

Mitras LX7

Instruction Manual

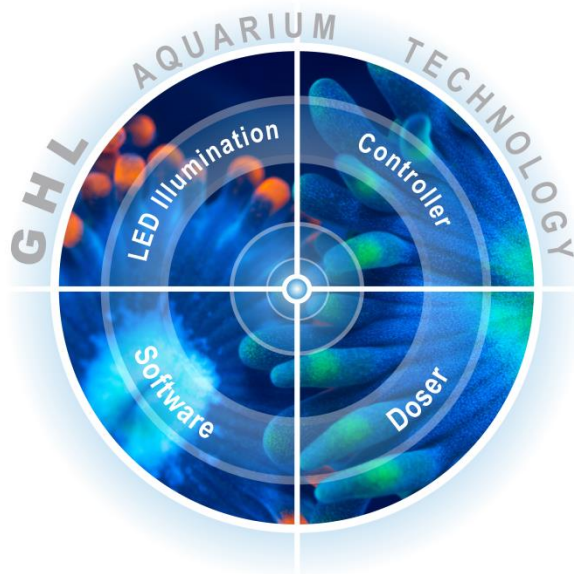


Valid from Firmware Version 1.00

As of 2016-12-27

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- ✓ Maximum Quality
- ✓ Maximum Performance
- ✓ Maximum Safety

FOCUSSED ON SUCCESSFUL FISHKEEPING

Unleash the True Potential of your Plants and Corals!

Congratulations on your new Mitras® LX7 purchase!

You now own the most powerful LED light on the market from GHL. From design to function, the Mitras® LX7 provides outstanding quality and light performance. These characteristics make a difference in your aquarium by boosting coral and plant coloration and also helping to achieve accelerated growth.

Intuitive user-friendly operation with built-in WiFi and Cloud accessibility as well as multi-channel Illumination Control makes this luminaire, one of a kind.

Enjoy Your Passion!

GHL Takes Care of the Rest.

Get the Most out of your GHL Product

GHL products are well-equipped with simple and intuitive features. In order to get the most out of our products, we recommend you read our Programming Guide and Instruction Manual together. Doing so will provide you with the most profound details for using our product. These and other helpful documents can be downloaded from our website's download area (*Support->Downloads*). Visit our homepage at www.aquariumcomputer.com, our Support Forum or meet us on Facebook to become a GHL-Product expert and fully utilize the full range of functions offered from your device!

1 Safety Instructions

Please read these instructions carefully before operating the *Mitras LX7*.

GHL products are built with maximum security and safety in mind. However, product safety for this device can only be guaranteed if you follow these guidelines.

Anyone who uses this device must become familiar with the following safety instructions and the operation of the device.

Failure to follow these instructions will void any warranty claims.

In this manual, the following symbols are used:



TIP

General note, tip or advice.



WARNING

Important note for operation, to avoid damage to the equipment, and for your safety.



DANGER

Warning that non-compliance can result in injury or damage to the device.

1.1 Safety of Children and Vulnerable Persons



WARNING

This equipment must not be used:

- By small children and vulnerable persons with limited physical, sensory or mental capabilities.
- By people who are unfamiliar with the functions of this product.

1.2 Intended Use

The *Mitras LX7* is intended exclusively for use in the domestic area. *Mitras LX7* may only be operated with GHL accessories.

Make sure to place the device away from splashing water, moisture or other liquids.

The luminaire is to be used exclusively for illuminating open aquariums in dry indoor areas.

For your own safety, please look at the hazard prevention and safety instructions in the chapters that follow.

2 General

2.1 About this Manual

These instructions apply to the pendant luminaire *Mitras LX7*.

2.2 Features

- Illuminated blue graphical display
- Control panel with capacitive buttons
- USB connection
- 2.4-GHz radio module
- Luminaire power cable for connection to the power supply unit for power supply
- Reset button

2.3 Scope of Delivery

Please check the contents of this box. The following items should be included:

- Pendant luminaire *Mitras LX7*
- USB-Cable
- Power Supply

- Power Cord
- Supplementary sheet

Please check to make sure all items are in perfect condition. In case of damage, immediately contact the dealer from whom you purchased the *Mitras LX7*.



WARNING

Damaged *Mitras LX7 Luminaires* or components may not be put into operation under any circumstances.

2.4 Important Operating Instructions

Mitras® LX7 has been designed exclusively for use over open aquariums in indoor areas.

To ensure safe operation, the following guidelines must be followed.

Disregarding these safety guidelines, will result in voiding your warranty. In which case, the manufacturer rejects any responsibility or liability for damage!



WARNING

Moisture indicators are placed inside the unit and will change color when exposed to excessive moisture.

Removing these indicators will void all warranty claims.



DANGER

- The *Mitras LX7* must not be operated under covers. Excessive humidity and high temperatures will damage the luminaire (See technical data)
- No operation may be performed inside panels or within other covers or structures which do not provide sufficient air circulation. Constant air circulation for heat dissipation during operation of the luminaire as well as of the power supply unit must be ensured. The ventilation slots of the luminaire must never be blocked or obscured.
- Make sure that the power cord is plugged into a grounded outlet; otherwise you could get an electric shock or cause a fire.
- Protect the power cable from damage (For example, twisting, kinking, clamping). Please also pay attention to the joints and connections to the device.

- Disconnect the power plug by pulling the plug, not the cable.
- Never attempt to disassemble, repair or alter the equipment by yourself.
- Do not insert sharp objects into the electrical contacts and ports.



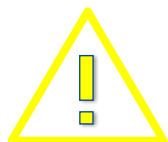
DANGER

- If the unit falls into the aquarium or has been exposed to moisture or humidity, first turn off the power to the device via the fuse or circuit breaker, then pull the power cord.
- Never touch the power plug with wet hands.
- If the contact of the plug is wet or soiled, please dry it completely or clean it with a cloth. The mains plug must not be immersed in the water.



DANGER

- The device may not be operated if it has been damaged in any way (e.g. damaged power cord or plug, liquids or objects have gotten into the interior, device has been exposed to excessive moisture, the normal operation is disturbed, or the device has been dropped).
- If the plug or socket gets wet, first turn off the power to the device via the fuse or the circuit breaker. Then pull the power cord.
- If the lamp has fallen into your aquarium, first pull the mains plug before you pull it out of the water. Under no circumstances should the lamp be used again!
- Never operate the lamps then leave it unsupervised when children, pets or persons are nearby.
- When cleaning the aquarium, pull the mains plug of the luminaire.



WARNING

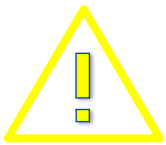
- Maintenance and cleaning for the luminaire should only be performed when the unit is powered down. The luminaire must be suspended from the ceiling fixture or disconnected from other mounting kits. Make sure to unplug the power cord first.
- Be careful when touching the lamp during operation. Some parts of the lamp can get very warm.
- The LEDs of the luminaire are extremely bright. Do not look directly into the light source.
- The luminaire must be regularly cleaned. To do this, it must be switched of.

- No water must enter the luminaire through the ventilation slots.
- The luminaire must not be exposed to fine dust which can occur during renovation work or drilling holes. Always protect the luminaire from these particles.
- Salt deposits must be removed immediately.
- Please note that improper or neglected care may result in damage not covered by the warranty.

3 Connections of the Mitras LX7

3.1 General

Applies to all connections:



WARNING

- Connect only original accessories from GHL.
- Do not use force when plugging connectors. If a plug contact does not fit, it is imperative to check that you have chosen the correct socket..

3.2 Connection Overview

The *Mitras LX7* has the following connections:



3.2.1 USB Connection

The USB port is located on the back of the luminaire.

The *Mitras LX7* can be connected to a PC by using the included USB cable. With this connection, you can comfortably program your fixture by using *GHL Control Center*. *GCC* software can be downloaded free of charge from our website's download area.

3.2.2 Power Supply Connection

Luminaire power cable for connection of the *Mitras LX7* to the power supply unit.

4 Functions of the Mitras LX7

4.1 Functions

- Simple and intuitive menu-driven operation
- Extensive lighting control:
 - 9 dimmable channels
 - Simulation of Moon phases, Thunderstorms, Clouds and Cloud cover
 - Seasonal lighting

- Acclimation program
- Child protection via PIN code
- Settings are stored during power loss in nonvolatile memory (EEPROM)
- Operable via PC software, GCC (Free of charge)

5 Activation

5.1 Installing the Mitras LX7

This device must be protected from water at all times!

The *Mitras LX7* can be positioned above the aquarium by using the *Mitras Flex Mount System* or *Mitras Hanging Kit*. Please make sure to allow sufficient space between the fixture and top of the aquarium. When selecting the mounting material, make sure you have adequate sizing and stability, and make sure that the unit cannot fall into the water during assembly.

***Mitras LX7* can be destroyed by excess moisture or atmospheric humidity - please observe the technical data and notes below!**

To ensure safe operation, the following guidelines must be followed! In the case of non-compliance, warranty claims expire, the manufacturer also rejects any responsibility or liability for damage!

