DIMLUX

XTREME SERIES LED MKII

XTREME SERIES LED +NIR MKII

User Manual



THE FUTURE OF GROWING
JUST GOT BRIGHTER.

DIMLUX

Table of Contents

1. SAFETY 2
1.1 IMPORTANT SAFETY PRECAUTIONS 2
1.2 TERMINOLOGY 3

2. CONFIGURATION OPTIONS 4
2.1 INTRODUCTION 4
2.2 FIXTURE(S) WITHOUT CONTROLLER 5
2.3 FIXTURE(S) WITH MAXI CONTROLLER 5
2.4 FIXTURE(S) WITH ADDED SMARTBOX/AUXBOX 5
2.5 FIXTURE(S) WITH DIGITAL SMART REMOTE CONTROLLER 5
2.6 3RD PARTY CONTROLLERS & BUILDING MANAGEMENT 5

3. USER INTERFACE 6
3.1 BASIC OPERATION 6
3.2 MENU HIERARCHY 7
3.3 READING THE DISPLAY 8
3.4 FIRST USE 9
3.5 GROWTH SETTINGS EXPLAINED 10

4. SETTINGS MENU 11
4.1 MAIN MENU 11
4.2 SELECT PROGRAM 11
4.3 CONFIGURE PROGRAM 11
4.4 ROOM SETTINGS 12
4.5 ROOM SETTINGS > CORRECTION 12
4.6 PREFERENCES > POWER UNIT 13
4.7 PREFERENCES > PRESENCE DETECTION 13
4.8 PREFERENCES > ION GENERATOR (MKII VERSION ONLY) 13
4.9 PREFERENCES > SENSOR SETTINGS 14
4.10 PREFERENCES > SHOW ID 14
4.11 PREFERENCES > NETWORK 14
4.12 PREFERENCES > SET DATE/TIME 14
4.13 PREFERENCES > FACTORY RESET 15
4.14 ADD-ONS 15
4.15 ADVANCED 15
4.16 ADVANCED > MODIFY 15
4.17 ADVANCED > MODIFY > PERIOD 16
4.18 ADVANCED > MODIFY UV-A + NIR ADD-ON (WHEN CONNECTED) 16
4.19 PREFERENCES > UVB ADD-ON (WHEN CONNECTED) 17
4.20 ADVANCED > MODIFY - CONFIGURATION 17
4.21 ADVANCED > MODIFY - CONFIGURATION - COPY-PASTE PERIOD 17
4.22 ADVANCED > CHANGE START DATE 17

5. CONNECTING ADD-ONS 18
5.1 NIR+UV-A AND UV-B 18

6. CONNECTING SENSORS 19
6.1 PLANT TEMPERATURE CAMERA (PT) 19
6.2 AIR TEMPERATURE (AT) 19

7. FIRMWARE UPDATES 20

8. WARNINGS & ALARMS 22

9. WARRANTY 23
9. 1 WARRANTY STATEMENT 23
9. 2 KNOWLEDGEBASE 23

1. SAFETY

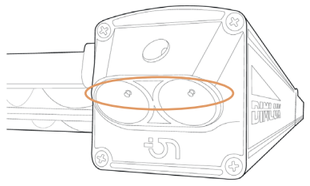
After successful installation of the Dimlux Xtreme, use this guide to configure and operate the system. Safety precautions apply.

These products may represent a possible shock or fire hazard if improperly installed or installed in any way. Products should be installed in accordance with the installation manual, current local electrical guidelines and law.

1.1 IMPORTANT SAFETY PRECAUTIONS

- Never look directly at the fixtures LED's while in operation.
- During operation, only use the control panel buttons or controller. The fixture gets very hot and can cause burn injuries.
- Always allow for a cool down period of at least 30 minutes before touching the LED rails.
- Always disconnect the LED fixture from it's power supply before performing any maintenance.
- This product may cause interference to radio equipment and should not be installed near maritime safety communications equipment or other critical navigation or communication equipment operating between 0.45 - 30 MHz. FCC regulations apply. Please refer to www.fcc.gov for more information.
- Do not use the LED fixture when either the LED fixture or its power cord are damaged. Replace the unit and/or power cord only with certified cords.
- Do not expose the LED fixture to:
  - ambient temperatures outside the specified range: 0 to 35 degrees Celcius / 32 to 95 degrees Fahrenheit
  - dust and contamination;
  - direct sunlight during use or other heat generating light source.
- Do not use the LED fixture near flammable, explosive or reactive substances.
- Do not use sulfur vaporizers or water misters in the same room as the fixtures.
- The installation and use of the LED fixture is the responsibility of the end user. Incorrect use or installation can lead to failure and damage to the LED fixture.
- Do not open or disassemble the LED fixture, it contains no serviceable parts inside.
- When mounted on the ceiling leave at least 5 cm of space between the ceiling and the fixture to allow the fixture to dispatch generated heat. Not allowing the fixture to dispatch heat will shorten the lifespan of the fixture.
- Always use a grounded power outlet.

- **The Ionizer can build up external electrical current that can give a shock when directly touching.**
- **The Ionizer can build up external electrical current that can give a shock from a close distance. Do not touch the bristles as they are fragile.**
- **The Ionizer has a blue indicator LED that indicates if the Ionizer is active**
- **The Ionizer can make a hissing sound. The ionizer might interfere with pacemakers, contact a health professional for information**



Ionizer on the Dimlux XtremeLED MKII

1.2 TERMINOLOGY

This manual uses industry standard abbreviations known in lighting and horticulture technology. Hereafter, abbreviations are used for readability purposes.

PAR	Photo synthetically active radiation
PPF	Photosynthetic Photon Flux, the amount of light in the 400 to 700 nm range
PPFD	Photosynthetic Photon Flux Density, the amount of light in the 400 to 700 nm range per square meter
DLI	Daily Light Integral, total amount of light generated during the daily cycle
µmol	Micromol, measurement of light intensity
UVA	Ultra Violet Light Aging, frequency of light that causes aging of the skin
UVB	Ultra Violet Light Burn, frequency of light that causes skin-burn
LED	Light Emitting Diode, Light source of the Dimlux Xtreme series
HPS	High Pressure Sodium lamps, traditional technology for lighting, not available in Dimlux Xtreme series
FCC	Federal Communications Commission, Government body for electrical guidelines (United States)
NIR	Near Infra Red light. Light in the range above 700 nm
H2O	Water, key-component in growing condition of plants, direct impact on growing performance
CO2	Carbon Dioxide, greenhouse gas. Key-component in growing condition of plants, direct impact on growing performance
RH	Relative Humidity, the relative amount of water in the water-air mix compared to maximum
RCD	Residual Current Device, safety device to shut down system in case of malfunction
RCBO	Residual Current Breaker with Overload protection, safety device to shut down system in case of malfunction
UVA	Ultra Vilolet Aging light specttrum
UVB	Ultra Violet Burn light spectrum, protection of human skin is highly recommended
B:R	Blue-red frequency ratio, the amount of red-frequency opposed to blue-frequency

2. CONFIGURATION OPTIONS

2.1 INTRODUCTION

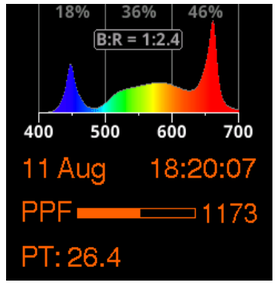
The Dimlux Xtreme Series are high-performing LED fixtures designed for high yield indoor growing environments. The LED's are fully configurable both in light frequency (determines color) and timing to match your crops growing needs. The on-board menu is designed to be easily operated with pre-made programs (grow/bloom), or fully control all lighting settings: white and red levels, blue-red ratio, output power and timing.

