

  
STAIRVILLE

LED Matrix Blinder  
5x5 DMX  
blinder

Musikhaus Thomann  
Thomann GmbH  
Hans-Thomann-Straße 1  
96138 Burgebrach  
Germany  
Telephone: +49 (0) 9546 9223-0  
E-mail: [info@thomann.de](mailto:info@thomann.de)  
Internet: [www.thomann.de](http://www.thomann.de)

14.01.2020, ID: 278014 (V5)

# Table of contents

<b>1</b>	<b>General information</b> .....	<b>5</b>
	1.1 Further information.....	6
	1.2 Notational conventions.....	7
	1.3 Symbols and signal words.....	8
<b>2</b>	<b>Safety instructions</b> .....	<b>10</b>
<b>3</b>	<b>Features</b> .....	<b>16</b>
<b>4</b>	<b>Installation</b> .....	<b>17</b>
<b>5</b>	<b>Starting up</b> .....	<b>21</b>
<b>6</b>	<b>Connections and controls</b> .....	<b>24</b>
<b>7</b>	<b>Handling</b> .....	<b>30</b>
	7.1 Starting up the device.....	30
	7.2 Main menu.....	30
	7.3 Menu diagram.....	35
	7.4 Functions in 1-channel DMX mode.....	35
	7.5 Functions in 4-channel DMX mode.....	36

7.6	Functions in 26-channel DMX mode.....	37
7.7	Functions in 28-channel DMX mode.....	38
7.8	Temperature monitoring.....	42
<b>8</b>	<b>Technical specifications.....</b>	<b>44</b>
<b>9</b>	<b>Plug and connection assignments.....</b>	<b>46</b>
<b>10</b>	<b>Troubleshooting.....</b>	<b>47</b>
<b>11</b>	<b>Cleaning.....</b>	<b>49</b>
<b>12</b>	<b>Protecting the environment.....</b>	<b>50</b>

# 1 General information

This user manual contains important information on the safe operation of the device. Read and follow all safety notes and all instructions. Save this manual for future reference. Make sure that it is available to all persons using this device. If you sell the device to another user, be sure that they also receive this manual.

Our products and user manuals are subject to a process of continuous development. We therefore reserve the right to make changes without notice. Please refer to the latest version of the user manual which is ready for download under [www.thomann.de](http://www.thomann.de).

## 1.1 Further information

On our website ([www.thomann.de](http://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'*.

### 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 7.

## 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
<b>DANGER!</b>	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.
<b>WARNING!</b>	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.
<b>NOTICE!</b>	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 – dangerous optical radiation.
	Warning – suspended load.
	Warning – danger zone.

## 2 Safety instructions

### Intended use

This device is intended for use as an electronic lighting effect by means of LED technology. The device is designed for professional use and is not suitable for use in households. 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.

Extend the life of the device by regular breaks in operation and avoid switching it on and off frequently. This device is not suitable for continuous use.

**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.

Do not use the device if covers, protectors or optical components are missing or damaged.



### **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.



### **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!**

**Risk of fire**

Do not block areas of ventilation. Do not install 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.

Only operate the device within the ambient conditions specified in the chapter 'Technical specifications' of this user manual. Avoid heavy temperature fluctuations and do not switch the device on immediately after it was exposed to temperature fluctuations (for example after transport at low outside temperatures).

Dust and dirt inside can damage the unit. When operated in harmful ambient conditions (dust, smoke, nicotine, fog, etc.), the unit should be maintained by qualified service personnel at regular intervals to prevent overheating and other malfunction.



**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.



**NOTICE!**

**Possible damage due to installation of a wrong fuse**

The use of different types of fuses can cause serious damage to the unit. Fire hazard!

Only fuses of the same type may be used.

### 3 Features

The LED blinder is particularly suitable for lighting applications in clubs and discotheques, on rock stages, in theatres and musicals.

