Dear customer,

thank you for choosing a GIESEMANN PULZAR LED-module.
Your PULZAR LED light is a high-quality product that was specially designed for aquatic and terrarium applications, and fulfills the most demanding safety requirements. The use of modern, high-quality LEDs from market leading brands is a guarantee for a long lifetime if you follow these instructions regarding maintenance and correct installation. The innovative electronic enables a stable light spectrum even after many years. Please read these instructions carefully, and do not hesitate to contact the GIESEMANN service for further questions.

Notice-, warning- and safety symbols
The European Standard prescribes the use of the following symbols for specific situations:

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

Notice! Your PULZAR 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 product.

Information for disposing of the product in an environmentally responsible manner.

In compliance with the EC directives

propper and intended use of your product

These products are designed and intended for private household use only. They are only intended as aquarium lighting and are not to be used for general lighting purposes. Thus, they are not subject to the labelling requirements related to energy-efficiency classifications (as described in Directives 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. A warranty can only be claimed, if more than 10% of the total number of LED are failing. The failure of single LED´s is not covered by the warranty GIESEMANN assumes no liability for the consequences of improper use, by not following these instructions or by using the PULZAR LED bar under improper or wrong conditions. IF YOU DISAGREE WITH THESE TERMS AND CONDITIONS DO NOT USE THIS PRODUCT.

The standard delivery of your PULZAR includes:
1 x LED module PULZAR
1 x matching power supply unit (PSU) 100- 240 V
1 x powercord with 3 prong plug
1 x instructions and warranty card

For your safety
Carefully read and observe the following important safety information. In order to avoid an electrical shock.

Position the power supply (PSU) in a suitable place to ensure that it is not exposed to water (from condensation, high humidity or falling into water).

We recommend to make "drip loops" in the cable from the PULZAR to the power supply and from the power supply to the outlet to prevent dripping water (condensation) from running along the cable to the power supply and the outlet.

PULZAR LED modules are waterproof according to IP67 (DIN EN 60529). Nevertheless, high humidity and water spray within an aquarium cover / aquariumhood might get into the sealed light module. Water vapour inside your PULZAR LED might damage the electronic.

Make sure, that if you install the PULZAR in an aquarium-hood, there is a proper ventilation inside the hood. You can either open the lids of your aquarium hood, installing ventilation grids instead of lids or using an electrical fan to reduce the high humidity & water-condensation inside your aquarium canopy.

Clean your PULZAR LED module from time to time, at least once a week to remove dirt and to avoid dull protection shields.

Make sure that all cables have no kinks in them and are not routed over sharp edges (i.e. your aquarium hood or the glass rim). Make sure that the cables cannot be jammed or snagged, and cannot come into contact with hot surfaces (> 60 °C / 140 °F).

If you notice that the power cord is damaged, disconnect the device from mains power supply immediately and contact GIESEMANN or an authorized GIESEMANN partner.

Never open or repair the power-supply unit and lights by yourself. Do not make any changes which are not described in these operating instructions. The operating device contains live (currentcarrying) parts (with 230 V AC).
A fatal injury can result from an opened device. Repairs may only be made by authorized GIESEMANN partners service or GIESEMANN itself using only original spare parts and accessories.

The following accessories are available:
-PULZAR hanging kit	- SPHERA aquarium canopy
- PULZAR mounting slider	- PULZAR mounting legs
- Bluetooth Interface	- Aquarium computer interface

Manufacturers declaration of conformity
We hereby confirm that the design and construction of the PULZAR LED module complies with all relevant regulations, directives and safety requirements, as listed below:
-Low Voltage Directive 2006/95/EC
-Waste Electrical Equipment Directive (WEEE) 2002/96/EC
-EMC Directive 2004/108/EC
-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 LED

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

controlling your PULZAR LED Module (optional)
PULZAR LED modules (only **HO** Versions) are dimmable and are equipped with an additional data-cord. If you run the PULZAR HO without an external cotroller device, they work in the 100% mode and can be switched via a plug in timer. GIESEMANN is offering two different controllers for the light and colour control of your PULZAR HO module:

Bluetooth Interface (item no. 20.171.035)
The Bluetooth Interface is a radio controlled light-computer that works via Bluetooth. A Mac or Windows computer or an Android device (Tablet / Smartphone is required) to control three independent light channels of your PULZAR LED module.

Computer Interface (item no. 20.171.032)
The Computer Interface ist a device that connects your aquarium computer with 1-10V output with up to 4 PULZAR HO modules. The functionallity is depended on the functions your aquarium computer is offering.

By using interfaces or dimmers, it may happen, that some LED doesn't switch off completely at 0% and they glow with a very light intensity. This effect can be caused by canister filters with earthed heater or other earthed electrical devices in your aquarium.

