

daytime®

LED

# Operating Manual



matrix

## Dear Customer,

Thank you for choosing a WALTRON daytime® LED light.

Your daytime® LED light is a high-quality product that was specially designed for aquatic and terrarium applications. It satisfies the most demanding safety requirements.

The selection and design of the light's materials enables it to illuminate in the most adverse conditions, even in saltwater aquariums.

The usage of modern, high-quality LEDs from a reputable supplier together with a heat removal system guarantees that the light source will have a virtually unlimited service life. They also ensure that the lighting will maintain the required energy efficiency for years to come.

The entire team at WALTRON wishes you a "bright" future with our daytime® lighting!

## Notice, warning and safety symbols

The European Standard prescribes the use of the following symbols for specific situations; they are not intended to unsettle the user.

They are a part of modern operating manuals for any electrically operated appliance.

General description:



Warning!

Serious injuries can result from an electric shock if you do not follow the information marked by this symbol.



NOTICE!

The daytime® products may malfunction or be damaged if the information marked by this symbol is not observed.



Info

Sections marked by this symbol contain helpful recommendations and tips for using the daytime® products.



Information for disposing of the product in an environmentally responsible manner



Compliance with EC directives

## Proper and intended usage

This product is designed for private home use. It is only intended as aquarium lighting and should not be used for general lighting purposes.

Thus, this is not subject to the mandatory labelling requirements regarding energy efficiency classification (refer to Regulation 874/2012 + 1194/2012).

Read and observe the entire operating manual before using the lighting for the first time. The warranty does not cover damage or defects which have resulted from not observing the information in the operating manual. Keep this operating manual accessible near the device. Make sure that it is given to any subsequent users.

WALTRON assumes no liability for the consequences of improper usage.

## For your safety



**Warning!** Carefully read and observe the following important safety information. In order to avoid an electric shock:

Position the device in a suitable place to ensure that it is not exposed to water (from condensation or falling into water).



**Info!** WALTRON recommends making "drip loops" in the converter cables to prevent water (condensation) from running along the cable to the converter or outlet.



**NOTICE!** Make sure that all cables:

- have no kinks in them,
- are not routed over sharp edges, and
- cannot be jammed or snagged,
- cannot come into contact with hot surfaces (> 60 °C).



**Warning!** If you notice that the power cable is damaged, disconnect the device from mains power supply immediately. Contact an authorized daytime<sup>®</sup> service partner or the manufacturer (WALTRON GmbH) directly.



**Warning!** If the operating device's power cable or secondary cable(s) are damaged, they must be repaired, either by an authorized daytime<sup>®</sup> service partner or directly by the manufacturer.

Never use a device which has a damaged or defective power cable (operating device).



**Warning!** Never open or repair the operating devices and lights by yourself. Do not make any changes which are not described in these operating instructions. The operating device contains live (current-carrying) parts (with 230 V AC). A fatal injury can result from an opened device.

Repairs may only be carried out by authorized daytime<sup>®</sup> service partners or by WALTRON GmbH, using only original spare parts and accessories.



We hereby confirm that the design and construction of the daytime<sup>®</sup> lighting series

**matrix**

complies with all relevant regulations, directives and safety requirements, as listed below:

**Low Voltage Directive  
2006/95/EG**

**Waste Electrical Equipment Directive  
(WEEE) 2002/96/EC**

**EMC Directive  
2004/108/EG**

**Product Safety Directive  
2001/95/EG**

**ErP Directive (energy related design)  
2009/125/EG**

**and the applicable standards**

**DIN EN 60598-1  
Lighting – general requirements and tests**

**DIN EN 60598-2-11  
Special requirements – aquarium lighting**

**DIN EN 62471  
Photo-biological safety of LEDs**

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Any changes in the lighting that are made without the approval of Waltron GmbH will invalidate this declaration.

# 1. Scope of delivery

The standard delivery of the daytime® matrix includes:

- 1 pc. lamp, with 2-metre connection cable and protective panel
- 1 pc. "Inline" universal adapter set with rubber pads
- 1 pc. special key (tool for mounting and disassembling the module, and for attaching the Inline adapter system)



# 2. Required accessories<sup>1</sup>

**⚠ NOTICE!** Follow the instructions and notices concerning the installation and operation that are included with the accessories.

