

**USER MANUAL**

**5 Star Systems**

**SPICA 250**

## 5 Star Systems – Spica 250 – User manual

1. Safety.....	3
1.2 Safety instructions.....	3
1.3 Operating determinations.....	4
2. Introduction.....	5
2.1 Beam path.....	5
2.2 Technical specifications.....	5
2.3 Description of the device.....	8
3. Installation.....	8
3.1 Fitting the lamp.....	8
3.2 Lamp adjustment.....	10
3.3 Inserting/Exchanging gobos.....	11
3.4 Installation of an optional lens.....	12
3.5 Connection to the mains.....	13
3.6 DMX 512 connections.....	13
4. Rigging the fixture.....	14
5. Addressing.....	16
6. Remotely controllable functions.....	17
6.1 Lamp.....	17
6.2 Switching on and off the lamp by Control board.....	17
6.3 Colour wheel.....	17
6.4 Rotating gobo wheel.....	17
6.5 3-facet rotating prism.....	18
6.6 Focus.....	18
6.7 Dimmer/Shutter/Strobe.....	18
6.8 Fan.....	18
7. Control Board.....	18
7.1 Main functions.....	19
7.2 SPEC – Special functions.....	20
8. Error and information messages.....	24
9. DMX-Protocol.....	26
9.1 Functions of the control channels – 16 and 8 bit protocol.....	26
10. Maintenance and cleaning.....	27
11. Appendix.....	28

# 1. Safety

## 1.2 Safety instructions

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

- be qualified
- follow the instructions of this manual

**CAUTION!**  
**Be careful with your operations. With a voltage of 230V 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.

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



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 devices housing bare-handed during its operation (housing becomes hot)!

## 5 Star Systems – Spica 250 – User manual

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) !**



### 1.3 Operating determinations

This device is a moving-head spot for creating decorative effects. This product is only allowed to be operated with an alternating current of 230 V, 50 Hz 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!

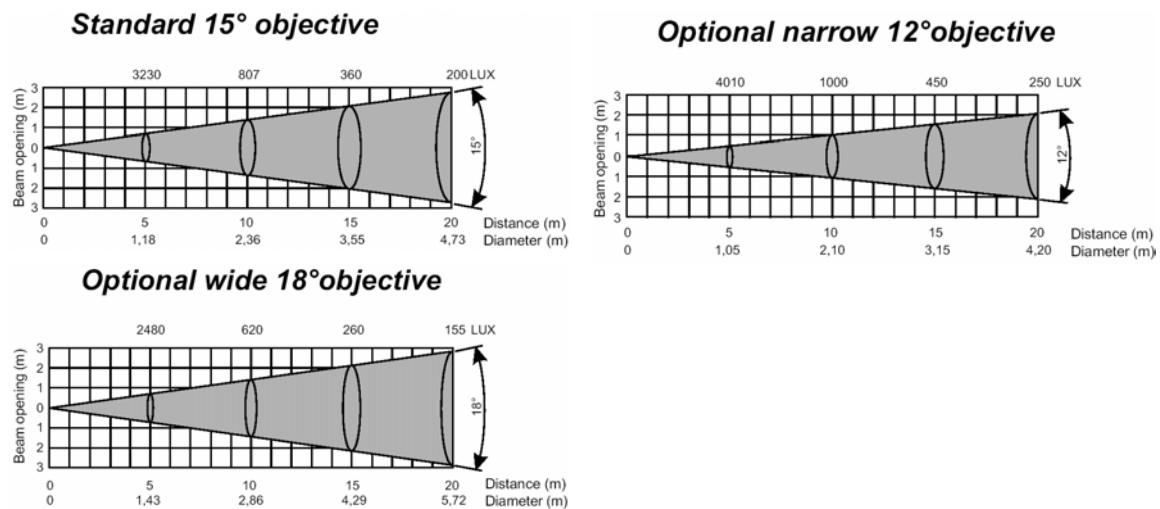


Please use the original packaging if the device is to be transported.  
Please consider that unauthorized modifications on the device are forbidden due to safety reasons!  
If this device will be operated in any way different to the one described in this manual, the product may suffer damages and the 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.

## 2. Introduction

Unpack your SPICA 250 and make sure that there are no damages caused by transportation.  
Should there be any, please consult your local dealer and do not take the device into operation.

### 2.1 Beam path



### 2.2 Technical specifications

#### Power supply

EU-model:	210/230/250V AC, 50/60 Hz ~
Fuse:	T 3.15A, 250V
US-model:	100/115/208/230 V AC, 50/60Hz ~
Fuse:	T 6.3 A
Power consumption:	500W

#### Lamp

MSD/HSD 230 V/250W GY-9.5 or MSD/HSD 230 V/200W GY-9.5

#### Optical System

High luminous-efficiency parabolic mirror and double condenser system  
Standard 15° focused beam angle

## 5 Star Systems – Spica 250 – User manual

Optional 12° and 18° lens  
All lenses are anti-reflection coated

### Colours

11 interchangeable dichroic-filters plus white  
Colour-wheel with variable rotation speed

### Rotating gobos

- 4 metal gobos, 1 glass gobos and 1 dichroic gobo rotating in both directions at different speeds
- Gobo indexing
- Rotating gobo-wheel cont. rotation
- Outside diameter 27 mm, image diameter 23 mm.

### Strobe

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

### Dimmer

Smooth dimmer from 0 - 100 %

### Prism

3-facet-prism rotating in both directions at different speeds

### Focus

Motorized focus from near to far

### Motor

10 high quality stepping-motors controlled by microprocessors

### Electronics

Digital serial input DMX-512  
16 control-channels (full 16 bit protocol):  
Channel 1: Horizontal mirror-movement 8 bit  
Channel 2: Fine Horizontal mirror-movement 16 bit  
Channel 3: Vertical mirror-movement 8 bit  
Channel 4: Fine Vertical mirror-movement 16 bit  
Channel 5: Pan/Tilt speed  
Channel 6: Fan speed, On/Off lamp, reset  
Channel 7: Colours  
Channel 8: No function  
Channel 9: Prism-wheel  
Channel 10: Prism-rotation  
Channel 11: Rotating gobos  
Channel 12: Gobo rotation, gobo indexing  
Channel 13: No function  
Channel 14: Focus  
Channel 15: Shutter, strobe  
Channel 16: 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

