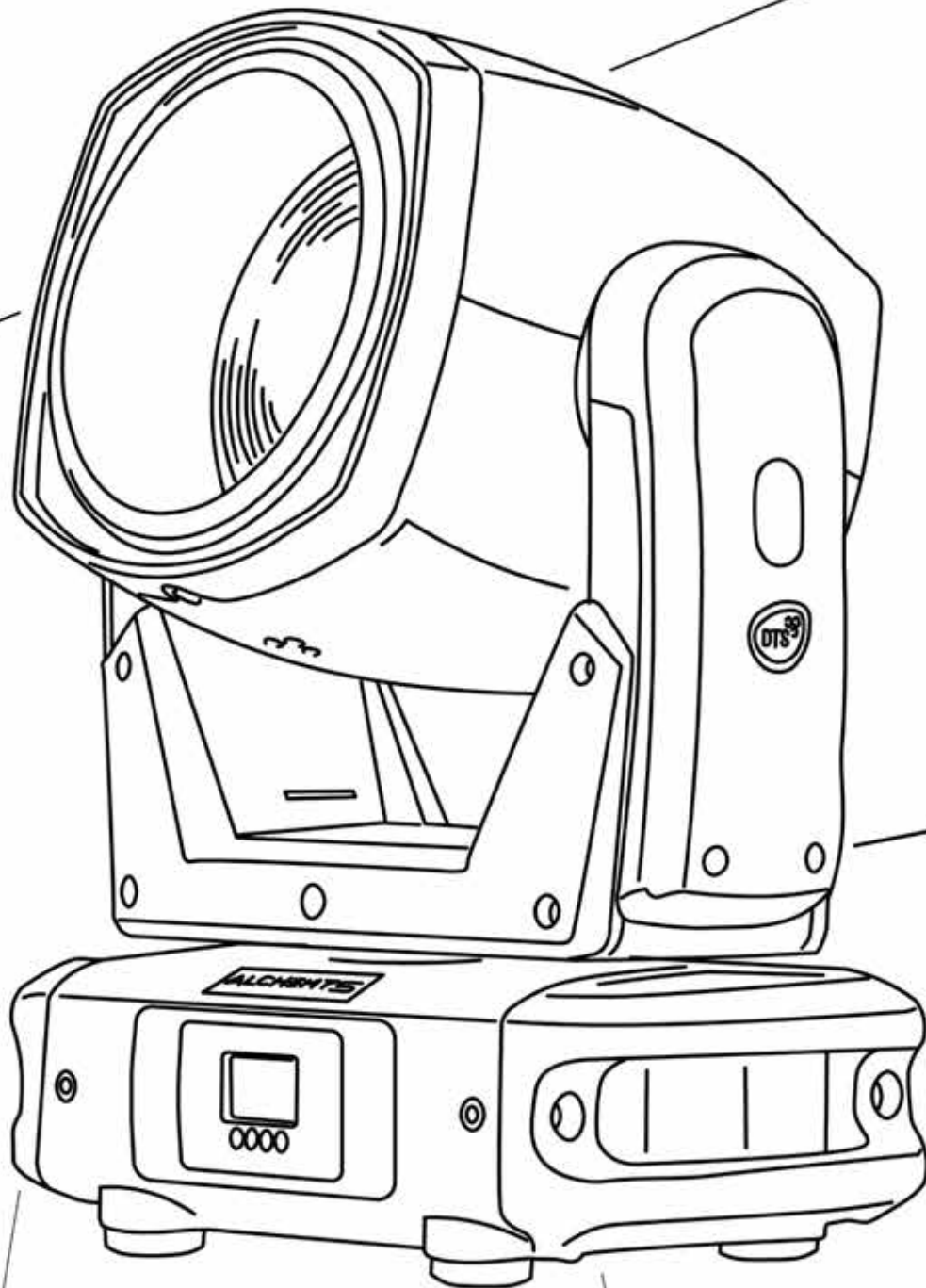



ALCHEMY 5

USER'S MANUAL



CE

Release	1.09	Code: 05171348	For more information	
Language	EN			



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1 Symbols

Symbol	Meaning
	General risk.
	Electric shock risk
	Hot surface
	Suitable for indoor use only.
$T_a 45^{\circ}\text{C}$	Maximum operating ambient temperature.
	Minimum distance from illuminated objects.
	Do not stare at the operating light source.
 Risk Group 2	Photobiological safety risk group2
	Never expose the front lens to sunlight or any strong artificial Light source from any angle to avoid damage of head internal parts.
	European Community Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE).
 LiFePO4	Dispose the battery at the end of its life according to the regulation in force

2 General Warning

Carefully read the instruction contained in this User Manual, as they give important information regarding your safety and others during installation, use, and maintenance of the product.

The unit is not suitable for domestic use and must be installed by qualified personnel only.

The device must always be equipped with an efficient ground connection.

3 Important Safety Information

3.1 Fire Prevention



- **Minimum distance from illuminated surface: 0.5 m**



- **Never expose the front lens, from any angle, to direct sunlight or strong artificial light sources to avoid damage to internal parts of the product.**
The front lens may act as a powerful magnifying glass if exposed towards the sun or any strong artificial light source; this will cause damage to the internal parts of the moving head, even if exposed for a few seconds, and even when the unit is turned off.

It is strongly recommended to leave the front lens directed towards the ground when switching off or leaving the unit unattended.



- **The unit features various air inlets and cooling fans located on both the base and the head of the fixture. Under no circumstances should these be blocked or obstructed whilst the projector is operating. Doing so may cause the fixture to seriously overheat, damaging it and compromising its proper operation.**
- Each fixture produces heat and must be installed in a well-ventilated place.
- Connect the projector to mains power via a thermal magnetic circuit breaker.

3.2 Prevention of Electric Shock



- **High voltage is present inside the unit.**
Unplug the unit prior to performing any function which involves handling of the insides of all parts of the product.



- **Class I appliance: connection must be made to a mains system fitted with an efficient earthing.**
- ALCHEMY 5 requires the assistance of specialized personnel for all servicing. Please always refer to an authorized DTS service center.

3.3 Safety



- **Risk Group 2 product according to IEC 62471.**
Do not look directly at the light output and do not stare at the light beam through optical instruments or any other device that may concentrate the light beam. May be harmful to the eyes and skin.



- **Do not stare at the operating light source.**
The luminaire should be positioned so that prolonged staring into the luminaire from a minimum distance of 38,9 m is not expected.
- The light source contained in this luminaire shall only be replaced by the manufacturer or their service agent or a similar qualified person.
- The unit is not suitable for domestic use and must be installed by qualified personnel only.
- The projector should always be installed with the proper tools. The fixing point must always be capable of supporting the weight of the unit.
- Always use a safety cable to sustain the weight of the unit in case of failure of the main fixing point.



- **Pan: 540° rotation; Tilt: 220° rotation.**
Never obstruct the projector's movement while it is operating.



- **The external surface of the unit's body, at various points, may exceed 50 °C.**
Never handle the unit until at least five minutes have passed since it was turned off.

$T_a 45^\circ\text{C}$

- **Ambient temperature should not exceed 45 °C.**
- This fixture is intended for use where humidity does not exceed 90% (non-condensing).
- After storage, and before switching on the fixture, please ensure that its ambient temperature has been restored to acceptable values.
- Never install the fixture in places that lack a constant air flow.

3.4 Level of protection IP



- **The projector is classified as an ordinary appliance and its protection level against the penetration of solid and liquid objects is IP20.**
- The projector contains electric and electronic components which should under no circumstances come into contact with oil, water, or any other liquid. The proper functioning of the unit would be compromised should this occur.



- Suitable for indoor use only.

3.5 **Waste Electrical and Electronic Equipment (WEEE) Directive:**



- The projector, the accessories, and the packaging should be sorted for environmental-friendly recycling.

For EC countries: according to the European Directive 2012/19/EU for Waste Electrical and Electronic Equipment and its implementation into national right, luminaires that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

3.6 **Waste Electrical and Electronic Equipment (WEEE) Directive:**



- The projector contains a rechargeable lead-acid or lithium iron tetraphosphate battery. To preserve the environment, please dispose the battery at the end of its life according to the regulation in force.

4 **General Warranty Conditions**

The unit is guaranteed for 36 months from the date of purchase against manufacturing material defects.

The warranty covers defects in materials and workmanship. The warranty is not applicable where a defect is caused by misuse or unauthorized repair of the product.

Any functional or/and physical modification of the product is not allowed.

5 **Technical Features**

5.1 **Output**

- Multi-chip LED source
- Lumen output: 10,800 lm
- CRI: up to 98
- TLCI: up to 96
- LED lifespan: 20,000 hours (70% lumen output)

5.2 **Optical Group**

- 10° - 47° linear motorized zoom
- Ø 250 mm Fresnel lens
- Indexable beam shaper (2:1 ratio) with endless continuous rotation
- Light and Heavy frost filters insertable via DMX
- Retractable 'top hat'

5.3 Color Generation

- 6-color LED engine
- Linear CCT (1,800 K – 10,000 K)
- Linear 'green saturation'
- 100 gel filter emulations:
 - - Linear crossfade from gel filters emulation to CCT whites
 - - Linear crossfade between emulated gel filters
 - - True color of gel filters emulation at any CCT values
- "Raw" RGBACL color-mixing in 'Advanced' mode
- "Deep Blue" and "Deep Red" filters (DMX-selectable)

5.4 Dimmer

- Li• Hi-Q Dimming technology
- Tungsten emulation function)

5.5 User interface

- LCD graphic display with 4 soft keys ("auto-flip" and "key-lock" functions available)
- Li-Fe backup battery for controlling display settings when the unit is not powered

5.6 Control

- Art-Net 4, sACN, RDM/DMX 512 protocols
- 'Standard' and 'Silent' operation modes (DMX-selectable)
Noise level in "Silent" mode: 37 dBA @ 1 m (normal operation, full power)
- Firmware updatable via DTS firmware uploader dongle
- Li-Fe backup battery for controlling display settings when the unit is not powered
- DMX MODES
 - CCT (default)
 - Advanced
 - Basic
 - Expo
 - CMY Emulation

5.7 Pan & Tilt

- Pan 540° (3.8 sec.)
- Tilt 220° (2.1 sec.)
- 16-bit resolution
- Pan / Tilt lock

5.8 Power Supply

- Wide-range 100-240 Vac 50/60 Hz
- Power consumption: 500 W max
- Power Factor: PF >0.90

