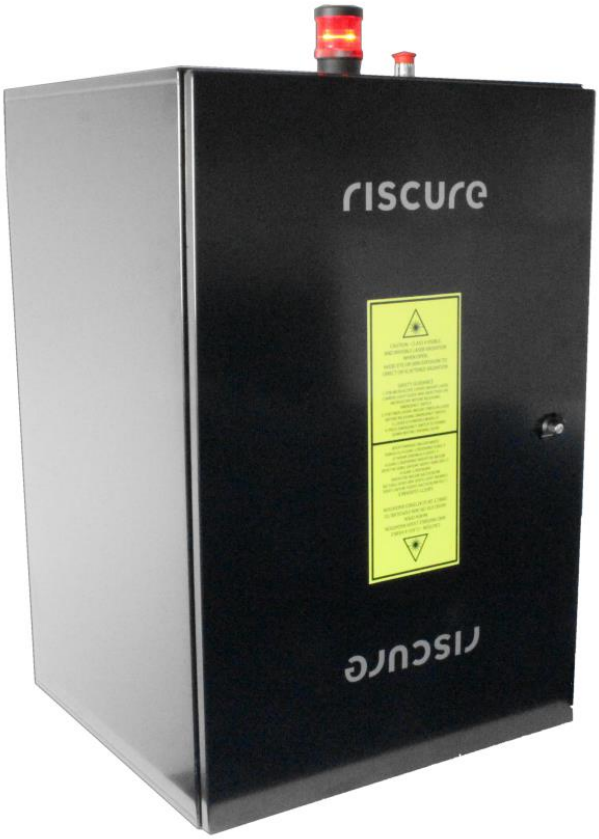
Safety Box 2

Quick Start Guide



What is in the box

The box has all the components to assemble the Safety Box 2.

Box content checklist

Qty [1]	Description		Identifier [2]
1	Safety Box 2 - case - warning light glass - 2 magnetic LED-strips - 2 magnetic cable straps - 2 keys for door lock - PSU		
-	12V DC Power Supply Unit, input 100 - 240 V, AC 50 - 60 Hz with two connectors (5 pin PS2). Power cable (with country specific mains plug)		PSU
-	This “Safety Box 2 - Quick Start Guide”		

[1] The amount or number of administrative items (quantity, Qty)

[2] Identifier used in this document to refer to the item.

Manufactured by

Riscure BV

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What does it do

The Safety Box 2 is a protective enclosure for experiment setups used in Side Channel Analysis (SCA) and Fault Injection (FI).

The Safety Box 2 is designed for containing laser-based experiments using the Diode Laser Station. It also provides excellent electromagnetic shielding.

Figure 1 Safety Box 2 with door placed in left and in right handed position.

The Safety Box 2 is provided with a power supply unit with connectors for powering up to two (diode) lasers.

The Safety box provides ample space to accommodate the higher DPSS Laser Station setup and use of the wider Base plate with grid and fixtures for DLS.

Unauthorized access to the laser setup is protected with a physical key lock. Opening the door disconnects the laser(s) from the power supply and activates the internal illumination.

How to build a setup

Install the power supply unit

1. Lead the power cable through a cable inlet at the back panel
2. Connect the power cable to the mains input of the PSU.