## 5 Star Systems – Spica 250 – User manual

### Rigging

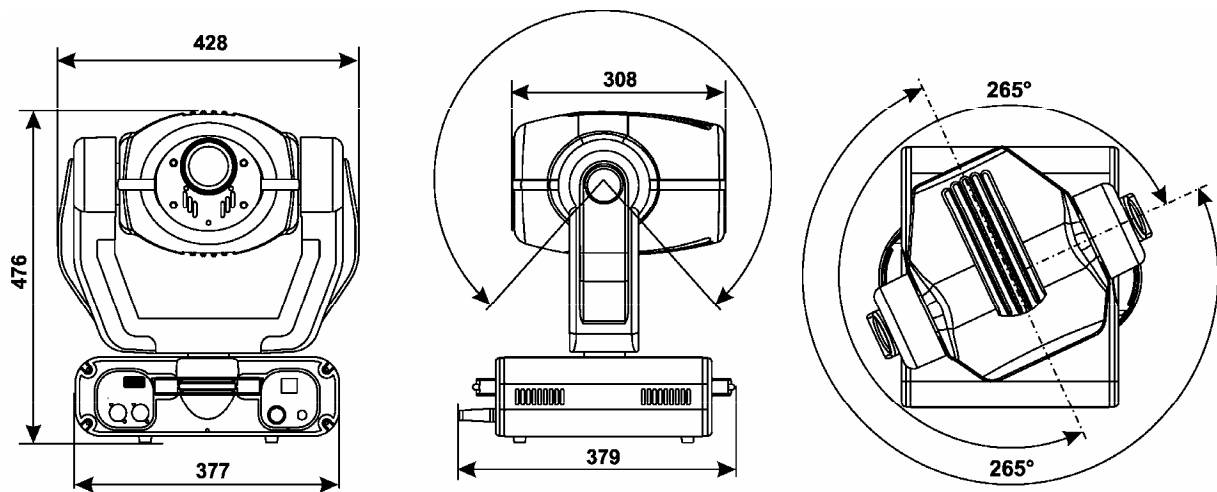
- Stands directly on the floor
- Mounts horizontally or vertically with 2 clamps
- 2 truss orientation
- Safety chain/cord attachment point

### Temperatures

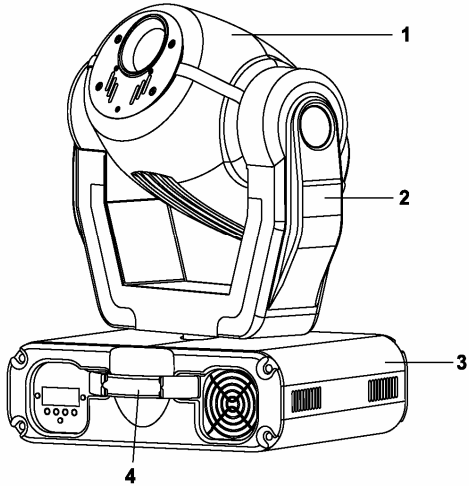
- Maximum ambient temperature  $t_a$ : 45° C
- Maximum housing temperature  $t_B$  (steady state): 80° C

### Dimensions and weight

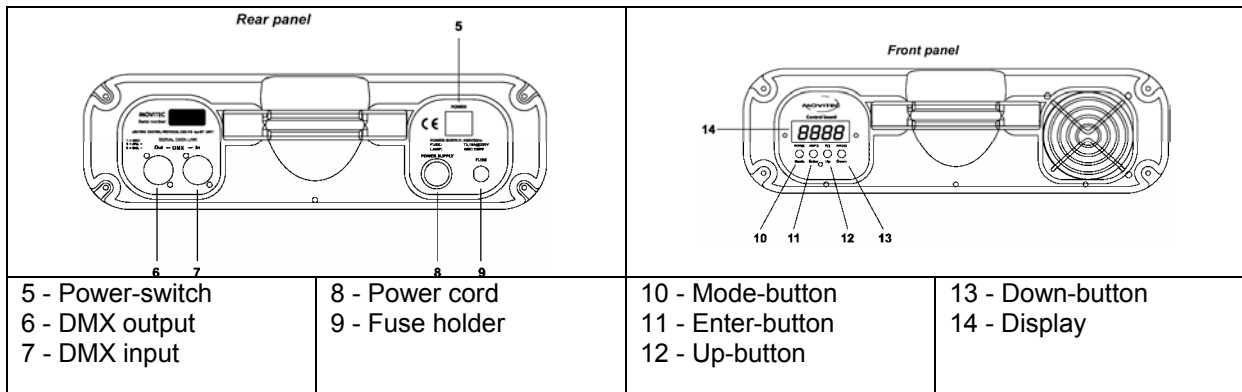
- Length of base (including handles): 373 mm
- Width of yoke: 400 mm
- Height (head horizontal): 494 mm
- Weight (net): 18 kg



## 2.3 Description of the device



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



## 3. Installation

### 3.1 Fitting the lamp

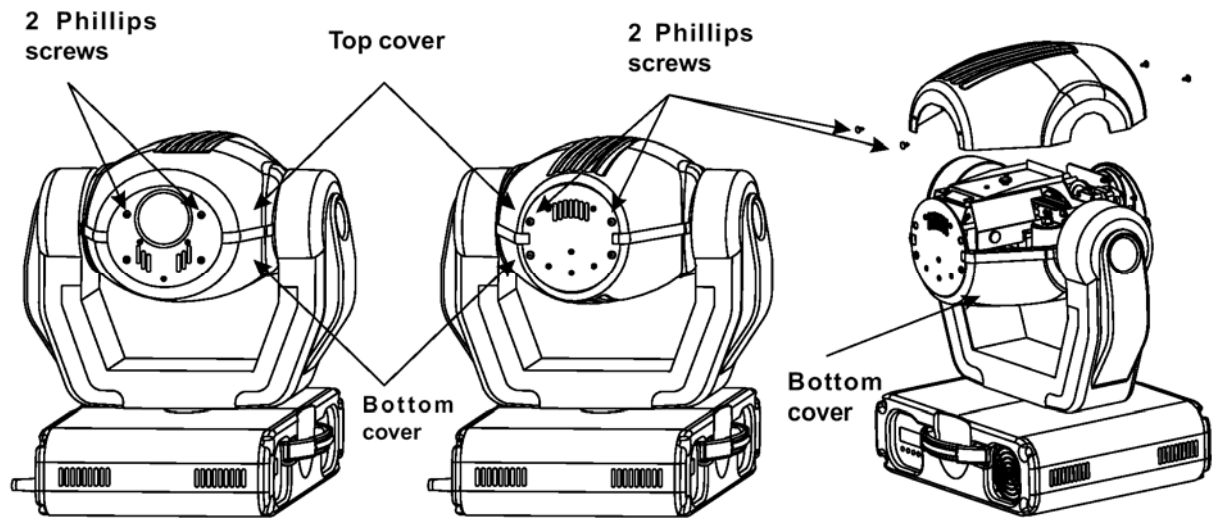
To insert the lamp MSD 230V/250W or MSD 230V/200W open the top cover of the head (see the drawings to identify which cover is top) by loosening the 4 Phillips screws on the front and rear sides of the top cover. Then open the small lamp cover by loosening 3 fastening screws (see the drawing).

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





## 5 Star Systems – Spica 250 – User manual



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 manufacturers notes!

