ROBE.

RoboSpot
MotionCamera

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USER MANUAL

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Version 2.0

RoboSpot MotionCamera

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FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY BEFORE POWERING OR INSTALLING YOUR RoboSpot MotionCamera !

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 RoboSpot MotionCamera 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.

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.

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, de-rigging or servicing the fixture.

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 camera, never let the sunlight or other fixture lights directly to the camera lens , even when the fixture is not working !

2. Fixture exterior view
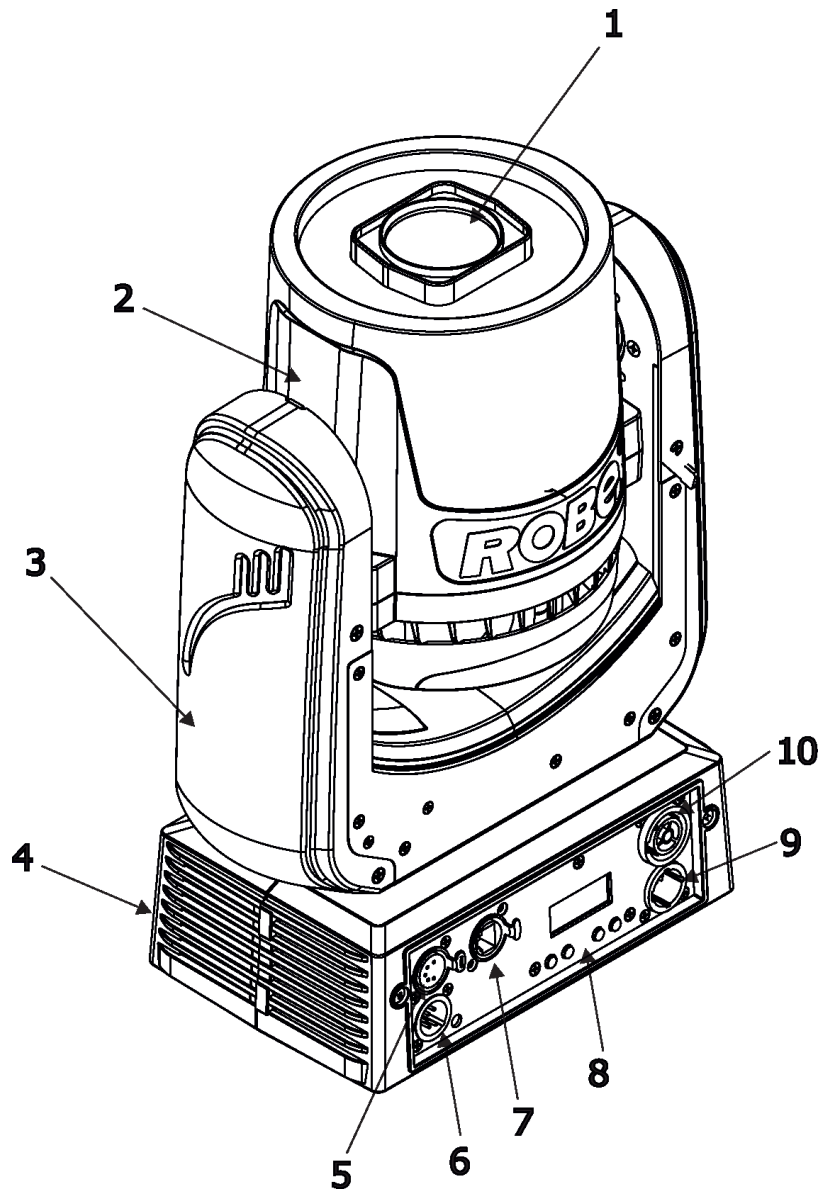
1 - Camera lens
2 - Moving head
3 - Yoke
4 - Base
5 - DMX Out (5-pin XLR)
6 - DMX In (5-pin XLR)
7 - Camera output (RJ45)
8 - Control board
9 - Mains In
10 - Mains Out

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 RoboSpot MotionCamera 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 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)!

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 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, de-rigging 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.

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.

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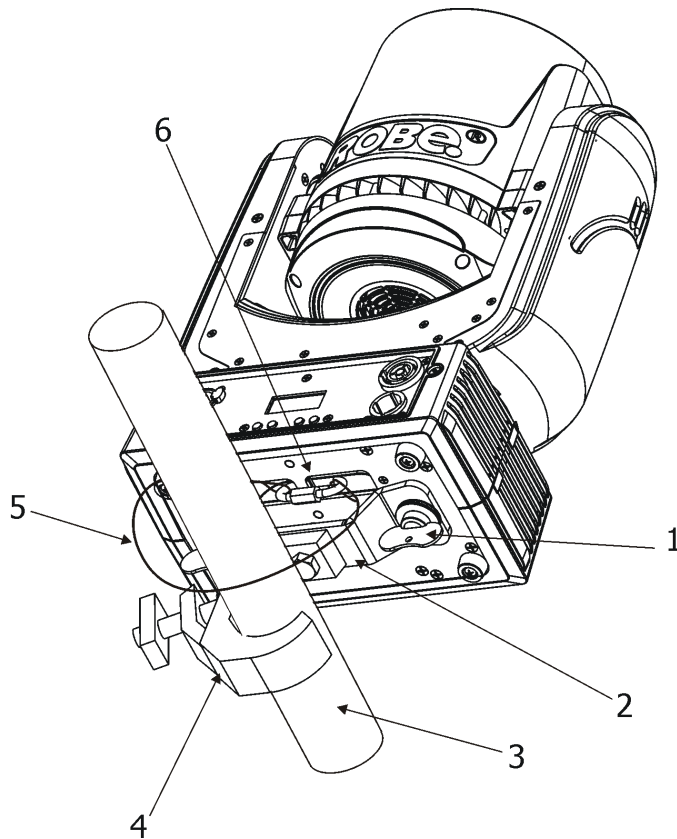
1-Quick-lock fastener
2-Omega holder
3-Trust
4-Clamp
5-Safety wire with a snap hook
  with screw lock gate
6-Attachment point

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

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.