The light frequency the fixture emits ranges from 400 nm to 700 nm for non-NIR models, to 400 nm to 750 nm for NIR models. The ranges are corresponding with the optimal PAR values plants need for optimal growth. The range can be extended with our NIR+UV-A and UV-B add-ons. Light composition is configurable in the available menu's.

After installing the fixtures as a stand-alone or multi-fixture system as instructed in the installation manual, with or without controller, you can now start configuring your system. First, the system will detect if a controller is present and activates the according settings automatically. The shown data on the status display changes to the color corresponding to the selected control or operating mode. A fixture either is in controlled mode, or has it's own operating mode.

Control modes
The color in which data is shown tells you in what control or operating mode the fixture currently is. A fixture 'under control' by a lead fixture or controller can show ORANGE, YELLOW or PURPLE. This states the type of control active:

Analog "Classic"	Remote controlled by 3rd party controller
Analog "LED"	Remote controlled by Maxi controller
Digital	Remote controlled by Smart Remote Controller or Lead Fixture

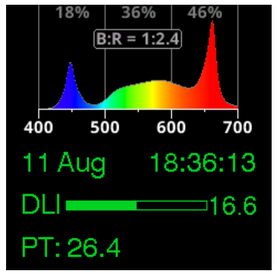


Fixture in Classic mode

The priority of control is automated and follows this hierarchy: Digital - Analog LED - Analog Classic. When a 'higher' mode is available this will overrule the other.

Operating modes
A fixture that is operating as a lead fixture, non-controlled or single fixture shows in what operating mode the fixture currently is configured. The color of the shown data: BLUE, RED, GREEN or BROWN informs you that the fixture is in one of the following modes:

Grow	Programmed preset, ideal for growth period of the crop
Bloom	Programmed preset, ideal for early bloom period of the crop
Manual	Programmable preset with white and red lighting control
Advanced	Programmable preset with extensive growth period control

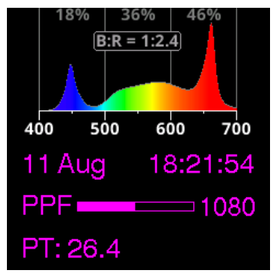


Fixture in Manual mode

2.2 FIXTURE(S) WITHOUT CONTROLLER

After connecting the fixtures as instructed in the **installation guide**, assign **'fixture 1'** as **lead fixture**, the first one in the serial chain. It will take the role of controller. Note: all fixtures are set by default on 'follow'. You only need to apply the setting below once, on the lead fixture.

All settings done on the lead fixture will be copied by all connected follow fixtures. It's not possible to assign more than one fixture as lead. The **lead fixture** will have a brown background color, the follow fixtures have a purple ● user interface.



Fixture in Digital mode

To set Fixture 1 to lead:

- open menu ⊡
- navigate to **preferences** , ⌃, ⌄, ⊳
- navigate to **network**, ⌃, ⌄
- change the value to **Lead**, ⊲, ⊳

2.3 FIXTURE(S) WITH MAXI CONTROLLER

Control all daily functionality with the comfort of eye-height, inside- or outside of the growing area. Once the configuration is done on the fixture, the daily operation is done at an easy accessible location of your convenience.

Optionally: connect a wider range of sensors of your choice:

- Temperature sensor
- Plant Temperature Camera
- Humidity (RH) sensor
- CO2 sensor

For configuration and installation refer to the Maxi Controller Manual

2.4 FIXTURE(S) WITH ADDED SMARTBOX/AUXBOX

Extend the functionality by adding the SmartBox 6/3 with 6 smartports for connecting extra sensors and up to 3rd party air quality control units like heaters, humidifiers, de-humidifiers and fans.

For configuration and installation refer to the Maxi Controller Manual

2.5 FIXTURE(S) WITH DIGITAL SMART REMOTE CONTROLLER

Extend the remote control capabilities with our Smart Remote Controller. Control all fixture settings and digitize the whole fixture setup without any analog signal loss. Add the Dimlux Smartbox for the full range of sensors and 3rd party air quality control systems.

The Smart Remote Controller can simultaneously control the Dimlux XtremeLED MKII fixtures and OptiClimate Revomax II.

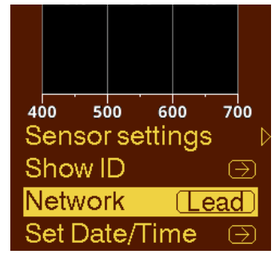
2.6 3RD PARTY CONTROLLERS & BUILDING MANAGEMENT

Control
Control up to 100 fixtures in a serial chain setup with a 3rd party controller. You might experience that the fixtures further up the chain have less brightness than the ones in the beginning of the chain because of signal loss. Use our Dimlux Interlink cables to minimize this effect. The Dimlux Xtreme Series fixtures are compatible with all 0-10 volt controllers like the Trolmaster Tent-X. Make sure to use the LMA-14 adapter to connect Trolmaster controllers.

Building Management
The Dimlux XtremeLED MKII is designed for maximum integration with industry leading control software and building management systems like Priva, Hoogendoorn and Ridder. This way we can provide cost-effective and efficient lighting upgrades without you having to replace your existing infrastructure. The Dimlux XtremeLED MKII fully supports the Hortivation HLP protocol and a JSON based API that you can use to create or use your own software and dashboards. Connect in three simple steps:

1. Connect the Smart Remote Controller to your corporate LAN on the LAN port of the controller
2. Use a keyboard and mouse to lookup the Controllers IP address that was assigned by DHCP
3. Connect and configure the building management software with the IP address and port 502

For more information and support please contact our professionals at Dimlux.nl



Lead-setting in preferences


Maxi Controller


Smartbox 6/3

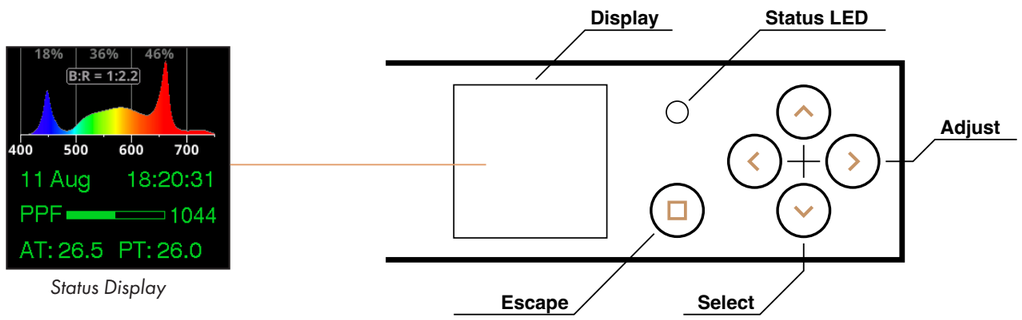

Smart Remote Controller

3. USER INTERFACE

3.1 BASIC OPERATION

The Display and navigation uses a standard, intuitive directional navigation and menu/escape setup. The display shows an accurate color spectrum to visualize the current settings. Find the menu structure in the next section (3.2) for reference.

When pressing the **escape** button on the fixture you enter the menu, while in the main menu or a sub menu, use the **escape** button to go back to the top menus until you return to the status display.



