ROBe.

Spote™

ROBE Innovative Technology

USER MANUAL

ROBE® lighting s.r.o. • Czech Republic • www.robe.cz

Version 1.8

Spote

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**FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY
BEFORE POWERING OR INSTALLING YOUR ROBIN Spote !**

Save it for future reference.

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

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.

**The Robin Spote was designed for indoor use and it is intended for
professional application only. It is not for household use.**

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1. Safety instructions

DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THIS UNIT!

Make sure that the available voltage is not higher than stated on the rear panel of the fixture.
This fixture should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied, consult your authorized distributor or local power company.

WARNING! This unit does not contain an ON/OFF switch. Always disconnect power input cable
to completely remove power from unit when not in use or before cleaning or servicing the unit.

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

Refer servicing to qualified service personnel.

**This fixture falls under protection class I. Therefore this fixture has to be connected to
a mains socket outlet with a protective earthing connection.**

Do not connect this fixture to a dimmer pack.

**LED light emission. Risk of eye injury. Do not look into the beam at short distance of
the of the product. Do not view the light output with optical instruments or any device
that may conncentrate the beam.**

If the fixture 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.

Avoid brute force when installing or operating the fixture.

This fixture was designed for indoor use only, do not expose this unit to rain or use near water.

When choosing the installation spot, please make sure that the fixture is not exposed to extreme heat, moisture or dust.
Air vents and slots in the fixture´s head and base are provided for ventilation, to ensure reliable operation of the device and to protect it from overheating.

Do not block the front lens with any object when the fixture is under operation.

CAUTION! Risk group 2, RG-2

Safe distance from the light source is 12 metres.

The cooling openings should never be covered with cloth or other materials, and never must be blocked.

This fixture should not be placed in a built-in installation unless proper ventilation is provided.

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

Always use a secondary safety wire when rigging this fixture.

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

The fixture becomes very hot during operation. Allow the fixture to cool approximately 20 minutes prior to manipulate with it.

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

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

Please consider that unauthorized modifications on the fixture 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, crash etc.

Immunity of the equipment is designed for electromagnetic environments E1, E2, E3 according to the standard EN55103-2 ed.2 Electromagnetic compatibility. Product family standard for audio, video, audiovisual and entertainment lighting control apparatus for professional use. Part 2: Immunity.
The product (covers and cables) must not be exposed to a high frequency electromagnetic field higher than 3V/m.

The installation company should check levels of possible interferences above the tested levels E1,E2,E3 given by this standard (e.g. transmitters in surrounding area) before installing the equipment.
Emission of the equipment complies with the standard EN55032 Electromagnetic compatibility of multimedia equipment – Emission Requirements according to class B.

To avoid damage of the internal optical system of the fixture, never let the sunlight or other fixture lights directly to the front lens , even when the fixture is not working !

2. Fixture exterior view
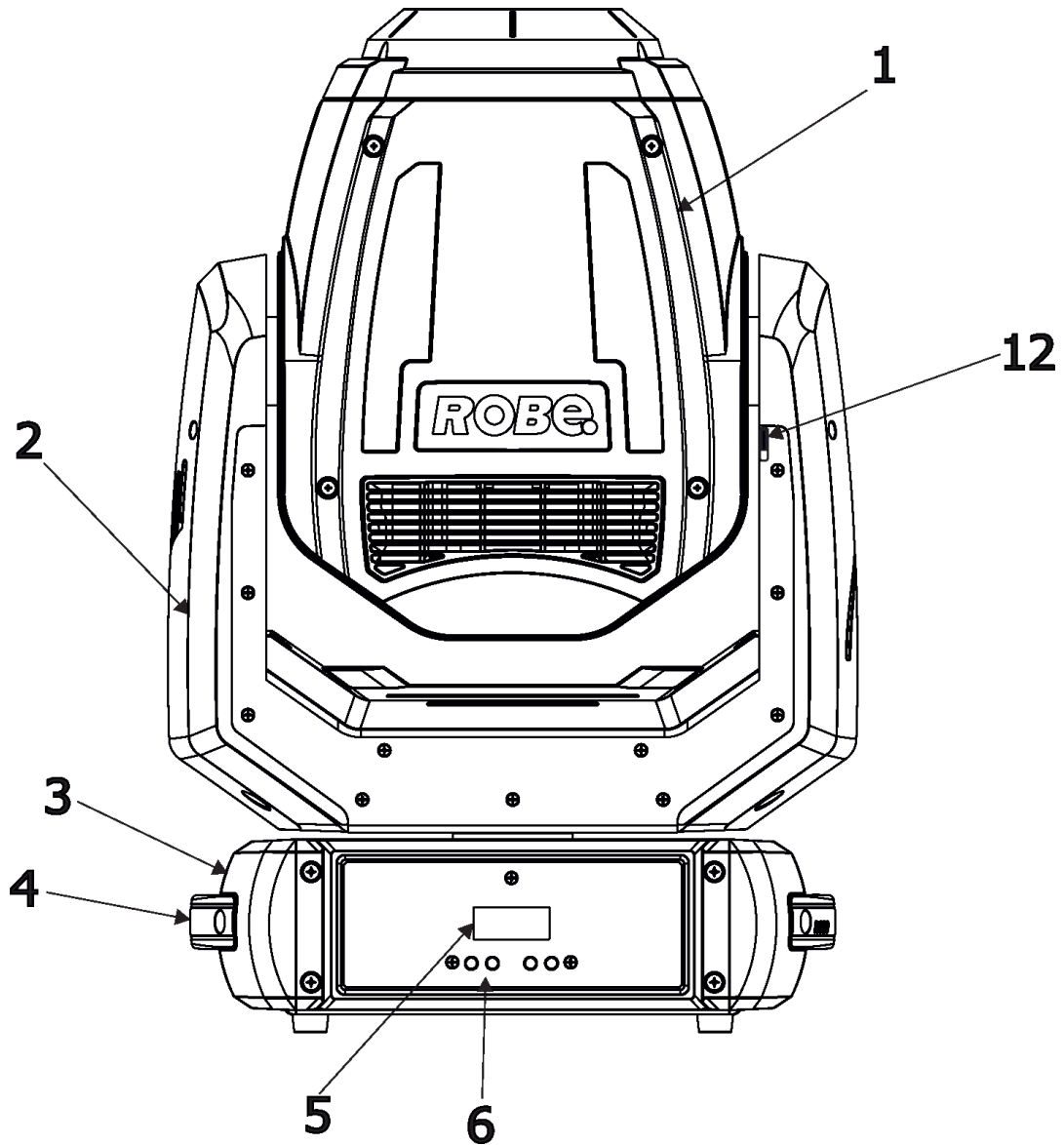
Rear panel of the base
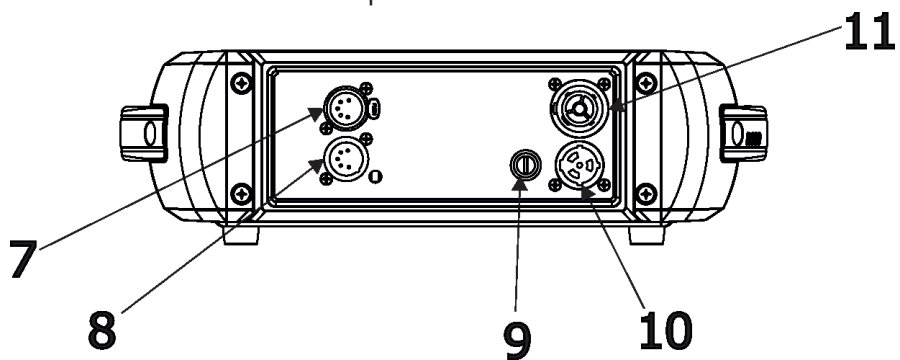
1- Moving head	**7** - DMX OUT
2 - Yoke	**8** - DMX IN
3 - Base	**9** - Fuse holder
4 - Handle	**10** - Mains IN
5 - Display	**11** - Mains OUT
6 - Control buttons	**12** - Tilt lock

3. Installation

⚡ **Fixtures must be installed by a qualified electrician in accordance with all national and local electrical and construction codes and regulations.**

3.1 Connection to the mains

For protection from electric shock, the fixture must be earthed!

The Robin Spote is equipped with auto-switching power supply that automatically adjusts to any 50-60Hz AC power source from 100-240 Volts.

If you need to install a power plug on the power cable to allow connection to power outlets, install a grounding-type (earthed) plug following the plug manufacturer's instructions. If you have any doubts about proper installation, consult a qualified electrician.
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Core (EU)	Core (US)	Connection	Plug Terminal Marking
Brown	Black	Live	L
Light blue	White	Neutral	N
Yellow/Green	Green	Earth	⏚

This device falls under class one and must be earthed (grounded)!

Design of the Robin Spote allows to connect several fixtures to AC mains power in one interconnected daisy chain using power input and throughput connectors. Needed daisy chain cords are stated in the chapter "Technical specifications "
The max. number of connected fixtures depends on the AC mains power voltage and fixture version:
CE: US:
 23 fixtures at power supply= 230V   18 fixtures at power supply= 230V
 21 fixtures at power supply= 208V   17 fixtures at power supply= 208V
 12 fixtures at power supply= 120V   9 fixtures at power supply= 120V
Actual numbers of fixtures may differ from values stated above as you have to take into account the length of supply cables, circuit breaker etc. at projecting of the fixtures installation Do not overload the supply line and the connecting leads.

Supply lead
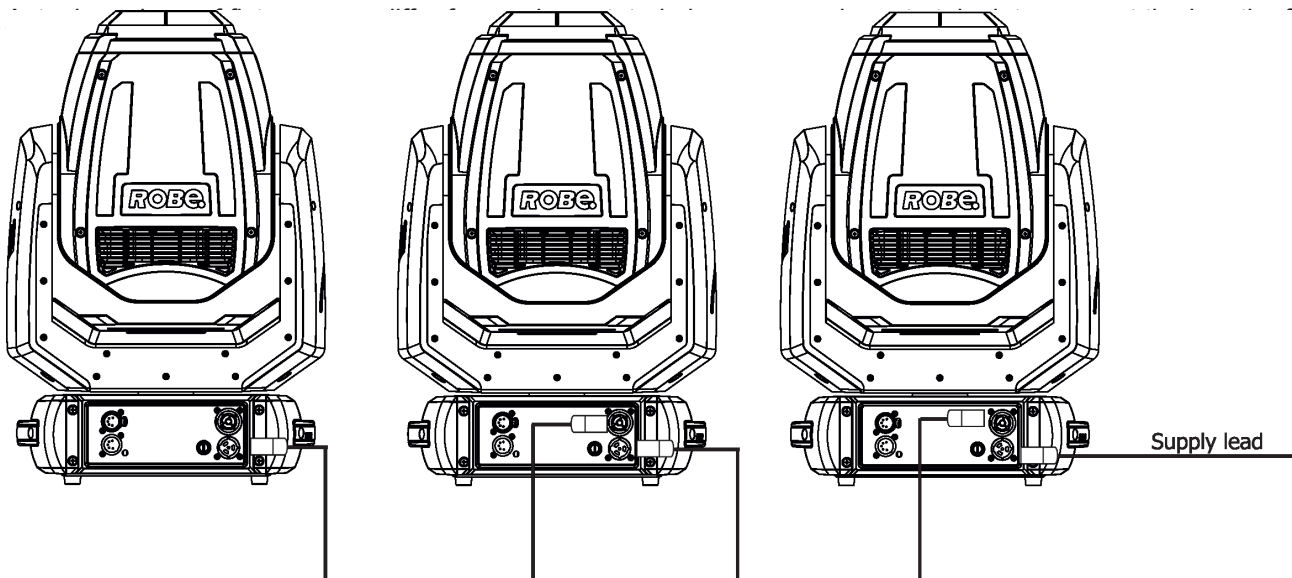
3.2 Rigging the fixture

A structure intended for installation of the fixture (s) must safely hold weight of the fixture(s) placed on it. The structure has to be certificated to the purpose.

