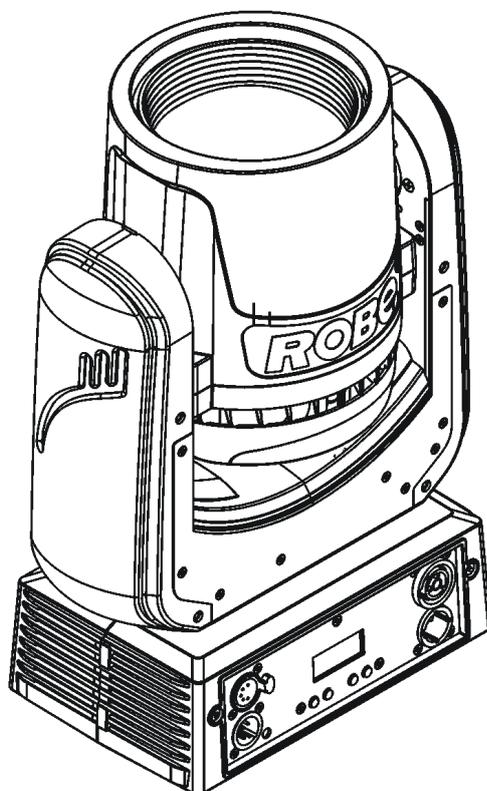

ROBE

ROBIN[®] Spikie



ROBE
Innovative
Technology

USER MANUAL

Version 1.1

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

Robin Spikie

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

Save it for future reference.

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.

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 Spikie was designed for indoor use and it is intended for professional application only. It is not for household use.

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.

Do not allow anything to rest on the power cord. Do not locate this fixture where the cord may be damaged by persons walking on it.

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.

**Warning! Risk Group 2 LED product according to EN 62471.
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 concentrate the beam.
The light source contains blue LEDs.**

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.

The 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 cable 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.

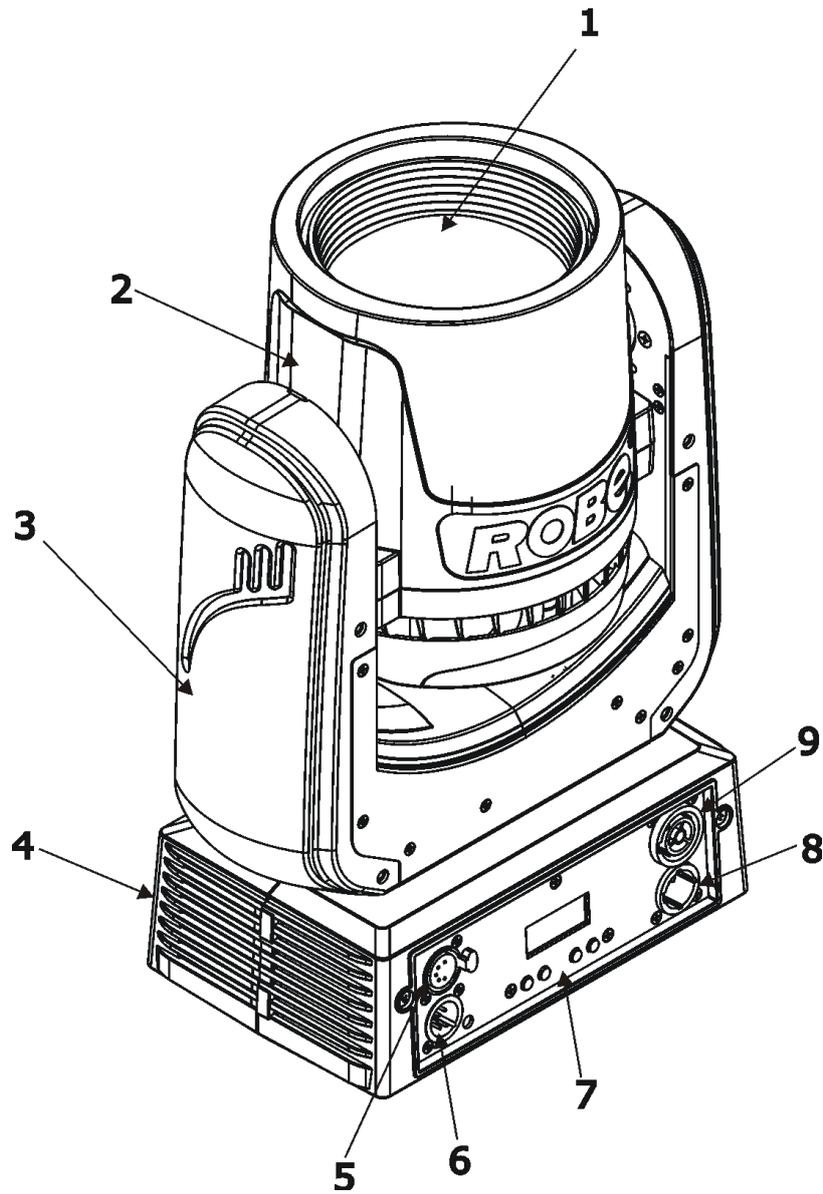
Please consider that unauthorized modifications on the fixture are forbidden due to safety reasons!

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.

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

Be carefull when the fixture performs fast pan and (or) tilt movement. There is a danger of injury of your hands (especially fingers).

2. Fixture exterior view



- 1 - Front lens
- 2 - Moving head
- 3 - Yoke
- 4 - Base
- 5 - DMX Out
- 6 - DMX In
- 7 - Control board
- 8 - Mains In
- 9 - Mains Out

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

If you install a cord cap 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.

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 Spikie 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:

EU version (CE)

29 fixtures at power supply= 230V

26 fixtures at power supply= 208V

15 fixtures at power supply= 120V

US version (cETLus)

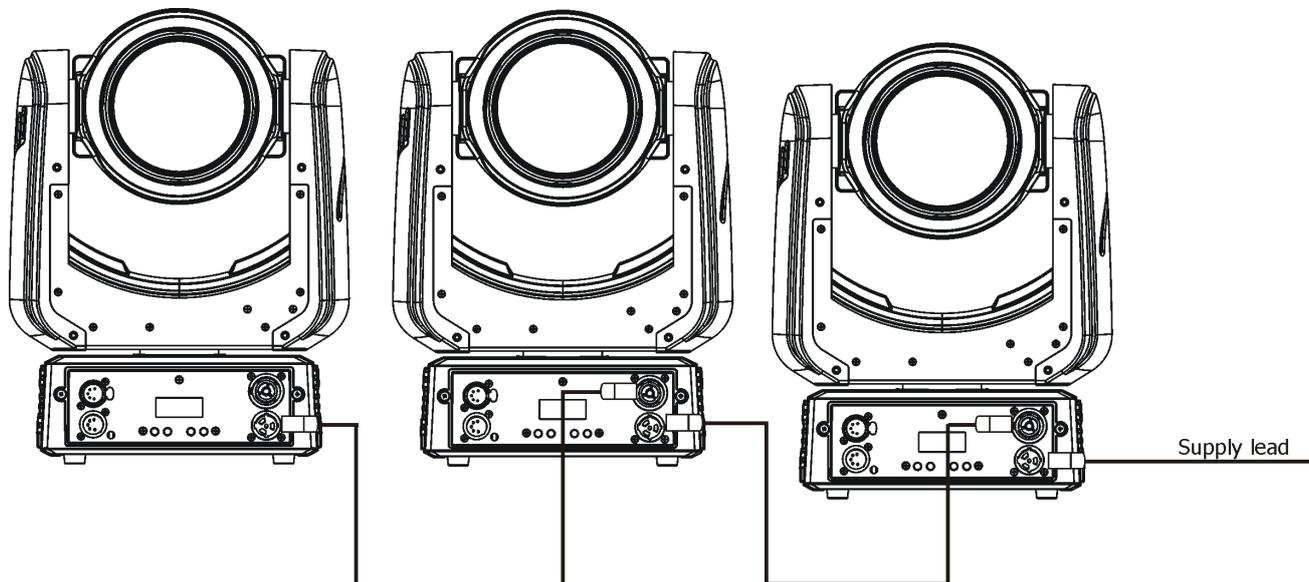
17 fixtures at power supply= 230V

15 fixtures at power supply= 208V

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.

Wiring and connection work must be carried out by qualified staff!



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.

