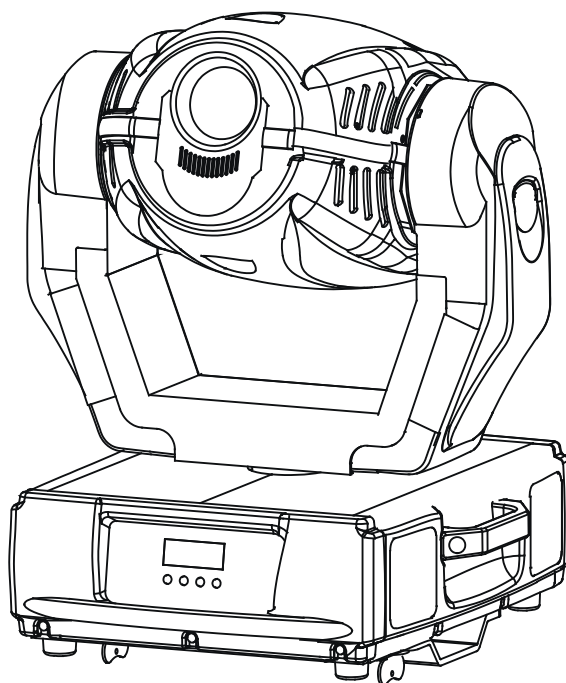


ROBE

Color Spot **250^{AT}**



AT series

Version: 2.5

Color Spot 250^{AT}

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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 1,3 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 45° 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!

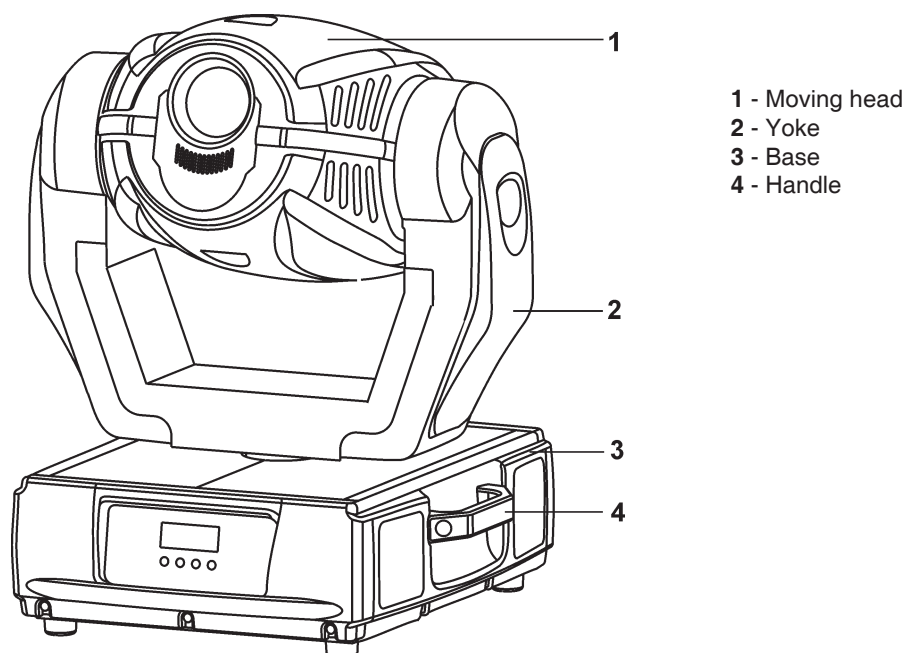
CAUTION! *The lamp has to be replaced when it is damaged or deformed due to the heat!*

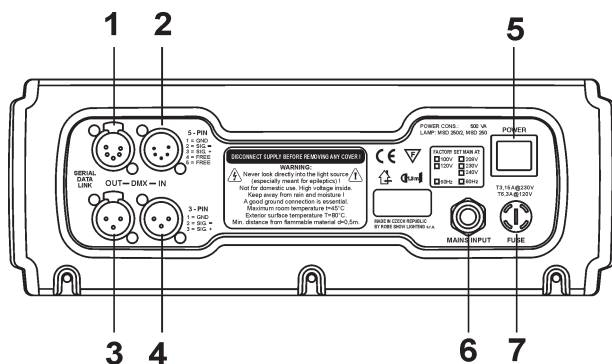
Please use the original packaging if the device is to be transported.

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.

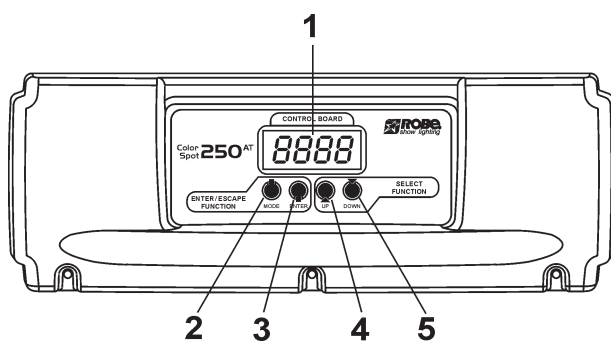
3. Description of the device





Rear panel of the base

- 1 - 5-pin DMX output
- 2 - 5-pin DMX input
- 3 - 3-pin DMX output
- 4 - 3-pin DMX input
- 5 - Power switch
- 6 - Power cord
- 7 - fuse holder



Front panel of the base

- 1 - Display
- 2 - Mode-button
- 3 - Enter-button
- 4 - Up-button
- 5 - Down-button

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 250W/2 open the top cover of the projector-head by loosening the 3 quarter-turn fasteners on the cover.

Then open the small lamp cover by loosening 2 fastening screws (see the drawing).

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!

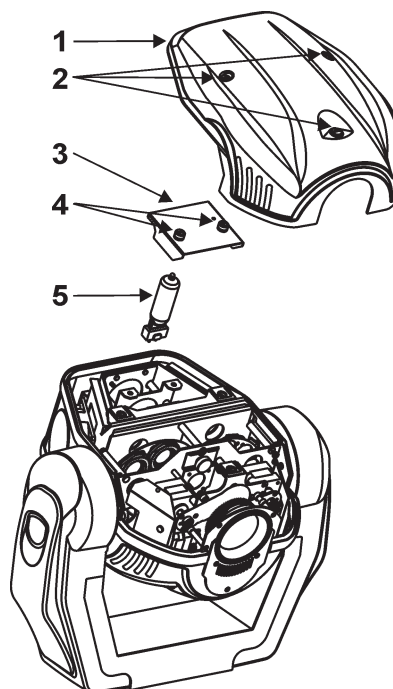
Do not touch the glass bulb with bare hands during the installation! Make sure that the lamp is installed tightly into the lampholder system.

Adjust the optimal distance 1-1,5 mm from the lens by turning the screw „A“ (see the drawings „Lamp adjustment“ below) on the rear panel of the head.

Then close the small lamp cover by tighten 2 fastening screws again. Reclose the top cover of the head and tighten the 3 quarter-turn fasteners.

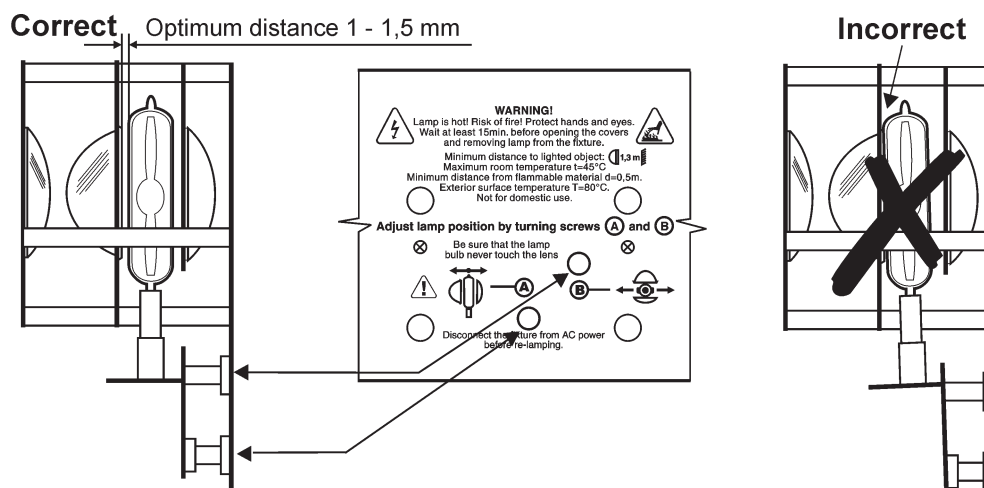
Before striking the lamp, reset the „LAt/rSEt“ and „LAsT/rSEt“ counters in the „InFO“ menu on the control panel, by pressing the „Up“ and „Down“ buttons in one time and then confirming with the „Enter“-button.

- 1 - Top cover
- 2 - Quarter-turn fasteners
- 3 - Lamp cover
- 4 - Fastening screws
- 5 - Lamp



Do not operate this fixture with opened housing-cover!

4.2 Lamp adjustment



The lampholder is aligned at the factory. Due to differences between lamps, fine adjustment may improve light performance. Strike the lamp, cancel all effects, open the shutter and set the dimmer intensity onto 100 % and focus the light on a surface (wall) or use function „LAAd“ in the **Special functions**. As the optimum distance of the lamp from lens was adjusted during the installing or changing the lamp (by turning the screw „A“), it is necessary to adjust only the second position by turning the screw „B“, in order to center the hot-spot (the brightest part of the beam).

If the hot spot seems to be too bright, you can lower its intensity by moving the lamp closer to the reflector. Do so by turning the screw „A“ until the light is evenly distributed.

If the light on the edge seems to be brighter as in the center, the lamp is too close at the reflector. In this case, you need to move the lamp away from the reflector until the light is evenly distributed and the beam appears bright enough.

4.3 Inserting/Exchanging gobos and colours

DANGER! Install the colours and gobos with the device switched off only.
 Unplug from mains before!

Turn off the lamp and allow it to cool for at least 10 minutes. Disconnect the fixture from power.

