

## Informazioni

### Laser RTI NEO ONE RGB

#### Operation Modes:

- DMX 512
- Ethernet
- ILDA over LAN
- Display

#### Dimensioni:

- 226x184x184 mm

#### Peso:

- 6,5 kg.

#### Power Consumption:

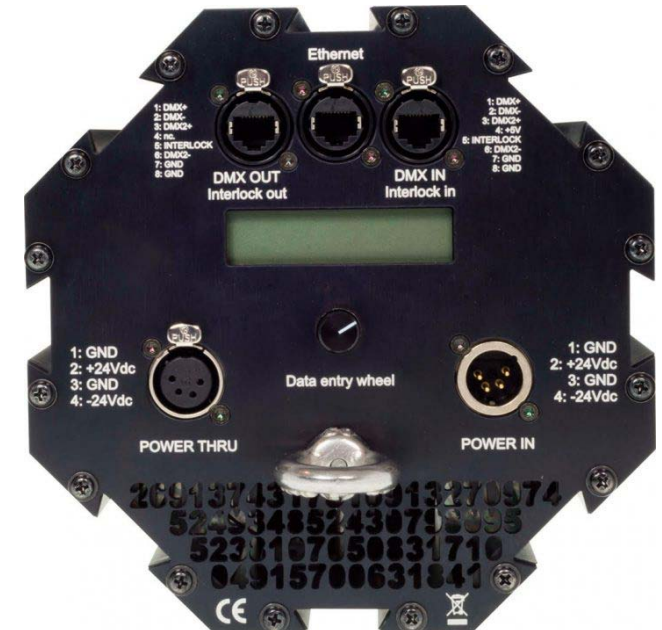
- 320 W

#### Laser Class:

- 4

#### Beam Specifications (full angle):

- c.a. 3.5 mm / 0.9 mrad



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**Technical data / Technische Daten / caractéristiques techniques**

<b>Laser sources:</b> Laserquellen: Sources laser:	Diode (red / green / blue) Diode (rot / grün / blau) diode (rouge / vert / bleu)
<b>Laser class:</b> Laserklasse: Classe laser	4
<b>Scanner:</b>	45 kpps@8° ILDA
<b>Scan angle:</b> Strahlauslenkung: Angle max de balayage:	45° (@30 kpps)
<b>Operation modes:</b> Betriebsmodi: Mode de fonctionnement:	DMX, Ethernet, ILDA over LAN
<b>Beam:</b>	ca. 3.5 mm / 0.9 mrad (full angle)
<b>Power supply:</b> Stromversorgung: Alimentation:	PSU is sold separately; 1 PSU needed for up to 6 devices PSU ist separat erhältlich; 1 PSU wird für bis zu 6 Geräte benötigt PSU est vendu séparément ; 1 PSU nécessaire pour un maximum de 6 appareils
<b>Power consumption:</b> Stromaufnahme: Consommation:	320 W
<b>Operating temperature:</b> Betriebstemperatur: température d'opération:	+10° to +30°C
<b>Dimensions:</b> Abmessungen:	226 x 184 x 184 mm (without bracket) (L x W x H)/(B x T x H)/(H x L x P)
<b>Weight:</b> Gewicht: Poids:	8 kg

**Power specifications (at laser module) / Laserleistung (am Modul) / Puissance (au module)**

	guar. output power	Red / Rot / Rouge (638nm)	Green / Grün / Vert (520nm)	Blue / Blau / Bleu (450nm)
RTI NEO ONE	3'300 mW	1'200 mW	900 mW	1'500 mW





## Manual / Bedienungsanleitung / Mode d'emploi

# RTI NEO ONE

Please spend a few minutes to read this manual fully  
before operating this laser!

Bitte lesen Sie diese Bedienungsanleitung sorgfältig  
vor Inbetriebnahme dieses Showlasersystems!

Avant d'utiliser cet appareil pour la première fois nous vous recommandons  
de lire cette notice d'utilisation!



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Manual: RTI NEO ONE



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**L'utilisation est réservée à un usage professionnel selon décret n°2007-665 du 2 mai 2007 relatif à la sécurité des appareils à laser sortant!**

### Article 4 bis :

« Les usages spécifiques autorisés pour les appareils à laser sortant d'une classe supérieure à 2 sont les usages professionnels suivants :  
(...)