5.9 Connections

- Power supply: powerCON TRUE1 In/Out panel connectors
- DMX: XLR 3-pole and 5-pole In/Out panel connectors
- Art-Net/sACN: etherCON RJ45 panel connector

5.10 Internal Protection Devices

- Overvoltage and over temperature circuits protection
- Retractable "Top Hat" system

5.11 Operating Temperature

- -10 °C / 45 °C

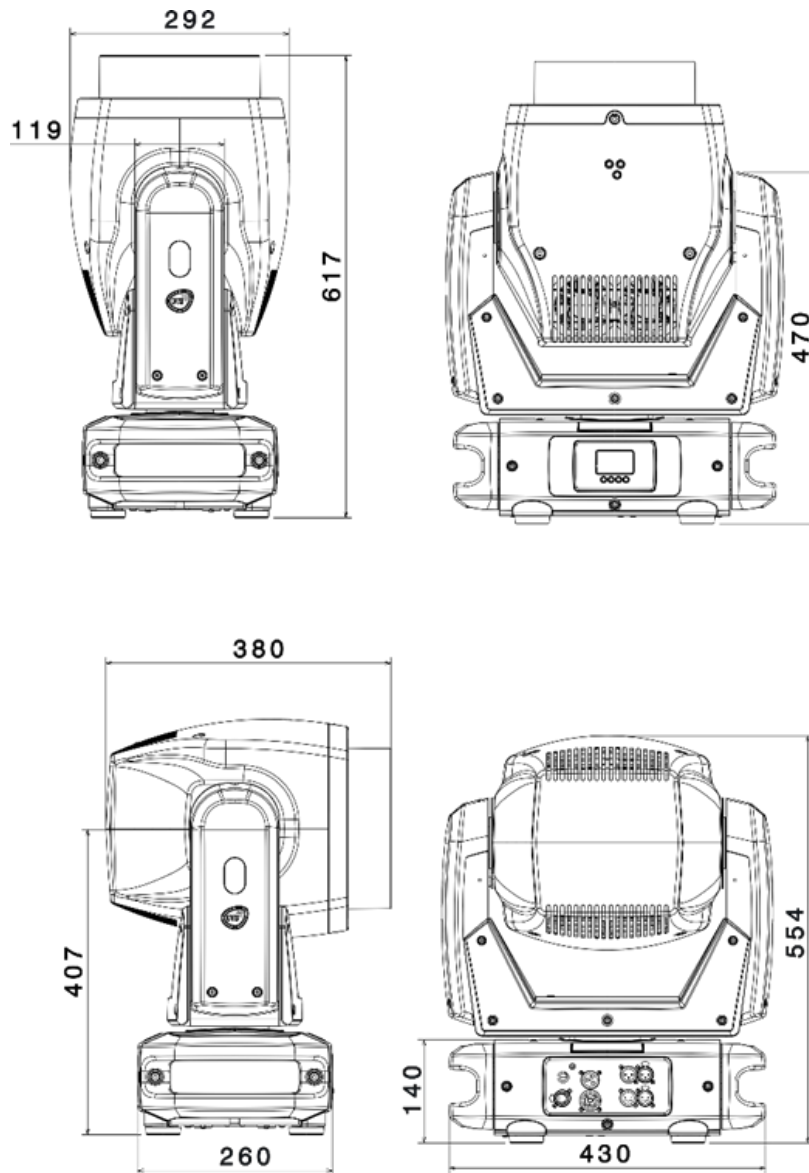
5.12 Storage Temperature

- -20 °C / 60 °C

5.13 Physical

- IP20
- Weight: 26.5 kg
- Finishing: Black

5.14 Dimensions



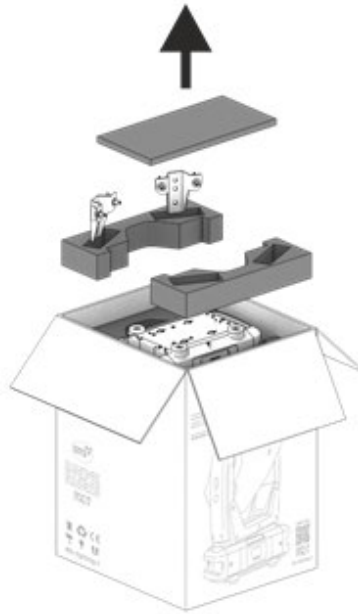
6 EZ-Shell

How to re-use the EZ-shell foam:

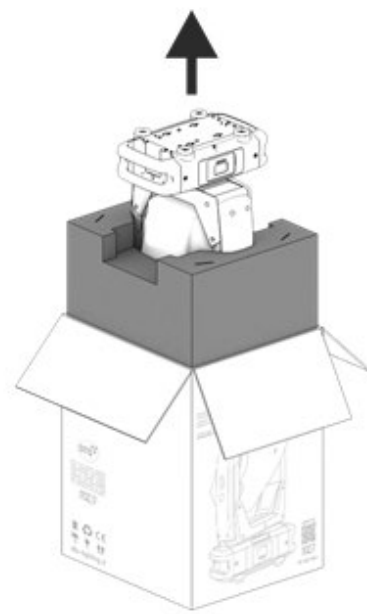
1) Open the package



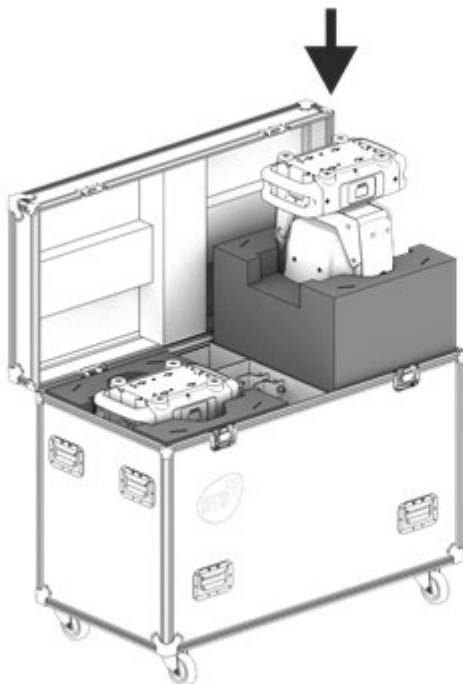
2) Extract covers and accessories



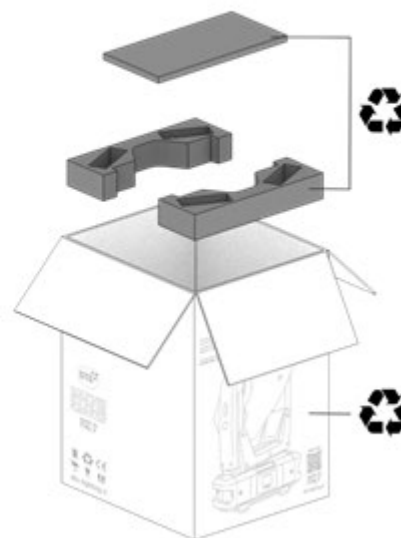
3) Extract the unit and the EZ-shell



4) Each flightcase can contain up to two units, along with their EZ-shell



5) Do not forget to recycle!



7 Retractable “Top Hat”

The top hat retracts automatically when the projector is switched off.

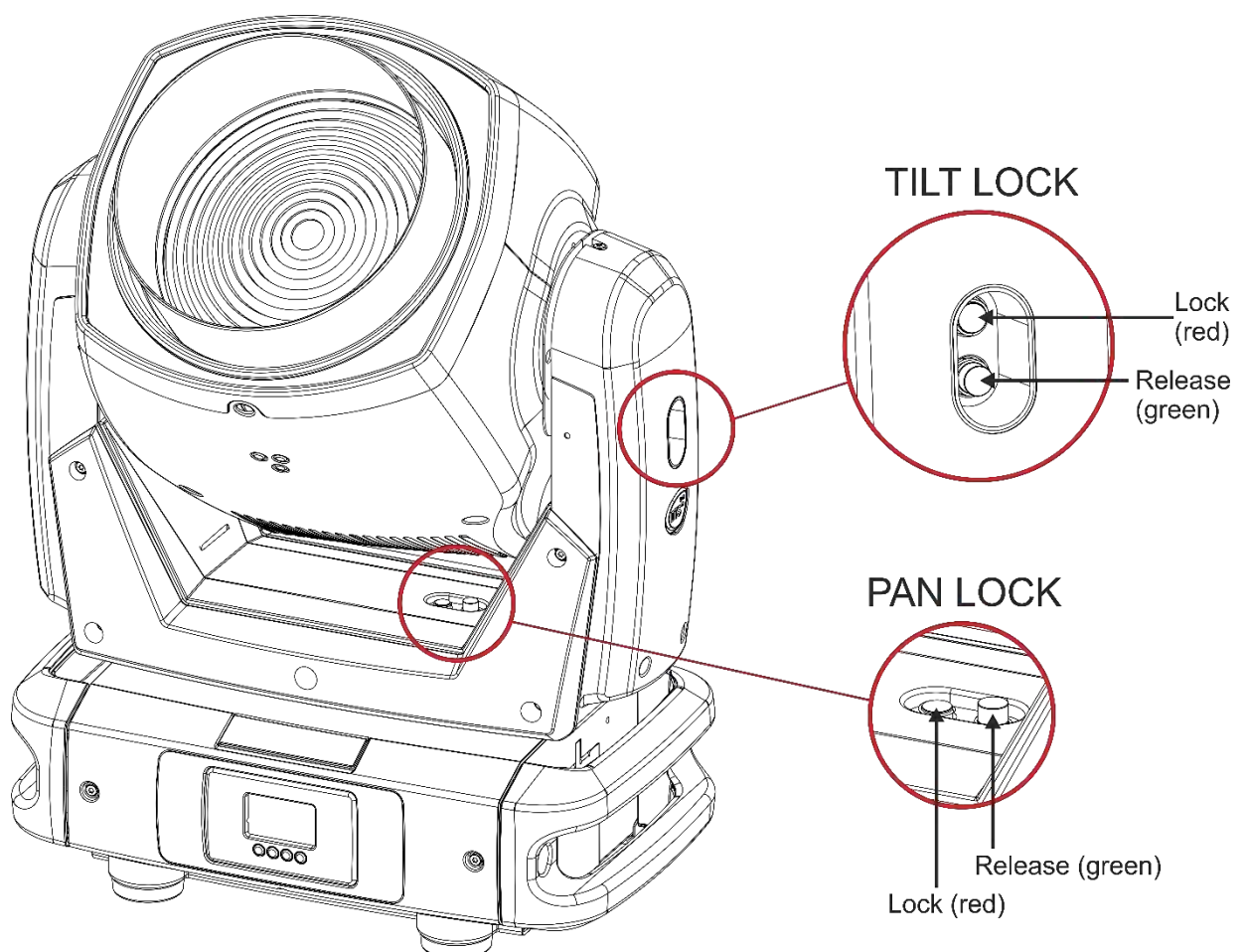


IN ORDER TO PREVENT DAMAGE TO THE UNIT, DTS RECOMMEND TO PRESS FOR TWO SECONDS ANY DISPLAY BUTTON TO RESET THE TOP HAT POSITION, BEFORE EXTRACTING THE PROJECTOR FROM THE PACKAGING.