4. 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				
	DMX In	Pan	0-255			
		:				
		Reserved				
	Sw Ver	IC-1				
		IC-2				
Pers						
	DMX Pres	Mode 1				
	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%			
	Temp Uni	**°C**, °F				
	I Ef Pos	Pan				
		:				
		Reserved				
		Store				
	Defaults					
Manual		Pan	0-255			
		:				
		Reserved				
Reset						
Special	RDM Low					
	RDM Hight					
	Wireless	Stat				
		Unlink				
	Adjust	DMX Val	Pan	0-255		
			:			
			Reserved			
		Calib	Cal Mech	Pan C	0-255	
				Tilt C	0-255	
				Store		
			Cal Load			
		SW Upd				

5. Control menu

The RoboSpot MotionCamera is equipped with 2-row LCD display which allows to set the fixture´s behaviour according to your needs and obtain information about its operation.

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.

```
        DMXA
        0001
```

ESCAPE ENTER   NEXT   PREV

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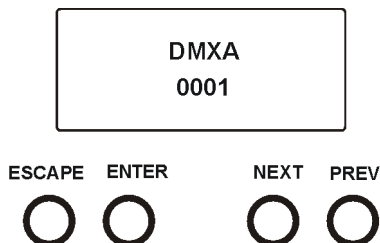
After switching the fixture on, display shows current DMX address.

5.1 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 RoboSpot MotionCamera will respond to the controller.
If you set, for example, the address 36, the RoboSpot MotionCamera will use channels 36 - 43 for control.
Please, be sure that you do not have any overlapping channels in order to control each RoboSpot MotionCamera 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.

5.2 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 RoboSpot MotionCamera has been fabricated.
> **Reset** - The item shows the number of the operation hours that the
> RoboSpot MotionCamera 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.

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

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.

5.3 Personality (Pers)

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%).

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.

5.4 Manual Control (Manual)

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

5.5 Reset

This option enables the RoboSpot MotionCamera to index all effects and return to their standard positions.

5.6 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

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.

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 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: 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 cabel.
      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 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.

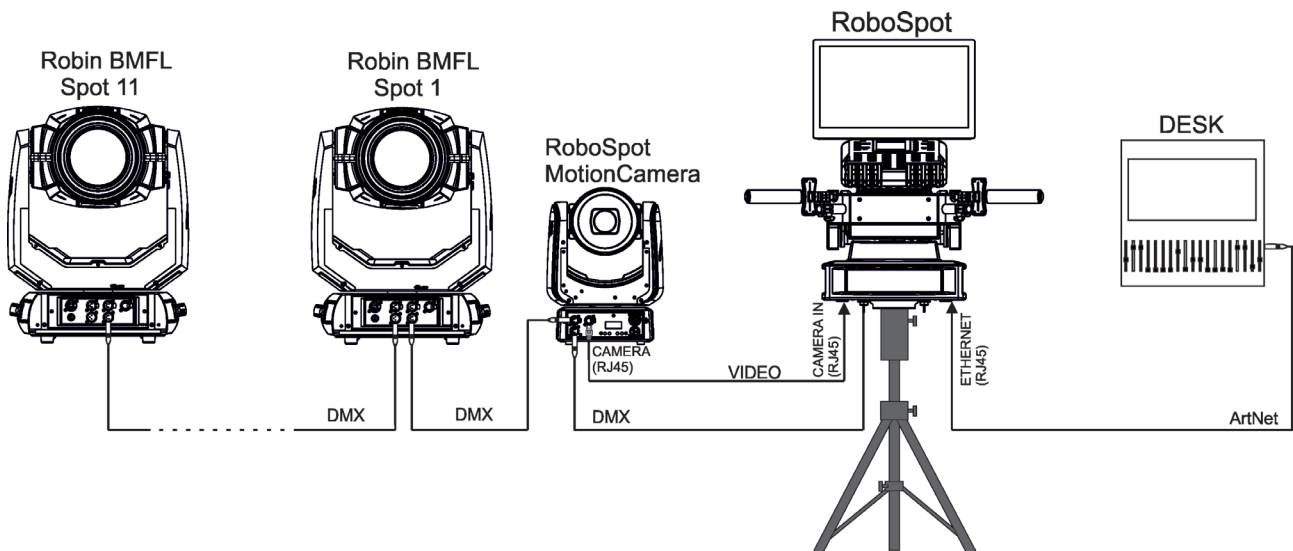# 6. Operation of the RoboSpot MotionCamera with the RoboSpot

6. 1 RoboSpot connection

After installing the RoboSpot, connect it with the RoboSpot MotionCamera and a control desk.
You do not need to patch the RoboSpot, but fixtures connected to the RoboSpot have to be patched.
Max. RJ 45 cable length between the Robostpot MotionCamera and the RoboSpot should not exceed 80m.
Example 1.
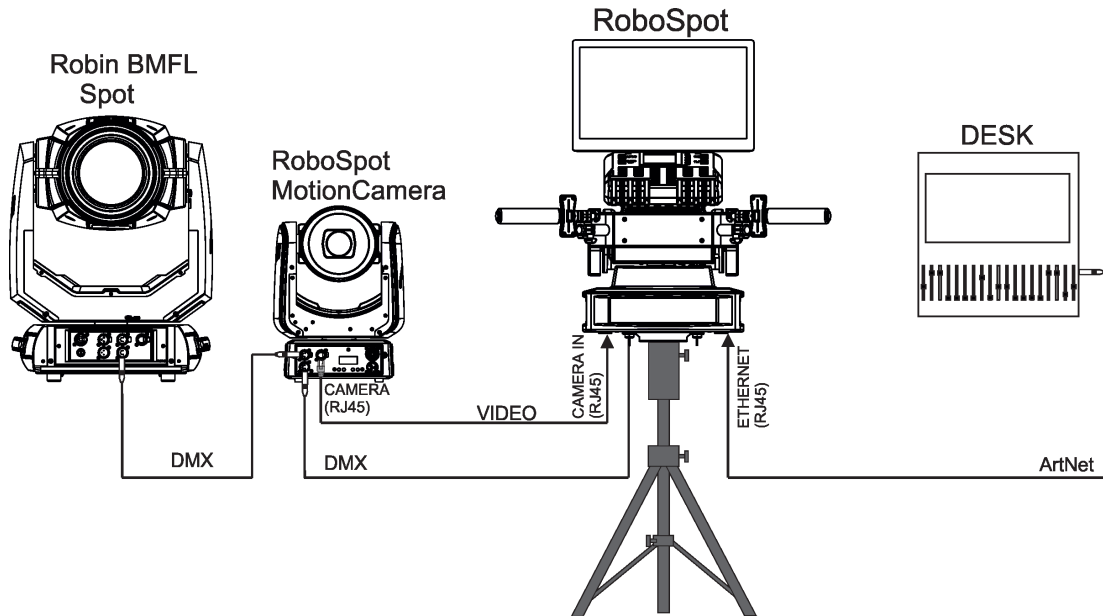
Example 2.
Up to 11 supported ROBIN fixtures can be connected to the RoboSpot MotionCamera. The fixtures should be of the same type.

