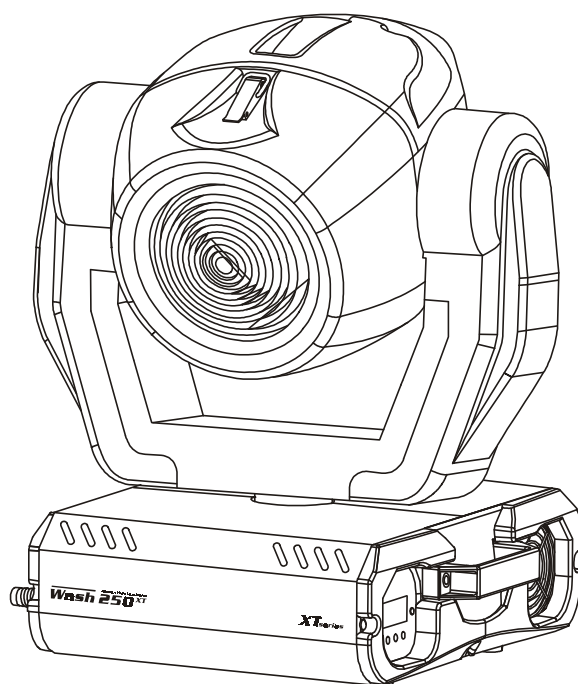


*Moving Yoke Luminaire*  
**Wash 250<sup>XT</sup>**



**USER MANUAL**

**XT** *series*



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# WASH 250 XT

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**CAUTION!**  
***Keep this device away from rain and moisture!***  
***Unplug mains lead before opening the housing!***

**FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY  
BEFORE YOU INITIAL START - UP!**

## **1. Safety instructions**

Every person involved with installation and maintenance of this device have to:

- be qualified
- follow the instructions of this manual

**CAUTION!**  
***Be careful with your operations. With a high voltage you can suffer  
a dangerous electric shock when touching the wires!***

This device has left our premises in absolutely perfect condition. In order to maintain this condition and to ensure a safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this manual.

### **Important:**

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual or any unauthorized modification to the device.

Please consider that damages caused by manual modifications to the device are not subject to warranty.

Never let the power-cord come into contact with other cables! Handle the power-cord and all connections with the mains with particular caution!

Make sure that the available voltage is not higher than stated on the rear panel.

Always plug in the power plug least. Make sure that the power-switch is set to OFF-position before you connect the device to the mains. The power-plug has to be accessible after installing the device.

Make sure that the power-cord is never crimped or damaged by sharp edges. Check the device and the power-cord from time to time.

Always disconnect from the mains, when the device is not in use or before cleaning it. Only handle the power-cord by the plug. Never pull out the plug by tugging the power-cord.

This device falls under protection class I. Therefore it is essential to connect the yellow/green conductor to earth.

The electric connection, repairs and servicing must be carried out by a qualified employee.  
Do not connect this device to a dimmer pack.

Do not switch the fixture on and off in short intervals as this would reduce the lamp's life.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

Do not touch the device's housing bare hands during its operation (housing becomes hot)!  
For replacement use lamps and fuses of same type and rating only.

**CAUTION! EYEDAMAGES!**  
***Avoid looking directly into the light source  
(meant especially for epileptics)!***

## 2. Operating determinations

This device is a moving-head spot for creating decorative effects and was designed for indoor use only.

If the device has been exposed to drastic temperature fluctuation (e.g. after transportation), do not switch it on immediately. The arising condensation water might damage your device. Leave the device switched off until it has reached room temperature.

Never run the device without lamp!

Do not shake the device. Avoid brute force when installing or operating the device.

Never lift the fixture by holding it at the projector-head, as the mechanics may be damaged. Always hold the fixture at the transport handles.

When choosing the installation-spot, please make sure that the device is not exposed to extreme heat, moisture or dust. There should not be any cables lying around. You endanger your own and the safety of others!

The minimum distance between light-output and the illuminated surface must be more than 1 meter.

Make sure that the area below the installation place is blocked when rigging, derigging or servicing the fixture.

Always fix the fixture with an appropriate safety-rope. Fix the safety-rope at the correct holes only.

Only operate the fixture after having checked that the housing is firmly closed and all screws are tightly fastened.

The lamp must never be ignited if the objective-lens or any housing-cover is open, as discharge lamps may explode and emit a high ultraviolet radiation, which may cause burns.

The maximum ambient temperature  $t_a = 45^\circ \text{C}$  must never be exceeded. Otherwise, the lamp is switched off and the fixture is out of operation for 5 minutes.

### **CAUTION!**

***The lens has to be replaced when it is obviously damaged, so that its function is impaired, e. g. due to cracks or deep scratches!***

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device. Most damages are the result of unprofessional operation!

### **CAUTION!**

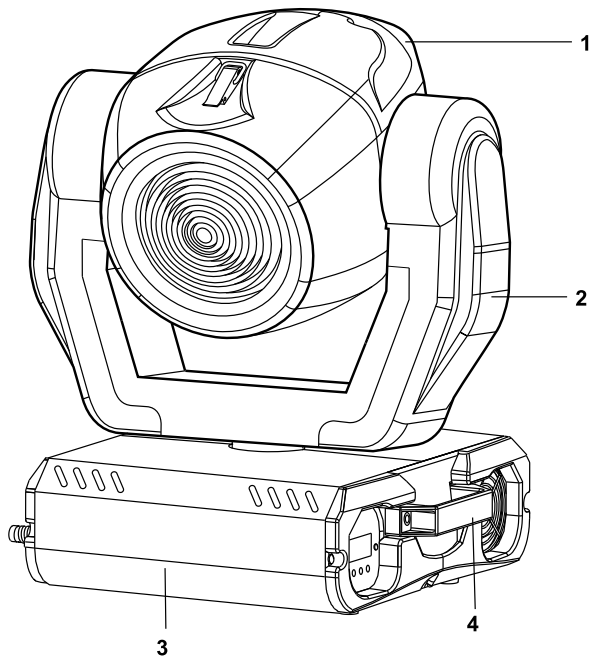
***The lamp has to be replaced when it is damaged or deformed due to the heat!***

Please use the original packaging if the device is to be transported.

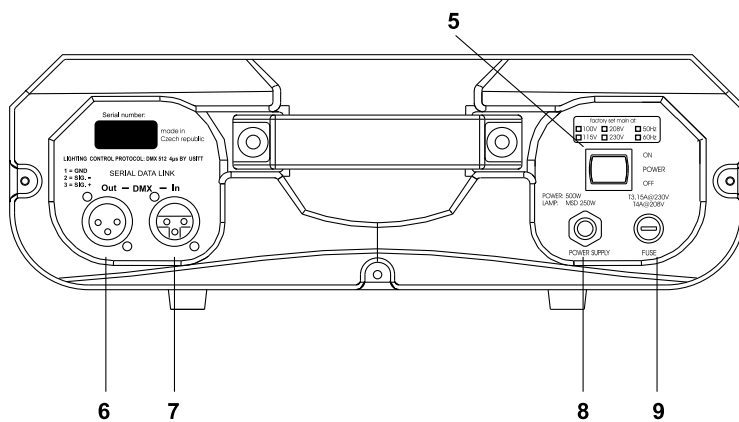
Please consider that unauthorized modifications on the device are forbidden due to safety reasons!

If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the guarantee becomes void. Furthermore, any other operation may lead to dangers like short-circuit, burns, electric shock, burns due to ultraviolet radiation, lamp explosion, crash etc.

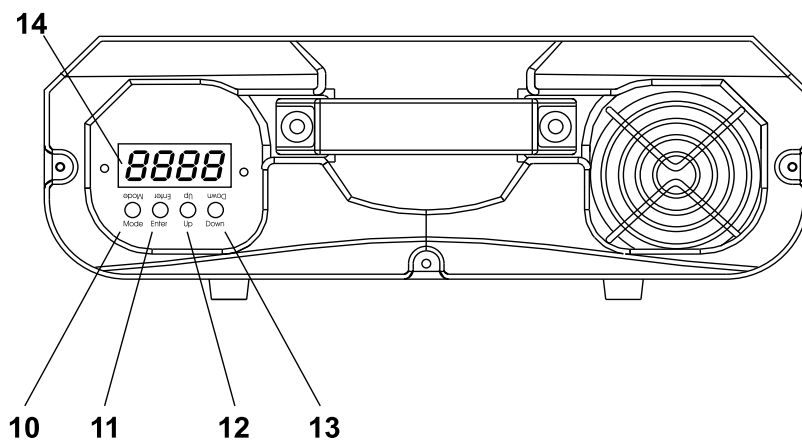
### 3. Description of the device



- 1 - Moving Head
- 2 - Yoke
- 3 - Base
- 4 - Carrying handles



- Rear panel:**
- 5 - Power-switch
  - 6 - DMX output
  - 7 - DMX input
  - 8 - Powercord
  - 9 - Fuseholder



- Front panel:**
- 10 - Mode-button
  - 11 - Enter-button
  - 12 - Up-button
  - 13 - Down-button
  - 14 - Display

## 4. Installation

### 4.1 Fitting the lamp

**DANGER!**  
**Install the lamps with the device switched off only.**  
**Unplug from mains before !**

To insert the lamp MSD 250 or MSD 250/2 open the small cover at the rear of head (See the drawings) by loosening the 3 Phillips screws on the cover.

Gently pull out the lamp assembly.

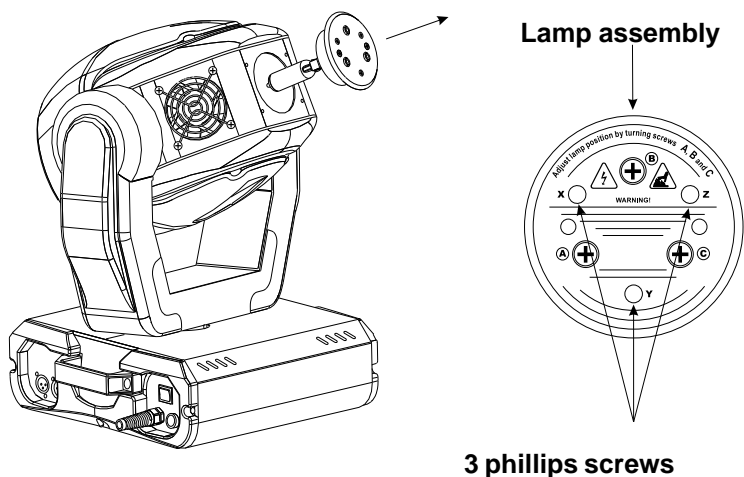
If changing the lamp, remove the old lamp from the socket. Insert the lamp to the socket.

