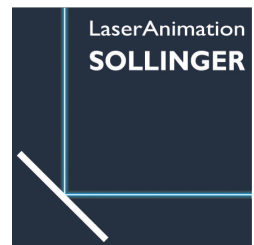


USER'S MANUAL

Version 2024-05



RTI NEO S12 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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This device is a show laser device for commercial use. This device is not a laser pointer and it must not be used for pointing purposes.

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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	
powerCON TRUE1 / power cable	1	
Interlock plug	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. Disconnect the unit from the power supply before carrying out any maintenance or cleaning.
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. Do not operate the device if the dew point is $> 18^{\circ}\text{C}$, as condensation can occur on the cooler components.
 - c. Do not switch the device off between operating times, simply activate interlock / E-stop to disable laser emission.
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

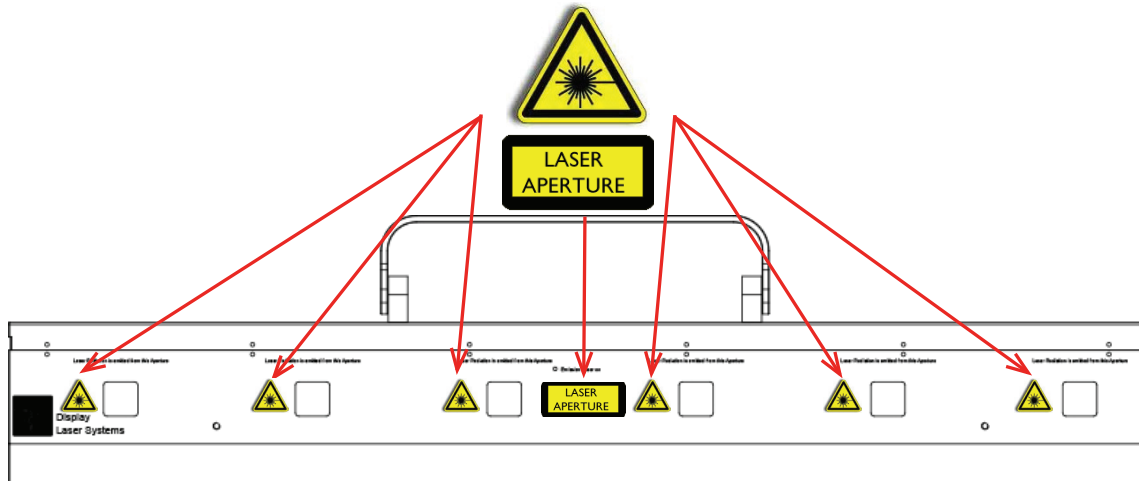
- The operation of laser systems with Class 4 lasers requires an emergency stop (E-Stop). Regardless of the way the laser is operated, an E-Stop must always be connected!
Place the E-Stop so that you can reach it immediately in emergency situations. Run a test each time the laser is activated to ensure 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!

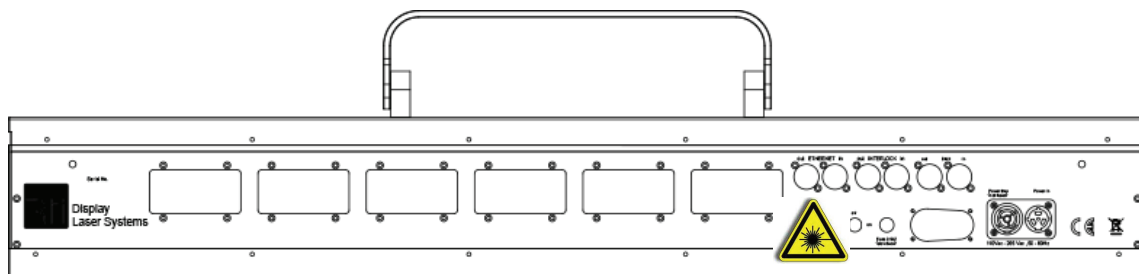
2.3 Warning Labels

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:

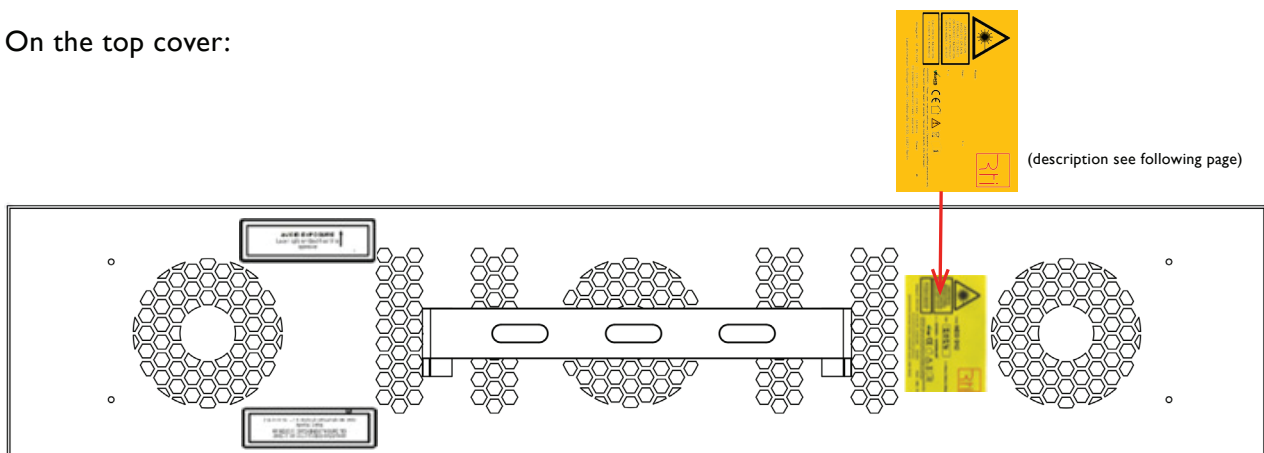
Next to the laser emission windows:

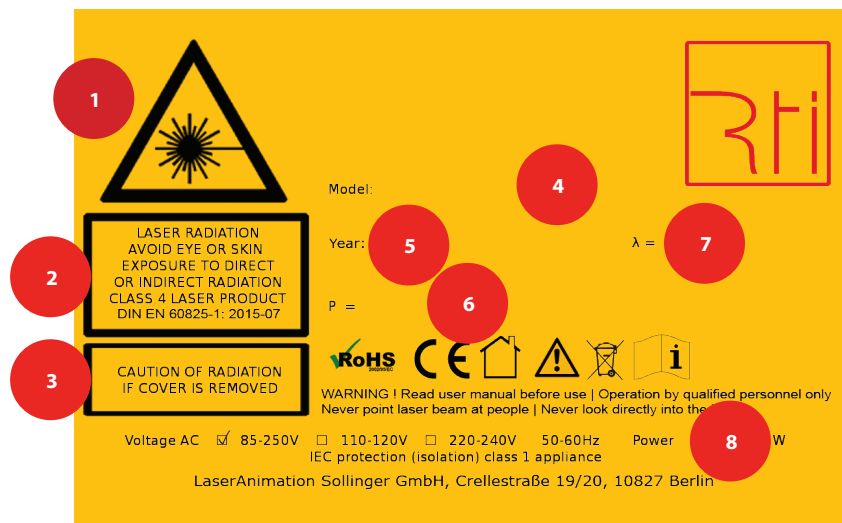


On the back panel:



On the top cover:



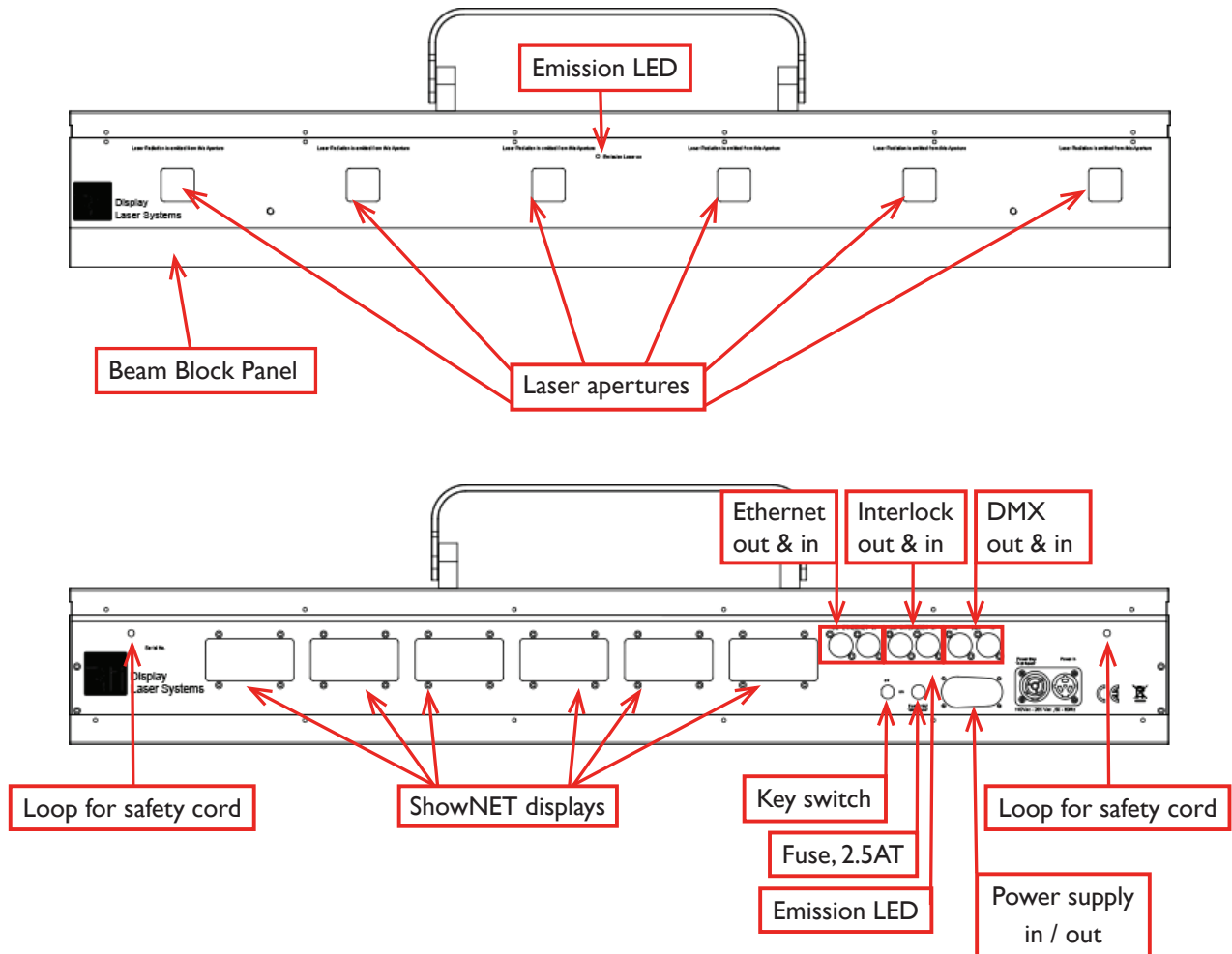


1. Laser radiation! Avoid exposure to beam
2. Laser radiation warnings & Laser class 4
3. Caution of radiation if cover is removed
4. Model type: NEO S12
5. Production year
6. Output power
7. Wavelength
8. Power supply & consumption

3 Device Connectors

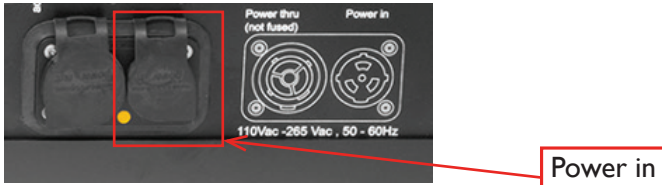
3.1 Overview

Always make sure that only shielded cables are used (e.g. remote control, interlock, etc.).



4 Operation

4.1 Power



Make sure that your device is provided with the correct voltage. Wrong voltage could lead to irreparable damages. Please find the correct voltage data in the synoptical table at the end of this manual as well as at the rear side of the device. It must be ensured that the device is not directed to people or inflammable objects during installation.

Connect the powerCON TRUE1 / power cable to the mains input ,Power in' at the device: Pull the slider, insert the connector and turn it clockwise until the connector is locked. After that, connect the power cable to a power outlet.

4.2 LAN



The laser unit can be connected to an Ethernet network using the LAN ports on the rear of the unit for ArtNet control. The laser projector's output can also be controlled by various types of software using the integrated ShowNET card. Use one of the two LAN ports to connect the laser projector to your computer or switch. The fact that "out" and "in" are written above the Ethernet/LAN interfaces is irrelevant. Both ports are connected to an internal network switch.

4.3 DMX in / DMX out



The device can be controlled via DMX. There are a ,DMX in' (DMX input) and a ,DMX out' (DMX through) interface on the rear side of the device. Connect ,DMX in' via a DMX cable to a DMX controller. ,DMX out' is intended to Daisy Chain the control signal to the ,DMX in' interface of a further RTI NEO device.

