

SHAFT 420

HYBRID CMY



SHAFT 420 HYBRID CMY

    /illusioncad

DESIGNED FOR CANADA 

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UNIVERSE

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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 be carried out by a 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.

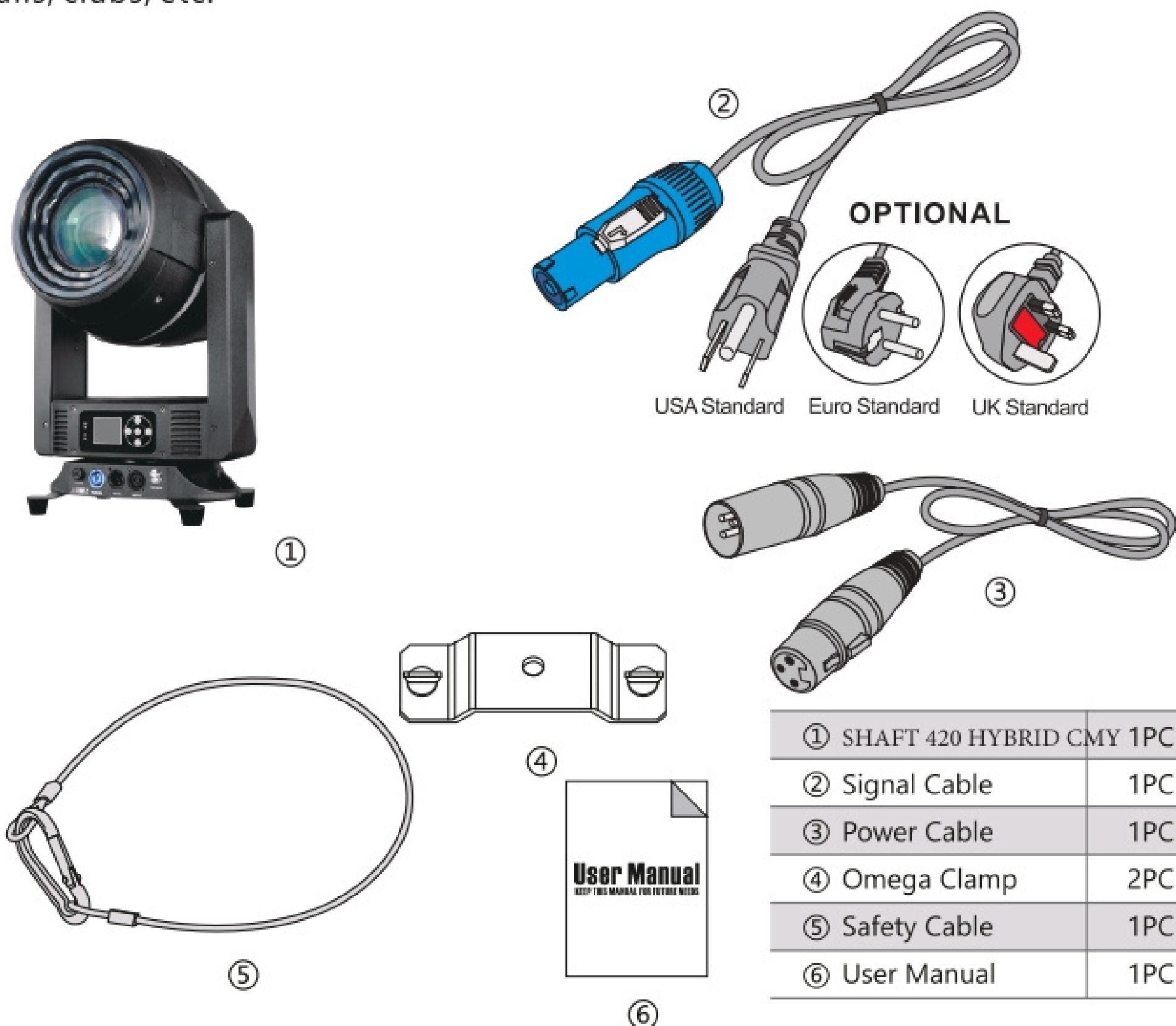
2 UNPACKING

BEAM+WASH, CMY+CTO, 1.8° Angle, Ø160mm Front Lens, Front Neon Ring, 2 Prism Wheels, Continuous PAN/TILT

The SHAFT 420 HYBRID CMY is an ultra compact and light weight stylish moving head beam light designed with a full CMY color mixing system and CTO color correction. It features an OSRAM SIRIUS HRI 420W lamp, integrated with a set of unique high resolution optical system (160cm front lens).

