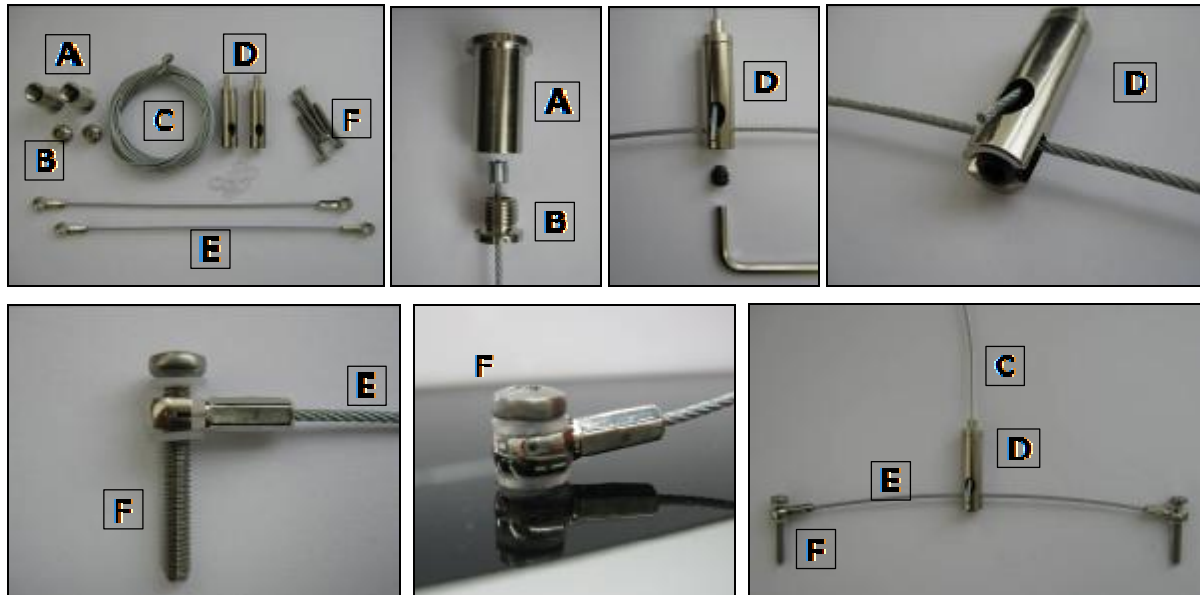# Giesemann

LED-Aquarium Light
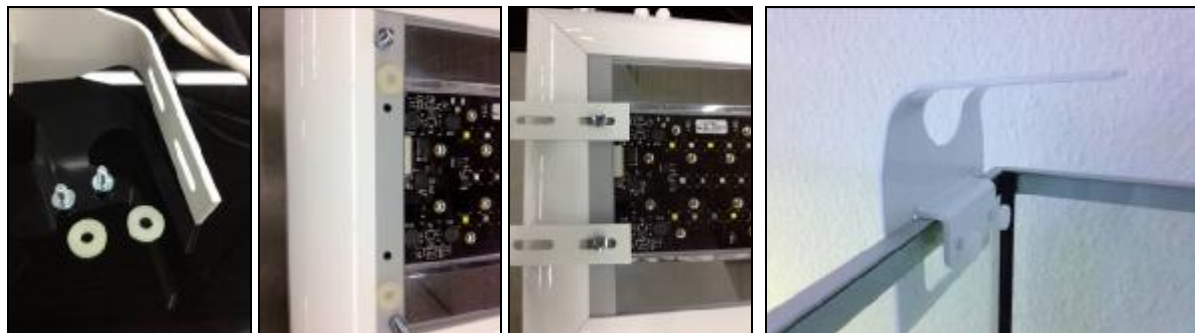
FUTURA

Fig. 1: Suspension kit

Fig. 2: Aquarium mount

CE Declaration of Conformity

The company
Giesemann Lichttechnik & Aquaristik GmbH
Bürdestraße 14 – 41334 Nettetal – Germany
declare under our sole responsibility that the products:
FUTURA
to which this declaration relates are in conformity with the technical requirements of
the following European Community directives & standards or other normative documents
- 98/37/EC / - EEC 89/336 - EEC 73/23 AND RELATED AMENDMENTS AND ADDITIONS (B.T.)