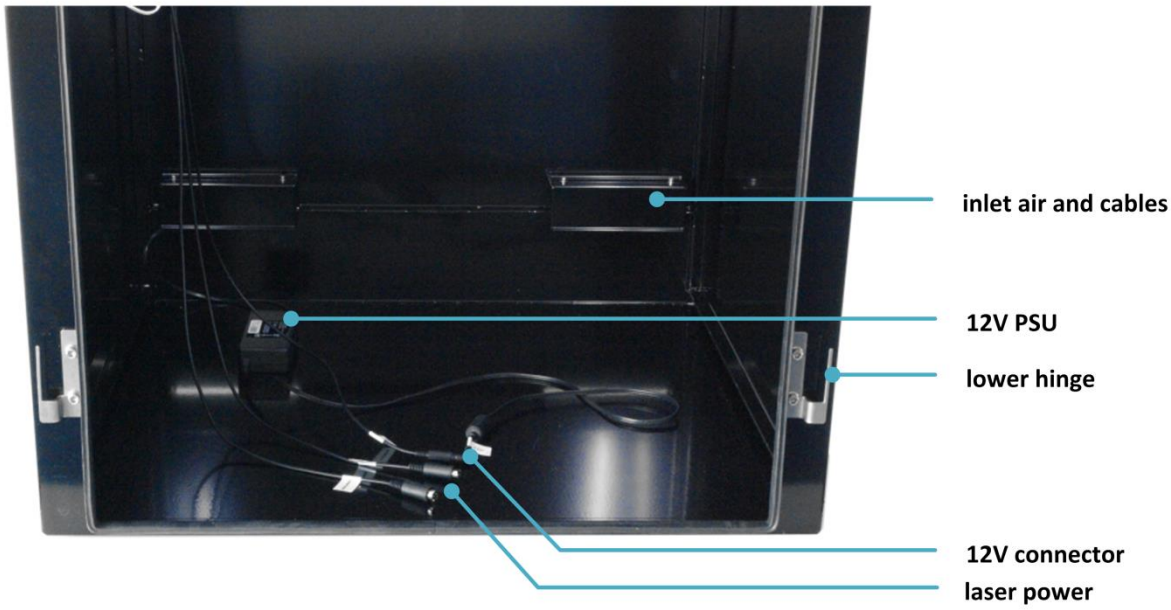

Figure 2 Inlet of the power cable to the PSU.

3. Connect the PSU output jack with the **12V connector** of the Safety Box.
   This connector enables an easy replacement of the PSU without the need to disassemble the internal wiring.
4. Connect the power cable with mains.
   The internal illumination goes ON.

Install the warning light

The warning light is delivered disassembled. Before using the Safety Box 2, assemble it as follows:

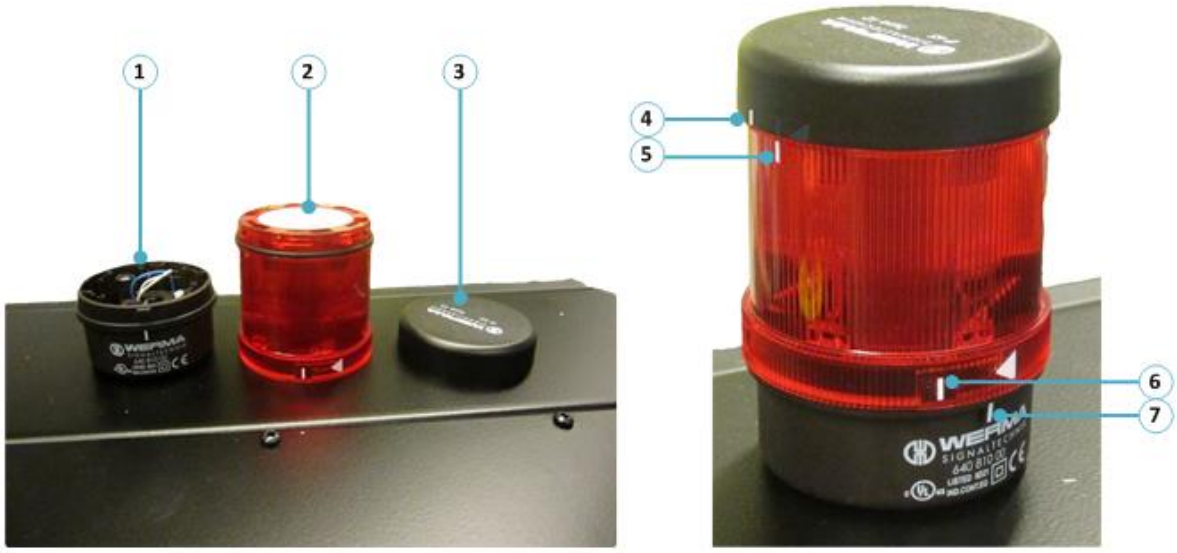

Figure 3 Use the different alignment marks to assemble the warning light.

1. Unscrew cap (3) from socket (1).
2. Place cap (3) on glass (2).
   Align mark (4) with mark (5), and turn the cap clockwise (in arrow direction) until the cap locks.
3. Place glass (2) on socket (1).
   Align mark (6) with mark (7), and turn the glass clockwise (in arrow direction) until the glass locks.