Note. If you use the RoboSpot Motion Camera in the Multi Device Control (MDC), set the red positioning circle to the centre of the screen before starting the MDC setup.

6.2 LCD monitor screen operation

The RoboSpot is equipped with the 15.6" (10-point) touch screen with max. resolution 1366 x 768.
After switching the RoboSpot and the RoboSpot MotionCamera on, image scanned by the camera is displayed on the LCD screen:
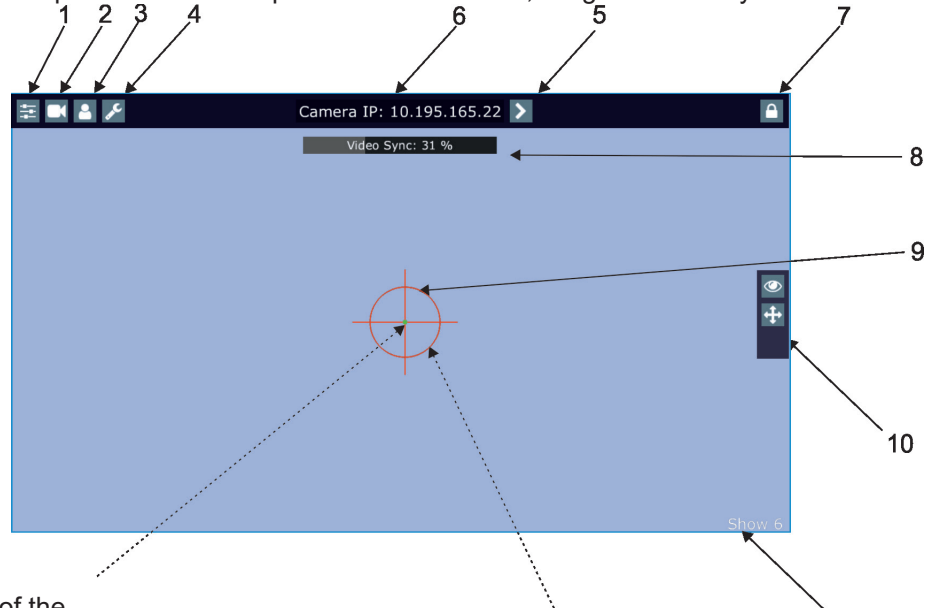
Touch the centre of the positioning cross and move the positioning cross to desired position on the screen.

Touch the edge of the positioning circle and move it in/out to decrease/increase the size of the circle

Current scene

1- Slider button
2- Camera button
3- User button
4- Service button
5 - Camera selection button

6- IP address of selected camera*
7- Screen lock***
8- Video synchronization box**
9 - Position circle (red)
10 - Action toolbar

To centre the positioning circle on the screen, touch the red cross it until the following dialog box will appear:
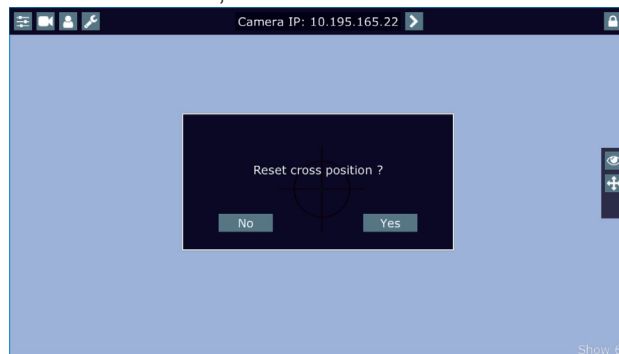


Select option Yes and the position circle will be placed to the centre of the screen.

*You can change the name of selected camera. To rename selected camera, touch for two seconds the camera name (e.g. Camera IP: 10.195.164.171).
The software touch keyboard will appear. Use the keyboard to type a new name of camera (e.g. Camera 1). Touch ENT to save the new name of the camera. The new name is saved into camera (in case that you will use other Robospot, the new camera name will be reloaded)
Touch the key X to close the keyboard.
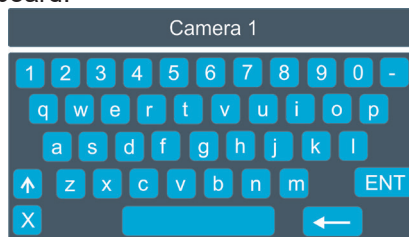
**When you switching between cameras, a box with video synchronization status is displayed. This box shows a delay between the camera and the screen. The value 0% means max. delay, 100% is without delay (and this box will disappear from the screen after reaching 100%).

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*** To lock the screen, touch the button 🔒. The following options will appear on the screen:
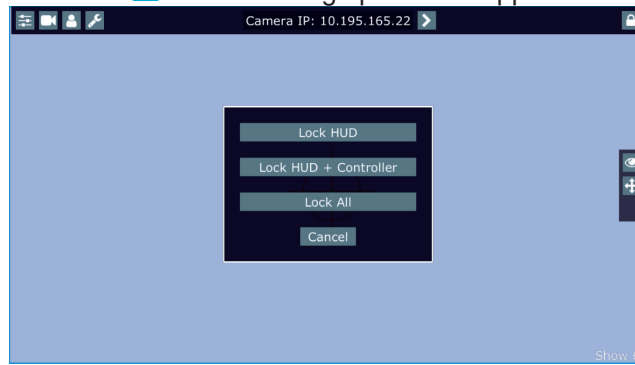
Lock HUD - this option locks the LCD monitor screen. Positions buttons and pan/tilt movement by means of the control handlebars are available.

