

USER'S MANUAL

Version 2023-12

LaserAnimation
SOLLINGER



RTI PIKO SERIES

Full Color Laser Projector



LaserAnimation Sollinger GmbH | Crellestr. 19/20 | D-10827 Berlin
Phone +49 (30) 780 963 00 | Fax +49 (30) 780 963 25
Email info@laseranimation.com | www.laseranimation.com
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**MADE
IN
GERMANY**

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I Contents of Package

Please make sure that all components were delivered correctly. Please also compare the separately supplied packing list. If something is missing, please contact your sales contact.

Name	No.	Picture
Laser projector	1	
ABS flight case	1	
powerCON TRUE1 / power cable	1	
Interlock bridge	1	
Set of keys	1	
Manual	1	

The unit is carefully packed before shipping. If you discover damages to the device or the packing material due to improper transportation, please inform the shipping company and return the device to the supplier preferably in its original packing.

2 Safety Hints

2.1 General Hints

1. The laser projector is intended only for proper use for projecting laser beams onto a projection surface (walls, screens) or into space indoors or outdoors.
2. The device may not be used when there is **visible damage** to the housing, the connectors in the rear, especially the electric power supply, or the connecting cables.
3. The installation should be performed by **specially trained personnel**. The projector **should not be connected to the mains** during installation. **Please note the local safety regulations!**
4. For operation of the laser unit at truss or on ceiling, the projector must be additionally secured by a **safety cable**. This cable must be appropriately designed according to the weight of the laser projector. The relevant accident prevention regulations of the professional associations must be observed.
5. If the provided mains cable does not correspond with your existing mains supply please use an appropriate adapter for mains connection. Do not use any electronically controlled sockets, e.g. no dimmer or radio sockets, for mains connection of the laser projector.
6. The laser unit has to be used according to this manual. LaserAnimation Sollinger GmbH does not assume liability for damages caused by non-observation of this manual.
7. Before starting any maintenance or cleaning **remove the unit from the power supply!**
8. In case of malfunctions please contact **your dealer and after consultation** send the device back **for inspection and repair** in its original packing. **Do not open the device!**

Attention: Warranty is rendered void if the device is misused, damaged, modified in any way, or for unauthorized repairs or parts.

9. The laser device is intended for use in a dry and sufficiently ventilated location. When used outdoors the device **has to be protected against humidity, overheating and excessively low temperatures**. Note the respective maximum and minimum ambient temperatures for operation specified in the technical details.

10. When operating the device in humid or special outdoor conditions that can lead to condensation:
- a. **Allow the device to acclimatize sufficiently at the place of use.**
 - b. **Use LA.toolbox to check the internal temperature of the unit and the dew point.**
 - c. **Do not operate the device if the dew point is $> 20^{\circ}\text{C}$, as condensation can occur on the cooler components.**
 - d. **Do not switch the device off between operating times, simply activate interlock / E-stop to disable laser emission or set the laser projector state to Standby (refer to LA.toolbox main tabs). This prevents the unit from cooling down, as all temperature control loops remain active.**
11. The laser unit may not be operated in environments polluted with sand, dust or acrid fumes or gases.
Fog machines must not be operated in the immediate vicinity of the laser projector. Do not point the fog nozzle directly at the laser projector.
12. Do not expose the laser unit to direct sunlight or other intensive light sources e.g. spotlight.

2.2 Hints for Laser Safety

Caution – use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This laser product is designated as Class 4 during all procedures of operation, maintenance and service.

The local safety regulations for the application of Class 4 laser products must be observed!

1. Eye Protection

- **Never look directly into the laser beam!**
A laser beam is coherent, monochromatic light with very high energy. A laser beam retains its intensity even over very long distances. If a laser beam hits the human eye it can lead to irreparable damages to the cornea, the conjunctiva, the eye lens and the retina. **Avoid any reflections back into the laser to prevent damages to the laser system. Do not place any objects into the laser beam** because even diffusely reflected radiation can cause eye damages.
Therefore remove any rings, watches or the like before you carry out work on the device and use only non-reflective tools.
- We strictly recommend wearing **laser protective glasses** for laser devices according to laser class 4.

2. Fire Protection

- The high energy density of the laser beam causes painful burns when it hits human skin. The beam may also burn holes into textiles.
Therefore **never reach into the laser beam** and do not let other parts of the body get in the way of the laser beam.
- If the laser beam hits easily flammable materials such as paper, these will ignite and a fire can develop very quickly.
Therefore make sure that **no flammable material is in the way of the beam** before activating the laser.

3. Audience Protection

- The operation of laser systems with Class 4 lasers requires an emergency stop (E-Stop). Regardless of the way the laser is operated, **an E-Stop must always be connected!** Place the E-Stop so that you can reach it immediately in emergency situations. Run a test each time the laser is activated to ensure that it is turned off immediately by activating the E-Stop.
- Mark an area of about 3 to 4 m around the laser system as off limits to the audience.
- Only test the laser system as long as no audience is present.