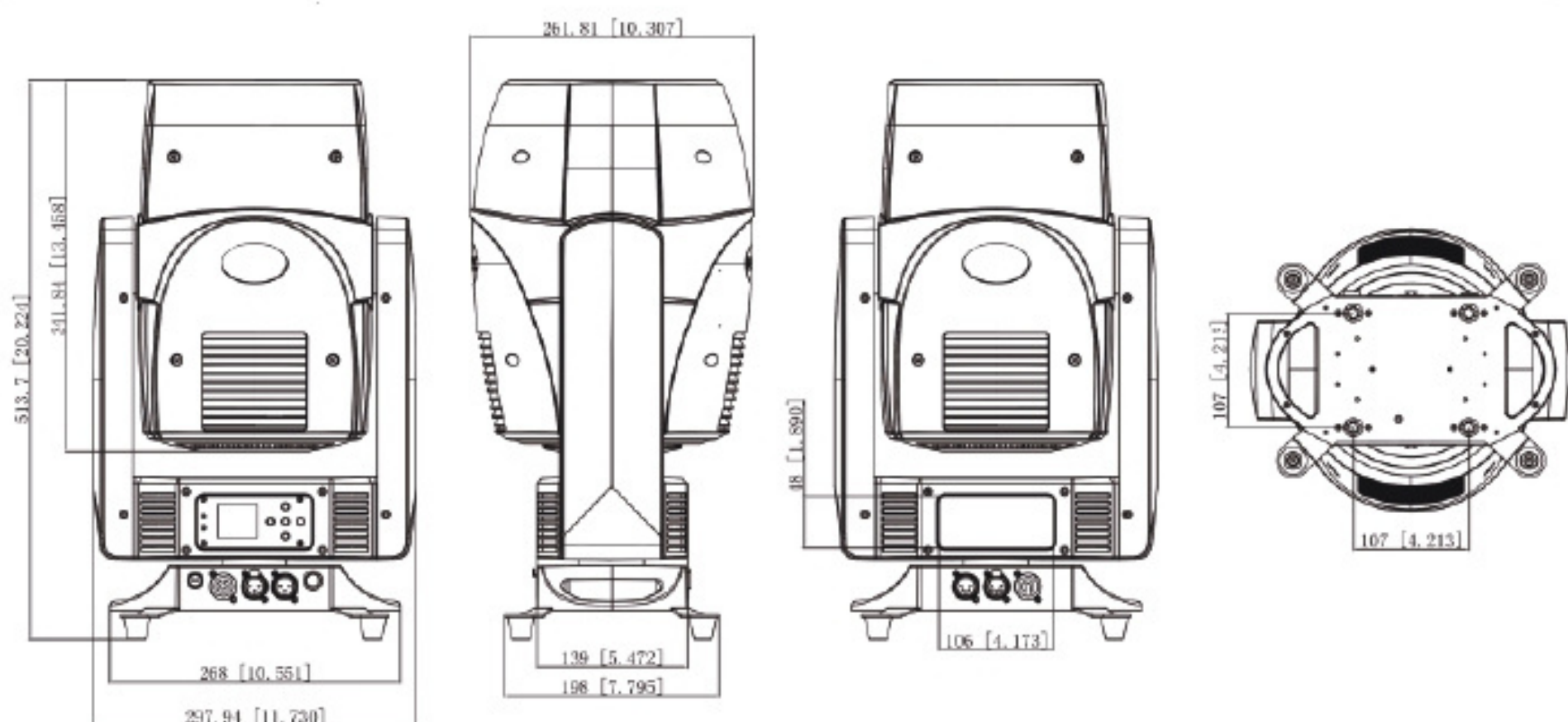
The fixture features 1.8° beam angle which helps to provide ultra long throw solid beam effect. The front ring strip light delivers a magic lighting effect created by 30*0.2W 3-IN-1 SMD RGB LEDs. The SHAFT 420 HYBRID CMY is designed with a range of effects: 13 static gobos, 13 dichroic colors, 6-Color Wheel, 2 prism wheels, frost, focus, etc. It provides 360° continuous fast and smooth PAN/TILT movement with variable speed which delivers even more vivid visual effect to the show. The fixture supports DMX, RDM (Remote Device Management).

It's fast and quiet operation moving head beam. It's a perfect option for indoor application like large scale live concerts, TV productions, road shows, conference halls, clubs, etc.