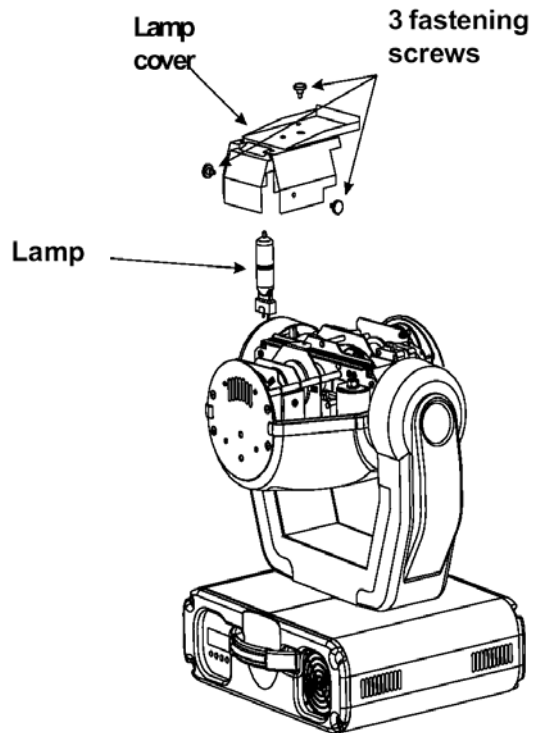
Do not touch the glass-bulb bare-handed during the installation! Make sure that the lamp is installed tightly into the lamp holder system.

Adjust the optimal distance 1-1.5 mm from the lens by turning the screw "A" (see the drawings "**Lamp adjustment**" below).

Then close the small lamp cover by tighten 3 fastening screws again.

Reclose the top cover of the head and tighten the 4 Phillips screws.

Before striking the lamp, reset the "**LAti**" 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.

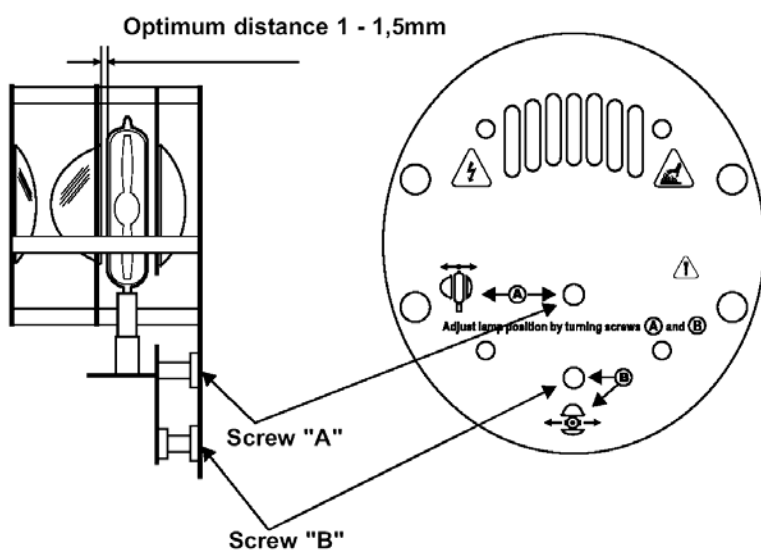


Do not operate this fixture with opened housing cover!



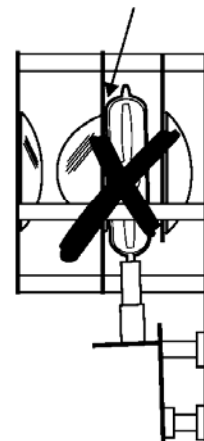
### 3.2 Lamp adjustment

**Correct**



**Incorrect**

Keep optimum distance to lens



The SPICA 250 lamp holder 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). As the optimum distance of 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 centre 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 screw "A" until the light is evenly distributed.

If the light on the edge seems to be brighter as in the centre, 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.

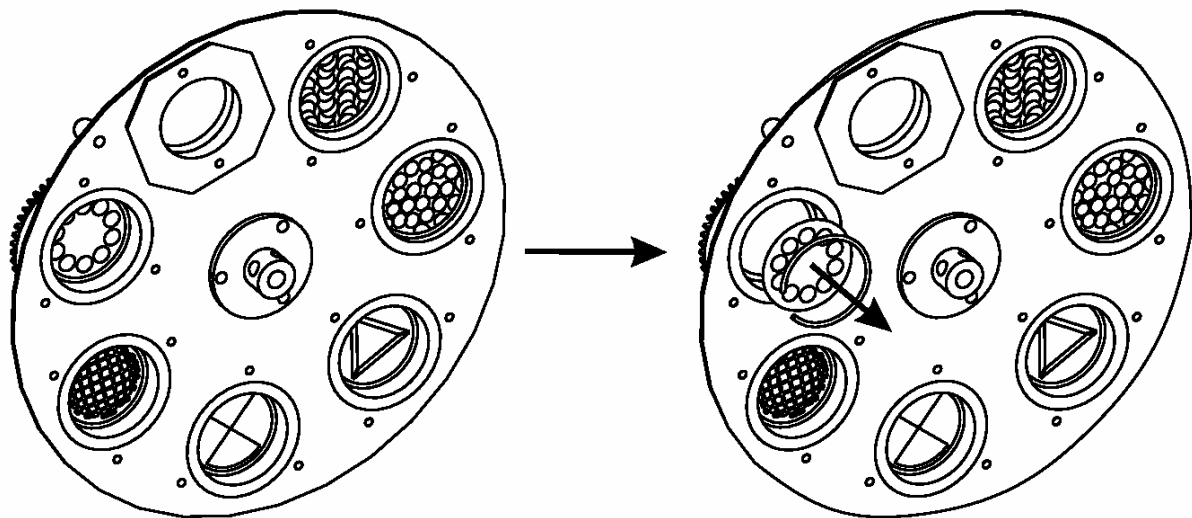
### 3.3 Inserting/Exchanging gobos

To insert the gobos open the top cover of the head by loosening the 4 Phillips screws on the front and rear sides of the top cover.

If you wish to use other forms and patterns as the standard-gobos, or if gobos are to be exchanged, please follow the instructions below:

#### Rotating gobo-wheel

Remove the fixation-ring with an appropriate tool. Remove the gobo and insert the new gobo. Press the fixation-ring together and insert it in front of the gobo.



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



**CAUTION!**

Never unscrew the screws of the rotating gobo as the ball bearing will otherwise be opened!



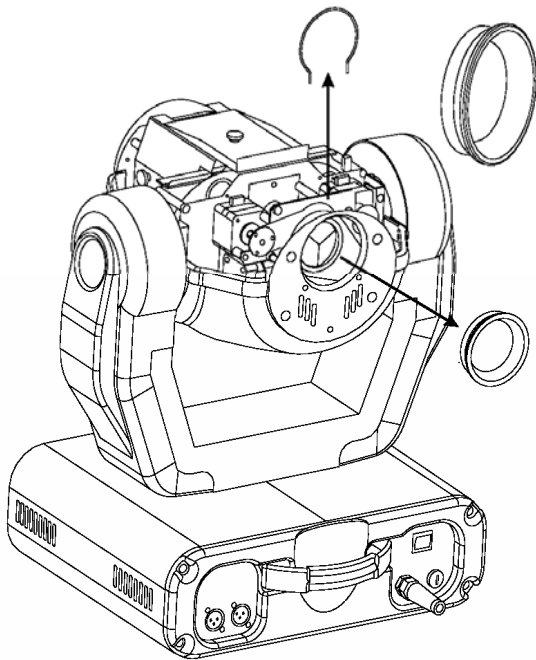
### 3.4 Installation of an optional lens

The device is delivered with a 15°-standard lens. If you wish to insert an optional 12° or 18°-lens, please follow the instructions below.

