

8 MAINTENANCE AND CLEANING

The following points have to be considered during the inspection:

- 1) All screws for installing the devices or parts of the device have to be tightly connected and must not be corroded.
- 2) There must not be any deformations on the housing, color lenses, fixations and installation spots (ceiling, suspension, trussing).
- 3) Mechanically moved parts must not show any traces of wearing and must not rotate with unbalances.
- 4) The electric power supply cables must not show any damage, material fatigue or sediments.

Further instructions depending on the installation spot and usage have to be adhered by a skilled installer and any safety problems have to be removed.



CAUTION

Disconnect from mains before starting maintenance operation.



In order to make the lights in good condition and extend the life time, we suggest a regular cleaning to the lights.

- 1) Clean the inside and outside lens each week to avoid the weakness of the lights due to accumulation of dust.
- 2) Clean the fan each week.
- 3) A detailed electric check by approved electrical engineer each three month, make sure that the circuit contacts are in good condition, prevent the poor contact of circuit from overheating.

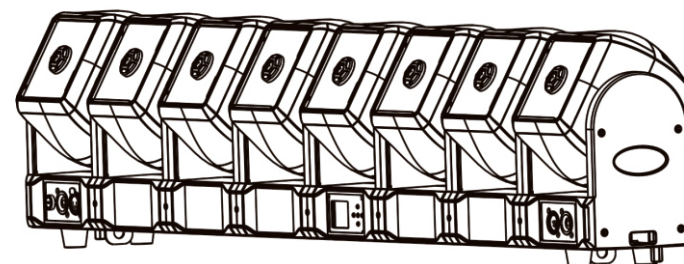
We recommend a frequent cleaning of the device. Please use a moist, lint- free cloth. Never use alcohol or solvents.

There are no serviceable parts inside the device. Please refer to the instructions under "Installation instructions".

Should you need any spare parts, please order genuine parts from your local dealer.



Catena 48



CE   IP20 $t_a 40^{\circ}\text{C}$ $t_c 100^{\circ}\text{C}$

User Manual

KEEP THIS MANUAL FOR FUTURE NEEDS

1 SAFETY INSTRUCTIONS



CAUTION

Becareful with your operations. With a dangerous voltage you can suffer a dangerous electric shock when touching wires!

This device has left the factory in perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.



IMPORTANT

Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

If the device has been exposed to temperature changes due to environmental changes, do not switch it on immediately. The arising condensation could damage the device. Leave the device switched off until it has reached room temperature.

This device falls under protection-class I. Therefore it is essential that the device be earthed.

The electric connection must carry out by qualified person.

The device shall only be used with rated voltage and frequency.

Make sure that the available voltage is not higher than stated at the end of this manual.

Make sure the power cord is never crimped or damaged by sharp edges. If this would be the case, replacement of the cable must be done by an authorized dealer.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power cord by the plug. Never pull out the plug by tugging the power cord.

During initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective, it should decrease gradually.

Please don't project the beam onto combustible substances.

Fixtures cannot be installed on combustible substances, keep more than 50cm distance with wall for smooth air flow, so there should be no shelter for fans and ventilation for heat radiation.

If the external flexible cable or cord of this luminaire is damaged, it shall be exclusively replaced by the manufacturer or his service agent or a similar qualified person in order to avoid a hazard.

112	EFFECT (STRIP LIGHT 5)	0 - 255	Dynamic effect options
113	Speed (STRIP LIGHT 5)	0 - 255	Speed control of dynamic effect
114	DIMMER (STRIP LIGHT 6)	0 - 255	Linear Dimmer 0 – 100%
115	SHUTTER (STRIP LIGHT 6)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
116	RED (STRIP LIGHT 6)	0 - 255	Linear 0 -100%
117	GREEN (STRIP LIGHT 6)	0 - 255	Linear 0 -100%
118	BLUE (STRIP LIGHT 6)	0 - 255	Linear 0 -100%
119	EFFECT (STRIP LIGHT 6)	0 - 255	Dynamic effect options
120	Speed (STRIP LIGHT 6)	0 - 255	Speed control of dynamic effect
121	DIMMER (STRIP LIGHT 7)	0 - 255	Linear Dimmer 0 – 100%
122	SHUTTER (STRIP LIGHT 7)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
123	RED (STRIP LIGHT 7)	0 - 255	Linear 0 -100%
124	GREEN (STRIP LIGHT 7)	0 - 255	Linear 0 -100%
125	BLUE (STRIP LIGHT 7)	0 - 255	Linear 0 -100%
126	EFFECT (STRIP LIGHT 7)	0 - 255	Dynamic effect options
127	Speed (STRIP LIGHT 7)	0 - 255	Speed control of dynamic effect
128	DIMMER (STRIP LIGHT 8)	0 - 255	Linear Dimmer 0 – 100%
129	SHUTTER (STRIP LIGHT 8)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
130	RED (STRIP LIGHT 8)	0 - 255	Linear 0 -100%
131	GREEN (STRIP LIGHT 8)	0 - 255	Linear 0 -100%
132	BLUE (STRIP LIGHT 8)	0 - 255	Linear 0 -100%
133	EFFECT (STRIP LIGHT 8)	0 - 255	Dynamic effect options
134	Speed (STRIP LIGHT 8)	0 - 255	Speed control of dynamic effect