The device offers 6 individually controllable laser apertures, each equipped with one ShowNET controller interface.

Depending on selected DMX / ArtNet mode, each ShowNET can be controlled via 19 or 34 DMX channels. Each ShowNET can be assigned with a specific / own DMX start address.

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 out").

There are two ways to control the laser projector via DMX:

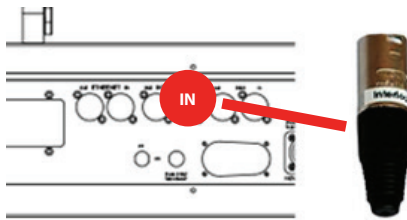
1. the laser beams emitted from the individual (six) laser apertures should be identical.

In this case you need to assign the same DMX address to each ShowNET card.

2. the laser beams emitted from the individual (six) laser apertures should have different patterns, colors, etc.

In this case each ShowNET card must have its own DMX address. Please make sure that you don't overlap DMX channels.

4.4 Interlock



There are a 'Interlock out' (Interlock loop) and a 'Interlock in' interface on the rear side of the device. The interlock plug is provided for testing purposes. During normal operation, a dedicated E-Stop with key switch has to be used.

To enable laser output, first connect the external E-stop (or the interlock plug for testing) to the interlock connector named „interlock in“.

'Interlock out' can be used as Interlock loop to switch all connected devices simultaneously with only one E-Stop.

In a second step, switch the key switch from „OFF“ to „ON“ position to activate 7-sec emission delay.

4.5 Key Switch



There is a key switch on the rear side of the device. Please insert the key into the key switch and turn it to ,on' position to enable laser output. Turn the key to ,off' to switch off laser emission. Please remove the key to avoid unauthorized access.

4.6 Fuse



There is a fuse at the rear side of the device. If the fuse should blow, please change it by a new 2.5AT fuse. If the problems recurs, please contact your dealer.

4.7 Display / Settings at the Device

It is possible to make settings directly on the device using the integrated 6 LCD displays. Each ShowNET controller has its own control display.

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.

Use the rotating knob next to each display to scroll through the menu and press the knob to select the desired control option. When you scroll through the menu, the control options are displayed in light blue. As soon as you make a control selection, please press the rotating knob. The selected option is now displayed in green:



Light blue: Control option



Green: Selected control option

Select from the following menu and submenu options:

* **Automatic Mode**

* **Single File Mode**

/ Turn knob <->

* **Demo Mode**

* **Master - Demo Mode**

* **Sound to Light Mode** (not available for RTI NEO S12)

* **Master Sound2Light** (not available for RTI NEO S12)

* **Slave Mode**

* **Custom Select**

* **Streaming receiver**

/ Select IP address (by turning and pressing the control knob)

* **DMX -> ShowNET**

/ Select DMX address (by turning and pressing the control knob)

* **LAN -> ShowNET**

/ Select IP Mode

// Auto IP

// Static IP

/// select IP address

// DHCP

The detailed online manual is available from this website:

<https://www.laser-interface.com/en/user-manual/shownet-display-panel.html>



Beam Block Panel

The Beam Block Panel is meant as additional protection to prevent laser emission, e.g. into the audience area. To prevent laser emission please loosen the screws and slide the panel in front of the beam outlets. Fasten the screws again. Loosen the screws, slide the Beam Block Panel down and fasten the screws to enable laser emission.



Attention: Do not open or close the Beam Block Panel while the device emits laser beams!

Turn off

To turn off the device, turn the key switch to the off position and unplug the power cord.

Important:

Before transporting the laser, remove both the key and the interlock connector to prevent damage.

5 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.

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.



ISO 9001:2015
certified

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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6 Malfunction