Special features of the device:

- 25 warm white LEDs (3 W each), arranged in a 5×5 matrix
- Control via DMX (four different modes) and via buttons and display on the unit
- 26 preprogrammed automatic shows
- LED matrix allows the display of letters and numbers
- Sound control
- Four master / slave modes for up to four interconnected devices that are controlled as one common large LED matrix
- Rugged metal housing with M6 thread holes for easy and stable interconnection of several units.

For technological reasons, the light output of LEDs decreases over their lifetime. This effect increases with higher operating temperature. You can extend the service life of the illuminants by providing adequate ventilation and operating the LEDs with the lowest possible brightness.



## 4 Installation

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



### **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 light output and the illuminated surface must be more than 1.5 m (19.7in).

Provide sufficient ventilation.

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



### **NOTICE!**

#### **Use of stands**

When mounting the device onto a stand, ensure that the stand is in a safe and stable position and that the weight of the device does not exceed the maximum permissible load capacity of the stand.

**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.

**Mounting options**

You can install the unit in hanging or standing position. When in use, the device must always be attached to a solid surface or an approved truss. Use the brackets provided for mounting.

Always work from a stable platform whenever installing, moving or servicing the unit. In doing so, the area underneath the unit must be cordoned off.

The safety cable must be threaded through this safety eyelet ( ↪ *Chapter 6 'Connections and controls' on page 24*).



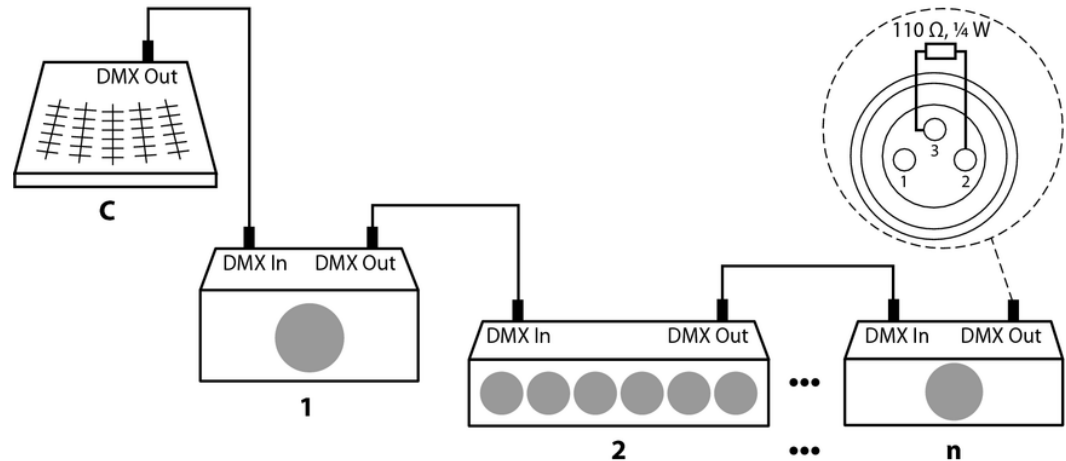
*Please note that this device must not be connected to a dimmer.*

## 5 Starting up

Create all connections while the device is off. Use the shortest possible high-quality cables for all connections. Take care when running the cables to prevent tripping hazards.

### 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 ( $110\ \Omega$ ,  $\frac{1}{4}\text{ W}$ ).



**DMX indicator**

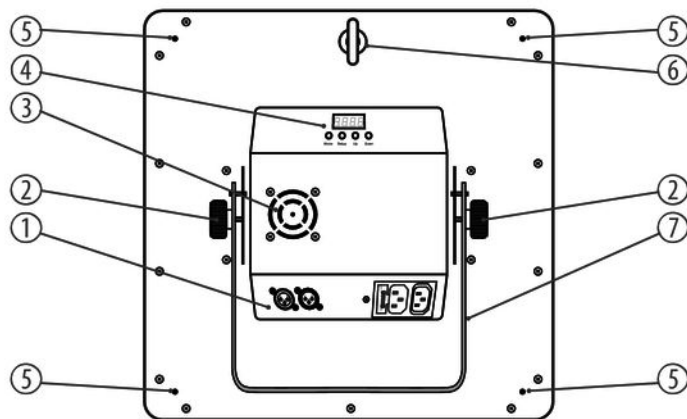
If the unit is properly connected to a turned on DMX controller, the first position of the display is flashing in DMX mode. If not, the device is not receiving a valid DMX signal.