Status Display

Escape	to toggle the menu and return to previous menu
Up/down Select	navigate through the menus
Right Adjust	advance to the next menu
Left/right Adjust	change value of selected setting

TYPES OF ACTIONS

All menus and settings can be one of five types of possible actions:



changes value of selected property



changes type of unit/value



toggle selection on or off



select next menu to go back to previous menu



opens dialog for selecting a different operaring mode



Execute an action

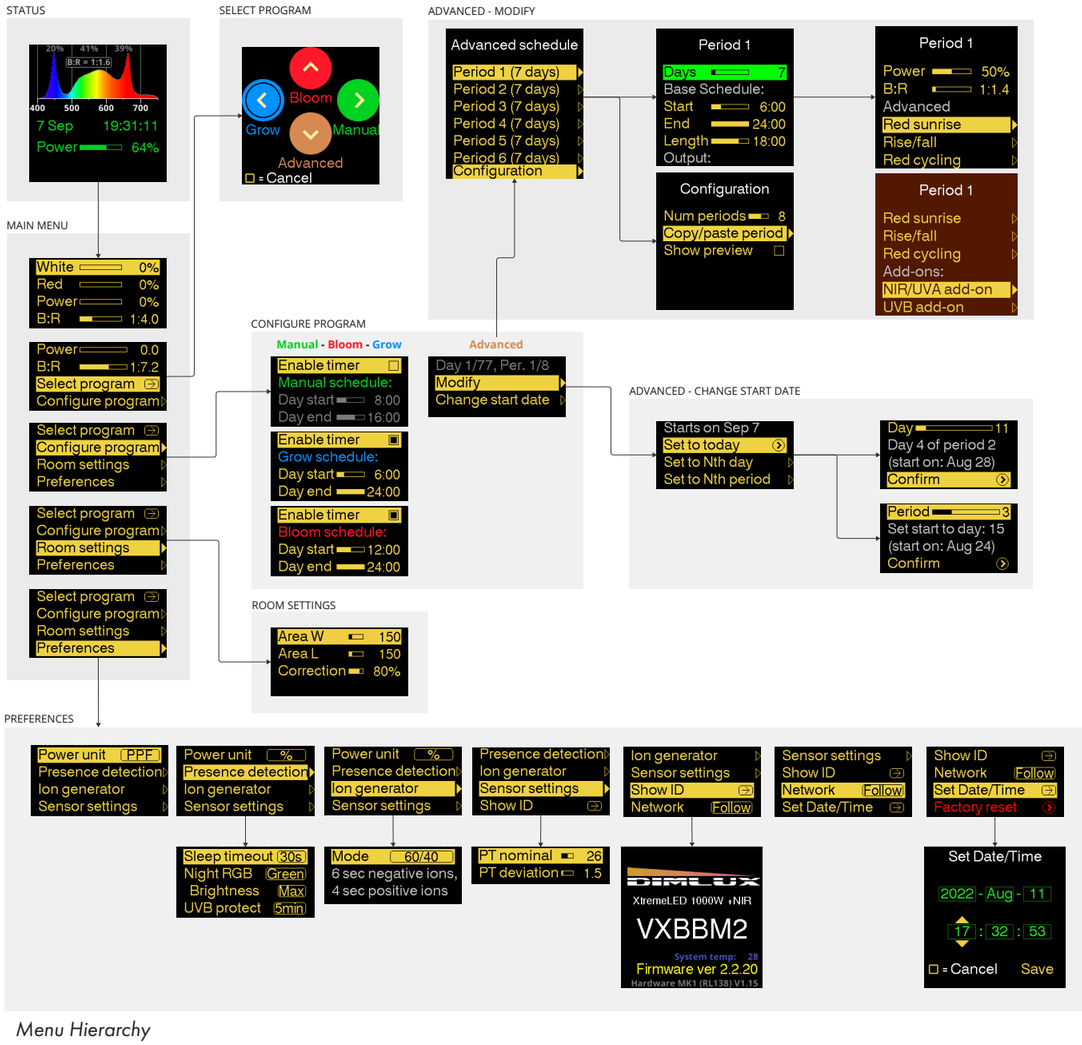
3.2 MENU HIERARCHY

All menus are designed to activate or configure one of the available growth programs or change system preferences.

Default operating modes **GROW** and **BLOOM** are pre-configured programs that work well on most indoor grown crops. For more information on how programs and their parameters work, check chapter 3.5 for reference. If you want more or full control, you can also choose **MANUAL** mode (adds red and white level control plus manual day/night cycle) or for even more control select **ADVANCED** mode (adds programmable growth periods to the manual mode).

The main-menu has the following sections that are fully explained in the next chapter.

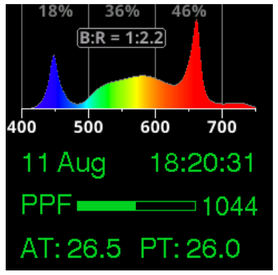
STATUS	Shows basic operational information and what operational/control mode selected
MAIN MENU	Main menu, accesses all other settings
SELECT PROGRAM	Selects one of the programs Bloom, Grow, Manual or Advanced
CONFIGURE PROGRAM	Available in Manual and Advanced mode, configures your selected program
ROOM SETTINGS	Defines effective lighting area in cm2 and corrects loss of wall reflections
PREFERENCES	Operational presets, which basic measurement to show in status screen and other settings



Menu Hierarchy

3.3 READING THE STATUS DISPLAY

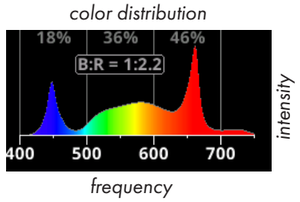
The highest level of the menu is the status display. It shows the actual lighting profile in operation, the Blue:Red ratio (B:R), time and date, one of five configurable values and temperatures (in degrees Celcius).



Status Display

B:R
B:R ratio is the most basic and easy way of operating the Dimlux XtremeLED MKII system. It's the ratio in which blue and red light are combined. 1 = Blue vs X = Red. All programs have different pre-programmed B:R ratios that work for most crops. You can change the values when your crops and/or growth period benefit different settings.

Spectrum
The horizontal axis shows the color wavelength in nm while the vertical axis shows the relative intensity in µmol/s/nm. Percentages on horizontal axis in the sections represent the distribution of blue 400-500 nm, green 500-600 nm and red 600-700 nm in percentage per color.

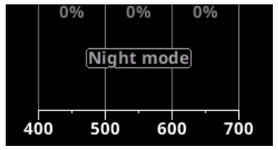


Measurement value
PPF is the default selected measurement value to show in the status display which can be changed into different measurement values in the Preferences menu:

- % Percentage of maximum power output
- Watt Power output delivered to the LED's in the current spectrum
- PPF Photosynthetic Photon Flux, total count of photons emitted by the LED's in the PAR-range (400-700 nm) in µmol/s. The NIR range is excluded in the count
- PPFD: Photosynthetic Photon Flux Density, total count of photons per square meter. PFF divided by configured room size (square meters). In one square meter (100cm x 100cm) at 100% the PPFD will be the same as PPF.
- DLI: Daily Light Integral, the amount of light a plant receives in one day cycle. DLI = PPFD x hours of exposure in day-cycle

Temperature
The air temperature (AT) and plant surface temperature (PT) are shown in degrees Celsius. When the Dimlux Temperature and/or Dimlux Plant Temperature Sensors are connected, the respective values are shown in the status display.

Night mode
When in night mode (programmed time window), the fixture shows a night mode indicator on the display. In the Bloom and Grow preset, the night mode window is automatically set to a pre-determined time-window. This can be adjusted in all program modes. Check chapter 4 on how to adjust day/night cycles.



