tourspot™

575 automated fixture

version 1.1

For technical assistance please contact:
A.C. Lighting Ltd.
Centauri House, Hillbottom Road
High Wycombe, Bucks. HP12 4HQ. UK

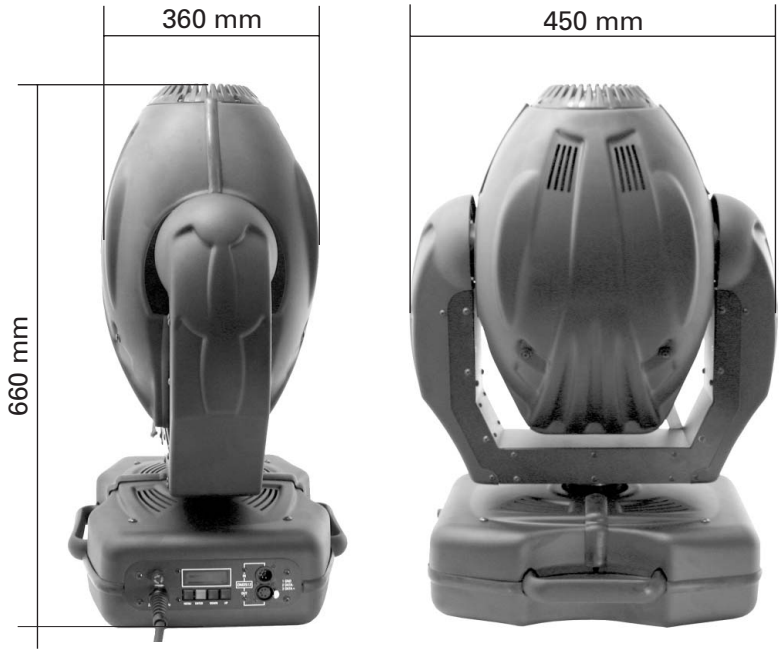
Tel: +44 (0)1494 446000 Fax: +44 (0)1494 461024
sales@aclighting.com www.aclighting.com

CE

CONTENTS

1 Features

- 575W discharge lamp
- Turn-on and turn-off of the lamp by DMX
- Pan/Tilt range of 540°/320°,16 bit
- Stepped zoom (13°/18°/21°)
- Motorised focus
- 7 rotating and indexable gobos
- Colour wheel with 8 colours
- Dimmer
- Strobe
- Frost
- Rotating prism
- DMX control and stand-alone mode
- Automatic feedback system
- Convenient ¼ turn fasteners
- Weight: 26kg



Hanging centres: 500mm

2 Important safety information

2.1 Fire prevention

1. Never locate the fixture on any flammable surface.
2. Minimum distance from flammable materials: 0.5m.
3. Minimum projection distance: 2m.
4. Replace any blown or damaged fuses only with those of identical value. Refer to the wiring diagram if there is any doubt.
5. Connect the fixture to mains power via a thermal magnetic circuit breaker.

2.2 Prevention of electric shock

1. High voltage is present inside the unit. Isolate the fixture from the mains supply prior to performing any function which involves touching the inside of the unit, including lamp replacement.
2. The technology used in the Tourspot 575 requires the assistance of trained personnel for all servicing. Refer all service work to your authorised Tourspot service centre.
3. A good earth connection is essential for proper functioning of the fixture. Never connect the unit without proper earth connection.
4. The fixture should never be located in a position exposed to moisture or extreme humidity. A steady supply of circulating air is essential.

2.3 Protection against ultraviolet radiation

1. Never turn the lamp on if any of the lenses, filters or the ABS housing is damaged. Their shielding functions will only operate efficiently if they are undamaged.
2. Never look directly into the lamp when it is on.

2.4 Safety

1. The fixture should always be installed with fixings that are capable of supporting the weight of the unit.
2. Always use a secondary safety bond of a suitable drop rating to sustain the weight of the unit in case of the failure of the main fixing point.
3. The external surface of the unit may exceed 150°C. Allow 10 minutes from lamp off before handling.
4. Always replace the lamp if any physical damage is evident.
5. Never install the fixture in an enclosed area lacking sufficient air flow. The ambient temperature should not exceed 35°C.
6. A hot lamp may explode. Allow 10 minutes from lamp off before attempting to replace the lamp.
7. Always wear suitable hand protection when handling the lamp.

2.5 Protection against the penetration of solids & liquids

The fixture is classified as an ordinary appliance and its level of protection against the penetration of solids and liquids is IP 20.

3 Changing the lamp

3.1 Lamp specification

Lamp:	GE CSR 575/2	Osram HSR 575/2	Philips MSR 575/2
Power:	575W	575W	575W
Luminous flux:	49,000 lm	49,000 lm	49,000 lm
Colour temperature:	7,200°K	7,200°K	7,200°K
Lampbase:	GX9.5	GX9.5	GX9.5
Rated life:	1,000 hours	1,000 hours	1,000 hours

3.2 Changing the lamp

Photo 1

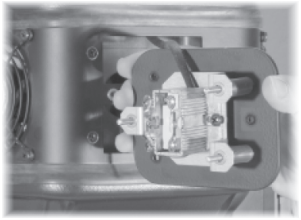


Photo 2

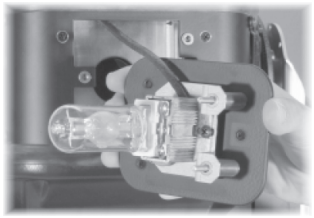


Photo 3

Photo 4

Note: turn power off before opening the fixture

1. Using a crosshead screwdriver, remove the 3 screws (X, Y, Z) located at the rear of the fixture head (photo 1, black screws).
2. Remove the lampholder assembly (photo 2).
3. Insert the lamp (photo 3).
   The lamp used is manufactured from quartz glass and should be handled with care. Always adhere to the instructions supplied in the lamp's packaging. Never touch the glass directly but use the tissue provided in the lamp's packaging. The GX 9.5 lampbase is symmetrical. DO NOT USE UNDUE FORCE ON THE GLASS. In case of difficulty, re-read the instructions and repeat the procedure.
4. Replace the lampholder assembly (photo 4) and replace and tighten the screws (X, Y, Z), which were previously removed (photo 1).

3.3 Lamp alignment

Note: each time a lamp is changed we recommend that the lamp be optically realigned to avoid overheating of components inside the unit (photo 5).

Photo 5

Alignment is carried out using the 3 crosshead screw adjusters A, B and C (silver screws).
During this operation you must bring the hot-spot to the centre of the beam and flatten it as much as possible.

4 Voltage and frequency

The fixture can operate at 230V 50 or 60 Hz. Tourspot 575 is factory set to operate at 230V 50Hz.

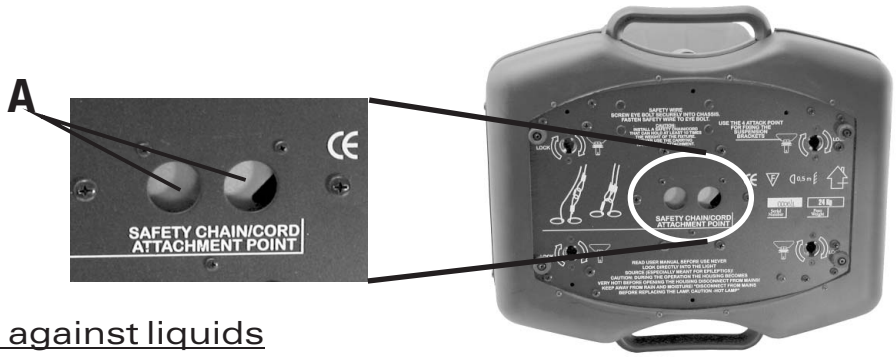
5 Installation

5.1 Overview

Tourspot 575 may be fixed in any orientation. For floor mounting, the Tourspot 575 is supplied with four rubber mounting feet on the base. For any other orientation the use of the quick fixing mounting bracket (supplied as standard) will be required. Four quarter turn fasteners are located on the base of the fixture to mount the quick fixing bracket.
The supporting structure from which the unit is fixed should be capable of bearing the weight of the unit. The structure should also be sufficiently rigid so as not to move or shake whilst the Tourspot 575 moves during its operation.

