PR

P U R E

RELIABILITY

CENTURY SPOT

PR-2002

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.

INDEX

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. Please refer to our product if you find any difference between this preliminary issued manual and product.

Every apparatus has been 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

Waterproof plug (1 PCS)
XLR control cable with 3-pin plug and socket (1PCS)
This manual (1PCS)

INTRODUCTION

Thank you for purchasing the product Century Spot, PR-2002.

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 Century Spot is an innovative projector with an elegant housing made from high quality aluminium-alloy with an epoxy paint finish. The Century Spot complies to CE norms and standards and uses international protocol DMX-512.

The Century Spot features full CYM colour mixing with high resolution stepper motors, and an independent adjustable linear mechanical dimmer 0-100%. The protection against dust and liquid is very high, IP 44, and guarantees perfect functions even in unfavorable weather conditions. The angle of inclination of the projector-head is adjustable easily from 15° to 90°. It is an ideal luminaire to lighten buildings, exhibitions or for artistic applications.

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 intended for outdoor use and is splash-proof, IP44. Install only in dry and plain locations. Avoid excessive moisture.

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 all the cooling fans run normally and no ventilation slots are blocked.

Do not project the beam onto inflammable surfaces. Minimum distance is 5m. ◁ 5m ⵎ

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. Only use the lamp with the specified type and rating.

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 a high power 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.
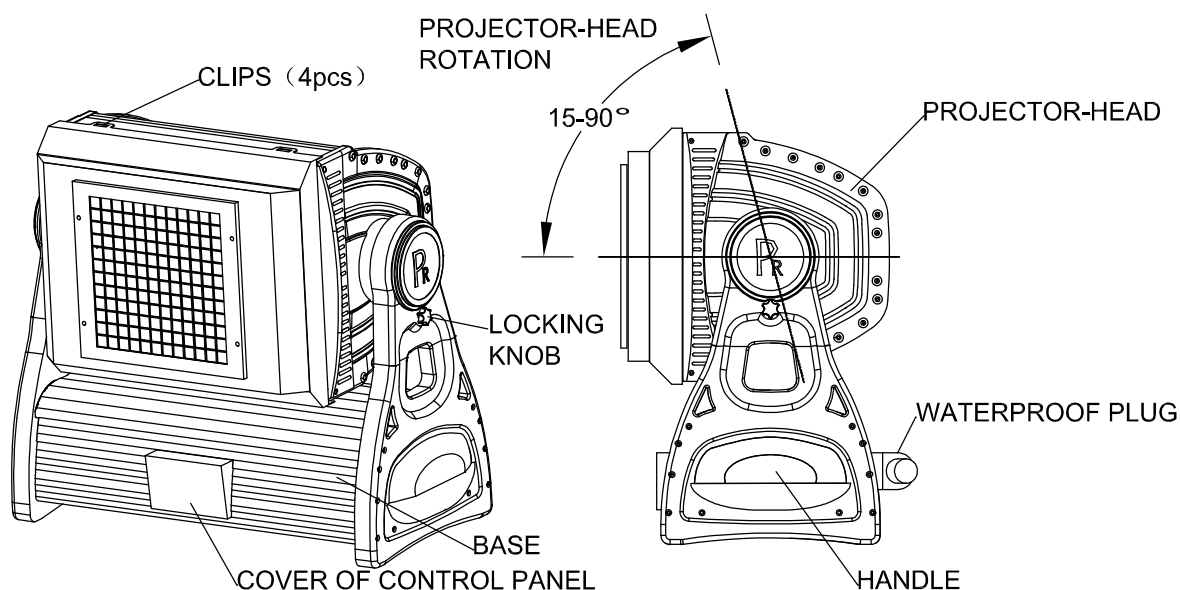
Never run the projector without a lamp.

There is 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.

STRUCTURE

CLIPS（4pcs）

PROJECTOR-HEAD ROTATION

15-90°

PROJECTOR-HEAD

LOCKING KNOB

WATERPROOF PLUG

BASE

COVER OF CONTROL PANEL

HANDLE

FITTING THE LAMP

Caution: For the safety reason, remove the sponge between the colour filters before the 1st application of luminaire.

