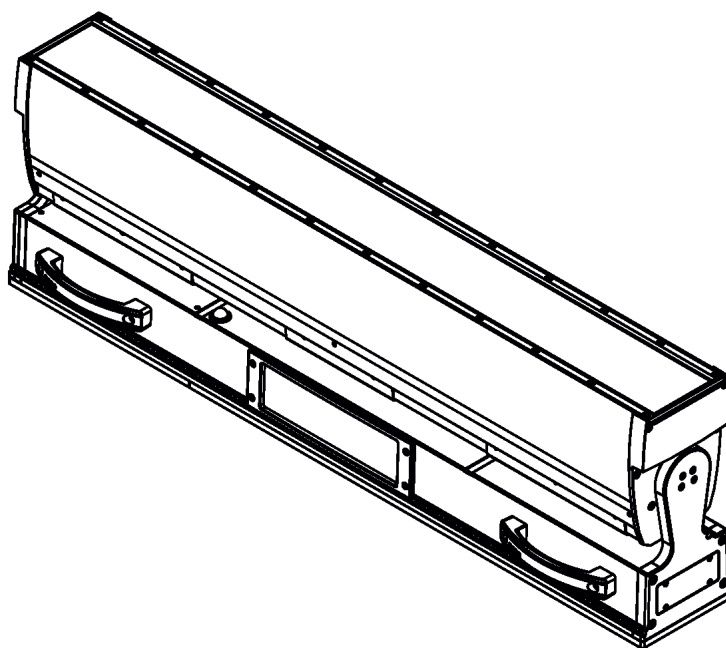




iTetra2™



ROBE
Innovative
Technology

QR code for user manual



USER MANUAL

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

Version 1.3

Robin iTetra2

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**FOR YOUR OWN SAFETY, PLEASE READ THIS USER MANUAL CAREFULLY
BEFORE YOU INITIAL START - UP**

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 warnings 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 iTetra2 was designed for outdoor use and it is intended for professional application only. It is not for household use.

1. Safety instructions

CAUTION!

Disconnect the fixture from mains before removing any cover of the fixture. With a high voltage you can suffer a dangerous electric shock when touching alive wires and electrical parts under covers!

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.

Always disconnect the fixture from AC power before cleaning or servicing any part of the fixture.

The power plug has to be accessible after installing the fixture. Do not overload wall outlets and extension cords as this can result in fire or electric shock.

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.

During the initial start-up some smoke or smell may arise. This is a normal process and does not necessarily mean that the device is defective.

The housing of the fixture becomes hot during its operation.

For replacement use fuse and battery of same type and rating only.

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.

CAUTION! Risk group 2, RG-2



Prior to manipulate the fixture, lock its moving head in a vertical position by means of the tilt lock.

Hold the fixture by handles only.

2. Operating determination

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

Avoid brute force when installing or operating the device.

Never lift the fixture by holding it at the fixture head as the mechanics may be damaged. Always hold the fixture at the transport handles.

When choosing the installation spot, please make sure that the device is not exposed to extreme heat or dust.

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

Always secure the fixture with an appropriate safety wire.

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

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

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

To avoid damage of an internal optical system of the fixture, never let the sunlight (or other light source) lights directly to the lens array, even when the fixture is not working

Operate the device only after having familiarized with its functions. Do not permit operation by persons not qualified for operating the device.

The fixture housing never must be covered with cloth or other materials during its operation. Do not block fans or fans ventilation slots with any object. Fans and ventilation slots must remain clean.

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

Potential foggy front lens array does not influence function of the fixture and does not subject to complaint.

Please use only an original ROBE packaging (paper box, loader case or foam shell) for transporting the device, otherwise potential damage of the device during its transport will not subject to warranty.

***The fixture must not come into contact with sea water (salt water).
Damages or corrosion issues resulting from salt water will void
the manufactures warranty and will not be subject to any warranty
claims or repairs.***

The product (covers and cables) must not be exposed to a high frequency electromagnetic field higher than 3V/m.

Immunity of the equipment is designed according to the standard EN 55035 Electromagnetic compatibility of multimedia equipment - Immunity requirements

Emission of the equipment complies with the standard EN55032 Electromagnetic compatibility of multimedia equipment – Emission Requirements according to class B.

Contains FCC ID: 2A6PL-DMXRDMRW001

Contains IC: 29573-DMXRDMRW001

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

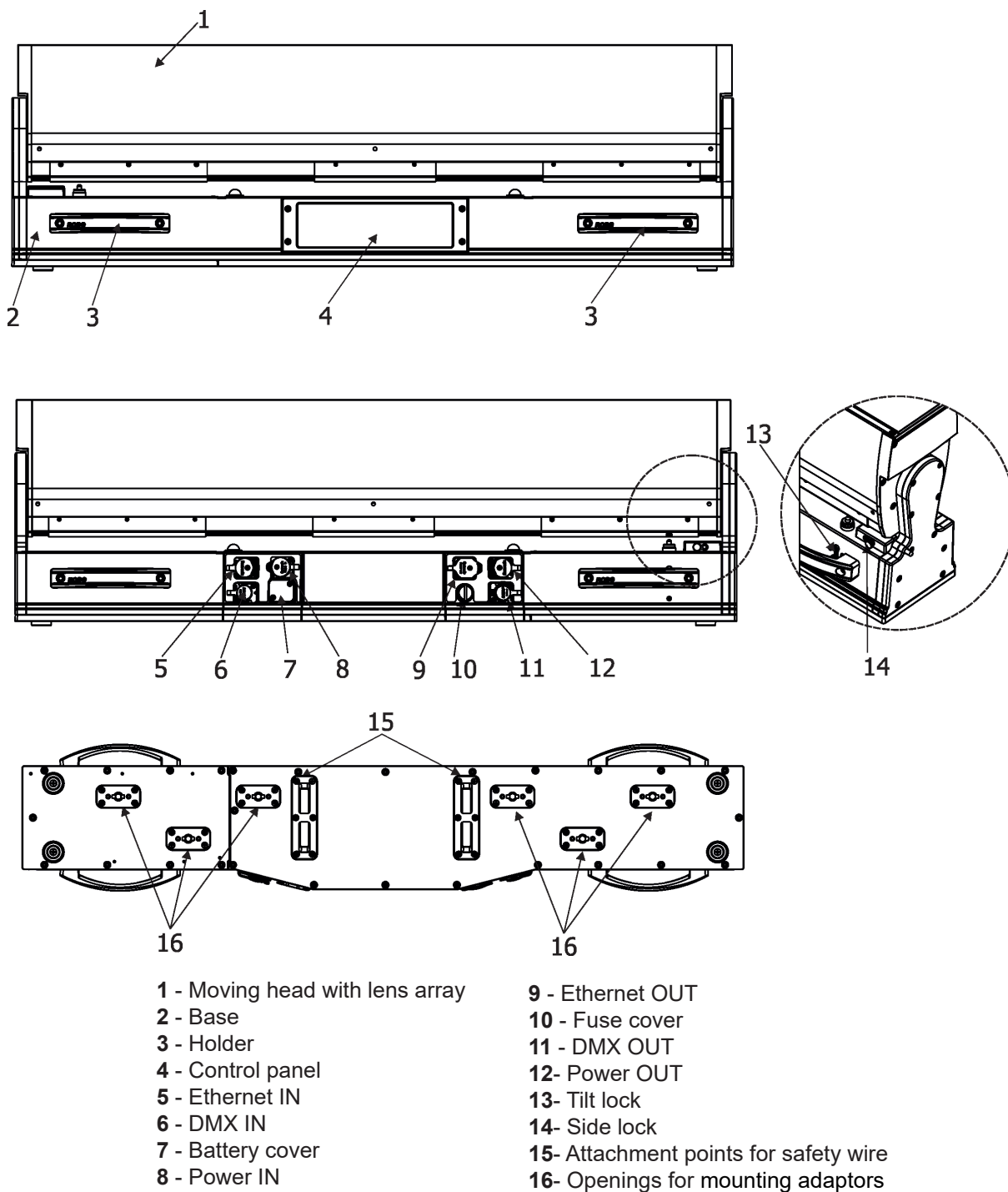
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The [Device] wireless operation is safe and complies to RF Exposure requirements

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

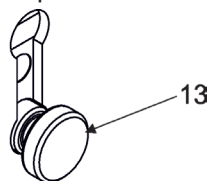
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

3. Fixture exterior view



The moving head has to be locked for transportation or inserting into case - the moving head has to be oriented vertically (optics up) and the tilt lock button (9) has to be in the locked position. To unlock the head, press and move the lock button to the unlocked position before operating the fixture. The ENTER/DISPLAY ON button also serves for switching the display on when the fixture is disconnected from the mains.

Locked position



Unlocked position

4. Installation



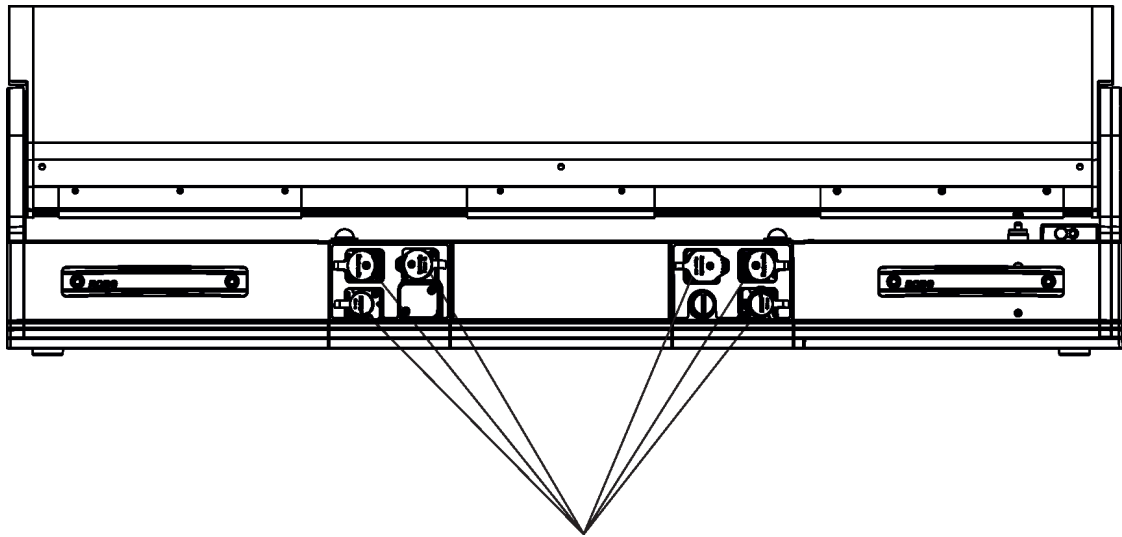
Fixtures must be installed by a qualified electrician in accordance with all national and local electrical and construction codes and regulations.

The Robin iTetra2's panel connectors are dust and water protected according to IP 65 by mating with related cable connectors. They cannot stay disconnected outdoor.

All unused panel connectors have to be sealed by the rubber caps.

Visually check panel connectors on accidental water leaks before connecting related cable connectors.

If some water will appear in panel connectors, do not connect cable connectors, especially power!



The rubber caps have to be placed on unused connectors.

4.1 Connection to the mains

**For protection from electric shock, the fixture must be earthed!
The fixture has to be connected to an electric outlet which is equipped with a residual-current device (residual-current circuit breaker)!**

Wiring and connection work must be carried out by a qualified electrician.

The Robin iTetra2 is equipped with auto-switching power supply that automatically adjusts to any 50-60Hz AC power source from 100-240 Volts.

Mains cable powerCON TRUE1 In/open ended is enclosed to the fixture. We recommend to install cord end-sleeves 1.5 x 8 (cross section in mm² x length in mm) on the cords of the mains cable. If you need to install a power plug on the mains 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. Connection to mains has to keep IP 65 protection rating.

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)!

Ensure all connections and the power plug on the cable are properly sealed.

To apply power, first check that the head tilt lock is released.

Design of the iTetra2 allows you to connect several fixtures to AC mains power in one interconnected daisy chain using power input and throughput connectors.

The max. number of connected fixtures depends on the AC mains power voltage:

CE:

5 fixtures at power supply= 230V

5 fixtures at power supply= 208V

3 fixtures at power supply= 120V

ETL:

4 fixtures at power supply= 230V

4 fixtures at power supply= 208V

2 fixture at power supply= 120V

Real 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 the fixtures installation Do not overload the supply line and connecting leads.

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

4.2 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.

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.

Allow the fixture to cool for ten minutes before handling.

Fixture should be installed in areas outside walking paths, seating areas, or away from areas where unauthorized personnel might reach the fixture by hand.

IMPORTANT! OVERHEAD RIGGING REQUIRES EXTENSIVE EXPERIENCE, including calculating working load limits, installation material being used, and periodic safety inspection of all installation material and the projector. If you lack these qualifications, do not attempt the installation yourself, but use a help of professional companies.

CAUTION: Fixtures may cause severe injuries when crashing down! If you have doubts concerning the safety of a possible installation, do not install the fixture!

The fixture has to be installed out of the reach of public.

The fixture must never be fixed swinging freely on the truss.

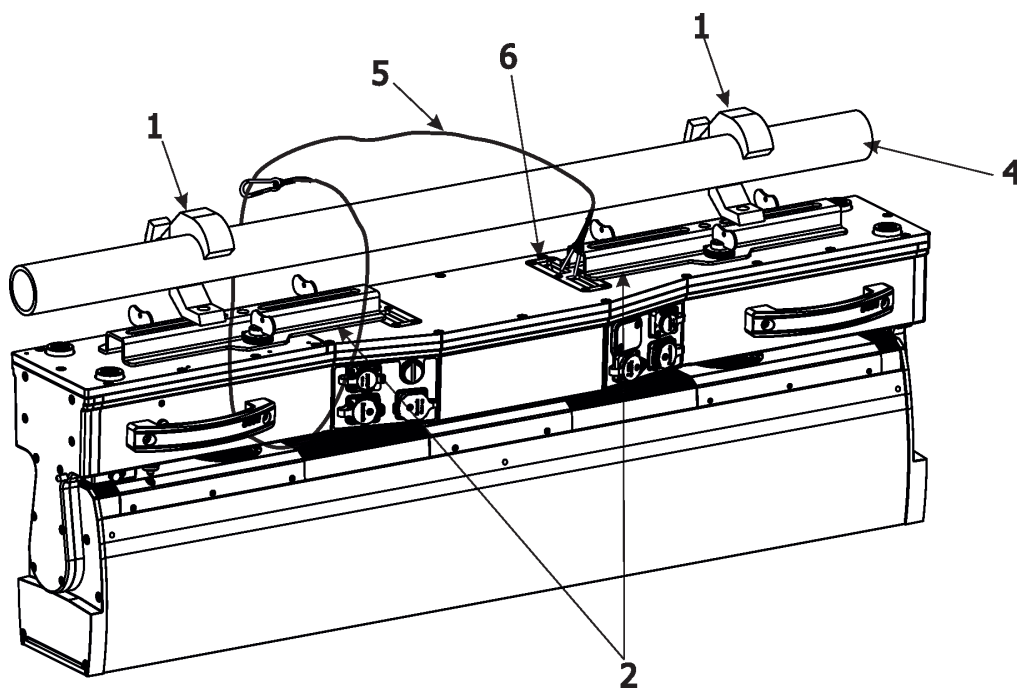
Danger of fire !
When installing the device, make sure there is no highly inflammable material (decoration articles, etc.) in a distance of min. 0.5 m.

CAUTION!
Use 2 appropriate clamps to rig the fixture on the truss.
Follow the instructions mentioned at the bottom of the base.
Make sure that the device is fixed properly! Ensure that the structure (truss) to which you are attaching the fixtures is secure.

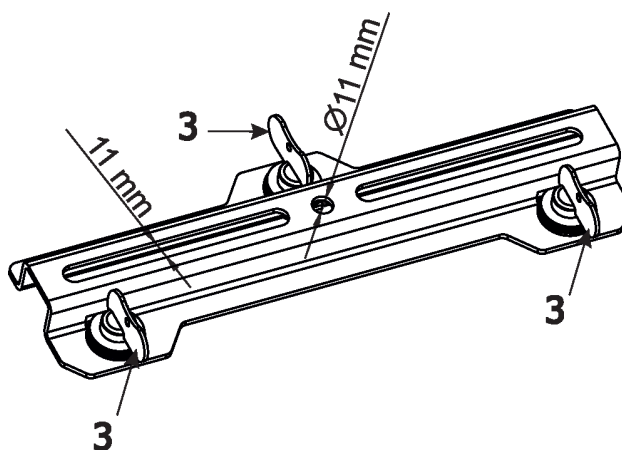
The fixture can be placed directly on the stage floor or rigged on the truss.
For securing the fixture to the truss, install a safety wire which can hold at least 10 times the weight of the fixture.
Use only the safety wire with a snap hook with screw lock gate.

Truss installation

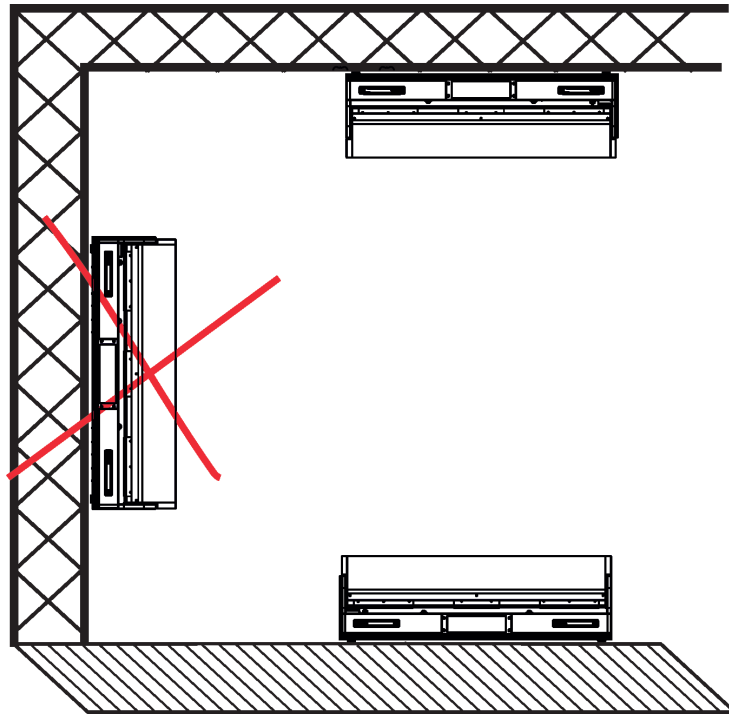
1. Bolt the clamps (1) to the two mounting adaptors (2) by means of M10 bolts and lock nuts through openings in the mounting adaptors.
2. Fasten the mounting adaptors to the bottom side of the base by means of the three quick-lock fasteners (3) on each adaptor.
3. Clamp the fixture on a truss (4) and tighten the rigging clamps (1).
4. Pull a safety wire (5) around the truss (4) and through the handle and lock the snap hook of the safety wire in the attachment point (6) as shown on the picture below. Use the safety wire of a suitable length that maximum fall of the fixture will be 20 cm.



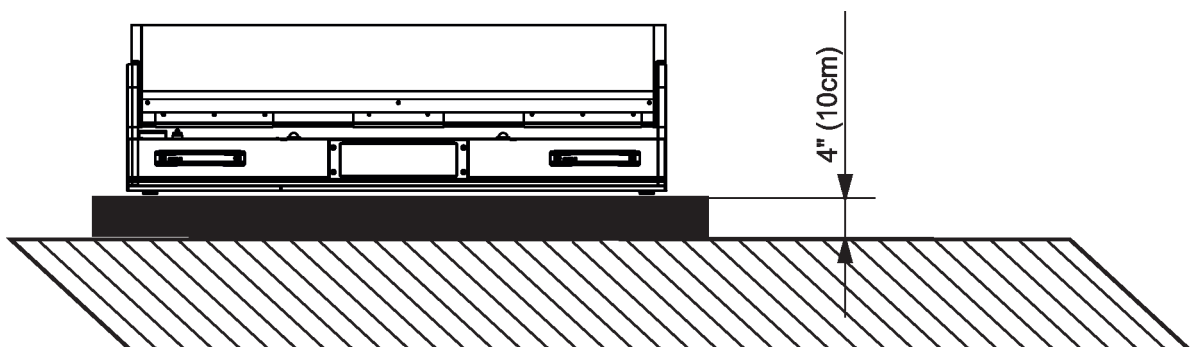
Mounting adaptor



Allowed installation positions of the iTetra2.



Note for open-air installation: if the fixture stands on the ground, min. distance of 4" (10cm) between the fixture base and the ground has to be kept.



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

DANGER TO LIFE!
***Before taking into operation for the first time, the installation has to be approved by
an expert!***

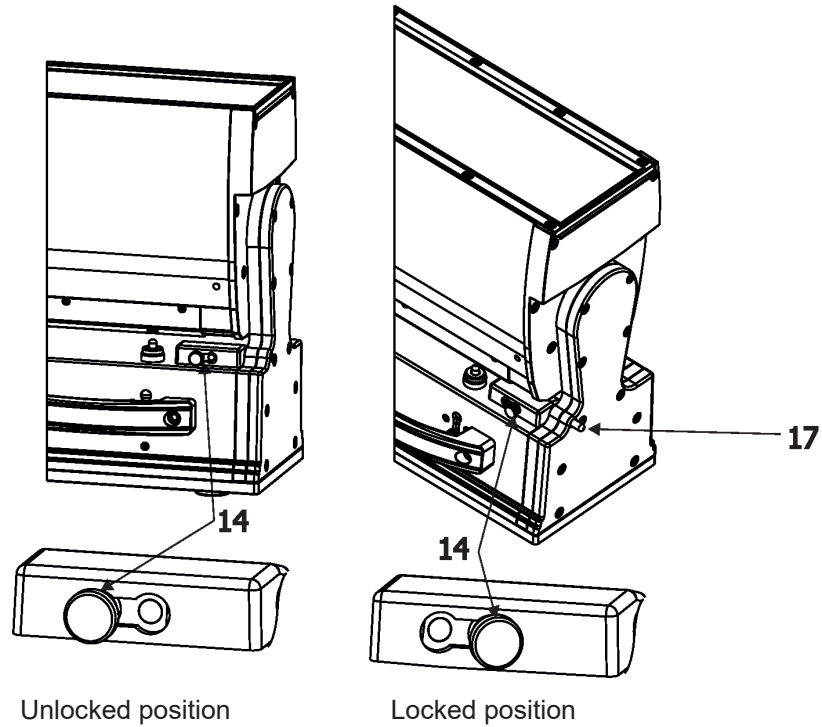
***In order to protect the internal parts of the head from the sun, the function
PARKING POSITION must be switched ON before switching the fixture off.***

The PARKING POSITION function is located on the Power/Special functions channel (120-129 DMX). If the

function is on, the fixture will automatically detect via G-sensor whether the fixture is on the floor or hangs on the truss and moves the tilt to the position in which the head will always face down. Owing this position of the fixture head, there is not chance to burn internal parts of the head by the sun light.