5.2 Safety bond

We recommend the use of a secondary safety bond to secure the Tourspot 575 to the supporting structure in the event of the failure of the primary fixings. Ensure that the safety bond can withstand the drop weight of the entire unit.
You may attach the safety bond to the two holes (A) located on the base of the fixture, as shown in the diagram below.

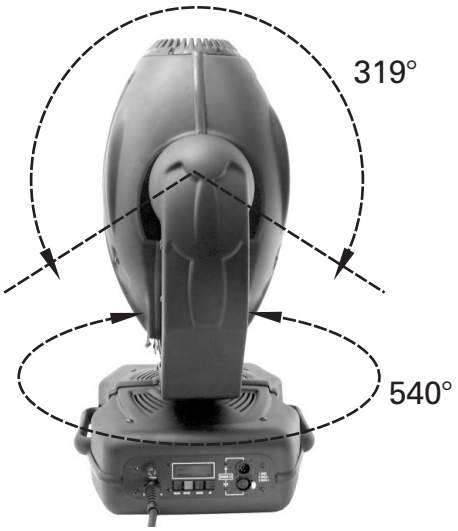


5.3 Protection against liquids

The fixture contains electric and electronic components which should, under no circumstances, come into contact with liquid.

5.4 Movement

The fixture has a maximum movement of 540° pan and 319° tilt. Do not place any obstructions in the path of the fixture's movement.



5.5 Risk of fire

Each fixture produces heat and must be installed in a well-ventilated area. The minimum recommended distance from flammable material is 0.5m. Minimum distance from the object being illuminated is 2m.

5.6 Air ventilation

The fixture features various air inlets and cooling fans located on both the base and head. Under no circumstances should these be blocked or obstructed whilst the fixture is in operation. Doing so could cause the fixture to seriously overheat thereby compromising its reliable operation.

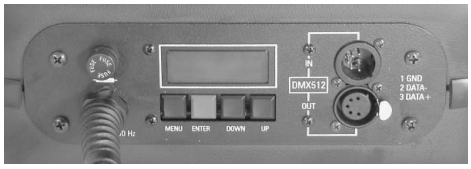
5.7 Ambient temperature

The fixture should never be installed in places that lack a constant flow of air. The ambient temperature should NOT exceed 35°C.

6 Mains connection

6.1 Connection

Tourspot 575 operates at 230V 50 or 60Hz. Prior to connecting the unit to your mains supply, please ensure that the settings correctly match the mains supply available and the plug fitted is suitably rated at 8A at 230V. The replaceable fuse is a T6.3A L250V 20mm.



230V 50 / 60Hz

6.2 Protection

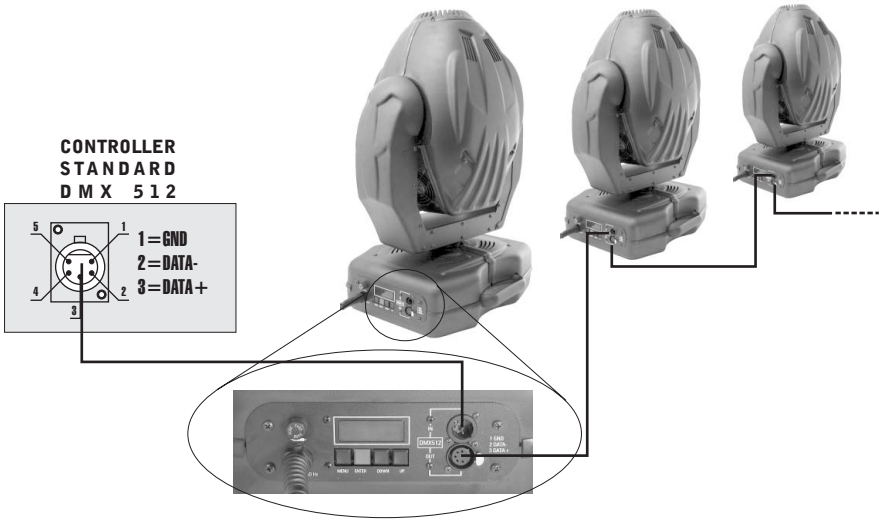
The use of a thermal magnetic circuit breaker is recommended for each Tourspot 575.
A good earth connection is essential for the correct operation of the fixture.

7 DMX signal connection

7.1 Overview

The fixture operates using a DMX 512 (1990) data signal. Only use twin screened DMX cable similar to Tourflex Datasafe for reliable operation.
Connect the control signal to the DMX In XLR fixture connection and daisy-chain it to the next fixture by connecting the DMX Out plug on the first fixture to the DMX In plug on the second, and so on.
Note: If the display showing the DMX address flashes, then one of the following errors has occurred:

- DMX signal not present
- DMX address not valid
- DMX reception problem



7.2 Alternative connections

The Tourspot 575 has both 3 pin and 5 pin XLR connections fitted. The standard configuration is with XLR 5 connectors.
To convert to an XLR 3 configuration proceed as follows:

1. Remove the external cover (photo 1).
2. Unscrew the external fixings for the connector panel (photo 2).
3. Rotate the circuit board by 180° (photo 3).
4. Refit the circuit board with the XLR 3 connectors in position and replace the cover.

Photo 1

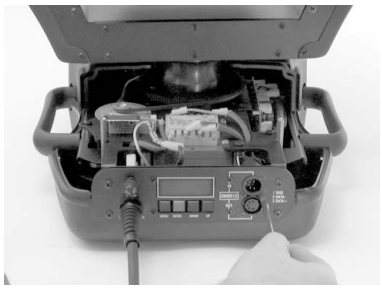


Photo 2

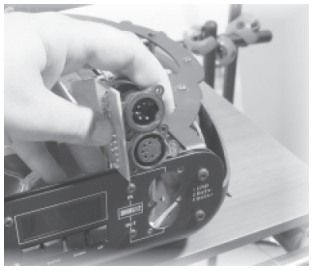


Photo 3

7.3 DMX addresses

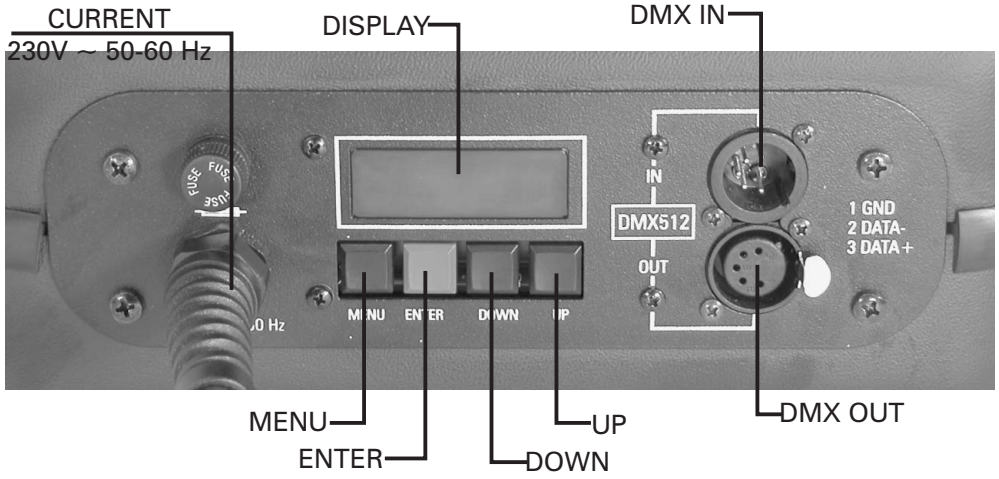
Tourspot 575 can be used in four different DMX control modes: 8, 10, 12 or 14 channels. For instructions on selecting the DMX control mode, please refer to section 8.1. See Appendix 2 for the various protocols detailing channel assignments.

7.4 Changing the DMX address

1. Press the UP-DOWN buttons until you reach the required DMX address. The numbers on the display will start to flash (but the new DMX address hasn't yet been set).
2. Press and hold ENTER for two seconds to confirm your selection. The numbers on the display will stop flashing and the fixture is now addressed at the number shown.

Note: if you press the UP-DOWN keys together the display changes faster.