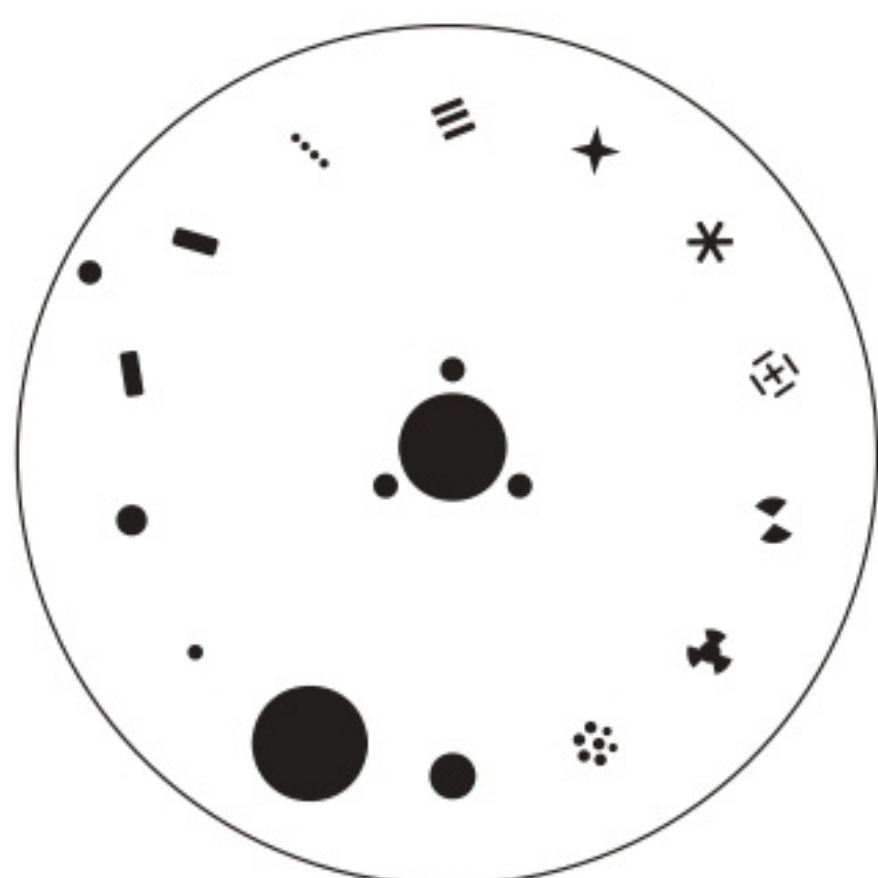


3 FEATURES & SPECIFICATIONS

1*OSRAM SIRIUS HRI 420W Lamp
30*0.2W 3-IN-1 RGB LEDs
Color Temperature: 7850K(+/- 300K)
CRI: ≥83(+/- 5)
Flicker free operation for broadcast TV and FILM
Life Span: 2500H
A set of high resolution and precise optics
Ø160mm Front lens
1.8°Beam angle
Smooth and precise linear focus
PAN: 2 modes
1. 360°Continuous movement
2. 540°(8/16 bit)
TILT: 2 modes
1. 360°Continuous movement
2. 270°(8/16 bit)
Fast, quiet, smooth and precise 3-Phase motors
Smooth, fast and precise resolution for PAN/TILT movement with low noise operation
Scan position memory, auto reposition after unexpected movement
PAN/TILT reversible
Full CMY color mixing system
CTO color correction
1 Color wheel with 13 dichroic colors plus open
Variable direction rainbow effect with speed adjustable
6-Color wheel with variable direction and speed control
1- ring strip effect with different built-in macro effects (variable speed control)
1 Static gobo wheel with 13 gobos plus open
2 Prism wheel design
Prism 1: 3 different prisms, 5-Facet linear prism/8-Facet circular prism/4+8+16-facet circular prism with variable speed and direction
Prism 2: 3 different prisms, 6-Facet linear prism/16-facet circular prism/8+16-facet circular prism with variable speed and direction
Prism indexing
Prism overlay (prism morphing)
0-25Hz shutter/strobe effect with variable speed
Preset variable/random strobe and dimming pulse effect
Even and soft coverage
0-100% Smooth linear dimming
25 DMX channels USITT DMX-512
DMX512, master-slave, or auto operation
DMX recorder and edit function integrated
RDM available (Remote Device Management)
Art-NET (Optional)
Wireless receiver system (Optional)
Shielded input signal protection for stable signal without interference
RJ45 etherCON IN/OUT (Optional with Art-Net)
3-Pin and 5-pin XLR DMX connectors IN/OUT
Software up-datable through DMX connectors
Multi units up-datable in daisy chain
Electronic ballast: PT-SIRIUS 420W
Electronic supply with active PFC
AC100-240V 50/60Hz
PowerCON IN/ OUT with fuse
520W Power consumption
-25°C to 45°C ambient temperature
IP20 protection rating