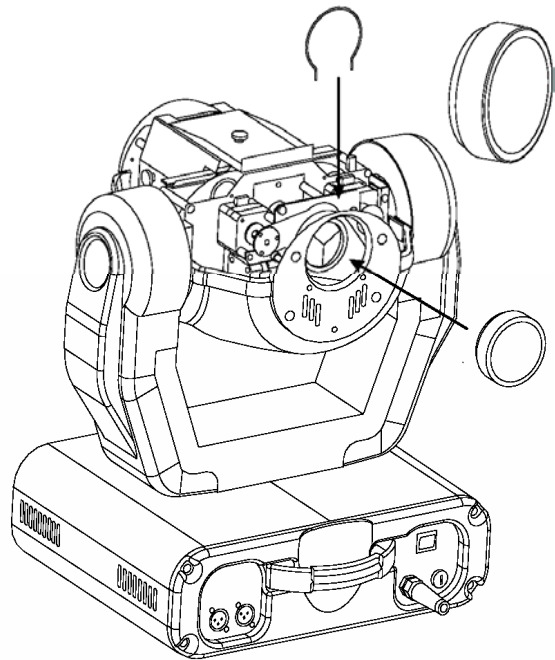
#### Optional 12°lens

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.

**15°- lens**

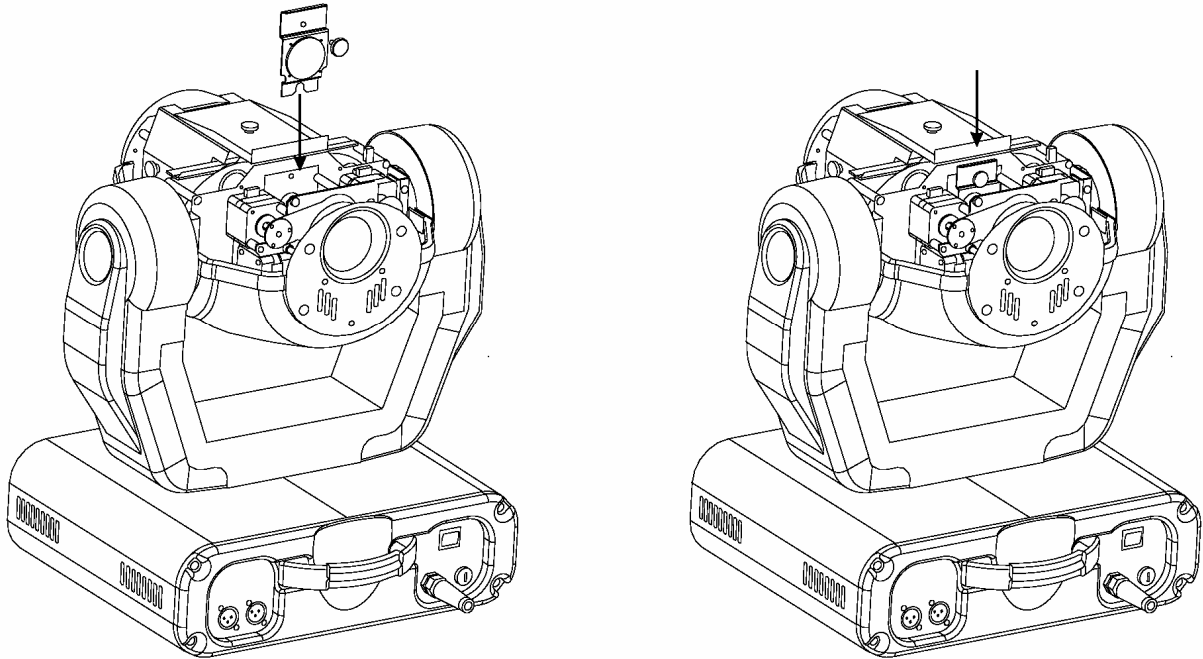


**optional 12°- lens**



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

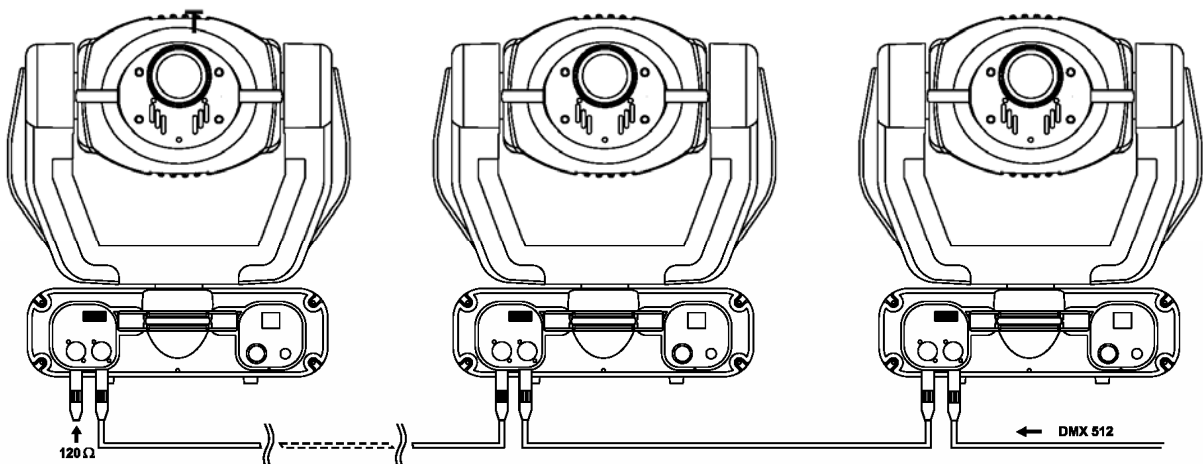


### 3.5 Connection to the mains

Connect the fixture to the mains with the enclosed power-plug.  
The earth has to be connected!

Cable	Pin	International
Blue	Neutral	L
Brown	Live	N
Yellow/Green	Earth	

### 3.6 DMX 512 connections





## 5 Star Systems – Spica 250 – User manual

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.

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



### Occupation of the XLR-connection

DMX - output		DMX-input	
XLR mounting-socket:		XLR mounting-plug:	
1 - Ground		1 - Ground	
2 - Signal (-)			
3 - Signal (+)			

If you are using the standard 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.