The fixture (fixtures) must be installed in accordance with national and local electrical and construction codes and regulations.

> **For overhead installation, the fixture must be always secured with a safety wire that can bear at least 10 times the weight of the fixture.**

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 operator has to make sure that safety-relating and machine-technical installations are approved by a skilled person once a year.

The fixture should be installed outside areas where persons may walk by or be seated.

IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE, including (but not limited to) calculating working load limits, installation material being used, and periodic safety inspection of all installation materials and the fixture. If you lack these qualifications, do not attempt the installation yourself, but instead use a professional structural rigger. Improper installation can result in bodily injury or damage to property.
The fixture has to be installed out of the reach of people.

The fixture must never be fixed swinging freely in the room.

Caution: Fixture may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do not install the moving head!

Before rigging make sure that the installation area can hold a minimum point load of 10 times the fixture's weight.

> **When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in a distance of min. 0.4 m.**

> **CAUTION!**
> **Use an appropriate clamps to rig the fixture on the truss.**
> **Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixture is secure.**

The fixture can be placed directly on the stage floor or rigged in any orientation on a truss without altering its operation characteristics .
For securing the fixture to the truss, install a safety wire which can hold at least 10 times the weight of the fixture. Use only the safety wire with a snap hook with screw lock gate.

1-Quick-lock fastener
2-Omega holder
3-Trust
4-Clamp
5-Safety wire with a snap hooks
     with screw lock gates
6-Attachment point
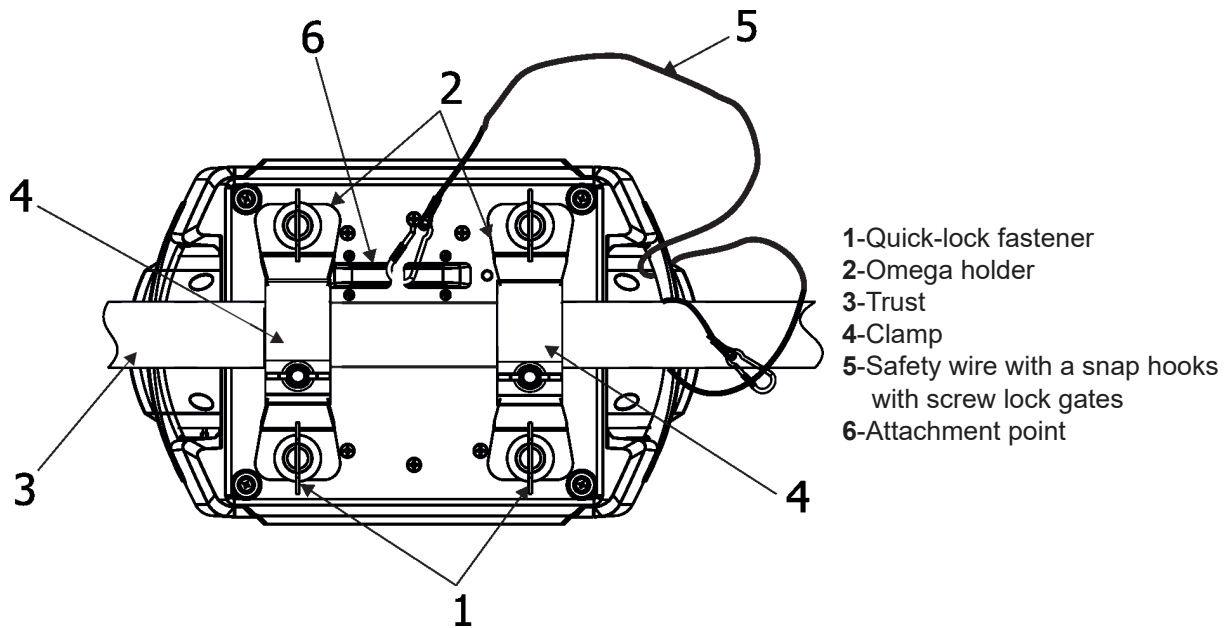
Truss installation

1. Bolt each clamp (1) to the omega holder (2) with M12 bolt and lock nut through the hole in the holder.
2. Fasten the omega holders to the bottom of the base by inserting both quick-lock fasteners (1) into
    the holes of the base and tighten fully clockwise.
3. Clamp the fixture on a truss (3) and tighten the rigging clamps.
4. Pull a safety wire (5) through the carrying handle and the truss (3) as shown on the picture above in a suitable
    position so that the maximum fall of the fixture will be 20 cm. Fasten a snap hook in the attachment point (6).
    Use only the safety wire with a snap hooks with screw lock gates.

When installing fixtures side-by-side, avoid illuminating one fixture with another!

3.3 DMX-512 connection

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

DMX output
XLR socket:

1 - Shield
2 - Signal (-)
3 - Signal (+)
4 - Used for wireless DMX
5 - Used for wireless DMX

DMX input
XLR plug:

1 - Shield
2 - Signal (-)
3 - Signal (+)
4 - Used for wireless DMX
5 - Used for wireless DMX

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

Building a serial DMX-chain:
Connect the DMX-output of the first fixture in the DMX-chain with the DMX-input of the next fixture. Always connect one output with the input of the next fixture until all fixtures are connected. Up to 32 fixtures can be interconnected.

Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω resistor between Signal (−) and Signal (+) into a 5-pin XLR-plug and plug it in the DMX-output of the last fixture.
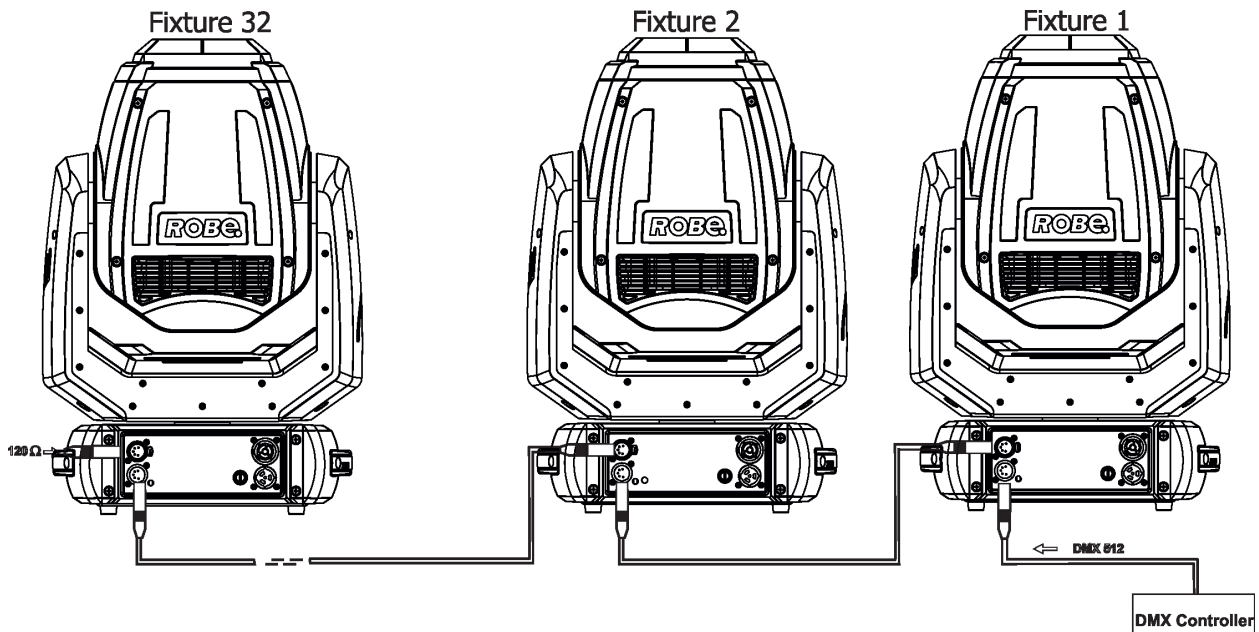
3.4. Wireless DMX operation

The external ROBE Wireless CRMX Dongle for compact ROBIN fixtures allows receiving wireless DMX. This module is equipped with the Lumen Radio CRMX module and antenna for receiving DMX signal. CRMX module operates on the 2.4 GHz band.

ROBE Wireless CRMX Dongle for compact ROBIN fixtures

1 - 5-pin XLR (female)
2 - Locating pin
3 - Lock
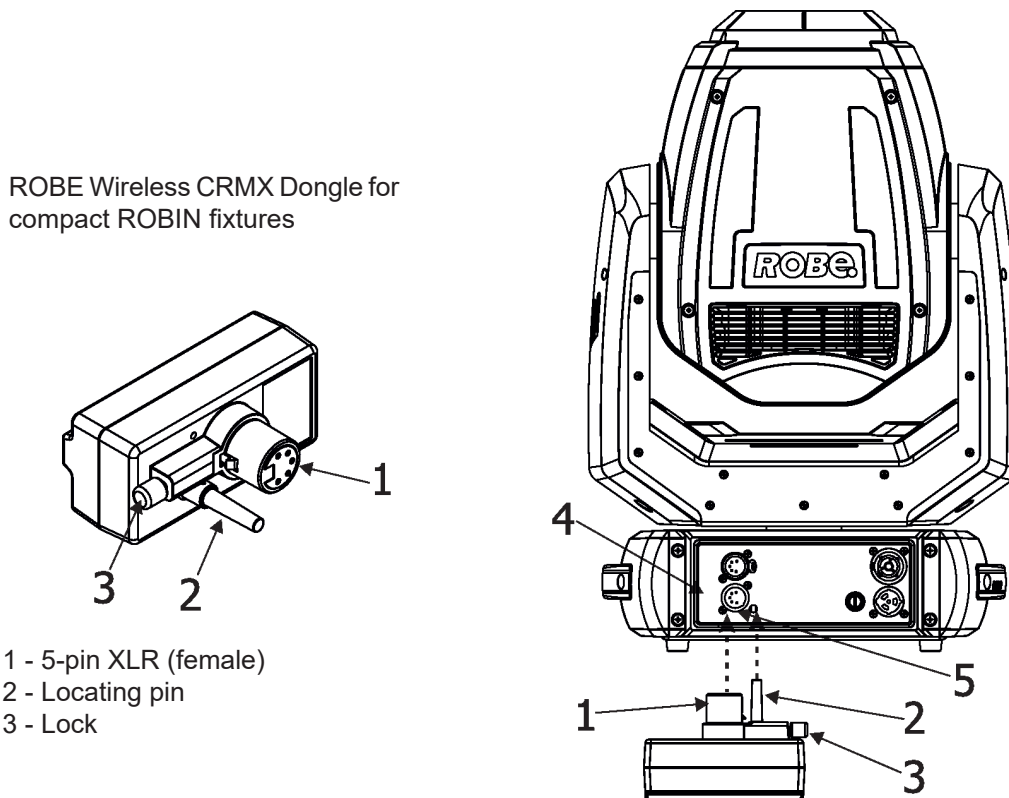
Push in the 5-pin XLR plug (1) into 5-pin XLR sockit (4) and simultaneously locating pin (2) into the hole (5) in the front panel of the fixture. In this way the wireless DMX module is connected with the fixture.
NOTE: when you disconnect the DMX wireless module from fixture, press and hold the lock (5) during getting the wireless module out from the 5-pin XLR sockit (4) .