Floor installation

The side lock (14) allows you to interlock fixtures in a row when fixtures are installed side-by-side. If the side lock (14) is in a locked position, the pin (17) sticks out of the fixture housing and snaps into hole in the housing of the adjacent fixture. Do not forget to unlock side locks before dismantling the row of interlocked fixtures. The side lock (14) has to be in unlocked position before inserting the fixture to the case.



4.3 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.

To keep declared IP rating of the XLR panel connectors, all used XLR connectors and cables have to meet IP 65 rating.

DMX - output

XLR sockets (rear view):

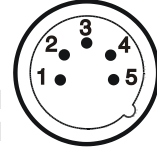
- 1 - Shield
- 2 - Signal (-)
- 3 - Signal (+)
- 4 - Not connected
- 5 - Not connected



DMX-input

XLR plugs (rear view):

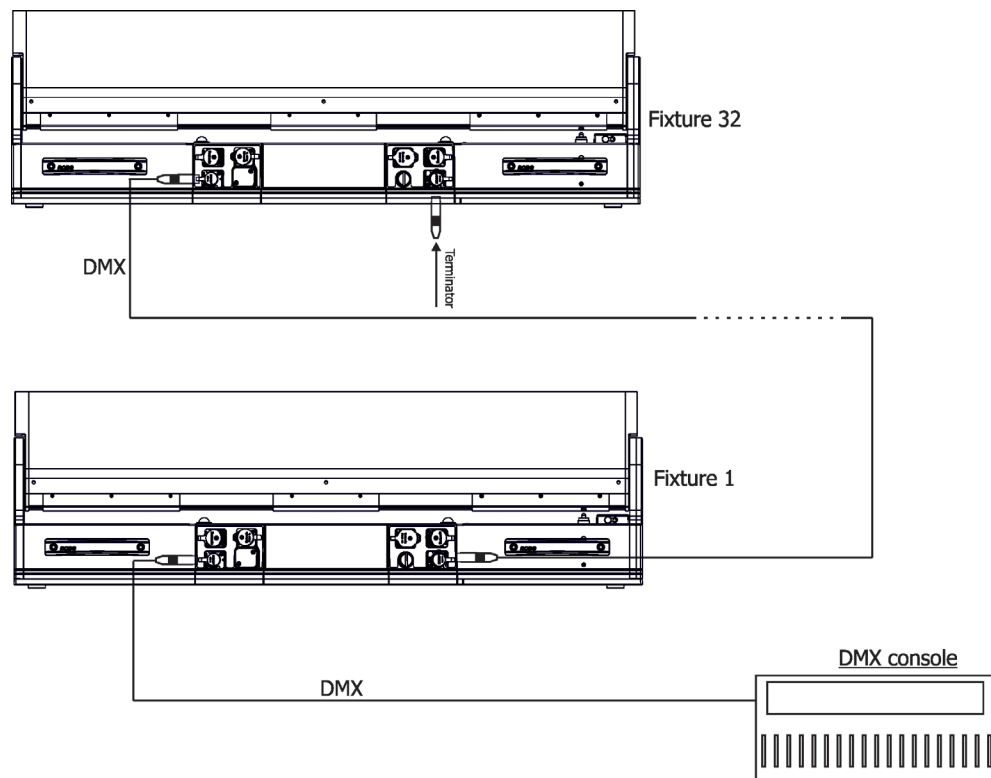
- 1 - Shield
- 2 - Signal (-)
- 3 - Signal (+)
- 4 - Not connected
- 5 - Not connected



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 connected.

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 5-pin XLR plug and plug it into DMX output of the last fixture.



The Robin iTetra2's panel connectors are dust and water protected according to IP 65 by mating with related cable connectors. They cannot stay disconnected outdoor. All unused panel connectors have to be sealed by the rubber caps.

4.4 Ethernet connection

To keep declared IP rating of the fixture, all used RJ45 and XLR connectors and cables have to meet IP 65 rating.

The fixtures on a data link are connected to the Ethernet with appropriate communication protocol (e.g. ArtNet). The control software running on your PC (or light console) has to support Art-Net protocol.

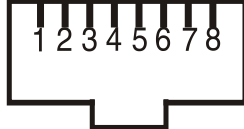
Art-Net communication protocol is a 10 Base T Ethernet protocol based on the TCP/IP. Its purpose is to allow transfer of large amounts of DMX 512 data over a wide area using standard network technology.

IP address is the Internet protocol address. The IP uniquely identifies any node (fixture) on a network.

The Universe is a single DMX 512 frame of 512 channels.

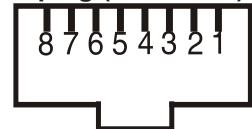
The Robin iTetra2 is equipped with two 8-pin RJ-45 socket for Ethernet input. Use a network cable category 5 (with four “twisted” wire pairs) and standard RJ-45 plugs in order to connect the fixture to the network.

RJ-45 socket (front view):



- | | |
|------------------|------------------|
| 1- TD+ | 5- Not connected |
| 2- TD- | 6- RX- |
| 3- RX+ | 7- Not connected |
| 4- Not connected | 8- Not connected |

RJ-45 plug (front view):



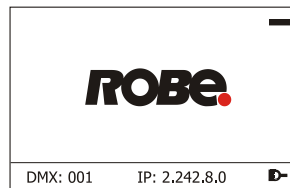
Patch cables that connect fixtures to the hubs or LAN sockets are wired 1:1, that is, pins with the same numbers are connected together:

1-1	2-2	3-3	4-4	5-5	6-6	7-7	8-8
-----	-----	-----	-----	-----	-----	-----	-----

If only the fixture and the computer are to be interconnected, no hubs or other active components are needed. A cross-cable has to be used:

1-3	2-6	3-1	4-8	5-7	6-2	7-5	8-4
-----	-----	-----	-----	-----	-----	-----	-----

If the fixture is connected with active Ethernet socket (e.g. switch) the network icon  will appear at the bottom right corner of the screen:

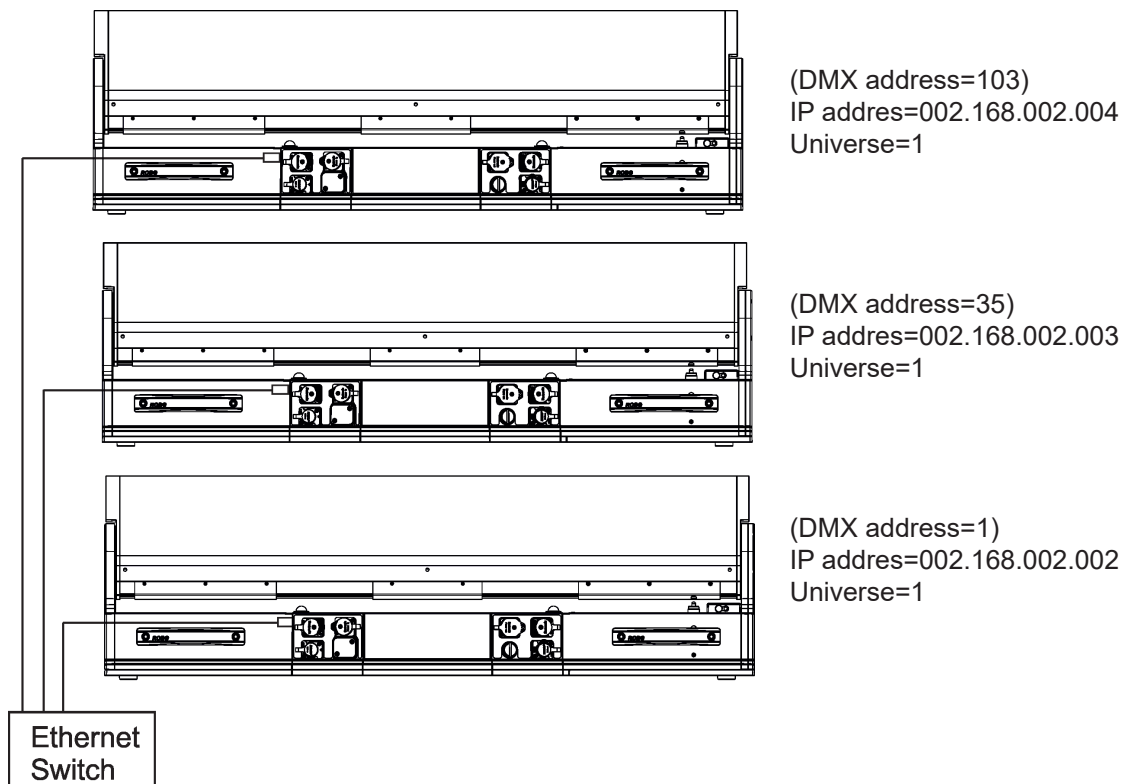


Ethernet operation

Connect the fixtures to the Ethernet network.

Option “Artnet (gMa1, gMA2 or sACN)” has to be selected from “Ethernet Mode” menu on the fixture.

Set IP address (002.xxx.xxx.xxx / 010.xxx.xxx.xxx) and the Universe.



An advised PC setting: IP address: 002.xxx.xxx.xxx / 010.xxx.xxx.xxx (Different from fixture IP addresses)
NET mask: 255.0.0.0

The iTetra2 is equipped with Ethernet Pass Through Switch which sustains Ethernet integrity, when the fixture has no power, it automatically maintains network connectivity.
If you use the Ethernet IN-OUT way for the Ethernet connection, max. 8 fixtures can be connected in the IN-OUT line

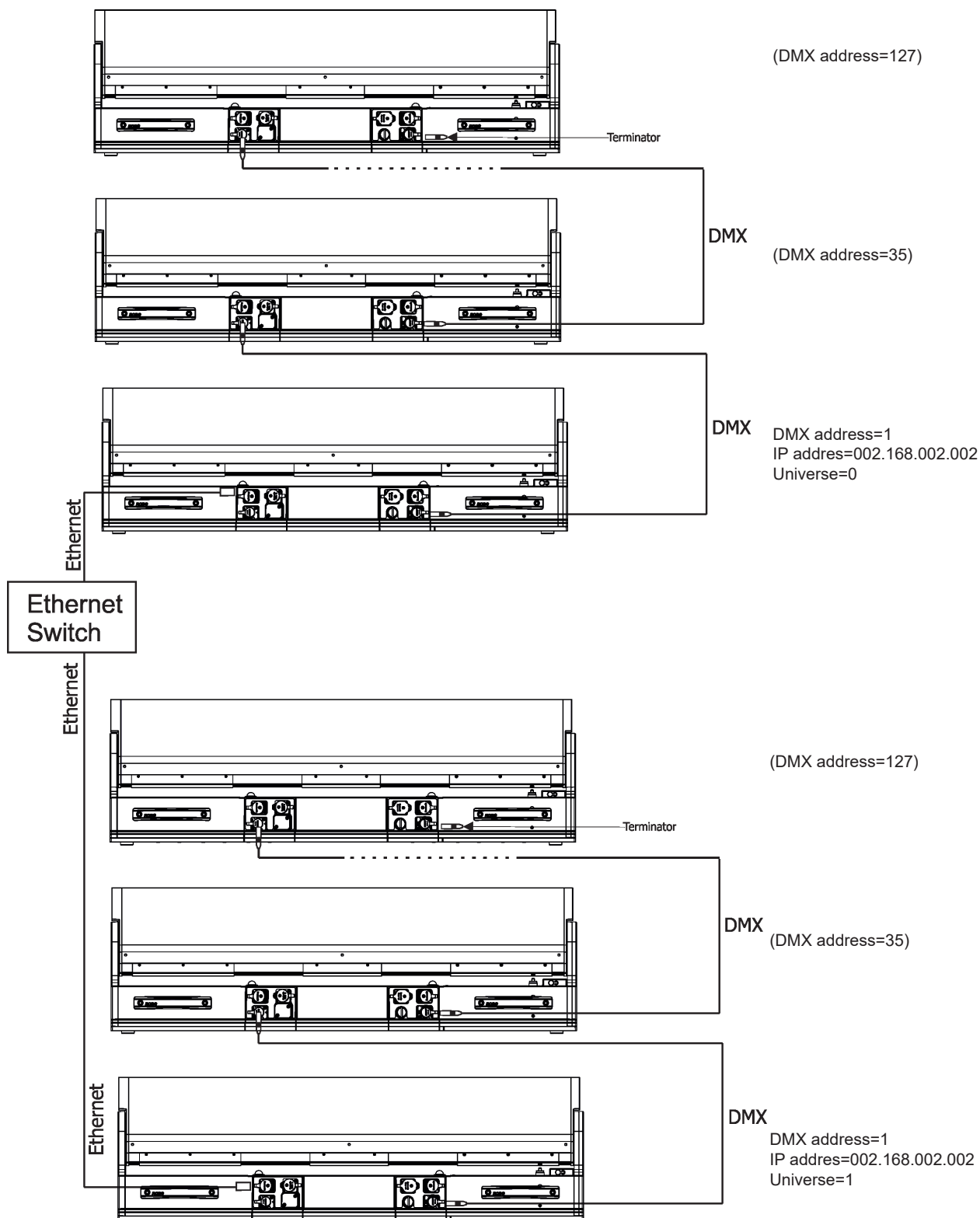
Ethernet / DMX operation

Option "Artnet" (gMal or gMA2 or sACN) has to be selected from "Ethernet Mode" menu at first fixture.

Option "Ethernet To DMX" has to be selected from the menu "Ethernet Mode" at the first fixture (connected to the Ethernet) in the fixture chain, next fixtures have standard DMX setting.

Connect the Ethernet-input of the first fixture in the data chain with the network. Connect the DMX output of this fixture with the input of the next fixture until all fixtures are connected to the DMX chain.

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



4.5 Wireless DMX operation

The integrated wireless DMX/RDM module allows receiving wireless DMX. The ROBE wireless DMX/RDM module has full support for wireless communication protocols at entertainment market. Modul is based on well known LumenRadio RF technology, with implemented wire interface for connection with Robe products. RF output for MCX interface antenna as standard output

The item " Wireless " from the menu "DMX Input" allows you to activate receiving of wireless DMX (Personality--> DMX Input -->Wireless.). First two options from the "DMX Input" menu are stated in DMX chart as well (channel Power/Special functions , range of 10-19 DMX). If DMX input option is changed by DMX command, the change is permanently written into fixture's memory.

DMX range of 10-19 switching fixture to the wired/wireless operation is active only during first 10 seconds after switching the fixture on.

After switching the fixture on, the fixture checks both modes of receiving DMX in the following order:

1. For the first five seconds, the fixture receives DMX signal from the wired input. If the Power/Special functions channel is set at some DMX input option, the fixture will receive DMX value according to this option. If DMX input option is set to the wired input , this option is saved and checking procedure is finished. If DMX input option is not set, the fixture continues next 5 seconds in scanning wireless DMX signal-see point 2.

2. For the next 5 seconds the fixture receives wireless DMX signal and again detects if the Power/Special functions channel is set at some DMX input option, if not, the fixture will take option which is set in the fixture menu "DMX Input".

To link the fixture with DMX transmitter.

The fixture can be only linked with the transmitter by running the link procedure at DMX transmitter .

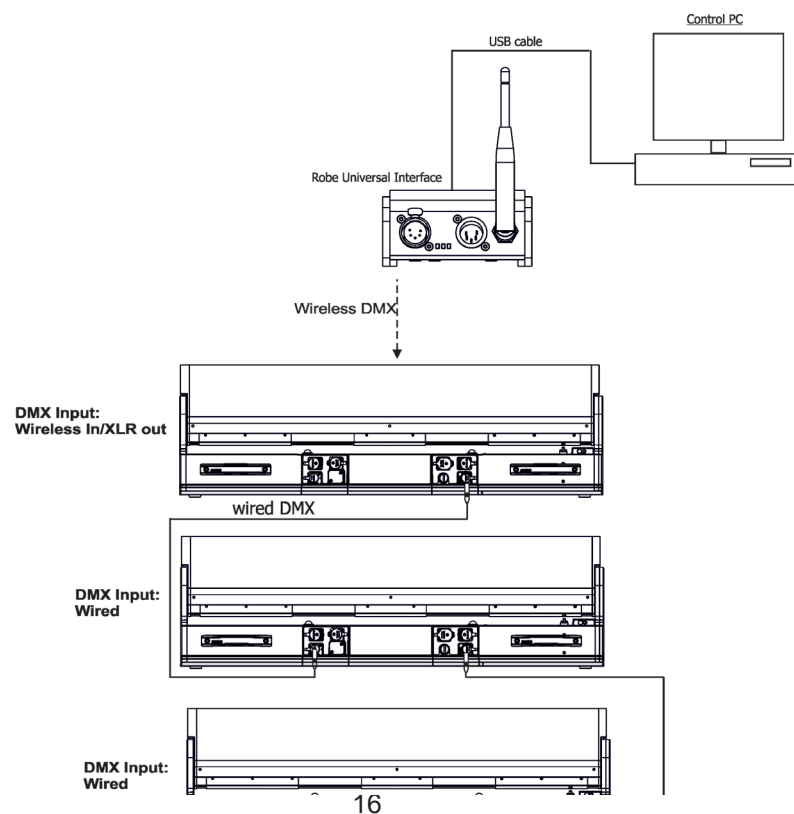
After linking , the level of DMX signal (0-100 %) is displayed in the menu item "Wireless State" (Information -->Wireless State).

To unlink the fixture from DMX transmitter.

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

Note: If the option "Wireless In/XLR Out" is selected (Personality--> DMX Input -->Wireless In/XLR Out), the fixture receives wireless DMX and sends the signal to its wired DMX output. The fixture behaves as " Wireless/ Wired" adaptor.

Example:



5. Checking the IP65 integrity of the fixture.

The Robin iTetra2 is IP65 rated lighting fixture which has been designed to be protected against the ingress of dust and pressure water jets from any direction.

1. Smart pressure test - for this test serves the function "Pressure Test" in the tab Service. Unique testing procedure allows you easy testing of the IP65 integrity of the fixture. You do not need any external device connected to the fixture for running the test.

The fixture has to be connected to mains (must not be in Standby mode) and a head temperature (at pressure sensor) cannot be higher than 55°C. The pressure test takes about 8 minutes and can be run at earliest 10 minutes after closing light output of the fixture. The pressure test can be repeated at earliest 2 minutes after last pressure test.

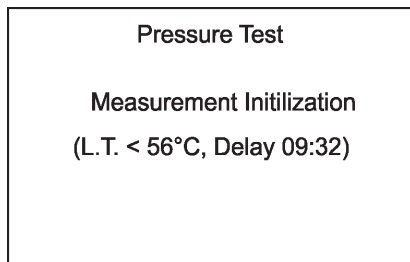
The function "Pressure Test" should be run after the following actions:

- **unscrewing/screwing back any watertight cover**
- **checking/replacing dessicants in the fixture base or head**
- **replacing tilt motor**

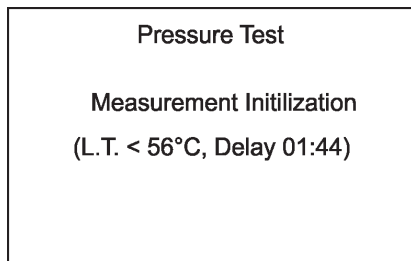
The pressure test can be also run by DMX command (channel Power/Special function) or from web interface REAP (Robe Ethernet Access Portal). During the pressure test fixture does not respond to DMX commands (except DMX value 9 on the channel Power/Special functions).

Examples of screens (front panel display) of the smart pressure test:

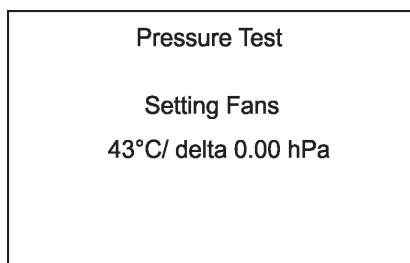
Fixture waits for 10 minutes period elapsing (inside of the fixture is too hot)



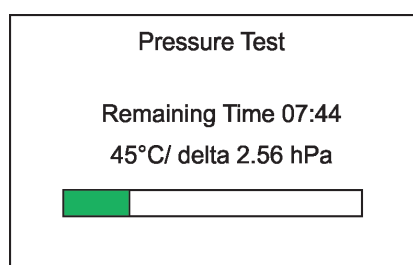
Fixture waits for 2 minutes period elapsing (pressure test was repeated too early)



Setting fans



Test in progress



Legend:

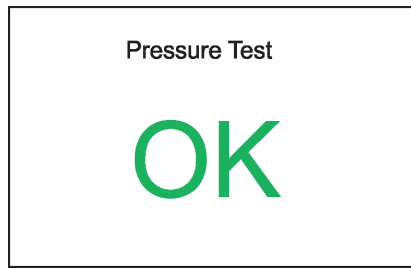
07:44Remaining Time (minutes) to finish of pressure test.

45°C.....Temperature at pressure sensor.

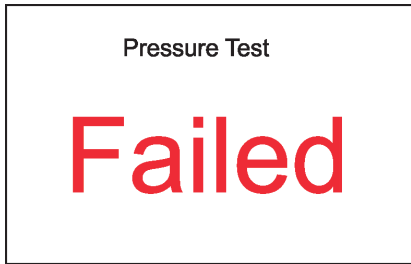
delta 2.56 hPa...Pressure difference.

The pressure difference has to be >7 hPa for successful test.

Test passed



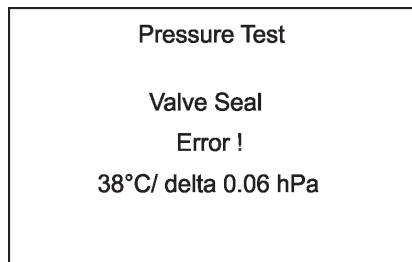
Test failed



If the first pressure test failed and the second is OK, the fixture complies with IP65 integrity.

If the pressure test twice fails despite checking of correct tightening of the cover screws and gaskets under covers, the fixture has to be tested by means of "Enhanced pressure test". For this type of pressure test is needed the Pressure IP Testing Set ROBE (P/N 10980659). Please ask your ROBE distributor for help.

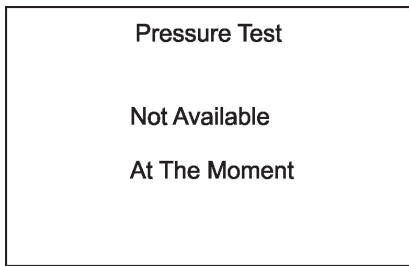
The message "Valve Seal Error" means that valve or coil in the valve is defective or there is a connection problem.



Check the connection between the valve and control PCB, especially cable connector. Other reason can be faulty coil in the valve or faulty valve.

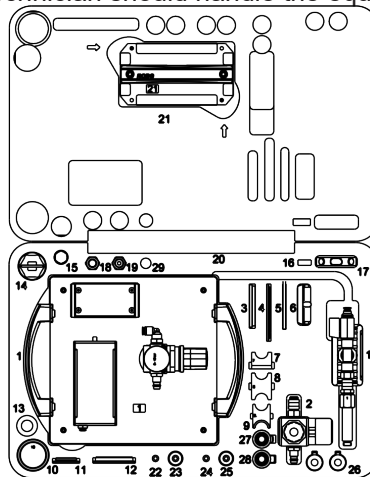


The message "Not Available At The Moment" means that the fixture is not connected to mains.



