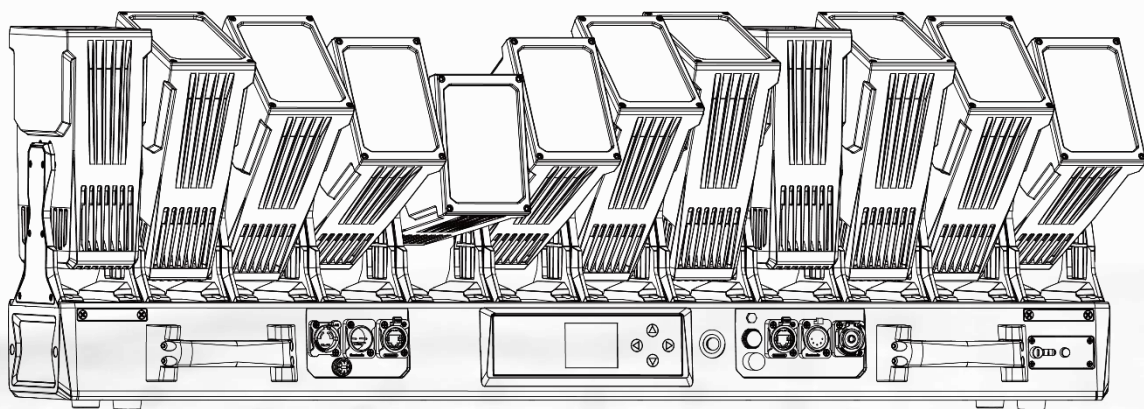




NF12

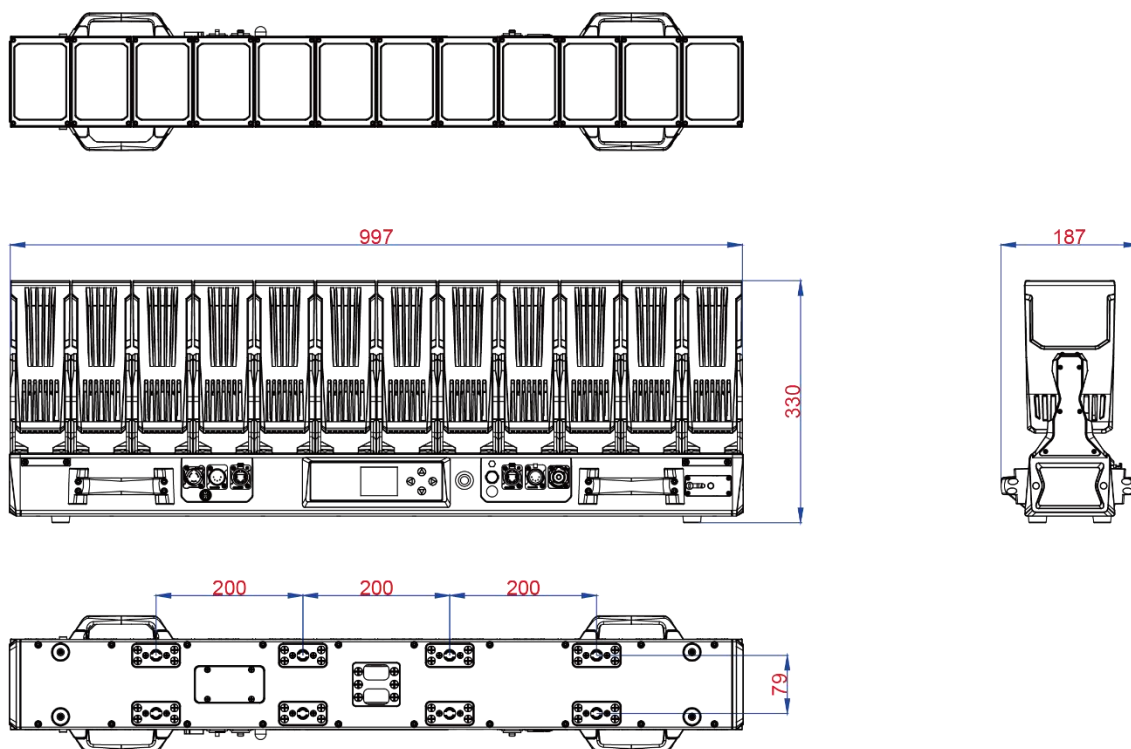
PROFESSIONAL STAGE LIGHTING OEM & ODM MANUFACTURER

1 PRODUCT

1.1 TECHNICAL SPECIFICATIONS

Type	NF12
LED colors	12PCS*60W RGBL LED
Power	1000W
Control Protocol	DMX512,RDM,ARTNET,sACN ,NFC,CRMX(optional)
Voltage Range	100-240V~
Frequency Range	50/60Hz
Input Current	110V/9.1A,220V/4.5A
Protection	IP66
Operation Temperature	-20℃~45℃
Dimensions	997x187x330mm
Weight	31.5kg

DIMENSIONS



1.2 Safety Notes

IMPORTANT

- This product must be installed by a qualified professional.
- 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
- The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

CAUTION!

- Make sure that the available voltage is not higher than stated on the rear panel.
- Do not touch the power cables if your hands are wet.
- The earth wire must always be connected to the ground. Therefore it is essential to connect the yellow/green conductor to earth.
- Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time. The electric connection, repairs and servicing must be carried out by a qualified employee.
- Always disconnect power input cable to completely remove power from unit when not in use or before cleaning or servicing the fixture.
- Do not switch the fixture on and off in short intervals as this would reduce the LED's life.
- Do not touch the device's housing bare hands during its operation (housing becomes hot)! The surface of the product's casing can reach up to 65° C (149° F) during operation. Avoid contact by persons and materials. Do not install the product in a location where there is a risk of accidental contact. Allow the product to cool for at least 10 minutes before handling.
- For replacement use lamps and fuses of same type and rating only.
- Please protect the fixture and avoid destroy during transport and installation. If there is any damage to the coating, the shell may be corroded.
- When hanging LEDs and lanterns, it is necessary to verify that facilities and hooks can bear at least 10 times the weight of lamps and lanterns.
- Fix the safety rope at the correct holes only. Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.
- The maximum ambient temperature 45°C must never be exceeded. Do not operate the product if the ambient temperature (Ta) exceeds 45° C (115° F).
- During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

Electrical Warning

- The light source contained in this luminaire shall only be replaced by the manufacturer or his service agent or a similar qualified person
- For replacement use lamps and fuses of same type and rating only.
- The lens has to be replaced when it is obviously damaged, so that its function is impaired, e. g. due to cracks or deep scratches!

Keep the product well away from flammable materials

- Keep all combustible materials (e.g. fabric, wood, paper) at least 500 mm (20 in.) away from the product.
- Ensure that there is free and unobstructed airflow around the product. Provide a minimum clearance of 150 mm (6 in.) around fans and air vents.
- Do not illuminate surfaces within 1m (3.2ft.) of the product.
- Do not install a fuse that has a higher rating than the one originally installed in the product. Do not bypass fuses.
- Do not stick filters, masks or other materials onto optical components.
- If the fixture seems to be abnormally hot, shows signs of melting or emits smoke, disconnect the fixture from power immediately and allow it to cool. Do not touch the fixture without heatproof safety gloves. Keep the fixture well away from combustible and flammable materials.

**NEVER LOOK DIRECTLY INTO THE LIGHT SOURCE!
RETINA INJURY RISK - MAY INDUCE BLINDNESS!**

Do not point the front of the fixture towards the sun or other strong light sources. The front lens focuses and concentrates light just like a magnifying glass. Strong light can cause internal damage to the fixture, melting components or starting an internal fire within seconds.

To avoid problems from strong light sources:

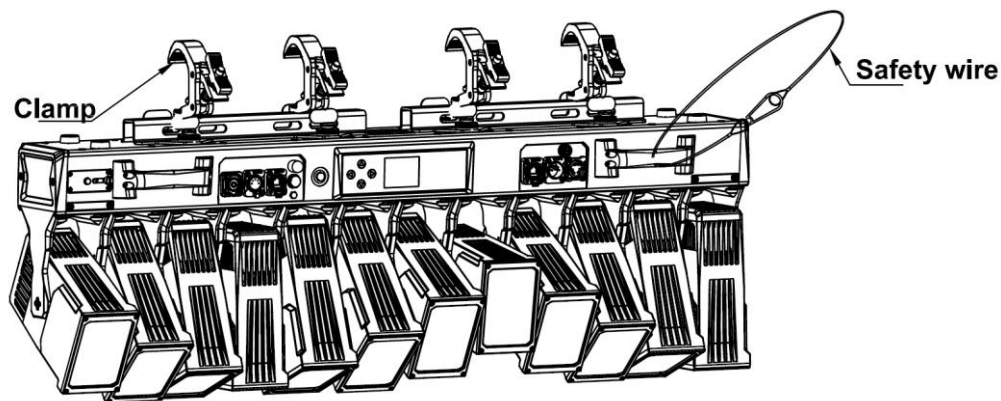
- Do not expose the front of a fixture to sunlight or any other strong light source. Avoid pointing other high-powered beam lights directly at the fixture.
- Do not focus a light beam from one lighting fixture directly towards another.
- For outdoor applications during daylight, make sure that the front face of any fixture is shielded or points away from the sun, even when not in use.
- Do not expose the product to heat (from other lighting fixtures for example).