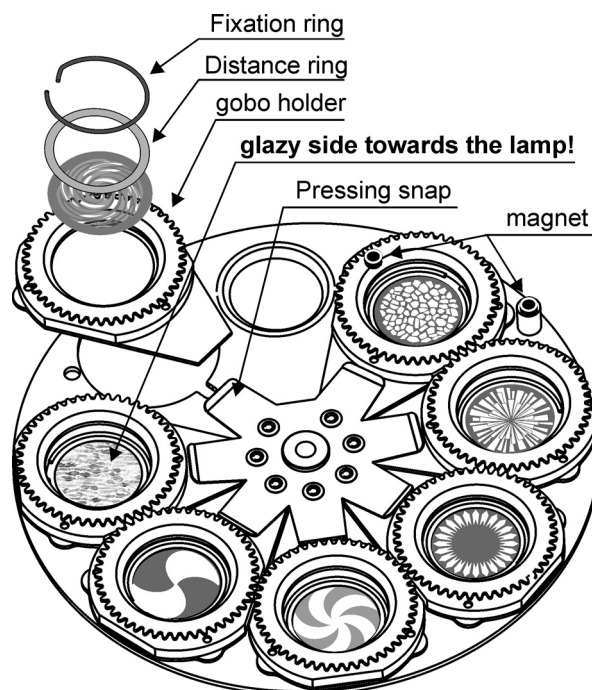
To insert the gobos or colours, open the top cover of the moving-head by loosening the 3 quarter-turn fasteners on the top cover and follow the instructions below:

Rotating gobo-wheel:

1. Gently bend out the gobo module to release it from the distance holes and eject it from the pressing snap.
2. Press the ends of the fixation ring together with an appropriate tool and remove it from the gobo holder. Remove the gobo and insert the new gobo. Press the ends of the fixation ring together and insert it in the front of the gobo.
3. Put the gobo module back under the pressing snap and push it to the 2 distance holes.

CAUTION!

The gobo module with the magnet must be placed in the same position as it was placed before gobo replacement!

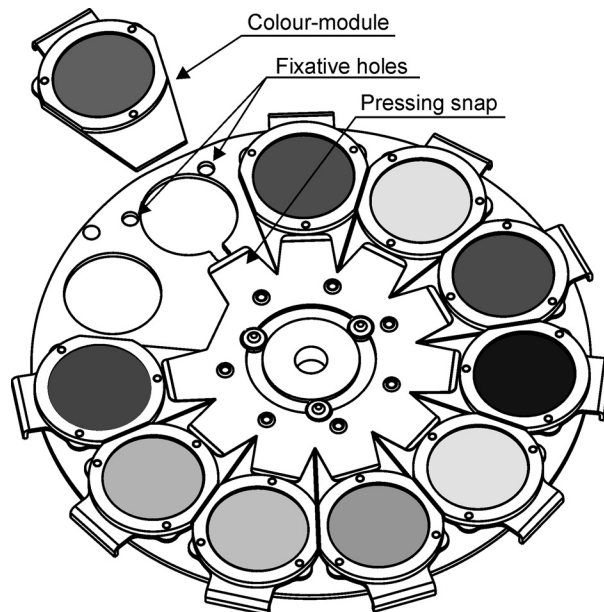


CAUTION! All Gobos were designed for 250 W lamp only.
 Do not use them in the fixture with more powerful lamp!
 Never unscrew the screws of the rotating gobo as the ball bearing will otherwise be opened!

Colour-wheel:

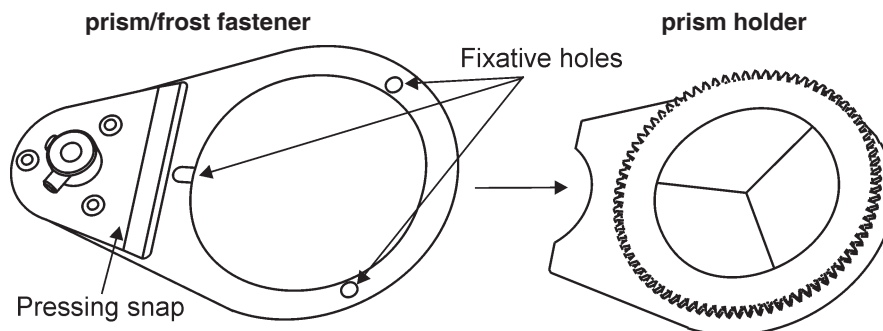
Gently bend out the colour-module to release it from the 2 distance holes and eject it from the pressing snap.

Put the new colour-module back under the pressing snap and push it to the 2 distance holes.



4.4 Replacing the 3-facet prism

Gently bend out the prism holder to release it from the fixative holes of prism/frost fastener and eject it from the pressing snap. Put the frost holder back under the pressing snap and push it to the 3 fixative holes.

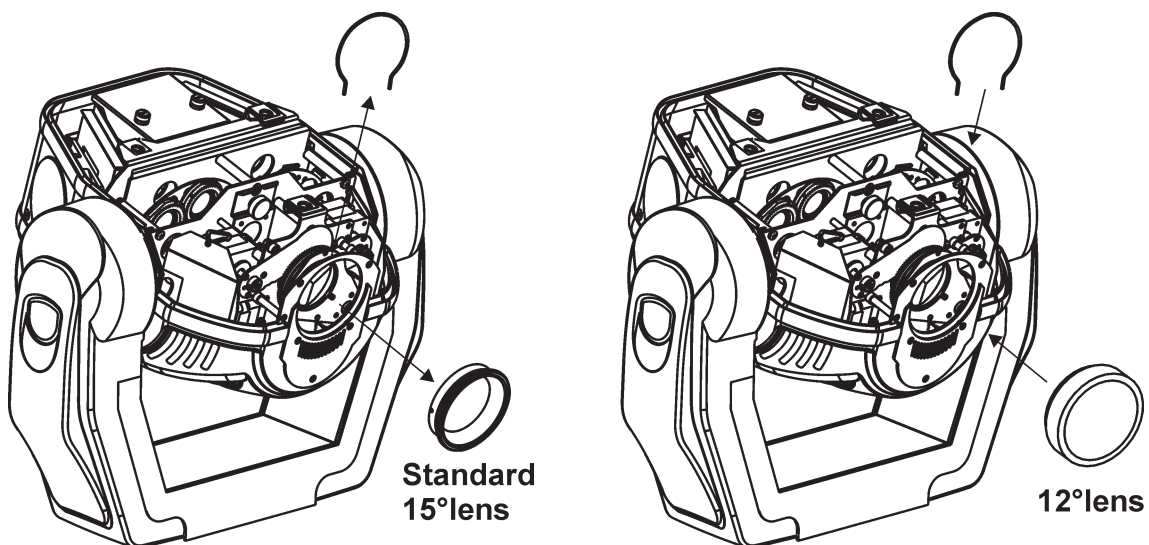


4.5 Installation of an optional lens

The device is delivered with a 15°-standard lens. If you wish to insert an optional 12° or 18°-lens (it is not the standard part of delivery), please follow the instructions below:

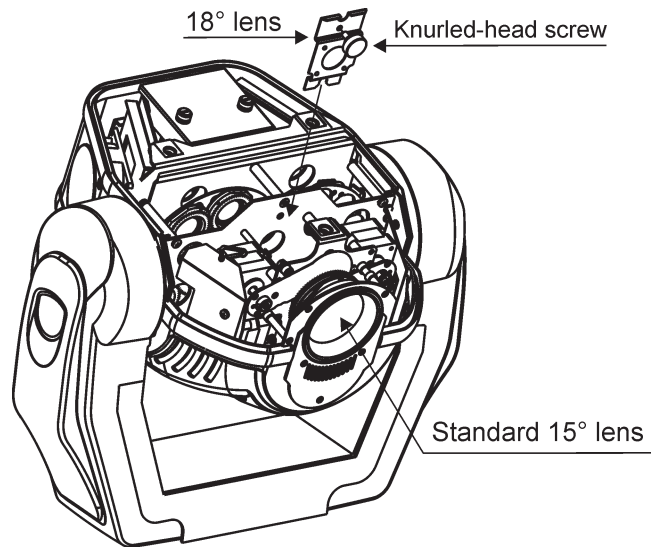
Optional 12°-lens:

Remove the fixation-ring of the 15°-lens with an appropriate tool. Remove the lens. Install the optional 12°-lens and fix it with the fixation-ring.



Optional 18°-lens:

Unscrew the knurled-head screw on the plate of the light-output. Install the optional 18°-lens and fix it with the knurled-head screw.



4.6 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.

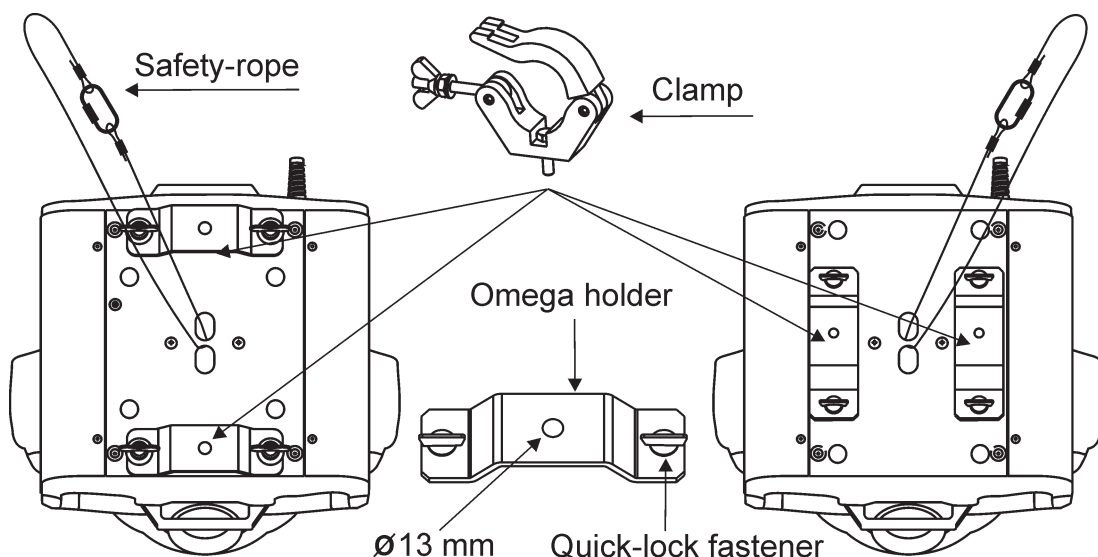
The installation must always be secured with a secondary safety attachment, e.g. an appropriate catch net. This secondary safety attachment must be constructed in a way that no part of the installation can fall down if the main attachment fails. When rigging, derigging or servicing the fixture staying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

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.