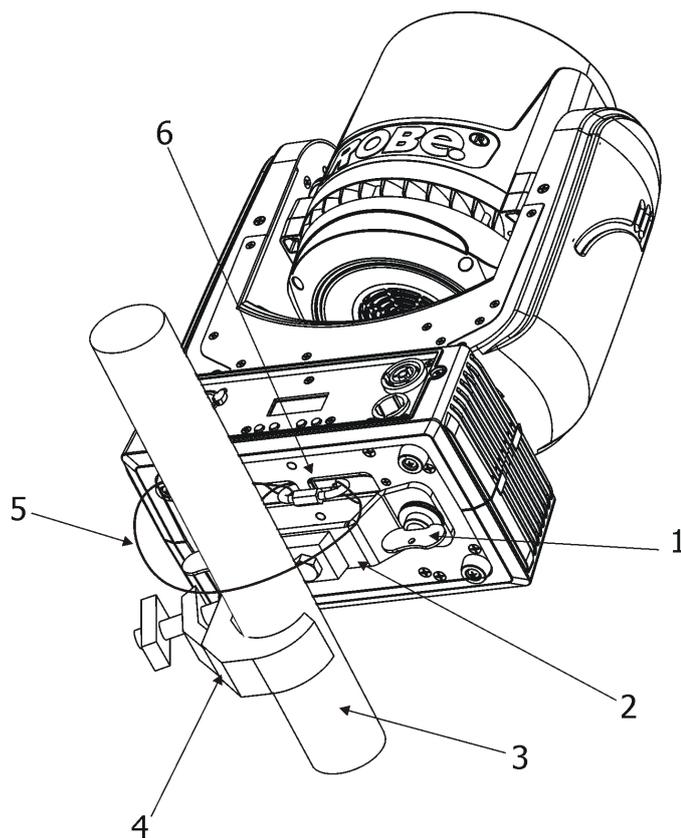
When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in a distance of min. 0.4 m.

CAUTION!
Use an appropriate clamp 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 on a truss without altering its operation characteristics.

Due to very fast pan/tilt movement of the fixture, the fixture has to be always anchored to the ground (base) otherwise there is a danger of knocking the fixture over.

For securing the fixture to the truss install a safety wire that can hold at least 10 times the weight of the fixture. Use only the safety wire with a snap hook with screw lock gate. Fasten the snap hook in the attachment point and the safety wire around the truss as shown on the picture below.



- 1-Quick-lock fastener
- 2-Omega holder
- 3-Truss
- 4-Clamp
- 5-Safety wire with a snap hook
with screw lock gate
- 6-Attachment point

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

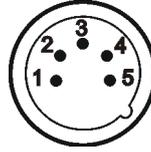
XLR socket:



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

DMX input

XLR plug:



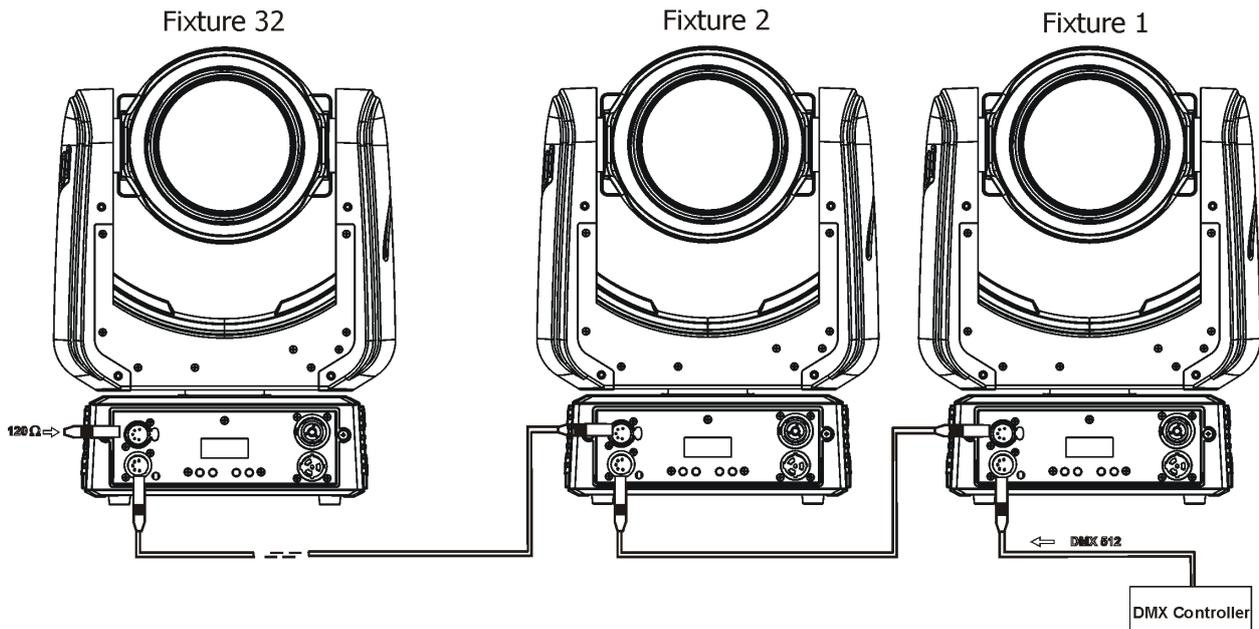
- 1 - Shield
- 2 - Signal (-)
- 3 - Signal (+)
- 4 - Used for wireless DMX
- 5 - Used for wireless DMX

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.

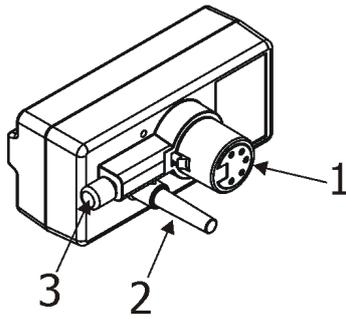
Caution: At the last fixture, the DMX-cable has to be terminated with a terminator. Solder a 120 Ω resistor between Signal (-) and Signal (+) into a 5-pin XLR-plug and plug it in the DMX-output of the last fixture.



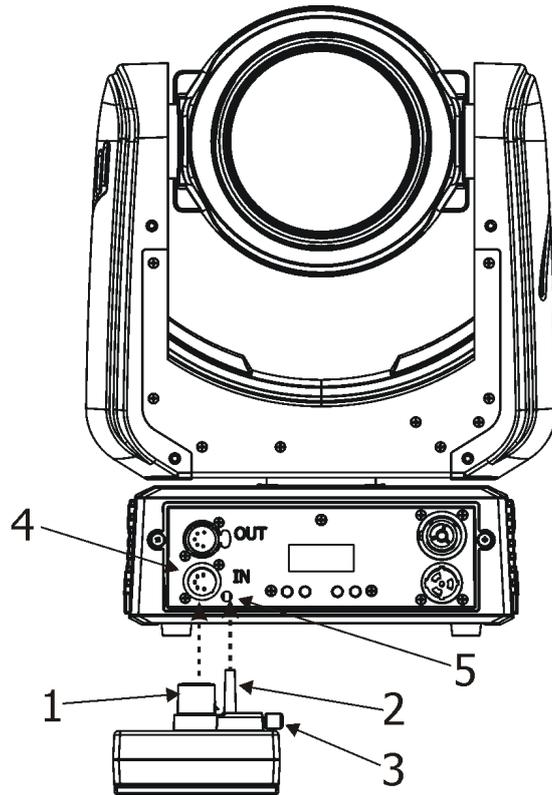
3.4. Wireless DMX operation

The external Robe Wireless CRMX-LB100 module 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-LB100



- 1 - 5-pin XLR (female)
- 2 - Locating pin
- 3 - Lock



Push in the 5-pin XLR plug (1) into 5-pin XLR socket (4) and simultaneously locating pin (2) into hole (5) in 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 lock (5) during getting the wireless module out.

To link the fixture with DMX transmitter.

The fixture can be only linked with the 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 -->Wireless -->Stat).

To unlink the fixture from DMX transmitter.

The fixture can be unlinked from receiver via the menu item " Unlink" (Special-->Wireless -->Unlink).

4. Remotely controllable functions

Virtual Colour wheel

The virtual colour contains 66 preset LEE swatches, rainbow effect in both directions with variable speed.

CTC (colour temperature correction)

The CTC channel allows to change colour temperature of white in range of 2700K-8000K.

Colour Mix control

The Colour Mix control channel defines relation between colour channels (R,G,B,W) and virtual colour wheel:

DMX value	Function
0-9	Virtual colour wheel has priority
10-19	Maximum mode (highest values have priority)
20-29	Minimum mode (lowest values have priority)
30-39	Multiply mode (multiply Virtual colour wheel and Colour channels)
40-49	Addition mode (Virtual colour wheel + Colour channels)
50-59	Subtraction mode (Virtual colour wheel – Colour channels)
60-69	Inverted Subtraction mode (Virtual colour wheel – Colour channels)
70-128	reserved
129	Virtual colour wheel has priority
130-254	Cross fade between Virtual colour wheel and colour channels
255	Colour channels have priority

E.g. If you wish to control individual RGBW channels, set the Colour Mix Control channel to 255 DMX, if you need colours from Virtual colour wheel, set the Colour Mix Control channel to 0 DMX.