The 12 V light bulb of the warning light is pre-installed.
If the light bulb needs replacement, reverse step 3 to access the light bulb.

Install the laser experiment

1. Open the Safety Box 2 door.
   If required, use the key to unlock the door first.
2. Apply power to the Safety Box 2 PSU.
   The internal illumination goes ON.
3. Assemble the laser experiment setup (Refer to the DLS Quick Start Guide)
4. Lead all outgoing signal cables through the cable entries in the back panel.
5. Connect the **laser power** jacks to the Lasers.
6. Close the Safety Box 2 door.

The experiment setup is now finished.

Arm the laser setup

To enable execution of a laser experiment, the Safety Box 2 **must be armed** by unlocking the emergency button.

Figure 4 Emergency button pressed (a), turn to unlock (b), and button in unlocked state (c).

The expression ‘arming’ the Safety Box 2 means **enabling** the power supply to the lasers. The **activation** of the laser itself is controlled by the Inspector application.

If the emergency button has been pressed, it locks itself.
You must resolve the cause of an emergency, before unlocking it.

It is safe to press the Emergency button any time, to disrupt an ongoing laser experiment, or if access to the experiment is required.

Opening the door will disconnect laser power **temporarily**. This power is reconnected if the door is closed again.

To permanently disconnect laser power, press the emergency button.

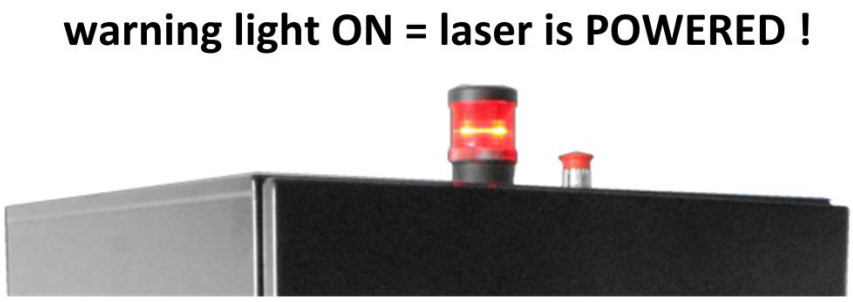

Figure 5 An active warning light means the lasers are electrically powered.

Help and troubleshooting

Common problems

Laser does not respond to controls	**CAUSE**: Safety Box 2 door not closed. **SOLUTION**: Close and lock the door.
	CAUSE 2: Safety Box 2 is not armed. **SOLUTION 2**: Unlock the emergency button by turning it clockwise.
	CAUSE 3: Diode Laser not connected to the PSU. **SOLUTION 3**: Connect PSU laser power (Figure 7: B3 or B5) to the Diode Laser
Warning light not ON:	**CAUSE**: Safety Box 2 door not closed. **SOLUTION**: Close and lock the door.
	CAUSE 2: Safety Box 2 is not armed. **SOLUTION 2**: Unlock the emergency button by turning it clockwise.
	CAUSE 3: Safety Box 2 is not powered. **SOLUTION 3**: Verify if the power cable of the Safety Box 2, - is still connected to the PSU; - is connected to an active mains power group.

Internal illumination is not ON when door is open.	**CAUSE**: Safety Box 2 is not powered. **SOLUTION**: Verify if the power cord of the Safety Box 2, - is still connected to the PSU; - is connected to an active mains power group.

Still have questions?

Visit the Riscure Support Portal: http://support.riscure.com.

Technical specifications

Operational conditions

- Room temperature 20 – 30 °C, (68 – 86 °F).

Do not block the ventilation gap on top of the box.

Power supply input

- 12 V DC, load max. 6.6 A, power max. 80 W.
- Two connectors (5 pin PS2) to power Riscure laser products.

Use of a PSU other than supplied by Riscure is not supported. Power spikes may cause internal damage and loss of accuracy.

Casing

- Steel plating, 1.5 mm, painted black.
- Ventilation gap in top panel.
- Two cable entry openings in back panel.
- Internal illumination: 2 x LED-strip 12 V.

Door

- Door handle with key lock, two-point lock system.
- Door locking bar has top and bottom rollers
- Transferable for use with left or right side hinges.

Product

- Dimensions H x W x D: 1050 x 700 x 670 [mm], 41.34 x 27.56 x 26.38 [inch].