4.7 Connection to the mains

Verify the power supply settings before applying power!

If you wish to change the power supply settings, see the chapter below.

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
Liht blue	White	Neutral	N
Yellow/ Green	Green	Earth	

4.8 Changing the power supply settings-magnetic ballast

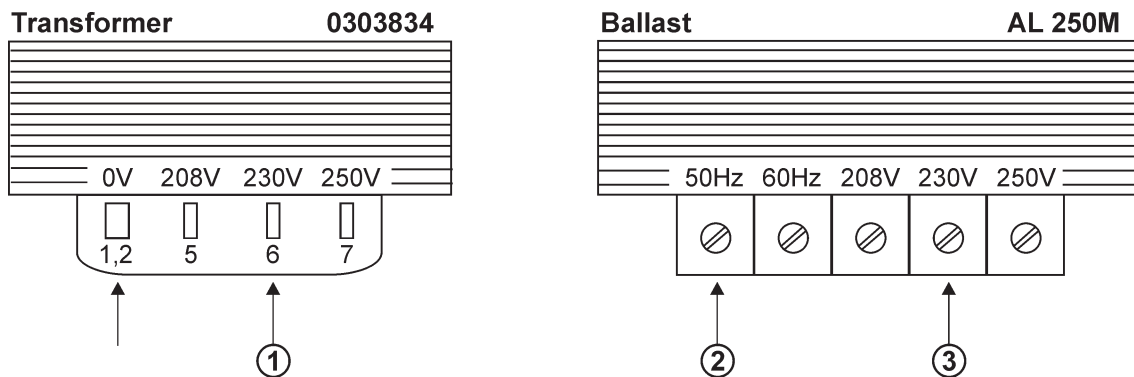
Both the transformer and the ballast must be connected correctly for the local AC voltage and frequency.
The wrong settings can cause poor performance or damage of the moving head. The factory settings are printed next to the power switch.

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

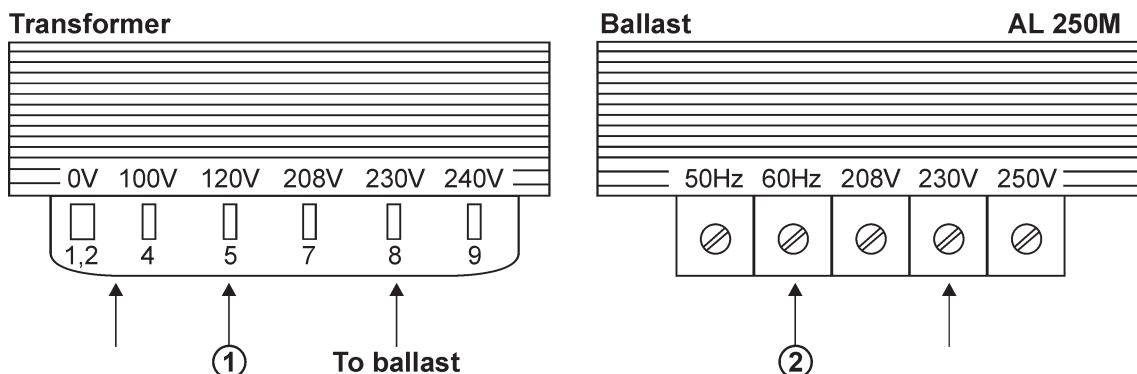
1. Disconnect the fixture from AC power.
2. Remove the 2 top base covers by loosening 10 screws.
3. Move the wire ① on the transformer connection block to the position according to the desired voltage.
4. Move the wires ② and ③ on the ballast connection block to the position according to the desired frequency (voltage).
5. Close the base before applying AC power.

Examples:

EU-version (power supply settings: 230V/50Hz)



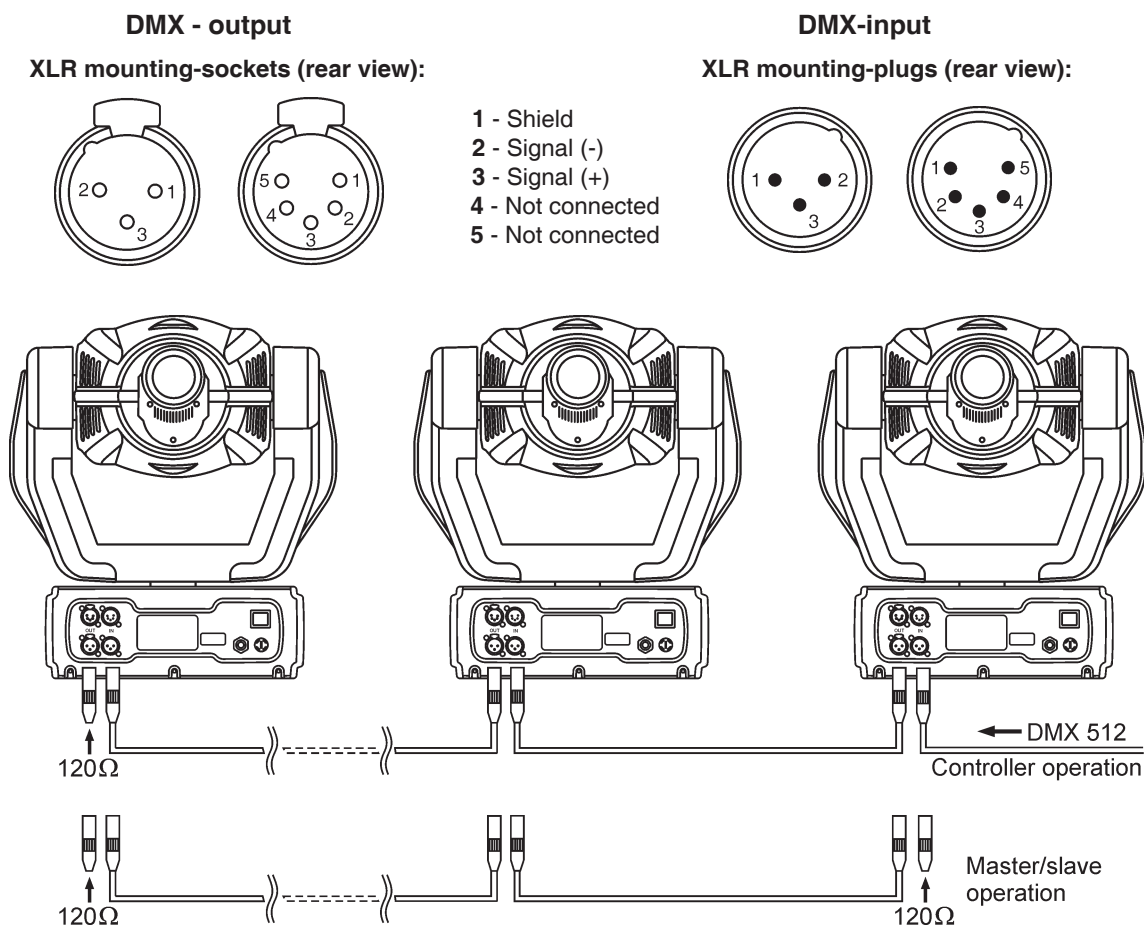
US-version (power supply settings: 120V/60Hz)



4.9 DMX-512 connection/connection between fixtures

The fixture is equipped with both 3-pin and 5-pin XLR sockets for DMX input and output. The sockets are wired in parallel. Only use a shielded twisted-pair cable designed for RS-485 and 3-pin or 5-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.

Occupation of the XLR-connection:



Building a serial DMX-chain:

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.

Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect 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 Ohm resistor between Signal (-) and Signal (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

Building a master/slave-chain:

Connect the DMX-output of the master fixture in the data-chain with the DMX-input of the first slave. Always connect output with the input of the next slave until all slaves are connected (up to 9 fixtures).

Caution: 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 link in order to ensure proper transmission on the data link.

5. DMX protocol

Mode 1 channel	Mode 2 channel	Mode 3 channel	Mode 4 channel	Value	Function	Type of control
1	1	1	1	0 - 255	Pan Pan movement by 530°	proportional
2	2	2	2	0 - 255	Pan Fine Fine control of pan movement	proportional
3	3	3	3	0 - 255	Tilt Tilt movement by 280°	proportional
4	4	4	4	0 - 255	Tilt fine Fine control of tilt movement	proportional
5	5	5	5	0	Pan/Tilt speed, Pan/Tilt time Max. speed (tracking mode)	step
				1 - 255	P./T. speed-set Speed Mode in menu: P./T. Mode Speed from max. to min. (vector mode)	proportional
				1 - 255	P./T. time - set Time Mode in menu: Pan/Tilt Mode Time from 0,1 s to 25,5 s. *	proportional
6	6	6	6	0 - 49	Power/Special functions Reserved To activate following functions, stop in DMX value for at least 3 s and shutter must be closed at least 3 s. („Shutter, Strobe” channel 16 (13, 18, 15) must be at range: 0-31 DMX).**	step
				50 - 59	Pan/Tilt speed mode	step
				60 - 69	Pan/Tilt time mode	step
				70 - 79	Blackout while pan/tilt moving	step
				80 - 89	Disabled blackout while pan/tilt moving	step
				90 - 99	Blackout while colour wheel moving	step
				100 - 109	Disabled blackout while colour wheel moving	step
				110 - 119	Blackout while gobo wheel moving	step
				120 - 129	Disabled blackout while gobo wheel moving <i>To activate following functions, stop in DMX value for at least 3 s.</i>	step
				130 - 139	Lamp On, reset (total reset except pan/tilt reset)	step
				140 - 149	Pan/Tilt reset	step
				150 - 159	Colour wheel reset	step
				160 - 169	Gobo wheel reset	step
				170 - 179	Dimmer/Strobe reset	step
				180 - 189	Focus reset	step
				190 - 199	Prism reset	step
				200 - 209	Total reset	step
				210 - 229	Reserved	step
				230 - 239	Lamp Off	step
				240 - 255	Reserved	step

Notes: * Short times are not used for long tracks (e.g. 0,5 s for track 0-255 DMX). Times are restricted by mechanical parameters of the fixture.