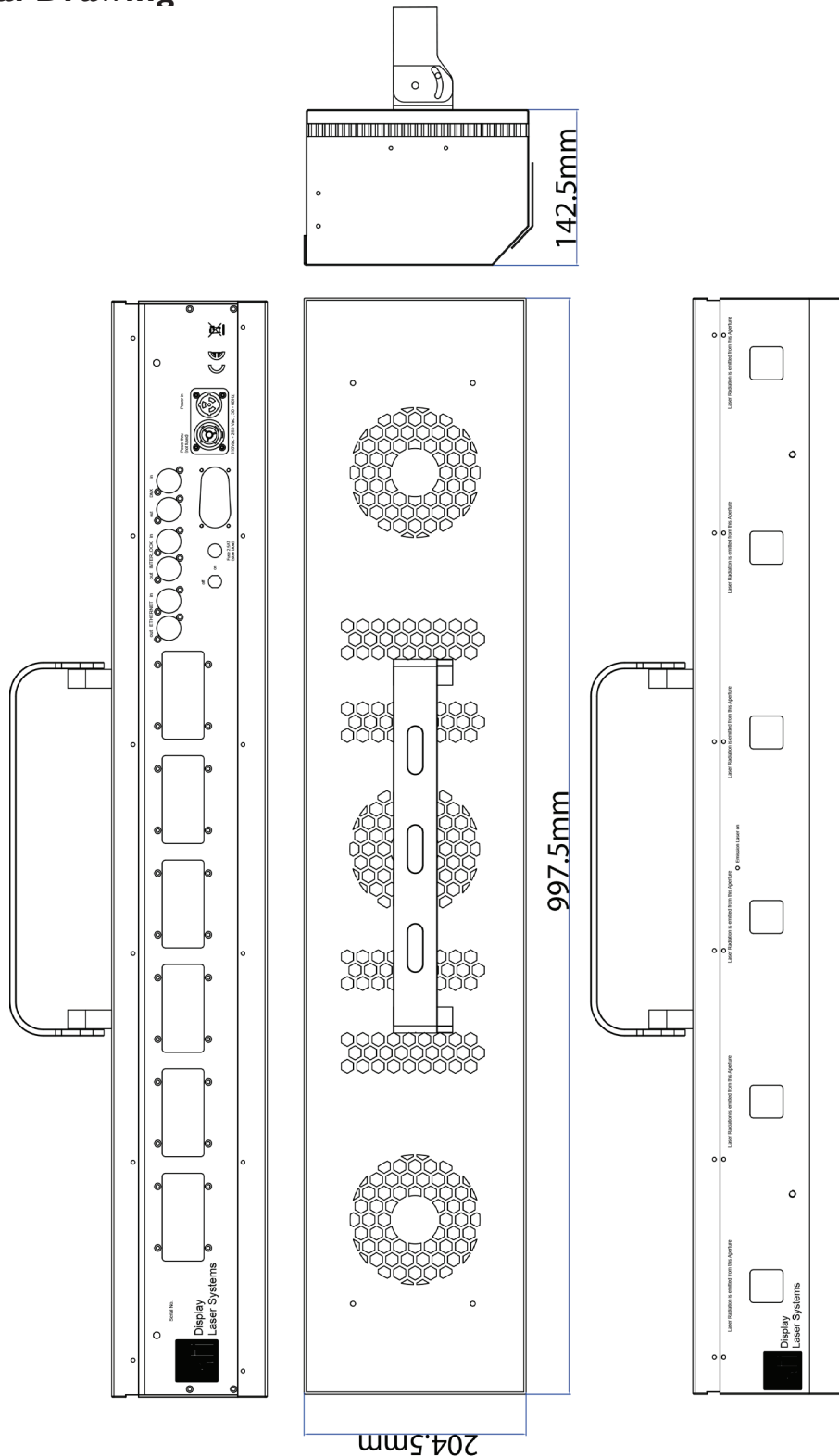
Check the mains connection!

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: 2.5 AT.

If any other malfunctions occur, kindly return the device to your dealer for inspection and repair in its original packaging as there are no user serviceable parts inside this projector.

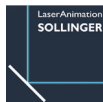
7 Technical Drawing



8 Technical Specifications

Laser			
Laser Source	Diode (red / green / blue)		
Type	CW analog modulated, laser class 4		
Typical wavelengths	638 nm	520 nm	450 nm
Scanner	45kpps ILDA 8°		
Scan angle	max. 45°		
Operation mode	DMX, ArtNet, LAN (computer based control)		
Power supply	85 VAC – 264 VAC, 50 - 60 Hz, universal		
Operating temperature	+10°C - +30°C		
IP rated	IP5X		
Total power	12000 mW		
Power per color at aperture	6 x 600 mW (Red)	6 x 500 mW (Green)	6 x 900 mW (Blue)
Beam divergence*	0.9 mrad*		
Beam diameter	5 mm		
Power consumption	500 W		
Dimensions (L x W x H)	997.5 x 204.5 x 142.5 mm (w/o bracket)		
Weight (net)	19 kg		

*FWHM average depending on model



EU Declaration of Conformity

Manufacturer:

LaserAnimation Sollinger GmbH

Product Name:

RTI NEO S12

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, 06.05.2024

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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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