant standards.

Do not connect this device to any dimmer pack.

Keep the lamp clean. Never touch the lamp glass with your bare fingers.

Make sure that the power-cord is never crimped or damaged by sharp edges. Never let the power-cord come into contact with other cables. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

Never run the projector without a lamp.

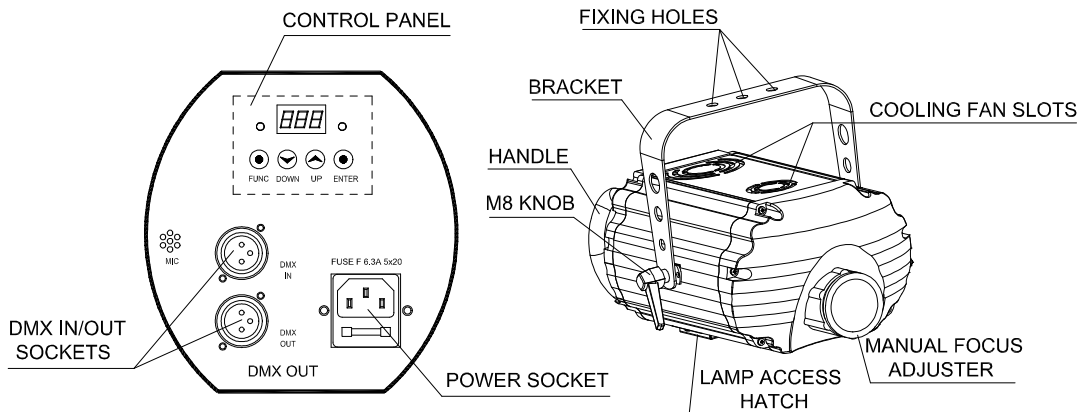
The lamp used in this projector is an MSD 250W discharge lamp. After being switched off don't attempt to restart the projector until lamp has cooled, this will require approx 15 minutes. Switching the lamp on and off at short intervals will reduce the life of both the lamp and the projector. But occasional breaks will prolong the life of the lamp and the projector.

There are no user serviceable parts inside the projector, do not open the housing and never operate the projector with the covers removed.

Always disconnect from the mains, when the device is not in use or before cleaning it or before attempting any maintenance work.

If you have any questions, don't hesitate to consult your dealer or manufacturer.

INSTALLING THE PROJECTOR



This unit has been designed to be hung. Mount the bracket provided on the body of the projector by 2 M8 knobs provided, then hang the projector via its bracket using a M12 size bolt and a nut. When you want to adjust the angle of the body of the projector, you only loosen the two M6 knobs carefully and then adjust the angle of the body. After finishing that, it is recommended that you don't forget to retighten the two knobs. Always ensure that the projector is firmly positioned to avoid vibration and slipping, and always ensure that the structure to which you are attaching the projector is secure and is able to support a weight of 9.8Kg for each NOVA.

For safety the unit should have a secondary fixing with a safety cable through the two handles on the back of the unit, and the safety cable should afford 10 times of the unit's weight.

FITTING THE LAMP

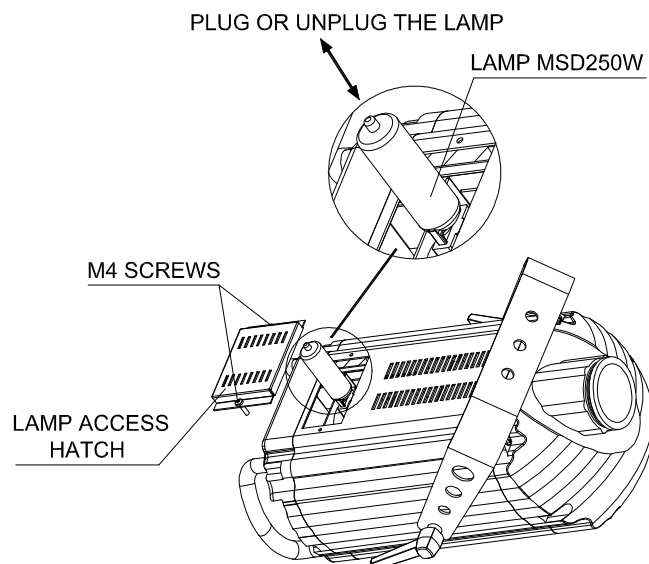
Remove the lamp access hatch by loosening the 2 M4 screws.