2. Enhanced pressure test - a special equipment Pressure IP Testing Set ROBE (P/N 10980659) is intended for this kind of pressure test. Only trained technician should handle the equipment.

Pressure IP Testing Set ROBE
in case:



If this equipment is used for pressure test of the fixture, the following values of pressure have to be kept:

Underpressure test.

300 mbar for 1 minute, pressure fall can be to 5 mbar maximally.

Overpressure test

150 mbar maximally!

6. Operating the fixture at ambient temperatures below 0°C

Design of the iTetra2 allows its operation at ambient temperature up to -30°C, but you have to take some specific into account before operating the fixture.

1. Fixture is not in Standby mode.

Ambient temperatures from 0°C to -10°C.

The fixture can be switched off but after powered it on, fixture reset can be delayed in range of 0 - 30 minutes depending on ambient temperature (max. delay is at low ambient temperature). This delay is caused by heating fixture effects on operating temperature. The fixture does not respond to DMX during heating the fixture on operating temperature.

We recommend to switch the fixture on at least 30 minutes before show.

Ambient temperatures from -11°C to -30°C.

The fixture should be permanently powered on in order to keep operating temperature of fixture's effects.

If the fixture is switched off, reset of the fixture will last long time (up to 1 hour depending on ambient temperature) until fixture effects reach their operating temperature. The fixture does not respond to DMX during heating the fixture on operating temperature.

2. Fixture is in Standby mode.

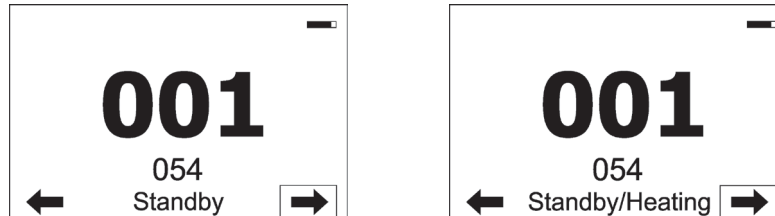
If the fixture is switched to Standby mode (fixture has to be connected to mains), the fixture keeps internal temperature on a level suitable for operation of fixture's effects without delay, heating up of the fixture inside is done automatically.

7. Standby mode

The fixture can be switched to Standby mode by means of web interface REAP or DMX command (channel Power/Special functions, DMX values 6).

Standby mode can be cancelled by means of web interface REAP, DMX command (channel Power/Special functions, DMX values 7) or by switching the fixture off and on.

Standby mode helps conserve power when a fixture is not in use, without fully powering it off. The max. power consumption of the fixture in Standby mode does not exceed 20 W (if the fixture is heated, power consumption is higher). Standby mode is indicated by a notice on the fixture display.



In the Standby mode, the fixture display is functional and can be used for setting of the fixture, but all motors and fans are deactivated, light output is closed.

As the fixture motors are deactivated, the fixture does not respond to DMX values controlling effects but the channel Power /Special functions can be used for fixture settings.

The fixture in Standby mode provides information for RDM and REAP and also can be set its behaviour by means of the RDM and REAP.

Main benefits of Standby mode:

- there is not time delay of fixture reset at ambient temperatures below 0°C.
- By means of REAP user has current information about fixture (settings, temperatures, state of desiccant in the fixture head).

8. Remotely controllable functions

Virtual colour wheel

This wheel contains 66 preset colours, rainbow effect with/without fade time.

Colour temperature correction (CTC)

This channel allows to set calibrated white colour from range of 8000K-2700K.

RGBW or CMY colour mixing system

The RGBW colour mixing system is based on red, green, blue and white high power LEDs. Option for switching the fixture to the CMY colour mixing system is also available.

Colour Mix control

The Colour Mix control channel defines relation between global colours (RGBW, CTO, Virtual colour wheel) and individual RGB pixels or Kling-Net.

Global = Global Colours (RGBW, CTO, Virtual Colour Wheel)

Pixel = Pixel Colors (RGB individual pixels or Kling-Net)

DMX value

Function

0-9	Global colours (Global has priority)
10-19	Maximum mode (highest values have priority)
20-29	Minimum mode (lowest values have priority)
30-39	Multiply mode (multiply Global and Pixel)
40-49	Addition mode (Global + Pixel) - default
50-59	Subtraction mode (Global – Pixel)
60-69	Inverted Subtraction mode (Pixel – Global)
70-79	Coloured background
80-127	Reserved
128	Global colours (Global has priority)
129-254	Crossfade (crossfade between Global and Pixel)
255	Pixel colours (Pixel has priority)

E.g. If you wish to control RGBW channels, set the Colour Mix Control channel to 0 DMX, if you need to use pixel effects, set the Colour Mix Control channel to 255 DMX.

Multi-Coloured Flower Effects

Two Multi-Coloured Flower Effects rotating in both directions at variable speed create spectacular multicolour beam effects in the air.

Zoom

Motorized zoom offers beam range of 4° - 45°. The fixture allows you to control the zoom as a master zoom (all lenses together) or divided into two sections (zoom 1, zoom 2) with 9 lenses per section. The master zoom has priority to the zoom 1/zoom 2.

Pixel control

18 RGB pixels allow you to create many effects or use pre-defined pixel effects.

Dimmer/Shutter system

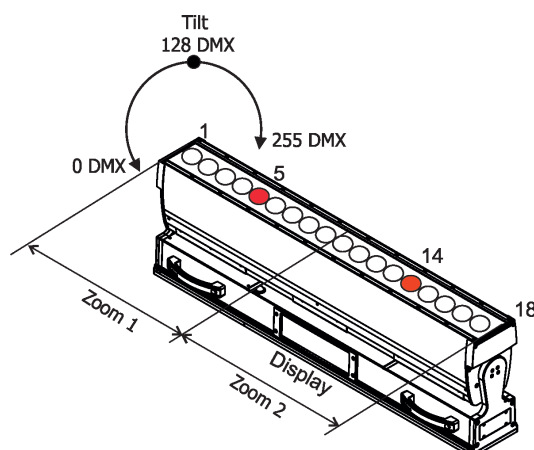
Imperceptible 18 bit dimming 0 - 100 % for ultra smooth fade to black Strobe effects with variable speed.

Tilt

Precise tilt movement in range of 191°.

Direction of tilt movement and pixel order/zoom order:

Multi-coloured flower effects are placed at pixel positions 5 and 14.



9. Control menu map

Default settings=**Bold print**

Tab	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Addressing	Settings	DMX Address	001-512			
		DMX Preset	Mode 1 , Mode 2, Mode 3, Mode 4 Mode 5, Mode 6			
		Ethernet Settings	Ethernet Mode	Disable		
				ArtNet		
				gMA1		
				gMA2		
				sACN		
			Ethernet To DMX	Off , On		
			IP Address/Net Mask	Default IP Address		
				Custom IP Address		
				Net Mask		
			ArtNet Universe	0-255		
			MANet settings	MANet/II Universe	01-256	
				MANet Session ID	01-32	
			sACN Settings	sACN Universe	00001-32000	
				sACN Priority	0-255	
			Klingnet Settings	Disable		
				Enable		
Information	Fixture Times	Power On Time	Total Hours			
			Resetable Hours			
	Fixture Temperatures	LEDs Temperature	Current			
			Maximum NonRes.			
			Maximum Res.			
		Base Temperature	Current			
			Maximum NonRes.			
			Maximum Res.			
	RAINS status					
	Sensors Info					
	DMX Values	Tilt				
		:				
		White Pixel 18				
	Wireless State	Signal Quality				
		Unlink Wireless Adapter				
	Power Channel State					
	Software Versions	Display System				
		Module M				
		Module DR				
		Module PX				
		Module DL				
		Wireless				
	Product IDs	Mac Address				
		RDM UID				
		RDM Label				
	View Logs	Fixture Errors				
		Fixture States	Power On			
			Power Off			
		Fixture Position				
		Fixture Temperatures	LEDs Temperature			

Tab	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			Base Temperature			
		Sensor Logs				
		Pressure Test Logs				
Personality						
	DMX Presets	Mode 1				
		Mode 2				
		:				
		Mode 6				
		View Selected Preset				
	DMX Input	Wired Input				
		Wireless Input				
		Wireless In/XLR Out				
	Tilt Settings	Tilt Reverse	Off, On			
		Tilt Feedback	Off, On			
		Tilt mode	Time			
			Speed			
	Pixel Control	Pixel Index	0-17			
		Pixel Mirror	On, Off			
		Reset to default				
	Blackout Settings	Blackout During M.C.	Off, On			
		Blackout while:	Tilt moving	Off, On		
	Colour Mixing Mode	RGBW				
		CMY				
	White Point 8000K	Off, On				
	Tungsten Eff. Sim.	Off				
		750W				
		1000W				
		1200W				
		2000W				
		2500W				
	Automatic white pixel On/Off	Off, On				
	Dimmer Curve	Linear				
		Square Law				
	LEDs Output Frequency	Standard High				
	LEDs Frequency Adjust	-6....0....+6				
	Init Effect Positions	Tilt	0-255			
		:				
		Dimmer Fine	0-255			
	Screen Settings	Display Intensity	1-10			
		Screen Saver Delay	Off-10min.			
		Touchscreen Lock	Off-10min.			
		Recalibrate Touchscreen				
		Display Orientation	Normal			
			Inverted			
			Auto			
	Temperature Unit	°C, °F				
	Fan settings	Fan Mode	Auto			
			High			
			Quiet			
		Quiet-Blackout Fan Off	Off, On			
	Date & Time Settings					
	Reset Web Pass-word					

Tab	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
	Default Settings					
Manual Control	Reset Functions	Total System reset				
		Tilt reset				
		Zoom Reset				
		Flower E. Reset				
	Manual Effect Control	Tilt	0-255			
		:				
		White Pixel 18	0-255			
Stand -Alone	Test Sequences	Dynamic Mode				
		Static Mode	Tilt	0-255		
			Zoom	0-255		
	MusicTrigger	Off, On				
	Preset Playback	None				
		Test				
		Prog. 1				
		Prog. 2				
		Prog. 3				
	Play Program	Play Program 1				
		Play Program 2				
		Play Program 3				
	Edit Program	Edit Program 1	Start Step	1-76		
			End Step	1-76		
			Edit Program Steps	Step 1	Tilt	0-255
				:	:	
				:	Dimmer Fine	0-255
				:	Step Time	0-25,5 sec.
				Step 76	Tilt	0-255
					:	
					Dimmer Fine	0-255
					Step Time	0-25,5 sec.
Service	Adjust DMX Values	Tilt	0-255			
		:				
		White Pixel 18	0-255			
	Calibrations	Calibrate Effects	Tilt	0-255		
			FE 1 Rotation	0-255		
			FE 2 Rotation	0-255		
		Calibrate colours	Red	0-255		
			Green	0-255		
			Blue	0-255		
			White	0-255		
			Red Intensity	0-255		
			Green Intensity	0-255		
			Blue Intensity	0-255		
			White intensity	0-255		
		Pixel Correction	Red 1	0-255		
			Green 1	0-255		
			Blue 1	0-255		
			White 1	0-255		
			:			
			Red 18	0-255		
			Green 18	0-255		
			Blue 18	0-255		
			White 18	0-255		

Tab	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
		Calibrate Tilt Reset				
		Load Default Calibrations				
	Update Software					

10. Control menu

The Robin iTetra2 is equipped with the QVGA screen with battery backup and four control buttons which allow you to set the fixture's behaviour according to your needs, obtain information on its operation, test its various parts and program it, if it has to be used in a stand-alone mode. The fixture supports NFC (Near-Field Communication).

NFC interface and control buttons on the front panel



[ESCAPE] button used to leave the menu without saving changes.

[NEXT] , [PREV] buttons for moving between menu items and symbols, adjusting values.

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

If the fixture is disconnected from mains, the button switches the screen on.

Icons used in the screen menu:



- [back arrow] used to move back to the previous screen (menu).



- [up arrow] used to move up on the previous page.



- [down arrow] used to move down on the next page.



- [confirm] used to save adjusted values, to leave menu or to perform desired action.



- [cancel] used to leave menu item without saving changes.



- [confirm+copy] used to save adjusted values and copy them to the next prog. step.



- [warning icon] used to indicate some error which has occurred in the fixture.



- [Ethernet] used to indicate Ethernet connected.



- [display turn] used to turn the display by 180°.



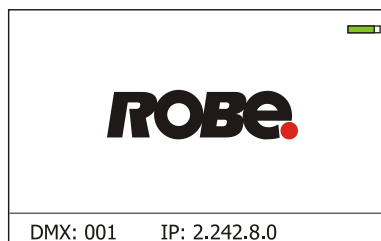
- [slider control] used to recall slider system for setting desired value.



- [keyboard control] used to recall keyboard system for setting desired value.

The menu page displays icons for each function that you can perform from the screen.

After switching the fixture on, the screen shows the screen with the ROBE logo:



Note: The green icon at the top right corner of the screen indicates the level of the display battery charging. If the whole icon is green, the battery is fully charged while the red icon indicates exhausted battery. The battery

charges during fixture operation, its charging lasts cca 6 hours.

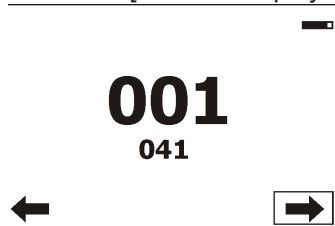
We recommend that the fixture should be in operation at least 7 hours per week to keep the battery fully charged. If you switch the fixture on and this screen will not appear till 1 minute, switch the fixture off and on again. If the screen lights, the battery is exhausted. In case the screen still does not light, the battery is faulty.

This is also indicated by an error message "Faulty battery" and if such an error message appears the battery should be replaced immediately. The lifetime of the battery is highly dependent on ambient temperature (and consequently on base temperature). If the maximum ambient temperatures (as recorded and displayed in menu: Information -> Fixture Temperatures -> Ambient Temperature -> Maximum NonRes.) are kept within the specified limits, the battery should last for at least two years. Should the ambient temperatures exceed the specified maximum temperature, the lifetime of the batteries could be considerably shortened even up to just one year or less and also result in physical damage (battery leakage) or unreliable fixture functions.

Damage caused by batteries failed due to exceeded maximum ambient temperature cannot be claimed under warranty terms.

Press the [ENTER/Display On] button to enter the "Address" menu.

Any item may be selected from a screen by pressing the [NEXT] or [PREV] buttons to scroll through list items. With each press, the next item is highlighted. Press [ENTER/Display On] to select the highlighted item.



Before first fixture operation, set current date and time in the menu "Date &Time Settings" (menu path: Personality--> Date &Time Settings).

As the fixture can be operated at wide range of ambient temperatures, suitable environment has to be maintained inside of the fixture. The following messages under DMX address inform you about fixture status.



The fixture is waiting for finishing all reset procedures.
Fixture does not respond to DMX.



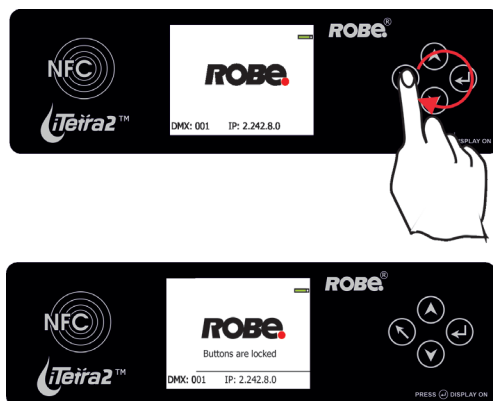
The fixture is waiting for reaching operating temperature of the fixture inside (inside temperature is below 0°C).
Fixture does not respond to DMX.



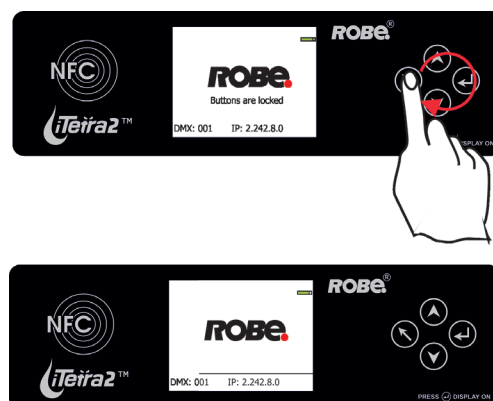
The fixture is in standby mode.
Fixture effects does not respond to DMX, but display is active. Fixture sends its statuses and recorded physical values (temperature, humidity, pressure) to the REAP.

Locking/unlocking the screen

To lock the screen, display the screen with ROBE logo, touch the [ESCAPE] button and slide your finger clockwise in a circular track of 360° across buttons [ESCAPE] --> [NEXT] --> [ENTER/Display On] --> [PREV]--> [ESCAPE]. The sign "Buttons are locked" will appear on the screen. If this sign will not appear, repeat finger sliding again with a different speed.



To unlock the screen, touch the [ESCAPE] button and slide your finger clockwise in a circular track of 360° across buttons [ESCAPE] --> [NEXT] --> [ENTER/Display On] --> [PREV]--> [ESCAPE]. The sign "Buttons are locked" will disappear from the screen. If this sign still remains on the screen, repeat finger sliding again with a different speed.



10.1 Tab " Address"



DMX Address - Select the menu to set the DMX start address.

DMX Preset - Use the menu to select desired channel mode.

View Selected Preset - Use the menu to display channels included in the selected mode.

Ethernet Settings - The menu allows all needed settings for the Ethernet operation

Ethernet Mode

Disable - The option disables Ethernet operation.

Artnet - Fixture receives Artnet protocol

gMA1 - Fixture receives MANet 1 protocol

gMA2 - Fixture receives MANet 2 protocol

sACN - Fixture receives sACN protocol

Ethernet To DMX - Fixture receives protocol from the Ethernet input and sends DMX data to its DMX output (fixture works as an "Ethernet/DMX converter", next fixture can be connected to its DMX output and you can build a standard DMX chain by connecting another fixtures. Only one fixture has to be connected to the Ethernet.

IP Address/Net Mask - Select this menu to set IP address. IP address is the Internet protocol address. The IP uniquely identifies any node (fixture) on a network.

There cannot be 2 fixtures with the same IP address on the network!

Default IP Address -Preset IP address, you can set up only first byte of IP address (2 or 10) e.g. 002.019.052.086.

Custom IP Address - The option enables to set up all bytes of IP address.

Net Mask - The option enables to set up all bytes of Net Mask.

ArtNet Universe - Use this item to set a Universe (0-255). The Universe is a single DMX 512 frame of 512 channels.

MANet Settings - Use this menu to set parameters for MANet operation.

MANet Universe I/II - The value of this item can be set in range 1-256.

MANet Session ID - The value of this item can be set in range 1-32.

sACN Settings - Use this menu to set parameters for sACN operation.

sACN Universe - The value of this item can be set in range 1-32000.

sACN Priority - The value of this item can be set in range 0-255.

Klingnet Settings - Use this menu to enable or disable Klingnet protocol.

10.2 Tab "Information"



Fixture Times - The menu provides readouts of fixture operation hours and air filters using hours.

Power On Time - Select this menu to read the number of fixture operation hours.

Total Hours - The item shows the total number of the operation hours since the Robin iTetra2 has been fabricated.

Resettable Hours - The item shows the number of the operation hours that the Robin iTetra2 has been powered on since the counter was last reset.

In order to reset this counter to 0, touch the text box next to the item "Resettable Hours."

Fixture Temperatures - The menu is used to view temperatures of the fixture's inside.

LEDs temperatures - The menu shows temperature on the LEDs PCB in the fixture head.

Cur. - A current temperature of the LEDs PCB.

Max. - A maximum temperature of the LEDs PCB since the fixture has been fabricated.

Max. Res. - A maximum temperature of the LEDs PCB since the counter was last reset.

In order to reset some counter to 0, touch desired text box under item "Max.Res."

Base Temperature - The menu shows temperature in the fixture base.

Current - A current temperature in the fixture base.

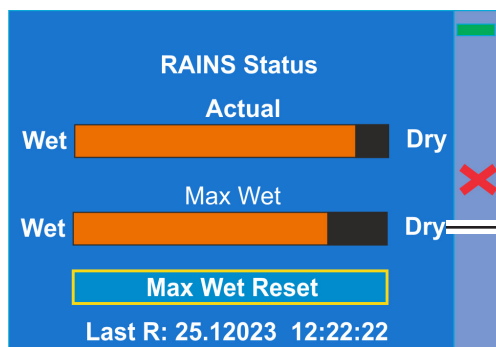
Maximum NonRes. - A maximum temperature in the fixture base since the fixture has been fabricated.

Maximum Res. - A maximum temperature in the fixture base since the counter was last reset.

In order to reset this counter to 0, touch the text box next to the item "Maximum Res."

RAINS Status - The menu item gives you information about environment in the fixture.

RAINS (Robe Automatic Ingress Neutralization System) manages humidity, temperature and pressure control using an active monitoring system to automatically remove any moisture detected within the fixture and provides permanent monitoring to ensure peak performance of the fixture.



Silica gel desiccant in tube in the fixture head



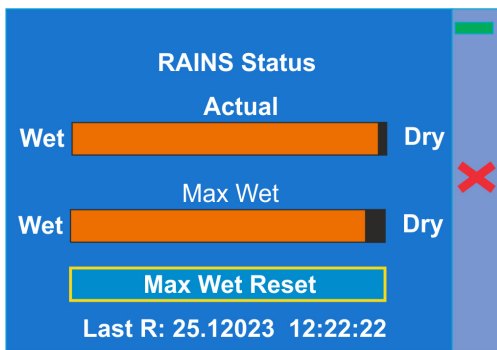
The bar chart **Actual** informs you about current humidity in the fixture. The bar chart changes depending on humidity, temperature and pressure in the fixture. The bar chart depends on current conditions in the fixture and can be different at start of fixture operation, after 10 minutes of its operating, after closing fixture dimmer etc.

The bar chart **MAX WET** informs you about maximum humidity achieved in the fixture since the chart was last reset. The bar chart also informs you about saturation of silica gel with water in tube in the fixture base and is deciding indicator for its checking and replacement.

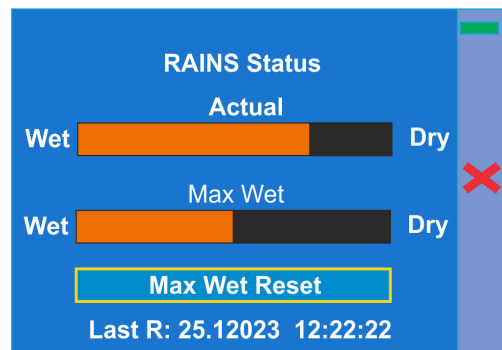
The option **MAX WET reset** resets the bar chart MAX WET. Date and time of last reset is displayed below the option.

