

DIMLUX VERTILED



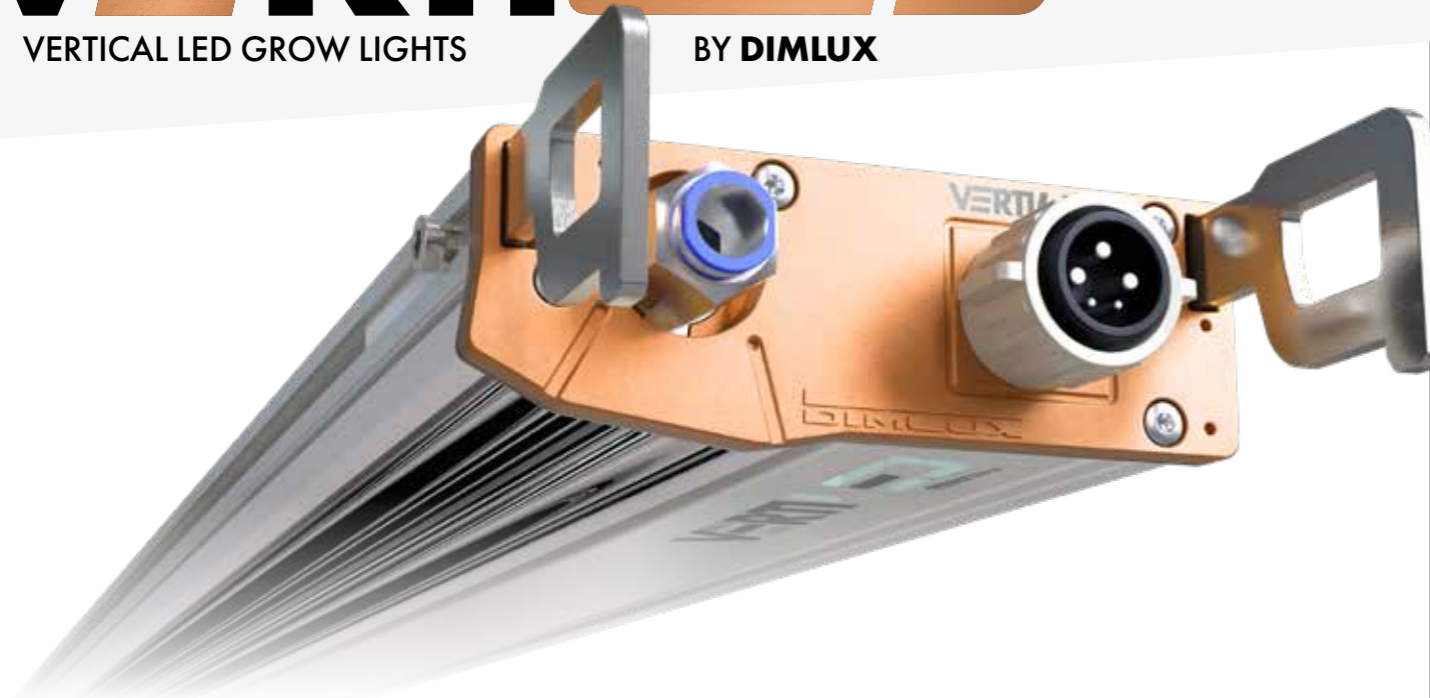
SPECIALLY MADE FOR
**VERTICAL
GROWING**

WATER COOLED
**HYBRID
COOLING**
PASSIVE AIR COOLED

INDEPENDENT
**DYNAMIC
CONTROL**
OF 4 SEPARATE
LED COLOR CHANNELS

VERTILED

VERTICAL LED GROW LIGHTS BY DIMLUX



THE MOST VERSATILE SYSTEM A UNIQUE MODULAR CONCEPT

Up to four different LED colors* and power ratings can be combined. The length of the fixtures can be adjusted to every desired length**. In combination with the multi option mounting system, it fits perfectly to every grow site.

Dimlux are experts in designing the best possible optics with the highest efficiency and uniformity for its fixtures to meet the most demanding lighting requirements in the most complicated grow areas. The patented "broken" lens design ensures the highest possible efficiency in the market. The innovative and unique modular technology ensures highly efficient tailored LED lighting in vertical grow farms and a stable cultivation climate.

The new vertiLED vertical grow farm fixture is specifically designed to distribute light uniformly, even with extremely little distance between fixture and crop. The vertiLED can be used for close-to-crop applications such as vertical grow systems and growrack systems in a grow farm.

