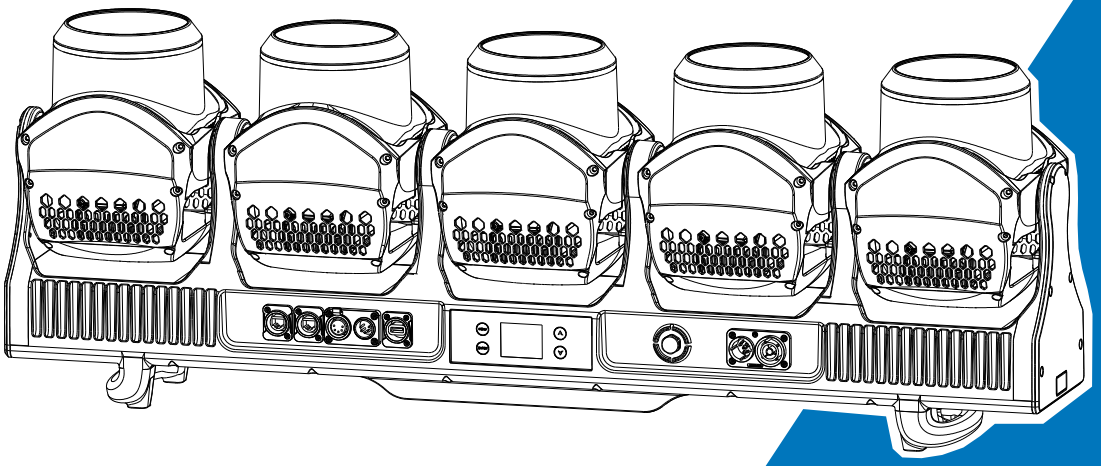
TORNADO



User Manual

Please read the instruction carefully before use

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01/ Safety Information



Please read the instruction carefully which includes important information about the installation, usage and maintenance.

WARNING

Please keep this User Manual for future consultation. If you sell the fixture to another user, be sure that they also receive this instruction manual.

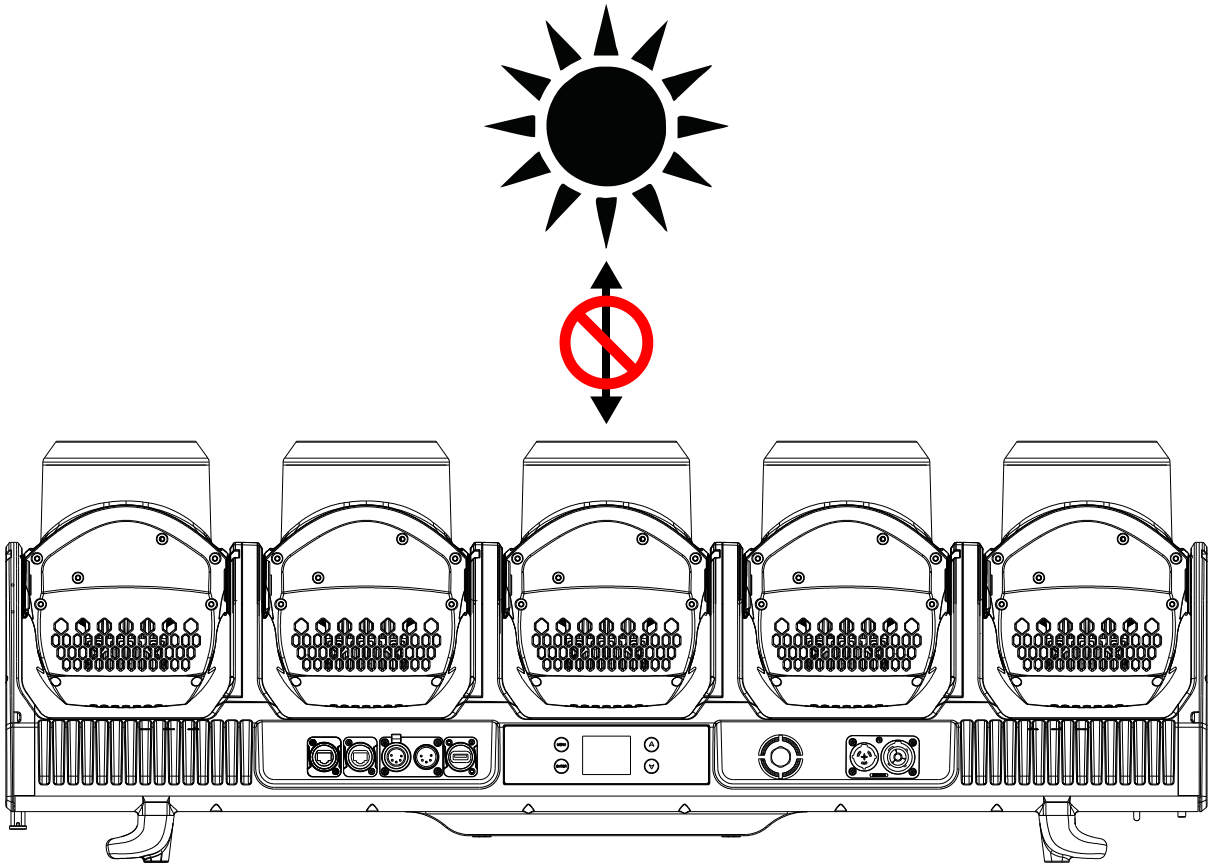
Important:

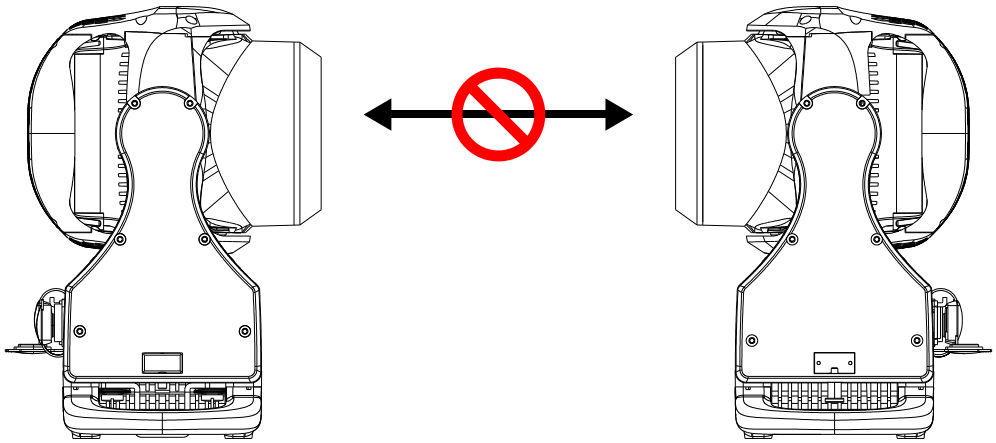
Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.

- Unpack and check carefully to ensure that there is no transportation damage before using the fixture.
- This product is suitable for wet locations. Do not immerse in water.
- DO install and operate by qualified operator.
- DO NOT allow children to operate the fixture.
- Use safety cable when fixing the fixture. Handle the fixture by carrying its base instead of the head only.
- The fixture must be installed in a location with adequate ventilation, at least 50cm from adjacent surfaces.
- Be sure that no ventilation holes are blocked, otherwise the fixture could over heat.
- Before operation, ensure that you are connecting this product to the proper voltage in accordance with the specifications in this manual or on the product's specification label.
- It's important to ground the yellow/green conductor to earth in order to avoid electric shock.
- Minimum ambient temperature TA: -10˚C. Maximum ambient temperature TA: 40˚C. Do not operate this product at a lower or higher temperature.
- DO NOT connect the device to any dimmer pack.
- Keep flammable materials away from the fixture while operating to avoid fire hazard.
- Make sure the power cord is not crimped or damaged; replace it immediately if damaged.
- Fixture's surface temperature may reach up to 75˚C. DO NOT touch the housing bare-handed during its operation.

- Avoid any flammable liquids, water or metal from entering the fixture. If it happens, cut off the mains power immediately.
- DO NOT operate in a dirty or dusty environment. DO clean the fixture regularly.
- DO NOT touch any wiring during operation as there might be a hazard of electric shock.
- Avoid entanglement of the power cord with other wires.
- The minimum distance to objects/surface must be more than 0.5 meters.
- In the event of a serious operating problem, stop using the fixture immediately.
- Never turn the fixture off and on repeatedly.
- The housing, the lenses, or the ultraviolet filter must be replaced if they are visibly damaged.
- DO NOT open the housing as there are no user serviceable parts inside.
- DO NOT attempt to operate this fixture if it becomes damaged. DO NOT attempt any repairs yourself. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center if needed.
- Disconnect this product from its power source before servicing.
- DO use the original packaging or suitable road case if the device is to be transported.
- Avoid direct eye exposure to the light source while the product is on.
- DO NOT operate this product if you see damage on the housing, shields, or cables. Have the damaged parts replaced by an authorized technician at once.
- The device MUST NOT be switched on immediately if it has been exposed to strong temperature fluctuations (e.g. after transport) as condensation may occur inside. Please leave the device switched off until it has reached to ambient temperature.

- External sources of light beams from direct sunlight or any other strong light source, which penetrate the front lens of lighting fixtures, can cause severe internal damage. DO NOT expose the fixture front lens to light beams from direct sunlight or any other strong light source from any angle while unpacking, installation, use, and extended idle times outdoors. DO NOT focus a light beam from one lighting fixture directly towards another.





01/ Informations de sécurité



AVERTISSEMENT

Veuillez lire attentivement les instructions, car elles contiennent des informations importantes concernant l'installation, l'utilisation et la maintenance.

Veuillez conserver ce manuel d'utilisation pour consultation future. Si vous vendez l'appareil à un autre utilisateur, assurez-vous qu'il reçoive également ce manuel d'instructions.

Important:

Les dommages causés par le non-respect de ce manuel d'utilisation ne sont pas couverts par la garantie. Le revendeur n'acceptera aucune responsabilité pour les défauts ou problèmes qui en résulteraient.

- Déballer et vérifier soigneusement qu'il n'y a pas de dommages dus au transport avant d'utiliser l'appareil.
- Ce produit est adapté aux endroits humides. Ne pas immerger dans l'eau.
- FAIRE installer et utiliser par un opérateur qualifié.
- NE PAS laisser les enfants manipuler l'appareil.
- Utiliser une chaîne de sécurité lors de la fixation de l'appareil. Manipuler l'appareil en portant sa base et non uniquement par la tête.
- L'appareil doit être installé dans un endroit bien ventilé, à au moins 50 cm des surfaces adjacentes.
- Assurez-vous qu'aucune fente de ventilation n'est obstruée, sinon l'appareil surchauffera.
- Avant utilisation, assurez-vous de connecter ce produit à la tension appropriée conformément aux spécifications de ce manuel ou à l'étiquette des spécifications du produit.
- Il est important de mettre le conducteur jaune/vert à la terre pour éviter tout risque de choc électrique.
- Temp é rature ambiante minimale (TA): -10˚C. Temp é rature ambiante maximale (TA): 40˚C. Ne pas utiliser ce produit à une temp é rature inf é rieure ou sup é rieure.
- NE PAS connecter l'appareil à un gradateur (dimmer pack).
- Éloigner les matériaux inflammables de l'appareil pendant son fonctionnement pour éviter tout risque d'incendie.

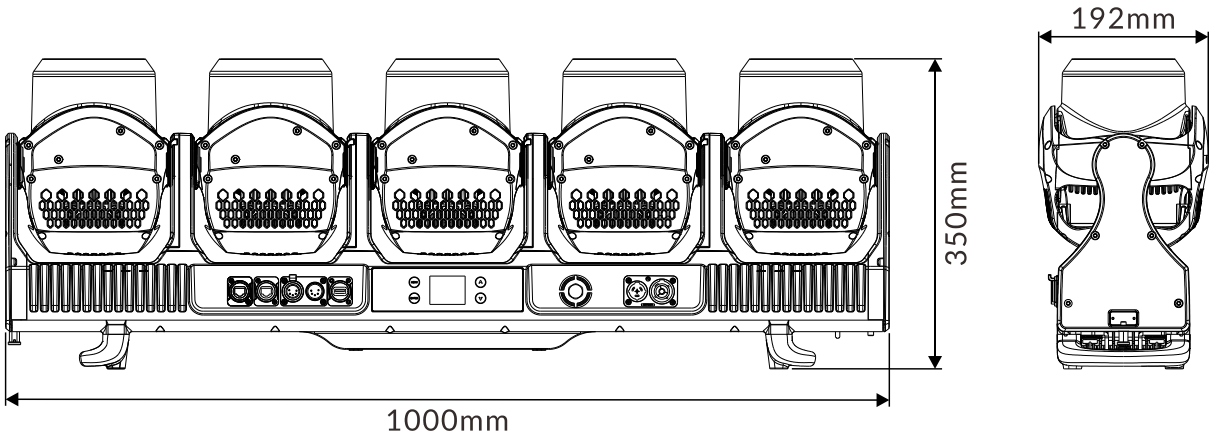
- Vérifier que le cordon d'alimentation n'est ni écrasé ni endommagé; le remplacer immédiatement s'il est endommagé.
- La température de surface de l'appareil peut atteindre jusqu'à 75℃. NE PAS toucher le boîtier à mains nues pendant son fonctionnement.
- Évitez que des liquides inflammables, de l'eau ou des objets métalliques ne pénètrent dans l'appareil. Si cela se produit, coupez immédiatement l'alimentation électrique.
- NE PAS utiliser l'appareil dans un environnement sale ou poussiéreux. Nettoyez régulièrement l'appareil.
- NE PAS toucher de fils pendant le fonctionnement, car cela pourrait présenter un risque de choc électrique.
- Évitez que le cordon d'alimentation ne s'emmêle avec d'autres fils.
- La distance minimale par rapport aux objets/surfaces doit être de plus de 0.5 mètres.
- En cas de problème de fonctionnement grave, cessez immédiatement d'utiliser l'appareil.
- Ne jamais allumer et éteindre l'appareil à plusieurs reprises.
- Le boîtier, les lentilles ou le filtre ultraviolet doivent être remplacés s'ils sont visiblement endommagés.
- NE PAS ouvrir le boîtier, car il ne contient aucune pièce pouvant être réparée par l'utilisateur.
- NE PAS tenter d'utiliser cet appareil s'il est endommagé. NE PAS tenter de réparations vous-même. Les réparations effectuées par des personnes non qualifiées peuvent entraîner des dommages ou un dysfonctionnement. Veuillez contacter le centre d'assistance technique agréé le plus proche si nécessaire.
- Débranchez l'appareil de sa source d'alimentation avant toute maintenance.
- UTILISEZ l'emballage d'origine si l'appareil doit être transporté.
- Évitez une exposition directe des yeux à la source lumineuse lorsque l'appareil est allumé.
- NE PAS utiliser ce produit si vous constatez des dommages sur le boîtier, les protections ou les câbles. Faites remplacer les pièces endommagées par un technicien agréé immédiatement.

- L'appareil NE DOIT PAS être allumé immédiatement s'il a été exposé à de fortes variations de température (par exemple après un transport), car de la condensation pourrait se former à l'intérieur. Veuillez laisser l'appareil éteint jusqu'à ce qu'il ait atteint la température ambiante.
- Les sources externes de rayons lumineux, comme la lumière directe du soleil ou toute autre source lumineuse intense, qui pénètrent à travers la lentille frontale des appareils d'éclairage, peuvent causer des dommages internes graves. NE PAS exposer la lentille frontale de l'appareil à des rayons lumineux provenant de la lumière directe du soleil ou de toute autre source lumineuse intense, sous quelque angle que ce soit, lors du déballage, de l'installation, de l'utilisation ou de périodes d'inactivité prolongées à l'extérieur. NE PAS diriger un faisceau lumineux d'un appareil d'éclairage directement vers un autre.