8 Pan / Tilt lock

When moving or servicing the unit, you can lock the pan and tilt movement.

To lock or release the pan and tilt, follow the instructions as seen in the following picture



9 Included Items

- 1x PowerCON TRUE1 female connector
- 2x Omega clamp with ¼- turn “Fast Lock” connection
- 1x Alchemy EZ-shell – 550x490x670 mm – 2pcs needed in each flightcase

10 Accessories on Request

- Aliscaf clamp for Ø 48-51 mm tube - max load 200 Kg (code 0521A033)

Indicated for any kind of loads, both vertical and/or horizontal.

- Professional G-QUICK clamp - max load 100 Kg (code 0521A037)

Not indicated for horizontal load.

- Safety cable 5 x 600 mm (Max load 60 Kg) (code 0521A038)
- DTS firmware uploader dongle (code 03.LA.206)
- Flightcase for 2 units (code 0521C073)

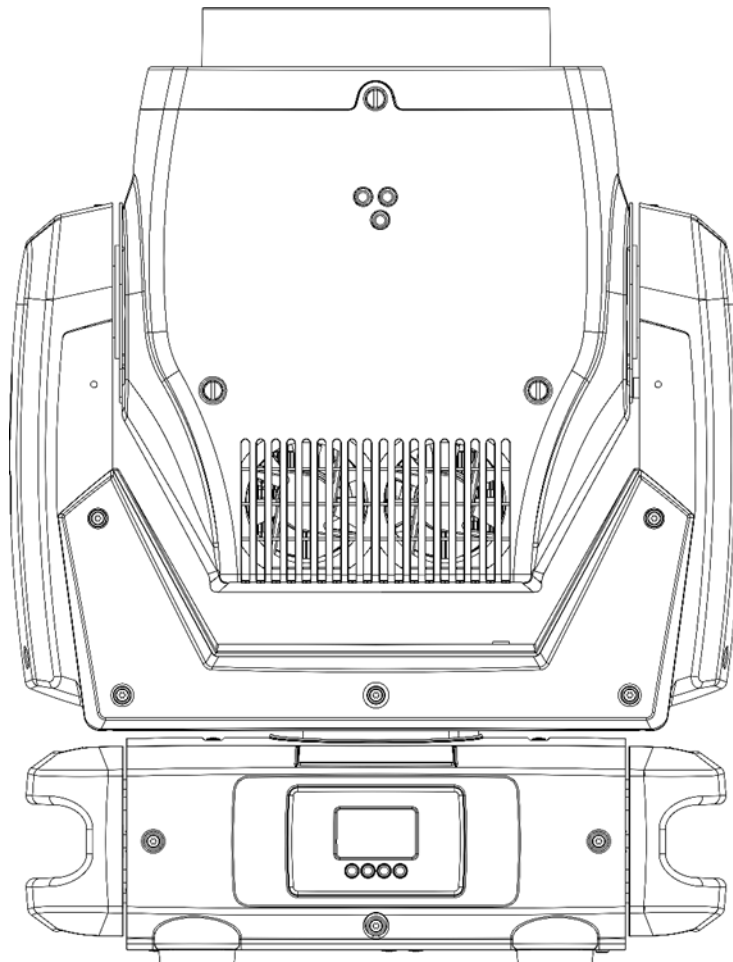
11 Installation

The unit is suitable for dry locations only.

ALCHEMY 5 may be either floor or ceiling mounted.

11.1 Floor mounting

For floor mounting installations, ALCHEMY 5 is supplied with four rubber mounting feet at the base, as seen in the following picture.



11.2 Ceiling mounting

For ceiling mounting installations, DTS recommend the use of appropriate clamps to fix the unit to the mounting surface.

The supporting structure from which the unit is hung should be capable of bearing the weight of the unit, as should any clamps used to hang it.

The structure should also be sufficiently rigid as not to move or shake whilst the ALCHEMY 5 is moving.

Four ¼-turn “Fast Lock” connections placed in the base of the unit allow ALCHEMY 5 to hang by using two Omega brackets (provided with the unit) in conjunction with an Aliscraf clamp (available on demand).

11.3 Safety Cable

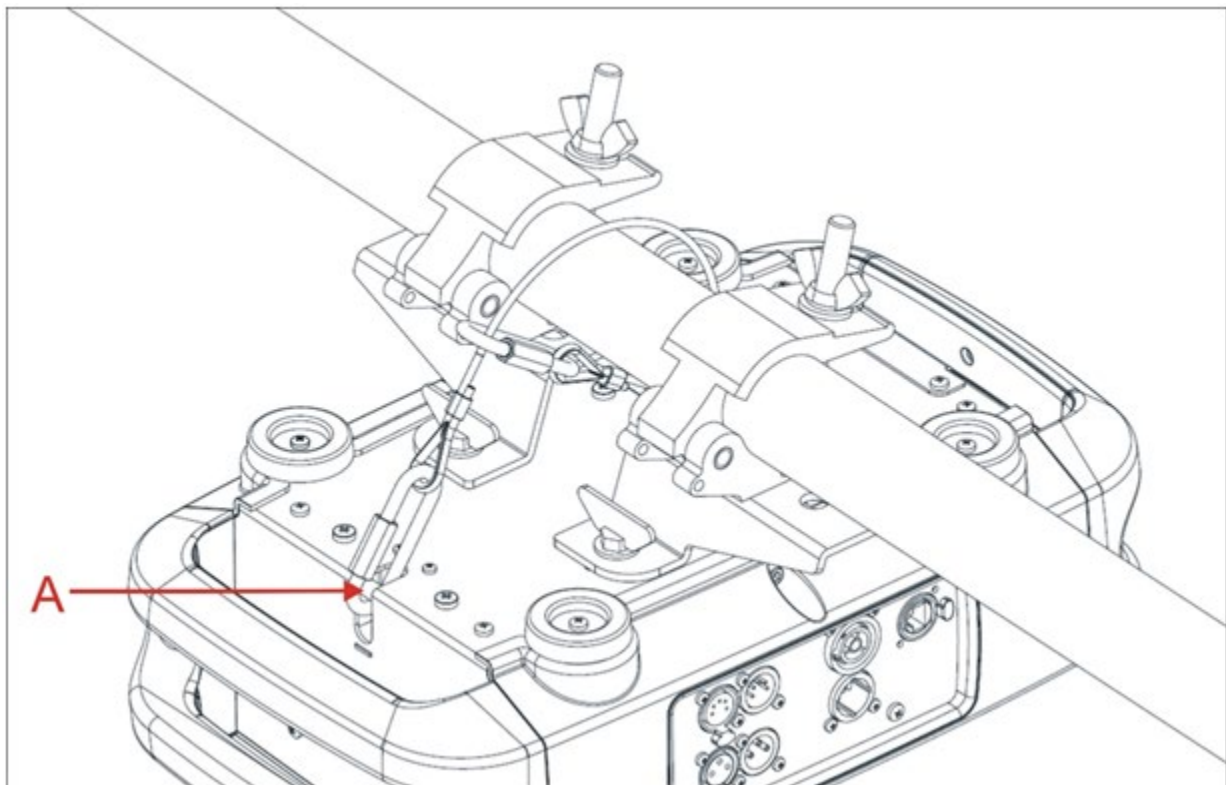


A safety cable must be securely fixed to ALCHEMY 5 and to the suspension truss in order to avoid the fixture accidentally falling, should the main fixing point fail.

The safety cable used must be approved by a notified body according to IEC 60598-2-17 and must be capable of bearing at least 10 times the weight of the unit. For more information, please refer to an authorized DTS service center.

A suitable safety cable (code 0521A038) is available on demand.

You may attach the safety cable to the attachment point (A) located at the base of the fixture, as shown in the picture below.



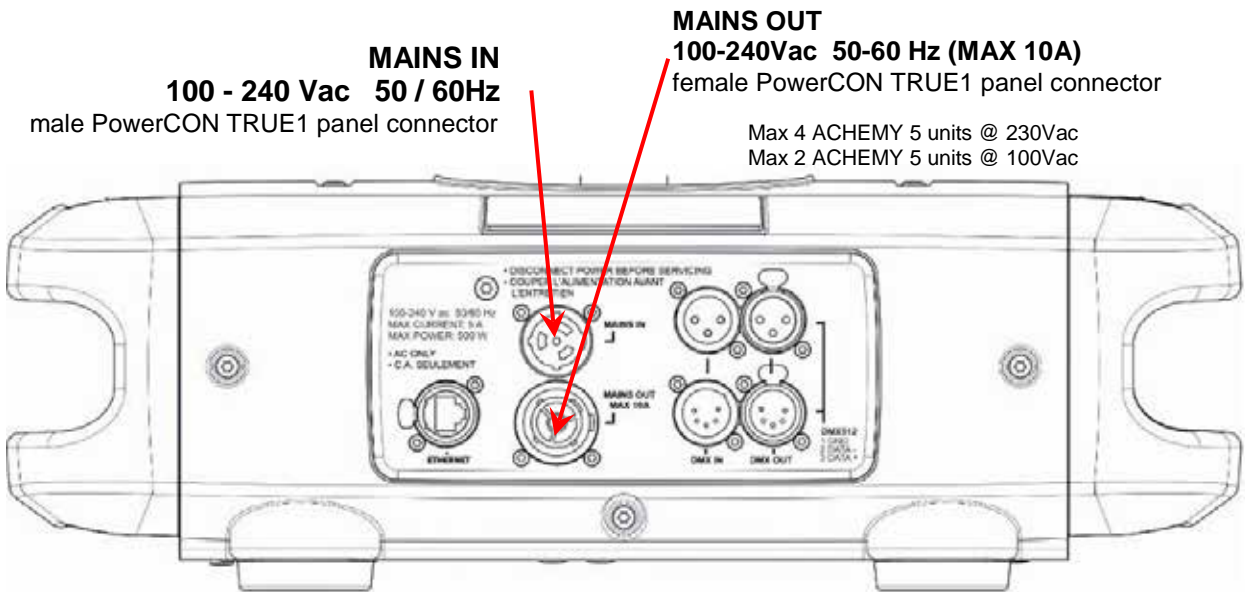
12 Mains Connection

ALCHEMY 5 operates at 100-240 Vac 50/60 Hz.

