PRO**LIGHTS**®
PROFESSIONAL LIGHTS

STARK400
MOVING HEAD

USER MANUAL

TABLE OF CONTENTS

Packing content

- STARK400
- Mount bracket
- User manual

WARNING! Before carrying out any operations with the unit, carefully read this instruction manual and keep it with cure for future reference. It contains important information about the installation, usage and maintenance of the unit.

SAFETY

General instruction
- The products referred to in this manual conform to the European Community Directives and are there-fore marked with $C\,E$ and approved for the North American Market.
- The unit is supplied with hazardous network voltage (120V~). Leave servicing to skilled personnel only. Never make any modifications on the unit not described in this instruction manual, otherwise you will risk an electric shock.
- Connection must be made to a power supply system fitted with efficient earthing (Class I appliance ac-cording to standard EN 60598-1). It is, moreover, recommended to protect the supply lines of the units from indirect contact and/or shorting to earth by using appropriately sized residual current devices.
- The connection to the main network of electric distribution must be carried out by a qualified electrical installer. Check that the main frequency and voltage correspond to those for which the unit is designed as given on the electrical data label.
- This unit is not for home use, only professional applications.
- Never use the fixture under the following conditions:
  - in places wet;
  - in places subject to vibrations or bumps;
  - in places with an ambient temperature of over 45°C.
- Make certain that no inflammable liquids, water or metal objects enter the fixture.
- Do not dismantle or modify the fixture.
- All work must always be carried out by qualified technical personnel. Contact the nearest sales point for an inspection or contact the manufacturer directly.
- If the unit is to be put out of operation definitively, take it to a local recycling plant for a disposal which is not harmful to the environment.

Warnings and installation precautions
- If this device will be operated in any way different to the one described in this manual, it may suffer damage and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short circuit, burns, electric shock, etc.
- Before starting any maintenance work or cleaning the projector, cut off power from the main supply.
- Always additionally secure the projector with the safety rope. When carrying out any work, always com-ply scrupulously with all the regulations (particularly regarding safety) currently in force in the country in which the fixture's being used.
- For inside use only. Not designed for outside use.
- The minimum distance between the fixture and surrounding walls must be more than 50 cm and the air vents at the housing must not be covered in any case.
- Install the fixture in a well ventilated place.
- Keep any inflammable material at a safe distance from the fixture.
- The maximum temperature that can be reached on the external surface of the fitting, in a thermally steady state, is high. After power off, please cool down over 15 minutes.
- Shields, lenses or ultraviolet screens shall be changed if they have become damaged to such an extent that their effectiveness is impaired.
- The lamp (LED) shall be changed if it has become damaged or thermally deformed.
- Never look directly at the light beam. Please note that fast changes in lighting, e. g. flashing light, may trigger epileptic seizures in photosensitive persons or persons with epilepsy.

- 1 - INTRODUCTION

1.1 DESCRIPTION

STARK400 is a new generation, high output, LED wash luminaire designed to bring the workhorse LED washlight right up to date. Featuring 7 of Osrams new 40W RGBW Ostar LEDs it delivers a massive output for its size with a huge color range and extensive toolkit of effects.

1.2 TECHNICAL SPECIFICATIONS

LIGHT SOURCE
- Source: 7x40W RGBW Osram Ostar LED
- CT: Tunable 2000K~10000K
- Luminous Flux: (3°) 1971 lm, (45°) 2209lm
- Lux: (3°) 38890 lux, (45°) 2180lux @3m Full
- Lux: (3°) 14000 lux, (45°) 785lux @5m Full
- Source Life Expectancy: >50.000 h

OPTICS
- Zoom: 3°-45° Motorised linear zoom
- Lens Type: HQ glass lens optics

COLOR SYSTEM
- Color Mixing: RGBW/FC
- CTC: CTC control through independent DMX channel
- White Presets: 2000~10000K
- Color Wheel: Virtual color wheel with presets
- Macros: Several pre-build pixel macros with adjustable speed

DYNAMIC EFFECTS
- Pixel Patterns: Preprogrammed dynamic and static patterns
- FX Generator: Adjustable foreground/background color, index, speed, direction

BODY
- Pan Angle: 540/630°
- Tilt Angle: 233°
- Pan/Tilt Resolution: 16bit
- Feedback: Automatic repositioning after accidental movement
- Body: Aluminium structure with hi-resistance polycarbonate cover
- Body Color: Black

CONTROL
- Protocols: DMX512, RDM, Art-Net
- DMX Channels: 16/26/50ch
- Pixel Control: Pixel2Pixel control
- W-DMX: Included, Lumen Radio TiMo receiver
- RDM: RDM ready for fixture remote monitor and settings
- Display: LCD high resolution color display with autoflip

- Firmware Upgrade: Yes, via USB-DMX interface (UPBOX2) not included
- Hibernation: Power Safe Mode when lost DMX
- Master/Slave: for synchronized operation of more units linked in a chain

ELECTRONICS
- Dimmer: Linear 0~100% electronic dimmer
- Dimmer Curves: Different dimming curves available
- Strobe/Shutter: 1-30 Hz, electronic
- Battery Backup: Battery backup for user operation without connecting to the main power
- Operating Temperature: -10° ~ +45°
- Flicker: Flicker free operation

ELECTRICAL
- Power Supply: 100-240V – 50/60Hz
- Power Consumption (at 230V): 265W
- Power Consumption (at 120V): 265W
- Output (at 230V): 8 units on a single power line
- Output (at 120V): 4 units on a single power line

PHYSICAL
- Cooling: Combination of heat pipe cooling system and low noise fan
- Suspension And Fixing: Any position with "quick-lock" omega brackets
- Signal Connection: DMX 5p IN/OUT Amphenol, ARTNET IN/OUT
- Power Connection: IN Neutrik Truecon
- IP: 20
- Dimensions (WxHxD): 338x452x235mm
- Weight: 11,3kg