Examples of RAINS statuses:

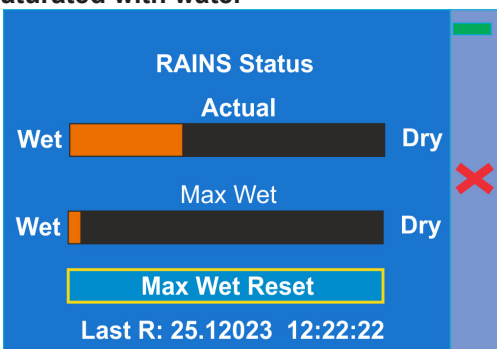
Dry desiccant in tube in the fixture base



Desiccant in tube in the fixture base partially saturated with water



Desiccant in tube in the fixture base fully saturated with water



Desiccant in tube in the fixture base is saturated with water and should be replaced.

After replacing it, reset the item MAX WET.

Maybe it will not be necessary to replace silica gel desiccant in the plastic boxes in the fixture head and base. These desiccants should be checked (and replaced if it is needed) at removing base or head cover, e.g. at some service intervention.

Sensors Info - The menu items shows you current conditions in the fixture (at pressure sensor): temperature, relative humidity and pressure.

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

Wireless State - The menu serves for reading of the wireless operation status.

Unlink Wireless Adapter - The item serves for unlinking the fixture from DMX transmitter.

Power Channel State - The menu item shows state of the Power/Special functions switches.

Software Version - Select this item to read the software version of the fixture modules:

Display System - a display processor on the display board in the fixture base

Module M - a tilt processors

Module DR - a LEDs control processor

Module PX - a pixels + zoom control processor

Module DL - a data logger

Wireless - a wireless DMX module

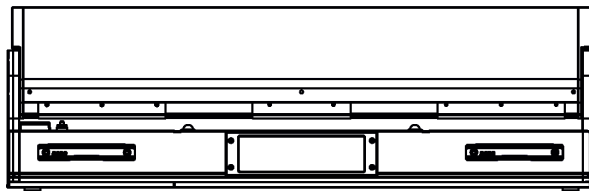
Product IDs - The menu is used to read the MAC Address ,RDM UID and RDM Label.

View Logs - Use this menu to read fixture's data which have been recorded during fixture operation. This collected data allows easier troubleshooting.

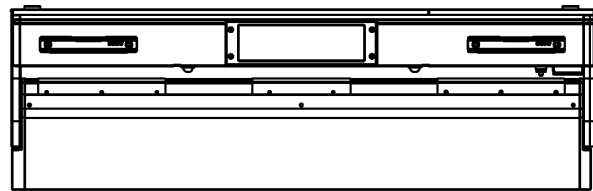
Fixture Errors - Use this menu to read fixture errors which have occurred during fixture operation.

Fixture States - Recorded following actions: Fixture On, Fixture Off.

Fixture Position - Recorded installation positions of the fixture:



Disp-FN



Disp-FI

Fixture Temperatures - Recorded temperatures which have exceeded defined levels.

Sensor Logs - In the menu item are recorded physical values in the fixture: temperature, relative humidity and pressure.

Pressure Test Log - In the menu item are recorded values related to executed pressure tests: date and time, temperature, pressure difference, duration of pressure test and its result.

Note: The log buffer can contain 8000 records max. If the buffer is full, old data will be overwritten.

10.3 Tab "Personality"



DMX Preset - Use the menu to select desired channel mode.

View Selected Preset - Use the menu to display channels included in the selected mode.

DMX Input - Use the menu to select mode of DMX signal receiving.

Wired - DMX signal is received by means of the standard DMX cable.

Wireless - DMX signal is received by means of the inbuilt wireless module.

Wireless In/XLR Out - the fixture receives wireless DMX and sends the signal to its wired DMX output.

The fixture behaves as "Wireless/Wired" adaptor.

The options "Wired" and "Wireless" are also stated in DMX chart (channel Power/Special functions).

Note. If the wireless module is not installed in the fixture, the following message will appear:

**DMX Input Set to Wired
Wireless Module Missing**

If the fixture is not connected to mains, the message "Not Available In Offline Mode" will appear after entering the menu DMX Input. To enter this menu, the fixture has to be connected to mains.

Tilt Settings - Use the menu set behaviour of the tilt movement.

Tilt Reverse - The item allows to invert tilt movement.

Tilt Feedback - The item allows to return the LED module to the required tilt position after changing the position by an external force if this option is set on.

Note. Be careful, the Tilt Feedback should be permanent On, the option Off is not suitable for standard operation and the head of the fixture can be damaged!

Tilt mode - Use this menu to set the Time mode or Speed mode of the tilt movement. Value of time (0-25,5sec. max) or speed can be set by means of the channel "Tilt speed, Tilt time".

Pixel Control - Use the menu to index or mirror pixels.

Pixel Index - The item allows you to choose needed position of turned pixels.

Pixel Mirror - The item allows mirroring of pixels along a vertical axis.

Both functions you can also find on the channel Power/Special functions (210-237 DMX).

Important: If you use DMX commands to set values for both Pixel Index and Pixel Mirror functions, set values will be lost after switching the fixture off. In order to save the values to the fixture, go to DMX value of 237 and stay in it for 3 sec. The set values will be saved to the fixture and will not be lost by switching the fixture off and on.

Reset to default - The item sets items "Pixel Index" and "Pixel Mirror" to default (factory) values.

Blackout Settings - Use the menu if you need to close the light output under certain conditions which are described below

Blackout DMC - Blackout during movement correction. Set this option On if you wish to close light

output during the time when the LED module goes to its correct position, which has been changed by an external force.

Active Blackouts - Use this menu if you wish to close the light output during effect changes.

Tilt Moving - The menu item enables to close light output while the tilt is moving.

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 Point 8000K - 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 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.

Tungsten Effect Sim. - This function simulates behaviour of a halogen lamp during dimming at calibrated whites 2700K, 3200K. You can select from various lamp wattage simulation: 750W, 1000W, 1200W, 2000W, 2500W.

Automatic white pixel On/Off - In pixel control DMX modes, this function allows automatic activation of the white LEDs, based on levels of RGB pixels.

Dimmer Curve - You can select desired dimmer curve: Linear or Square Law.

LEDs Output Frequency - The function allows you to set the PWM (Pulse Width Modulation) output frequency of LEDs to Standard (300Hz) or High (600Hz).

LEDs Frequency Adjust - The function allows you to change the selected PWM output frequency of LEDs in 6 levels up and down around the selected frequency in the menu "LEDs Output Frequency".

-1...-6 - Frequency levels 1 - 6 under selected frequency.

00 - Selected frequency (Standard or High)

1...6 - Frequency levels 1 - 6 above selected frequency.

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.

Screen Settings - Use this menu to change the touch screen settings.

Display Intensity - The item allows to control the intensity of the screen (1-min., 10-max.).

Screen saver Delay - The item allows you to keep the screen on or to turn it off automatically after 1-10 minutes after last touch (or pressing any button on the control panel).

Touchscreen Lock - The item allows you to lock the screen after last touch (or pressing any button on the control panel). The time delay can be set in range of 1-10 minutes. To unlock the screen, press the [ENTER/Display On] button.

Recalibrate Touchscreen - The item starts calibration of the touchscreen. Follow the instructions on the screen.

Display Orientation - The menu allows to change display orientation.

Normal - Standard display orientation if the fixture is placed horizontally (e.g. on the ground).

Inverted - This function rotates menu 180 degrees from current orientation.

Auto - The option activates a gravitation sensor for automatic screen orientation.

Note: **Auto** option is set as default. You change the display orientation by touching the icon  on the display, an the option set in the "Display Orientation" menu is temporarily overridden.

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

Fan Settings - Use the menu to set fans operation mode.

Fan Mode - Use the menu to set the fixture fans to max. power mode (option "**High**") or to the auto-control mode (option "**Auto**"). The third option "**Quiet**" allows you to set desired fan noise. The light output of the fixture is reduced at low speeds of fans.

Quiet - Blackout Fan Off - The menu item allows you to stop all fans in the fixture (option "**On**") when its light output is closed (shutter in range of 0-31 DMX or dimmer in 0 DMX). The menu item does not influence fans in the "**High**" mode.

Date & Time Settings - Use this menu to set current date and time for the fixture log system (menu "View Logs"). Set this menu item before first fixture operation.

Password Protection - allows to enter password in order to prevent unauthorized person from changing setting

of the fixture. Password is set to 7623 and cannot be changed.

Reset Web Password - The menu item allows you to reset a password for access to the REAP (default password: 2479, user: robe).

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

10.4 Tab "Manual Control"



Reset Functions - The menu allows to reset the fixture either per function modules or all modules together.

Total System Reset - The item resets all function modules.

Tilt Reset - The item resets a tilt.

Zoom Reset - The item resets a zoom system.

Flower E. Reset - The item resets Flower effects.

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

10.5 Tab "Stand-alone"



Test Sequences - Use the menu to run a test/demo sequences without an external controller, which will show you some possibilities of using Robin iTetra2.

Dynamic Mode - This mode uses all Robin iTetra2 functions including tilt movement and therefore is good for a complete introduction of the fixture.

Static Mode - This mode is suitable for projections on the wall, ceiling or ground without any pan/tilt movement. Adjust the tilt and zoom to desired positions and start test sequences by the green ► icon.

Preset Playback - This menu allows you to select the program which will be played in a loop after switching the fixture on (the option is commonly used in a stand-alone operation without an external controller).

None - The option disables "Presetting playback" function.

Test - The option starts the test sequences.

Prog. 1 - The option starts user program No. 1.

Prog. 2 - The option starts user program No. 2.

Prog. 3 - The option starts user program No. 3.

Play program - Use the menu to run desired program in a loop.

Play Program 1 - The option starts user program No.1.

Play Program 2 - The option starts user program No. 2.

Play Program 3 - The option starts user program No. 3.

Edit Program - Use the menu to create or to edit desired program. The Robin iTetra2 offers 3 free programs, each up to 76 steps.

Edit Program 1 - The option allows to edit user program No.1.

Edit Program 2 - The option allows to edit user program No.2.

Edit Program 3 - The option allows to edit user program No.3

To edit program:

1. Touch the item which you want to edit ("Edit Program 1" - "Edit Program 3").
2. Touch the item "Edit Program Steps".
3. Touch the item "Step 1".
4. From the list of effects touch desired effect and set its value. Browse throw the list by touching the [up arrow] and [down arrow] and set all desired effects.
An item "Step Time" (value of 0-25.5 sec.) is the time during which effects last in the current step
5. Save adjusted effects to the current step by touching the [confirm] or save and copy them to the following

step by touching the [confirm+copy]. By touching the text box "Preview" next to the current program step you can view created scene.

6. Repeat the steps 4 and 5 for next program steps.

7. After editing desired program steps, adjust the length of the program by touching the text boxes "Start Step" and "End Step".

Meaning of the icons used in the "Edit Program" menu:

↓ - moves down on the next page

✓ - saves adjusted values and leaves menu

↑ - moves up on the previous page

✓ - saves values to the current step and copy them to the following prog. step

✗ - leaves menu without saving values

10.6 Tab "Service"



Pressure Test - The menu item runs a procedure which checks the IP65 integrity of the fixture. The fixture has to be connected to mains and the head temperature (at pressure sensor) cannot be higher than 55°C. The pressure test lasts about 8 minutes and can be run at earliest 10 minutes after closing light output (shutter closed) of the fixture. The pressure test can be repeated at earliest 2 minutes after last pressure test.

For more details of pressure test please see the chapter Checking the IP65 integrity of the fixture.

Calibrations - This menu enables fine calibration of fixture effects and download default calibration values.

Calibrate Effects - The menu allows the fine adjustment of effects.

Tilt - a tilt position fine adjustment

FE 1 Rotation - a flower effect 1 fine rotation

FE 2 Rotation - a flower effect 1 fine rotation

Calibration of the effects via the control board

1. Disconnect DMX controller from the fixture and enter the "Calibrate Effects" menu.
2. Use the [up arrow] and [down arrow] to find "Tilt" and touch it to enter the fine effect adjustment screen.
3. Set desired value and save it by touching the [confirm].
4. Repeat steps 2 and 3 for next items.
5. After calibrating all effects, touch the [confirm] to save all adjusted values and reset the fixture.

Calibrate Colours - The menu serves for adjusting of LEDs saturation to achieve uniform colours

The items **Red**, **Green**, **Blue** and **White** serve for adjustment of white 5600K.

Calibration of white colour 5600K via the control board:

1. Disconnect DMX controller from the fixture, open shutter and dimmer and set the CTC channel to DMX=64 (white 5600K), RGBW channels to 255 DMX and Zoom channel to 128 DMX.
2. Set the following items in the menu Personality:
White Point 8000K =On
Colour Mixing Mode=RGBW
3. Aim the light beam on the lux meter (e.g. Minolta CL-500A Chroma meter) which is placed at min. distance of 3 m from the fixture.
4. Enter the menu Calibrate Colours.
5. By means of the Red, green, Blue and White items adjust the 5600K colour temperature as exactly as possible ($\Delta u'v' = 0$).
6. After adjusting 5600K colour temperature, touch the [confirm] to save all adjusted values and reset the fixture.

The items **Red Intensity**, **Green Intensity**, **Blue Intensity** and **White Intensity** serve for correction of intensity of red, green, blue and white colour on desired level (during fixture calibration in the factory).

Pixel Correction - The menu serves for colour calibration of fixture pixels in order to get uniform colours all over pixels.

Note: User can do the calibration of white 5600K only, other colour calibrations should be done in the factory.

Calibration protocol:

Effect	Mode 1	Mode 2	Mode 3	Mode 4	Mode 5
Tilt - fine adjustment	channel 35	channel 57	channel 98	channel 116	channel 111
FE 1 Rotation	channel 36	channel 58	channel 99	channel 117	channel 112
FE 2 Rotation	channel 37	channel 59	channel 100	channel 118	channel 113
Red - red saturation	channel 38	channel 60	channel 101	channel 119	channel 114
Green- green saturation	channel 39	channel 61	channel 102	channel 120	channel 115
Blue - blue saturation	channel 40	channel 62	channel 103	channel 121	channel 116
White - white saturation	channel 41	channel 63	channel 104	channel 122	channel 117

Load Default Calibrations - The item loads default (factory) calibration values.

Update software - The menu item allows you to update software in the fixture via either serial or USB port of PC. The following items are required in order to update software:

- PC running Windows or Linux or macOS
- DSU file
- Flash cable RS232/DMX (P/N13050624) or Robe Universal Interface / Robe Universal interface WTX.

To update software in the fixture:

1. DSU file is available from Robe web site at WWW.robe.cz.

File with extension zip is intended for Windows (used and tested from XP to W10 on 32/64bit systems).

File with extension tbz is intended for Linux (used and tested on Debian and Ubuntu 32/64bit).

File with extension dmg is intended for macOS (used and tested on OSX up to Sierra) XQuartz required, install it from <https://www.xquartz.org/>

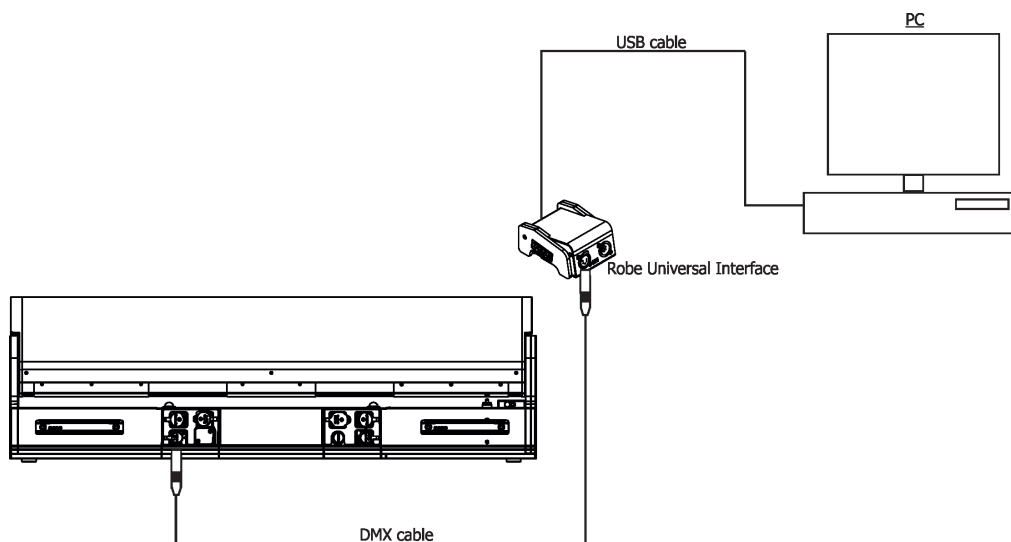
Save the download file to a folder on your computer.

In case that you use windows, extract files in the zip file (e.g. DSU_RobiniTetra2_18051835.zip)

2. Disconnect the fixture from DMX controller.

3. If you use the flash cable RS232/DMX, connect a serial port of your computer with DMX input of the fixture by means of the cable (probably you will need some USB to RS 232 converter if your computer has USB ports only).

If you use the Robe Universal Interface, connect a USB port of your computer with the Robe Universal Interface by means of the USB cable and DMX input of the fixture with the DMX output of the Robe Universal Interface via a DMX cable.

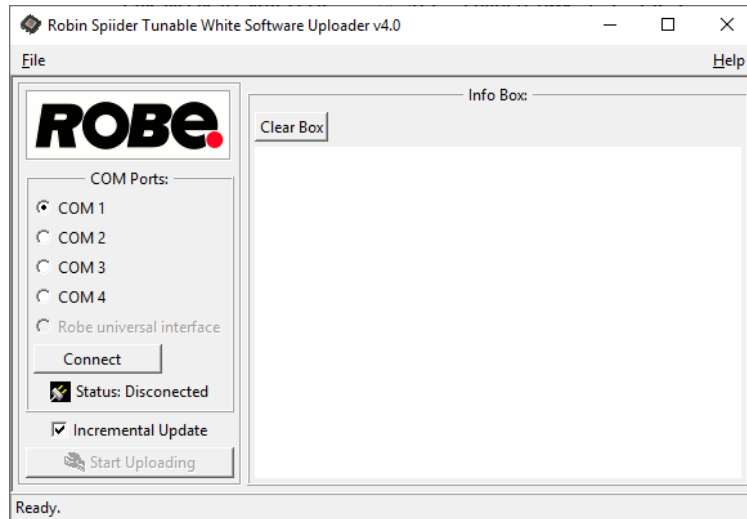


4. Switch the fixture to the update mode (Tab "Service" --> Update software).

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

We recommend to cancel all running programs on your computer before starting the software uploader.

5. Double-click the software uploader file (e.g. DSU_RobiniTetra2_18051835.exe) in the extracted files. The Software Uploader program will start running.



6. Select correct "COM " number if you use a Flash cable RS232/DMX or select "Robe Universal Interface 1 " if you use the Robe Universal Interface/Robe Universal Interface WTX and then click on the "Connect" button.
7. If the connection is OK, click the "Start Uploading" button to start software uploading. It will take several minutes to perform software update.

If the option "Incremental Update" is not checked, all processors will be updated (including processors with the same software version).

If you wish to update only processors with new version of software, check the "Incremental Update box".

Avoid interrupting the process. Update status is being displayed in the "Info Box" window.

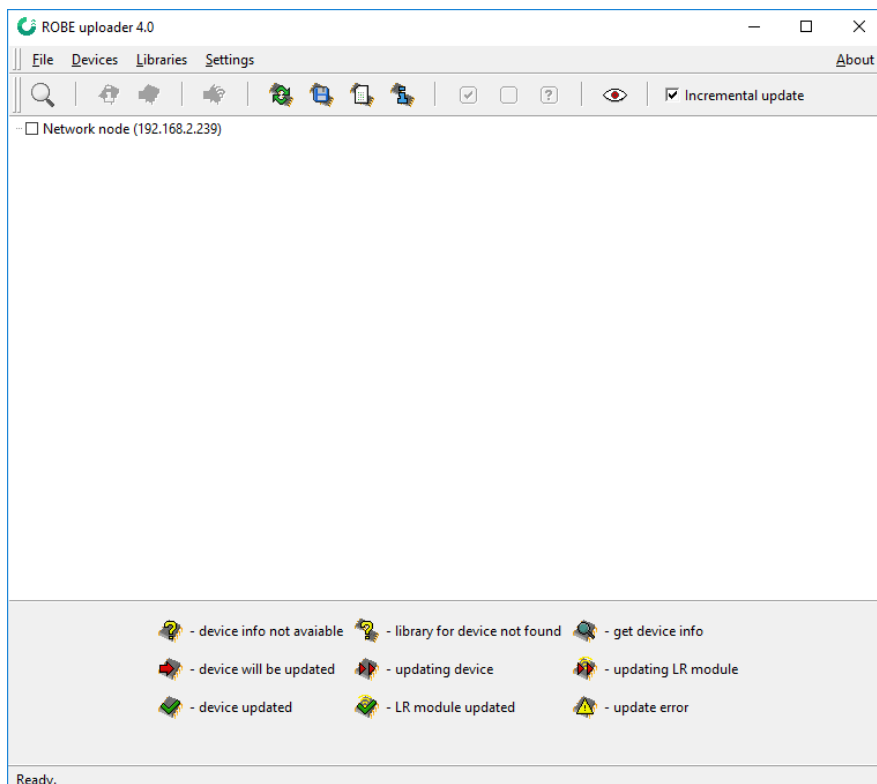
When the update is finished, the line with the text "Fixture is successfully updated" will appear in this window.

Note: After all processors updating, the fixture will be set to default values. If you use the Incremental update, setting the fixture to default values depends on type of updated processors.

In case upload process is interrupted (e.g. power loss), the fixture stays in "Updating mode" and you will have to repeat the software update again.

Another way, how to update software in the fixtures (especially large installation of fixtures) is to use the ROBE Uploader. It is a software for automatized software update of Robe fixtures. It can take advantage of RDM support and Ethernet ports if present in the units.

For more information please see <https://www.robe.cz/robe-uploader/>.



11. 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 iTetra2 is the following.

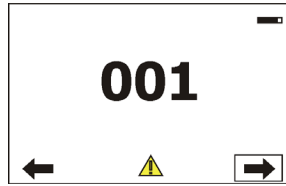
Parameter ID	Discovery command	SET command	GET command
DISC_UNIQUE_BRANCH	*		
DISC_MUTE	*		
DISC_UN_MUTE	*		
DEVICE_INFO			*
SUPPORTED_PARAMETERS			*
SOFTWARE_VERSION_LABEL			*
DMX_START_ADDRESS		*	*
IDENTIFY_DEVICE		*	*
DEVICE_MODEL_DESCRIPTION			*
MANUFACTURER_LABEL			*
DEVICE_LABEL		*	*
SENSOR_DEFINITION			*
SENSOR_VALUE			*
DISPLAY_INVERT		*	*
DISPLAY_LEVEL		*	*
TILT_INVERT		*	*
DEVICE_RESET		*	
DMX_PERSONALITY		*	*
DMX_PERSONALITY_DESCRIPTION			*
STATUS_MESSAGES			*
STATUS_ID_DESCRIPTION			*
DEVICE_HOURS ²			*
ROBE_DMX_INPUT		*	*
ROBE_WIRELESS_UNLINK		*	

²...Commands relative resetable values

RDM model ID for the Robin iTetra2 is 0x0134.