Position the projector-head facing the sky and lock it via locking knob.

Remove the projector-head cover by loosening the 4 retaining clips.

Open the dichroic-colour-filter bracket by undoing the 2 M6 knurled-screws.

Insert the lamp in the lamp-holder, and ensure PST (pumping stem tip off) on the lamp is at a right angle (90°) to the beam path. Don't touch the bulb by bare hand.

Close the dichroic-colour-filter bracket and install projector-head cover. Make sure that all screws and retaining clips are tightened.

Note: The HMI 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 be supplied separately so that they may be individually switched on and off.

OPERATION

When the power is switched on, the apparatus automatically starts to run the programmes of self-test. After finishing these, the apparatus is ready for the following operation.

Remove the cover of the control panel. You will see the panel as shown in the figure below.
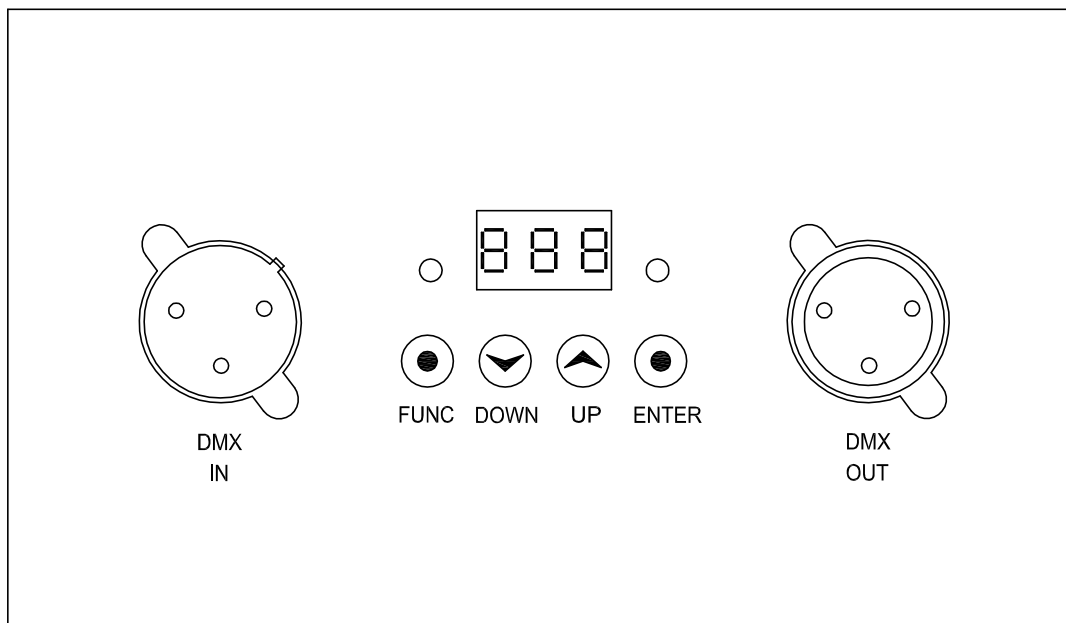
The right red LED flashes means there is a DMX signal receiving.

Press the button RESET to reset the DMX start address and functions, and the left green LED will flash one time.

TO SET THE DMX START ADDRESS

See the panel above.

The digital screen will display the DMX start address.

Press the button UP or DOWN, you can change the start address.

Press the button ENTER to confirm. The green LED will flash one time, which means that apparatus has saved your setting.

The setting will be displayed when you turn on next time.

In stand-alone mode, the DMX start address could be set any value. In master/slave mode, refer to the chapter **MASTER/SLAVE MODE**. In controller mode, the address of each apparatus must be set correctly so as to be controlled respectively. Refer to the chapter **CONTROLLER MODE**.

TO SET THE FUNCTION

Press the button FUNC consecutively, the digital screen will display in turn the function code 1~9, A, b. Each one represents one function. You can see the following table for details.