452mm/17,79in

338mm/13,30in

235mm/9,25in

PROLIGHTS
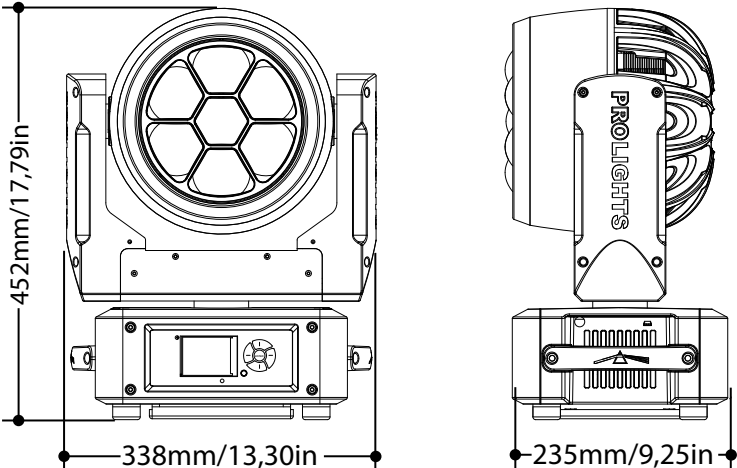
Technical drawing

Fig.1

1.3 OPERATING ELEMENTS AND CONNECTIONS
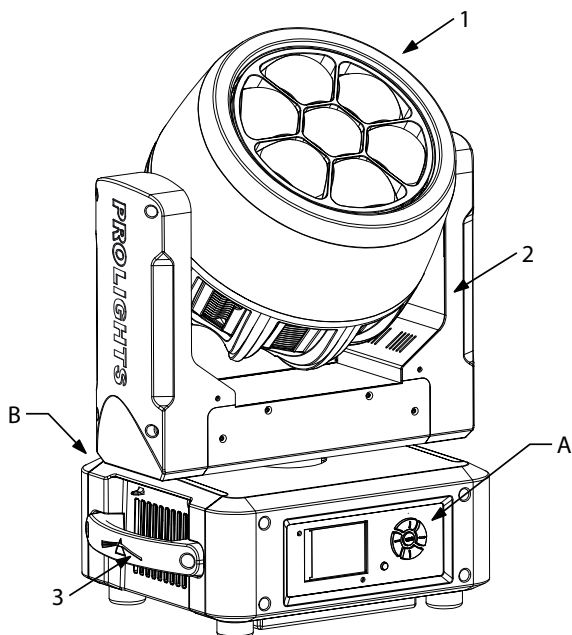
1. MOVING HEAD
2. ROTARY ARM
3. HANDLE
4. LED INDICATOR "WDMX"
5. MICROPHONE
6. CONTROL PANEL with LCD display and 5 button used to access the control panel functions and manage them.
7. EtherCON connector Signal IN/OUT
8. EtherCON connector Signal IN/OUT
9. DMX OUT (5-pole XLR):
   1 = ground, 2 = DMX-, 3 = DMX+, 4 N/C, 5 N/C
10. DMX IN (5-pole XLR):
    1 = ground, 2 = DMX-, 3 = DMX+, 4 N/C, 5 N/C
11. POWER IN (PowerCON IN): for connection to a socket (100-240V~/50-60Hz) via the supplied mains cable.
12. POWER OUT (PowerCON OUT): power output for connection of multiple units in series.
13. MAIN FUSE HOLDER: replace a burnt-out fuse by one of the same type only.

View A

View B

Fig.2
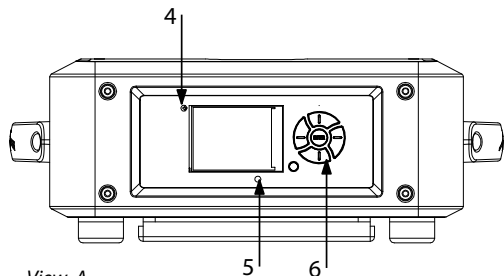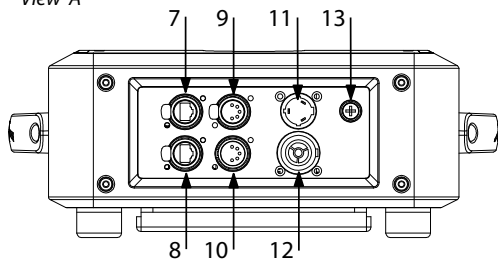
- 2 - INSTALLATION
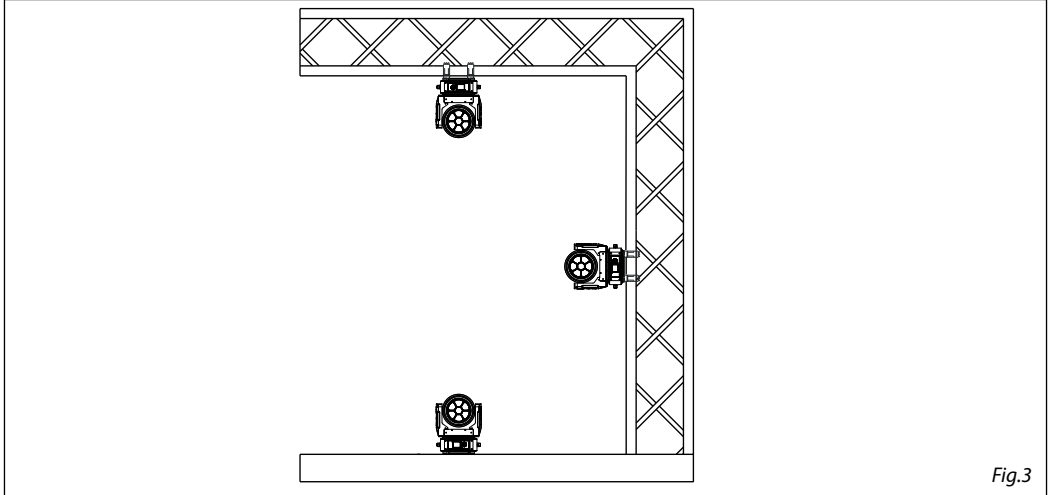
Fig.3

2.1 MOUNTING

The   may be set up on a solid and even surface. By means of the fixing facilities of the baseplate, the unit can also be mounted upside down to a cross arm. The base plate is shown in fig.3. For fixing, stable mounting clips are required. According to the figure, the bolts of the brackets are placed into the openings provided in the base plate and turned clockwise until they lock (to the stop). Always ensure that the unit is firmly fixed to avoid vibration and slipping while operating. The mounting place must be of sufficient stability and be able to support a weight of 10 times of the unit's weight. When carrying out any installation, always comply scrupulously with all the regulations (particularly regarding safety) currently in force in the country in which the fixture's being used. Always additionally secure the projector with the safety rope from falling down. For this purpose, fasten the safety rope at a suitable position so that the maximum fall of the projector will be 20 cm.