Prism

The 3-facet prism rotates in both directions at different speeds.

Flower Effect

The Flower effect rotates in both directions with variable speed. 10 Flower effect macros are created.

Zoom

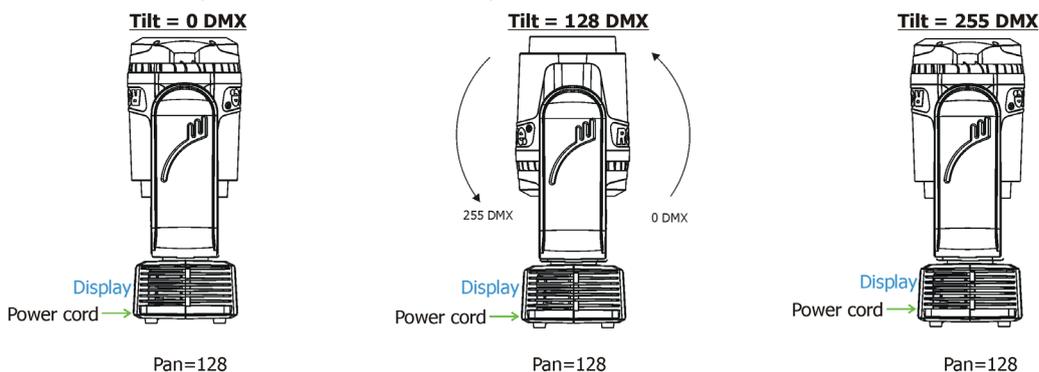
The motorized zoom module allows beam range of 4°- 27°.

Dimmer/Shutter unit

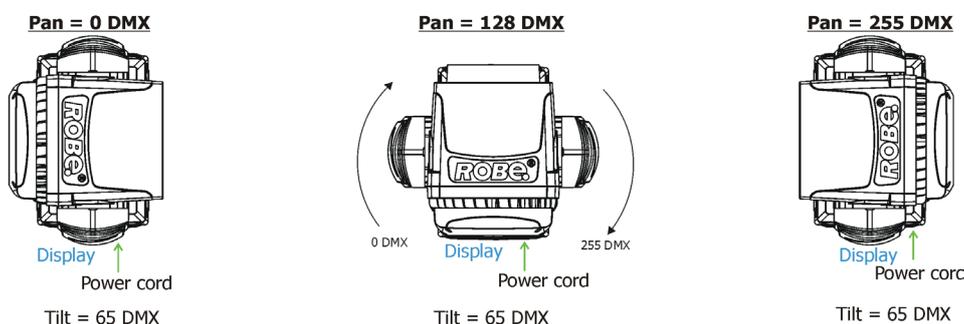
Smooth 0 - 100 % dimming is provided by the electronic control unit. This unit is also used for strobe effects with variable speed.

Pan/Tilt

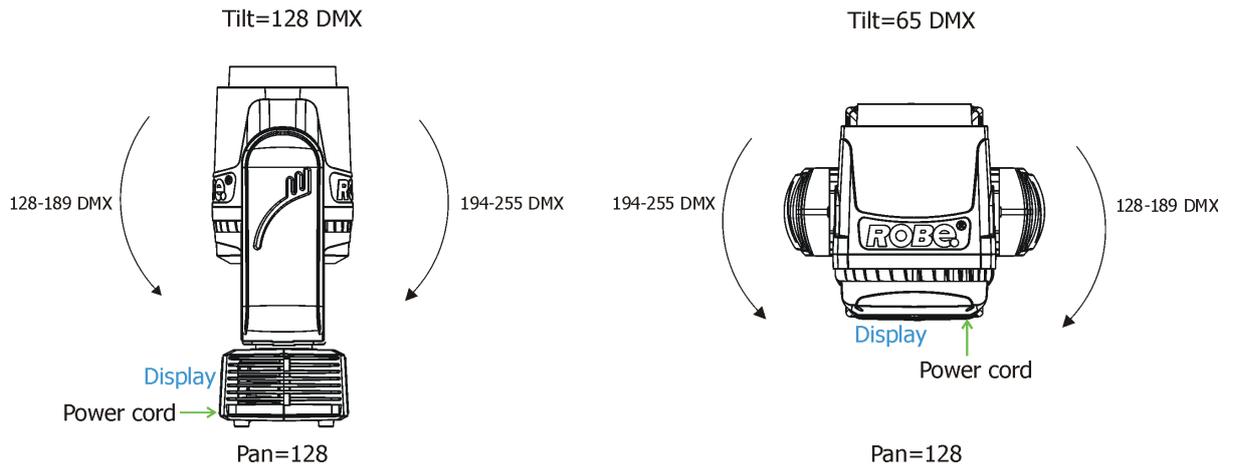
Pan/tilt movement range: 540°/360°, continual pan/tilt rotation.



Tilt movement range: 360° Pan movement range: 540°



Continual rotation



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	001-255				
	DMX Pres	Mode 1				
		Mode 2				
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				
	Bas. Temp	Current				
		Highest				
		High Res				
	Sw Ver	IC-1				
		IC-2				
		IC-3				
		IC-4				
Pers	DMX Pres	Mode 1				
		Mode 2				
	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%			
	BLC DMC	On, Off				
	BLC P/T	On, Off				
	C Mix M	RGBW, CMY				
	White P	On, Off				
	Mic Sens	0... 10 ...19				
	Fans	Auto, High				
	Temp Uni	° C , °F				
	I Ef Pos	Pan				
		:				
	Dim F					
	Store					
Defaults						
Manual		Pan	0-255			
		:				
		Dim F	0-255			

Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Test Prg	Static	Pan	0-255			
		Tilt	0-255			
		Run				
	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	
				Pr1 C	0-255	
				Pr2 C	0-255	
				Fl1 C	0-255	
				Fl2 C	0-255	
				Zoom	0-255	
				Store		
			Cal Col	Red C	0-255	
				Gren C	0-255	
				Blue C	0-255	
				Whit C	0-255	
				Store		
			Cal Load			
	Sw Upd	On, Off				

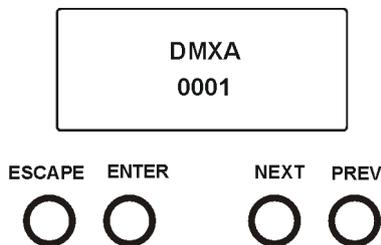
6. Control menu

The Robin Spikie is equipped with 2-row LCD display which allows to set the fixture's behaviour according to your needs, obtain information on its operation, test its various parts and lastly program it, if it has to be used in a 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.



[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)

Set DMXA- Use this menu item to set the DMX start address of the fixture, which is defined as the first channel from which the Robin Spikie will respond to the controller.

If you set, for example, the address 36, the Robin Spikie will use channels 36 - 70 for control (if Mode 1 is selected).

Please, be sure that you do not have any overlapping channels in order to control each Robin Spikie 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.

DMX Pres - **DMX preset**. Use the menu to select desired channel mode.

Mode 1 - 27 control channels

Mode 2 - 21 control channels

6.2 Fixture information (Info)

Pon Time - **Power on time**. Select this menu to read the number of fixture operation hours.

Total - The item shows the total number of the operation hours since the Robin Spikie has been fabricated.

Reset - The item shows the number of the operation hours that the Robin Spikie 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.

Air fil - **Air filter**. Regular cleaning of the air filter in the fixture base is very important for the fixture's life and performance. Build-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.

Alert P - 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.

R Ti - 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.

DMX In - DMX readout. The menu is used to read DMX values of each channel received by the fixture.

Hea Temp - Head temperature. The menu shows temperature in the fixture's head.

Current - A current temperature of the head.

Highest - A maximum temperature of the the head since the fixture has been fabricated.

High Res - A maximum temperature of the the head 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 - LED control processor.

IC-4 - LED control processor.

6.3 Personality (Pers)

DMX Pres - DMX preset. Use the menu to select desired channel mode.

Mode 1 - 27 control channels

Mode 2 - 21 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 moving 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%).

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.

C Mix M - Colour mixing mode. This item allows switching into RGBW or CMY mode. In the CMY mode, the white(8bit)/white (16) bit channels are not active.

White P - If the function is on, the CTC channel allows to set desired white in range of 8000K-2700K (0 DMX=8000K, 255 DMX=2700K). Necessary condition is , that RGBW channels have to be full or set at the same DMX values, e.g. 255.

If this function is off, the range of whites is not uniform and may be different for each fixture.

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**").