** The switch-functions have priority to the equivalent functions in menu „Personality” but the setting by DMX is not saved to the memory (after switching the fixture on, the setting from menu „Personality” is loaded and after that can be changed with DMX value on the channel 6).

DMX protocol

50 - 59 Pan/Tilt speed mode
60 - 69 Pan/Tilt time mode
70 - 79 Blackout while pan/tilt moving
80 - 89 Disabled blackout while pan/tilt moving
90 - 99 Blackout while colour wheel moving
100 - 109 Disabled blackout while colour wheel moving
110 - 119 Blackout while gobo wheel moving
120 - 129 Disabled blackout while gobo wheel moving

menu „Personality”

Pan/Tilt mode--->Speed Mode
Pan/Tilt mode--->Time Mode
Active blackout While-->Pan/Tilt Moving-->On
Active blackout While-->Pan/Tilt Moving-->Off
Active blackout While-->Colour Wheel Moving-->On
Active blackout While-->Colour Wheel Moving-->Off
Active blackout While-->Gobo Wheels Moving-->On
Active blackout While-->Gobo Wheels Moving-->Off

Mode 1 channel	Mode 2 channel	Mode 3 channel	Mode 4 channel	Value	Function	Type of control
		7	7	0 - 9 Disabled pan/tilt macro 10 - 31 Reserved 32 - 63 Figure of circle (from small to large) 64 - 95 Figure of horizontal eight (from small to large) 96 - 127 Figure of vertical eight (from small to large) 128 - 159 Figure of rectangle (from small to large) 160 - 191 Figure of triangle (from small to large) 192 - 223 Figure of five-pointed star (from small to large) 224 - 255 Figure of cross (from small to large)	Pan/Tilt macro selection Disabled pan/tilt macro Reserved Figure of circle (from small to large) Figure of horizontal eight (from small to large) Figure of vertical eight (from small to large) Figure of rectangle (from small to large) Figure of triangle (from small to large) Figure of five-pointed star (from small to large) Figure of cross (from small to large)	step step proportional proportional proportional proportional proportional proportional
		8	8	0 No macro generation 1 - 127 Macro generation from fast to slow-forwards 128 - 129 No macro generation 130 - 255 Macro generation from slow to fast-backwards	Pan/Tilt macro speed Set pan/tilt speed (channel 5) to 0 No macro generation Macro generation from fast to slow-forwards No macro generation Macro generation from slow to fast-backwards	step proportional step proportional
7	7	9	9	0 Open/white 11 Dark green 23 Red 34 Light azure 46 Magenta 58 UV filter 70 Yellow 81 Green 93 Pink 105 Blue 117 Deep red 128 White 130 - 135 Dark green 136 - 141 Red 142 - 147 Light azure 148 - 153 Magenta 154 - 159 UV filter 160 - 165 Yellow 166 - 171 Green 172 - 177 Pink 178 - 183 Blue 184 - 189 Deep red 190 - 215 Forwards rainbow effect from fast to slow 216 - 217 No rotation 218 - 243 Backwards rainbow effect from slow to fast 244 - 249 Random colour selection by audio control (Set microphone sensitivity in menu „Personality“) 250 - 255 Auto random colour selection from fast to slow	Colour wheel In range 0-128 DMX is possible fine colour Open/white Dark green Red Light azure Magenta UV filter Yellow Green Pink Blue Deep red White Dark green Red Light azure Magenta UV filter Yellow Green Pink Blue Deep red Forwards rainbow effect from fast to slow No rotation Backwards rainbow effect from slow to fast Random colour selection by audio control (Set microphone sensitivity in menu „Personality“) Auto random colour selection from fast to slow	proportional proportional proportional proportional proportional proportional proportional proportional proportional proportional proportional step step step step step step step step step proportional step proportional step proportional
8		10		0 - 255	Colour wheel-fine positioning Fine positioning	proportional
9	8	11	10	0 - 3 Open/hole 4 - 7 Gobo 1 (15030016) 8 - 11 Gobo 2 (15040011) 12 - 15 Gobo 3 (15020137) 16 - 19 Gobo 4 (15020138) 20 - 23 Gobo 5 (15020139) 24 - 27 Gobo 6 (15020140) 28 - 31 Gobo 7 (15020141)	Rotating gobo wheel Index - set indexing on channel 10 (9, 12, 11) Open/hole Gobo 1 (15030016) Gobo 2 (15040011) Gobo 3 (15020137) Gobo 4 (15020138) Gobo 5 (15020139) Gobo 6 (15020140) Gobo 7 (15020141)	proportional

Mode 1 channel	Mode 2 channel	Mode 3 channel	Mode 4 channel	Value	Function	Type of control
9	8	11	10	32 - 35	<u>Rotation</u> - set rotation on channel 10 (9, 12, 11) Gobo 1	step
				36 - 39	Gobo 2	step
				40 - 43	Gobo 3	step
				44 - 47	Gobo 4	step
				48 - 51	Gobo 5	step
				52 - 55	Gobo 6	step
				56 - 59	Gobo 7	step
					<u>Shaking gobos from slow to fast</u>	
					<u>Index</u> - set indexing on channel 10 (9, 12, 11)	
				60 - 69	Gobo 1	proportional
				70 - 79	Gobo 2	proportional
				80 - 89	Gobo 3	proportional
				90 - 99	Gobo 4	proportional
				100 - 109	Gobo 5	proportional
				110 - 119	Gobo 6	proportional
				120 - 129	Gobo 7	proportional
					<u>Shaking gobos from slow to fast</u>	
					<u>Rotation</u> - set indexing on channel 10 (9, 12, 11)	
				130 - 139	Gobo 1	proportional
				140 - 149	Gobo 2	proportional
				150 - 159	Gobo 3	proportional
				160 - 169	Gobo 4	proportional
				170 - 179	Gobo 5	proportional
				180 - 189	Gobo 6	proportional
				190 - 199	Gobo 7	proportional
				200 - 201	Open/hole	step
				202 - 221	Forwards gobo wheel rotation from fast to slow	proportional
				222 - 223	No rotation	
				224 - 243	Backwards gobo wheel rotation from slow to fast	proportional
				244 - 249	Random gobo selection by audio control (Set microphone sensitivity in menu „Personality“)	step
				250 - 255	Auto random gobo selection from fast to slow	proportional
10	9	12	11		Gobo indexing and rotation	
				0 - 255	<u>Gobo indexing</u> - set position on channel 9 (8, 11, 10) Gobo indexing	proportional
				0	<u>Gobo rotation</u> - set position on channel 9 (8, 11, 10) No rotation	step
				1 - 127	Forwards gobo rotation from fast to slow	proportional
				128 - 129	No rotation	step
				130 - 255	Backwards gobo rotation from slow to fast	proportional
11		13			Gobo fine indexing (set position on channel 9 (8, 11, 10))	
				0 - 255	Fine indexing	proportional
12	10	14	12	0 - 19	Prism Open position (hole)	step
				20 - 159	3-facet rotating prism	step
				160 - 255	Prism/gobo macros	step
				160 - 167	Macro 1	step
				168 - 175	Macro 2	step
				176 - 183	Macro 3	step
				184 - 191	Macro 4	step
				192 - 199	Macro 5	step
				200 - 207	Macro 6	step
				208 - 215	Macro 7	step
				216 - 223	Macro 8	step
				224 - 231	Macro 9	step
				232 - 239	Macro 10	step
				240 - 247	Macro 11	step
				248 - 255	Macro 12	step

Mode 1 channel	Mode 2 channel	Mode 3 channel	Mode 4 channel	Value	Function	Type of control
13	11	15	13	0 1 - 127 129 - 129 130 - 255	Prism rotation No rotation Forwards rotation from fast to slow No rotation Backwards rotation from slow to fast	step proportional step proportional
14	12	16	14	0 - 255	Focus Coarse focus	proportional
15		17		0 - 255	Focus fine Fine focus adjustment	
16	13	18	15	0 - 31 32 - 63 64 - 95 96 - 127 128 - 143 144 - 159 160 - 191 192 - 223 224 - 255	Shutter, Strobe Shutter closed No function (Shutter open) Strobe-effect from slow to fast No function (Shutter open) Opening pulse in sequences from slow to fast Closing pulse in sequences from fast to slow No function (Shutter open) Random strobe-effect from slow to fast No function (Shutter open)	step step proportional step proportional proportional step proportional step
17	14	19	16	0 - 255	Dimmer Coarse gradual adjustment of the dimmer intensity from 0% to 100%	proportional
18		20		0 - 255	Dimmer fine Dimmer intensity fine	proportional

6. Controller mode

The fixtures are individually addressed 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 ColorSpot 250 AT will respond to the controller.

If you set, for example, the address 19, the ColorSpot 250 AT will use the channel 19 to 36 for control (if Mode 1 is selected). Please, be sure that you don't have any overlapping channels in order to control each ColorSpot 250 AT correctly and independently from any other fixture on the DMX data link.

If two, three or more ColorSpot 250 AT are addressed similarly, they will work similarly.

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

Controlling:

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

Note: After switching on, the ColorSpot 250 AT 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 ColorSpot 250 AT.
- the controller is switched off or defective, the cable or connector is defective or the signal wires are swap 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 ColorSpot 250 AT is to be operated with a MSD 250/2 GY-9,5 lamp.

A relay inside of the ColorSpot 250 AT 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 ColorSpot 250 AT 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 ColorSpot 250 AT. 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 ColorSpot 250 AT features a colour wheel with 11 colour positions - 10 of these with dichroic colors and the last one open. The wheel can be positioned between two adjacent colors in any position. All colours are easy replaceable. It is also possible to rotate the color-wheel continuously at different speeds - the so-called „Rainbow effect” is created.