ALISCAFF CLAMP

OMEGA BRACKETS

SAFETY CABLE
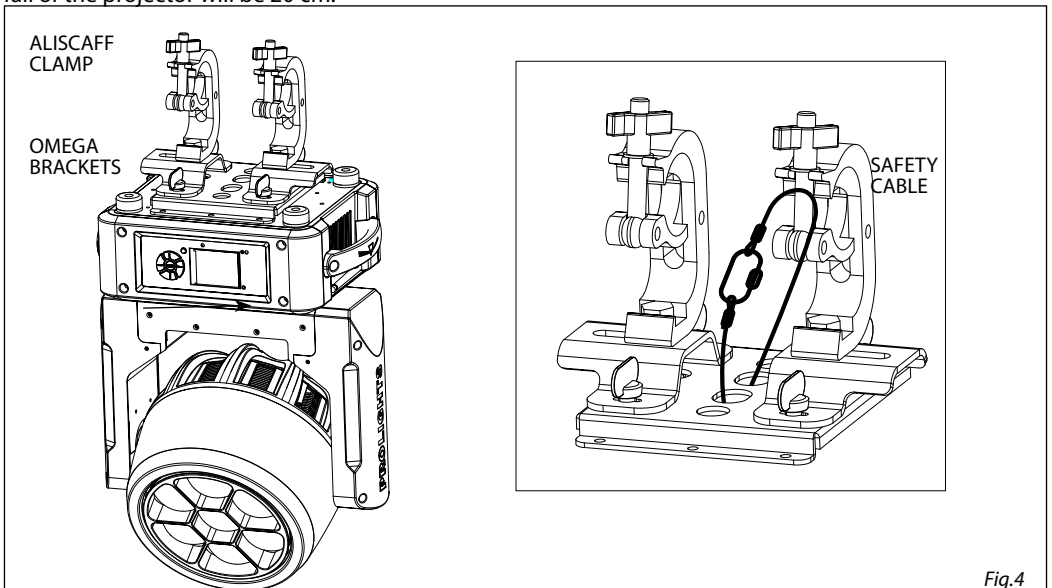
Fig.4

- 3 - FUNCTIONS AND SETTINGS

3.1 OPERATION
Connect the supplied main cable to a socket (120V~60Hz). The unit will run built-in program to reset all motors to their home position. Shortly after that the STARK400 is ready for operation. To switch off, disconnect the mains plug from the socket. For a more convenient operation it is recommended to connect the unit to a socket which can be switched on and off via light switch.

3.2 BASIC
The STARK400 has a LCD display and 5 button used to access the control panel functions and manage them (fig.4).

◁ LEFT	▷ RIGHT	△ UP	▽ DOWN	ENTER	BATTERY
Return to the top level	Commute from units, tens, hundred in the menu	Increases the value displayed or passes to the previous item in a menu	Decreases the value displayed or passes to the next item in the menu	Confirms the displayed value, or activates the displayed function, or enters the successive menu	Used to activate the backup battery. It allows to switching display interface without main power

CONNECT   LIGHT   INFORMATION   SET   PROGRAM

Fig.4 - Functions of the buttons and display icons

3.3 MENU STRUCTURE

	MENU						
1	CONNECT	⇨	**Address**	⇨	DMX	⇨	Value (1-512)
					W-DMX	⇨	Value (1-512)
					Artnet	⇨	Value (1-512)
			DMX Mode	⇨	Mode	⇨	WASH / FX / PIXFX
					Edit User	⇨	Max Channel/Control/Pan/Pan Fine/Tilt/...
			Wireless	⇨	DMX Out	⇨	ON/OFF
					Reset Connect	⇨	YES/NO
			Ethernet	⇨	DMX Out	⇨	ON/OFF
					IP Address	⇨	2.XX.XX.01
					IP Mask	⇨	255.0.0.0
					Universe	⇨	00000
			RDM ID	⇨	Name	⇨	Fixture ID Name
					Password	⇨	050 (unlocks the following settings)
					PID Code	⇨	00001
2	SET UP	⇨	**Temperature**	⇨	Temperature C/F	⇨	Celsius/Fahrenheit
					Max Temperature	⇨	Value (60°-139° C)
			Movement	⇨	Pan Reverse	⇨	YES/NO
					Tilt Reverse	⇨	YES/NO
					Pan Degree	⇨	540/630
					Pan/Tilt Feedbacks	⇨	YES/NO
					Pan/Tilt Mode	⇨	Standard/Smooth
			Screen	⇨	Backlight	⇨	Always On/Min (01-99)
					Flip Display	⇨	YES/NO/AUTO
					Display Bright	⇨	Value (00-31)
					Key Lock	⇨	ON/OFF
					Language	⇨	EN/FR/SP...
			Fixture	⇨	Fans Mode	⇨	Auto Speed/High Speed
					No Signal	⇨	Close/Hold/Auto/Music
					Hibernation	⇨	Disable/Min (01-99)
			Adjust	⇨	Theater Mode	⇨	YES/NO
					Control, Pan, Pan Fine, Tilt, Tilt Fine, Pan&Tilt Speed, Shutter, Dimmer, Dimmer Fade, [...]	⇨	Value (000-255) for each function

3	ADVANCED	⇨	Reset	⇨	All		
					Pan & Tilt		
					Others		
			Calibration	⇨	Password	⇨	050 (unlocks the following settings)
					Pan	⇨	Value (-128-127)
					Tilt	⇨	Value (-128-127)
					1Led Red	⇨	Value (-128-127)
					1Led Green	⇨	Value (-128-127)
					1Led Blue	⇨	Value (-128-127)
					2Led Red	⇨	Value (-128-127)
					2Led Green		
					2Led Blue		
					......		
					7Led Red		
					7Led Green		
					7Led Blue		
			Reload Default	⇨	Basic Reload	⇨	ON/OFF
					Program Reload	⇨	ON/OFF
					Password	⇨	050 (unlocks the following settings)
					Private Reload	⇨	ON/OFF
					All Reload	⇨	ON/OFF
4	INFORMATION	⇨	Time I nfo.				
			Temperature				
			Fans Speed				
			Channel Value				
			Error Message				
			Fixture Model				
			Software Ver.				
5	STAND ALONE	⇨	Play	⇨	DMX Receive		
					Slave Receive	⇨	Part 1-2-3 Receive
					Static	⇨	1-250 Scene
					Sequence	⇨	Alone/Master
					Music	⇨	Alone/Master
					Mic Sens.	⇨	Value (00-99%)

Select Chase	⇨	Chase Part 1	⇨	Chase 1 - Chase 8
		Chase Part 2		Chase 1 - Chase 8
		Chase Part 3	⇨	Chase 1 - Chase 8
Edit Chase	⇨	Chase 1	⇨	Step 1 - 64
		Chase 2		Step 1 - 64
		....		
		Chase 8	⇨	Step 1 - 64
Edit Scenes	⇨	Edit Scenes 001	⇨	Pan/Pan Fine/Tilt/Tilt Fine/...
		Edit Scenes ...	⇨	Pan/Tilt/CMY, Gobo1...
		Edit Scenes 250	⇨	Pan/Tilt/CMY, Gobo1...
Scenes Record	⇨	Sc XX - Sc XX		

3.4 SLAVE RECEIVE MODE

This mode will allow you to link up the units together without a controller. Choose a unit to function as the Master. The unit must be the first unit in line; other units will work as slave with the same effect.