12. Error and information messages

Error in the fixture is signalled by the yellow warning icon at the bottom line of the screen:



Press the [ESCAPE] button to display error messages.

List of error and information messages:

Temper.Sensor Error

The message informs you that the communication between the head temperature sensor and the main processor failed.

Tilt Error 1 (Tilt Error 2)

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 Error 1 (Zoom Error 2)

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

Rod Error

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

EEprom Error

Hardware error of the EEprom.

Recharge The battery

The battery on the display board needs to be charged. Let the fixture on for cca 6 hrs.

Battery faulty. Replace it.

The battery on the display board is exhausted and should be replaced immediately.

Pan/Tilt EMS Cal. Error

The EMS system is not calibrated.

Pan/Tilt EMS Error

Control electronics cannot communicate with the EMS system.

Too Much Humidity in Device

To remove the message, reset the bar chart Max.Wet in the menu RAINS Status (tab Information) and check the silica gel desiccants in the fixture head.

Valve Seal Error

The valve in fixture head or coil in the valve is defective or there is a connection problem between the valve and head, check cable connector at valve.

Base Fan 1 - Blackout

The fan 1 in the fixture base is disconnected from its control PCB or is faulty and has to be replaced.

Base Fan 2 - Blackout

The fan 2 in the fixture base is disconnected from its control PCB or is faulty and has to be replaced.

13. NFC

The fixture supports NFC. Using the mobile phone application ROBE COM you can read and set the Robin iT12 parameters (DMX address, IP address...etc.), get information about temperatures, operation hours, RDM identification etc.

The NFC point is situated on the front panel of the fixture base.



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

Hold the mobile phone on the side of the fixture base, if NFC connection is OK, discovered fixture will appear on the screen, after touching the fixture name the following the following menu items will appear:

- DMX/RDM settings
- Ethernet settings
- Tilt settings
- Blackout settings
- Colour settings
- Display settings
- Other settings
- Software versions
- Device hours
- Device temperatures

Touch desired menu item to enter its submenu.

14. Cleaning

Regular cleaning will not only ensure the maximum light output, but will also allow the fixture to function reliably throughout its life.

The frequency of cleaning depends on the environment in which the fixture operates: damp, smoky or particularly dirty environments can cause greater accumulation of dirt on the fixture housing.

The front glass cover of the fixture should be cleaned on a monthly basis.

A soft lint-free cloth dampened with a solution of water and a mild detergent is recommended, under no circumstances should alcohol, solvents or abrasives be used!

DANGER !

Always disconnect the fixture from mains before starting any cleaning or maintenance work.

**Important! Never use alcohols (ethanol, methanol, isopropyl alcohol), acetone and another aggressive solvents for cleaning the lens array.
Do not immerse lenses in liquid (e.g. water) during cleaning.**

Recommended steps for cleaning the lens array:

1. Use low-pressure compressed air to remove coarse dust from lenses.
2. Use distilled water with weak detergent solution and lint-free small cloth for further cleaning of lenses.
3. Use an antistatic, alcohol-free screen cleaner (we recommend the Lyreco Screen Cleaner) and polish lenses until they are dry.
4. Check the lenses are dry before reapplying power.

Note: potential foggy lens array does not influence function of the fixture and does not subject to complaint.

Potential stains on fixture covers caused by hard water (water that has high mineral content) can be effectively removed by means of non-abrasive descaler (e.g. EverStar descaler).

15. Maintenance

In order to ensure the fixture remains in good condition and does not fail prematurely, we recommend regular maintenance.

The following points have to be considered during fixture inspection:

- All outside covers and screws should be checked for damages, scratches or corrosion.
- All connectors and its rubber caps should be checked for damages or sediments.
- All screws and fasteners has to be securely tightened. Check for any deformation on the housing and rigging points. Damaged rigging points or unsecured rigging could cause the fixture to fall and seriously injure people.
- Electric power supply cable must not show any damage or material fatigue.
- Fans and heatsink should be checked for sediments or dirt/debris accumulation.

User can do the following operations:

- main fuse replacement
- battery replacement
- silica gel desiccants replacement

Another maintenance, cleaning and service operations should be carried out by trained technicians only. If you need any spare parts, please order genuine parts from your local Robe distributor.

Do not remove fixture covers in smoky or particularly dirty environment (e.g. with fog machines).

Fixture metal covers are made of material resistant to corrosion, potential damages of covers (like scratches, abrasions) are only appearance defects and will not cause corrosion of covers.

To repair small damages of fixture metal covers (e.g. scratches), you can use a paint intended for non-rusting metal surfaces (like aluminium, copper...). The paint can be applied to surface by means of a small brush or by spraying.

Use the paint with the same colour and sheen as has your cover. The paint can perform as undercoat or top-coat, it doesn't matter.

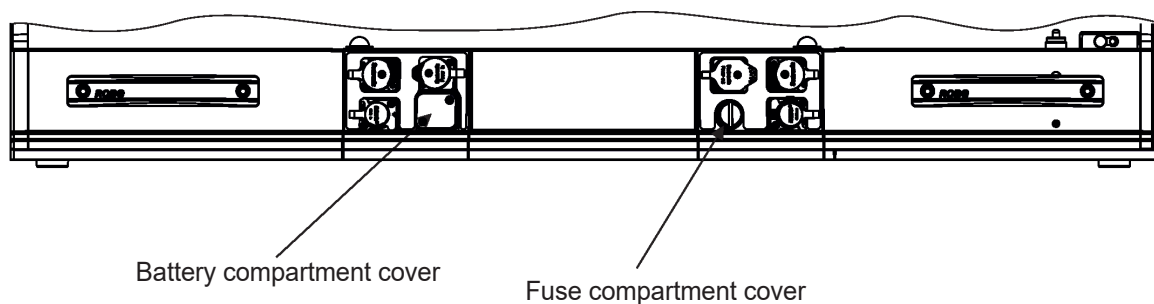
IMPORTANT: in case of service intervention, the front glass cover (or base covers) should be removed as short time as possible (about 1-2 hours depending on air humidity) otherwise silica gel in the small box (boxes) in the fixture base may become damp.

If you have removed front glass cover (or base cover) and you need to interrupt your service work for long time (hours, days), we recommend to place the front glass cover on the head (base covers on the base) and fasten it provisionally by means of two screws, another possibility is unscrewing small box with silica gel and tube with silica gel from the base and put them to a sealed container with limited access of air (e.g. sealed plastic bag).

Replacing the fuse.

Before replacing the fuse, disconnect the fixture from mains.

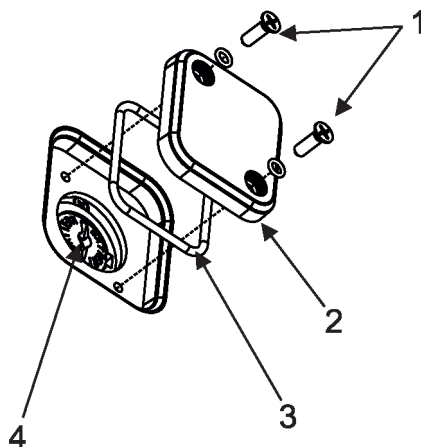
1. Using a flat-blade screwdriver, unscrew (anti-clockwise) the metal cover of the fuse compartment from the rear panel of the base.
2. Unscrew the fuse holder (anti-clockwise) and remove the blown fuse from the fuse holder.
3. Place a good fuse (only the same type and rating) into the fuse holder and screw the fuseholder back.
4. Screw the metal cover of the fuse compartment back to the rear panel, use a tightening torque 2.5Nm.



Replacing the battery.

Before replacing the battery, disconnect the fixture from mains.

1. Using a flat-blade screwdriver, unscrew (anti-clockwise) the metal cover of battery compartment from rear panel of the base.
2. Loosen (anti-clockwise) the battery holder cap.
3. Remove the exhausted battery from the battery holder.
4. Place a new battery (only the same type) into the battery holder (Negative (-) inside, Plus (+) outside).
5. Place back the battery holder cap and tighten it.
6. Screw the metal cover of battery compartment back to the rear panel of the base, use a tightening torque 2.5Nm .

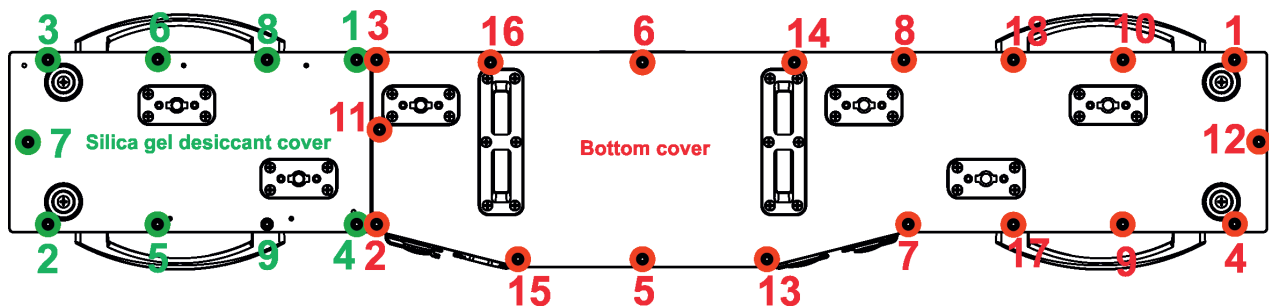


15.1 Torques for watertight covers

Keep values of torques as stated on pictures below otherwise leakage issues can occur.

Run the procedure Pressure Test (Service --> Pressure Test) after replacing any watertight cover!

Bottom cover and silica gel desiccant cover



Before removing the bottom cover unscrew the silica gel desiccant cover !

Only the bottom cover has to be watertight fastened, but we recommend observance of prescribed torques for the silica gel desiccant cover.

○ 9 x hex socket head screw M4x14
9 Spring washer
Tightening torque: 2.5 Nm

Screws* must be tightened
in the order 1-->9.

○ 18 x hex socket head screw M4x14
18x Spring washer
Tightening torque: 2.5 Nm

Screws* must be tightened
in the order 1-->18.

* Tighten all screws in two steps:

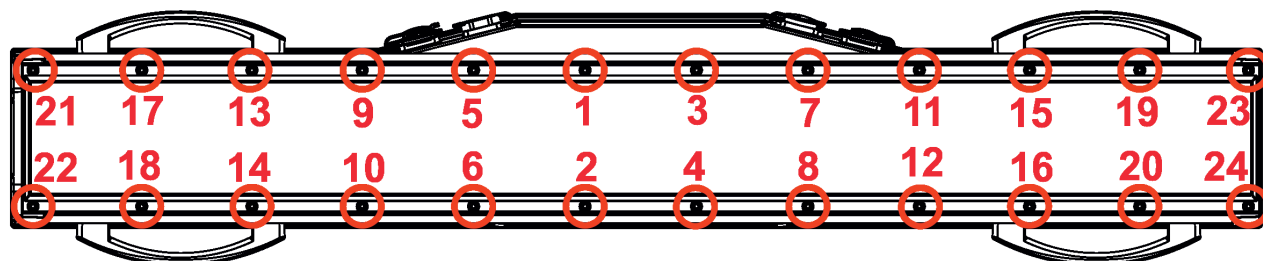
Step 1 - use tightening torque 0.5 Nm (pre-tightening)

Step 2- use tightening torque 2.5 Nm (final tightening)

Carefully check the gasket for signs of deformities or damages and if it is correctly placed before screwing covers back. The gasket is part of base.

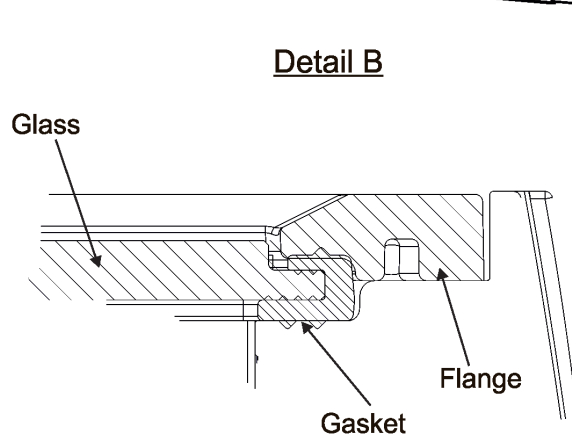
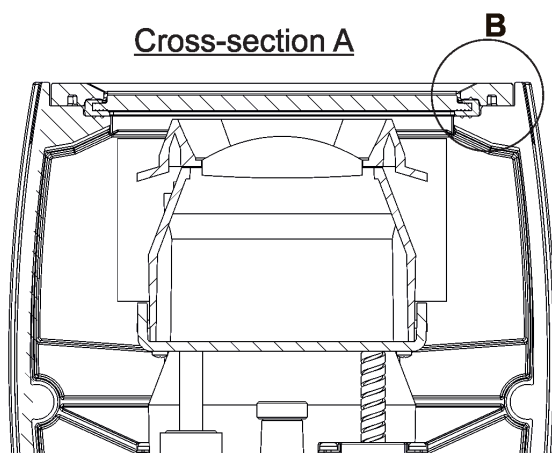
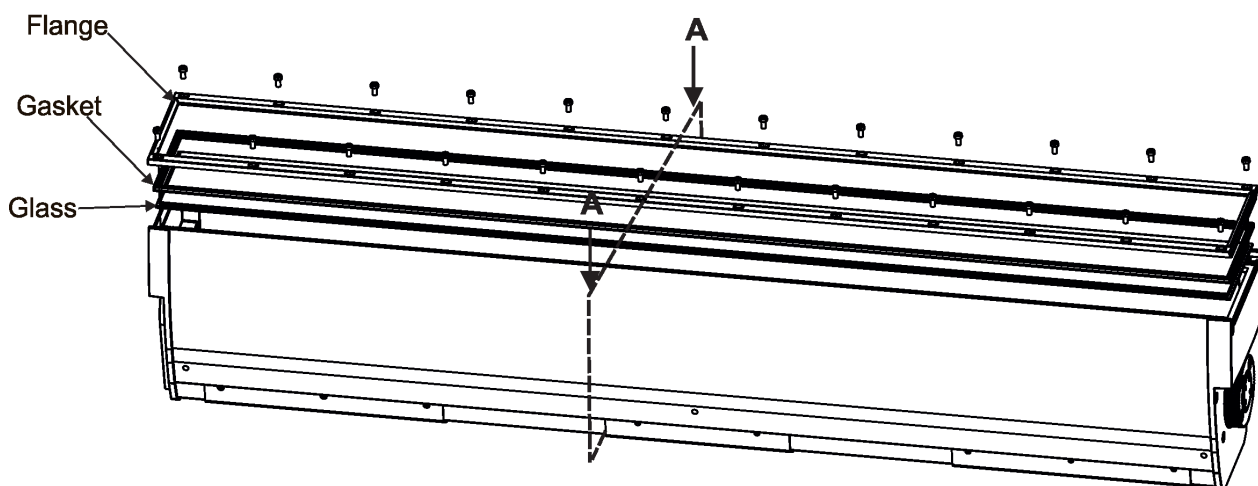
Do not forget to connect grounding wires between chassis and covers.

Head flange



Screws* must be tightened
in the order 1-->24.

24 x hex socket head screw M4x8
Tightening torque: 2.5 Nm



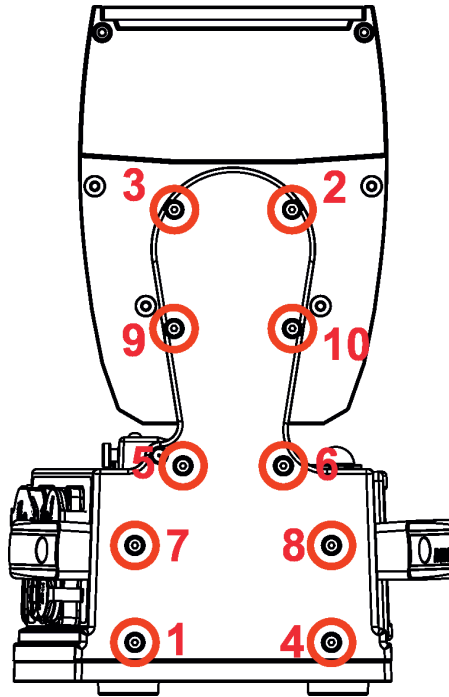
* Tighten all screws in two steps:

Step 1 - use tightening torque 0.5 Nm (pre-tightening)

Step 2- use tightening torque 2.5 Nm (final tightening)

Carefully check the gasket for signs of deformities or damages and if it is correctly placed on the glass cover before screwing the head flange back.

Side covers



Screws* must be tightened
in the order 1-->10.

12 x hex socket head screw M4x12
Tightening torque: 2.5 Nm

* Tighten all screws in two steps:

Step 1 - use tightening torque 0.5 Nm (pre-tightening)

Step 2- use tightening torque 2.5 Nm (final tightening)

Carefully check the gasket for signs of deformities or damages and if it is correctly placed before screwing covers back. The gasket is part of chassis.

Do not forget to connect grounding wires between chassis and covers.

15.2 Checking and replacing the silica gel desiccants

The silica gel desiccants are used for humidity indication in the fixture. Dry silica gel has an orange colour, if it is saturated with water, its colour changes to dark grey. If most of silica gel changed colour to dark grey, it has to be replaced.

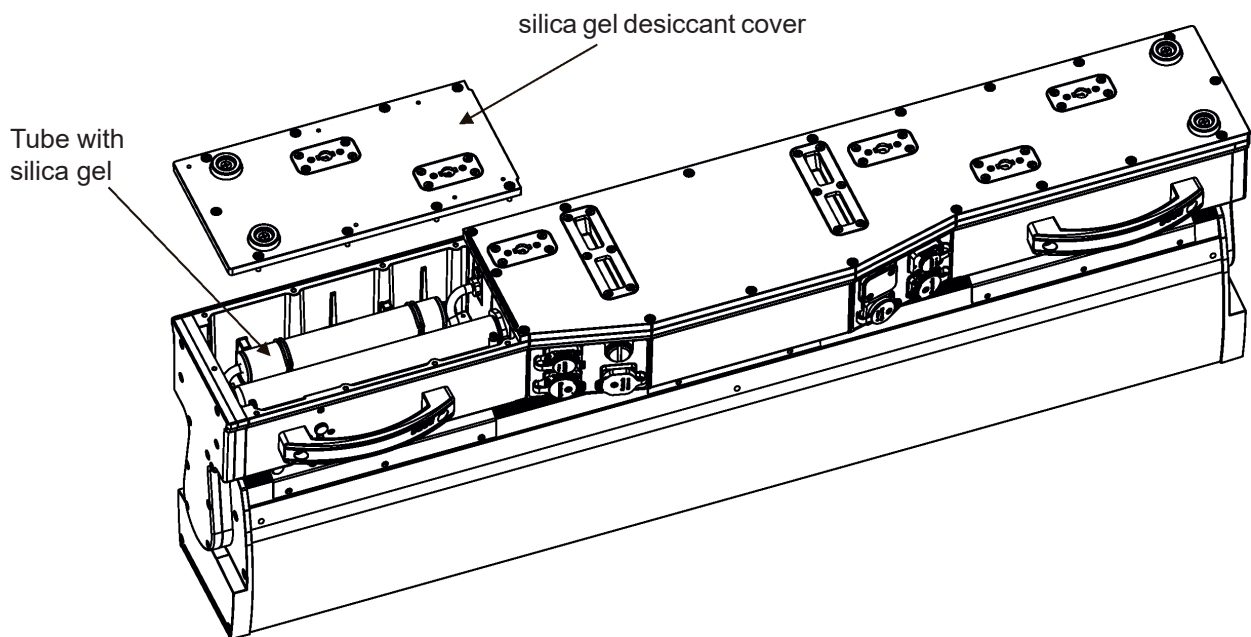
***Unplug the fixture from mains before checking/replacing silica gel desiccant!
Do not check/replace silica gel desiccant in a damp environment (e.g. rain, snowfall)!***

***Spare desiccants from factory are packaged in a protective foil. Take desiccants out of the protective foil immediately before replacing them in the fixture!
Silica gel may become damp if it is exposed to wet air for longer time.***

Silica gel is not under warranty.