9° Spectacle et affichage :

Toutes les applications de trajectoire, de visualisation, de projection ou de reproduction d'images en deux ou trois dimensions. »

**Content:**

1. **Product and Package Contents**
2. **Preliminary Warning Notices**
3. **Initial Operations, Safety Instructions**
4. **Working on the Device**
5. **Service Notes**
6. **Warnings and other Notices on the Device**
7. **Device & Connections**
8. **Operation**
9. **Device Array Assembly**
10. **More Information / Tutorials**

**Final Statement****Technical Data Sheet****Laser Specifications****1. Product and Package Contents**

Please check if all listed parts are included and undamaged. Included in delivery:

1 x laser projector	1 x NEO ONE power cable	1 x manual
1 x data cable	1 x spring clamp connector	

**2. Preliminary Warning Notices**

1. Please use this device only **according to these operating instructions**.
2. Do not use the device if there are any **visible damages** on housing, connector panels, power supplies or power cords.
3. **Never look directly into the light source** of a laser projector. Danger of damage to the eyes or even blindness in extreme circumstances!
4. **Do not operate the device at high humidity or in the rain.**
5. **Protect device against dripping or splashing water.** Do not place any liquid filled containers near to this device.

**Any warranty claims are void if the warranty label is removed or tampered with in any way.**

**3. Initial Operations, Safety Instructions**

1. Only use the RTI NEO ONE with the specific **RTI NEO ONE PSU**.
2. Make sure that the device is **not connected to mains** during installation.
3. Installation has to be done by **technical experienced and qualified persons** according to safety regulations of the respective country.
4. **Always ensure that maximum permissible exposure (MPE) is not exceeded in areas accessible to the public or members of staff.**
5. In some countries an additional inspection by technical control institutes could be necessary.
6. Connect an **easily accessible interlock connector or circuit breaker** to the RTI NEO ONE PSU.
7. The power supply should be easily accessible.
8. When installing the laser mount it with a minimum distance of 15 cm from walls and objects.
9. When connecting several RTI NEO ONE devices to each other, make sure the **spring clamp connector is tightened**.
10. Never load a connector with more than **100 kg!**
11. For safe setup e.g. on walls or ceilings please use a **safety cord**. The safety cord should be able to withstand tenfold the weight of the device. Please follow the accident prevention regulations of professional associations and/or comparable regulations for accident prevention.
12. If the device has been exposed to **great temperature changes**, do not switch it on immediately. Condensation (or any moisture/water formed) may damage this device.



13. Never use dimmer, RC or other electronically switched sockets. Whenever possible, do not use the laser projector together with large appliances (especially fog machines) on the same mains!
14. Ensure **sufficient ventilation** and do not place the device on any warm or heat radiating surface. Especially the **ventilation openings must not be covered!**

#### 4. Working on the Device

1. This product has no user serviceable parts inside and should only be maintained and serviced by a qualified engineer.
2. Be sure that the mains plug is not connected to the power supply while installing the device.
3. Take off all reflecting things like rings, watches etc. before starting to work with or at the projector.
4. Only use non-reflecting tools to work on device.
5. Wear protective clothing (like goggles, gloves etc.) according to laser power and wavelength of the laser.



15. Ensure that device does **not get overheated**. Make sure that the device is not exposed to spotlights (especially moving heads). Heat of spotlights could overheat laser in a little while and leads to a degradation of performance.

#### 5. Service Notes

- Moisture and heat can reduce lifetime of the laser system dramatically and expires any warranty claim.
- Quick on/off switching of this device will reduce durability of the laser diode dramatically.
- Avoid sharp knocks and shocks to this device and ensure sufficient protection during transportation. Look after your Laserworld product.
- To increase durability of your laser, protect device against overheating:
  - Always ensure sufficient ventilation.
  - Do not face spotlights (especially moving heads) to the device.
  - Check temperature after approx. 30 minutes with each new installation. If necessary install the projector at a place with different temperature.
- Keep the device dry. Protect it from moisture, rain and damp.
- Switch off device when it is not needed. Diodes are switched on and can wear out even if there is no visible laser output.
- **Removal of the warranty label as well as damages to the device caused by improper handling, neglect of the safety instructions and service notes will void the warranty.**

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#### 6. Warnings and other Notices on the Device