2 INSTALLATION

2.1 MOUNTING

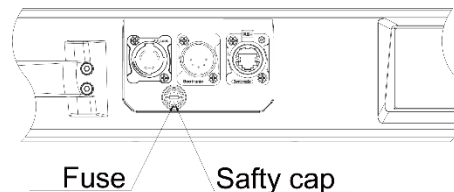
Truss installation

- ◆ Keep all combustible materials (e.g. fabric, wood, paper) at least 500 mm (20 in.) away from the product.
- ◆ For overhead use, always install a safety cable that can hold at least 10 times the weight of the fixture.
- ◆ For overhead installation, the fixture must be always secured with a safety wire that can bear at least 10 times the weight of the fixture;
- ◆ Secure the fixture with a safety cable through the rear safety eye and truss as shown..
- ◆ Ensure that the structure (truss) to which you are attaching the fixture is secure



2.2 Fuse replacement

- ◆ Remove the safety cap by a screwdriver.
- ◆ Fetch the old fuse from safety cap.
- ◆ Install a new fuse.
- ◆ Install the safety cap.



2.3 POWER CONNECTIONS

- ◆ POWER Linking: 1 units@110V; 2 units@220V.
- ◆ This product has an auto-ranging power supply that can work with an input voltage range of 100–240 VAC, 50/60 Hz.

AC Plug

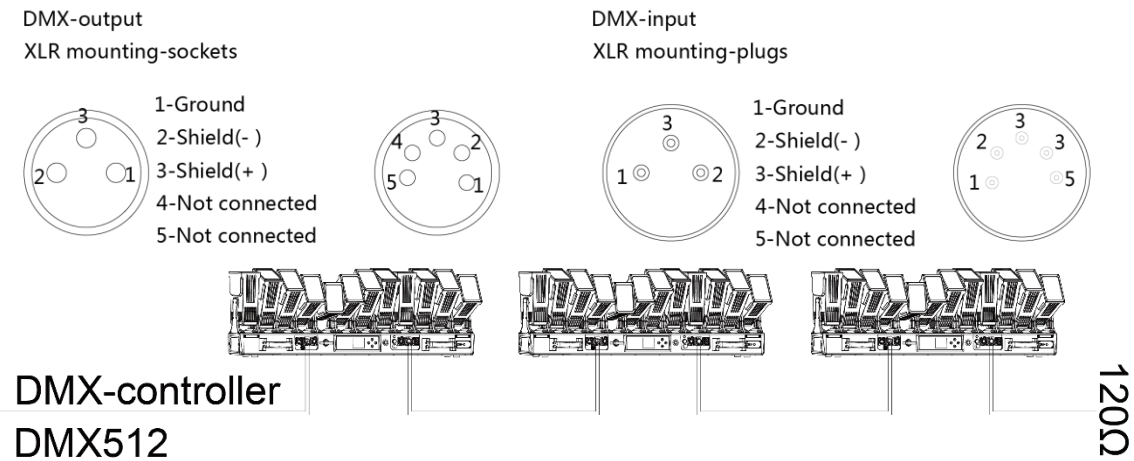
Connection	Wire (U.S.)	Wire(Europe)	Screw Color
AC Live	Black	Brown	Yellow/Brass
AC Neutral	White	Blue	Silver
AC Ground	Green/Yellow	Green/Yellow	Green

2.4 Data network requirements

- ◆ Connect the DMX512 controller to the units in series. A DMX 512 data link is required in order

to control the fixture via DMX. The fixture has 3/5-pin XLR connectors for DMX data input and output.

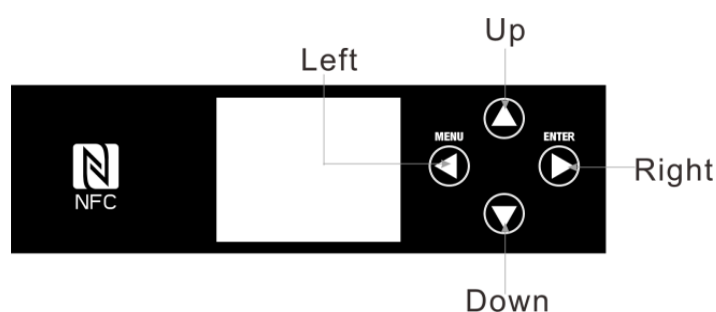
- ◆ Each unit has N DMX channels so the DMX Addresses should increase by increments of 1, (Nx1)+1, (Nx2)+1, (Nx3)+1...
- ◆ Any DMX address in the range from 001 to 512 may be used.
- ◆ Connect the DMX-output of the first fixture in the DMX chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.
- ◆ Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω resistor between Signal (-) and Signal (+) into a 3/5-pin XLR-plug and plug it in the DMX-output of the last fixture.



3 FUNCTIONS AND SETTINGS

3.1 DISPLAY OPERATION

- ◆ LEFT: Used to access the menu or to return a previous menu option;
- ◆ RIGHT: Used to select and store the current menu or confirm the current function value or option within a menu;
- ◆ UP: Navigates downwards through the menu list and increases the numeric value when in a function;
- ◆ DOWN: Navigates upwards through the menu list and decreases the numeric value when in a function;
- ◆ When the display locked, please unlock the display as below:
 1. Keep pressing BACK around 5sec, until the display shows inset password.
 2. Press “up down up down, enter” to unlock.



3.2 Menu Map

ADDRESS	001 – 512(Default 001)			DMX address setting
PERSON	HSIC			Use the menu to select desired channel mode
	SSP			
	TOUR(Default)			
	TR16			
	CMY			
	PIXEL 1			
	PIXEL 2			
	PIXEL 3			
RUNMODE	DMX512 (Default)			Select Signal
	ARTNET			Default: DMX512
	ARTNET2DMX			CUSTOM 1-2 Set up get into EDIT
	sACN			MENU edit
	DMX+NETWORK	PIXEL ADDRESS	1-512	
	AUTO			
	CUSTOM1			
	CUSTOM2			
OPTION	TILT	OFF(Default)		TILT moving direction selection
	INVERT	ON		
	PERFORM	STUDIO		Fan mode low speed

		POWER			Fast rotation of fan, all power
		LIVE (Default)			Automatic rotation of fan
	BLACKOUT	OFF (Default)			Select OFF blackout without delay
		ON			Select ON Blackout delay 3s
	TILT ENCODER	OFF(Default)			XY Encoder switch.
		ON			OFF is close; ON is open.
	DIMMER	DIM4			Dimming speed OFF (fast) to DIM4 (slow);
		OFF (Default)			
	DIMMER CURVE	LINEAR			Dimmer curves selection
		SQUARE LAW (Default)			
		INV. SQUARE LAW			
		S-CURVE			
	LED PWM	1200Hz (Default)			Sets the PWM frequency
		2400Hz			
		4000Hz			
		6000Hz			
		25000Hz			
	DMX ERROR	SAVE (Default)			Hold after loss of DMX signal
		BLACK			Blackout after loss of DMX signal
	DISPLAY TIME	On			Display backlight always on
		30s (Default)			Turns off display backlight after 30s/1min/2min of inactivity
		1min			
		2min			
	DISPLAY LOCK	OFF			Locks display (passcode is <UP>, <DOWN>,<UP>, <DOWN>, <ENTER>)
		ON (Default)			
	LOAD PARA	OFF(Default)			Upload data
		ON			Not upload data
	SETTING	RECOVERY	****		Restore default factory settings.
		CLEAN EDIT1	****		Clean customer self-editing scene 1
		CLEAN EDIT2	****		Clean customer self-editing scene 2
		WDMX HIDE	YES		Hide wireless mode WDMX reset and signal hide and the default is wired mode only
			NO		
	Color Cali	OFF			Full power mode
		User Calibration	RED	0-255	Manual calibration mode
			GREEN	0-255	
			BLUE	0-255	

			LIME	0-255		
		Factory Calibration (Default)			Factory calibration mode	
	NETWORK	NET SWITCH	2.xxx.xxx.xxx/ 10.xxx.xxx.xxx		Net switch off IP mode	
		UNIVERS	0-255		Packet group Settings	
		IP MODE	DEFAULT IP		Default IP	
			CUSTOM IP		Customer's IP	
		CUSTOM IP	IP ADDRESS	XXX.XXX.XXX. XXX	Customer's IP setting	
			NET MASK	YYY.YYY.YYY. YYY		
	LANGUAGE	****	Chinese		LANGUAGE	
			English(Default)			
	WDMX RESET	YES			Do not clear the receiver's message.	
		NO			Clear the receiver's message	
	SIGNAL	ONLY XLRDMX(Default)			ONLY XLR is wire only	
		XLRDMX FIRST			XLR FIRST is wire first	
		ONLY WDMX			ONLY WDMX is wireless only	
		WDMX FIRST			WDMX FIRS is wireless first	
		WDMX TO XLRDMX			WDMX TO DMX is wireless to wired	
	EDIT	EDIT 1-2	STEP 1-30	PAN	0-255	Edit the custom programs1-30
				TITL	0-255	Select play 【EDIT 1】 in
				TILT Pattern	0-255	RUNMOEDE CUSTOM 1; Select
TILT Pattern Size				0-255	play 【EDIT 2】 in RUNMOEDE	
TILT Pattern Speed				0-255	CUSTOM 2	
RED				0-255		
GREEN				0-255		
BLUE				0-255		
LIME				0-255		
STROBE				0-255		
ZOOM				0-255		
ZOOM Pattern				0-255		
ZOOM Pattern Speed				0-255		
PRESET COLOR				0-255		
CCT				0-255		
STATIC PIXEL				0-255		
PIXEL EFFECT				0-255		
AUTO SPEED				0-255		