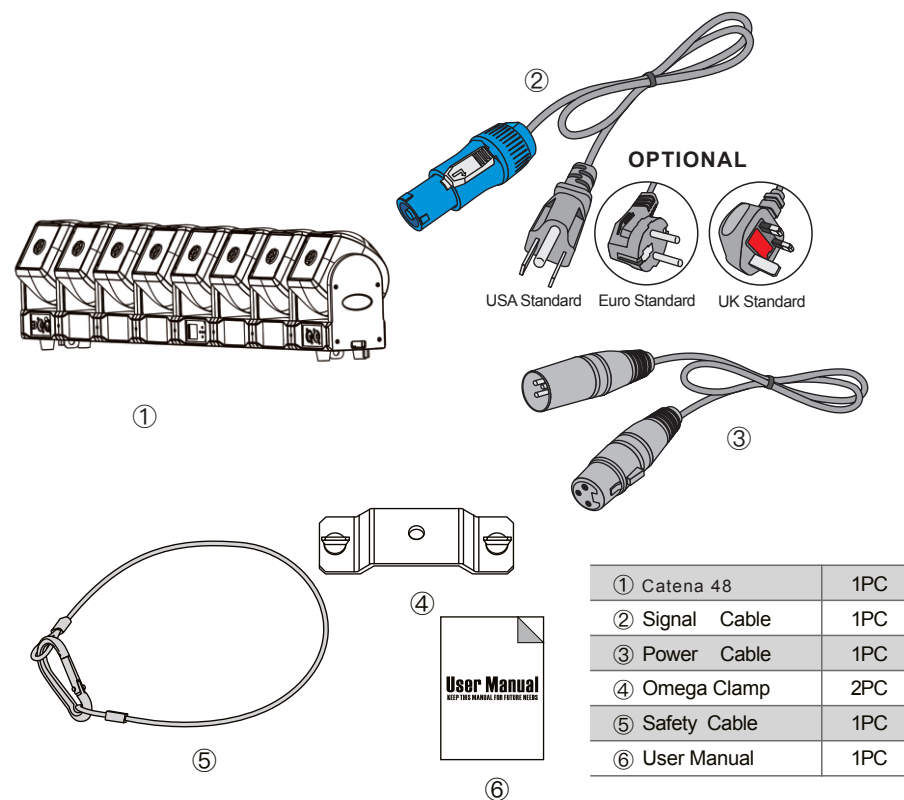
76	360° Continuous TILT 6 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
77	360° Continuous TILT 7 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
78	360° Continuous TILT 8 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
79	DIMMER (STRIP LIGHT 1)	0 - 255	Linear Dimmer 0 – 100%
80	SHUTTER (STRIP LIGHT 1)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
81	RED (STRIP LIGHT 1)	0 - 255	Linear 0 -100%
82	GREEN (STRIP LIGHT 1)	0 - 255	Linear 0 -100%
83	BLUE(STRIP LIGHT 1)	0 - 255	Linear 0 -100%
84	EFFECT (STRIP LIGHT 1)	0 - 255	Dynamic effect options
85	Speed (STRIP LIGHT 1)	0 - 255	Speed control of dynamic effect
86	DIMMER (STRIP LIGHT 2)	0 - 255	Linear Dimmer 0 – 100%
87	SHUTTER (STRIP LIGHT 2)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
88	RED (STRIP LIGHT 2)	0 - 255	Linear 0 -100%
89	GREEN (STRIP LIGHT 2)	0 - 255	Linear 0 -100%
90	BLUE(STRIP LIGHT 2)	0 - 255	Linear 0 -100%
91	EFFECT (STRIP LIGHT 2)	0 - 255	Dynamic effect options
92	Speed (STRIP LIGHT 2)	0 - 255	Speed control of dynamic effect
93	DIMMER (STRIP LIGHT 3)	0 - 255	Linear Dimmer 0 – 100%
94	SHUTTER (STRIP LIGHT 3)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
95	RED (STRIP LIGHT 3)	0 - 255	Linear 0 -100%
96	GREEN (STRIP LIGHT 3)	0 - 255	Linear 0 -100%
97	BLUE(STRIP LIGHT 3)	0 - 255	Linear 0 -100%
98	EFFECT (STRIP LIGHT 3)	0 - 255	Dynamic effect options
99	Speed (STRIP LIGHT 3)	0 - 255	Speed control of dynamic effect
100	DIMMER (STRIP LIGHT 4)	0 - 255	Linear Dimmer 0 – 100%
101	SHUTTER (STRIP LIGHT 4)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
102	RED (STRIP LIGHT 4)	0 - 255	Linear 0 -100%
103	GREEN (STRIP LIGHT 4)	0 - 255	Linear 0 -100%
104	BLUE(STRIP LIGHT 4)	0 - 255	Linear 0 -100%
105	EFFECT (STRIP LIGHT 4)	0 - 255	Dynamic effect options
106	Speed (STRIP LIGHT 4)	0 - 255	Speed control of dynamic effect
107	DIMMER (STRIP LIGHT 5)	0 - 255	Linear Dimmer 0 – 100%
108	SHUTTER (STRIP LIGHT 5)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
109	RED (STRIP LIGHT 5)	0 - 255	Linear 0 -100%
110	GREEN (STRIP LIGHT 5)	0 - 255	Linear 0 -100%
111	BLUE(STRIP LIGHT 5)	0 - 255	Linear 0 -100%