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 run demo test sequences without an external controller, which will show you some possibilities of using Robin Spikie.

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 Spikie 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 Spikie 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
Pan C	a pan continual movement

Tilt C	a tilt continual movement
P/T Sp	a pan/tilt speed
Powr	power/special functions
Virt C	a virtual colour wheel
Red	a red colour coarse
Red F	a red colour fine
Green	a green colour coarse
Green F	a green colour fine
Blue	a blue colour coarse
Blue F	a blue colour fine
White	a white colour
White F	a white colour fine
CTC	a colour temperature correction
C Mix C	a colour mix control
Prism	a rotating prism
Flow E	a flower effect
Flow ER	a flower effect rotation
Zoom	a zoom function
Zoom F	a zoom function fine
Stro	a strobe/shutter function
Dimm	a dimmer function 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 Spikie 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 fixture from wireless DMX.

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 - position of the pan
- Tilt C - position of tilt
- Pr1 C - position of prism
- Pr2 C - prism rotation
- Fl1 C - flower effect frost movement
- Fl2 C - flower effect rotation fine
- Zoom - Zoom position fine

Cal Col - Use this menu to calibrate white colour 5600K.

Calibration of the pan/tilt via the control board

1. Disconnect DMX controller from the fixture and enter the "Cal P/T" menu.
2. Use the [PREV] and [NEXT] to find "Pan" and press [ENTER].
3. Set desired value and save it by pressing [ENTER].

4. Repeat steps 2 and 3 for Tilt.
5. After calibrating both effects, find item "Store" and press [ENTER]. to save all adjusted values and reset the fixture.

Calibration of the white 5600K via the control board

1. Disconnect DMX controller from the fixture , set the shutter, dimmer and RGBW channels at 255 DMX and set the CTC channel at DMX=64 (white 5600K). Aim the light beam on the lux meter (e.g. Minolta CL-200A Chroma meter) which is placed cca 5m from the fixture.
2. Set the menu items Colour Calibration Mode and White Point 8000K to On (Pers-> C Cal M -> On, Pers-> White P -> On).
3. Enter the menu "Cal Col".
4. Use the [NEXT] or [PREV] button to select desired colour and press the [ENTER] button.
5. Use the [NEXT] or [PREV] button to set desired value of the colour.
5. By means of the "Red C, Gre C, Blu C and Whi C" items adjust the 5600K colour temperature as exactly as possible ($\Delta u'v' = 0$).
7. After adjusting 5600K colour temperature, select item Store and press the [ENTER] button to save all adjusted values .

Note: you can also use DMX controller for both calibrations stated above, calibration protocol is the following:

Effect	Mode 1	Mode 2
Pan-fine adjustment	channel 27	channel 22
Tilt - fine adjustment	channel 28	channel 23
Prism - position fine	channel 29	channel 24
Prism - rotation fine	channel 30	channel 25
Flower effect -reserved	channel 31	channel 26
Flower effect rotation	channel 32	channel 27
Zoom	channel 33	channel 28
Red - red saturation	channel 34	channel 29
Green- green saturation	channel 35	channel 30
Blue - blue saturation	channel 36	channel 31
White - white saturation	channel 37	channel 32

Cal Load - Loads default (factory) calibration.

Sw Upd - Software update. The menu item allows you to update software in the fixture via either serial or USB port of PC.

The following are required in order to update software:

- PC running Windows /XP/7/10 or Linux
- Update software
- Flash cable RS232/DMX No.13050624 (if you want to use a serial port of PC)
- Robe Universal Interface (if you want to use an USB port of PC)

Note 1: Software update should execute a qualified person. If you lack qualification, do not attempt the update yourself and ask for help your ROBE distributor.

Note 2: DMX address, , programs 1-3 and all items in the menu "Pers" will be set to their default (factory) values after software update.

To update software in the fixture:

I. Installation of the update software.

1. Update Software available from the ROBE web site at WWW.robe.cz.
2. Make a new directory (e.g. Robe_Uploader) on your hard disk and download the software to it.
3. Unpack the program to the directory.

II. Fixture software updating.

1. Determine which of your ports is available on your PC and connect it:
 - with the DMX input of the fixture if you using the flash cable RS232/DMX
 - with the USB input of the Robe Universal Interface if you using the USB cable. Connect DMX output of the Robe Universal Interface with the fixture via a standard DMX cable.
 Turn both the computer and the fixture on. Make sure the lamp is switched off (only if the fixture has a lamp).

2. Switch the fixture to the updating mode (Special -> "SW Upd "-> On).

Note: If you do not want to continue in software update, you have to switch off and on the fixture to escape from this menu.

We recommend to cancel all running programs on PC before starting the software update.

3. Run the Software Uploader. Select desired COM and then click on the Connect button. (Select COM if the serial port is used or Robe Universal Interface if the USB port is used). If the connection is OK, click on the "Start Uploading button" to start 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 later versions of processors, 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 "The fixture is successfully updated" will appear in this window and the fixture will reset with the new software.

Note: In the case of an interruption of the upload process (e.g. power cut), the fixture keeps the updating mode and you have to repeat the software update again.

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 Spikie 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		*	

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 occurred 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 2A/250V ~
Max. power consumption: 100W@230V (I=0.48A, power factor=0.88)

Mains input: CE - max. 16A
ETL - max. 10A
Mains output: CE - max. 15A
ETL - max. 9A

Optic

Light source: 60W RGB LED multichip)
Min LED life expectancy: 20.000 hours (at full load of LEDs)
RGBW/CMY colour mixing +CTO

Virtual colour wheel

66 preset LEE swatches
CTC in range of 2700K-8000K
Halogen lamp effect at whites 2700K and 3200K
Rainbow effect with in both directions with variable speed

Zoom

Linear motorized zoom: 4°-27° (flower effect off)

Strobe

Strobe effect with variable speed (0.3 - 20Hz)

Dimmer

Smooth dimmer from 0 - 100 %

Prism

3-facet rotating prism with continuous rotation in both directions

Effect

Flower effect rotating in both directions
10 Flower effect macros

Pan/Tilt

Pan movement range 540° (switchable to 360°)
Tilt movement range 360°
Continual pan/tilt rotation
16 bit movement resolution
Automatic Pan/Tilt position correction
Remotely controllable speed of pan/tilt
Movement control: tracking and vector

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,
2 DMX modes (27, 21 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 NAC3MPX
Power OUT: Neutrik NAC3FPX

Rigging

Mounting points: pair of 1/4-turn locks
Mounting horizontally or vertically via one Omega holder

Temperatures

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

Distances

Min. distance from flammable surfaces: 0.4 m
Min. distance to lighted object: 0.8 m