The following accessories are available or required<sup>1</sup> for setting up and operating the lighting:

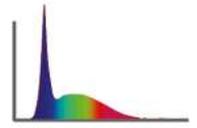
## 2.1 matrix LED modules<sup>1</sup>

	<p><b>matrix module WW</b></p> <ul style="list-style-type: none"><li>• Warm White</li><li>• 4,000 K</li><li>• PAR: 4.73 <math>\mu\text{mol/s/watt}</math></li><li>• Power: 10 watts</li></ul>	
	<p><b>matrix module NW</b></p> <ul style="list-style-type: none"><li>• Neutral White</li><li>• 6,000 K</li><li>• PAR: 4.50 <math>\mu\text{mol/s/watt}</math></li><li>• Power: 10 watts</li></ul>	

1) At least one matrix module and converter per lamp is required for operation



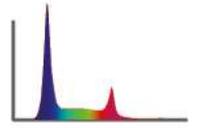
### matrix module UW



- Ultra White
- 8,000 K
- PAR: 4.30  $\mu\text{mol/s/watt}$
- Power: 10 watts



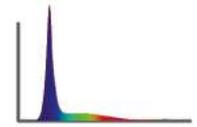
### matrix module UBRW



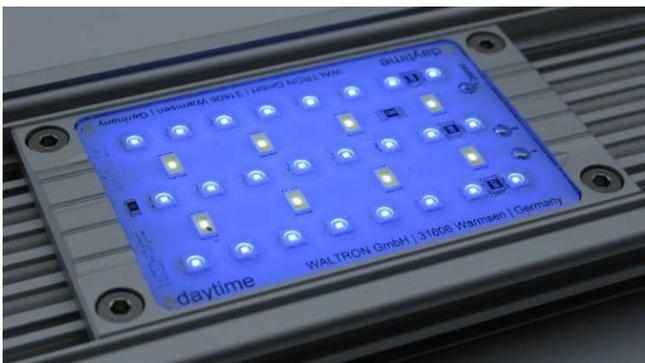
- Ultra Blue Red White
- Ratio of blue and red to white LED is 1:1:2
- 440-455 nm + 620-630 nm + 8,000 K
- PAR: 4.26  $\mu\text{mol/s/watt}$
- Power: 10 watts



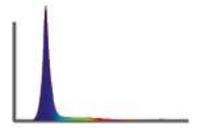
### matrix module UBW 1:1



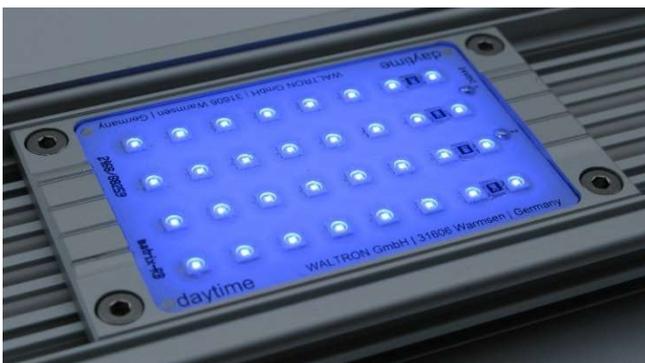
- Ultra Blue White 1:1
- Ratio of blue to white LED is 1:1
- 440-455 nm + 8,000 K
- PAR: 4.06  $\mu\text{mol/s/watt}$
- Power: 10 watts



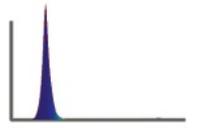
### matrix module UBW 3:1



- Ultra Blue White 3:1
- Ratio of blue to white LED is 3:1
- 440-455 nm + 8,000 K
- PAR: 3.94  $\mu\text{mol/s/watt}$
- Power: 10 watts



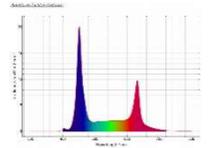
### matrix module BR



- Royal Blue
- 440-455 nm
- PAR: 3.81  $\mu\text{mol/s/watt}$
- Power: 10 watts



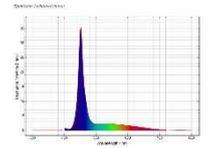
### matrix-Modul SLF



- SunLike fresh
- 25% SunLike-LED Seoul Semi.
- 6.000 K + 440-455 nm + 620-630 nm
- PAR: 4,39  $\mu\text{mol/s/Watt}$
- Power: 10 watts



### matrix-Modul SLM



- SunLike marine
- 25% SunLike-LED Seoul Semi.
- 8.000 K + 440-455 nm
- PAR: 4,06  $\mu\text{mol/s/Watt}$
- Power: 10 watts

1) At least one matrix module and converter per lamp is required for operations.