Dimensions



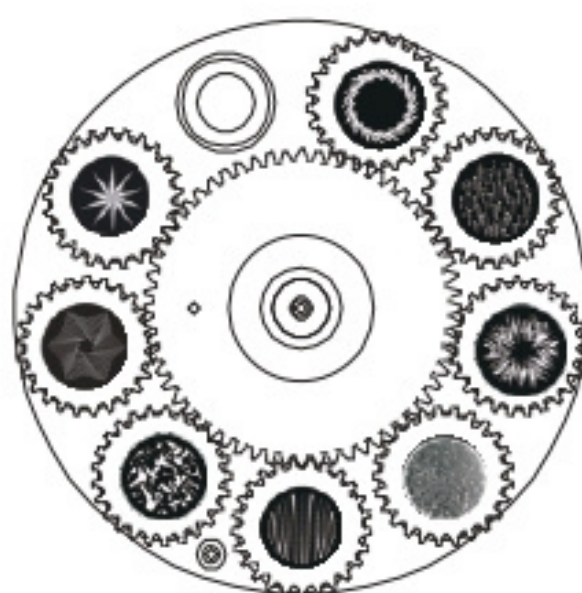
Static Gobo



Colors



Color Wheel



Rotating gobo



Animation wheel

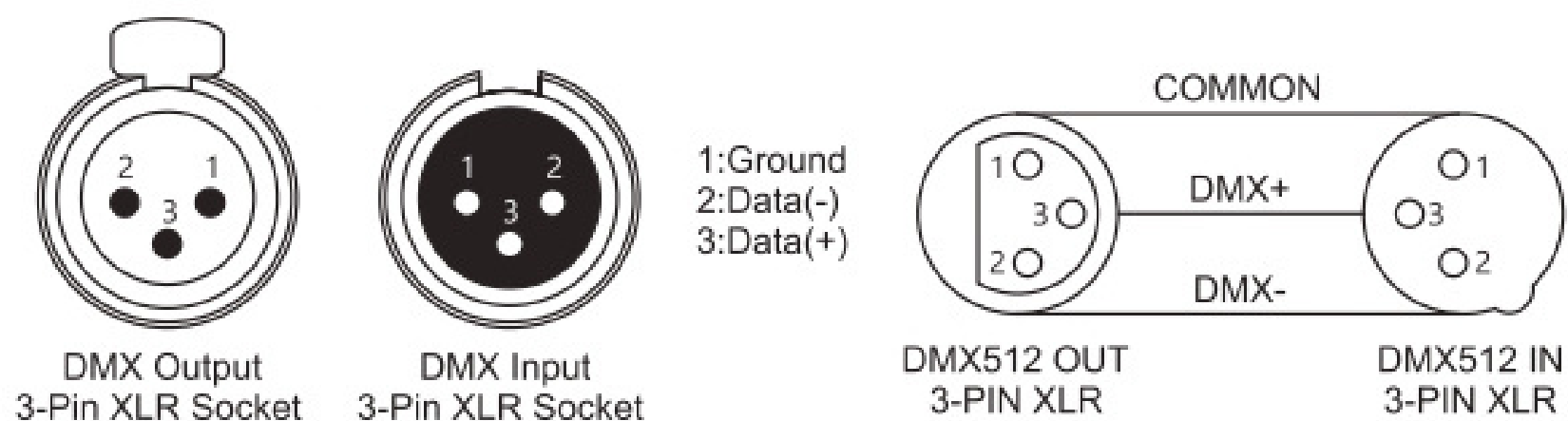


CMY+CTO

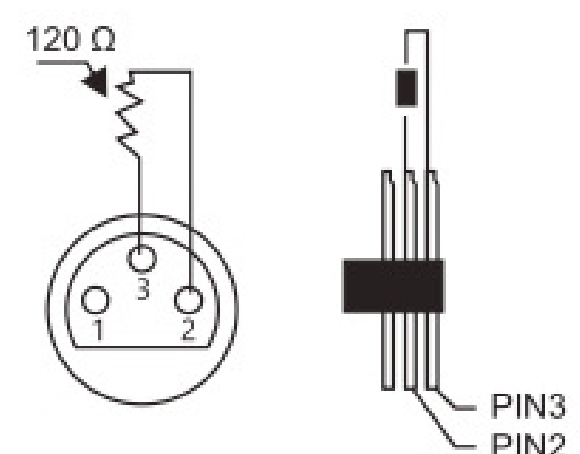
5 DMX-512 CONTROL CONNECTIONS

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 architectural. You can chain multiple Architectural 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.



6 MENU OPERATIONS

When the selected item is value need to been modified, the dialog shown in Figure 4 will popup.

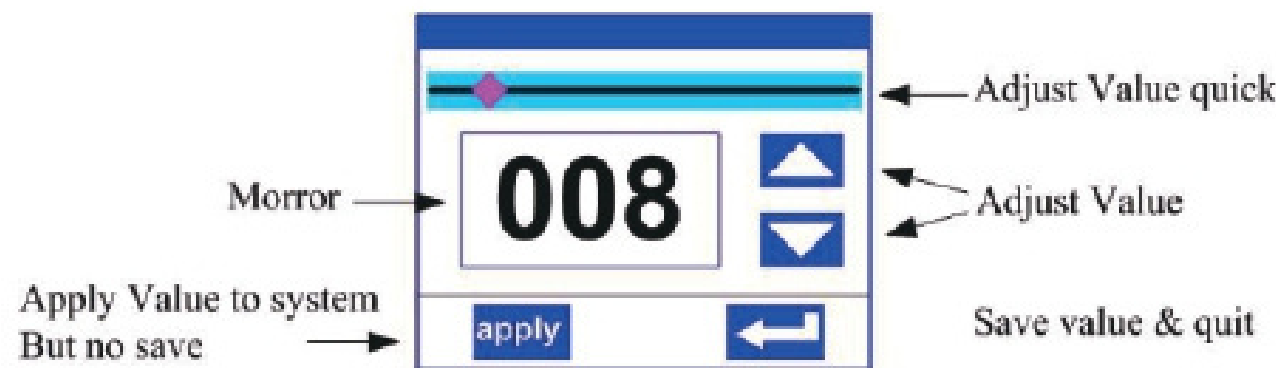


Figure 4 Dialog of value setting

- **Modify value:** Can quickly modify value via pull the slider to the desired position, or click the button of ' up' or ' down' whit finger on the right side to set the exact desired value, another way is roll encoder on the right hand side of panel.
- **Apply value:** When Value had been modified, Then press the bottom of ' apply' in the left corner to apply to