Prior to connecting the unit to the mains, ensure that your local mains electricity supply properties are compatible with those of the product.

For connection purposes, ensure that your plug is capable of supporting 2,2 A at 230 Vac or 5 A at 100 Vac for each unit connected.

Strict adherence to regulatory norms is strongly recommended.



12.1 Protection



The use of a thermal magnetic circuit breaker is recommended for each unit.

Class I appliance: connection must be made to a mains system fitted with an efficient earthing.

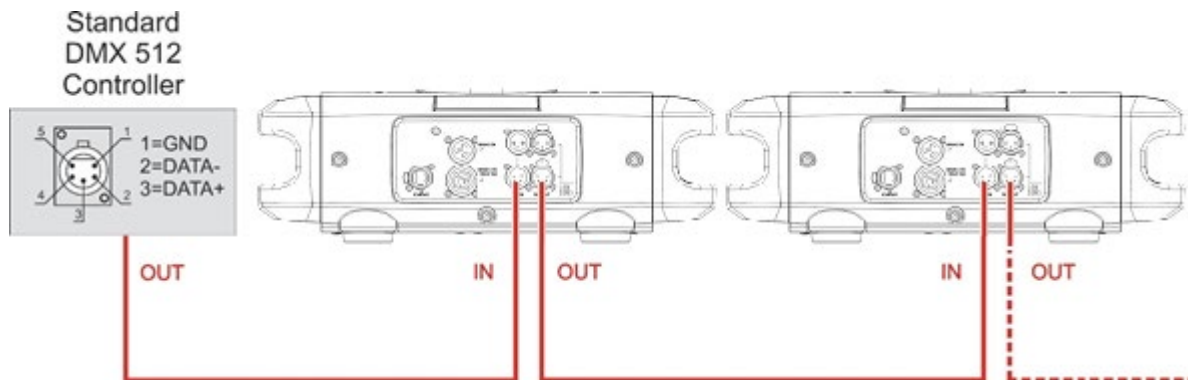
13 DMX Signal Connection

- The unit operates using the digital USITT DMX512 signal.
- Connection between the light controller and the projector, or between projectors, must be carried out using a two-pair screened \varnothing 0.5 mm cable, and a XLR 5 or 3 pins connector.
- Ensure that the conductors do not touch each other. Do not connect the ground cable to the XLR chassis. The housing of the plug must be isolated.
- Connect the light controller to the DMX IN panel connector of the projector; to create a link to the next projector, simply connect the DMX OUT plug of the former to the DMX IN plug of the new fixture in line.

Following this procedure, all the projectors will be cascade connected.

PS. *If the display showing the DMX address flashes, then one of the following errors has occurred:*

- DMX signal not present
- DMX reception problem

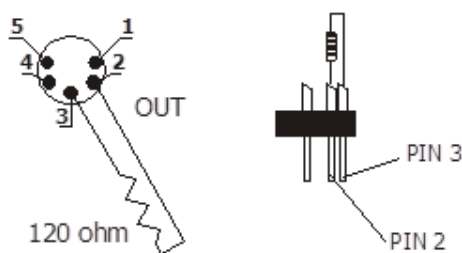


13.1 DMX terminator

The use of a DMX terminator is recommended.

The DMX terminator is a male XLR 3- or 5-pins connector with a 120 Ω resistor between pin 2 and pin 3.

The DMX terminator must be plugged in into the last unit's DMX OUT panel connector of the DMX line.



Place a 120 Ω resistor between pin 2 and 3 of a male XLR connector;

Plug the resistor into the DMX OUT panel connector of the last unit connected to the DMX line.

13.2 DMX Modes

ALCHEMY 5 can be used in five different DMX modes:

- CCT (Default)
- Advanced
- Basic
- Expo
- CMY Emulation

e.g., when using the unit in “CCT” (Default) mode (20 DMX channels), set the following addresses on the light desk as shown below:

- Projector 1 A001
- Projector 2 A021
- Projector 3 A041
- A....
- Projector 6 A101

If you want to select the next projector, just add “20” to the former DMX address

13.3 Setting Up the DMX Address

- 1 Press the UP and DOWN key until you reach the desired DMX address. The numbers on the display will start flashing (new DMX address hasn't yet been set).
- 2 Press ENTER to confirm your selection. The numbers on the display will stop flashing; the projector is now set to the new DMX address.

TIP: if you keep pressed down the UP or DOWN keys, address scrolling will be quicker allowing thus for a faster selection.

14 Art-Net / sACN Signal Connection

ACHEMY 5 can be controlled through Art-Net / sACN signals.

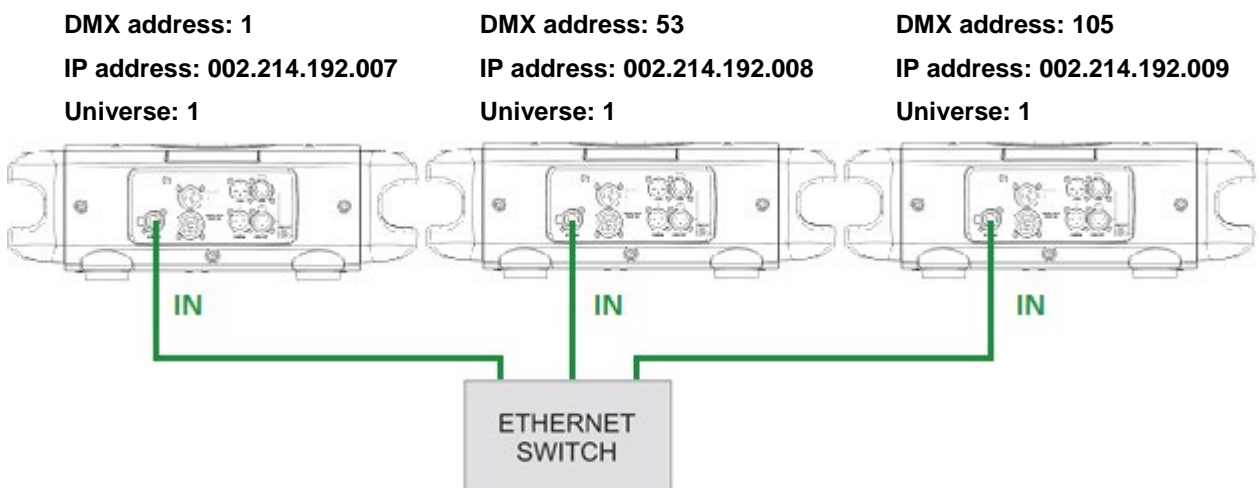
Connection between the light controller and the projector must be carried out using a category 5 network cable and a standard RJ45 connector.

14.1 Direct Ethernet Operation

For direct Ethernet operation, connect the light controller's Art-Net / s-ACN output signal via Ethernet switch to each unit's Ethernet RJ45 IN connector.

For each unit, scroll to "NETWORK" menu (refer to the paragraph "Display Function" for further details):

- Inside the "INPUT" menu, select "Art-Net" or "sACN" as input control signal.
- Inside the "IP ADDRESS MODE" menu, select "Default" or "Static" mode.
- Inside the "ETH TO DMX" menu, select OFF.
- Set the IP address and Net Mask. **IP address must be different for each unit on a network.**
- Set the Art-Net or sACN Universe.



14.2 Ethernet to RDM/DMX Operation

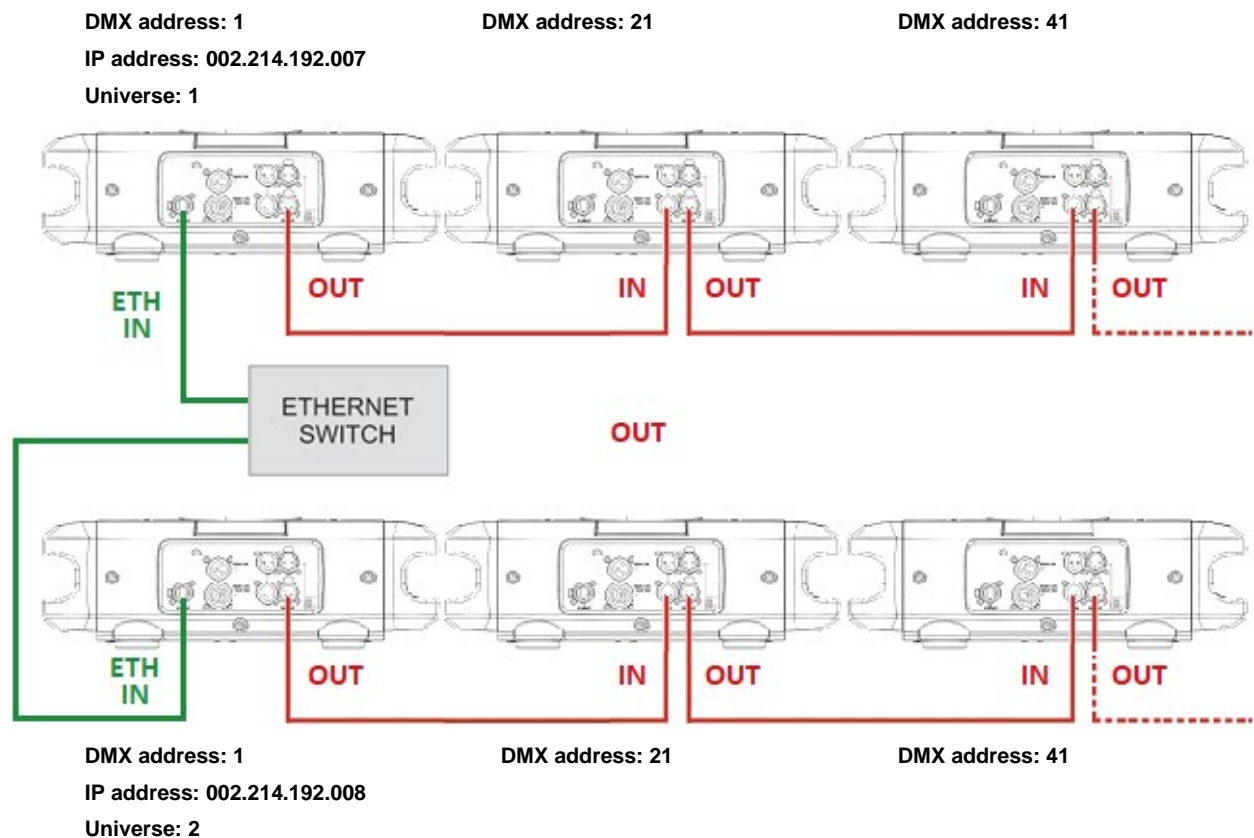
For Ethernet to RDM/DMX operation, connect the light controller's Art-Net / s-ACN output signal via Ethernet switch to the Ethernet RJ45 input connector of the first unit only.