			FX Warm White	0-255	
			FX COOL White	0-255	
			FX Dimmer	0-255	
			FX STROBE	0-255	
			FX CCT	0-255	
			FX STATIC PIXEL	0-255	
			FX PIXEL EFFECT	0-255	
			FX AUTO SPEED	0-255	
			TIME	0-255	
			USE	YES/NO	
			Select YES to run the steps user need.		
MANUAL	Auto Test			Auto Test channel	
	CHANNEL	PAN	0-255	Manual control channel	
		TITL	0-255		
		TILT Pattern	0-255		
		TILT Pattern Size	0-255		
		TILT Pattern Speed	0-255		
		RED	0-255		
		GREEN	0-255		
		BLUE	0-255		
		LIME	0-255		
		STROBE	0-255		
		ZOOM	0-255		
		ZOOM Pattern	0-255		
		ZOOM Pattern Speed	0-255		
		PRESET COLOR	0-255		
		CCT	0-255		
		STATIC PIXEL	0-255		
		PIXEL EFFECT	0-255		
		AUTO SPEED	0-255		
		FX Warm White	0-255		
		FX COOL White	0-255		
		FX Dimmer	0-255		
		FX STROBE	0-255		
		FX CCT	0-255		
		FX STATIC PIXEL	0-255		
		FX PIXEL EFFECT	0-255		
		FX AUTO SPEED	0-255		
	CCT	1800K		Preset color temperatures	

		2200K		
		2700K		
		3000K		
		3200K		
		4000K		
		4500K		
		5000K		
		5600K		
		6000K		
		6500K		
		7000K		
		8000K		
		10000K		
		PRESET COLOR	COLOR 1	
	COLOR 2			
	...			
	COLOR 24			
	CMY	CYAN		Cyan、Magenta、Yellow color
		MAGENTA		
		YELLOW		
		C+M		
		C+Y		
		M+Y		
	DEBUG HIDE	NO		Factory testing mode. All stepper motors are not controlled by signal, It only works again after the reset.
		YES		
	RESET	ALL RESET		Select Yes/No to carry out all reset
		XY RESET		Select Yes/No to carry out P/T reset
		ZOOM RESET		Zoom/ Focus/ Prism reset
SERVICE	*****	TILT 1	±127	Tilt position fine adjustment
		TILT 2	±127	Tilt position fine adjustment
		TILT 3	±127	Tilt position fine adjustment
		TILT 4	±127	Tilt position fine adjustment
		TILT 5	±127	Tilt position fine adjustment
		TILT 6	±127	Tilt position fine adjustment
		TILT 7	±127	Tilt position fine adjustment
		TILT 8	±127	Tilt position fine adjustment
		TILT 9	±127	Tilt position fine adjustment
		TILT 10	±127	Tilt position fine adjustment

		TILT 11	±127	Tilt position fine adjustment	
		TILT 12	±127	Tilt position fine adjustment	
		ZOOM 1	±127	Zoom position fine adjustment	
		ZOOM 2	±127	Zoom position fine adjustment	
		ZOOM 3	±127	Zoom position fine adjustment	
		ZOOM 4	±127	Zoom position fine adjustment	
		ZOOM 5	±127	Zoom position fine adjustment	
		ZOOM 6	±127	Zoom position fine adjustment	
		ZOOM 7	±127	Zoom position fine adjustment	
		ZOOM 8	±127	Zoom position fine adjustment	
		ZOOM 9	±127	Zoom position fine adjustment	
		ZOOM 10	±127	Zoom position fine adjustment	
		ZOOM 11	±127	Zoom position fine adjustment	
		ZOOM 12	±127	Zoom position fine adjustment	
INFO	FIXTURE HOURS			Hours of fixture use	
	LED USE HOURS			LED use time	
	TEMPERATURE			LED temperature	
	VERSION			Software versions	
	NETWORK			Check network parameter	
	RDM	UID	0x388Axxxxxxxx	Check fixture's ID	
		LABEL		Check fixture's LABEL	
	SYSTEM ERROR	MEMORY IC			Memory IC
		ANGLESENSOR			Angle Sensor
		TILT SENSOR			Tilt Sensor
		TILT ENCODER			Tilt Encoder
		TILT DRIVEIC			Tilt Drive IC
		TEMPERATURE			Temperature
NETWORK IC			Network IC		
UPDATE SOFTWARE				USB-C Update software	
All passwords of this product are: <UP>, <DOWN>,<UP>, <DOWN>, <ENTER>					

4 USING A DMX512 CONTROLLER

4.1 DMX CONTROL

HSIC(25CH)	Value	Function
1	0-255	TITL
2	0-255	TITL FINE
3	TILT Pattern	
	0-10	NO FUNCTION
	11-30	1
	31-50	2
	51-70	3
	71-90	4
	91-110	5
	111-130	6
	131-150	7
	151-170	8
	171-190	9
	191-210	10
	211-230	11
	231-250	12
	251-255	NO FUNCTION
4	TILT Pattern Size	
	0-255	Small to Big
5	TILT Pattern Speed	
	0	Off
	1-127	Pattern Speed fast to slow
	128	Pattern Speed Stop
	129-255	Pattern Speed slow to fast (backwards)
6	0-255	INTENSIYT
7	0-255	HUE
8	0-255	HUE FINE
9	0-255	SATURATION
10	CCT	
	0-9	NO FUNCTION
	10	1800K
	25	2200K
	40	2700K
	55	3000K
	70	3200K
	85	4000K
	100	4500K
	115	5000K
	130	5600K
	145	6000K
	160	6500K

	175	7000K
	190	8000K
	205	10000K
	255	10000K
11	STROBE	
	0-9	NO FUNCTION
	10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
	100-109	NO FUNCTION
	110-179	LIGHTNING STROBE
	180-189	NO FUNCTION
	190-255	RANDOM STROBE
12	0-255	ZOOM All
13	ZOOM Pattern	
	0-10	NO FUNCTION
	11-30	1
	31-50	2
	51-70	3
	71-90	4
	91-110	5
	111-130	6
	131-150	7
	151-170	8
	171-190	9
	191-210	10
	211-230	11
	231-250	12
	251-255	NO FUNCTION
14	ZOOM Pattern Speed	
	0	Off
	1-127	Pattern Speed fast to slow
	128	Pattern Speed Stop
	129-255	Pattern Speed slow to fast (backwards)
15	0-255	FX Top Warm White
16	0-255	FX Top Cool White
17	0-255	FX Bottom Warm White
18	0-255	FX Bottom Cool White
19	0-255	FX Dimmer
20	FX STROBE	
	0-9	NO FUNCTION
	10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
	100-109	NO FUNCTION
	110-179	LIGHTNING STROBE
	180-189	NO FUNCTION
	190-255	RANDOM STROBE
21	FX CCT	
	0-9	NO FUNCTION

	10	2700K
	25	3000K
	40	3200K
	55	3500K
	70	3700K
	85	4000K
	100	4200K
	115	4500K
	130	4700K
	145	5000K
	160	5300K
	175	5600K
	190	6000K
	205	6500K
	255	6500K
22	FX STATIC PIXEL	
	0-10	Open
	11-255	FX STATIC PIXEL (See Annex 4 for details)
23	FX PIXEL EFFECT	
	0-10	Open
	11-255	FX PIXEL EFFECT (See Annex 5 for details)
24	0-255	FX AUTO SPEED ADJUSTMENT(SLOW TO FAST)
25	CONTROL (EXECUTE AFTER 3 SECONDS)	
	0-10	NO FUNCTION
	11-14	Tilt black activated (Execute after 3 seconds, Temporary save)
	15	Tilt black activated (Execute after 10 seconds, Permanent save)
	16-19	Tilt black deactivated (Execute after 3 seconds, Temporary save)
	20	Tilt black deactivated (Execute after 10 seconds, Permanent save)
	21-25	RESERVED
	26-30	TILT INVERT
	31-35	TILT INVERT OFF
	66-100	RESERVED
	101-105	STUDIO
	106-110	POWER
	111-115	LIVE
	116-130	RESERVED
	131-135	DIMMER SPEED Halogen
	136-140	DIMMER SPEED LED
	141-145	DIMMER CURVE LINEAR
	146-150	DIMMER CURVE SQUARE LAW
	151-155	DIMMER CURVE INV. SQUARE LAW
	156-160	DIMMER CURVE S-CURVE
	161-165	1200Hz
	166-170	2400Hz
	171-175	4000Hz