When you locate the function code, you can press button UP or DOWN to display "y" or "n". When the digital screen display "y", you can save and validate it via button ENTER. When the digital screen display "n", you can save and invalidate it via button ENTER.

| CODE	OPTION	FUNCTION
1	Y	Auto-program enable
2	Y	Master/Slave mode enable
3		Choose 1 of 7 built-in program
4		Set time between scenes
5	Y	Reset enable

STAND-ALONE MODE

Without connecting the controller, when enable the function 1, the apparatus will run in stand-alone mode.

In this mode, you can set the DMX start address to any value.

XLR CONNECTORS AND TERMINATOR

XLR CONNECTORS

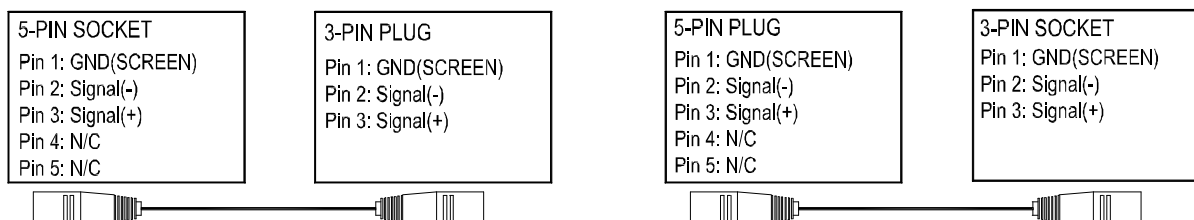| DMX512	
PIN	FUNCTION
1	GND
2	DATA -
3	DATA +
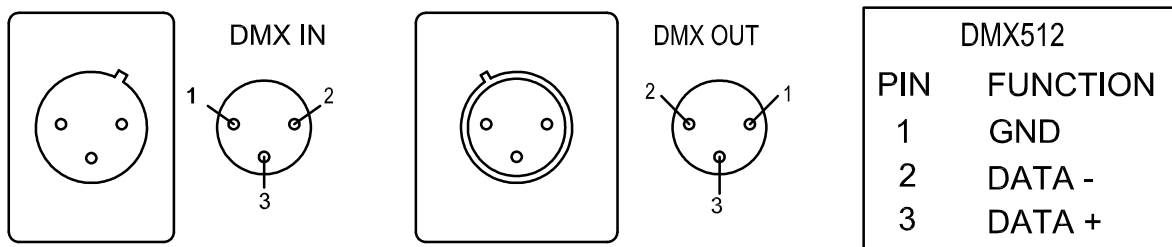
Connection between controller and projector and between one projector and another must be done with 2-core screened cable, with each core having at least a 0.5mm diameter. Connection to and from the projector is via an XLR control cable with 3-pin plug and socket, which are included with the projector. The XLR's are connected as shown in the figure 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 Century Spot accepts digital control signals in standard DMX512 (1990) format.

5-PIN AND 3-PIN CONVERSION

Century Spot 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.

5-PIN SOCKET
Pin 1: GND(SCREEN)
Pin 2: Signal(-)
Pin 3: Signal(+)
Pin 4: N/C
Pin 5: N/C

3-PIN PLUG
Pin 1: GND(SCREEN)
Pin 2: Signal(-)
Pin 3: Signal(+)

5-PIN PLUG
Pin 1: GND(SCREEN)
Pin 2: Signal(-)
Pin 3: Signal(+)
Pin 4: N/C
Pin 5: N/C

3-PIN SOCKET
Pin 1: GND(SCREEN)
Pin 2: Signal(-)
Pin 3: Signal(+)

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.