## 2.2 Converter (power supply) including power supply cable<sup>1</sup>



### "Premium" 24 V LED converter

- 40 watts
- 60 watts
- 90 watts
- 120 watts
- 180 watts
- 240 watts

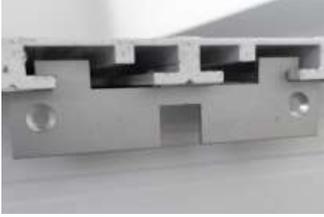
1) At least one matrix module and converter per lamp is required for operation

### 3. Optional accessories

**⚠ NOTICE!** Follow the instructions and notices concerning the installation and operation that are included with the accessories.

#### 3.1 matrix adapter sets

	<p><b>matrix acrylic adapter set</b></p> <ul style="list-style-type: none"> <li>• For open aquariums</li> <li>• For placing on aquarium edges</li> </ul>
	<p><b>matrix swing adapter set</b></p> <ul style="list-style-type: none"> <li>• For open aquariums</li> <li>• For placing on aquarium edges</li> </ul>
	<p><b>matrix insertion/screw-on adapter set</b></p> <ul style="list-style-type: none"> <li>• For closed aquariums with terraced levels</li> <li>• For screwing onto suitable surfaces</li> </ul>
	<p><b>matrix T8 adapter set</b></p> <ul style="list-style-type: none"> <li>• For mounting into existing T8 lamp holders</li> </ul>
	<p><b>matrix T5 adapter set</b></p> <ul style="list-style-type: none"> <li>• For mounting into existing T5 lamp holders</li> </ul>
	<p><b>matrix magnet holder set</b></p> <ul style="list-style-type: none"> <li>• For attaching to magnetic surfaces</li> </ul>
	<p><b>matrix wire suspension set</b></p> <ul style="list-style-type: none"> <li>• For hanging over open aquariums</li> </ul>

	<p><b>matrix cross-connector set</b></p> <ul style="list-style-type: none"> <li>• For hanging two or three lamps over an open aquarium</li> </ul>
	<p><b>matrix Tetra AquaArt 100/130 adapter set</b></p>
	<p><b>matrix Giesemann Sphera adapter set</b></p>
	<p><b>matrix Aquatlantis adapter set</b></p>

### 3.2 Adapter profiles for matrix

	<p><b>Adapter profile for JUWEL® aquariums</b></p> <ul style="list-style-type: none"> <li>• For converting to matrix</li> </ul>
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### 3.3 Design profiles for matrix

	<p><b>Design-Profiles: Top White/Black</b></p> <ul style="list-style-type: none"><li>• For elegantly integrating the matrix into open aquariums</li></ul>
	<p><b>Design-Profiles: Pendant White/Black</b></p> <ul style="list-style-type: none"><li>• For elegantly integrating the matrix into open aquariums using wire suspension</li></ul>

### 3.4 Light controls for matrix

	<p><b>Smart Control SC20 3-channel</b></p> <ul style="list-style-type: none"><li>• Operating and programming using a smartphone, tablet or PC</li></ul>
	<p><b>Basic Control BC16 1-channel</b></p> <ul style="list-style-type: none"><li>• Operating and programming using 3 buttons</li></ul>

### 3.5 Distributor, adapter cables for matrix

	<p><b>2-way distributor</b></p> <ul style="list-style-type: none"><li>• For operating two matrix lamps with a converter or a light control unit</li></ul>
	<p><b>Adapter cables</b></p> <ul style="list-style-type: none"><li>• 5-pin female connector, wire-end ferrule</li><li>• 5-pin male connector, wire-end ferrule</li><li>• Set for GHL LEDControl4 V2 / ProfiLux</li><li>• Set for EHEIM LEDcontrol+</li></ul>
	<p><b>Extension cables</b></p> <ul style="list-style-type: none"><li>• Length: 1 metre</li><li>• Length: 2 metre</li></ul>