- Never let the laser run unattended.
- Make sure that no unauthorized persons have access to your laser system.

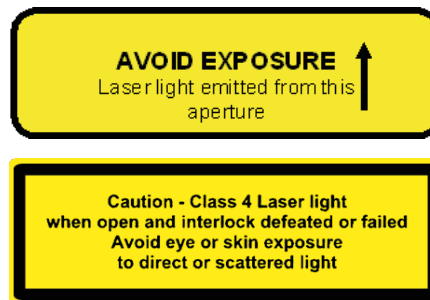
The operation of laser equipment in the event sector with an audience requires an approval by a technical inspection authority in many countries!

The following warning labels are placed on the laser device:

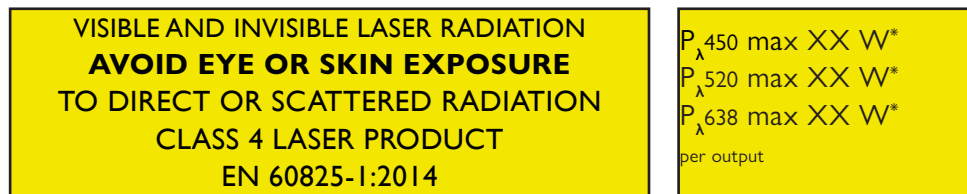
Next to emission laser window:



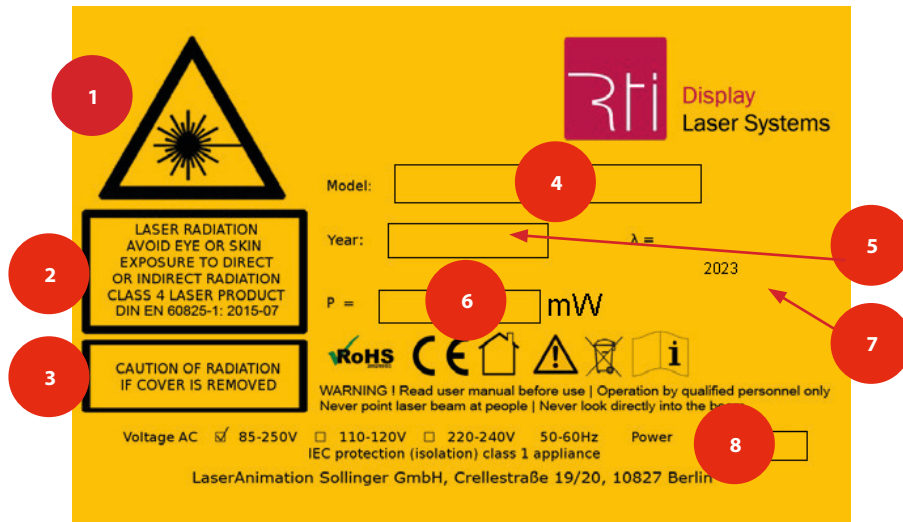
On the top cover:



On the bottom:



*depending on model



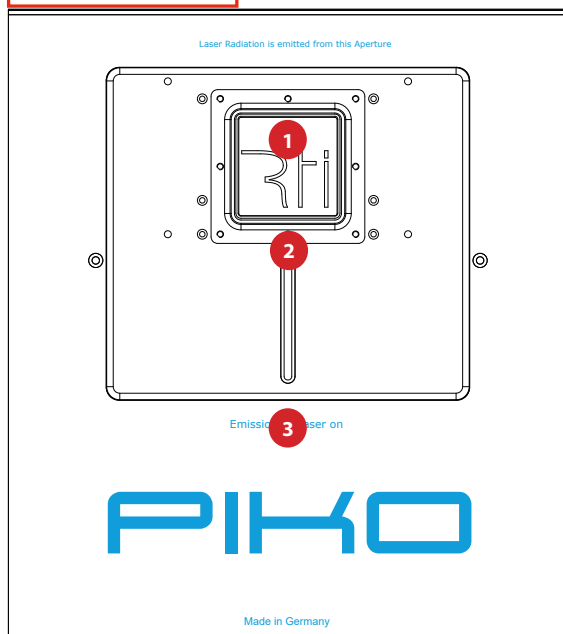
1. Laser radiation! Avoid exposure to beam
2. Laser class 4
3. Caution of radiation if cover is removed
4. Model type
5. Production year
6. Output power
7. Wavelength
8. Power supply & consumption

3 Connectivity and Physical Features

3.1 Overview

All included signal cables are shielded. In case you use other cables (e.g. for remote control, Interlock, external key switch) it is essential to use shielded cables only.