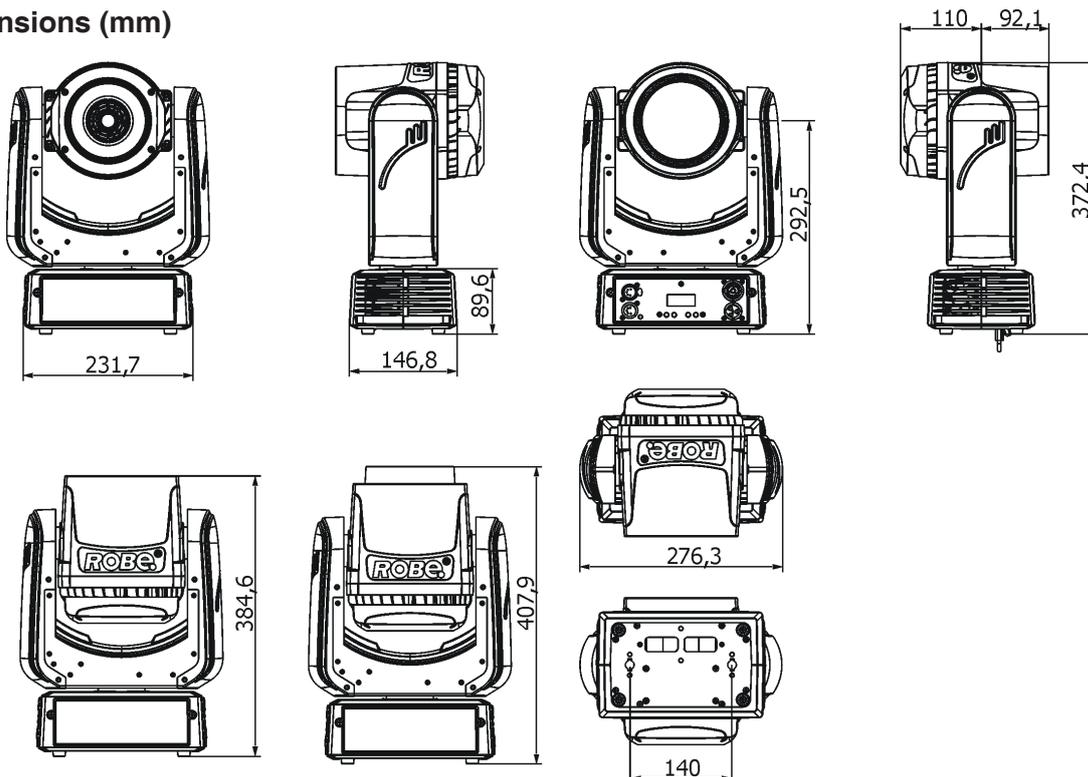
Total heat dissipation

340 BTU/h (calculated)

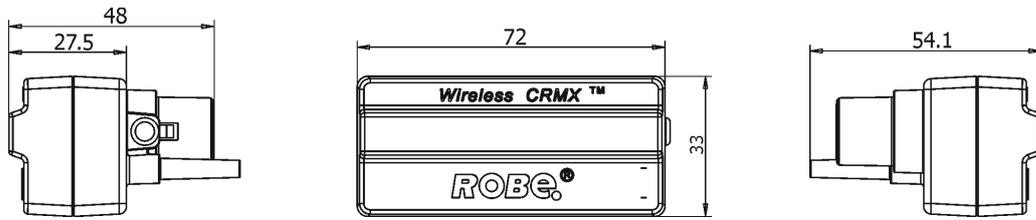
Weight (net)

7.5 kg

Dimensions (mm)



Wireless DMX module: Robe Wireless CRMX-LB100



Accessories

Omega holder (P/N 99010420).....1 piece

Optional accessories

- (P/N 10980127) Robe Wireless CRMX-LB100
- (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 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 13052443) Mains Cable PowerCon In TRUE1/Hubb 2321, 2m US, indoor
- (P/N 13052445) Mains Cable PowerCon In TRUE1/CEE 16A, 2m, indoor

10. Maintenance and cleaning

DANGER !
Disconnect from the mains before starting any maintenance work

A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

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. Use a vacuum cleaner, compressed air or you can wash it and put back dry.

The guide rods of zoom module should be lubricated monthly (or according to the current situation of movement of zoom module -). Use a suitable lubricant (e.g. oil Aronix /100ml/, P/N 90031114).

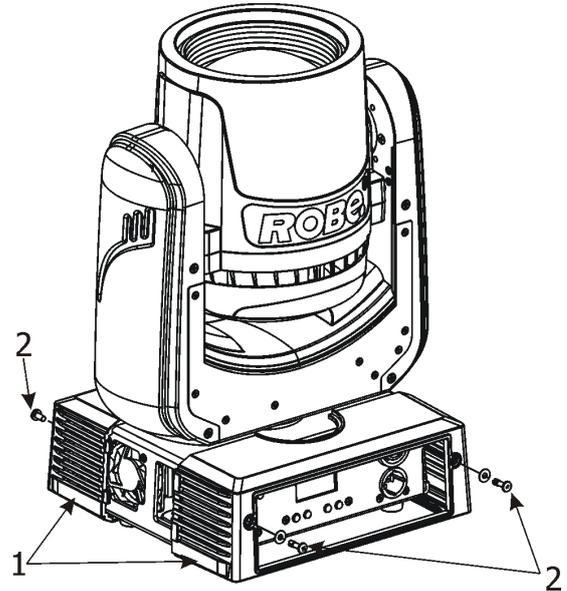
More complicated maintenance and service operations are only to be carried out by authorized distributors.

10.1 Replacing the fuse

Before replacing the fuse, unplug mains lead!

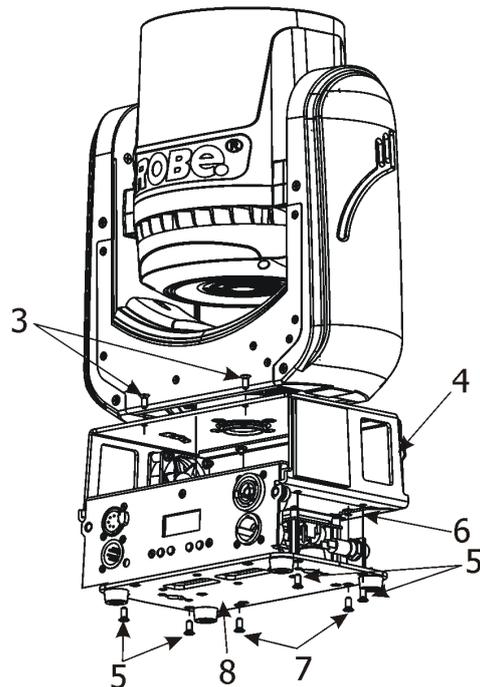
1. Replace the fuse by a fuse of the same type and rating only.

2. Remove the plastic covers of the base (1) by unscrewing two fastening screws (2) on each cover.



3. Unscrew four screws (3) on the top chassis (4). Lay down the fixture and unscrew four screws (5) on the bottom plate (8) to push out inside module of the base.

4. Unscrew two screws (7) on the bottom plate to remove rear panel of the fixture (6).

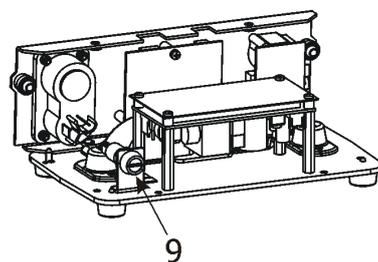


5. Now you have access to the fuse holder (9) in the inside module of the base.

6. Remove the old fuse from the fuse holder.

7. Install the new fuse into the fuse holder.

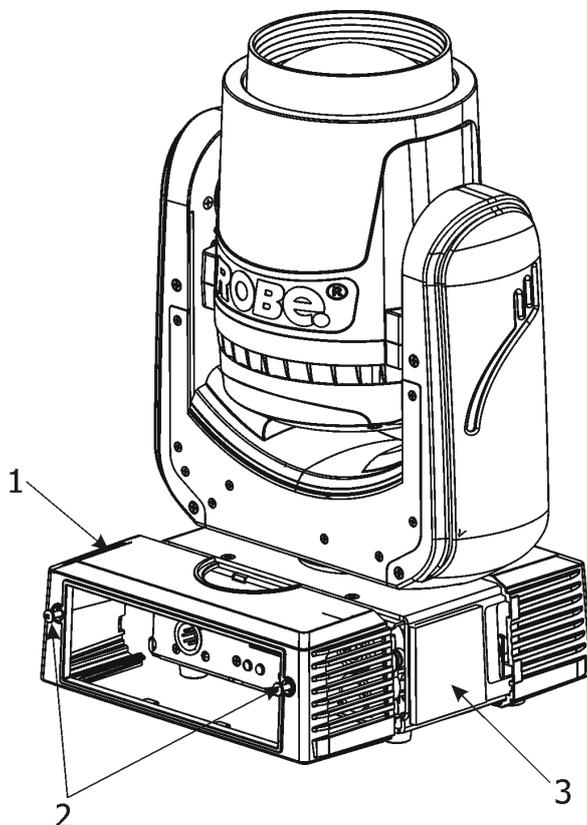
8. Assemble the base of the fixture.



10.2 Cleaning of the air filter

Before replacing the fuse, unplug mains lead!

1. Remove the front plastic cover of the base (1) by unscrewing two fastening screws (2) on the cover.



2. Clean the air filter (3) placed in the base. Use a vacuum cleaner, compressed air or you can wash it and put back dry.

After replacing the air filter, reset the elapsed time counter in the menu Information.
(Info--->Air fil---> R Ti.).