Night Mode Indicator

3.4 FIRST USE

When the fixture is booted for the first time up, the 'select program' window is displayed. Select the mode of preference and navigate to the time and date settings in the **preferences > set date/time** menu (chapter 4.12) to make sure the fixture operates in the correct timezone.

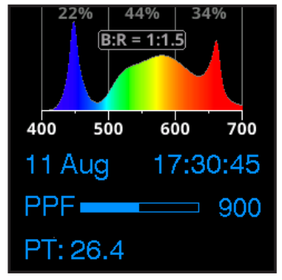
After the time and date setup: select the **GROW** or **BLOOM** growth program right away and you are able to start configuring your fixture. Alternatively, choose the **MANUAL** (adds red and white level control) or **ADVANCED** (adds detailed configurable growth periods) option for even more control. In a multi-fixture setup, after initial physical installation and date/time settings are correct: start configuring on the lead fixture only.



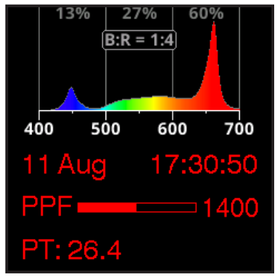
Operating Mode Selection

- The **BLOOM** and **GROW** presets lets you change the **POWER** and **B:R** ratio only
- The **MANUAL** preset offers control over **WHITE** and **RED** lighting control but disables **B:R** control
- The **ADVANCED** mode adds programmable growing **PERIODS** to the manual mode

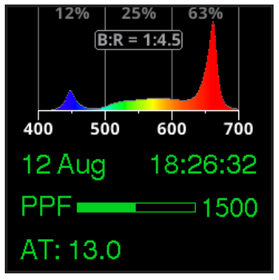
NOTE: whenever you change one of the operating modes as shown above, the manual settings of the previous settings are saved in that program preset. When a program is active and the system goes through a power-cycle (main power supply on-off-on) the system reboots and resumes operating normally.



Status display in **GROW** operating mode



Status display in **BLOOM** operating mode



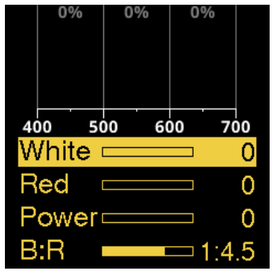
Status display in **MANUAL** operaring mode

3.5 GROWTH SETTINGS EXPLAINED

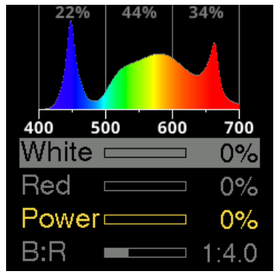
All lighting settings and configuration is done by four parameters that, depending on the current program, can be adjusted individually or are blocked for adjustments. The parameters of some values are connected: for example when the RED value changes, the B:R ratio changes accordingly.

To achieve the best and most natural results it's recommended to primarily use our pre-configured **POWER** and **B:R** values.

- **White** Level of white light emitted
- **Red** Level of red light emitted
- **Power** Overall output level (brightness) = combined White & Red
- **B:R** Blue vs Red ratio (1 = Blue, X = Red)



Main menu lighting settings



Main menu - Power adjust

WHITE and RED

- When adjusting the white and red levels manually, the B:R ratio naturally changes accordingly.
- The WHITE channel in itself has a B:R ratio of 1:1 as it contains as many blue photons as red ones. A spectrometer might detect slight deviations but the margins are negligible
- The RED channel by nature has a ratio of 0:1, to be displayed as 1:--. The ranges 500-600 nm (green/yellow) and 700-750 nm (near infrared) are not used in these calculations.

POWER

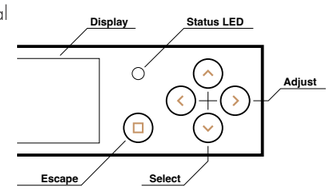
- Controls both WHITE and RED channels simultaneously and aims to keep the B:R ratio leveled. POWER is the maximum combined output of both channels. When POWER = 100%, at least one individual channel is at 100%.
- Because of natural color composition, when POWER drops below 40%, depending on the B:R setting the RED level might drop below lowest threshold.
- Increasing the POWER from zero the fixture always jumps from 0% to 5% (version mkI) or 0% to 10% (version mkII). Below these respective values, the LED's will shut down. When attempting to configure a value below these values, the respective color channels will not turn on.
- A slight flickering and buzzing effect may occur when using the fixtures below 20%. This is normal behavior and is neither harmful nor a defect. Setting the power output above 20% resolves the issue.

B:R

- B:R is the ratio between blue (400-500 nm) and red light (600-700 nm). The value can vary between 1:1 to 1:6. When changing the B:R ratio, the system will try to keep the POWER leveled.
- Changing B:R ratio also changes WHITE and RED levels

4. SETTINGS MENU

The escape button opens the main menu from the status display. Navigate the menu with the directional buttons:



Select: Navigate up-down:
Adjust Right: Advance to next menu:
Adjust: Change value / toggle:
Escape: to previous menu:

4.1 MAIN MENU

Depending on the chosen operating mode, the WHITE, RED, POWER and B:R settings are available or not. All sub menus are accessed by the main menu as described in chapter 3.2.

WHITE manual setting of white light levels

RED manual setting of red light levels

POWER manual setting of light output power

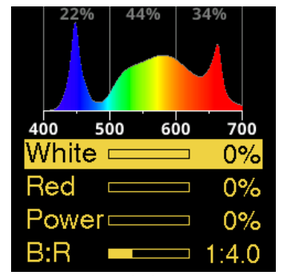
B:R manual setting of B:R ratio

SELECT PROGRAM Select the Bloom, Glow, Manual or Advanced operating program

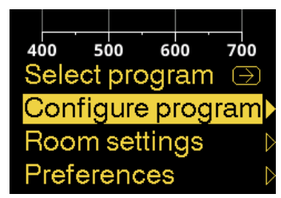
CONFIGURE PROGRAM Access to manual and advanced growth configuration menu

ROOM SETTINGS Access to room settings menu

PREFERENCES Access to preferences menu



Main menu lighting settings



Main menu submenu select

4.2 SELECT PROGRAM

Change the operating mode into one of four available options:

GROW Activate the GROW preset
Default configuration: B:R ratio = 1:1.5 - 06:00 to 24:00 hrs

BLOOM Activate the BLOOM growth preset
Default configuration: B:R ratio = 1:4 - 12:00 to 24:00 hrs

MANUAL Activate the MANUAL preset

ADVANCED Activate the ADVANCED preset



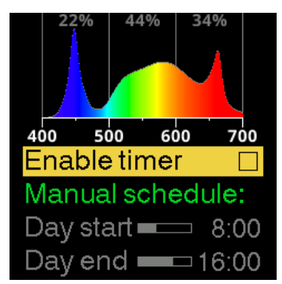
Select Program menu

4.3 CONFIGURE PROGRAM

Enable or disables DAY/NIGHT cycle control and adjust the corresponding time windows. It's available in the **MANUAL**,**GROW** and **BLOOM** presets. In **ADVANCED** you'll be able to use programmable growth PERIODS for more control and programmability.

ENABLE TIMER Toggle DAY/NIGHT cycle. The fixture will remain on in set time window and goes to night mode after day end.

NOTE: The time schedules and advanced schedules will be ignored when the fixture is con trolled by another lead fixture or controller.

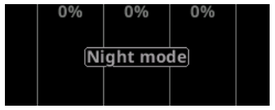


Configure Program menu

During the NIGHT cycle, the output POWER is off by default. When you enable the timer during night time, the display will show 'NIGHT MODE' plus the power values that will be used during the DAY.