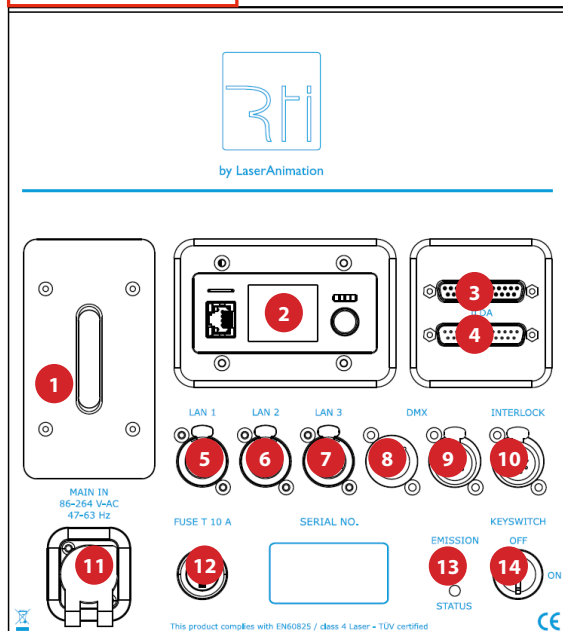
RTI PIKO front panel



RTI PIKO front panel

1. Laser aperture
2. Beam blocker mechanism
3. Emission LED

RTI PIKO back panel



RTI PIKO back panel

1. Loop for safety cord
2. ShowNET / FB4 interface
3. ILDA thru: 25pin D-sub female for daisy chaining to other projector
4. ILDA in: 25pin D-sub male to connect an ILDA compliant signal source
5. LAN RJ-45 for Ethernet network (LAS software / AVB) connection
6. LAN RJ-45 for Ethernet network (ShowNET) connection
7. LAN RJ-45 for Ethernet network (ShowNET) connection
8. DMX in: 5pin XLR male
9. DMX thru: 5pin XLR female
10. Interlock: 7pin XLR for connection of
 - emergency stop (E stop) (separately available)
 - included Interlock plug (to close the interlock loop for testing purposes only)
11. Universal input: 86 VAC – 264 VAC, 47 – 63 Hz
12. Fuse T 10A
13. Emission & status LEDs
14. Key switch

3.2 Connectivity

3.2.1 Mains Connection

The projector can be operated with supply voltages of 86 VAC – 264 VAC / 47 – 63 Hz.

Note: If the provided mains cable does not correspond with your existing mains supply please use an appropriate adapter for mains connection.



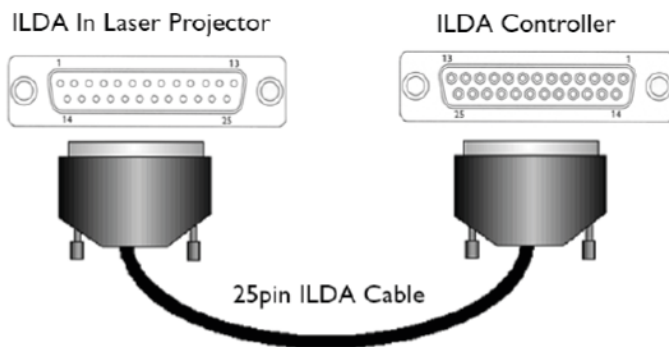
The highly-efficient power supply allows discharging external and internal disturbances via the protective conductor (PE). Internal filters are ineffective without protective conductor (PE). Operation without grounded protective conductor (PE) can cause damage to the components of the power supply. For this we cannot provide any warranty!

3.2.2 Connection Signal Source via ILDA

Be sure to use fully connected 25 wire 1:1 shielded cables only!

All significant ILDA signals are true differential inputs i.e. each signal line must have its “inverted signal” counterpart!

At the signal source “inverted signal” lines may be tied together and connected to GND. For reasons of best noise suppression also in this case a fully connected 25 wire cable should be used! Connect your projector to the 25pin ILDA output of a laser show controller, e.g. Lasergraph DSP or another controller with an ILDA compliant output using a DSub25pin ILDA cable.



3.2.2 AVB

Your projector can be controlled via AVB (Audio Video Bridging) by means of an external AVB stream.

To control your PIKO using AVB, please make sure that you exclusively use the “LAN 1” port of your projector as LAN 2 and LAN 3 are internally routed towards ShowNET or FB4.

Using AVB will also require an AVB compliant network infrastructure (AVB compliant switch and USB2AVB interface). For further information about AVB control, please refer to our LA.toolbox user manual and/or tutorials.

3.2.4 Remote Connection

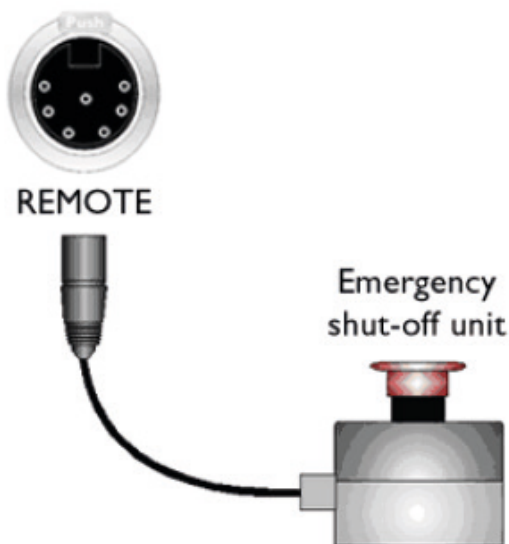
Different connections are possible:

1. Emergency Stop Switch (Interlock loop) with or without key switch

An external emergency (E-stop) button can be connected to the projector using the 7-pin remote connector on the rear side of the device.