In this configuration, the first unit works as an Ethernet-to-DMX converter and sends RDM/DMX signal to its

DMX output connector. All the other units must be connected as a DMX chain with standard DMX settings.

Only for the first unit, scroll until reaching “NETWORK” menu (refer to DISPLAY FUNCTIONS for details):

- Inside the “INPUT” menu, select “Art-Net” or “sACN” as input control signal.
- Inside the “IP ADDRESS MODE” menu, select “Default” or “Static” mode.
- Inside the “ETH TO DMX” menu, select OFF.
- Set the IP address and Net Mask. **IP address must be different for each unit on a network.**
- Set the Art-Net or sACN Universe.



The use of a DMX terminator is recommended.

For further information, please refer to page 17 paragraph “12.1 DMX terminator”

15 RDM Functions

RDM Device Model ID: 0x0016

By using an RDM controller, it is possible to read/set DMX addresses, DMX modes and other parameters.

ALCHEMY 5 accepts the following RDM commands:

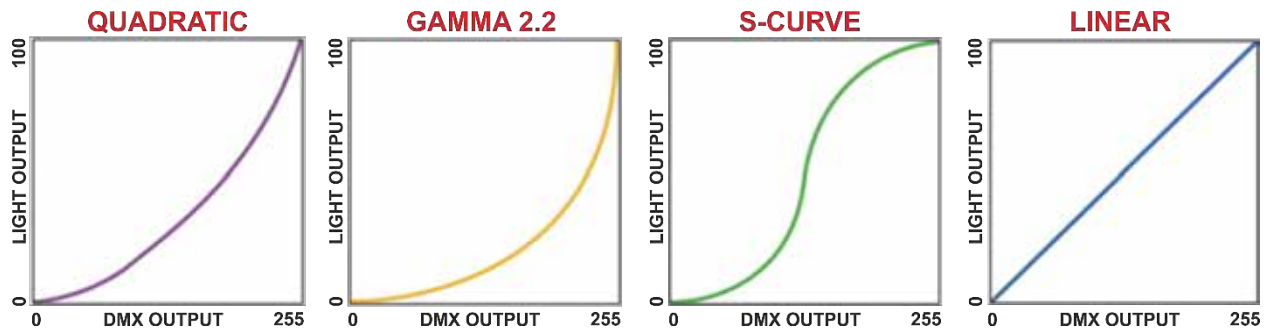
RDM PID DESCRIPTION	RDM PID VALUE	GET	SET
Category – Network Management			
DISC_UNIQUE_BRANCH	0x0001		
DISC_MUTE	0x0002		
DISC_UN_MUTE	0x0003		



RDM PID DESCRIPTION	RDM PID VALUE	GET	SET
Category – Status Collection			
STATUS_MESSAGES	0x0030	X	
STATUS_ID_DESCRIPTION	0x0031	X	
Category – RDM Information			
SUPPORTED_PARAMETERS	0x0050	X	
PARAMETERS_DESCRIPTION	0x0051	X	
Category – Product Information			
DEVICE_INFO	0x0060	X	
DEVICE_MODEL_DESCRIPTION	0x0080	X	
MANUFACTURER_LABEL	0x0081	X	
DEVICE_LABEL	0x0082	X	X
SOFTWARE_VERSION_LABEL	0x00C0	X	
Category – DMX512 Setup			
DMX_PERSONALITY	0x00E0	X	X
DMX_PERSONALITY_DESCRIPTION	0x00E1	X	
DMX_START_ADDRESS	0x00F0	X	X
Category – Sensors			
SENSOR_DEFINITION	0x0200	X	
SENSOR_VALUE	0x0201	X	X
Category – Power/Lamp Settings			
DEVICE_HOURS	0x0400	X	
LAMP_HOURS	0x0401	X	
Category – Display Settings			
DISPLAY_INVERT	0x0500	X	X
Category – Configuration			
PAN_INVERT	0x0600	X	X
TILT_INVERT	0x0601	X	X
Category – Control			
IDENTIFY_DEVICE	0x1000	X	X
Category – Dimmer Settings			
CURVE	0x0343	X	X
CURVE_DESCRIPTION	0x0344	X	
OUTPUT_RESPONSE_TIME	0x0345	X	X
OUTPUT_RESPONSE_TIME_DESCRIPTION	0x0346	X	
MODULATION_FREQUENCY	0x0347	X	X
MODULATION_FREQUENCY_DESCRIPTION	0x0348	X	
Category – Custom PID			
ETHERNET_TO_DMX	0x8000	X	X
INPUT_PRIORITY	0x8001	X	X
DISPLAY_STANDBY	0x8002	X	X

FURTHER RDM MESSAGES:

CURVE	CURVE DESCRIPTION
1	LINEAR
2	QUADRATIC (default)
3	GAMMA 2.2
4	S-CURVE



OUTPUT RESPONSE TIME	OUTPUT RESPONSE TIME DESCRIPTION
1	SMOOTH OFF
2	SMOOTH 1 (25 ms)
3	SMOOTH 2 (50 ms)
4	SMOOTH 3 (75 ms)
5	SMOOTH 4 (100 ms) (default)
6	SMOOTH 5 (125 ms)
7	SMOOTH 6 (150 ms)
8	SMOOTH 7 (175 ms)
9	SMOOTH 8 (200 ms)
10	SMOOTH 9 (225 ms)
11	SMOOTH 10 (250 ms)
12	SMOOTH 11 (275 ms)
13	SMOOTH 12 (300 ms)
14	SMOOTH 13 (325 ms)
15	SMOOTH 14 (350 ms)
16	SMOOTH 15 (375 ms)
17	SMOOTH 16 (400 ms)
18	SMOOTH 17 (425 ms)
19	SMOOTH 18 (450 ms)
20	SMOOTH 19 (475 ms)
21	SMOOTH 20 (500 ms)

MODULATION FREQUENCY	MODULATION FREQUENCY DESCRIPTION
1	610 Hz
2	800 Hz
3	1.000 Hz (default)
4	1.500 Hz
5	2.000 Hz
6	2.500 Hz
7	3.000 Hz

MODULATION FREQUENCY	MODULATION FREQUENCY DESCRIPTION
8	3.500 Hz
9	4.000 Hz
10	4.500 Hz
11	5.000 Hz

RDM MANUFACTURER'S SPECIFIC PIDs:

RDM CUSTOM PID	DESCRIPTION
0x8000_ETHERNET_TO_DMX	Set parameter NETWORK – ETH TO DMX 0 = OFF (default) 1 = ON
0x8001_INPUT_PRIORITY	Set parameter NETWORK – PRIORITY 0 = DMX PORT (default) 1 = ETHERNET PORT
0x8002_DISPLAY_STANDBY	Set parameter DISPLAY – STANDBY 0 = DISABLED (default) 1 = ENABLED 2 = FORCED ENABLED

RDM STATUS MESSAGE IDs:

Status Message ID	Data Value 1	Data Value 2	Status ID Description
0x8000			ERROR PAN MOTOR/ENCODER
0x8001			ERROR PAN LOCKED
0x8002			ERROR PAN ZERO SENSOR
0x8003			ERROR TILT MOTOR/ENCODER
0x8004			ERROR TILT LOCKED
0x8005			ERROR TILT ZERO SENSOR
0x8006			ERROR DMX ADDRESS
0x8007			ERROR PARAMETERS MEMORY
0x8008			ERROR SUPPLY VOLTS TOO LOW
0x8009			ERROR SUPPLY VOLTS TOO HIGH
0x800A			ERROR BUS ARTNET CARD
0x800B			ERROR BUS LED DRIVER CARD
0x800C	card number		ERROR BUS MOTORS CARD %d
0x8013			ERROR ZOOM
0x801B			ERROR EFFECTS
0x801C	prism number		ERROR PRISM %d
0x801D	prism number		ERROR PRISM %d INDEX
0x801F			ERROR TEMPERATURE LED MODULE
0x8020	sensor number		ERROR TEMPERATURE LED DRIVER %d
0x8021			ERROR TEMPERATURE MICRO
0x8022			ERROR RED
0x8023			ERROR GREEN
0x8024			ERROR BLUE
0x8025			ERROR AMBER
0x800E			ERROR CYAN
0x8026			ERROR LIME

Status Message ID	Data Value 1	Data Value 2	Status ID Description
0x8028	1=data not present		ERROR COLOUR DATA INTEGRITY CODE %d* (In case of LED Driver PCB replacement, these RDM Status Message IDs will be shown.)
	2=read error		
	3=incomplete data		

16 Updating the Firmware

In order to update to the latest firmware release of the ALCHEMY 5, you will need:

- DTS firmware uploader dongle (code 03.LA.206).
- “DTS Firmware Upgrade Utility v.2.02” program installed on PC (Windows OS).
- Latest firmware release available for the ALCHEMY 5 unit.