A Master unit can send up to 3 different data groups to the Slave units, i.e. a Master unit can start 3 different Slave units, which run 3 different programs. The Master unit sends the 3 program parts in a continuous loop.

The Slave unit receives data from the Master unit according to the group which the Slave unit was assigned to.

For example, if a slave device is set to Receive Part 1, the Master unit Slave unit will send the automated Chase Part 1; if set to Receive Part 2, the Chase Part 2 Slave units will receive from the Master.

To set the drive as a slave, proceed as follows:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Program** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, and then select **Play** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, and select **Slave Receive** and press ENTER to confirm.
- Press the UP/DOWN button to select the different modes of operation **Part 1 Receive/Receive Part 2/Part 3 Receive**, and then press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.

Select the desired program on the master unit (described in section 3.5).

Use the DMX connectors of the STARK400 and an XLR cable to form a chain of units. Under certain conditions and lengths you want to make a termination as shown on page 17.

3.5 OPERATIONS IN AUTOMATIC MODE

The unit independently runs through its show. Before you send an automatic program you need to set the drive as Master/Alone:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Program** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Play** and press the ENTER button to enter

the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Sequence** and press ENTER to confirm your choice.
- Press the UP/DOWN button to select the mode of operation:
    - **Master**, if the unit is connected in series with other units and it acts as the Master;
    - **Alone**, if the unit is not connected to other units.
- Press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.

The unit will go into automatic mode by executing the program automatically.

Select Chase

The function **Select Chase** lets you choose the automatic program to actually run.
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Program** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Select Chase** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, then select **Chase Part 1/Chase Part 2/Chase Part 3** and press ENTER to confirm.
- Press the UP/DOWN button to select **Chase1-Chase8**, and press the ENTER button to confirm.
- Press the LEFT button repeatedly to exit the menu and save changes.

Edit Chases

The function **Edit Chases** allows you to create automatic pre-programmed show.
The automatic programs **Chase Part1/2/3** are each divided into **Chase1-Chase8**. Each Chase can be composed of **1-64 step** that can be configured through the following procedure:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Program** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Edit Chases** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Edit Chase 1 - Edit Chase 8**, then press the ENTER button to confirm.
- Press the UP/DOWN button to select the **Step 01 - Step 64**, and press ENTER to confirm.
- Press the UP/DOWN button to select the **Scene** you want to set for the Step chosen, and then press ENTER to confirm.
- Press the LEFT button repeatedly to exit the menu and save changes.

Edit Scenes

The function **Edit Scenes** allows you to create individual scenes to be included in the Chase Step.
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Program** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Edit Scenes** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Edit Scene 001 - Edit Scene 250**, then press the ENTER button to confirm.
- Press the UP/DOWN button to select the desired function you want to edit (Control, Pan, Tilt, etc..), Then press the ENTER button to confirm.
- Press the UP/DOWN button to change the value of the function, then press the ENTER button to

confirm.
- Press the LEFT button repeatedly to exit the menu and save changes.

3.6 SCENES RECORD MODE

STARK400 is equipped with a built-in DMX recorder by which you can transmit the programmed scenes from your DMX-controller to the device. Proceed as follows to store the sequence of scenes in the unit.
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll through the menu, select the **Program** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Scenes Record** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to adjust the scene at the beginning and end to be inserted in the automatic program, then press the ENTER button to confirm.
- Press the LEFT button repeatedly to exit the menu and save changes.

When recalling scenes from the controller will automatically be transmitted to the device.

3.7 MUSIC MODE

In music mode, via its integrated microphone, the unit can be controlled by music with a clear rhythm in the bass range. If the music control should not work optimally, increase the volume or reduce the distance between the sound source and the light effect unit or alternatively increase the sensitivity of the microphone.
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Program** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Play** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Music** and press ENTER to confirm.
- Press the UP/DOWN button to select the mode of operation:
  - **Master**, if the mobile head is connected in series to other units, and it performs the Master function;
  - **Alone**, if the fixture is not connected to other units.
- Press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.

The unit will go into music mode by executing an automatic program to the rhythm of music.

3.8 SENSITIVITY MICROPHONE

Select this function to set the value of the sensitivity of the microphone for use with a music control:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Set** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **UI Set**, and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, then select **Mic Sens.** and press ENTER to confirm.
- Press the UP/DOWN button to adjust the level of sensitivity of the microphone, and then press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.

3.9 LINKING
Several units may be interconnected in order to control all further slave units to the same effect of the master unit.
1. Connect the DMX OUT of the master unit via 5-pole XLR cable to the DMX IN of the first slave unit.
2. Connect the DMX OUT of the first slave unit to the DMX IN of the second slave unit, etc. until all units are connected in a chain.

3.10 DMX MODE
To enter the DMX mode, follow these steps:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Connect** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select the **DMX Address** and press the ENTER key.
- Press the arrow keys to select the desired value (**001-512**).
- Press the ENTER key to confirm the setting.
- Press the LEFT button repeatedly to exit the menu and save changes.

3.11 DMX CONFIGURATION
The STARK400 has 3 DMX channel configurations which can be accessed from the control panel.
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Set** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Users** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **User Mode** and press ENTER to confirm your choice.
- Use the UP/DOWN button to select the desired DMX channel configuration (**Wash, FX, PIX-FX, User**), then press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.
The tables on page 17 show the mode of operation and their values DMX.
The unit is equipped with 5-pole XLR connections.

Edit User
The **Edit User**, in the same menu, allows you to create a profile of personalized functions. You can change the parameters of the various functions (Control, Pan, Tilt, etc.). Once you've created your custom profile, you can use it by selecting the USER mode as described above.

