STAIRVILLE

DJ Lase
GR-140 RGY MKII

showlaser

th•mann
MUSIC IS OUR PASSION

user manual

Musikhaus Thomann e.K.
Treppendorf 30
96138 Burgebrach
Germany
Telephone: +49 (0) 9546 9223-0
E-mail: info@thomann.de
Internet: www.thomann.de

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1 General notes

This manual contains important instructions for the safe operation of the unit. Read and follow the safety instructions and all other instructions. Keep the manual for future reference. Make sure that it is available to all those using the device. If you sell the unit please make sure that the buyer also receives this manual.

Our products are subject to a process of continuous development. Thus, they are subject to change.

1.1 Further information

On our website (*www.thomann.de)* you will find lots of further information and details on the following points:

Download	This manual is also available as PDF file for you to download.
Keyword search	Use the search function in the electronic version to find the topics of interest for you quickly.
Online guides	Our online guides provide detailed information on technical basics and terms.
Personal consultation	For personal consultation please contact our technical hotline.
Service	If you have any problems with the device the customer service will gladly assist you.

1.2 Notational conventions

This manual uses the following notational conventions:

Letterings

The letterings for connectors and controls are marked by square brackets and italics.
Examples: *[VOLUME]* control, *[Mono]* button.

Displays

Texts and values displayed on the device are marked by quotation marks and italics.
Examples: *'24ch'*, *'OFF'*.

Instructions

The individual steps of an instruction are numbered consecutively. The result of a step is indented and highlighted by an arrow.

Example:

1. Switch on the device.

2. Press *[Auto]*.

⇨ Automatic operation is started.

3. Switch off the device.

Cross-references

References to other locations in this manual are identified by an arrow and the specified page number. In the electronic version of the manual, you can click the cross-reference to jump to the specified location.

Example: See *'Cross-references' on page 8*.

1.3 Symbols and signal words

In this section you will find an overview of the meaning of symbols and signal words that are used in this manual.

Signal word	Meaning
DANGER!	This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided.
WARNING!	This combination of symbol and signal word indicates a possible dangerous situation that can result in death or serious injury if it is not avoided.
NOTICE!	This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided.

Warning signs	Type of danger
	Warning – high-voltage.
	Warning – laser radiation.
	Warning – suspended load.
	Warning – danger zone.

2 Safety instructions

Intended use

This device is intended to be used for the projection of laser light effects. It has been designed exclusively for show applications. Use the device only as described in this user manual. Any other use or use under other operating conditions is considered to be improper and may result in personal injury or property damage. No liability will be assumed for damages resulting from improper use.

This device may be used only by persons with sufficient physical, sensorial, and intellectual abilities and having corresponding knowledge and experience. Other persons may use this device only if they are supervised or instructed by a person who is responsible for their safety.

Laser safety basics

Laser safety requirements are based on DIN EN 60825-1. The corresponding accident prevention regulation of the Accident Prevention and Insurance Association in Germany is BGV-B2.

This device contains a class-3B laser. It is equipped with a safety key. Always remove the key when the device is not attended by a trained operator.

As an operator you are responsible for the safety of all persons present. Familiarize yourself with the laser safety regulations that apply in your country. To ensure safe operation, it is important to pay attention to the following instructions.

Prior to commissioning, the company/operator must appoint a qualified person as laser protection officer in writing and notify the operation of the laser equipment to the Accident Prevention and Insurance Association and to the authority responsible for occupational safety. In the event of public use, the complete laser equipment must be approved by an expert (e. g. the Technical Control Board TÜV) prior to commissioning.

Safety

DANGER!

Danger for children

Ensure that plastic bags, packaging, etc. are disposed of properly and are not within reach of babies and young children. Choking hazard!

Ensure that children do not detach any small parts (e.g. knobs or the like) from the unit. They could swallow the pieces and choke!

Never let children unattended use electrical devices.

DANGER!

Electric shock caused by high voltages inside

Within the device there are areas where high voltages may be present. Never remove any covers.