Powered equipment and water can become a dangerous combo if precautions are not taken. It is therefore essential to supply power to all mains-operated devices which are operated in the aquarium or in the vicinity of the device via a residual current circuit breaker!

In order to avoid any danger, all mains-operated devices must be disconnected from the mains; all plugs must be disconnected!



DANGER

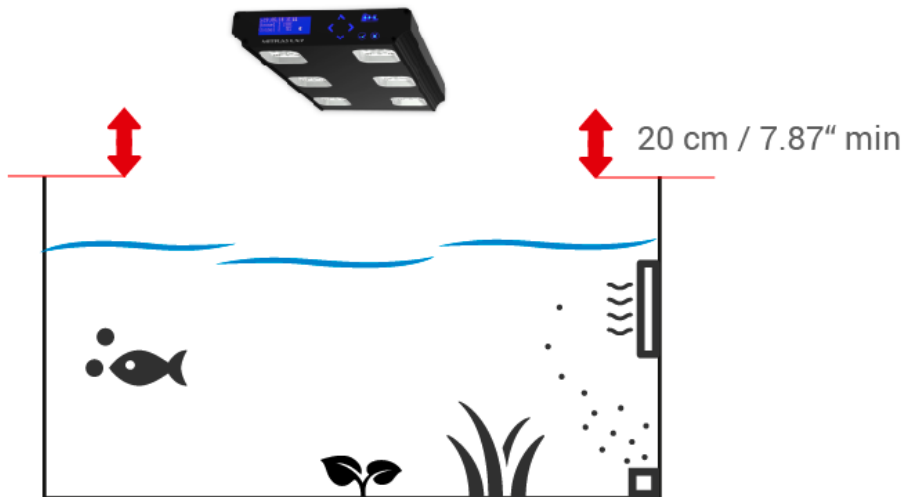
The luminaire is to be used exclusively for illuminating open aquariums in dry indoor areas.

- The luminaire must not be operated under a closed aquarium cover or canopy. Excessive humidity and high temperatures will damage the luminaire (See technical data)
- The luminaire must be mounted at least 20 cm (7.87") away from the top of the aquarium.
- The lamp must not be operated lying on the edges of the aquarium.
- To avoid heat build-up, the luminaire must not be operated in a horizontal position. A minimum distance of 10 cm (eg to a splash screen) must be maintained under the protective screen of the

luminaire.

- Under no circumstances should the luminaire be operated without the protective shield or with a damaged shield.
- The luminaire must be protected against splashing water, excess and condensing humidity. Please observe the following technical data.

Minimum distance to the upper edge of the aquarium:





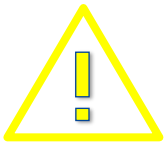
DANGER

Aquarium specimens are very sensitive to sudden changes in lighting conditions. If an adjustment (duration, intensity, color and alignment of the lighting) is needed, please perform these changes gradually and observe the reaction of the ecosystem in the aquarium.



TIP

The *Mitras LX7* is equipped with an acclimation program that allows you to easily adjust the performance and output of the light.



WARNING

- To ensure proper operation, the connection cables should never be kinked, crimped, or positioned in an unsuitable way.



DANGER

Products that are already powered should never be pulled by the cable. This may cause malfunction or damage the connected power supply and the *Mitras LX7*.

They should only be pulled by the plug connected to the power socket.

Mitras LX7 and its accessories are destroyed by moisture or excessive humidity.

5.2 Connection to the Power Supply / Switching on the *Mitras LX7*

Connect the luminaire power cable to the power supply. Connect the power supply unit to the power cord and connect the power connection cable with the plug to the power outlet.



DANGER

- Ensure that the mains voltage matches the voltage specified on the identification plate located on the bottom of the device.
- Connect the device only to a properly installed and grounded outlet with a minimum rating of 10A.
- Never use a different voltage supply. Incorrect polarity or voltage can destroy the device.

- Use only the supplied AC adapter



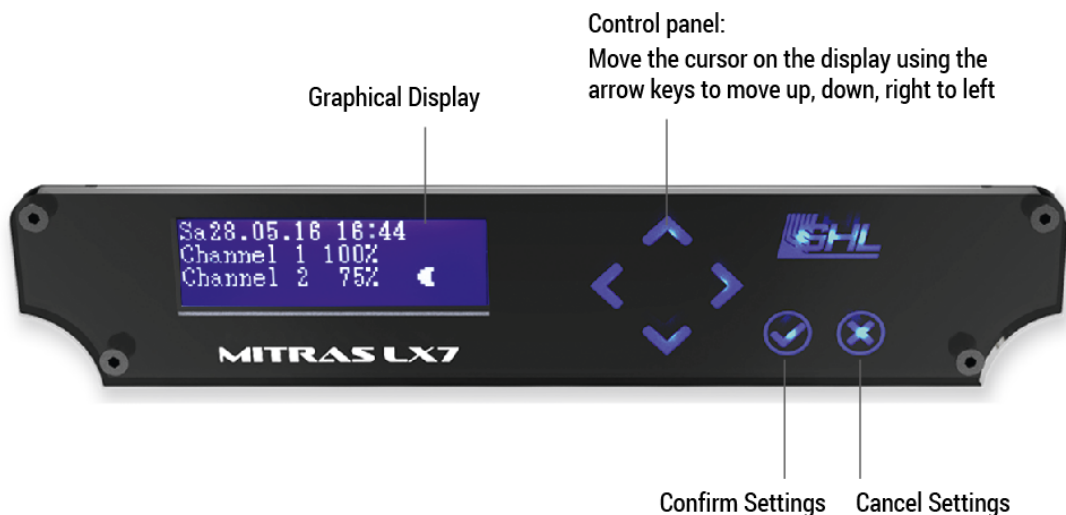
DANGER

- Never leave your aquarium unsupervised for an extended amount of time.
- Always remember that technologies can fail and therefore, malfunctions can never be ruled out! Power failures, incorrect settings, damage (For example, by water or overvoltage) or simply an unexpected operating situation can lead to fatal damage.
- The manufacturer disclaims any liability for (consequential) damages or losses which might arise in connection with the use of the *ProfiLux System* extent legally permissible.

6 Operation

6.1 Operation on the Device

Use the navigation buttons (arrow keys) on the device to make settings or desired changes to your settings.



The *Mitras LX7* can be operated as a stand-alone light or together with several lamps in the master and slave mode.



TIP

Master and Slave modes are ideal for running simulations across all luminaires. These simulations can be performed across one or more luminaire:

- Gliding cloud simulation
- Sunrise and sunset with east-west simulation
- Thunderstorm

It is particularly convenient to use these settings via the *GHL Control Center* (See below 6.2)

Set the time and date first.



TIP

If several *Mitras® LX7* are operated, it is sufficient to make the settings for the lighting and the clock with only one luminaire.

Set this luminaire as a master (Menu: System-> Wireless), the others as slaves, and give the luminaires different addresses (Nos.1-31).

The settings of the master light are then transmitted via radio to the other luminaires.

Press any arrow key to enter. You can move up and down from the right to the left with the arrow keys in the menu. The right and left arrow keys are programmed as shortcut keys. You can press the buttons to go directly to thunderstorm or maintenance.



The operation of the device is very simple. Use the up and down arrow keys to navigate through the menus and make a selection.

To confirm the selection of a menu item, press the confirmation key (Check mark button: Confirm input = **Return**). This will take you to the sub-menus.

Make the desired changes and save them with the confirmation key. Press the Cancel key (Cross mark button: Cancel input = **Escape**) to abort entries.

After each setting process, you are asked if you want to save the changed settings. Only after confirmation with Yes, the new settings are accepted and saved. These settings are also stored in the nonvolatile memory (EEPROM, independent of the mains voltage) and are restored after voltage interruption.

The following types of dialogs are used when operating the device:

Dialog type	Display*	Operation
Select Yes / No		Use the left-arrow key to select <i>Yes</i> , use the right-arrow key to select <i>No</i> . The current selection is marked with a frame. Confirm with <i>RETURN</i> .
Enter a number (0-9)		Use the up-arrow to increase the number, decrease with down-arrow. Confirm with <i>RETURN</i> .

* The illustrations are exemplary.

6.1.1 Menu Structure

The operating menu is structured as follows:

Menu Structure*

Clock:	Time & Date Location
Illumination:	Illumination run Manual illumination Clouds Moon Rainy days Storms Light-demo Acclimation
Extras:	Info and Support Language Display Maintenance
System:	Factory settings PIN Energy options Wireless

* The menu structure can slightly differ from the one shown above. Menu layout will depend on the firmware of the respective luminaire model.

6.1.2 Display Indications

The display shows the day, date and time in the upper line. On the right side of the display, different symbols are displayed depending on the operating state:

Display	Meaning
---------	---------



Current lunar phase



Maintenance mode active



Manual operation for lighting active

The lower lines display current values, e.g. Illumination intensity of the lighting channels successively alternating, fan activity, heat sink temperature of the luminaire and the current lunar phase.