**Laser radiation!**  
Avoid exposure to beam

**Laser class 4**

**CAUTION OF RADIATION IF COVER IS REMOVED**

**LASER RADIATION**  
AVOID EYE OR SKIN  
EXPOSURE TO DIRECT OR INDIRECT RADIATION  
CLASS 4 LASER PRODUCT  
DIN EN 60825-1: 2014

**CAUTION OF RADIATION IF COVER IS REMOVED**

**Model type**: RTI NEO ONE RGB

**Production year**: YEAR: [ ]

**Wavelength**:  $\lambda = 445\text{nm} - 655\text{nm}$

**Output power**: P = **3'300 - 3'600mW**

**Power supply & consumption**: VOLTAGE: 24V DC | Power: 320 W  
IEC protection (isolation) class 1 appliance

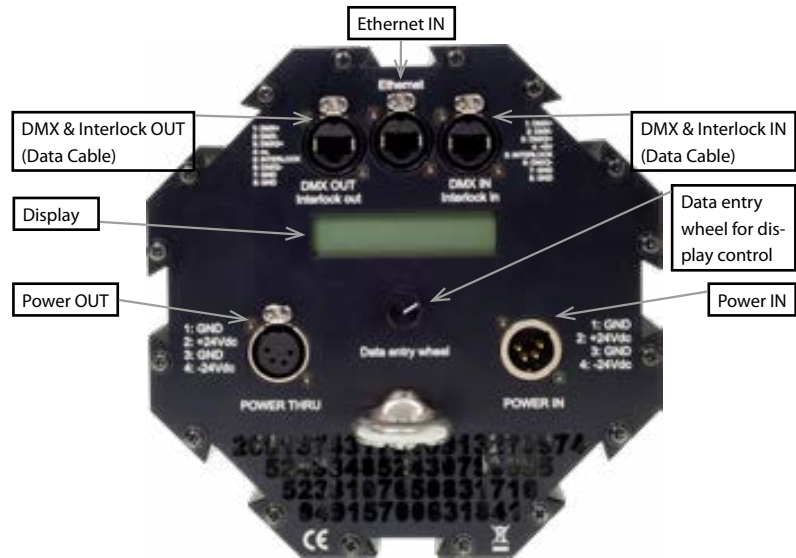
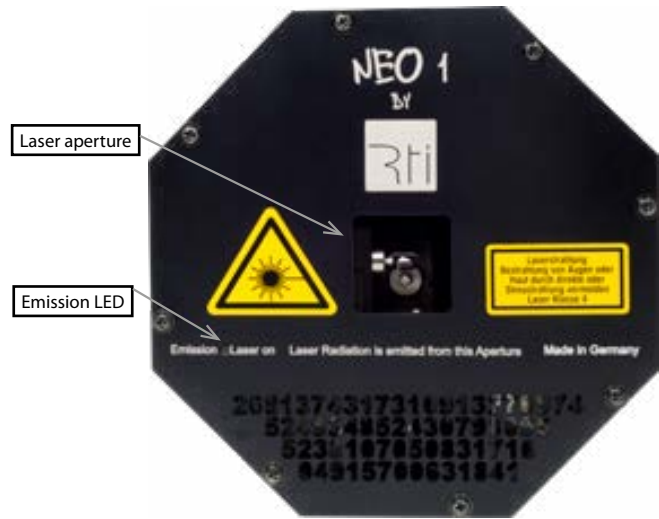
**Warning!** Read user manual before use.  
Operation by qualified personnel only.  
Never point laser beam at people.  
Never look directly into the beam.

Only for indoor use!