There are no user-serviceable parts inside.

DANGER!

Electric shock caused by short-circuit

Always use proper ready-made insulated mains cabling (power cord) with a protective contact plug. Do not modify the mains cable or the plug. Failure to do so could result in electric shock/death or fire. If in doubt, seek advice from a registered electrician.

DANGER!

Laser radiation – avoid exposure to beam

The device contains a class-3B laser, classified according to EN 60825-1. Do not look into the laser beam. The laser beam can injure your eyes when you directly look into it. Do not expose yourself to the laser beam. The laser beam can cause skin burns.

In this context take extreme care when using converging optical instruments.

WARNING!

Eye damage caused by high light intensity

Never look directly into the light source.

WARNING!

Risk of epileptic shock

Strobe lighting can trigger seizures in photosensitive epilepsy. Sensitive persons should avoid looking at strobe lights.

NOTICE!

Laser radiation – risk of fire

Keep the area exposed to laser radiation free from flammable substances.

NOTICE!

Risk of fire

Do not cover the device nor any ventilation slots. Do not place the device near any direct heat source. Keep the device away from naked flames.

NOTICE!

Operating conditions

This device has been designed for indoor use only. To prevent damage, never expose the device to any liquid or moisture. Avoid direct sunlight, heavy dirt, and strong vibrations.

NOTICE!

Power supply

Before connecting the device, ensure that the input voltage (AC outlet) matches the voltage rating of the device and that the AC outlet is protected by a residual current circuit breaker. Failure to do so could result in damage to the device and possibly injure the user.

Unplug the device before electrical storms occur and when it is unused for long periods of time to reduce the risk of electric shock or fire.

3 Features

The showlaser is specially suited for discos, clubs, bars, small stages, etc. It allows smooth integration into light shows, but can also be operated as stand-alone device.

Special features of this device:

- Control via DMX (5 channels), infrared remote control and buttons plus display on the unit itself
- Built-in automatic show programmes
- Sound control
- Master/slave mode
- Laser diodes: Red (100 mW, green (40 mW)

4 Installation

Unpack and carefully check that there is no transportation damage before using the unit. Keep the equipment packaging. To fully protect the device against vibration, dust and moisture during transportation or storage use the original packaging or your own packaging material suitable for transport or storage, respectively.

You can install the device on the wall or on the ceiling. A mounting bracket and the required screws are provided together with the device.

DANGER!

Laser radiation

During installation follow the instructions in *Chapter 2 'Safety instructions' on page 11*.

To avoid laser emission, remove the safety key before you start to install the device.

WARNING!

Stray laser radiation

Inadequately secured additional components may cause stray laser radiation.

Make sure that all additional components are adequately secured.

WARNING!

Risk of injury caused by falling objects

Make sure that the installation complies with the standards and rules that apply in your country. Always secure the device with a secondary safety attachment, such as a safety cable or a safety chain.

NOTICE!

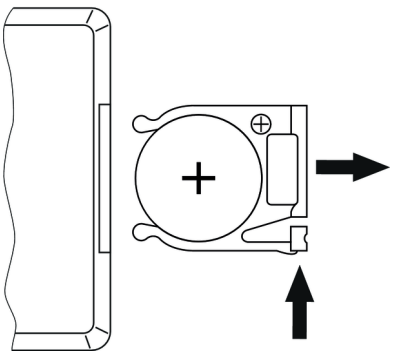
Risk of overheating

The distance between the light output and the illuminated surface must be more than 0.5 m (19.7 in).

Always ensure sufficient ventilation.

The ambient temperature must always be below 40 °C (104 °F).

Inserting the battery into the remote control



Press the lock of the battery holder to the centre of the housing and pull out the battery holder like a drawer. Insert the battery. The battery is correct if the positive pole points to the housing base of the remote control. Slide the battery holder back into the remote until it clicks into place.

When shipping, the battery is already installed in the remote and protected against discharge by a transparent plastic foil. Remove the plastic foil prior to first use.

5 Starting up

Establish all connections as long as the unit is switched off. Use the shortest possible high-quality cables for all connections.