	176-180	6000Hz
	181-185	25000Hz
	186-200	RESERVED
	201-205	ALL RESET
	206-210	TILT RESET
	211-215	ZOOM RESET
	216-250	RESERVED
	251-255	NO FUNCTION

SSP (21CH)	TOUR (31CH)	TR16 (35CH)	Value	Function
1	1	1	0-255	TITL
2	2	2	0-255	TITL FINE
3	3	3		
			0-10	NO FUNCTION
			11-30	1
			31-50	2
			51-70	3
			71-90	4
			91-110	5
			111-130	6
			131-150	7
			151-170	8
			171-190	9
			191-210	10
			211-230	11
			231-250	12
			251-255	NO FUNCTION
4	4	4	TILT Pattern Size	
			0-255	Small to Big
5	5	5	TILT Pattern Speed	
			0	Off
			1-127	Pattern Speed fast to slow
			128	Pattern Speed Stop
			129-255	Pattern Speed slow to fast (backwards)
6	6	6	0-255	RED
		7	0-255	RED FINE
7	7	8	0-255	GREEN
		9	0-255	GREEN FINE
8	8	10	0-255	BLUE
		11	0-255	BLUE FINE
9	9	12	0-255	LIME
		13	0-255	LIME FINE
10	10	14	0-255	DIMMER
	11	15	0-255	DIMMER FINE
11	12	16	STROBE	

			0-9	NO FUNCTION
			10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
			100-109	NO FUNCTION
			110-179	LIGHTNING STROBE
			180-189	NO FUNCTION
			190-255	RANDOM STROBE
12	13	17	0-255	ZOOM ALL
13	14	18	ZOOM Pattern	
			0-10	NO FUNCTION
			11-30	1
			31-50	2
			51-70	3
			71-90	4
			91-110	5
			111-130	6
			131-150	7
			151-170	8
			171-190	9
			191-210	10
			211-230	11
			231-250	12
			251-255	NO FUNCTION
14	15	19	ZOOM Pattern Speed	
			0	Off
			1-127	Pattern Speed fast to slow
			128	Pattern Speed Stop
			129-255	Pattern Speed slow to fast (backwards)
	16	20	PRESET COLOR	
			0-10	NO FUNCTION
			11-255	PRESET COLOR (See Annex I for details)
	17	21	CCT	
			0-9	NO FUNCTION
			10	1800K
			25	2200K
			40	2700K
			55	3000K
			70	3200K
			85	4000K
			100	4500K
			115	5000K
			130	5600K
			145	6000K
			160	6500K
			175	7000K
			190	8000K
			205	10000K

			255	10000K
	18	22	STATIC PIXEL	
			0-10	NO FUNCTION
			11-255	STATIC PIXEL (See Annex 2 for details)
	19	23	PIXEL EFFECT	
			0-10	NO FUNCTION
			11-255	PIXEL EFFECT (See Annex 3 for details)
	20	24	0-255	AUTO SPEED ADJUSTMENT(SLOW TO FAST)
15	21	25	0-255	FX Top Warm White
16	22	26	0-255	FX Top Cool White
17	23	27	0-255	FX Bottom Warm White
18	24	28	0-255	FX Bottom Cool White
19	25	29	0-255	FX Dimmer
			FX STROBE	
			0-9	NO FUNCTION
			10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
			100-109	NO FUNCTION
			110-179	LIGHTNING STROBE
			180-189	NO FUNCTION
			190-255	RANDOM STROBE
			Ring Color Presets (RGB ring)	
			0-9	Open
			10	2700K
			25	3000K
			40	3200K
			55	3500K
			70	3700K
			85	4000K
			100	4200K
			115	4500K
			130	4700K
			145	5000K
			160	5300K
			175	5600K
			190	6000K
			205	6500K
			255	6500K
			FX STATIC PIXEL	
	28	32	0-10	Open
			11-255	FX STATIC PIXEL (See Annex 4 for details)
			FX PIXEL EFFECT	
	29	33	0-10	Open
			11-255	FX PIXEL EFFECT (See Annex 5 for details)
	30	34	0-255	FX AUTO SPEED ADJUSTMENT(SLOW TO FAST)
			CONTROL (EXECUTE AFTER 3 SECONDS)	
21	31	35	0-10	NO FUNCTION

			11-14	Tilt black activated (Execute after 3 seconds , Temporary save)
			15	Tilt black activated (Execute after 10 seconds , Permanent save)
			16-19	Tilt black deactivated (Execute after 3 seconds , Temporary save)
			20	Tilt black deactivated (Execute after 10 seconds , Permanent save)
			21-25	RESERVED
			26-30	TILT INVERT
			31-35	TILT INVERT OFF
			66-100	RESERVED
			101-105	STUDIO
			106-110	POWER
			111-115	LIVE
			116-130	RESERVED
			131-135	DIMMER SPEED Halogen
			136-140	DIMMER SPEED LED
			141-145	DIMMER CURVE LINEAR
			146-150	DIMMER CURVE SQUARE LAW
			151-155	DIMMER CURVE INV. SQUARE LAW
			156-160	DIMMER CURVE S-CURVE
			161-165	1200Hz
			166-170	2400Hz
			171-175	4000Hz
			176-180	6000Hz
			181-185	25000Hz
			186-200	RESERVED
			201-205	ALL RESET
			206-210	TILT RESET
			211-215	ZOOM RESET
			216-250	RESERVED
			251-255	NO FUNCTION

CMY(29CH)	Value	Function
1	0-255	TITL
2	0-255	TITL FINE
3	TILT Pattern	
	0-10	NO FUNCTION
	11-30	1
	31-50	2
	51-70	3
	71-90	4
	91-110	5
	111-130	6
	131-150	7

	151-170	8
	171-190	9
	191-210	10
	211-230	11
	231-250	12
	251-255	NO FUNCTION
4	TILT Pattern Size	
	0-255	Small to Big
5	TILT Pattern Speed	
	0	Off
	1-127	Pattern Speed fast to slow
	128	Pattern Speed Stop
	129-255	Pattern Speed slow to fast (backwards)
6	0-255	CYAN
7	0-255	MAGENT
8	0-255	YELLOW
9	0-255	DIMMER
10	STROBE	
	0-9	NO FUNCTION
	10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
	100-109	NO FUNCTION
	110-179	LIGHTNING STROBE
	180-189	NO FUNCTION
	190-255	RANDOM STROBE
11	0-255	ZOOM All
12	ZOOM Pattern	
	0-10	NO FUNCTION
	11-30	1
	31-50	2
	51-70	3
	71-90	4
	91-110	5
	111-130	6
	131-150	7
	151-170	8
	171-190	9
	191-210	10
	211-230	11
	231-250	12
	251-255	NO FUNCTION
13	ZOOM Pattern Speed	
	0	Off
	1-127	Pattern Speed fast to slow
	128	Pattern Speed Stop
	129-255	Pattern Speed slow to fast (backwards)
14	PRESET COLOR	

	0-10	NO FUNCTION
	11-255	PRESET COLOR (See Annex I for details)
15	CCT	
	0-9	NO FUNCTION
	10	1800K
	25	2200K
	40	2700K
	55	3000K
	70	3200K
	85	4000K
	100	4500K
	115	5000K
	130	5600K
	145	6000K
	160	6500K
	175	7000K
	190	8000K
	205	10000K
	255	10000K
16	STATIC PIXEL	
	0-10	NO FUNCTION
	11-255	STATIC PIXEL (See Annex 2 for details)
17	PIXEL EFFECT	
	0-10	NO FUNCTION
	11-255	PIXEL EFFECT (See Annex 3 for details)
18	0-255	AUTO SPEED ADJUSTMENT(SLOW TO FAST)
19	0-255	FX Top Warm White
20	0-255	FX Top Cool White
21	0-255	FX Bottom Warm White
22	0-255	FX Bottom Cool White
23	0-255	FX Dimmer
24	STROBE	
	0-9	NO FUNCTION
	10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
	100-109	NO FUNCTION
	110-179	LIGHTNING STROBE
	180-189	NO FUNCTION
	190-255	RANDOM STROBE
25	FX CCT	
	000-009	Open
	10	2700K
	25	3000K
	40	3200K
	55	3500K
	70	3700K
	85	4000K

	100	4200K
	115	4500K
	130	4700K
	145	5000K
	160	5300K
	175	5600K
	190	6000K
	205	6500K
	255	6500K
26	FX STATIC PIXEL	
	0-10	Open
	11-20	FX STATIC PIXEL (See Annex 4 for details)
27	FX PIXEL EFFECT	
	0-10	Open
	11-20	FX PIXEL EFFECT (See Annex 5 for details)
28	0-255	FX AUTO SPEED ADJUSTMENT(SLOW TO FAST)
29	CONTROL (EXECUTE AFTER 3 SECONDS)	
	0-10	NO FUNCTION
	11-14	Tilt black activated (Execute after 3 seconds, Temporary save)
	15	Tilt black activated (Execute after 10 seconds, Permanent save)
	16-19	Tilt black deactivated (Execute after 3 seconds, Temporary save)
	20	Tilt black deactivated (Execute after 10 seconds, Permanent save)
	21-25	RESERVED
	26-30	TILT INVERT
	31-35	TILT INVERT OFF
	66-100	RESERVED
	101-105	STUDIO
	106-110	POWER
	111-115	LIVE
	116-130	RESERVED
	131-135	DIMMER SPEED Halogen
	136-140	DIMMER SPEED LED
	141-145	DIMMER CURVE LINEAR
	146-150	DIMMER CURVE SQUARE LAW
	151-155	DIMMER CURVE INV. SQUARE LAW
	156-160	DIMMER CURVE S-CURVE
	161-165	1200Hz
	166-170	2400Hz
	171-175	4000Hz
	176-180	6000Hz
	181-185	25000Hz
	186-200	RESERVED
	201-205	ALL RESET
	206-210	TILT RESET
	211-215	ZOOM RESET
	216-250	RESERVED