DAY START Set the **start** of the manual operating mode

DAY END Set the **end** of the manual operating mode



Night mode indicator



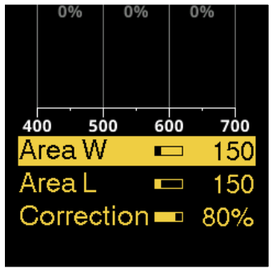
Change day-time window

4.4 ROOM SETTINGS

Here you can change the angles the fixture emits light. Set the effective surface area in cm of your crops below to maximize effective lighting and minimize loss.

AREA W Set the **width** of the effective lightened area in cm - setting ranges between 100 and 300 cm

AREA H Set the **height** of the effective lightened area in cm - setting ranges between 100 and 300 cm



Room settings menu

4.5 ROOM SETTINGS > CORRECTION

Adjustment value to correct for loss of effective lighting like reflections on walls and growth area. The correction value corrects the PPFD (light density) and DLI (total light per cycle) values proportionally. Standard value is 80%, which means a correction of 20%.

NOTE: µmol/m²/s is also known as, µmol/s·m² and µmol s-¹ m-¹.

How to calculate the correction value

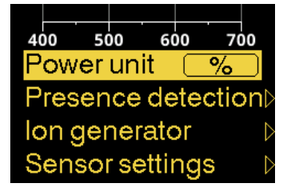
1. Use a professional grade PAR meter
2. Set output unit on the fixture to PPFD
3. Set correction value to 100%
4. Activate the fixture and write down the PPFD value as PPFD1
5. Measure the light intensity with the (PAR) meter on floor level without obstruction.
6. Use (or convert if needed) the measured value in µmol/s/m², write this down as PPFD2
7. Calculate PPFD2 / PPFD1 x 100%. the value should be less then 100%.

Change the correction value in the correction menu to the calculated value.

4.6 PREFERENCES > POWER UNIT

POWER UNIT Selects what value is showed in the status display. Check chapter 3.3 for extra information. Values to choose from:

%	Percentage of maximum power output
Watt	Power delivered to the LED's in Watts
PPF	Photosynthetic Photon Flux
PPFD:	Photosynthetic Photon Flux Density
DLI:	Daily Light Integral



Select Power unit menu

4.7 PREFERENCES > PRESENCE DETECTION

The Dimlux Xtreme II is equipped with a presence detection sensor to enable convenient features like auxiliary (night) lighting and disable UV-B lighting for protection. During the night cycle, when movement is detected, the Auxiliary (night/work) light activates. The sensor activates after detection within three meters, depending on environment and direction. The sensor is active by default. The auxiliary light is not active during the day-cycle. Note that the sensor is very sensitive, a fan or other moving item can activate the auxilery lighting.

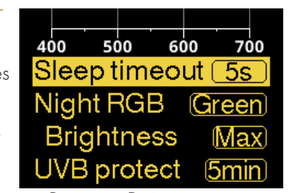
SLEEP TIME-OUT Determines how long the Auxiliary light stays active after last movement was detected.

NIGHT RGB Sets the Auxiliary color of the fixture to RED, BLUE or GREEN. The lighting does not influence your crops.

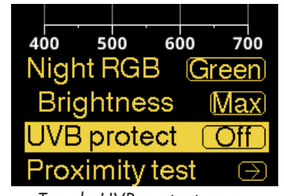
BRIGHTNESS Sets the night support color brightness in 8 steps.

UVB PROTECT set the UV-B add-on presence detection method
Off - No protection, UV-B follows program
5 min - Responds to presence, will stay off for 5 minutes after last detection
Lock - Responds to presence, will stay off until next power cycle (power off > on)

PROXIMITY TEST Check if the proximity sensor is active. When test is activated, 'no detection' appears for 4 to 8 seconds after the last detected movement. 'Detected is shown immediately after movement was detected.



Presence Detection menu



Toggle UVB protect menu





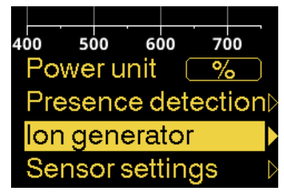
Presence detection indicators

4.8 PREFERENCES > ION GENERATOR (MKII VERSION ONLY)

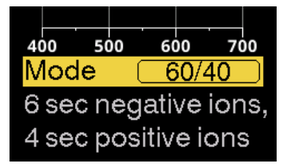
The built-in ION generator (MKII version only) increases the health of your crops by eliminating unhealthy pathogens that causes mold, fungi and bacteria to thrive. Negative ions weigh down particles while positive ions then eliminate the particles. The ideal setting depends on the amount of dust in the growing room. More dust requires more negative ions.

MODE Select mode of operation
Negative - only negative ions are emitted
Mode 80/20 - 8 seconds of negative ions alternated with 2 seconds positive
Mode 60/40 - 6 seconds of negative ions alternated with 4 seconds positive
Mode 50/50 - 5 seconds of negative ions alternated with 5 seconds positive
Mode 40/60 - 4 seconds of negative ions alternated with 6 seconds positive
Advanced - program your own alternation

Note: the ionizer can produce a hissing sound. This is normal and indicates proper operation. The ionizer might interfere with pacemakers, contact a health professional for information. The blue LED indicator right next to the ionizer indicates the ionizer is in operation.



Preferences to ION generator menu



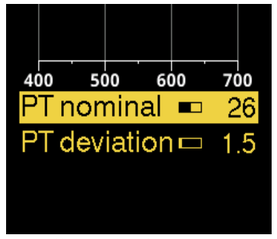
ION generator menu

4.9 PREFERENCES > SENSOR SETTINGS

When the Dimlux Plant Temperature Camera is connected, the nominal temperature and maximum deviation can be set to keep in control.

PT NOMINAL Set optimal plant surface temperature in degrees Celcius.

PT DEVIATION Sets max deviation tolerance before the system shows deviation message on the fixture. When the temperature is above deviation threshold the fixture shows a red blinking LED light. Below threshold it will blink blue. Only auxiliary light is affected



Sensor Settings menu

4.10 PREFERENCES > SHOW ID

Opens display with model, serial number, Network ID, system temperature, firmware version and hardware version



Show ID menu

4.11 PREFERENCES > NETWORK

NETWORK Sets the fixture to either '**LEAD**' or '**FOLLOW**'. All fixtures are set to FOLLOW by default. When using multiple fixtures in a chain, only set the first to LEAD. All following fixtures will adopt the settings of the lead fixture.



Change Network mode menu

4.12 PREFERENCES > SET DATE/TIME

ADJUST SETTINGS Set to local time and date in 24 hrs format to make sure the day/night cycle works properly.

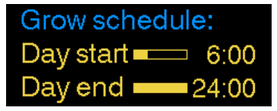
The Grow and Bloom programs have pre-determined cycles that are based on the date and time settings.

Grow Program - 0600 to 2400 - 18 hrs total
Bloom Program - 1200 to 24:00 - 12 hrs total

In **MANUAL, GROW** and **BLOOM** you can change the default day/night cycle. The settings can be changed in 30 minute increments. The **ADVANCED** mode has growth periods which is an enhanced version of regular programs. You can now set different cycles in different periods. Refer to section 4.15 of this manual for instructions.



Set Date/Time menu



Date/Time influences day/night cycle

4.13 PREFERENCES > FACTORY RESET

FACTORY RESET Reset all settings to original values



Preferences to Factory reset

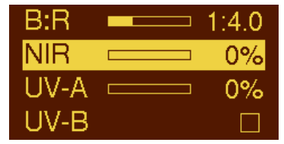
4.14 ADD-ONS

When the UV-A+NIR and/or UV-B add-ons are connected to the fixture anywhere in the connected system, the corresponding controls appear in the main menu of the LEAD fixture.