Rotating gobo wheel

The rotating gobo-wheel includes 7 gobos rotating in both directions, indexable, rotating gobo wheel cont. rotation from slow to fast. All gobos are easy replaceable.

3-facet rotating prism / frost filter

3-facet prism (rotating in both directions at different speeds) can be replaced by frost filter.

Focus

Motorized focus enables the beam to be focused anywhere on the stage.

Dimmer/Shutter/Strobe

Smooth 0 - 100 % dimming is provided by the combined mechanical dimmer/shutter unit. This unit may also be used for strobe effect (1 - 10 flashes per second)

Fans

The ColorSpot 250 AT is cooled by 3 axial fans - two in the projector head and one in the base. The speed of the fans (and of course the noise) can be reduced using mode „Auto” if very quiet performance is required.

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)!

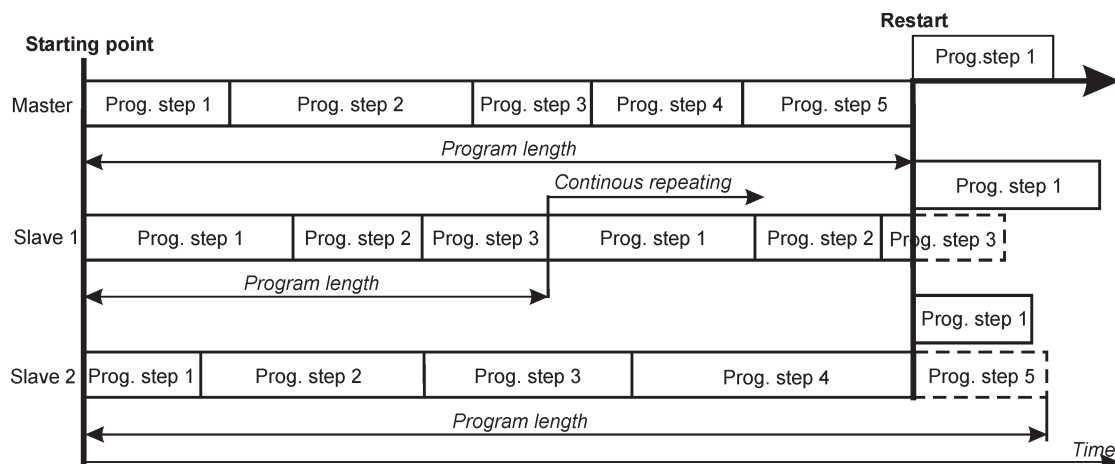
You can't play or edit any programs on the slaves by their control panels if the master is switched on and connected to the master/slave chain.

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 it 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:



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.



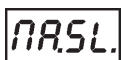
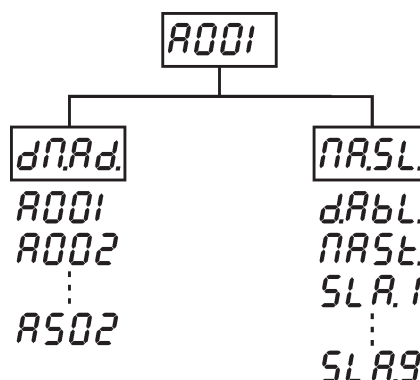
8.1 Addressing

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” ashes) and by **[Up]** and **[down]** buttons select required address, 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) ashes-no DMX data received at the DMX-input.



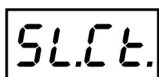
Master/slave addressing

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 ashes) 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 ashes-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.



8.2 Slave control

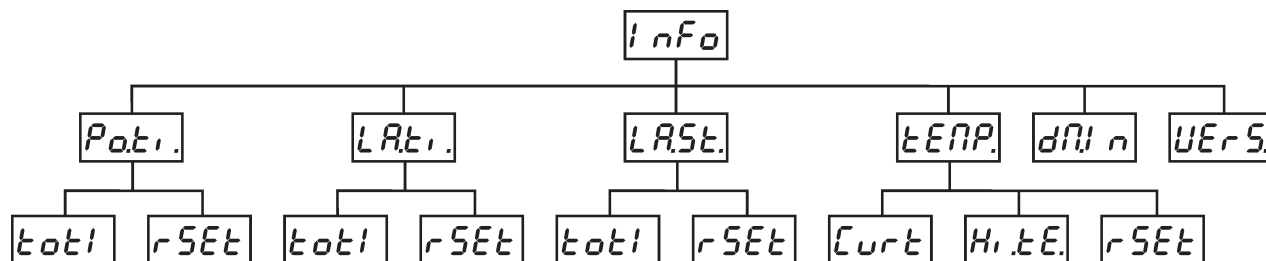
This function allows you to control the slaves from the master’s control panel in a master/slave operation.

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.

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.



Pot. Power On time

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

rSEt - The number of the hours that the ColorSpot 250 AT 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 ColorSpot 250 AT 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.

LSt. Lamp strikes

totl - By this option you can read the total number of the lamp strikes since the ColorSpot 250 AT 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.

tEMP. 8.4 Fixture temperatures

Temperature readouts of the head inside in Celsius. Please note that the outside temperature should not exceed 45°C.

Cur.t. Current fixture temperatures

boAr. - By this option you can read the max. temperature of the base inside. Press **[Enter]** or **[Mode]** to return to the menu. Temperatures below 87°C are not critical. 87°C and more lead to the lamp being switched off and the fixture goes to „low power mode“. Before switching the lamp on again (after 5 minutes), run a total fixture reset.

HEAd. - By this option you can read the max. temperature of the head inside. Press **[Enter]** or **[Mode]** to return to the menu. Temperatures below 77°C are not critical. 77°C and more lead to the lamp being switched off and the fixture goes to „low power mode“. Before switching the lamp on again (after 5 minutes), run a total fixture reset.

H.tE. Max. fixture temperatures

boAr. - By this option you can read the max. temperature of the base inside since the ColorSpot 250 AT has been fabricated. Press **[Enter]** or **[Mode]** to return to the menu.

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

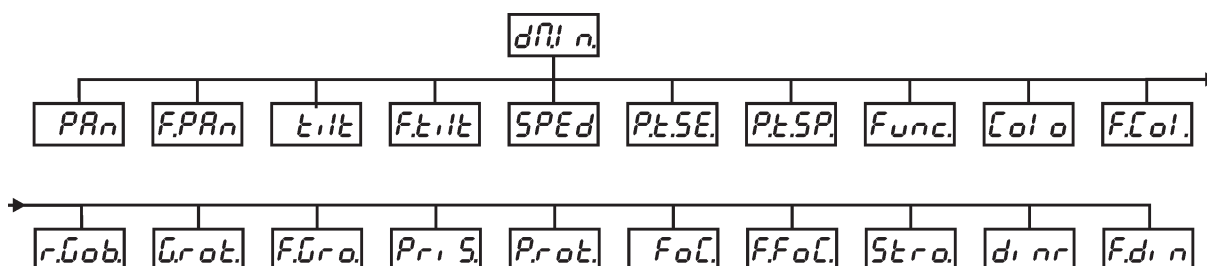
rSEt Maximum resetable temperatures.

boAr. - By this option you can read the max. temperature of the base inside since the counter was last reset. In order to reset the counter to 0 you have to hold **[UP]** and **[DOWN]** and press the **[ENTER]**.

HEAd. - By this option you can read the max. temperature of the head inside since the counter was last reset. In order to reset the counter to 0 you have to hold **[UP]** and **[DOWN]** and press the **[ENTER]**.

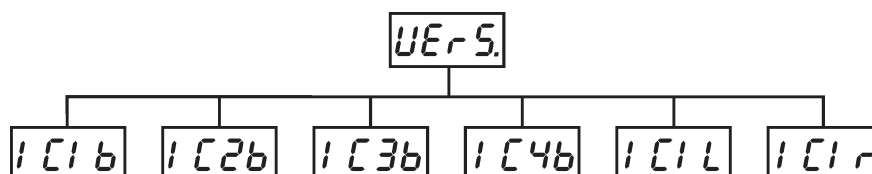
dNI n. DMX values

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 versions

By this function you can read the software version of each processors. Using **[Up]** and **[Down]** to select desired processor and press **[Enter]** to read its version or **[Mode]** to return to the menu.



„IC1b” - Main processor IC1 on the master board in the fixture base

„IC2b” - Pan processor IC2 on the master board in the fixture base

„IC3b” - Tilt processor IC3 on the master board in the fixture base

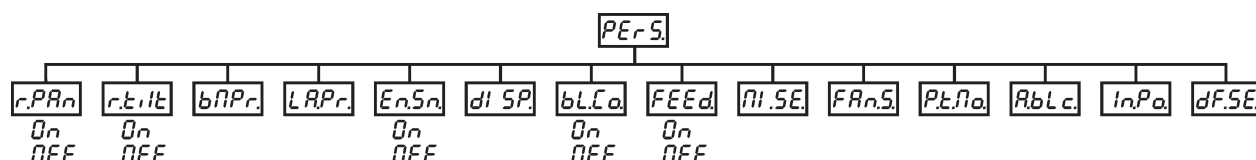
„IC1L” - Processor IC1 on the board in the left arm

„IC1r” - Processor IC1 on the board in the right arm

PEr S. 8.5 Personality options

These options allow you to modify ColorSpot 250 AT 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.

dNPr.

DMX presetting

The function enables to select from 2 DMX- channels settings. Use the [Up] or [Down] buttons to select desired channel settings („Mod.1, Mod.2, Mod.3, Mod.4”) and press [Enter] to confirm or [Mode] to cancel and return to the menu. List of the channels settings - see DMX protocol.

LAPr.

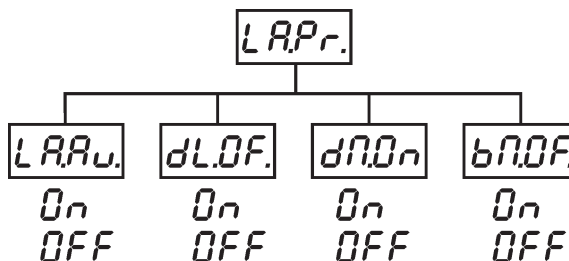
Lamp presetting

This function allows you to adjust the lamp settings:

LAAU.