Insert an MSD 250W lamp in the lamp porcelain holder until the lamp is fully seated. (**Note:** One plug on the lamp is smaller than the other. And you can see there is a red box marked on one socket of the lamp-holder. When installing the lamp, you should let the smaller plug of the lamp align with the red marked socket of the lamp-holder.)

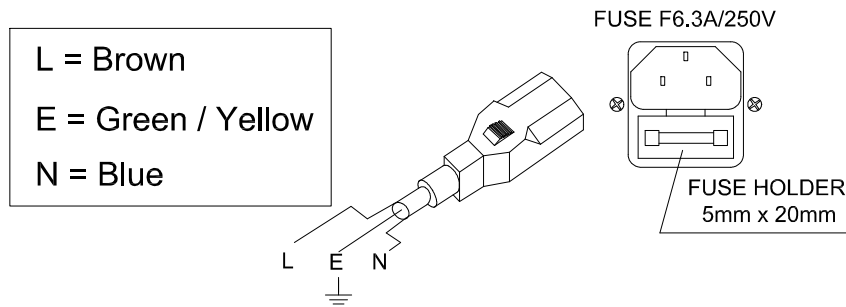
Mount the lamp access hatch again.

Retighten the 2 M4 screws.

NOTE: The MSD series are high pressure lamps with external igniters \triangle . Care should always be taken when handling these lamps. Always read the manufacturers "Instructions for use" enclosed with the lamp.



POWER SUPPLY - MAINS



Use the plug provided to connect the mains power to the projector paying attention to the voltage and frequency marked on the panel of the projector. It is recommended that each projector is supplied separately so that they may be individually switched on and off. It is recommended that **the green/yellow cord must be earthed correctly.**

OPERATION

The projector may be controlled by sound, auto programmes or a controller, and it may be operated in Stand-Alone automatic mode, in Master/Slave synchro mode or in Controller mode. With the touch-switches and the digital display screen, DMX start address can be easily set and the various setup options may be configured.

TO SET THE DMX START ADDRESS

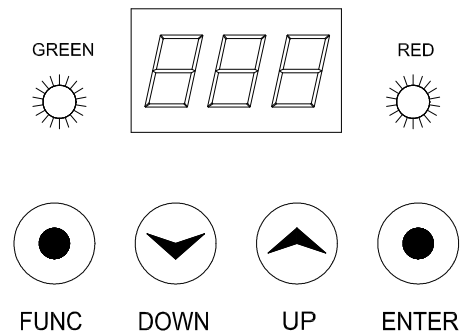
The display shows the DMX start address after the projector is switched on (if you have already set the DMX start address and saved it, the screen will display the last setting).

Press the **UP** or **DOWN** buttons to select the required DMX start address in the display.

Confirm your choice by pressing the **ENTER** button. The green LED will flash and the projector will save it.

In Stand-Alone mode, the DMX start address can be set at random.

In the Controller and Master/Slave mode, the DMX start address must be set correctly. (Refer to "Controller mode" and "Master/Slave mode" sections).



SETUP OPTIONS - PROJECTOR CONFIGURATION

To browse through the various Setup Options, press the **FUNC** button consecutively. There are 11 option codes (1~9 and A, b), each code has a specific function. The functions provided are listed in the following table.

Once you have selected the desired operation code, press the key **UP** or **DOWN** to select "y" (means ON) or "n" (means OFF). y = YES, n = NO.

Press the key **ENTER** to save the selected function and configuration. If the display is showing "y", then the setting has been enabled. In the same way, if it was showing "n" when you pressed **ENTER** the option has been disabled.