**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

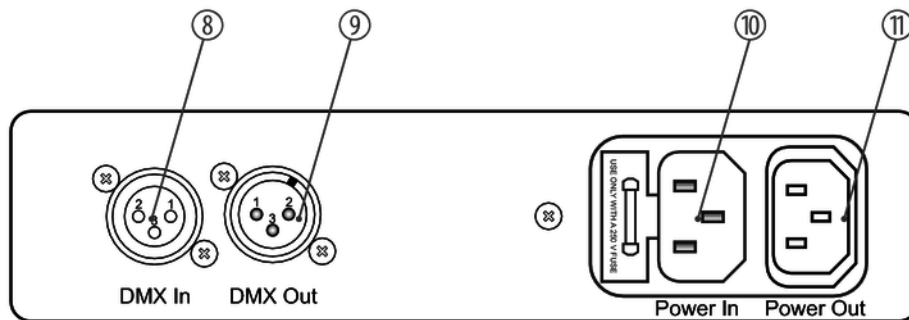
### Rear panel





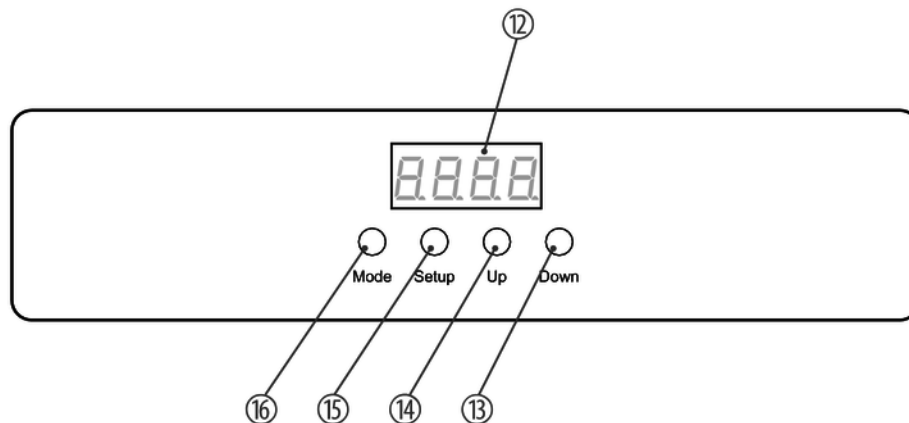
1	Connection panel.
2	Locking screws for the mounting bracket.
3	Fan.
4	Buttons and display.
5	Thread holes (M6), fit for connecting elements.
6	Safety eyelet.
7	Bracket for floor placement or hanging.

**Connection panel**



8	<i>[DMX In]</i> DMX input.
9	<i>[DMX Out]</i> DMX output.
10	<i>[Power In]</i> IEC chassis plug for operating voltage supply with fuse holder.
11	<i>[Power Out]</i> IEC chassis socket for the power supply cable to the next unit.

## Buttons and display



12	Display.
13	Button [ <i>Down</i> ] Decreases the displayed value by one.
14	Button [ <i>Up</i> ] Increases the displayed value by one.
15	Button [ <i>Setup</i> ] Selects an option of the respective operating mode, confirms the set value.
16	Button [ <i>Mode</i> ] Activates the main menu and moves between menu items. Closes an opened sub menu.

## 7 Handling

### 7.1 Starting up the device

To start up the device, connect it to the mains. After a few seconds, the display indicates that a reset is in progress. The device is then ready for use. The display shows the operating mode that was selected when the unit was last powered off.

### 7.2 Main menu

Press *[Mode]* to activate the main menu and select an operating mode. Use *[Setup]* to select further options. Use *[Up]* and *[Down]* to change the respectively displayed value. The unit instantly applies the displayed value, you don't need to push a button for confirmation.