2 UNPACKING

The Catena 48 is a high-performance stage lighting bar fixture that features 8 individual moving MINI heads, each of which is equipped with a powerful 60W 4-IN-1 RGBW LED light source. With its versatile design and advanced features, specially the mirror based optical system, the Catena 48 is capable of producing a wide range of dynamic sharp and collimated BEAM lighting effects that are sure to captivate audiences and enhance performances. Also, thanks to the ingenious front neon ring design on each head, the BAR could bring ultra brilliant and magic lighting effect to the lighting designers.

The Catena 48 also features a range of advanced lighting effects, including strobe, colour mixing, and chase effects. These effects can be easily accessed and controlled via the controller, allowing for precise and customisable lighting setups.

The fixture is tuned with proper LED refresh rate for flicker free operation for TV and FILM. It's a perfect option for large scale live concerts, TV productions, road shows, clubs/bars, weddings, etc.



3 FEATURES & SPECIFICATIONS

8*60W 4-IN-1 RGBW LEDs

(8*30)*0.2W 3-IN-1 SM D RGB LEDs

Flicker free operation for broadcast TV and FILM

Life Span: 50000H

8PCS high efficiency lens

3.5°Projection angle

TILT: 2 modes

1. 360° Continuous movement

2. 240° (8/ 16 bit)

Fast, quiet, smooth and precise 2-phase motors

Smooth, fast and precise resolution for TILT movement with low noise operation

Scan position memory, auto reposition after unexpected movement

Pixel mapping capability with each LEDs controllable individually Sophisticated

4 colours RGBW mixed

Linear CTO 2500-8000K

Sharp beam effect

Preset static patterns

Preset dynamic patterns with variable speed

Preset dynamic colour macro with variable speed

Each head with strip effect with different built-in macros

(variable speed control)

0-100% Smooth linear LED dimming

1-25Hz shutter/strobe effect with variable speed

Preset pulse strobe effect with variable speed

Random strobe effect with variable speed

22/ 59/ 85/ 134 DMX channels USITT DMX-512

DMX512, master-slave, sound activated or auto operation

RDM available (Remote Device Management)