DANGER!

Laser radiation

When starting up the device, you have to follow the instructions given here:
↳ *Chapter 2 'Safety instructions' on page 11*.

NOTICE!

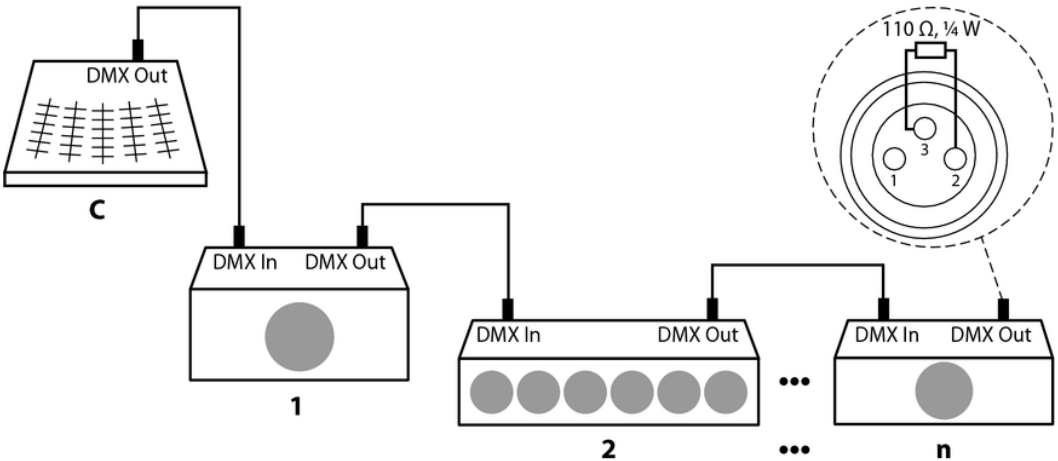
Possible data transmission errors

For error-free operation make use of dedicated DMX cables and do not use ordinary microphone cables.

Never connect the DMX input or output to audio devices such as mixers or amplifiers.

Connections in DMX mode

Connect the DMX input of the device to the DMX output of a DMX controller or another DMX device. Connect the output of the first DMX device to the input of the second one, and so on to form a daisy chain. Always ensure that the output of the last DMX device in the daisy chain is terminated with a resistor (110 Ω, ¼ W).

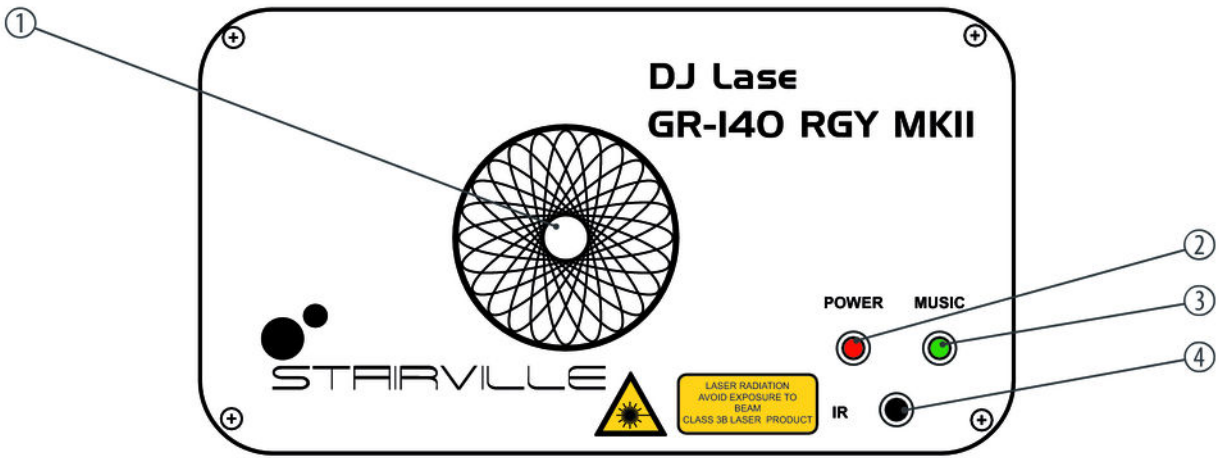


Connections in master/slave mode

When you configure a group of devices in master/slave mode, the first unit will control the other units for an automatic, sound-activated, synchronized show. This function is ideal when you want to start a show immediately. Connect the DMX output of the master device to the DMX input of the first slave device. Then connect the DMX output of the first slave device to the DMX input of the second slave device and so on.