### 3.6 Miscellaneous accessories for the matrix



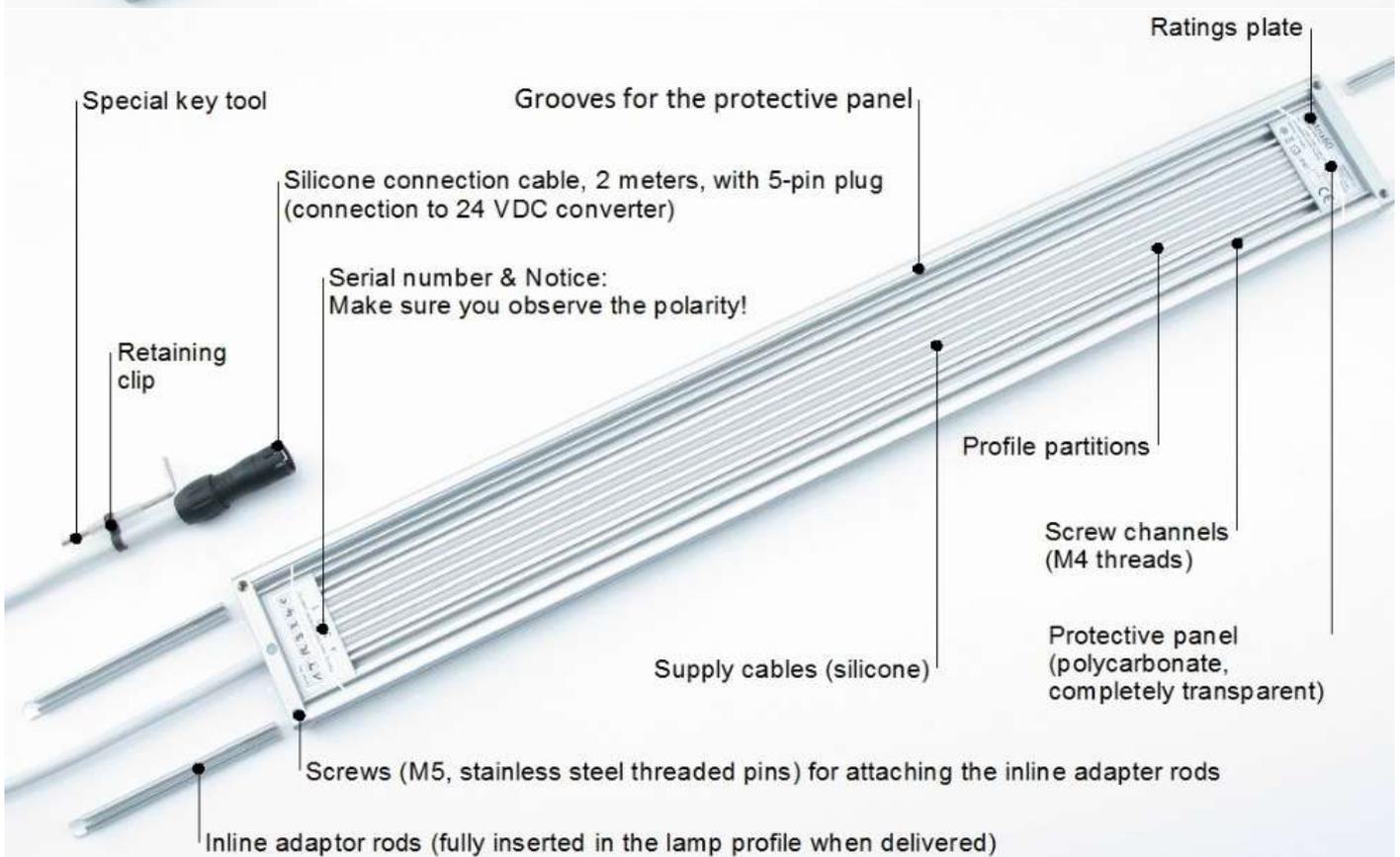
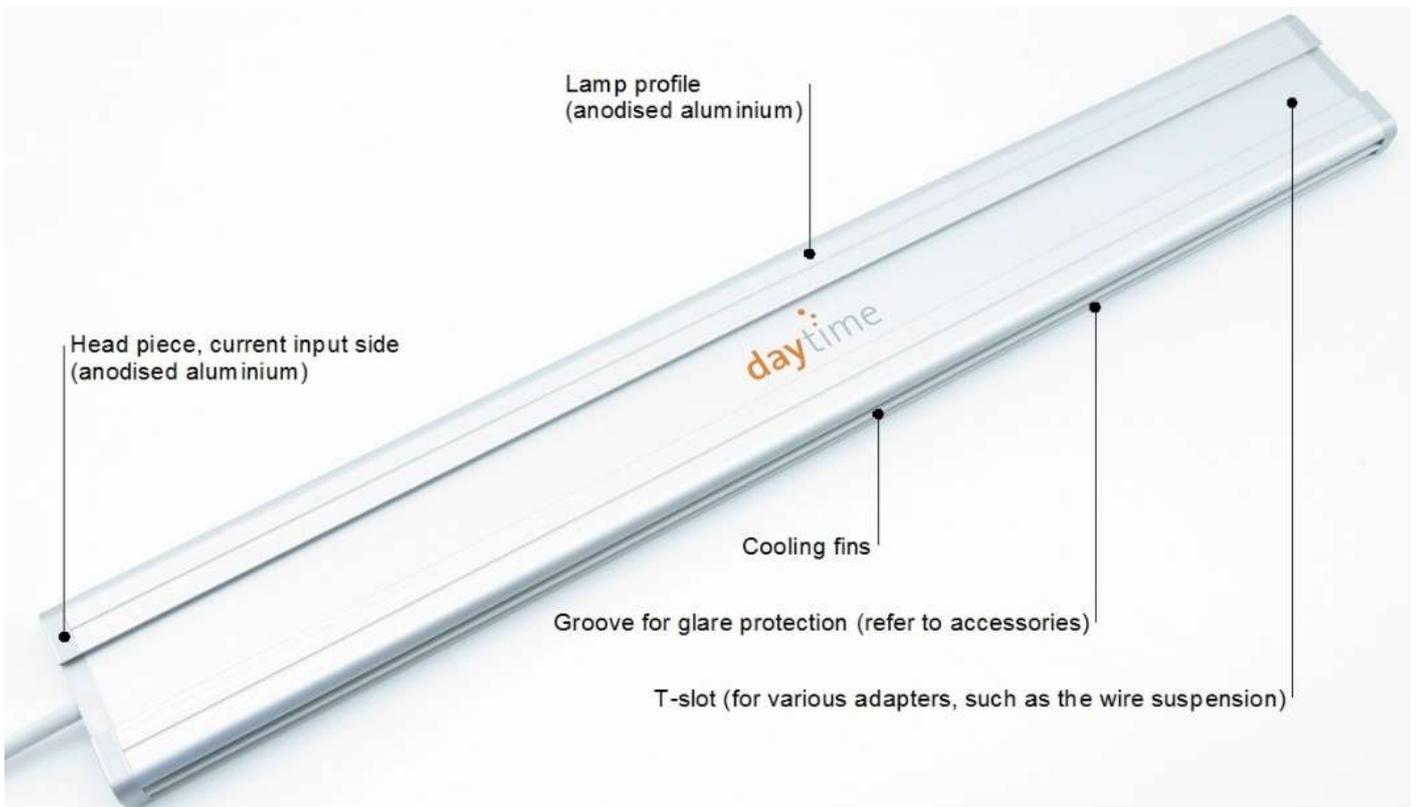
#### Glare protection