If you have special requirements for E-stops, you can connect them to the projector using this port.

An external IP-based E-stop (LAS Disable button) will distribute its heartbeat over network broadcast and doesn't need to be connected to the laser directly.



- The operation of laser systems with lasers class 4 requires an emergency stop (E-Stop). Regardless of the way the laser is operated, an E-Stop must always be connected.
- Place the E-Stop so that you can reach it immediately in emergency situations.
- Run a test each time the laser is activated to ensure that it is turned off immediately by activating the E-Stop.
- After activating the E-Stop (opening the interlock loop) your device is blocked from any laser emission.
- To return to normal mode you have to reset the E-stop (will close the interlock loop again) and then turn the key switch to "OFF" position and then to "ON" position again. This interlock latch process will reactivate laser emission.

2. Interlock Plug

The included interlock plug is mandatory for closing the interlock loop. Always insert the interlock plug to enable laser emission. If you're using an external LAS disable button, you also need to connect the interlock plug to the unit.:



Remote



7pin plug
Interlock

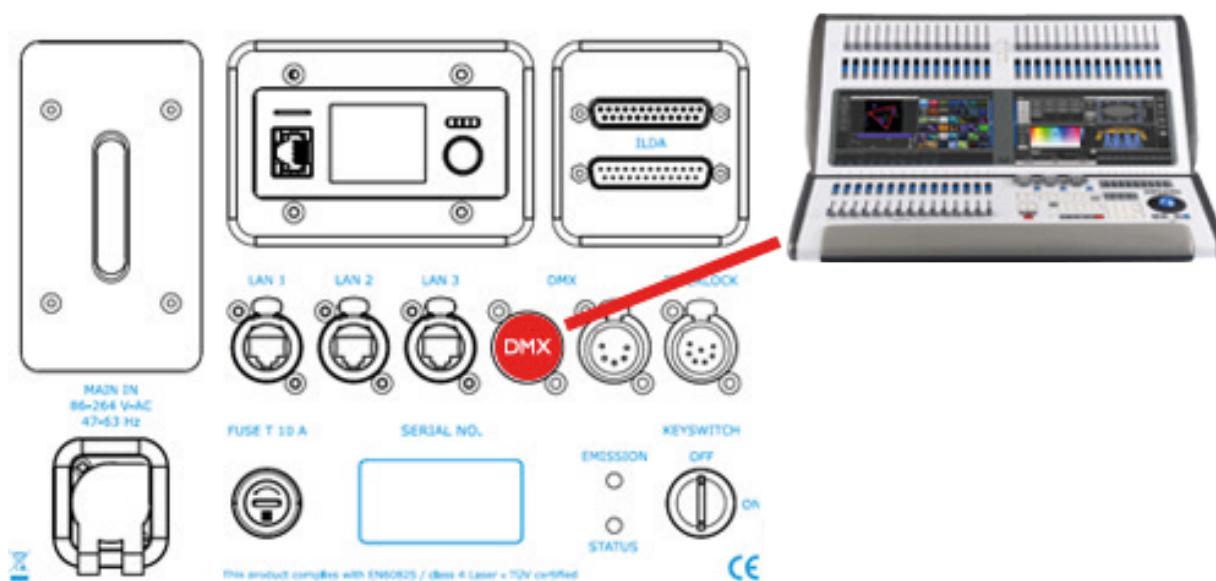
3.2.5 DMX

The DMX In and Outputs are only available for ShowNET or FB4 control.

The applied DMX signal at "DMX in" is still available for transmission to other DMX devices at "DMX thru".

Note:

Please note that "DMX in" is not terminated with 120 Ohm. This needs to be done externally (most easily using a terminating connector on "DMX thru").



For the connection between the laser projector and the DMX console, please use a DMXCable Type EIA RS-485, Shielded, Twisted Pair

3.2.6 LAN

The laser unit can be integrated into an Ethernet network using the LAN ports on the rear side of the unit.

The main control interface of the laser projector is accessible using the LA.toolbox software, available for both PC or Mac.

Use “LAN 1” port for this purpose. Access to laser projector mainboard is not possible via LAN 2 or LAN 3.

The laser projector output can be also controlled with different types of software using the integrated

ShowNET card (or FB4 if applicable). Use either “LAN 2” or “LAN 3” for this purpose. Both ports are connected on an internal network switch.

If you're not using AVB for control, you can link LAN 1 with LAN 2 using a small network patch cable and control the whole laser projector (mainboard functionalities and ShowNET or FB4) through “LAN 3” port.