3.12 DMX ADDRESSING
For operation via light control unit with DMX512 protocol, is sufficient connect the controller to STARK400. To able to operate the STARK400 with a light controller, adjust the DMX start address for the first a DMX channel. If e. g. address 33 on the controller is provided for controlling the function of the first DMX channel, adjust the start address 33 on the STARK400. The other functions of the light effect panel are then automatically assigned to the following addresses.
An example with the start address 33 is shown below:

Numero canali DMX	Indirizzo di start (esempio)	Indirizzo DMX occupati	Prossimo indirizzo di start possibile per unità n°1	Prossimo indirizzo di start possibile per unità n°2	Prossimo indirizzo di start possibile per unità n°3
16	33	33-48	64	80	96
26	33	33-58	84	110	136
50	33	33-82	132	182	232

DMX Address: 33　　DMX Address: 64　　DMX Address: 80　　DMX Address: 96
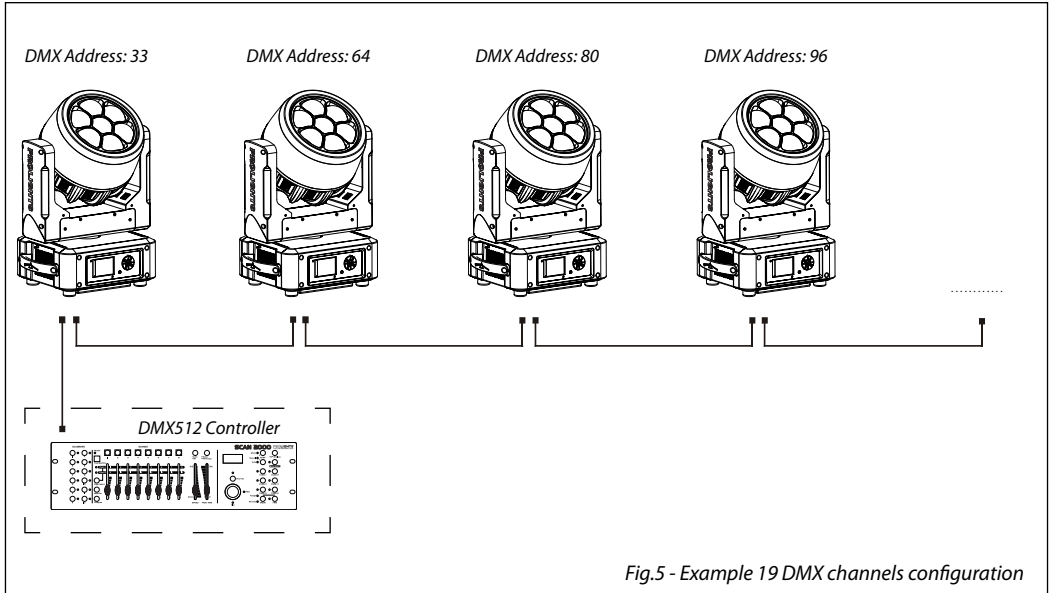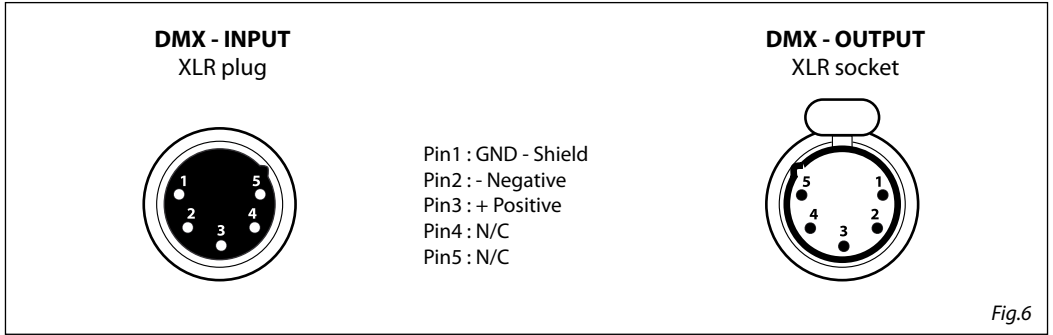
DMX512 Controller

Fig.5 - Example 19 DMX channels configuration

3.13 CONNECTION OF THE DMX LINE

DMX connection employs standard XLR connectors. Use shielded pair-twisted cables with 120Ω impedance and low capacity.

The following diagram shows the connection mode:

DMX - INPUT
XLR plug

Pin1 : GND - Shield
Pin2 : - Negative
Pin3 : + Positive
Pin4 : N/C
Pin5 : N/C

DMX - OUTPUT
XLR socket

Fig.6

ATTENTION

The screened parts of the cable (sleeve) must never be connected to the system's earth, as this would cause faulty fixture and controller operation.

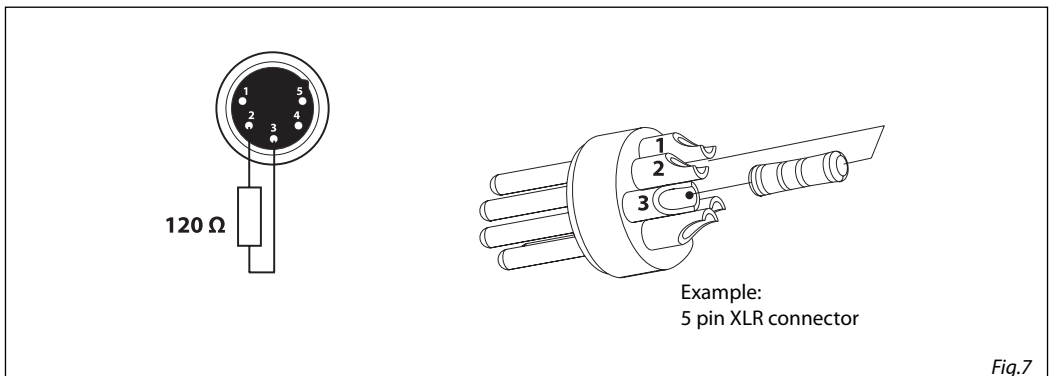Over long runs can be necessary to insert a DMX level matching amplifier.

For those connections the use of balanced microphone cable is not recommended because it cannot transmit control DMX data reliably.

- Connect the controller DMX input to the DMX output of the first unit.
- Connect the DMX output to the DMX input of the following unit. Connect again the output to the input of the following unit until all the units are connected in chain.
- When the signal cable has to run longer distance is recommended to insert a DMX termination on the last unit.

3.14 CONSTRUCTION OF THE DMX TERMINATION

The termination avoids the risk of DMX 512 signals being reflected back along the cable when they reaches the end of the line: under certain conditions and with certain cable lengths, this could cause them to cancel the original signals.

The termination is prepared by soldering a 120Ω 1/4 W resistor between pins 2 and 3 of the 5-pin male XLR connector, as shown in figure.