If you are in a submenu without setting anything the device automatically returns to the main menu after a certain period of time.

Display*	Meaning
----------	---------

```
Th10.11.16 18:16
Sky white 25%
Ultraviolet 0% ☾
```

Display of the current *brightness of lighting channels* in percent and the *lunar phase*

```
Th10.11.16 18:16
Hyperviolet 6%
Fan: 37% 37C ☾
```

Display of the *brightness of a lighting channel* in percent, *fan activity, heat sink temperature* and *lunar phase*

* The illustrations are exemplary.

6.2 Operating the Device via the Software GCC

All settings of the device can also be programmed via the software *GHL Control Center (GCC)*, which is available for download free of charge in the download area (support-> downloads) of our homepage www.aquariumcomputer.com.

6.2.1 Requirements

You will need to download the appropriate *GHL Control Center* version for the firmware of the respective *Mitras LX7*.

Operating System compatibility: Microsoft Windows Vista® and Windows 7®, Windows 8®, Windows 10®.

The connection to the *Mitras LX7* can be established via USB:

After successful installation, connect *Mitras LX7* to your PC using the USB cable. The driver is installed automatically.

6.2.2 GCC General Information

With the *Load* button, the settings of the *Mitras LX7* are read out and the program displays are updated. Clicking the *Save* button will store the settings you have made in the program and transfer it to the device.

6.2.3 What can be set via GCC

With *GCC*, you have access to almost all settings. Some features can only be carried out directly on the device.

6.3 How to Connect between the Mitras LX7 and PC

Two steps must be taken before your *Mitras LX7* can be operated with a PC:

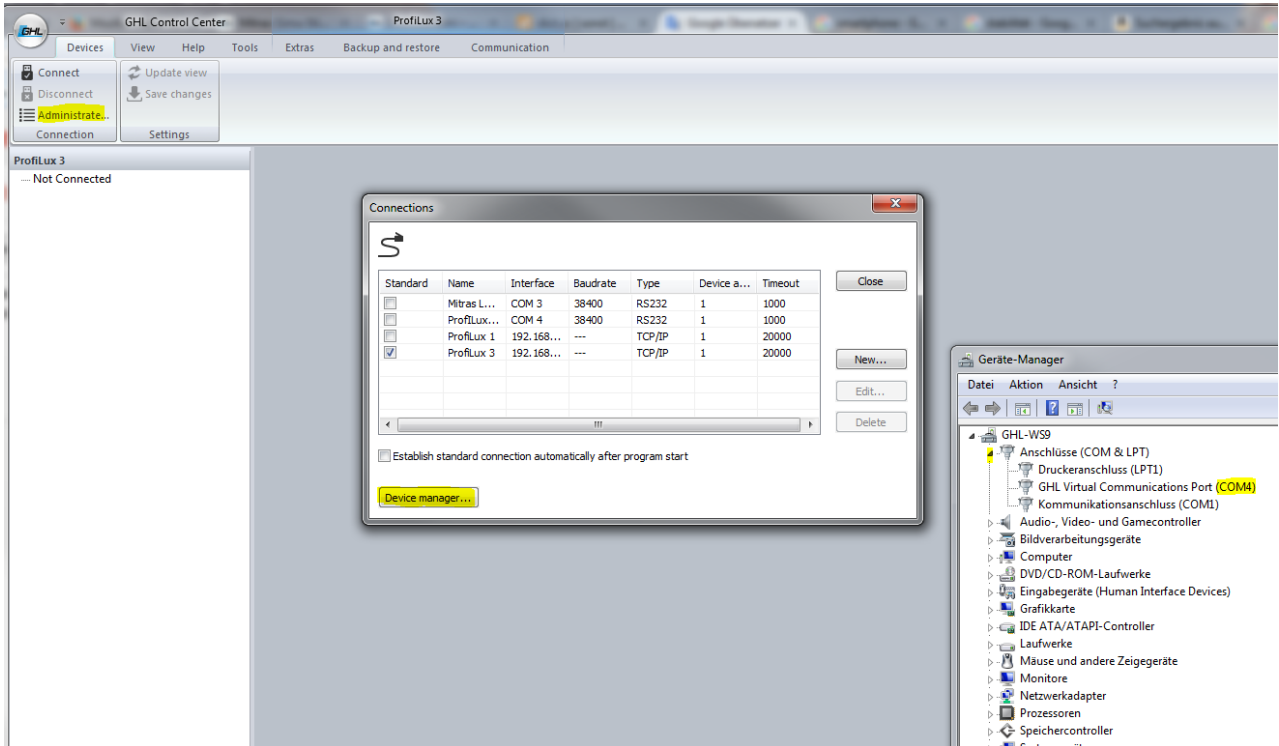
- PC and ProfiLux must be connected with a cable via USB
- The PC program *GCC* must be set up

Then proceed as follows:

Open the *GCC* application and connect the USB cable to your device and PC.

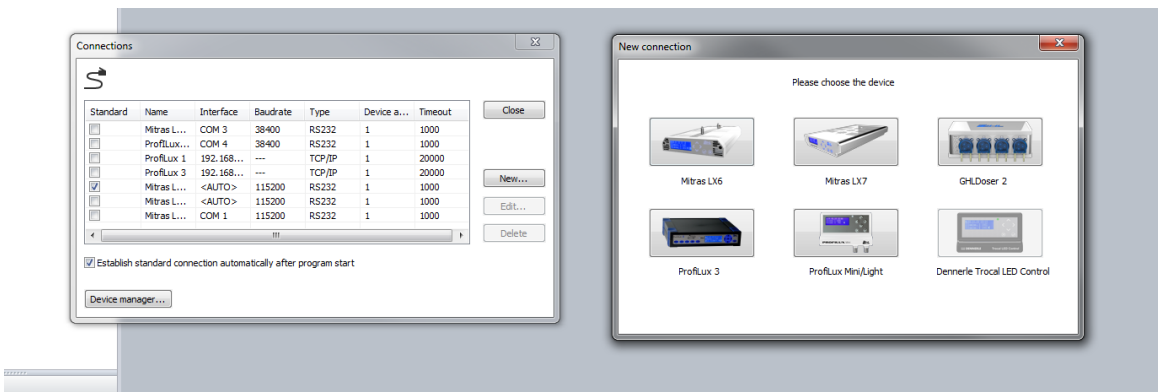
Navigate to "Administration" -> "Connections" -> "Device Manager". In Device Manager, you will see "GHL Virtual Communications Port" for your device. (Illustration shown below)

In the illustrated example, this is "COM4". (For illustration purposes only!)

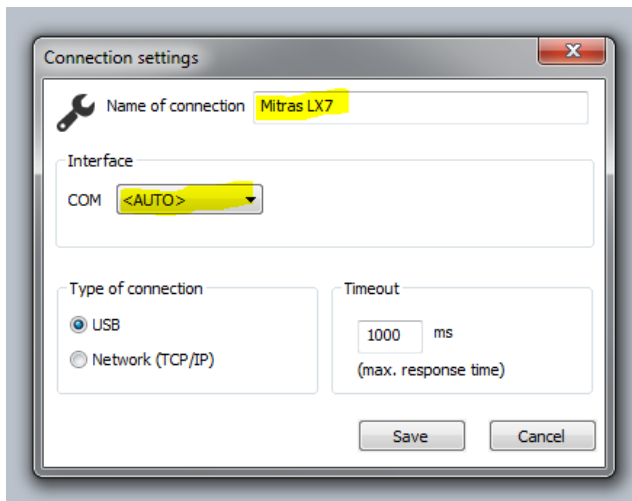


Close the "Device Manager window" and click "New".

Select your device.



The "Connection settings" window pops up automatically.