The add-ons adds Ultra-Violet Aging + Near Infrared and Ultra-Violet Burn to the lighting spectrum.

UV-B can only be toggled on- or off.

NOTE: the UV-B can be (temporarily) turned off with the presence detection functionality.



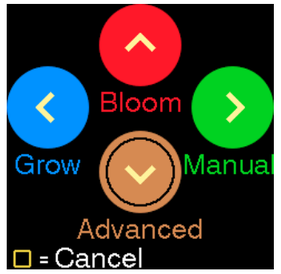
Add-on settings menu, appears after connecting the add-on

4.15 ADVANCED

The Advanced mode is designed to give full control of the different growth stages of your crop. You can now configure multiple periods with each having their unique time tables and lighting settings. The available options in the advance menu are:

MODIFY Access to the modify menu to configure the individual periods

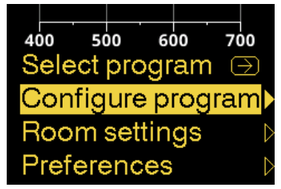
CHANGE START DATE Set date or moment in the periods past or future to activate the pro gram



Activate the Advanced mode

To access the advanced menu, make sure to activate advanced mode first:

1. activate the **advanced mode** in the **select program** menu
2. select **configure program** in the **main** menu



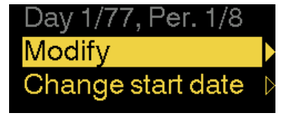
Navigate to configure program

4.16 ADVANCED > MODIFY

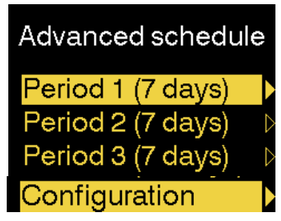
The Advanced - Modify menu gives access to configure individual period settings

PERIOD X (X DAYS) - Configure set **period,** shows number of days in period

CONFIGURATION - Access the **configuration** menu to increase or decrease the number of periods



Advanced menu



Advanced - Modify menu

4.17 ADVANCED > MODIFY > PERIOD

This menu lets you configure every period individually. The configurable parameters are:

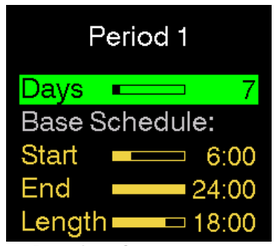
DAYS Sets the number of days the period lasts

BASE SCHEDULE START Sets the start time of operation during the day

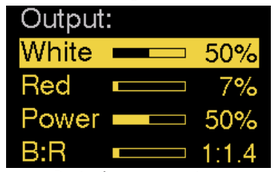
BASE SCHEDULE END Sets the end time operation during the day

BASE SCHEDULE LENGTH Is the length of the operation during the day based on START and END.

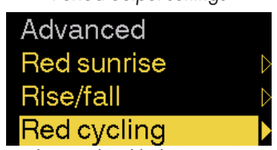
OUTPUT WHITE, RED, POWER, B:R Sets the lighting settings of the program as explained in chapter 3.5



Period configuration menu

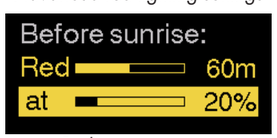


Period output settings



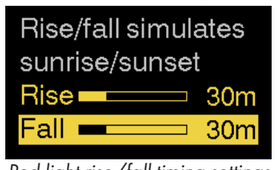
Advanced red lighting settings

ADVANCED > RED SUNRISE Sets RED light x-minutes at x-% intensity before the day starts



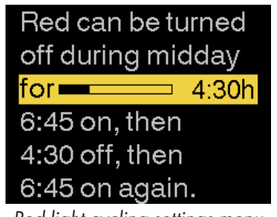
Red sunrise settings

ADVANCED > RISE/FALL Sets daylight simulation for x-minutes to go from 0 to 100 percent and back. The speed in RED light increasing in the set period.



Red light rise/fall timing settings

ADVANCED > RED CYCLING Sets periods and intervals for red light to be de-activated during the day cycle



Red light cycling settings menu

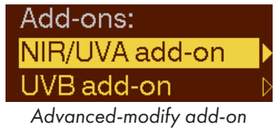
4.18 ADVANCED > MODIFY UV-A + NIR ADD-ON (WHEN CONNECTED)

When one or more add-ons are connected, the corresponding menu is added to the Advanced modify menu.

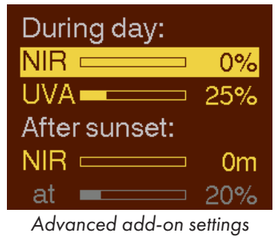
DURING DAY NIR Sets the NIR power output

DURING DAY UVA Sets the UV-A power output

AFTER SUNSET NIR Sets the NIR output level and duration after sunset (end of DAY cycle)



Advanced-modify add-on

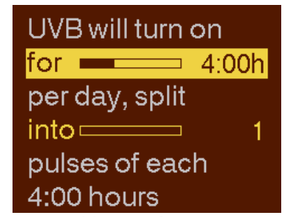


Advanced add-on settings menu

4.19 PREFERENCES > UVB ADD-ON (WHEN CONNECTED)

UVB Turn on Sets the amount of time (in hours) the UVB-light is active during the DAY cycle

Into Sets the number of intervals in which to split the configured total on-time



UVB add-on preferences menu

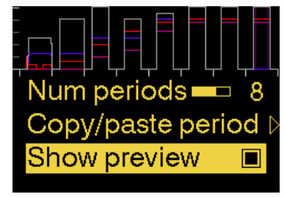
4.20 ADVANCED > MODIFY > CONFIGURATION

Set the optimal unique periods and their sequence to benefit your crops needs.

NUM PERIODS Sets the number of unique periods in the growth cycle to manually adjust

COPY-PASTE PERIOD Copy the settings of periods to other periods

SHOW PREVIEWS Toggle the preview of a periods settings as a graph



Configure the number of periods

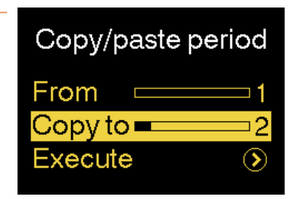
4.21 ADVANCED > MODIFY > CONFIGURATION > COPY-PASTE PERIOD

Copy a specific period setting to another period. The settings are effective immediatly.

FROM Select the period to copy settings from

COPY TO Select the designated period to copy to

EXECUTE Executes the copying of settings



Copy-Paste period menu

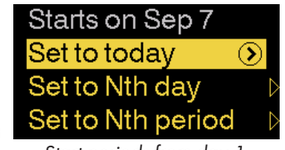
4.22 ADVANCED > CHANGE START DATE

Periods can be activated directly, from a specific day in the future or specific period start in the future. The second and third option are designed in the case that your crops are further along in the growth proces when you start operating the new fixtures or settings.

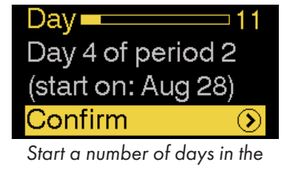
SET TO TODAY Immediately activate/restart the first configured period

SET TO N'TH DAY Activate the program any number of days from today, this can span over any period. To be used when your crops already have grown when activating this new setting.

SET TO N'TH PERIOD Skip to the start of a configured period. To be used when your crops already have grown when activating this new setting.