120 Ω

Example:
5 pin XLR connector

Fig.7

3.15 DMX CONTROL

WASH	FX	PIX-FX	STARK 400 FUNCTION	DMX Value
1	1	1	**PAN** 0~100%	000 - 255
2	2	2	**PAN FINE** 0~100%	000 - 255
3	3	3	**TILT** 0~100%	000 - 255
4	4	4	**TILT FINE** 0~100%	000 - 255
5	5	5	**MOVMENT SPEED** Fastest to slowest Movement with Blackout	000 - 249 250 - 255
6	6	6	**SHUTTER** Closed Strobe effect slow to fast Open 1 Pulse-effect in sequences Open 2 Random strobe effect slow to fast Open 3	000 - 010 011 - 082 083 - 093 094 - 163 164 - 174 175 - 244 245 - 255
7	7	7	**DIMMER** Dimmer 0% ~ 100%	000 - 255
	8	8	**DIMMER FADE** Snap to Fade	000 - 255
8	9	9	**COLOR FUNCTION** No Function White presets Forward Spin Reverse Spin Continuous Color Bounce TBD	000 - 015 016 - 031 032 - 047 048 - 063 064 - 079 080 - 111 112 - 255
9	10	10	**VIRTUAL COLOR 1** **White Presets** White 2000K ~ 2700K White 2700K ~ 3200K White 3200K ~ 4200K White 4200K ~ 5600K White 5600K ~ 8000K White 8000K ~ 10000K **Forward Spin** Rainbow Effect (Slow to Fast) **Reverse Spin** Rainbow Effect (Slow to Fast)	000 - 155 156 - 175 176 - 195 196 - 215 216 - 235 236 - 255 000 - 255 000 - 255

WASH	FX	PIX-FX	STARK 400 FUNCTION	DMX Value
9	10	10	Continuous Black Red Green Blue White Pastel Red Pastel Green Pastel BLue Cyan Magenta Yellow Light Yellow Light BLue Light Magenta Full White Full White ~ White 3200K White 3200K ~ White 4200K White 4200K ~ White 5600K	000 - 000 001 - 013 014 - 027 028 - 041 042 - 055 056 - 069 070 - 083 084 - 097 098 - 111 112 - 125 126 - 139 140 - 153 154 - 167 168 - 181 182 - 195 196 - 225 226 - 240 241 - 255
10	11	11	**VIRTUAL COLOR 2 (When Color Bounce Function is active)** Color Bounce Black Red Green Blue White Pastel Red Pastel Green Pastel BLue Cyan Magenta Yellow Light Yellow Light BLue Light Magenta Full White Full White ~ White 3200K White 3200K ~ White 4200K White 4200K ~ White 5600K	 000 - 000 001 - 013 014 - 027 028 - 041 042 - 055 056 - 069 070 - 083 084 - 097 098 - 111 112 - 125 126 - 139 140 - 153 154 - 167 168 - 181 182 - 195 196 - 225 226 - 240 241 - 255
11	12		**RED-All** 0~100%	000 - 255
12	13		**GREEN -All** 0~100%	000 - 255

WASH	FX	PIX-FX	STARK 400 FUNCTION	DMX Value
13	14		**BLUE-All** 0~100%	000 - 255
14	15		**WHITE-All** 0~100%	000 - 255
15	16	12	**ZOOM** Big to Small	000 - 255
17	13		**PATTERN** No Pattern	000 - 015
			Static Pattern Static mode	016 - 031
			Dynamic Pattern Selection Dynamic Pattern 1	032 - 049
			Dynamic Pattern 2	050 - 058
			Dynamic Pattern 3	059 - 067
			Dynamic Pattern 4	068 - 076
			Dynamic Pattern 5	077 - 085
			Dynamic Pattern 6	086 - 094
			Dynamic Pattern 7	095 - 103
			Dynamic Pattern 8	104 - 112
			Dynamic Pattern 9	113 - 121
			Dynamic Pattern 10	122 - 130
			Dynamic Pattern 11	131 - 139
			Dynamic Pattern 12	140 - 148
			Dynamic Pattern 13	149 - 157
			Dynamic Pattern 14	158 - 166
			Dynamic Pattern 15	167 - 175
			Dynamic Pattern 16	176 - 184
			Dynamic Pattern 17	185 - 193
			Dynamic Pattern 18	194 - 202
			Dynamic Pattern 19	203 - 211
			Dynamic Pattern 20	212 - 220
			Dynamic Pattern 21	221 - 229
			Random Pattern Random	230 - 255
18	14		**PATTERN CONTROL** **Static Pattern** Static Selection (When static mode is active) **Dynamic Pattern** (When dinamic patterns are active) Index Forward spin Stop Reverse spin	003 - 252 000 - 037 038 - 144 145 - 148 149 - 255

WASH	FX	PIX-FX	STARK 400 FUNCTION	DMX Value
	19	15	**PATTERN TRANSITION** Snap effect Fade effect	000 - 001 002 - 255
	20	16	**FOREGROUND COLOR** Black Red Green Blue White Pastel Red Pastel Green Pastel BLue Cyan Magenta Yellow Light Yellow Light BLue Light Magenta Full White Full White ~ White 3200K White 3200K ~ White 4200K White 4200K ~ White 5600K	000 - 000 001 - 013 014 - 027 028 - 041 042 - 055 056 - 069 070 - 083 084 - 097 098 - 111 112 - 125 126 - 139 140 - 153 154 - 167 168 - 181 182 - 195 196 - 225 226 - 240 241 - 255
	21	17	**FOREGROUND DIMMER** Dimmer 0% ~ 100%	000 - 255
	22	18	**FOREGROUND SHUTTER** Closed Strobe Open 1 Random Open 2	000 - 010 011 - 163 164 - 174 175 - 243 244 - 255
	23	19	**BACKGROUND COLOR** Black Red Green Blue White Pastel Red Pastel Green Pastel BLue Cyan Magenta Yellow Light Yellow Light BLue Light Magenta Full White Full White ~ White 3200K White 3200K ~ White 4200K White 4200K ~ White 5600K	000 - 000 001 - 013 014 - 027 028 - 041 042 - 055 056 - 069 070 - 083 084 - 097 098 - 111 112 - 125 126 - 139 140 - 153 154 - 167 168 - 181 182 - 195 196 - 225 226 - 240 241 - 255
	24	20	**BACKGROUND DIMMER** Pattern background dimmer	000 - 255

WASH	FX	PIX-FX	STARK 400 FUNCTION	DMX Value
	25	21	**BACKGROUND STROBE** Closed Strobe Open 1 Random Open 2	000 - 010 011 - 163 164 - 174 175 - 243 244 - 255
16	26	22	**CONTROL** Normal Reset All Pan&Tilt Reset TBD Other Reset Display Off Display On TBD TBD Hibernation TBD	000 - 007 008 - 015 016 - 023 024 - 047 048 - 055 056 - 063 064 - 071 072 - 079 080 - 087 088 - 095 096 - 255
		23	**RED 1** 0~100%	000 - 255
		24	**GREEN 1** 0~100%	000 - 255
		25	**BLUE 1** 0~100%	000 - 255
		26	**WHITE 1** 0~100%	000 - 255
		...	...	
		47	**RED 7** 0~100%	000 - 255
		48	**GREEN 7** 0~100%	000 - 255
		49	**BLUE 7** 0~100%	000 - 255
		50	**WHITE 7** 0~100%	000 - 255