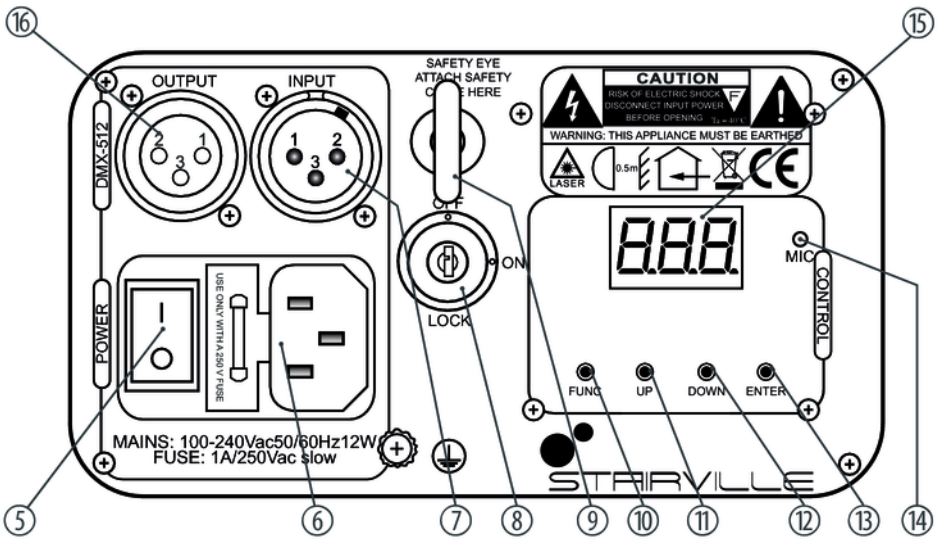
6 Connections and controls

Front panel



1	Laser aperture.
2	LED *[POWER]* Shows that the device is turned on.
3	LED *[MUSIC]* Shows that a sound or music signal is being detected.
4	*[IR]* Receiver for the infrared signal of the remote control.

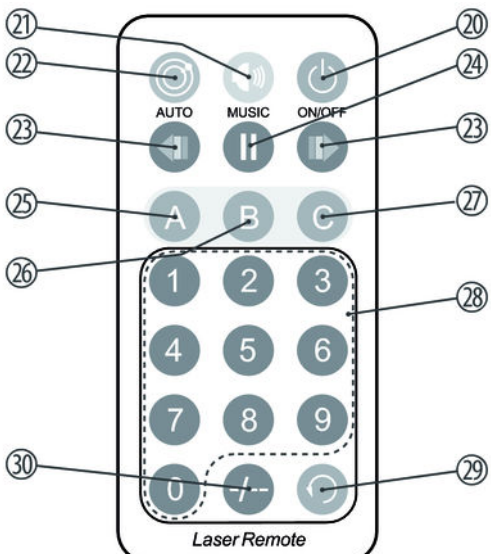
Rear panel


16
15
OUTPUT
INPUT
SAFETY EYE
ATTACH SAFETY
CABLE HERE
CAUTION
RISK OF ELECTRIC SHOCK
DISCONNECT INPUT POWER
BEFORE OPENING
WARNING: THIS APPLIANCE MUST BE EARTHED
LASER
0.5m
DMX-512
OFF
ON
LOCK
MIC
CONTROL
POWER
USE ONLY WITH A 250 V FUSE
FUNC
UP
DOWN
ENTER
MAINS: 100-240Vac50/60Hz12W
FUSE: 1A/250Vac slow
STARVILLE
5
6
7
8
9
10
11
12
13
14

5	Power switch
6	Plug for mains cable with fuse holder next to it. The input voltage range is printed below the plug.
7	*[INPUT]* DMX input.
8	*[LOCK]* Safety key switch: Turns the laser output on or off.
9	Eyelet for safety cable.
10	*[FUNC]* button Opens the main menu.
11	*[UP]* button Increments the displayed value by one.
12	*[DOWN]* button Decrements the displayed value by one.