Mounting options
Please make sure, that you intall the PULZAR module always properly. Avoid the installation nearby any airpumps, airstones, skimmer outlets to prevent high humidity or water spray next to the PULZAR LED module.

Aquarium mounting legs
By using the PULZAR aquarium mounting legs (item no. 20.120.453), you can install your PULZAR above your tank by placing the legs on the glass edge or the rim of your aquarium canopy.

⚠ Make sure that the minimum distance between water surface and the PULZAR module is at least 60 mm (2.5")

⚠ Clean your PULZAR LED module from time to time, at least once a week to remove dirt and to avoid dull protection shields.

⚠ Make sure your PULZAR is properly mounted and fixed to avoid falling into the water

Slide in the brackets at each end of the PULZAR module and fix the required position by tighten the screws.

PULZAR suspension kit
With the suspension kit (Art.Nr. 20.300.013-3) you can suspend the PULZAR module easily above your tank and using your PULZAR as a pendant light.

⚠ Make sure that the minimum distance between water surface and the PULZAR module is at least 100 mm (4.0").

⚠ Clean your PULZAR LED module from time to time, at least once a week to remove dirt and to avoid dull protection shields.

⚠ Make sure your PULZAR is properly mounted and fixed to avoid falling into the water

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The steel wire set includes two cables, each with a length of 150 cm,) and a mounting kit for the ceiling. The wire holder, for easy height adjustment, is inserted into the longitudinal channel of the PULZAR and can be fixed in any desired position. The suspension kit allows your lighting system to be continuously adjustable in height. One pull on the wire and the lighting system can be elevated easily. At the desired position, the cable mechanics locks automatically.

PULZAR mounting slider
The mounting sliders contain several mounting options, such that the module can be mounted under covers, attached to holders or directly on the glass. With these connectors several PULZAR elements can be connected in sequence.

⚠ Make sure that the minimum distance between water surface and the PULZAR module is at least 60 mm (2.5")

⚠ Make sure, that the area where you install the LED module is perfectly ventilated. Avoid high humidity by opening the lids of your aquarium canopy, installing an electrical fan or changing the standard hood lids against ventilated grids.

⚠ Do not install PULZAR on inflammable materials such as wood or plastic, and make sure your PULZAR is properly mounted and fixed to avoid falling into the water
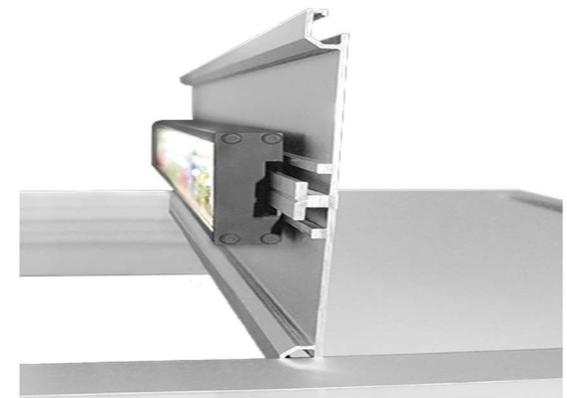
⚠ Clean your PULZAR LED module from time to time, at least once a week to remove dirt and to avoid dull protection shields.

In the upper part of the PULZAR module, an integrated guidance channel can be found, into which the two sliding connectors can be inserted sideways and fixed. This allows the systems to compensate for different aquarium lengths.

For increased durability of your PULZAR, each PULZAR module is equipped with a transparent protective acrylic pane with almost loss-free light transparency. Additionally, this cover is lined with a Neoprene seal, thereby protecting the LED, as well as the control electronics, from the exterior environment. The PULZAR light module is thus dust- and water-proof according to IP67 (based on DIN EN 60529). IP67 doesn't protect against water steam and mist, therefor a proper ventilation of your aquarium is very important to increase the lifetime of your PULZAR LED module.

PULZAR – installation in the SPHERA aquarium-canopy
The PULZAR LED module is especially suited to be used in conjunction with our SPHERA aquarium canopies. The middle profile of your aquarium cover serves then as insertion channel and provides additional cooling due to its large surface. For older STRATOS aquarium hoods, please simply screw the accompanying mounting sliders to the cover lamella of your aquarium hood. By the way: The SPHERA middle profile is available individually in any desired length and can thus be used for many other canopies, hoods or frames on the market.

⚠ **IMPORTANT INFORMATION FOR INSTALLING THE PULZAR LED MODULE IN CLOSED AQUARIUM HOODS**

A proper ventilation in your aquarium hood is very important to increase the lifetime of your PULZAR LED module. The module itself is waterproof according to IP67. Nevertheless, the high temperature of your aquarium water (for discus aquariums up to 30°C) creates a lot of steam or water vapour. Even the best insulation and sealing of a light module cannot avoid, that tiny water molecules penetrate cables, gaskets and the acrylic shield of the light bar and cause damages of the electronics. A damage caused by water is not covered by our warranty!