Sub Menu (Parameter)

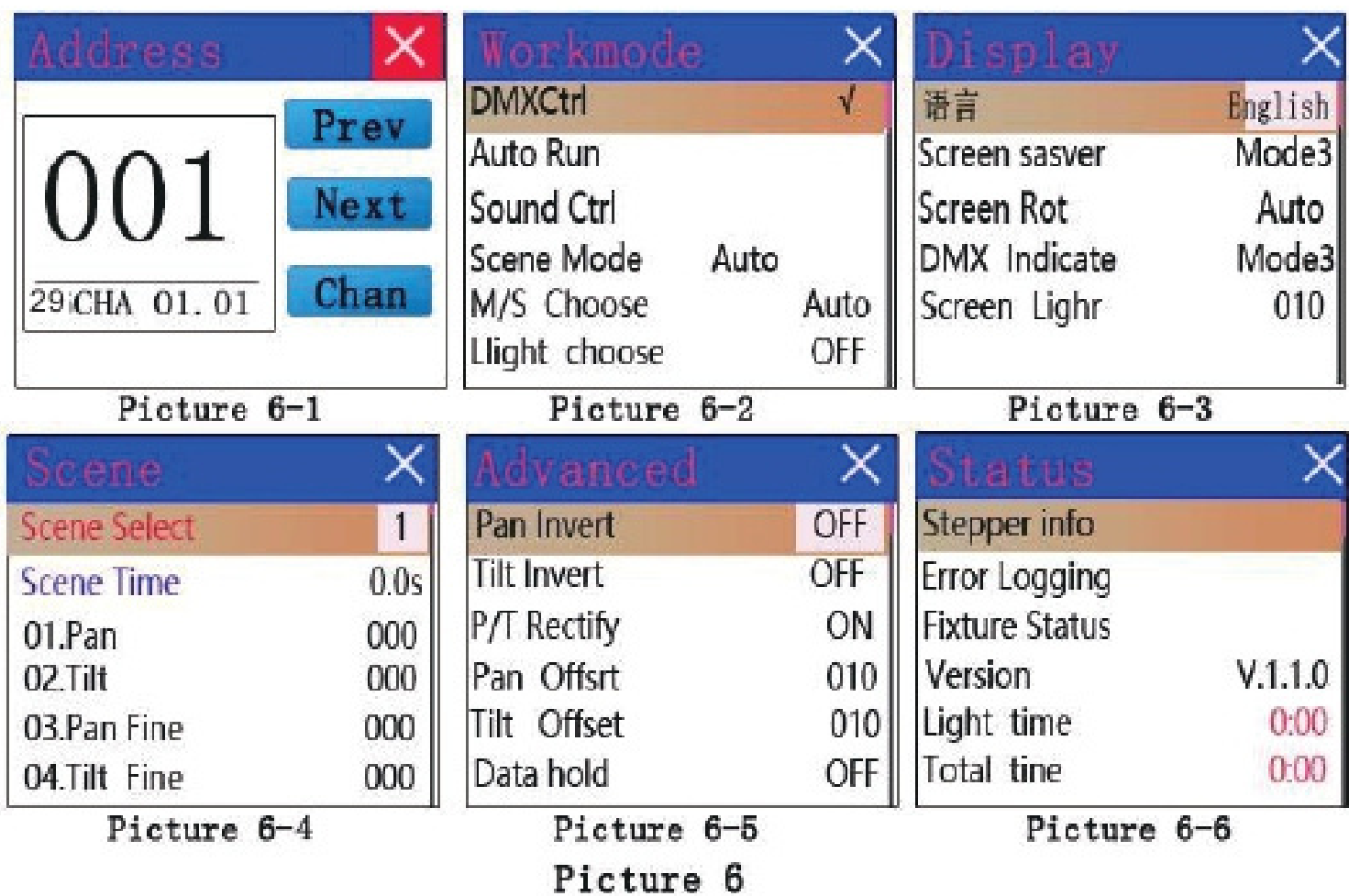


Figure 6 Parameter menu

Operation and parameter instruction

Chick item of main menu, enter corresponding sub menu shown in Figure 6, In main menu, chick 1/6 function button into corresponding parameter menu.

In sub menu(page), chick main item on the left side of displayer, can shift to corresponding sub menu(page) quickly.

1. DMX Address setting

Enter page show in Figure6-1, can set fixture DMX address, channel mode and so on.