If you don't press any button for about ten seconds the display turns off. It will be reactivated to display the previously shown menu by pressing any button.

The set values are retained even when the device is disconnected from the mains power supply. To delete all settings made by you, follow the notes in chapter ↪ *'Reset to factory defaults'* on page 34.

**Operating mode 'Preprogrammed automatic show'**

Press *[Mode]* repeatedly until the display shows '*Pr.xx*'. Now you can select one of the preprogrammed automatic shows. Use *[Up]* and *[Down]* to select a value between '*Pr.01*' and '*Pr.26*'.

To adjust the programme speed, press *[Setup]*. The display shows '*SP.xx*'. Now use *[Up]* and *[Down]* to select a value between '*SP.01*' (slow) and '*SP.FL*' (fast).

To adjust the strobe frequency, press *[Setup]* again. The display shows '*FS.00*'. Now use *[Up]* and *[Down]* to select a value between '*FS.00*' (slow) and '*FS.99*' (fast).

## DMX mode

Press *[Mode]* repeatedly until the display shows 'dxxx'.

You can now set the number of the first DMX channel used by the device (DMX address). Use *[Up]* and *[Down]* to select a value between 1 and 512 (display shows 'd001' ... 'd512').

Ensure that this channel number fits to the configuration of your DMX controller. The following table shows the highest usable DMX address for the different DMX modes.

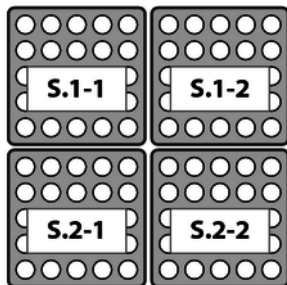
Mode	Highest usable DMX address
1 channel	512
4 channels	509
26 channels	487
28 channels	485

Press *[Setup]*. Now use *[UP]* and *[DOWN]* to select one of the following DMX operating modes:

- '1-ch' (one channel)
- '4-ch' (four channels)
- '26ch' (26 channels)
- '28ch' (28 channels)



### Operating mode 'Slave'



In the master-slave configuration, you can interconnect four devices of the same type to one large matrix with 10×10 LEDs. The effects then use this device combination in common.

Press *[Mode]* until the display shows 'SLAv'.

Press *[Setup]*. With *[Up]* and *[Down]* you can now set the position at which the particular device is located within the equipment combination. The figure alongside shows the possible values and their meaning. Unit 'S.1-1' works as Master.

### Sound control

Press *[Mode]* repeatedly until the display shows 'Soud'. This activates a sound controlled automatic show.

Press *[Setup]* and use *[Up]* and *[Down]* to adjust the sensitivity for the sound control in a range from 'SU.00' (low sensitivity) to 'SU.31' (high sensitivity).

### **Display of letters and numbers**

Press *[Mode]* repeatedly until the display shows 'ChAr'. Press *[Setup]*. With *[Up]* and *[Down]* you can now select between the display of letters (display shows 'Lett') and the display of numbers (display shows 'nUbe'). Press *[Setup]* again and use *[Up]* and *[Down]* to select the letter or the number to be displayed.

### **Testing the LED matrix**

Press *[Mode]* repeatedly until the display shows 'TEST'. Now all LEDs of the matrix light up.