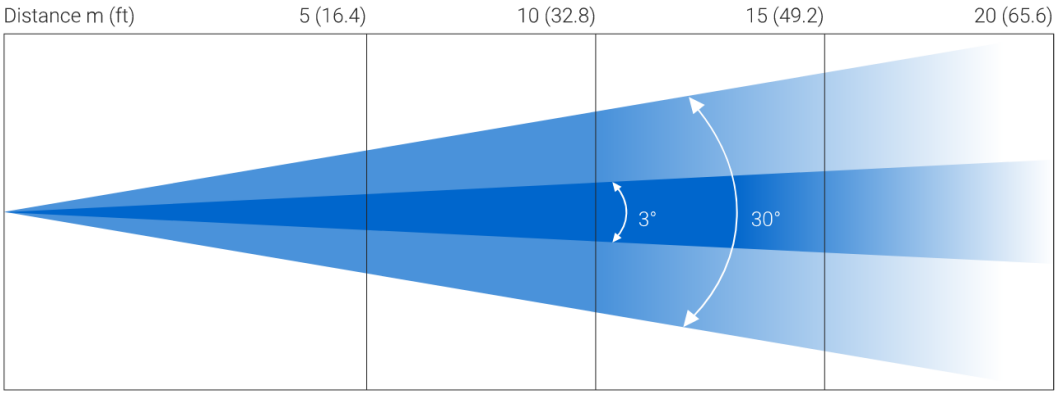
02/ Technical Specifications

AC Power	100-240Vac; 50/60Hz	
Max. Power Consumption	935W	
Light Source	5x120W RGBL LED	
	120x0.5W RGB LED	
Beam Angle	3°-30°	
Field Angle	4°-35°	
Movement	Pan	59°
	Tilt	221°
	16 bit movement resolution	
	Automatic pan/tilt repositioning	
Control and Programming	DMX Channels	41/71/75/85/170
	Protocols	DMX512
		RDM
		Art-Net
		sACN
	Firmware Update	via DMX or USB memory device
Construction	Display	LCD display
	Battery backup for user setup without mains connection	
	DMX and RDM Data In/Out	5-pin IP XLR (optional with 3-pin IP XLR)
		RJ45 Connectors
	Power In/Out	Waterproof Power Connector in/out
	Protection Rating	IP66
Dynamic Effects	5 individual heads	
	Each head has one led ring (24 leds) that can be individually controlled	
	0-100% continuous dimming and strobe effects	
	Choice of four dimming curves	
	Variable color temperature control	
	Outstanding color mixing	
	Motorized zoom	
Included Items	Power Cable with Neutrik true1 power connector	
	Two omega brackets with 1/4-turn fasteners	
	User Manual (this document)	

Dimensions	1000x192x350mm	39.4"x7.6"x13.8"
Weight	30 kg	66.1 lbs

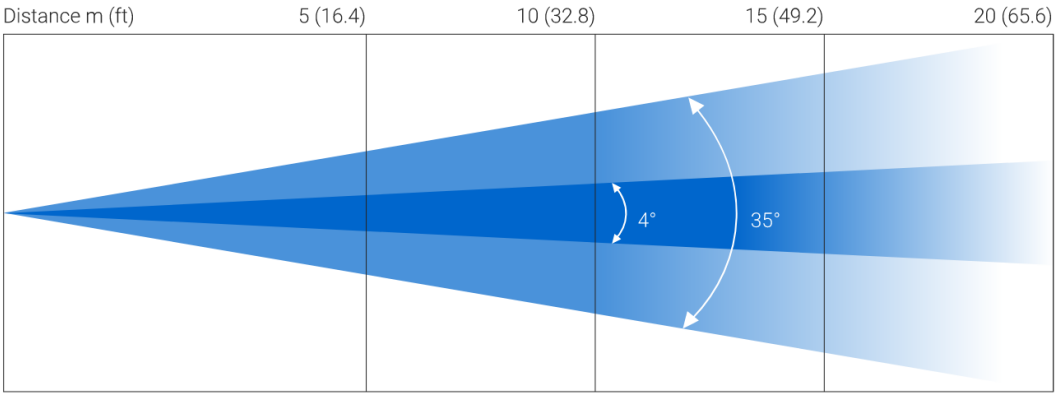


Photometric Diagram (Beam Angle):



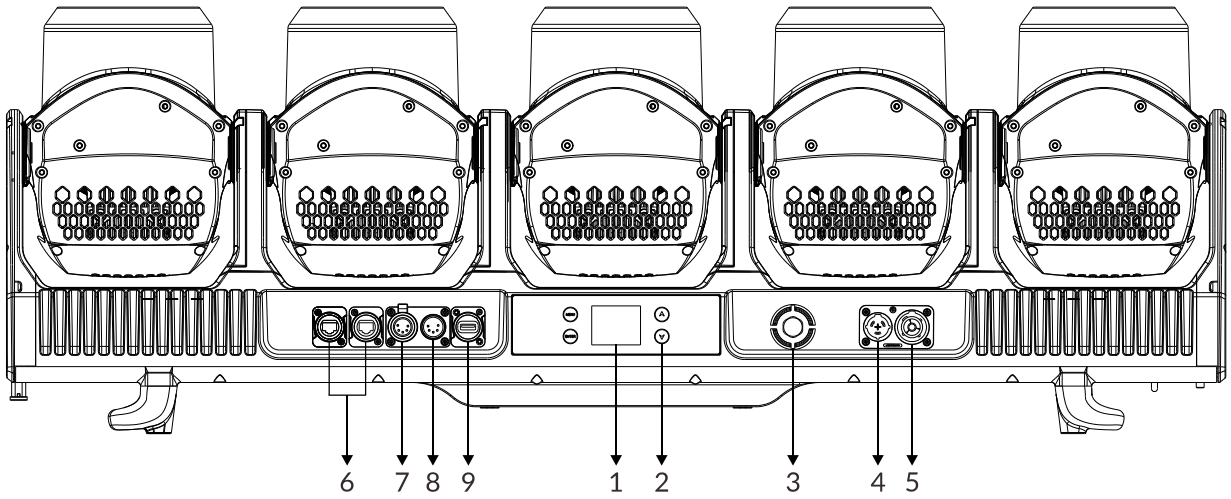
3° Lux	25,500	6,300	3,050	1,600
Diameter m (ft)	0.3 (1)	0.5 (1.6)	0.8 (2.6)	1.0 (3.3)
30° Lux	720	190	85	50
Diameter m (ft)	2.7 (8.9)	5.4 (17.7)	8.4 (27.6)	10.7 (35.1)

Photometric Diagram (Field Angle):



4° Lux	25,500	6,300	3,050	1,600
Diameter m (ft)	0.4 (1.3)	0.7 (2.3)	1.1 (3.6)	1.4 (4.6)
35° Lux	720	190	85	50
Diameter m (ft)	3.2 (10.5)	6.3 (20.7)	9.5 (31.2)	12.6 (41.3)

03/ Overview



1. Display	To show the various menus and the selected function	
2. Buttons	MENU	To enter into, move backward or leave the menu
	▲ UP	To go backward or move up in the menu
	▼ DOWN	To go forward or move down in the menu
	ENTER	To perform the desired functions
3. RELEASE VALVE		
4. POWER IN	To connect to supply power	
5. POWER OUT	To connect to the next fixture	
6. ETHERNET	For use with sACN or Art-Net controls	
7. DMX OUT	For DMX512 link, use 5-pin XLR cable to link the next units to output DMX signal (optional with 3-pin IP XLR)	
8. DMX IN	For DMX512 link, use 5-pin XLR cable to link the unit and DMX controller to input DMX signal (optional with 3-pin IP XLR)	
9. FIRMWARE UPGRADE	Used to upgrade fixture's firmware	

3.1 Battery Power

This product contains a rechargeable battery.

Battery type: 18650 Lithium-ion battery (3.7V, 2200mAh, 8.14Wh), compliant with the new EU battery regulation EU2023/1542.



Do not expose the fixture or battery to excessive temperatures.

Be aware of the risk of terminals of the battery-operated fixture or battery being short-circuited by metal objects.

This fixture contains battery that is only replaceable by skilled persons.

Different types of batteries or new and used batteries are not to be mixed.

Exhausted batteries are to be removed from the fixture and safely disposed of.

If the fixture is to be stored unused for a long period, the batteries should be removed.

Do not use non-rechargeable batteries in place of rechargeable batteries.

Do not use modified or damaged batteries.

Replacing the battery with an incorrect type can defeat a safeguard and pose a risk of fire or explosion.

Disposal of a battery into fire or a hot oven, or mechanically crushing or cutting of a battery, that can result in an explosion.

Leaving a battery in an extremely high temperature surrounding environment that can result in an explosion or the leakage of flammable liquid or gas.

Using the control panel with battery power:

The fixture contains a battery that enables you to use the control panel to set up the fixture even when it is not connected to the main power supply. The battery charges during fixture operation. All of the main setup options in the control panel are accessible on battery power, but the ‘Fixture Test’ and ‘Reset Function’ are not available.

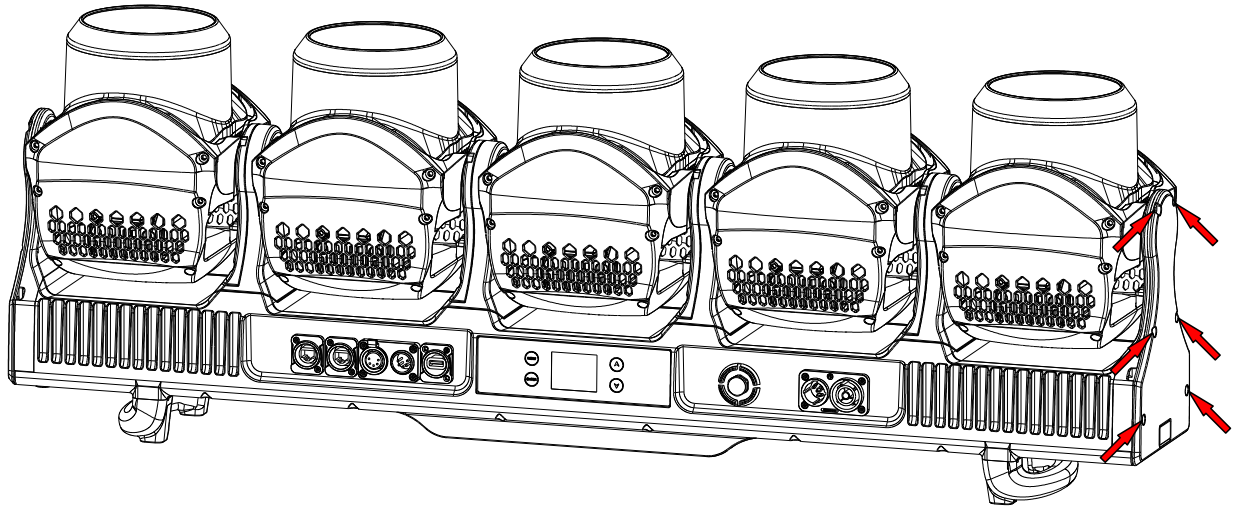
To activate the display when the fixture is not connected to power, press and hold the [▲ UP] button for 3 seconds. The display extinguishes after 30 seconds with no user input. Press and hold the [▲ UP] button for 3 seconds again to re-activate.

Battery Replacement:

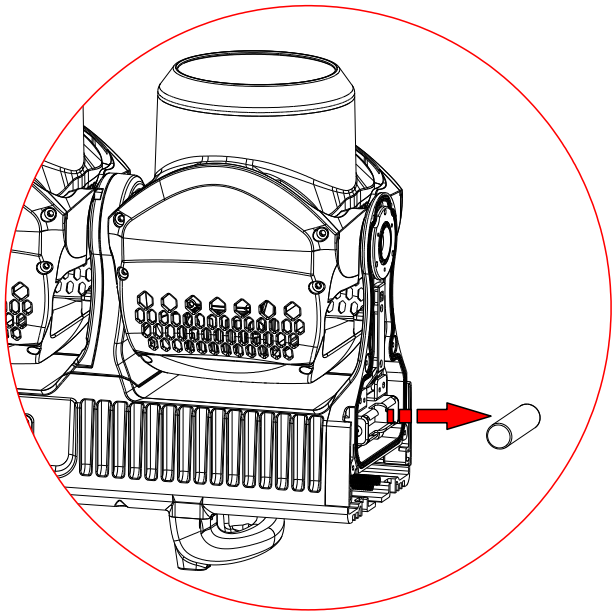
Warning! Disconnect the fixture from AC power before replacing its battery. Replace the battery with one of the same type only.

1. Disconnect the fixture from AC mains power and allow to cool.

2. Remove six screws in the arm cover of the fixture and remove the arm cover.



3. Remove the exhausted battery and insert a new one (only the same type) into the battery holder (Negative (-) towards the spring, Positive (+) away from the spring).



5. Reinstall the arm cover and check that it is close securely before reapplying power.

04/ Connecting Power and Data

4.1 Connecting Power

This fixture can operate on any 100-240Vac; 50/60Hz AC mains power supply.

The maximum power consumption is 935W.

The fixture must be grounded/earthed and able to be isolated from AC power. The AC power supply must incorporate a fuse or circuit breaker for fault protection.

Wiring and connection work must be carried out by a qualified electrician.

The power cable color coding is given in the figure below:

Wire	Color (US)	Wire	Color (EU)	Symbol	Conductor
	black		brown	L	live
	white		blue	N	neutral
	green		yellow/green	⏚ or ⏚	ground (earth)

Description for power cord set should be used: Listed SJOW flexible cord with rating: 300V, 105°C, VW-1, 16AWG x 3C, molded with 5-20P attachment plug and terminated with cord connector model RCAC3F-X-000 with rating 250V, 16A by NEUTRIK AG. The power cord shall be at least 914mm (It is to be measured from the face of attachment plug to the face of connector).

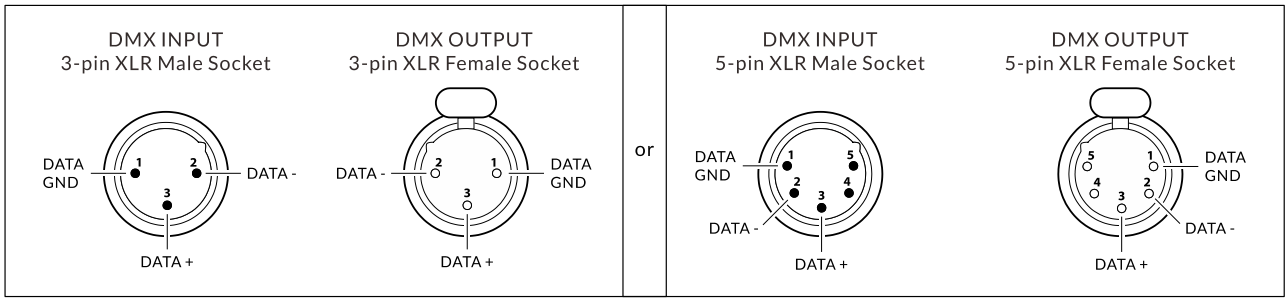
CAUTION!

DO NOT CONNECT THE FIXTURE TO AN ELECTRICAL DIMMER SYSTEM AS DOING SO MAY CAUSE DAMAGE.

4.2 Connecting Data

The fixture is equipped with 5-pin (or 3-pin) XLR sockets for DMX input and output. Use shielded twisted-pair high-quality DMX cable designed for RS-485 fixtures in order to connect the controller with the fixture and one fixture with another. For outdoor installations, use only waterproof DMX cables suitable for outdoor use.