Shielded input signal protection for stable signal without interference

3-Pin XLR connectors IN/ OUT

Electronic supply with active PFC

AC100-240V 50/ 60Hz

PowerCON IN/ OUT with fuse

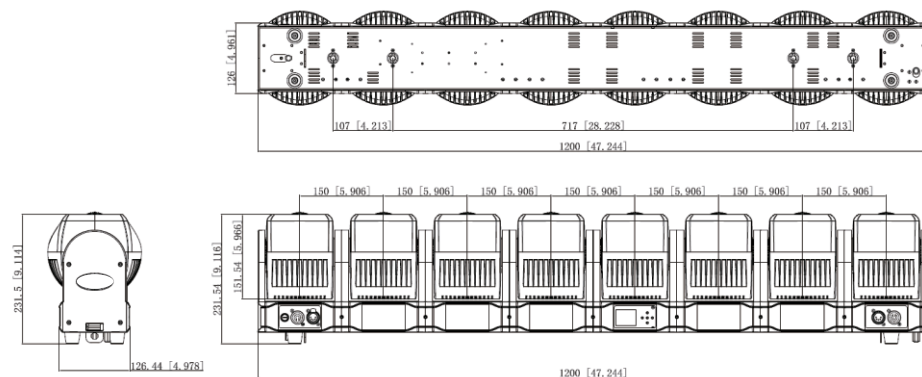
640W Power consumption

-25°C to 45°C ambient temperature

IP20 protection rating

38	TILT 8	000 - 255	Mirror 8 positioning (Default REVERSEHEADSoption OFF)
39	Red 1	000 - 255	Red 1
40	Green 1	000 - 255	Green 1
41	Blue 1	000 - 255	Blue 1
42	White 1	000 - 255	White 1
43	Red 2	000 - 255	Red 2
44	Green 2	000 - 255	Green 2
45	Blue 2	000 - 255	Blue 2
46	White 2	000 - 255	White 2
47	Red 3	000 - 255	Red 3
48	Green 3	000 - 255	Green 3
49	Blue 3	000 - 255	Blue 3
50	White 3	000 - 255	White 3
51	Red 4	000 - 255	Red 4
52	Green 4	000 - 255	Green 4
53	Blue 4	000 - 255	Blue 4
54	White 4	000 - 255	White 4
55	Red 5	000 - 255	Red 5
56	Green 5	000 - 255	Green 5
57	Blue 5	000 - 255	Blue 5
58	White 5	000 - 255	White 5
59	Red 6	000 - 255	Red 6
60	Green 6	000 - 255	Green 6
61	Blue 6	000 - 255	Blue 6
62	White 6	000 - 255	White 6
63	Red 7	000 - 255	Red 7
64	Green 7	000 - 255	Green 7
65	Blue 7	000 - 255	Blue 7
66	White 7	000 - 255	White 7
67	Red 8	000 - 255	Red 8
68	Green 8	000 - 255	Green 8
69	Blue 8	000 - 255	Blue 8
70	White 8	000 - 255	White 8
71	360° Continuous TILT 1 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
72	360° Continuous TILT 2 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
73	360° Continuous TILT 3 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
74	360° Continuous TILT 4 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
75	360° Continuous TILT 5 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast

	PRESETHADPOSITION	128 - 143	Presetheadposition9
		144 - 159	Presetheadposition10
		160 - 175	Presetheadposition11
		176 - 191	Presetheadposition12
		192 - 207	Presetheadposition13
		208 - 223	Presetheadposition14
		224 - 239	Presetheadposition15
		240 - 255	Presetheadposition16
19	SHAPE RED	000 - 255	Linear 0 – 100%
20	SHAPE GREEN	000 - 255	Linear 0 – 100%
21	SHAPEBLUE	000 - 255	Linear 0 – 100%
22	SHAPEWHITE	000 - 255	Linear 0 – 100%
23	FOREGROUND CTO – TBD	000 - 255	TBD
24	FOREGROUND SHUTTER	000 - 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation frequency from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at slow frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at fast frequency
25	FOREGROUND DIMMER	252 - 255	Light ON
		000 - 255	Linear Dimmer 0 – 100%
26	PATTERN MODE	000 - 005	Normal
		006 - 130	Static
		131 - 255	Dynamic
27	PATTERN SELECTION	000 - 007	Effect 1
		...	...
		255	Effect XXX
28	PATTERN SPEED	000 - 255	Indexing
		000 - 124	Speed control fast to slow, forward
		125 - 130	Stop
		131 - 255	Speed control slow to fast, Backward
29	PATTERN FADE	000 - 127	Fade In/Out
		128 - 255	Fade Out
30	PATTERN TRANSITION	000 - 255	Crossfade between layers/pattern (0: instant transition - 255: 3 seconds transition)
31	TILT 1	000 - 255	Mirror 1 positioning (Default REVERSEHEADSoption OFF)
32	TILT 2	000 - 255	Mirror 2 positioning (Default REVERSEHEADSoption OFF)
33	TILT 3	000 - 255	Mirror 3 positioning (Default REVERSEHEADSoption OFF)
34	TILT 4	000 - 255	Mirror 4 positioning (Default REVERSEHEADSoption OFF)
35	TILT 5	000 - 255	Mirror 5 positioning (Default REVERSEHEADSoption OFF)
36	TILT 6	000 - 255	Mirror 6 positioning (Default REVERSEHEADSoption OFF)
37	TILT 7	000 - 255	Mirror 7 positioning (Default REVERSEHEADSoption OFF)

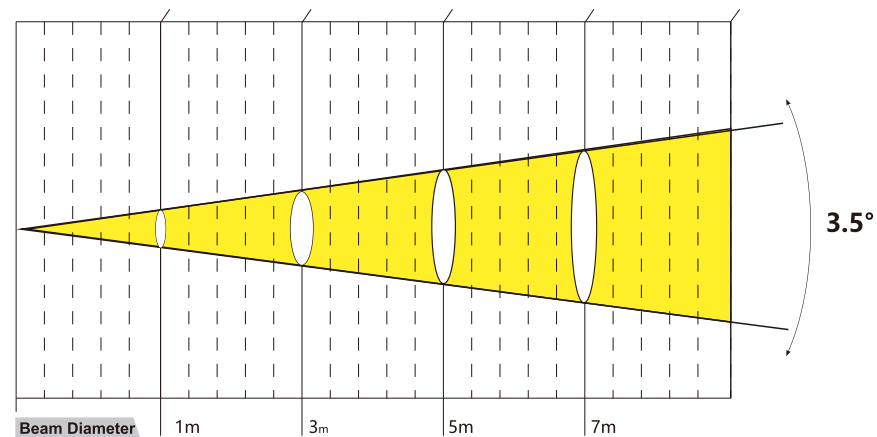


4 PHOTOMETRIC DATA

Photometric Beam Angle Data 3.5° Beam Angle $LUX \times 0.0929 = FC$

R	1600	206	80	42
G	3860	520	195	102
B	144	20	8	4
W	4673	647	239	124
RGBW	9640	1278	487	256

(LUX)