The green LED will flash during this operation.

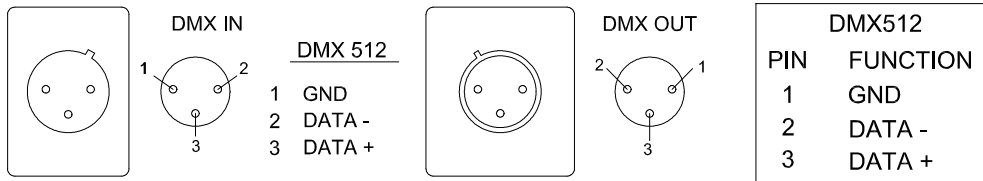
SETUP OPTIONS		
CODE	CHOICE	FUNCTION
1		Not used
2		Not used
3	Y	Sound activation enable
	N	Sound activation disable
4	Y	Automatic programmes enable
	N	Automatic programmes disable
5		Not used
6		Not used
7	Y	Reset enable
	N	Reset disable
8		Not used
9		Not used
A		Not used
B		Not used

STAND-ALONE MODE

Without connecting the controller and the control cable, with the setup option 3 (sound activation) or 4 (auto programmes) enable, the projector will run in Stand-Alone mode. If you enable a combination of setup options 3 (sound activation) and 4 (auto programmes), the projector will run in auto programmes. You may set the DMX start address at random in Stand-Alone mode. When sound activating, the red LED will flash according to the rhythm of the music. When auto programmes running, the red LED is constantly on.

XLR CONNECTORS AND TERMINATOR

XLR CONNECTORS

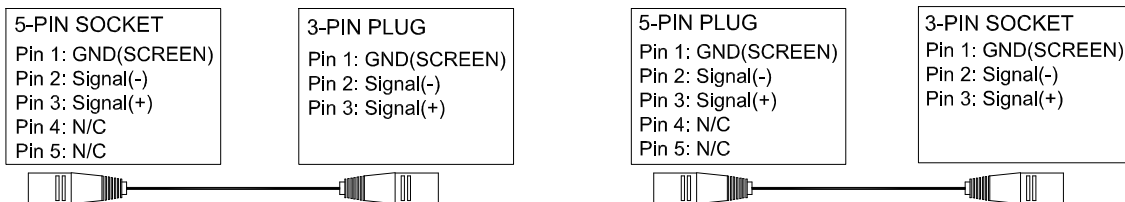


Connection between controller and projector and between one projector and another must be made with 2 core screened cable, with each core having at least a 0.5mm diameter. Connection to and from the projector is via cannon 3 pin XLR plugs and sockets which are included with the projector. The XLR's are connected as shown in the table above.

Note, care should be taken to ensure that none of the connections touch the body of the plug or each other. The body of the plug is not connected in any way. The NOVA accepts digital control signals in standard DMX512 (1990) format.

5-PIN AND 3-PIN CONVERSION

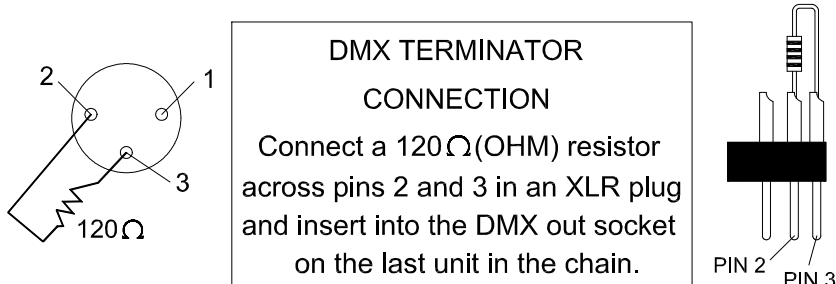
NOVA uses 3-pin XLR plug / socket. If your controller uses 5-pin XLR plug / socket, you should convert 5-pin plug / socket into 3-pin socket / plug as shown below.