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.
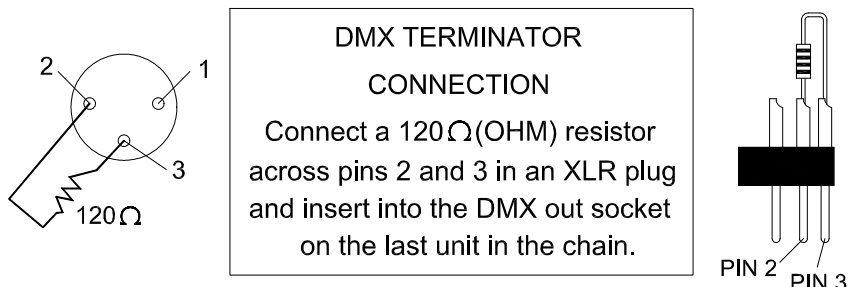
MASTER/SLAVE MODE

Many luminaires can run synchronously by linking them with each other in the master/slave mode.

Set the address of all luminaires to 001.

Select one luminaire as the master, and set the function code 1 and 2 to "y". Don't connect its input with an XLR control cable.

Set the function code 1 and 2 of the rest luminaries to "n". Now they are slaves.

Connect the master's output to the first slave's input with an XLR control cable, and connect the first slave's output to the second slave's input with an XLR control cable. The rest may be connected in the same way. Eventually connect the last slave's output to a DMX terminator as shown below.
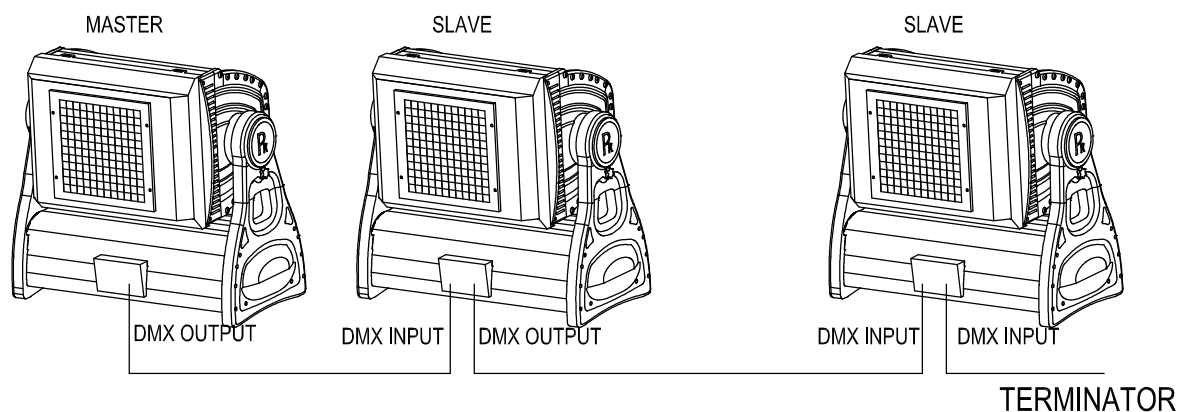
CONTROLLER MODE – DMX 512 OPERATION

Century Spot adopts international standard DMX 512 protocol. You may control many luminaires via controller. When in controller mode, the function code 1 and 2 of all luminaires should be set to "n", and each apparatus should have specific address to receive the signal from the controller. Century Spot has 6 channels. So, in controller mode, the address of 1st luminaire is 001; 2nd, 007; 3rd, 013; 4th, 019; etc. Please follow the formula: address of nth luminaire=6 x (n-1) + 1.