The default pin-out on XLR sockets is as the following diagram:



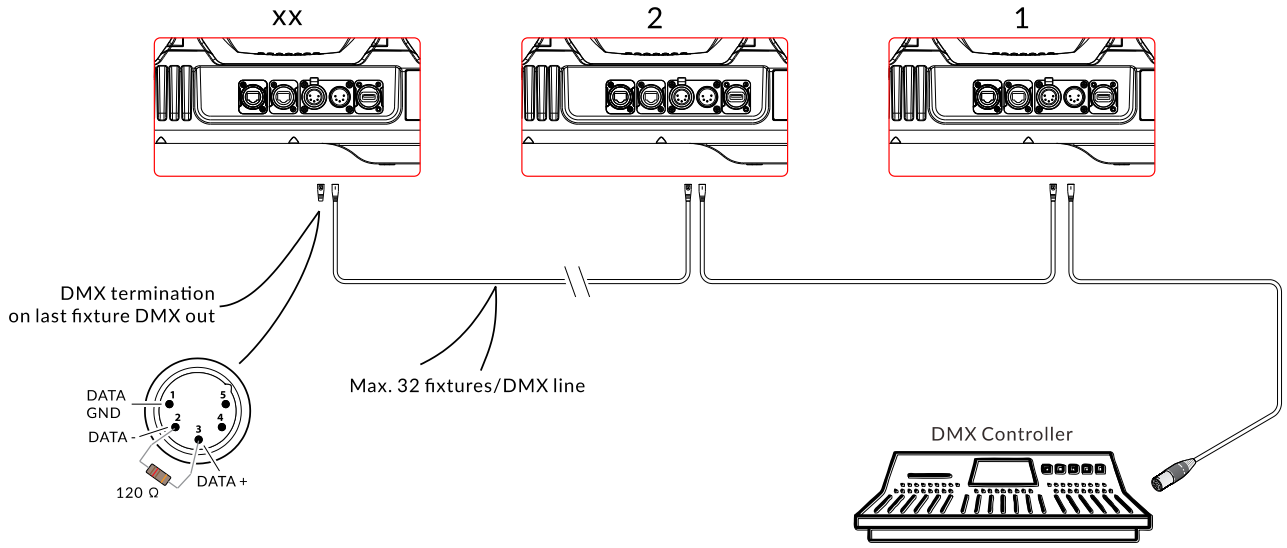
Building a serial DMX chain:

1. Connect the DMX data output from the controller to the fixture's data input socket.

2. 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.

Note: Up to 32 fixtures can be connected to the same DMX link.

3. Terminate the DMX output of the last fixture in the data link with a DMX terminator which is an XLR plug with a 120 Ω, 1/4 watt resistor connected between pins 2 and 3.



05/ Fixture Installation

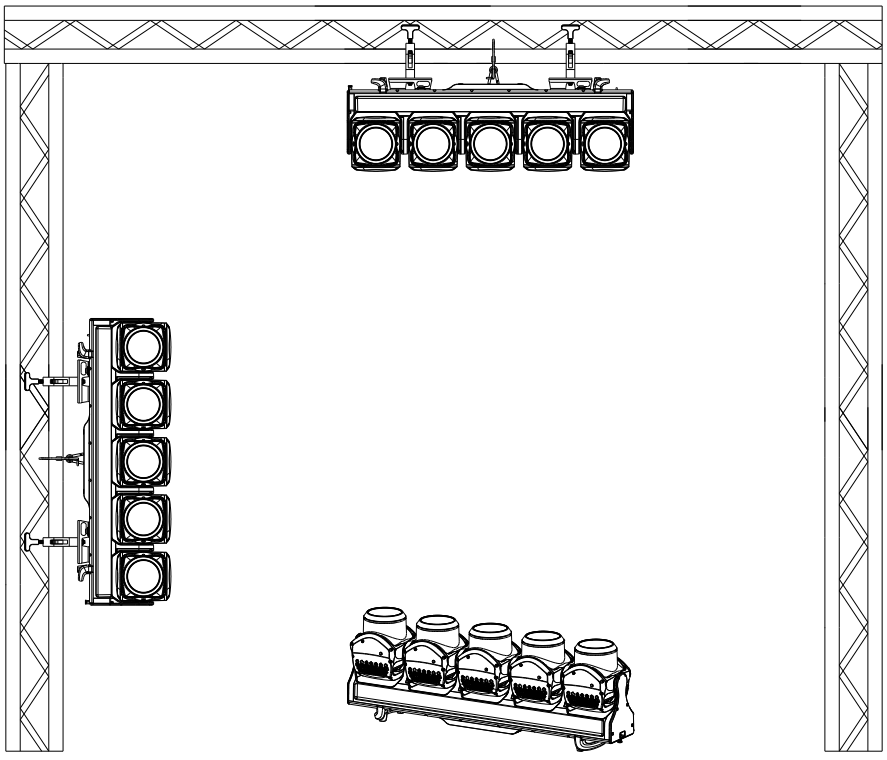
The fixture is IP66-rated and designed for both indoor and outdoor events. This means that it is protected from:

- Dust, to the degree that dust cannot enter the device in sufficient quantities as to interfere with its operation.
- Water jets from any direction.

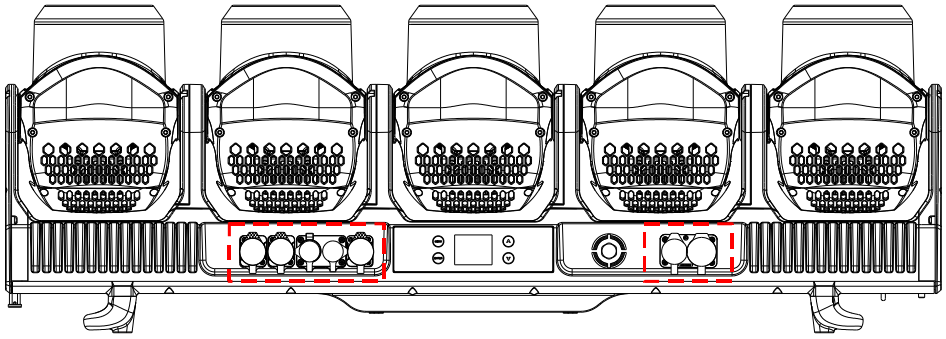
DO install and operate by qualified operator. Fixture(s) should be installed in areas outside walking paths, seating areas, or away from areas were unauthorized personnel might reach the fixture by hand. NEVER stand directly below the fixture(s) when rigging, removing or servicing.

Always ensure that the unit is firmly fixed to avoid vibration and slipping off during operation. Ensure that the trussing or area of installation must be able to hold 10 times the weight without any deformation. Always attach a safety cable (made of steel, min. diameter 4.0mm) that can hold at least 12 times the weight of the fixture whenever installing this fixture in a suspended environment to ensure that the fixture will not fall if the clamp fails.

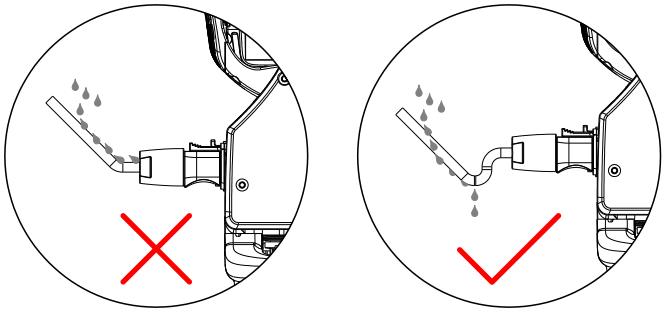
This fixture is fully operational in three different mounting positions: hanging upside-down, mounted sideways on truss, or base positioned on floor. Always use and install a safety cable as a safety measure to prevent accidental damage and/or injury in the event the clamp fails.



- Use only waterproof power cords and connectors suitable for outdoor use.
- Visually check panel connectors on accidental water leaks and dust before connecting related cable connectors. If some water appears in panel connectors, do not connect cable connectors, especially power!
- Fixtures require regular maintenance. Carefully check panel connectors for corrosion and scorching, and replace them promptly if damaged.
- All power and data connectors are equipped with rubber caps to prevent water ingress. All unused panel connectors have to be sealed by the rubber caps to avoid contact with water, especially seawater.

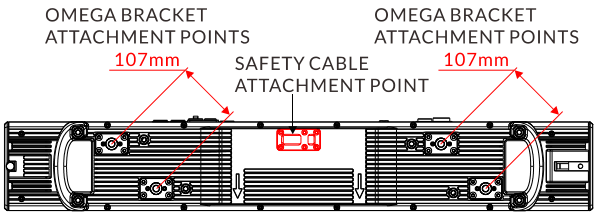


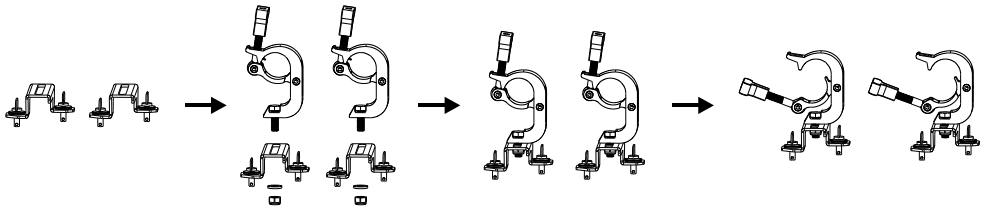
- When routing cables, always bring them into connectors from below. Form a service loop where needed, allowing gravity to divert condensation and water droplets away from the connectors.

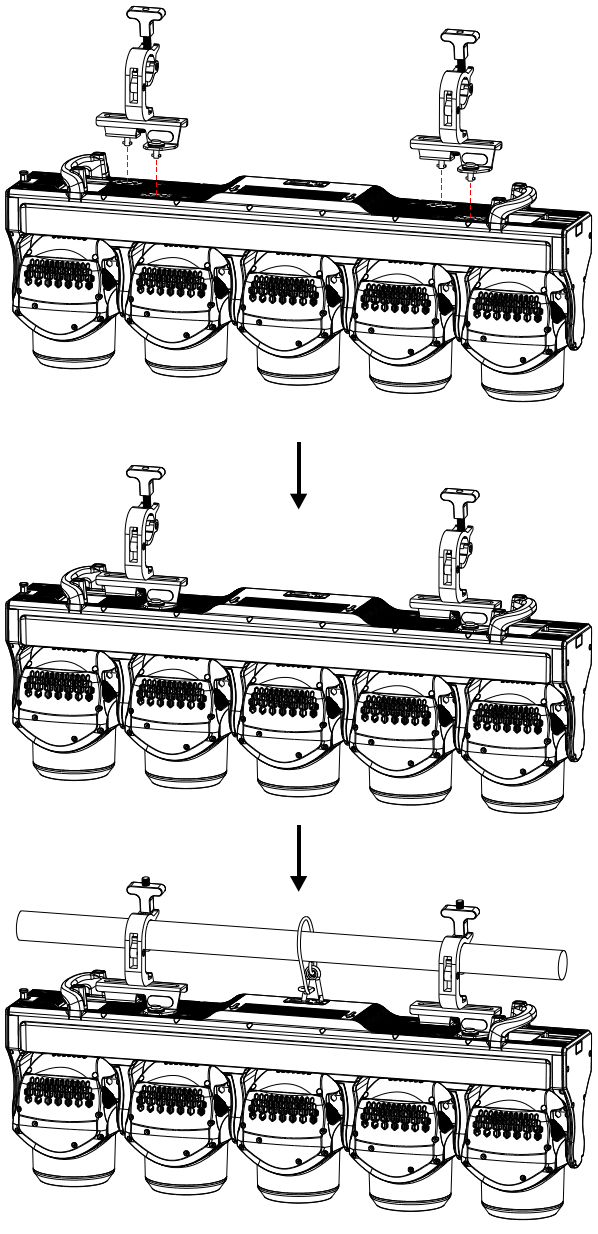


- To ensure the long-term reliable performance of the fixture, it is recommended to perform external cleaning and maintenance every one to two months. Promptly remove corrosive residues such as acidic substances and sea salt deposits attached to the surface of the fixture to slow down the oxidation process of the housing. Additionally, inspect and clean protective grilles and other structures to prevent small organisms like insects from entering the interior, avoiding functional abnormalities or fan blockages caused by the accumulation of insect remains.

5.1 Hanging the Fixture







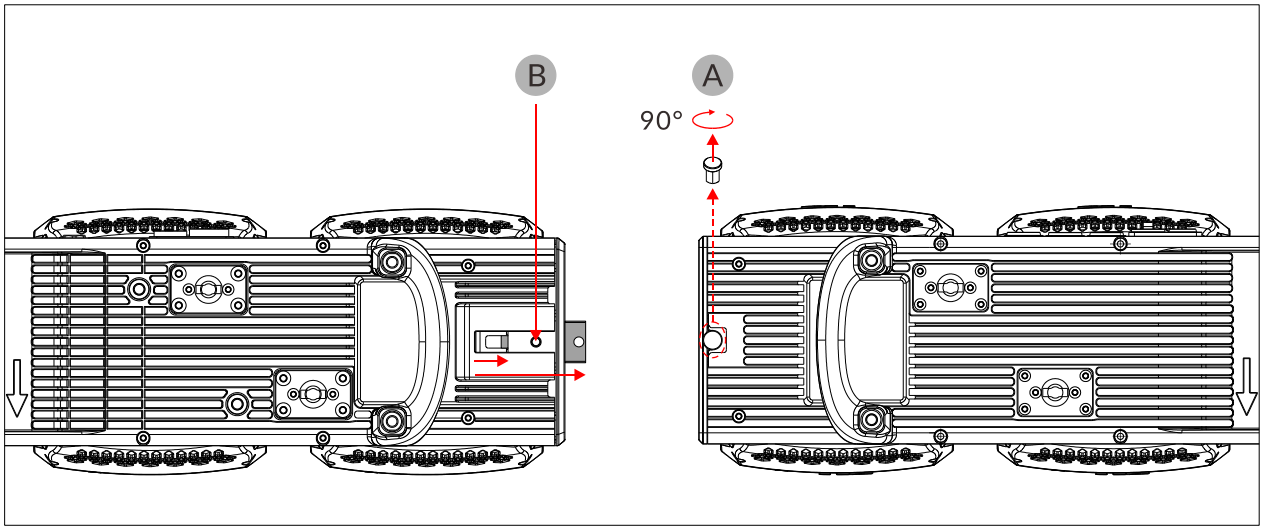
5.2 Connecting and Aligning Multiple Fixtures

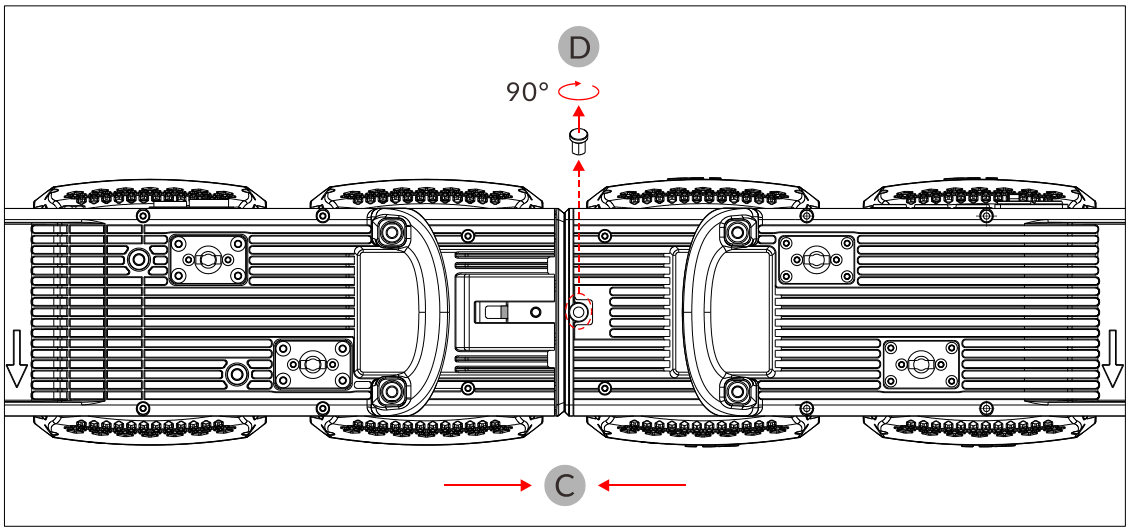
A. Pull the locking pin and turn it over 90° so it stays unlocked.

B. Push the button: automatically the slide comes out completely.

C. Place both fixtures against each other in line so that the slide fits into the other fixture.

D. When this is done, pull the locking pin and turn it again over 90°, until the pin fits in the hole of the slide and locks both fixtures together.





If you need to connect and align more fixtures, repeat the steps above.

To detach the fixtures, simply reverse the steps mentioned above.