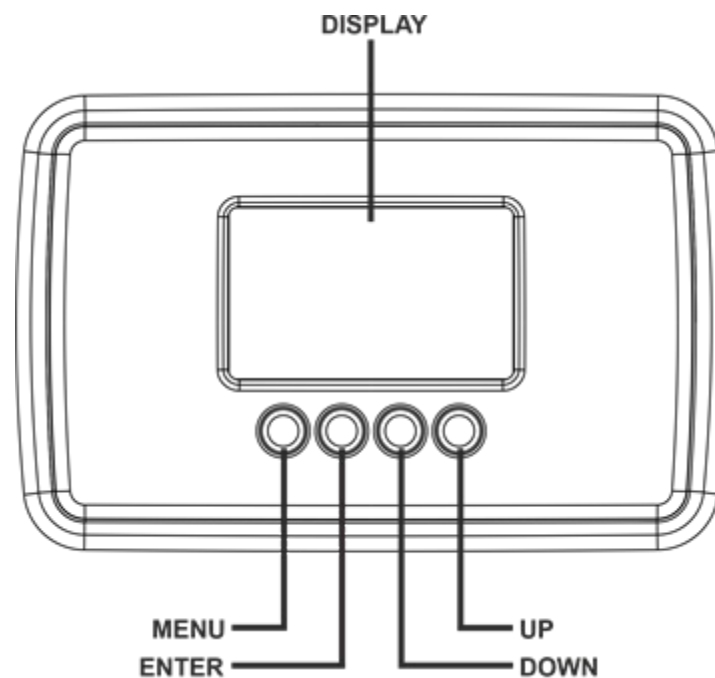
Updating to the latest firmware release:

To perform the update, please follow the procedure as described below:

- 1 Connect the DTS Firmware Uploader Dongle to a spare USB port on the PC.
- 2 Connect the unit’s DMX IN to the DTS Firmware Uploader Dongle’s DMX OUT with a standard DMX cable and turn on the fixture.
- 3 Send the new firmware release into the unit by using “DTS Firmware Upgrade Utility v.2.02” program. At the end of the procedure, the unit will commence a reset.

For more information, please refer to an authorized DTS service center.

17 Display Functions



The ALCHEMY 5 display panel shows all the available control menus.

By selecting the available functions on these menus, you will be able to change the fixture’s settings and behavior.

Beware that changing these settings may vary the operating functions of the unit so that it may not respond correctly to the signal given to it. Carefully read the instructions and tables below before carrying out any variations or selections.

MENU	<ul style="list-style-type: none"> • To access the control menus in the display panel. • To return to the previous level in the menu structure without saving any changes. • To exit the menus.
ENTER	<ul style="list-style-type: none"> • To select any desired menu. • To confirm any selection made or save any changes.
UP / DOWN	<ul style="list-style-type: none"> • To navigate the menus' structure. • To scroll between any values.

MOTORS FIRMWARE RELEASE	14
LED FIRMWARE RELEASE	1.02
RDM Device Model ID	0x0016
DMX Personality IDs	0x01 "CCT" 0x02 "ADVANCED" 0x03 "BASIC" 0x04 "EXPO" 0x05 "CMY EMULATION"

“DISPLAY KEY-LOCK” FUNCTION

Display “key-lock” function can be enabled/disabled by contemporary pressing ENTER + DOWN keys for 3 seconds.



ZERO SKIP” FUNCTION

“Zero skip” function can be activated by contemporary pressing MENU + UP during initial reset.

This function allows to have the display ON and all motors OFF. This can be useful when the unit, while still being inside the flightcase, needs to be DMX-addressed or when its other parameters need to be set.

MAIN MENU	LEVEL 1	LEVEL 2	LEVEL 3	FUNCTION
NETWORK	INPUT	DISABLED		Allows to disable Ethernet operation. (Default).
		ARTNET		Allows to select Art-Net as input control signal protocol.
		SACN		Allows to select sACN as input control signal protocol.

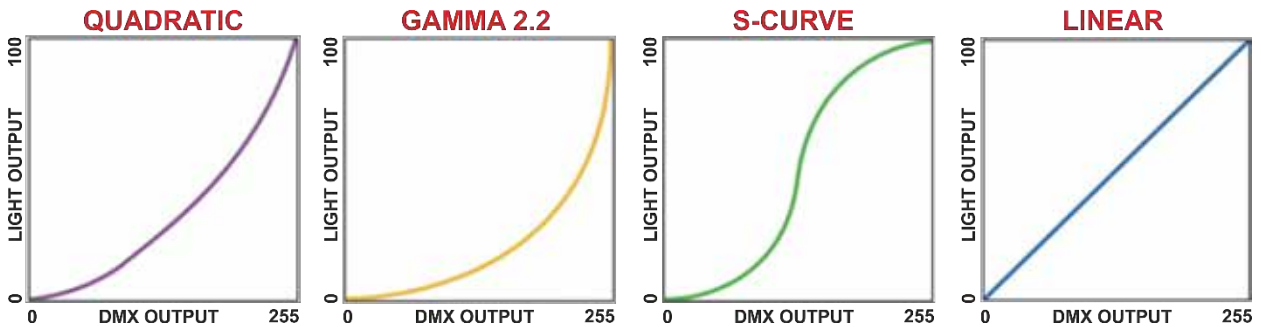
MAIN MENU	LEVEL 1	LEVEL 2	LEVEL 3	FUNCTION
	IP ADDR MODE	DEFAULT		Allows to select the mode to set the IP address and the Net Mask. Fixed IP address with manual setting of first byte only and fixed Net Mask (Default).
		STATIC		Manual setting of IP address and Net Mask.
	DEFAULT IP IP: 2.214.192.7 MASK: 255.0.0.0			Fixed IP address and Net Mask. It is possible to set only first byte of the IP address. IP address must be different for each unit on a network.
	ARTNET UNIV.	00000 - 32767		Allows to set the Art-Net Universe (range 0 ÷ 32767).
	SACN UNIVERSE	00001 - 63999		Allows to set the sACN Universe (range 1 ÷ 63999).
	PRIORITY	DMX512		Allows to set the priority between input control signals when the unit is connected via DMX and via ETHERNET at the same time. RDM/DMX signal has the priority on the Art-Net / sACN signal (Default).
		ETHERNET		Art-Net / sACN signal has the priority on the DMX signal.
	ETH TO DMX	OFF		Allows to enable ETHERNET to RDM/DMX operation. OFF = Default.
		ON		In this configuration the first unit works as an Ethernet to DMX converter and sends RDM/DMX signal to its DMX output connector.
	NO SIGNAL	KEEP LAST		Allows to set the desired unit's behavior in case Art-Net or sACN signal is missing or not available. Keep last valid Art-Net or sACN signal (Default).
BLACK OUT			Black-out.	
PAN DIRECTION	NORMAL			Allows for selection of the Pan movement. Normal or Reverse. Normal (Default).
	REVERSE			
TILT DIRECTION	NORMAL			Allows for selection of the Tilt movement. Normal or Reverse. Normal (Default).
	REVERSE			
ZOOM DIRECTION	NORMAL			Allows for selection of the Zoom movement. Normal or Reverse. Normal (Default).
	REVERSE			

MAIN MENU	LEVEL 1	LEVEL 2	LEVEL 3	FUNCTION
OPERATING MODE	SILENT			Reduced Pan-Tilt-Zoom-Fans speed for low noise operation (Default).
	STANDARD			Pan-Tilt-Zoom-Fans standard speed.
FAN MODE (FAN MODE will work relatively to OPERATING MODE)	CONSTANT			Fans speed is constant both in SILENT or STANDARD operating mode (Default).
	AUTOMATIC			Automatic fans speed. <u>If LED temperature <40°C:</u> fans OFF. <u>If LED temperature >40°C:</u> If OPERATING MODE = SILENT, fans speed is increased within the values range set in SILENT mode. If OPERATING MODE = STANDARD, fans speed is increased within the values range set in STANDARD mode.
DISPLAY	FLIP	AUTO ON THE GROUND		Reverses display reading depending on the mounting position. Automatic, on the ground, or suspended. Automatic (Default).
		SUSPENDED		
		DISABLED		
	STANDBY	ENABLED		Display stand-by disabled (Default). Display goes OFF after 5 seconds.
		FORCED EN.		Display forced on OFF even if control signal is missing or error messages are shown.
		CONTRAST	20 - 35	Display contrast regulation. Range 20-35. Default = 25.
DMX MODE Personality	CCT 20 channels			Allows to select CCT mode (20 DMX channels). Default.
	ADVANCED 28 channels			Allows to select ADVANCED mode (28 DMX channels).
	BASIC 23 channels			Allows to select BASIC mode (23 DMX channels).
DMX MODE Personality	EXPO 13 channels			Allows to select EXPO mode (13 DMX channels).
	CMY EMULATION 23 channels			Allows to select CMY EMULATION mode (23 DMX channels).
NO DMX ACTION	KEEP LAST DMX			Allows to set the desired unit's behavior in case DMX signal is missing or not available. Keep last valid DMX signal (Default).

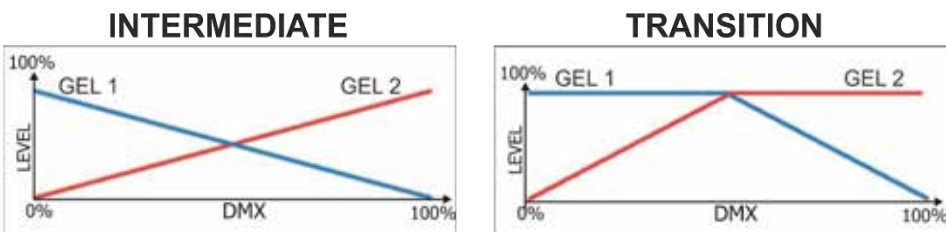
MAIN MENU	LEVEL 1	LEVEL 2	LEVEL 3	FUNCTION
	PROGRAM 1-48	1 - 48		48 pre-programmed steps. Speed time values (range 0.5x – 3x) selectable by user (default 1x).
	SINGLE CUE	RESTORE DEF.		To restore to default parameter settings.
		PAN MSB	0 - 255	Fixed cue with values selectable by user. Default = 128
		PAN LSB	0 - 255	Default = 128
		TILT MSB	0 - 255	Default = 128
		TILT LSB	0 - 255	Default = 128
		SPEED MOVEMENT	0 - 255	Default = 0
		SHUTTER	0 - 255	Default = 15
		DIMMER MSB	0 - 255	Default = 255
		DIMMER LSB	0 - 255	Default = 255
		CCT	0 - 255	Default = 0
		GEL LIBRARY	0 - 255	Default = 0
		RED	0 - 255	Default = 255
		GREEN	0 - 255	Default = 255
		BLUE	0 - 255	Default = 255
		AMBER	0 - 255	Default = 255
		CYAN	0 - 255	Default = 255
		LIME	0 - 255	Default = 255
		FROST/COL.	0 - 255	Default = 0
	BEAM SHAPER	0 - 255	Default = 0	
BEAM SHP R-I	0 - 255	Default = 0		
ZOOM	0 - 255	Default = 128		
BLACKOUT			Black-out.	
RESET BY DMX	ENABLED			Reset via DMX enabled (Default).
	DISABLED			Reset via DMX disabled.
	NOW			Instant unit motors reset.
LED	SMOOTH	OFF - 20		DIMMER channel reaction (in ms) OFF = Instant 4 = 100 ms smooth response (Default). 20 = 500 ms smooth response.
LED	GAMMA CORR.	QUAD 2.0		Allows to set quadratic current output for LED (Default).
		2.2		Allows to set gamma curve 2.2 current output.
		S-CURVE		Allows to set S-curve for emulation of tungsten halogen lamps dimming response.
		LINE		Allows to set linear light output.