INDEPENDENT DYNAMIC CONTROL OF 4 SEPARATE LED COLOR CHANNELS FOR REDUCING ENERGY COSTS

The variable spectrum and dynamic color control can be used to work with different crops with different optimal spectrum requirements in the same grow cell or growrack. With this, the advantages of crop dependent spectrum strategies can be applied.

Select the most efficient spectrum for each crop, and each stage in its life, and reduce energy costs. Using independent fixture control, it is possible to select a different light output for different growing stages of a crop when grown in different sectors in a growing cell or growrack.



The wide range of possible spectra, together with individual remote control from a central location, make it possible to find the right light recipe for a new or known crops in a very short time. Ideal for research and testing chambers.



MULTI OPTION MOUNTING SYSTEM

The fixture has mounting options for **top and side mounting**. For any mounting option, mounting brackets can be custom-made.

* UV-A (broadband or narrow-band), White (435nm peak), White (455nm blue peak), Blue, Lime, Red, Deep Red, Far-red. White options can have different color temperatures.

** Between 75cm (30") and 220cm (86").

VERTILED



THE HIGHEST "FULL WIDTH" FIXTURE-TO-GROW-BED UNIFORMITY AND EFFICIENCY IN THE MARKET

The unique angled position and asymmetric high-precision optics distributes the light uniformly over the full width of the grow bed.

With conventional vertical growing lighting systems, light decreases towards the sides of the grow bed, and they don't prevent light falling outside of the grow bed. This is inherent to symmetrical light designs.

The vertiLED overcomes this limitation by using an asymmetrical design of the secondary optics. The optics amplify the light that falls on the grow bed and attenuates the light that falls outside of the grow bed. **Because of this, vertiLED offers the highest fixture-to-grow-bed light efficiency in the market.**

PASSIVE AIR COOLED AND WATER COOLED

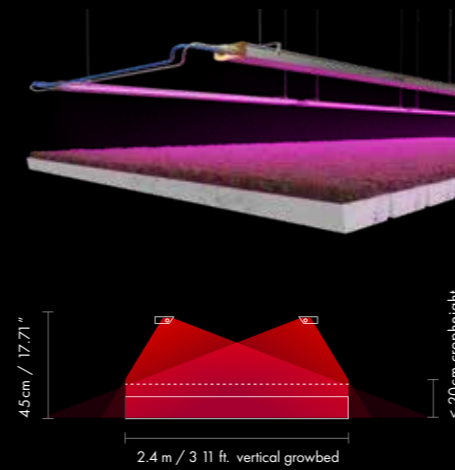
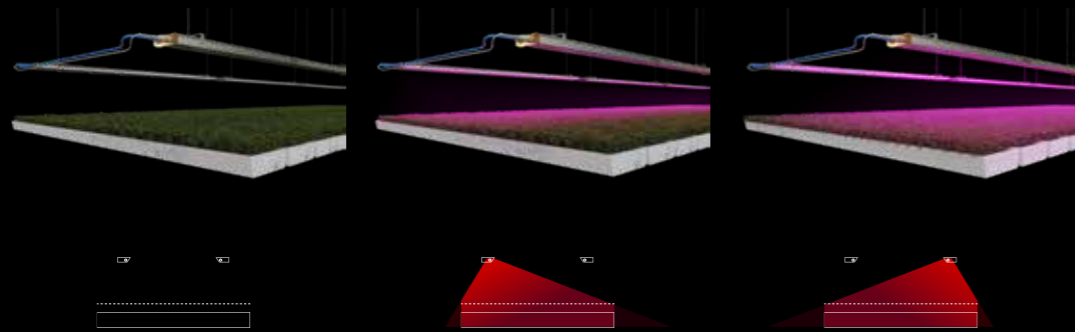
Can be used in any situation due to the hybrid cooling. The air cooling is passive so there are no fans or spaces that can become clogged with dust. The water cooling is the most efficient form of cooling and ensures direct heat dissipation.

LINKABLE UP TO 10 FIXTURES

The vertiLED uses combined power and communication cables. Using a simple quick connect system, up to 10 fixtures can be connected in series with each other without needing ten separate cables.