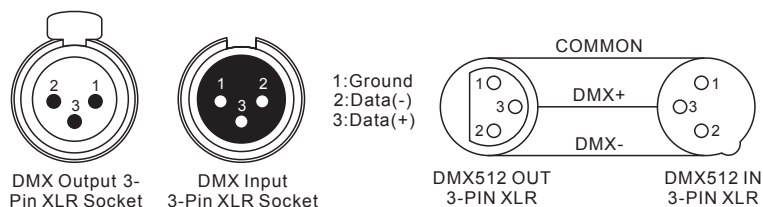
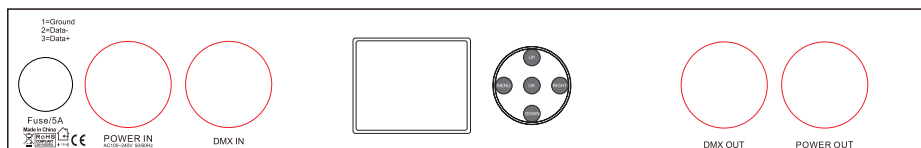


5 DMX-512 CONTROL CONNECTIONS

Connect the provided XLR cable to the female 3-pin XLR output of your controller and the other side to the male 3-pin XLR input of the moving head. You can chain multiple

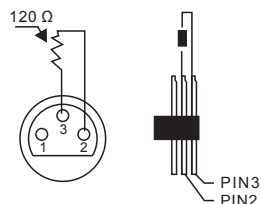
Moving head together through serial linking. The cable needed should be two core, screened cable with XLR input and output connectors. Please refer to the diagram below.

DMX-512 connection with DMX terminator



For installations where the DMX cable has to run a long distance or is in an electrically noisy environment, such as in a discotheque, it is recommended to use a DMX terminator.

This helps in preventing corruption of the digital control signal by electrical noise. The DMX terminator is simply an XLR plug with a 120 Ω resistor connected between pins 2 and 3 which is then plugged into the output XLR socket of the last fixture in the chain. Please see illustrations below.



134CH	Function	Dmx Value	Description
1	RED	000 - 255	Linear 0 -100%
2	RED FINE	000 - 255	Linear Fine Red (16 Bit)
3	GREEN	000 - 255	Linear 0 -100%
4	GREEN FINE	000 - 255	Linear Fine Green (16 Bit)
5	BLUE	000 - 255	Linear 0 -100%
6	BLUEFINE	000 - 255	Linear Fine Blue (16 Bit)
7	WHITE	000 - 255	Linear 0 -100%
8	WHITEFINE	000 - 255	Linear Fine White (16 Bit)
9	CTO	000 - 009	CTO Off
		010 - 255	8000Kto 2500K
10	MACRO COLOUR	000 - 255	MACRO COLOUR
11	BACKGROUND SHUTTER	000 - 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation at linearly from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at low frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at high frequency
		252 - 255	Light ON
12	BACKGROUND DIMMER	000 - 255	Linear Dimmer 0 – 100%
13	MASTER SHUTTER	000 - 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation frequency from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at low frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at high frequency
		252 - 255	Light ON
14	MASTER DIMMER	000 - 255	Linear Dimmer 0 – 100%
15	MASTER DIMMER FINE	000 - 255	Fine Dimmer (16 bit)
16	FUNCTION	000 - 255	FUNCTION
17	RESET	000 - 025	Unused Range
		026 - 127	Tilt Reset
		128 - 255	Complete Reset
18	PRESETHEADPOSITION	0	No Function
		001 - 015	Presetheadposition1
		016 - 031	Presetheadposition2
		032 - 047	Presetheadposition3
		048 - 063	Presetheadposition4
		064 - 079	Presetheadposition5
		080 - 095	Presetheadposition6
		096 - 111	Presetheadposition7
		112 - 127	Presetheadposition8