The following technical standards and specifications have been observed:

Safety: EN 60335-1 / EN 60335-2- 55 AND RELATED AMENDMENTS / EN 292-1-2 / CEI 61-50

EMC directive: EN 50081-1 / EN 50081-2 and the following amendments / EN 5008

16.05.2012, Nettetal - Germany

GIESEMANN
aquaristic

Delivery and safety tips

Honoured customer, thank you very much for your confidence in Giesemann quality products.

Our experiences in the area of the Aquatics as well as modern illumination technology guarantees the quality standard of our products. Please read this manual in its entirety in order to guarantee optimal function and operational reliability of your product over many years. Failure to observe the following points may prove dangerous or can violate existing guidelines.

All Giesemann lamps are equipped with the CE sign. You find this sign on the type sign in the lamp or on any external power supply box.

After unpacking, please check to ensure the condition of your lamp and that all components are present. Damage must be reported immediately to your specialist supplier in order to make a valid claim. The lamps may be installed only by authorized specialist staff. These lamps may not be operated if any damage is visible, If false function appears, after submersion into water, or any other deficiency that may effect safe operation.

The lamps never may be operated without the corresponding protection glasses; broken splash-shields are to be replaced immediately in order to guarantee sufficient water protection.

The described lamps are designed exclusively for the illumination and addition of illumination of indoor aquariums only. The illumination is to be installed securely with a minimum distance to the water surface above the aquarium and should never be operated under water. They should never be placed unsecured on the aquarium edge or have ventilation inhibited by way of surrounding equipment, panel work or covers. The lamps and the electrical components should be protected unconditionally against direct water ingression.

Use the lamps with extreme caution if children or other people are present who do not understand the dangers of close proximity. Packaging materials may not be used for playing and should be disposed of securely: DANGER: risk of asphyxiation.
Never look directly into the light source. Bright light can lead to eye injuries!

Maintenance work on the lamps should only be carried out after removing applicable covers and ensuring the light is disconnected from the power supply at the wall. For safety reasons it is recommended that any work carried out in the aquarium, should only take place when the illumination is removed from the aquarium.
Do not attempt to open any LED light module, or power supply, as this will cause damage to the inner seal and will void the warranty.

The housing and protective glasses may become very hot during use: Avoid touching them!! When cleaning, it is particularly important to ensure that no moisture gets into the air vents inside or on top of the lights. Never cover the ventilation grilles with any item, and make sure that there can be sufficient heat exchange.

Improper use will invalidate any warranty claim. The transport and storage of the lamp must only be done using the original packaging.

The lights are made of aluminium which is protected from seawater corrosion by a high quality powder coating. To keep the body clean and the light areas clear, clean regularly with a slightly damp cloth. Please note that salt deposits always should be removed immediately, otherwise even quality surfaces may become damaged over time. Failure to maintain effectively may lead to the loss of warranty.

Disposal: Once this appliance has expired, make the retired lights unusable by removing the plug from the socket and cut the cable. Dispose of the lamp in accordance with applicable environmental regulations in your country. Electrical waste may not be disposed of with household waste. Contact us for advice on recycling with your local authorities or dealer.

Installation

To assemble your FUTURA there are different mounting options (not included) which are available from your Giesemann dealer.

Installation of the FUTURA by wire suspension kit (Fig. 1, No. 20300013): Remove the four plastic plugs in the top cover glass of the light unit. Screw in at these points, the two cross wires (F) of the optional FUTURA steel suspension cross cables with their M4 screws **only finger tight**. Make sure that the plastic washer is in place above and below the M4 retaining screw. **Caution: Over-tightening the screws can cause damage to the glass!** Remove the small lock screw in the bottom of the wire holder (D) Insert the cross support cable (E) in the groove of the cable holder, insert the screw and tighten to secure. Check the tightness of the cable holder. Install the ceiling mounting (A) with suitable screws and wall plugs, making sure that the brickwork/ceiling on site can offer sufficient support. If necessary, special fastening systems, such as Hollow wall anchors, screws, etc may be necessary. If uncertain, please consult with a specialist company. Now run the steel cord (C) through the bore of screw (B). Screw (B) into the ceiling mount (A). Insert the loose end of the steel cable into the top opening of the cable holder hole (D) and push through until the end exits through the side hole. Since your light is equipped with continuously variable height adjustment, it can be raised or lowered easily by applying pressure to the nozzle of the spring lock mechanism. For safety reasons, always support the lamp when it is being adjusted. When the light unit is gently lowered again with the nozzle released the cable will automatically lock in place. Always aim to set your light unit level with the aquarium.