8 Menu functions



8.1 Menu functions

The Tourspot 575 display panel shows all the menu functions available. By navigating the menu, it is possible to select the operation mode and test functions.
To enter the menu, press and hold the MENU button for two seconds. To adjust settings use the UP and DOWN buttons.
To confirm a selection press ENTER. To exit press MENU.
Note: the symbol ☞ shows which button has to be pushed to obtain the selection required.

A001

☞ MENU ☞ Up-Down **Pdir** ☞ ENTER ☞ Up-Down **CU** Clockwise

PAN DIRECTION
To invert selection between clockwise and counterclockwise pan direction.

☞ Up-Down **CCU** Counterclockwise

☞ MENU ☞ Up-Down **tdir** ☞ ENTER ☞ Up-Down **CU** Clockwise

TILT DIRECTION
To invert selection between clockwise and counterclockwise tilt direction.

☞ Up-Down **CCU** Counterclockwise

☞ MENU **diSP** ☞ ENTER ☞ Up-Down **POS1** ☞ ENTER ☞ Up-Down **AA** **UU**

DISPLAY
Position - Inverts the display text.
Standby - Sets the display to blackout unless in use or showing error.

☞ Up-Down **Stby** ☞ ENTER ☞ Up-Down **ON** **OFF**

☞ MENU ☞ Up-Down **mode** ☞ ENTER ☞ Up-Down **8.8** 8 CHANNELS (Pan & Tilt 8 bit)

DMX MODE
To select DMX control mode

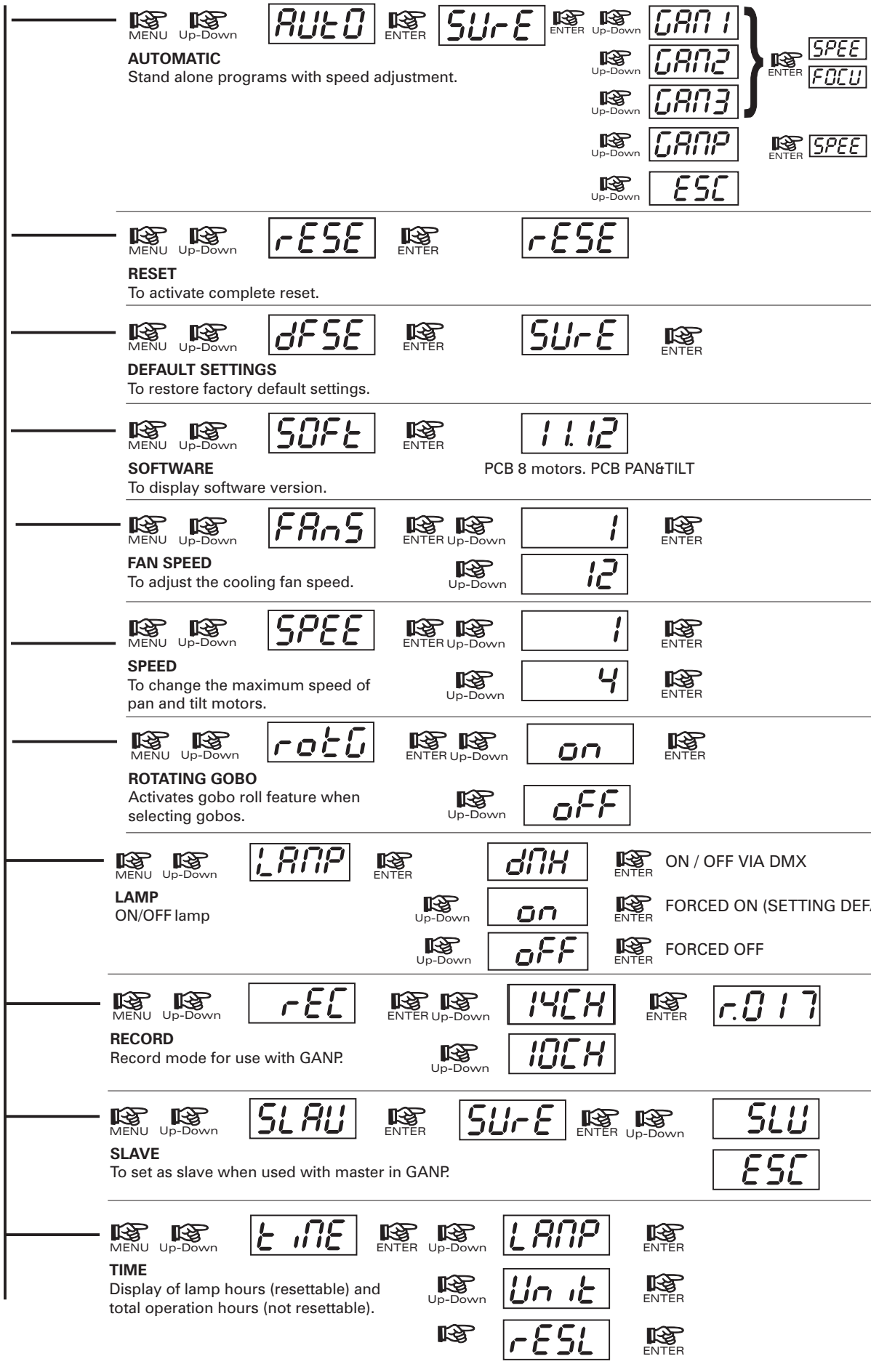
☞ Up-Down **12.8** 12 CHANNELS (Pan & Tilt 8 bit)

☞ Up-Down **10.16** 10 CHANNELS (Pan & Tilt 16 bit)

☞ Up-Down **14.16** 14 CHANNELS (Pan & Tilt 16 bit)

☞ MENU ☞ Up-Down **tESt** ☞ ENTER **tESt**

TEST
Complete test sequence one function at a time.


MENU Up-Down
AUTO
ENTER
SURE
ENTER Up-Down
GAN1
GAN2
GAN3
ENTER
SPEE
FOCU
Up-Down
GANP
ENTER
SPEE
ESC
AUTOMATIC
Stand alone programs with speed adjustment.
RESE
RESE
RESET
To activate complete reset.
dFSE
SURE
DEFAULT SETTINGS
To restore factory default settings.
SOFt
11.12
PCB 8 motors. PCB PAN&TILT
SOFTWARE
To display software version.
FAnS
1
12
FAN SPEED
To adjust the cooling fan speed.
SPEE
1
4
SPEED
To change the maximum speed of pan and tilt motors.
rotG
on
oFF
ROTATING GOBO
Activates gobo roll feature when selecting gobos.
LAMP
dMX
ON / OFF VIA DMX
on
FORCED ON (SETTING DEFAULT)
oFF
FORCED OFF
LAMP
ON/OFF lamp
rEC
14CH
10CH
r.017
RECORD
Record mode for use with GANP.
SLAU
SLU
ESC
SLAVE
To set as slave when used with master in GANP.
t iME
LAMP
Unit
rESL
TIME
Display of lamp hours (resettable) and total operation hours (not resettable).

8.2 Automatic stand alone operation

Tourspot 575 can work in synchronised stand alone mode without a control desk.
First of all connect the fixtures with DMX cable (see picture below).

The first fixture must be set to AUTO in order to act as the master. Use the menu to access AUTO on the display and press ENTER.
It is now possible to select four pre-programmed sequences (GAN1/2/3/P). To confirm selection press ENTER.

8.3 GAN1/2/3

GAN1/2/3 are factory defined programs with adjustable speed and focus. The master fixture should be placed in AUTO mode, the other fixtures should be set to 14 channel DMX Mode and the DMX address should be set at 001. Once a program is chosen press ENTER, choose between speed (SPEE) and focus (FOCU), press ENTER to adjust. All fixtures will now replicate the master.

8.4 GANP

GANP is a user definable program of 16 linked scenes which require a control desk to record. Playback, however, is stand alone.

RECORD

Enter record (REC) and set all fixtures to the same DMX channel mode (14 (16 bit) or 10 (16 bit)). When in record mode 3 additional DMX channels are required per fixture to enable the GANP internal scenes to be selected and recorded.
Set individual DMX addresses for each fixture remembering to add 3 additional channels. Any Tourspot or Tourwash model can be used in this mode. Adjust fixture parameters with the console and use the additional 3 channels to program the internal scenes of the fixtures.

