PLANET

PR-222R

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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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

- Mounting Bracket (1 PCS)
- M6 Handy Knob for bracket (2 PCS)
- Safety cord (1 PCS)
- Power-cord (1 PCS)
- XLR plug (1 PCS)
- XLR socket (1 PCS)
- This manual (1 PCS)

INTRODUCTION

Thank you for purchasing our product PLANET PR-222R.

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.

The PLANET is an innovative projector with an elegant housing made from high intensity and heat–resistant complex plastic which has various colors for your selection. The PLANET complies to CE norms and standards and uses international protocol DMX-512. The PLANET 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 PLANET features 12 colours and 12 gobos, and an independent adjustable strobe/shutter. 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 package 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. Keep the package well for your possible future transportation.

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 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. ≥ 3m

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 personnel.

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.

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.

Keep the lamp clean. Do not touch the lamp glass with bare hand.

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. Occasional breaks will prolong the life of both the lamp and the projector.

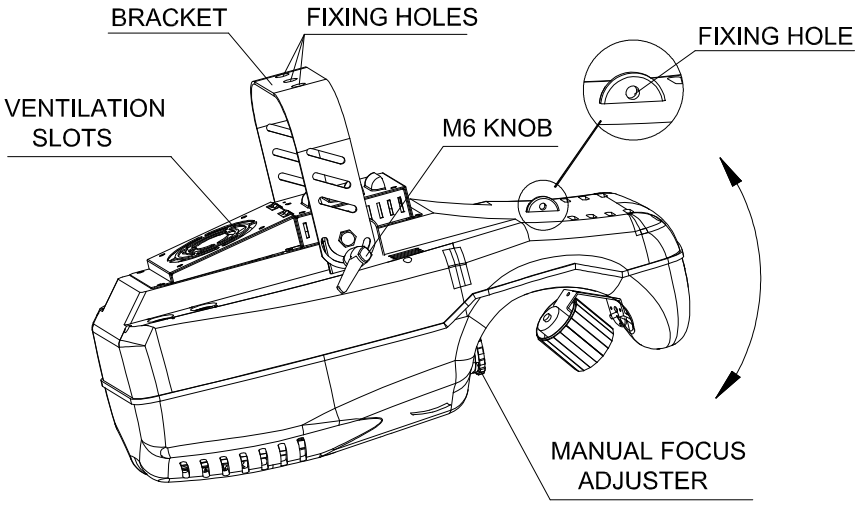
Never run the projector without a lamp.

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.

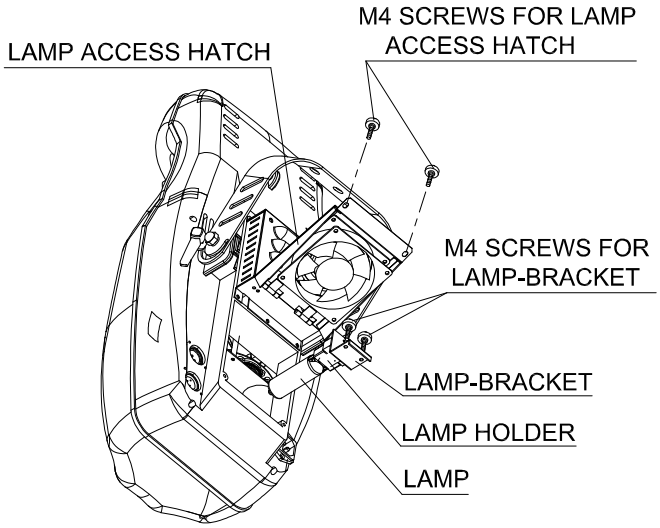
If you have any questions, don't hesitate to consult your dealer or manufacturer.

INSTALLING THE PROJECTOR



Mount the bracket provided on the body of the projector by 2 M6 knobs provided, then suspend the projector via its mounting 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 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 10Kg for each PLANET.
For safety the unit should have a secondary fixing with a safety chain through the fixing hole on the upper unit, and the safety chain should afford 10 times of the unit's weight.