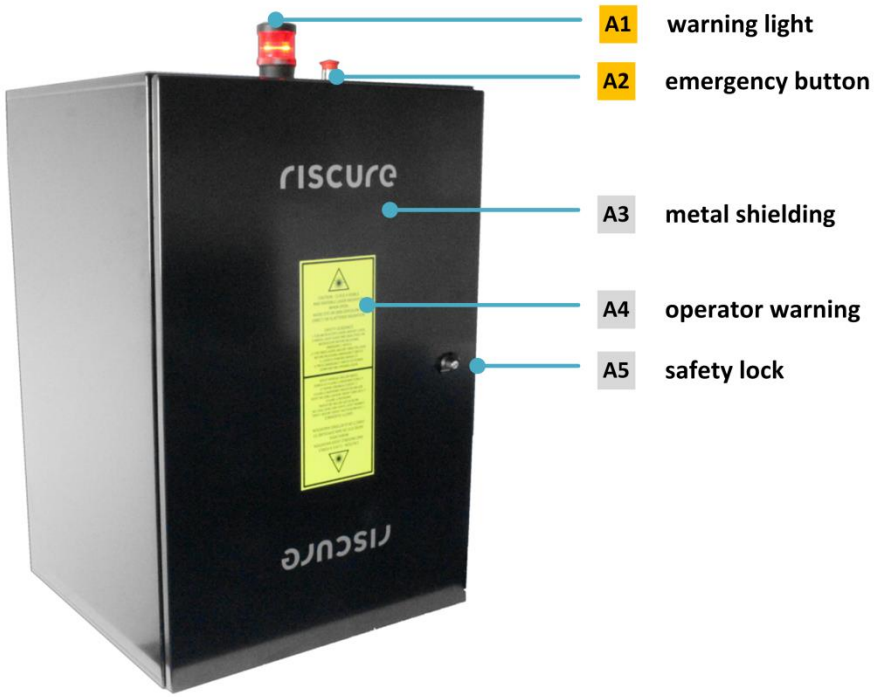

Figure 6 Safety Box 2 outside case view.

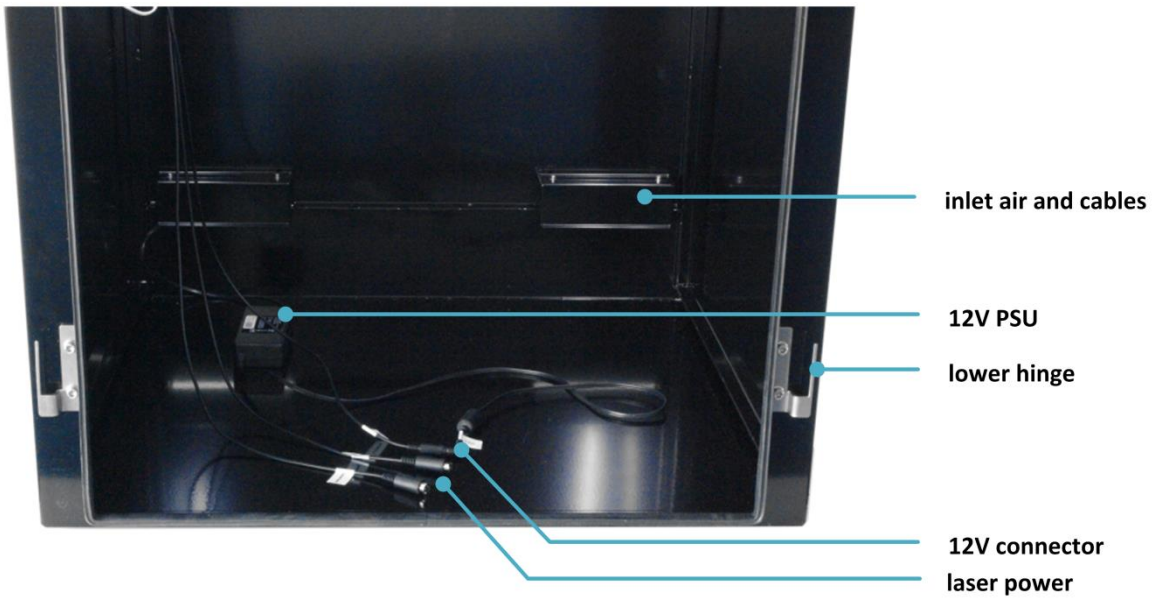

Figure 7 Safety Box 2 interior - bottom area.