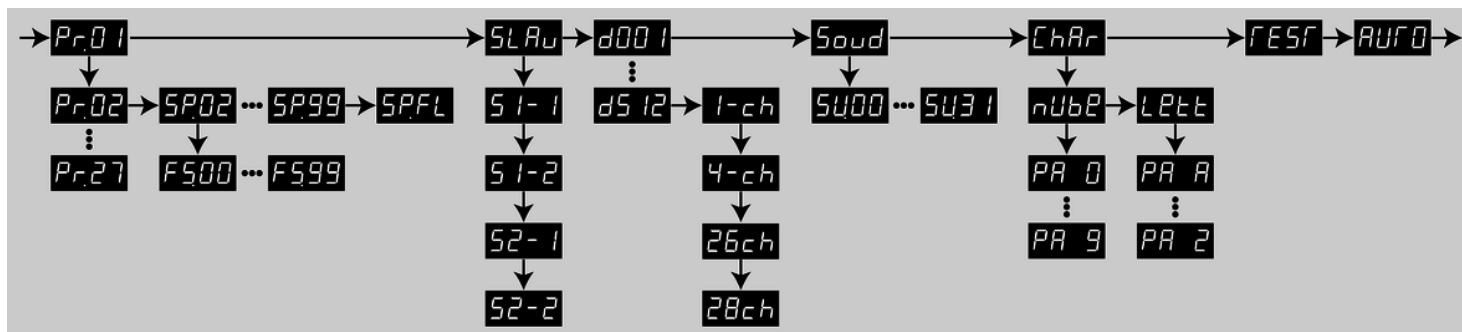
### **Operating mode 'Automatic'**

Press *[Mode]* repeatedly until the display shows 'AUTO'. The playback of the random show starts automatically.

### **Reset to factory defaults**

To reset all settings you have made to factory defaults, press *[Mode]* and *[Setup]* simultaneously for five seconds. After the reset, the unit operates in automatic mode and the display shows 'AUTO'.

### 7.3 Menu diagram



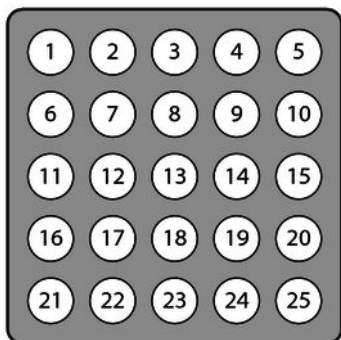
### 7.4 Functions in 1-channel DMX mode

Channel	Value	Function
1	0...255	Dimmer (0 % to 100 %), for all LEDs together

## 7.5 Functions in 4-channel DMX mode

Channel	Value	Function
1	0...255	Dimmer (0 % to 100 %), for all LEDs together
2	Operating mode	
	0	LEDs off
	1...11	Preprogrammed automatic show no. 1
	12...23	Preprogrammed automatic show no. 2
	⋮	
	240...251	Preprogrammed automatic show no. 21
	252...255	Sound-controlled show
3	0...255	Increasing speed
4	0...255	Strobe effect, increasing speed

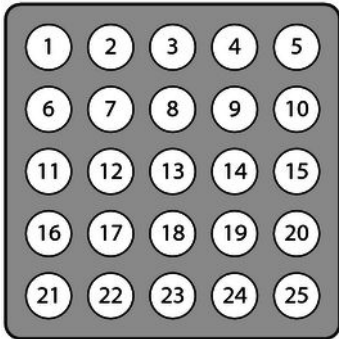
## 7.6 Functions in 26-channel DMX mode



The figure alongside shows the numbering of the LEDs.

Channel	Value	Function
1	0...255	Dimmer (0 % to 100 %), for all LEDs together
2	0...255	Dimmer (0 % to 100 %), for LED no. 1
3	0...255	Dimmer (0 % to 100 %), for LED no. 2
		⋮
26	0...255	Dimmer (0 % to 100 %), for LED no. 25

## 7.7 Functions in 28-channel DMX mode



The figure alongside shows the numbering of the LEDs.

Channel	Value	Function
1	0...255	Dimmer (0 % to 100 %), for all LEDs together
2	0...255	Dimmer (0 % to 100 %), for LED no. 1
3	0...255	Dimmer (0 % to 100 %), for LED no. 2
⋮		
26	0...255	Dimmer (0 % to 100 %), for LED no. 25
27	Operating mode	
	1...9	All LEDs on
	10...19	Letter display, to be selected with channel 28
	20...29	Number display, to be selected with channel 28
	30...39	Preprogrammed automatic show no. 1