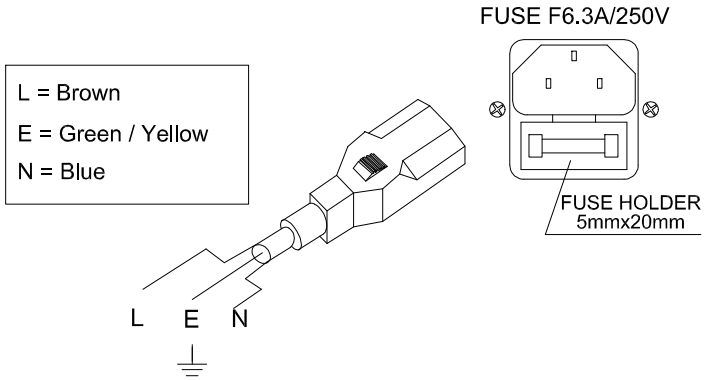
FITTING THE LAMP



Open the lamp access hatch at the bottom of the projector by loosening the 2 M4 screws as shown above.
Take out the lamp-bracket from the inside of the projector by loosening the 2 M4 screws.
Insert the lamp in the lamp holder.
Install the lamp-bracket on the position slot well and then tighten the 2 M4 handy screws.
Close the lamp access hatch again, and then tighten the 2 M4 handy screws.
NOTE: The MSD series are high pressure lamps with external igniters ⚠. Care should always be taken when handling these lamps. Always read the manufacturers "Instructions for use" enclosed with the lamp.

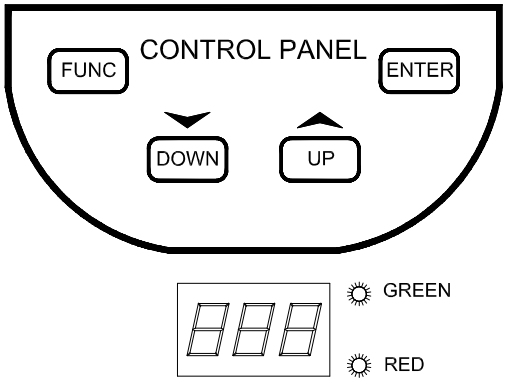
POWER SUPPLY - MAINS

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 conductor 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, this will save and set the DMX start address.

The display will show the latest setting each time when the projector is powered up.

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

In the Controller mode 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 “n” (means OFF) or “y “ (means ON). N = ON, Y = YES.

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 OPTIONAL		
CODE	**CHOICE**	**FUNCTION**
1	Y	Pan inversion enable-Pan is inverted
	N	Pan inversion disable-Pan is norma
2	Y	Tilt inversion enable-Tilt is inverted
	N	Tilt inversion disable-Tilt is normal
3	Y	Sound activation enable
	N	Sound activation disable
4	Y	Automatic programmes enable
	N	Automatic programmes disable
5		Reserved for possible future development
6		Reserved for possible future development
7	Y	Reset enable
	N	Reset disable
8		Reserved for possible future development
9		Reserved for possible future development
A		Reserved for possible future development
B		Reserved for possible future development

STAND-ALONE MODE

Without connecting the controller and the control cable, with the setup option 3 (sound activation) or 4 (auto process) enable, the projector will run in Stand-Alone mode.

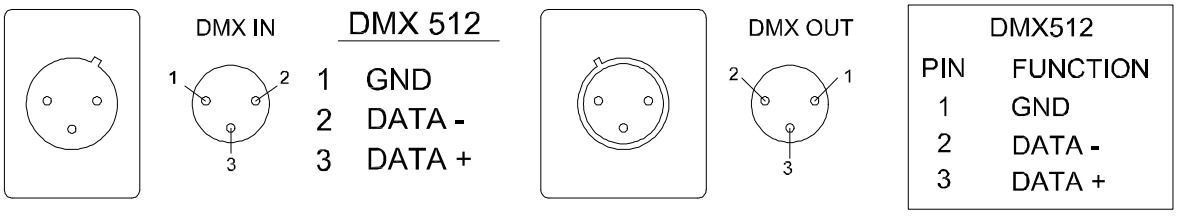
If you enable a combination of setup options 3 (sound activation) and 4 (auto process), the projector will run in auto programmes.

You may set the DMX start address at random in Stand-alone mode.

When the projector is activatived by sound, the red indicator will flash according to the rhythm of the music. And when the projector is running in auto programmes, the indicator will be contantly red.

XLR CONNECTORS AND TERMINATOR

XLR CONNECTORS



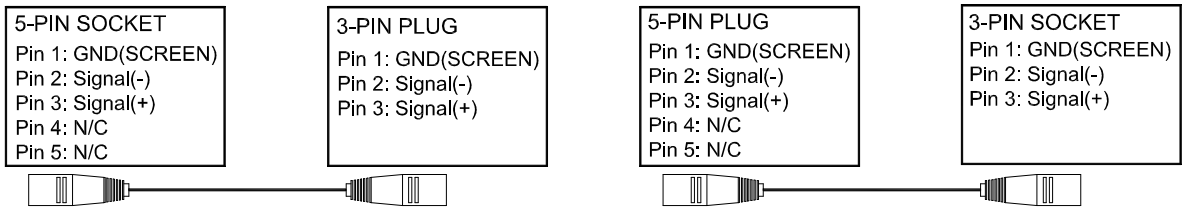
DMX512	
PIN	FUNCTION
1	GND
2	DATA -
3	DATA +

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 PLANET accepts digital control signals in standard DMX512 (1990) format.