To link the fixture to a DMX transmitter.
The fixture can be only linked to a transmitter by running the link procedure at DMX transmitter .
After linking , the level of DMX signal (0-100 %) is displayed in the menu item "Stat" (Special -->Vireless -->Stat).

To unlink the fixture from DMX transmitter.
The fixture can be unlinked from receiver via the menu item " Unlink" (Special-->Vireless -->Unlink).

3.5. Wide-angle lens installation

Disconnect the fixture from mains before the wide-angle module installing.

To install the wide-angle lens
1. Unscrew the four screws (2) to remove the front cover (1) of the head.
2. Unscrew the three screws (3) and remove the covering glass. (4).
3. Place the wide-angle lens (5) on the head and screw it by means of the three screws (3).
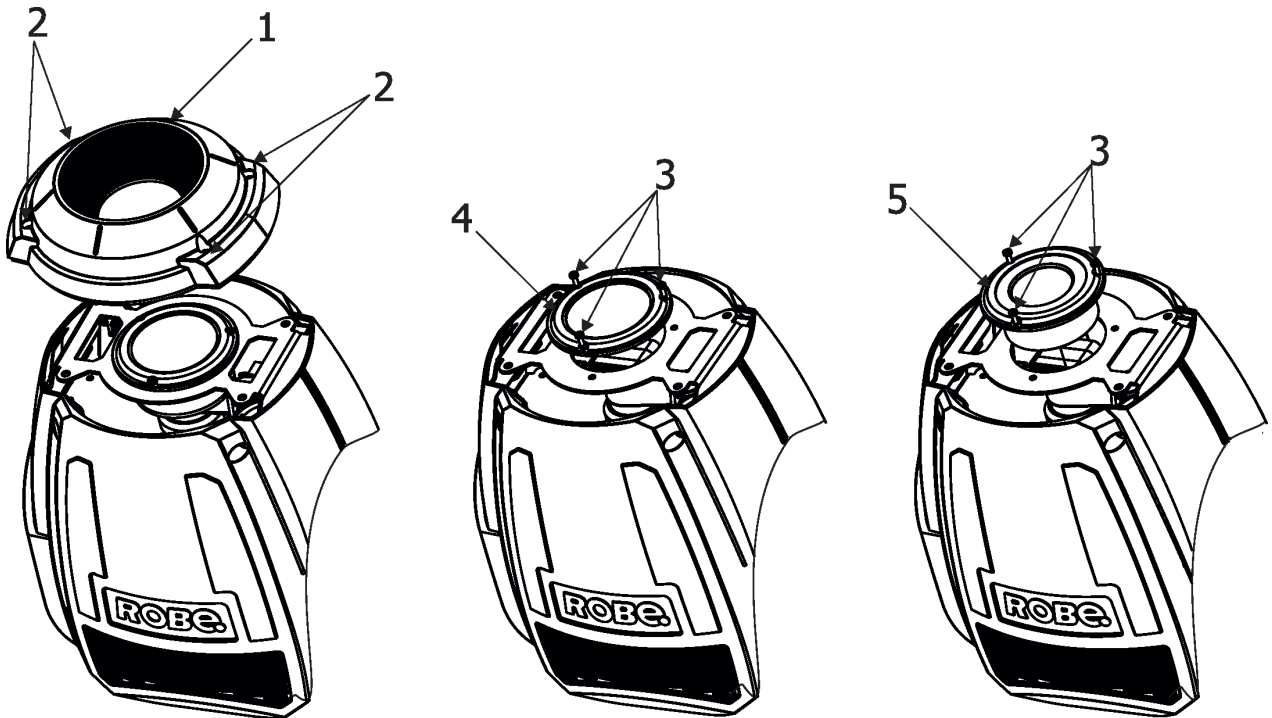
4. Remotely controllable functions

Colour wheel

The colour wheel with 13 dichroic filters rotates in both directions with variable speed which creates wide spectrum of graphic effects.

Rotating gobo wheel

The rotating gobo wheel includes 9 glass gobos rotating in both directions, indexable, replaceable "SLOT&LOCK" system.

Prism

The 8-facet radial prism rotates in both directions at different speeds.

Frost filter

The 5°frost filter provides variable frost for fine frosting.

Focus

Motorized focus allows to focus beam from approx. 2 meters to infinity.
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Dimmer/Shutter unit

Smooth 0 - 100 % dimming is provided by the electronic control unit. This unit is also used for strobe effects with variable speed.

Pan/Tilt

Pan/tilt movement range: 540°/270°
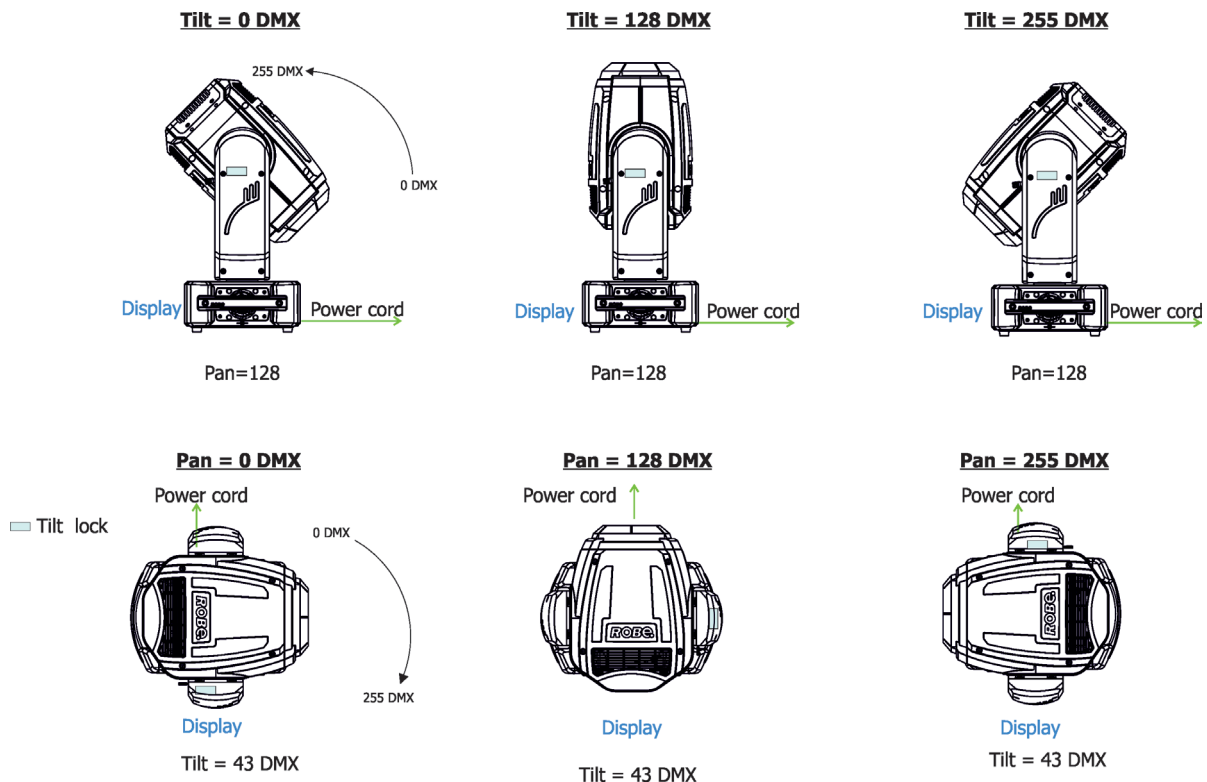
5. Control menu map

Default settings=Bold print

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
DMXA	Set DMXA	001-512				
	DMX Pres	Mode 1				
Info	POn Time	Total				
		Reset				
	Air fil	Aler P				
		R Ti				
	DMX In	Pan	0-255			
		:				
		Dim F	0-255			
	Hea Temp	Current				
		Highest				
		High Res				
	Sw Ver	IC-1				
		IC-2				
		IC-3				
		IC-4				
		IC-5				
Pers						
	Pan Rev	On, **Off**				
	Tilt Rev	On, **Off**				
	P/T Mode	**Speed**				
		Time				
	P/T Feed	**On**, Off				
	Display	Turn				
		On/Off T	**On**, Off			
		Contrast	0-100%			
		Backlight	0-100%			
	LED Freq.	300				
		600				
		1200				
		2400				
	LED FreF					
	BLC DMC	On, **Off**				
	BLC P/T	On, **Off**				
	Mic Sens	0...**10**...19				
	Fans	**Auto**, High				
	Dimmer C	**Square**, Linear, S square				
	Temp Uni	**°C**, °F				
	I Ef Pos	Pan				
		:				
		Dim F				
		Store				
	Defaults					
Manual		Pan	0-255			
		:				
		Dim F	0-255			
Test Prg	Static	Pan	0-255			
		Tilt	0-255			
		Run				

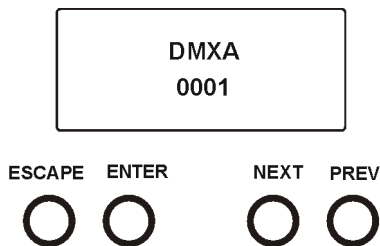| Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
	Dynamic					
Sta Alone	Music T	On, **Off**				
	Auto Run	**Off**				
		Test				
		Prog 1				
		Prog 2				
		Prog 3				
	Pr Play	Test Prg				
		Prog 1				
		Prog 2				
		Prog 3				
	Pr Edit	Prog 1	Step 1	Pan		
		Prog 2	:	:		
		Prog 3	Step 40	F.Tim	0-25.5	
				S.Tim	0-25.5	
				COPY		
				Prg En	1-40	
Reset						
Special	RDM Low					
	RDM Hight					
	Wireless	Stat				
		Unlink				
	Adjust	DMX Val	Pan	0-255		
			:			
			Dim F	0-255		
		Calib	**Cal Mech**	Pan C	0-255	
				Tilt C	0-255	
				Col C	0-255	
				Pri C	0-255	
				Fro C	0-255	
				Gob C	0-255	
				GR 1 C	0-255	
				GR 2 C	0-255	
				GR 3 C	0-255	
				GR 4 C	0-255	
				GR 5 C	0-255	
				GR 6 C	0-255	
				GR 7 C	0-255	
				GR 8 C	0-255	
				GR 9 C	0-255	
				Store		
			Cal Load			
	Sw Upd	On, **Off**				

6. Control menu

The Robin Spote is equipped with 2-row LCD display which allows which allows you to set the fixture´s be-haviour according to your needs, obtain information on its operation, control all range of effects and program it in stand-alone mode.

Control panel:
[ESCAPE] button used to leave the menu without saving changes.
[NEXT] , [PREV] buttons for moving between menu items and for value adjusting.

```
  ┌─────────────────────────┐
  │         DMXA            │
  │         0001            │
  │                         │
  └─────────────────────────┘

   ESCAPE  ENTER      NEXT  PREV

     ◯     ◯          ◯     ◯
```

[ENTER] button used to enter the selected menu (menu item) and to confirm adjusted value.

After switching the fixture on, display shows current DMX address.