Additional channel 1	Scene	selects last scene or scene to be recorded
Additional channel 2	Control	1-19=scene playback, 20-235=scene channel in record mode, 236-255=scene channel sets last scene in sequence
Additional channel 3	Record	0=off, 255=record

PLAYBACK

To playback the recorded scenes, the master fixture should be placed in GANP and the other fixtures should be set to slave (SLAV). The speed of playback can be adjusted by pressing ENTER on the master fixture.

8.5 Pan & tilt speed (SPEE)

You can adjust the maximum speed of the pan and tilt movement between 1 and 4, default is 2.

8.6 Fan speed (FANS)(12 default)

You can adjust the maximum speed of the cooling fans to reduce noise between 1 and 12, default is 12. Adjustment will affect efficient cooling and may result in the thermal cutout being activated. It is important that the ambient temperature is less than 35°C.

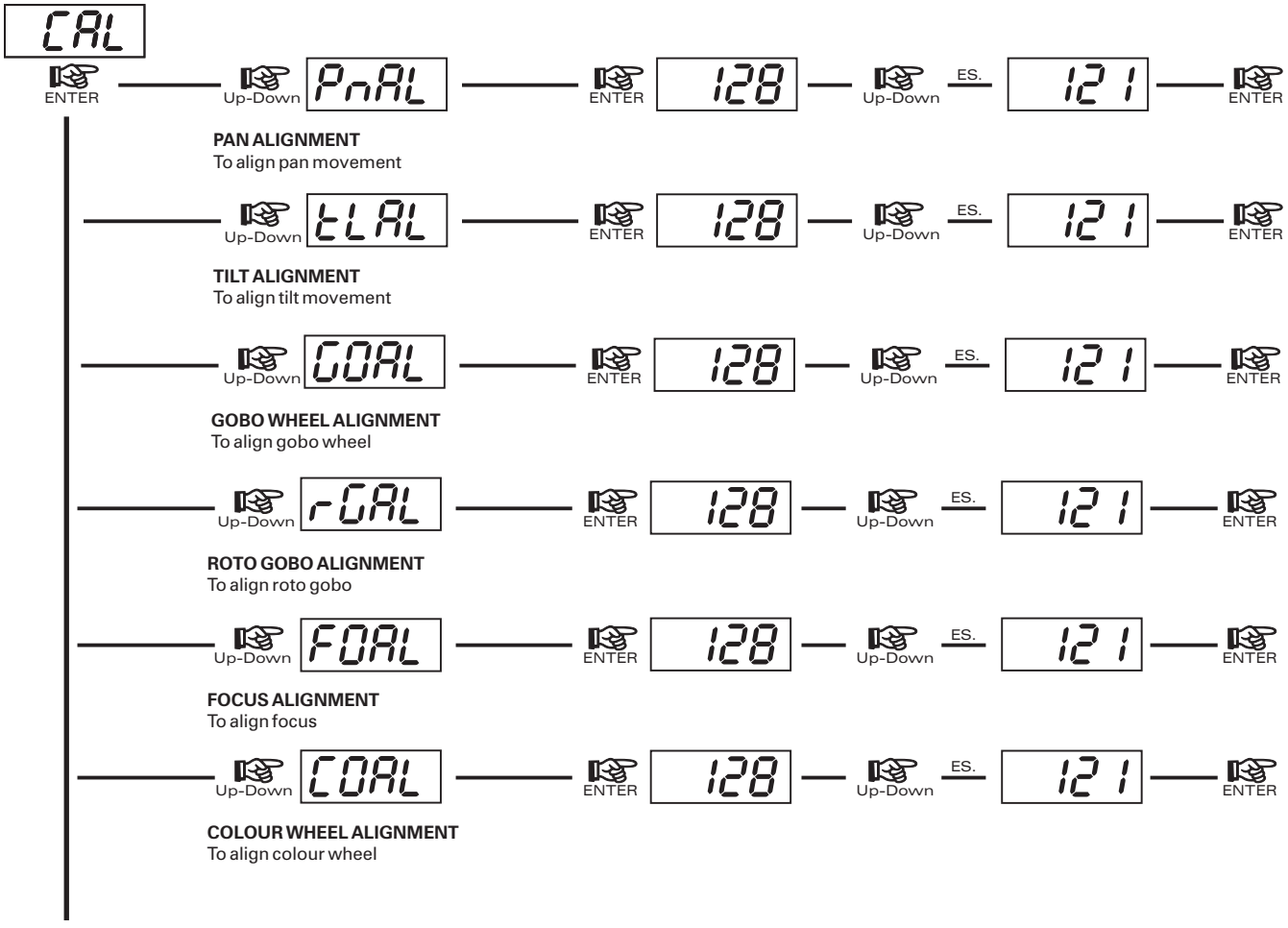
9 Error messages

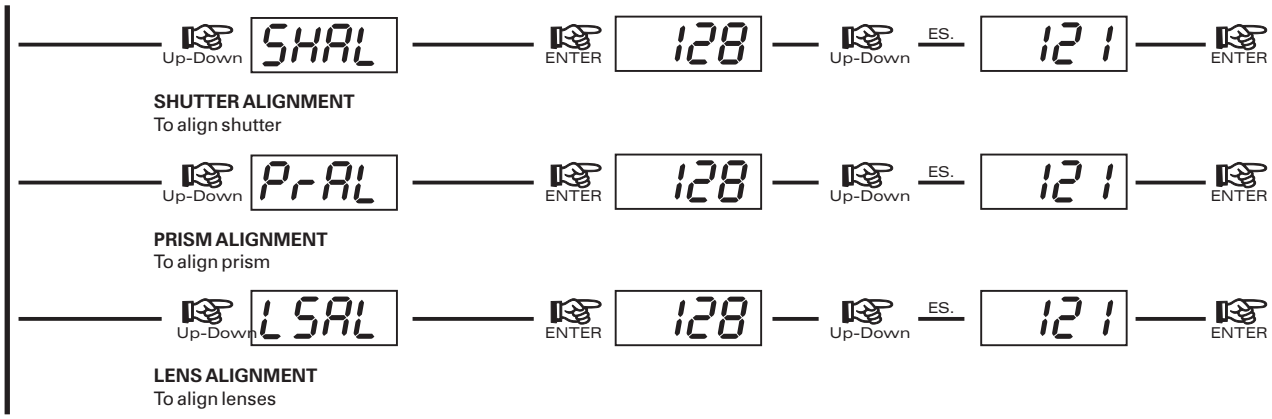
OPEr	Error: Encoder pan
OtEr	Error: Encoder tilt
AdEr	Error: DMX address
dtEr	Error: Load data EPROM
SCEr	Error: Sensor circuit colour/beam angle
SGEr	Error: Sensor circuit gobo/rotogobo
SnEr	Error Synchronized frequency measure (Synchronism for lamp ON)
COEr	Error: Colour wheel position
rGEr	Error: Gobo wheel position
LSEr	Error: Lenses wheel position
iGEr	Error: Rotogobo position
nbEr	Error: Internal communication
AUEr	Error: Auto mode input

10 Hidden menu (for technical personnel only)

To access the hidden menu connect the fixture to DMX and access the reset (rESE) menu from the display. Whilst resetting press MENU and ENTER buttons at the same time.

CAL	Electronic calibration of the motors
rESn	Reset EPROM NOTE: by pressing this button you must re-calibrate all functions
ESC	Exit from hidden menu





11 Opening up the fixture housing

It is possible to inspect the inside of the fixture by removing the cover as indicated below.
Note: isolate mains power prior to removing the covers.

1. Loosen (do not remove) the four screws which secure the front nose moulding (photo 1)
2. Remove the four side cover retaining screws (two each side) (photo 2).
3. Lift the covers to remove (photo 3).

Photo 1

Photo 2

Photo 3

12 Replacing gobos

The gobos in a Tourspot 575 may be removed without tools. Replacement gobos should be made of either heat resistant glass or metal.
Gobo dimensions:
ø external = 28 mm (or 27 mm from the back)
ø of image with defined edge = 24 mm
thickness = from 0.2 to 3.5 mm

12.1 Replacing gobos on the rotating gobo wheel

Note: isolate mains power prior to removing the covers.

1. Remove the covers as described in section 11.
2. Loosen the screws as shown (photo 1) and remove the metal leaf to allow easier access to the gobos.
3. Release the gobo retaining spring and carefully remove the gobo (photo 2-3).
4. Reverse the procedure to install a replacement gobo.