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.



dL.OF.

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.

dNOn

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.

dN.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.

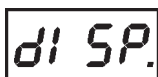
EnSn.

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.

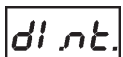
Important:

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!



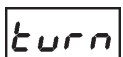
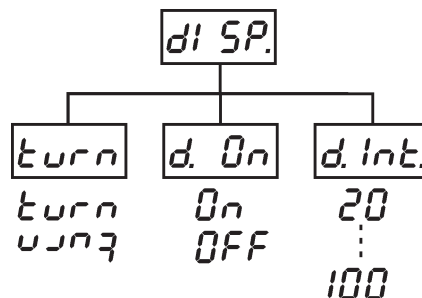
Display adjusting

This function allows you to adjust the display settings:



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.



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.



Display-permanent 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.



Blackout during movement correction

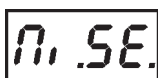
The function executes the blackout during the head movement correction (the moving head has lost its right pan/tilt-position for a short moment). Use the **[Up]** and **[Down]** buttons to select „On” if you want to execute the blackout or „Off” if you don't and press **[Enter]** to confirm or **[Mode]**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



PAN/TILT-feedback

This function allows to return the mowing 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 mowing 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 to be synchronized with the DMX signal. You have to make a reset in order to synchronize the moving head with the DMX signal.



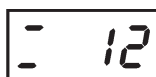
Microphone sensitivity

With this function you can adjust the microphone sensitivity from 1 (maximum) to 20 (minimum). Use the **[Up]** or **[Down]** buttons to select the level of the microphone sensitivity and press **[Enter]** to confirm the chosen level or **[Mode]** to cancel and return to the menu.

Example:



underexited



right level

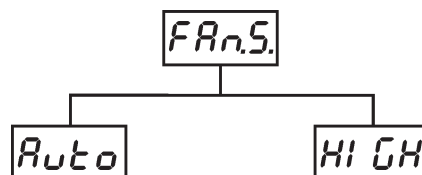


overexited

(upper segment blinks via the bass rhythm)

FAN.S. Fan speed operating modes

By using this function you can choose 2 types of the fan speed operating modes. Browse through this menu by the pressing [Up] and [Down] buttons - the display shows these items: „Auto, HIGH”. 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 speeds

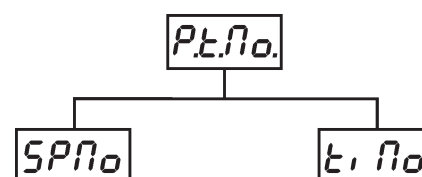
The fans automatically raise their speed in order to control inside temperature of the head, if the temperature inside increases about certain level (the low fan speed reduces the cooling of the lighting). This cycle can repeat several times until the temperature inside is on suitable level.

HIGH High (max.) speed of fans

The cooling fans work on max. speed (max. cooling).

P.t.No. Pan/tilt mode

Use the [Up] and [Down] buttons to select desired mode and press [Enter] to confirm this option.



SPNo Speed mode

Pan and tilt will move with different speeds and they will come at the same time to end point (pan and tilt sets its optimal speed).

t.No Time mode

Pan and tilt will move with the same speed as adjusted by the channel 5 (Pan/Tilt speed). E.g. pan will come to the end point and will wait for tilt, which has longer track.

A.bLc. Active blackout

Use the [Up] and [Down] buttons to select desired active blackout and press [Enter] to confirm this option.

P.t. N. Blackout while pan/tilt moving

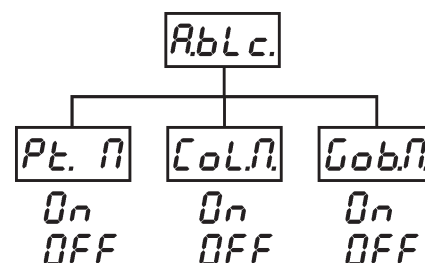
This function closes the light output during pan/tilt changes.

CoL.N. Blackout while colour wheel moving

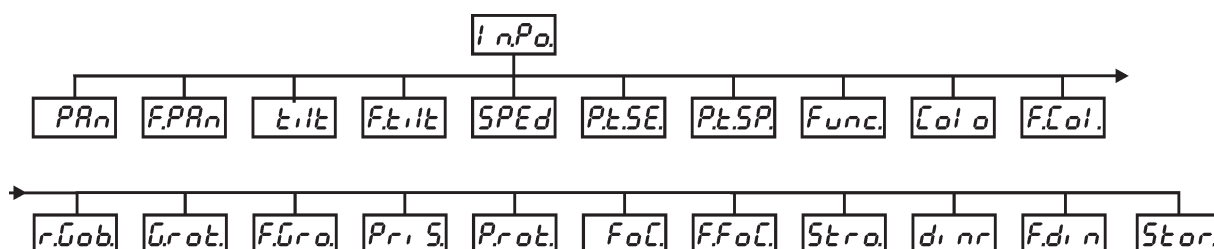
This function closes the light output during colour changes.

Gob.N. Blackout while gobo wheel moving

This function closes the light output during gobo wheel changes.



I nPo. Initial positions



Select this function to adjust all effects to the desired initial positions. After switching the fixture on (if DMX is not connected), all effects will move to initial positions. Use the [Up] and [Down] buttons to select desired channel and press [Enter]. Set the effect to the desired position using [Up] and [Down] buttons and confirm by pressing [Enter]. After having adjusted required effects, select „Stor”. to save all initial values to the memory.



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 settings and their default values.

Personality	Display	Default values (SHADED)
Pan reverse	r.PAn	On OFF
Tilt reverse	r.tilt	On OFF
DMX presetting	dNPr.	Mod1 Mod3 Mod2 Mod4
Lamp On after switch. the fixture On	LARu.	On OFF
Lamp OFF via DMX	dL.OF.	On OFF
Lamp On if DMX is present	dN.ON	On OFF
Lamp On if DMX is missing	dN.OF.	On OFF
Blackout during mov. correction	bL.Co.	On OFF
Display permanent On	d. On	On OFF
Display intensity	di nt.	20 40 60 80 100

Personality	Display	Default values (SHADED)
Display-reverse	t urn	t urn u r n 3
PAN/TILT Feedback	FEEd.	On OFF
Switch On/Off the lamp light sensor	En.Sn.	On OFF
Fan speed operating modes	FA n.S.	Auto HIGH
Blackout while PAN/TILT moving	P.t. n.	On OFF
Blackout while colour wheel moving	CoL.N.	On OFF
Blackout while gobo wheel moving	Gob.N.	On OFF
PAN/TILT mode	P.t.No.	SPNo t, No
Music trigger	Audi	On OFF
Microphone sensitiv	n. SE.	01 02 10 ... 20



8.6 Switching On/Off the lamp

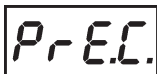
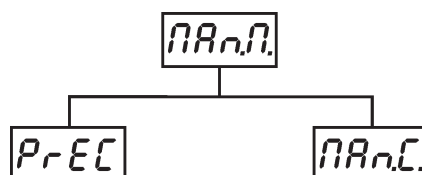
Press the **[Mode]** button in order to access the main menu. Browse through the menu by pressing the **[Up]** and **[Down]** buttons until the display shows “LAMP”. Confirm by pressing **[Enter]** button.

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.



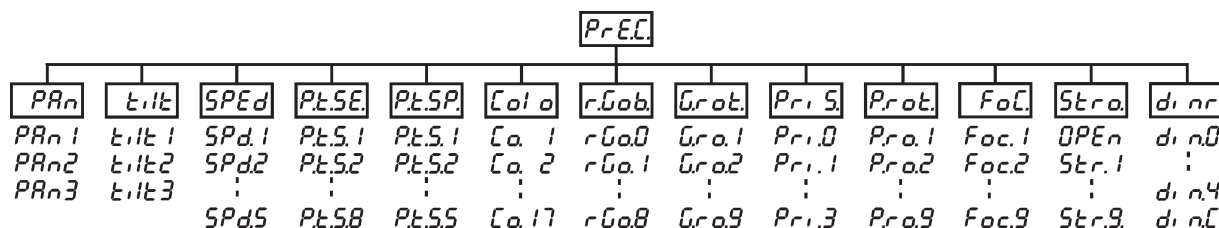
8.7 Manual mode

Select this menu to call up presetted positions of channel effects or direct control channel effects.



Presetted effects

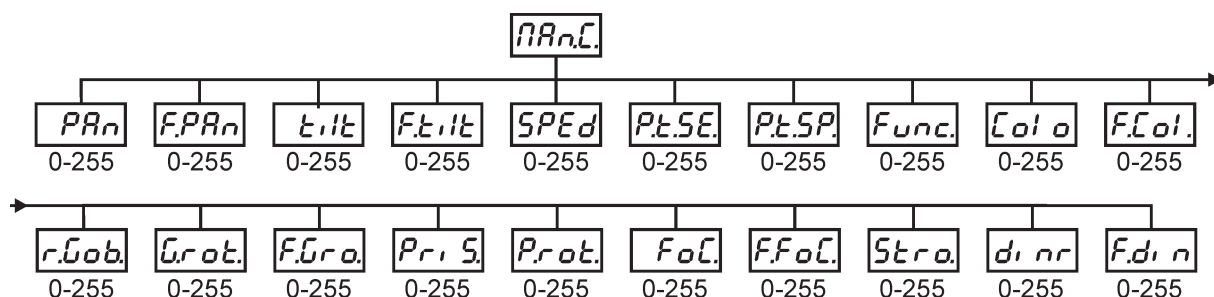
Select this menu to call up presetted positions of channel effects. Use the **[Up]** and **[Down]** buttons to select desired effect and press **[Enter]** to select presetted effect positions.



MAN.C.