6.1 Addressing (DMXA)

<u>Set DMXA</u>- Use this menu item to set the DMX start address of the fixture, which is defined as the first channel from which the Robin Spote will respond to the controller.
If you set, for example, the address 25, the Robin Spote will use channels 25 - 49 for control .
Please, be sure that you do not have any overlapping channels in order to control each Robin Spote correctly and independently from any other fixture on the DMX data link.
If there is no data received at the DMX input, the display will start to flash "0001" with actually stored DMX address.

6.2 Fixture information (Info)

<u>Pon Time</u> - **Power on time**. Select this menu to read the number of fixture operation hours.
<u>Total</u> - The item shows the total number of the operation hours since the Robin Spote has been fabricated.
<u>Reset</u> - The item shows the number of the operation hours that the Robin Spote has been powered on since the counter was last reset.
In order to reset this counter to 0, press and hold both [NEXT] and [PREV] buttons and the [Enter] button at the same time.

<u>Air fil</u> - **Air filter.** Regular cleaning of the air filter in the fixture base is very important for the fixture´s life and performance. Bild-up of dust, dirt and fog fluid residues reduces the fixture´s fan ability.
he two items of this menu help you to keep cleaning period of the air filter.
<u>Alert P</u> - Cleaning schedule for the fixture depends on the operating environment.
It is therefore impossible to specify accurate cleaning interval. This item allows you to change the cleaning interval of the air filter. This "alert" value is 300 hours and it is set as default. Inspect the fixture within its 300 hours of operation to see whether cleaning is necessary. If cleaning is required, clean air filter and change the value in this menu on acceptable level. Min. level of alert period is 10 hours, max. is 300 hours.
<u>R Ti</u> - The item allows you to read the time which remains to cleaning air filter. The time period is set in the menu mentioned above.
To reset this menu item press and hold both [NEXT] and [PREV] buttons and the [Enter] button at the same time.
<u>DMX In</u> - **DMX readout.** The menu is used to read DMX values of each channel received by the fixture.

<u>Hea Temp</u> - **Head temperature**. The menu shows temperature on the LEDs PCB in the fixture head.
<u>Current</u> - A current temperature of the LEDs PCB.
<u>Highest</u> - A maximum temperature of the LEDs PCB since the fixture has been fabricated.
<u>High Res</u> - A maximum temperature of the LEDs PCB since the counter

was last reset.
In order to reset this counter, press and hold both [NEXT] and [PREV] buttons and the [Enter] button at the same time.

Sw Ver - **Software versions**. Select this item to read the software version of the fixture modules.
>>**IC-1** - A pan/Tilt processor.
>>**IC-2** - A display processor.
>>**IC-3** - A LEDs control processor.
>>**IC-4** - A rot. gobo control processor.
>>**IC-5** - A prism/frost control processor.

6.3 Personality (Pers)

DMX Pres - **DMX preset**. Use the menu to select desired channel mode.
>**Mode 1** - 25 control channels

Pan Rev - **Pan reverse**. The item allows to invert pan movement.

Tilt Rev - **Tilt reverse**. The item allows to invert tilt movement.

P/T Mode - **Pan and Tilt movement mode**. Use this menu to set mode of the pan/tilt movement.
>>**Speed** - Both Pan and tilt will move with the same speed as adjusted at the channel "Pan/Tilt speed, Pan/Tilt time".
>>**Time** – The pan and tilt will move with different speeds and they will come at the same time to the end point of their tracks (pan and tilt use their optimal speeds). Time of the pan/tilt movement (25.5 sec. max.) is set by the channel "Pan/Tilt speed, Pan/Tilt time".

P/T Feed - **Pan and Tilt Feedback**. The menu item allows to return the mowing head to the required pan/tilt position after changing the position by an external force if this option is set on.
Note. The Pan/Tilt Feedback should be permanent On, the option Off is not suitable for standard operation and the head of the fixture can be damaged!

Display - **Display adjusting**. This menu allows you to adjust the display behaviour.
>>**Turn** - This function rotates menu 180 degrees from current orientation..
>>**On/Off T** - This function allows you to keep the display permanent on (On/Off T= Off) or turn it off two minutes after last pressing any button on the control panel (On/Off T= On).
>>**Contrast**- Use this function to adjust contrast of the display (0-100%).
>>**Backlight**- Use this function to adjust backlight of the display (0-100%).

Led Freq. - **LEDs frequency**. The function allows you to set the PWM (Pulse Width Modulation) output frequency of LEDs to 300Hz, 600Hz, 1200Hz or 2400Hz.

Led FreF - **LEDs frequency fine adjustment.** The menu item allows you fine adjustment of the LED frequency around selected frequency.

BLC DMC - **Blackout during movement correction**. Set this option on if you wish to close light output during the time when the head goes to its correct position, which has been changed by an external force.

BLC P/T - **Blackout at P/T movement**. The menu item allows to close light output while pan/tilt coordinates are changing.

Mic Sens - **Microfon sensitivity**. Enter the menu if you want to adjust the microphone sensitivity (0-max., 19-min.).

Fans - **Fan mode**. Use the menu to set the fixture fans to max. fan power mode ("**High**") or to auto-control mode ("**Auto**").

Dimmer C. - **Dimmer curve**. Use the menu to select desired dimmer curve: Linear, Square Law or Super square law.

Temp Uni - **Temperature unit**. Use the menu item to change temperature unit from °C to °F.

I Ef Pos - **Init effect positions**. Use the menu to set all effects to the desired positions at which they will stay after switching the fixture on without DMX signal connected.

Defaults - The menu item allows to set all fixture parameters to the default (factory) values.

6.4 Manual Control (Manual)

Use the menu to control all fixture channels by means of the control panel.

6.5 Test program (Test Prg)

Use this menu to to run demo test sequences without an external controller, which will show you some possibilities of using the Robin Spote.

> **Static** - **Static mode**. This mode is suitable for projections on the wall, ceiling or ground without any head movement.
> **Dynamic** - **Dynamic mode.** This mode uses all Robin Spote functions including pan/tilt movement and   therefore is good for a complete introduction of the fixture.

6.6 Stand-alone (St Alone)

Music T - **Music trigger**. Select this function to enable the sound control of the running program via the built-in microphone.

Auto Run - **Presetting playback**. This function allows you to select the program which will be played in the stand-alone mode after switching the fixture on. Selected program will be played continuously in a loop.

> **Off** - The option disables „Auto Run" function.
> **Test** - The option will start built-in test program.
> **Prog 1** - The option will start user-created program 1
> **Prog 2** - The option will start user-created program 2
> **Prog 3** - The option will start user-created program 3

Pr Play - **Playing program**. Select this menu to run a user-created program in a loop.

> **Test Prg** - The option runs built-in test program.
> **Prog 1** - The option runs user-created program 1
> **Prog 2** - The option runs user-created program 2
> **Prog 3** - The option runs user-created program 3

Select the program you wish and press [ENTER]. The selected program starts running. By Pressing [ENTER] again, program pauses running.

Pr Edit - **Editing program**. Select this menu to edit or create the program. The Robin Spote has one built-in program and one user-editable program up to 40 steps. Each program step has a step time - during which effects last in the current step and a fade time- during which effects move to new positions.
To edit program:
1. Press [NEXT] or [PREV] to select the menu "Edit" and press [ENTER].
2. Press [NEXT] or [PREV] to select the desired program step and press [ENTER] button.
3. Press [NEXT] or [PREV] to select the desired item and press [ENTER] button. Now you can edit by [NEXT] or [PREV] buttons the DMX value (0-255) for selected item:

> Prg End.   a total number of the program steps (value 1-40). This value you should be set before starting of programming (e.g. if you want to create program with the 10 steps, set Prg End=10).
>
> PAn   a coarse pan movement
> PAn F   a fine pan movement
> Tilt   a coarse tilt movement
> Tilt F   a fine tilt movement
> P/T Sp   a pan/tilt speed
> Powr   power/special functions
> Led Freq   a LED frequency selection
> Led FreF   a LED frequency selection (fine)
> Max L. in   a max. light intensity indication
> Colour   a colour wheel

Colour F	a colour wheel (fine)
Efe Sped	an effect speed
Col. Time	a colour wheel time
Efe Time	a focus/frost/prism time
Gob Whel	a rotating gobo wheel
Rot Gobo	a gobo rotation
Rot Go F	a fine gobo rotation
Prism	a rotating prism
Prism Ro	a prism rotation
Frost	a frost
Focus	a focus
Focus F	a focus (fine)
Stro	a strobe/shutter
Dimm	a dimmer (coarse)
Dim F	a dimmer function (fine)
F.Tim	a fade time (0-25.5 sec)
S.Tim	a step time (0-25.5 sec)
COPY	copying the current prog. step to the next prog. step

4. Press [ENTER] button to confirm adjusted value .
5. Press [ESCAPE] button, select next prog. step, press [ENTER] button and repeat steps 3 - 5).

6.7 Reset

This option enables the Robin Spote to index all effects and return to their standard positions.

6.8 Special functions (Special)

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

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

Wireless - **Stat** - Use the menu to read wireless DMX status.
            Unlink - use this item to unlink the fixture from a wireless DMX transmitter.

Adjust - **Adjustment**. The menu allows the fine adjustment of effects.
                DMX Val- **DMX values**. Use the menu to set DMX values of fixture´s channels.
                Calib - calibration fixture effects.
                    Cal Mech - Use this menu to calibrate mechanical effects:
                          Pan C - a position of the pan
                          Tilt C - a position of tilt
                          Col C - a position of colour wheel
                          Pri C - a position of prism
                          Fro C - a position of frost
                          Gob C - a carousel of rotating gobos fine movement
                          GR1 C - fine movement of the rotating gobo 1
                          GR2 C - fine movement of the rotating gobo 2
                          GR3 C - fine movement of the rotating gobo 3
                          GR4 C - fine movement of the rotating gobo 4
                          GR5 C - fine movement of the rotating gobo 5
                          GR6 C - fine movement of the rotating gobo 6
                          GR7 C - fine movement of the rotating gobo 7
                          GR8 C - fine movement of the rotating gobo 8
                          GR9 C - fine movement of the rotating gobo 9
                          Store - saving adjusted values

Calibration of the pan/tilt via the control board
1. Disconnect DMX controller from the fixture and enter the "Cal Mech" menu.
2. Use the [PREV] and [NEXT] to find "Pan C" and press [ENTER].

3. Set desired value and save it by pressing [ENTER].
4. Repeat steps 2 and 3 for another effects.
5. After calibrating all effects, find the item "Store" and press [ENTER]. to save all adjusted values.

Note: you can also use DMX controler for fine calibration of effects, calibration protocol is the following:
Effect

Pan	channel 26
Tilt	channel 27
Colourt	channel 28
Prism	channel 29
Frost	channel 30
Rot. gobos wheel	channel 31
Gobo 1 rotation	channel 32
Gobo 2 rotation	channel 33
Gobo 3 rotation	channel 34
Gobo 4 rotation	channel 35
Gobo 5 rotation	channel 36
Gobo 6 rotation	channel 37
Gobo 7 rotation	channel 38
Gobo 8 rotation	channel 39
Gobo 9 rotation	channel 40

Cal Load - the item alows you to load default (factory) calibration.

Sw Upd - **Software update**. The menu item allows you to update software in the fixture.
The following items are required in order to update software:
- PC running Windows or Linux or macOS
- DSU file
- Flash cable RS232/DMX, P/N13050624 (if you want to use a serial port of PC)
- Robe Universal Interface or Robe Universal interface WTX (if you want to use an USB port of PC)
After the software updating the fixture will be set to default values.