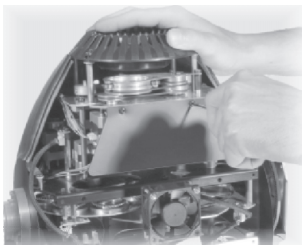


Photo 1

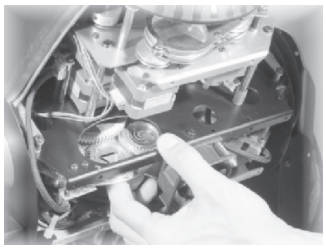


Photo 2

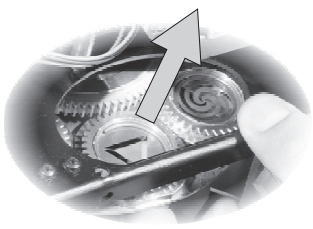


Photo 3

13 Periodic maintenance

Note: Disconnect mains power prior to removing the fixture housing.

13.1 Lenses and reflectors

Even a fine layer of dust can reduce the light output substantially. Regularly clean the reflector and all lenses using a soft cotton cloth, dampened with a specialist lens cleaning solution.

13.2 Fans and air ducts

In normal conditions the fans and air ducts must be cleaned approximately every 6 weeks. This can be achieved with a paint brush and domestic vacuum cleaner or compressed air. If necessary, clean the fans and air ducts more frequently.

13.3 Lamp

The lamp should be replaced if there is any visible damage. This will help to avoid the danger of the lamp exploding.

13.4 Mechanical parts

Periodically check all mechanical parts, gears, guides, belts etc. for wear and tear, replacing them if necessary. Periodically check the lubrication of all components, particularly the parts subject to high temperatures. If necessary, lubricate with suitable lubricant, available from your Tourspot distributor. Check the tension of all belts and adjust if necessary.

13.5 Electrical components

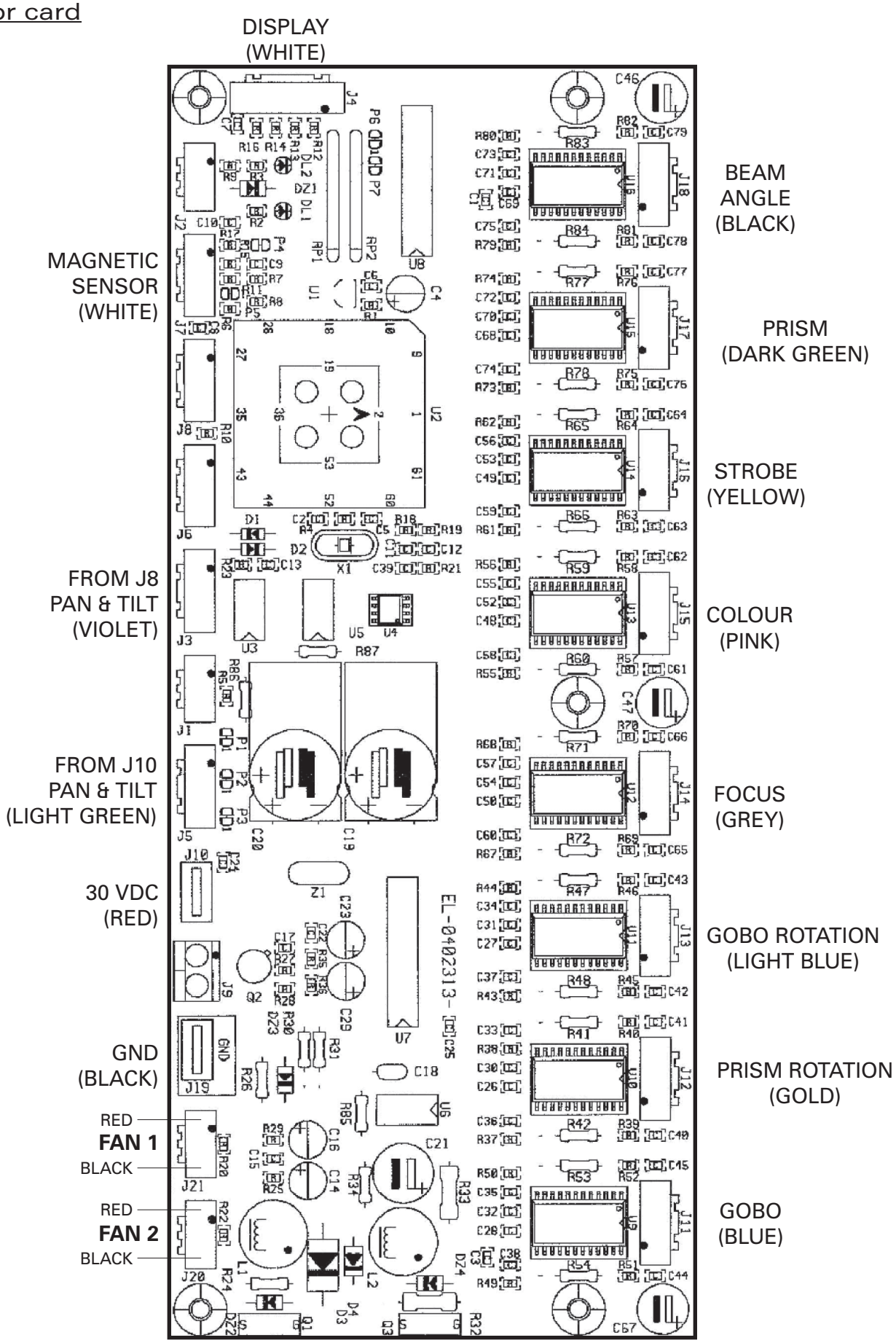
Check all electrical components for correct earthing and secure attachment of all connectors, refastening if necessary.

13.6 Fuse replacement

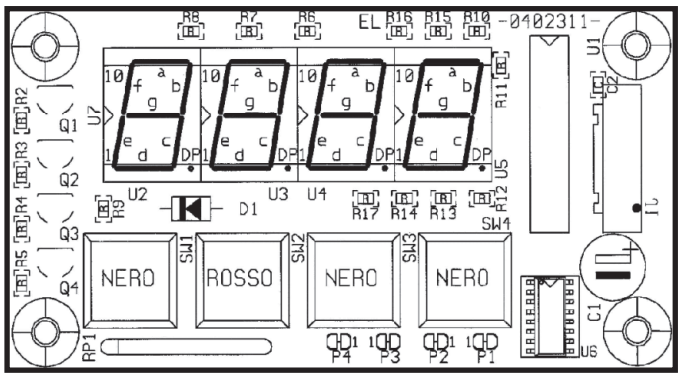
The fuse which protects the lamp and electronics, is mounted in the base of the Tourspot 575. Test the condition of the fuse using a multimeter, replacing it with one of equivalent type if necessary.