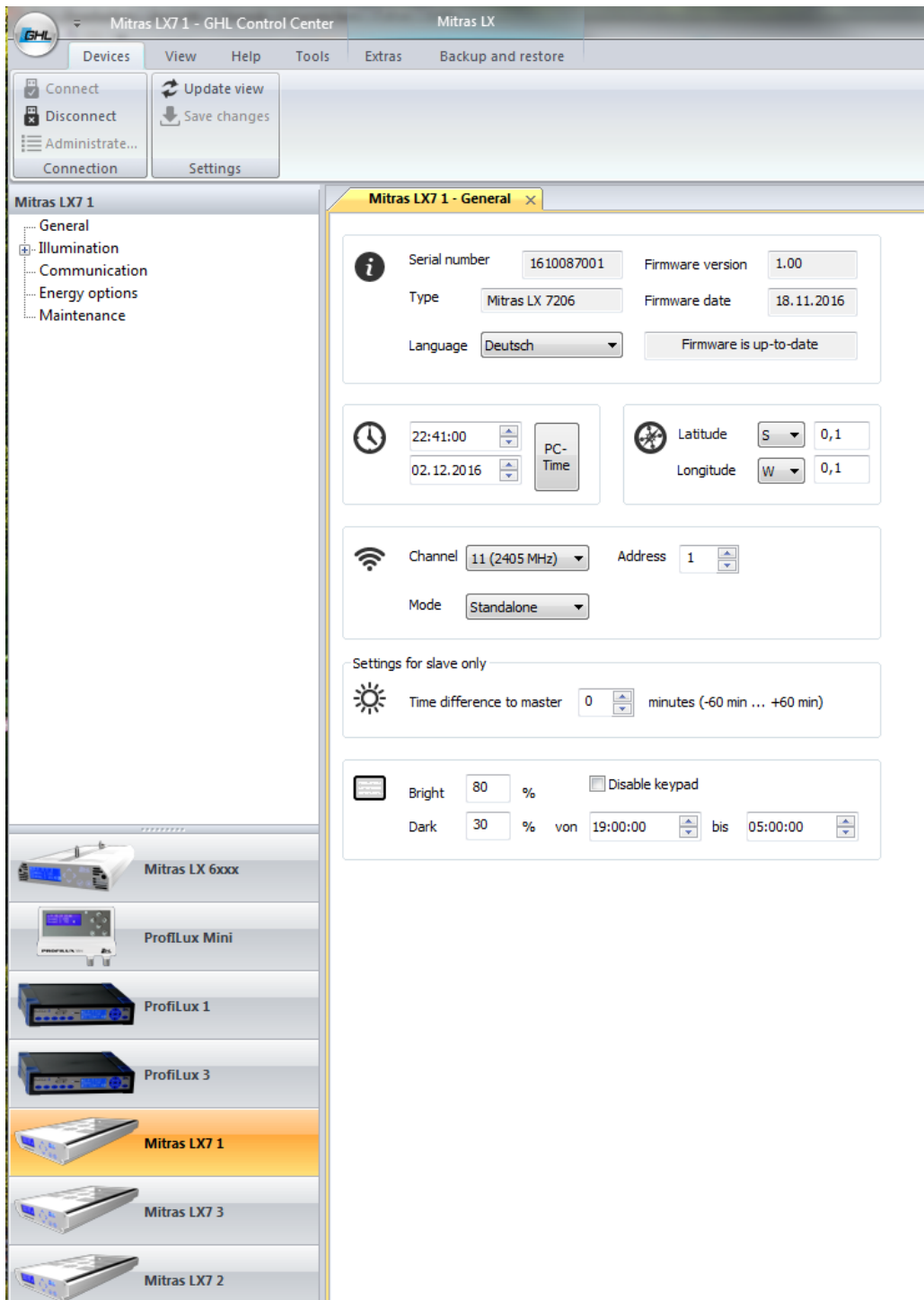


Enter any connection name (for example "Mitras LX7") and set the previously determined port (COM4) via the selection window (<Auto>). Press "Save".

Mitras LX7 is now visible in the sidebar. By double-clicking the device or by pressing the "Connect" button in the upper ribbon bar, the connection between the device and your PC is established.

Once connected, you can view the menu of the *Mitras LX7*, in which you can make all desired settings.

For further settings and programming please refer to the "*Programming manual for Mitras LX7*" which you can download in the download area (*Support-> Downloads*) of our homepage www.aquariumcomputer.com.



Once a connection has been successfully established, *GH Control Center* examines the connected luminaire and displays the start screen. (Shown above)

The available setting options are displayed in a tree structure in the sidebar.

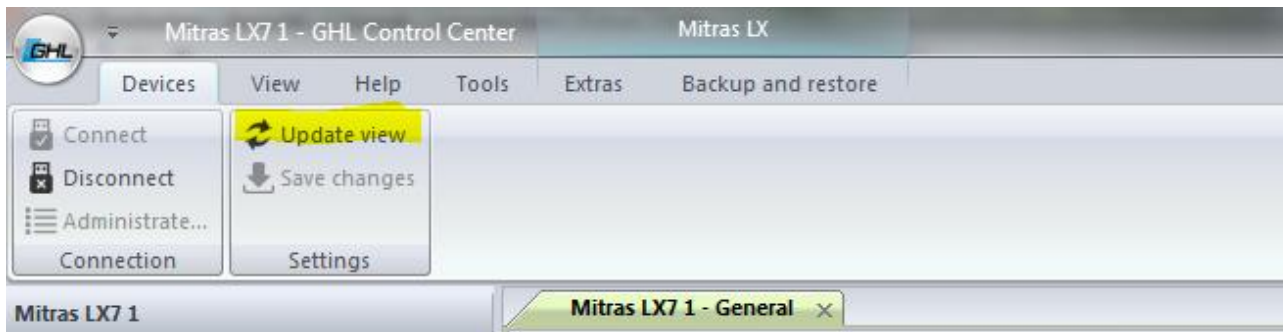
The connection can be disconnected by pressing the "*Disconnect*" button in the upper ribbon bar.



DANGER

- If you have made any changes to the settings for your device via the GCC, you have to save them using the "Save changes" button, **before you disconnect your device**. Otherwise your changes will not be transferred to the device.

If your luminaire is connected to GCC and you make settings adjustments directly on your *Mitras LX7* at the same time, you have to transfer these to the GCC by pressing the "Update view" button.



6.4 Adjusting the Lighting

GCC offers you various possibilities to adjust the lighting.

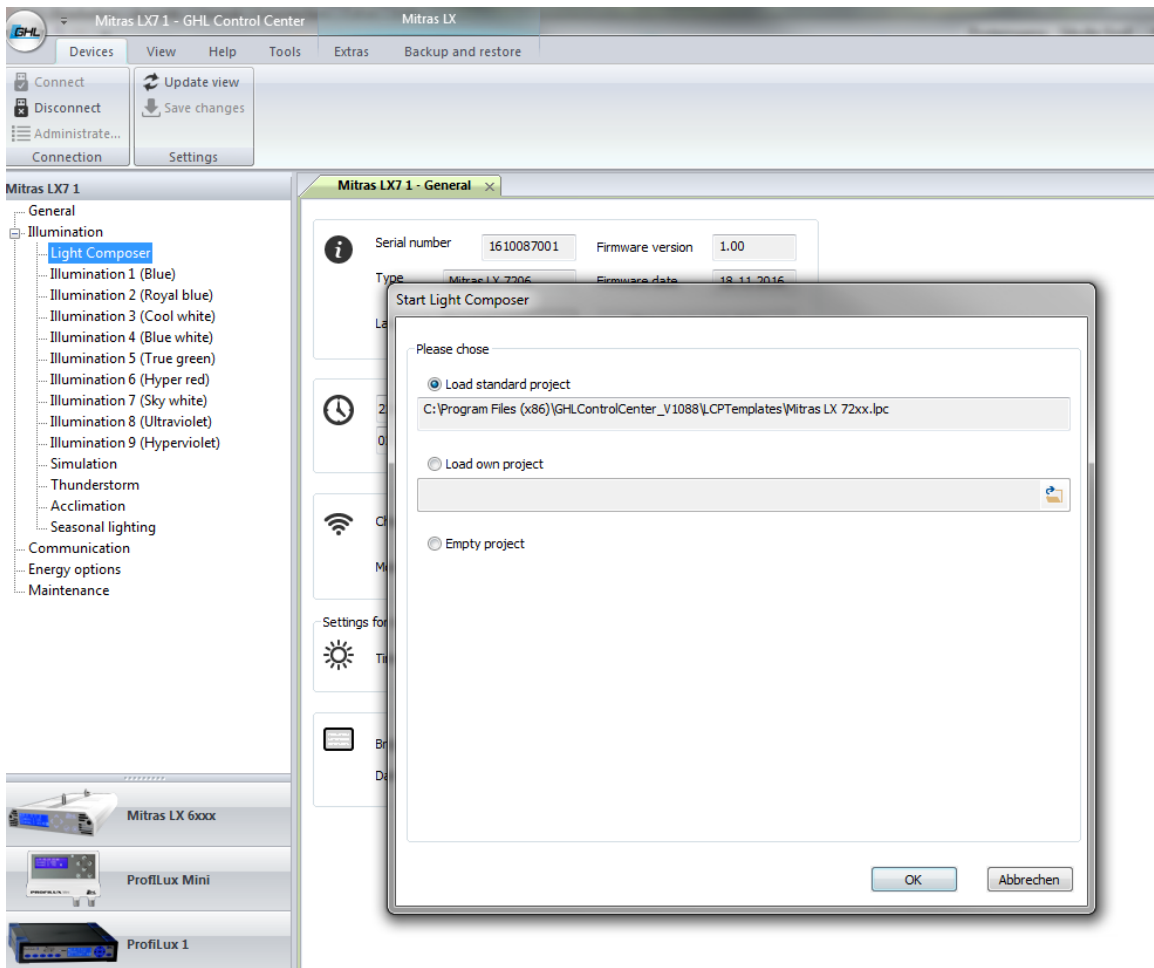
Please also refer to the programming manual for the *Mitras LX7* and the detailed explanations for the *Light Composer* which you can download from our homepage www.aquariumcomputer.com in the download area (*Support-> Downloads*)

The GCC Light Composer feature provides the most comfortable solution for creating illumination schedules.