Installation of the FUTURA with aquarium mounts (Fig. 2, No. 20171031): To mount the FUTURA two aquarium mounts are needed. Install the aquarium mount with the screws on the underside of the FUTURA. The attachment of the aquarium mount is variable, make sure that the distance between the two holders exactly the aquarium length. Then position the light over the aquarium to keep the feet of both aquariums mounts on the aquarium outer rim. Tighten the retaining screws to secure the mounts to the aquarium.

PSU

Each LED light unit is equipped with one or two separate power supplies with electronic controls that deliver a constant output. The input voltage is 100-240VAC 50/60 Hz. Use only the original power adaptors. The use of alternate types may result in irreparable damage to the light unit and will invalidate the warranty.

First, connect the power supply to the socket of the lamp cable. Between the lamp and the power adapter ensure there is a drip loop formed so that dripping water can not get into the power adapter. Plug the power cord in after plugging in the external power supply into the wall outlet. The DC connection between the power supply and the lamp should not be modified in any way. Attempts to modify this connection with controllers or similar intervention will lead to immediate loss of warranty.

Turning -On

After supplying power, the lamp will start automatically. A status LED in each power supply will light up which displays the operation status. The lamp is ready now for use.

For programming of the inbuilt light control, a PC, tablet computer, or a smartphone with Bluetooth/USB Bluetooth interface is required (not included). The device corresponding to the respective software is available for free under the download section at http://www.giesemann.de The software (app) for mobile devices can be directly downloaded to your smartphone or tablet computer via http://play.google.com. The App is available under the name "GIESEMANN FUTURA BT" for free download.

Please note the following minimum system requirements:

Windows PC	WindowsXP, Windows Vista, Windows7 or later, Java, Bluetooth
Apple Computer	Mac OS X up to version 10.6.8, Bluetooth
Smartphone or TabletPC	ANDROID OS 3.1 or later, Bluetooth

Install the software after the download according to the relevant instructions for your device.

Internal Fan

Dependent upon the internally measured temperature, the fan/s are engaged automatically and will vary speed accordingly. In the event of overheating, inbuilt protection will automatically switch off the lamp. The fans will continue to run until the correct temperature has been attained at which point, the lamp will automatically re-engage. Repeated overheating may damage the lamp and should be notified to your specialist dealer immediately.

⚠ **WARNING:** Before using your light over an aquarium that may already contain sensitive fish/plants/corals or other animals that have become accustomed to an alternate light source. Please remember that your LED light is capable of delivering very high levels of light intensity within the frequency ranges that are of greatest importance to the animals. It is often impossible to judge spectral intensity by visual reference alone when comparing different lighting methods, so it is advised that a setting of no more than 50% intensity be used on any channel for the first few weeks, or until you have had time to see how the animals are adapting to the chosen spectrum and intensities that you have set. Additionally lighting durations may be reduced temporarily to reduce the chances of stress or shock.

Connecting to the Light using the software.

With the light/s turned on, first check that your PC can see the light unit/s by searching for available devices in your Bluetooth menu and allow time for any device drivers to install automatically. You may not be able to connect initially, but the light should still show as available. Now open the FuturaBT software on your computer through the start menu, or by clicking the FuturaBT Icon on the desktop or Tablet/ Smartphone. In opening the program, the "FUTURA BT" interface will appear.

Programming the FUTURA

The functional elements and operation of the different software versions are basically the same, although the interface appearance may deviate slightly from that shown dependent on the device type. For demonstration purposes in this manual we show the PC interface.

At the top left of the menu click <CONNECT> and <Looking for divices> in the following screen. Allow a short time for the software to search. After this time all Bluetooth devices within range will be displayed in a list in the upper left of this pane. Initially the serial number of the devices will be shown and then change showing the device name ie "Futura LED Light 00:07:80:54:CA:E2"

Select (click) the appropriate device. Then click <connect> if the device doesn't connect automatically. A notice will appear confirming connection to the Futura light unit.

After having been connected there is a PIN needed - type the last 8 numbers of the light´s ID (you will find the ID on your registry card, which has been delivered together with the FUTURA).