The menu settings of fixture have optimized the setting of addresses. Several settings of the address are as follows:

- Select " Prev " or "Next", the fixture will be based on the current address and channel mode, automatically

calculate the next or last address, make address setting can quickly;

- Click on the address value, you can enter the numeric editing window, where you can set any valid address, fixture system automatically get the current number of channels, automatically filter the unusable address (512 - the current number of channels).
- Fixture support RDM protocol, remote address can be set through RDM.

Provide one buttons:

- Channel mode' chan' : you can choose different channel modes by cycle.

2. Fixture operating mode setting

Through the page shown in Figure 6-2, the operating mode of the fixture can be set and the lamp can be controlled. The fixture supports four operating modes (DMX mode, auto mode, voice control mode and scene mode). Detailed parameter settings can be refer in the previous section. Specific parameter descriptions are as follows:

operating mode		
DMX Ctrl	DMX mode, receive DMX signal, RDM signal	
Auto Run	Fixture run automatically according to built-in programs	
Sound Ctrl	When the fixture detects a strong sound, the fixture automatically runs a scene according to the built-in program, otherwise it will stay the last scene	
Scene Mode 01	runs in a set scebe, which supports most of the custom editing of 10 scenes.	
	1~10	outputs the specified scene
	Auto	Automatically loops the output scene in the set scene time (non-zero) order, and the scene with time 0 automatically ignore
M/S Choose	Master and slave selection, non-DMX mode takes effect, select the mode of data output, fixture detect DMX cable state automatic switch output, prevent data conflicts	
	Maste r	fixture runs built-in program. If DMX has no signal, it outputs data (synchronization), otherwise it does not output data.
	Slave	ixture runs built-in program and do not output data
	Auto	If DMX has no signal, the fxiture will runs built-in program. Otherwise, the fixture will run in DMX Mode(follow DMX).
Lamp switch	(Lamp light source) pop-up confirmation dialog box, select "SURE" to confirm the current operation, turn on or off the lamp, switch time interval limited to 30 seconds	
	Off	the current lamp output is off
	On	The current lamp output is turned on

Scene mode applies to a single or a small number of fixture, just output a fixed scene, or need to run a simple program, you no need connect to the console, in the scene page can be edited.
If the light source is lamp, wait for 10 minutes before turning off the lamp.

3. Set display

The fixture support Chinese and English, invert display and so on. Enter the corresponding parameter settings as shown in Figure 6-3. The specific menu contents are as follows:

DISPLAY SETTING		
Language	display language settings	
	English	English display
	Chinese	Chinese display

Screen saver	Set screen 30 seconds without operation, the screen's display content or method.	
	OFF	Keep the last operation page
	Mode1	Black
	Mode2	Black screen, showing the address code of the current fixture in the lower left corner.
	Mode3	Display trademark information, address code and operation mode.
Screen Rot	Set the display direction of the screen.	
	OFF	No reverse display
	ON	Reverse display
DMX Indicate	Set the indication mode of DMX signal indicator.	
	Mode1	When signal is bright, no signal is off.
	Mode2	When signal is off, no signal is bright.
	Mode3	When signal is flash, no signal is off.
Screen Lihgt	Set the screen backlight for 10 seconds without operation	
	1~10	10

4. Scene

Enter the page shown in Figure 6-4, and the fixture enters the scene editing mode. Under this page, the fixture does not receive DMX console data, and the edited data will effect on the fixture immediately.

The content of the page depends on the currently selected channel mode, and the channel content and order displayed are consistent with the fixture channel table. Through this page, you can edit 10 scenes, as shown in the following table:

SCENE MODE

Scene Select	Select the current operation scenario.	
	1~10	The 10 scenes sets the format
Scene Time	Sets the retention time of the current scene when it is automatic, unit in 0.1 seconds.	
	0	The current scene is not output in automatic scene output.
	1-255	0..1s-25.5s
1. PAN	0-255	Set up the data of each channel, and the contents and order of the display are one-to-one correspondence with the channel list of fixture.
.....	0-255	
.....	0-255	
N. Function	0-255	

If the reset channel in the scene edits the effective reset data, the fixture will reset, but after reset, the corresponding reset channel value will automatically set 0, preventing multiple consecutive resets.

Looking at this page, you can get the current channel table slot of the fixture. For specific channel data, please refer to the detailed channel description.

5. Set light run parameter

Enter the page shown in Figure 6-5, adjust the field parameters of fixture, facilitate the installation of fixture, etc.

ADVANCED SETTING

Pan Invert	Set the rotation direction of PAN	
	OFF	
	ON	

Tilt Invert	Set the rotation direction of TILT	
	OFF	
	ON	
P/T Rectify	Setting up fixture to detect XY lost step and correct	
	OFF	Uncorrected position after out of step
	ON	After losing step, the position is automatically corrected and the out of step fault is recorded.
Pan Offset	Setting the zero point of the PAN of the fixture	
	4-150	
Tilt Offset	Setting the zero point of the TILT of the fixture	
	4-48	
Data hold	When the fixture is not equipped with DMX signal, the output state of the fixture	
	OFF	No signal, so the motor and light source return to the position and state when reset is completed.
	ON	No signal, keep the last frame DMX data output.
Lamp mode	(lamp light source) Set the way to first open the lamp after power up	
	Power on	Turn on the lamp at power up and reset the lamp after 30 seconds.
	After reset	Reset the fixture after 3 seconds when power-on, and turn on the lamp after reset.
	Manual	After reset, manually turn on the lamp through the menu or console.
Reset	Reset fixture	
Factory Setting	Pop up the confirmation box, select "SURE", and return the lamp parameters to the factory settings.	