Do not install a lamp with a higher wattage! A lamp like this generates temperatures the device is not designed for.

Damages caused by non-observance are not subject to warranty. Please follow the lamp manufacturer's notes! Do not touch the glass-bulb bare hand during the installation! Make sure that the lamp is installed tightly into the lampholder system.

Reinsert the lamp assembly and tighten 3 screws again.

Before striking the lamp, reset the "**LA**ti" counter in the main menu of the Control Board, by pressing the "**Up**" and "**Down**" buttons in one time and then confirming with the **Enter**-button.



***Do not operate this fixture with opened housing-cover!***

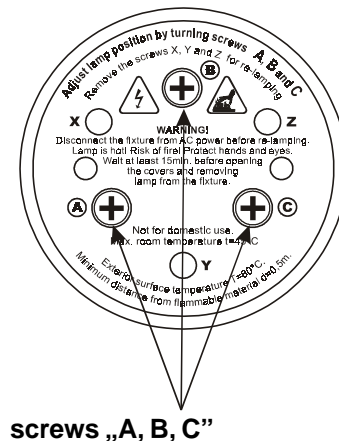
### 4.2 Lamp adjustment

The fixture lampholder is aligned at the factory. Due to differences between lamps, fine adjustment may improve light performance. Strike the lamp and focus the light on a flat surface (wall).

Center the hot-spot (the brightest part of the beam) using the 3 adjustment screws „A, B, C”. Turn one screw at a time to drag the hot-spot, diagonally across the projected image. If you cannot detect a hot -spot, adjust the lamp until the light is even.

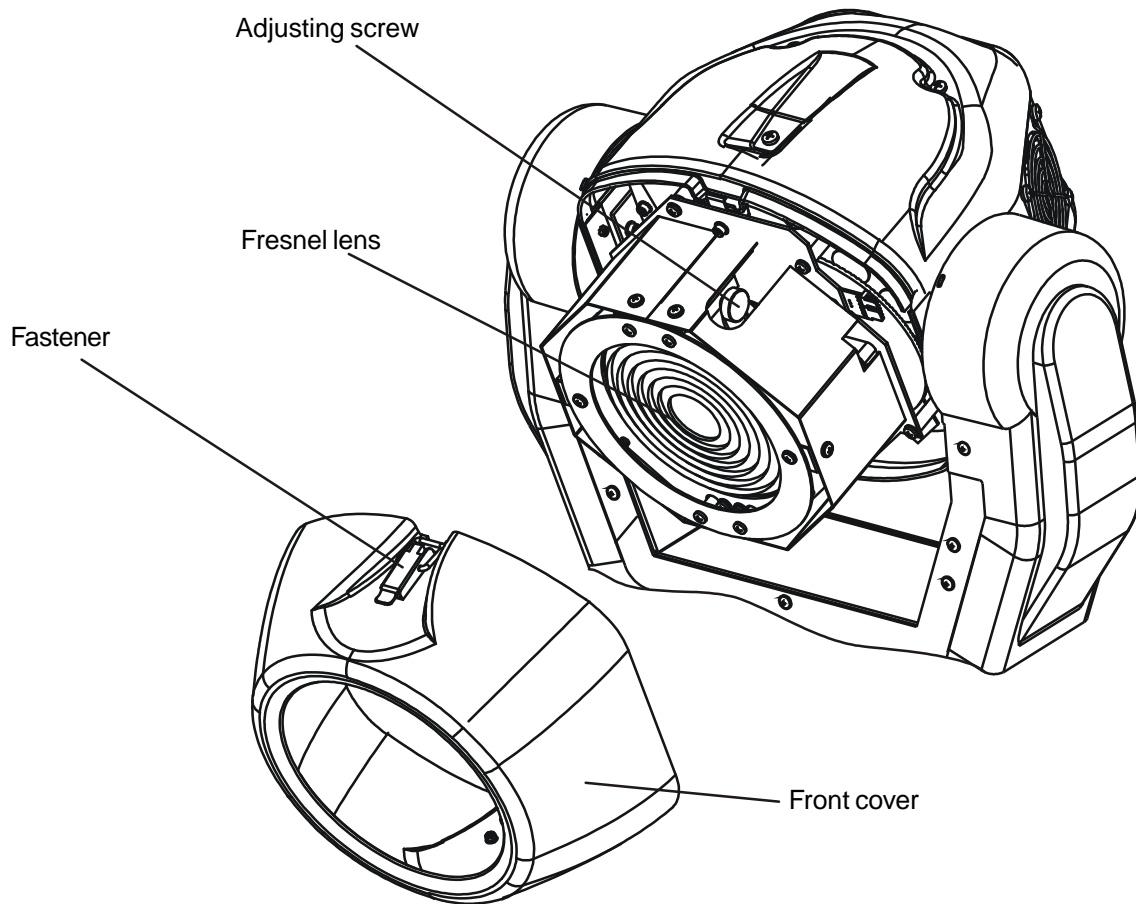
To reduce a hot-spot, pull the lamp in by turning all three screws „A, B, C” clockwise 1/4-turn at a time until the light is evenly distributed.

If the light is brighter around the edge than it is in the center, or if light output is low, the lamp is too far back in the reflector. „Push” the lamp out by turning the screws „A, B, C” counterclockwise 1/4-turn at a time the light is bright and evenly distributed.



### 4.3 Adjusting beam eangle

The Fresnel lens system can be configured in the range between 8° and 22° .To set the desired beam angle,remove the front cover by loosening 2 fasteners on this cover and loose 2 adjusting screws on the Fresnel lens unit and adjust the required beam angle.Tighten the adjusting screws again and fix back the front cover.




### 4.4 Connection to the mains

**Verify the power supply settings before applying power!**

If you wish to change the power supply settings, see the chapter Appendix.  
Connect the fixture to the mains with the enclosed power cord and plug.  
The earth has to be connected!

**The occupation of the connection-cables is as follows:**

Cable (EU)	Cable (US)	Pin	International
Brown	Black	Live	L
Light blue	White	Neutral	N
Yellow/Green	Green	Earth	



## 4.5 Rigging the fixture

### ***Danger of fire !***

***When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in between a distance of min. 0,5 m.***

***Warning ! Use 2 clamps to rig the fixture on the truss.***

***Follow the instructions mentioned at the bottom of the base.***

***Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixtures is secure.***

The installation of the projector has to be built and constructed in a way that it can hold 10 times the weight for 1 hour without any harming deformation.

The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails.

When rigging, derigging or servicing the fixture staying in the area below the installation place, on bridges, under high working places and other endangered areas is forbidden.

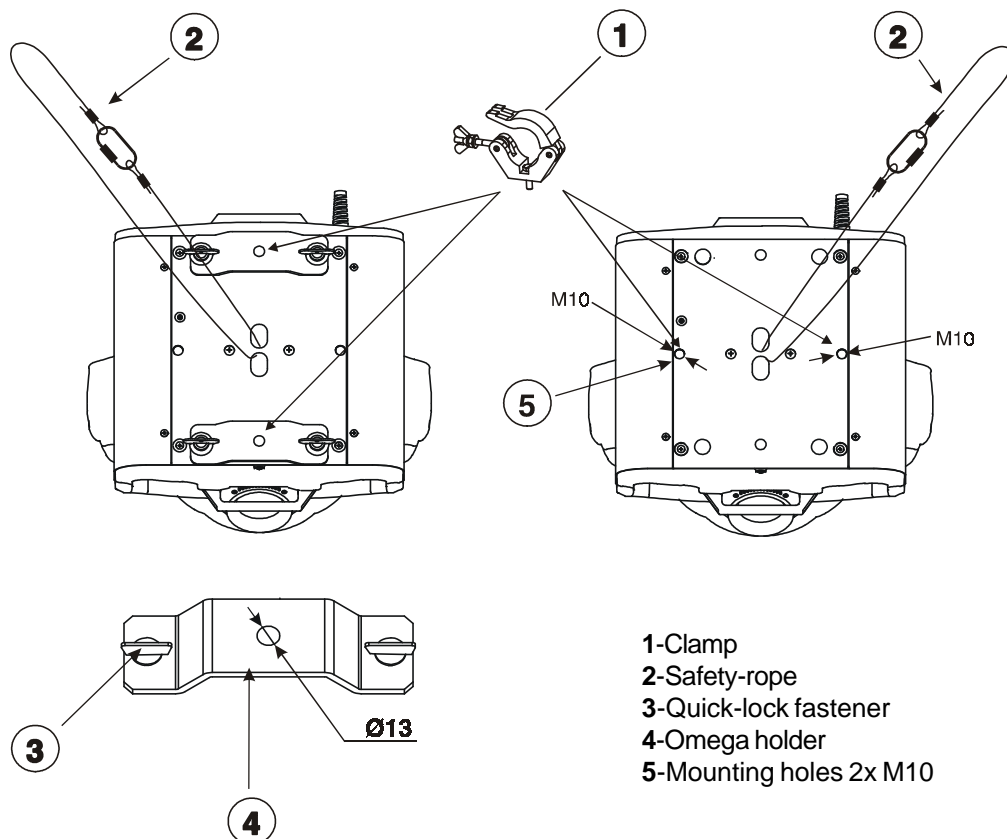
The moving-head can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics (see the drawing).

You can fix the WASH 250 XT on a truss via 2 Omega holders or using the mounting plate(it is not the standard part of delivery) or screw the clamps directly to 2 holes (5) in the base.

For overhead use, always install a safety-rope that can hold at least 10 times the weight of the fixture. You must only use safety-ropes with screw-on carabines. Pull the safety-rope through the two apertures on the bottom of the base and over the trussing system etc. Insert the end in the carabine and tighten the fixation screw.