MAIN MENU	LEVEL 1	LEVEL 2	LEVEL 3	FUNCTION
	FREQUENCY	610 - 5000 HZ		Allows to adjust the PWM frequency value (Hz) in order to reduce flickering in the process of your camera recordings. Range = 610 Hz – 5 KHz Default = 1000 Hz
	TUNGSTEN EMU.	DISABLED		Allows to enable Tungsten Emulation. Variation in the dimmer intensity will affect CCT values. Disabled (Default).
		ENABLED		
	CROSSFADE	INTERMEDIATE		Allows to set Crossfade Intermediate for 'GELS X-FADE' channel 12 of "ADVANCED" DMX mode (Default).
		TRANSITION		Allows to set Crossfade Transition for 'GELS X-FADE' channel 12 of "ADVANCED" DMX mode.

"GAMMA CORR." GRAPHICS:



"CROSSFADE" GRAPHICS:



MAIN MENU	LEVEL 1	LEVEL 2	LEVEL 3	FUNCTION
SYSTEM INFO	SOFTWARE	ALCHEMY 5 16 SEPT 2020 MOTOR: V.14 LED: V.1.02		Unit model, motors firmware release date, Motors board and LED Driver board firmware release.
	TEMPERATURES	LED: 041°C DRV-1: 043°C DRV-2: 044°C MICRO: 040°C		LED: LED temperature monitoring. DRV-1: output 1 and output 2 of LED Driver board temperature monitoring. DRV-2: output 3 and output 4 of LED Driver board temperature monitoring. MICRO: Micro controller temperature monitoring.
	TIME COUNTERS	UNIT: 0082H DRIVER: 0080H RED: 0045H GREEN: 0068H BLUE: 0023H AMBER: 0037H CYAN: 0067H LIME: 0058H		Unit, LED Driver board and LED channels life time.
	ADDRESSES	RDM: 0710:00011407		RDM ID.
RESERVED	ENTER CODE 0 – 255 (code 100)	PAN LOCK	NO	Lock the Pan to the desired value. NO = Default.
			YES	
		TILT LOCK	NO	Lock the Tilt to the desired value. NO = Default.
			YES	
		PAN FREE	NO	Remove power to Pan motor. NO = Default.
			YES	
		TILT FREE	NO	Remove power to Tilt motor. NO = Default.
YES				
LOCK DETECTOR	ON	Allows to activate the Lock detector on Pan and Tilt. If for any reason there is something blocking the movement for Pan&Tilt motors during the initial reset (example unit into the flight case and power connected), it automatically will stop to reset Pan&Tilt motors after 5 seconds from the startup and a warning message (Pan locked-Tilt locked) will appear on unit display. ON = Default.		
REBOOT		Unit reboot without needing of turning OFF the unit.		
RESERVED	(ENTER CODE)	EXIT TO MAIN		Exit from Reserved menu.
DEFAULT				To restore factory settings.

MAIN MENU	LEVEL 1	LEVEL 2	LEVEL 3	FUNCTION
MANUAL CONTR.	RESET	HEAD MOTORS		To reset head motors only.
		PAN TILT		To reset Pan and Tilt only.
		ALL MOTORS		To reset all motors.
	RESTORE DEF.			To restore parameters default settings.
	PAN MSB	0 - 255		Manual mode with functions value selectable by user. Default = 128
	PAN LSB	0 - 255		Default = 128
	TILT MSB	0 - 255		Default = 128
	TILT LSB	0 - 255		Default = 128
	SPEED MOVEMENT	0 - 255		Default = 0
	SHUTTER	0 - 255		Default = 15
	DIMMER MSB	0 - 255		Default = 255
	DIMMER LSB	0 - 255		Default = 255
	CCT	0 - 255		Default = 0
	GEL LIBRARY	0 - 255		Default = 0
	RED	0 - 255		Default = 255
	GREEN	0 - 255		Default = 255
	BLUE	0 - 255		Default = 255
	AMBER	0 - 255		Default = 255
	CYAN	0 - 255		Default = 255
	LIME	0 - 255		Default = 255
FROST/COL.	0 - 255		Default = 0	
BEAM SHAPER	0 - 255		Default = 0	
BEAM SHP R-I	0 - 255		Default = 0	
ZOOM	0 - 255		Default = 128	

18 Error Messages

ERROR SHOWN ON DISPLAY	APPEARS WHEN
PAN	-Pan motor fault -Pan encoder fault -Pan motor driver on Pan&Tilt PCB fault -Wiring connection between Pan encoder and Pan&Tilt PCB fault
PAN LOCKED	-Pan locked -Pan motor fault -Pan encoder fault -Pan motor driver on Pan&Tilt PCB fault -Wiring connection between Pan encoder and Pan&Tilt PCB fault
TILT	-Tilt motor fault -Tilt encoder fault -Tilt motor driver on Pan&Tilt PCB fault -Wiring connection between Tilt encoder and Pan&Tilt PCB fault
TILT LOCKED	-Tilt locked -Tilt motor fault -Tilt encoder fault -Tilt motor driver on Pan&Tilt PCB fault -Wiring connection between Tilt encoder and Pan&Tilt PCB fault
PAN ZERO SENSOR LINE	-Pan magnet missing -Pan hall sensor PCB fault -Wiring connection between Pan hall sensor PCB and Pan&Tilt PCB fault
TILT ZERO SENSOR LINE	-Tilt magnet missing -Tilt hall sensor PCB fault -Wiring connection between Tilt hall sensor PCB and Pan&Tilt PCB fault
TEMP. LED MOD.	LED module temperature detected under -10°C or over 80°C. Unit immediately goes in black-out.

TEMP. LED DRV 1	Output from 1 to 4 of LED Driver PCB temperature detected under -10°C or over 90°C. Unit immediately goes in black-out.
TEMP. LED DRV 2	Output from 5 to 8 of LED Driver PCB temperature detected under -10°C or over 90°C. Unit immediately goes in black-out.
TEMP. LED MICRO	Micro controller on LED Driver PCB temperature detected under -10°C or over 80°C. Unit immediately goes in black-out.
R/G/B/A/C/L OPEN <i>(not yet implemented)</i>	LED channel in open circuit. Unit immediately goes in black-out.
R/G/B/A/C/L SHORT <i>(not yet implemented)</i>	LED channel in short circuit. Unit immediately goes in black-out.
SUPPLY VOLTS TOO LOW	PCBs input voltage <46,5Vdc.
SUPPLY VOLTS TOO HIGH	PCBs input voltage >49,5Vdc.
BUS 5 MOTORS CARD	-Pan&Tilt PCB driver fault -5 Motors PCB driver fault -5 Motors PCB input voltage missing -Internal Bus wiring connection fault
BUS LED DRIVER CARD	-Pan&Tilt PCB driver fault -LED Driver PCB driver fault -LED Driver PCB input voltage missing -Internal Bus wiring connection fault
BUS ARTNET CARD	-Pan&Tilt PCB driver fault -Art-Net PCB driver fault -Art-Net PCB input voltage missing -Wiring connection between Art-Net PCB and Pan&Tilt PCB fault
ZOOM DX OR RESET LINE 4	-Zoom DX motor fault -Zoom DX motor driver on 5 Motors PCB fault -Zoom DX magnet missing -Zoom DX hall sensor PCB fault
ZOOM SX OR RESET LINE 3	-Zoom SX motor fault -Zoom SX motor driver on 5 Motors PCB fault -Zoom SX magnet missing -Zoom SX hall sensor PCB fault
EFFECTS OR RESET LINE 2	-Effects wheel motor fault -Effects wheel motor driver on 5 Motors PCB fault -Effects wheel magnet missing -Effects wheel hall sensor PCB fault
PRISM OR RESET LINE 1	-Prism motor fault -Prism motor driver on 5 Motors PCB fault -Prism magnet missing -Prism hall sensor PCB fault
PRISM INDEX OR RESET LINE 5	-Prism Index motor fault -Prism Index motor driver on 5 Motors PCB fault -Prism Index magnet missing -Prism Index hall sensor PCB fault