Connect the controller's output to the 1st luminaire's input, and connect the 1st luminaire's output to the 2nd luminaire's input. The rest may be connected in the same way. Eventually connect the last luminaire's output to a DMX terminator as shown below.
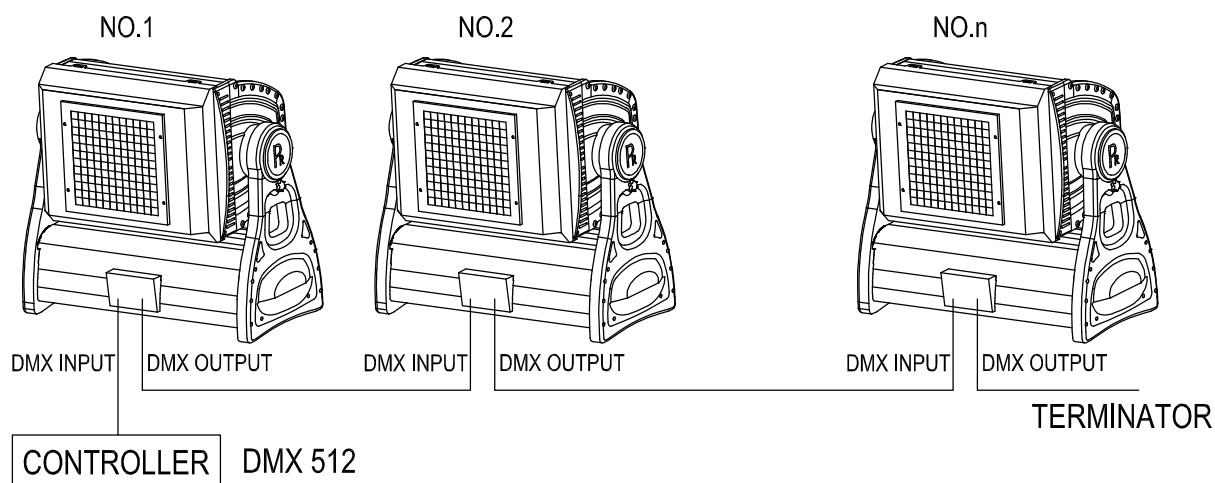
DMX CONTROL CHANNEL FUNCTIONS

The Century Spot has 6 channels. They are shown in the following table.

CHANNELS	DMX VALUE	DESCRIPTION
1 Shutter	000-255	Shutter to open continuous change
2 Cyan	000-255	White to cyan continuous change
3 Yellow	000-255	White to yellow continuous change
4 Magenta	000-255	White to magenta continuous change
5 Focus	000-255	Focusing from big to small
6 Control	000-249	Reserved
	250-255	Reset

MAINTENANCE

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 may explode. If the projector does not function, check the fuse in the projector base. It should only be replaced by fuse of the same specified value 16A/380V (fast blow, ceramic). 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.
Any maintenance work should only be carried out by a qualified technician.
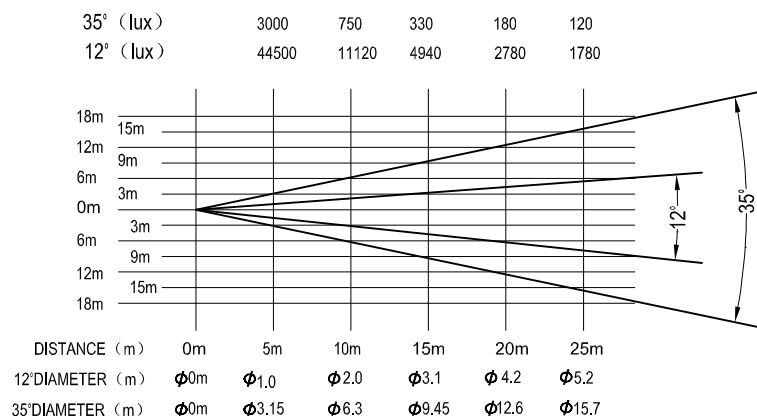
KEEPING THE PROJECTOR CLEAN

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

TROUBLESHOOTING

PROBLEM	ACTION
The projector doesn't work	Check the fuse on the power socket. Replace the lamp.
The lamp comes on but the projector doesn't respond to the controller	Make sure that the projector is correctly configured. Replace or repair the DMX cable.
The projector only functions intermittently	Make sure the fan is working and not dirty.
Defective projection	Check the lenses are not broken. Remove dust or grease from the lenses.
The projected image appears to have a halo	Make sure the lamp is installed correctly. Carefully clean the optical group lenses and the projector components.
The beam appears dim	Check the optics is clean. Replace with a new lamp of the specified type and rating.