Channel	Value	Function
	40...49	Preprogrammed automatic show no. 2
	50...59	Preprogrammed automatic show no. 3
		⋮
	230...239	Preprogrammed automatic show no. 21
	240...255	Sound-controlled show
28	Selection of the displayed letter (if channel 27 = 10...19)	
	0...9	Letter 'A'
	10...19	Letter 'B'
	20...29	Letter 'C'
	30...39	Letter 'D'
	40...49	Letter 'E'
	50...59	Letter 'F'
	60...69	Letter 'G'

Channel	Value	Function
	70...79	Letter 'H'
	80...89	Letter 'I'
	90...99	Letter 'J'
	100...109	Letter 'K'
	110...119	Letter 'L'
	120...129	Letter 'M'
	130...139	Letter 'N'
	140...149	Letter 'O'
	150...159	Letter 'P'
	160...169	Letter 'Q'
	170...179	Letter 'R'
	180...189	Letter 'S'
	190...199	Letter 'T'



Channel	Value	Function
	200...209	Letter 'U'
	210...219	Letter 'V'
	220...229	Letter 'W'
	230...239	Letter 'X'
	240...249	Letter 'Y'
	250...255	Letter 'Z'
	Selection of the displayed number (if channel 27 = 20...29)	
	0...27	Number '0'
	28...55	Number '1'
	56...83	Number '2'
	84...111	Number '3'
	112...139	Number '4'
	140...167	Number '5'

Channel	Value	Function
	168...195	Number '6'
	196...223	Number '7'
	224...251	Number '8'
	252...255	Number '9'
	Speed adjustment (if channel 27 = 30...255)	
	0...255	Increasing speed

## 7.8 Temperature monitoring

The built-in fan turns on automatically as soon as a certain temperature is reached. If a second temperature limit is exceeded despite the turned on fan, the unit automatically switches off. In this case, let the unit cool down before powering it up again.

The temperature-controlled shut-off function is constantly monitored by the device. If a defect is detected, the value 'rt' is flashing in the display. In this case, please contact our service centre. Contact details can be found at [www.thomann.de](http://www.thomann.de).

## 8 Technical specifications

Light source	25 × LED, 3 W (warm white)	
Optical properties	Beam angle	approx. 55°
	Diameter of lenses	6.5 cm
Control	DMX	
Number of DMX channels	1, 4, 26, 28	
Input connections	Voltage supply	IEC chassis plug C14
	DMX control	XLR chassis socket, 3-pin
Output connections	Voltage supply	IEC chassis plug C13
	DMX control	XLR chassis socket, 3-pin
Power consumption	96 W	
Supply voltage	100 – 240 V ~ 50/60 Hz	
Fuse	5 mm × 20 mm, 2 A, 250 V, slow-blow	

Degree of protection	IP20	
Mounting options	Hanging, standing M6 thread holes, suitable for connecting elements.	
Dimensions (W × H × D)	450 mm × 450 mm × 115 mm	
Weight	10.2 kg	
Ambient conditions	Temperature range	0 °C...40 °C
	Relative humidity	50 %, non condensing

**Further information**

Design	Matrix
Light source included	Yes
Light source	LED
Colour/colour temperature	WW

## 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



### **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.

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

Symptom	Remedy
The unit does not work, no light	Check the mains connection and the main fuse.
No response to the DMX controller	1. If the first display digit is not flashing in DMX mode, then no valid DMX signal is received. Check that the DMX controller is switched on. Check the DMX connectors and cables for proper connection.
	2. If the first display digit is flashing in DMX mode, but there is still no response, check the address settings and the DMX polarity.
	3. Try using 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](http://www.thomann.de).



# 11 Cleaning

## 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.

## Fan grids

The fan grids of the device must be cleaned of any contamination, such as dust, etc. on a regular basis. Before cleaning, switch off the device and disconnect mains-operated devices from the mains. Only use pH-neutral, solvent-free and non-abrasive cleaning agents. Clean the unit with a slightly damp lint-free cloth.

## 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 of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.

### Disposal of your old device



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

Dispose of 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.