The Main Menu

Upon successful connection to your light, the software will change to show the following control interface for your light:

In the top of the screen, the name of the associated light is displayed and the connection status with an option to <Disconnect>. The main menu also allows access to the different control areas and features of your light as follows.

The Info Menu

Here the devices general information is displayed and managed.

This menu provides information on the following parameters:

Date/Time	Indication of the current time set in the operating system. When using the software version for computer (PC or Mac), the time can be set manually or will be updated automatically to match the computers current time. To adjust, Click on the current time and adjust accordingly. Click <UPDATE> to upload the new settings.
Available Boards	Shows the number of connected LED boards.
Serial Number	The factory assigned serial number of your lamp.
Firmware	The installed firmware version of their light.
Energy Demand	This value is calculated from the day you first installed your lamp.

The Settings Menu

In this area, the basic settings of the lamp can be adjusted.

This menu contains the following subsections:

Name	Here you can assign an individual name to your lamp (useful in the operation and management of multiple units).
Language	The language is automatically set as a rule. Nevertheless, this option allows you to change this setting to the following available languages: English, German, French and Italian.
Demo Mode	This mode can be selected for demonstration purposes. Within approximately 60 seconds, all of the functions of the luminaire are simulated (this is a factory determined mode which cannot be adjusted) If you select the function <LOOP> the demo mode will repeat constantly.
Firmware Update	This function allows the on-board firmware to be updated via a downloadable file.

The Daycycle Menu

Here, light colours, durations, and intensities are set for each day.
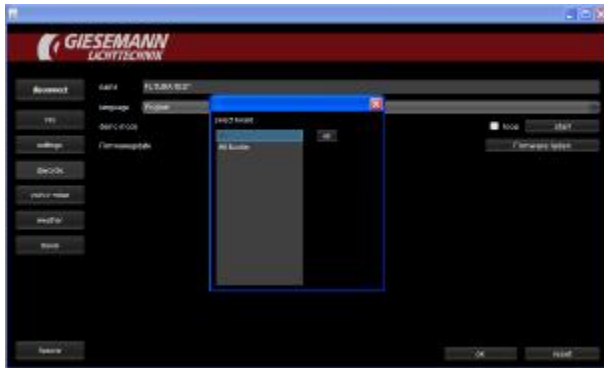
The first dialog box displays the available LED boards. With # 0MASTER being the board closest to the power cable outlet on the light unit. And with #1Slave - #2Slave etc showing all subsequent boards.

First choose which board is to be programmed. Or select <#ALL> if you wish to duplicate all settings across all boards, ie the same timings, the same light intensities, and the same light color mixes.

Alternatively it is possible to program each board individually. Depending on the light version (number of boards available) you have between 10 to 30 individually programmable color channels (5 per board). Thus, for example, a varying brightness and color development can be achieved over time from left to right or vice versa to simulate the sun's natural transition throughout the day in both intensity and position. This programming allows for an almost infinite number of lighting scenarios to be created.

After selecting and confirming the boards to be programmed, a window with the selected profile will be shown giving an overview for the entire day with each of the 5 channels shown as a coloured line or plot.
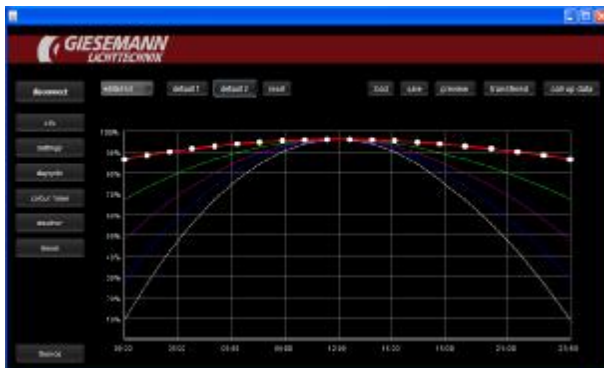
The chart starts on the left of the horizontal axis at 00:00hrs running to 23:59hrs on the right. The five color channels with their respective light intensities and durations are shown as time/intensity curves (0 - 100%) with intensity shown on the left of the graph on the vertical axis.