Note: Hold down the button and pull the slide back simultaneously to retract it to its original position.

06/ Operation

6.1 Control Menu

- To access the control menus, press the [MENU] button.
- Navigate the menu structure, using the [ENTER], [▲ UP] and [▼ DOWN] buttons.
- To select a menu option or to confirm a selection, press the [ENTER] button.
- To return to a higher level in the menu structure without making a change, press the [MENU] button, or wait 30 seconds.

The screen locks after 30 seconds of inactivity.
Press and hold the [MENU] button to unlock the screen.

The main functions are shown below:

MAIN MENU	SUBMENU	CHOICES/VALUES		
DMX Settings	DMX Address	1-472 (41 CH)		
		1-442 (71 CH)		
		1-438 (75 CH)	(Default=1)	
		1-428 (85 CH)		
		1-343 (170 CH)		
	DMX Channel Mode	41 CH		
		71 CH		
		75 CH		
		85 CH		
		170 CH		
	No DMX Status	Blackout		
		Hold		
		Manual		
	View DMX Value			
	Connect Option	Auto		
		DMX		
		Art-Net		
		sACN		
	Network	IP Address	Default 1:002.xxx.xxx.xxx	
			Default 2:010.xxx.xxx.xxx	
			Manual:xxx.xxx.xxx.xxx	
		Subnet Mask	xxx.xxx.xxx.xxx	
	Art-Net Settings	Net	0-127	(Default=0)

MAIN MENU	SUBMENU	CHOICES/VALUES		
		Subnet	0-15	(Default=0)
		Universe	0-15	(Default=0)
	sACN Settings	sACN Universe	1-32000	(Default=1)
		sACN Priority	0-200	(Default=100)
	Network to DMX	No		
		Yes		
Fixture Settings	Pan Invert	No		
		Yes		
	Tilt Invert	No		
		Yes		
	P/T Feedback	No		
		Yes		
	Dimmer Curve	Linear		
		Square Law		
		Inv SQ Law		
		S Curve		
	Dimmer Speed	Fast		
		Smooth		
	White Balance	LED R	125-255	
		LED G	125-255	
		LED B	125-255	
		LED R1	125-255	
		LED G1	125-255	
		LED B1	125-255	
		.....	.....	
		LED R5	125-255	
		LED G5	125-255	
		LED B5	125-255	
	LED Refresh Rate	900Hz		
		1000Hz		
		1100Hz		
		1200Hz		
		1300Hz		
		1400Hz		
		1500Hz		
		2500Hz		
		4000Hz		
		5000Hz		

MAIN MENU	SUBMENU	CHOICES/VALUES			
		6000Hz			
		10KHz			
		15KHz			
		20KHz			
		25KHz			
	Fan Mode	Standard			
		Quiet			
	Head Invert	No			
		Yes			
	CCT Calibration	Off			
		On			
	Dimmer Start Mode	High			
		Low			
	Invert Pixel	No			
		Yes			
Display Settings	Display Invert	No			
		Yes			
	Backlight Intensity	1-10	(Default=10)		
	Temperature Unit	°C			
		°F			
Fixture Test	Auto Test	Single			
		Cycle			
	Manual Test	Mode 1		Mode 2	
		Clear	No/Yes	Clear	No/Yes
		Pan	0-255	Pan 1	0-255
		Tilt	0-255	Tilt 1	0-255
		Zoom	0-255	.....	.....
		Dimmer	0-255	Pan 5	0-255
		Strobe	0-255	Tilt 5	0-255
		Ring Strobe	0-255	Zoom 1	0-255
		LED R	0-255	.....	.....
		LED G	0-255	Zoom 5	0-255
		LED B	0-255	Dimmer	0-255
		LED L	0-255	Strobe	0-255
		LED CCT	0-255	Ring Strobe	0-255
		LED Color	0-255	LED R1	0-255
		Ring R	0-255	LED G1	0-255

MAIN MENU	SUBMENU	CHOICES/VALUES			
		Ring G	0-255	LED B1	0-255
		Ring B	0-255	LED L1	0-255
		Ring Macro	0-255	.....	.....
				LED R5	0-255
				LED G5	0-255
				LED B5	0-255
				LED L5	0-255
				Ring R1	0-255
				Ring G1	0-255
				Ring B1	0-255
				Ring Macro 1	0-255
				.....	.....
				Ring R5	0-255
				Ring G5	0-255
				Ring B5	0-255
				Ring Macro 5	0-255
Fixture Information	Fixture Use Hour				
	LED Use Hour	Total LED Hour			
		LED On Hour			
		LED Hours Reset	Password=050		
	Humidity		Current	Max	
		Base			
	Temperature		Current	Max	
		LED’s			
		Base			
	Fan State	B_FAN 1-2			
		H_FAN 1-5			
	Firmware Version				
	RDM UID				
	Error Logs	Fixture Errors			
		Reset Error Log	No		
			Yes	Password=050	
Reset Function	Pan/Tilt Reset	No			
		Yes			
	Effect Reset	No			
		Yes			
	All Reset	No			

MAIN MENU	SUBMENU	CHOICES/VALUES		
		Yes		
Special Function	USB Upgrade	No		
		Yes	*DMX*	*(Select during firmware upgrades for other fixture models)*
			NET	
	Send Upgrade	No		
		Yes	DMX	
			NET	
	Firmware Restore	No		
		Yes		
	Factory Settings	No		
		Yes		

DMX Settings

Enter the control menu and select **DMX Settings**, press ENTER. Use the UP/DOWN button to select **DMX Address, DMX Channel Mode, No DMX Status, View DMX Value, Connect Option, Network, Art-Net Settings, sACN Settings** or **Network to DMX.**

DMX Address

Select **DMX Address,** press ENTER.

Use UP/DOWN button to select an address, confirm your selection with ENTER.

CHANNEL MODE	DMX ADDRESS
41 CH	1-472
71 CH	1-442
75 CH	1-438
85 CH	1-428
170 CH	1-343

To exit the menu, press MENU, or wait 30 seconds.

DMX Channel Mode

Select **DMX Channel Mode,** press ENTER.
Use UP/DOWN button to select between **41 CH, 71 CH, 75 CH, 85 CH** and **170 CH**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

No DMX Status

Select **No DMX Status,** press ENTER.
Use UP/DOWN button to select one of the following status:
Blackout (Fixture blacks out if DMX signal stops)
Hold (The device continues to operate in the current mode with the last active DMX values until the signal returns)
Manual (The device accepts the DMX value stored in the 'Manual Test' menu)
Confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

View DMX Value

Select **View DMX Value,** press ENTER.
Use UP/DOWN button to select the desired DMX channel, for which the value is to be displayed.
To exit the menu, press MENU, or wait 30 seconds.

Connect Option

Select **Connect Option,** press ENTER.
Use UP/DOWN button to select **Auto, DMX, Art-Net** or **sACN**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Network

Select **Network,** press ENTER.
Use UP/DOWN button to select **IP Address** or **Subnet Mask**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Art-Net Settings

Select **Art-Net Settings,** press ENTER.
Use UP/DOWN button to select **Net, Subnet** or **Universe**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

sACN Settings

Select **sACN Settings,** press ENTER.
Use UP/DOWN button to select **sACN Universe** or **sACN Priority**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Network to DMX

Select **Network to DMX,** press ENTER.
Use UP/DOWN button to select **No** or **Yes**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Fixture Settings

Enter the control menu and select **Fixture Settings**, press ENTER. Use the UP/DOWN button to select **Pan Invert, Tilt Invert, P/T Feedback, Dimmer Curve, Dimmer Speed, White Balance, LED Refresh Rate, Fan Mode, Head Invert, CCT Calibration, Dimmer Start Mode** or **Invert Pixel.**

Pan Invert

Select **Pan Invert,** press ENTER.
Use UP/DOWN button to select **No** (pan invert deactivated) or **Yes** (pan invert activated), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Tilt Invert

Select **Tilt Invert,** press ENTER.
Use UP/DOWN button to select **No** (tilt invert deactivated) or **Yes** (tilt invert activated), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

P/T Feedback

Select **P/T Feedback,** press ENTER.

Use UP/DOWN button to select **No** (pan/tilt feedback deactivated) or **Yes** (pan/tilt feedback activated), confirm your selection with ENTER.

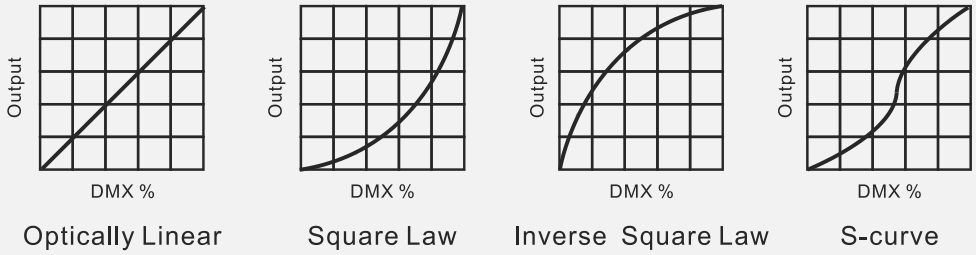
To exit the menu, press MENU, or wait 30 seconds.

Dimmer Curve

Select **Dimmer Curve,** press ENTER.

Use UP/DOWN button to select **Linear, Square Law, Inv SQ Law** or **S Curve**, confirm your selection with ENTER.

Dimmer Modes



To exit the menu, press MENU, or wait 30 seconds.

Dimmer Speed

Select **Dimmer Speed,** press ENTER.

Use UP/DOWN button to select **Fast** or **Smooth**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

White Balance

Select **White Balance,** press ENTER.

Use UP/DOWN button to select **LED R, LED G, LED B, LED R1, LED G1, LED B1……** or **LED R5, LED G5, LED B5**, confirm your selection with ENTER.

Use UP/DOWN button to select a value between **125** and **255**, confirm your selection with ENTER.

To exit the menu, press MENU, or wait 30 seconds.

LED Refresh Rate

Select **LED Refresh Rate,** press ENTER.
Use UP/DOWN button to select **900Hz, 1000Hz, 1100Hz, 1200Hz, 1300Hz, 1400Hz, 1500Hz, 2500Hz, 4000Hz, 5000Hz, 6000Hz, 10KHz, 15KHz, 20KHz** or **25KHz**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Fan Mode

Select **Fan Mode,** press ENTER.
Use UP/DOWN button to select **Standard** or **Quiet**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Head Invert

Select **Head Invert,** press ENTER.
Use UP/DOWN button to select **No** or **Yes**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

CCT Calibration

Select **CCT Calibration,** press ENTER.
Use UP/DOWN button to select **Off** or **On**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Dimmer Start Mode

Select **Dimmer Start Mode,** press ENTER.
Use UP/DOWN button to select **High** (high dimming start) or **Low** (low dimming start), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Invert Pixel

Select **Invert Pixel,** press ENTER.
Use UP/DOWN button to select **No** or **Yes**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Display Settings

Enter the control menu and select **Display Settings**, press ENTER. Use the UP/DOWN button to select **Display Invert, Backlight Intensity, Temperature Unit** .

Display Invert

Select **Display Invert,** press ENTER.
Use UP/DOWN button to select **No** (display normal) or **Yes** (display inverted), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Backlight Intensity

Select **Backlight Intensity,** press ENTER.
Use UP/DOWN button to select a value between **1** (dark) and **10** (bright), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Temperature Unit

Select **Temperature Unit,** press ENTER.
Use UP/DOWN button to select **°C** or **°F**, confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Fixture Test

Enter the control menu and select **Fixture Test**, press ENTER. Use the UP/DOWN button to select **Auto Test** or **Manual Test.**

Auto Test

Select **Auto Test,** press ENTER.
Use UP/DOWN button to select **Single** (the device immediately performs a single automatic self-test) or **Cycle** (the device immediately performs a cyclic automatic self-test), confirm your selection with ENTER.
To exit the menu, press MENU.

Manual Test

Select **Manual Test,** press ENTER.
Use UP/DOWN button to select the channel for which the manual test is to be performed, confirm your selection with ENTER.
Use UP/DOWN button to select a value, confirm your selection with ENTER.
To exit the menu, press MENU.
(The device returns to its original DMX state after the manual test. The test values are saved automatically when the device is switched off.)

Fixture Information

Enter the control menu and select **Fixture Information**, press ENTER. Use the UP/DOWN button to select **Fixture Use Hour, LED Use Hour, Humidity, Temperature, Fan State, Firmware Version, RDM UID** or **Error Logs.**

Fixture Use Hour

Select **Fixture Use Hour,** press ENTER.
The operating hours is displayed.
To exit the menu, press MENU, or wait 30 seconds.

LED Use Hour

Select **LED Use Hour,** press ENTER.
Use UP/DOWN button to select **Total LED Hour** (total time) or **LED On Hour** (current switch-on time), confirm your selection with ENTER.
The total time or current switch-on time is displayed.
Use UP/DOWN button to select **LED Hours Reset**, confirm your selection with ENTER.
Use UP/DOWN button to set the password 050, confirm your selection with ENTER. The LED operating hours is reset.
To exit the menu, press MENU, or wait 30 seconds.

Humidity

Select **Humidity,** press ENTER.
The device humidity is displayed.
To exit the menu, press MENU, or wait 30 seconds.

Temperature

Select **Temperature,** press ENTER.
The device temperature is displayed.
To exit the menu, press MENU, or wait 30 seconds.

Fan State

Select **Fan State,** press ENTER.
The fan status is displayed.
To exit the menu, press MENU, or wait 30 seconds.

Firmware Version

Select **Firmware Version,** press ENTER.
The firmware version is displayed.
To exit the menu, press MENU, or wait 30 seconds.

RDM UID

Select **RDM UID,** press ENTER.
The RDM UID is displayed.
To exit the menu, press MENU, or wait 30 seconds.

Error Logs

Select **Error Logs,** press ENTER.
Use UP/DOWN button to select **Fixture Errors**, confirm your selection with ENTER.
The error list is displayed.
Use UP/DOWN button to select **Reset Error Log**, confirm your selection with ENTER.
If you wish to reset the relevant error logs, select **Yes**. If you do not wish to reset anything, select **No**. Confirm your selection with ENTER.

Reset Function

Enter the control menu and select **Reset Function**, press ENTER. Use the UP/DOWN button to select **Pan/Tilt Reset, Effect Reset** or **All Reset.**

Pan/Tilt Reset

Select **Pan/Tilt Reset,** press ENTER.
Use UP/DOWN button to select **No** or **Yes** (the device will run built-in program to reset pan/tilt to their home positions), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Effect Reset

Select **Effect Reset,** press ENTER.
Use UP/DOWN button to select **No** or **Yes** (the device will run built-in program to reset effect to their home positions), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

All Reset

Select **All Reset,** press ENTER.
Use UP/DOWN button to select **No** or **Yes** (the device will run built-in program to reset all to their home positions), confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Special Function

Enter the control menu and select **Special Function**, press ENTER. Use the UP/DOWN button to select **USB Upgrade, Send Upgrade, Firmware Restore** or **Factory Settings.**

USB Upgrade

Select **USB Upgrade,** press ENTER.
The upgrade files are displayed. (See the 'Updating Software' section for details.)
To exit the menu, press MENU, or wait 30 seconds.

Send Upgrade

Select **Send Upgrade,** press ENTER.
If you wish to send upgrade files from this fixture to other fixtures to upgrade their firmware, select **Yes**. Then use UP/DOWN button to select **DMX** (send upgrade via DMX) or **NET** (send upgrade via Ethernet), confirm your selection with ENTER. Once selected, the display of this fixture will show "**Sending Packet, Please Wait...**" while the display of other fixtures will show "**Upgrading, Please Wait...**". A percentage bar will also be displayed. After the update is complete, fixtures will perform a reset (this can take some time).
If you do not wish to send anything, select **No**. Confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Firmware Restore (After replacing fixture's vice board(s), this function allows you to synchronize the main board's software to all vice board(s), as the software version of the replaced vice board(s) may not consistent with that of the main board.)