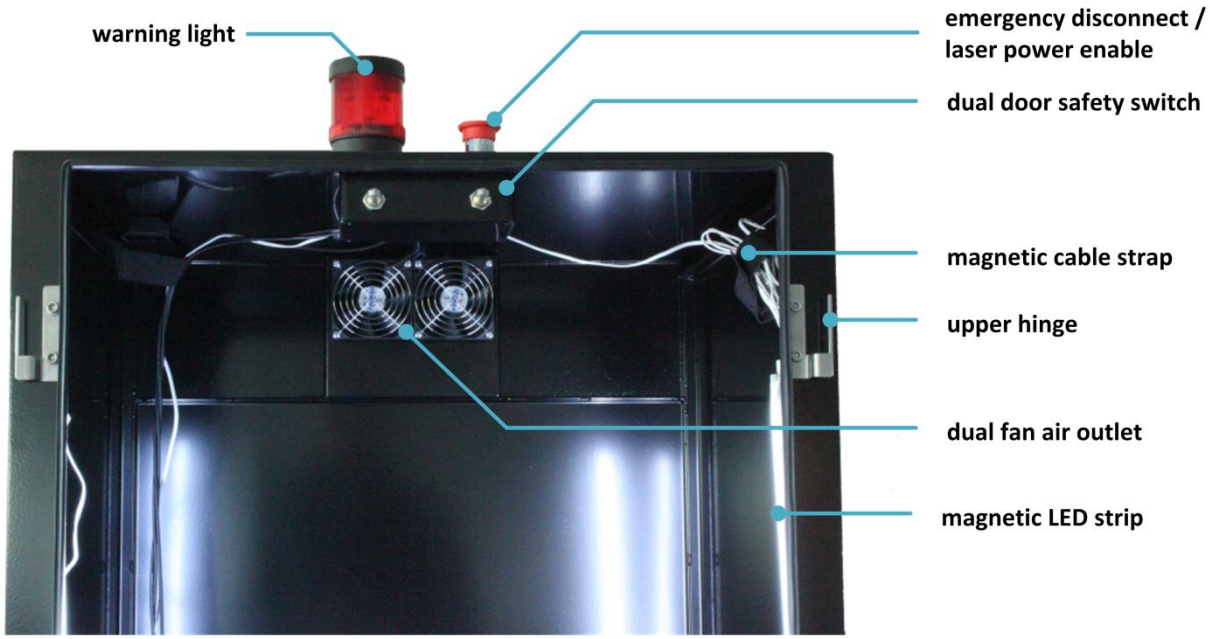

Figure 8 Safety Box interior - roof area

Declaration of conformity

The Safety Box 2 is part of the (Diode) Laser Station product. The Safety Box 2 implementation complies to the directives and standards mentioned in the EC Declaration of Conformity of the (Diode) Laser Station.

EC-DECLARATION OF CONFORMITY

Suppliers Details

Name

Riscure B.V.

Address

Frontier Building, Delftechpark 49, 2628 XJ Delft, The Netherlands

Product Details

Product Name

Inspector

Model Name(s)

Diode Laser Station

Trade Name

Riscure

Applicable Standards Details

Directives:

- MD (2006/42/EC) - LVD (2006/95/EC) - EMC directive (2004/108/EC)

Standards:

- IEC 60825-1; IEC 320 C8; IEC 60950-1; 21 CFR 1040; ANSI/ESD S20.20:2007; BS EN 61340-5-1:2007; EN55022-B; EN61000-4-2, 4-5; EN-ISO 12100:2010; CISPR 11; CISPR22-B; UL 1950

Supplementary Information

The appliance fulfils the relevant requirements of the above mentioned directives according to our technical documentation TCD-Diode Laser Station. Riskassessment according to the EN-ISO 12100:2010.

Declaration

I hereby declare under our sole responsibility that the product(s) mentioned above to which this declaration relates complies with the above mentioned standards and Directives

Name	Issued Date
Dr.ir. F.G. de Beer / Technical Director	02 / 05 / 2013

Signature of representative

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