- Anti-glare profile strip
- Reduces glare for a seated observer

**i** **Info!** Further details, tips and technical data on these accessories can be found on our homepage: [www.daytime.de](http://www.daytime.de).

Our current product line is also described there. It is constantly being developed and supplemented.

## 4. Overview and explanations of lamps



## 5. Setup and initial usage

### 5.1 Mounting and disassembling the protective panels



**NOTICE!** Carefully read the following description for installing and removing the protective panels. Carry out the necessary steps as described.



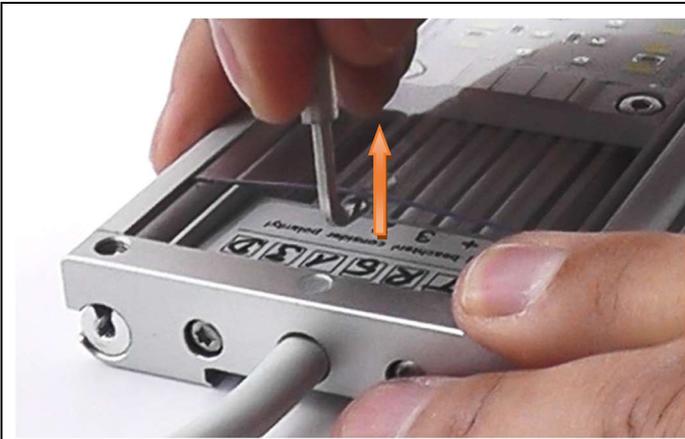
**Info!** The matrix is configured by default with a non-breakable protective panel made of polycarbonate. It reduces deposits and formation of encrustation inside of the lamp, thus minimizing the required maintenance.