LIGHT OUTPUT

35° (lux)		3000	750	330	180	120
12° (lux)		44500	11120	4940	2780	1780

DISTANCE (m)	0m	5m	10m	15m	20m	25m
12°DIAMETER (m)	φ0m	φ1.0	φ2.0	φ3.1	φ4.2	φ5.2
35°DIAMETER (m)	φ0m	φ3.15	φ6.3	φ9.45	φ12.6	φ15.7

TECHNICAL DATA

Power supply: 220/230V AC 50/60Hz

Power consumption: 2800W

Lamp: OSRAM HMI 2500W/SE, single end

                       Colour temperature: 6000°K

                       Manufacturers Rated Lamp life: 500 Hours

Protocol: Standard DMX 512

Running mode: Stand-alone, Master/Slave, and DMX Controller

DMX channels: 6 channels

Colours: 3 basic colours, CYM 256 colours continuous mixing, white, blackout

Beam coverage: 12° - 35°

Tilt angle: Adjustable from 15° to 90°

Net weight: 75 kg

Others: Linear dimming from 0-100%, thermal cut-off
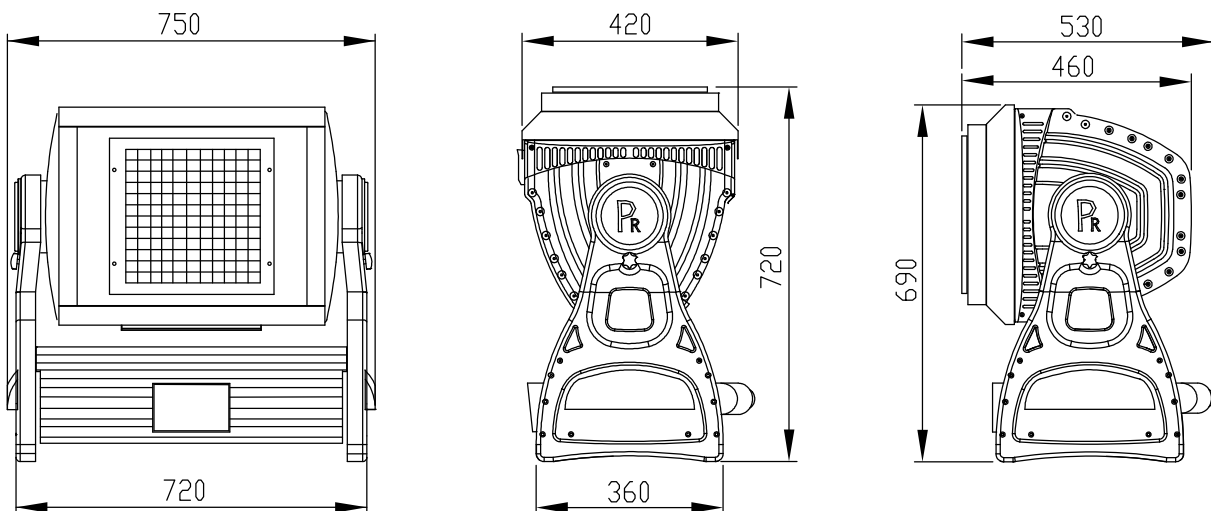