When choosing power-on mode, the lamp will wait for 30 seconds after power-on, let the lamp fully start, internal voltage is stable enough, then start the reset program, if the field capacity is stable, recommend power-on mode.

When the fixture can not calibrate the position, please check whether the "P/T Rectify" is turned off.

When the signal is unplugged, check the Data Hold setting first if the position of the fixture is not output as expected.

When setting the XY offset, after setting up, please control XY with the maximum stroke first to check that XY will not bump into the positioning rod or shell.

6. Status and information

Entering the page shown in Figure 6-6, you can view the information and real-time status of the fixture to get their usage status. If the fixture need customer service, please provide the status information displayed on the page as a basis for judgment, as shown in the following table:

STATUS INFORMATION

Stepper info	Display information status of all motors and signals in fixture.	
	Hall	No display, indicating that the motor has no Hall, 0 indicating that the motor leaves the correction position point, 1 indicating that the motor is in the correction position point
	Status	Display motor reset status
	PAN	Display real-time position value of PAN optocoupler feedback
	TILT	Display real-time position value of TILT optocoupler feedback

	PAN OP	Displays the PAN TILT optocoupler two signal level state, binary
Error Logging	Show the latest 8 error records when the fixture is reset and running. The error records are not saved after power failure. The current power cycle is valid.	
	Error Logging	Total number of failures detected after power on
	12: :03	The time of power failure when the fault occurs is in minutes.
	Hall error	The effective hall signal is not detected when the motor is reset
	Hall short	When the motor is reset, the hall signal of the motor is always effective
	Opti error	No effective optocoupler signal is detected when the motor is reset.
	Lose stop	The corresponding motor is out of step during its operation.
	Hit	Striking the positioning rod when the motor is reset
	Lamp error	Lamp explosion accident
	NTC error	The temperature sensor signal is abnormal
	Fan error	The main fan is not working properly.
Fixture status	Displays the critical state data of the current fixture for reference.	
	Communication prec	0~100%, Communication quality of internal data link of lamps and lanterns
	Error cnt	The number of erroneous frames was detected after power on, and the total number of erroneous frames was detected.
	Light Temperature	Show the temperature of the current light source, "---" means no detection.
	Panel Temperatrue	Displays the temperature of the current display panel or the ambient temperature.
	Sensor1 Temperatrue	Display the ambient temperature of the motherboard temperature or the motherboard installation position.
Version	Display the information and version of the current fixtrue, important reference for after sales maintenance.	
	Device	The name of the fixture is the same as the equipment information of RDM.
	Model	The type of fixture is the same as the model information of RDM.
	Panel	Firmware version and serial number of display panel
	Main Board	Firmware version and serial number of mother board 1
Light time	Record the total cumulative time of light source opening, unit minute, user manual cleaning, as a reference for regular maintenance of light source time	
Total time	The total accumulated time for recording the opening of fixture is not allowed to be removed.	

7 DMX CHANNELS

Channel	Function	Dmx Value	Description
[CH1]	Pan Rotation	0-255	360° Continuous PAN Rotation
[CH2]	Tilt Rotation	0-255	360° Continuous TILT Rotation
[CH3]	PAN	0-255	PAN movement 0-540°
[CH4]	TILT	0-255	TILT movement 0-270°
[CH5]	Pan Fine	0-255	Fine control of PAN movement
[CH6]	Tilt Fine	0-255	Fine control of TILT movement
[CH7]	Speed	0-255	Speed control of PAN/TILT, fast to slow
[CH8]	Frost	0-127	No Function
		128-255	Frost IN
[CH9]	Strobe	0-3	LIGHT OFF
		4-127	Pulsation frequency from slow (1 flash/sec) to fast (25 flash/sec)
		128-191	Fading Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		192-251	Random Strobe frequency from slow (1 flash/sec) to fast (25 flash/sec)
		252-255	LIGHT ON
[CH10]	Dimmer	0-255	Linear Dimmer 0 – 100%
[CH11]	Color Wheel	0-4	Open
		5-9	Open+Color 1
		10-14	Color 1
		15-19	Color 1+Color 2
		20-24	Color 2
		25-29	Color 2+Color 3
		30-34	Color 3
		35-39	Color 3+Color 4
		40-44	Color 4
		45-49	Color 4+Color 5
		50-54	Color 5
		55-59	Color 5+Color 6
		60-64	Color 6
		65-69	Color 6+Color 7
		70-74	Color 7
		75-79	Color 7+Color 8
		80-84	Color 8
		85-89	Color 8+Color 9
		90-94	Color 9
		95-99	Color 9+Color 10
		100-104	Color 10
		105-109	Color 10+Color 11
		110-114	Color 11
		115-119	Color 11+Color 12
		120-124	Color 12
		125-129	Color 12+Color 13
		130-134	Color 13
		135-139	Color 13+Color 14
		140-200	Forward rotation from fast to slow
		201-255	Backward rotation from slow to fast
[CH12]	Cyan	0-255	Cyan
[CH13]	Magenta	0-255	Magenta
[CH14]	Yellow	0-255	Yellow
		0-4	Open
		5-9	Gobo 1
		10-14	Gobo 2
		15-19	Gobo 3
		20-24	Gobo 4
		25-29	Gobo 5
		30-34	Gobo 6
		35-39	Gobo 7
		40-44	Gobo 8
		45-49	Gobo 9