Selection and Adjustment of the individual light Channels
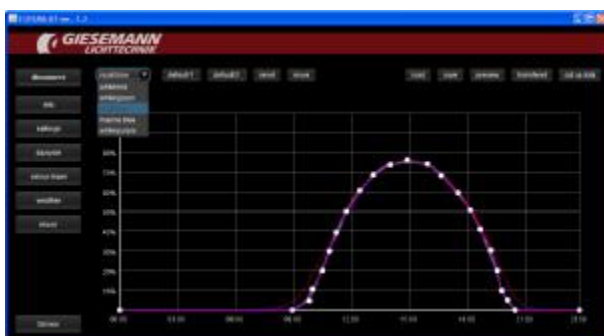
On the left side of the selection bar at the top of the currently active screen you can choose the individual channel to be adjusted. Tap this area to select a colour channel whose settings you want to change. After selecting a colour channel the corresponding curve and current set points will be highlighted. Touching or clicking on a set point will allow you to drag or adjust that point to anywhere on the scale. Whilst highlighted or whilst being moved, the set point details will be displayed in numerical terms as both time and intensity.

Please note: Each set point must follow the previous point and rest prior to the next to create a linear curve. An existing set-point cannot be moved to a time 'before' the previous set point, or after the next in the curve. The first and last set points will always represent the start and end of your daytime light cycle for the colour channel you are currently

adjusting. If either start or end set-point are at a level above 0% intensity, the program will automatically follow that trend across the rest of the 24hr period until reaching the first set point of the following day. Setting both start and end points to 0% will ensure that the respective channel remains inactive at all other times. Moonlight cycles are covered later in this manual.

You can add set points at any point along the curve by tapping any non-allocated area between existing points and the curve will automatically adjust to factor the new point. Alternately a point may be removed by 'double clicking' on it, and the curve will adjust automatically by joining the previous and next set points. In this fashion, very realistic lighting curves may be programmed for each colour channel to simulate not only realistic increases and decreases in intensity across the light period, but also natural changes in the spectral distribution across the light period, such as a gentle warm orange sunrise through midday high intensity light of a more even spectrum, and onto late evening twilight. A maximum of 4320 set-points may be programmed across all boards and all colour channels during a 24hr period.

The Default settings

Clicking the "Default 1" or "Default 2" button will set all colour channels to a predefined curve. From here you can adjust the curves of each channel to suite your individual requirements by moving, adding, or subtracting set points as you go.

Reset

Using this function will reset all colour channels to 50% intensity for the entire course of the 24 hour cycle (00:00 - 23:59)

Move settings

All settings of the actually chosen curve may be moved backward and forward.
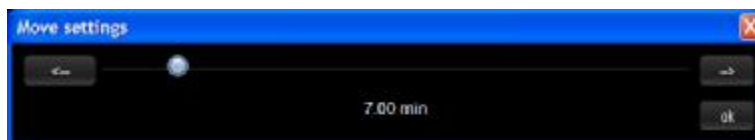
Use the slider to select an interval for the shift of the curve. By clicking on the two direction buttons the curve is shifted by the specified time. Repeat the process if necessary. With OK the new values are stored for the current channel.

Upload Settings and Transmit to Light

Click the <TRANSFER> button to upload the currently stored settings on the FUTURA light to the software interface. Here you can adjust the settings as described above. Afterwards click <transmit> to send the new settings back to the light unit. **NOTE**: this will overwrite the current settings stored on your light unit.

Save

After clicking the option <SAVE> a file browser window will open. This allows the currently displayed settings to be stored locally on the input device as a file. This file may be saved with a new name or will be saved as a default file name.

In this way you can save your settings while editing at an intermediate stage for use later. In addition, The file may be used for additional lights if they require identical settings or can be shared with others as a profile.

Note: A saved profile can be used for just one or all available boards. To create separate differing profiles for each board (such as a full moving sun effect where boards have staggered profiles from left to right or vise versa), it is recommended that an appropriate filename is created for each board profile such as "daycycle board 0master" or "daycycle board 01slave" etc

Preview:

Clicking this button will send the displayed profile temporarily to the light unit where it will run through the full 24hour cycle in condensed time. This allows you to see the results of any changes before uploading the new settings to the light unit. You can then either transfer the new settings to overwrite the previous profile, or save them for further adjustment at a later stage on the input device. (**NOTE:** whilst in Preview mode, any active weather or moon simulations will run as well, possibly showing as rapid flashing of the light simulation. De-activating these settings temporarily will allow for a much smoother preview. It should also be noted that in situations where a late day cycle is chosen, after 9.00am for example, it may take several minutes before any activity in shown in preview mode whilst the software runs through the non-light period 00.00-09.00. The preview mode will continue to run until the end of the simulation. Ie 23:59 at which point the light unit will revert back to the on-board settings.