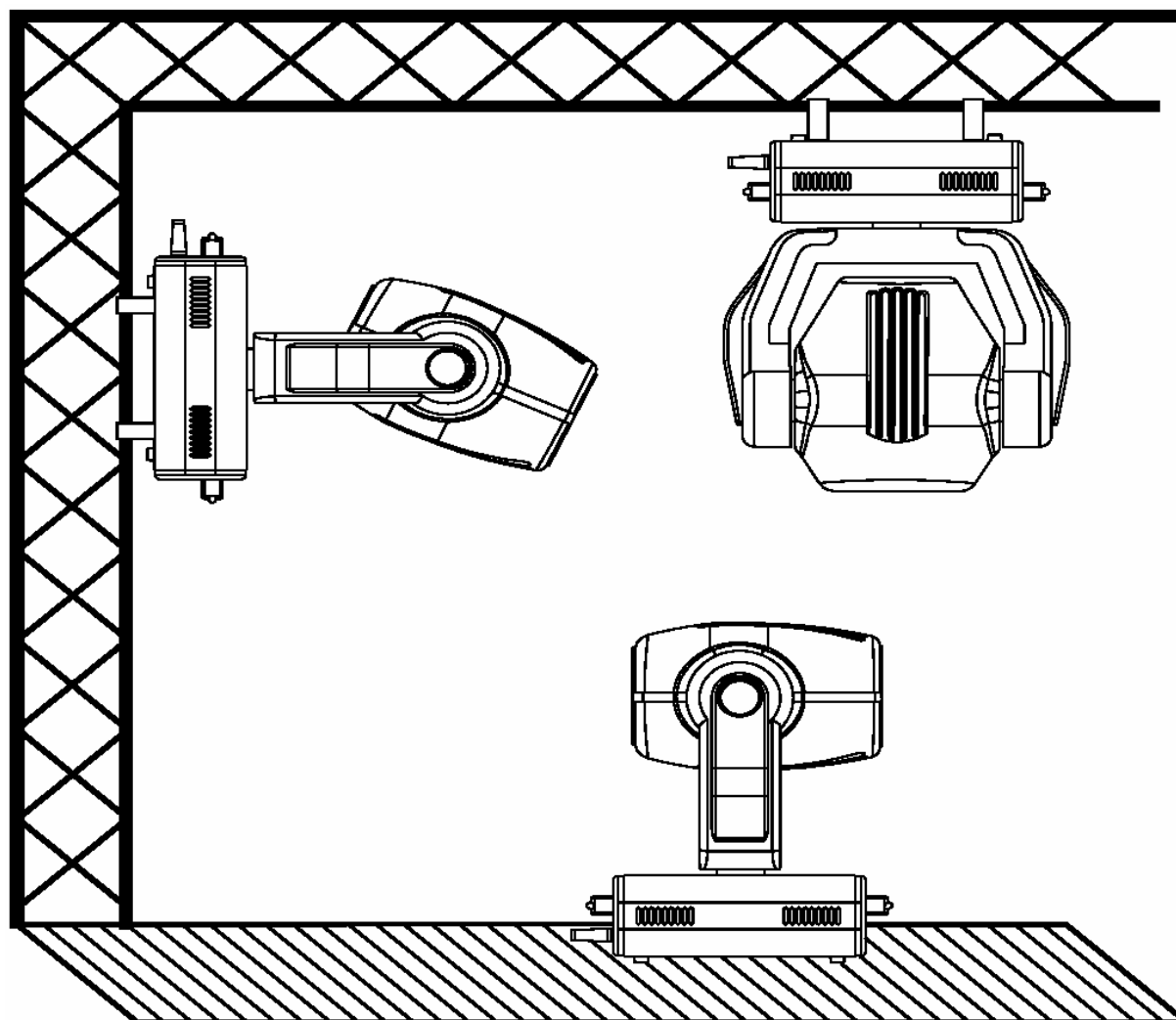
Always connect one output with the input of the next fixture until all fixtures are connected.

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

## 4. Rigging the fixture

The SPICA 250 can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics (see the drawing).

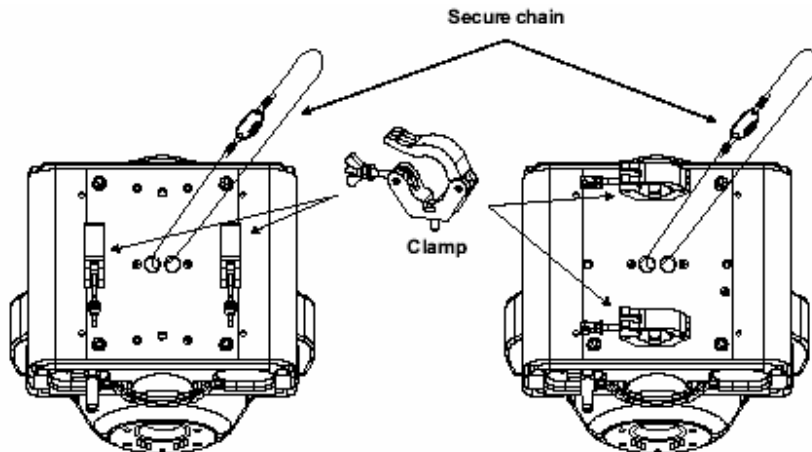
The fixtures base enables to be mounted in two ways. Use the clamps with screws M10 or M8 - check the base bottom.



**Ensure that the structure (truss) to which you are attaching the fixtures is secure.**



Install a safety wire that can hold at least 10 times the weight of the fixture. Never use the carrying handles for secondary attachment.



**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!



## 5. Addressing

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

If you set, for example, the address to channel 5, the SPICA 250 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 SPICA 250 correctly and independently from any other fixture on the DMX data link.

If two, three or more SPICA 250's are addressed similarly, they will work similarly.

**For address setting follow this procedure**

1. Switch On the SPICA 250 and wait until the fixture reset has finished ("rSt" is flashing at the display).
2. Press the **[Mode]** key in order to access the main menu. Browse through the menu by pressing the **[Up]** and **[Down]** keys until the display shows "A001". Confirm by pressing **[Enter]** key and the letter "A" will flash.
3. Use the **[Up]** and **[Down]** keys to select the desired address.
4. Confirm by pressing **[Enter]** or **[Mode]** to cancel.

**Controlling**

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

**Note:**

After switching on, the SPICA 250 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.



## 5 Star Systems – Spica 250 – User manual

This situation can occur if:

- the 3 PIN XLR plug (cable with DMX signal from controller) is not connected with the input of the SL-250
- the controller is switched off or defective, if 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) in the last lighting in the link in order to ensure proper transmission on the DMX data link.

## 6. Remotely controllable functions

### 6.1 Lamp

The SPICA 250 is run with a MSD 250W/200W lamp.

A relay inside of the SPICA 250 allows you to switch On and Off the lamp via itself control board on the front panel or via your controller without affecting the rest of the lighting.

### 6.2 Switching on and off the lamp by Control board

1. Switch On the SPICA 250 and wait until the fixture reset has finished.
2. Press the [Mode] key in order to access the main menu. Browse through the menu by pressing the [Up] and [Down] keys until the display shows "LAMP". Confirm by pressing [Enter] key.
3. Use the [Up] and [Down] keys to select "On" for switch On the lamp and "Off" for switch Off the lamp and press [Enter] to confirm or [Mode] to cancel.

**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 SPICA 250 will store this information and automatically ignite the lamp when the 5 minutes period has expired. The message "HEAt" will appear on the control board display at the back side of the SPICA 250. 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.

### 6.3 Colour wheel

The SPICA 250 features a colour-wheel with 12 color positions - 11 of these with dichroic colors and the last one open. The wheel can be positioned between two adjacent colors in any position. It is also possible to rotate the color-wheel continuously at different speeds - the so-called "Rainbow effect" is created.