3.16 CHANNEL FUNCTION

FUNCTION	STARK 400		
	WASH	FX	PIX-FX
PAN	1	1	1
PAN Fine	2	2	2
TILT	3	3	3
TILT Fine	4	4	4
P/T SPEED	5	5	5
SHUTTER	6	6	6
DIMMER	7	7	7
DIMMER FADE		8	8
COLOR FUNCTION	8	9	9
VIRTUAL COLOR 1	9	10	10
VIRTUAL COLOR 2	10	11	11
RED	11	12	
GREEN	12	13	
BLUE	13	14	
WHITE	14	15	
ZOOM	15	16	12
PATTERN		17	13
PATTERN SPEED		18	14
PATTERN TRANSITION		19	15
FOREGROUND COLOR		20	16
FOREGROUND DIMMER		21	17
FOREGROUND STROBE		22	18
BACKGROUND COLOR		23	19
BACKGROUND DIMMER		24	20
BACKGROUND STROBE		25	21
CONTROL	16	26	22
RED PIXEL 1			23
GREEN PIXEL 1			24
BLUE PIXEL 1			25
WHITE PIXEL 1			26
PIXELS 2~6			27~46
RED PIXEL 7			47
GREEN PIXEL 7			48
BLUE PIXEL 7			49
WHITE PIXEL 7			50
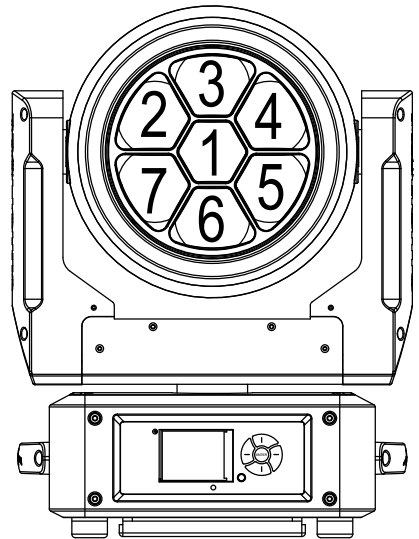
STARK400
PIXEL MAPPING LAYOUT

3.17 WIRELESS CONTROL SETTINGS

To enable wireless control mode, proceed as follows:

- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Connect** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Wireless DMX** and press ENTER.
- Press the UP/DOWN and LEFT/RIGHT buttons to select the desired value (**001-512**).
- Press the ENTER key to confirm the setting.

To change the settings of wireless control, proceed as follows:

- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Set** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Wireless Set**, and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to select the option proposed and press the ENTER button to confirm your choice.
  - **DMX On Cable** - Disable/enable the DMX signal cable. Select OFF to deactivate or ON to activate the function.
  - **Reset Connect** - Reset the wireless connection of the unit. Select OFF to deactivate or ON to activate the function.
- Press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.

3.18 FIXTURE SETTINGS

You can change the parameters for the device by following these steps:

- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Set** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, then select **Movement** and press the ENTER button to enter the next menu.
- Use the UP/DOWN button to select the option proposed and press the ENTER button to confirm the setting.
  - **Pan Reverse** - Pan rotation in the opposite direction. Select OFF to deactivate the function (normal setting); ON to activate the function (Pan Reverse).
  - **Tilt Reverse -** Used for reversing tilt movement. Select OFF to deactivate the function (normal setting); ON to activate the function (Tilt Reverse).
  - **Pan Degree -** Angle of Pan. Select 540° or 630° to set the maximum angle of rotation of the moving head.
  - **Feedbacks -** Reorganization Pan/Tilt position after rolling away. Select OFF to deactivate or ON to activate the function.
  - **Pan/Tilt Mode -** Type of movement of the moving head. Select Standard to obtain a fast and fluid movement of Pan/Tilt, Smooth for a slower and softer movement of Pan/Tilt.
- Press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.

3.19 LAMP SETTINGS

Reset

You can start a preset program to restore the selected function:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the Set icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select Reset and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, then select the function you wish to reset between **All, Pan&Tilt e Others**.
- Press the ENTER button to confirm your choice and wait for the recovery of the selected function.

Calibration

Select this function to calibrate and adjust the wheels of the effects in their correct positions:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button keys to scroll the menu, select the **Set** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, then select **Calibration** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, then select **Password** and press ENTER to confirm.
- Use the arrow keys to enter the password 050 and press ENTER to confirm.
- Once you have entered your password, you can set the values for **Pan, Tilt**. Press the UP/DOWN button to scroll through the menu, select one of the functions mentioned above and press ENTER to confirm your choice.
- Use the arrow buttons to enter the desired value, then press the ENTER button to confirm your choice.
- Press the LEFT button repeatedly to exit the menu and save changes.

Reload Default

Select this function to reset the unit to factory settings:
- Press the ENTER button to access the main menu.
- Press the UP/DOWN button to scroll the menu, select the **Set** icon, then press the ENTER button to enter the next menu.
- Press the UP/DOWN button to scroll through the menu, select **Reload Default** and press the ENTER button to enter the next menu.
- Press the UP/DOWN button to select the favourite recovery mode **Basic Reload/Program Reload/Private Reload/All Reload**, then press the ENTER button to confirm.
- Press the UP/DOWN button to select **ON** or **OFF**, then press the ENTER button to confirm.

3.20 DISPLAY SETTINGS

You can change the following parameters related to the display, following the same procedure:
- Press the ENTER button to access the main menu.
- Press the UP / DOWN keys to scroll the menu, select the Setup icon, then press the ENTER button to enter the next menu.
- Press UP / DOWN to scroll through the menu, then select UI Set, and press the ENTER button to enter the next menu.
- Press UP / DOWN to scroll through the menu, and then select one of the following settings for the display and press the ENTER key to display it.
    - **Back Light** - Backlight display Auto Off. This feature allows you to automatically turn off the backlight

after a specified time that you can set using the arrow buttons. To have the display always on select **Always On** or set a value of 01-99 min to turn off the display after the amount of time you choose.
- **Flip Display** - Orientation of the display. This function allows you to rotate the display 180° to get a better view of the display when the unit is hanging upside down. Select ON to activate or OFF to disable this function.
- **Bright Display** - Backlight Brightness. Use the arrow buttons to select a value from 0-31.
- **Key Lock** - Lock keys. With this function, you can lock the buttons on the control panel. If this function is activated, the keys are automatically locked. To disable or temporarily disable the key lock function, press the buttons in the following order to regain access to menu commands: UP, DOWN, LEFT, RIGHT, ENTER. Select ON to activate or OFF to disable.
- **Language** - Select the display language. This function allows you to select the preferred menu language.
• Press the ENTER button to confirm your choice.
• Press the LEFT button repeatedly to exit the menu and save changes.