To update software in the fixture:
1. DSU file is available from Robe web site at WWW.robe.cz.
   File with extension zip is intended for Windows (used and tested from XP to W10 on 32/64bit systems).
   File with extension tbz is intended for Linux (used and tested on Debian and Ubuntu 32/64bit).
   File with extension dmg is intended for macOS (used and tested on OSX up to Sierra) XQuartz required,
   install it from https://www.xquartz.org/
   Save the download file to a folder on your computer.
   In case that you use windows, extract files in the zip file (e.g. DSU_RobinSpote_21091633.zip)
2. Disconnect the fixture from DMX controller.
3. If you use the flash cable RS232/DMX, connect a serial port of your computer with DMX input of the fixture
    by means of the cable.
   If you use the Robe Universal Interface, connect a USB port of your computer with the Robe Universal Interface
   by means of the USB cable and DMX input of the fixture with the DMX output of the Robe Universal Interface
   via a DMX cable.
4. Switch the fixture to the update mode (Special -> "SW Upd "-> On).
   Note: If you do not want to continue in the software update, you have to switch off and on the fixture
   to escape from the updating mode.
   We recommend to cancel all running programs on your computer before starting the software update.
5. Double-click the software uploader file (e.g. DSU_RobinSpote_21091633.exe) in
   the extracted files. The Software Uploader program will start to run.
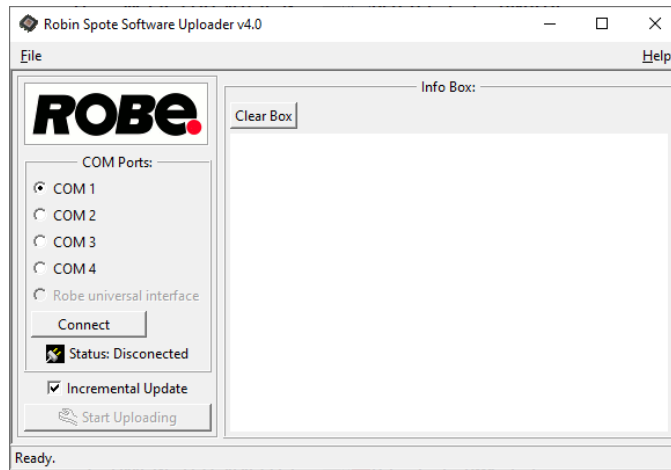
6. Select correct "COM " number if you use a Flash cable RS232/DMX or select "Robe Universal Interface "
   if you use the Robe Universal Interface/Robe Universal Interface WTX and then click on the "Connect" button.
7. If the connection is OK, click the "Start Uploading" button to start software uploading. It will take several
   minutes to perform software update.
   If the option "Incremental Update" is not checked, all processors will be updated (including processors with
   the same software version).
   If you wish to update only processors with new version of software, check the "Incremental Update box".
   Avoid interrupting the process. Update status is being displayed in the "Info Box" window.
   When the update is finished, the line with the text "Fixture is successfully updated" will appear in
   this window.
In case upload process is interrupted (e.g. power loss), the fixture stays in "Updating mode" and you will have
to repeat the software update again.

Another way, how to update software in the fixtures (especially large installation of fixtures) is to use the ROBE
Uploader. It is a software for automatized software update of Robe fixtures. It takes advantage of RDM
 support).
For more information please see https://www.robe.cz/robe-uploader/.

7. RDM

This fixture supports RDM operation. 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.
RDM allows explicit commands to be sent to a device and responses to be received from it.
The list of commands for Robin Spote 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			*
DEVICE_HOURS			*
PARAMETER_DESCRIPTION			*
ROBE_DMX_INPUT		*	*
ROBE_WIRELESS_UNLINK		*	

RDM model ID for the Robin Spote is 0x0112.

8. Error and information messages

Tilt Err

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

Pan Err

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

Zoom Err

The messages will appear after the reset of the zoom module if the zoom lens is not located in the default position.

Prism Err

The messages will appear after the reset of the if the prism is not in the default position.

Rod Err

The messages will appear after the reset of the flower effect if the rod is not in the default position.

Short Err

The message informs you that short circuit has occured on the LED PCB.

Clean Air Fil

This icon signalizes that cleaning period of the air filter has elapsed and you have to clear air filter in the fixture base and reset the menu item "R Ti".

9. Technical Specifications

Electrical

Power supply: electronic auto-ranging
Input voltage range: 100-240V, 50-60Hz
Fuse: T 3.15A/250V ~
Max. power consumption: 140W (power factor 0.88)
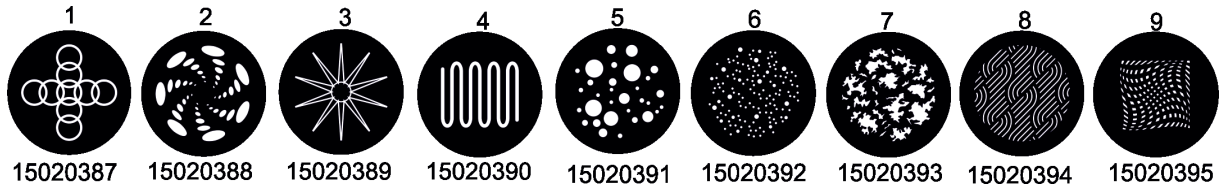Mains input: - max. 16A (US 13A)

Optic

Light source: TE™ 70W White LED Engine (Transferable)
Colour temperature: 6700K
CRI: 70
Typical lumen maintenance: 70% @ 20.000 hours
Light source warranty: 4 years or 20.000 hours

Colour wheel

13 dichroic filters + open

Rotating gobo wheel

9 glass gobos can be indexed and rotated in both directions at different speeds
Gobo wheel continuous rotation
Glass gobos: outside diameter= 15.8$^{+0,15}$ mm, image diameter=12.5 mm, thickness=1.1-1.5 mm, high temperature borofloat or better glass
"Slot&lock" system for easy replacement of gobos

1	2	3	4	5	6	7	8	9
15020387	15020388	15020389	15020390	15020391	15020392	15020393	15020394	15020395

Prism

8-facet rotating prism with continuous rotation in both directions

Frost filter

Frost filter 5°

Beam angle

16° (standard lens)
24° (wide-angle lens)

Focus

Motorized focus allows to focus beam from approx. 2 meters to infinity.

Strobe

Strobe effect with variable speed (0.3 - 20Hz)

Dimmer

Smooth dimmer from 0 - 100 %

Pan/Tilt

Pan movement range 540°
Tilt movement range 270°
16 bit movement resolution
Automatic Pan/Tilt position correction
Remotely controllable speed of pan/tilt

22

Control

2-row LCD display & 4 buttons
Readout fixture usage, receiving DMX values, temperatures, etc
Built-in analyzer for easy fault finding, error messages
Built-in demo sequences
Silent fans cooling,
Stand-alone operation
3 user editable programs, each up to 40 steps
Supported protocols: USITT DMX 512, RDM,
1 DMX mode (25 control channels)

External Wireless DMX/RDM module (option)

Compliance with USITT DMX-512 (1986 & 1990) and 512-A
Full DMX fidelity and frame integrity
Auto sensing of DMX frame rate and frame size
<5ms DMX latency
Operational frequency range of 2402-2480 MHz
Producer: LumenRadio

Connection

DMX data in/out: Locking 5-pin XLR
Power IN: Neutrik powerCON TRUE1
Power OUT: Neutrik powerCON TRUE1

Rigging

Mounting points: 2 pairs of 1/4-turn locks
Mounting horizontally or vertically via two Omega holders

Temperatures

Maximum ambient temperature : 45° C
Maximum housing temperature : 70° C

Distances

Min. distance from flammable surfaces: 0.4 m
Min. distance to lit object: 0.8 m
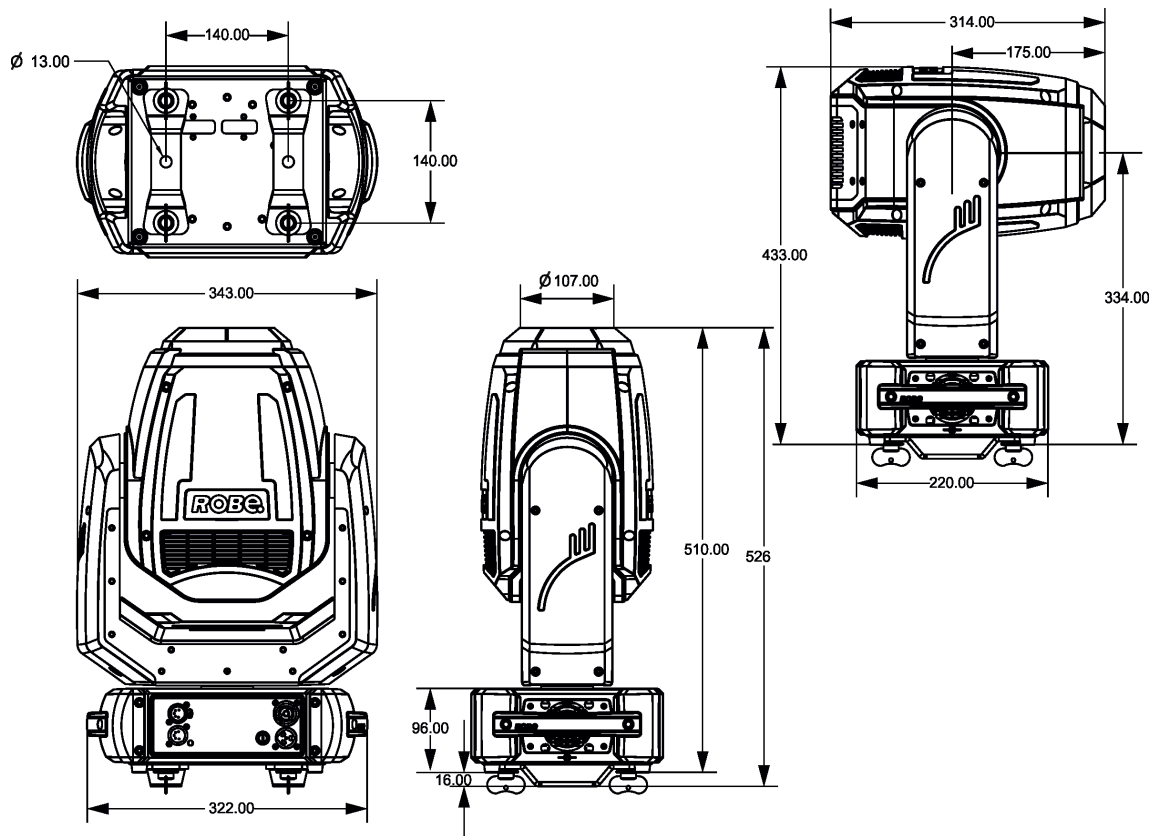
Total heat dissipation
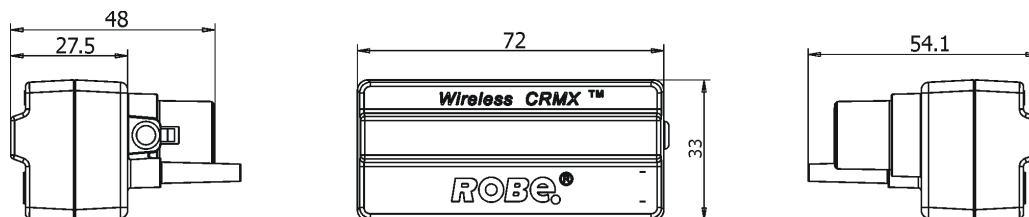
444 BTU/h (calculated)

Protection factor

IP20

Weight

10.5 kg

Dimensions (mm)

ROBE Wireless CRMX Dongle for compact ROBIN fixtures

Accessories

1 x Omega adapter CL-regular 2 pcs in box (P/N 10980033)

Optional accessories

(P/N 1305 2405) Mains Cable PowerCon In TRUE1/Schuko, 2m, indoor
(P/N 1305 2406) Mains Cable PowerCon In TRUE1/US, 2m, indoor
(P/N 1305 2407) Mains Cable PowerCon In TRUE1/open ended, 2m, indoor
(P/N 13052445) Mains Cable PowerCon In TRUE1/CEE 16A, 2m, indoor
(P/N 10980127) ROBE Wireless CRMX Dongle for compact ROBIN fixtures
(P/N 1305 2439) Daisy Chain PowerCon TRUE1 In/Out, EU, 2m, indoor
(P/N 1305 2440) Daisy Chain PowerCon TRUE1 In/Out, US, 2m, indoor
(P/N 13052444) Daisy Chain PowerCon TRUE1 In/Out, EU, 5m, indoor
(P/N 10980033) Omega Adaptor CL-regular 2 pcs
(P/N 17030386) Doughty Trigger Clamp
(P/N 99011963) Safety wire 35 kg
(P/N 10980127) Wireless DMX external module
(P/N 10980553) Wide angle lens for Robin Spote black
(P/N 14080068) TE™ HP LED Engine for Spote

10. Maintenance and cleaning

DANGER !
Disconnect from the mains before starting any maintenance work

Never use alcohol or solvents for cleaning the front lens and covers of the fixture

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!