Select **Firmware Restore,** press ENTER.
If you wish to restore fixture's firmware, select **Yes**. Once Yes is selected, the display will show "**Upgrading, Please Wait...**". A percentage bar will also be displayed. After the update is complete, the fixture will perform a reset (this can take some time).
If you do not wish to restore anything, select **No**. Confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

Factory Settings

Select **Factory Settings,** press ENTER.
If you wish to reset the device to the factory settings, select **Yes**. If you do not wish to reset anything, select **No**. Confirm your selection with ENTER.
To exit the menu, press MENU, or wait 30 seconds.

6.2 Updating Software

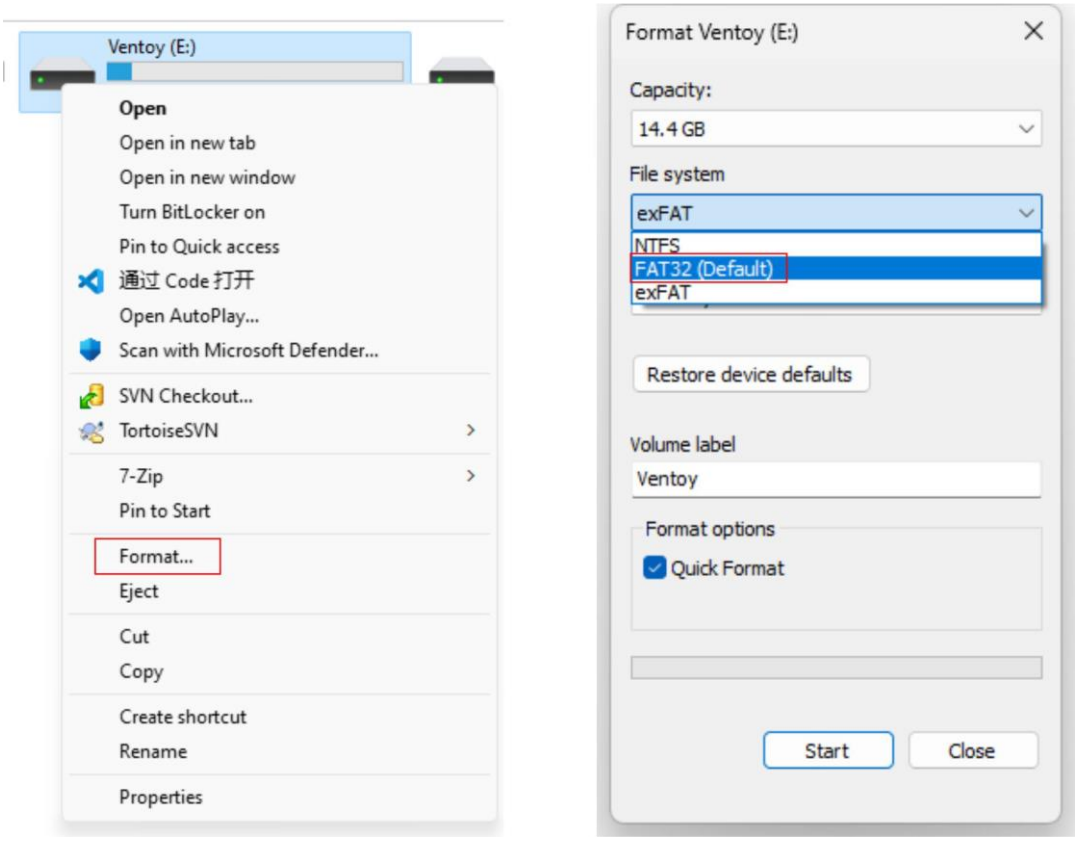
Only qualified technicians should perform this function! Note all menu settings before updating software! Please note, up to 32 fixtures can be connected together and updated at the same time.

Note: Before using the USB flash drive to update the software, please ensure that the USB flash drive is formatted with the FAT32 file system. Otherwise, you will need to reformat the USB flash drive to FAT32 before transferring the .yfu files, as the fixture will only recognize the files stored on a FAT32 formatted drive.

Format the USB flash drive:

- Connect the USB flash drive to the computer.
- Right-click on the USB flash drive disk.
- Click "Format".

- Select the "FAT32" file system and click "Start".



<u>Updating Software (on this fixture):</u>

1. Download the software update files from the ACME website.
2. Copy the software files to a compatible USB flash drive.

Note: To avoid the risk of uploading the wrong file to the fixture, make sure that there are no other files on your flash drive.

3. Disconnect DMX and Ethernet connections and power the fixture on.
4. Insert the USB flash drive into the **FIRMWARE UPGRADE** port located on the front panel of the fixture.
5. Locate "**Special Function**" within the system menu and press ENTER. Scroll to the "**USB Upgrade**" submenu and press ENTER.
6. Two software files will be displayed as downloaded earlier. Highlight the first file (V00) and press ENTER. Select "**Yes**" to begin the first of two updating processes. Once Yes is selected, the display will show "**Copying Files, Please Wait...**". After copying is complete, the display will show "**Upgrading, Please Wait...**". A percentage bar will also be displayed.

7. After the first update is complete, the fixture will perform a reset (this can take some time).
8. Once the reset is complete, scroll to the "**Special Function**" menu again and press ENTER. Scroll to the "**USB Upgrade**" submenu and press ENTER.
9. Highlight the second file (Vxx) this time and press ENTER. Select "**Yes**" to begin the second and final updating process. Once Yes is selected, the display will show "**Copying Files, Please Wait...**" again. After copying is complete, the display will show "**Upgrading, Please Wait...**". A percentage bar will also be displayed.
10. After the second update is complete, the fixture will perform another reset (this can take some time as well).
11. Remove the USB flash drive.
12. After the reset process is complete, check the new software version to confirm it is updated to the most recent software.

Updating Software (for other fixture models):

1. Download the software update files from the ACME website.
2. Copy the software files to a compatible USB flash drive.

Note: To avoid the risk of uploading the wrong file to the fixture, make sure that there are no other files on your flash drive.

3. Disconnect DMX and Ethernet connections and power the fixture on.
4. Connect the fixtures to be upgraded to this fixture using a DMX signal cable or Ethernet cable.

Note: For DMX cable connections, ensure "DMX" is selected as the signal source. For Ethernet cable connections, select "NET" as the signal source.

5. Insert the USB flash drive into the **FIRMWARE UPGRADE** port located on the front panel of the fixture.
6. Locate "**Special Function**" within the system menu and press ENTER. Scroll to the "**USB Upgrade**" submenu and press ENTER.
7. Two software files will be displayed as downloaded earlier. Highlight the first file (V00) and press ENTER. Select "**Yes**" and then specify the signal source - **DMX** (send upgrade via DMX) or **NET** (send upgrade via Ethernet) to begin the first of two updating processes. Once selected, the display of this fixture will show "**Copying Files, Please Wait...**". After copying is

complete, the display of this fixture will show "**Sending Packet, Please Wait...**" while the display of other fixtures will show "**Upgrading, Please Wait...**". A percentage bar will also be displayed.

8. After the first update is complete, the fixtures will perform a reset (this can take some time).

9. Once the reset is complete, scroll to the "**Special Function**" menu again and press ENTER. Scroll to the "**USB Upgrade**" submenu and press ENTER.

10. Highlight the second file (Vxx) this time and press ENTER. Select "**Yes**" and then specify the signal source again to begin the second and final updating process. Once selected, the display of this fixture will show "**Copying Files, Please Wait...**" again. After copying is complete, the display of this fixture will show "**Sending Packet, Please Wait...**" while the display of other fixtures will show "**Upgrading, Please Wait...**". A percentage bar will also be displayed.

11. After the second update is complete, the fixtures will perform another reset (this can take some time as well).

12. Remove the USB flash drive.

13. After the reset process is complete, check the new software version to confirm it is updated to the most recent software.

RDM functions: Certain menus of the device and functions can be called up via the RDM protocol.

The parameter IDs are implemented as follows for different commands:

Standard RDM Parameter IDs

PID	Parameter IDs	Command 'Discovery'	Command 'Set'	Command 'Get'
0x0001	DISC_UNIQUE_BRANCH	√		
0x0002	DISC_MUTE	√		
0x0003	DISC_UN_MUTE	√		
0x0050	SUPPORTED_PARAMETERS			√
0x0051	PARAMETER_DESCRIPTION			√
0x0060	DEVICE_INFO			√
0x0080	DEVICE_MODEL_DESCRIPTION			√
0x0081	MANUFACTURER_LABEL			√
0x0082	DEVICE_LABEL		√	√
0x0090	FACTORY_DEFAULTS		√	√
0x00C0	SOFTWARE_VERSION_LABEL			√
0x00C1	BOOT_SOFTWARE_VERSION_ID			√

0x00C2	BOOT_SOFTWARE_VERSION_LABEL			√
0x00E0	DMX_PERSONALITY		√	√
0x00E1	DMX_PERSONALITY_DESCRIPTION			√
0x00F0	DMX_START_ADDRESS		√	√
0x0120	SLOT_INFO			√
0x0121	SLOT_DESCRIPTION			√
0x0200	SENSOR_DEFINITION			√
0x0201	SENSOR_VALUE			√
0x0343	CURVE		√	√
0x0344	CURVE_DESCRIPTION			√
0x0400	DEVICE_HOURS			√
0x0401	LAMP_HOURS			√
0x0600	PAN_INVERT		√	√
0x0601	TILT_INVERT		√	√
0x1000	IDENTIFY_DEVICE		√	√
0x1001	RESET_DEVICE		√	√

√ -Command implemented for the respective parameter ID

Manufacturer-specific RDM Parameter IDs

PID	Parameter IDs	Command 'Discovery'	Command 'Set'	Command 'Get'	Note
0xA004	DMX_STATUS		√	√	0:Blackout 1:Hold 2:Manual
0xA007	INVERT_PIXEL_ORDER		√	√	0:No 1:Yes
0xA008	DIMMER_SPEED		√	√	0:Fast 1:Smooth
0xA010	FAN_MODE		√	√	0:Standard 1:Quiet
0xA018	ERROR_LOG			√	
0xA020	OFFSET		√	√	
0xA021	PAN_TILT_FEEDBACK		√	√	0:No 1:Yes
0xA025	DIMMER_CURVE		√	√	1:Linear 2:Square Law 3:Inv SQ Law 4:S Curve
0xA026	DIMMER_FREQUENCY		√	√	1:900Hz 2:1000Hz 3:1100Hz 4:1200Hz 5:1300Hz 6:1400Hz 7:1500Hz 8:2500Hz

					9:4000Hz 10:5000Hz 11:6000Hz 12:10KHz 13:15KHz 14:20KHz 15:25KHz
0xA027	HEAD_INVERT		√	√	0:No 1:Yes
0xA028	CCT_CALIBRATION		√	√	0:Off 1:On

√ -Command implemented for the respective parameter ID

6.3 Home Position Adjustment

- To access the control menus, press the [MENU] button.
- To access the offset menus, long-press the [ENTER] button.
- Navigate the offset menus, using the [ENTER], [▲ UP] and [▼ DOWN] buttons.
- To select a menu option or to confirm a selection, press the [ENTER] button.
- To return to a higher level in the menu structure without making a change, press the [MENU] button, or wait 30 seconds.

OFFSET MENU	VALUES
Frequency	1072~1327
Pan 1	-128~127
.....	.....
Pan 5	-128~127
Tilt 1	-128~127
.....	.....
Tilt 5	-128~127
Zoom 1	-128~127
.....	.....
Zoom 5	-128~127
LED R	0~255
LED G	0~255
LED B	0~255

LED L	0~255
LED R1	0~255
LED G1	0~255
LED B1	0~255
LED L1	0~255
……	……
LED R5	0~255
LED G5	0~255
LED B5	0~255
LED L5	0~255

Frequency

Select **Frequency,** press ENTER.

Use UP/DOWN button to select a value, confirm your selection with ENTER.

To exit the offset menu, press MENU, or wait 30 seconds.

Frequency	VALUES
900Hz	772~1027
1000Hz	872~1127
1100Hz	972~1227
1200Hz	1072~1327
1300Hz	1172~1427
1400Hz	1272~1527
1500Hz	1372~1627
2500Hz	2372~2627
4000Hz	3872~4127
5000Hz	4872~5127
6000Hz	5872~6127
10KHz	9872~10127
15KHz	14872~15127
20KHz	19872~20127
25KHz	24872~25127

Pan 1

Select **Pan 1,** press ENTER.
Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

.....

Pan 5

Select **Pan 5,** press ENTER.
Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

Tilt 1

Select **Tilt 1,** press ENTER.
Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

.....

Tilt 5

Select **Tilt 5,** press ENTER.
Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

Zoom 1

Select **Zoom 1,** press ENTER.
Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

.....

Zoom 5

Select **Zoom 5,** press ENTER.
Use UP/DOWN button to select a value between -128 and 127, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED R

Select **LED R,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED G

Select **LED G,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED B

Select **LED B,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED L

Select **LED L,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED R1

Select **LED R1,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED G1

Select **LED G1,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED B1

Select **LED B1,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED L1

Select **LED L1,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

.....

LED R5

Select **LED R5,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED G5

Select **LED G5,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED B5

Select **LED B5,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

LED L5

Select **LED L5,** press ENTER.
Use UP/DOWN button to select a value between 0 and 255, confirm your selection with ENTER.
To exit the offset menu, press MENU, or wait 30 seconds.

07/ Configuring the Device for DMX Control

7.1 Address Setting

All fixtures should be given a DMX starting address when operating with a DMX controller, in order to ensure that the correct fixture responds to the correct control signal. Incorrect settings will result in unpredictable responses from the lighting controller.
You can set the same starting address for all fixtures or a group of fixtures, or set different addresses for each individual fixture.
Setting all fixtures to the same DMX address will cause all fixtures to react in the same way. In this case, please note that changing the settings of one channel will affect all the fixtures simultaneously.
If you set each fixture to a different DMX address, each unit will “listen” starting at the channel number you have set, based on the quantity of DMX channels of each fixture. That means changing the settings of one channel will only affect the selected fixture.
For example, if the first fixture is set to 41 ch DMX mode with a start DMX address of 1, the following fixture in the DMX chain should then be set to a DMX address of 42. As the first fixture uses all the first 41 DMX channels, the next available channel is 42 (41+1=42 >> 42).
See the chart below for more details:

Channel Mode	Unit 1 Address	Unit 2 Address	Unit 3 Address	Unit 4 Address	Unit xxx Address
41 channels	1	42	83	124	.....
71 channels	1	72	143	214	.....
75 channels	1	76	151	226	.....
85 channels	1	86	171	256	.....
170 channels	1	171	341	511	/

7.2 DMX Protocol

Valid from firmware version: V1.3

41 ch (Mode 1):

CHANNEL	VALUE	FUNCTION
1	000-255	PAN 1 0°→59°
2	000-255	PAN 1 FINE
3	000-255	TILT 1 0°→221°
4	000-255	TILT 1 FINE
5	000-255	ZOOM 1 Wide→Narrow
6	000-255	PAN 2 0°→59°
7	000-255	PAN 2 FINE
8	000-255	TILT 2 0°→221°
9	000-255	TILT 2 FINE
10	000-255	ZOOM 2 Wide→Narrow
11	000-255	PAN 3 0°→59°
12	000-255	PAN 3 FINE
13	000-255	TILT 3 0°→221°

14	000-255	TILT 3 FINE
15	000-255	ZOOM 3 Wide→Narrow
16	000-255	PAN 4 0°→59°
17	000-255	PAN 4 FINE
18	000-255	TILT 4 0°→221°
19	000-255	TILT 4 FINE
20	000-255	ZOOM 4 Wide→Narrow
21	000-255	PAN 5 0°→59°
22	000-255	PAN 5 FINE
23	000-255	TILT 5 0°→221°
24	000-255	TILT 5 FINE
25	000-255	ZOOM 5 Wide→Narrow
26	000-255	LED RED 0%→100%
27	000-255	LED GREEN 0%→100%
28	000-255	LED BLUE 0%→100%
29	000-255	LED LIME 0%→100%
30	000 001-004 005-009 010-013 014-018 019-022 023-027 028-031 032-036 037-040 041-045 046-049 050-054 055-058 059-063	LED CCT Null 8000K 7900K 7800K 7700K 7600K 7500K 7400K 7300K 7200K 7100K 7000K 6900K 6800K 6700K