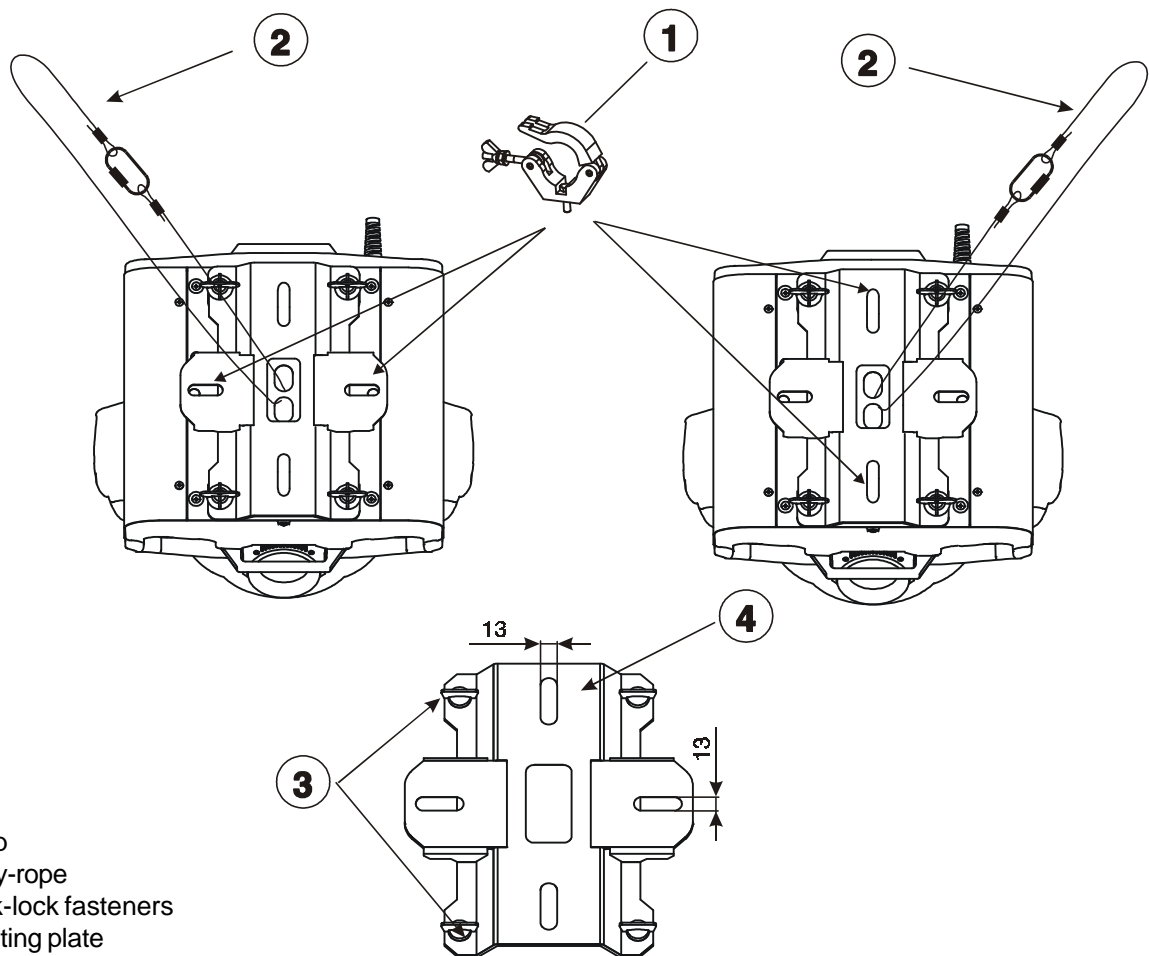
### **Fixation via Omega holders**

1. Bolt each clamp (1) to the omega holder (4) with M12 bolt and lock nut through the hole in the holder.
2. Fasten the omega holders on the bottom of the base by inserting both quick-lock fasteners (3) into the holes of the base and tighten fully clockwise.
3. Fasten the safety-rope (2) through the two apertures on the bottom of the base and over the trussing system.



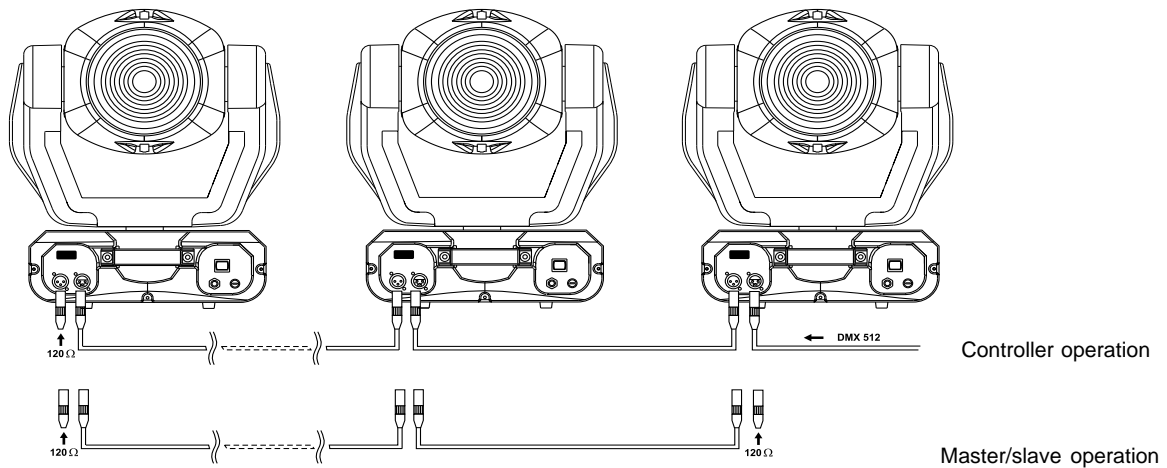
### Fixation via a mounting plate

1. Screw 2 clamps (1) to the mounting plate (4) with M12 bolts and lock nuts through the holes in the mounting plate (4).
2. Insert the 4 quick-lock fasteners (3) into the holes on the bottom of the base and tighten fully clockwise.
3. Fasten the safety-rope (2) through the two apertures on the bottom of the base and over the trussing system.



## 4.6 DMX-512 connection/connection between fixtures

*The wires must not come into contact with each other, otherwise the fixtures will not work at all, or will not work properly.*

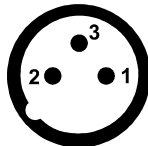


Only use a stereo shielded cable and 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

### Occupation of the XLR-connection:

#### DMX - output

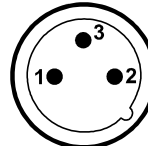
##### XLR mounting-socket:



- 1 - Ground
- 2 - Signal (-)
- 3 - Signal (+)

#### DMX-input

##### XLR mounting-plug:



- 1 - Ground
- 2 - Signal (-)
- 3 - Signal (+)

If you are using the standard DMX-controllers, you can connect the DMX-output of the controller directly with the DMX-input of the first fixture in the DMX-chain. If you wish to connect DMX-controllers with other XLR-outputs, you need to use adapter-cables.

### Building a serial DMX-chain:

Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected.

**Caution:** At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 W resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

## 5. DMX PROTOCOL

Mode 1 channel	Mode 2 channel	8 bit	Value	Function	Type of control
1	1	1	0-255	<b>Pan</b> Pan movement by 530°	proportional
2	3	2	0-255	<b>Tilt</b> Tilt movement by 280°	proportional
3	2		0-255	<b>Pan fine</b> Fine control of pan movement	proportional
4	4		0-255	<b>Tilt fine</b> Fine control of tilt movement	proportional
5	5	3	0 1-249 250-255	<b>Speed of PAN/TILT movement</b> Max. speed (tracking mode) From max. to min.speed (vector mode) Max. speed,black-out while PAN,TILT moving orcolor changes (tracking mode)	step proportional step
6	6	4	0-127 128-139 140-229 230-239 240-255	<b>Lamp on/off,reset,fans speed control</b> From max.speed of fan to min. speed of fan Lamp on,reset No function Lamp off after 3 sec No function	proportional step step step step
7	7	5	0-17 18-35 36-53 54-72 73-90 91-108 109-127 128-190 191-192 193-255	<b>Colours</b> Open/white Red Blue Green CTF 3200 K CTF 5600 K UV filter Forwards rainbow effect from fast to slow No rotation Backwards rainbow effect from slow to fast	step step step step step step step proportional step proportional
8	8	6	0-255	<b>Cyan</b> Cyan ( 0- white, 255 - full cyan )	proportional
9	9	7	0-255	<b>Magenta</b> Magenta ( 0-white, 255-full magenta )	proportional
10	10	8	0-255	<b>Yellow</b> Yellow (0-white,255-full yellow)	proportional
11	11	9	0-255	<b>Speed of CMY and dimmer</b> From max. speed to min. speed	proportional
12	12	10	0-7 8-15 16-23 24-31 32-39 40-47	<b>Colours macros - CMY and color wheel</b> Off Macro 1 Macro 2 Macro 3 Macro 4 Macro 5	step step step step step step



## 6. Controller mode

The fixtures are individually addressed (001-497) on a data link and connected to the controller. The fixtures respond to the DMX signal from the controller.

### 6.1 DMX addressing

The control panel on the front panel of the fixture allows you to assign the DMX fixture address, which is defined as the first channel from which the WASH 250 XT will respond to the controller.

If you set, for example, the address to channel 5, the WASH 250 XT will use the channel 5 to 20 for control.

Please, be sure that you don't have any overlapping channels in order to control each WASH 250 XT correctly and independently from any other fixture on the DMX data link.

If two, three or more WASH 250 XT are addressed similarly, they will work similarly.

For address setting, please refer to the instructions under "Addressing" (menu "**A001**").

#### Controlling:

After having addressed all WASH 250 XT, you may now start operating these via your lighting controller.

**Note:** After switching on, the WASH 250 XT will automatically detect whether DMX 512 data is received or not. If there is no data received at the DMX-input, the display will start to flash "**A001**" with actually set address.

This situation can occur if:

- the 3 PIN XLR plug (cable with DMX signal from controller) is not connected with the input of the WASH 250 XT
- the controller is switched off or defective, the cable or connector is defective or the signal wires are swapped in the input connector.

**Note:** It's necessary to insert the XLR termination plug (with 120 Ohm) to the last fixture in the link in order to ensure proper transmission on the DMX data link.

### 6.2 Remotely controllable functions

#### Lamp

The WASH 250 XT is to be operated with a MSD/HSD 250 or MSD 250/2 GY-9,5 lamp.

A relay inside of the WASH 250 XT allows you to switch on and off the lamp via the control panel or via your DMX-controller without affecting the rest of the lighting.

To switch On/Off the lamp, please refer to "Switching On/Off the lamp" (menu "**LAMP**").