Manual control

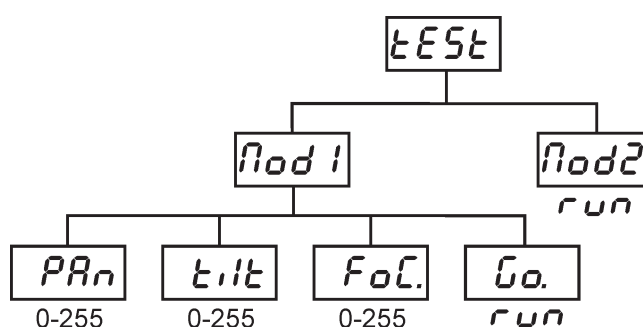
Select this menu in order to control fixture channels using control buttons on the control board. Use the [Up] and [Down] buttons to select desired effect and press [Enter] to set DMX value for this effect.



TEST

8.8 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 ColorSpot 250 AT. 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 ColorSpot 250 AT 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.



StAL.

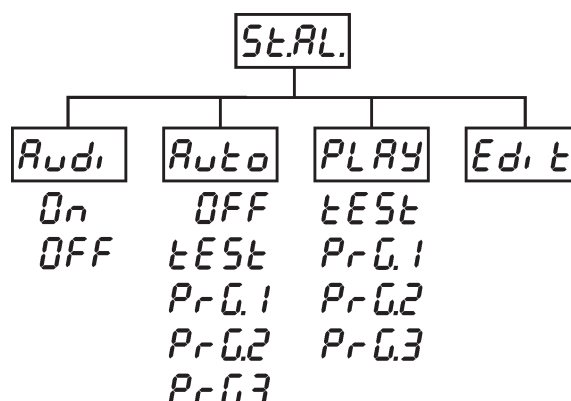
8.9 Stand-alone setting

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

Audi

Music trigger

The ColorSpot 250 AT enables the sound control of the running programs via the built-in microphone. Use the [Up] or [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.



Auto

Presetting playback

This function allows you to select 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.

PLAY

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).

Ed. t.

Editing program

This menu item allows you to select a program to edit or create. The ColorSpot 250 AT 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]-button.
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
„SPed”	- a speed of PAN/TILT movement, value 0-255
„P.t.SE.”	- a pan/tilt macro selection, value 0-255
„P.t.SP.”	- a pan/tilt macro speed, value 0-255
„Colo”	- a colour wheel, value 0-255
„F.Col”	- a colour wheel fine, value 0-255
„Pris”	- a prism, macros, value 0-255
„P.rot”	- a prism rotation, value 0-255
„r.Gob.”	- a rot.gobo, value 0-255
„G.rot.”	- a rot. gobo rotation, value 0-255
„F.G.ro.”	- a rot. gobo rotation fine, value 0-255
„Foc.”	- a focus, value 0-255
„F.Foc.”	- a focus fine, value 0-255
„Stro.”	- a strobe, value 0-255
„dimr”	- a dimmer, value 0-255
„F.dim.”	- a dimmer fine, 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 one 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).

rESE.

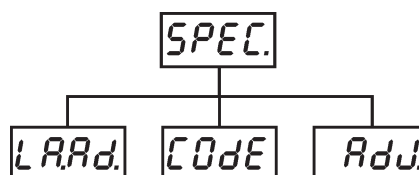
8.10 Reset function

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

SPEC.

8.11 Special functions

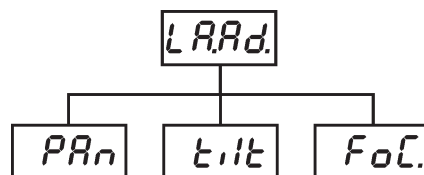
Use the [Up] and [Down] buttons to browse through the special functions and select the one by pressing [Enter].



LAAAd.

Lamp adjustment

This function can be used when you make the fine adjustment of the lamp. If you select „LAAAd” 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, Foc” you can focus the light on a surface (wall) and perform the fine lamp adjustment.



Code

Fixture code

The option contains identification hexadecimal code (0000-FFFF) for the fixture, which is used for the master/slave operation.

rAnL

RDM Low Code

This menu item shows the first part of the RDM identification code.

rAnH

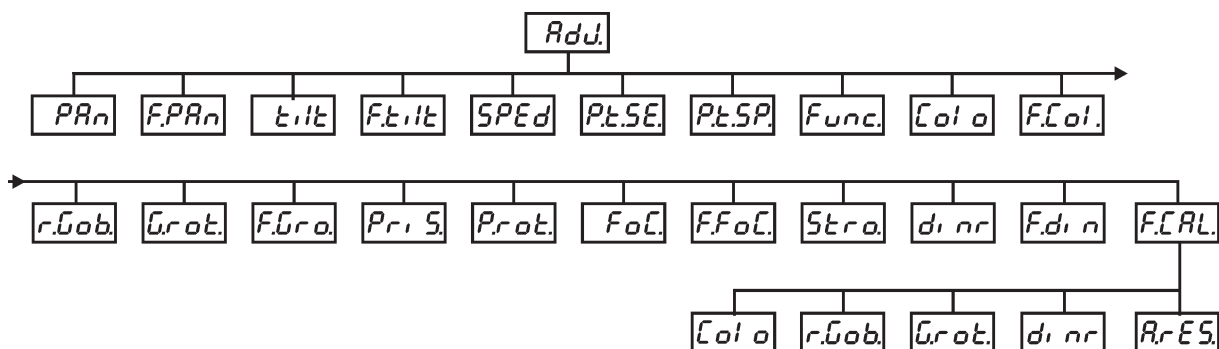
RDM High Code

This menu item shows the second part of the RDM identification code.

Adj.

Adjusting the default positions of effects

By this function you can calibrate and adjust effects their standard/right positions. Use the [Up] and [Down] buttons to browse through the adjusting menu - the display shows step by step these items: „PAn, FPAAn, Tilt, FtTilt, SPED, PtSE, PtSP, Func, Colo, F.Col, rGOB, Grot, FGro, PriS, Prot, Foc, F.Fo, Stro, dimr, Fdim, FCAL” by which you can adjust the fixture to the required/desired position (0-255) before the function calibration(DMX controller must be disconnected. Then when the positioning is finished use the last „F.CAL.” function (fine calibration).



1. Calibration via the control board

Disconnect DMX controller from the fixture. Press [Enter] and use the [Up] and [Down] keys in order to display the following items: „Colo, rGob, Grot, dimr” 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, gobo wheels and dimmer. 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

Connect the DMX controller to the fixture, press [Enter] and the [Up] and [Down] buttons in order to display the following items: „Colo, rGob, Grot, dimr” - calibration parameters. Select one of them and press [Enter].

Now you can calibrate the colour, and gobo wheels and dimmer by your controller. The DMX calibration protocol is described in below.

DMX calibration protocols:

Effect	Mode 1	Mode 2	Mode 3	Mode 4
„Colo.”- Colour wheel	channel 19	channel 15	channel 21	channel 17
„rGob” - R. gobo wheel	channel 20	channel 16	channel 22	channel 18
„G.rot”- Gobo rotation	channel 21	channel 17	channel 23	channel 19
„dimr” - Dimmer	channel 22	channel 18	channel 24	channel 20

After having calibrated required effects, 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, gobo and effect wheels.

9. Power down mode

This mode omits fixture reset after switching the fixture on and lowers motor powers of the fixture. „Power down mode” is useful in special cases, e.g. if the fixture is in a tight case and you want to set its DMX address without taking it out from the case. To enter „Power down mode”, press and hold **[Up]** and **[Down]** and at the same time switch on the Power switch. The following message appears on the display: „**P.d.Mo.**”

Press **[ENTER]** to activate „Low power mode” without fixture reset. Now you can set features and behaviour of the fixture by using „**A001**” menu and „**Pers.**” menu. If you want to go „normal operation mode”, execute fixture reset.

Note: All motors in „Low power mode” are deactivated and switching the lamp on from the control panel is blocked.

10. RDM

This fixture supports an RDM operation. The RDM (Remote Device Management) is a bi-directional communications protocol for use in DMX512 control systems, it is the new open standard for DMX512 device configuration and status monitoring. The RDM protocol allows data packets to be inserted into a DMX512 data stream without adversely affecting existing non-RDM equipment. By using a special „Start Code,” and by complying with the timing specifications for DMX512, the RDM protocol allows a console or dedicated RDM controller to send commands to and receive messages from specific moving lights.

The ROBE DreamBox with an additional ROBE RDM-network software provides the RDM functionality. The DreamBox supports RDM - new control protocol featuring AutoPatch and Fixture Status Monitoring.

The list of RDM commands for ColorSpot 250 AT is the following:

Parameter ID	Discovery command	SET command	GET command
DISC_UNIQUE_BRANCH	*		
DISC_MUTE	*		
DISC_UN_MUTE	*		
DEVICE_INFO			*
SUPPORTED_PARAMETERS			*
SOFTWARE_VERSION_LABEL			*
DMX_START_ADDRESS		*	*
IDENTIFY_DEVICE		*	*
DEVICE_MODEL_DESCRIPTION			*
MANUFACTURER_LABEL			*
DEVICE_LABEL		*	*
SENSOR_DEFINITION			*
SENSOR_VALUE			*
DISPLAY_INVERT		*	*
DISPLAY_LEVEL		*	*
PAN_INVERT		*	*
TILT_INVERT		*	*
DEVICE_RESET		*	
DMX_PERSONALITY		*	*
DMX_PERSONALITY_DESCRIPTION			*
STATUS_MESSAGES			*
STATUS_ID_DESCRIPTION			*
LAMP_STATE		*	*
LAMP_ON_MODE ¹		*	*
DEVICE_HOURS ²			*
LAMP_HOURS ²			*
LAMP_STRIKES ²			*

¹...Another options for this command (only for Robe's fixtures):

value PARAMETER_DATA=0x84 - lamp OFF by DMX value on DMX channel

value PARAMETER_DATA=0x88 - lamp OFF if DMX is not present

²...Commands relative resetable values

11. 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 ColorSpot 250 AT 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 mode „LOOF“ was operated.

M.b.Er.

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

Co.Er. (color-wheel error)

The 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.

r.G.Er. (rotating gobo-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 rotating gobo-wheel is not located in the default position after the reset.

I.G.Er. (rotating gobo indexing error)

The message will appear after the reset of the fixture and 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 rotating gobo is not located in the default position after the reset.