Lock HUD + Controller - this option locks the LCD monitor screen and the FollowSpot Controller display. The FollowSpot Controller presets and Jog-wheels are available (Jog-wheels have to be activated before locking the FollowSpot Controller display). Positions buttons and pan/tilt movement by means of the control handlebars are also available.

Lock ALL - this option locks all RoboSpot system

To unlock the screen, touch the button 🔓 and the software touch keyboard will appear. Type a correct password (the password is the same as the password for the FollowSpot Controller, default password is 5242) and confirm it by touching the key ENT. Touch the key X to close the keyboard.

Note: the message "Not correct camera settings! Reset camera settings?" informs you that the RoboSpot software and the camera settings are not accordance.
Use the option "Yes" to set correct camera settings.
The option "Yes" has the same effect as the option "Factory reset " in the Camera button menu.
The message " Last used camera not present. Wait for camera?" informs you that the RoboSpot cannot find last used camera. If you select Yes, the RoboSpot will still search for last used camera, if you select No, the RoboSpot will use another founded camera.

After switching the ROBIN BMFL FollowSpot lamp on and adjusting its beam (zoom, focus, dimmer....), aim the beam to desired position by means of the pan/tilt handles.


Touch and move the position circle on the beam image and set its size in order to match to beam image. Now, when you move with the control handles, both beam image and position circle on the screen will move synchronously. In case that the light output from the fixture is closed, you know the position of the light beam by means of the position circle.
Note: if you change a camera zoom, you have to move and adjust the position circle on the beam image again.

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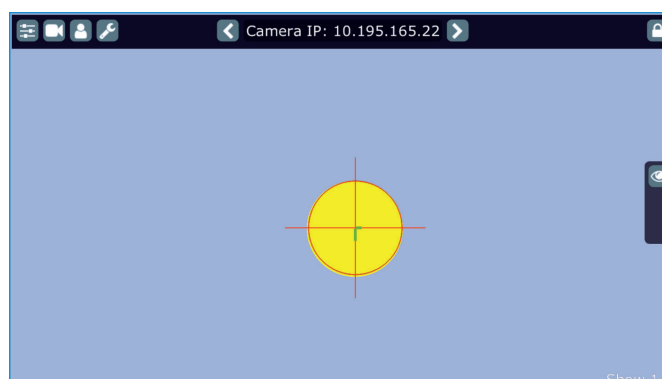
The green lines in the position circle give pan and tilt position of the control handles.
The green point in the centre of the position circle signals the middle position of the control handles.
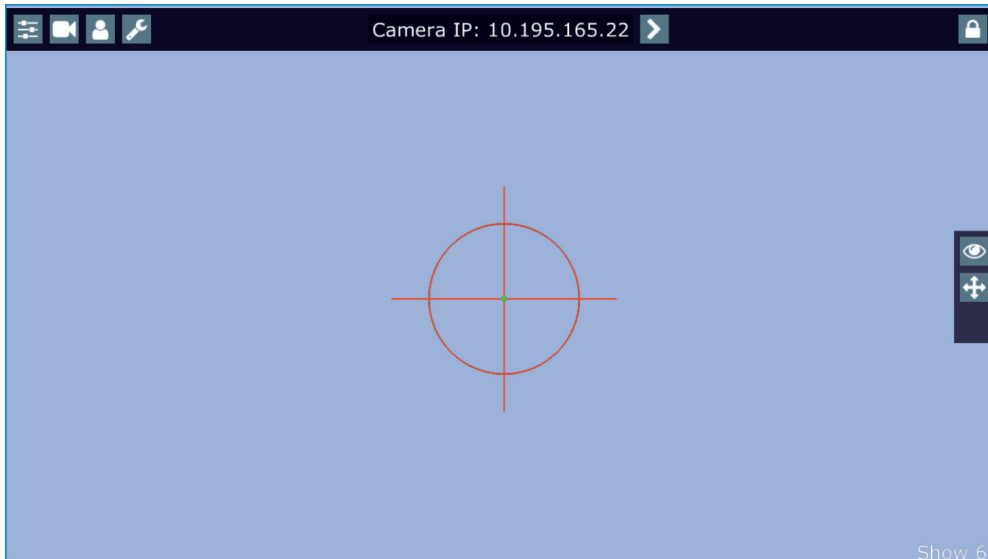
If you move with control handles, the distance between the green lines and the red circle will give available range of pan and tilt movement of the control handles. The red circle poses a " limit" of pan/tilt movement.
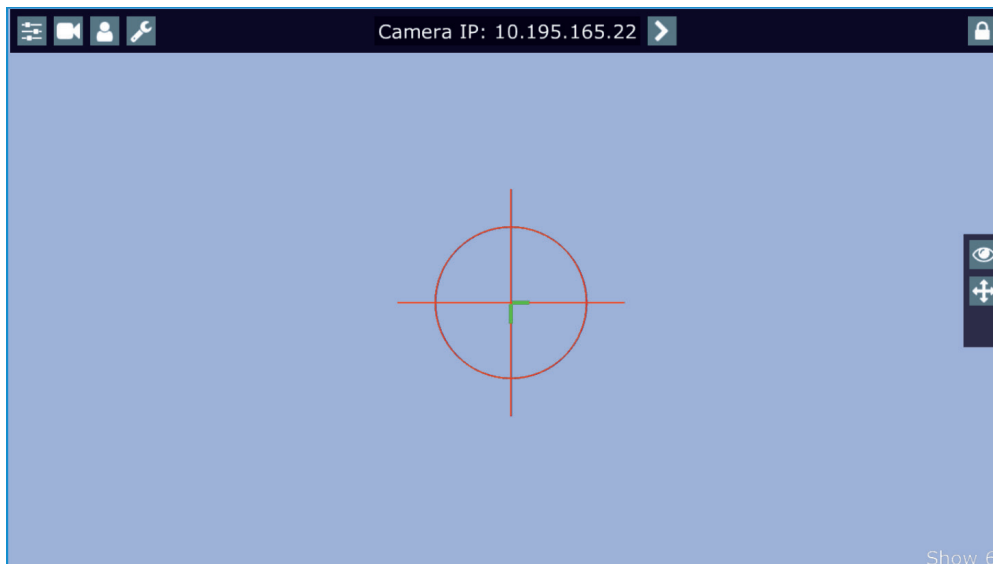
Note.
If the pan/tilt control handles requires recalibration, the following screen will appear.
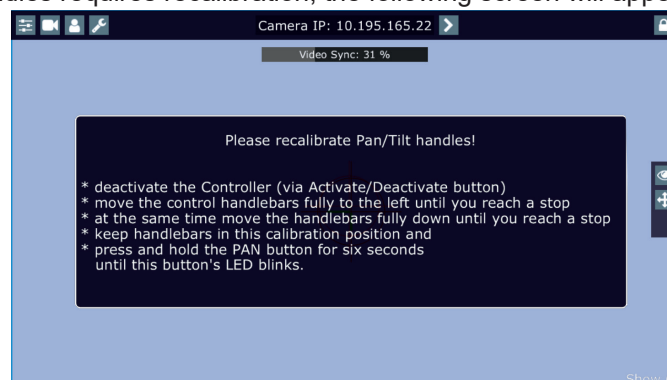
In this case please do a calibration of pan/tilt handles as described in the article "5.5 RoboSpot handles calibration".

