



## DimLux: progressive lighting technology

Design and appearance may not be decisive when choosing a product, yet the first impression is often very important, and that's why the DimLux Expert Series has a stylish design and appearance. The sleek and stylish golden casing and shiny reflector are an indication of the professional quality and demonstrates high performance expectations for this product. It will come as no surprise that the performances are excellent and rank among the top of the market.



### What makes DimLux lighting so special?

Originated in the Netherlands, the DimLux Expert Series is one of the most effective lighting system nowadays. Each DimLux Expert Series light system consists of an groundbreaking DimLux Expert Series electronic ballast, a flexible Alpha Optics reflector 98 and a powerful and efficient Philips Greenpower lamp, which are all combined in a single solid unit.



If several DimLux light systems are controlled by a DimLux Maxi Controller you'll get a huge amount of power and an unprecedented level of control over your lighting and over the environment.



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If you have a large installation such as a greenhouse or a closed-loop room, the DimLux Expert Series light systems are the ultimate light setup for you, especially if one or more DimLux Expert light systems and a DimLux Maxi Controller are working together with the innovative OptiClimate climate control system. By using these three systems, you are able to create optimal conditions for crop growth and maintenance.

Without any doubt the DimLux products have revolutionized the horticulture sector through their seamless collaboration, unprecedented power and extensive setting possibilities. The use of one or more DimLux Expert Series light systems in conjunction with the DimLux Maxi Controller has some great advantages, which we will explain below (please see below for more information):

1. Comprehensive and accurate settings
2. Sensors: the numbers tell the tale
3. Better performing light equipment
4. Extensive connection - and control capabilities
5. Minimum light wastage (waste?)
6. Actively cooled lamp
7. Sunrise and sunset simulation
8. Unique all-in-one unit
9. Safety

### 1. Comprehensive and accurate settings

The DimLux Expert Series light system consists of an electronic DimLux ballast, an Alpha Optics reflector 98, and a Philips GreenPower lamp. The DimLux ballast from the 600W and 1000W systems has the largest dimming range of all electronic ballasts currently available. This allows you to precisely adjust the amount of light output on the needs of your crops.

There are seven standard dimming options available (most ballasts offer 3 or 4), including two special "boost" functions that allow you to overclock the lamp safely. By boosting it's possible to squeeze as much as 15% - 20% extra grow light from the lamp!



Connecting a DimLux Expert Series light system to a DimLux Maxi Controller facilitates the transition of stepwise dimming to continuous variable dimming, which makes it easier to achieve the perfect light setting. You can do this by using the + and - (brightness) buttons, or you can set the desired temperature and the Maxi Controller will arrange the rest. It couldn't be easier!

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### 2. Sensors: the numbers tell the tale

Several sensors can be linked to the DimLux Maxi Controller. First of all, the ambient temperature can be monitored and adjusted by means of a temperature sensor. If the ambient temperature of the room suddenly rises, the DimLux Maxi Controller will detect this and take proper action.

The first action of the DimLux Maxi Controller is the automatic reduction of light intensity by adjusting the light quantity (output) of all connected DimLux Expert light systems. If this does not produce the desired result, the DimLux Maxi Controller will turn off half the lights and will only be switched on again when the desired temperature is reached.

If you want perfect control over your lighting system, it is advisable to connect a humidity sensor that also communicates the humidity level of the room directly to the DimLux Maxi Controller. Given that temperature and humidity have an inter-dependent relationship, the two factors should be managed in conjunction – ultimately for calculating the Vapour Pressure Deficit (VPD) in maximum control rooms.

To restore the shortage of moisture in the room, a humidifier can be connected to the DimLux Maxi Controller (via a separately available Aux box or Fan/Aux box), which will humidify the air at regular intervals.

The combination of the temperature and humidity sensor is highly recommended in the search for the optimal growth of crops but it gets really interesting when these sensors are combined with the plant temperature sensor! This high-tech accessory uses infrared technology to scan the leaves of the crops in order to determine the plant temperature. The values obtained from the temperature sensor, humidity sensor and the plant temperature sensor directed to the optimum ratio between the ambient temperature, relative humidity of the environment, relative humidity and temperature of the leaves of the crops and the VPD expressed in kPa. Note: the DimLux Maxi Controller can only calculate The VPD if the plant temperature camera is connected.

Last but not least: the DimLux Maxi Controller has the ability to check the Co2 levels by means of a special Co2 sensor and to run a separate Co2 generator. Co2 is of great influence on the photosynthesis of a plant - the process responsible for generating energy and thriving plant development - and must be added to closed loop areas due to the lack of air intake.