3. Place the base cover back and fasten it by means of two screws (2).

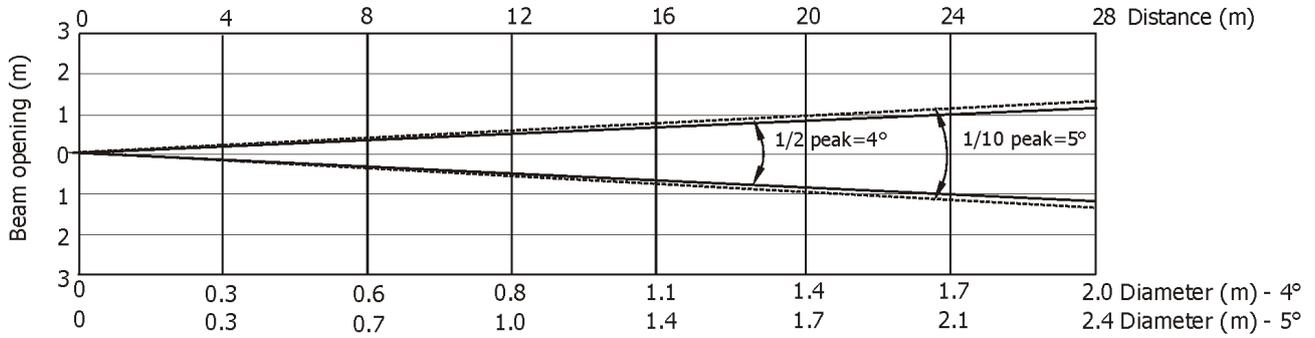
10.3 Disposing of the product

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

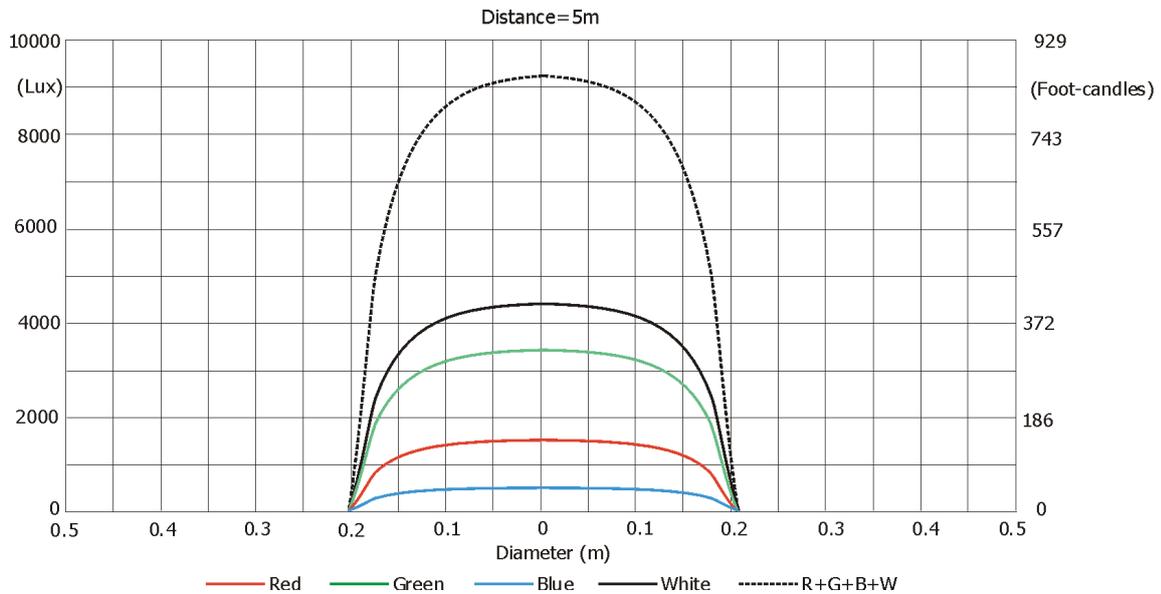
Min. Zoom
Flower Effect Off

Total Output: 600 lumens



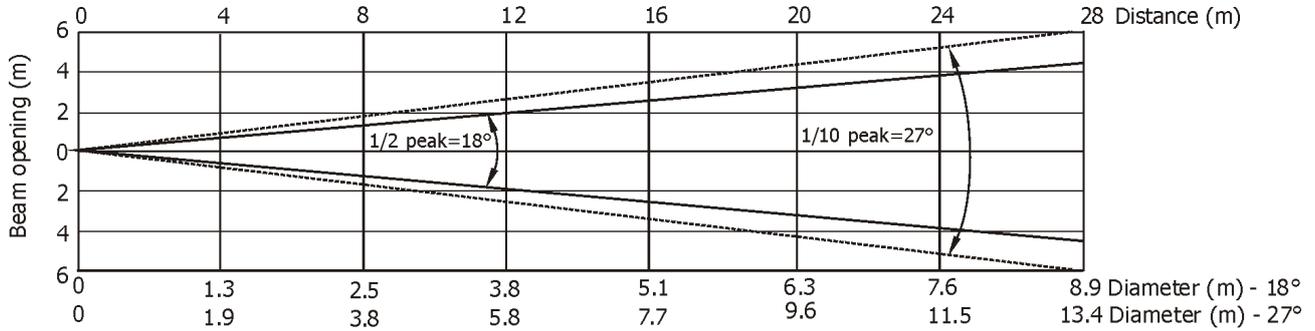
Distance (m)	4	5	8	12	16	20	24	28	
Red	2422/225	1550/144	605/56	270/25	151/14	97/9	67/6	50/5	Intensity (center) Lux/footcandles
Green	5156/479	3300/307	1290/120	573/53	322/30	206/19	143/13	105/10	
Blue	765/71	490/46	191/18	85/8	48/4	31/2.8	21/2	16/1.5	
White	6875/639	4400/409	1718/160	764/71	430/40	275/26	191/18	140/13	
R+G+B+W	14484/1346	9270/861	3621/336	1609/150	905/84	579/54	402/37	296/28	

Illuminance distribution



Max. Zoom Flower Effect Off

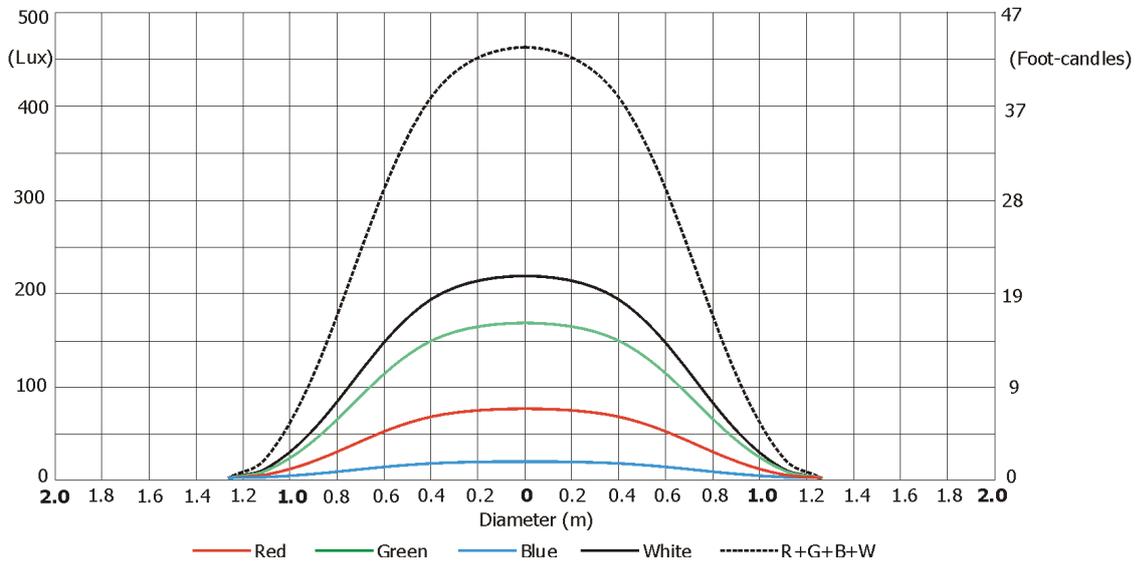
Total Output: 920 lumens



Distance (m)	4	5	8	12	16	20	24	28	
Red	125/12	80/7.4	31/3	14/1.3	8/0.7	5/0.5	4/0.3	2/0.2	Intensity (center) Lux/footcandles
Green	266/25	170/16	66/6.2	30/2.7	17/1.5	10/1	7/0.7	5/0.5	
Blue	40/3.8	26/2.4	10/0.9	5/0.4	3/0.2	2/0.2	1/0.1	0.8/0.1	
White	344/32	220/20	87/8	38/4	22/2	14/1.3	9/0.9	7/0.7	
R+G+B+W	727/68	465/43	180/17	80/8	45/4.2	29/2.7	20/1.9	15/1.4	