Start periods from day 1, period 1



Start a number of days in the future, can overlap periods



Start a number periods in the future

5. CONNECTING ADD-ONS

5.1 NIR+UV-A AND UV-B

Install the add-on by carefully placing the add-on on top of the fixture as shown in the visual. The weight of the add-on securely mounts the add-on. There is no fixation mechanism needed.



Add-on placed on the fixture

POWER

1. Connect the power supply (new or from the previous fixture) to the add-ons POWER IN
2. Loop the power from the add-on's POWER OUT to the fixture's POWER IN

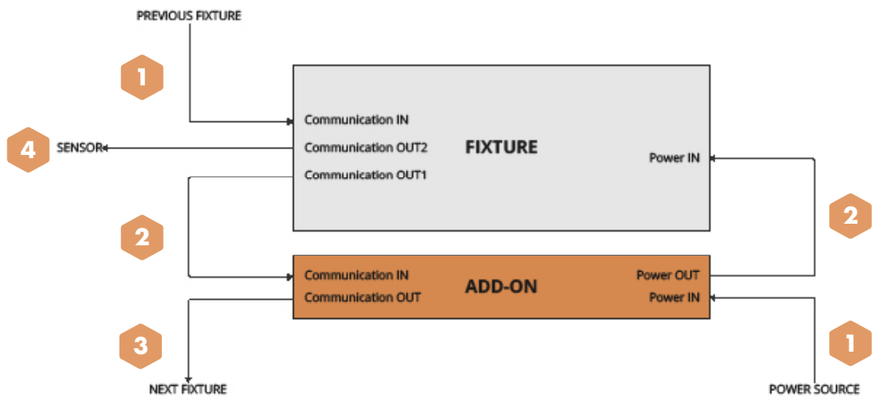
COMMUNICATION

1. Connect the communication cable (new or from previous fixture) to the communication IN on the fixture
2. Loop a new (short) communication cable to the communication IN on the add-on
3. Optionally, use a new cable to connect a next fixture with the communication OUT1 of the add-on
4. Optionally, connect a sensor to the communication OUT port of the fixture

Side-view of Communication connectors



Side-view of power connectors



The Dimlux NIR+UV-A add-on adds two independently operated color channels to the Dimlux XtremeLED MKII fixtures. NIR (700-750 nm) and IR-A also know as IR UV-A-light (370-405 nm).

The Dimlux UV-B add-on adds broadband UV-B (290-320 nm) spectra with a T5 fluorescence tube. When using both the UV-A+NIR and UV-B add-on, repeat the instructions above. The Dimlux Add-ons will be automatically activated when connected to the fixture. When you use the Maxi or Smart Remote controller, refer to their respective manuals to configure correctly.

6. CONNECTING SENSORS

The Dimlux XtremeLED MKII can enhance its capabilities by connecting sensors to measure important values that gives you the insights you need to adjust settings accordingly.

Note: only one sensor can be connected per fixture. When using multiple fixtures in a chain, you can use the different sensors alternately.

- Fixture 1 - Plant temperature
- Fixture 2 - Air Temperature
- Fixture 3 - Light intensity
- Etc

6.1 PLANT TEMPERATURE CAMERA (PT)

The Dimlux Plant Temperature Camera measures the surface of the leaf canopy with Infra Red technology. By setting the nominal temperature and maximum deviation we can monitor or control the crops temperature and optimize yield. During the day-cycle, when the temperature drops below or rises above the settings, the fixture warning light will blink blue for 'too cold' or red for 'too hot'. When connected, the status display will show actual temperatures of the plants surface.

When a Smart Remote Controller is used, the plant temperature camera can be used to control the lighting and other settings.



Mounting the plant temperature camera

Install

Find the mounting screw on the opposite side of the display on the fixture. Use the supplied mount to attach the plant temperature camera to the fixture. Make sure to aim the camera in a slight angle to the crop.

Connect the camera with the attached communication cable to the fixture's OUT2 port, or when using the Dimlux Xtreme Add-on(s) to the add-ons OUT port. When connected to an add-on the blue- and red warning lights don't work.

6.2 AIR TEMPERATURE (AT)

Measures ambient temperature. The value is displayed across all connected fixtures. The value does not control any settings and is only there to inform. The measurable range is -40°C tot 125°C. When a Smart Remote Controller is used, the plant temperature camera can be used to control the lighting and other settings.

Connect the sensor with the attached communication cable to the fixture's OUT2 port, or when combined with an add-on, on the OUT port of the add-on. Hang the sensors end roughly halfway between fixture and crop.

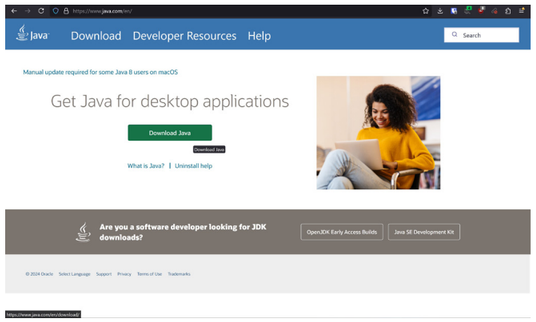


Air temperature sensor

7. FIRMWARE UPDATES

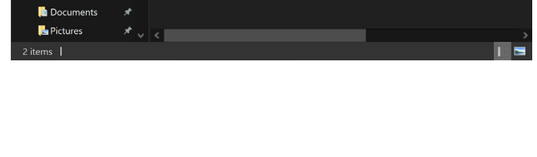
Firmware updates release regularly to add new functionality and fix bugs. Connected fixtures will be updated in one action. To execute an update:

1. Make sure you have installed the latest version of JAVA from **https//www.java.com/**



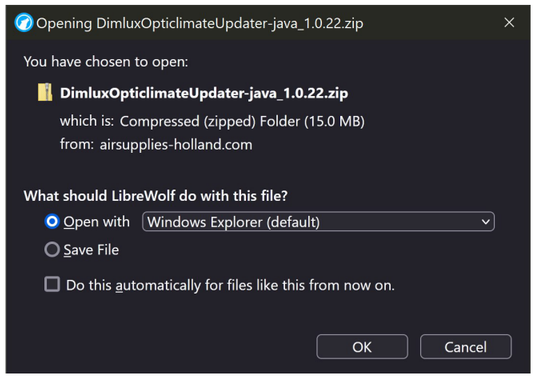
2. Download the latest Dimlux XtremeLED MKII firmware updater tool on a Windows computer. Navigate to our website **www.dimlux.nl/knowledge-base** and download: **DimluxOpticlimateUpdater-java_version.zip**

3. Save the file to your desktop (or other convenient location)

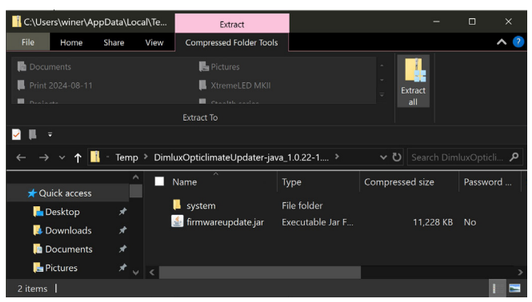


4.open the **DimluxOpticlimateUpdater-java_x.zip** by double clicking and extract the containing file **firmwareupdate.jar** to your desktop.