[CH15]	Static Gobo Wheel	50-54	Gobo 10
		55-59	Gobo 11
		60-64	Gobo 12
		65-69	Gobo 13
		70-129	Forward rotation from fast to slow
		130-134	Open
		135-190	Backward rotation from slow to fast
		191-195	Gobo 1 shaking from slow to fast
		196-200	Gobo 2 shaking from slow to fast
		201-205	Gobo 3 shaking from slow to fast
		206-210	Gobo 4 shaking from slow to fast
		211-215	Gobo 5 shaking from slow to fast
		216-220	Gobo 6 shaking from slow to fast
		221-225	Gobo 7 shaking from slow to fast
		226-230	Gobo 8 shaking from slow to fast
		231-235	Gobo 9 shaking from slow to fast
		236-240	Gobo 10 shaking from slow to fast
		241-245	Gobo 11 shaking from slow to fast
		246-250	Gobo 12 shaking from slow to fast
		251-255	Gobo 12 shaking from slow to fast
[CH16]	Rotating Gobo Wheel	0-9	Open
		10-19	Gobo 1
		20-29	Gobo 2
		30-39	Gobo 3
		40-49	Gobo 4
		50-59	Gobo 5
		60-69	Gobo 6
		70-79	Gobo 7
		80-89	Gobo 8
		90-94	Gobo 1 shaking from slow to fast
		95-99	Gobo 2 shaking from slow to fast
		100-104	Gobo 3 shaking from slow to fast
		105-109	Gobo 4 shaking from slow to fast
		110-114	Gobo 5 shaking from slow to fast
		115-119	Gobo 6 shaking from slow to fast
		120-124	Gobo 7 shaking from slow to fast
		125-129	Gobo 8 shaking from slow to fast
		130-199	Forward rotation from fast to slow
		200-255	Backward rotation from slow to fast
[CH17]	Gobo Rotation	0-127	360° Continuous Rotation
		128-190	Forward rotation from fast to slow
		191-192	Stop
		193-255	Backward rotation from slow to fast
[CH18]	Animation Wheel	0-255	Animation wheel IN
[CH19]	Animation Wheel Rot	0-255	Animation wheel rotation from slow to fast
[CH20]	Prism Wheel 1	0-49	No Function
		50-99	Prism 1 IN
		100-149	Prism 2 IN
		150-199	Prism 3 IN
		200-255	Prism 4 IN
[CH21]	Prism Wheel 1 Rot	0-127	0-360° Rotation
		128-190	Forward rotation from fast to slow
		191-192	Stop
		193-255	Backward rotation from slow to fast
[CH22]	Prism Wheel 2	0-49	No Function
		50-99	Prism 1 IN
		100-149	Prism 2 IN
		150-199	Prism 3 IN
		200-255	Prism 4 IN
		0-127	0-360° Rotation

[CH23]	Prism Wheel 2 Rot	128-190	Forward rotation from fast to slow
		191-192	Stop
		193-255	Backward rotation from slow to fast
[CH24]	Effect Wheel	0-127	No Function
		128-255	6-Color effect wheel IN
[CH25]	Zoom	0-255	Zoom from big to small
[CH26]	Focus	0-255	Focus from fast to near
[CH27]	Reset/Functions	0-209	No Function
		210-215	XY Motors reset in 3s
		216-219	No Function
		220-235	Effect Motors reset in 3s
		236-239	No Function
		240-255	All reset in 3s
[CH28]	Strip Effect	0-255	Preset strip effect
[CH29]	Speed	0-255	Speed control of strip effect

8

MAINTENANCE AND CLEANING

The following points have to be considered during the inspection:

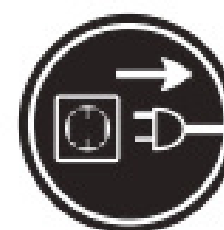
- 1) All screws for installing the devices or parts of the device have to be tightly connected and must not be corroded.
- 2) There must not be any deformations on the housing, color lenses, fixations and installation spots (ceiling, suspension, trussing).
- 3) Mechanically moved parts must not show 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.



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