63	Red 7	000 - 255	Red 7
64	Green 7	000 - 255	Green 7
65	Blue 7	000 - 255	Blue 7
66	White 7	000 - 255	White 7
67	Red 8	000 - 255	Red 8
68	Green 8	000 - 255	Green 8
69	Blue 8	000 - 255	Blue 8
70	White 8	000 - 255	White 8
71	360° Continuous TILT 1 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
72	360° Continuous TILT 2 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
73	360° Continuous TILT 3 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
74	360° Continuous TILT 4 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
75	360° Continuous TILT 5 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
76	360° Continuous TILT 6 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
77	360° Continuous TILT 7 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
78	360° Continuous TILT 8 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
79	DIMMER (STRIP LIGHT)	0 - 255	Linear Dimmer 0 – 100%
80	SHUTTER (STRIP LIGHT)	0 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
81	RED (STRIP LIGHT)	0 - 255	Linear 0 -100%
82	GREEN (STRIP LIGHT)	0 - 255	Linear 0 -100%
83	BLUE (STRIP LIGHT)	0 - 255	Linear 0 -100%
84	EFFECT (STRIP LIGHT)	0 - 255	Dynamic effect options
85	Speed (STRIP LIGHT)	0 - 255	Speed control of dynamic effect

6 MENU OPERATIONS

Main Menu	Second	Third	Fourth
Dmx Address	000 - 512		
Fixture	Dmx Mode	22CH/59CH/85CH/134CH	
	Run Mode	DMX / Host / Sound	
	Tilt Invert	Close / Open	
	No Dmx Signal	Clear / Hold	
	PT Calibrate	Close / Open	
	Frequency	900/1000/1100/1200/1300/1400/1500/2500/4000/5000/6000/10000/15000/20000/25000Hz	
	Sensitivity	1 -- 99	
Manual	Tilt	000 - 255	
	Tilt Fine	000 - 255	
	Tilt Rotate	000 - 255	
	Tilt Speed	000 - 255	
	...	...	
Information	Time	Current Time	xxxH
		Total Time	xxxH
	Sensor	All Sensor are ok!	
	Temperature	Head Temp	xxx°C
	Software Version	Panel	Vx.xx
		Motor	Vx.xx
Factory	Password	000 - 255	
	Tilt1	000 - 255	
	Tilt2	000 - 255	
	Tilt3	000 - 255	
	Tilt4	000 - 255	
	Tilt5	000 - 255	
	Tilt6	000 - 255	
	Tilt7	000 - 255	
	Tilt8	000 - 255	
	Red1	000 - 255	
	Green1	000 - 255	
	Blue1	000 - 255	
	White1	000 - 255	
	---	---	
	Red8	000 - 255	
	Green8	000 - 255	
	Blue8	000 - 255	
	White8	000 - 255	
Fixture Reset	Motor Reset	Cance / Run	
	Factory	Cance / Run	
Display	Language	CH / EN	
	Display Flip	Normal / Reverse	
	Display Mode	60s / Show	

7 DMX CHANNELS

22CH	Function	Dm x Value	Description
1	TILT	000 - 255	0-270° TILT movement
2	TILT FINE	000 - 255	Fine control of TILT movement
3	360° Continuous TILT Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
4	SPEED	000 - 255	Speed control of TILT movement
5	DIMMER	000 - 255	Linear Dimmer 0 – 100%
6	MASTER Strobe	000- 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation frequency from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at low frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at high frequency
		252 - 255	Light ON
7	RED	000 - 255	Linear 0 -100%
8	GREEN	000 - 255	Linear 0 -100%
9	BLUE	000 - 255	Linear 0 -100%
10	WHITE	000 - 255	Linear 0 -100%
11	MACRO COLOUR	000 - 255	MACRO COLOUR
12	CTO	000 - 009	CTO Off
		010 - 255	8000K to 2500K
13	EFFECT	000 - 255	Dynamic effect options
14	EFFECT SPEED	000 - 255	Speed control of dynamic effect
15	RESET	000 - 025	Unused Range
		026 - 255	Complete Reset (5s)
16	DIMMER (STRIP LIGHT)	000 - 255	Linear Dimmer 0 – 100%
17	SHUTTER (STRIP LIGHT)	000 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
18	RED (STRIP LIGHT)	000 - 255	Linear 0 -100%
19	GREEN (STRIP LIGHT)	000 - 255	Linear 0 -100%
20	BLUE(STRIP LIGHT)	000 - 255	Linear 0 -100%
21	EFFECT (STRIP LIGHT)	000 - 255	Dynamic effect options
22	Speed (STRIP LIGHT)	000 - 255	Speed control of dynamic effect