DMX TERMINATOR

In the Controller mode or Master/Slave mode, the DMX output has to be connected with a DMX terminator at the last fixture in the chain. This prevents electrical noise from disturbing and corrupting the DMX control signals.

The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated below.

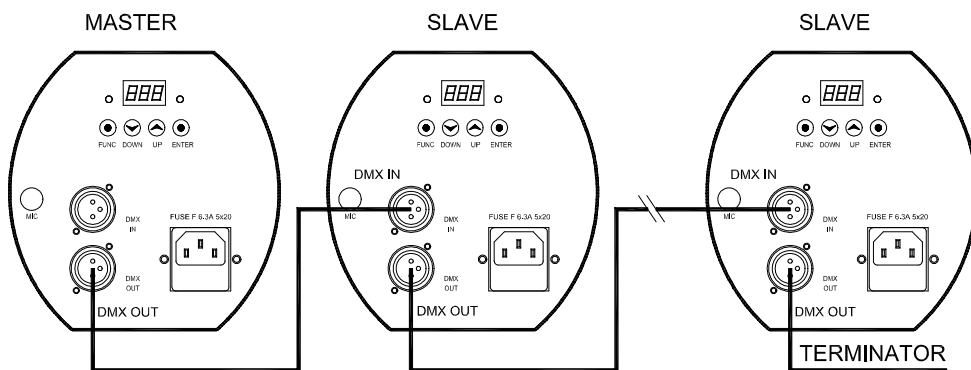


MASTER/SLAVE MODE

Without using the controller, many projectors can run synchronously in the Master/Slave mode by linking them with each other.

Select one projector as the master setting the DMX start address at random. Regard the other projectors as the slaves setting all DMX start address "001".

Connect the master's output to the first slave's input, and connect the first slave's output to the second slave's input. The rest may be deduced by analogy. Eventually connect the last slave's output to a DMX terminator as shown in the figure below.



In the Master/Slave mode, you may run the master via the auto programmes having been set in the master or via sound activation through MIC inside the master, and the slaves will run synchronously with the master.

In the Master/Slave mode, when enable Master a combining of setup options 3 (sound activation) and 4 (auto programmes), the master will run auto programmes.

During operation, you can easily differentiate between the master and the slaves since the master's DMX input without connecting any cable. When auto programmes running, the master's red LED is constantly on, but the slaves' red LEDs are flashing.

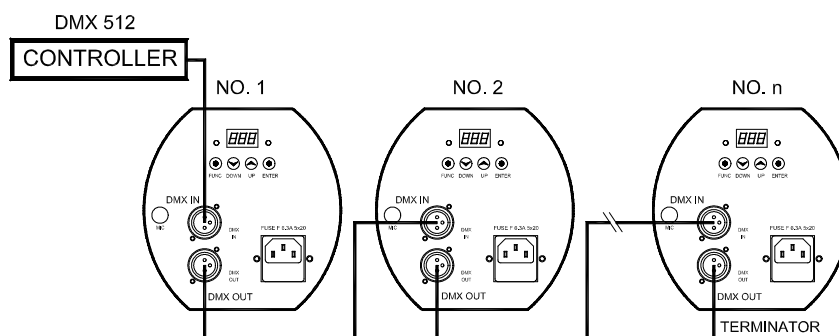
CONTROLLER MODE - DMX 512 OPERATION

Each NOVA must be given a DMX start address so that the correct projector responds to the correct control signals. This DMX start address is the channel number from which the projector starts to “listen” to the digital control information being sent out from the controller. The NOVA has 3 channels, so set the No. 1 projector’s address 001, No. 2 projector’s address 004, No. 3 projector’s address 007, No. 4 projector’s address 010, and so on.

Certainly, you may use formulation: $\text{address} = \text{channels} \times (\text{projector No} - 1) + 1$

For example, for the No. 4 projector’s start address, you should calculate according to formulation: $3 \times (4 - 1) + 1 = 10$, So you set the No. 4 projector start address 010.