Desiccants are placed in the fixture on the following places:

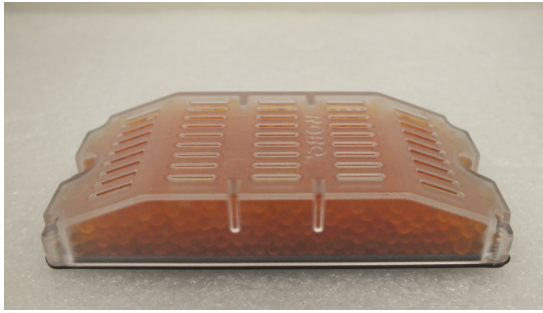
- fixture base - 1 x tube with silica gel under silica gel desiccant cover
- fixture base - 1 x small box with silica gel on the PSU (next to fan)
- fixture head - 4 x small box with silica gel under lens array



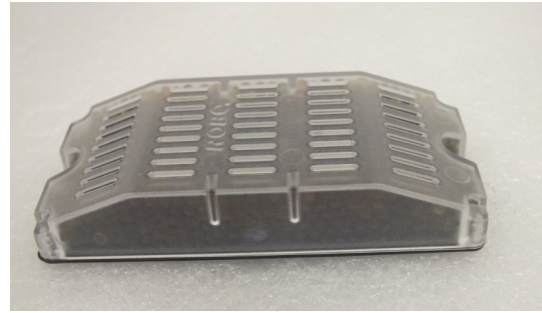
Examples of dry silica gel and silica gel saturated with water:



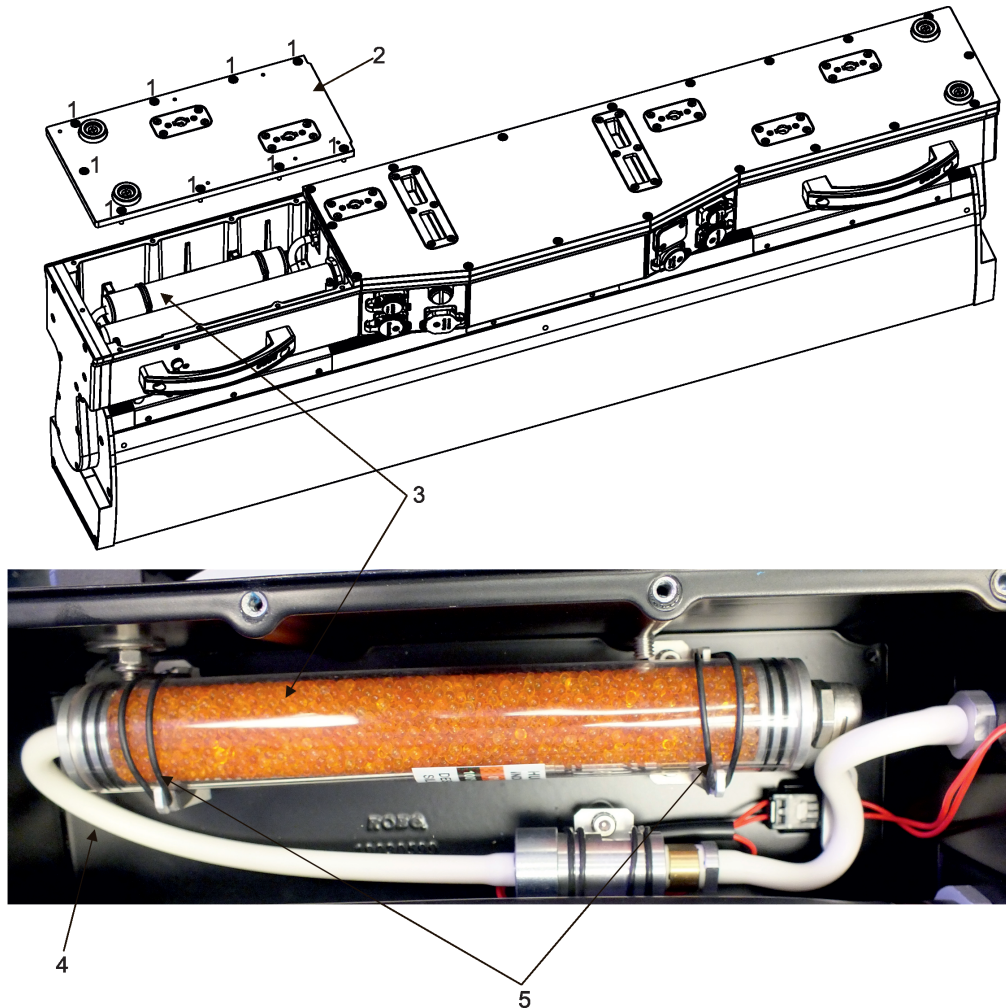
Dry silica gel



Silica gel saturated with water



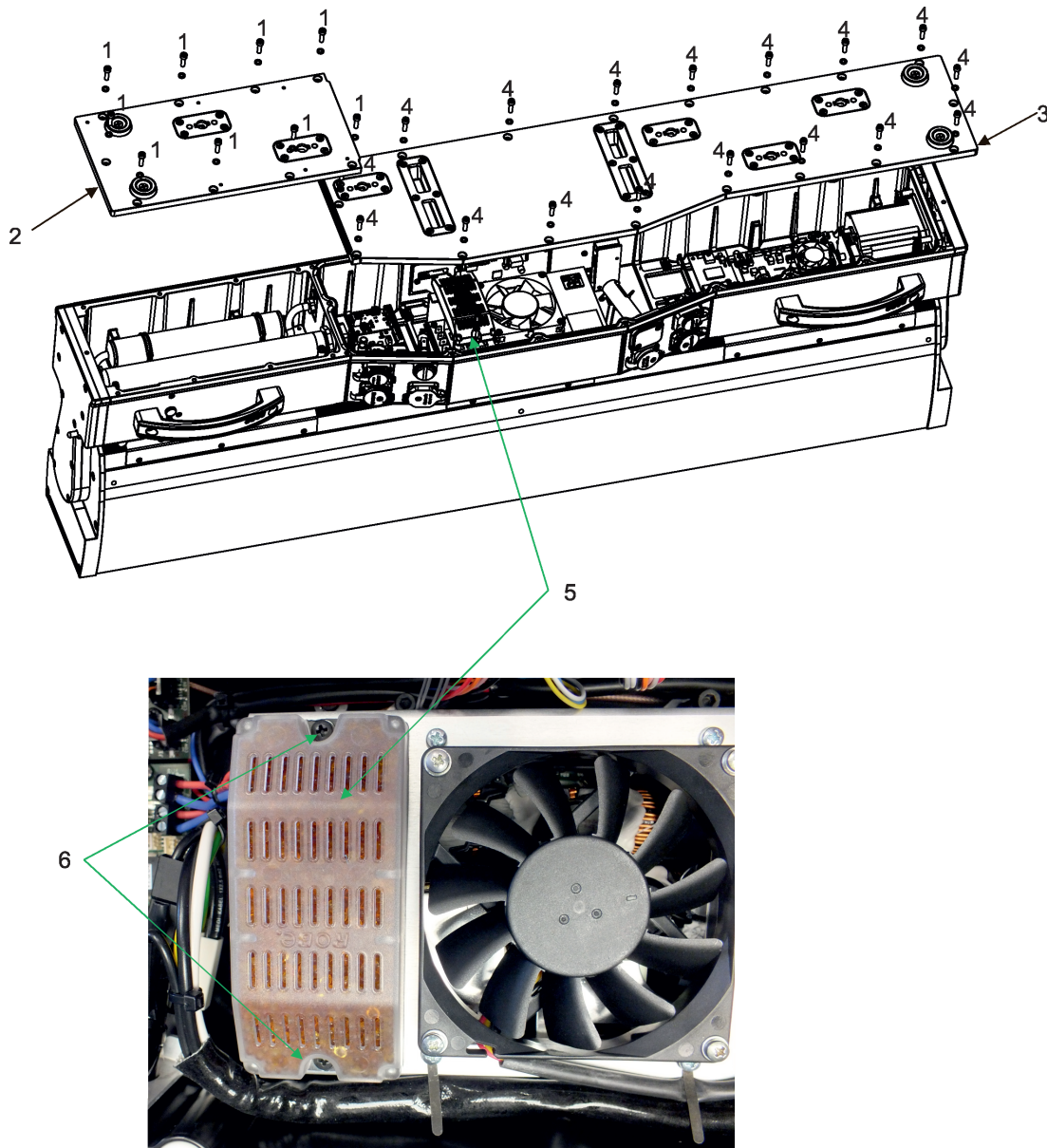
Changing the tube with silica gel in the fixture base



1. Disconnect the fixture from mains and let it cool about 60 minutes.
2. Secure the head in the vertical position by means of the tilt lock. Turn the fixture upside down.
3. Remove the silica gel desiccant cover (2) of the fixture base by unscrewing 9 screws (1) to get access to the tube with desiccant.
4. Disconnect the hosepipe (4) from the tube with silica gel.
5. Stick out the rubber rings (5) and remove the tube with silica gel.
6. Insert the new tube with silica gel and secure it by means of the rubber rings (5).
7. Connect the hosepipe (4) to the tube with silica gel.
8. Screw the silica gel desiccant cover back on the fixture base. Keep required tightening torque as stated in the chapter 15.1 Torques for watertight covers.
Do not forget to connect grounding wire between chassis and the silica gel desiccant cover.
9. **After connecting the fixture to mains, reset the MAX WET chart (tab Information-->RAINS Status) and run the procedure Pressure Test (tab Service -->Pressure Test).**
If the pressure test failed, check if hosepipe is correctly put on the tube with silica gel.

Changing the box with silica gel in the fixture base

The silica gel desiccant in the small box should be checked (and alternatively replaced) at removing bottom cover e.g. at service intervention.



1. Disconnect the fixture from mains and let it cool about 30 minutes.
2. Secure the head in the vertical position by means of the tilt lock. Turn the fixture upside down.
3. Remove the silica gel desiccant cover (2) of the fixture base by unscrewing 9 screws (1).
4. Remove the bottom cover (3) of the fixture base by unscrewing 18 screws (4) to get access to the small box with desiccant (5).
5. Unscrew the two screws (6) and remove the box with silica gel (5)
6. Insert the new box with silica gel and screw it by means of two screws (6).
7. Screw the bottom cover (3) back on the fixture base. Keep required tightening torque as stated in the chapter Maintenance.
Do not forget to connect grounding wire between chassis and the bottom cover.
8. Screw the silica gel desiccant cover (2) back on the fixture base. Keep required tightening torque as stated in the chapter Maintenance.
Do not forget to connect grounding wire between chassis and the silica gel desiccant cover.
9. **After connecting the fixture to mains, reset the MAX WET chart (tab Information-->RAINS Status) and run the procedure Pressure Test (tab Service -->Pressure Test).**
If the pressure test failed, check if all screws on the bottom cover are correctly tightened.

Changing boxes with silica gel in the fixture head

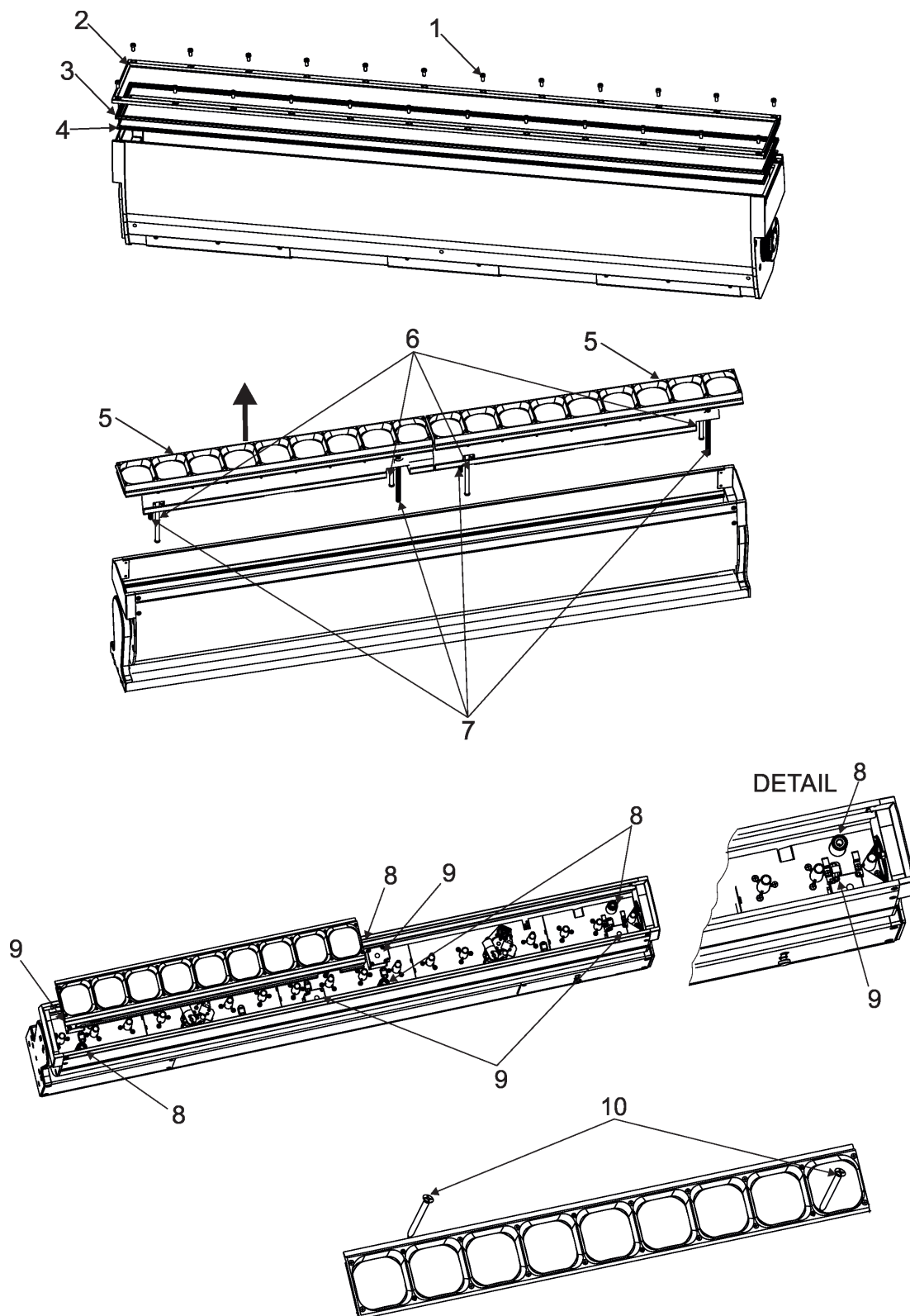
The silica gel desiccant in four small boxes should be checked (and alternatively replaced) when the silica gel in the boxes is obviously fully wet (outside look through glass at boxes with silica gel) or at removing optical modules e.g. during service intervention.

To remove optical modules from fixture head

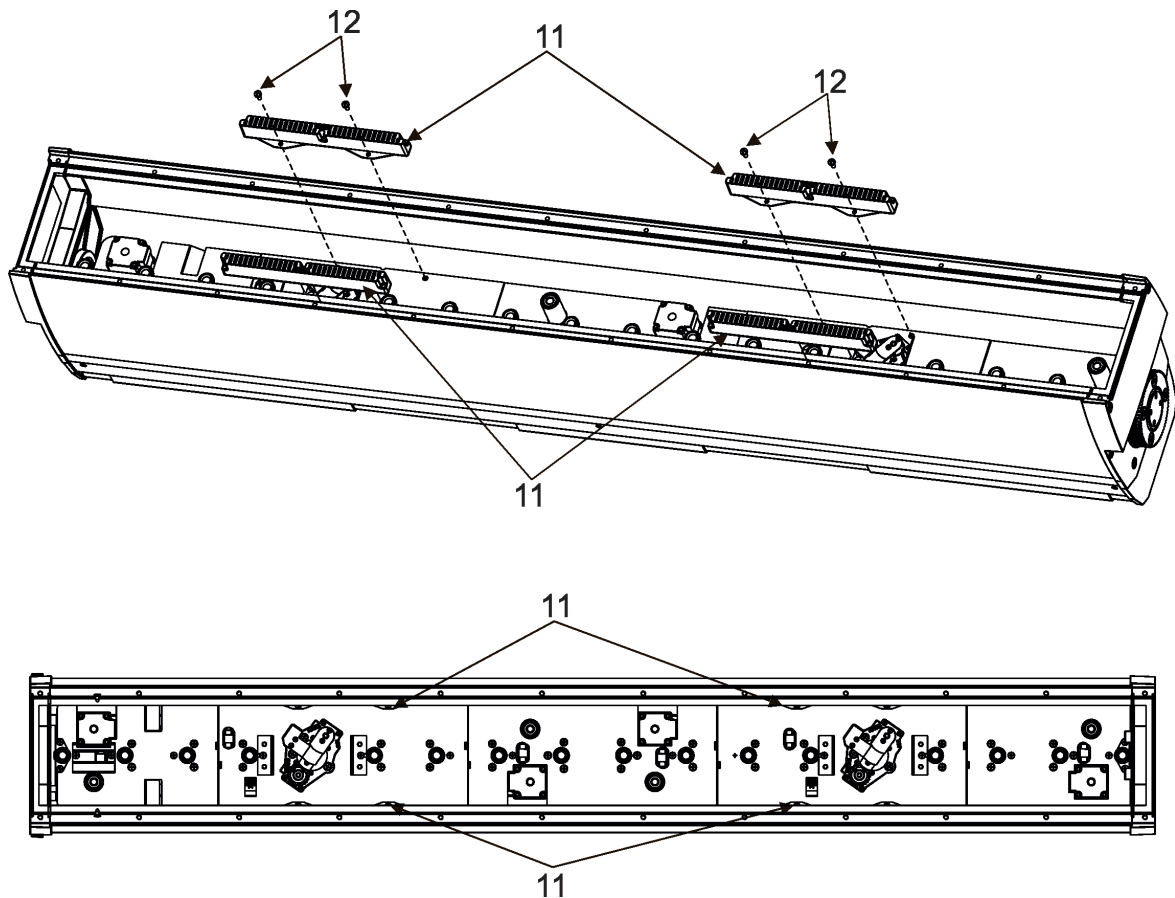
1. Disconnect the fixture from mains and let it cool about 60 minutes.
2. Secure the head in the vertical position by means of the tilt lock.
3. Unscrew 24 screws (1) on the fixture and remove the flange (2) and glass (4) with gasket (3).
4. Carefully take the optical modules (5) out of the guide-tubes (8) and motors (9).

Do not touch the plastic lenses bare hands!

To make easier pulling the optical module (5) out of the moving head, screw two screws M3 (e.g. 30 mm long) (10) to the holes with M3 thread as shown on the picture below. The two screws help you to hold the optical module.



5. The four boxes (11) with silica gel are located at inner sides of the fixture head. Every box is fastened to the head by means of two screws M3x6 (12).
Remove boxes with wet silica gel and insert new boxes with dry silica gel and screw them to the head.

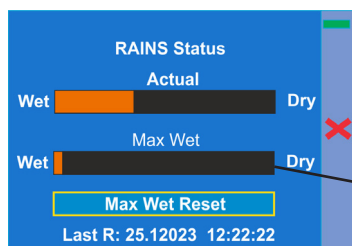


To insert optical modules back to the moving head

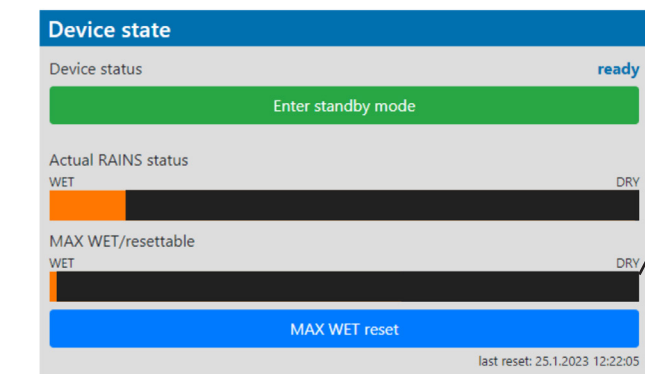
1. Unlock the moving head and connect the fixture to mains
2. After fixture reset go to the tab Manual Control, select item the Tilt and set it at 128 DMX and Master Zoom at 255 DMX.
3. Put one optical module (5) to the head in such a way that two guide-pins (6) aim into guide-tubes (8) and two lead screws (7) aim into motors (9).
4. Hold the optical module (5) in this position and slowly change the item Master Zoom from 255 DMX to 0 DMX. Motors "are pulling" the optical module into the head. If the optical module is not fully pulled into the head, carefully push the optical module into the head until you feel a stop. The optical module has to lay horizontally (it must not be askew).
To check the optical module movement, set the Master Zoom at 255 --> 0 DMX a few times. The optical module has to move smoothly in both directions.
5. Set the Master Zoom at 255 DMX and repeat steps 3 and 4 for the second optical module.
6. Set the Master Zoom at 0 DMX and disconnect the fixture from mains.
7. Secure the head in the vertical position by means of the tilt lock.
8. Screw the flange (2) and glass (4) with gasket (3) back on the fixture head. Keep required tightening torque as stated in the chapter 15.1 Torques for watertight covers.
9. **After connecting the fixture to mains, reset the MAX WET chart (tab Information-->RAINS Status) and run the procedure Pressure Test (tab Service -->Pressure Test).**
If the pressure test failed, check if all screws on the flange are correctly tightened.

State of desiccant in the tube (under silica gel desiccant cover) can be checked:

- visually by unscrewing the silica gel desiccant cover
- from fixture display (tab Information, option RAINS Status):



- remotely by means of the Robe Ethernet Access Portal (REAP):



The chart MAX WET is decisive for replacing the dessicant in the tube in the fixture base under silica gel desiccant cover.

If the chart has changed to black colour, dessicant in the tube has to be replaced and mayby silica gel desiccant in plastic boxes in the fixture base and head. These desiccants should be checked (and replaced if it is needed) at removing bottom cover of the base or top glass cover of the head e.g. at some service intervention.

In case that silica gel in the tube is fully saturated with water, the warning message "**Too Much Humidity in Device**" will appear on the fixture display (yellow warning icon) and also in the Robe Ethernet Access Portal (Logs screen).

Example



16. Robe Ethernet Access Portal (REAP)

Before running the REAP, your computer needs to be connected to the fixture (s) through the means of Ethernet wired network and a network switch. The computer needs to have configured network settings in order to be able to communicate with the fixture(s) through the network. The Ethernet network connection (Local LAN) typically needs to be set to 2.x.x.x address, the computer IP address has to be set to 2.x.x.x (for example 2.247.216.25) with netmask 255.0.0.0. On the fixture make sure to use the default 2.x.x.x IP address as provided. You do not need change any IP settings on the fixture, There is no need to set the fixture into Art-Net mode.

Type the IP address of the iTetra2 to your web browser, e.g. <http://2.247.216.25>, enter the user name: **robe** and the password: **2479**, the **Status screen** of the iTetra2 will appear.

The screenshot shows the Robe iTetra2 Status screen. The top navigation bar includes 'Status', 'Personality', 'Logs', 'RAINS logs', 'Discovery', and 'Settings'. The main content area is divided into several sections:

- DMX/RDM settings:** Includes fields for DMX address (2), DMX preset (Mode 1), DMX input (wired), IP address (2.247.216.25), MAC address (00:0d:19:06:d8:19), RDM UID (52:53:01:34:00:19), and RDM label (iTetra2).
- Device times:** Shows power on time (117h / 20h) and air filters (280h / 300h).
- Device temperatures:** Displays LED temperatures (30°C / 55°C / 55°C) and base temperatures (37°C / 53°C / 53°C).
- Wireless state:** Shows the device is linked with a signal strength of 0.0%.
- Software versions:** Lists versions for Display System, Module M, Module DR, and Module PX, all at 1.0.
- Device state:** Shows the device status as 'active' with a green bar. It also displays current RAINS status (WET) and MAX WET/resettable status (WET) with corresponding bars and a 'MAX WET reset' button.
- Status messages:** A section at the bottom for displaying status messages.

This screen gives you a fast overview of fixture settings and environment in the fixture. The icon  allows you to change some values in a corresponding table.

Example for DMX/RDM settings:

The screenshot shows the Robe iTetra2 Status screen with the 'DMX/RDM settings' modal open. The modal contains the following fields:

- DMX address:** A text input field with the value '2'.
- DMX preset:** A dropdown menu with 'Mode 1' selected.
- DMX input:** A dropdown menu with 'wired' selected.
- RDM label:** A text input field with the value 'iTetra2'.

A 'Save' button is located at the bottom right of the modal.

Note.

The background colour of the top row of the Status screen with the name and RDM label of the fixture denotes state of the fixture:

	fixture is ready for operation
	fixture does not communicate with computer
	fixture with error message(s)

The table "Device state" gives you information about fixture and environment in the fixture.

Device status: **ready** - all fixture resets successfully passed and the fixture is ready for operation.

initialization - fixture is waiting for fixture reset

heating - fixture is waiting for reaching operating temperature of the fixture inside (temperature in the fixture is below 0°C).

standby - the fixture is in standby mode

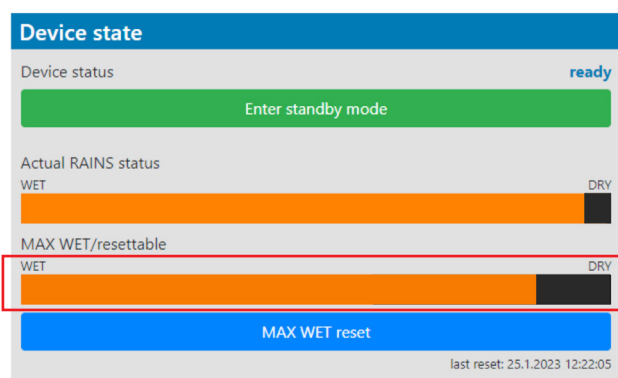
standby/heating - the fixture is in standby mode and inside of the fixture is heated

The bar chart **Actual RAINS status** informs you about current humidity in the fixture. The bar chart changes depending on humidity, temperature and pressure in the fixture. The bar chart depends on current conditions in the fixture and can be different at start of fixture operation, after 10 minutes of its operating, after closing fixture dimmer etc.