Ray Technologies GmbH, Mühlbachweg 2, 83626 Valley, Germany



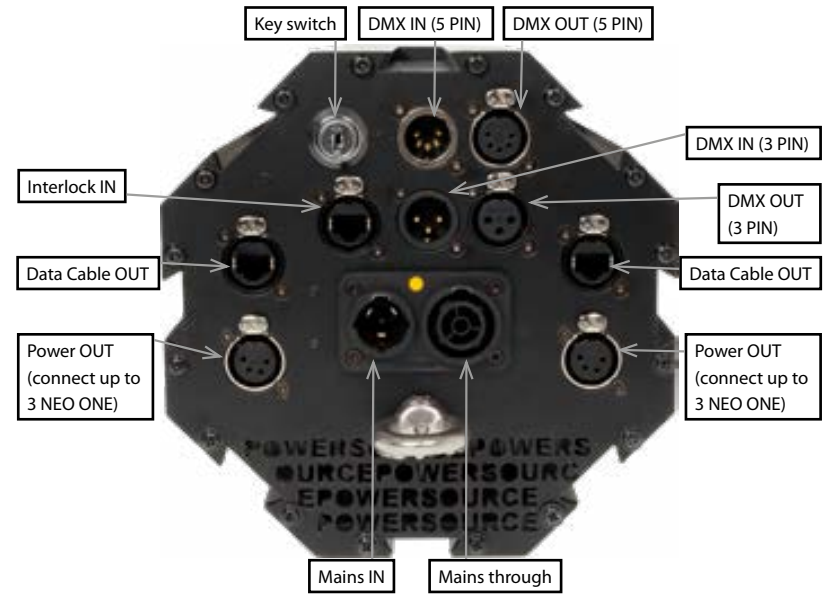
### 7. Device & Connections RTI NEO ONE



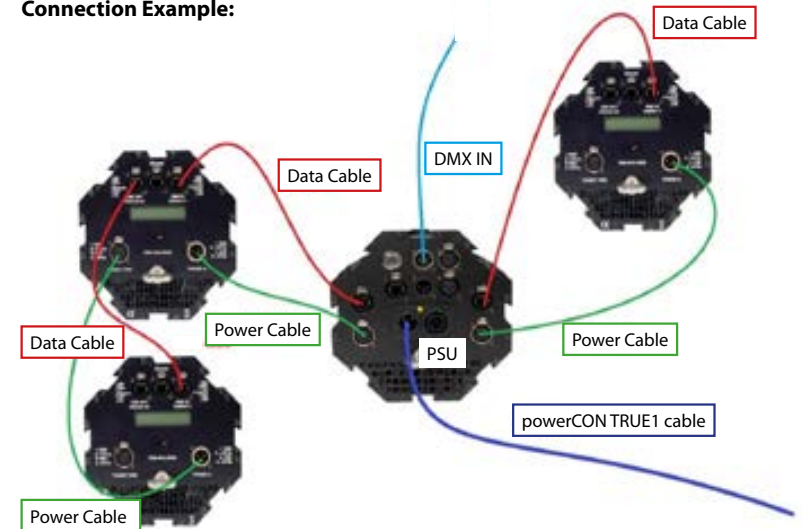
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### RTI NEO ONE PSU (sold separately)



### Connection Example:





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8. Operation

1. **Power Connection to the PSU (sold separately)**

One RTI NEO ONE PSU is needed for up to six RTI NEO ONE devices. Make sure that the PSU 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. It must be ensured that the devices are not directed to people or flammable objects during installation. Connect a power cable to ,Power IN' at the RTI NEO ONE device and then either to the left or to the right ,Power through' at the PSU. After that connect the powerCON TRUE1 power cable to ,Mains IN' at the PSU and then to the mains.

A second RTI NEO ONE can either be connected to the other side of the PSU or to ,Power through' of the first device as illustrated in the connection example above. Each side of the PSU can power up a maximum of three RTI NEO ONE show laser lights.

2. **DMX**

The device can be controlled via DMX. One RTI NEO ONE PSU is needed for up to six RTI NEO ONE devices (a maximum of three devices on each side). There are two ,DMX IN' interfaces at the rear side of the PSU. One for DMX controllers with 5 pins and one for DMX controllers with 3 pins. Only use one controller at the same time. On the rear side of the NEO ONE there are a ,DMX IN' (DMX input) and a ,DMX OUT' (DMX through) interface.

First connect ,DMX IN' of the NEO ONE PSU via a DMX cable to a DMX controller. Then connect ,DMX IN' of the NEO ONE with a data cable to a ,Data Cable OUT' of the NEO ONE PSU. ,DMX through' at the PSU is intended to Daisy Chain the control signal with a DMX cable to the ,DMX IN' interface of a further DMX device. ,DMX OUT' at the NEO ONE is intended to Daisy Chain the control signal with another data cable to the ,DMX IN' of a further NEO ONE device.