	251-255	NO FUNCTION
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PIXEL1(103CH)	Value	Function
1	0-255	DIMMER
2	0-255	RED
3	0-255	GREEN
4	0-255	BLUE
5	0-255	LIME
6	STROBE	
	0-9	NO FUNCTION
	10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
	100-109	NO FUNCTION
	110-179	LIGHTNING STROBE
	180-189	NO FUNCTION
	190-255	RANDOM STROBE
7	PRESET COLOR	
	0-10	NO FUNCTION
	11-255	PRESET COLOR (See Annex I for details)
8	CCT	
	0-9	NO FUNCTION
	10	1800K
	25	2200K
	40	2700K
	55	3000K
	70	3200K
	85	4000K
	100	4500K
	115	5000K
	130	5600K
	145	6000K
	160	6500K
	175	7000K
	190	8000K
	205	10000K
	255	10000K
9	CONTROL (EXECUTE AFTER 3 SECONDS)	
	0-10	NO FUNCTION
	11-14	Tilt black activated (Execute after 3 seconds, Temporary save)
	15	Tilt black activated (Execute after 10 seconds, Permanent save)
	16-19	Tilt black deactivated (Execute after 3 seconds, Temporary save)
	20	Tilt black deactivated (Execute after 10 seconds, Permanent save)
	21-25	RESERVED
	26-30	TILT INVERT
	31-35	TILT INVERT OFF
	66-100	RESERVED
	101-105	STUDIO

	106-110	POWER
	111-115	LIVE
	116-130	RESERVED
	131-135	DIMMER SPEED Halogen
	136-140	DIMMER SPEED LED
	141-145	DIMMER CURVE LINEAR
	146-150	DIMMER CURVE SQUARE LAW
	151-155	DIMMER CURVE INV. SQUARE LAW
	156-160	DIMMER CURVE S-CURVE
	161-165	1200Hz
	166-170	2400Hz
	171-175	4000Hz
	176-180	6000Hz
	181-185	25000Hz
	186-200	RESERVED
	201-205	ALL RESET
	206-210	TILT RESET
	211-215	ZOOM RESET
	216-250	RESERVED
	251-255	NO FUNCTION
10	0-255	FX Dimmer
11	0-255	FX Top Warm White
12	0-255	FX Top Cool White
13	0-255	FX Bottom Warm White
14	0-255	FX Bottom Cool White
15	FX STROBE	
	0-9	NO FUNCTION
	10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
	100-109	NO FUNCTION
	110-179	LIGHTNING STROBE
	180-189	NO FUNCTION
	190-255	RANDOM STROBE
16	CCT	
	0-9	NO FUNCTION
	10	2700K
	25	3000K
	40	3200K
	55	3500K
	70	3700K
	85	4000K
	100	4200K
	115	4500K
	130	4700K
	145	5000K
	160	5300K
	175	5600K

	190	6000K
	205	6500K
	255	6500K
17	FX STATIC PIXEL	
	0-10	Open
	11-20	FX STATIC PIXEL (See Annex 4 for details)
18	FX PIXEL EFFECT	
	0-10	Open
	11-20	FX PIXEL EFFECT (See Annex 5 for details)
19	0-255	FX AUTO SPEED ADJUSTMENT(SLOW TO FAST)
20	0-255	TILT 1
21	0-255	TILT 1 FINE
22	0-255	TILT 2
23	0-255	TILT 2 FINE
24	0-255	TILT 3
25	0-255	TILT 3 FINE
26	0-255	TILT 4
27	0-255	TILT 4 FINE
28	0-255	TILT 5
29	0-255	TILT 5 FINE
30	0-255	TILT 6
31	0-255	TILT 6 FINE
32	0-255	TILT 7
33	0-255	TILT 7 FINE
34	0-255	TILT 8
35	0-255	TILT 8 FINE
36	0-255	TILT 9
37	0-255	TILT 9 FINE
38	0-255	TILT 10
39	0-255	TILT 10 FINE
40	0-255	TILT 11
41	0-255	TILT 11 FINE
42	0-255	TILT 12
43	0-255	TILT 12 FINE
44	0-255	ZOOM 1
45	0-255	ZOOM 2
46	0-255	ZOOM 3
47	0-255	ZOOM 4
48	0-255	ZOOM 5
49	0-255	ZOOM 6
50	0-255	ZOOM 7
51	0-255	ZOOM 8
52	0-255	ZOOM 9
53	0-255	ZOOM 10
54	0-255	ZOOM 11
55	0-255	ZOOM 12

56	0-255	RED 1
57	0-255	GREEN 1
58	0-255	BLUE 1
59	0-255	LIME 1
60	0-255	RED 2
61	0-255	GREEN 2
62	0-255	BLUE 2
63	0-255	LIME 2
64	0-255	RED 3
65	0-255	GREEN 3
66	0-255	BLUE 3
67	0-255	LIME 3
68	0-255	RED 4
69	0-255	GREEN 4
70	0-255	BLUE 4
71	0-255	LIME 4
72	0-255	RED 5
73	0-255	GREEN 5
74	0-255	BLUE 5
75	0-255	LIME 5
76	0-255	RED 6
77	0-255	GREEN 6
78	0-255	BLUE 6
79	0-255	LIME 6
80	0-255	RED 7
81	0-255	GREEN 7
82	0-255	BLUE 7
83	0-255	LIME 7
84	0-255	RED 8
85	0-255	GREEN 8
86	0-255	BLUE 8
87	0-255	LIME 8
88	0-255	RED 9
89	0-255	GREEN 9
90	0-255	BLUE 9
91	0-255	LIME 9
92	0-255	RED 10
93	0-255	GREEN 10
94	0-255	BLUE 10
95	0-255	LIME 10
96	0-255	RED 11
97	0-255	GREEN 11
98	0-255	BLUE 11
99	0-255	LIME 11
100	0-255	RED 12
101	0-255	GREEN 12

102	0-255	BLUE 12
103	0-255	LIME 12

PIXEL 2 (133CH)	PIXEL 3 (145CH)	Value	Function
1	1	0-255	DIMMER
2	2	0-255	DIMMER FINE
3	3	STROBE	
		0-9	NO FUNCTION
		10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
		100-109	NO FUNCTION
		110-179	LIGHTNING STROBE
		180-189	NO FUNCTION
		190-255	RANDOM STROBE
4	4	PRESET COLOR	
		0-10	NO FUNCTION
		11-255	PRESET COLOR (See Annex I for details)
5	5	CCT	
		0-9	NO FUNCTION
		10	1800K
		25	2200K
		40	2700K
		55	3000K
		70	3200K
		85	4000K
		100	4500K
		115	5000K
		130	5600K
		145	6000K
		160	6500K
		175	7000K
		190	8000K
		205	10000K
		255	10000K
6	6	CONTROL (EXECUTE AFTER 3 SECONDS)	
		0-10	NO FUNCTION
		11-14	Tilt black activated (Execute after 3 seconds, Temporary save)
		15	Tilt black activated (Execute after 10 seconds, Permanent save)
		16-19	Tilt black deactivated (Execute after 3 seconds, Temporary save)
		20	Tilt black deactivated (Execute after 10 seconds, Permanent save)
		21-25	RESERVED
		26-30	TILT INVERT
		31-35	TILT INVERT OFF
		66-100	RESERVED
		101-105	STUDIO
		106-110	POWER

		111-115	LIVE
		116-130	RESERVED
		131-135	DIMMER SPEED Halogen
		136-140	DIMMER SPEED LED
		141-145	DIMMER CURVE LINEAR
		146-150	DIMMER CURVE SQUARE LAW
		151-155	DIMMER CURVE INV. SQUARE LAW
		156-160	DIMMER CURVE S-CURVE
		161-165	1200Hz
		166-170	2400Hz
		171-175	4000Hz
		176-180	6000Hz
		181-185	25000Hz
		186-200	RESERVED
		201-205	ALL RESET
		206-210	TILT RESET
		211-215	ZOOM RESET
		216-250	RESERVED
		251-255	NO FUNCTION
7	7	0-255	FX Dimmer
8	8	0-255	FX Top Warm White
9	9	0-255	FX Top Cool White
10	10	0-255	FX Bottom Warm White
11	11	0-255	FX Bottom Cool White
12	12	FX STROBE	
		0-9	NO FUNCTION
		10-99	STROBE FROM (SLOW TO FAST , 0-25Hz)
		100-109	NO FUNCTION
		110-179	LIGHTNING STROBE
		180-189	NO FUNCTION
		190-255	RANDOM STROBE
13	13	CCT	
		0-9	NO FUNCTION
		10	2700K
		25	3000K
		40	3200K
		55	3500K
		70	3700K
		85	4000K
		100	4200K
		115	4500K
		130	4700K
		145	5000K
		160	5300K
		175	5600K
		190	6000K