RAINS (Robe Automatic Ingress Neutralization System) manages humidity, temperature and pressure control using an active monitoring system to automatically remove any moisture detected within the fixture and provides permanent monitoring to ensure peak performance of the fixture.

The bar chart **MAX WET/resettable** informs you about maximum humidity achieved in the fixture since the chart was last reset. The bar chart also informs you about saturation of silica gel desiccant in tube in the fixture base with water and is deciding indicator for its checking and replacement.

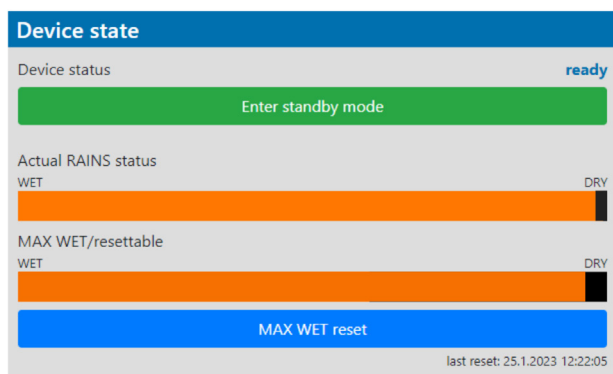
The blue button **MAX WET reset** resets the bar chart MAX WET/resettable. Date and time of last reset is displayed below this button.



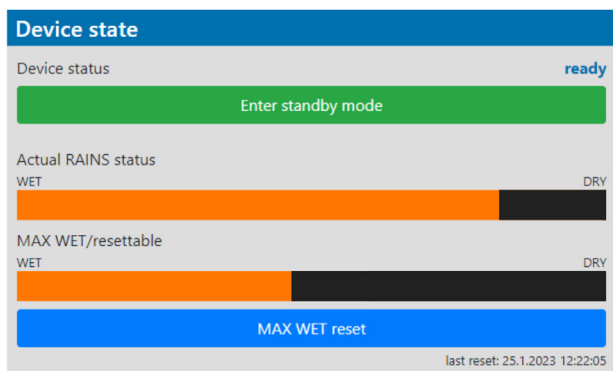
Silica gel desiccant in the fixture base



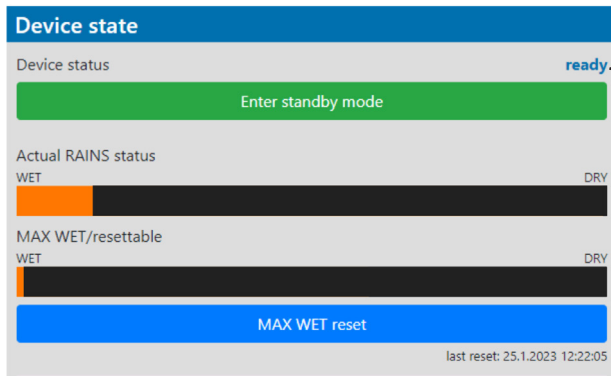
Examples of the table "Device state":



Dry desiccants



Desiccants partially saturated with water



Device status **ready** means, that all fixture resets are OK and the fixture is ready for operation. It does not assess state of desiccants or result of pressure test!

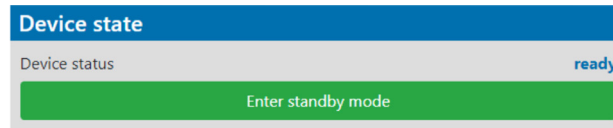
Desiccants fully saturated with water

Desiccant in tube in the fixture base should be replaced.

After replacing it, reset MAX WET resettable bar chart.

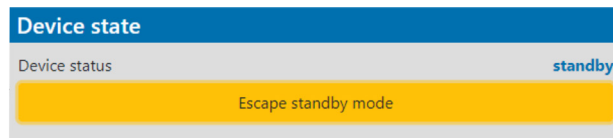
It is not necessary to replace silica gel desiccant in the plastic box in the fixture base. This desiccant should be checked (and replaced if it is needed) at removing base cover, e.g. at some service intervention.

The option **Enter standby mode** allows you to switch the fixture to Standby mode.



Note: Standby mode helps conserve power when a fixture is not in use, without fully powering it off. In the Standby mode, all fixture motors and fans are deactivated and light output is closed. For more information about Standby mode please see the chapter Standby mode.

The option **Escape standby mode** allows you to switch the fixture to standard operating mode.



The **Personality** screen allows you to set fixture behaviour and run a pressure test.

Personality

DMX/RDM settings

- DMX address: 2
- DMX preset: Mode 1 (34 channels)
- DMX input: wired
- RDM label: iTetra2

Ethernet settings

- Ethernet mode: disable
- Ethernet to DMX: off
- ArtNet universe: 0
- MAANet I/II universe: 1
- MAANet session ID: 1
- sACN universe: 1

Tilt settings

- Tilt reverse: off
- Tilt feedback: on
- Tilt mode: speed

Blackout settings

- Blackout DMC: off
- Active blackout while: off
- Tilt moving: off

Screen settings

- Display intensity: 10
- Screensaver delay: 5 min
- Touchscreen lock: off
- Display orientation: auto

Color settings

- Dimmer curve: square law
- Colour mixing mode: rgbw
- White point 8000K: on
- Thungsten effect simulation: off

Date & time settings

- Date: 11.7.2023
- Time: 09:29:29

Other settings

- Fan mode: auto
- LEDs output frequency (Hz): standart
- LEDs frequency adjust: 0
- Temperature unit: °C
- Display buttons: on

Pressure test

Start test

The icon  allows you to change values in a corresponding table.

Example for Screen settings:

Screen settings

- Display intensity: 10
- Screensaver delay: 5 min
- Touchscreen lock: off
- Display orientation:
 - ☐ normal
 - ☐ inverted
 - ☒ auto

Save

The table "Pressure test " with green button **Start test** allows you to run a procedure which checks IP65 integrity of the fixture. The fixture has to be connected to mains and the fixture temperature (at pressure sensor) cannot be higher than 55°C. The pressure test lasts about 5 minutes and can be run at earliest 10 minutes after closing light output (shutter closed) of the fixture. The pressure test can be repeated at earliest 2 minutes after last pressure test.

Pressure test

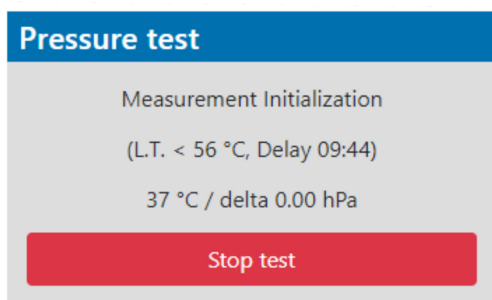
Setting Fan

36 °C / delta 0.00 hPa

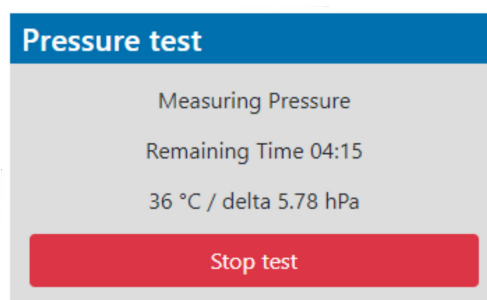
Stop test

Examples of pressure test messages:

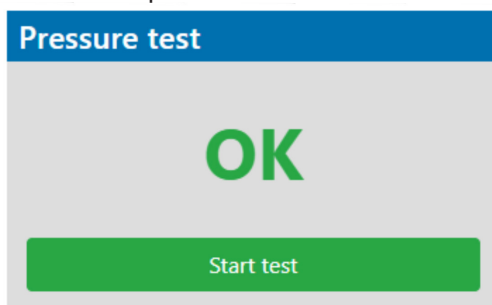
Pressure test is 10 minutes delayed due to fixture cooling



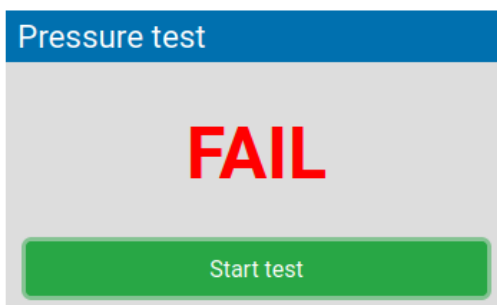
Pressure test is running



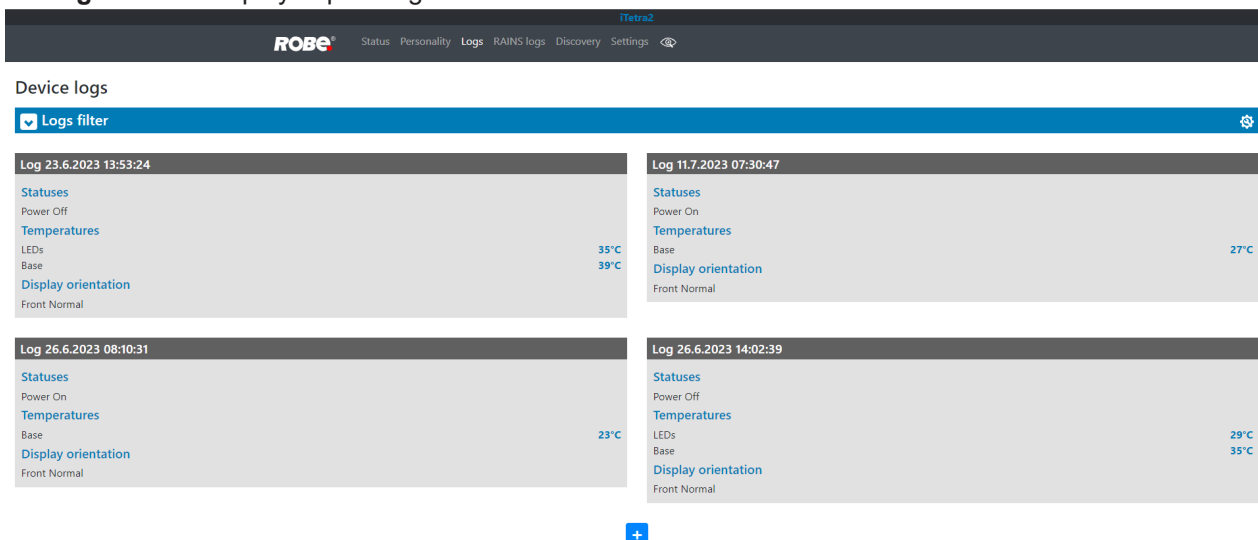
Pressure test passed



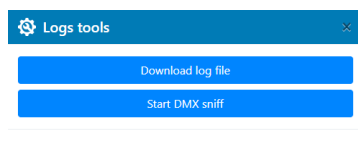
Pressure test failed



The **Logs screen** displays operating information of the fixture which have been saved.



The icon  offers you two options:



"Download log file" - the option allows you to download the log file to computer, name of the log file is: file-abcd.log, where abcd is a fixture ID (e.g. file-015e.log).

"Start DMX sniff" - the option starts saving coming DMX values to the file, the file name is DMX_sniffer.log).

The option **Logs filter** allows you to select desired group of recorded errors and recorded operating values.

Expanded menu **Logs filter**

Tetra2

ROBE®

Status

Personality

Logs

RAINS logs

Discovery

Settings

Device logs

Logs filter

Mechanical errors

☐ all must pass

☐ Pan error

☐ Tilt error

☐ LEDs Short error

System errors

☐ all must pass

☐ Clean air filters

☐ Powerdown mode

☐ Temperature sensor error

☐ Eeprom error

☐ Base fan 1 bad - blackout

☐ Base fan 2 bad - blackout

☐ Recharge the battery

☐ Battery faulty, replace it

Statuses

☐ all must pass

☐ Power on

☐ Power off

Temperatures

☐ all must pass

LEDs

°C

Base

°C

Start date/time

Date

dd.mm.yyyy

Time

--:--:--

Sorting, filter pass

Sorting

descending

Filter pass

single groups

Apply filter

Clear filter

Log 23.6.2023 13:53:24

Statuses

Power Off

Temperatures

LEDs

Base

35°C

39°C

Log 11.7.2023 07:30:47

Statuses

Power On

Temperatures

Base

Display orientation

27°C

If the option "all must pass" is checked, only logs which contain all selected errors will be displayed.

Menu "Sorting filter pass" --> option "single groups" means that logs which contain at least one selected error will be displayed.

Menu "Sorting, filter pass" option "all groups" means that logs which contain all selected error will be displayed.

The **screen RAINS Logs** offers you a list of physical values recorded by sensors inside the fixture.

ROBE®

Status

Personality

Logs

RAINS logs

Discovery

Settings

RAINS logs

Sensors

Pressure measurements

Logs filter

Download log file

Date / Time	Temperature [°C]	Relative humidity [%]	Pressure [hPa]
11.7.2023 09:31:22	37	17.5	986
11.7.2023 08:34:49	36	17.5	986
11.7.2023 07:54:11	35	17.0	986
11.7.2023 07:44:15	34	16.5	986
11.7.2023 07:37:37	33	16.0	986
11.7.2023 07:33:43	32	16.0	986
11.7.2023 07:32:02	31	16.5	986
11.7.2023 07:31:04	30	18.0	986
11.7.2023 07:30:42	29	18.5	986
11.7.2023 07:30:35	28	18.5	986

You can select range of temperature, humidity and pressure in desired time interval.

ROBE®

Status Personality Logs **RAINS logs** Discovery Settings

RAINS logs

Sensors

Pressure measurements

Logs filter

Start date

dd.mm.rrrr

End date

dd.mm.rrrr

Temperature

-

°C

Relative humidity

-

%

Pressure

-

hPa

Apply filter

Clear filter

Download log file

Date / Time	Temperature [°C]	Relative humidity [%]	Pressure [hPa]
11.7.2023 09:31:22	37	17.5	986
11.7.2023 08:34:49	36	17.5	986
11.7.2023 07:54:11	35	17.0	986
11.7.2023 07:44:15	34	16.5	986
11.7.2023 07:37:37	33	16.0	986
11.7.2023 07:33:43	32	16.0	986

Tab Pressure measurements shows history of pressure tests.

ROBE®

Status Personality Logs **RAINS logs** Discovery Settings

RAINS logs

Sensors

Pressure measurements

Download measurements file

Date / Time	Temperature [°C]	Relative humidity [%]	Pressure [hPa]	Pressure difference [hPa]	Duration [ms]	Result
23.6.2023 13:23:32	46	15.0	989	6.66	08:00	Fail
23.6.2023 13:09:16	45	15.0	989	7.06	07:58	OK
23.6.2023 12:50:15	45	15.0	990	7.19	07:56	OK

If you have two and more fixtures, the **Discovery** screen allows you to show all connected fixtures in network. Click on the blue button Discover and fixtures connected in the network will be displayed.

ROBE®

Status Personality Logs **Discovery** Settings

Discovery

Move devices with warning to top

Discover (4)

Columns selection (max. 7 items)

☒ DMX address
 ☒ DMX preset
 ☒ RDM UID
 ☒ IP address
 ☐ Head temperature [°C]
 ☐ Relative humidity [%]
 ☒ RAINS (max wet)
 ☐ Last pressure test
 ☒ Device status

Apply selection

Device	DMX address	DMX preset	RDM UID	IP address	RAINS (max wet)	Device status
iTetra2	2	Mode 1 (34 channels)	52:53:01:34:00:19	2.247.216.25		active
iForte - iForte 3	1	Mode 1 (54 channels)	52:53:01:2c:00:1a	2.247.136.26		active
iForte - iForte 8	1	Mode 1 (54 channels)	52:53:01:2c:00:0b	2.247.136.11		active
iSpider - iSpider 10	1	Mode 1 (49 channels)	52:53:01:1c:03:d8	2.246.239.216		active

Hledat

19°C Slunečno 10:12 11.07.2023

The background colour in the device row denotes state of the fixture:

- indicates "server fixture"(fixture of which IP address you have written to your WEB browser).
- indicates fixture ready for operation.
- indicates fixture which does not communicate with computer or "server fixture".
- indicates fixture with error messages.

If the option Move devices with warning to top is checked, fixtures with some error will be displayed on the top of fixture list.

The option Columns selection allows you to check desired items which will be displayed in columns. Max. 6 items can be selected. After checking desired items, click on the blue button Apply selection to activate selection.

Icons   allows you to order values in the column in descending or ascending order.

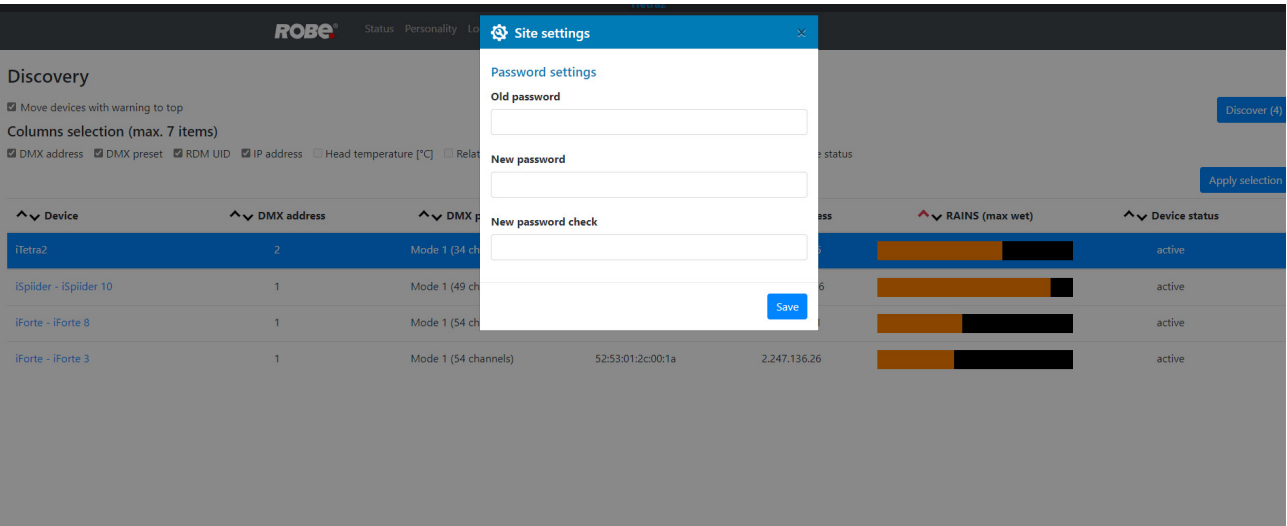
Note: The values of the fixture in the first blue row ("server fixture") will not be included into ordering.

Example.

 Device							 DMX address		 DMX preset		 RDM UID		 IP address		 RAINS (max wet)		 Device status			
iTetra2							2		Mode 1 (34 channels)		52:53:01:34:00:19		2.247.216.25				active			
iSpilder - iSpilder 10							1		Mode 1 (49 channels)		52:53:01:1c:03:d8		2.246.239.216				active			
iForte - iForte 8							1		Mode 1 (54 channels)		52:53:01:2c:00:0b		2.247.136.11				active			
iForte - iForte 3							1		Mode 1 (54 channels)		52:53:01:2c:00:1a		2.247.136.26				active			

Item **ready** in the column Device status does not assess state of desiccants or result of pressure test!

The **screen Settings** allows you to change password to REAP.



The icon  serves for identification of the fixture in a group of fixtures. After clicking on the icon, the fixture will start to flash.