#### Mounting:

1. Insert one side of the panel over the entire length into the profile groove.
2. Bend the end of the panel in a slight arc; insert it into the opposite profile groove.
3. Press the panel in using a grazing motion along the panel.





### Disassembly:

1. Lift the panel slightly at one side



until the panel edges "jump out" of the profile grooves.

**⚠ NOTICE! Do not pull out, bend or fold!**



2. Use the special key tool to remove the panel along its entire length.

## 5.2 Mounting the matrix LED modules

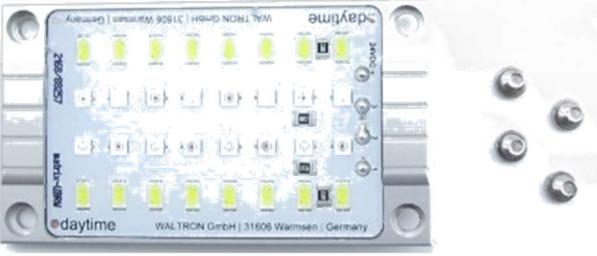
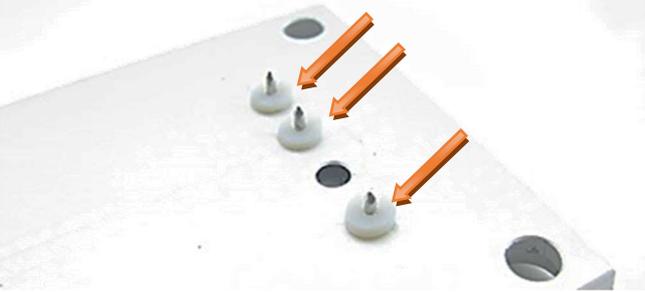


**NOTICE!** Carefully read the following description of the module's placement and attachment. Carry out the steps described in the order listed.

**The correct polarity must be observed (also refer to the mounting instructions enclosed with the modules)!**

The modules are inserted into the lamp profile by hand without extra equipment.

Use only the special key tool (included with the matrix) when attaching or removing the modules of the Inline adapter system.

	<p>Verify that that module sets are complete:</p> <ul style="list-style-type: none"><li>• 1 pc. matrix LED module</li><li>• 4 pcs. cylinder head screws M4x8 (V4A)</li><li>• 1 pc. installation instructions</li></ul>
	<p>Depending on the version, the modules can have from 2 to 4 contact pins (on the bottom). <b>All pins must be fitted with a seal.</b> Modules with damaged or missing seal gaskets must not be used.</p>
	<p>Checking the inside of the lamp profile; remove any residues from previous usage and clean the inside. For optimal heat dissipation, the partitions, in particular, must be free of residues or other foreign contaminants.</p>
	<p>Select the module position and insert (but do not press in yet) the module. <b>Make sure the polarity is properly aligned:</b></p> <p><b>1 to 1 / 2 to 2 / 3 to 3 / + to +</b></p> <p>(Refer to the label on the module and the lamp profile.)</p> <p>Remove the modules in order to change their positions. Do not move any installed modules within the lamp profile (the contacts must not be "scraped").</p>



**Press in manually to mount the manual, with two steps:**

1. Side with no contacts
2. Side with contacts

**Push the module into the profile as far as it will go. Do not use any tools since they could damage the module.**



**Screw the module into the lamp profile. Use only the tool included in the delivery.**

1. Screw all the screws straight in until you feel resistance. (The screws should be easy to screw in from the start. If they cannot be easily screwed in, unscrew them a bit and put them back in.)

**⚠ NOTICE! Inclined (diagonal) insertion will damage the thread grooves.**

2. Tighten the screws with moderate and uniform force until the gap between the bottom of the module and the profile partitions is closed.

**⚠ NOTICE! Screwing in too tightly will damage the thread grooves.**

**i Info: The gap is considered closed when you can no longer push the corner of a sheet of standard copy paper (80 g/m<sup>2</sup>) into it.**

### 5.3 Disassembly of the matrix LED modules



**NOTICE!** Carefully read the following description of the module's removal. Carry out the steps described in the order listed.

The modules should be removed using the special key tool supplied with the matrix.

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Loosen and remove all screws.



1.

Lift and remove the module in two steps:  
Insert the short, rubber shank of the special key tool into the thread grooves and lever out the module.