		205	6500K
		255	6500K
14	14	0-255	TILT 1
	15	0-255	TILT 1 FINE
15	16	0-255	ZOOM 1
16	17	0-255	RED 1
17	18	0-255	GREEN 1
18	19	0-255	BLUE 1
19	20	0-255	LIME 1
20	21	0-255	TILT 2
	22	0-255	TILT 2 FINE
21	23	0-255	ZOOM 2
22	24	0-255	RED 2
23	25	0-255	GREEN 2
24	26	0-255	BLUE 2
25	27	0-255	LIME 2
26	28	0-255	TILT 3
	29	0-255	TILT 3 FINE
27	30	0-255	ZOOM 3
28	31	0-255	RED 3
29	32	0-255	GREEN 3
30	33	0-255	BLUE 3
31	34	0-255	LIME 3
32	35	0-255	TILT 4
	36	0-255	TILT 4 FINE
33	37	0-255	ZOOM 4
34	38	0-255	RED 4
35	39	0-255	GREEN 4
36	40	0-255	BLUE 4
37	41	0-255	LIME 4
38	42	0-255	TILT 5
	43	0-255	TILT 5 FINE
39	44	0-255	ZOOM 5
40	45	0-255	RED 5
41	46	0-255	GREEN 5
42	47	0-255	BLUE 5
43	48	0-255	LIME 5
44	49	0-255	TILT 6
	50	0-255	TILT 6 FINE
45	51	0-255	ZOOM 6
46	52	0-255	RED 6
47	53	0-255	GREEN 6
48	54	0-255	BLUE 6
49	55	0-255	LIME 6
50	56	0-255	TILT 7
	57	0-255	TILT 7 FINE

51	58	0-255	ZOOM 7
52	59	0-255	RED 7
53	60	0-255	GREEN 7
54	61	0-255	BLUE 7
55	62	0-255	LIME 7
56	63	0-255	TILT 8
	64	0-255	TILT 8 FINE
57	65	0-255	ZOOM 8
58	66	0-255	RED 8
59	67	0-255	GREEN 8
60	68	0-255	BLUE 8
61	69	0-255	LIME 8
62	70	0-255	TILT 9
	71	0-255	TILT 9 FINE
63	72	0-255	ZOOM 9
64	73	0-255	RED 9
65	74	0-255	GREEN 9
66	75	0-255	BLUE 9
67	76	0-255	LIME 9
68	77	0-255	TILT 10
	78	0-255	TILT 10 FINE
69	79	0-255	ZOOM 10
70	80	0-255	RED 10
71	81	0-255	GREEN 10
72	82	0-255	BLUE 10
73	83	0-255	LIME 10
74	84	0-255	TILT 11
	85	0-255	TILT 11 FINE
75	86	0-255	ZOOM 11
76	87	0-255	RED 11
77	88	0-255	GREEN 11
78	89	0-255	BLUE 11
79	90	0-255	LIME 11
80	91	0-255	TILT 12
	92	0-255	TILT 12 FINE
81	93	0-255	ZOOM 12
82	94	0-255	RED 12
83	95	0-255	GREEN 12
84	96	0-255	BLUE 12
85	97	0-255	LIME 12
86	98	0-255	FX Top Warm White 1
87	99	0-255	FX Top COOL White 1
88	100	0-255	FX Top Warm White 2
89	101	0-255	FX Top COOL White 2
90	102	0-255	FX Top Warm White 3
91	103	0-255	FX Top COOL White 3

92	104	0-255	FX Top Warm White 4
93	105	0-255	FX Top COOL White 4
94	106	0-255	FX Top Warm White 5
95	107	0-255	FX Top COOL White 5
96	108	0-255	FX Top Warm White 6
97	109	0-255	FX Top COOL White 6
98	110	0-255	FX Top Warm White 7
99	111	0-255	FX Top COOL White 7
100	112	0-255	FX Top Warm White 8
101	113	0-255	FX Top COOL White 8
102	114	0-255	FX Top Warm White 9
103	115	0-255	FX Top COOL White 9
104	116	0-255	FX Top Warm White 10
105	117	0-255	FX Top COOL White 10
106	118	0-255	FX Top Warm White 11
107	119	0-255	FX Top COOL White 11
108	120	0-255	FX Top Warm White 12
109	121	0-255	FX Top COOL White 12
110	122	0-255	FX Bottom Warm White 1
111	123	0-255	FX Bottom COOL White 1
112	124	0-255	FX Bottom Warm White 2
113	125	0-255	FX Bottom COOL White 2
114	126	0-255	FX Bottom Warm White 3
115	127	0-255	FX Bottom COOL White 3
116	128	0-255	FX Bottom Warm White 4
117	129	0-255	FX Bottom COOL White 4
118	130	0-255	FX Bottom Warm White 5
119	131	0-255	FX Bottom COOL White 5
120	132	0-255	FX Bottom Warm White 6
121	133	0-255	FX Bottom COOL White 6
122	134	0-255	FX Bottom Warm White 7
123	135	0-255	FX Bottom COOL White 7
124	136	0-255	FX Bottom Warm White 8
125	137	0-255	FX Bottom COOL White 8
126	138	0-255	FX Bottom Warm White 9
127	139	0-255	FX Bottom COOL White 9
128	140	0-255	FX Bottom Warm White 10
129	141	0-255	FX Bottom COOL White 10
130	142	0-255	FX Bottom Warm White 11
131	143	0-255	FX Bottom COOL White 11
132	144	0-255	FX Bottom Warm White 12
133	145	0-255	FX Bottom COOL White 12

Annex 1

PRESET COLOR	Value	Color Names		x	y
	0-10	NO FUNCTION			
	11-15	RESERVE	Loving Amber	0.407	0.321
COLOR 1	16-20	R40	Light Salmon	0.499	0.321
COLOR 2	21-25	L24	Scarlet	0.561	0.296
COLOR 3	26-30	L164	Flame Red	0.659	0.302
	31-35	RESERVE	Easy White	0.389	0.344
	36-40	RESERVE	Warm Peach	0.448	0.353
COLOR 4	41-45	L08	Dark Salmon	0.498	0.347
COLOR 5	46-50	L25	Sunset Red	0.566	0.359
	51-55	RESERVE	Medium Bastard Amber	0.37	0.335
COLOR 6	56-60	L237	CID(To Tungsten)	0.43	0.365
COLOR 7	61-65	R321	Soft Golden Amber	0.477	0.406
COLOR 8	66-70	L652	Urban Sodium	0.535	0.399
	71-75	RESERVE	LCT Yellow(Y1)	0.34	0.363
COLOR 9	76-80	L765	LEE Yellow	0.389	0.412
COLOR 10	81-85	L513	Ice And A Slice	0.38	0.447
	86-90	RESERVE	Spring Yellow	0.41	0.502
	91-95	RESERVE	LEE Plus Green	0.324	0.388
	96-100	RESERVE	CalColor 30 Green	0.318	0.44
	101-105	RESERVE	Fern Green	0.234	0.543
COLOR 11	106-110	L90	Dark Yellow Green	0.184	0.641
	111-115	RESERVE	LEE Fluorescent3600K	0.286	0.37
COLOR 12	116-120	R92	Tuquoise	0.235	0.36
	121-125	RESERVE	Kelly Green	0.185	0.459
	126-130	RESERVE	Forest Green	0.162	0.496
	131-135	RESERVE	Cosmetic Aqua Blue	0.3	0.318
COLOR 13	136-140	L728	Steel Green	0.256	0.302
COLOR 14	141-145	L117	Steel Blue	0.223	0.278
COLOR 15	146-150	L354	Special Steel Blue	0.173	0.265
	151-155	RESERVE	Paler Lavender	0.284	0.284
COLOR 16	156-160	L501	New Colour Blue	0.246	0.249
COLOR 17	161-165	L174	Dark Steel Blue	0.204	0.205
	166-170	RESERVE	Daylight Blue	0.159	0.158
	171-175	RESERVE	Pale Lavender	0.288	0.254
	176-180	RESERVE	Surprise Pink	0.24	0.183
COLOR 18	181-185	L142	Pale Violet	0.209	0.148
	186-190	RESERVE	Perfect Lavender	0.177	0.07
	191-195	RESERVE	Light Pink	0.335	0.289
COLOR 19	196-200	L794	Pretty'n Pink	0.335	0.251
COLOR 20	201-205	L328	Follies Pink	0.335	0.18
	206-210	RESERVE	Magical Magenta	0.327	0.138
	211-215	RESERVE	Pale Rose	0.35	0.318
COLOR 21	216-220	L127	Smokey Pink	0.397	0.265
COLOR 22	221-225	L192	Flesh Pink	0.41	0.237
	226-230	RESERVE	Special Rose Pink	0.465	0.193
	231-235	RESERVE	Moroccan Pink	0.378	0.324
COLOR 23	236-240	L157	Pink	0.457	0.272
COLOR 24	241-245	R332	Cherry Rose	0.489	0.295
	246-250	RESERVE	Cool LED Bright Pink	0.57	0.263
	251-255	NO FUNCTION			