28	PATTERN SPEED	000 - 255	Indexing
		000 - 124	Speed control fast to slow, forward
		125 - 130	Stop
		131 - 255	Speed control slow to fast, Backward
29	PATTERN FADE	000 - 127	Fade In/Out
		128 -255	Fade Out
30	PATTERN TRANSITION	000 - 255	Crossfade between layers/pattern (0: instant transition - 255: 3 seconds transition) ONLY ON LAYER MODE
31	TILT 1	000 - 255	Mirror 1 positioning (Default REVERSEHEADSoption OFF)
32	TILT 2	000 - 255	Mirror 2 positioning (Default REVERSEHEADSoption OFF)
33	TILT 3	000 - 255	Mirror 3 positioning (Default REVERSEHEADSoption OFF)
34	TILT 4	000 - 255	Mirror 4 positioning (Default REVERSEHEADSoption OFF)
35	TILT 5	000 - 255	Mirror 5 positioning (Default REVERSEHEADSoption OFF)
36	TILT 6	000 - 255	Mirror 6 positioning (Default REVERSEHEADSoption OFF)
37	TILT 7	000 - 255	Mirror 7 positioning (Default REVERSEHEADSoption OFF)
38	TILT 8	000 - 255	Mirror 8 positioning (Default REVERSEHEADSoption OFF)
39	Red 1	000 - 255	Red 1
40	Green 1	000 - 255	Green 1
41	Blue 1	000 - 255	Blue 1
42	White 1	000 - 255	White 1
43	Red 2	000 - 255	Red 2
44	Green 2	000 - 255	Green 2
45	Blue 2	000 - 255	Blue 2
46	White 2	000 - 255	White 2
47	Red 3	000 - 255	Red 3
48	Green 3	000 - 255	Green 3
49	Blue 3	000 - 255	Blue 3
50	White 3	000 - 255	White 3
51	Red 4	000 - 255	Red 4
52	Green 4	000 - 255	Green 4
53	Blue 4	000 - 255	Blue 4
54	White 4	000 - 255	White 4
55	Red 5	000 - 255	Red 5
56	Green 5	000 - 255	Green 5
57	Blue 5	000 - 255	Blue 5
58	White 5	000 - 255	White 5
59	Red 6	000 - 255	Red 6
60	Green 6	000 - 255	Green 6
61	Blue 6	000 - 255	Blue 6
62	White 6	000 - 255	White 6

18	PRESET HEAD POSITION	0	No Function
		001 - 015	Preset head position 1
		016 - 031	Preset head position 2
		032 - 047	Preset head position 3
		048 - 063	Preset head position 4
		064 - 079	Preset head position 5
		080 - 095	Preset head position 6
		096 - 111	Preset head position 7
		112 - 127	Preset head position 8
		128 - 143	Preset head position 9
		144 - 159	Preset head position 10
		160 - 175	Preset head position 11
		176 - 191	Preset head position 12
		192 - 207	Preset head position 13
		208 - 223	Preset head position 14
		224 - 239	Preset head position 15
		240 - 255	Preset head position 16
19	SHAPE RED	000 - 255	Linear 0 – 100%
20	SHAPE GREEN	000 - 255	Linear 0 – 100%
21	SHAPEBLUE	000 - 255	Linear 0 – 100%
22	SHAPEWHITE	000 - 255	Linear 0 – 100%
23	FOREGROUND CTO – TBD	000 - 255	TBD
24	FOREGROUND SHUTTER	000 - 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation frequency from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at slow frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at fast frequency
		252 - 255	Light ON
25	FOREGROUND DIMMER	000 - 255	Linear Dimmer 0 – 100%
26	PATTERN MODE	000 - 005	Normal
		006 - 130	Static
		131 - 255	Dynamic
27	PATTERN SELECTION	000 - 007	Effect 1
		...	...
		255	Effect XXX

59CH	Function	Dm x Value	Description
1	RED	000 - 255	Linear 0 -100%
2	GREEN	000 - 255	Linear 0 -100%
3	BLUE	000 - 255	Linear 0 -100%
4	WHITE	000 - 255	Linear 0 -100%
5	CTO	000 - 009	CTO Off
		010 - 255	8000K to 2500K
6	MACRO COLOUR	000 - 255	MACRO COLOUR
7	MASTER Strobe	000 - 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation frequency from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at low frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at high frequency
		252 - 255	Light ON
8	MASTER DIMMER	000 - 255	Linear Dimmer 0 – 100%
9	MASTER DIMMER FINE	000 - 255	Fine Dimmer (16 bit)
10	FUNCTION	000 - 255	FUNCTION
11	RESET	026 - 127	Tilt Reset
		128 - 255	Complete Reset
12	PRESET HEAD POSITION	0	No Function
		001 - 015	Preset head position 1
		016 - 031	Preset head position 2
		032 - 047	Preset head position 3
		048 - 063	Preset head position 4
		064 - 079	Preset head position 5
		080 - 095	Preset head position 6
		096 - 111	Preset head position 7
		112 - 127	Preset head position 8
		128 - 143	Preset head position 9
		144 - 159	Preset head position 10
		160 - 175	Preset head position 11
		176 - 191	Preset head position 12
		192 - 207	Preset head position 13
		208 - 223	Preset head position 14
		224 - 239	Preset head position 15
		240 - 255	Preset head position 16