Front lens may require weekly cleaning as smoke-fluid tends to building up residues, reducing the light output very quickly. The cooling fans should be cleaned according to the situation (at least annually).
The interior of the head and base should be cleaned at least annually using a vacuum-cleaner.

Periodically clean the air filter placed in the fixture base. This air filter is placed under a grille, which is fastened by means of two magnets.
Use a vacuum cleaner, compressed air or you can wash them and put back dry.
After replacing the air filter, set the remaining time counter in the menu "Fixture Information" (Info--->Air fil. --->R.Ti)

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

10.1 Replacing the fuse

Before replacing the fuse, unplug mains lead!

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

10.3 Checking plastic parts of the fixture

The plastic parts of the fixture should be checked for damages and beginning cracks at least every two months. If hint of a crack is found on some plastic part, do not use the fixture until the damaged part will be replaced. Cracks or another damages of the plastic parts can be caused by the fixture transportation or manipulation and also ageing process may influence plastic materials.
This checking is necessary for both fixed installations and preparing fixtures for renting. Any free moving parts inside of the fixture or any cracked plastic not sitting properly in place need to be immediately replaced.
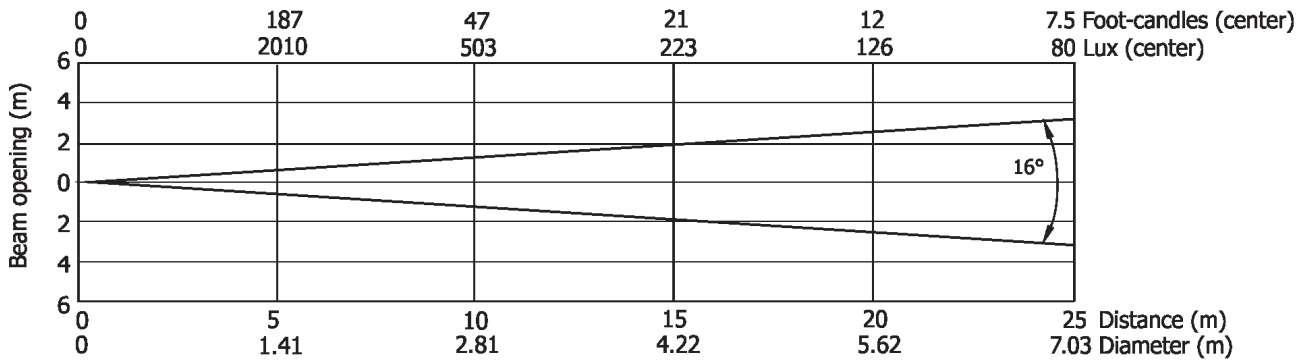
10.4 Disposing of the product

To preserve the environment please dispose or recycle this product at the end of its life according to the local regulations and codes.
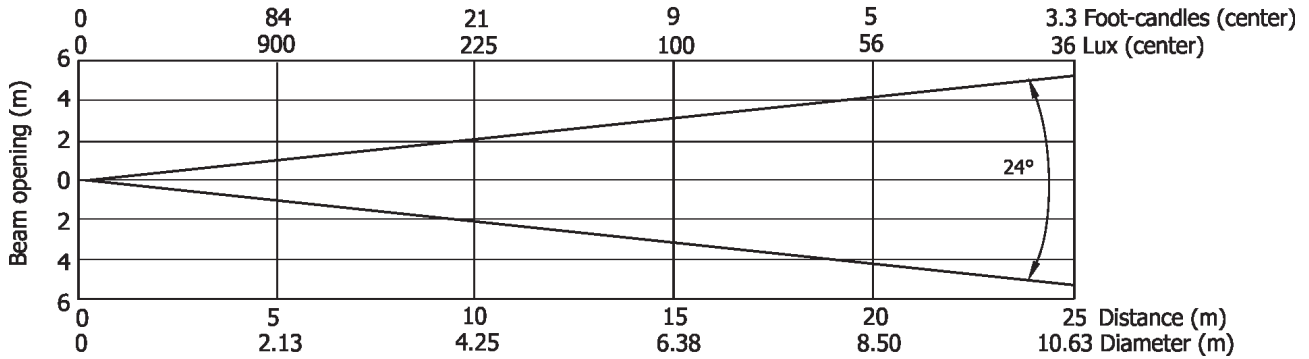
11. Photometric diagrams

Standard lens

Total Output: 2700 lumens

0	187	47	21	12	7.5 Foot-candles (center)
0	2010	503	223	126	80 Lux (center)

16°

0	5	10	15	20	25 Distance (m)
0	1.41	2.81	4.22	5.62	7.03 Diameter (m)

Beam opening (m)

Wide-angle lens

Total Output: 2497 lumens

0	84	21	9	5	3.3 Foot-candles (center)
0	900	225	100	56	36 Lux (center)

24°

0	5	10	15	20	25 Distance (m)
0	2.13	4.25	6.38	8.50	10.63 Diameter (m)

Beam opening (m)

12. ChangeLog

This section summarizes changes in the user manual.

| Version of the manual	Date of issue	Description of changes
1.1	27/10/2020	Photometric diagrams changed
1.2	12/11/2020	DMX chart ver. 1.1
1.3	27/11/2020	Panels of base changed
1.4	04/01/2021	Warning Risk Group 2 added
1.5	17/03/2021	Truss rigging description changed
1.6	08/10/2021	Software update more specified
1.7	16/12/2021	Dimming curve Super Square Law added (DMX chart v.1.2)
1.8	16/03/2022	Photometric changed

13. Appendix

## 13.1Changing the LED light source

The Robin Spote allows you to change the LED light source and this way keep a high performance of the fixture.

To change the LED light source.
1. Disconnect the fixture from mains and allow it to cool about 30 minutes.
2. Remove the top cover of the fixture and lock the head in a horizontal position in which you will have access to the control PCB of the LED light source.
3. Cut off the cable binder (1) and disconnect cables (2) from the fan connector (3) and the LED connector (4) on the control PCB.
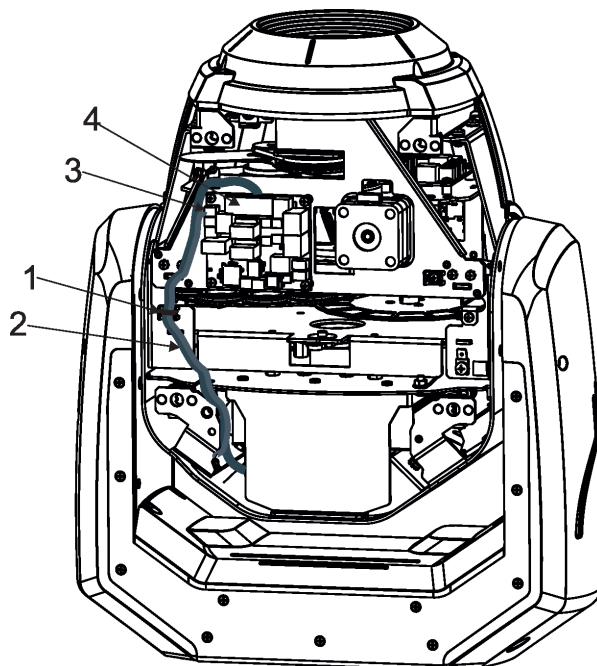
4. Remove the rear cover (5) of the head (10) by unscrewing the four screws M4x10 (6) and disconnect the earthing wire (9).
5. Unscrew the four screws M4x12 (7) and carefully remove the LED module (8) from the head (10).
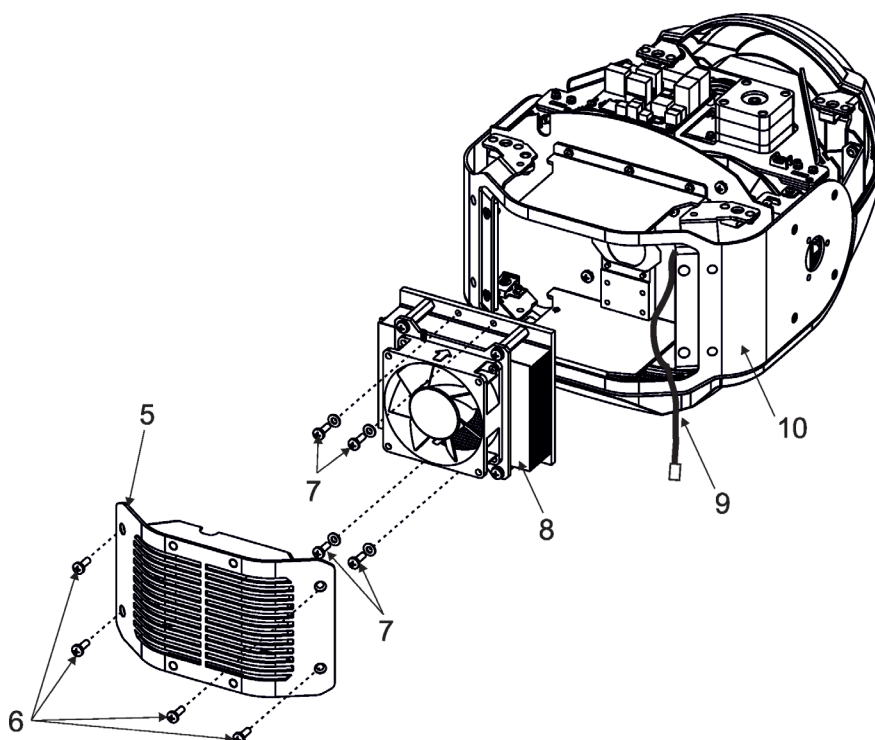
The LED module consists of the LED PCB (A), the heatsink (B) and the Fan (C)
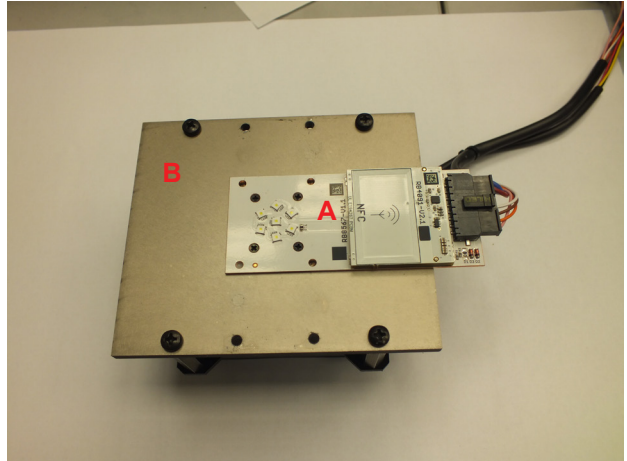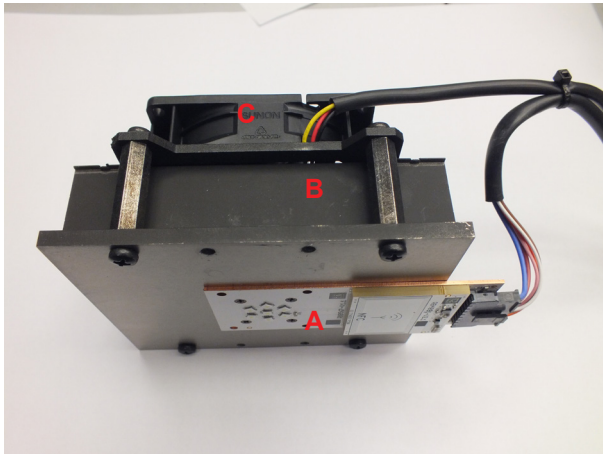