Sliders menu

Zoom slider- use it to change a zoom of currently selected camera. A sensitivity of a camera zoom can be set in three levels: low (green slider), medium (yellow slider) and high (red slider).
To change the sensitivity level of the camera zoom, the camera zoom has to be assigned to some jog-wheel of the FollowSpot Controller, please see the chapter "Functions mapping" how to change sensitivity level of a slider. After changing of zoom size, picture is automatically focused.

Pan/Tilt sliders - use them to move a moving head to the desired position. A Sensitivity of pan/tilt movement can be set in three levels : low (green slider), medium (yellow slider) and high (red slider).
In order to switch the sensitivity of pan or tilt movement to desired level, press and hold the PAN (5) or TILT (6) button until the colour of fader is changed.

Track slider- use it to set desired level of speed of pan/tilt movement. Each level of the track slider responds to the DMX value of the Pan/Tilt speed channel in DMX chart of BMFL fixture:

Track level	DMX value on the Pan/Tilt speed channel
Smooth	0
Fast	1
Medium	10
Slow	20

Camera menu

Rotate Picture- use this item to rotate a picture on the touch screen 180 degrees from current orientation.

Refocus- use this item to focus an image on the screen (Focus of the camera is set to the "One shot focus " mode which means that picture is focused automatically after zoom change and the item Refocus allows to focus the image when the zoom is without change.

Exposure- the menu item allows you to choose a level (Low, Medium, High) of light intensity in the position circle on the screen to see hidden objects from reason of high light intensity in the position circle on the screen. The item Auto switches the function off.

DayNight mode- the menu item allows you to choose desired colour mode of the camera:
>   Auto - Normally, video output is set to Color but to B&W under low luminance.
>   Color - The video output is always in color.
>   B&W - The video output is always in black and white.

Reconnect- the item disconnects and again connects active camera to the RoboSpot. Use the item in case that behaviour of the camera is not correct (e.g. long response time).

Factory Reset- use this item to set a camera to the current setting.

All items stated above relate to the selected camera in the menu bar.

Every camera holds information about position of the position circle, its size and picture rotation.
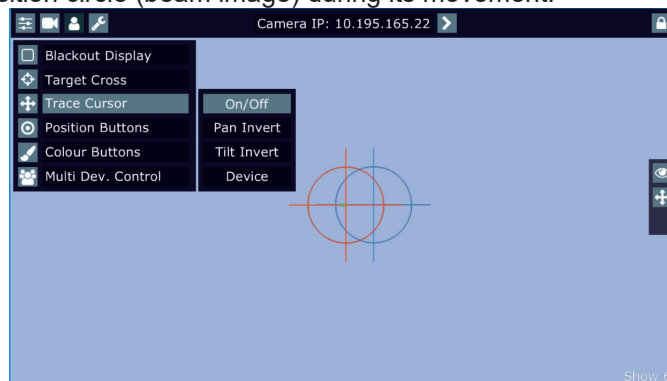
User menu

Blackout Display - use the item to darken the screen. To active the screen, touch it.

Target Cross - use the item to switch on/off the red position circle.

Trace Cursor - if the function is on, a blue circle will appear during (behind a red position circle) which gives a target position of the position circle (beam image) during its movement.

>   Pan Invert - the item inverts a pan movement
>   Tilt Invert - the item inverts a tilt movement
>   Device - the menu allows you to select a device with camera. Correct device has to be chosen
>   if the "Trace Cursor" function is to work correctly.
> >   MotionCamera - select the item if you use the RoboSpot Motion Camera.
> >   BMFL Follow Spot - select the item if you use the Robin BMFL FollowSpot with camera.

Position Buttons - if the function is on, the "+" button will appear at the bottom of the screen. Move the position circle to desired position and press the "+" button. Button no.1 will appear at the bottom of the screen and

the button no.1 is assigned to this position of the position circle (if item " Show in scene is active, button no.1 is displayed in the position circle on the screen). You can assign up to 9 buttons to different positions of the position circle on the screen.
If you touch a position button, the position circle will move to the position of this position button.
Last activated position button is highlighted.
Example (option "Show in Scene" is active):

IShow in Scene - the item allows you to show positions of the position buttons on the screen.

In the position button are saved values of the following items: pan position, tilt position, pan/tilt sensitivity, zoom sensitivity, MDC height, speed, zoom, focus, camera zoom, camera rotation, cross position, cross size.
To edit or remove the position button from the screen, touch it until the message "Edit or Delete position button number X?" appears on the screen and select desired option.