Annex 2

STATIC PIXEL	
0-10	NO FUNCTION
11-12	1
13-14	2
15-16	3
17-18	4
19-20	5
21-22	6
23-24	7
25-26	8
27-28	9
29-30	10
31-32	11
33-34	12
35-36	1
37-38	1,2
39-40	1,2,3
41-42	1,2,3,4
43-44	1,2,3,4,5,
45-46	1,2,3,4,5,6
47-48	1,2,3,4,5,6,7
49-50	1,2,3,4,5,6,7,8
51-52	1,2,3,4,5,6,7,8,9
53-54	1,2,3,4,5,6,7,8,9,10
55-56	1,2,3,4,5,6,7,8,9,10,11
57-58	1,2,3,4,5,6,7,8,9,10,11,12
59-60	1,3,
61-62	2,4
63-64	3,5
65-66	4,6
67-68	5,7
69-70	6,8
71-72	7,9
73-74	8,10
75-76	9,11
77-78	10,12
79-80	1,2
81-82	2,3
83-84	3,4
85-86	4,5
87-88	5,6
89-90	6,7
91-92	7,8
93-94	8,9
95-96	9,10
97-98	10,11
99-100	11,12
101-102	12,1
103-104	1,2
105-106	3,4
107-108	5,6
109-110	7,8
111-112	9,10
113-114	11,12
115-116	1,3,5
117-118	2,4,6

119-120	3,5,7
121-122	4,6,8
123-124	5,7,9
125-126	6,8,10
127-128	7,9,11
129-130	8,10,12
131-132	9,11,1
133-134	10,12,2
135-136	11,1,3
137-138	12,2,4
139-140	1,2,3
141-142	2,3,4
143-144	3,4,5
145-146	4,5,6
147-148	5,6,7
149-150	6,7,8
151-152	7,8,9
153-154	8,9,10
155-156	9,10,11
157-158	10,11,12
159-160	11,12,1
161-162	12,1,2
163-164	1,2,3
165-166	4,5,6
167-168	7,8,9
169-170	10,11,12
171-172	1,12
173-174	2,11
175-176	3,10
177-178	4,9
179-180	5,8
181-182	6,7
183-184	1,2,11,12
185-186	3,4,9,10
187-188	5,6,7,8
189-190	1,2,3,10,11,12
191-192	4,5,6,7,8,9
193-194	1,3,5,7,9,11
195-196	2,4,6,8,10,12
197-198	1,5
199-200	2,6
201-202	3,7
203-204	4,8
205-206	5,9
207-208	6,10
209-210	7,11
211-212	8,12
213-214	9,1
215-216	10,2
217-218	11,3
219-220	12,4
221-222	1,6,7
223-224	2,6,7
225-226	3,6,7
227-228	4,6,7
229-230	5,6,7
231-232	6,7,8
233-234	6,7,9
235-236	6,7,10

237-238	6,7,11
239-240	6,7,12
241-242	2,3,4,5,6,8,9,10,11,12
243-244	1,3,4,5,6,7,9,10,11,12
245-246	1,2,4,5,6,7,8,10,11,12
247-248	1,2,3,5,6,7,8,9,11,12
249-250	1,2,3,4,6,7,8,9,10,12
251-252	1,2,3,4,5,7,8,9,10,11
253-255	1,2,3,4,5,6,7,8,9,10,11,12

Annex 3

PIXEL EFFECT	
0-10	1→2→3→...→11→12 cycle
11-15	12→11→10→...→2→1 cycle
16-20	1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12 cycle
21-25	12,11→12,11,10→12,11,10,9...→12,11,...1 cycle
26-30	1,3→2,4→3,5→4,6...→9,11→10,12 cycle
31-35	12,10→11,9→10,8...→4,2→3,1 cycle
36-40	1,2→2,3→3,4→4,5...→10,11→11,12 cycle
41-45	12,11→11,10→10,9...→3,2→2,1 cycle
46-50	1,2→3,4→3,4→4,5...→9,10→11,12 cycle
51-55	1,3,5→2,4,6→3,5,7...→11,1,3→12,2,4 cycle
56-60	1,2,3→2,3,4→3,4,5...→11,12,1→12,1,2 cycle
61-65	1,2,3→4,5,6→7,8,9→10,11,12 cycle
66-70	12,11,10→9,8,7→6,5,4→3,2,1 cycle
71-75	1,12→2,11→3,10→4,9→5,8→6,7 cycle
76-80	6,7→5,8→4,9→3,10→2,11→1,12 cycle
81-85	1,2,11,12→3,4,9,10→5,6,7,8 cycle
86-90	1,2,3,10,11,12→4,5,6,7,8,9 cycle
91-95	1,3,5,7,9,11→2,4,6,8,10,12 cycle
96-100	1,5→2,6→3,7→4,8...→11,3→12,4 cycle
101-105	1,6,7→2,6,7→3,6,7...→6,7,11→6,7,12 cycle
106-110	6,7,12→6,7,11→6,7,10...→6,7,2→6,7,1 cycle
111-115	2,3,4,5,6,8,9,10,11,12→1,3,4,5,6,7,9,10,11,12...→1,2,3,4,5,7,8,9,10,11 cycle
116-120	Red background, (1→2→3→...→11→12) 100% green lightness runs
121-125	Red background, (1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12) 100% green lightness runs
126-130	Red background, (1,3→2,4→3,5→4,6...→9,11→10,12) 100% green lightness runs
131-135	Red background, (1,2→2,3→3,4→4,5...→10,11→11,12) 100% green lightness runs
136-140	Red background, (1,2→3,4→3,4→4,5...→9,10→11,12) 100% green lightness runs
141-145	Green background, (1→2→3→...→11→12) 100% blue lightness runs
146-150	Green background, (1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12) 100% blue lightness runs
151-155	Green background, (1,3→2,4→3,5→4,6...→9,11→10,12) 100% blue lightness runs
156-160	Green background, (1,2→2,3→3,4→4,5...→10,11→11,12) 100% blue lightness runs
161-165	Green background, (1,2→3,4→3,4→4,5...→9,10→11,12) 100% blue lightness runs
166-170	Blue background, (1→2→3→...→11→12) 100% green lightness runs
171-175	Blue background, (1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12) 100% green lightness runs
176-180	Blue background, (1,3→2,4→3,5→4,6...→9,11→10,12) 100% green lightness runs
181-185	Blue background, (1,2→2,3→3,4→4,5...→10,11→11,12) 100% green lightness runs
186-190	Blue background, (1,2→3,4→3,4→4,5...→9,10→11,12) 100% green lightness runs
191-195	6500K background, (1→2→3→...→11→12) 100% red lightness runs
196-200	6500K background, (1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12) 100% red lightness runs
201-205	6500K background, (1,3→2,4→3,5→4,6...→9,11→10,12) 100% red lightness runs
206-210	6500K background, (1,2→2,3→3,4→4,5...→10,11→11,12) 100% red lightness runs
211-215	6500K background, (1,2→3,4→3,4→4,5...→9,10→11,12) 100% red lightness runs
216-220	1-4(RED), 5-8(GREEN), 9-12(BLUE)
221-225	1-4(GREEN), 5-8(BLUE), 9-12(RED)
226-230	1-4(BLUE), 5-8(RED), 9-12(GREEN)
231-235	1-4(CYAN), 5-8(MAGENTA), 9-12(YELLOW)

236-240	1-4(MAGENTA), 5-8(YELLOW), 9-12(CYAN)
241-245	1-4(YELLOW), 5-8(CYAN), 9-12(MAGENTA)
246-250	NO FUNCTION
251-255	1→2→3→...→11→12 cycle

Annex 4

FX STATIC PIXEL	
0-10	NO FUNCTION
11-12	FX Top 1
13-14	FX Top 2
15-16	FX Top 3
17-18	FX Top 4
19-20	FX Top 5
21-22	FX Top 6
23-24	FX Top 7
25-26	FX Top 8
27-28	FX Top 9
29-30	FX Top 10
31-32	FX Top 11
33-34	FX Top 12
35-36	FX Bottom 1
37-38	FX Bottom 2
39-40	FX Bottom 3
41-42	FX Bottom 4
43-44	FX Bottom 5
45-46	FX Bottom 6
47-48	FX Bottom 7
49-50	FX Bottom 8
51-52	FX Bottom 9
53-54	FX Bottom 10
55-56	FX Bottom 11
57-58	FX Bottom 12
59-60	FX Top+Bottom 1
61-62	FX Top+Bottom 1,2
63-64	FX Top+Bottom 1,2,3
65-66	FX Top+Bottom 1,2,3,4
67-68	FX Top+Bottom 1,2,3,4,5
69-70	FX Top+Bottom 1,2,3,4,5,6
71-72	FX Top+Bottom 1,2,3,4,5,6,7
73-74	FX Top+Bottom 1,2,3,4,5,6,7,8
75-76	FX Top+Bottom 1,2,3,4,5,6,7,8,9
77-78	FX Top+Bottom 1,2,3,4,5,6,7,8,9,10
79-80	FX Top+Bottom 1,2,3,4,5,6,7,8,9,10,11
81-82	FX Top+Bottom 1,2,3,4,5,6,7,8,9,10,11,12
83-84	FX Top+Bottom 1,3
85-86	FX Top+Bottom 2,4
87-88	FX Top+Bottom 3,5
89-90	FX Top+Bottom 4,6
91-92	FX Top+Bottom 5,7
93-94	FX Top+Bottom 6,8
95-96	FX Top+Bottom 7,9
97-98	FX Top+Bottom 8,10
99-100	FX Top+Bottom 9,11
101-102	FX Top+Bottom 10,12
103-104	FX Top+Bottom 1,2
105-106	FX Top+Bottom 2,3
107-108	FX Top+Bottom 3,4
109-110	FX Top+Bottom 4,5