13	*[ENTER]* button Chooses between the options of the selected mode.
14	*[MIC]* Microphone used for the sound mode.
15	Display.
16	*[OUTPUT]* DMX output.

Remote control



20	*[ON/OFF]* button When the device is in the Auto Show mode or is performing a self test, press the button for several seconds to enter the Remote control mode. When the device is already in the Remote control mode, this button switches the laser on or off.
21	*[MUSIC]* button Starts a sound-controlled automatic show in random order.
22	*[AUTO]* button Starts an automatic show in random order.
23	Changes the patterns used for the colours (red, green, red+green).
24	Stops or restarts a running show.
25	*[A]* button Switches the flash effect for the red laser on or off, the flash frequency can be input with the numeric keypad.

26	*[B]* button Switches the flash effect for the green laser on or off, the flash frequency can be input with the numeric keypad.
27	*[C]* button No function.
28	Numeric keypad for direct input of values (flash frequency, motor speed, speed of the double burst grating effect).
29	Controls the motor speed of the laser optics in conjunction with the numeric keypad.
30	*[-/--]* button Controls the double burst grating effect in conjunction with the numeric keypad.

7 Operation

7.1 Start the device

Perform the following steps to start the operation:

1. Verify that all required laser safety precautions have been taken. Make sure that there is no one in the reach of the laser beam.
2. Insert the safety key into the lock (8) and turn it into the 'OFF' position.
3. If not already connected, connect the device to the mains (6).
4. Using the main switch (5) turn the device on. After a few seconds, the fan and the motors start to work. The display shows the current operation mode. The device is now operational.
5. Turn the safety key (8) to the "ON" position to turn the laser beam on.

7.1.1 Stop the device

1. Turn the safety key (8) to the “OFF” position to turn the laser beam off and remove the key. Keep the safety key under control.
2. Using the main switch (5) turn the device off.
3. Optionally, disconnect the device from the mains (6).

7.2 Main menu

Press *[FUNC]* to activate the main menu and to select one of the operation modes.

When the display flashes, use the *[UP]* and *[DOWN]* buttons to change the displayed value. When the display shows the desired value, press *[ENTER]*. To go back to the main menu without any changes press *[FUNC]* or wait for one minute.

All previously made settings are saved, even if you disconnect the device from the power supply.

Auto show mode

Press *[FUNC]* until the display shows *'Aut'*. The device operates in stand-alone mode and displays a pre-programmed show that can optionally be controlled by the built-in microphone. Use the *[UP]* and *[DOWN]* buttons to select the built-in show programme with or without sound control (display *'Sou'* or *'Aut'*).

To set the sensitivity and thus the response characteristic of the microphone for the built-in show programme, press *[ENTER]*. The display shows *'S 0'*. Use the *[UP]* and *[DOWN]* buttons to select the settings *'S 0'* (sensitivity = 0, sound-controlled mode off) or *'S 1'* (low sensitivity) to *'S 9'* (high) sensitivity. Press *[ENTER]* to store the setting.

Please note that the laser is switched off if a sound controlled show has been selected but the microphone does not receive any sound.

Master/Slave mode

Press *[FUNC]* until the display shows *'SLA'*. In this mode, the device exactly follows the operation of the "master" it is connected to. Press *[ENTER]* to confirm and to start the operation in Master/Slave mode.

DMX mode

Press *[FUNC]* until the display shows *'001'*. You can now set the number of the first DMX channel used by the device (DMX address). Use the *[UP]* and *[DOWN]* buttons to select a value between 1 and 507. Press *[ENTER]* to store the value and to start the operation in DMX mode.