If you select the option "Edit", the following screen with attributes will appear.

Now you can uncheck(check) attributes which you wish to be active in the position point.
Some menu attributes iclude more functions:
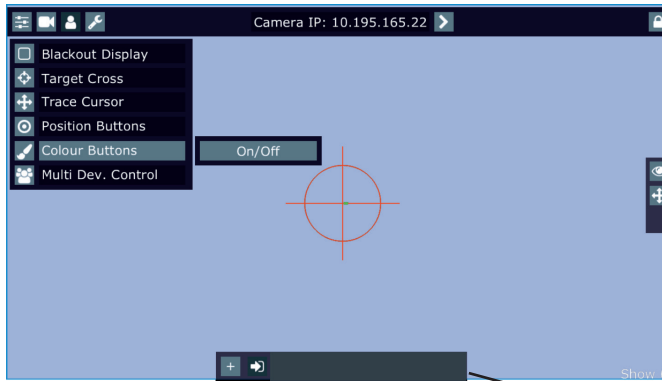   "Position" = pan + tilt + MDC height
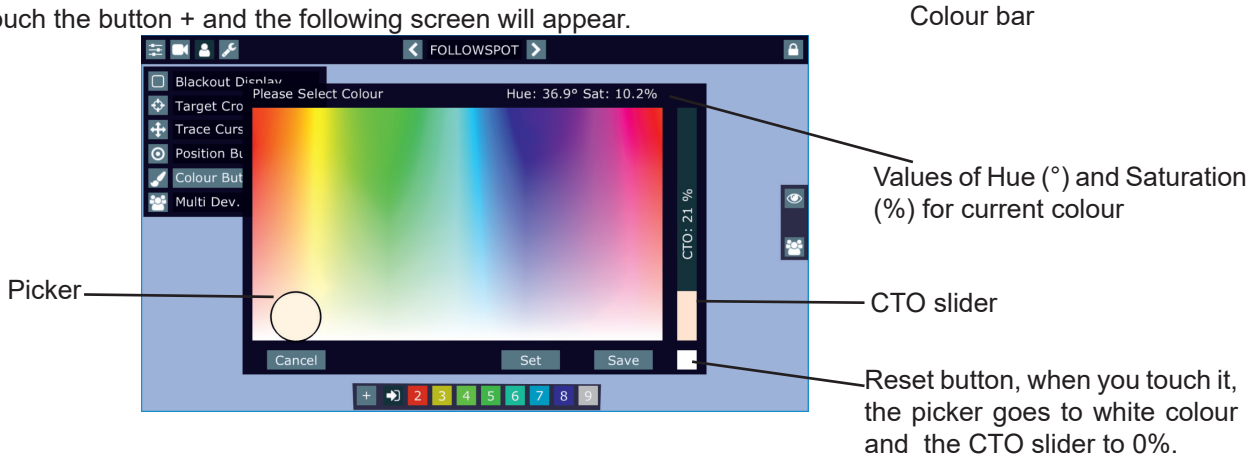   "Camera Zoom/Rotation" = camera zoom + camera rotation
    "Cross" = size + position
    "Sensitivities" = pan sensitivity + tilt sensitivity + zoom sensitivity

Colour Buttons - the function allows you to change colour on used fixtures together. The function controls colour channels (Red/Green/Blue/White/CTO channels at LEDs fixtures and Cyan/Magenta/Yellow channels at lamp fixtures). When choosing desired colour, corresponding channels are taken over from a desk to the Robospot.

Colour bar

Touch the button + and the following screen will appear.

Picker

Values of Hue (°) and Saturation (%) for current colour

CTO slider

Reset button, when you touch it, the picker goes to white colour and the CTO slider to 0%.

Use the circular picker to choose a desired colour. The chosen colour can be "send" to fixtures by pressing the button Set or saved to the colour bar at the bottom of the screen by pressing the button Save. Up to 8 colour buttons can be saved to the colour bar. Only RGB or CMY colors can be controlled via the circular picker. Desired colour can be activated by touching its button in the colour bar.
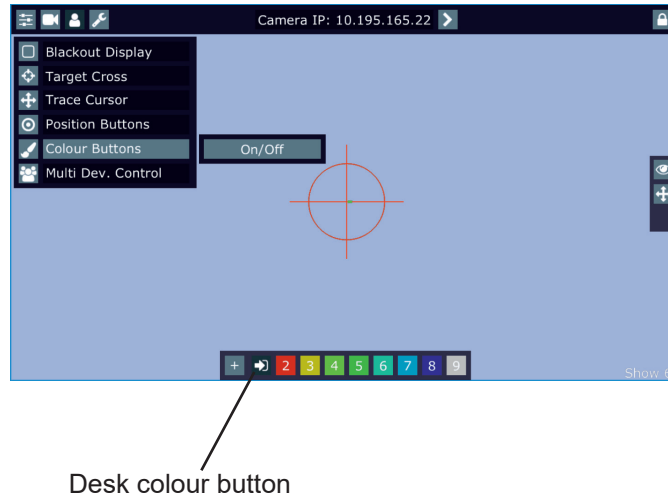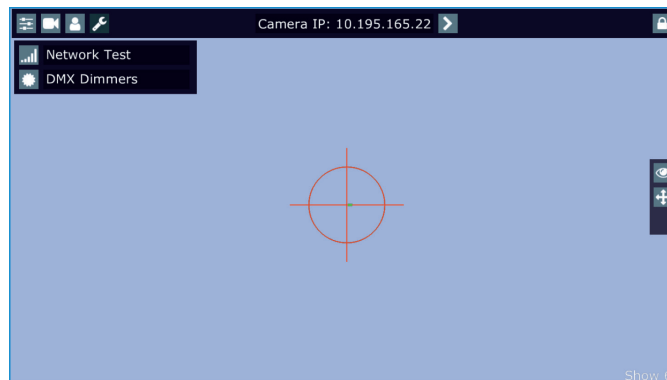
Desk colour button

To delete a colour button, touch and hold a finger on the button for a while.
The Desk Colour button passes colour channels on to the control from a desk.