1. On the contact side

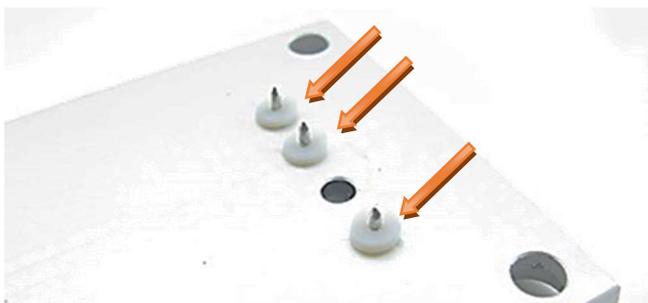
**NOTICE!** The rubber part must be on the short shank of the key tool. It must also cover the key edges completely so that it does not damage the bottom of the module.



2.

2. On the non-contact side

**NOTICE!** Check to make sure that there are no sealing gaskets remaining between the profile partitions. Check that all contact pins still have a seal on them. Thread them on by hand if necessary.



## 5.4 Adjusting and attaching the Inline adapter system



**NOTICE!** During the setup and initial usage, make sure that there is at least a 15-mm gap between the bottom of the lamp and the water surface.



The matrix includes the Inline adapter system (four adapter rods in the non-slip profile). In their delivered state, these are already attached with screws so that they are flush with the lamp ends.

**The rods can be moved by loosening (1/4-turn)\* the screws.**

**You can use the special key tool to remove the rods.**

\* Do not loosen the screws more than a 1/4 turn, so that the adapter rods always remain in their correct positions.



The adapter rods are graduated at one side and have a rubber bumper. These can be used for support (e.g. directly at the tank edge or on one partition of the cover).

**After adjusting to fit the tank width, tighten the screws gently a bit so that the rods are secured in place.**

There is a metric-threaded hole (size: M3) on the opposite side that can be used to attach various adapter sets (refer to the Available Accessories chapter).



The Inline adapter system allows two matrix lights to be connected at the front side.

1. Push the adapter rods halfway out of one lamp and secure in place. Remove the rods from the second lamp.
2. Put them together and secure in place.

**!NOTICE!** We recommend using the cord suspension or a middle support (e.g. glass partition) when using this connection; this will avoid any bending that could be visually disturbing.

## 5.5 Electrical connections



**NOTICE!** Never connect or disconnect the secondary cables while voltage is applied (while the power cable is plugged in).



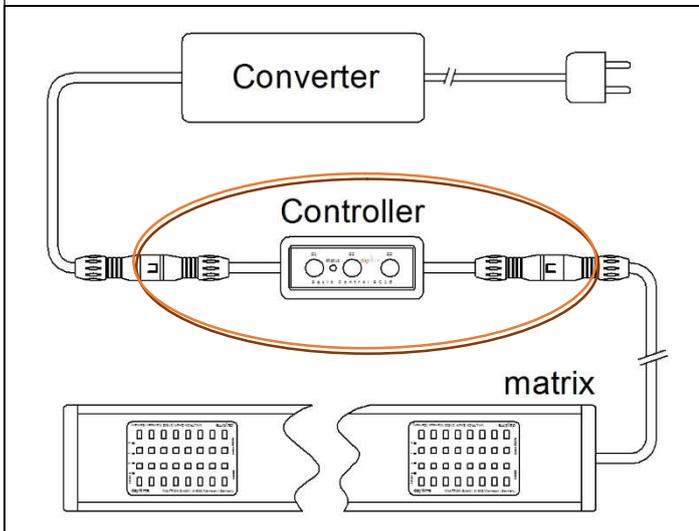
**Info!** To switch on or off, we recommend using a timed switch, a switched outlet or a power strip with an integrated fuse.



1. Connect the secondary cable (output) from the converter to the lamp's connecting cable.

**NOTICE:** Make sure that the connection is secure and tightly fitting. You should be able to notice when the round plug clicks into its connection.