	064-067	6600K
	068-072	6500K
	073-076	6400K
	077-081	6300K
	082-085	6200K
	086-090	6100K
	091-094	6000K
	095-099	5900K
	100-103	5800K
	104-108	5700K
	109-112	5600K
	113-117	5500K
	118-121	5400K
	122-126	5300K
	127-130	5200K
	131-135	5100K
	136-139	5000K
	140-144	4900K
	145-148	4800K
	149-153	4700K
	154-157	4600K
	158-162	4500K
	163-166	4400K
	167-171	4300K
	172-175	4200K
	176-180	4100K
	181-184	4000K
	185-189	3900K
	190-193	3800K
	194-198	3700K
	199-202	3600K
	203-207	3500K
	208-211	3400K
	212-216	3300K
	217-220	3200K
	221-225	3100K
	226-229	3000K
	230-234	2900K
	235-238	2800K
	239-243	2700K
	244-247	2600K
	248-255	2500K
31		**LED COLOR**
	000-009	Null
	010-016	LEE 790 – Moroccan Pink
	017-023	LEE 157 – Pink
	024-030	LEE 332 – Special Rose Pink

	031-037	LEE 328 – Follies Pink
	038-044	LEE 345 – Fuchsia Pink
	045-051	LEE 194 – Surprise Pink
	052-058	LEE 181 – Congo Blue
	059-065	LEE 071 – Tokyo Blue
	066-072	LEE 120 – Deep Blue
	073-079	LEE 079 – Just Blue
	080-086	LEE 132 – Medium Blue
	087-093	LEE 200 – Double CT Blue
	094-100	LEE 161 – State Blue
	101-107	LEE 201 – Full CT Blue
	108-114	LEE 202 – Half CT Blue
	115-121	LEE 117 – Steel Blue
	122-128	LEE 353 – Lighter Blue
	129-135	LEE 118 – Light Blue
	136-142	LEE 116 – Medium Blue Green
	143-149	LEE 124 – Dark Green
	150-156	LEE 139 – Primary Green
	157-163	LEE 089 – Moss Green
	164-170	LEE 122 – Fern Green
	171-177	LEE 738 – JAS Green
	178-184	LEE 088 – Lime Green
	185-191	LEE 100 – Spring Yellow
	192-198	LEE 104 – Deep Amber
	199-205	LEE 179 – Chrome Orange
	206-212	LEE 105 – Orange
	213-219	LEE 021 – Gold Amber
	220-226	LEE 778 – Millennium Gold
	227-233	LEE 135 – Deep Gold Amber
	234-255	LEE 164 – Flame Red
32		**RING RED**
	000-255	0%→100%
33		**RING GREEN**
	000-255	0%→100%
34		**RING BLUE**
	000-255	0%→100%
35		**RING MACRO EFFECT & SPEED**
	000-015	Null
	016-031	Macro Effect 1, Fast to Slow
	032-047	Macro Effect 2, Fast to Slow
	048-063	Macro Effect 3, Fast to Slow
	064-079	Macro Effect 4, Fast to Slow
	080-095	Macro Effect 5, Fast to Slow
	096-111	Macro Effect 6, Fast to Slow
	112-127	Macro Effect 7, Fast to Slow
	128-143	Macro Effect 8, Fast to Slow
	144-159	Macro Effect 9, Fast to Slow

	160-175	Macro Effect 10, Fast to Slow
	176-191	Macro Effect 11, Fast to Slow
	192-207	Macro Effect 12, Fast to Slow
	208-223	Macro Effect 13, Fast to Slow
	224-239	Macro Effect 14, Fast to Slow
	240-255	Macro Effect 15, Fast to Slow
36		DIMMER
	000-255	0%→100%
37	000-255	DIMMER FINE
38		LED STROBE
	000-007	Close
	008-015	Open
	016-131	Strobe from Slow to Fast
	132-139	Open
	140-181	Fast Open Slow Close from Slow to Fast
	182-189	Open
	190-231	Slow Open Fast Close from Slow to Fast
	232-239	Open
	240-247	Random Strobe from Slow to Fast
	248-255	Open
39		RING STROBE
	000-007	Close
	008-015	Open
	016-131	Strobe from Slow to Fast
	132-139	Open
	140-181	Fast Open Slow Close from Slow to Fast
	182-189	Open
	190-231	Slow Open Fast Close from Slow to Fast
	232-239	Open
	240-247	Random Strobe from Slow to Fast
	248-255	Open
40		PAN/TILT SPEED
	000-255	Fast to Slow
41		FUNCTION (To activate following functions, stop in DMX value for at least 3 seconds.)
	000-029	Null
	030-039	Dimmer Curve: Linear
	040-049	Dimmer Curve: Square Law
	050-059	Dimmer Curve: Inv SQ Law
	060-069	Dimmer Curve: S Curve
	070-079	Fan Mode: Standard
	080-089	Fan Mode: Quiet
	090-099	Null
	100-109	Led Frequency Setting Enable
	110-119	Led Frequency Setting Disable

	120-122	Null
	123	900Hz
	124	1000Hz
	125	1100Hz
	126	1200Hz
	127	1300Hz
	128	1400Hz
	129	1500Hz
	130	2500Hz
	131	4000Hz
	132	5000Hz
	133	6000Hz
	134	10KHz
	135	15KHz
	136	20KHz
	137	25KHz
	138-139	Null
	140-149	Pan/Tilt Reset
	150-159	Effect Reset
	160-169	Head Invert: Yes
	170-179	Head Invert: No
	180-189	CCT Calibration: On
	190-199	CCT Calibration: Off
	200-209	All Reset
	210-219	Dimmer Speed: Fast
	220-229	Dimmer Speed: Smooth
	230	Dimming Start Mode: High
	231	Dimming Start Mode: Low
	232-233	Invert Pixel Order: Yes
	234-235	Invert Pixel Order: No
	236-237	Pan Invert: Yes
	238-239	Pan Invert: No
	240-241	Tilt Invert: Yes
	242-243	Tilt Invert: No
	244-255	Null

71 ch (Mode 2) / 75 ch (Mode 3) / 85 ch (Mode 4):

CHANNEL			VALUE	FUNCTION
71ch	75ch	85ch		
1	1	1	000-255	**PAN 1** 0°→59°
2	2	2	000-255	**PAN 1 FINE**
3	3	3	000-255	**TILT 1** 0°→221°
4	4	4	000-255	**TILT 1 FINE**
5	5	5	000-255	**LED 1 RED** 0%→100%
6	6	6	000-255	**LED 1 GREEN** 0%→100%
7	7	7	000-255	**LED 1 BLUE** 0%→100%
8	8	8	000-255	**LED 1 LIME** 0%→100%
		9	000-255	**LED 1 DIMMER** 0%→100%
		10	000-255	**LED 1 DIMMER FINE**
	9	11	000-007 008-015 016-131 132-139 140-181 182-189 190-231 232-239 240-247 248-255	**LED 1 STROBE** Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
9	10	12	000-255	**ZOOM 1** Wide→Narrow
10	11	13	000-255	**RING 1 RED** 0%→100%
11	12	14	000-255	**RING 1 GREEN** 0%→100%
12	13	15	000-255	**RING 1 BLUE** 0%→100%
13	14	16	000-015 016-031	**RING 1 MACRO EFFECT & SPEED** Null Macro Effect 1, Fast to Slow

			032-047 048-063 064-079 080-095 096-111 112-127 128-143 144-159 160-175 176-191 192-207 208-223 224-239 240-255	Macro Effect 2, Fast to Slow Macro Effect 3, Fast to Slow Macro Effect 4, Fast to Slow Macro Effect 5, Fast to Slow Macro Effect 6, Fast to Slow Macro Effect 7, Fast to Slow Macro Effect 8, Fast to Slow Macro Effect 9, Fast to Slow Macro Effect 10, Fast to Slow Macro Effect 11, Fast to Slow Macro Effect 12, Fast to Slow Macro Effect 13, Fast to Slow Macro Effect 14, Fast to Slow Macro Effect 15, Fast to Slow
14	**15**	**17**	000-255	**PAN 2** 0°→59°
15	**16**	**18**	000-255	**PAN 2 FINE**
16	**17**	**19**	000-255	**TILT 2** 0°→221°
17	**18**	**20**	000-255	**TILT 2 FINE**
18	**19**	**21**	000-255	**LED 2 RED** 0%→100%
19	**20**	**22**	000-255	**LED 2 GREEN** 0%→100%
20	**21**	**23**	000-255	**LED 2 BLUE** 0%→100%
21	**22**	**24**	000-255	**LED 2 LIME** 0%→100%
		25	000-255	**LED 2 DIMMER** 0%→100%
		26	000-255	**LED 2 DIMMER FINE**
	23	**27**	000-007 008-015 016-131 132-139 140-181 182-189 190-231 232-239 240-247 248-255	**LED 2 STROBE** Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
22	**24**	**28**	000-255	**ZOOM 2** Wide→Narrow

23	25	29	000-255	**RING 2 RED** 0%→100%
24	26	30	000-255	**RING 2 GREEN** 0%→100%
25	27	31	000-255	**RING 2 BLUE** 0%→100%
26	28	32	000-015 016-031 032-047 048-063 064-079 080-095 096-111 112-127 128-143 144-159 160-175 176-191 192-207 208-223 224-239 240-255	**RING 2 MACRO EFFECT & SPEED** Null Macro Effect 1, Fast to Slow Macro Effect 2, Fast to Slow Macro Effect 3, Fast to Slow Macro Effect 4, Fast to Slow Macro Effect 5, Fast to Slow Macro Effect 6, Fast to Slow Macro Effect 7, Fast to Slow Macro Effect 8, Fast to Slow Macro Effect 9, Fast to Slow Macro Effect 10, Fast to Slow Macro Effect 11, Fast to Slow Macro Effect 12, Fast to Slow Macro Effect 13, Fast to Slow Macro Effect 14, Fast to Slow Macro Effect 15, Fast to Slow
27	29	33	000-255	**PAN 3** 0°→59°
28	30	34	000-255	**PAN 3 FINE**
29	31	35	000-255	**TILT 3** 0°→221°
30	32	36	000-255	**TILT 3 FINE**
31	33	37	000-255	**LED 3 RED** 0%→100%
32	34	38	000-255	**LED 3 GREEN** 0%→100%
33	35	39	000-255	**LED 3 BLUE** 0%→100%
34	36	40	000-255	**LED 3 LIME** 0%→100%
		41	000-255	**LED 3 DIMMER** 0%→100%
		42	000-255	**LED 3 DIMMER FINE**
	37	43	000-007 008-015 016-131	**LED 3 STROBE** Close Open Strobe from Slow to Fast

			132-139 140-181 182-189 190-231 232-239 240-247 248-255	Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
35	38	44	000-255	**ZOOM 3** Wide→Narrow
36	39	45	000-255	**RING 3 RED** 0%→100%
37	40	46	000-255	**RING 3 GREEN** 0%→100%
38	41	47	000-255	**RING 3 BLUE** 0%→100%
39	42	48	000-015 016-031 032-047 048-063 064-079 080-095 096-111 112-127 128-143 144-159 160-175 176-191 192-207 208-223 224-239 240-255	**RING 3 MACRO EFFECT & SPEED** Null Macro Effect 1, Fast to Slow Macro Effect 2, Fast to Slow Macro Effect 3, Fast to Slow Macro Effect 4, Fast to Slow Macro Effect 5, Fast to Slow Macro Effect 6, Fast to Slow Macro Effect 7, Fast to Slow Macro Effect 8, Fast to Slow Macro Effect 9, Fast to Slow Macro Effect 10, Fast to Slow Macro Effect 11, Fast to Slow Macro Effect 12, Fast to Slow Macro Effect 13, Fast to Slow Macro Effect 14, Fast to Slow Macro Effect 15, Fast to Slow
40	43	49	000-255	**PAN 4** 0°→59°
41	44	50	000-255	**PAN 4 FINE**
42	45	51	000-255	**TILT 4** 0°→221°
43	46	52	000-255	**TILT 4 FINE**
44	47	53	000-255	**LED 4 RED** 0%→100%
45	48	54	000-255	**LED 4 GREEN** 0%→100%
46	49	55	000-255	**LED 4 BLUE** 0%→100%

47	50	56	000-255	**LED 4 LIME** 0%→100%
		57	000-255	**LED 4 DIMMER** 0%→100%
		58	000-255	**LED 4 DIMMER FINE**
	51	59	000-007 008-015 016-131 132-139 140-181 182-189 190-231 232-239 240-247 248-255	**LED 4 STROBE** Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
48	52	60	000-255	**ZOOM 4** Wide→Narrow
49	53	61	000-255	**RING 4 RED** 0%→100%
50	54	62	000-255	**RING 4 GREEN** 0%→100%
51	55	63	000-255	**RING 4 BLUE** 0%→100%
52	56	64	000-015 016-031 032-047 048-063 064-079 080-095 096-111 112-127 128-143 144-159 160-175 176-191 192-207 208-223 224-239 240-255	**RING 4 MACRO EFFECT & SPEED** Null Macro Effect 1, Fast to Slow Macro Effect 2, Fast to Slow Macro Effect 3, Fast to Slow Macro Effect 4, Fast to Slow Macro Effect 5, Fast to Slow Macro Effect 6, Fast to Slow Macro Effect 7, Fast to Slow Macro Effect 8, Fast to Slow Macro Effect 9, Fast to Slow Macro Effect 10, Fast to Slow Macro Effect 11, Fast to Slow Macro Effect 12, Fast to Slow Macro Effect 13, Fast to Slow Macro Effect 14, Fast to Slow Macro Effect 15, Fast to Slow
53	57	65	000-255	**PAN 5** 0°→59°
54	58	66	000-255	**PAN 5 FINE**
55	59	67		**TILT 5**

			000-255	0°→221°
56	60	68	000-255	**TILT 5 FINE**
57	61	69	000-255	**LED 5 RED** 0%→100%
58	62	70	000-255	**LED 5 GREEN** 0%→100%
59	63	71	000-255	**LED 5 BLUE** 0%→100%
60	64	72	000-255	**LED 5 LIME** 0%→100%
		73	000-255	**LED 5 DIMMER** 0%→100%
		74	000-255	**LED 5 DIMMER FINE**
	65	75		**LED 5 STROBE**
			000-007	Close
			008-015	Open
			016-131	Strobe from Slow to Fast
			132-139	Open
			140-181	Fast Open Slow Close from Slow to Fast
			182-189	Open
			190-231	Slow Open Fast Close from Slow to Fast
			232-239	Open
			240-247	Random Strobe from Slow to Fast
			248-255	Open
61	66	76	000-255	**ZOOM 5** Wide→Narrow
62	67	77	000-255	**RING 5 RED** 0%→100%
63	68	78	000-255	**RING 5 GREEN** 0%→100%
64	69	79	000-255	**RING 5 BLUE** 0%→100%
65	70	80		**RING 5 MACRO EFFECT & SPEED**
			000-015	Null
			016-031	Macro Effect 1, Fast to Slow
			032-047	Macro Effect 2, Fast to Slow
			048-063	Macro Effect 3, Fast to Slow
			064-079	Macro Effect 4, Fast to Slow
			080-095	Macro Effect 5, Fast to Slow
			096-111	Macro Effect 6, Fast to Slow
			112-127	Macro Effect 7, Fast to Slow
			128-143	Macro Effect 8, Fast to Slow
			144-159	Macro Effect 9, Fast to Slow
			160-175	Macro Effect 10, Fast to Slow