6.4.1 Customizing a Lighting Schedule via Light Composer

Light Composer provides the quickest solution to creating your own lighting schedule. Follow these steps to get started.

To begin, load a Light Composer project. You have the option to either use an existing template or use your own existing project.



The *Light Composer* feature offers you two menus for processing: light sources and illumination. The LEDs of the respective *Mitras LX7* and their channel assignment are displayed. These are permanently assigned in the *Mitras LX7* and therefore do not have to be edited.

The screenshot displays the 'Mitras LX7 1 - Light Composer' window. It features a 'Light sources' table and an 'Illumination run' table. The 'Illumination run' table is as follows:

Time	Color	Brightn...	SEMILED5-ULT...	SEMILED5-HYP...	CREE-XLAMP-R...	OSRAM-OSLON...	CREE-XLAMP-B...	OSRAM-OSLON...	CREE-XLAMP-W...	OSRAM-OSLON...	OSRAM-OSLON...
05:30:00	21620 K	2,00%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
06:00:00	7920 K	100,00%	0,0%	14,6%	26,7%	32,4%	34,6%	55,3%	57,5%	55,4%	100,0%
06:30:00	11960 K	100,00%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
17:30:00	11960 K	100,00%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
18:00:00	7920 K	100,00%	0,0%	14,6%	26,7%	32,4%	34,6%	55,3%	57,5%	55,4%	100,0%
18:30:00	21620 K	2,00%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

Below the table is a graph showing the light spectrum over a 24-hour period. The x-axis represents time from 00:00 to 00:00, and the y-axis represents intensity from 0% to 100%. A blue shaded area indicates the active light schedule, which is at 100% intensity from 06:00 to 18:00, with a peak at 17:30:00.

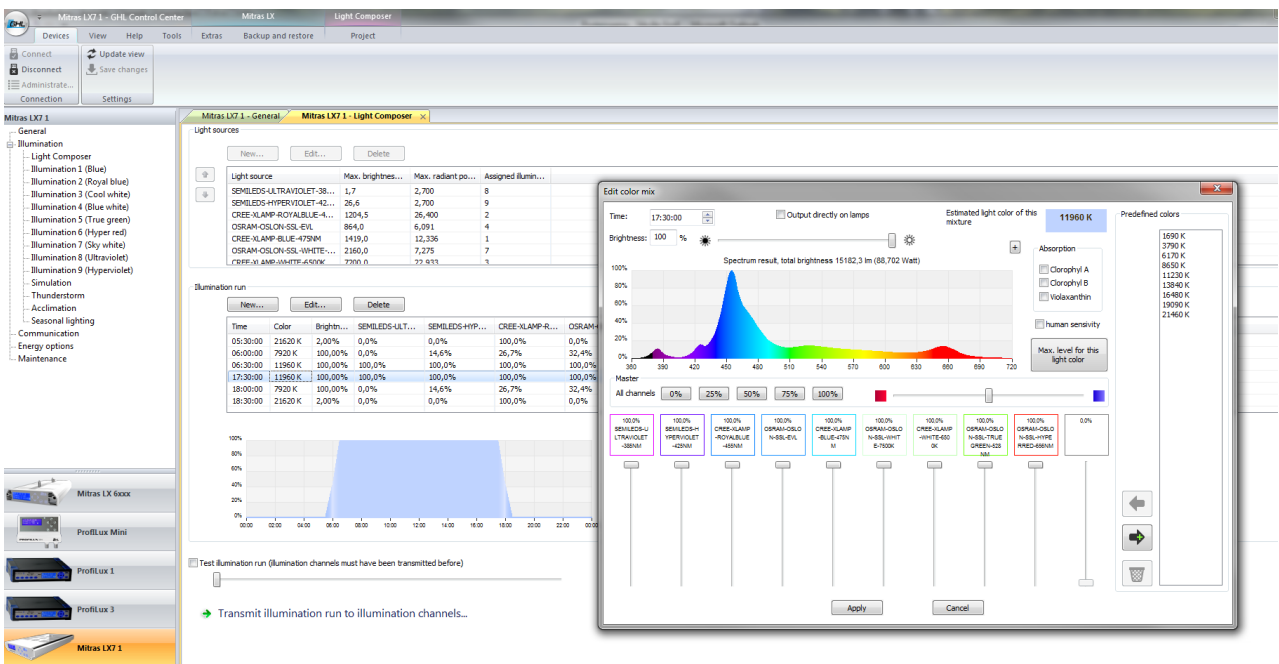
In the *Illumination Run* menu shown above, you can create your own light schedule. All lighting projects work in relation to 24 h. For example, 13:00, 16:00, etc.

Double-clicking on a time-slot allows you to change the color mixing, color temperature or brightness for that given time. Here, you can create your desired spectrum and dimming times.

The following example shows the adjusted light spectrum exactly at 17:30 (5:30 pm).

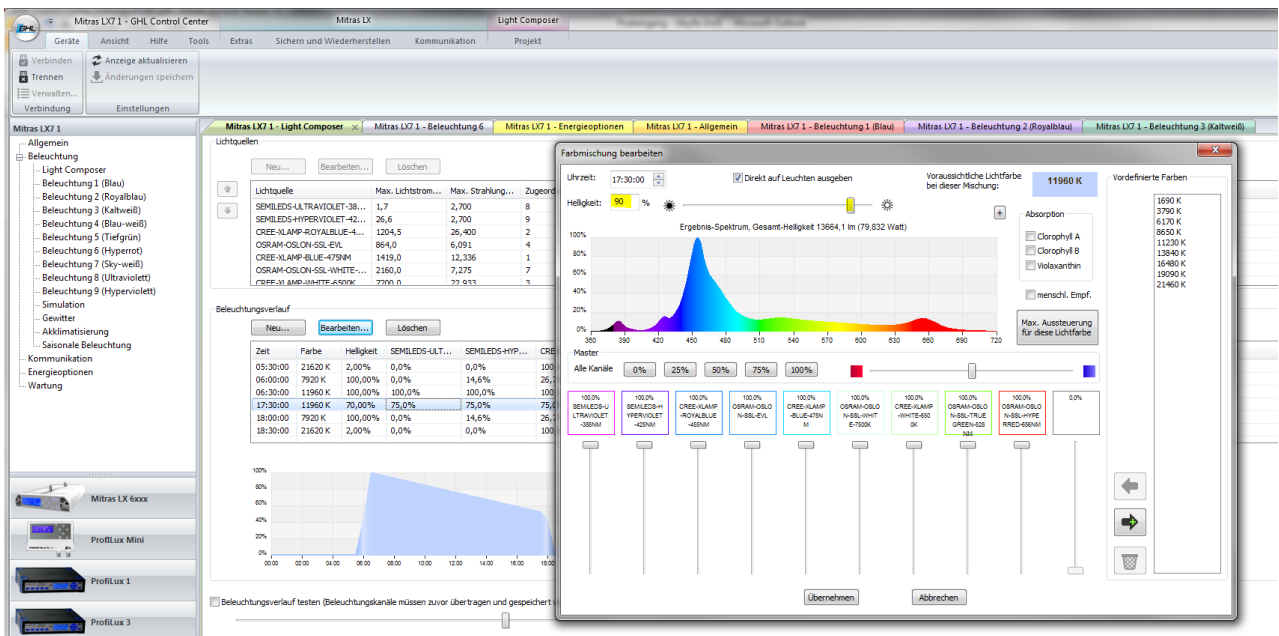
Displayed are:

- Brightness (lm) at the selected time (here 17:30)
- The estimated light color in Kelvin, which result from the settings/changes that were made
- The intensity of the different light channels in %
- Pre-defined light colors which can be created, saved and reloaded