Appendix 1: Wiring connections

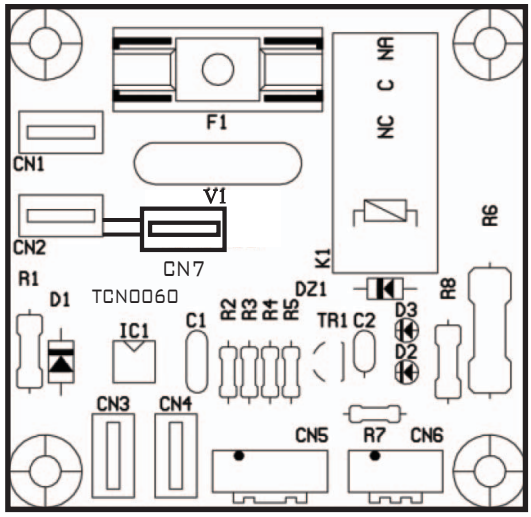
Motor card



Display card



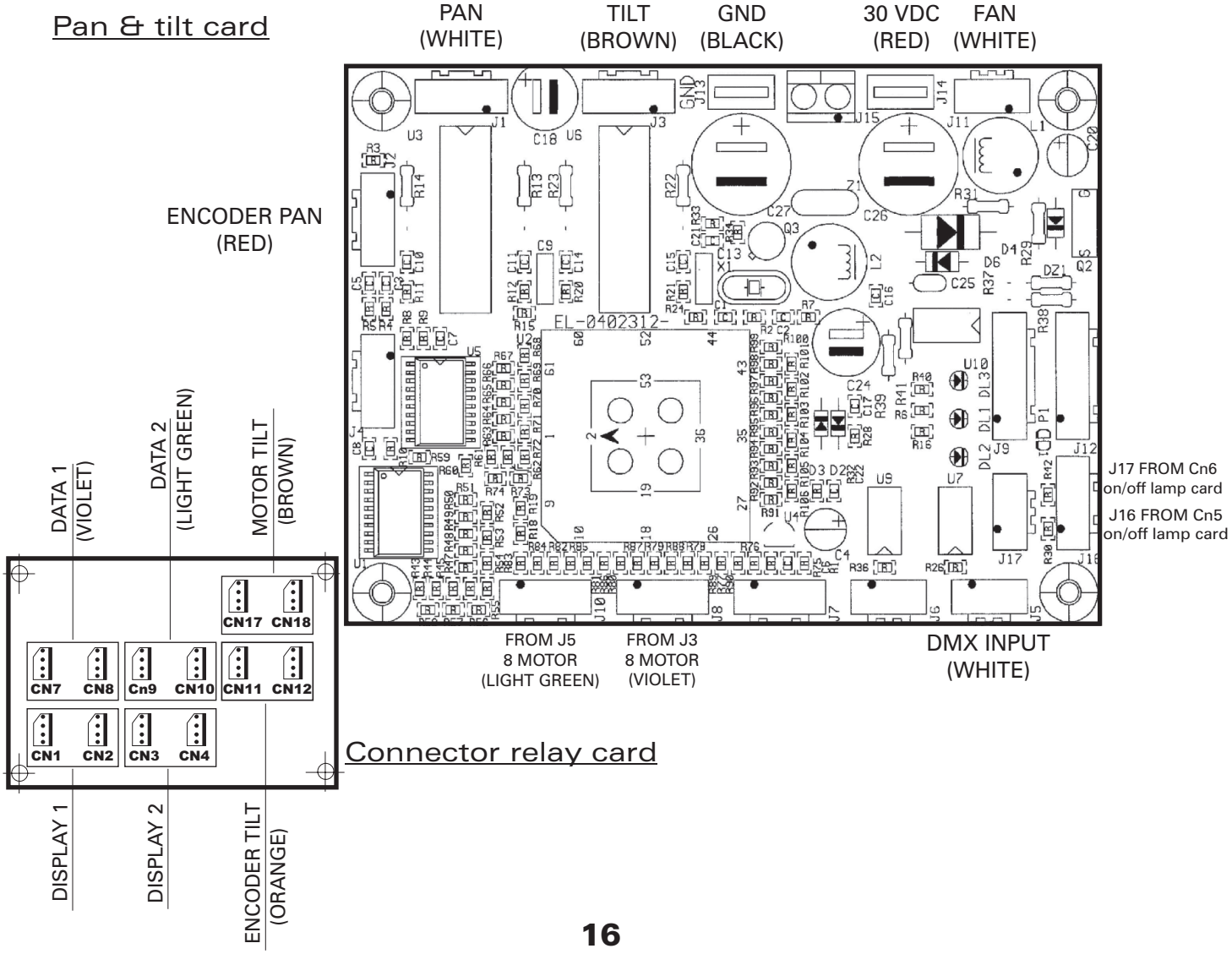
ON / OFF Lamp card



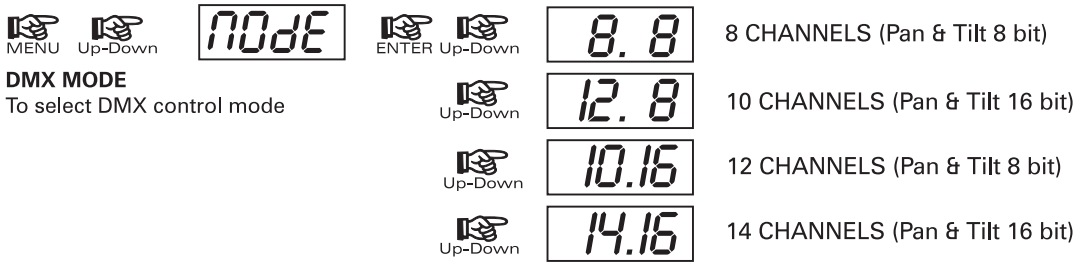
If the PCB card doesn' t work, move the cable "IN LAMP" from Cn1 to Cn7

To delete SnEr error from display, in menu LAMP select oFF

Pan & tilt card



Connector relay card



DMX MODE
To select DMX control mode

Appendix 2: DMX protocol

14 Channel mode (16 bit) (14.16)

DMX CHANNEL	1	PARAMETER:	**PAN Coarse**
DMX CHANNEL	2	PARAMETER:	**PAN Fine**
DMX CHANNEL	3	PARAMETER:	**TILT Coarse**
DMX CHANNEL	4	PARAMETER:	**TILT Fine**
DMX CHANNEL	5	PARAMETER:	**MOVEMENT SPEED**

DMX RANGE VALUE	MID POINT DMX VALUE	MOVE RANGE (DEGREES)	FUNCTION
0 – 10			Standard
11 – 25			Fast Movement
26 – 127			Vector Mode From Fast To Slow
128 – 247			Variable Time Reaction to DMX Signal (Fast To Slow)
248 – 255			Slow Reaction Time To DMX Signal
DMX CHANNEL	6	PARAMETER:	**DIMMER**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 8			Black-Out
9 – 255			Proportional Dimmer
DMX CHANNEL	7	PARAMETER:	**SHUTTER**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 9			Black Out
10 – 23			Strobe Random Speed
24 – 37			Strobe Speed 1 Min
38 – 51			Strobe Speed 2
52 – 65			Strobe Speed 3
66 – 79			Strobe Speed 4
80 – 93			Strobe Speed 5
94 – 107			Strobe Speed 6 MAX
108 – 121			Pulse Open Speed 1 Min
122 – 135			Pulse Open Speed 2
136 – 149			Pulse Open Speed 3
150 – 163			Pulse Open Speed 4 MAX
164 – 177			Pulse Closed Speed 1 Min
178 – 191			Pulse Closed Speed 2
192 – 205			Pulse Closed Speed 3
206 – 219			Pulse Closed Speed 4 MAX
220 – 227			COLOUR & GOBO In BLACKOUT
228 – 233			PAN & TILT In BLACKOUT
234 – 255			Open

DMX CHANNEL	8	PARAMETER:	COLOUR
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 128			Proportional Colour 0 - 360º
	0		OW
	14		Green
	28		Cyan
	42		Magenta
	57		Amber
	71		Deep Magenta
	85		Red
	99		Deep Blue
	114		Yellow
129 – 132			Colour1 - OW
133 – 136			Bicolour ½
137 – 140			Colour2 - GREEN
141 – 144			Bicolour 2/3
145 – 148			Colour3 - CYAN
149 – 152			Bicolour ¾
153 – 156			Colour 4 - MAGENTA
157 – 160			Bicolour 4/5
161 – 164			Colour 5 - AMBER
165 – 168			Bicolour 5/6
169 – 172			Colour 6 - DEEP MAGENTA
173 – 176			Bicolour 6/7
177 – 180			Colour 7 - RED
181 – 184			Bicolour 7/8
185 – 188			Colour 8 - DEEP BLUE
189 – 192			Bicolour 8/9
193 – 196			Colour 9 - YELLOW
197 – 200			Bicolour 9/1
201 – 202			Right Speed Rotation 9 MAX
203 – 205			Right Speed Rotation 8
206 – 208			Right Speed Rotation 7
209 – 211			Right Speed Rotation 6
212 – 214			Right Speed Rotation 5
215 – 217			Right Speed Rotation 4
218 – 220			Right Speed Rotation 3
221 – 223			Right Speed Rotation 2
224 – 226			Right Speed Rotation 1 Min
227 – 229			STOP
230 – 232			Left Speed Rotation 1 Min
233 – 235			Left Speed Rotation 2
236 – 238			Left Speed Rotation 3
239 – 241			Left Speed Rotation 4
242 – 244			Left Speed Rotation 5
245 – 247			Left Speed Rotation 6
248 – 250			Left Speed Rotation 7
251 – 253			Left Speed Rotation 8
254 – 255			Left Speed Rotation 9 MAX