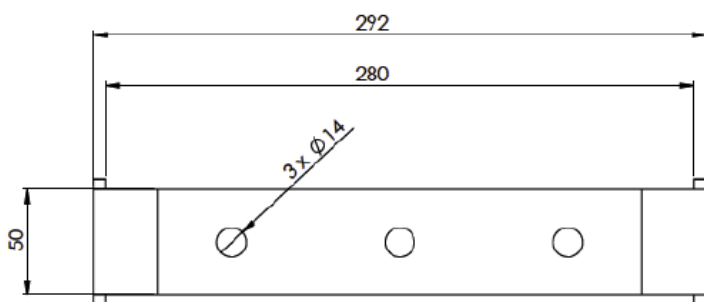
If you're using AVB, connect your LAN cable to port “LAN 1” and access to the mainboard functionalities and AVB receiver.

4 Installation and Commissioning

4.1 Installation

4.1.1 Hanging Operation

The laser projector is equipped with an extra stable stainless steel yoke for hanging operation (truss or tripod). For mounting you will need minimum one C-clamp (not included).



Make sure that the projector is adequately secured by an additional steel cable during hanging operation. The manufacturer does not assume responsibility for damage to persons or to property due to faulty attachment!

4.1.2 Standing Operation



Attention! The air is supplied by the fans on the right side of the projector. Do not block the fans on the right side !



Place the laser unit in upright position on a stable platform and make sure that the position is sufficiently ventilated. Do not place the laser unit sideways and do not block the side panels.

4.1.3 Hints for Application of the integrated Beam Blocker

A beam block panel is integrated into the front panel for safety reasons. This convenient cover can be used to blank the laser output in order to protect the audience in a certain area.



1. Loosen silver screw by turning anticlockwise.
2. While holding the silver screw, slide it up and down until the beam blocking plate is in the desired position.
3. Tighten the silver screw by turning clockwise.

4.2 Commission

4.2.1 Power On

The device is not equipped with a power switch. The power supply should only be performed by connecting respectively disconnecting the laser projector to or from the mains.



1. Connect the included power cable to the mains input of your device: Pull the slider, insert the connector and turn it clockwise until the connector is locked.
2. Connect the device to a power outlet. If mains power is available the fans will start.
3. For power off the projector turn the connector counterclockwise and disconnect it from the mains input "Power".

Note:

The powerCON TRUE1 connector can be connected or disconnected under load!

4.2.2 Laser On



Never look into the laser outlet window while turning the laser on! Ensure that no individuals or highly flammable objects are situated in the line of the laser beam.

1. Ensure that the beam block panel in front of the laser outlet window is opened.
2. Make sure that the Interlock loop is closed.
3. Insert the key and activate the laser by turning the key to the ON position.
4. The laser can be switched off immediately by turning the key switch to the OFF position.

5 Control

5.1 LA.toolbox

The RTI PIKO operating modes and main settings can be configured easily using the „LA.toolbox“ software. This intuitive software allows to monitor important functions of the laser unit and adjust operating parameters.

The LA.toolbox communicates with the laser projector via LAN I port. The software offers PC installation for Windows 7/8.1/10/11 operating systems. Mac version for installation on an Apple Macintosh running macOS 13 (Ventura) or newer.

Both PC and Mac versions of LA.toolbox are included on the USB memory stick, along with a detailed LA.toolbox manual. The software and manual are also available for download from our website:
<https://laseranimation.com/en/downloads/>



To install LA.toolbox, simply follow the instructions in the manual. For additional information, please consult the LA.toolbox manual.

5.2 ShowNET*

ShowNet is a versatile laser controller with a broad set of functionalities, including that of a digital-analog-converter for the use with laser show software. It converts a digital network signal to an analog laser control signal.

The manual is available for download from this website:
<https://www.laser-interface.com/en/user-manual/shownet-display-panel.html>



*depending on model

6 Maintenance Hints



Ensure the laser is turned off and the device is disconnected from the mains before conducting any maintenance.

Please ensure that the fans of the projector are checked regularly.

Depending on the operating environment, large amounts of dirt may accumulate on the fans over time, which must be removed to ensure trouble-free operation.

It is recommended that you also periodically inspect the air inlets and outlets on both sides.

Make sure to remove any dust between the ribs with a brush, a vacuum cleaner, or an oil-free compressed air cleaner.

To clean the device's housing, use a soft fluff-free cloth and a mild detergent.

Avoid touching the laser outlet window and always use the protector to close it after operation.

The window may become fogged during operation (fog machines, outdoor operation, etc.).

A contaminated window can lower the laser output power and affect the beam quality. It is recommended to clean the laser outlet window regularly using isopropyl alcohol (for fingerprints) and/or acetone and lens paper.

Be careful during cleaning and do not touch the cleaning surface of the lens paper with your fingers.