13	TILT 1	000 - 255	Mirror 1 positioning (Default REVERSEHEADSoption OFF)
14	TILT 2	000 - 255	Mirror 2 positioning (Default REVERSEHEADSoption OFF)
15	TILT 3	000 - 255	Mirror 3 positioning (Default REVERSEHEADSoption OFF)
16	TILT 4	000 - 255	Mirror 4 positioning (Default REVERSEHEADSoption OFF)
17	TILT 5	000 - 255	Mirror 5 positioning (Default REVERSEHEADSoption OFF)
18	TILT 6	000 - 255	Mirror 6 positioning (Default REVERSEHEADSoption OFF)
19	TILT 7	000 - 255	Mirror 7 positioning (Default REVERSEHEADSoption OFF)
20	TILT 8	000 - 255	Mirror 8 positioning (Default REVERSEHEADSoption OFF)
21	Red 1	000 - 255	Red 1
22	Green 1	000 - 255	Green 1
23	Blue 1	000 - 255	Blue 1
24	Red 2	000 - 255	Red 2
25	Green 2	000 - 255	Green 2
26	Blue 2	000 - 255	Blue 2
27	Red 3	000 - 255	Red 3
28	Green 3	000 - 255	Green 3
29	Blue 3	000 - 255	Blue 3
30	Red 4	000 - 255	Red 4
31	Green 4	000 - 255	Green 4
32	Blue 4	000 - 255	Blue 4
33	Red 5	000 - 255	Red 5
34	Green 5	000 - 255	Green 5
35	Blue 5	000 - 255	Blue 5
36	Red 6	000 - 255	Red 6
37	Green 6	000 - 255	Green 6
38	Blue 6	000 - 255	Blue 6
39	Red 7	000 - 255	Red 7
40	Green 7	000 - 255	Green 7
41	Blue 7	000 - 255	Blue 7
42	Red 8	000 - 255	Red 8
43	Green 8	000 - 255	Green 8
44	Blue 8	000 - 255	Blue 8
45	360° Continuous TILT 1 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
46	360° Continuous TILT 2 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
47	360° Continuous TILT 3 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
48	360° Continuous TILT 4 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
49	360° Continuous TILT 5 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
50	360° Continuous TILT 6 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
51	360° Continuous TILT 7 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
52	360° Continuous TILT 8 Rotation	000 - 003	No Function
		004 - 129	Forward rotation from fast to slow
		130 - 255	Backward rotation from slow to fast
53	DIMMER (STRIP LIGHT)	000 - 255	Linear Dimmer 0 – 100%
54	SHUTTER (STRIP LIGHT)	000 - 255	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
55	RED (STRIP LIGHT)	000 - 255	Linear 0 -100%
56	GREEN (STRIP LIGHT)	000 - 255	Linear 0 -100%
57	BLUE (STRIP LIGHT)	000 - 255	Linear 0 -100%
58	EFFECT (STRIP LIGHT)	000 - 255	Dynamic effect options
59	Speed (STRIP LIGHT)	000 - 255	Speed control of dynamic effect

85CH	Function	Dmx Value	Description
1	RED	000 - 255	Linear 0 -100%
2	RED FINE	000 - 255	Linear Fine Red (16 Bit)
3	GREEN	000 - 255	Linear 0 -100%
4	GREEN FINE	000 - 255	Linear Fine Green (16 Bit)
5	BLUE	000 - 255	Linear 0 -100%
6	BLUE FINE	000 - 255	Linear Fine Blue (16 Bit)
7	WHITE	000 - 255	Linear 0 -100%
8	WHITE FINE	000 - 255	Linear Fine White (16 Bit)
9	CTO	000 - 009	CTO Off
		010 - 255	8000K to 2500K
10	MACRO COLOUR	000 - 255	MACRO COLOUR
11	BACKGROUND SHUTTER	000 - 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation at linearly from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at low frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at high frequency
		252 - 255	Light ON
12	BACKGROUND DIMMER	000 - 255	Linear Dimmer 0 – 100%
13	MASTER SHUTTER	000 - 003	Light OFF
		004 - 103	Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		104 - 107	Light ON
		108 - 207	Pulsation frequency from slow (1 flash/sec) to fast (25 flash/sec)
		208 - 212	Light ON
		213 - 225	Random Strobe at low frequency
		226 - 238	Random Strobe at medium frequency
		239 - 251	Random Strobe at high frequency
		252 - 255	Light ON
14	MASTER DIMMER	000 - 255	Linear Dimmer 0 – 100%
15	MASTER DIMMER FINE	000 - 255	Fine Dimmer (16 bit)
16	FUNCTION	000 - 255	FUNCTION
17	RESET	000 - 025	Unused Range
		026 - 127	Tilt Reset
		128 - 255	Complete Reset