26 – 51			Gobo 1 - Spiral
52 – 77			Gobo 2 - Triangle
78 – 103			Gobo 3 - Cone
104 – 129			Gobo 4 - Star
130 – 155			Gobo 5 - Bubbles
156 – 181			Gobo 6 - Radial Breakup
182 – 207			Gobo 7 - Web
208 – 213			Speed Rotation 1 Min
214 – 219			Speed Rotation 2
220 – 225			Speed Rotation 3
226 – 231			Speed Rotation 4
232 – 237			Speed Rotation 5
238 – 243			Speed Rotation 6
244 – 249			Speed Rotation 7
250 – 255			Speed Rotation 8 MAX
DMX CHANNEL	**10**	PARAMETER:	**GOBO ROTATION**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 127			Proportional Da 0 A 360°
128 – 180			Left Rotation
181 – 202			STOP
203 – 255			Right Rotation
DMX CHANNEL	**11**	PARAMETER:	**PRISM / PRISM ROTATION**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 63			No Effect
64 – 127			Prism On
128 – 191			Left Rotation
192 – 255			Right Rotation
DMX CHANNEL	**12**	PARAMETER:	**FOCUS**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 255			Proportional
DMX CHANNEL	**13**	PARAMETER:	**LIGHT BEAM ANGLE / FROST**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 72			No Lens
73 – 145			Lens 1
146 – 218			Lens 2
219 – 255			FROST
DMX CHANNEL	**14**	PARAMETER:	**RESET**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 29			No Effect
30 - 85			Lamp OFF
86 – 170			Reset Internal Motor
171 - 235			Total Reset
236 – 255			Lamp ON

12 Channel mode (8 bit) (12.8)			
DMX CHANNEL	1	PARAMETER:	PAN
DMX CHANNEL	2	PARAMETER:	TILT
DMX CHANNEL	3	PARAMETER:	MOVEMENT SPEED
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 10			Standard
11 – 25			Fast Movement
26 – 127			Vector Mode From Fast To Slow
128 – 247			Variable Time Reaction To DMX Signal (Fast To Slow)
248 – 255			Slow Reaction Time To DMX Signal
DMX CHANNEL	4	PARAMETER:	DIMMER
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 8			Black-Out
9 – 255			Proportional Dimmer
DMX CHANNEL	5	PARAMETER:	SHUTTER
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 9			Black Out
10 – 23			Strobe Random Speed
24 – 37			Strobe Speed 1 Min
38 – 51			Strobe Speed 2
52 – 65			Strobe Speed 3
66 – 79			Strobe Speed 4
80 – 93			Strobe Speed 5
94 – 107			Strobe Speed 6 MAX
108 – 121			Pulse Open Speed 1 Min
122 – 135			Pulse Open Speed 2
136 – 149			Pulse Open Speed 3
150 – 163			Pulse Open Speed 4 MAX
164 – 177			Pulse Closed Speed 1 Min
178 – 191			Pulse Closed Speed 2
192 – 205			Pulse Closed Speed 3
206 – 219			Pulse Closed Speed 4 MAX
220 – 227			COLOUR & GOBO In BLACKOUT
228 – 233			PAN & TILT In BLACKOUT
234 – 255			Open

DMX CHANNEL	6	PARAMETER:	COLOUR
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 128			Proportional Colour 0 - 360º
	0		OW
	14		Green
	28		Cyan
	42		Magenta
	57		Amber
	71		Deep Magenta
	85		Red
	99		Deep Blue
	114		Yellow
129 – 132			Colour1 - OW
133 – 136			Bicolour ½
137 – 140			Colour2 - GREEN
141 – 144			Bicolour 2/3
145 – 148			Colour3 - CYAN
149 – 152			Bicolour ¾
153 – 156			Colour 4 - MAGENTA
157 – 160			Bicolour 4/5
161 – 164			Colour 5 - AMBER
165 – 168			Bicolour 5/6
169 – 172			Colour 6 - DEEP MAGENTA
173 – 176			Bicolour 6/7
177 – 180			Colour 7 - RED
181 – 184			Bicolour 7/8
185 – 188			Colour 8 - DEEP BLUE
189 – 192			Bicolour 8/9
193 – 196			Colour 9 - YELLOW
197 – 200			Bicolour 9/1
201 – 202			Right Speed Rotation 9 MAX
203 – 205			Right Speed Rotation 8
206 – 208			Right Speed Rotation 7
209 – 211			Right Speed Rotation 6
212 – 214			Right Speed Rotation 5
215 – 217			Right Speed Rotation 4
218 – 220			Right Speed Rotation 3
221 – 223			Right Speed Rotation 2
224 – 226			Right Speed Rotation 1 Min
227 – 229			STOP
230 – 232			Left Speed Rotation 1 Min
233 – 235			Left Speed Rotation 2
236 – 238			Left Speed Rotation 3
239 – 241			Left Speed Rotation 4
242 – 244			Left Speed Rotation 5
245 – 247			Left Speed Rotation 6
248 – 250			Left Speed Rotation 7
251 – 253			Left Speed Rotation 8
254 – 255			Left Speed Rotation 9 MAX

52 – 77			Gobo 2 - Triangle
78 – 103			Gobo 3 - Cone
104 – 129			Gobo 4 - Star
130 – 155			Gobo 5 - Bubbles
156 – 181			Gobo 6 - Radial Breakup
182 – 207			Gobo 7 - Web
208 – 213			Speed Rotation 1 Min
214 – 219			Speed Rotation 2
220 – 225			Speed Rotation 3
226 – 231			Speed Rotation 4
232 – 237			Speed Rotation 5
238 – 243			Speed Rotation 6
244 – 249			Speed Rotation 7
250 – 255			Speed Rotation 8 MAX
DMX CHANNEL	**8**	PARAMETER:	**GOBO ROTATION**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 127			Proportional Da 0 A 360º
128 – 180			Left Rotation
181 – 202			STOP
203 – 255			Right Rotation
DMX CHANNEL	**9**	PARAMETER:	**PRISM / PRISM ROTATION**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 63			No Effect
64 – 127			Prism On
128 – 191			Left Rotation
192 – 255			Right Rotation
DMX CHANNEL	**10**	PARAMETER:	**FOCUS**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 255			Proportional
DMX CHANNEL	**11**	PARAMETER:	**LIGHT BEAM ANGLE / FROST**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 72			No Lens
73 – 145			Lens 1
146 – 218			Lens 2
219 – 255			FROST
DMX CHANNEL	**12**	PARAMETER:	**RESET**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 29			No Effect
30 - 85			Lamp OFF
86 – 170			Reset Internal Motor
171 - 235			Total Reset
236 – 255			Lamp ON

10 Channel mode (16 bit) (10.16)

DMX CHANNEL	1	PARAMETER:	**PAN Coarse**
DMX CHANNEL	2	PARAMETER:	**PAN Fine**
DMX CHANNEL	3	PARAMETER:	**TILT Coarse**
DMX CHANNEL	4	PARAMETER:	**TILT Fine**
DMX CHANNEL	5	PARAMETER:	**DIMMER / SHUTTER**

DMX RANGE VALUE	MID POINT DMX VALUE	MOVE RANGE (DEGREES)	FUNCTION
0 – 9			Black Out
10 – 85			Dimmer
86 – 95			Strobe Random Speed
96 – 105			Strobe Speed 1 Min
106 – 115			Strobe Speed 2
116 – 125			Strobe Speed 3
126 – 135			Strobe Speed 4
136 – 145			Strobe Speed 5
146 – 155			Strobe Speed 6 MAX
156 – 165			Pulse Open Speed 1 Min
166 – 175			Pulse Open Speed 2
176 – 185			Pulse Open Speed 3
186 – 195			Pulse Open Speed 4 MAX
196 – 205			Pulse Closed Speed 1 Min
206 – 215			Pulse Closed Speed 2
216 – 225			Pulse Closed Speed 3
226 – 235			Pulse Closed Speed 4 MAX
236 – 245			COLOUR/GOBO/PAN/TILT In BLACKOUT
246 – 255			Open
DMX CHANNEL	6	PARAMETER:	**COLOUR**