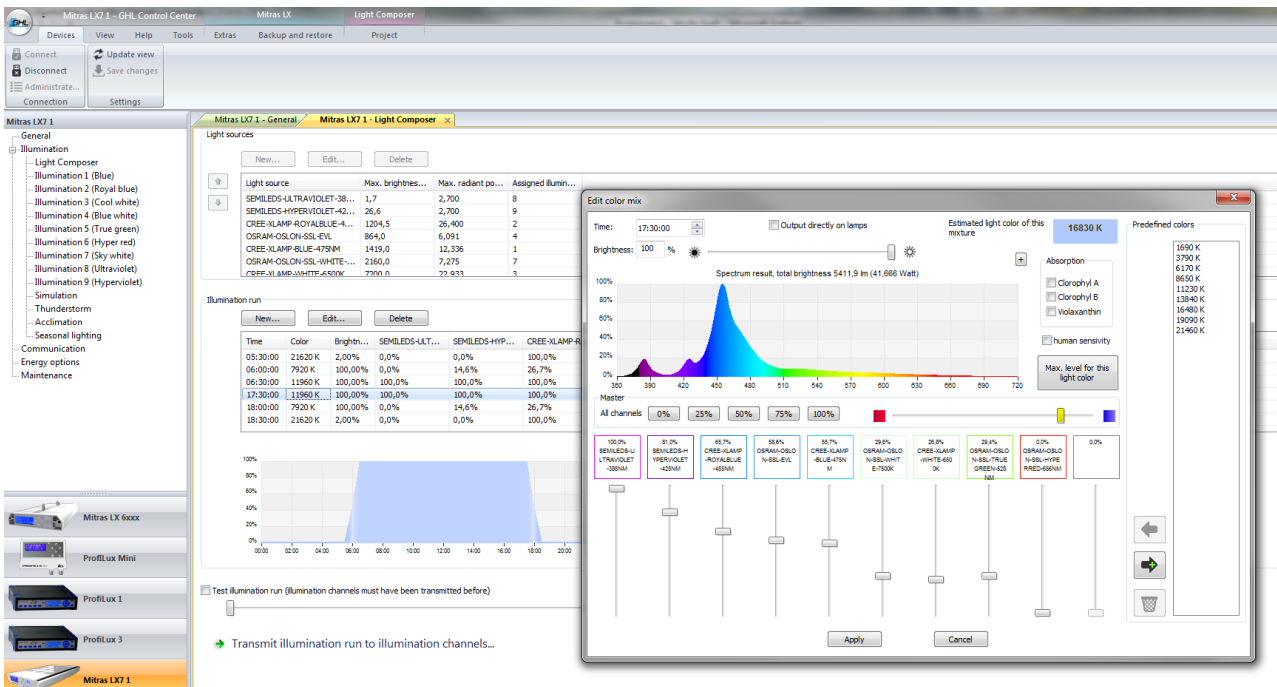
If you have ticked the checkbox "Output directly on lamps", you will see how the changed settings directly affect your connected luminaire(s). The display of the luminaire will now show "M" for manual lighting.

If you want to change the brightness of the luminaire at this time, enter either the desired percentage or move the upper slider.

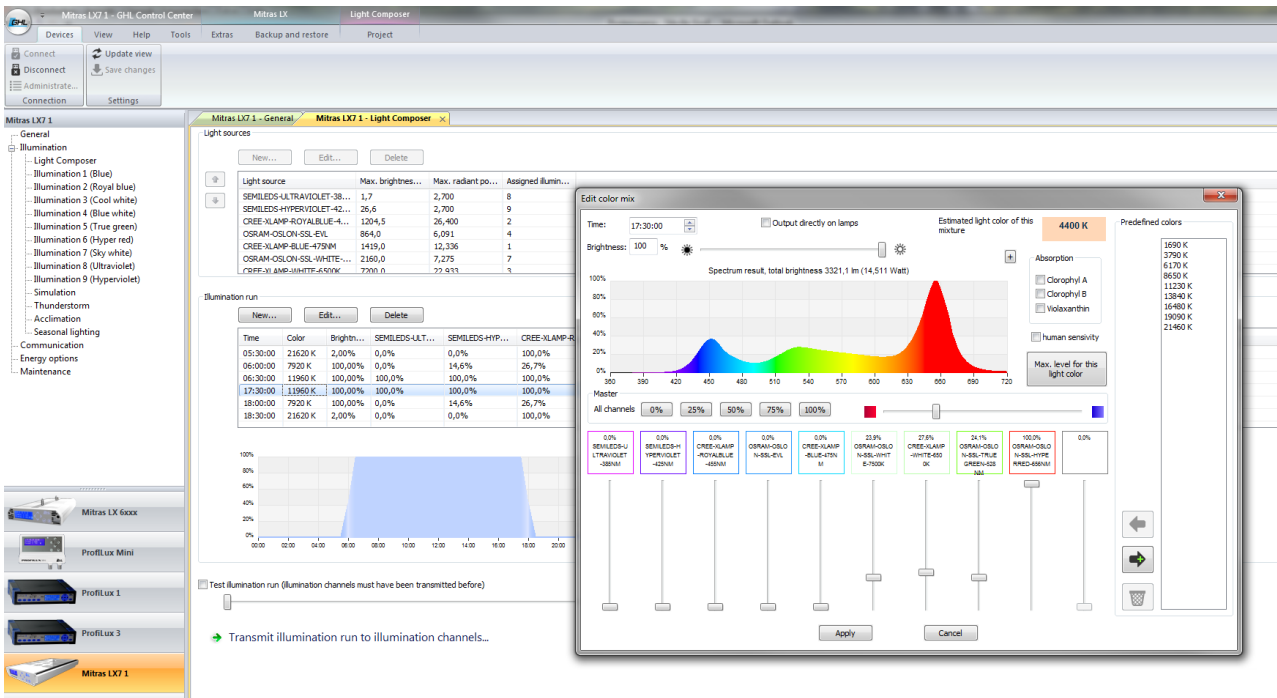


If you want to change the output color of the color channels, you can move them in the direction of blue or red using a slider. All color channels are automatically changed accordingly.

More blue:

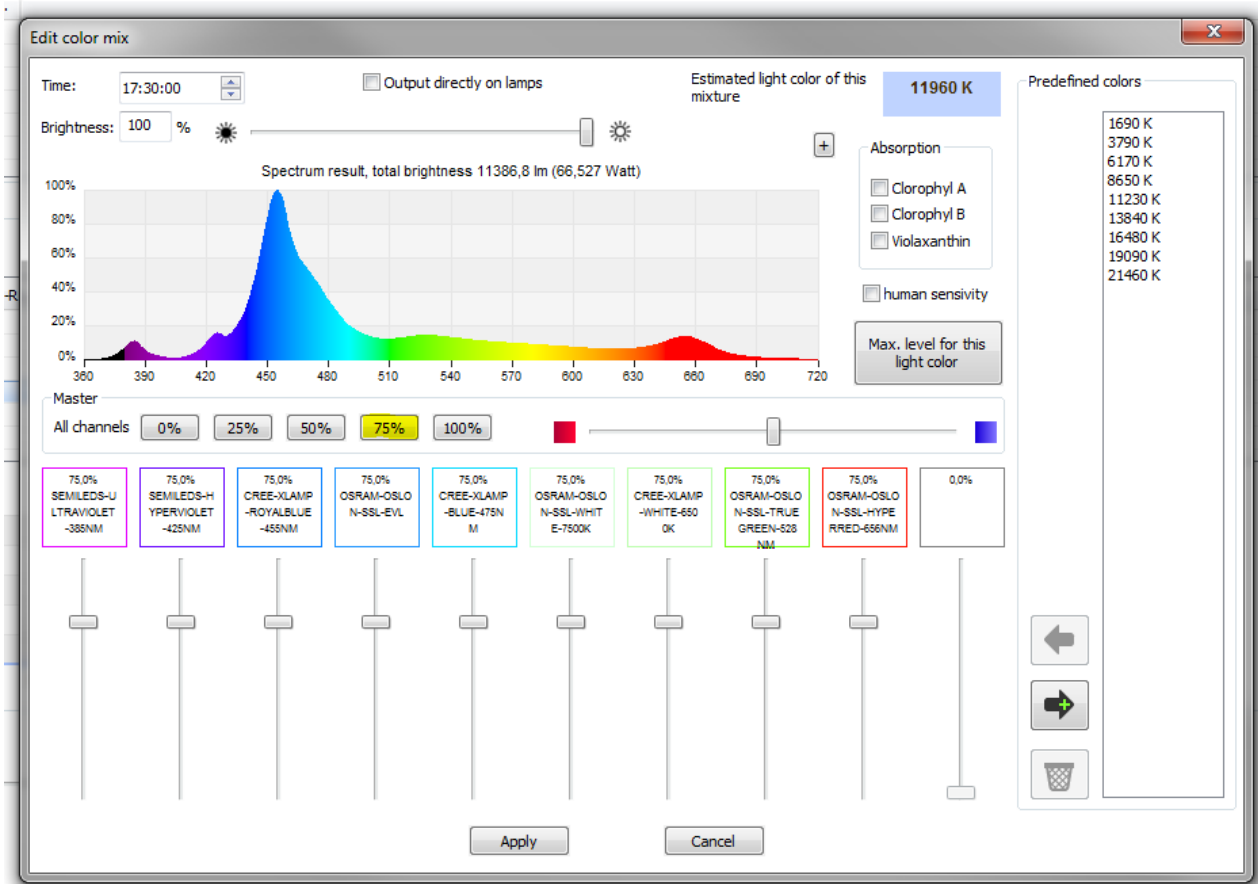


More red:



If you want to change the intensity of all color channels, simply press the available percent buttons.

Change Intensity: Intensity of all color channels at 75%



You can save your LC-generated light color by adding it to *Predefined colors* using the arrow key.

You load your predefined colors by selecting the appropriate color on the right side of the menu and loading it with the arrow key.