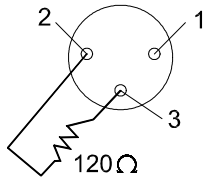
5-PIN AND 3-PIN CONVERSION

PLANET 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.



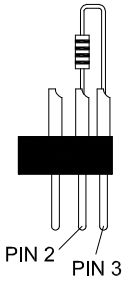
DMX TERMINATOR

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.



DMX TERMINATOR CONNECTION

Connect a 120Ω(OHM) resistor across pins 2 and 3 in an XLR plug and insert into the DMX out socket on the last unit in the chain.



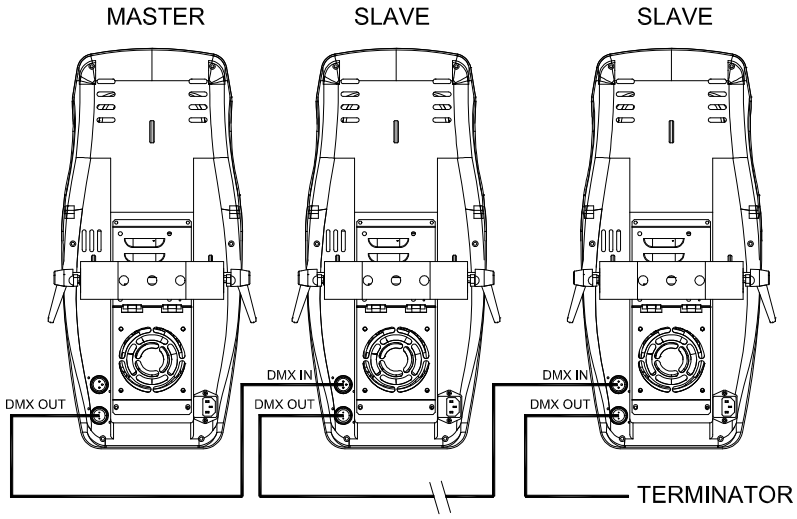
The DMX terminator is simply an XLR connector with a 120Ω (ohm) resistor connected across pins 2 and 3, which is then plugged into the output socket on the last projector in the chain. The connections are illustrated above.

MASTER / SLAVE MODE

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

Select one projector as the master with 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.

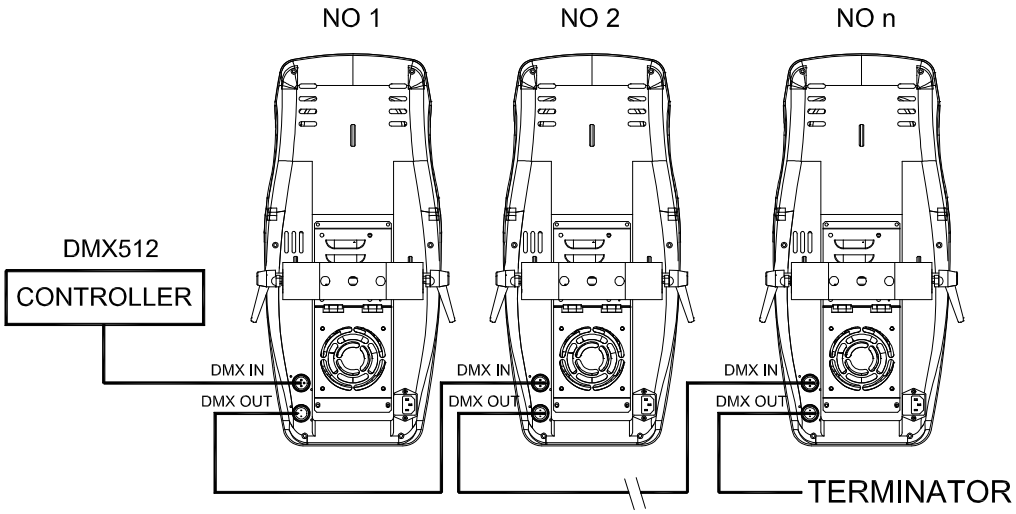
In the Master/Slave mode, when the master is a combining of setup 3 (sound activation) and 4 (auto programmes), the projectors will run auto programmes.