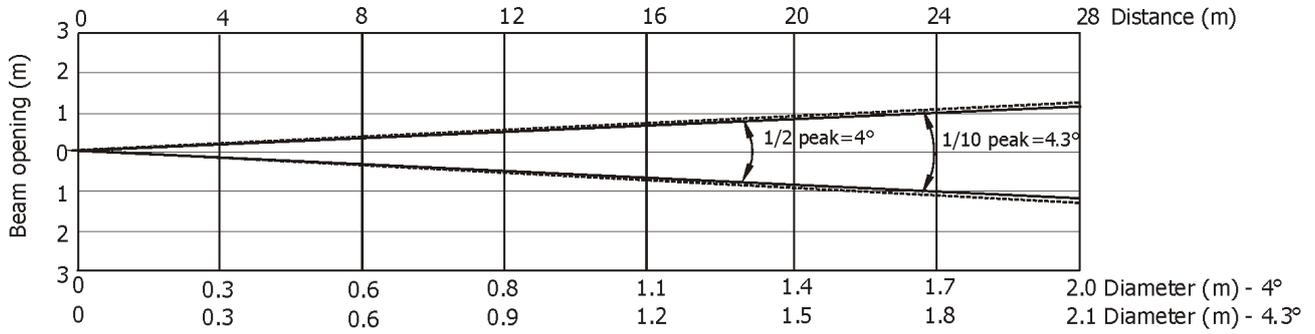
Illuminance distribution

Distance=5m



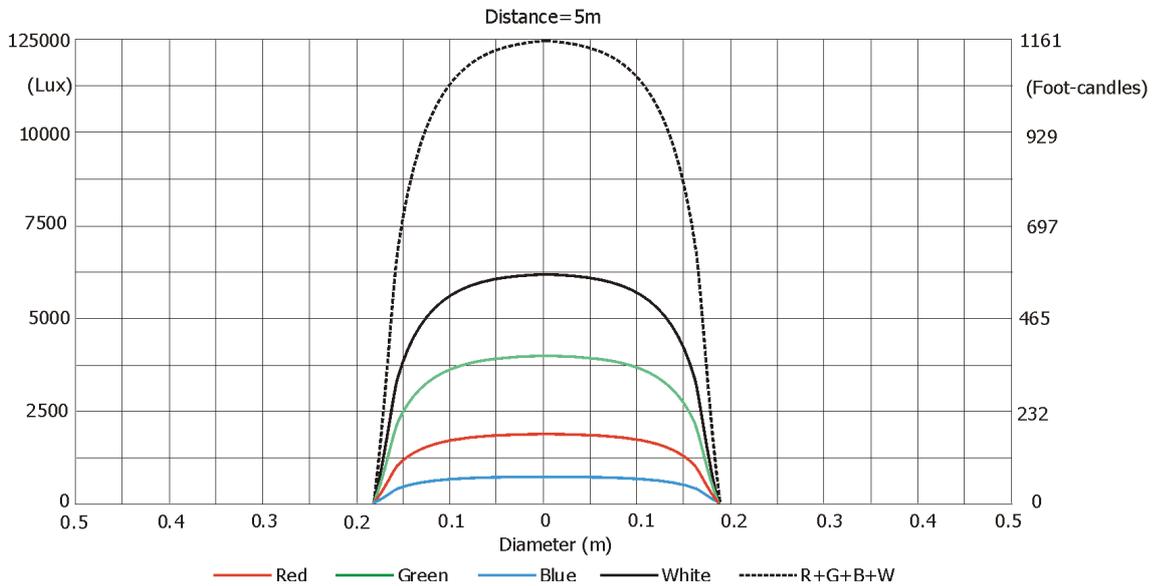
Min. Zoom Flower Effect On

Total Output: 870 lumens

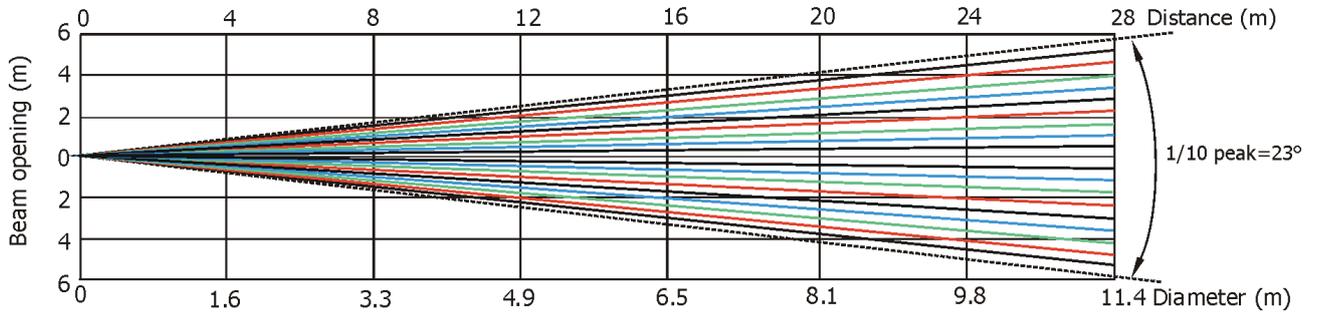


Distance (m)	4	5	8	12	16	20	24	28	
Red	3250/301	2080/193	813/76	361/34	203/19	130/12	90/8	66/6	Intensity (center) Lux/Footcandles
Green	6328/588	4050/376	1582/147	703/65	396/37	253/24	176/16	130/12	
Blue	1078/100	690/64	270/25	120/11	67/6	43/4	30/2.8	22/2	
White	9688/900	6200/576	2422/225	1076/100	605/56	388/36	269/25	198/18	
R+G+B+W	19530/1814	12500/1161	4882/454	2170/202	1220/113	781/73	540/50	398/37	

Illuminance distribution

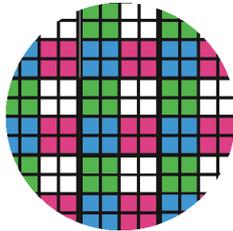


Max. Zoom Flower Effect On



Distance (m)	4	5	8	12	16	20	24	28	
Red	468/44	300/28	117/11	52/5	29/3	19/1.7	13/1.2	10/0.9	Intensity (center) Lux/Footcandles
Green	1860/173	1190/111	465/43	207/19	116/11	74/7	52/5	38/3.5	
Blue	133/12	85/8	33/3	15/1.4	8/0.8	5/0.5	4/0.3	3/0.3	
White	2250/209	1440/134	563/52	250/23	140/13	90/8	63/6	46/4	

Image on the screen (just for illustration)



12. ChangeLog

This section summarizes all types of changes in the user manual.

Version of the manual	Date of issue	Description of changes
1.1	20/07/2016	Added chapter "Remotely controllable functions"

DMX protocol

Robin SPIKle - DMX protocol				
Version: 1.1 Mode 1 -Standard 16-bit, Mode 2 -Reduced 8-bit				
Mode/channel		DMX Value	Function	Type of control
1	2			
1	1		Pan (8 bit)	
		0 - 255	Pan movement by 540°/360° (128=default)	proportional
2	2		Pan Fine (16 bit)	
		0 - 255	Fine control of pan movement (0=default)	proportional
3	3		Tilt (8 bit)	
		0 - 255	Tilt movement by 360° (128=default)	proportional
4	4		Tilt fine (16 bit)	
		0 - 255	Fine control of tilt movement (0=default)	proportional
5	5		Pan control	
		0	Pan range 540°, shortcut Off (0=default)	step
		1	Pan range 360°, shortcut On	step
		2-127	No function (Pan range 540°, shortcut Off)	
		128-189	Continuous rotation fast -> slow , Forwards	proportional
		190-193	Stop rotation	step
		194-255	Continuous rotation slow -> fast , Backwards	proportional
6	6		Tilt control	
		0	Tilt range 360°, Shortcut Off (0=default)	step
		1	Tilt range 360°, Shortcut On	step
		2-127	No function (Tilt range 360°, Shortcut Off)	
		128-189	Continuous rotation fast -> slow , Forwards	proportional
		190-193	Stop rotation	step
		194-255	Continuous rotation slow -> fast , Backwards	proportional
7	7		Pan/Tilt speed , Pan/Tilt time	
		0	Max. speed -tracking mode (0=default)	step
			Pan/Tilt speed	
		1 - 255	Speed from max. to min. (vector mode)	proportional
			Pan/Tilt time	
		1 - 255	Time from 0.1 s to 25.5 sec.	proportional
8	8		Power/Special functions	
		0 -19	Reserved (0=default)	
			<i>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 25/20 must be at range: 0-31 DMX). Corresponding menu items are temporarily overridden.</i>	
		20-24	Display ON	step
		25-29	Display OFF	step
		30-34	RGBW colour mixing mode	step
		35-39	CMY colour mixing mode	step
		40-44	Pan/Tilt speed mode	step
		45 - 49	Pan/Tilt time mode	step
		50 -54	Blackout while pan/tilt moving	step
		55 -59	Disabled blackout while pan/tilt moving	step
		60 - 64	Dimmer curve - square law	step
		65 - 69	Dimmer curve - linear	step
		70 - 74	Fans mode: Auto	step
		75 - 79	Fans mode: High	step
		80-84	White point 8000K ON	step
		85-89	White point 8000K OFF	step