The light color 14040 K was loaded in the sample image below.

Time: 17:30:00 Output directly on lamps Estimated light color of this mixture: 14040 K

Brightness: 100 %

Spectrum result, total brightness 8775,5 lm (55,703 Watt)

Absorption: Chlorophyll A Chlorophyll B Violaxanthin human sensitivity

Max. level for this light color

Predefined colors: 1690 K, 3790 K, 6170 K, 8650 K, 11230 K, 13840 K, 16480 K, 19090 K, 21460 K, 14040 K

Master: All channels 0% 25% 50% 75% 100%

89.9% SEMILEDS-U LTRAVIOLET -385NM	80.5% SEMILEDS-H YPERVIOLET -425NM	72.9% CREE-XLAMP -ROYALBLUE -455NM	69.4% OSRAM-OSLO N-SSL-EVL	68.0% CREE-XLAMP -BLUE-475N M	55.1% OSRAM-OSLO N-SSL-WHIT E-7500K	53.7% CREE-XLAMP -WHITE-650 0K	55.0% OSRAM-OSLO N-SSL-TRUE GREEN-628 NM	27.2% OSRAM-OSLO N-SSL-HYPE RRRED-656NM	0.0%
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Apply Cancel

Once you have found your corresponding settings, you must save them by clicking “Apply”.

Once the light spectra are set at any desired time, you can test your newly generated lighting process.

Illumination run

New... Edit... Delete

Time	Color	Brightn...	SEMILEDS-ULT...	SEMILEDS-HYP...	CREE-XLAMP-R...	OSRAM-OSLON...	CREE-XLAMP-B...	OSRAM-OSLON...	CREE-XLAMP-W...	OSRAM-OSLON...	OSRAM-OSLON...
05:30:00	21620 K	2,00%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
06:00:00	7920 K	100,00%	0,0%	14,6%	26,7%	32,4%	34,6%	55,3%	57,5%	55,4%	100,0%
06:30:00	11960 K	100,00%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
17:30:00	11960 K	100,00%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
18:00:00	7920 K	100,00%	0,0%	14,6%	26,7%	32,4%	34,6%	55,3%	57,5%	55,4%	100,0%
18:30:00	21620 K	2,00%	0,0%	0,0%	100,0%	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%

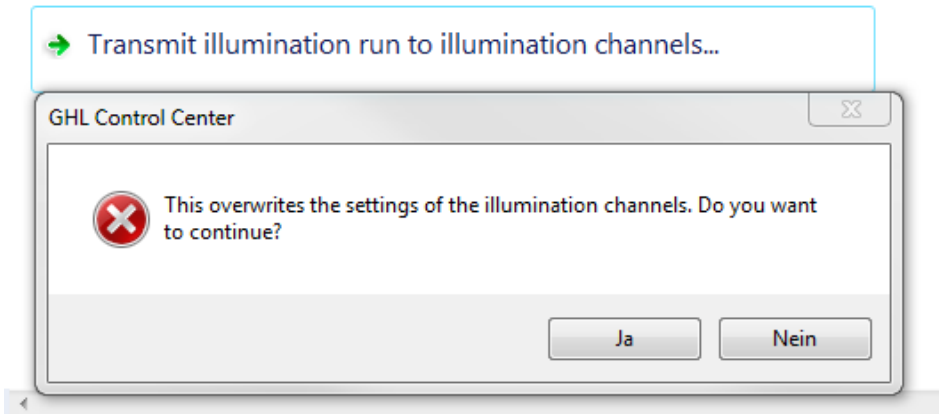
10:37:00

Test illumination run (illumination channels must have been transmitted before)

→ Transmit illumination run to illumination channels...

Activate the checkbox and move the slider. The illumination run can be followed directly on the luminaire.

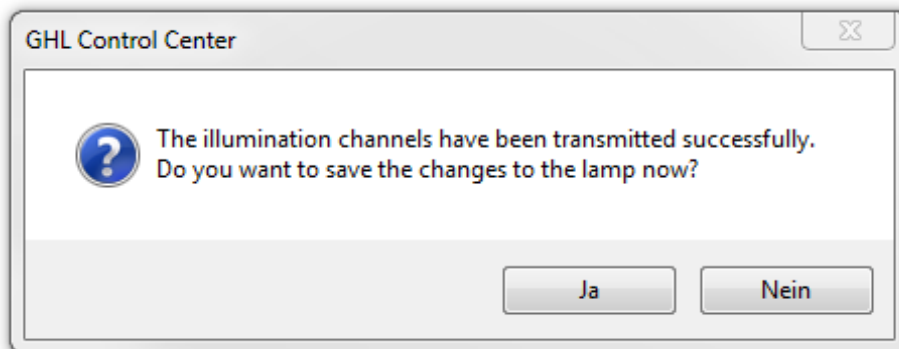
If you are satisfied with your settings after the test, transfer the new lighting sequence to your lighting channels. These are then overwritten with the new settings.



Press *Yes* to accept the new settings.

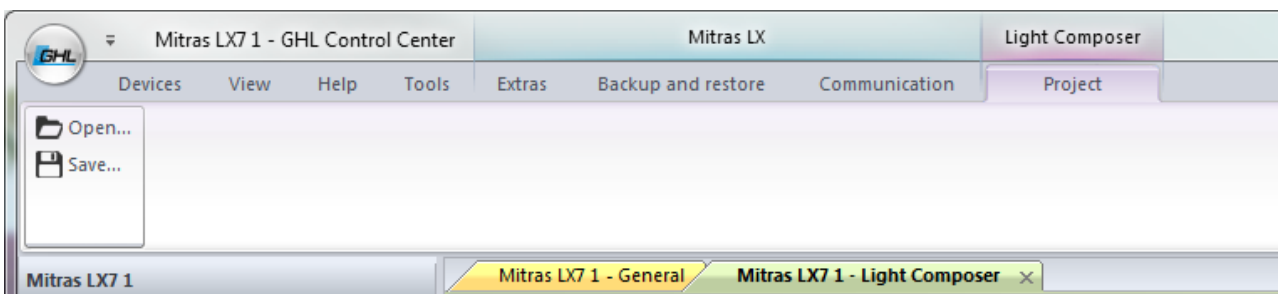
In a second step, you transfer the settings to your luminaire.

Press *Yes* again to transfer the changes to the light.



6.4.2 Securing and Loading Lighting Projects

You can save the illumination run created by the *LC* as an independent lighting project and reload it at any time, or exchange it with other users





TIP

If you want to change an existing lighting project, you should save it first. So you can always go back on it.

6.4.3 Customizing the Color Channels

You may also configure your desired light spectrum by editing the individual color channels.

6.4.4 Seasonal Lighting

You also have the choice to run your light on a seasonally adjusted schedule.

Detailed explanations of how to adjust *Seasonal Lighting* can be downloaded from our homepages download area at www.aquariumcomputer.com (*Support->Downloads*).

Mitras LX7 1

- General
- Light Composer
- Illumination 1 (Blue)
- Illumination 2 (Royal blue)
- Illumination 3 (Cool white)
- Illumination 4 (Blue white)
- Illumination 5 (True green)
- Illumination 6 (Hyper red)
- Illumination 7 (Sky white)
- Illumination 8 (Ultraviolet)
- Illumination 9 (Hyperviolet)
- Simulation
- Thunderstorm
- Acclimation
- Seasonal lighting
- Communication
- Energy options
- Maintenance

Mitras LX7 1 - Seasonal lighting | Mitras LX7 1 - General | Mitras LX7 1 - Light Composer | Mitras LX7

Midday shall be at this time:

This time will be used as center when an illumination run is pushed together. This means that all times in a curve will be moved towards this "midday time" when the days get shorter.

Number	Date	Brightness	Duration
1	04. Januar	50%	31%
2	19. Januar	53%	34%
3	04. Februar	57%	40%
4	19. Februar	62%	47%
5	06. März	68%	55%
6	21. März	74%	64%
7	05. April	81%	73%
8	21. April	87%	82%

Brightness

Duration

Fill table automatically

The longest and brightest day should be at: In the northern hemisphere this is the 21. June, in the southern hemisphere the 21. December, but any date can be chosen.