			176-191 192-207 208-223 224-239 240-255	Macro Effect 11, Fast to Slow Macro Effect 12, Fast to Slow Macro Effect 13, Fast to Slow Macro Effect 14, Fast to Slow Macro Effect 15, Fast to Slow
66	**71**	**81**	000-255	**DIMMER** 0%→100%
67	**72**	**82**	000-255	**DIMMER FINE**
68			000-007 008-015 016-131 132-139 140-181 182-189 190-231 232-239 240-247 248-255	**LED STROBE** Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
69	**73**	**83**	000-007 008-015 016-131 132-139 140-181 182-189 190-231 232-239 240-247 248-255	**RING STROBE** Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
70	**74**	**84**	000-255	**PAN/TILT SPEED** Fast to Slow
71	**75**	**85**	000-029 030-039 040-049 050-059 060-069 070-079 080-089 090-099 100-109 110-119 120-122	**FUNCTION** (To activate following functions, stop in DMX value for at least 3 seconds.) Null Dimmer Curve: Linear Dimmer Curve: Square Law Dimmer Curve: Inv SQ Law Dimmer Curve: S Curve Fan Mode: Standard Fan Mode: Quiet Null Led Frequency Setting Enable Led Frequency Setting Disable Null

			123	900Hz
			124	1000Hz
			125	1100Hz
			126	1200Hz
			127	1300Hz
			128	1400Hz
			129	1500Hz
			130	2500Hz
			131	4000Hz
			132	5000Hz
			133	6000Hz
			134	10KHz
			135	15KHz
			136	20KHz
			137	25KHz
			138-139	Null
			140-149	Pan/Tilt Reset
			150-159	Effect Reset
			160-169	Head Invert: Yes
			170-179	Head Invert: No
			180-189	CCT Calibration: On
			190-199	CCT Calibration: Off
			200-209	All Reset
			210-219	Dimmer Speed: Fast
			220-229	Dimmer Speed: Smooth
			230	Dimming Start Mode: High
			231	Dimming Start Mode: Low
			232-233	Invert Pixel Order: Yes
			234-235	Invert Pixel Order: No
			236-237	Pan Invert: Yes
			238-239	Pan Invert: No
			240-241	Tilt Invert: Yes
			242-243	Tilt Invert: No
			244-255	Null

170 ch (Mode 5):

CHANNEL	VALUE	FUNCTION
1	000-255	**PAN 1** 0°→59°
2	000-255	**PAN 1 FINE**
3	000-255	**TILT 1** 0°→221°
4	000-255	**TILT 1 FINE**

5	000-255	**LED 1 RED** 0%→100%
6	000-255	**LED 1 GREEN** 0%→100%
7	000-255	**LED 1 BLUE** 0%→100%
8	000-255	**LED 1 LIME** 0%→100%
9	000-255	**ZOOM 1** Wide→Narrow
10	000-255	**RING 1 BLOCK 1 RED** 0%→100%
11	000-255	**RING 1 BLOCK 1 GREEN** 0%→100%
12	000-255	**RING 1 BLOCK 1 BLUE** 0%→100%
13	000-255	**RING 1 BLOCK 2 RED** 0%→100%
14	000-255	**RING 1 BLOCK 2 GREEN** 0%→100%
15	000-255	**RING 1 BLOCK 2 BLUE** 0%→100%
16	000-255	**RING 1 BLOCK 3 RED** 0%→100%
17	000-255	**RING 1 BLOCK 3 GREEN** 0%→100%
18	000-255	**RING 1 BLOCK 3 BLUE** 0%→100%
19	000-255	**RING 1 BLOCK 4 RED** 0%→100%
20	000-255	**RING 1 BLOCK 4 GREEN** 0%→100%
21	000-255	**RING 1 BLOCK 4 BLUE** 0%→100%
22	000-255	**RING 1 BLOCK 5 RED** 0%→100%
23	000-255	**RING 1 BLOCK 5 GREEN** 0%→100%
24	000-255	**RING 1 BLOCK 5 BLUE** 0%→100%
25	000-255	**RING 1 BLOCK 6 RED** 0%→100%
26	000-255	**RING 1 BLOCK 6 GREEN** 0%→100%

27	000-255	**RING 1 BLOCK 6 BLUE** 0%→100%
28	000-255	**RING 1 BLOCK 7 RED** 0%→100%
29	000-255	**RING 1 BLOCK 7 GREEN** 0%→100%
30	000-255	**RING 1 BLOCK 7 BLUE** 0%→100%
31	000-255	**RING 1 BLOCK 8 RED** 0%→100%
32	000-255	**RING 1 BLOCK 8 GREEN** 0%→100%
33	000-255	**RING 1 BLOCK 8 BLUE** 0%→100%
34	000-255	**PAN 2** 0°→59°
35	000-255	**PAN 2 FINE**
36	000-255	**TILT 2** 0°→221°
37	000-255	**TILT 2 FINE**
38	000-255	**LED 2 RED** 0%→100%
39	000-255	**LED 2 GREEN** 0%→100%
40	000-255	**LED 2 BLUE** 0%→100%
41	000-255	**LED 2 LIME** 0%→100%
42	000-255	**ZOOM 2** Wide→Narrow
43	000-255	**RING 2 BLOCK 1 RED** 0%→100%
44	000-255	**RING 2 BLOCK 1 GREEN** 0%→100%
45	000-255	**RING 2 BLOCK 1 BLUE** 0%→100%
46	000-255	**RING 2 BLOCK 2 RED** 0%→100%
47	000-255	**RING 2 BLOCK 2 GREEN** 0%→100%
48	000-255	**RING 2 BLOCK 2 BLUE** 0%→100%
49		**RING 2 BLOCK 3 RED**

	000-255	0%→100%
50	000-255	RING 2 BLOCK 3 GREEN 0%→100%
51	000-255	RING 2 BLOCK 3 BLUE 0%→100%
52	000-255	RING 2 BLOCK 4 RED 0%→100%
53	000-255	RING 2 BLOCK 4 GREEN 0%→100%
54	000-255	RING 2 BLOCK 4 BLUE 0%→100%
55	000-255	RING 2 BLOCK 5 RED 0%→100%
56	000-255	RING 2 BLOCK 5 GREEN 0%→100%
57	000-255	RING 2 BLOCK 5 BLUE 0%→100%
58	000-255	RING 2 BLOCK 6 RED 0%→100%
59	000-255	RING 2 BLOCK 6 GREEN 0%→100%
60	000-255	RING 2 BLOCK 6 BLUE 0%→100%
61	000-255	RING 2 BLOCK 7 RED 0%→100%
62	000-255	RING 2 BLOCK 7 GREEN 0%→100%
63	000-255	RING 2 BLOCK 7 BLUE 0%→100%
64	000-255	RING 2 BLOCK 8 RED 0%→100%
65	000-255	RING 2 BLOCK 8 GREEN 0%→100%
66	000-255	RING 2 BLOCK 8 BLUE 0%→100%
67	000-255	PAN 3 0°→59°
68	000-255	PAN 3 FINE
69	000-255	TILT 3 0°→221°
70	000-255	TILT 3 FINE
71	000-255	LED 3 RED 0%→100%

72	000-255	**LED 3 GREEN** 0%→100%
73	000-255	**LED 3 BLUE** 0%→100%
74	000-255	**LED 3 LIME** 0%→100%
75	000-255	**ZOOM 3** Wide→Narrow
76	000-255	**RING 3 BLOCK 1 RED** 0%→100%
77	000-255	**RING 3 BLOCK 1 GREEN** 0%→100%
78	000-255	**RING 3 BLOCK 1 BLUE** 0%→100%
79	000-255	**RING 3 BLOCK 2 RED** 0%→100%
80	000-255	**RING 3 BLOCK 2 GREEN** 0%→100%
81	000-255	**RING 3 BLOCK 2 BLUE** 0%→100%
82	000-255	**RING 3 BLOCK 3 RED** 0%→100%
83	000-255	**RING 3 BLOCK 3 GREEN** 0%→100%
84	000-255	**RING 3 BLOCK 3 BLUE** 0%→100%
85	000-255	**RING 3 BLOCK 4 RED** 0%→100%
86	000-255	**RING 3 BLOCK 4 GREEN** 0%→100%
87	000-255	**RING 3 BLOCK 4 BLUE** 0%→100%
88	000-255	**RING 3 BLOCK 5 RED** 0%→100%
89	000-255	**RING 3 BLOCK 5 GREEN** 0%→100%
90	000-255	**RING 3 BLOCK 5 BLUE** 0%→100%
91	000-255	**RING 3 BLOCK 6 RED** 0%→100%
92	000-255	**RING 3 BLOCK 6 GREEN** 0%→100%
93	000-255	**RING 3 BLOCK 6 BLUE** 0%→100%

94	000-255	RING 3 BLOCK 7 RED 0%→100%
95	000-255	RING 3 BLOCK 7 GREEN 0%→100%
96	000-255	RING 3 BLOCK 7 BLUE 0%→100%
97	000-255	RING 3 BLOCK 8 RED 0%→100%
98	000-255	RING 3 BLOCK 8 GREEN 0%→100%
99	000-255	RING 3 BLOCK 8 BLUE 0%→100%
100	000-255	PAN 4 0°→59°
101	000-255	PAN 4 FINE
102	000-255	TILT 4 0°→221°
103	000-255	TILT 4 FINE
104	000-255	LED 4 RED 0%→100%
105	000-255	LED 4 GREEN 0%→100%
106	000-255	LED 4 BLUE 0%→100%
107	000-255	LED 4 LIME 0%→100%
108	000-255	ZOOM 4 Wide→Narrow
109	000-255	RING 4 BLOCK 1 RED 0%→100%
110	000-255	RING 4 BLOCK 1 GREEN 0%→100%
111	000-255	RING 4 BLOCK 1 BLUE 0%→100%
112	000-255	RING 4 BLOCK 2 RED 0%→100%
113	000-255	RING 4 BLOCK 2 GREEN 0%→100%
114	000-255	RING 4 BLOCK 2 BLUE 0%→100%
115	000-255	RING 4 BLOCK 3 RED 0%→100%
116		RING 4 BLOCK 3 GREEN

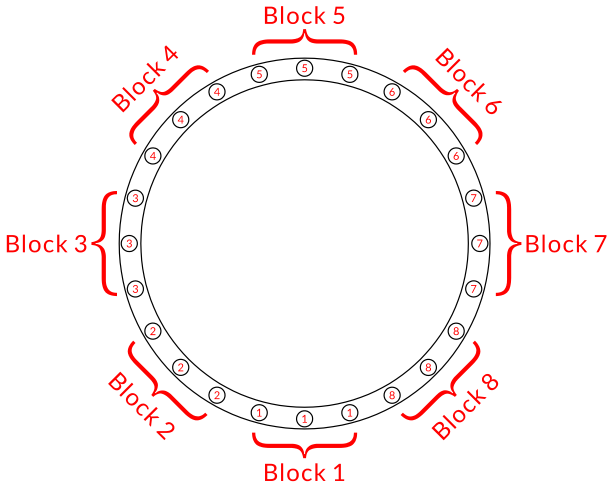
	000-255	0%→100%
117	000-255	RING 4 BLOCK 3 BLUE 0%→100%
118	000-255	RING 4 BLOCK 4 RED 0%→100%
119	000-255	RING 4 BLOCK 4 GREEN 0%→100%
120	000-255	RING 4 BLOCK 4 BLUE 0%→100%
121	000-255	RING 4 BLOCK 5 RED 0%→100%
122	000-255	RING 4 BLOCK 5 GREEN 0%→100%
123	000-255	RING 4 BLOCK 5 BLUE 0%→100%
124	000-255	RING 4 BLOCK 6 RED 0%→100%
125	000-255	RING 4 BLOCK 6 GREEN 0%→100%
126	000-255	RING 4 BLOCK 6 BLUE 0%→100%
127	000-255	RING 4 BLOCK 7 RED 0%→100%
128	000-255	RING 4 BLOCK 7 GREEN 0%→100%
129	000-255	RING 4 BLOCK 7 BLUE 0%→100%
130	000-255	RING 4 BLOCK 8 RED 0%→100%
131	000-255	RING 4 BLOCK 8 GREEN 0%→100%
132	000-255	RING 4 BLOCK 8 BLUE 0%→100%
133	000-255	PAN 5 0°→59°
134	000-255	PAN 5 FINE
135	000-255	TILT 5 0°→221°
136	000-255	TILT 5 FINE
137	000-255	LED 5 RED 0%→100%
138	000-255	LED 5 GREEN 0%→100%

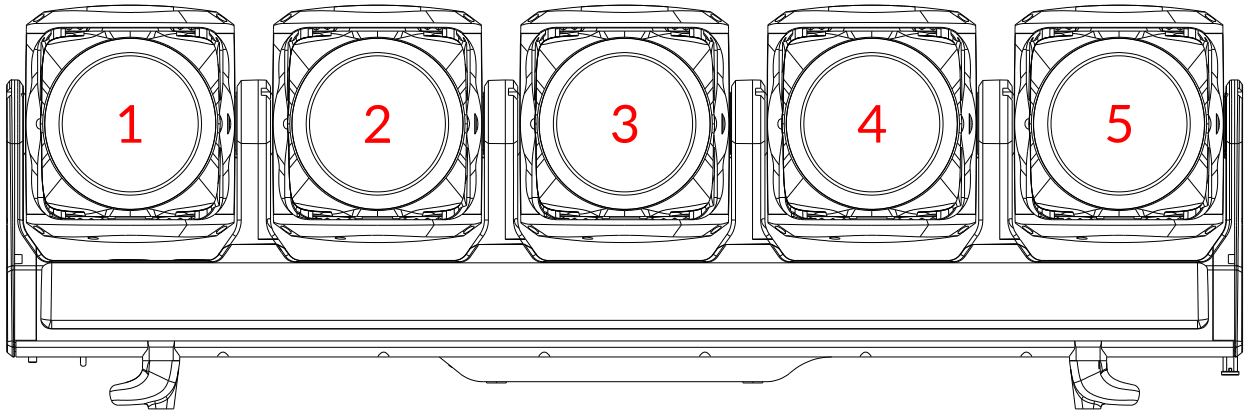
139	000-255	**LED 5 BLUE** 0%→100%
140	000-255	**LED 5 LIME** 0%→100%
141	000-255	**ZOOM 5** Wide→Narrow
142	000-255	**RING 5 BLOCK 1 RED** 0%→100%
143	000-255	**RING 5 BLOCK 1 GREEN** 0%→100%
144	000-255	**RING 5 BLOCK 1 BLUE** 0%→100%
145	000-255	**RING 5 BLOCK 2 RED** 0%→100%
146	000-255	**RING 5 BLOCK 2 GREEN** 0%→100%
147	000-255	**RING 5 BLOCK 2 BLUE** 0%→100%
148	000-255	**RING 5 BLOCK 3 RED** 0%→100%
149	000-255	**RING 5 BLOCK 3 GREEN** 0%→100%
150	000-255	**RING 5 BLOCK 3 BLUE** 0%→100%
151	000-255	**RING 5 BLOCK 4 RED** 0%→100%
152	000-255	**RING 5 BLOCK 4 GREEN** 0%→100%
153	000-255	**RING 5 BLOCK 4 BLUE** 0%→100%
154	000-255	**RING 5 BLOCK 5 RED** 0%→100%
155	000-255	**RING 5 BLOCK 5 GREEN** 0%→100%
156	000-255	**RING 5 BLOCK 5 BLUE** 0%→100%
157	000-255	**RING 5 BLOCK 6 RED** 0%→100%
158	000-255	**RING 5 BLOCK 6 GREEN** 0%→100%
159	000-255	**RING 5 BLOCK 6 BLUE** 0%→100%
160	000-255	**RING 5 BLOCK 7 RED** 0%→100%

161	000-255	**RING 5 BLOCK 7 GREEN** 0%→100%
162	000-255	**RING 5 BLOCK 7 BLUE** 0%→100%
163	000-255	**RING 5 BLOCK 8 RED** 0%→100%
164	000-255	**RING 5 BLOCK 8 GREEN** 0%→100%
165	000-255	**RING 5 BLOCK 8 BLUE** 0%→100%
166	000-255	**LED DIMMER** 0%→100%
167	000-007 008-015 016-131 132-139 140-181 182-189 190-231 232-239 240-247 248-255	**LED STROBE** Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
168	000-255	**RING DIMMER** 0%→100%
169	000-007 008-015 016-131 132-139 140-181 182-189 190-231 232-239 240-247 248-255	**RING STROBE** Close Open Strobe from Slow to Fast Open Fast Open Slow Close from Slow to Fast Open Slow Open Fast Close from Slow to Fast Open Random Strobe from Slow to Fast Open
170	000-029 030-039 040-049 050-059 060-069 070-079 080-089	**FUNCTION** (To activate following functions, stop in DMX value for at least 3 seconds.) Null Dimmer Curve: Linear Dimmer Curve: Square Law Dimmer Curve: Inv SQ Law Dimmer Curve: S Curve Fan Mode: Standard Fan Mode: Quiet

	090-099	Null
	100-109	Led Frequency Setting Enable
	110-119	Led Frequency Setting Disable
	120-122	Null
	123	900Hz
	124	1000Hz
	125	1100Hz
	126	1200Hz
	127	1300Hz
	128	1400Hz
	129	1500Hz
	130	2500Hz
	131	4000Hz
	132	5000Hz
	133	6000Hz
	134	10KHz
	135	15KHz
	136	20KHz
	137	25KHz
	138-139	Null
	140-149	Pan/Tilt Reset
	150-159	Effect Reset
	160-169	Head Invert: Yes
	170-179	Head Invert: No
	180-189	CCT Calibration: On
	190-199	CCT Calibration: Off
	200-209	All Reset
	210-219	Dimmer Speed: Fast
	220-229	Dimmer Speed: Smooth
	230	Dimming Start Mode: High
	231	Dimming Start Mode: Low
	232-233	Invert Pixel Order: Yes
	234-235	Invert Pixel Order: No
	236-237	Pan Invert: Yes
	238-239	Pan Invert: No
	240-241	Tilt Invert: Yes
	242-243	Tilt Invert: No
	244-255	Null

LED PIXEL ZONES:





08/ Error Information

Error codes are shown continuously in the display when the fixture fails and they will not disappear until the fixture is repaired.