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### 3. Better performing light equipment

The DimLux electronic ballast belongs to a new generation of electronic ballasts that regulate the voltage. So the regular 230-240v of the socket is converted to 400v for controlling better performing 400v lamps. Through the use of 400v Ultra High Frequency Technology (UHF), the PAR light output is greatly increased while the temperature is decreased during use. This technology was until recently only available for professional horticulture and greenhouses. In terms of efficiency, this digital technology is also advantageous; relatively more power at less costs. As long as you use the optimum conditions, it can result in a yield of up to 10-20% more than you had before!



As for the lamp, the DimLux Expert Series 600w fixture with the Philips GreenPower 600w 400v lamp has the highest PAR light output rating of all horticultural lamps available. The DimLux Expert Series 1000w fixture however comes with a BLV Horturion 2.2 1000W 400v DE EL Plus, is the most efficient HPS lamp available and registers 2.1  $\mu\text{mol}$  per Watt (which is even more efficient than the 600w lamp of 1,9  $\mu\text{mol}$  per Watt!).

### 4. Extensive connection - and control capabilities

A single DimLux Maxi Controller can control an astonishing 160 DimLux Expert Series light systems (in pairs of 40, under 80 light systems we recommend to use gate 1 and gate 2, if using more than 80 light systems please use gates gate 1,2,3,4). Two DimLux Expert lighting systems can be connected directly via speaker wire to the DimLux Maxi Controller, multiple light systems must be connected linear (daisy chain) to the first two light systems. A separate timer or relay isn't necessary anymore, just connect the light systems to the DimLux Maxi Controller, set the desired day and night cycles on the device, position the sensor and that's it! The DimLux Maxi Controller follows the instructions and turns all the lights on and off as adjusted, and only diverges from the established pattern to correct heat issues.



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### 5. Minimum light wastage

The latest techniques are used in developing the Alpha Optics reflector 98 to direct the light beams down towards your crops. This reflector features super reflective Miro Silver aluminum and adopts a remarkably effective shape that conforms to the Single Bounce Clear Sight principle (SBCS), only letting light beams hit the surface once before carefully guiding them past your lamp and over the crop canopy.



You can also adjust both sides of the reflector to carefully focus and fine-tune the spread of light. And there are even optional add-on reflector pieces available to prevent any (further) light wastage!



### 6. Actively cooled lamp

Another feature of the Alpha Optics reflector 98 is the 50mm port on top of the unit. This innocent-looking 50mm port makes it possible to extract warm air away from over, under and around the lamp, significantly contributing towards closer control of room temperatures.





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### 7. Sunrise and sunset simulation

To mimic the natural habitat of plants as good as possible, you can simulate sunrise and sunset with the DimLux Maxi Controller. The DimLux Maxi Controller includes a feature that slowly fades DimLux Expert Series Lighting Systems when turning on or off. Crops do not use photosynthesis until a certain temperature is reached. When the lights are turned on after a dark period, the plant could get stressful and this could affect crop growth. However, this can be prevented by simulating sunrise and sunset and additionally saves energy as well.

Another disadvantage of switching quickly from a cold to a warm room and vice versa is condensation. Water(drops) on your crops can't be absorbed by them and this is obviously a major concern since it instigates the onset of botrytis . Simulating sunrise and sunset with your lights will help you to overcome this issue.



### 8. Unique all-in-one unit

Attractive appearances aside, the initial thing you'll notice about the DimLux Expert Series is that the three main components of the lighting system (reflector, ballast and lamp) are incorporated into a single solid unit. This eliminates the threat of radio frequency interference in order to guarantee that an uninterrupted flow of energy reaches the light. It also helps free up space in your grow room, since the ballast is taken away from the floor/wall and cabling between the ballast and reflector no longer is necessary.





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### 9. Safety

After all the great features of the DimLux Expert Light system, you could easily forget one of the most important aspects of this system, safety! The Soft Start and Soft Off functions stop sudden surges of power from causing any damage to the equipment whenever you switch between "on" and "off" modes.

The DimLux Maxi Controller provides further security against electrical faults by also doing the job of a timer and switch / circuit breaker.

The solid casing complements the comprehensive level of protection; internal components are protected from excessive heat in order to prevent the risk of fire damage.

### Summary

The DimLux Expert Light systems and the DimLux Maxi Controller are specially designed to work together in order to get the most energy out of your lamps and (achieve) an unmatched level of control over these collaborative systems.

The optional sensors that can be connected to the DimLux Maxi Controller with the DimLux Light Expert systems, makes it the most intelligent system that is currently available. Being able to hand over the management of the lighting to a controller that can monitor the ambient temperature, plant temperature, humidity and CO<sub>2</sub> and then dim or switch off lights if deemed necessary to re-establish desired conditions will change your life completely! They offer a tantalizing glimpse into the future and represent a giant leap forwards in terms of grow room technology!

If you combine the DimLux Light Expert system and DimLux Maxi Controller with the multifunctional airtreating OptiClimate system, which was created by the same forward thinkers as the aforementioned products, you have the basis for one of the most advanced closed-loop growing rooms in existence!