### 6.4 Rotating gobo wheel

The rotating gobo-wheel includes 4 metal gobos, 1 glass gobo and 1 multicolor dichroic gobo rotating in both directions, indexable, rotating gobo wheel cont. rotation slow to fast. The multicolor dichroic gobo (containing C,M,Y colors) can be combined with the color-wheel especially with cyan, magenta and yellow colours in order to obtain several different multicolor beams. The gobos have an outside

diameter of 27 mm and an image diameter of 23 mm.  
3-facet prism rotating in both directions at different speeds.

### **6.5 3-facet rotating prism**

3-facet prism rotating in both directions at different speeds

### **6.6 Focus**

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

### **6.7 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)

### **6.8 Fan**

The SPICA 250 is cooled by two axial fans - one each 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 4 types of low fan speed operating:

**1. "HIGH" - high (max.) speed of fans**

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

**2. "rEG" - continuous controlling of the fan speed**

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.

**3. "LoOF" - low speed/Switch Off the lamp operating**

the fan keeps the adjusted low speed until the temperature exceeds max. inside temp. then the SPICA 250 automatically switches Off the lamp.

**4. "LoHI" - low/high speed of the fan operating**

the fan keeps the adjusted low speed until the temperature exceeds max. inside temp. of the fixture, then the SPICA 250 automatically switch from low to high the fan speed.

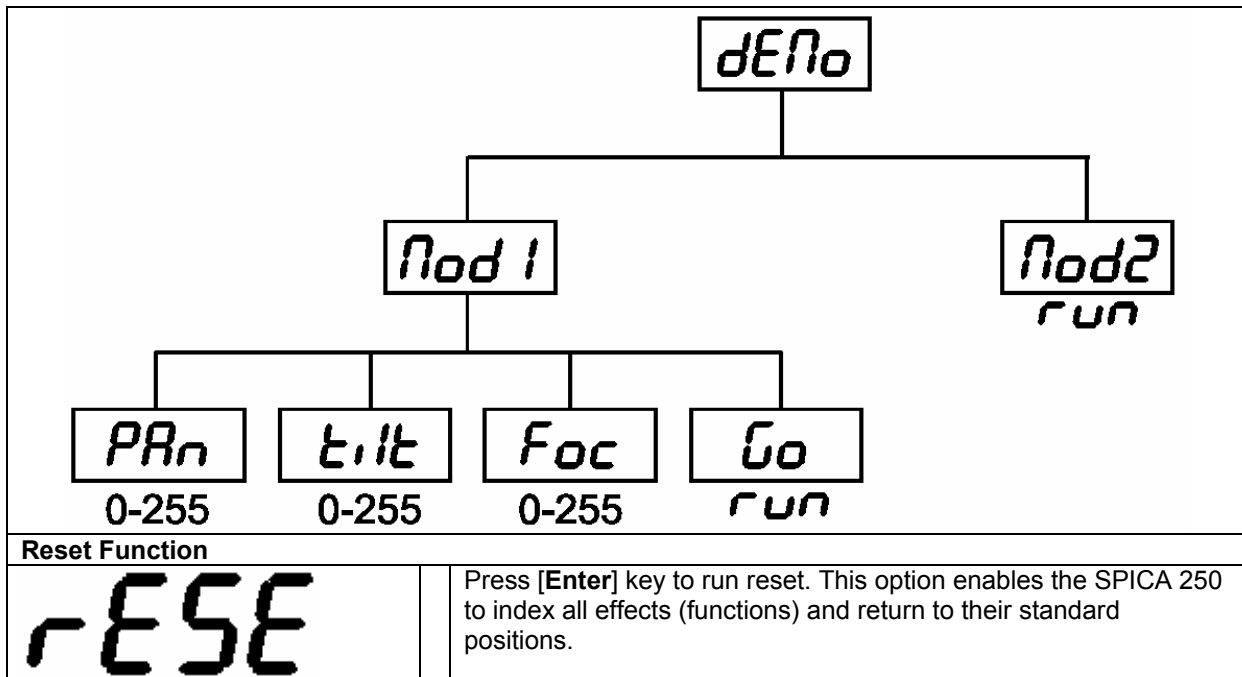
## **7. Control Board**

The control board situated on the front panel of the SPICA 250 offers several features. You can simply set the lighting address, read the number of lamp or unit hours, switch On and Off the lamp, run test show, make a reset and also use special functions for manual, demo and service purposes. The main menu is accessed by pressing the [Mode] key - press this one so many times until the display shows message "**A001**" (with actually stored address). Browse through the menu by the pressing [Up] and [Down] keys - the display shows step by step these messages: A001, rPAn, rTilt, 16br, Lati, **Poti, LAMP, dEMo, rESE, SPEC**. Press [Enter] if you wish to select one of them. The functions provided are described in the following sections and the function hierarchy is shown below.