DMX RANGE VALUE	MID POINT DMX VALUE	MOVE RANGE (DEGREES)	FUNCTION
0 – 128			Proportional COLOUR 0 - 360º
	0		OW
	14		Green
	28		Cyan
	42		Magenta
	57		Amber
	71		Deep Magenta
	85		Red
	99		Deep Blue
	114		Yellow
129 – 132			COLOUR1 - OW
133 – 136			Bicolour ½
137 – 140			colour2 - GREEN
141 – 144			Bicolour 2/3
145 – 148			colour3 - CYAN
149 – 152			Bicolour ¾
153 – 156			colour 4 - MAGENTA
157 – 160			Bicolour 4/5
161 – 164			colour 5 - AMBER
165 – 168			Bicolour 5/6
169 – 172			colour 6 - DEEP MAGENTA
173 – 176			Bicolour 6/7
177 – 180			colour 7 - RED
181 – 184			Bicolour 7/8
185 – 188			colour 8 - DEEP BLUE

189 – 192			Bicolour 8/9
193 – 196			colour 9 - YELLOW
197 – 200			Bicolour 9/1
201 – 202			Right Speed Rotation 9 MAX
203 – 205			Right Speed Rotation 8
206 – 208			Right Speed Rotation 7
209 – 211			Right Speed Rotation 6
212 – 214			Right Speed Rotation 5
215 – 217			Right Speed Rotation 4
218 – 220			Right Speed Rotation 3
221 – 223			Right Speed Rotation 2
224 – 226			Right Speed Rotation 1 Min
227 – 229			STOP
230 – 232			Left Speed Rotation 1 Min
233 – 235			Left Speed Rotation 2
236 – 238			Left Speed Rotation 3
239 – 241			Left Speed Rotation 4
242 – 244			Left Speed Rotation 5
245 – 247			Left Speed Rotation 6
248 – 250			Left Speed Rotation 7
251 – 253			Left Speed Rotation 8
254 – 255			Left Speed Rotation 9 MAX
DMX CHANNEL	**7**	PARAMETER:	**GOBO**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 25			Open
26 – 51			Gobo 1 - Spiral
52 – 77			Gobo 2 - Triangle
78 – 103			Gobo 3 - Cone
104 – 129			Gobo 4 - Star
130 – 155			Gobo 5 - Bubbles
156 – 181			Gobo 6 - Radial Breakup
182 – 207			Gobo 7 - Web
208 – 213			Speed Rotation 1 Min
214 – 219			Speed Rotation 2
220 – 225			Speed Rotation 3
226 – 231			Speed Rotation 4
232 – 237			Speed Rotation 5
238 – 243			Speed Rotation 6
244 – 249			Speed Rotation 7
250 – 255			Speed Rotation 8 MAX
DMX CHANNEL	**8**	PARAMETER:	**GOBO ROTATION**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 127			Proportional Da 0 A 360º
128 – 180			Left Rotation
181 – 202			STOP
203 – 255			Right Rotation

DMX CHANNEL	9	PARAMETER:	PRISM / PRISM ROTATION
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 63			No Effect
64 – 127			Prism On
128 – 191			Left Rotation
192 – 255			Right Rotation
DMX CHANNEL	10	PARAMETER:	FOCUS / BEAM ANGLE / FROST
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 72			No Lens
73 – 145			Lens 1
146 – 218			Lens 2
219 – 255			FROST

8 Channel mode (8 bit) (8.8)

DMX CHANNEL	1	PARAMETER:	**PAN**
DMX CHANNEL	2	PARAMETER:	**TILT**
DMX CHANNEL	3	PARAMETER:	**DIMMER / SHUTTER**

DMX RANGE VALUE	MID POINT DMX VALUE	MOVE RANGE (DEGREES)	FUNCTION
0 – 9			Black Out
10 – 85			Dimmer
86 – 95			Strobe Random Speed
96 – 105			Strobe Speed 1 Min
106 – 115			Strobe Speed 2
116 – 125			Strobe Speed 3
126 – 135			Strobe Speed 4
136 – 145			Strobe Speed 5
146 – 155			Strobe Speed 6 MAX
156 – 165			Pulse Open Speed 1 Min
166 – 175			Pulse Open Speed 2
176 – 185			Pulse Open Speed 3
186 – 195			Pulse Open Speed 4 MAX
196 – 205			Pulse Closed Speed 1 Min
206 – 215			Pulse Closed Speed 2
216 – 225			Pulse Closed Speed 3
226 – 235			Pulse Closed Speed 4 MAX
236 – 245			colour/GOBO/PAN/TILT In BLACKOUT
246 – 255			Open
DMX CHANNEL	4	PARAMETER:	**COLOUR**

DMX RANGE VALUE	MID POINT DMX VALUE	MOVE RANGE (DEGREES)	FUNCTION
0 – 128			Proportional Colour 0 - 360°
	0		OW
	14		Green
	28		Cyan
	42		Magenta
	57		Amber
	71		Deep Magenta
	85		Red
	99		Deep Blue
	114		Yellow
129 – 132			Colour1 - OW
133 – 136			Bicolour ½
137 – 140			Colour2 - GREEN
141 – 144			Bicolour 2/3
145 – 148			Colour3 - CYAN
149 – 152			Bicolour ¾
153 – 156			Colour 4 - MAGENTA
157 – 160			Bicolour 4/5
161 – 164			Colour 5 - AMBER
165 – 168			Bicolour 5/6
169 – 172			Colour 6 - DEEP MAGENTA
173 – 176			Bicolour 6/7

177 – 180			Colour 7 - RED
181 – 184			Bicolour 7/8
185 – 188			Colour 8 - DEEP BLUE
189 – 192			Bicolour 8/9
193 – 196			Colour 9 - YELLOW
197 – 200			Bicolour 9/1
201 – 202			Right Speed Rotation 9 MAX
203 – 205			Right Speed Rotation 8
206 – 208			Right Speed Rotation 7
209 – 211			Right Speed Rotation 6
212 – 214			Right Speed Rotation 5
215 – 217			Right Speed Rotation 4
218 – 220			Right Speed Rotation 3
221 – 223			Right Speed Rotation 2
224 – 226			Right Speed Rotation 1 Min
227 – 229			STOP
230 – 232			Left Speed Rotation 1 Min
233 – 235			Left Speed Rotation 2
236 – 238			Left Speed Rotation 3
239 – 241			Left Speed Rotation 4
242 – 244			Left Speed Rotation 5
245 – 247			Left Speed Rotation 6
248 – 250			Left Speed Rotation 7
251 – 253			Left Speed Rotation 8
254 – 255			Left Speed Rotation 9 MAX
DMX CHANNEL	**5**	PARAMETER:	**GOBO**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 25			Open
26 – 51			Gobo 1 - Spiral
52 – 77			Gobo 2 - Triangle
78 – 103			Gobo 3 - Cone
104 – 129			Gobo 4 - Star
130 – 155			Gobo 5 - Bubbles
156 – 181			Gobo 6 - Radial Breakup
182 – 207			Gobo 7 - Web
208 – 213			Speed Rotation 1 Min
214 – 219			Speed Rotation 2
220 – 225			Speed Rotation 3
226 – 231			Speed Rotation 4
232 – 237			Speed Rotation 5
238 – 243			Speed Rotation 6
244 – 249			Speed Rotation 7
250 – 255			Speed Rotation 8 MAX
DMX CHANNEL	**6**	PARAMETER:	**GOBO ROTATION**
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 127			Proportional Da 0 A 360º
128 – 180			Left Rotation
181 – 202			STOP
203 – 255			Right Rotation

DMX CHANNEL	7	PARAMETER:	PRISM /PRISM ROTATION
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 63			No Effect
64 – 127			Prism On
128 – 191			Left Rotation
192 – 255			Right Rotation
DMX CHANNEL	8	PARAMETER:	FOCUS / BEAM ANGLE / FROST
DMX RANGE VALUE	**MID POINT DMX VALUE**	**MOVE RANGE (DEGREES)**	**FUNCTION**
0 – 72			No Lens
73 – 145			Lens 1
146 – 218			Lens 2
219 – 255			FROST