CPU-B/C/D/E/F/G/H/I Error

Check whether the 485 (DATA) leads on the PCB board are installed in place or disconnected.
Check whether the related 485 (DATA) signal circuit on the PCB board is damaged.

LED Timeout Use

LED Too Hot Off

When the fixture temperature reaches 86℃, it will automatically turn off to protect the fixture.

LED Temp. 1/2/3/4/5 Error

Check whether the temperature detecting board is normal.
Check whether the components of the temperature detecting board are damaged.
Check whether the lead on the temperature detecting board is installed in place or disconnected.

Network Error

Check whether the net model is installed in place.
Check whether the net model is damaged.
Check whether the network is normal.

Pan 1/2/3/4/5 Reset Error

Check whether the position of the pan where the magnet is installed falls off or is damaged.
Check whether there are obstacles in the pan operating range.
Check whether the Hall element on the pan is damaged.
Check whether the lead connecting the Hall element on the pan and the PCB board is in poor contact or disconnected.
Check whether the motor on the pan is damaged.
Check whether the related circuit of the motor drive board on the pan is damage.

Pan 1/2/3/4/5 Encode Error

Check whether the encoder on the pan is damaged.
Check whether the lead connecting the encoder on the pan and the PCB board is in poor contact or disconnected.

Pan 1/2/3/4/5 Encode No Find

Check whether the lead connecting the encoder on the pan and the PCB board is in poor contact or disconnected.

Pan 1/2/3/4/5 Encode Disable

Check whether the encoder on the pan is damaged.

Tilt 1/2/3/4/5 Reset Error

Check whether the position of the tilt where the magnet is installed falls off or is damaged.
Check whether there are obstacles in the tilt operating range.
Check whether the Hall element on the tilt is damaged.
Check whether the lead connecting the Hall element on the tilt and the PCB board is in poor contact or disconnected.
Check whether the motor on the tilt is damaged.
Check whether the related circuit of the motor drive board on the tilt is damage.

Tilt 1/2/3/4/5 Encode Error

Check whether the encoder on the tilt is damaged.
Check whether the lead connecting the encoder on the tilt and the PCB board is in poor contact or disconnected.

Tilt 1/2/3/4/5 Encode No Find

Check whether the lead connecting the encoder on the tilt and the PCB board is in poor contact or disconnected.

Tilt 1/2/3/4/5 Encode Disable

Check whether the encoder on the tilt is damaged.

Zoom 1/2/3/4/5 Reset Error

Check whether the position of the zoom where the magnet is installed falls off or is damaged.
Check whether there are obstacles in the zoom operating range.
Check whether the Hall element on the zoom is damaged.
Check whether the lead connecting the Hall element on the zoom and the PCB board is in poor contact or disconnected.
Check whether the motor on the zoom is damaged.
Check whether the related circuit of the motor drive board on the zoom is damage.

Base Fan 1/2 Start Error

Check whether the fan is not running.
Check whether the fan leads are installed in place or disconnected.
Check whether the fan is damaged.
Check whether there are obstacles in the fan operating range.

Head Fan 1/2/3/4/5 Start Error

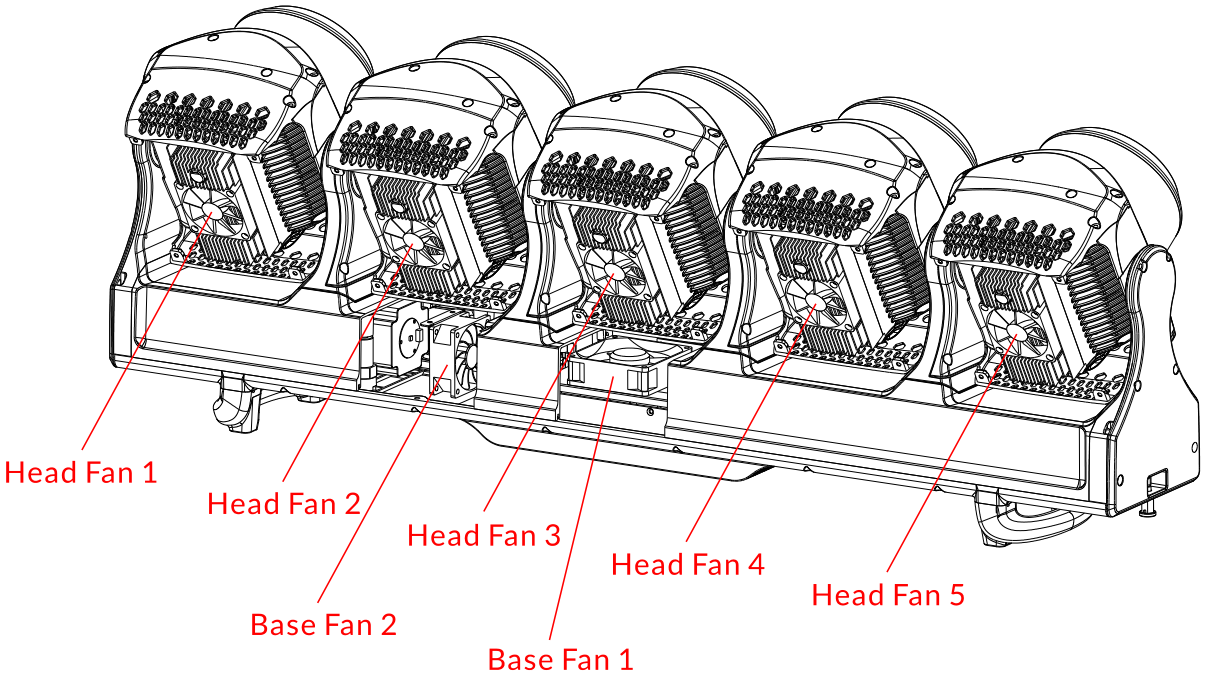
Check whether the fan is not running.

Check whether the fan leads are installed in place or disconnected.

Check whether the fan is damaged.

Check whether there are obstacles in the fan operating range.

Position of cooling fans:



Cooling Fans	Part Number	V	W	Position
Base Fan 1	3014001368	DC 24V	3.8W	Base - A
Base Fan 2	3014001293	DC 24V	4.8W	
Head Fan 1	3014003023	DC 24V	2.2W	Head - D
Head Fan 2				Head - E
Head Fan 3				Head - F
Head Fan 4				Head - G
Head Fan 5				Head - H

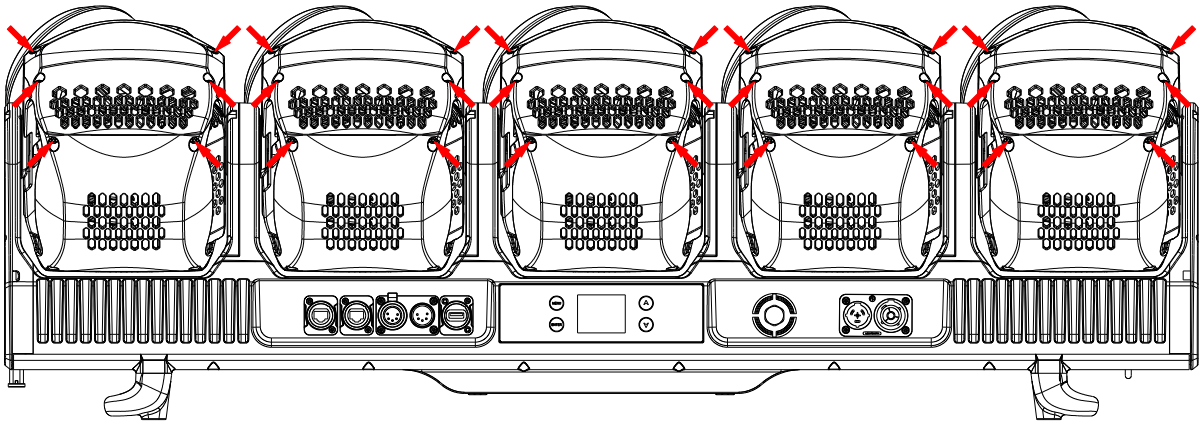
09/ Troubleshooting

Problem	Potential cause(s)	Remedies
Fixture does not respond or appears to be off.	No power to the fixture.	Confirm that the power is switched on and cables are plugged in.
	No output from PSU.	Replace the PSU.
Fixture suddenly turned off.	Power was turned off.	Check the power supply, switches and breakers.
Light output cuts out intermittently.	Fixture is too hot.	Check fixture's stored error messages for more information. Allow fixture to cool. Clean fixture. Reduce ambient temperature.
Fixture suddenly stopped responding.	DMX cables were disconnected.	Inspect DMX cables.
Fixture operates irregularly / abnormal.	Incorrect DMX address or DMX mode.	Inspect and enter the correct DMX address or mode.
	DMX link is not terminated.	Install a XLR 120ohm DMX termination at the end of the DMX link.
	Bad data link.	Replace or repair defective cables and/or connections.
	One of the fixtures is defective and is disturbing data transmission on the link.	Track and isolate the corrupted fixture. Have the fixture serviced by a qualified technician.
Pan / tilt is skipping / shuddering	Pan/ tilt locks are not released.	Release the pan / tilt locks.
	Obstacles are within the required pan / tilt clearance.	Inspect and remove any obstacles constraining free operation of the pan / tilt.
	The Hall element is damaged.	Replace the Hall element.
	The magnetic steel fell out.	Replace the magnetic steel.

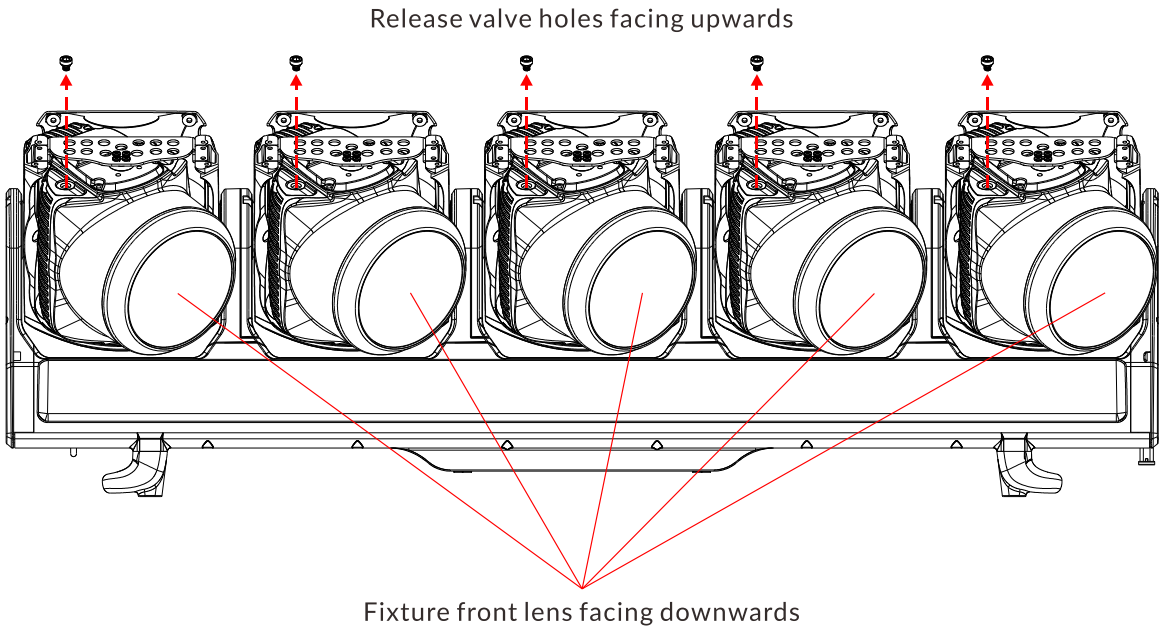
Condensation Removal Procedures:

1. Disconnect the fixture from power and allow it to cool.

2. Remove the six retaining screws (arrowed) in each head from one of the head covers and then remove the head covers from the fixture, keeping the screws for re-use.



3. Remove the hexagonal screws from the fixture's heads and keep them for re-use.



4. Reapply power to the fixture.

5. Run the fixture at full intensity for at least one hour with the DMX values of channels 'Tilt' and 'Zoom' set to '0' (fixture front lens facing downwards, release valve holes facing upwards) to reduce the moisture inside of the fixture.

6. After the moisture has completely evaporated, put the hexagonal screws and the head covers back on with the fixture still at full intensity.

Note: Tornado with S/N after TF-042600151 and AE-022609823 is referring to this instruction.

Moisture on Lens Glass	Excessive ambient humidity or internal residual moisture	Keep the fixture powered on and lit until the moisture condenses into visible water droplets.
		Turn off the light output but keep the fixture powered on in standby mode for at least 12 hours. The fixture will operate continuously to eliminate internal moisture.
		Power on and test the fixture again. If condensation remains, repeat the above steps until the moisture is completely removed.

10/ Fixture Cleaning

Regular cleaning is very important for fixture life and performance. Buildup of dust, dirt, smoke particles, fog fluid residues, etc. degrades the fixture's light output and cooling ability. Cleaning schedules for lighting fixtures vary greatly depending on the operating environment. It is therefore impossible to specify precise cleaning intervals for the fixture. Environmental factors that may result in a need for frequent cleaning include:

- Use of smoke or fog machines.
- High airflow rates (near air conditioning vents, for example).
- Airborne dust (from stage effects, building structures and fittings or the natural environment at outdoor events, for example).

If one or more of these factors is present, inspect fixtures within their first few hours of operation to see whether cleaning is necessary. Check again at frequent intervals. This procedure will allow you to assess cleaning requirements in your particular situation.

Follow these precautions when cleaning the fixture:

- Work in a clean, dry, well-lit area.
- Use gentle pressure only. A soft lint-free cloth dampened with a solution of water and a mild detergent is recommended, under no circumstances should alcohol, solvents or abrasives be used! Use care when cleaning optical components: surfaces are fragile and easily scratched.

11/ Approvals and Certifications

This product has been tested and found to comply with the following standards:

- 2014/30/EU - Electromagnetic Compatibility (EMC)
- 2014/35/EU - Low Voltage Directive (LVD)
- cETLus Approved (Control #5000057)
- UK SI 2016 No. 1091: Electromagnetic Compatibility Regulations 2016
- UK SI 2016 No. 1101: The Electric Equipment (Safety) Regulations 2016



The information in this document is subject to change without notice.

For the latest information, visit www.acmelighting.com.