Connect the controller’s output to the first fixture’s input, and connect the first fixture’s output to the second fixture’s input. The rest may be deduced by analogy. Eventually connect the last fixture’s output to a DMX terminator as shown in the figure below.



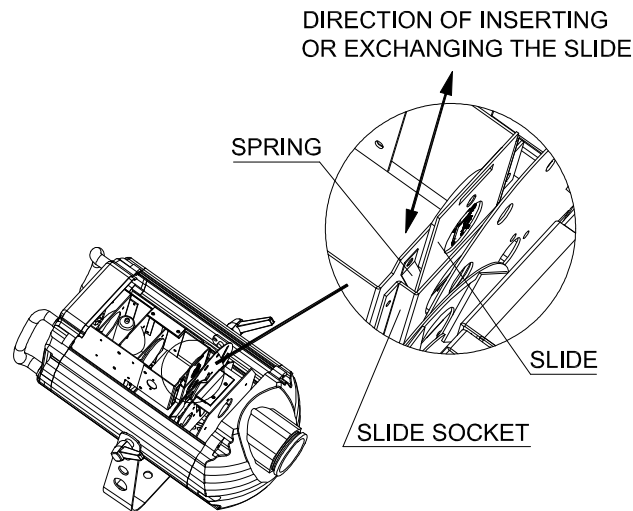
In Controller mode, the red LED indicator blinking means the projector is receiving the DMX 512 signal normally.

DMX CONTROL CHANNEL FUNCTIONS

CHANNEL	DMX VALUE	DESCRIPTION
1 Colour	0 - 17	White
	18 - 35	Light red
	36 - 53	Yellow
	54 - 71	Orange
	72 - 89	Blue
	90 - 107	Green
	108 - 125	Cyan
	126 - 143	Light purple
	144 - 161	Pink
	162 - 177	Light green
	178 - 255	Colour wheel movement in clockwise or anti-clockwise direction from slow to fast
2 Gobo	0 - 25	Open / Clear
	26 - 51	GOBO 1
	52 - 77	GOBO 2
	78 - 103	GOBO 3
	104 - 129	GOBO 4
	130 - 155	GOBO 5
	156 - 181	GOBO 6
	182 - 207	GOBO 7
	208 - 233	Clear / Green
	234 - 255	Clear / Cyan
3 Shutter/Strobe	0 - 12	Black-out
	13 - 99	Dimmer in linear movement
	100 - 127	Open
	128 - 251	Strobe adjust from slow to fast (1 to 7 flashes per sec.)
	252 - 255	Open

INSERTING OR EXCHANGING THE SLIDES

It is easy to insert or exchange the slides provided after removing the cover as shown below. With a different slide you will gain a different light beam effect or advertising function.



MAINTENANCE

If the projector's lens becomes damaged or broken it should be replaced. If the lamp becomes damaged or deformed in any way it must be replaced. If the light from the lamp appears dim this would normally indicate that it is reaching the end of its life and it should be changed at once, old lamps run to the extremity of their life can explode. If the projector does not function, check the fuse on the power socket of the projector, they should only be replaced by fuse of the same specified value 6.3A/250V (fast blow, 5mmx20mm). On the main PCB inside the projector there is also a fuse rated 4A/250V (fast blow, 5mmx20mm). Should these be damaged call a qualified technician before replacement. The projector has thermal protection device that will switch off the projector in case of overheating, should this operate, check that the fans are not blocked, and if they are dirty clean them before switching on the projector again. Check that the fans are operational, if not call a qualified technician.

Any maintenance work should only be carried out by a qualified technician.

KEEPING THE PROJECTOR CLEAN

To ensure the reliability of the projector it should be kept clean. It is recommended that the fans should be cleaned every 15 days. The lens and dichroic colour filters should also be regularly cleaned to maintain an optimum light output. **Do NOT use any type of solvent on dichroic colour filters.**

Cleaning frequency depends on the environment in which the fixture operates: damp, smoke or particularly dirty surroundings can cause greater accumulation of dirt on the unit's optics. A soft cloth and typical glass cleaning products should be used in cleaning. It is recommended to clean the external optics at least once every 20 days and clean the internal optics at least once every 30 / 60 days.