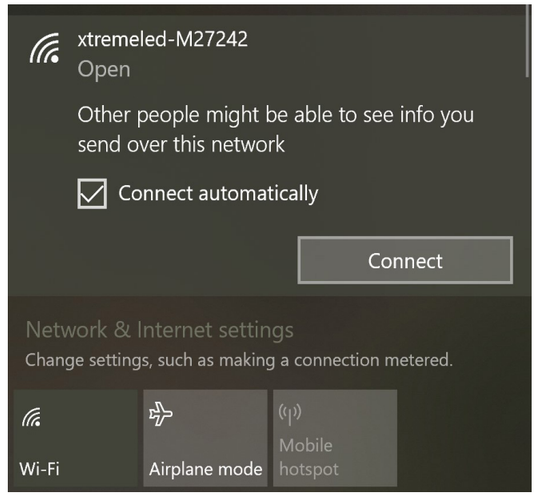
5. Use a **Dimlux Interlink Cable to connect the IN and OUT2 port of the fixture**. It will form a loop. The fixture will be rebooted and internal Wifi access point will be activated. Wait for the fixture to be fully rebooted. The reboot-sequence is complete when your laptop can detect the **xtremeled-xyz** wifi network.



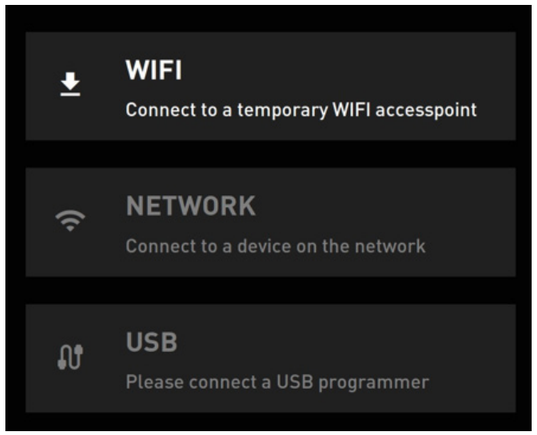
6. Run the **firmwareupdate.jar** file located on your desktop. Make sure you have a working internet connection. The updater tool will download the latest firmware version for your product.



7. On your computer, connect to the **xtremeled-xyz** wifi network. Make sure your are within close wifi operating range (max 1 meter for good performance)

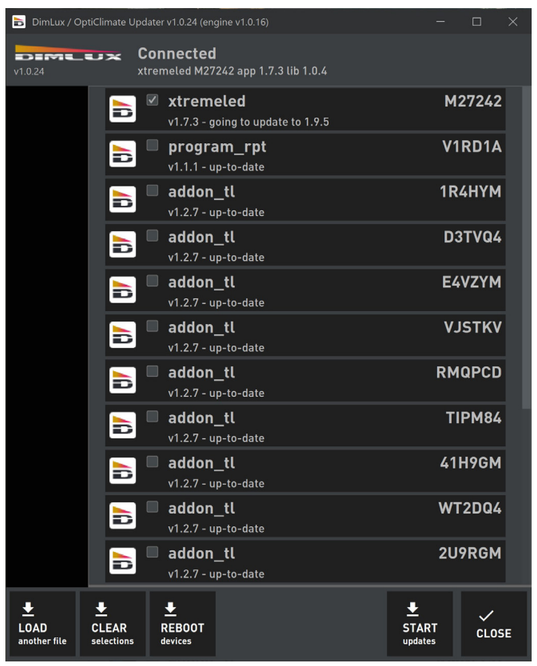


8. Select the top option from the appeared updater window **WIFI - Connect to temporary Wifi network**



9. Make sure the **xtremeled** and **xtremeled2** tiles that appear are selected, and click **START** to start the proces. Wait for the proces to complete. The process will take around two to three minutes per fixture, based on the quality of the Dimlux network connection and number of fixtures in one serial chain.

10. After the proces is done the window on your computer will close. Re-connect the fixture in its original state. Reboot the whole chain (Powercycle) by switching off the powersupply. After the full reboot, your fixtures now have the latest sofware and functionality.



8. WARNINGS & ALARMS

When abnormal situations occur, the fixture can display warnings and alarms. In an event that triggers the alarm, the fixture will turn of the LED lighting and the auxiliary LED's start blinking. When activated, the system will activate the auxiliary lighting setting (night light).

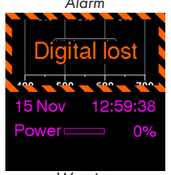


Warning



Alarm

Cause	Action	Notes
The signal from the Maxi Controller is lost for more than 60 seconds (warning) or 16 minutes (alarm). When the warning becomes active, the ligts continue working at the last known values. When the alarm becomes active, the lights are turned off.	• Check the Dimlux Interlink cable connections • Check for a broken port by changing from OUT2 to IN or OUT1 (in either or both ends of the cable) or vice versa • Check for a broken cable by trying another	When the warning is active, restoring the communcations will automatically remove the warning. To try to remove an alarm after restoring the com-muncations, press any of the buttons. The Fixture will continue to operate as a single fixture untill the root cause is resolved.



Warning



Alarm

Cause	Action	Notes
The signal from the controlling device (Smart Controller or Leader fixture) is lost for more than 60 seconds (warning) or 16 minutes (alarm). When the warning becomes active, the ligts continue working at the last known values. When the alarm becomes active, the lights are turned off.	• Check the Dimlux Interlink cable connections • Check for a broken port by changing from OUT2 to IN or OUT1 (in either or both ends of the cable) or vice versa • Check for a broken cable by trying another	When the warning is active, restoring the communcations will automatically remove the warning. Press any of the buttons to remove the warning and resume normal operation. The Fixture will continue to operate as a single fixture untill the root cause is resolved.

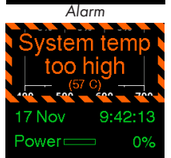


Warning



Alarm

Cause	Action	Notes
The fixture has or had a power loss, and it gets emergency power from the next fixture(s) in line. When the alarm is active, the fixture does not have power. When the warning is active, the power was lost but has been restored.	• Check the power cable connections • Check for a broken add-on by plugging the main power cable directly into the fixture • Check for a broken power cable by trying another	It's normal to see the warning when changing or replacing power cables. Press any of the buttons to remove the warning and resume normal opera-tion.



Warning



Alarm

Cause	Action	Notes
The internal over-temperature protection was triggered. The alarm occurs as soon as the internal temperature exceeds 60°C. When the temperature drops below 58°C the alarm turns into a warning. When the alarm becomes active, the lights are turned off, and stay off even when the temperature drops.	• Turn off the fixture and let it cool • Check if there's at least 5 cm of space above the fixture and that there's convective air flow possible. Increase the distance if necessary. • Try to introduce air flow, even if it's only a little.	Press any of the buttons to remove the warning and resume normal opera-tion. The fixture doesn't automatically resume after an alarm, to prevent on/off cycles beause of heating/cooling.

9. WARRANTY

9. 1 WARANTY STATEMENT

The Dimlux Xtreme II series and accessories are designed and manufactured with maximum care and craftsmanship. Airlux Technologies warrants the delivered goods to be free of defects for the duration of the applicable warranty period under normal use and conditions after the original purchase date. When the product shows any defects within this period that is not due to improper use, Airlux Technologies will replace or repair the defect product with a suitable replacement with at least the same functionality and specifications. Warranty of the replaced products will remain under warranty for the remaining period from the original product and purchase date. For service, the owner ships the unit to the closest Airlux Technologies service location, to be determined by the service desk. Airlux Technologies will require the original receipt to determine the warranty eligibility.

To contact the support desk:

By Phone: +31 20 776 6006
By e-mail: support@airluxtechnologies.com

9. 2 KNOWLEDGEBASE

Direct link: www.dimlux.nl/knowledge-base

Scan the QR-code to go to our online knowledge base for the latest manuals and information