DMX protocol

Mode/channel		DMX Value	Function	Type of control
1	2			
		90 -129	Reserved	
			<i>To activate following functions, stop in DMX value for at least 3 seconds.</i>	
		130 - 139	Fixture reset (except pan/tilt)	
		140 - 149	Pan/Tilt reset	step
		150 - 159	Zoom reset	step
		160 - 169	Flower effect/prism reset	step
		170-171	Tungsten effect simulation (750W) On	step
		172-173	Tungsten effect simulation (1000W) On	step
		174-175	Tungsten effect simulation (1200W) On	step
		176-177	Tungsten effect simulation (2000W) On	step
		178-179	Tungsten effect simulation (2500W) On	step
		180-181	Tungsten effect simulation Off	step
		182 - 199	Reserved	
		200 - 209	Total fixture reset	step
		210 - 255	Reserved	
9	9		Virtual colour wheel	
		0	No function (0=default)	step
		1-2	LEE 4 (Medium Bastard Amber)	step
		3-4	LEE 25 (Sunset Red)	step
		5-6	LEE 19 (Fire)	step
		7-8	LEE 26 (Bright Red)	step
		9-10	LEE 58 (Lavender)	step
		11-12	LEE 68 (Sky Blue)	step
		13-14	LEE 36 (Medium Pink)	step
		15-16	LEE 89 (Moss Green)	step
		17-18	LEE 88 (Lime Green)	step
		19-20	LEE 90 (Dark Yellow Green)	step
		21-22	LEE 49 (Medium Purple)	step
		23-24	LEE 52 (Light Lavender)	step
		25-26	LEE 102 (Light Amber)	step
		27-28	LEE 103 (Straw)	step
		29-30	LEE 140 (Summer Blue)	step
		31-32	LEE 124 (Dark Green)	step
		33-34	LEE 106 (Primary Red)	step
		35-36	LEE 111 (Dark Pink)	step
		37-38	LEE 115 (Peacock Blue)	step
		39-40	LEE 126 (Mauve)	step
		41-42	LEE 117 (Steel Blue)	step
		43-44	LEE 118 (Light Blue)	step
		45-46	LEE 122 (Fern Green)	step
		47-48	LEE 182 (Light Red)	step
		49-50	LEE 121 (LEE Green)	step
		51-52	LEE 128 (Bright Pink)	step
		53-54	LEE 131 (Marine Blue)	step
		55-56	LEE 132 (Medium Blue)	step
		57-58	LEE 134 (Golden Amber)	step
		59-60	LEE 135 (Deep Golden Amber)	step
		61-62	LEE 136 (Pale Lavender)	step
		63-64	LEE 137 (Special Lavender)	step

DMX protocol

Mode/channel		DMX Value	Function	Type of control
1	2			
		65-66	LEE 138 (Pale Green)	step
		67-68	LEE 798 (Chrysalis Pink)	step
		69-70	LEE 141 (Bright Blue)	step
		71-72	LEE 147 (Apricot)	step
		73-74	LEE 148 (Bright Rose)	step
		75-76	LEE 152 (Pale Gold)	step
		77-78	LEE 154 (Pale Rose)	step
		79-80	LEE 157 (Pink)	step
		81-82	LEE 143 (Pale Navy Blue)	step
		83-84	LEE 162 (Bastard Amber)	step
		85-86	LEE 164 (Flame Red)	step
		87-88	LEE 165 (Daylight Blue)	step
		89-90	LEE 169 (Lilac Tint)	step
		91-92	LEE 170 (Deep Lavender)	step
		93-94	LEE 172 (Lagoon Blue)	step
		95-96	LEE 194 (Surprise Pink)	step
		97-98	LEE 180 (Dark Lavender)	step
		99-100	LEE 181 (Congo Blue)	step
		101-102	LEE 197 (Alice Blue)	step
		103-104	LEE 201 (Full C.T. Blue)	step
		105-106	LEE 202 (Half C.T. Blue)	step
		107-108	LEE 203 (Quarter C.T. Blue)	step
		109-110	LEE 204 (Full C.T. Orange)	step
		111-112	LEE 219 (Fluorescent Green)	step
		113-114	LEE 206 (Quarter C.T. Orange)	step
		115-116	LEE 247 (LEE Minus Green)	step
		117-118	LEE 248 (Half Minus Green)	step
		119-120	LEE 281 (Three Quarter C.T. Blue)	step
		121-122	LEE 285 (Three Quarter C.T. Orange)	step
		123-124	LEE 352 (Glacier Blue)	step
		125-126	LEE 353 (Lighter Blue)	step
		127-128	LEE 507 (Madge)	step
		129-130	LEE 778 (Millennium Gold)	step
		131-132	LEE 793 (Vanity Fair)	step
		133-235	Reserved	
		236-245	Rainbow effect (with fade time) from slow-> fast	proportional
		246-255	Rainbow effect (without fade time) from slow-> fast	proportional
10	10		Red/Cyan (8 bit)*	
		0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
11	*		Red/Cyan (16bit)*	
		0 - 255	Colour saturation control - fine (255=default)	proportional
12	11		Green/Magenta (8 bit) *	
		0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
13	*		Green/Magenta (16bit) *	
		0 - 255	Colour saturation control - fine (255=default)	proportional
14	12		Blue/Yellow (8 bit) *	
		0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
15	*		Blue/ Yellow (16bit) *	
		0 - 255	Colour saturation control - fine (255=default)	proportional
16	13		White (8 bit)	

DMX protocol

Mode/channel		DMX Value	Function	Type of control
1	2			
			<i>If RGBW mode is selected:</i>	
		0-255	Colour saturation control - coarse 0-100% (255=default)	proportional
			<i>If CMY mode is selected:</i>	
		0 - 255	No function	
17	*		White (16 bit)	
		0 - 255	Colour saturation control - fine (255=default)	proportional
18	14		CTC	
			<i>If function "White Point 8000K" is ON</i>	
		0-255	Col. temperature correction from 8000K to 2700K -for whites only (0=8000K, 64=5600K, 128=4200K, 192=3200K, 255=2700K)	proportional
			To get colour temperatures stated above, RGBW channels have to be set at the same value e.g. 255DMX (0=default) (To activate Tungsten effect at 2700K and 3200K , set DMX value at "Power/Special functions" channel)	
			<i>If function "White Point 8000K" is OFF</i>	
		0-255	Colour temperature correction for from cool white to 2700K	proportional
19	15		Colour Mix control	
			<i>Defines relation between colour channels</i>	
			"Virtual" = Virtual Colours (Virtual Colour Wheel)	
			"Colour mix" = Colour channels (RGB/CMY)	
		0-9	Virtual colors (virtual has priority)	step
		10-19	Maximum mode (highest values have priority)	step
		20-29	Minimum mode (lowest values have priority)	step
		30-39	Multiply mode (multiply Virtual and Colour Mix)	step
		40-49	Addition mode (Virtual + Colour mix)	step
		50-59	Subtraction mode (Virtual – Colour mix)	step
		60-69	Inverted Subtraction mode (Virtual –Colour mix)	step
		70-128	Reserved	
		129	Virtual colors (virtual has priority)	step
		130-254	Crossfade (crossfade between Virtual and Colour mix)	proportional
		255	Colour channels ("Colour mix" has priority) -default	step
20	16		Rotating Prism	
		0	Open position-without prism (0=default)	step
		1 - 127	Prism inserted, forwards rotation from fast to slow	proportional
		128	No rotation-prism inserted	step
		129-255	Prism inserted, backwards rotation from slow to fast	proportional
21	17		Flower Effect & Prism/Flower Effect macros	
		0-19	Without Flower Effect (0=default)	step
		20-49	Flower Effect	step
			<i>In range of 50-69DMX, channels Rotating prism and Flower Effect rotation are blocked</i>	
		50-51	Macro 1	step
		52-53	Macro 2	step
		54-55	Macro 3	step
		56-57	Macro 4	step
		58-59	Macro 5	step
		60-61	Macro 6	step
		62-63	Macro 7	step
		64-65	Macro 8	step
		66-67	Macro 9	step

DMX protocol

Mode/channel		DMX Value	Function	Type of control
1	2			
		68-69	Macro 10	step
		70-255	Reserved	
22	18		Flower effect 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
23	19		Zoom	
		0-255	Zoom from max. to min.beam angle (128=default)	proportional
24	*		Zoom - fine	
		0-255	Fine zooming (0=default)	proportional
25	20		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	step
		192 - 223	Random strobe-effect from slow to fast	proportional
		224 - 255	Shutter open	step
26	21		Dimmer intensity (8 bit)	
		0 - 255	Dimmer intensity from 0% to 100% (0=default)	proportional
27	*		Dimmer intensity - fine (16 bit)	
		0 - 255	Fine dimming (0=default)	proportional
* Select RGB or CMY mixing mode on channel "Power/Special functions"				
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