Multi Dev.Control - the menu serves for activating and setting control of fixtures in the multi device operation.
For more information please see the chapter Multi device contro

Service menu

Network Test - the item runs a connection test between a camera and the RoboSpot. During the test, do not touch any buttons on the FollowSpot controller.

DMX Dimmers - the item shows value of dimmer for each fixture (in %). This dimmer value of
the corresponding fixture is calculated from a DMX value of dimmer sent from a desk to the fixture and a position of fader or Jog-wheel (depends on fixture mapping).
E.g. DMX value for dimmer sent from the desk to a fixture is 120, by means of the fader this value can be changed from 0 DMX to 120 DMX.

For more information about RoboSpot seting control please see its user manuál.

6.3 Streaming a camera video

If you wish to stream a camera video over computer network, use a rtsp stream supported media player (e.g. VLC media player, SMPlayer,...) running on your computer and type the following to your media player:

      rtsp://IP address of camera/profile2/media.smp

example: rtsp://10.195.165.223/profile2/media.smp

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 RoboSpot MotionCamera 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 RoboSpot MotionCamera is 0x00e7

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.

9. Technical Specifications

Electrical

Power supply: electronic auto-ranging
Input voltage range: 100-240V, 50-60Hz
Fuse: T 1A
Max. power consumption: 35W (I=0.3A at 230V, power factor=0.51)

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

Camera

Type: SNZ-6320
Max. resolution: 1920 x 1080
16 : 9 Full HD (1080p) resolution support
32x optical zoom, 16x digital zoom
H.264, MPEG dual codec, Multiple streaming
Day & Night (ICR), WDR (120dB)

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

Control

2-row LCD display & 4 buttons
Readout fixture usage, receiving DMX values, temperatures, etc
Built-in analyzer for easy fault finding, error messages
Supported protocols: USITT DMX 512, RDM,
8 control channels

Connection

DMX data in/out: Locking 5-pin XLR
Power IN: Neutrik True oneNAC3MPX
Power OUT: Neutrik True One NAC3FPX
Camera: RJ 45

Rigging

Mounting points pair of 1/4-turn locks
Mounting horizontally or vertically via mounting bracket Omega CL

Temperatures

Maximum ambient operating temperature : 45° C
Maximum housing temperature : 55° C
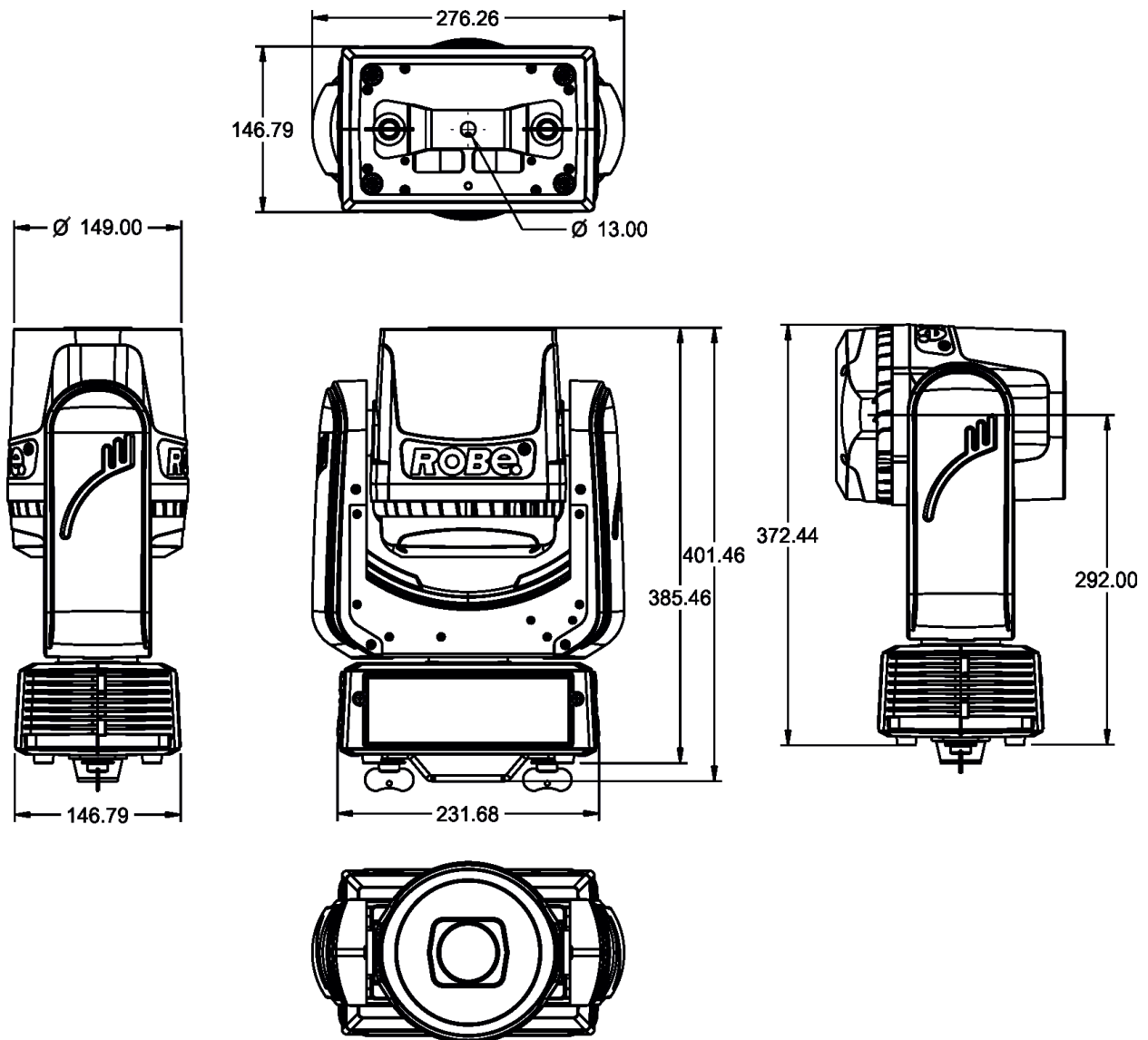Minimum ambient operating temperature: -5°C