The Colour Mixer
This feature allows for fine tuning of the visual light composition in real time.

The first dialog box displays the available LED boards. With # 0MASTER being the board closest to the power cable outlet on the light unit. And with #1Slave to #6Slave etc showing all subsequent boards.

First choose which board is to be used. Or select #ALL if you wish to duplicate the same settings across all boards with the same real-time control of light intensity and the same colours.

Here, the intensity of each colour channel can be tested by moving its respective slider from 0-100%, thus different intensities and colour channel mixes can be tested in real time over your aquarium to achieve an infinite number of lighting conditions. Preferred mixes or ratios can then be recorded for reference later when programming the daytime profiles.

The Weather Menu

In this area, weather scenarios can be initiated.
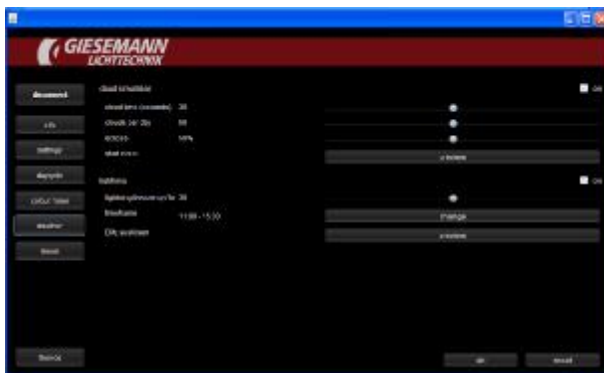
If desired, choose the weather settings here. The following options are available:

|	
Cloud Simulation **Yes/No (On/Off)**	This setting simulates the passing of clouds by consecutive dimming and then brightening of each panel to simulate the passing of clouds.
Cloud Duration	Here the duration of each cloud can be adjusted.
Clouds per Day	Here the number of clouds are determined each day from 1-100. The individual clouds occur at random intervals.
Blackout	Here the desired cloud density can be adjusted which affects the amount of dimming encountered per board as a cloud passes with 0% representing very dense cloud cover 100% representing very light cloud cover.
Test	Here the simulation is triggered.
Storm Simulation/ Lightening **Yes/No (On/Off)**	This provides a lightening simulation. In this particular mode the LED channels are activated in your lamp to produce a stroboscopic flickering lightning storm simulation.
Number of Flashes per hour	Here you can set the frequency of the flashes (flashes are randomly generated).
Time Window	This allows you to specify between what times the simulation will be active.
Test	Here the "lightening simulation is" is triggered.

Click the <OK> button to save all settings, or click the <CANCEL> button, to reject the settings.

The Moon/Lunar Phase Menu

This section allows setting of the moonlight simulation. The first dialog box displays the available LED boards. With # 0MASTER being the board closest to the power cable outlet on the light unit. And with 1Slave to #Slave showing all subsequent boards. First choose which board is to be programmed selecting one or more boards if you wish the moon to be present over a select area of the aquarium. Or select #ALL if you wish to duplicate the simulation across all boards. Confirm your selection by pressing <OK>.
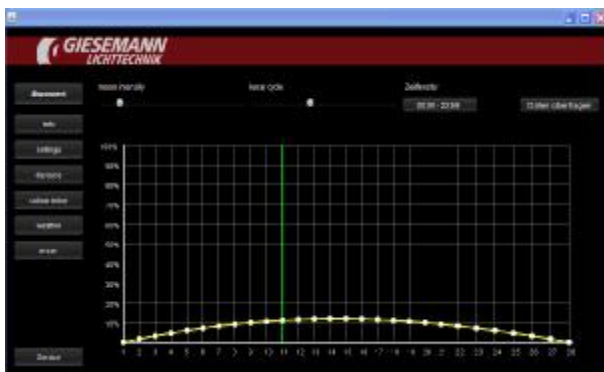
A new window will appear showing a graph with intensity shown on the vertical axis and duration shown on the horizontal axis over a period of 0-28 days: Move the slider entitled "**Moon Intensit**y", to adjust the maximum brightness of the moon. This value determines the maximum intensity of the **full** moon at day 14. All other values of the ascending and descending lunar phase intensity will be calculated automatically across the 28 day cycle. Move the slider entitled "**Lunar Cycle**" to determine the current moon phase position relative to your own real time lunar cycle. Ie if your local Luna phase is at its peak in 2 days time, set the slider to day 12. After confirming the settings, a dialog appears. Here you can set the daily moonrise and moonset times. Finally, save your preference by clicking the <**Save>** or <**Transfer Settings**> button.
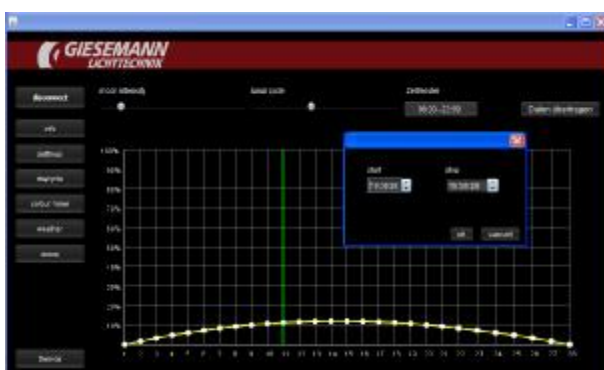
Service / Help with Troubleshooting::