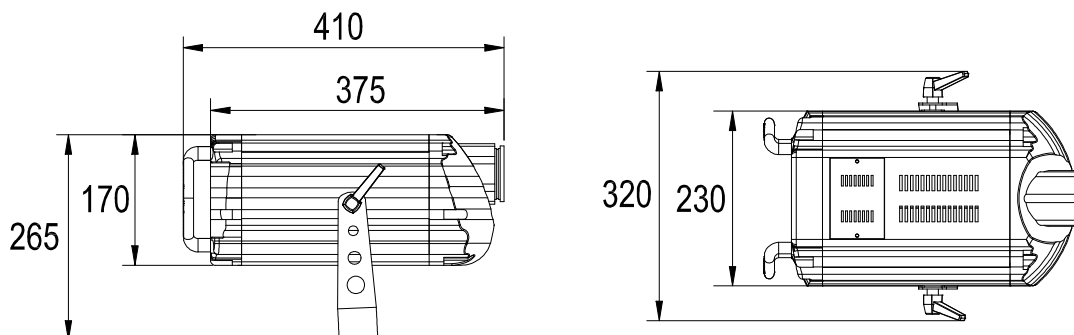
Do not use any organic solvent, e.g. alcohol, to clean the housing of the projector.

TROUBLESHOOTING

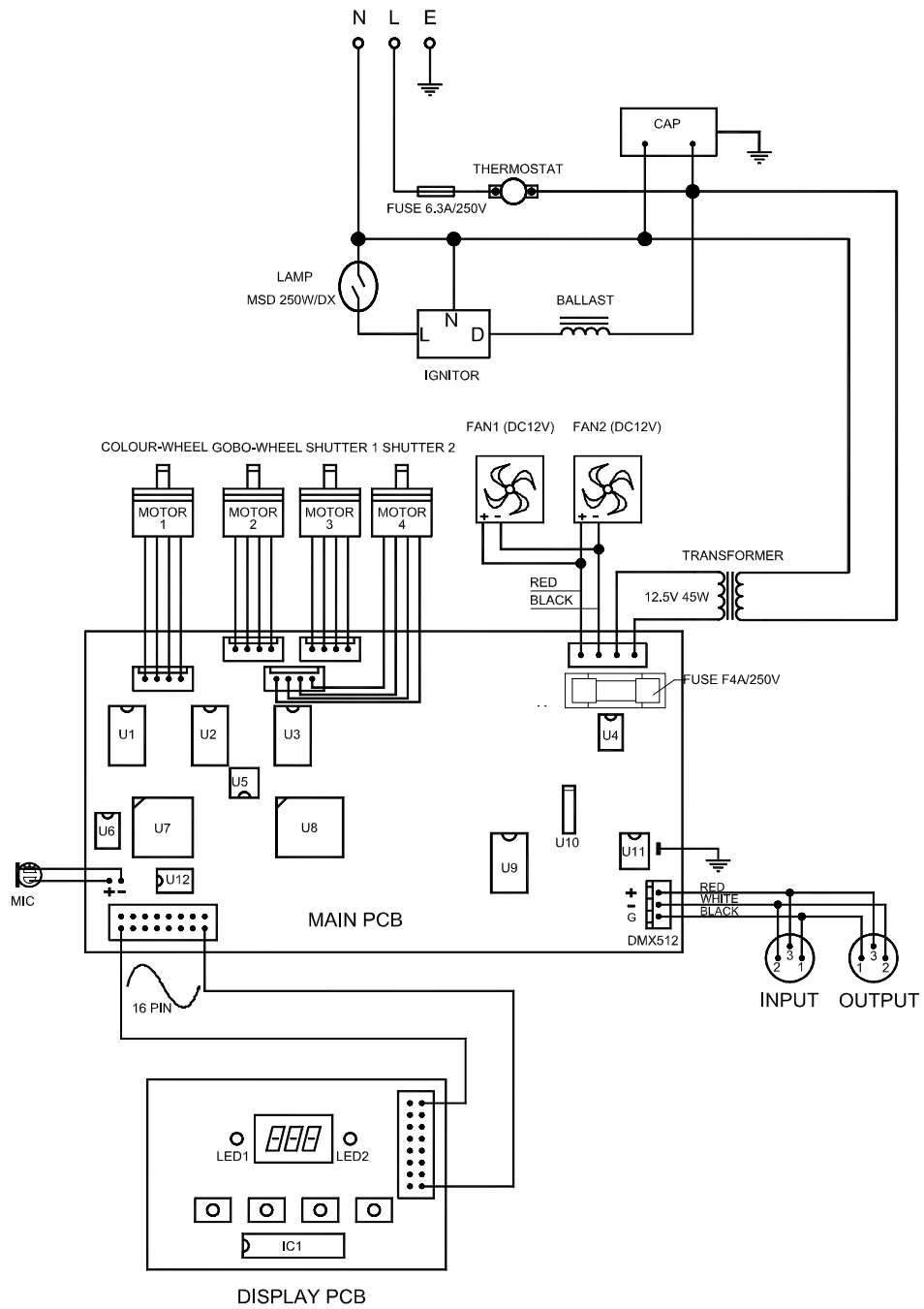
PROBLEM	RESOURCE
The projector does not start	Check the fuse on the socket is blown or not. Check if the lamp is good or not.
The projector switches on but does not answer to commands	Check the projector is correctly configured. Check the XLR cable is good.
The projector only functions intermittently	Check the fan is working and not dirty.
The beam appears dim	Check the lamp is not at the end of its life. Check the optics are clean.
Projection with halo	Carefully clean the lamp and optical group lenses.
Defecting projection	Check the lenses are not broken. Remove dust or grease stored on lenses.