Day Month

Brightness of the shortest day (compared to longest day): %

Duration of the shortest day (compared to longest day): %

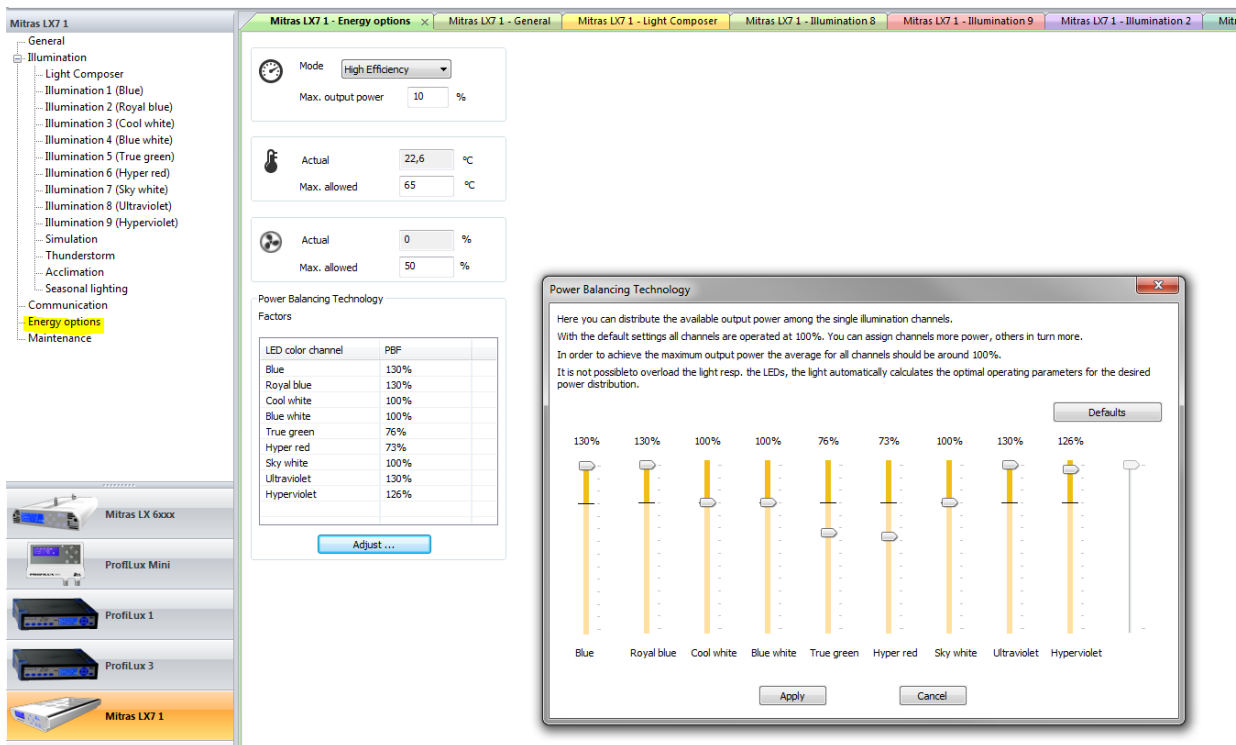
Simulate seasonal lighting

Simulate for this day: Day Month

The resulting curve is displayed in all currently open illumination channels.

6.4.5 Power Balancing Technology

Under the item Energy Options there is a further possibility to adjust the light spectrum. Here, you can weigh the available power of the luminaire in favor-of or at the expense of individual color channels.



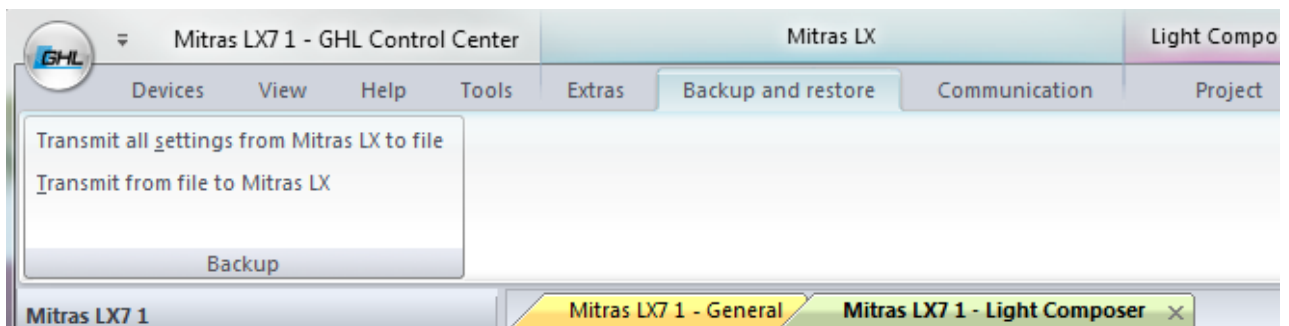
6.4.6 Further settings

Under Simulation, you can set clouds, calendar moon phase simulations, as well as Rainy days. Under Thunderstorm, adjust the frequency and the intensity. With Acclimation, you can run an adjusted light schedule to allow your aquarium to adjust to the new light.

You will find further information in the *Mitras LX7 Programming Manual* and in the detailed explanations for the *Light Composer* that can be downloaded from our homepage www.aquariumcomputer.com in the download area (*Support-> Downloads*).

6.5 Save and Load Settings

If you want to back up your settings to restore them after a firmware update, the following functions are provided under the "*Backup and restore*" ribbon bar.



6.5.1 Saving Settings

Settings of the connected *Mitras LX7* are stored in a file (File name .par).

How to read the settings or sensor data from the *Mitras LX7* ?

The PC program uses parameter definition files (file extension .def) to know which settings should be available or read out in the connected luminaire. These files are located in the *GHL Control Center* program directory.

The appropriate parameter definition file must exist for the firmware version of the respective device. For the firmware version 1.00 of the *Mitras LX7*, for example, the file is called *ParaList_V100_Mitras LX7.def*.

6.5.2 Loading Settings

Settings or sensor data are loaded from a file (file extension .par) and transferred to the respective device. If the file comes from a ProfiLux with a different firmware version as the target device, a warning is issued.

Settings that originate from a device with a firmware version older than the firmware version of the target device can be loaded without problems. If you load settings from a device with a newer firmware version to a device with older firmware, problems can occur.

If a problem occurs during the transfer of the settings to the respective device, a message is displayed. If the message is ignored, the transmission of the remaining settings is continued.

If the device type does not fit, the operation is aborted completely.

Basically, all settings found in the file are transferred to the connected luminaire.

If only some of the settings should be transferred, the file can be edited accordingly. The lines in the file containing entries with settings that are not to be transferred may be deleted via a text editor for example.

7 Warranty/Liability

You have a 2-year warranty beginning from invoice date. This applies to material and manufacturing defects.

We guarantee that the supplied products correspond to the specifications outlined and that the products do not have material resp. manufacturing defects. For the accuracy of the manuals, we do not guarantee damages of any kind which result from improper usage or from an unsuitable environment. Furthermore, we do not accept warranty claims for damages that are caused by a false connection or excessive humidity. We assume no liability

for direct damages, indirect damages, consequential damages and third party damages as far as it is legally permitted. We do not take over guarantee that our product package corresponds to the requirements of the buyer. Our warranty expires if the delivered original product is damaged or modified.

8 Additional Information

8.1 Help and Information

For help or further information, please visit our *Support Forum* at www.aquariumcomputer.com or contact your retailer.

8.2 Firmware-Update

The firmware of your *Mitras LX7* is constantly being further developed. If you want to use new features that are not supported by your current firmware, you can update your controller.



DANGER

- Be sure to back up your data **before** updating!

You can use the menu item "Backup and Restore" -> "Transfer all settings from Mitras LX7 to file" and load them again after the successful update via "Transfer from file to Mitras LX7".

For the update, you need the latest firmware and the PC program *GHL Control Center*, both of which can be downloaded free of charge from our homepage www.aquariumcomputer.com in the download area (*Support-> Downloads*), as well as our USB cable.

Instructions for updating firmware can be found from our homepage.

9 Technical Data

The device and its accessories may only be used indoors. Moisture or excessive humidity can lead to malfunctions or damage.

Voltage Power supply	Wide range power supply 100 – 240 VAC (50 – 60 Hz)
Voltage Luminaire	24 VDC

Lamp Operation Mode	Max. Power Consumption	Recommended Water Volume	Illumination Area	Light Output comparable with
High Efficiency Mode at 100 %	130 W	max.240 Liter / 63 Gallons	Water depth ca. 77 cm / 30.31" Bottom area ca. 82 cm x 55 cm / 32.28" x 21.65"	HQI 280 W
High Output Mode at 100%	195 W	max.340 Liter / 79 Gallons	Water depth ca. 88 cm / 34.65" Bottom area ca. 88 cm x 58 cm / 34.65" x 22.83"	HQI 380 W

* Above specifications relate to average parameters and may vary due to component tolerances and ambient conditions.

	Leuchte	Netzteil
Dimensions (L xBb H)	324 mm x 200 mm x 42 mm / 12.8" x 7.9" x 1.65"	245 mm x 68 mm x 40 mm / 9.6" x 2.7" x 1.57"
Weight	2,4 kg / 5.29 lb	1,3 kg / 2.87 lb
Cable length	ca. 3 m / 118.11" to power supply	ca. 2 m / 78.74" to wall outlet
Ambient conditions during operation	max. 40°C / 104°F, max. rel. humidity 80% non-condensing	max. 50°C / 122°F, max. rel. humidity 80% non-condensing

* Both the power supply and luminaire become warm during normal operation and must therefore be installed in an area that allows for sufficient heat dissipation.

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