**Note:** It is also important to note, that the discharge lamp is cold restrike types, that means, that they have to be cold before re-striking. For this reason, you have to wait 5 minutes (max. speed of fan must be adjusted) after having switched Off the lamp before you can switch it back On again. If you try to switch On the lamp within 5 minutes after having switched it Off, the WASH 250 XT will store this information and automatically ignite the lamp when the 5 minutes period has expired. The message "**HEAT**" will appear on the control panel display of the WASH 250 XT. If the ignition of the lamp is seven times unsuccessful, on the display will appear "**LA.Er**", meaning that the lamp could be damaged or even missed, or there could be a failure on the ignitor or ballast.

#### Colour wheel

The WASH 250 XT features a colour-wheel with 7 color positions - 6 of these with dichroic colors and the last one open. It is also possible to rotate the color-wheel continuously at different speeds - the so-called "Rainbow effect" is created.

#### CMY - colours mixing system

The CMY color mixing system is based on graduated cyan, magenta, and yellow color filters. A continuous range of colors may be achieved by varying the amount of each filter from 0 to 100%.

#### Beam effects

The beam shaper allows you to widen and flatten beam. Beam shaper rotates 180°.

Frost filter on the same wheel as beam shaper softens the beam.

#### Dimmer

Smooth 0 - 100 % dimming is provided by the special dimmer unit.

#### Shutter/Strobe

Extremely fast shutter may also be used for strobe effect (1 - 10 flashes per second)

## Fans

The WASH 250 XT is cooled by free axial fans - two in the projector head and one in the base. The speed of the fan (and of course the noise) can be continuously reduced if very quiet performance is required.

By the Control Board using the "**FAnS**" function you can choose 5 types of fan speed operating modes.

## 7. Stand - alone mode

The fixtures on a data link are not connected to the controller but can execute pre-set programs which can be different for every fixture. To set the program to be played, see the "Stand-alone setting" ( menu "**St.AL.**" ).

"Stand-alone operation" can be applied to the single fixture (the fixture may be set to the master /slave mode or controller mode ) or to multiple fixtures operating synchronously.

Synchronous operation of multiple fixtures requires that they must be connected on a data link and one of them is set as a master (master mode) and the rest as the slaves (slave mode). The slaves are assigned to SLA1-SLA9 and on the certain slave address can be connected only one fixture. To set the fixture as the master or slave , see the "Addressing" (menu "**A001**" ).

**If the master fixture runs a reset, switches On/Off the lamp or plays test(program), all slaves will execute these acts too (e.g. if the master fixture has switched the lamp off, no slaves can switch the lamp on)!**

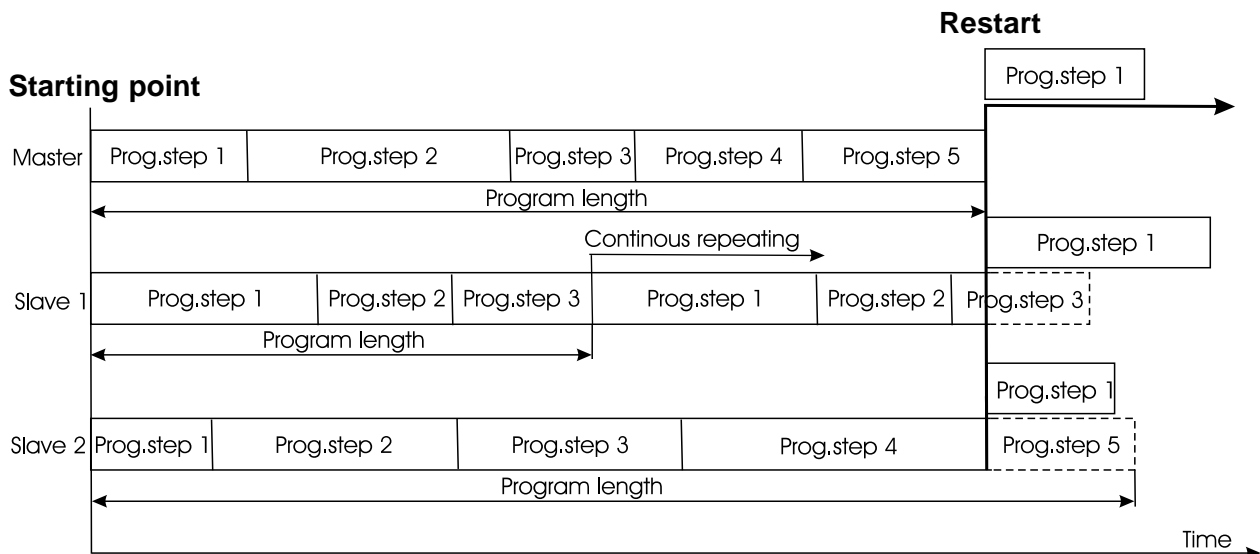
**You can't play or edit any programs on the slaves by their control panels if the master is switched on and connected to the master/slave chain.**

The master fixture starts simultaneous program start in the other slave fixtures. All fixtures have a definite, synchronized starting point when playing back their programs. The number of running program is the same in all slaves and depends on the master's choice (menu "**St.AL.**" ). Every fixture runs its program repeatedly , starting the program step No.1 when requested by the master .

For example:

If the slave fixture has a shorter program length, it will continuously repeat its program until the master fixture finishes its own program and restarts its program running (slave 1- prog.step 3 will not be finished).

If the slave fixture has a longer program length, it will restart at prog. step 1 before it completes all its prog.steps (slave 2 - prog.step 5 will not be played)- see the picture below.



**Note:** Disconnect the fixtures from the DMX controller before master/slave operating ,otherwise data collisions can occur and the fixtures will not work properly!

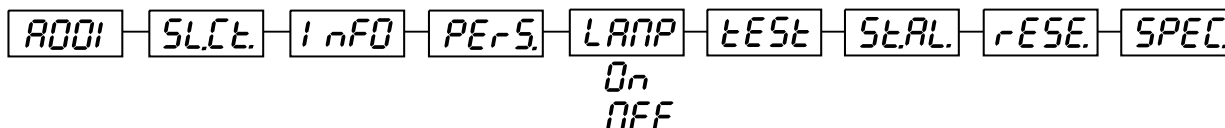
It's necessary to insert the XLR termination plug (with 120 Ohm) into the input of the master fixture and into the output of the last slave fixture in the data link in order to ensure proper transmission on the data link.

From the master's control panel is possible to control any slave in a master/slave chain.

## 8. Functions of the control panel

The control panel situated on the front side of the base offers several features. You can simply set the DMX address, master/slave mode, read the number of lamp or unit hours, switch On and Off the lamp, run test, make a reset and also use many functions for setting and service purposes.

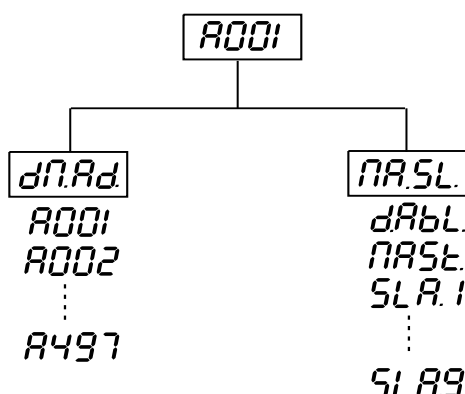
The main menu of the control panel is accessed by pressing the **[Mode]** button - press this one so many times until the display shows message "A001" (with actually stored address). Browse through the menu by the pressing **[Up]** or **[Down]** buttons - the display shows step by step these messages: **A001, SLct, InFO, PErs, LAMP, tESt, StAL, rESE, SPEC.** Press **[Enter]** if you wish to select one of them. The functions are described in the following sections and the function hierarchy is shown below.



### 8.1 Addressing



By this menu you can set the DMX address or address the fixture as a master/slave.



**DMX addressing**

1. Press the **[Mode]**- button so many times until the display shows message "A001" (with actually stored address).
  2. Press **[Enter]**-button and use the **[Up]** and **[down]** buttons to select "dM.Ad."-menu.
  3. Press **[Enter]**-button (the letter "A" flashes) and by **[Up]** and **[down]** buttons select required address (001 - 497), press **[Enter]**-button to confirm.
  4. Select "M.ASL."-menu, press **[Enter]**-button and use **[Up]** and **[down]** buttons to select "d.AbL." (no master or slave), press **[Enter]** to confirm.
  5. Press the **[Mode]**- button. Chosen address is shown on the display.
- If message "A001" (with actually stored address) flashes - no DMX data received at the DMX-input.



**Master/slave addressing**

1. Press the **[Mode]** button so many times until the display shows message "A001" (with actually stored address).
2. Press **[Enter]**-button and use the **[Up]** and **[down]** buttons to select "MA.SL."-menu.
3. Press **[Enter]**-button (display flashes) and select "MASt" (to set the fixture as the master in a chain of multiple fixtures) or "SLA.1"-"SLA.9" (to set the fixture to be the slave in a chain of multiple fixtures) and press **[Enter]**



to confirm. If you want address no master or slave, select "**d.AbL.**".  
 4. Press the **[Mode]-** button. Chosen address is shown on the display.  
 If message "**MASt.**" fast flashes-DMX signal is received at the DMX-input- disconnect DMX controller!

**Only one fixture may be the master.** Up to the 9 slaves may be connected to the master and on the certain address can be connected only one slave fixture (SLA1-SLA9).

**Note:** Disconnect the fixtures from the DMX controller before master/slave operating ,otherwise data collisions can occur and the fixtures will not work properly!

If the fixture is set as the master and DMX signal is connected to its input, the error message "MAEr" will appear on its display and the fixture's address will be set to its DMX address in order to respond to DMX signal from the controller.

For example:

The master fixture has these address setting: "dM.Ad."-menu.....**A017**  
 "MA.SL."-menu.....**MASt** (is displayed)

## 8.2 Slave control



This function allows you to control the slaves from the master's control panel in a master/slave operation. Select this function from the main menu and press **[Enter]**-button. Browse the list of all connected slaves ("**SL.C.1**" - "**SL.C.9**") by pressing **[Up]** or **[Down]** button. Select the desired slave and press **[Enter]**-button. The slave's control panel is available from the master's control panel.

If no slave is connected to the master, messages "SL.C.1", "SL.C.2", "SL.C.3"... "SL.C.9" still round repeat.