TECHNICAL DATA

Power supply:	230V AC 50Hz
Other Voltages Available To Order	240V, 220V, 200V AC 50/60Hz
Power consumption:	280W at 220V
Lamp:	MSD250W
Channels:	3 channels
Signal:	Standard DMX 512
Control mode:	Sound activation, Auto programmes, Controller
Running mode:	Stand-Alone mode, Master/Slave synchro mode, Controller mode
Colours:	9 colours + white (2 of 9 colours are in gobo wheel)
Gobos:	7 gobos + open
Strobe:	Adjustable from 1 ~ 7 F. P. S
Beam coverage:	13 ° (available 20 ° by change a set of lenses provided)
Net weight:	9.8kg
Others:	Auto thermal cut-off / Manual adjustable focus / Rainbow effect / Slide function



ELECTRICAL DIAGRAM



COMPONENT ORDER CODES

NAME	PART NO.	REMARK
TRANSFORMER	040010006	230V/50Hz
IGNITOR	040090016	230V/50Hz
BALLAST	040070023	220~230V/50~60Hz/250W/3A
THERMOSTAT	190010054	95 /10A
FAN	030060008	DC12V
LAMP	100050018	MSD250W
CAP	140010036	32 μ F/AC 450V
MOTOR 1 (COLOUR-WHEEL)	030040023	17HS0002-38L
MOTOR 2 (GOBO-WHEEL)		
MOTOR 3 (SHUTTER 1)		
MOTOR 4 (SHUTTER 1)		
IC1	230040093	DIGITAL-SCREEN CHIP
U1~U3	170110001	DRIVER CHIPS
U4	170170039	STABLE-POWER CHIP
U5	230040087	WATCH DOG CHIP
U6	170050002	ARITHMETIC AMPLIFIER CHIP
U7	230040105	MICROPROCESSOR 1
U8	230040106	MICROPROCESSOR 2
U9	170040002	TTL REVERSION CHIP
U10	170170034	RESET CHIP
U11	170170012	BUS CHIP FOR RECEIVING/TRANSMITTING
U12	170040032	EEPROM CHIP

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