Total heat dissipation

150 BTU/h (calculated)

Weight

5.7 kg

Dimensions (mm)

276.26

146.79

Ø 149.00

Ø 13.00

401.46

385.46

372.44

292.00

146.79

231.68

Included items

1 x RoboSpot MotionCamera
1 x Mounting bracket Omega CL assembled (P/N 99010420)
1 x power cord

Optional accessories

(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 10980033) Omega adaptor CL-regular 2 pcs in box
(P/N 17030386) Doughty Trigger Clamp
(P/N 99011957) Safety wire 50 kg

10. Maintenance and cleaning

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

Never use 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.
A soft lint-free cloth moistened with any good glass cleaning fluid is recommended, under no circumstances should alcohol or solvents be used!

Camera lens may require weekly cleaning as smoke-fluid tends to building up residues.
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.

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 plastic covers of the base (1) by unscrewing two fastening screws (2) on each cover.
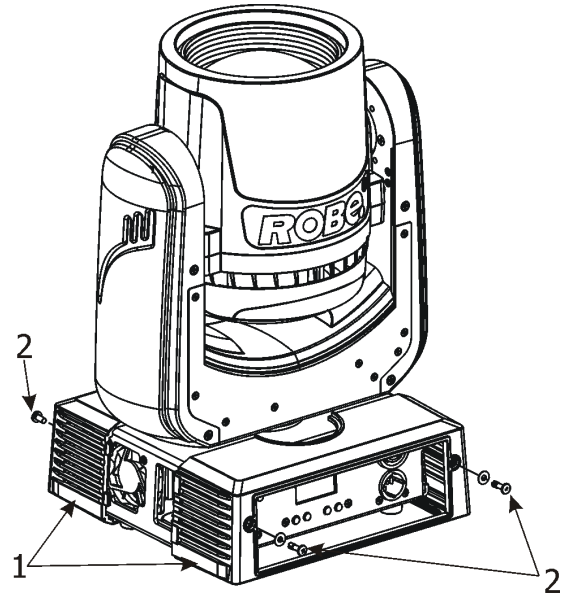
2. Unscrew four screws (3) on the top chassis (4). Lay down the fixture and unscrew four screws (5) on the bottom plate (8) to push out inside module of the base.

3. Unscrew two screws (7) on the bottom plate to remove rear panel of the fixture (6).
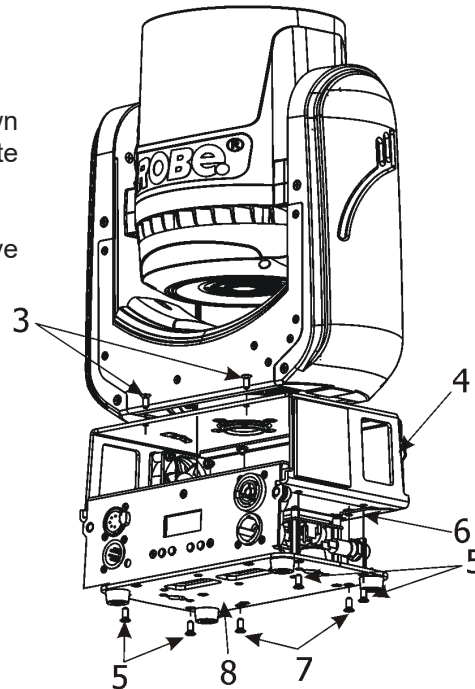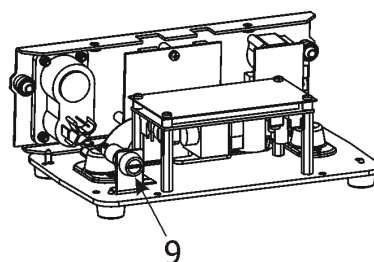
4. Now you have access to the fuse holder (9) in the inside module of the base.
5. Remove the old fuse from the fuse holder.
6. Install the new fuse into the fuse holder.
7. Assemble the base of the fixture.

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

10.2 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. ChangeLog

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

Version of the manual	Date of issue	Description of changes
1.1	21/01/2017	Chapter LCD monitor screen operation added
1.2	18/01/2018	Chapter LCD monitor screen operation modidfied
1.3	26/01/2018	Optional accessories changed
1.4	30/04/2018	DMX protocol ver. 1.1
1.5	15/11/2018	LCD monitor screen menu changed
1.6	28/11/2018	Positioning circle reset added
1.7	23/04/2019	RJ 45 cable length between RoboSpot and RoboSpot MotionCamera added
1.8	16/05/2019	New GUI look at RoboSpot
1.9	26/11/2021	Technical specification changed
2.0	31/05/2022	Software changed

RoboSpot MotionCamera - DMX protocol

Version: 1.1

Channel	DMX Value	Function	Type of control
1		**Pan (8 bit)**	
	0 - 255	Pan movement by 540° (128=default)	proportional
2		**Pan Fine (16 bit)**	
	0 - 255	Fine control of pan movement (0=default)	proportional
3		**Tilt (8 bit)**	
	0 - 255	Tilt movement by 270° (128=default)	proportional
4		**Tilt fine (16 bit)**	
	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	
		P./T. speed-set Speed Mode in menu: Pan/Tilt Mode	
	2 - 255	Speed from max. to min.	proportional
		P./T. time - set Time Mode in menu: Pan/Tilt Mode	
	2 - 255	Time from 0.1 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 seconds.	
	20-24	Display ON	step
	25-29	Display OFF	step
	30-34	Pan/Tilt speed mode	step
	35-39	Pan/Tilt time mode	step
	40-49	Reserved	
	50-54	Pan/Tilt reset	step
	55-255	Reserved	
7		**Reserved**	
	0- 255	Raw DMX (0=default)	proportional
8		**Reserved**	
	0- 255	Raw DMX (0=default)	proportional
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All Specifications subject to change without notice			