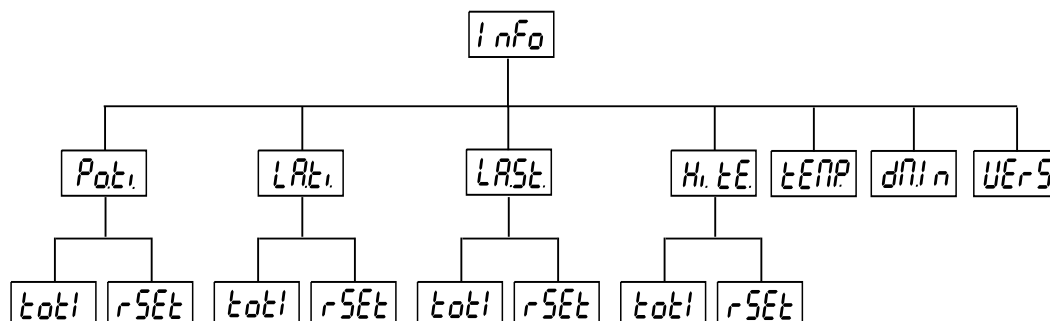
**Note:** This function is available from the master fixture only.

## 8.3 Fixture informations



The menu allows you to read an useful information about the fixture as the lamp life, head temperature, software version, etc.

Press **[Up]** and **[Down]** buttons to select the desired option and press **[Enter]** to see the value or next submenu.



**Power On time**



-By this option you can read the total number of the operation hours since the WASH 250 XT has been fabricated. Press **[Enter]** or **[Mode]** to return to the menu.

**rSEt** - The number of the hours that the WASH 250 XT has been powered On since the counter was last reset. Press **[Enter]** or **[Mode]** to return to the menu. In order to reset this counter to 0, you have to hold the **[Up]** and **[Down]**-button and press the **[Enter]**-button.

**LAt.** **Lamp On time**

**totl** - This option enables you to read the total number of the operation hours with the lamp on since the WASH 250 XT has been fabricated. Press **[Enter]** or **[Mode]** to return to the menu.

**rSEt** - The number of hours that the lamp has been powered On since the counter was last reset. Press **[Enter]** or **[Mode]** to return to the menu. In order to reset this counter to 0, you have to hold the **[Up]** and **[Down]**-button and press the **[Enter]**-button.

**LASt.** **Lamp strikes**

**totl** - By this option you can read the total number of the lamp strikes since the WASH 250 XT has been fabricated. Press **[Enter]** or **[Mode]** to return to the menu.

**rSEt** - The number of the lamp strikes since the counter was last reset. Press **[Enter]** or **[Mode]** to return to the menu. In order to reset the counter to 0, you have to hold the **[Up]** and **[Down]**-button and press the **[Enter]**-button.

**Hi. tE.** **Max. fixture head temperature**

**totl** - By this option you can read the max. temperature of the head inside since the WASH 250 XT has been fabricated. Press **[Enter]** or **[Mode]** to return to the menu.

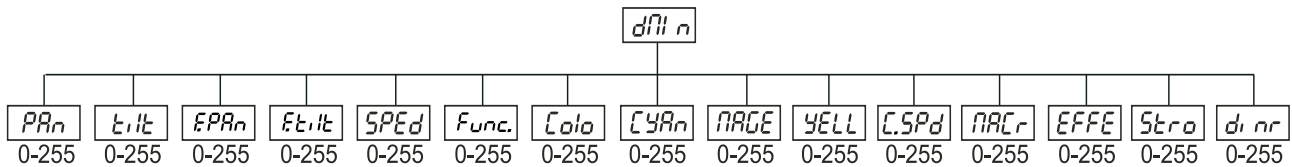
**rSEt** - Max. temperature of the head inside since the counter was last reset. Press **[Enter]** or **[Mode]** to return to the menu. In order to reset the counter to 0, you have to hold the **[Up]** and **[Down]**-button and press the **[Enter]**-button.

**tEMP.** **Current fixture head temperature**

Temperature readouts of the head inside in Celsius. Inside temperatures below 95°C are not critical. 95° C and more lead to the lamp being switched off. Please note that the outside temperature should not exceed 45° C.

**dmn.** **DMX values**

Readout DMX values of each channel received by the fixture. Use the **[Up]** and **[Down]** buttons to select desired channel and press **[Enter]** to read its value coming to the fixture or **[Mode]** to cancel and return to the menu.



UEr.S.

#### Software version

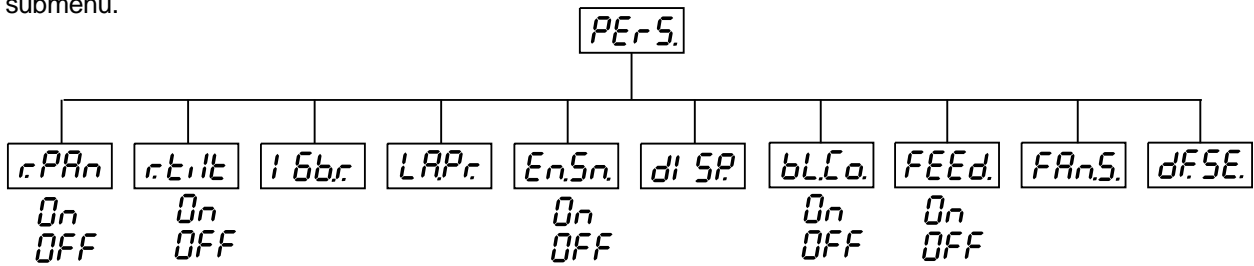
By this function you can read the software version of the display module. Press **[Enter]** to read its value or **[Mode]** to return to the menu.

## 8.4 Personality options

PEr.S.

These options allow you to modify WASH 250 XT operating behavior.

Press **[Up]** and **[Down]** buttons to select the desired option and press **[Enter]** to set the value or to see next submenu.



r.PAn

#### Pan reverse

This function allows you to invert the pan movement. Use the **[Up]** and **[Down]** buttons to select "On" if you wish this feature or "Off" if you don't wish this feature and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

r.tilt

#### Tilt reverse

This function allows you to invert the tilt movement. Use the **[Up]** and **[Down]** buttons to select "On" if you wish this feature or "Off" if you don't wish this feature and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

16b.r.

#### Movement resolution

By this function you can adjust the 16-bit movement resolution (Mod.1, Mod. 2) or 8-bit resolution (8bit).

Use the **[Up]** or **[Down]** keys to select the desired movement resolution and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

List of the channel settings:

Channel	Mode 1-16bit (default)	Mode 2-16bit	8 bit
1	Pan	Pan	Pan
2	Tilt	Fine Pan	Tilt
3	Fine Pan	Tilt	Pan/Tilt speed
4	Fine Tilt	Fine Tilt	Fans,Lamp On/Off
5	Pan/Tilt speed	Pan/Tilt speed	Colours
6	Fans, On/Off lamp	Fans, On/Off lamp	Cyan
7	Colours	Colours	Magenta
8	Cyan	Cyan	Yellow
9	Magenta	Magenta	CMY speed
10	Yellow	Yellow	Colour macros
11	Speed of CMY	Speed of CMY	Effect wheel
12	Colour macros	Colour macros	No function
13	Effect wheel	Effect wheel	Strobe
14	No function	No function	Dimmer
15	Shutter, strobe	Shutter, strobe	
16	Dimmer	Dimmer	

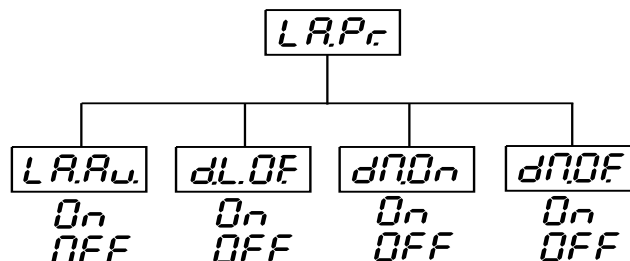
Please refer to the chapter "DMX- protocol" for detail description.

**Note:** If you adjust the 16 bit resolution (Mode 1 or Mode 2), the fixture will occupy 16 DMX channels, if you adjust the 8 bit resolution, the fixture will be operated by only 14 DMX channels.



#### Lamp presetting

This function allows you to adjust the lamp settings:



#### Lamp On after switching the fixture On

This function enables to turn the lamp on automatically after switching the fixture on. Use the **[Up]** and **[Down]** buttons to select **"On"** if you wish to turn the lamp on automatically after switching the fixture on or **"Off"** if you wish the lamp off after switching on the fixture and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.



#### Lamp Off via DMX

This function allows you to switch off the lamp by DMX. Use the **[Up]** and **[Down]** buttons to select **"On"** if you want to switch off the lamp by DMX or **"Off"** if you don't want to switch off the lamp by DMX and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.



#### Lamp On if DMX is present

This function allows you to strike the lamp automatically after 26 seconds if DMX signal is present on the data link. If the ignition is unsuccessful (e.g. lamp is too hot), the fixture will try to ignite the lamp after next 26 s. This process will repeat until the lamp lights. Use the **[Up]** and **[Down]** buttons to select **"On"** if you want to strike the lamp or **"Off"** if you don't want to strike the lamp and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

### **dm.OF.** Lamp Off if DMX is missing

This function allows you to switch Off the lamp automatically after 2 minutes if DMX signal is missing on the data link. Use the **[Up]** and **[Down]** buttons to select "On" if you want to switch Off the lamp or "Off" if you don't want to switch Off the lamp and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

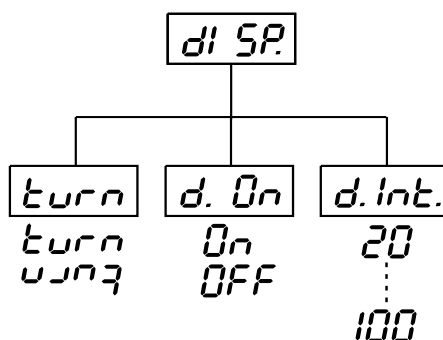
### **En.Sn.** Switch On/Off the lamp light sensor

Use the **[Up]** and **[Down]** buttons to select "On" if you wish to switch the lamp light sensor on and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu. **The option "On" is for the standard operation.** Use the **[Up]** and **[Down]** buttons to select "Off" if you wish to switch the lamp light sensor Off and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

**Important: The option "Off" is for "emergency operation" only if the lamp light sensor is defective and you will wait for a service intervention!** If the lamp light sensor is switched Off, the error messages "LAEr,SnEr,HEAt" will not appear on the display (only the message "HEAt" will appear if the lamp was turned off and on within 5 minutes) and at switching the lamp on the electronics will still try to ignite the lamp until it shines (even when the lamp is damaged or absent), on this account some electronics parts could be damaged!