F.tEr.

The 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.

SnEr.

This message appears if the lamp lighting sensor is failed. Please, contact your dealer.

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

Po.Er.

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

PA.Er. (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.

ti.Er. (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.

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.

Fr.Er.

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

t.M.Er. (Temperature measuring error)

The message informs you that the communication between the head and the main board in the fixture base was cut off (or the head temperature sensor is defective) and the lamp was automatically switched off.

12. Technical specifications

Power supply

Power consumption: 410 VA

EU-model - ColorSpot 250 AT:

Voltage: 208/230/240V AC, 50/60Hz ~

Fuse: T3,15 A@230V

US-model - ColorSpot 250 AT:

Voltage: 100/120/208/230 V AC, 50/60Hz ~

Fuse: T6,3 A@230V

Lamps

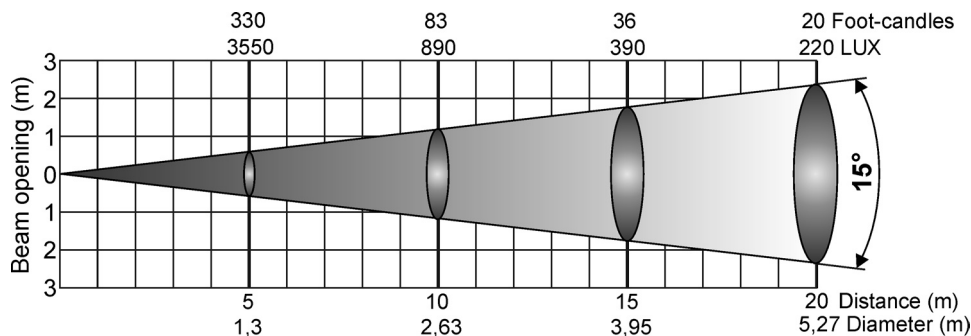
- Philips MSD 250W/2 GY9.5

Optical system

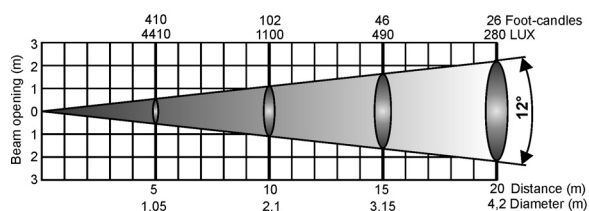
- High luminous-efficiency parabolic mirror and double condenser system
- Standard 15° focused beam angle
- Optional 12° and 18° lenses
- All lenses are anti-reflection coated

Beampath

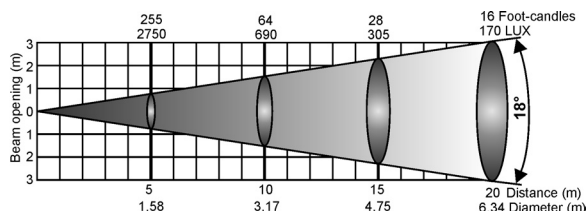
Standard 15° objective



Optional 12° objective



Optional 18° objective



Colours-wheel

- 10 dichroic-filters plus white
- Colour-wheel with variable rotation speed
- All colours are easily replaceable

Rotating gobos-wheel

- 6 dichroic glass gobos and one glass gobo rotating in both directions at different speeds
- Gobo indexing
- Rotating gobo-wheel cont. rotation
- Multicolor dichroic glass gobos: outside diameter=26.8mm, thickness=1.1mm, high temperature borosilicate or better glass, image diameter=22mm
- Glass gobo: outside diameter=26.8mm, max. thickness=4mm, high temperature borosilicate or better glass
- All rotating gobos are easily replaceable

Strobe

- Strobe effect with variable speed (1 - 15 flashes per second)
- Preprogrammed variable/random strobe and dimmer pulse-effects

Dimmer

- Smooth dimmer from 0 - 100 %

Prism

- 3-facet-prism rotating in both directions at different speeds
- Macro-function for rotating gobos/rotating prism combinations
- Prism can be replaced by frost filter

Focus

- Remotely controllable motorized focus from near to far

Motors

- 10 high quality stepping motors controlled by microprocessors

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 gobo/colour changing
- Silent fans cooling
- Self-resettable thermo-fuse
- Digital serial input DMX-512, RDM support
- Master/slave operation (up to 9 slaves)
- DMX-control via every standard DMX controller
- 4 control-channels presets (14, 16, 18, 20 control channels)

Pan/Tilt

- Pan movement range 530°
- Tilt movement range 280°
- 16 bit movement resolution
- Automatic Pan / Tilt position correction
- Remotely controllable speed of Pan/Tilt movement for easy programming
- Max. Pan speed 184.67°/sec.
- Max. Tilt speed 127.85°/sec.

Rigging

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

Data input/output

- 3-pin and 5-pin XLR male sockets for DMX data input
- 3-pin and 5-pin XLR female sockets for DMX data output

Temperatures

- Maximum ambient temperature: 45° C
- Maximum housing temperature: 75° C

Minimum distances

- Min. distance from flammable surfaces: 0.5 m
- Min. distance to lighted object: 1.3 m

Weight (net)

- EU version: 20,5 kg
- US version: 23,5 kg

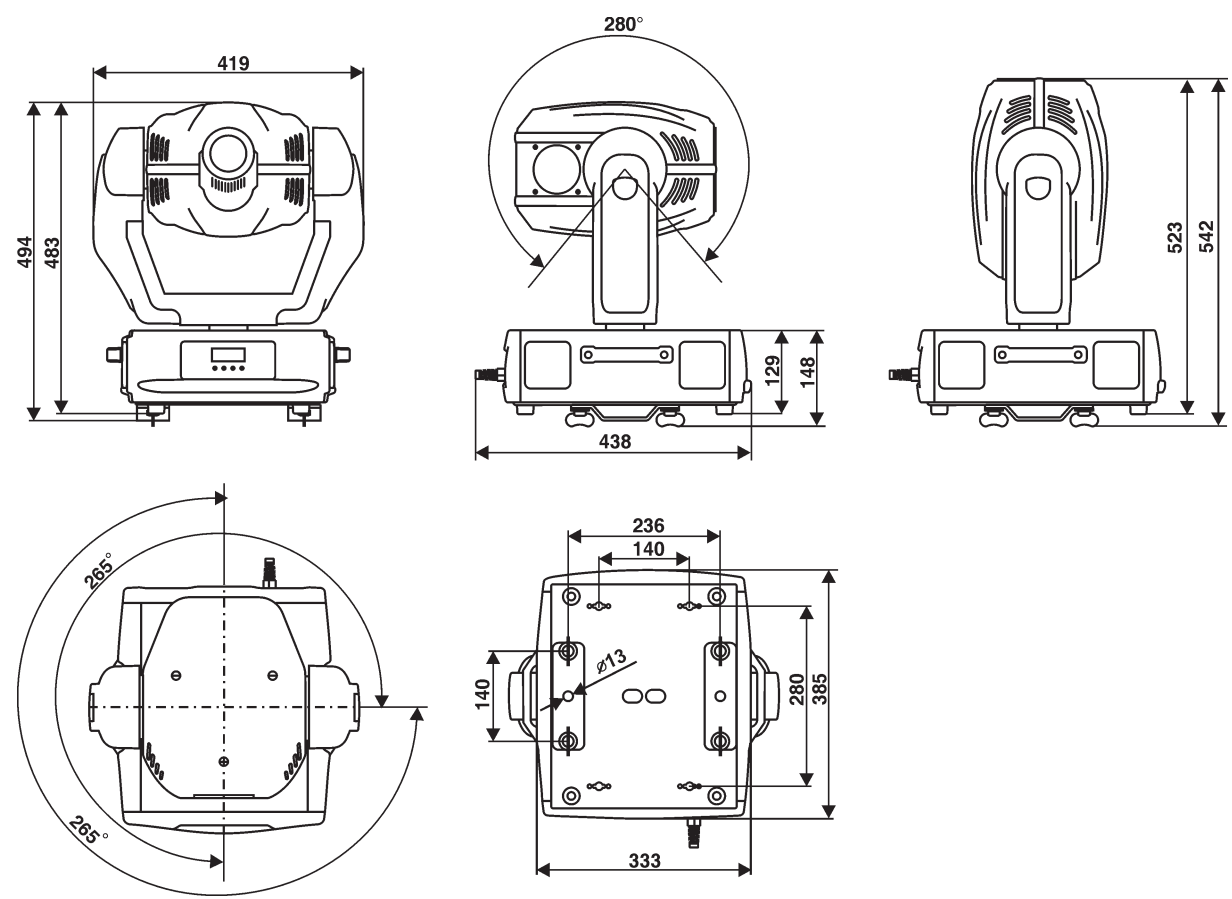
Accessories

- Accessories gobo-set 12 15050021
- Omega holder (2 pieces) 99010420

Optional accessories:

- Objective 12° 99010201
- Lens-module 18° 99010200

Dimensions



Standard gobos

Order No.:	15030016	15040011	15020137	15020138	15020139	15020140	15020141

Optional gobos

Order No.:	15020142	15020143	15020144	15020145	15020146

13. Maintenance and cleaning

It is absolutely essential that the fixture is kept clean and that dust, dirt and smoke-uid 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 uid is recommended, under no circumstances should alcohol or solvents be used!

DANGER !

Disconnect from the mains before starting any maintenance work

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

The gobos may be cleaned with a soft brush. The interior of the fixture should be cleaned at least annually using a vacuum-cleaner or an air-jet.

The dichroic colour-filters, the gobo-wheel and the internal lenses should be cleaned monthly.

There are no serviceable parts inside the device except for the lamp and the fuse.

Please refer to the instructions under „Fitting/Exchanging the lamp”.

More complicated maintenance and service operations are only to be carried out by authorized dealers.

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:

- 1) Unscrew the fuseholder on the rear panel of the base with a fitting screwdriver from the housing (anti clockwise).
- 2) Remove the old fuse from the fuseholder.
- 3) Install the new fuse in the fuseholder.
- 4) Replace the fuseholder in the housing and fix it.