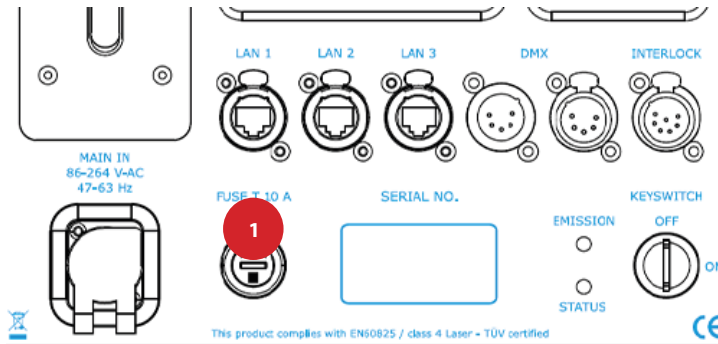
Isopropyl alcohol and Acetone are dangerous substances, so please adhere to the corresponding safety measures.

7 Malfunction

Check the mains connection!

In case of a malfunction, first check the mains connection and the mains cable. If needed, change the power cable.

Additionally, check the device fuse as it may be faulty. Replacing the fuse is easy - remove the fuse holder next to the power connector using a screwdriver and replace the defective fuse by a new one with identical values: T 10A.



1 Fuse Holder

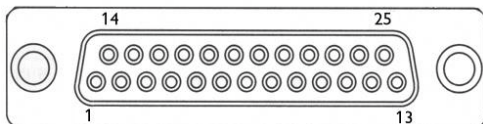
If any other malfunctions occur, kindly return the device to your dealer for inspection and repair in its original packaging.

The status LED on the rear side of the device indicates the momentary operating status of the device. Green blinking sequences signalizes normal operation, red ones an error state:

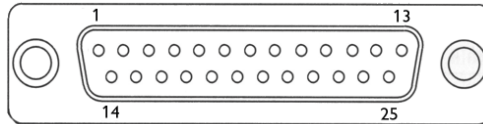
Blinking Sequence	Meaning
Alternate red \green blinking	The laser is in 'Adjusting' mode, temperatures have not reached their target values yet.
Green constantly on	The laser is in 'Run' or 'Test 10%' mode. ILDA signal is present for laser emission, laser emission can follow.
Green blinking 1 time	The device is in the "Shutdown" mode.
Green blinking 2 times	Interlock loop is open.
Green blinking 3 times	Key switch is not closed.
Green fast blinking emission LED is off	Laser is in the 'Standby' mode, interlock and key switch are closed.
Green fast blinking emission LED is constantly on	Laser is in the automatic 'Standby' or 'Shutdown' mode. This occurs if the laser in the 'Run' mode but no ILDA signal has been present for more than some seconds (adjustable). The laser switches back to 'Run' immediately when the ILDA signal comes back. A lot of heat dissipation can be saved in this mode. Your projector stays cooler especially in higher ambient temperatures. The power of the fans will be reduced -> less noise.
Red blinking	Warning! The temperature sensor for the heat sink or the RTC (Real Time Clock) is failing. However, the laser can still be operated.
Red constantly on	Error! 1. If 'Run' or 'Test' modes are no longer possible a system error has occurred. 2. If 'Run' and 'Test' modes are still possible, it means that one or more laser disable drivers have signaled an error.

8 Pin Assignments

8.1 ILDA in, ILDA out



ILDA out (25pin D-sub female)



ILDA in (25 pin D-sub male)

Notes: n.c. means not connected | all signal lines are true differential

Pin No.	Signal	Level	Remarks
1	X+	$\pm 10V$ measured against X-	Beam position: +10V : right 0V : center - 10V : left
2	Y+ ₋	$\pm 10V$ measured against Y-	Beam position: +10V : top 0V : center - 10V : bottom
3	Intensity+	0V or 5V measured against Intensity - digital signal	0V: Beam off / blanked 5V: Beam on Left open: Beam on Interpretation of this signal can be switched off
4	Interlock A	Interlock loop	Connected with Interlock B
5	Red+	0V to +5V against Red-	0V : 0% red 5V : 100% red
6	Green+	0V to +5V against Green-	0V : 0% green 5V : 100% green
7	Blue+	0V to +5V against Blue-	0V : 0% blue 5V : 100% blue
8, 9, 10, 11, 12	n.c.		
13	Shutter	0V to +5V against Shutter-	Signal not interpreted
14	X-	Return lead for X+	
15	Y-	Return lead for Y+	
16	Intensity-	Return lead for Intensity+	
17	Interlock B	Interlock Loop	Connected with Interlock A
18	Red-	Return lead for Red+	
19	Green-	Return lead for Green+	
20	Blue-	Return lead for Blue+	
8, 9, 10, 11, 12	n.c.	-	
25	Shutter-	Return lead for Shutter+	