2. Connect the power cord of the converter to a grounded (earthed) electrical outlet.



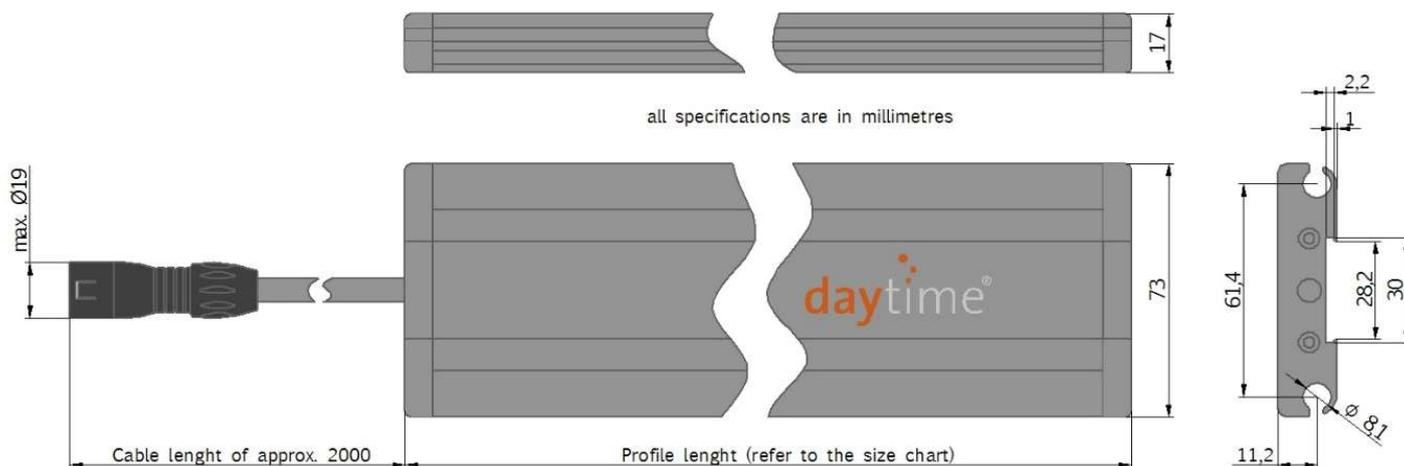
The optional daytime<sup>®</sup> light controllers, distributors, adapters and extension cables (refer to the accessories list) are all equipped with an identical circular plug. They are plugged (simply "Plug & Play") between the converter and lamp.

For further information and notes on installation and initial commissioning, please refer to the documents supplied with the accessories.

## 6. Maintenance and cleaning

The lamps should be cleaned of any dirt or deposits regularly, especially the insides. (Also refer to the "Mounting the matrix LED modules" chapter.) Use a clean, lint-free cloth (e.g. a microfibre cloth) moistened with lukewarm water and, if necessary, a little vinegar. Do not use abrasive, chemical or solvent-based cleaners.

## 7. Technical specifications



Size	Length of profile [cm]	Max. number of modules [pc.]	Max. power [w]
matrix20.0	16.6	1	10
matrix30.0	25.0	1	10
matrix40.0	35.0	2	20
matrix50.0	45.0	3	30
matrix60.0	55.0	4	40
matrix70.0	65.0	5	50
matrix80.0	75.0	6	60
matrix90.0	85.0	7	70
matrix100.0	95.0	8	80
matrix110.0	105.0	9	90
matrix120.0	115.0	10	100
matrix130.0	125.0	11	110
matrix140.0	135.0	12	120
matrix150.0	145.0	13	130
matrix160.0	155.0	14	140
matrix170.0	165.0	15	150
matrix180.0	175.0	16	160
matrix190.0	185.0	17	170
matrix200.0	195.0	18	180
matrix210.0	205.0	19	190
matrix220.0	215.0	20	200
matrix230.0	225.0	21	210
•	•	22	220
•	•	23	230
•	•	24	240
matrix400.0	395.0	24	240

Operating voltage:	<b>24 VDC (safety extra low voltage)</b>
Current consumption:	<b>Max. 10 A (corresponds to 24 matrix LED modules)</b>
Protection degree:	<b>IP67 (protected against the effects of temporary immersion in water)</b>
Lamp housing:	<b>Aluminium, anodized E6/EV1 natural, Seawater resistance, according to DIN 81249-1</b>
Weight (without modules):	<b>matrix20.0 &gt; 430 g Starting from matrix30.0 &gt; 531 g + 123 g for each additional 10 cm length</b>

## Additional information and tips

Video instructions are available which cover all steps.

An overview of the videos can be found at our **You** channel; the link is listed on our homepage [www.daytime.de](http://www.daytime.de).

Your daytime® retailer is available to help you on-site. Our technical support staff will also be happy to assist you via e-mail or phone.

## Warranty notice

We have a 24-month warranty for daytime® products that we deliver within the EU.

Exceptions are damages due to non-compliance with the operating manual or other improper handling.

Should you have any reason to complain within the warranty period, please return your lamp, together with the enclosed warranty card (with information filled in) and the purchase receipt to your daytime® retail dealer.

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