### **dl SP.** Display adjusting

This function allows you to adjust the display settings:



### **dl. nt.** Display intensity

With this function you can adjust the display-intensity from 20% to 100% . Use the **[Up]** and **[Down]** buttons to select the level of the display- intensity and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

### **turn** Display-reverse

With this function, you can rotate the display by 180°. Use the **[Up]** and **[Down]** buttons to select "normal display" or "display turned by 180°" and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

### **d.On** Display-On

This function allows you to keep the display on or to turn off automatically 2 minutes after last pressing any button on the control panel. Use the **[Up]** and **[Down]** buttons to select "On" if you wish to keep the display on or "Off" if you wish to turn off automatically 2 minutes after last pressing any button on the control panel and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

**blCo.**

### Blackout during movement correction

The function executes the blackout during the head movement correction (the moving head has lost its right pan/tilt-position for a short moment). Use the **[Up]** and **[Down]** buttons to select "On" if you want to execute the blackout or "Off" if you don't and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

**FEEd.**

### PAN/TILT-feedback

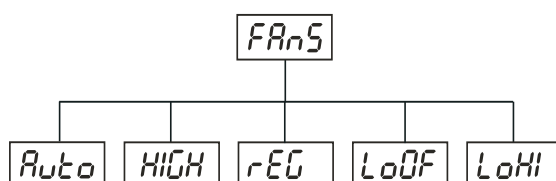
This function allows to return the moving head to the required pan/tilt position after changing the position by external force (e.g. by stroke). Use the **[Up]** and **[Down]** buttons to select "On" if you wish to enable this function or "Off" if you wish not to return the moving head to the required position and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu.

**Note:** If the feedback was switched off, the pan/tilt-position is changed by an external force and the feedback is switched on again, the moving head might not be synchronized with the DMX signal. You have to make a reset in order to synchronize the moving head with the DMX signal.

**FAnS.**

### Fan speed operating modes

By using this function you can choose 5 types of the fan speed operating modes. Browse through this menu by the pressing **[Up]** and **[Down]** buttons - the display shows step by step these messages: "Auto, HIGH, reG, LoOF, LoHI". Press **[Enter]** if you wish to select one of them or **[Mode]** to cancel and return to the menu.



**Auto**

### Continuous controlling of the fan speed without the DMX value

The fan automatically raises its speed in order to control inside temperature of the lighting, if the temperature inside increases about certain level (the low fan speed reduces the cooling of the lighting). This cycle can repeat several times until the temperature inside is on suitable level. The initial level of the fan speed can't be adjusted by the DMX.

**HIGH**

### High (max.) speed of fans

The cooling fan works on max. speed (max. cooling)

**reG.**

### Continuous controlling of the fan speed

This mode is similar to "Auto", but the initial level of the fan speed can be adjusted by the DMX.

**LoOF.**

### Low speed/Switch Off the lamp operating

The fan keeps the adjusted low speed until the temperature exceeds max. inside temperature of the fixture, then the WASH 250 XT automatically switches off the lamp.

**LoHI.**

### Low/high speed of the fan operating

The fan keeps the adjusted low speed until the temperature exceeds max. inside temperature of the fixture, then the WASH 250 XT automatically switches from low to high the fan speed.

**Note:** The modes "Auto" and "HIGH" don't interact to the DMX value on the channel 6 (0-127)!



Default settings

Press **[Enter]** to reset all fixture personalities (not the adjusting functions) to the default values. On the display will appear "rSt" meaning that the fixture makes the reset. See the table of personality setting and their default positions.

Personality	Display	Default values (SHADED)
Pan reverse	rPAn	On
		OFF
Tilt reverse	rTilt	On
		OFF
Movement resolution	16br	Mod 1
		Mod 2
		8bit
Lamp On after switch. the fixture On	LAAu	On
		OFF
Lamp Off via DMX	dLOF	On
		OFF
Lamp On if DMX is present	dNOOn	On
		OFF
Lamp Off if DMX is missing	dNOF	On
		OFF
Blackout during mov. correction	bLCo	On
		OFF
Display-On	d On	On
		OFF
Display intensity	d Int	20 40 60 80 100
Display- reverse	turn	turn
		turn
PAN/TILT feedback	FEEd	On
		OFF
Switch On/Off the lamp light sensor	EnSn	On
		OFF
Fan speed operating modes	FAnS	Auto
		HIGH
		REG
		LoOF
		LoHi

## 8.5 Switching On/Off the lamp



Press the **[Mode]** button in order to access the main menu. Browse through the menu by pressing the **[Up]** and **[Down]** buttons until the display shows "LAMP". Confirm by pressing **[Enter]** button.

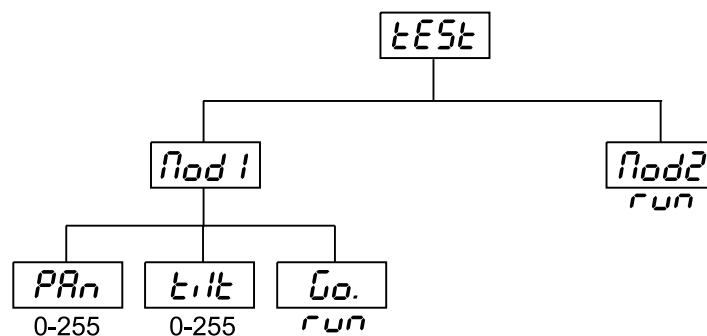
Use the **[Up]** and **[Down]** buttons to select "On" to switch On the lamp and "Off" to switch Off the lamp and press **[Enter]** to confirm or **[Mode]** to cancel.

## 8.6 Test sequences



This function allows you to run a special demo-test sequences without an external controller, which will show you some possibilities of using WASH 250 XT. Press **[Up]** and **[Down]** keys to select the **"Mod1"** or **"Mod2"** sequences. The **"Mod1"** is suitable for projections on the wall, ceiling or ground without any head-movement, the **"Mod2"** uses all WASH 250 XT functions and therefore is good for a complete introduction of the fixture. Select **"Mod1"** or **"Mod2"** by **[Up]** and **[Down]** buttons and press **[Enter]** to confirm the choice. If the test program is running, messages **"run/test"** blink on the display.

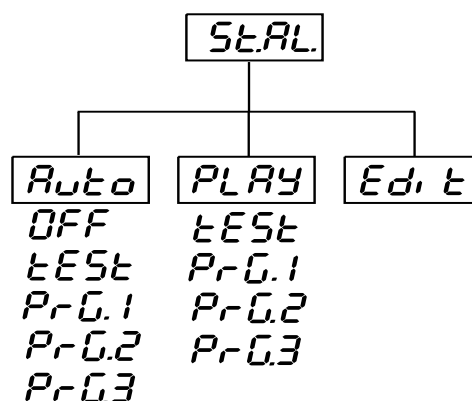
If you want to pause the running program in the required position, press the **[Enter]**-button (messages **"PAUS"/"test"** blink). To continue the program running, press the **[Enter]**-button again.



## 8.7 Stand-alone setting



This menu offers options for stand-alone mode as a selection of the playing program, programming and modifying current programs.



### Presetting playback

This function allows you to select the the program which will be played in the stand-alone mode after switching the fixture On. Use the **[Up]** and **[Down]** buttons to select desired program (**"tEst"** - built-in program) or **"OFF"** if you don't want trigger any program after switching the fixture On and press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu. Selected program will be played continuously in a loop as long as it appears on the display. This option should be set **"OFF"** for all slaves in the master/slave chain by reason of the right program starts.



For example: You have selected program "**PrG.3**" in this menu and:

this fixture is set as a single fixture (master/slave or controller operating)- the fixture will run its program "**PrG.3**".

this fixture is set as a master in a data chain- the fixture will run its program "**PrG.3**".

this fixture is set as a slave in a data chain- the fixture will run its program according to the master(if the master runs its own program "**PrG.1**", the slave will run its own program "**PrG.1**"also).

Note:If the fixture operates in the controller mode ( DMX controller is connected) and any program from this menu is selected ,in this case the fixture will not respond to the DMX controller after switching On and will play selected program.



### Playing program

This function allows you to run a built-in program "**tEST**" and the 3 freely-programmable programs "**PrG.1,PrG.2,PrG.3**". Press **[Up]** or **[Down]** buttons to select the desired program and press **[Enter]** to run the program which will be played continuously in a loop.

If you want to pause the running program in the required position, press the **[Enter]**-button(messages "**PAUS**" / "program No." blink ). To continue the program running, press the **[Enter]**-button again.

Note:If the fixture operates in the controller mode ( DMX controller is connected) and any program from this function is selected in this case the fixture will not respond to the DMX controller and will play selected program.

You can't play programs on the slave fixtures from their control panels if the master fixture is switched On and connected to the slaves (playing is forced by the master).



### Editing program

This menu item allows you to select a program to edit or create. The WASH 250 XT has one built-in program ("**tEST**") and the 3 free programs, each up to 99 steps.

If the fixture is set as a master, then you may edit any program in the slaves. You can't edit programs on the slave fixtures from their control panels if the master fixture is switched on and connected to the slaves (editing is possible by the master control panel only).

#### Procedure:

1. Press **[Up]** or **[Down]**-button to select the program you want to edit ("PrG.1" - "PrG.3") and press **[Enter]**.
2. Press **[Up]** or **[Down]**-button to select the desired fixture ("MASt." - "SLA.9") and press **[Enter]**-button.
3. Press **[Up]** or **[Down]**-button to select the desired program step ("St.01" - "St.99") and press **[Enter]**-button.
4. Press **[Up]** or **[Down]**-button to select the desired item and press **[Enter]**-button. Now you can edit by **[Up]** or **[Down]** buttons the DMX value for selected item:

"P.End." - a total number of the program steps, value 1-99. **This value you must set before start programming** (e.g. if you want to create program with the 10 steps, set the value onto 10).