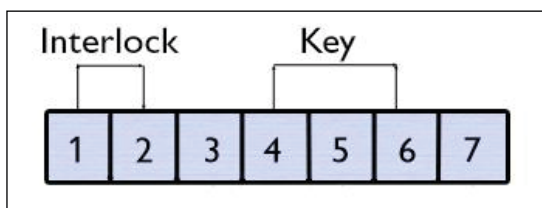
8.2 Remote Connector

8.2.1 7pin XLR female



Pin No.	Signal	Meaning
1	Interlock	Interlock loop: INTERLOCK ON: when both Interlock lines are connected to each other
2	Interlock	
4	Remote Key	KEY ON (external key switch): if connected to VCC (pin 6)
6	VCC	+24V max. 250mA
7	GND	Ground

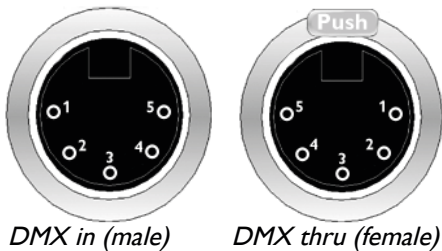
8.2.2 Interlock Plug (included in delivery)



Please only use the silver Interlock connectors for the laser projectors. The black interlock connectors supplied with previous LaserAnimation products do not possess the required bridge of pins 4 and 6.

8.3 DMX

Valid for RTI PIKO laser projectors with integrated ShowNET or FB4.



Pin No.	DMX in	DMX thru
1	DMX Shield	DMX Shield
2	DMX In-	DMX THRU-
3	DMX In+	DMX THRU+
4	n.c.	n.c.
5	n.c.	n.c.

Please note that “DMX in” is not terminated with 120 Ohm. This needs to be done externally (most easily using a terminating connector on “DMX thru”).

9 Technical Specifications

RTI PIKO 33 RTI PIKO 38			
RTI PIKO 33 - device-dependent laser specifications:			
Total power (after optics)	35 W		
Power per color (at module)	8 W / 637 nm	13 W / 525 nm	20 W / 455 nm
RTI PIKO 38 - device-dependent laser specifications:			
Total power (after optics)	38 W		
Power per color (at module)	8.5 W / 637 nm	15 W / 525 nm	20 W / 455 nm
Identical device specifications:			
Laser Source	RSL2 (red / green / blue)		
Beam divergence*	< 0.8 mrad*		
Beam diameter	5 mm		
Type	CW analog modulated, laser class 4		
Scanner	45 kpps ILDA 8°; optional CT-6210 with LAS Turboscan: 60 kpps ILDA 8°		
Scan angle	max. 50°; optional CT-6210 with LAS Turboscan: max. 60°		
Operation mode	LAS Mainboard with AVB, LA.toolbox and ShowNET		
Power supply	85 VAC – 264 VAC, 50 - 60 Hz, universal		
Operating temperature	+5°C to +45°C		
IP rated	IP54		
Power consumption	900 W		
Dimensions	491 x 271 x 296 mm		
Weight (net)	27 kg		

RTI PIKO 42 ROGB RTI PIKO 45 RYGB				
RTI PIKO 42 ROGB - device-dependent laser specifications:				
Total power (after optics)	42 W			
Power per color (at module)	8 W / 637 nm	15 W / 525 nm	22 W / 455 nm	5 W / 590 nm
RTI PIKO 45 RYGB - device-dependent laser specifications:				
Total power (after optics)	45 W			
Power per color (at module)	8.5 W / 637 nm	15 W / 525 nm	24 W / 455 nm	6 W / 577 nm
Identical device specifications:				
Laser Source	RSL2 (red / green / blue) OPSL (orange / yellow)			
Beam divergence*	< 0.7 mrad*			
Beam diameter	5 mm			
Type	CW analog modulated, laser class 4			
Scanner	45 kpps ILDA 8°; optional CT-6210 with LAS Turboscan: 60 kpps ILDA 8°			
Scan angle	max. 50°; optional CT-6210 with LAS Turboscan: max. 60°			
Operation mode	LAS Mainboard with AVB, LA.toolbox			
Power supply	85 VAC – 264 VAC, 50 - 60 Hz, universal			
Operating temperature	+5°C to +45°C			
IP rated	IP54			
Power consumption	1600 W			
Dimensions	491 x 271 x 296 mm			
Weight (net)	28 kg			