3.21 SPECIAL FUNCTIONS
For the STARK400 you can access the following special functions:
• Press the ENTER button to access the main menu.
• Press the UP/DOWN button to scroll the menu, select the icon **Set Up**, then press the ENTER button to enter the next menu.
• Press the UP/DOWN button to scroll through the **Fixture** menu, then select one of the following information and press the ENTER button to display it.
    - **Theater Mode** - Activate this function to set a lower light output with a lower heat and fans operation.
    - **Fans Mode** - Select this function to set the fans operation mode**.** Use the arrow buttons to select **Auto Speed/High Speed**. Press the ENTER button to confirm your choice.
    - **No Signal** - Select this feature to set the preferred mode of operation to be activated in case the drive is not present no DMX signal input. Press the UP/DOWN button to select the preferred mode of operation: **Close/Hold/Auto/Music**. Press the ENTER button to confirm your choice.
    - **Hibernation** - Select this function to activate the standby mode. This function will be activated automatically after a period of inactivity, which is defined by the user. In standby mode, the lamp and all engines will not be fed if no signal is sent. The unit will automatically reset and will return to operation as soon as the DMX signal is sent. Select the desired time **Min (01-99)** through the arrow keys or select **Disable** to disable this function, then press the ENTER button to confirm your choice.
• Press the ENTER button to confirm your choice.
• Press the LEFT button repeatedly to exit the menu and save changes.next menu.
• Press the UP/DOWN button to scroll through the menu, select **Temperature C/F** and press ENTER to confirm.
• Press the UP/DOWN button to select the unit of measure **Celsius/Fahrenheit** and press the ENTER button to confirm your choice.
• Press the LEFT button repeatedly to exit the menu and save changes.

3.22 FIXTURE INFORMATION
To view all the information on the device, proceed as follows:
• Press the ENTER button to access the main menu.
• Press the UP/DOWN button to scroll the menu, select the icon Information, then press the ENTER button to enter the next menu.

- Press the UP/DOWN button to scroll through the menu, then select one of the following information and press the ENTER button to display it.
  - **Time Information** - **Through the Time Information function you can display the operating time of the projector.**
  - **Lamp Info** - **Through the Lamp Info function you can display the lamp information.**
  - **Temperature** - Through the Temperature function can be displayed the temperature inside the fixture, near the lamp. The temperature can be displayed in degrees Celsius or Fahrenheit.
  - **Fans Speed** - Through the Fans Speed function you can show on display the fan speed present near the lamp. Velocity is expressed in RPM (revolutions per minute).
  - **Channel Value** - Channel Value function can be used to display the values of the channels by which the unit will operate when switched on.
  - **Error Message** - Through the Error Message function can be displayed any errors channels.
  - **Fixture Model** - Through the Fixture Model function can be displayed the model number and manufacturer.
  - **Software Version** - Through Software Version function you can display the currently installed software version.
- Press the LEFT button repeatedly to exit the menu.

- 4 - MAINTENANCE

4.1 MAINTENANCE AND CLEANING THE UNIT
- Make sure the area below the installation place is free from unwanted persons during setup.
- Switch off the unit, unplug the main cable and wait until the unit has cooled down.
- All screws used for installing the device and any of its parts should be tightly fastened and should not be corroded.
- Housings, fixations and installation spots (ceiling, trusses, suspensions) should be totally free from any deformation.
- When the lens is visibly damaged due to cracks or deep scratches, it must be replaced.
- The main cables must be in impeccable condition and should be replaced immediately even when a small problem is detected.
- In order to protect the device from overheating the cooling fans (if any), and ventilation openings should be cleaned monthly.

To ensure optimal operation and performance for a long time it is essential to periodically clean the parts subject to dust and grease deposits. The frequency with which the following operations are to be carried out depends on various factors, such as the amount of the effects and the quality of the working environment (air humidity, presence of dust, salinity, etc.). Use a soft cloth dampened with any detergent liquid for cleaning glass to remove the dirt from the reflectors, from the lenses and filters.

It is recommended that the projector undergoes an annual service by a qualified technician for special maintenance involving at least the following operations:
- General cleaning of internal parts..
- Restoring lubrication of all parts subject to friction, using lubricants specifically.
- General visual check of the internal components, cabling, mechanical parts, etc.
- Electrical, photometric and functional checks; eventual repairs.

Warning: we strongly recommend internal cleaning to be carried out by qualified personnel!

4.2 FUSE REPLACEMENT
1. Disconnect this product from the power outlet.
2. Using a screwdriver, unscrew the fuse holder cap from the housing.
3. Remove the blown fuse and replace with a good fuse of the same type and rating.
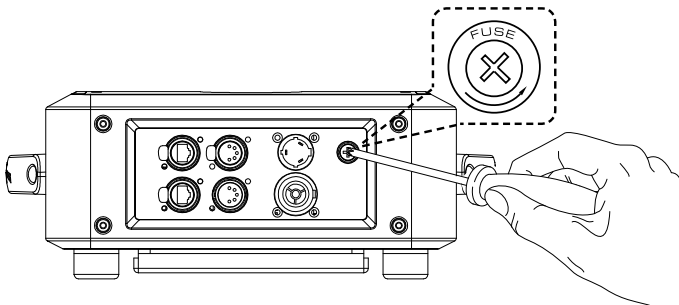4. Screw the fuse holder cap back in place and reconnect power.

Fig.8

4.3 TROUBLESHOOTING

Problems	Possible causes	Checks and remedies
Fixture does not light up	• No mains supply • Dimmer fader set to 0 • All color faders set to 0 • Faulty LED • Faulty LED board	• Check the power supply voltage • Increase the value of the dimmer channels • Increase the value of the color channels • Replace the LED board • Replace the LED board
General low light intensity	• Dirty lens assembly • Misaligned lens assembly	• Clean the fixture regularly • Install lens assembly properly
Fixture does not power up	• No power • Loose or damaged power cord • Faulty internal power supply	• Check for power on power outlet • Check power cord • Replace internal power supply
Fixture does not respond to DMX	• Wrong DMX addressing • Damaged DMX cables • Bouncing signals	• Check control panel and unit addressing • Check DMX cables • Install terminator as suggested

Contact an authorized service center in case of technical problems or not reported in the table can not be resolved by the procedure given in the table.