During operation, you can easily differentiate between the master and the slaves since the master's DMX output without connecting any cable. When the master runs in auto programmes, the master's red indicator is constantly on but the slaves' red indicators flash.

CONTROLLER MODE - DMX 512 OPERATION

Each PLANET 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 PLANET has 6 channels, so set the No. 1 projector's address 001, No. 2 projector's address 007, No. 3 projector's address 013, No. 4 projector's address 019, and so on.
Certainly, you may use formulation: address=channels x (projector No –1) +1
For example, for the No. 4 projector's start address, you should calculate according to formulation: 6 x (4 – 1) +1 = 19. So you set the No 4 projector start address 019.

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.



When a DMX 512 signal is received the red indicator will flash. When not receiving a DMX signal the green and red indicators will be off.

DMX CONTROL CHANNEL FUNCTIONS

The PLANET uses 6 channels with standard DMX 512 protocol. They are listed in the following table.

CHANNEL	DMX VALUE	DESCRIPTION
1 Colour	0-14	White
	15-29	Red
	30-44	Yelow
	45-59	Orange
	60-74	Blue
	75-89	Green
	90-104	Cyan
	105-119	Purple
	120-134	Pink
	135-149	Light green
	150-164	Indigo
	165-178	Light blue
	179-185	Light blue/ Indigo
	186-192	Indigo / Light green
	193-199	Light green / Pink
	200-206	Pink / Purple
	207-213	Purple / Cyan
	214-220	Cyan / Green
	221-227	Green / Blue
	228-234	Blue / Orange
	235-241	Orange / Yellow
	242-248	Yellow / Red
	249-255	Red / White
2 Gobo	0-21	Clear (White)
	22-43	Gobo 1 (Windmill)
	44-65	Gobo 2 (Triangle)
	66-87	Gobo 3 (Swirl)
	88-109	Gobo 4 (Mult-circle)
	110-131	Gobo 5 (Peacock)
	132-153	Gobo 6 (Tri-prong)
	154-175	Gobo 7 (Eight clows)
	176-197	Gobo 8 (Kink)
	198-219	Gobo 9 (Twist)
	220-241	Gobo 10 (Tri-leaf)
	242-255	Gobo 11 (Pentacle)
3 Strobe	0-14	Shutter
	15-29	Open
	30-250	Strobe adjust from slow to fast (1~ 7 flashes per second)
	251-255	Open
4 Not used		
5 Pan	0-255	Pan movement from 0 ° to 264 °
6 Tilt	0-5	(Tilt movement) Stop
	6-120	Tilt movement from slow to fast in clockwise
	121-140	(Tilt movement) Stop
	141-255	Tilt movement from slow to fast in anti-clockwise

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.