ADDI rPARn rtilt 16br LATi Poti LANP dENO rESE SPEC

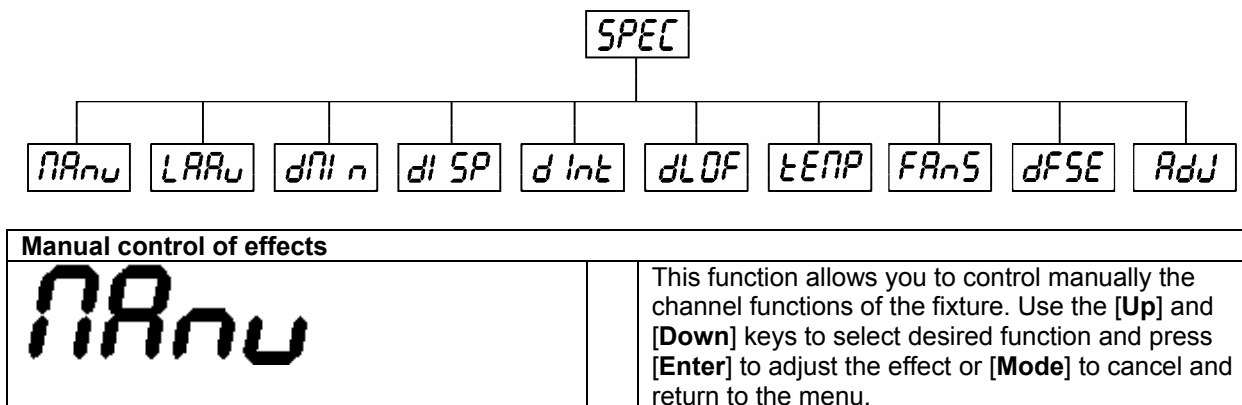
## 7.1 Main functions

DMX 512 Address settings	
ADDI	The letter "A" flashes. Use the [Up] and [down] keys to select required address (001 - 497) and press [Enter] to confirm or [Mode] to cancel and return to the main menu.
Pan reverse	
rPARn	This function allows you to invert the pan movement. Use the [Up] and [Down] keys 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 main menu.
Tilt reverse	
rtilt	This function allows you to invert the tilt movement. Use the [Up] and [Down] keys 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 main menu.
Movement resolution	
16br	By this function you can adjust the desired movement resolution 8 or 16 bit. Use the [Up] and [Down] keys to select "On" if you wish the 16bit high resolution or "Off" if you wish only 8 bit resolution and press [Enter] to confirm or [Mode] to cancel and return to the main menu. <b>Note:</b> If you adjust the 16 bit resolution the fixture will occupy 16 DMX channels, if you adjust the 8 bit resolution, the fixture will be operated by only 14 DMX channels. Please, check the DMX protocol.
Lamp On time	
LATi	This option enables you to read the total number of hours that the lamp has been powered On. Press [Enter] or [Mode] to return to the main menu. In order to reset the counter to 0, you have to hold the [Up] and [Down]-button and press the [Enter]-button.
Power On time	
Poti	By this option you can read the total number of hours that the SPICA 250 has been powered On. Press [Enter] or [Mode] to return to the main menu.
Switch On/Off the lamp	
LANP	Use the [Up] and [Down] keys to select "On" if you wish the switch On the lamp or "Off" if you wish switch Off the lamp and press [Enter] to confirm or [Mode] to cancel and return to the main menu.
Demo sequences	
dENO	This function allows you to run a special demo-test sequences without an external controller, which will show you some possibilities of using SPICA 250. 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 SPICA 250 functions and therefore is good for a complete introduction of the fixture.



## 7.2 SPEC – Special functions

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



<div style="border: 1px solid black; padding: 2px; display: inline-block;">PRnu</div>	
<div style="display: flex; justify-content: space-around; font-size: small;"> <span>PRn</span> <span>tilt</span> <span>SPEd</span> <span>Colo</span> <span>EFEL</span> <span>Prot</span> <span>rGob</span> <span>Grot</span> <span>Foc</span> <span>Stro</span> <span>d,nr</span> </div>	
<div style="display: flex; justify-content: space-around; font-size: x-small;"> <span>PRn1 tilt1 SPd1 Co 1 HOLE Pro1 rGob1 Gro1 Foc1 OPEn din0</span> </div>	
<div style="display: flex; justify-content: space-around; font-size: x-small;"> <span>PRn2 tilt2 SPd2 Co 2 Pri 5 Pro2 rGob1 Gro2 Foc2 Str1 din1</span> </div>	
<div style="display: flex; justify-content: space-around; font-size: x-small;"> <span>PRn3 tilt3 SPd3 Co 3</span> </div>	
<div style="display: flex; justify-content: space-around; font-size: x-small;"> <span>SPd4</span> <span>Pro9</span> <span>rGob1</span> <span>Gro9</span> <span>Foc5</span> <span>Str9</span> <span>d,n4</span> </div>	
<div style="display: flex; justify-content: space-around; font-size: x-small;"> <span>SPd5</span> <span>Co 18</span> <span>d,nC</span> </div>	
<b>Lamp On automatically</b>	
<div style="font-size: 2em; font-weight: bold;">LAAU</div>	<p>This function enables to switch On the lamp automatically after switching On the fixture. Use the [Up] and [Down] keys to select 'On' if you wish to switch On the lamp automatically after switching On the fixture 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.</p>
<b>DMX values</b>	
<div style="font-size: 2em; font-weight: bold;">dnn</div>	<p>Readout DMX values of each channel received by the fixture. Use the [Up] and [Down] keys to select desired channel and press [Enter] to read its value coming to the fixture or [Mode] to cancel and return to the menu.</p>
<div style="border: 1px solid black; padding: 2px; display: inline-block;">dnn</div>	
<div style="display: flex; justify-content: space-around; font-size: small;"> <span>PRn</span> <span>tilt</span> <span>SPEd</span> <span>Colo</span> <span>EFEL</span> <span>Prot</span> <span>rGob</span> <span>Grot</span> <span>Foc</span> <span>Stro</span> <span>d,nr</span> </div>	
<div style="display: flex; justify-content: space-around; font-size: x-small;"> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> <span>0-255</span> </div>	
<b>Automatic blackout of Display</b>	
<div style="font-size: 2em; font-weight: bold;">di SP</div>	<p>This function allows you to keep the display On or to turn Off automatically 2 minutes after last pressing any key on the control board. Use the [Up] and [Down] keys 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 key on the control board and press [Enter] to confirm or [Mode] to cancel and return to the menu.</p>
<b>Display intensity</b>	
<div style="font-size: 2em; font-weight: bold;">dint</div>	<p>By this function you can adjust from 20 to 100 the intensity of the display. Use the [Up] and [Down] keys to select the level of the display intensity and press [Enter] to confirm or [Mode] to cancel and return to the menu.</p>
<b>Lamp Off via DMX</b>	
<div style="font-size: 2em; font-weight: bold;">dLOF</div>	<p>This function allows you to switch Off the lamp by DMX. Use the [Up] and [Down] keys 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.</p>
<b>Temperature</b>	

5 Star Systems – Spica 250 – User manual

	<p>Temperature readouts of fixture inside in Celsius. Inside temperatures below 70° C are not critical. 70° C and more lead to the lamp being switched off. Please note that the outside temperature should not exceed 45° C.</p>
<p><b>Low fan speed operating</b></p>	
	<p>By using this function you can choose 4 types of low fan speed operating. Browse through this menu by the pressing [Up] and [Down] keys - the display shows step by step these messages: "HIGH, reG, LoOF, LoHI". Press [Enter] if you wish to select one of them or [Mode] to cancel and return to the menu.</p>
<pre> graph TD     FANS[FANS] --&gt; HIGH[HIGH]     FANS --&gt; reG[reG]     FANS --&gt; LoOF[LoOF]     FANS --&gt; LoHI[LoHI]             </pre>	
<p><b>High (max.) speed of fans</b></p>	
	<p>The cooling fans work on max. speed (max. cooling)</p>
<p><b>Continuous controlling of the fan speed</b></p>	
	<p>The fan keeps the adjusted low speed until the temperature exceeds max. inside temp., then the SPICA 250 automatically switches Off the lamp.</p>
<p><b>Low/high speed of the fan operating</b></p>	
	<p>the fan keeps the adjusted low speed until the temperature exceeds max. inside temp of the fixture, then the SPICA 250 automatically switch from low to high the fan speed.</p>
<p><b>Default settings</b></p>	
	<p>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 positions.</p>

Personality	Display	Default values (SHADED)
Pan reverse	<i>rPAN</i>	<i>On</i>
		<i>OFF</i>
Tilt reverse	<i>rtilt</i>	<i>On</i>
		<i>OFF</i>
Movement resolution	<i>16br</i>	<i>On</i>
		<i>OFF</i>
Lamp on automatically	<i>LARu</i>	<i>On</i>
		<i>OFF</i>
Automatic blackout of display	<i>di SP</i>	<i>On</i>
		<i>OFF</i>
Display intensity	<i>dInt</i>	20 40 60 80 100
Lamp Off via DMX	<i>dLOF</i>	<i>On</i>
		<i>OFF</i>
		<i>HIGH</i>
Low fan speed	<i>FANs</i>	<i>rEG</i>
		<i>LoDF</i>
		<i>LoHi</i>