*FWHM average depending on model

RTI PIKO 46 RTI PIKO 65 RTI PIKO 80			
RTI PIKO 46 - device-dependent laser specifications:			
Total power (after optics)	46 W		
Power per color (at module))	16 W / 637 nm	16 W / 525 nm	24 W / 455 nm
RTI PIKO 65 - device-dependent laser specifications:			
Total power (after optics)	65 W		
Power per color (at module)	24 W / 637 nm	22 W / 525 nm	30 W / 455 nm
RTI PIKO 80 - device-dependent laser specifications:			
Total power (after optics)	80 W		
Power per color (at module)	17 W / 637 nm	32 W / 525 nm	45 W / 455 nm
Identical device specifications:			
Laser Source	RSL2 (red / green / blue)		
Beam divergence*	< 0.8 mrad*		
Beam diameter	8 mm		
Type	CW analog modulated, laser class 4		
Scanner	42 kpps ILDA 8°		
Scan angle	max. 48° (at 28 kpps)		
Operation mode	LAS Mainboard with AVB, LA.toolbox and ShowNET		
Power supply	85 VAC – 264 VAC, 50 - 60 Hz, universal		
Operating temperature	+5°C to +45°C (RTI PIKO 46) max. +35°C (RTI PIKO 65 RTI PIKO 80)		
IP rated	IP54		
Power consumption	1200 W (RTI PIKO 46) 2500 W (RTI PIKO 65 RTI PIKO 80))		
Dimensions	491 x 271 x 296 mm		
Weight (net)	27 kg (RTI PIKO 46) 28 kg (RTI PIKO 65 RTI PIKO 80))		

RTI PIKO 50 G		
RTI PIKO 50 G		
Total power (after optics)	50 W	
Power per color (at module)	60 W / 525 nm	
Laser Source	RSL2 (green)	
Beam divergence*	< 0.9 mrad*	
Beam diameter	10 mm	
Type	CW analog modulated, laser class 4	
Scanner	38 kpps ILDA 8°	
Scan angle	max. 48° (at 25 kpps)	
Operation mode	LAS Mainboard with AVB, LA.toolbox and ShowNET	
Power supply	85 VAC – 264 VAC, 50 - 60 Hz, universal	
Operating temperature	max. +35°C	
IP rated	IP54	
Power consumption	2100 W	
Dimensions	491 x 271 x 296 mm	
Weight (net)	27 kg	

*FWHM average depending on model

Final statement

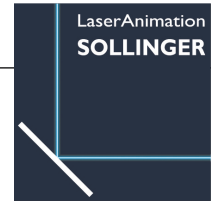
All our products and their packaging are individually checked and leave our facilities in a flawless and proper condition. If you notice any damage or defects when receiving the product, please contact your dealer immediately. Damages caused by improper handling are not subject to the manufacturer's or dealer's responsibility and no liability or warranty is assumed for it. The operator of the device must follow the local safety regulations and the warnings in the manual. If changes are made to this manual, we cannot inform you. Please contact your dealer for service and any other questions. Only use original spare parts.

Subject to change without notice. No warranty can be given for the correctness of the information.

LaserAnimation Sollinger GmbH
Crellestr. 19/20
10827 Berlin
Germany

Place of Business: Berlin, Germany | Registry Court: Amtsgericht Charlottenburg, HRB 45888 | Managing Director: Martin Werner | VAT-ID: DE154202159

E-Mail: info@laseranimation.com
Internet: www.laseranimation.com



EU Declaration of Conformity

Manufacturer:

LaserAnimation Sollinger GmbH

Product Name:

RTI PIKO 33 RGB
RTI PIKO 38 RGB
RTI PIKO 42 ROGB
RTI PIKO 45 RYGB

RTI PIKO 46
RTI PIKO 65
RTI PIKO 80
RTI PIKO 50 G

Products covered by this declaration: Laser display systems

We here declare that the product described above is in conformity with the following directives:

- 2014/35/EU Low Voltage Directive
- 2014/30/EU Electromagnetic Compatibility Directive
- 2014/53/EU Directive for harmonisation of the laws of the Member States relating to the making available on the market of radio equipment

The following harmonized standards have been applied:

- DIN EN 61000-6-1 VDE 0839-6-1:2007-10
Electromagnetic compatibility (EMC)
Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
- DIN EN 61000-6-2 VDE 0839-6-2:2006-03
Electromagnetic compatibility (EMC)
Part 6-2: Generic standards - Immunity for industrial environments
- DIN EN 61000-6-3 VDE 0839-6-3:2011-09
Electromagnetic compatibility (EMC)
Part 6-3: Generic standards – Emission standard for residential, commercial and light-industrial environments
- DIN EN 61000-6-4 VDE 0839-6-4:2011-09
Electromagnetic compatibility (EMC)
Part 6-4: Generic standards – Emission standard industrial environments
- DIN EN 60825-1 VDE 0837-1:2015-07
Safety of laser products
Part 1: Equipment classification and requirements
- DIN EN 55032:2016-02 VDE 0878-32:2016-02
Electromagnetic compatibility of multimedia equipment - Emission Requirements

The included technical documents (files) demonstrate that the product has been produced according to the requirements of the abovementioned directives.

The EU declaration of conformity is available for inspection by the market surveillance authorities at any time.

Berlin, 24.10.2023

Martin Werner



LaserAnimation Sollinger GmbH | Crellestr. 19/20 | D-10827 Berlin
Phone +49 (30) 780 963 00 | Fax +49 (30) 780 963 25
Email info@laseranimation.com | www.laseranimation.com
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Technical Drawing - RTI PIKO Housing