ELECTRICAL DIAGRAM
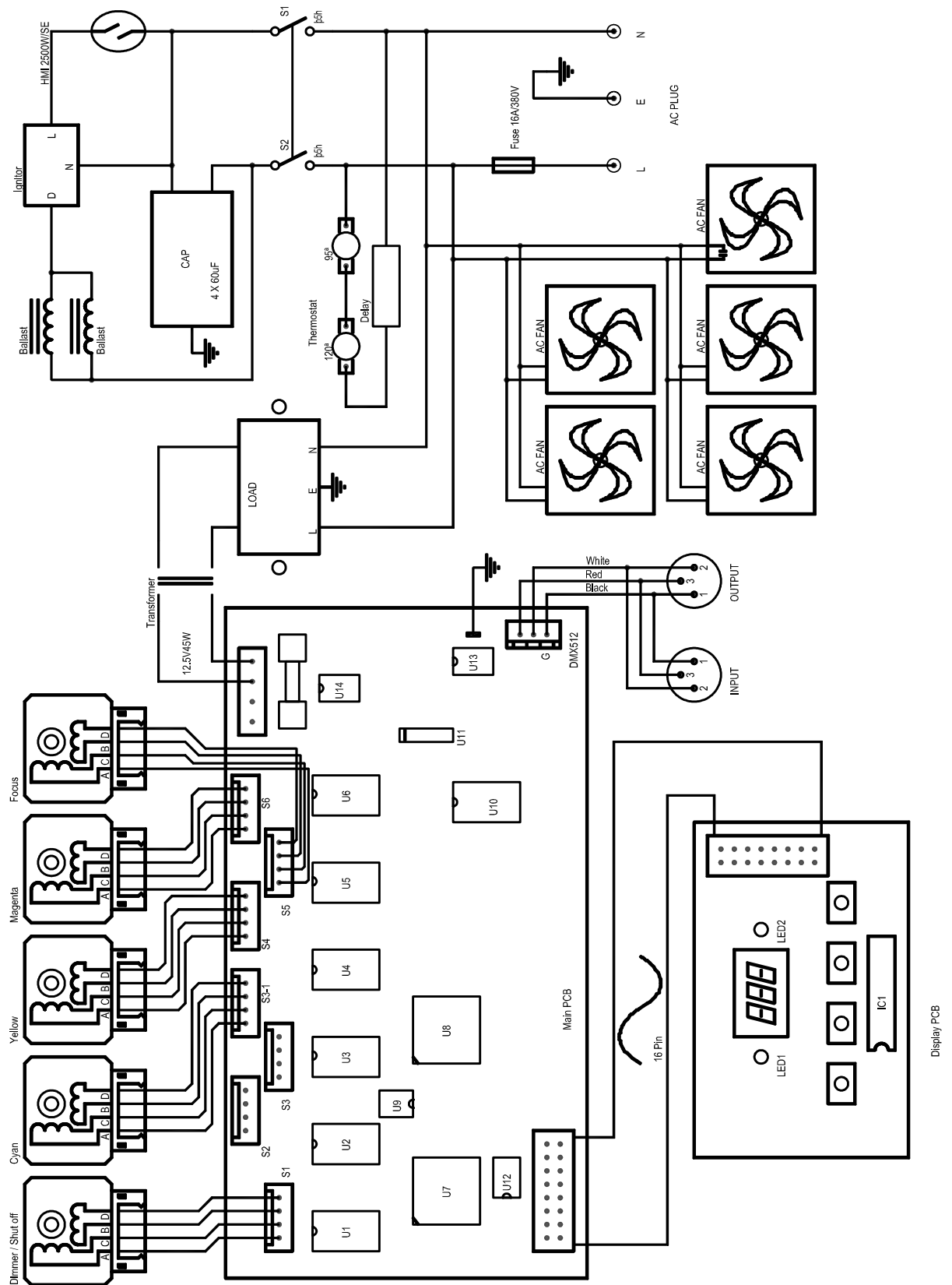
COMPONENT ORDER CODES

NAME	PART NO.	REMARK
TRANSFORMER	040010045	230V 50/60Hz
IGNITOR	040090004	230V/50Hz
BALLAST	040070033	230V/50Hz
RELAY	192010009	230V/20A
FILTER	193020001	10A
THERMOSTAT 1	190010035	120 /15A
THERMOSTAT 2	190010054	95 /10A
FAN (4 pcs)	030060019	230V/19W
FAN	030060042	220V 50/60Hz
LAMP	100050024	HMI 2500W/SE
CAPACITOR (4 pcs)	140010018	60μF/AC 370V
MOTOR	030040029	17HS1013L
MOTOR	030040097	17HS1013-10L
IC1	230040093	Digital PCB
U1~U6	170110001	Driver IC
U7	170170039	Manostat IC
U8	170050002	Amplifier IC
U9	230040088	Main IC1
U10	230040087	Monitor IC
U11	230040089	Main IC2
U12	170040002	TTL IC
U13	170170034	Reset IC
U14	170170012	Bus transceiver IC
U15	170040032	EEPROM IC

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