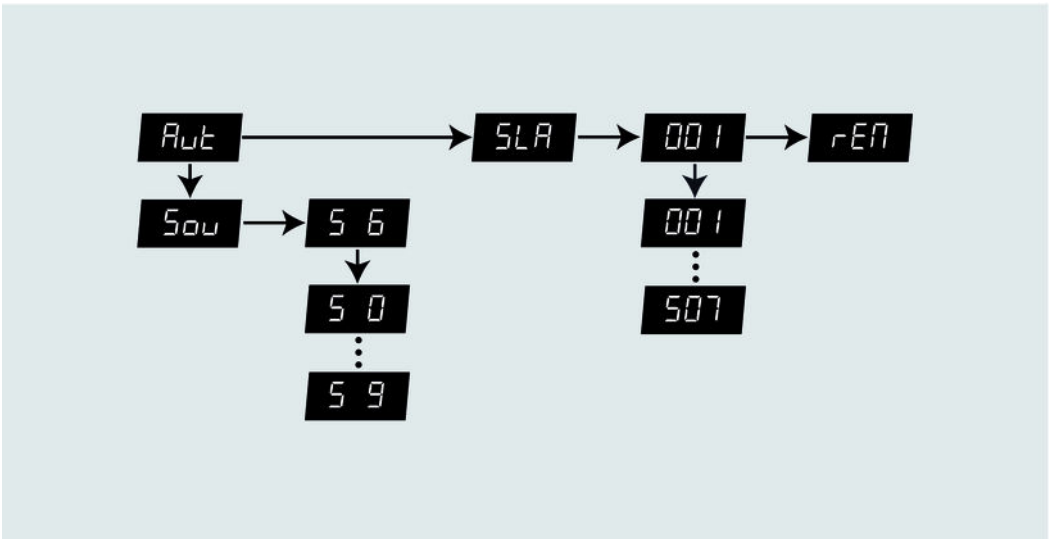
Ensure that this channel number fits to the configuration of your DMX controller.

Remote control mode

Press *[FUNC]* until the display shows *'rEN'*. Press *[ENTER]* to confirm and to start operation in 'Remote control' mode.

This mode allows you to operate the device conveniently with the infrared remote control. Make sure that the infrared receiver on the front panel of the device is not obstructed.

7.3 Menu diagram



7.4 Functions in DMX mode

Channel 1

Value	Function
Mode selection	
0…50	Laser off
51…100	Auto show
101…150	Sound-controlled automatic show
151…200	DMX 1 mode
201…255	DMX 2 mode

Channels 2 to 5 in DMX 1 mode

Channel	Value	Function
2	Pattern rotation	
	0…4	No rotation
	5…127	Clockwise rotation (slow to fast)
	128…133	No rotation
	134…255	Counterclockwise rotation (slow to fast)
3	0…255	Vibration effect of patterns (small to large vibration)
4	Red laser	
	0…4	Laser off
	5…10	Laser on
	11…254	Strobing (strobe effect), slow to fast
	255	Sound-controlled strobe effect

Channel	Value	Function
5	Green laser	
	0…4	Laser off
	5…10	Laser on
	11…254	Strobing (strobe effect), slow to fast
	255	Sound-controlled strobe effect

Channels 2 to 5 in DMX 2 mode

Channel	Value	Function
2	Pattern rotation	
	0…4	No rotation
	5…127	Clockwise rotation (slow to fast)
	128…133	No rotation
	134…255	Counterclockwise rotation (slow to fast)
3	0…255	Vibration effect of patterns (small to large vibration)
4	Colour selection	
	0…4	Laser off
	5…20	Constantly red
	21…35	Red off, constantly green
	36…50	Red and green constantly