The RTI NEO ONE uses 13 channels as shown here:

Channel	Value	Effect	Comment
1 Red	0 - 255	Red: 0 - 100%	
2 Green	0 - 255	Green: 0 - 100%	
3 Blue	0 - 255	Blue: 0 - 100 %	
4 Pan Coarse	0 - 255	Pan MSB	
5 Pan Fine	0 - 255	Pan LSB	
6 Tilt Coarse	0 - 255	Tilt MSB	
7 Tilt Fine	0 - 255	Tilt LSB	
8 Off / Dot / Gobo	0	Blackout	Safety channel
	1 - 10	Dot	
	11 - 20	Rectangle	
	21 - 30	Triangle	
	31 - 40	Line horizontal	
	41 - 50	Line vertical	



	51 - 60	2 dots horizontal	
	61 - 70	2 dots vertical	
	71 - 80	3 dots horizontal	
	81 - 90	3 dots vertical	
	91 - 100	Circle	
	101 - 110	4 quarter circle	
	111 - 120	Test picture	
	241 - 255	Blackout	
9 Zoom	0 - 255	Gobo size	active, if value of channel 8 between 11 and 110
10 Strobe	0	Strobe off	Strobe effect
	1 - 127	Strobe speed	2Hz - 12Hz
	128 - 255	Grow effect	256 points - 0 points
11 Rotation pattern Coarse	0 - 255	Rotation MSB	
12 Rotation pattern Fine	0 - 255	Rotation LSB	
13 Grating Selection	0	No grating	If available
	1 - 127	Grating 1	
	128 - 255	Grating 2	

3. **Interlock (RJ45)**

There is an ,Interlock IN' interface on the rear side of the PSU. The Interlock signal is forwarded to the RTI NEO ONE via a data cable (just like the DMX signal).

An interlock connector is provided with the PSU for testing purposes. Use an E-Stop for your laser shows. If an Interlock / E-Stop is plugged in the PSU, the laser output of the connected RTI NEO ONE devices gets enabled (if key switch is in ,ON' position).

4. **Key Switch**

There is a key switch on the rear side of the PSU. Please insert the key into the key switch and turn it to ,Laser ON' position to enable laser output of all connected NEO ONE devices. Turn the key to ,Laser OFF' to switch off the devices. Please remove the key to avoid unauthorized access.

5. **Display**

It is possible to adjust settings directly at the device by means of the integrated display and the data entry wheel below it:





The data entry wheel navigates you through the menu:

- By pressing the wheel you will change the menu.
- By turning the wheel you will change the values of the very menu.

The starting display shows the version and the currently used function mode.

Please note: The RTI NEO ONE has a memory function and will always start with the last used function mode.

One of the following modes is displayed at the beginning:

a) The RTI NEO ONE is controlled via DMX

```
RTI Neo 1 U3.2
DMX Neo1 :1
```

b) The RTI NEO ONE is controlled via DMX over the built-in ShowNET

```
RTI Neo 1 U3.2
DMX Shownet:1
```

c) The RTI NEO ONE is controlled via network (display becomes blue)

```
RTI Neo 1 U3.2
IP192.168.2.50
```

d) The RTI NEO ONE runs in ShowNET stand-alone mode

```
RTI Neo 1 U3.2
Stand alone mode
```

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### 6. Settings at the device / data entry wheel

By pressing the data wheel once, you will enter the **function menu**. To change the function mode turn the data wheel left / right.

IMPORTANT: After changing the function mode, you will have to remove the RTI NEO ONE from the mains to save your settings! Plug the device back in to start with the desired function mode.

Following modes are selectable:

#### FUNCTION MODES

a) The RTI NEO ONE is **controlled via DMX**; X- and Y-axis are displayed normally

```
Function mode
Neo1 DMX X-Y
```

b) The RTI NEO ONE is **controlled via DMX**; X-axis is displayed normally, Y-axis is inverted

```
Function mode
Neo1 DMX X-Yinv
```

c) The RTI NEO ONE is **controlled via DMX**; X- and Y-axis are exchanged with each other

```
Function mode
Neo1 DMX Y-X
```

d) The RTI NEO ONE is **controlled via DMX**; X- and Y-axis are exchanged, X is inverted

```
Function mode
Neo1 DMX Y-Xinv
```

e) The RTI NEO ONE is **controlled via DMX** and uses only 11 instead of 13 channels

```
Function mode
Shownet DMX 11ch
```



f) The built-in **ShowNET is controlled via Showeditor on a PC**

Function mode  
Shownet LAN-PC

Download and install the latest version of Laserworld Showeditor. The license is on the ShowNET card of the RTI NEO ONE.  
Details and software download on [www.showeditor.com](http://www.showeditor.com)

g) The built-in **ShowNET works as ILDA interface**

Function mode  
Shownet ILDA-LAN

First connect your laser show controller via ILDA with an external ShowNET network interface. Then connect the external ShowNET interface via LAN with the integrated ShowNET interface of the RTI NEO ONE.  
Configuration details on [www.laserworld.com/shownet](http://www.laserworld.com/shownet)

h) The built-in **ShowNET works as playback unit**

Function mode  
Shownet Playback

Select and trigger the saved patterns via DMX.