8. Screw the new LED module to the head by means of the four screws M4x12 (7).
9. Connect cables (2) to the control PCB. Fasten the cables to the holder by means of the cable binder (1).
10. Connect the earthing wire (9) to the rear cover (5) and screw this cover to the head by means of the four screws M4x10 (6).
11. Screw the top cover back on the head.

13.2. Obtaining information about the LED light source by mobile phone

You can read information about the LED light source by means of the mobile application ROBE COM. The LED light source has to be outside of the fixture.

Download and install the application ROBE COM from Google Play (for Android 5.0 and higher) or App Store (for iOS 12.0 and higher) to your mobile phone. Your mobile phone has to support NFC (Near-Field Communication).

After installing the ROBE COM, run the application by touching the icon [robe] .
The following screen will appear:
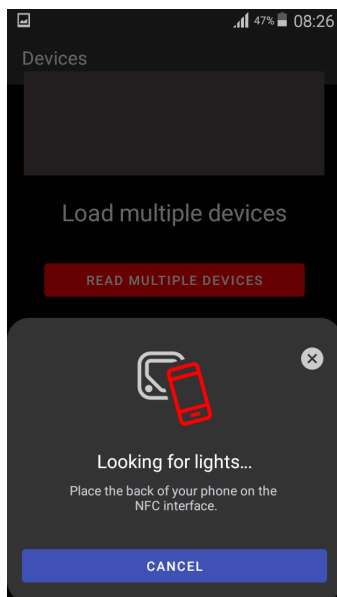
Hold the mobile phone close to the point of the LED PCB which is marked with the symbol NFC.
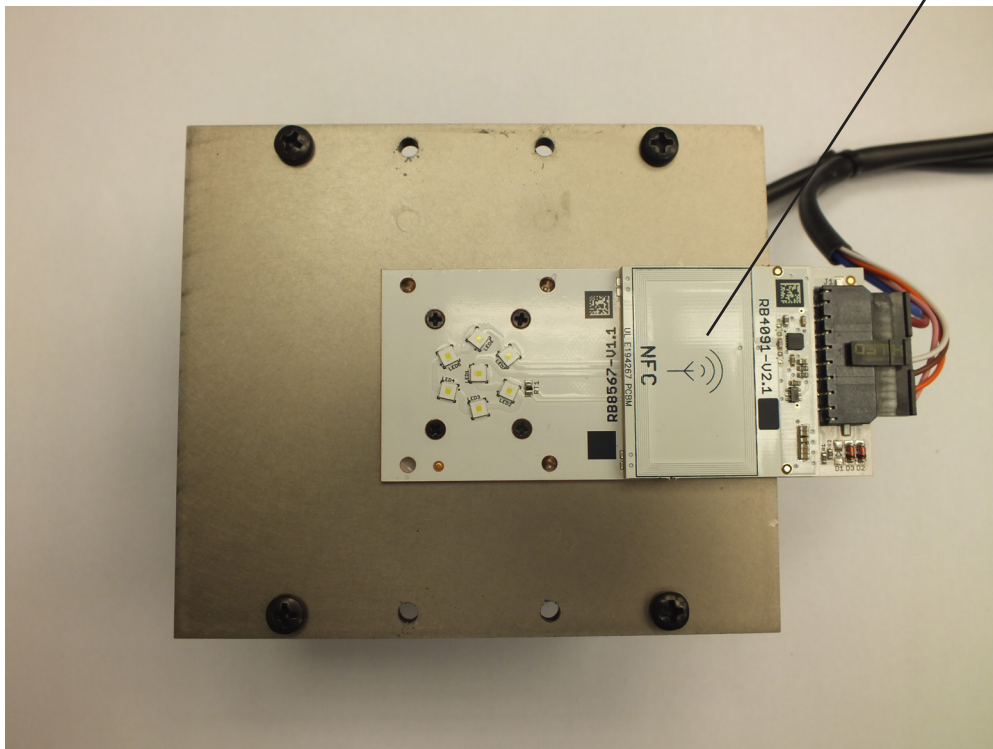
If NFC connection is OK, the following screens will appear.
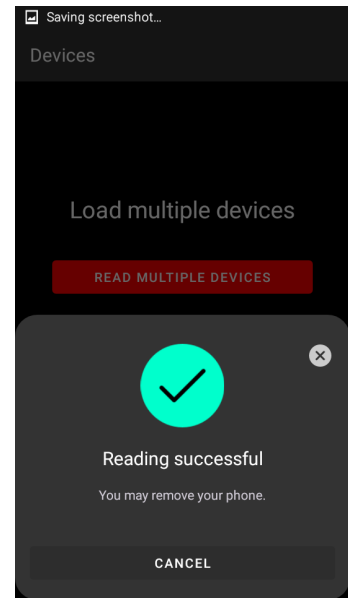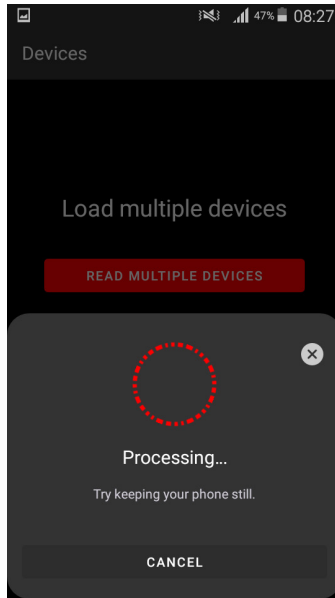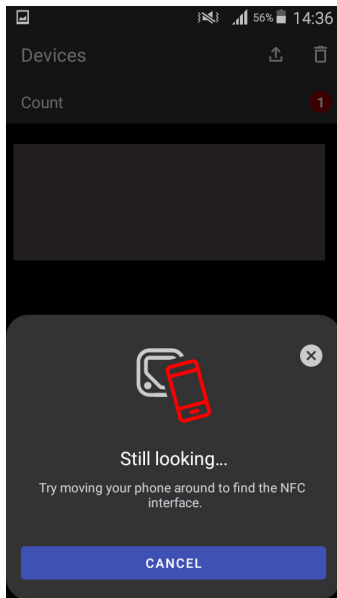
When the following screen will appear, touch the button CANCEL.

Touch the found LED module ("Robin Spote LED module") and than touch "LED engine" to read information about found LED module.

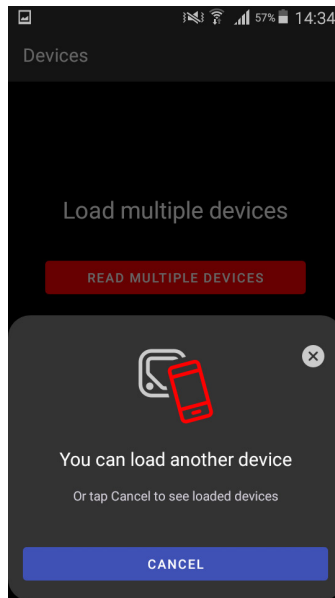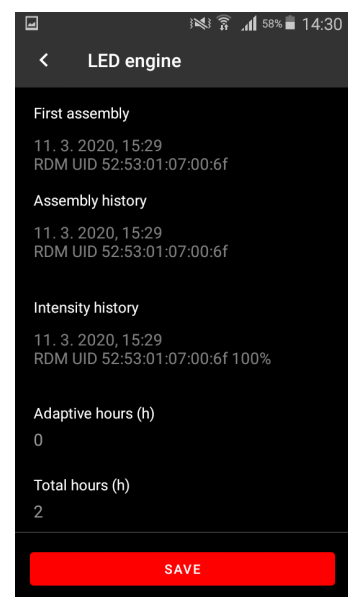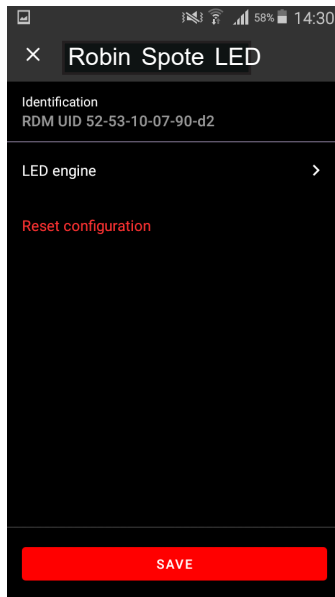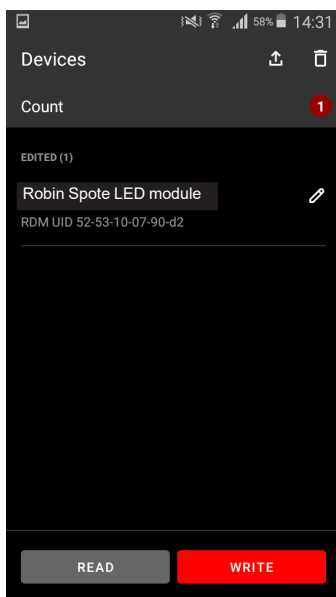| Channel	DMX Value	Function	Type of control
Robin Spote - DMX protocol		
Version 1.2		
1		**Pan**	
	0 - 255	Pan movement by 540° (128=default)	proportional
2		**Pan Fine**	
	0 - 255	Fine control of pan movement (0=default)	proportional
3		**Tilt**	
	0 - 255	Tilt movement by 270° (128=default)	proportional
4		**Tilt fine**	
	0 - 255	Fine control of tilt movement (0=default)	proportional
5		**Pan/Tilt speed , Pan/Tilt time**	
	0	Standard mode (0=default)	step
	1	Max. Speed Mode	step
		Pan/Tilt speed mode	
	2 - 255	Speed from max. to min.	proportional
		Pan/Tilt time mode	
	2 - 255	Time from 0.2 s to 25.5 sec.	proportional
6		**Power/Special functions**	
	0 - 19	Reserved (0=default)	
		To activate following functions, stop in DMX value for at least 3 s and shutter must be closed at least 3 sec. („Shutter,Strobe" channel 23 must be at range: 0-31 DMX). Corresponding menu items are temporarily overriden.	
	20-24	Display On	step
	25-29	Display Off	step
	30-44	Reserved	
	45-49	Dimmer curve: Super square law	step
	50-54	Dimmer curve: Square law	step
	55-59	Dimmer curve: Linear	step
	60-64	Fans mode: Auto	step
	65-69	Fans mode: High	step
	70-89	Reserved	
	90 - 94	Pan/Tilt speed mode	step
	95-99	Pan/Tilt time mode	step
	100 - 104	Blackout while pan/tilt moving	step
	105 -109	Disabled blackout while pan/tilt moving	step
	11 0-114	Blackout while colour wheel moving	step
	115 -119	Disabled blackout while colour wheel moving	step
	120-139	Reserved	step
		To activate following functions, stop in DMX value for at least 3 seconds.	
	140 - 149	Pan/Tilt reset	step
	150 - 159	Colour wheel reset	step
	160 - 169	Gobo wheel reset	step
	170 - 179	Reserved	
	180 - 189	Focus/frost/prism reset	step
	190 - 199	Reserved	
	200 - 209	Total reset	step
	210-224	Reserved	