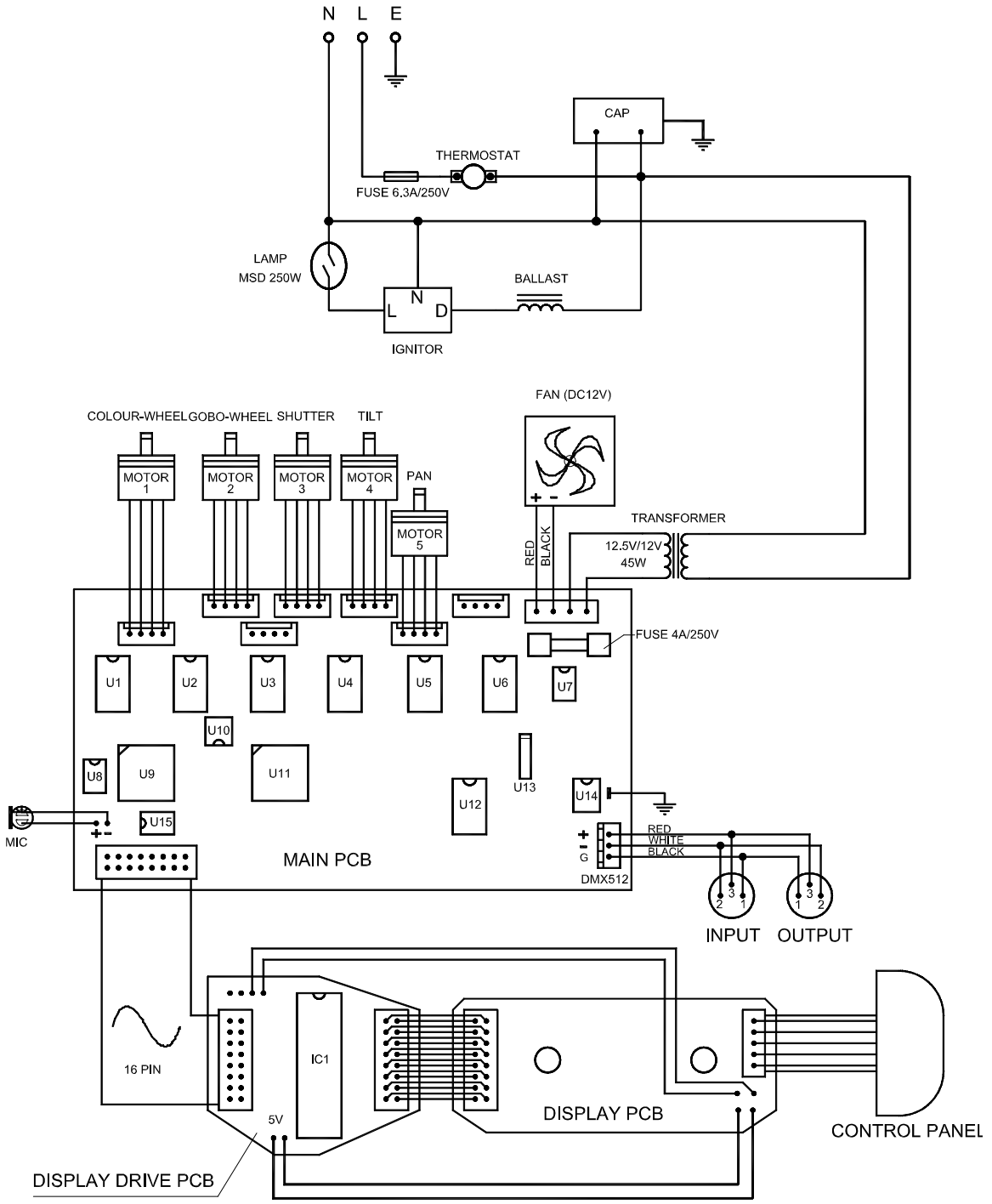
TROUBLESHOOTING

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 configurated. 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, the optical group lenses.
Defecting projection	Check the lenses are not broken. Remove dust or grease stored on lenses.

TECHNICAL DATA

Power supply:	AC230V/50Hz
Optional:	AC200V/60Hz
Power consumption:	300W at 220V
Lamp:	MSD 250W discharge lamp
Electric strength:	1.5KV
Insulating resistance:	>2MΩ
Channels:	6 channels
Signal:	Standard DMX 512
Control mode:	Sound activation, Auto programmes, Controller
Running mode:	Stand-Alone mode, Master/Slave synchro mode, Controller mode
Colours:	11 dichroic colours plus white
Gobos:	11 gobos plus white
Strobe:	Adjustable from 1 ~ 7 F.P.S
Beam coverage:	8.5 °
Movement:	Pan movement 264 ° / Tilt movement in both directions
Dimensions:	520mm LENGTH x 240mm WIDE x 210mm HIGH
Net weight:	10kg
Others:	Auto thermal cut-off / Manual adjustable focus

ELECTRICAL DIAGRAM



COMPONENT ORDER CODES

NAME	PART NO.	REMARK
TRANSFORMER	040010006	230V/50Hz
	040140004	200V/60Hz
IGNITOR	040090014	230V/50Hz
	040090018	200V/60Hz
BALLAST	040070026	230V/250W/3A
	040070028	200V/250W/3A
THERMOSTAT	190010035	120℃/15A
FAN	030060008	DC12V
LAMP	100050018	MSD250W
CAP	140010036	32μF/AC 450V
MOTOR 1 (COLOUR-WHEEL)	030040023	17HS0002-38L
MOTOR 2 (GOBO WHEEL)	030040056	17HS0002-45L
MOTOR 3 (SHUTTER)		
MOTOR 4 (TILT)	030040023	17HS0002-38L
MOTOR 5 (PAN)		
IC1	230040093	DIGITAL-SCREEN CHIP
U1~U6	170110001	DRIVER CHIPS
U7	170170039	STABLE-POWER CHIP
U8	170050002	ARITHMETIC AMPLIFIER CHIP
U9	230040098	MICROPROCESSOR 1
U10	230040087	WATCH DOG CHIP
U11	230040099	MICROPROCESSOR 2
U12	170040002	TTL REVERSION CHIP
U13	170170034	RESET CHIP
U14	170170012	RECEIVING/TRANSMITTING CHIP
U15	170040032	EEPROM CHIP

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