**Adjusting the default positions of colour, gobo and effect wheels**

*Adj*

By this function you can calibrate and adjust the colour, gobo and effect wheels 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, SPed, Colo, EFEC, Prot, rGOB, Grot, Foc, 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).

```

    graph TD
      Adj[Adj] --- PAN[PAN  
0-255]
      Adj --- Tilt[Tilt  
0-255]
      Adj --- SPed[SPEd  
0-255]
      Adj --- Colo[Colo  
0-255]
      Adj --- EFEC[EFEC  
0-255]
      Adj --- Prot[Prot  
0-255]
      Adj --- rGOB[rGOB  
0-255]
      Adj --- Grot[Grot  
0-255]
      Adj --- Foc[Foc  
0-255]
      Adj --- Stro[Stro  
0-255]
      Adj --- dimr[dimr  
0-255]
      Adj --- FCAL[FCAL]
      FCAL --- Colo2[Colo  
0-255]
      FCAL --- EFEC2[EFEC  
0-255]
      FCAL --- rGOB2[rGOB  
0-255]
      FCAL --- Grot2[Grot  
0-255]
      FCAL --- ArES[ArES]
    
```

**1. Calibration via the control board**

Press [Enter] and the [Up] and [Down] keys in order to display the following messages: "Colo, EFEC, rGob, Grot" 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 and effect wheels. When the reset

## 5 Star Systems – Spica 250 – User manual

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, EFEC, rGob, Grot" - calibration parameters. Select one of them and press [Enter]. Now you can calibrate the colour, gobo and effect wheel by your controller. The DMX calibration protocol is described in the table mentioned below.

#### DMX Calibration protocol

DMX Channel	1	2	3	4	5	6	7	8
Function	COL.	-	EFEC.	RGOB	GROT	-	COLOURS	-
	CALIBRATION 0 - 255		CALIBRATION 0 - 255	CALIBRATION 0 - 255	CALIBRATION 0 - 255	-	STANDARD PROTOCOL	-
SMOOTH MICROSTEP MOVEMENT								

9	10	11	12	13	14	15	16
EFFECT (PRISM)	PRISM ROTATION	ROTATING GOBOS	GOBO ROTATION	-	FOCUS	STROBO	DIMMER
STANDARD PROTOCOL	STANDARD PROTOCOL	STANDARD PROTOCOL	STANDARD PROTOCOL	-	STANDARD PROTOCOL	STANDARD PROTOCOL	STANDARD PROTOCOL

After having calibrated required functions press [Enter] to confirm (or [Mode] to cancel and return to the menu without reset by the "ArES" function) and use the "ArES" 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, effect and rot. gobo wheels and gobo indexing.

## 8. Error and information messages

<b>HEAT</b>	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 SPICA 250 will store this information and automatically ignite the lamp when the 5 minutes period has expired.
<b>LAER</b>	The ignition of the lamp is seven times unsuccessful (the HEAT message appeared six times before), and the display shows "LAER", 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.
<b>ABER</b>	This message informs you that the main PCB does not communicate correctly with the Control Board.
<b>COER</b>	(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.



5 Star Systems – Spica 250 – User manual

<b>rGEr</b>	(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.
<b>IGEr</b>	(rotating gobo indexing error) This 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.
<b>PrEr</b>	(prism 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 prism-wheel is not located in the default position after the reset.
<b>FtEr</b>	This error message informs you that the fixture was overheating (occurred 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 sees above).
<b>SnEr</b>	This message appears if the lamp lighting sensor is failed. Please, contact your dealer.
<b>POEr</b>	This message will appear if the fixture was shortly disconnected from the main.
<b>PAEr</b>	(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 it's driving IC on the main PCB). The yoke is not located in the default position after the reset.
<b>t, Er</b>	(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 it's driving IC on the main PCB). The head is not located in the default position after the reset.
<b>FrEr</b>	It will appear if the frequency of the main is not standard 50 or 60Hz.

## 9. DMX-Protocol

### 9.1 Functions of the control channels – 16 and 8 bit protocol

16 bit Channel	8 bit Channel	Value	Function
1	1	0 - 255	PAN movement (530°)
2	2	0 - 255	PAN movement fine (530°)
3			TILT movement (280°)
4			TILT movement fine (280°)
5	3	0 1 - 249 250 - 255	Speed of PAN/TILT movement Max. speed (tracking mode) From max. to min, speed (vector mode) Max. speed, black-out while PAN/TILT moving Or colour changes (tracking mode)
6	4	0 - 127 128 - 139 140 - 229 180 - 189 190 - 229 230 - 239 240 - 255	Lamp on/off, reset, fan speed From max. to min. speed of fan Lamp on No function Reset No function Lamp off after 5 seconds No function
7	5	0 - 18 19 - 37 38 - 55 56 - 73 74 - 91 92 - 110 111 - 127 128 - 189 190 - 193 194 - 255	Colours White Yellow Orange Red Green Mauve Blue Forwards rainbow effect from fast to slow No rotation Backwards rainbow effect from slow to fast
8	6		No function
9	7	0 - 95 96 - 159 160 - 255 160 - 167 168 - 175 176 - 183 184 - 191 192 - 199 200 - 207 208 - 215 216 - 223 224 - 231 232 - 239 240 - 247 248 - 255	Effect wheel Open position 3-facet rotating prism PRISM/GOBO MACROS: Macro 1 Macro 2 Macro 3 Macro 4 Macro 5 Macro 6 Macro 7 Macro 8 Macro 9 Macro 10 Macro 11 Macro 12
10	8		Prism rotation

## 5 Star Systems – Spica 250 – User manual

		0 1 - 126 127 - 128 129 - 255	No rotation Forwards rotation from fast to slow No rotation Backwards rotation from slow to fast
11	9	0 -031 032-063 064-095 096-127 128-159 160-223 224-255	Rotating gobos Open Gobo 1 Gobo 2 Gobo 3 Gobo 4 Gobo 5 Gobo wheel cont. rotating from slow to fast
12	10	0 - 127 128 - 190 191 - 192 193 - 255	Index and rotation of gobos Gobo indexing Forwards gobo rotation from fast to slow No rotation Backwards gobo rotation from slow to fast
13	11		No function
14	12	0 - 255	Focus Continuous adjustment from far to near
15	13	0 - 31 32 - 63 64 - 95 96 - 127 128 - 159 160 - 191 192 - 223 224 - 255	Shutter, Strobe Shutter closed No function Strobe-effect from slow to fast Now function Pulse-effect in sequences Now function Random strobe-effect from slow to fast No function
16	14	0 - 255	Dimmer intensity from 0 to 100%

## 10. 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 objective 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 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.

To ensure a proper function of the gobo-wheel, we recommend lubrication in six month intervals. The quantity of oil must not be excessive in order to avoid that oil runs out when the gobo-wheel rotates.

### **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 fuse holder on the rear panel with a fitting screwdriver from the housing (anticlockwise).

Step 2: Remove the old fuse from the fuse holder.

Step 3: Install the new fuse in the fuse holder.

Step 4: Replace the fuse holder in the housing and fix it.

## **11. Appendix**

We hope you will enjoy your SPICA 250. We can assure you that you will enjoy this device for years if you follow the instructions given in this manual.

Should you have further questions, do not hesitate to contact your local dealer.

Please note: errors and omissions for every information given in this manual excepted. Every information is subject to change without prior notice. Any claim due to missing or wrong information in this manual is herewith excluded!