"PAn" - a pan, value 0-255

"tilt" - a tilt, value 0-255

"F.PAn" - a fine pan, value 0-255

"F.tilt" - a fine tilt, value 0-255

"SPEd" - a speed of PAN/TILT movement, value 0-255

"Colo." - a colour wheel, value 0-255

"CYAn" - a cyan, value 0-255

"MAGE." - a magenta, value 0-255

"YELL." - a yellow, value 0-255

"C.SPd." - a speed of CMY, value 0-255

"MACr." - a colour macro, value 0-255

"EFFE." - a zoom, frost and UV filter, value 0-255

"Stro." - a strobe, value 0-255

"dimr" - a dimmer, value 0-255

"S.tim." - a step time, value 0, 1-25, 5 seconds

"COPY." - a copying the current prog. step to the next prog. step. If the last prog. step is copied to the next prog. step, parameter "**P.End**" is increased about 1 by itself (except step 99).

5. Press **[Enter]**-button to confirm adjusted value.

6. Press **[Mode]**-button, select next prog. step and repeat this procedure (steps 4 and 6).

The editing programs "PrG.1, PrG.2, PrG.3" are saved in the current modified fixture (master or slave 1-9).

## 8.8 Reset function

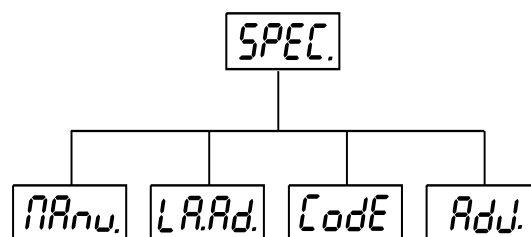


Press **[Enter]** button to run a reset. This option enables the WASH 250 XT to index all effects (functions) and return to their standard positions.

## 8.9 Special functions

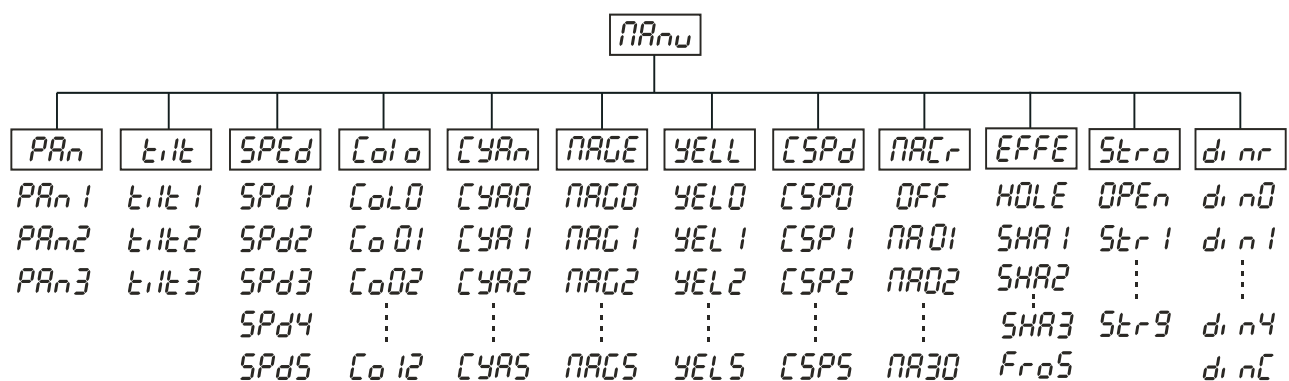


Use the **[Up]** and **[Down]** buttons to browse through the special functions and select the one by pressing **[Enter]**.



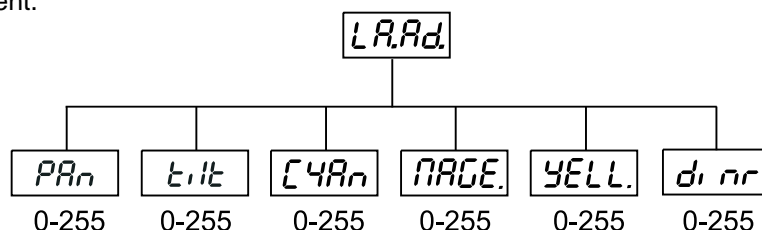
### Manual control of effects

The function allows you to control manually the channel functions of the fixture. Use the **[Up]** and **[Down]** buttons to select desired function and press **[Enter]** to adjust the effect or **[Mode]** to cancel and return to the menu.



### Lamp adjustment

This function can be used when you make the fine adjustment of the lamp. If you select "LAAD" pressing by **[Enter]**-button, all effects will be canceled, shutter will be opened and the dimmer intensity will be set onto 100%. By using the options "PAn, tilt, CYAn, MAGE, YELL, dimr" you can focus the light on a flat surface (wall) and perform the fine lamp adjustment.





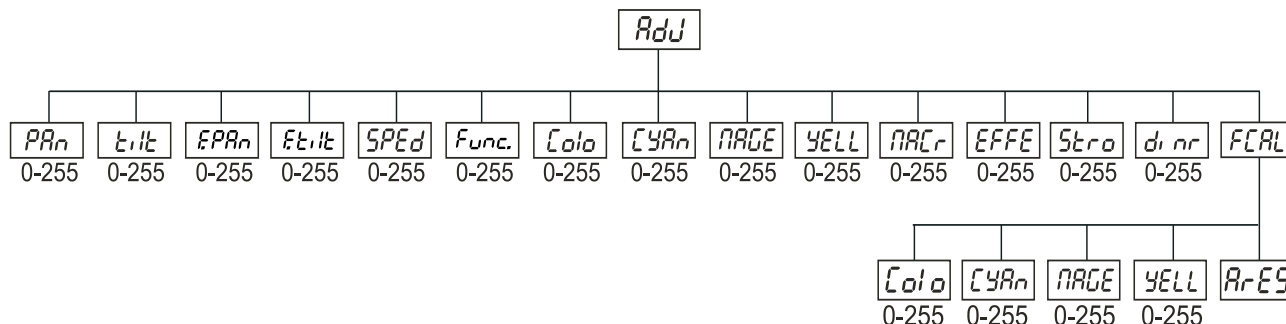
## Fixture code

The option contains identification code (1-9999) for the fixture, which is used for the master/slave operation.



## Adjusting the default positions of the colour and CMY

By this function you can calibrate and adjust the colour and CMY to their standard/right positions. Use the **[Up]** and **[Down]** keys to browse through the adjusting menu - the display shows step by step these messages: "**PAn**, **Tilt**, **F.Pan**, **F.Tilt**, **SPEd**, **Func**, **Colo**, **CYAn**, **MAGE**, **YELL**, **MACr**, **EFFE**, **Stro**, **dimr**, **FCAL**" by which you can adjust the fixture to the required/desired position (0-255) before the function calibration. Then when the positioning is finished use the last "**FCAL**" function (Fixture calibration).



### 1. Calibration via the control board

Press **[Enter]** and the **[Up]** and **[Down]** keys in order to display the following messages: "**Colo**, **CYAn**, **MAGE**, **YELL**," for very smooth function calibration. Select one of them, press **[Enter]** and use the **[Up]** and **[Down]** keys in order to adjust their right value from 0 to 255. Then press **[Enter]** to confirm or **[Mode]** to cancel and return to the menu. This can be repeated for each calibration parameter if it is required. When the calibration is finished, it is necessary to use the "**ArES**" function in order to write the calibration values to the memory (EPROM) and to make a reset in order to check the newly adjusted positions of the colour and CMY wheels. When the reset of the fixture is finished, the display will show the "**FCAL**" message. Press **[Enter]** to repeat the calibration or **[Mode]** to return to the "**Adj**" menu.

### 2. Calibration via the external controller

Press **[Enter]** and the **[Up]** and **[Down]** keys in order to display the following messages: "**Colo**, **CYAn**, **MAGE**, **YELL**" - calibration parameters. Select one of them and press **[Enter]**.

Now you can calibrate the colour and CMY wheels by your controller. The DMX calibration protocol is described in the table mentioned below.

#### DMX Calibration protocol:

DMX channel	Function		
1	Colour	S m o o t h e p	Calibration 0-255
2	Cyan		Calibration 0-255
3	Magenta		Calibration 0-255
4	Yellow		Calibration 0-255
5	No function		
6	No function		
7	Colours	Standard protocol	
8	Cyan	Standard protocol	
9	Magenta	Standard protocol	
10	Yellow	Standard protocol	
11	Speed CMY,dimmer	Standard protocol	
12	Colours macros	Standard protocol	
13	Beam effects	Standard protocol	
14	No function		
15	Strobo	Standard protocol	
16	Dimmer	Standard protocol	

After having calibrated required functions press **[Enter]** to confirm (or **[Mode]** to cancel and return to the menu without reset by the "A.rES." function) and use the "A.rES." function in order to write the calibration values to the memory (EEPROM) and to make a reset in order to check the new adjusted positions of the colour and CMY wheels.

## 9. Error and information messages

### **HEAt**

This message appears if you try to switch on the lamp within 5 minutes after having switched it off (the lamp is too hot). The message will appear on the display if the lamp doesn't ignite within 28 seconds. The WASH 250 will store this information and automatically ignite the lamp when the 5 minutes period has expired.

**Caution:** The message is disabled if the lamp light sensor (function "En.Sn.") is switched Off (only if the lamp was turned Off and On within 5 minutes, the message "HEAt" will appear).

### **LA.Er.**

The ignition of the lamp is seven times unsuccessful (the "HEAt" message appeared six times before), and the display shows "LA.Er", meaning that the lamp could be damaged or even missed, the fixture is overheating (this can occur if the ambient temperature is 45° C or more) or there could be a failure on the ignitor or ballast.

Please place or replace the lamp, check the ambient temperature or contact your dealer if the situation was not caused by the lamp.

**Caution:** The message is disabled if the lamp light sensor (function "En.Sn.") is switched Off.

### **FAn**

The message informs you that the fixture was overheating and switched off. This message will appear on the display if the fan speed operating "LOOF" was selected.

### **MbEr**

This message informs you that the main PCB does not communicate correctly with the Control Board.

### **CoEr (color-wheel error)**

This message will appear after the reset of the fixture if the magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping-motor is defective (or its driver circuit on the main PCB). The color-wheel is not located in the default position after the reset.

### **FtEr**

This error message informs you that the fixture was overheating (occured if the ambient temperature is 45° C or more) and that the relay switched off the lamp. This message will appear on the display until the temperature will be on a suitable level, then the display will show the "HEAt" message meaning the lamp is too hot (explanation see above).

### **SnEr**

This message appears if the lamp lighting sensor is failed.