Channel	Value	Function
	51…80	Strobe effect for red, green off
	81…110	Red off, strobe effect for green
	111…140	Strobe effect for red and green
	141…170	Constantly red, strobe effect for green
	171…200	Strobe effect for red, constantly green
	201…255	Alternating strobe effect for red and green
5	Strobing (strobe effect)	
	0…4	No function
	5…254	Strobing (strobe effect), slow to fast
	255	Sound-controlled strobe effect

8 Technical specifications

Laser medium	Red: 650 nm (typical), LD GaAlAs
	Green: 532 nm (typical), DPSS Nd:YVO4
Laser power	Red: 100 mW
	Green: 40 mW
Laser classification acc. to EN 60825-1 2007	3B
Beam diameter at outlet aperture	< 5 mm
Pulses	All pulses < 4 Hz (> 0.25 s)
Divergence (per beam)	< 2 mrad
Divergence (overall light)	< 160°
Number of DMX channels	5
Operating voltage supply	AC 110 – 240 V ~ , 50/60 Hz
Fuse	5 mm × 20 mm, 1.6 A, 250 V, slow blow

Power consumption	15 W
Dimensions (W × D × H)	145 mm × 160 mm × 80 mm
Weight	1.8 kg

9 Plug and connection assignments

Introduction

This chapter will help you select the right cables and plugs to connect your valuable equipment so that a perfect light experience is guaranteed.

Please take our tips, because especially in 'Sound & Light' caution is indicated: Even if a plug fits into a socket, the result of an incorrect connection may be a destroyed DMX controller, a short circuit or 'just' a not working light show!

DMX connections

The unit offers a 3-pin XLR socket for DMX output and a 3-pin XLR plug for DMX input. Please refer to the drawing and table below for the pin assignment of a suitable XLR plug.

Pin	Configuration
1	Ground, shielding
2	Signal inverted (DMX–, 'cold signal')
3	Signal (DMX+, 'hot signal')

10 Troubleshooting

DANGER!

Laser radiation inside the housing

During troubleshooting you have to comply with the instructions given here:
Chapter 2 'Safety instructions' on page 11.

Any servicing of the unit (with open housing) must only be carried out by qualified technicians.

For working on the device you have to wear suitable laser safety goggles.

In the following we list a few common problems that may occur during operation. We give you some suggestions for easy troubleshooting:

The unit does not work, no light, the fan does not run

1. Check the mains power connection and the main fuse.
2. Check the safety key switch (8).

No response to DMX controller

1. If the display indicates a flashing figure, e.g. '001', no DMX signal is received. Check the DMX connections and cables for proper connection.
2. If the display is not flashing and the unit does not respond check the address settings and the DMX polarity.
3. Try to use another DMX controller.
4. Check to see if the DMX cables run near or alongside to high voltage cables that may cause damage or interference to DMX interface circuits.

If the procedures recommended above do not succeed, please contact our Service Center. You can find the contact information at *www.thomann.de*.

11 Cleaning

DANGER!

Laser radiation

During cleaning follow the instructions specified in *Chapter 2 'Safety instructions' on page 11*.

To avoid laser emission, remove the safety key before you start to clean the device.

Optical lenses

Clean the optical lenses, that are accessible from the outside, regularly in order to optimize the light output. The frequency of cleaning depends on the operating environment: wet, smoky or particularly dirty surroundings can cause more accumulation of dirt on the optics of the device.

- Clean with a soft cloth using our lamp and lens cleaner (item no. 280122).
- Always dry the parts carefully.

12 Protecting the environment

Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of.

Do not just dispose these materials with your normal household waste, but make sure that they are fed to a recovery. Please follow the notes and markings on the packaging.

Disposal of batteries

Batteries must not be disposed of as domestic waste or thrown into fire. Dispose of the batteries according to national or local regulations regarding hazardous waste. To protect the environment, dispose of empty batteries at your retail store or at appropriate collection sites.

Disposal of your old device

This product is subject to the European Waste Electrical and Electronic Equipment Directive (WEEE). Do not dispose with your normal household waste.

Dispose this device through an approved waste disposal firm or through your local waste facility. When discarding the device, comply with the rules and regulations that apply in your country. If in doubt, consult your local waste disposal facility.