Channel	DMX Value	Function	Type of control
		The following RoboSpot related commands are only applicable when the RoboSpot is connected:	
	225 - 229	RoboSpot enabled	step
	230 - 234	RoboSpot disabled - except handle faders and pan/tilt	step
	235 - 239	RoboSpot fully disabled	step
	240 - 255	Reserved	
7		**LED frequency selection**	
		Factory display menu setting: 600Hz	
		Select PWM output frequency of LEDs. Selected PWM frequency can be fine adjusted in 127 steps up/down around selected PWM frequency on the channel below. Corresponding menu item is temporarily overridden.	
	0-4	PWM frequency from Display menu (fixture utilizes PWM frequency set in the display menu item Frequency Setup).	step
	5-9	300 Hz	step
	10-14	600 Hz (10=default)	step
	15-19	1200 Hz	step
	20-24	2400 Hz	step
	25-255	Reserved (fixture utilizes PWM frequency set in the display menu item Frequency Setup).	
8		**LED frequency fine adjusting**	
		Factory display menu setting: 600Hz	
		Select desired PWM output frequency of LEDs on the channel above.	
	0-1	Selected LED Frequency	step
	2	LED Frequency (step -126)	step
	3	LED Frequency (step -125)	step
	4	LED Frequency (step -124)	step
	:		
	125	LED Frequency (step -3)	step
	126	LED Frequency (step -2)	step
	127	LED Frequency (step -1)	step
	128	Selected LED Frequency (128=default)	step
	129	LED Frequency (step +1)	step
	130	LED Frequency (step +2)	step
	131	LED Frequency (step +3)	step
	:		
	252	LED Frequency (step +124)	step
	253	LED Frequency (step +125)	step
	254	LED Frequency (step +126)	step
	255	Selected LED Frequency	step
9		**Max. light intensity indication and setting**	
	0-10	No function (0=default)	
	11-20	Indication of drop of max. light intensity	step
		A drop of max. light intensity of the fixture (compared to its original intensity) is indicated by a corresponding colour output: *0-5%, (WHITE /new LED module/)* *6-10% (RED)* *11-15% (GREEN)* *16-20% (BLUE)*	

Channel	DMX Value	Function	Type of control
		21-25% (CYAN)	
		26-30% (MAGENTA)	
		31-35% (YELLOW)	
		36-40% (ORANGE)	
		Pan/tilt is set at 128 DMX (50%), Dimmer is open at 255 DMX (100%).	
		To set a drop of max. light intensity (compared to original light intensity), stay at DMX value for at least 3 sec. and shutter must be closed at least 3 sec. (Channel „Shutter/ Strobe" 23 must be at range: 0-31 DMX). Corresponding menu items are permanently overwritten.	
	21-30	Set drop by 6-10% (RED)	step
	31-40	Set drop by 11-15% (GREEN)	step
	41-50	Drop by 16-20% (BLUE)	step
	51-60	Set drop by 21-25% (CYAN)	step
	61-70	Set drop by 26-30% (MAGENTA)	step
	71-80	Set drop by 31-35% (YELLOW)	step
	81-90	Set drop by 36-40% (ORANGE)	step
	91-100	Original intensity (WHITE)	step
	101-255	Reserved	
10		**Colour wheel**	
		Continual positioning	
	0	Open/white	proportional
	9	Deep Red	proportional
	18	Deep Blue	proportional
	27	Yellow	proportional
	37	Light green	proportional
	46	Magenta	proportional
	55	Lavender	proportional
	64	Pink	proportional
	73	Dark green	proportional
	82	CTO 2700K	proportional
	91	Blue	proportional
	101	Orange	proportional
	110	CTO 3200K	proportional
	119	UV (Kongo blue)	proportional
	128-129	White	step
		Positioning	
	130-134	Deep Red	step
	135-138	Deep Blue	step
	139-143	Yellow	step
	144-147	Light green	step
	148-152	Magenta	step
	153-157	Lavender	step
	158-161	Pink	step
	162-166	Dark green	step
	167-171	CTO 2700K	step
	172-176	Blue	step
	177-180	Orange	step

DMX protocol

Channel	DMX Value	Function	Type of control
	181-185	CTO 3200K	step
	186-189	UV (Kongo blue)	step
	190 - 215	Forwards rainbow effect from fast to slow	proportional
	216 - 217	No rotation	step
	218 - 243	Backwards rainbow effect from slow to fast	proportional
	244 - 249	Random colour selection by audio control	step
		(Set microphone sensitivity in menu „Personality")	
	250 - 255	Auto random colour selection from fast to slow	proportional
11		**Colour wheel - fine positioning**	
	0 - 255	Fine positioning (0=default)	proportional
12		**Effect speed**	
	0-255	Speed of rot.gobo selection from max. to min. (0=default)	proportional
13		**Colour wheel time**	
	0	Function is off (0=default)	step
	1 - 255	Time of Colour wheel movement (0.1sec-->25.5sec.)	proportional
14		**Focus/Frost/Prism time**	
	0	Function is off (0=default)	step
	1 - 255	Time of focus and frost movement (0.1 sec-->25.5 sec.)	proportional
	1-50	Time of prism movement (0.1 sec-->5 sec.)	proportional
15		**Rotating gobo wheel**	
		Index - set indexing on channel 16	
	0-4	Open/Hole (default)	step
	5-7	Gobo 1	step
	8-10	Gobo 2	step
	11-13	Gobo 3	step
	14-16	Gobo 4	step
	17-19	Gobo 5	step
	20-22	Gobo 6	step
	23-25	Gobo 7	step
	26-28	Gobo 8	step
	29-31	Gobo 9	step
		Rotation - set rotation on channel 16	
	32-34	Gobo 1	step
	35-37	Gobo 2	step
	38-40	Gobo 3	step
	41-43	Gobo 4	step
	44-46	Gobo 5	step
	47-49	Gobo 6	step
	50-52	Gobo 7	step
	53-55	Gobo 8	step
	56-59	Gobo 9	step
		Shaking gobos from slow to fast	
		Index - set indexing on channel 16	
	60-67	Gobo 1	proportional
	68-75	Gobo 2	proportional
	76-83	Gobo 3	proportional
	84-91	Gobo 4	proportional
	92-99	Gobo 5	proportional

Channel	DMX Value	Function	Type of control
	100-107	Gobo 6	proportional
	108-115	Gobo 7	proportional
	116-123	Gobo 8	proportional
	124-129	Gobo 9	proportional
		Shaking gobos from slow to fast	
		Rotation - set rotation on channel 16	
	130-137	Gobo 1	proportional
	138-145	Gobo 2	proportional
	146-153	Gobo 3	proportional
	154-161	Gobo 4	proportional
	162-169	Gobo 5	proportional
	170-177	Gobo 6	proportional
	178-185	Gobo 7	proportional
	186-193	Gobo 8	proportional
	194-199	Gobo 9	proportional
	200 - 201	Open/hole	step
	202 - 222	Forwards gobo wheel rotation from fast to slow	proportional
	223 - 243	Backwards gobo wheel rotation from slow to fast	proportional
	244 - 249	Random gobo selection by audio control	step
		(Set microphone sensitivity in menu „Personality")	
	250 - 255	Auto random gobo selection from fast to slow	proportional
16		**Rot. Gobo indexing/rotation**	
		Gobo indexing - set position on channel 17	
	0 - 255	Gobo indexing	proportional
		Gobo rotation - set position on channel 17	
	0	No rotation	step
	1 - 127	Forwards gobo rotation from fast to slow	proportional
	128	No rotation (128=default)	step
	129 - 255	Backwards gobo rotation from slow to fast	proportional
17		**Rot. Gobo indexing/rotation - fine**	
	0-255	Fine indexing/rotation (0=default)	proportional
18		**Prism**	
		Note: prism and frost cannot be be inserted into light beam at the same time	
	0 - 19	Open position/hole (0=default)	step
	20 - 127	8-facet rotating prism	step
		Prism/gobo macros	
		The following channels are blocked: Rotating gobo wheel, Rot. Gobo indexing and rotation, Rot. Gobo wheel fine rotation	
	128 - 135	Macro 1	step
	136 - 143	Macro 2	step
	144 - 151	Macro 3	step
	152 - 159	Macro 4	step
	160 - 167	Macro 5	step
	168 - 175	Macro 6	step
	176 - 183	Macro 7	step
	184 - 191	Macro 8	step
	192 - 199	Macro 9	step

Channel	DMX Value	Function	Type of control
	200 - 207	Macro 10	step
	208 - 215	Macro 11	step
	216 - 223	Macro 12	step
	224 - 231	Macro 13	step
	232 - 239	Macro 14	step
	240 - 247	Macro 15	step
	248 - 255	Macro 16	step
19		**Prism rotation**	
	0	No rotation	step
	1 - 127	Forwards rotation from fast to slow	proportional
	128	No rotation (128= default)	step
	129-255	Backwards rotation from slow to fast	proportional
20		**Frost**	
		Note: prism and frost cannot be be inserted into light beam at the same time	
	0	Open (0=default)	step
	1 - 179	Frost from 0% to 100%	proportional
	180 - 189	100% frost	step
	190 - 211	Pulse closing from slow to fast	proportional
	212 - 233	Pulse opening from fast to slow	proportional
	234 - 255	Ramping from fast to slow	proportional
21		**Focus**	
	0 - 255	Continuous adjustment from far to near (128=default)	proportional
22		**Focus - fine**	
	0- 255	Fine focusing (0=default)	proportional
23		**Shutter/ strobe**	
	0 - 31	Shutter closed	step
	32 - 63	Shutter open (32=default)	step
	64 - 95	Strobe-effect from slow to fast	proportional
	96 - 127	Shutter open	step
	128 - 143	Opening pulse in sequences from slow to fast	proportional
	144 - 159	Closing pulse in sequences from fast to slow	proportional
	160 - 191	Shutter open	proportional
	192 - 223	Random strobe-effect from slow to fast	proportional
	224 - 255	Shutter open	step
24		**Dimmer intensity**	
	0 - 255	Dimmer intensity from 0% to 100% (0=default)	proportional
25		**Dimmer intensity - fine**	
	0 - 255	Fine dimming (0=default)	proportional