17. Technical Specifications

Electrical

Power supply:.....electronic auto-ranging
Input voltage range:..... supply 100-240V, 50/60Hz
Fuse:.....T 8 A
Max. power consumption600W (power factor= 0.98)
Mains input: - max. 16A (US 13A)
Mains output: - max. 12A (US 9A)

Optic

Light source: 18 RGBW LED multichips
RGBW or CMY colour mixing
18 controllable LED multichips (pixels)
LED life expectancy: min. 50.000 hours
Typical lumen maintenance: L70/B50 @ 50.000 hours

Virtual colour wheel

66 preset colours
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
Min. beam angle: 4°
Max. beam angle: 45°

Effect

Flower effect rotating in both directions
10 Flower effect macros

Strobe

Strobe effect with variable speed (0.3 - 20Hz)

Dimmer

Smooth dimmer from 0 - 100 %

Control

Graphic screen for fixture setting and addressing
Gravitation sensor for auto screen positioning
Battery backup of the touch screen
Readout fixture and LED module usage, receiving DMX values, temperatures, etc
Built-in analyzer for easy fault finding, error messages
Built-in demo sequences
Individual pixel control of each LED
Stand-alone operation
3 user editable programs, each up to 100 steps
Supported protocols: USITT DMX 512, RDM, ArtNet, MANet, MANet2, sACN, Kling-Net
Support of RDM (Remote Device Management)
6 DMX modes (34, 56, 97, 115, 110, 128 control channels)

Wireless DMX/RDM module (type RW 001)

Supported protocols: full RDM support, CRMX , W-DMX™ G2, G3,G4 and G4S
Operational frequency range: 2402-2480 MHz
Output power: 100 mW
Receiver sensitivity (0.1% BER): -93 dBm
Crystal Clock Frequency : 16.0 MHz

Tilt

Tilt movement range 191°
16 bit movement resolution
Automatic Tilt position correction
Remotely controllable speed of tilt movement for easy programming
Tilt-lock mechanism

Max. number of fixtures in Ethernet IN/Out line

8

Battery

Size: AA (R6)
Type: IFR 1450, 600mA/3.2V

Connection

DMX data In/Out: 2 x IP65 Locking 5-pin XLR connector Seetronic
AC power In: IP65 power connector Seetronic
Ethernet In/Out: 2 x IP65 RJ45 connector Seetronic

Rigging

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

Temperatures

Maximum ambient temperature: +45° C
Minimum ambient temperature: -30° C
Maximum housing temperature: 75° C

Minimum distances

Min. distance from flammable surfaces: 0.5 m
Min. distance to lighted object: 1 m

Total heat dissipation

1535 BTU/hr (calculated)

Ingress protection

IP65

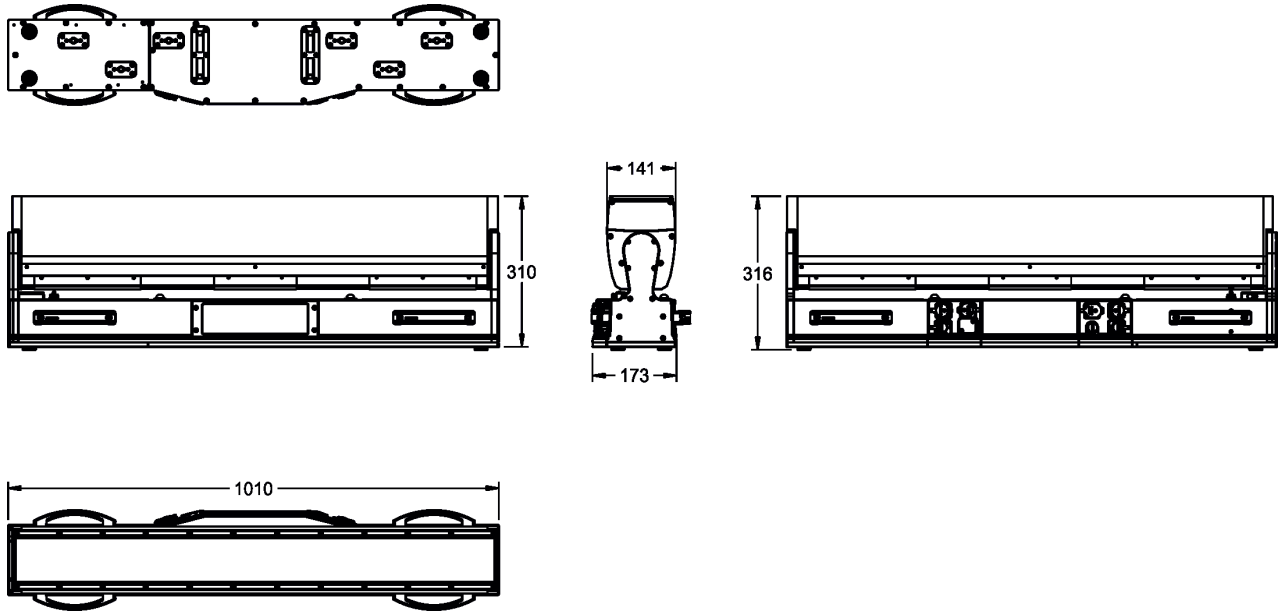
Included items

2 x Variable Omega Adaptor (P/N 99016241-02)
1 x power cable with including powerCON TRUE1 In connector (IP65 rating)
1 x user manual

Weight

29.7 kg (65.5 lbs)

Dimensions (mm)



Optional accessories

Safety wire 35 kg (P/N 99011963)

Daisy Chain powerCON TRUE1 In/Out, EU, 2m, Indoor: 13052439

Daisy Chain powerCON TRUE1 In/Out, US, 2m, Indoor: 13052440

Daisy Chain powerCON TRUE1 In/Out, EU, 5m, Indoor: 13052444

18. Appendix - DMX modes overview

Pixel modes underlined

Mode	DMX Channels	Main Features
Mode 1	34	16-bit tilt Selection of active zone (rings, sectors) 8-bit control of four individual colours (R,G,B,A) and Dimmer Flower effects control Without control of individual pixels.
Mode 2	56	16-bit tilt Selection of active zone (rings, sectors) 16-bit control of four individual colours (R,G,B,A) and Dimmer Pixel patterns control (shape, repeat/size, rotation, transition, fade, crossfade, colour) Flower effects control Without control of individual pixels
<u>Mode 3</u>	97	16-bit tilt Selection of active zone (rings, sectors) 16-bit control of four individual colours (R,G,B,A) and Dimmer Flower effects control Individual control of pixels (R,G,B)
<u>Mode 4</u>	115	16-bit tilt Selection of active zone (rings, sectors) 16-bit control of four individual colours (R,G,B,A) and Dimmer Flower effects control Individual control of pixels (R,G,B,A)
<u>Mode 5</u>	110	16-bit tilt Selection of active zone (rings, sectors) 16-bit control of four individual colours (R,G,B,A) and Dimmer Pixel patterns control (shape, repeat/size, rotation, transition, fade, crossfade, colour) Flower effects control Individual control of pixels (R,G,B)
<u>Mode 6</u>	128	16-bit tilt Selection of active zone (rings, sectors) 16-bit control of four individual colours (R,G,B,A) and Dimmer Pixel patterns control (shape, repeat/size, rotation, transition, fade, crossfade, colour) Flower effects control Individual control of pixels (R,G,B,A)

19. ChangeLog

This section summarizes changes in the user manual.

Version of the manual	Date of issue	Description of changes
1.1	16/11/2023	Position of silica gel boxes in head added
1.2	21/11/2023	Order of screw tightening of head flange changed
1.3	09/01/2024	Technical specifications changed

January 9, 2024

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DMX protocol

iTetra2 - DMX protocol								
Version: 1.0 Mode 1-Wash, Mode 2-Pattern, Mode 3-Pixel RGB, Mode 4-Pixel RGBW, Mode 5-Pattern full RGB, Mode 6-Pattern full RGBW								
Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
1	1	1	1	1	1		Tilt (8 bit)	
						0 - 255	Tilt movement by 191° (128=default)	proportional
2	2	2	2	2	2		Tilt fine (16 bit)	
						0 - 255	Fine control of tilt movement (0=default)	proportional
3	3	3	3	3	3		Tilt speed , Tilt time	
						0	Standard mode (0=default)	step
						1	Max. Speed Mode	step
							Tilt speed mode	
						2 - 255	Speed from max. to min.	proportional
							Tilt time mode	
						2 - 255	Time from 0.2 s to 25.5 sec.	proportional
4	4	4	4	4	4		Power/Special functions	
						0 -5	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. („Master Shutter/Strobe“ channel 33/54/41/41/54/54 must be at range: 0-31 DMX). Corresponding menu items are temporarily overridden (unless otherwise stated).</i>	
						6	Standby mode: On (fixture effects are deactivated, light output is closed)	step
						7	Standby mode: Off	
						8	Pressure test: On (fixture does not respond to DMX during the test except value 9 (Pressure test: Off))	step
						9	Pressure test: Off	step
						10-14	DMX input: Wired DMX *	step
						15-19	DMX input: Wireless DMX *	step
						20-24	Graphic display: On	step
						25-29	Graphic display: Off	step
						30-34	RGBW colour mixing mode	step
						35-39	CMY colour mixing mode	step
						40-44	Tilt speed mode	step
						45-49	Tilt time mode	step
						50-54	Blackout while tilt moving	step
						55-59	Disabled blackout while 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
						90-94	Automatic white pixel: On	step
						95-99	Automatic white pixel: Off	step
						100-104	Quiet mode: Fans On at blackout	step
						105-109	Quiet mode: Fans Off at blackout	step
						110-114	Kling-Net: On	step
						115-119	Kling-Net: Off	step

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
						120-124	Parking position: On	step
						125-129	Parking position: Off	step
							<i>To activate following functions, stop in DMX value for at least 3 seconds (except Pixel index and Pixel mirror). Corresponding menu items are temporarily overridden.</i>	
						130 - 139	Fixture reset (except pan/tilt)	
						140 - 149	Tilt reset	step
						150 - 159	Zoom reset	step
						160 - 169	Flower effects 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
						210-227	Pixel index	proportional
						228-229	Pixel mirror: On	step
						230-231	Pixel mirror: Off	step
						232-236	Reserved	
						237	Save Pixel index and mirror to fixture	step
						238-239	Reserved	
						240	Disabled "Quiet mode"	step
						241 - 255	Quiet mode - fan noise control from min. to max.	proportional
5	5	5	5	5	5		LED frequency selection	
							Factory display menu setting: 300Hz	
							<i>Select PWM output frequency of LEDs. Selected PWM frequency can be fine adjusted in 127 steps up/down around selected PWM frequency on the channel below. Corresponding menu item (Frequency Setup) is temporarily overridden.</i>	
						0-4	PWM frequency from Display menu (fixture utilizes PWM frequency set in the display menu item Frequency Setup).	step
						5-9	300 Hz (5=default)	step
						10-14	Reserved	
						15-19	600 Hz	step
						20-255	Reserved (fixture utilizes PWM frequency set in the display menu item Frequency Setup).	
6	6	6	6	6	6		LED frequency fine adjusting	
							Factory display menu setting: 300Hz	
							<i>Select desired PWM output frequency of LEDs on the channel above.</i>	
						0-121	Selected LED Frequency	step
						122	LED Frequency (step -6)	step
						123	LED Frequency (step -5)	step
						124	LED Frequency (step -4)	
						125	LED Frequency (step -3)	step
						126	LED Frequency (step -2)	step
						127	LED Frequency (step -1)	step
						128	Selected LED Frequency (128=default)	step

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
						129	LED Frequency (step +1)	step
						130	LED Frequency (step +2)	step
						131	LED Frequency (step +3)	step
						132	LED Frequency (step +4)	
						133	LED Frequency (step +5)	step
						134	LED Frequency (step +6)	step
						135-255	Selected LED Frequency	step
7	7	7	7	7	7		Background -Virtual colour wheel	
						0	No function (0=default)	step
						1-2	Filter 4 (Medium Bastard Amber)	step
						3-4	Filter 25 (Sunset Red)	step
						5-6	Filter 19 (Fire)	step
						7-8	Filter 26 (Bright Red)	step
						9-10	Filter 58 (Lavender)	step
						11-12	Filter 68 (Sky Blue)	step
						13-14	Filter 36 (Medium Pink)	step
						15-16	Filter 89 (Moss Green)	step
						17-18	Filter 88 (Lime Green)	step
						19-20	Filter 90 (Dark Yellow Green)	step
						21-22	Filter 49 (Medium Purple)	step
						23-24	Filter 52 (Light Lavender)	step
						25-26	Filter 102 (Light Amber)	step
						27-28	Filter 103 (Straw)	step
						29-30	Filter 140 (Summer Blue)	step
						31-32	Filter 124 (Dark Green)	step
						33-34	Filter 106 (Primary Red)	step
						35-36	Filter 111 (Dark Pink)	step
						37-38	Filter 115 (Peacock Blue)	step
						39-40	Filter 126 (Mauve)	step
						41-42	Filter 117 (Steel Blue)	step
						43-44	Filter 118 (Light Blue)	step
						45-46	Filter 122 (Fern Green)	step
						47-48	Filter 182 (Light Red)	step
						49-50	Filter 121 (Filter Green)	step
						51-52	Filter 128 (Bright Pink)	step
						53-54	Filter 131 (Marine Blue)	step
						55-56	Filter 132 (Medium Blue)	step
						57-58	Filter 134 (Golden Amber)	step
						59-60	Filter 135 (Deep Golden Amber)	step
						61-62	Filter 136 (Pale Lavender)	step
						63-64	Filter 137 (Special Lavender)	step
						65-66	Filter 138 (Pale Green)	step
						67-68	Filter 798 (Chrysalis Pink)	step
						69-70	Filter 141 (Bright Blue)	step
						71-72	Filter 147 (Apricot)	step
						73-74	Filter 148 (Bright Rose)	step
						75-76	Filter 152 (Pale Gold)	step
						77-78	Filter 154 (Pale Rose)	step

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
						79-80	Filter 157 (Pink)	step
						81-82	Filter 143 (Pale Navy Blue)	step
						83-84	Filter 162 (Bastard Amber)	step
						85-86	Filter 164 (Flame Red)	step
						87-88	Filter 165 (Daylight Blue)	step
						89-90	Filter 169 (Lilac Tint)	step
						91-92	Filter 170 (Deep Lavender)	step
						93-94	Filter 172 (Lagoon Blue)	step
						95-96	Filter 194 (Surprise Pink)	step
						97-98	Filter 180 (Dark Lavender)	step
						99-100	Filter 181 (Congo Blue)	step
						101-102	Filter 197 (Alice Blue)	step
						103-104	Filter 201 (Full C.T. Blue)	step
						105-106	Filter 202 (Half C.T. Blue)	step
						107-108	Filter 203 (Quarter C.T. Blue)	step
						109-110	Filter 204 (Full C.T. Orange)	step
						111-112	Filter 219 (Fluorescent Green)	step
						113-114	Filter 206 (Quarter C.T. Orange)	step
						115-116	Filter 247 (Filter Minus Green)	step
						117-118	Filter 248 (Half Minus Green)	step
						119-120	Filter 281 (Three Quarter C.T. Blue)	step
						121-122	Filter 285 (Three Quarter C.T. Orange)	step
						123-124	Filter 352 (Glacier Blue)	step
						125-126	Filter 353 (Lighter Blue)	step
						127-128	Filter 507 (Madge)	step
						129-130	Filter 778 (Millennium Gold)	step
						131-132	Filter 793 (Vanity Fair)	step
						133-235	Raw DMX	proportional
						236-245	Rainbow effect (with fade time) from slow-> fast	proportional
						246-255	Rainbow effect (without fade time) from slow-> fast	proportional
8	8	8	8	8	8		Background - Red/Cyan (8 bit)***	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
*	9	9	9	9	9		Background - Red/Cyan (16bit)***	
						0 - 255	Colour saturation control - fine (255=default)	proportional
9	10	10	10	10	10		Background - Green/Magenta (8 bit)***	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
*	11	11	11	11	11		Background - Green/Magenta (16bit) ***	
						0 - 255	Colour saturation control - fine (255=default)	proportional
10	12	12	12	12	12		Background - Blue/Yellow (8 bit)***	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
*	13	13	13	13	13		Background - Blue/ Yellow (16bit)***	
						0 - 255	Colour saturation control - fine (255=default)	proportional
11	14	14	14	14	14		Background - White (8 bit) - all pixels	
							<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	
*	15	15	15	15	15		Background - White (16 bit) - all pixels	

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
						0 - 255	Colour saturation control - fine (255=default)	proportional
12	16	16	16	16	16		Background - CTO	
						0-255	Col. temperature correction from 8000K to 2700K -for whites only (0=8000K, 64=5600K, 128=4200K, 192=3200K, 255=2700K) To get colour temperatures stated above, RGBW channels have to be set at the same value (e.g. 255DMX) or RGB=0 and White channel > 0 DMX (0=default) (To activate Tungsten effect at 2700K and 3200K , set DMX value at "Power/Special functions" channel)	proportional
13	17	17	17	17	17		Background - 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
14	18	18	18	18	18		Background - Dimmer intensity (8 bit)	
						0 - 255	Dimmer intensity from 0% to 100% (255=default)	proportional
*	19	19	19	19	19		Background Dimmer intensity - fine (16 bit)	
						0 - 255	Fine dimming (255=default)	proportional
15	20	20	20	20	20		Colour Mix control	
							<i>The channel defines relation between color channels</i>	
							<i>IF Flower effect is active, its colour channels always have priority!</i>	
							<i>Global = Global Colours (RGBW colours, Virtual Colour Wheel, CTO)</i>	
							<i>Pixel = Pixel Colours (RGB individual pixels or Kling-Net)</i>	
						0-9	Global colours (Global has priority)	
						10-19	Maximum mode (highest values have priority)	step
						20-29	Minimum mode (lowest values have priority)	step
						30-39	Multiply mode (multiply Global and Pixel)	step
						40-49	Addition mode (Global + Pixel) (45=default)	step
						50-59	Subtraction mode (Global – Pixel)	step
						60-69	Inverted Subtraction mode (Pixel – Global)	step
						70-79	Coloured background	step
						80-127	Raw DMX	proportional
						128	Global colours only (Global has priority)	step
						129-254	Crossfade (crossfade between Global and Pixel)	proportional
						255	Pixel colours (Pixel has priority)	step
16	21	21	21	21	21		Flower Effect 1	
						0	Open position-without Flower Effect (0=default)	step
						1 - 127	Flower Effect forwards rotation from fast to slow	proportional
						128	Flower Effect -without rotation	step
						129-255	Backwards rotation from slow to fast	proportional
17	22	22	22	22	22		Flower Effect 1 - Red/Cyan (8 bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
18	23	23	23	23	23		Flower Effect 1 - Green/Magenta (8 bit)	

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
19	24	24	24	24	24		Flower effect 1 - Blue/Yellow (8 bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
20	25	25	25	25	25		Flower Effect 1 - White (8 bit)	
						0-255	Colour saturation control - coarse 0-100% (255=default)	proportional
21	26	26	26	26	26		Flower Effect 1 - 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
22	27	27	27	27	27		Flower Effect 1 - Dimmer intensity (8 bit)	
						0 - 255	Dimmer intensity from 0% to 100% (255=default)	proportional
23	28	28	28	28	28		Flower Effect 2	
						0	Open position-without Flower Effect (0=default)	step
						1 - 127	Flower Effect forwards rotation from fast to slow	proportional
						128	Flower Effect -without rotation	step
						129-255	Backwards rotation from slow to fast	proportional
24	29	29	29	29	29		Flower Effect 2 - Red/Cyan (8 bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
25	30	30	30	30	30		Flower Effect 2 - Green/Magenta (8 bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
26	31	31	31	31	31		Flower effect 2 - Blue/Yellow (8 bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
27	32	32	32	32	32		Flower Effect 2 - White (8 bit)	
						0-255	Colour saturation control - coarse 0-100% (255=default)	proportional
28	33	33	33	33	33		Flower Effect 2 - 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
29	34	34	34	34	34		Flower Effect 2 - Dimmer intensity (8 bit)	
						0 - 255	Dimmer intensity from 0% to 100% (255=default)	proportional
30	35	35	35	35	35		Master Zoom	
						0-255	Zoom from max. to min.beam angle (128=default)	proportional
*	36	36	36	36	36		Master Zoom - fine	
						0-255	Fine zooming (0=default)	proportional
31	37	37	37	37	37		Zoom 1	
						0-255	Zoom from max. to min.beam angle (128=default)	proportional

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
*	38	38	38	38	38		Zoom 1 - fine	
						0-255	Fine zooming (0=default)	proportional
32	39	39	39	39	39		Zoom 2	
						0-255	Zoom from max. to min.beam angle (128=default)	proportional
*	40	40	40	40	40		Zoom 2- fine	
						0-255	Fine zooming (0=default)	proportional
*	41	*	*	41	41		Pattern selection	
						0-2	No pattern (0=default)	
						3-4	Pattern 1	step
						5-6	Pattern 2	step
						7-8	Pattern 3	step
						9-10	Pattern 4	step
						11-12	Pattern 5	step
						13-14	Pattern 6	step
						15-16	Pattern 7	step
						17-18	Pattern 8	step
						19-20	Pattern 9	step
						21-22	Pattern 10	step
						23-24	Pattern 11	step
						25-26	Pattern 12	step
						27-255	RAW DMX	proportional
*	42	*	*	42	42		Pattern - Repeat (Size)	
						0-2	Variant 1 (0=default)	step
						3-4	Variant 2	step
						5-6	Variant 3	step
						7-8	Variant 4	step
						9-10	Variant 5	step
						11-12	Variant 6	step
						13-14	Variant 7	step
						15-16	Variant 8	step
						17-18	Variant 9	step
						19-20	Variant 10	step
						21-22	Variant 11	step
						23-24	Variant 12	step
						25-26	Variant 13	step
						27-28	Variant 14	step
						29-30	Variant 15	step
						31-32	Variant 16	step
						33-34	Variant 17	step
						35-255	Raw DMX	proportional
*	43	*	*	43	43		Pattern - Movement	
						0	No movement	step
						1-127	Pattern movement from fast to slow	proportional
						128	Pause - without movement (128=default)	step
						129-255	Backwards pattern movement from slow to fast	proportional
*	44	*	*	44	44		Pattern - Fade	
						0	Snap (0=default)	step
						1-255	Fade from min. to max.	proportional

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
*	45	*	*	45	45		Pattern - Transition	
						0	No fade (0=default)	step
						1	100ms	step
						:		
						255	4 sec	step
*	46	*	*	46	46		Pattern - Crossfade	
						0	Background	step
						1-255	Crossfade between Background and Pattern 0-100% (255=default)	proportional
*	47	*	*	47	47		Pattern - Red (8-bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
*	48	*	*	48	48		Pattern - Green (8-bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
*	49	*	*	49	49		Pattern - Blue (8-bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
*	50	*	*	50	50		Pattern - White (8-bit)	
						0 - 255	Colour saturation control - coarse 0-100% (255=default)	proportional
*	51	*	*	51	51		Pattern - Colour macro	
						0-2	No macro (0=default)	step
							<i>Macros 2-23 allow control of colour change speed from max. to min.</i>	
						3-8	Macro 1	step
						9-14	Macro 2	proportional
						15-20	Macro 3	proportional
						21-26	Macro 4	proportional
						27-32	Macro 5	proportional
						33-38	Macro 6	proportional
						39-44	Macro 7	proportional
						45-50	Macro 8	proportional
						51-56	Macro 9	proportional
						57-62	Macro 10	proportional
						63-68	Macro 11	proportional
						69-74	Macro 12	proportional
						75-80	Macro 13	proportional
						81-86	Macro 14	proportional
						87-92	Macro 15	proportional
						93-98	Macro 16	proportional
						99-104	Macro 17	proportional
						105-110	Macro 18	proportional
						111-116	Macro 19	proportional
						117-122	Macro 20	proportional
						123-128	Macro 21	proportional
						129-134	Macro 22	proportional
						135-140	Macro 23	proportional
						141-255	Raw DMX	proportional
*	52	*	*	52	52		Pattern - Shutter/ strobe	
						0 - 31	Shutter closed	step
						32 - 63	Shutter open (32=default)	step
						64 - 95	Strobe effect from slow to fast	proportional

DMX protocol

Mode/channel						DMX Value	Function	Type of control
1	2	3	4	5	6			
						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
*	53	*	*	53	53		Pattern - Dimmer intensity (8 bit)	
						0 - 255	Dimmer intensity from 0% to 100% (255=default)	proportional
33	54	41	41	54	54		Master 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
34	55	42	42	55	55		Master Dimmer intensity (8 bit)	
						0 - 255	Dimmer intensity from 0% to 100% (0=default)	proportional
*	56	43	43	56	56		Master Dimmer intensity - fine (16 bit)	
						0 - 255	Fine dimming (0=default)	proportional
*	*	44	44	57	57		Red pixel 1	
						0-255	Red LED saturation control 0-100% (0=default)	proportional
*	*	45	45	58	58		Green pixel 1	
						0-255	Green LED saturation control 0-100% (0=default)	proportional
*	*	46	46	59	59		Blue pixel 1	
						0-255	Blue LED saturation control 0-100% (0=default)	proportional
*	*	*	47	*	60		White pixel 1	
						0-255	White LED saturation control 0-100% (0=default)	proportional
							:	
*	*	95	112	108	125		Red pixel 18	
						0-255	Red LED saturation control 0-100% (0=default)	proportional
*	*	96	113	109	126		Green pixel 18	
						0-255	Green LED saturation control 0-100% (0=default)	proportional
*	*	97	114	110	127		Blue pixel 18	
						0-255	Blue LED saturation control 0-100% (0=default)	proportional
*	*	*	115	*	128		White pixel 18	
						0-255	White LED saturation control 0-100% (0=default)	proportional
* function is active only 10 seconds after switching the fixture on								
** In the Tungsten effect simulation the Dimmer channel imitates behaviour of the halogen lamp during dimming								
*** Select RGB or CMY mixing mode on channel "Power/Special functions"								

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