111-112	FX Top+Bottom 5,6
113-114	FX Top+Bottom 6,7
115-116	FX Top+Bottom 7,8
117-118	FX Top+Bottom 8,9
119-120	FX Top+Bottom 9,10
121-122	FX Top+Bottom 10,11
123-124	FX Top+Bottom 11,12
125-126	FX Top+Bottom 12,1
127-128	FX Top+Bottom 1,2
129-130	FX Top+Bottom 3,4
131-132	FX Top+Bottom 5,6
133-134	FX Top+Bottom 7,8
135-136	FX Top+Bottom 9,10
137-138	FX Top+Bottom 11,12
139-140	FX Top+Bottom 1,3,5
141-142	FX Top+Bottom 2,4,6
143-144	FX Top+Bottom 3,5,7
145-146	FX Top+Bottom 4,6,8
147-148	FX Top+Bottom 5,7,9
149-150	FX Top+Bottom 6,8,10
151-152	FX Top+Bottom 7,9,11
153-154	FX Top+Bottom 8,10,12
155-156	FX Top+Bottom 9,11,1
157-158	FX Top+Bottom 10,12,2
159-160	FX Top+Bottom 11,1,3
161-162	FX Top+Bottom 12,2,4
163-164	FX Top+Bottom 1,2,3
165-166	FX Top+Bottom 2,3,4
167-168	FX Top+Bottom 3,4,5
169-170	FX Top+Bottom 4,5,6
171-172	FX Top+Bottom 5,6,7
173-174	FX Top+Bottom 6,7,8
175-176	FX Top+Bottom 7,8,9
177-178	FX Top+Bottom 8,9,10
179-180	FX Top+Bottom 9,10,11
181-182	FX Top+Bottom 10,11,12
183-184	FX Top+Bottom 11,12,1
185-186	FX Top+Bottom 12,1,2
187-188	FX Top+Bottom 1,2,3
189-190	FX Top+Bottom 4,5,6
191-192	FX Top+Bottom 7,8,9
193-194	FX Top+Bottom 10,11,12
195-196	FX Top+Bottom 1,12
197-198	FX Top+Bottom 2,11
199-200	FX Top+Bottom 3,10
201-202	FX Top+Bottom 4,9
203-204	FX Top+Bottom 5,8
205-206	FX Top+Bottom 6,7
207-208	FX Top+Bottom 1,2,3,10,11,12
209-210	FX Top+Bottom 4,5,6,7,8,9
211-212	FX Top+Bottom 1,3,5,7,9,11
213-214	FX Top+Bottom 2,4,6,8,10,12
215-216	FX Top+Bottom 1,5
217-218	FX Top+Bottom 2,6
219-220	FX Top+Bottom 3,7
221-222	FX Top+Bottom 4,8
223-224	FX Top+Bottom 5,9
225-226	FX Top+Bottom 6,10
227-228	FX Top+Bottom 7,11

229-230	FX Top+Bottom 8,12
231-232	FX Top+Bottom 9,1
233-234	FX Top+Bottom 10,2
235-236	FX Top+Bottom 11,3
237-238	FX Top+Bottom 12,4
239-240	FX Top+Bottom 2,3,4,5,6,8,9,10,11,12
241-242	FX Top+Bottom 1,3,4,5,6,7,9,10,11,12
243-244	FX Top+Bottom 1,2,4,5,6,7,8,10,11,12
245-246	FX Top+Bottom 1,2,3,5,6,7,8,9,11,12
247-248	FX Top+Bottom 1,2,3,4,6,7,8,9,10,12
249-250	FX Top+Bottom 1,2,3,4,5,7,8,9,10,11
251-255	NO FUNCTION

Annex 5

FX PIXEL EFFECT	
0-10	NO FUNCTION
11-15	1→2→3→...→11→12 cycle
16-20	12→11→10→...→2→1 cycle
21-25	1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12 cycle
26-30	12,11→12,11,10→12,11,10,9...→12,11...1 cycle
31-35	1,3→2,4→3,5→4,6...→9,11→10,12 cycle
36-40	12,10→11,9→10,8...→4,2→3,1 cycle
41-45	1,2→2,3→3,4→4,5...→10,11→11,12 cycle
46-50	12,11→11,10→10,9...→3,2→2,1 cycle
51-55	1,2→3,4→3,4→4,5...→9,10→11,12 cycle
56-60	1,3,5→2,4,6→3,5,7...→11,1,3→12,2,4 cycle
61-65	1,2,3→2,3,4→3,4,5...→11,12,1→12,1,2 cycle
66-70	1,2,3→4,5,6→7,8,9→10,11,12 cycle
71-75	12,11,10→9,8,7→6,5,4→3,2,1 cycle
76-80	1,12→2,11→3,10→4,9→5,8→6,7 cycle
81-85	6,7→5,8→4,9→3,10→2,11→1,12 cycle
86-90	1,2,11,12→3,4,9,10→5,6,7,8 cycle
91-95	1,2,3,10,11,12→4,5,6,7,8,9 cycle
96-100	1,3,5,7,9,11→2,4,6,8,10,12 cycle
101-105	1,5→2,6→3,7→4,8...→11,3→12,4 cycle
106-110	1,6,7→2,6,7→3,6,7...→6,7,11→6,7,12 cycle
111-115	6,7,12→6,7,11→6,7,10...→6,7,2→6,7,1 cycle
116-120	2,3,4,5,6,8,9,10,11,12→1,3,4,5,6,7,9,10,11,12...→1,2,3,4,5,7,8,9,10,11 cycle
121-125	FX Cool White background, Warm White 1→2→3→...→11→12 cycle
126-130	FX Cool White background, Warm White 1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12 cycle
131-135	FX Cool White background, Warm White 1,3→2,4→3,5→4,6...→9,11→10,12 cycle
136-140	FX Cool White background, Warm White 1,2→2,3→3,4→4,5...→10,11→11,12 cycle
141-145	FX Cool White background, Warm White 1,2→3,4→3,4→4,5...→9,10→11,12 cycle
146-150	FX Cool White background, Warm White 1,3,5→2,4,6→3,5,7...→11,1,3→12,2,4 cycle
151-155	FX Cool White background, Warm White 1,2,3→2,3,4→3,4,5...→11,12,1→12,1,2 cycle
156-160	FX Cool White background, Warm White 1,2,3→4,5,6→7,8,9→10,11,12 cycle
161-165	FX Cool White background, Warm White 1,12→2,11→3,10→4,9→5,8→6,7 cycle
166-170	FX Cool White background, Warm White 1,2,11,12→3,4,9,10→5,6,7,8 cycle
171-175	FX Cool White background, Warm White 1,2,3,10,11,12→4,5,6,7,8,9 cycle
176-180	FX Cool White background, Warm White 1,5→2,6→3,7→4,8...→11,3→12,4 cycle
181-185	FX Cool White background, Warm White 1,6,7→2,6,7→3,6,7...→6,7,11→6,7,12 cycle
186-190	FX Warm White background, Cool White 1→2→3→...→11→12 cycle
191-195	FX Warm White background, Cool White 1→1,2→1,2,3→1,2,3,4...→1,2...11→1,2,...12 cycle
196-200	FX Warm White background, Cool White 1,3→2,4→3,5→4,6...→9,11→10,12 cycle
201-205	FX Warm White background, Cool White 1,2→2,3→3,4→4,5...→10,11→11,12 cycle
206-210	FX Warm White background, Cool White 1,2→3,4→3,4→4,5...→9,10→11,12 cycle
211-215	FX Warm White background, Cool White 1,3,5→2,4,6→3,5,7...→11,1,3→12,2,4 cycle
216-220	FX Warm White background, Cool White 1,2,3→2,3,4→3,4,5...→11,12,1→12,1,2 cycle

221-225	FX Warm White background, Cool White 1,2,3→4,5,6→7,8,9→10,11,12 cycle
226-230	FX Warm White background, Cool White 1,12→2,11→3,10→4,9→5,8→6,7 cycle
231-235	FX Warm White background, Cool White 1,2,11,12→3,4,9,10→5,6,7,8 cycle
236-240	FX Warm White background, Cool White 1,2,3,10,11,12→4,5,6,7,8,9 cycle
241-255	NO FUNCTION



广州市雅江光电设备有限公司
Guangzhou Yajiang Photoelectric Equipment Co., Ltd.

电话/Tel : 020-86947788 邮箱/E-mail : sales@yajiang.cn
传真/Fax : 020-86943773 网址/Website : www.yajiang.cn