**Caution:** The message is disabled if the lamp light sensor (function "En.Sn.") is switched Off.

### **PoEr**

This message will appear if the fixture was shortly disconnect from the main.

### **PAEr (PAN-yoke movement error)**

This message will appear after the reset of the fixture if the yoke's magnetic-indexing circuits malfunction (sensors failed or magnet missing) or the stepping motor is defective. (Or its driving IC on the main PCB). The yoke is not located in the default position after the reset.

### **tiEr (TILT-head movement error)**

This message will appear after the reset of the fixture if the head's magnetic-indexing circuit malfunctions (sensor failed or magnet missing) or the stepping motor is defective. (Or its driving IC on the main PCB). The head is not located in the default position after the reset.

### **FrEr**

It will appear if the frequency of the main is not standard 50 or 60Hz.

## MA.Er.(Master error)

The message informs you that the fixture was addressed as a master and DMX signal is connected to its input. Disconnect the DMX controller from fixture's input and address the fixture as the master again.

## 10. Technical specifications

### Power supply:

EU-model-Voltage.....208/230/240V AC, 50/60 Hz ~  
-Fuse.....T 3.15 A@230V  
US-model-Voltage.....100/120/208/230/240 V AC, 50/60 Hz ~  
-Fuse.....T 6.3 A@120V  
-Power consumption....500 VA

### Motors:

-9 high quality stepping-motors controlled by microprocessors

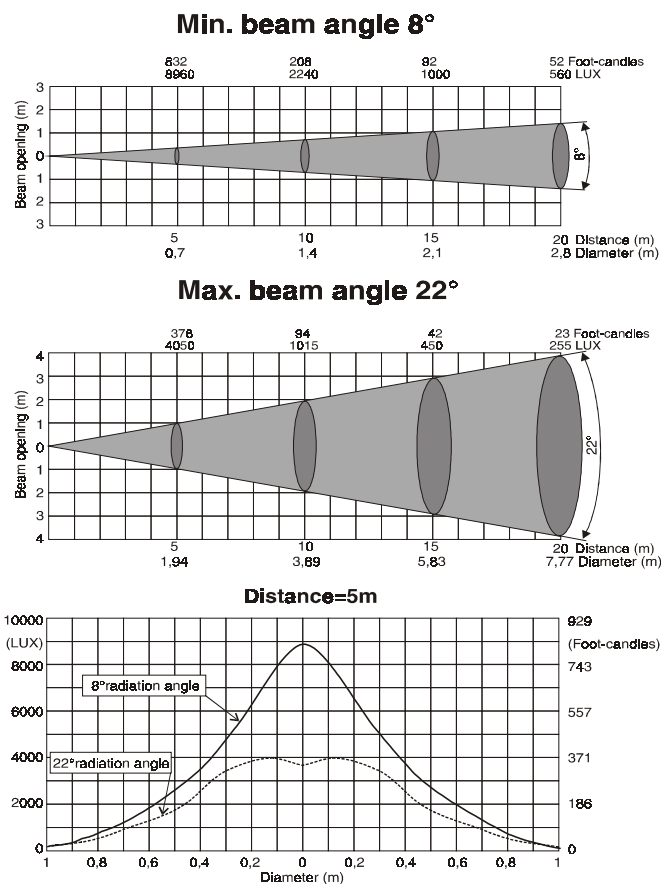
### Lamps:

-Philips MSD250/2 GY9.5

### Optical system:

-High luminous-efficiency parabolic reflector  
-Fresnel lens of diameter 150 mm  
-Manually adjustable beam angle from 8° to 22°

### Beampath:



**Colours:**

- CMY - colours mixing system
- 6 dichroic-filters plus white
- Red,green,blue colors and 3200K, 5600K, UV filters
- Colour-wheel continuous rotation in both directions (rainbow effect)

**Beam effects:**

- Beam shaper
- Wide and flat beam can steplessly be rotated by 90°
- Frost filter for softer beam

**Strobe:**

- Strobe effect with variable speed (1 - 10 flashes per second)

**Dimmer:**

- Smooth dimmer from 0 - 100 %

**Electronics:**

- Addressing, special functions setting, effects calibration via control panel with 4-digit LED display
- Readout fixture and lamp usage, receiving DMX values, temperature, etc
- Built-in analyzer for easy fault finding,error messages
- Remotely switching of the lamp
- Built-in demo sequences
- Black-out while head moving or color changing
- Silent fans cooling, remotely controllable speed of fans
- Self-resetable thermo-fuse
- Digital serial input DMX-512
- DMX-control via every standard DMX controller
- 14 DMX-channels (8 bit Pan/Tilt movement resolution)
- 16 DMX-channels (16 bit Pan/Tilt movement resolution):

Channel	Mode 1-16bit (default)	Mode 2-16bit	8 bit
1	Pan	Pan	Pan
2	Tilt	Fine Pan	Tilt
3	Fine Pan	Tilt	Pan/Tilt speed
4	Fine Tilt	Fine Tilt	Fans,Lamp On/Off
5	Pan/Tilt speed	Pan/Tilt speed	Colours
6	Fans, On/Off lamp	Fans, On/Off lamp	Cyan
7	Colours	Colours	Magenta
8	Cyan	Cyan	Yellow
9	Magenta	Magenta	CMY speed
10	Yellow	Yellow	Colour macros
11	Speed of CMY	Speed of CMY	Effect wheel
12	Colour macros	Colour macros	No function
13	Effect wheel	Effect wheel	Strobe
14	No function	No function	Dimmer
15	Shutter, strobe	Shutter, strobe	
16	Dimmer	Dimmer	

**Pan/Tilt:**

- Pan movement range 530°
- Tilt movement range 280°
- 8/16 bit movement resolution
- Automatic Pan / Tilt position correction
- Maximum PAN-movement 530° in 2.65 s
- Maximum TILT-movement 280° in 1.68 s
- Remotely controllable speed of Pan/Tilt movement for easy programming

### Rigging:

- Stands directly on the floor
- Mounts horizontally or vertically with 2 clamps
- 2 truss orientation
- Safety chain/cord attachment point

### Temperatures:

- Maximum ambient temperature  $t_a$ : 45° C
- Maximum housing temperature  $t_B$  (steady state): 80° C

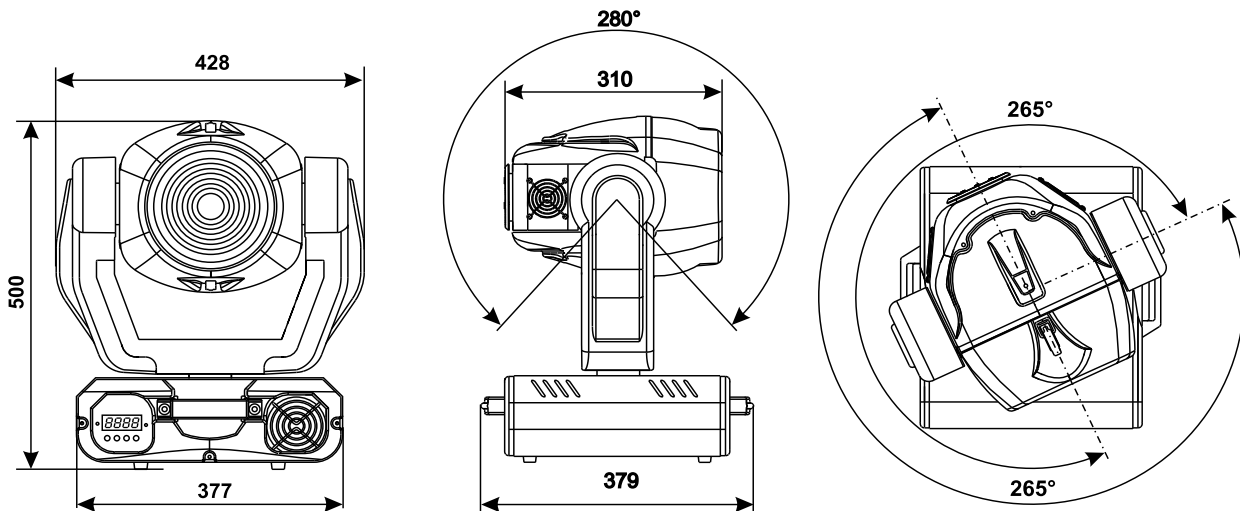
### Minimum distances:

Min.distance from flammable surfaces: 0,5m

Min.distance to lighted object: 1,0m

### Dimensions and weight:

- Length of base (including handles): 372 mm
- Width of yoke: 426 mm
- Height (head horizontal): 500 mm
- Weight (net): 18,0 kg
- Shipping weight: 25,6 kg



### Accessories

Omega holder (2 pieces).....99010420

### Optional accessories:

Mounting plate.....99010500

## 11. Maintenance and cleaning

It is absolutely essential that the fixture is kept clean and that dust, dirt and smoke-fluid residues must not build up on or within the fixture. Otherwise, the fixture's light-output will be significantly reduced. Regular cleaning will not only ensure the maximum light-output, but will also allow the fixture to function reliably throughout its life. A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

***DANGER !***  
***Disconnect from the mains before starting any  
maintenance work***

The fresnel lens will require weekly cleaning as smoke-fluid tends to building up residues, reducing the light-output very quickly. The cooling-fans should be cleaned monthly.

The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet. The dichroic colour-filters should be cleaned monthly.

### Replacing the fuse

If the lamp burns out, the fine-wire fuse of the device might fuse, too. Only replace the fuse by a fuse of same type and rating .

Before replacing the fuse, unplug mains lead.

#### Procedure:

Step 1: Unscrew the fuseholder on the rear panel with a fitting screwdriver from the housing (anti-clockwise).

Step 2: Remove the old fuse from the fuseholder.

Step 3: Install the new fuse in the fuseholder.

Step 4: Replace the fuseholder in the housing and fix it.



## 12. Appendix

### 12.1 Changing the power supply settings

Both the transformer and the ballast must be connected correctly for the local AC voltage and frequency. The wrong settings can cause poor performance or damage of the moving head. The factory settings are printed next to the power switch.

**If you want to change the power supply settings, follow the instructions:**

1. Disconnect the fixture from AC power.
2. Remove the top base cover (closest to the power cord) by loosening the 6 screws.
3. Move the wire ① on the transformer connection block to the position according to the desired voltage.
4. Move the wires ② and ③ on the ballast connection block to the position according to the desired frequency (voltage).
5. Close the base before applying AC power.

**Examples:**