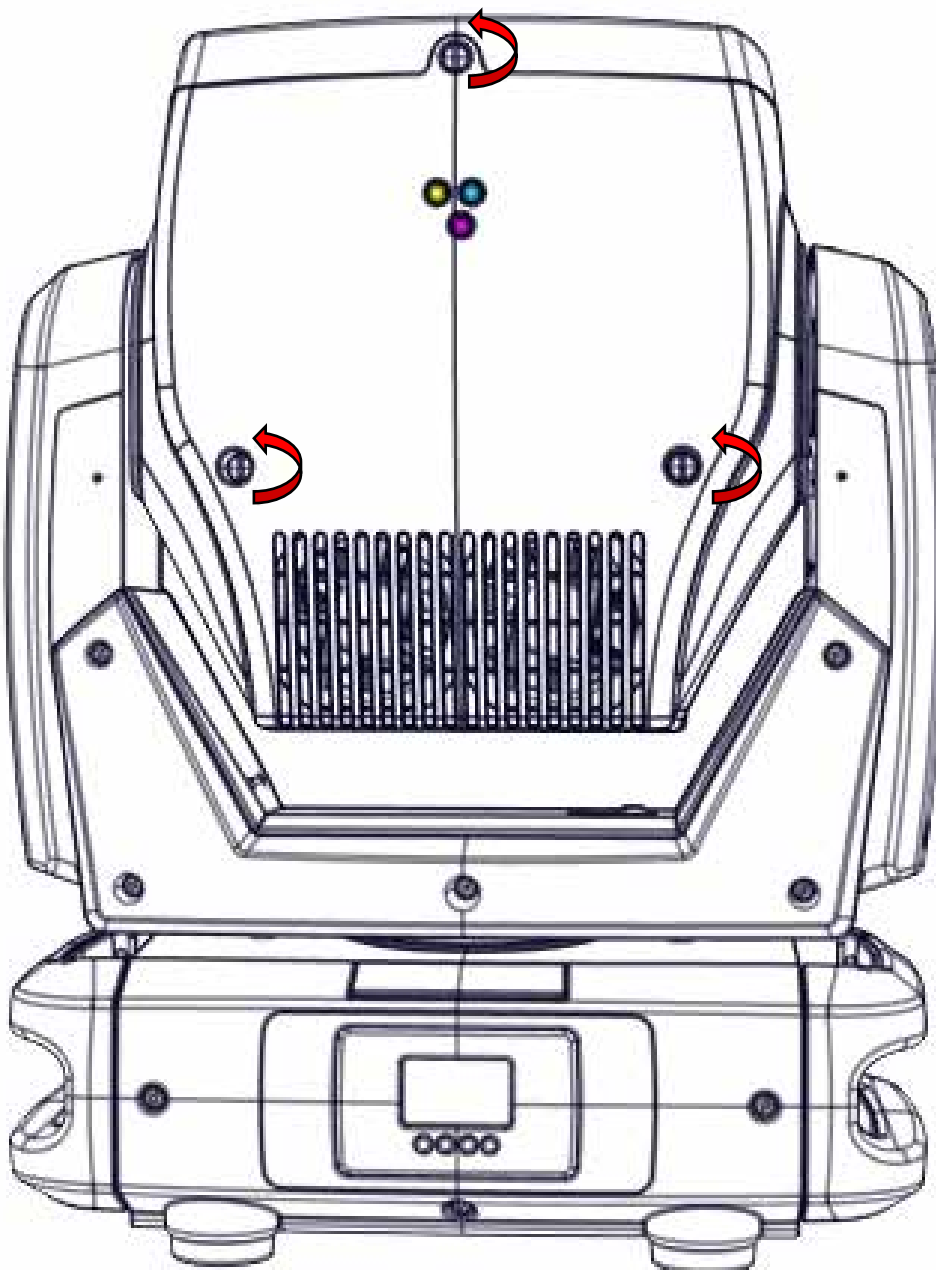
19 Opening the Housing

It is possible to inspect the inside of the projector by removing the covers, as indicated below.

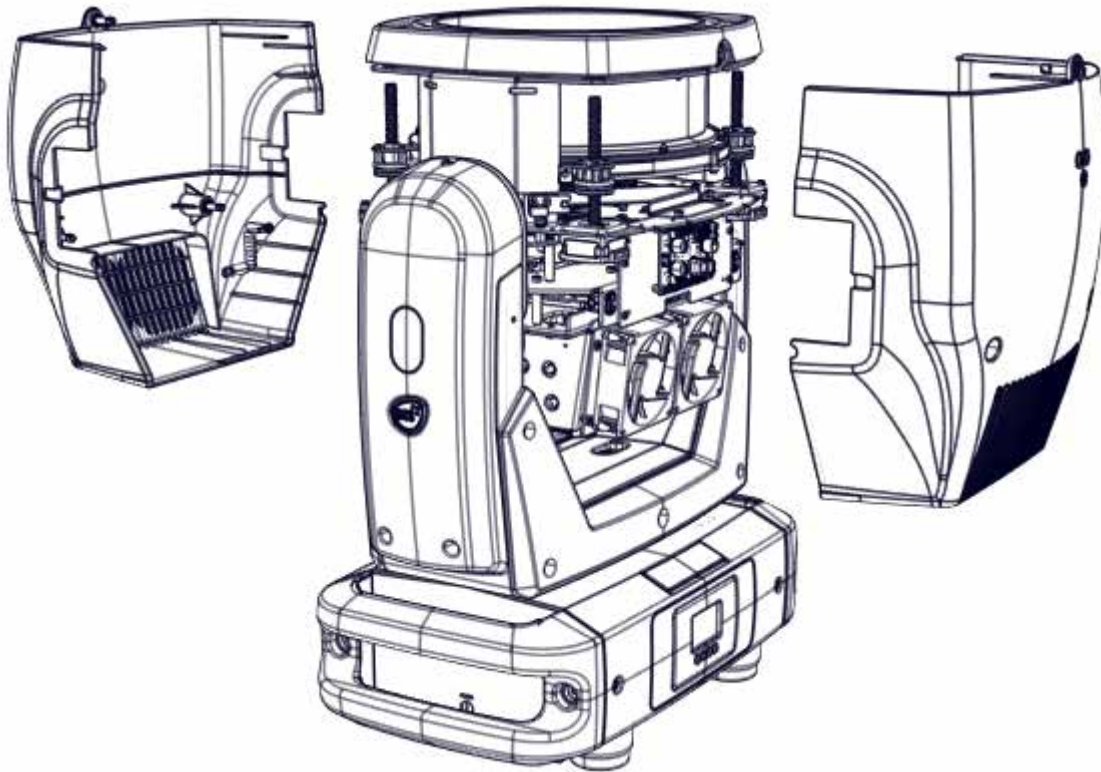


WARNING! Remove mains power prior to accessing the projector's internal components.

- 1) Using a flat bladed screwdriver, loose the four “¼-turn” screws that fix the head covers on both sides.



- 2) Remove each cover, then slide away the protective silicone tube from the safety wire. Unhook the wire in order to access the internal components of the head.



20 Periodic Cleaning



WARNING! Disconnect from mains before servicing.

20.1 Lenses and Filters

Even a fine layer of dust can substantially reduce the luminous output.

Excessive dust, smoke fluid, and particle buildup can degrade and seriously damage lenses and filters.

It is recommended to regularly clean all lenses and glass filters using a soft cotton cloth, dampened with a dedicated lens cleaning solution.

Maintenance period may vary, depending on environmental conditions.

20.2 Fans and Air Passages

The fans and air passages must be cleaned approximately every 6 weeks.

This time period will of course vary depending on the conditions in which the projector is operating.

Suitable instruments for performing this type of maintenance are a brush and a common vacuum cleaner or air compressor.

If necessary, clean the fans and air passages more frequently than suggested.

21 Periodic Check-ups



WARNING! Disconnect from mains before servicing.

21.1 Mechanical Parts

Periodically check all mechanical parts, gears, guides, belts, etc., for wear and tear. Replace them if necessary.

Periodically check the lubrication of all components, particularly the parts subjected to high temperatures.

If necessary, apply suitable lubricant (available from your DTS distributor) where needed.

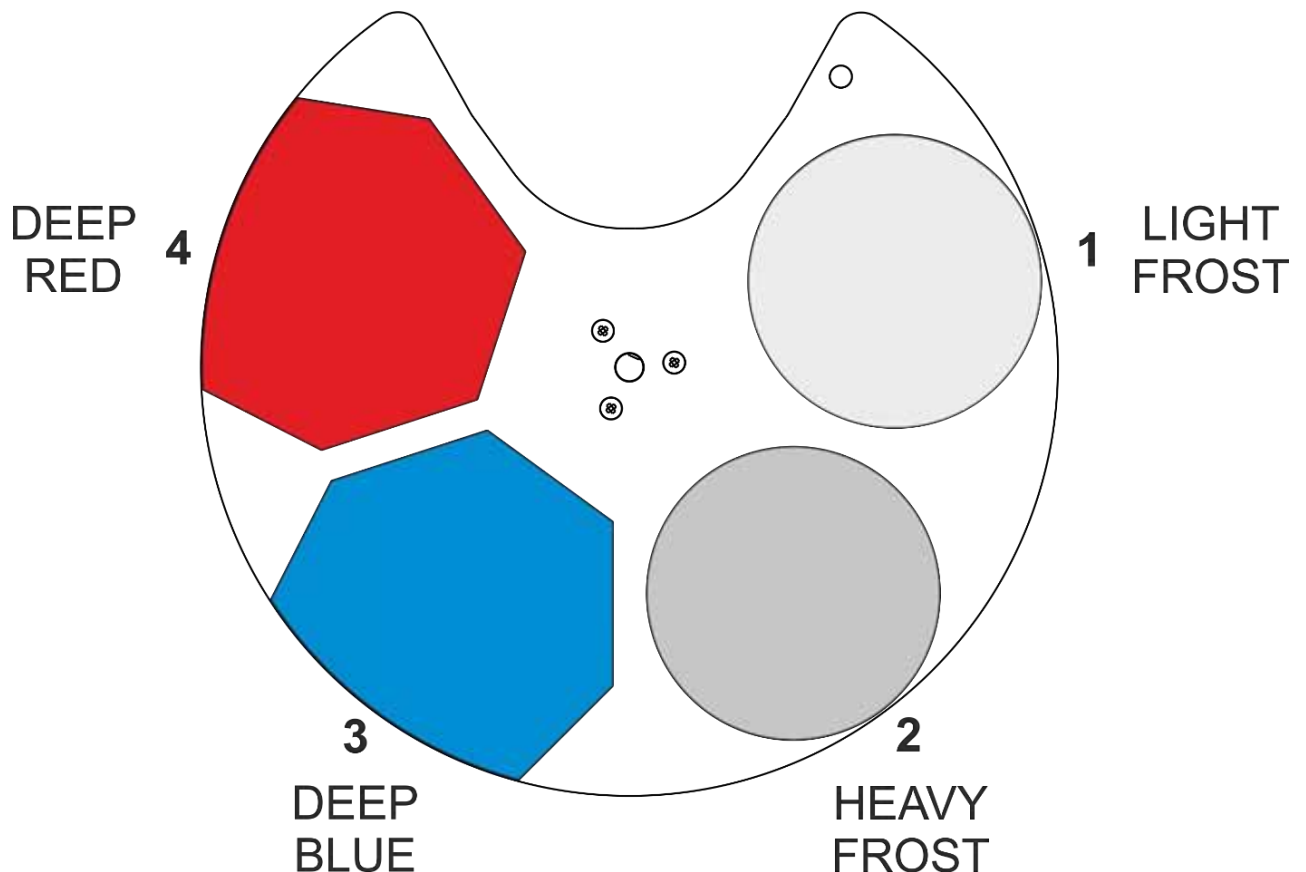
Check the tension of the belts and adjust them where necessary.

21.2 Electrical Components



Check all electrical components for correct earthing and proper connection of all connectors. Refasten where necessary.

22 Frost / Color Wheel





NOTES

ISO 9001:2015

DTS quality system is
certified to the ISO
9001:2015 standard.



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