i) The built-in **ShowNET runs in stand-alone mode**

Function mode  
Shown. Standalone

The saved patterns will be displayed by the RTI NEO ONE automatically.

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By pressing the data wheel another time, you will enter the menu for **setting the DMX address of the RTI NEO ONE**. Turn the data wheel left / right to select the desired DMX starting address. Press the data wheel to confirm your selection.

DMX Neo1:  
start at:1

After pressing the data wheel to select the DMX starting address of the RTI NEO ONE, you will enter the menu for **setting the DMX address of the ShowNET**. Turn the data wheel left / right to select the desired DMX starting address. Press the data wheel to confirm your selection.

DMX Shownet:  
start at:1

After pressing the data wheel to select the DMX starting address of the ShowNET, you will enter the menu for **setting the IP address of the ShowNET**. First you will have to select the third IP address block:

Select IP ---  
192.168.002.50

Press the data wheel to confirm your selection of the third block. Then you will have to select the last two digits of the IP address:

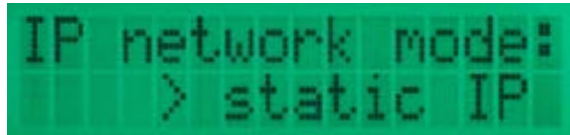
Select IP ---  
192.168.002.50

Confirm your selection of the last two digits by pressing the data wheel.



After selecting the IP address, you will enter the menu for setting the **IP network mode** of the ShowNET. You can choose between the following three modes by turning the data wheel left / right:

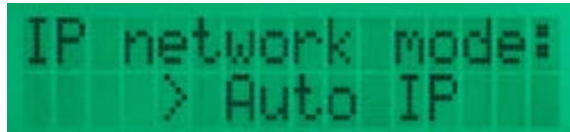
a) Static IP



b) DHCP



c) Auto IP

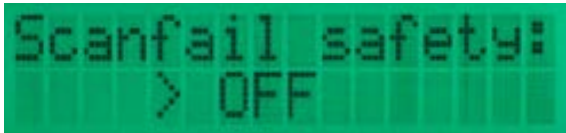


More information and troubleshooting on [www.showeditor.com](http://www.showeditor.com) and [www.laserworld.com/shownet](http://www.laserworld.com/shownet)

Press the data wheel to confirm your selection and to enter the next menu.

In the last menu before returning to the starting display you can **enable / disable the scanfail safety** by turning the data wheel left / right:

a) Scanfail safety OFF



b) Scanfail safety ON (display turns red)



7. **Turn off**

To turn off the device, disconnect the power cable from the PSU.

**Important:** Before transporting the laser device, remove both the key and the Interlock connector from the RTI NEO ONE PSU to prevent damage.

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9. **Device Array Assembly**

To connect two RTI NEO ONE devices, first place them with the connecting rails next to each other:



Then take the spring clamp connector and put it in the hole between the two connecting rails.



Turn the crank at the end of the spring clamp connector clockwise to screw it tight:



10. **More Information / Tutorials**

Find more information and tutorials on how to connect and operate the RTI NEO ONE show laser device on the Youtube channel of Laserworld:

[www.youtube.com/user/LaserworldAG](https://www.youtube.com/user/LaserworldAG)



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**Final Statement**

RTI products are tested and product packaging is inspected before leaving our warehouse. Users must follow the local safety regulations and warnings within this manual and adhere to any regulations within its place of use. Damages through inappropriate use will void any liability or warranty of our products.

Due to continual product developments, please check for the latest update of this product manual at [www.laserworld.com](http://www.laserworld.com). If you do have any further questions, then please contact your dealer/place of purchase or use our contact section on our website.

For service issues, please contact your dealer/place of purchase and ensure only genuine Laserworld spare parts are used in any service repairs.

Errors and Omissions excepted and products are subject to change.

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