This menu can only be used by the GIESEMANN technical service. Our technicians can read all the operating parameters of your lamp. Thus, the exact life of your lamp, the maximum temperature reached, and any error messages encountered. In addition it can be detected whether any technical changes have been made to the lamp.

We have extensively developed and tested the light, the software and the associated descriptions. Despite the utmost care and technical assistance provided our products have been made by people. Therefore, errors can occur. Constructive criticism and suggestions are always welcome. For assistance with questions or technical problems, please see the support area at http://giesemann.de/support.

Technical Data

Model	FUTURA				
Dimensions	Height 45 mm / Width 290mm				
Length	450 mm	650 mm	950 mm	1250 mm	1550 mm
Weight			9,1 kg	10,2 kg	16,4 kg
Equipment	2 LED-Module	3 LED Module	4 LED-Module	5 LED-Module	6 LED-Module
Equipment per LED-Module	20 LED: 8 x coolwhite B1 (containing 18% red/ 7% orange/11% yellow/ 37% green) White 1 x green (490-560 nm) 1 x red (630- 790 nm) 4 x royal blue (410- 430 nm) 1 x royal violet 390- 400 nm) 1 x blue (465 nm) 4 x blue (430- 480 nm) Provides a biologically meaningful mix of all primary colours with preferred accentuation of individual color channels. Cross channel mixing of LEDs limits the possibility of adverse manipulation of the colour channels to a biologically damaging level.				
Total output	130 Watt ca. 10200 Lumen	195 Watt ca. 15300 Lumen	260 Watt ca. 20400 Lumen	325 Watt ca. 25500 Lumen	390 Watt ca. 30600 Lumen
Optics	Loss free 120° No-beam forming.				
Finish	Matt silver anodised. Optional: "PURE" (Gloss White).				
Mounting	Optional: Variable Steel Suspension Cable. Optional: Mounting bracket for attachment to aquarium rim.				
Illumination	Saltwater up to 81 cm (dependent on stock type).				
Control	Independent control of 5 colour channels per module with integrated electronics. Programming on Windows or MAC PC with integrated Bluetooth. Alternative control via App software on tablet or smartphone with android operating system 3.0 or later.				
Cooling	Passive Cooling Active Cooling: Software controlled variable speed fan assisted.				
Security	Temporary shutdown on overheating, whilst passively cooling before automatic restart.				
Power supply	110-240V, 50-60Hz. 1 supply line		110-240V, 50-60Hz. 2 Supply line		

Available accessories

20.300.013-5	**Wire Suspension MATRIX II/FUTURA** Wire suspension with height / angle adjustment
20.171.031-0	**TESZLA/FUTURA/MATRIXX II – Aquarium mount** For FUTURA / II MATRIXX two pieces are required
20.604.0903	**ROWA politus (60ml spray bottle)** Nano Coating waterproofing agent for glass surfaces
	FUTURA_BT: FUTURA software to control via Bluetooth. Available for download in the service area at http://www.giesemann.de