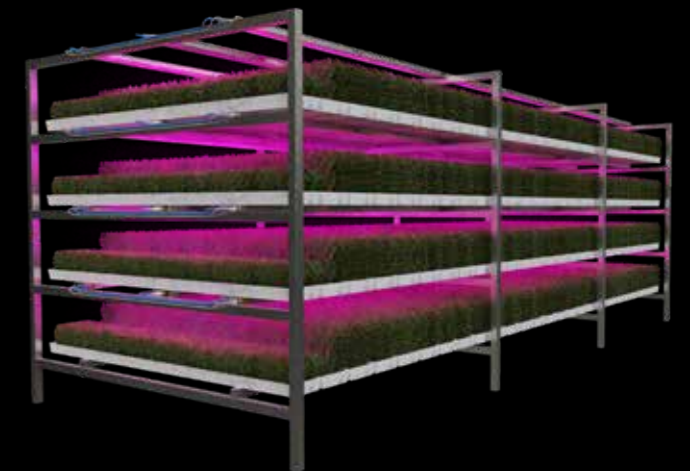
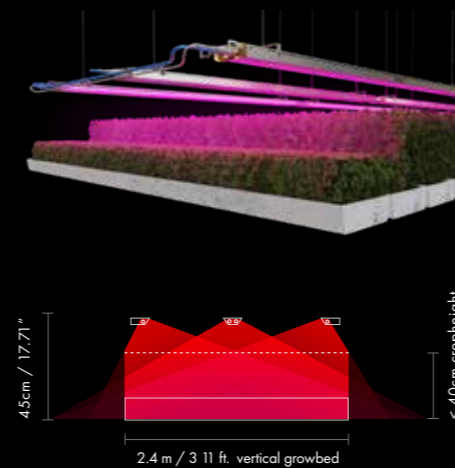
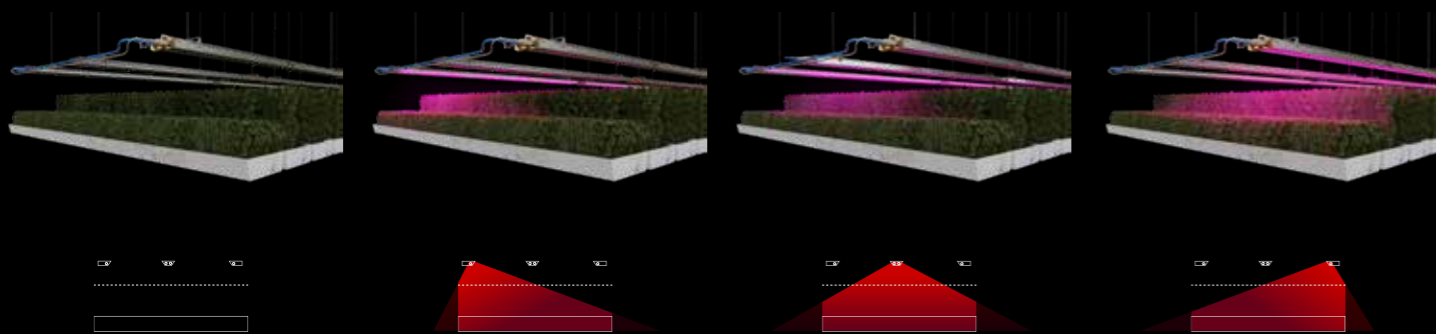
OPTIMAL LIGHT DISTRIBUTION

The unique angled position and asymmetric high-precision optics distributes the light uniformly over the full width of the grow bed.



ADDITIONAL SYMMETRICAL OPTICS

An additional symmetrical optics fixture is required in between 2 asymmetrical optics fixtures when the grow bed is very wide or when the crop to fixture distance is extremely limited.



LED'S SHINE A LIGHT ON DIMLUX VERTILED

PASSIVE AIR-COOLED AND WATER-COOLED

Can be used in any situation thanks to the hybrid cooling. The **air cooling is passive** so there are no fans or spaces that can become clogged with dust. The **water cooling is the most efficient form of cooling and ensures direct heat dissipation**. With water cooling, the fixture will no longer give off convection heat and will therefore not heat above or nearby levels. The hot water can be reused in various ways, for example in places where heat is desired in the room or another room.

STABLE CLIMATE

When active water cooling is used, the heat from the vertiLED fixtures is taken out of the growing area, so that there is no need for forced air flow, which improves growth and reduces cooling costs. **This contributes to a stable temperature and humidity, a stable, homogeneous growing climate.**

WATER COOLED DRIVERS

The drivers for each of the channels are built into the fixtures, so their heat is also dissipated into the water, further increasing the total excess heat dissipation for the water-cooled option. No external drivers, less fixtures, less installation time, less points of failure, less wiring, more space, clean and crisp appearance.

WATER PROOF

The vertiLED fixture has an IP66 rating.

All electronics and LEDs are in a dry safe environment.

EASY TO SANITIZE

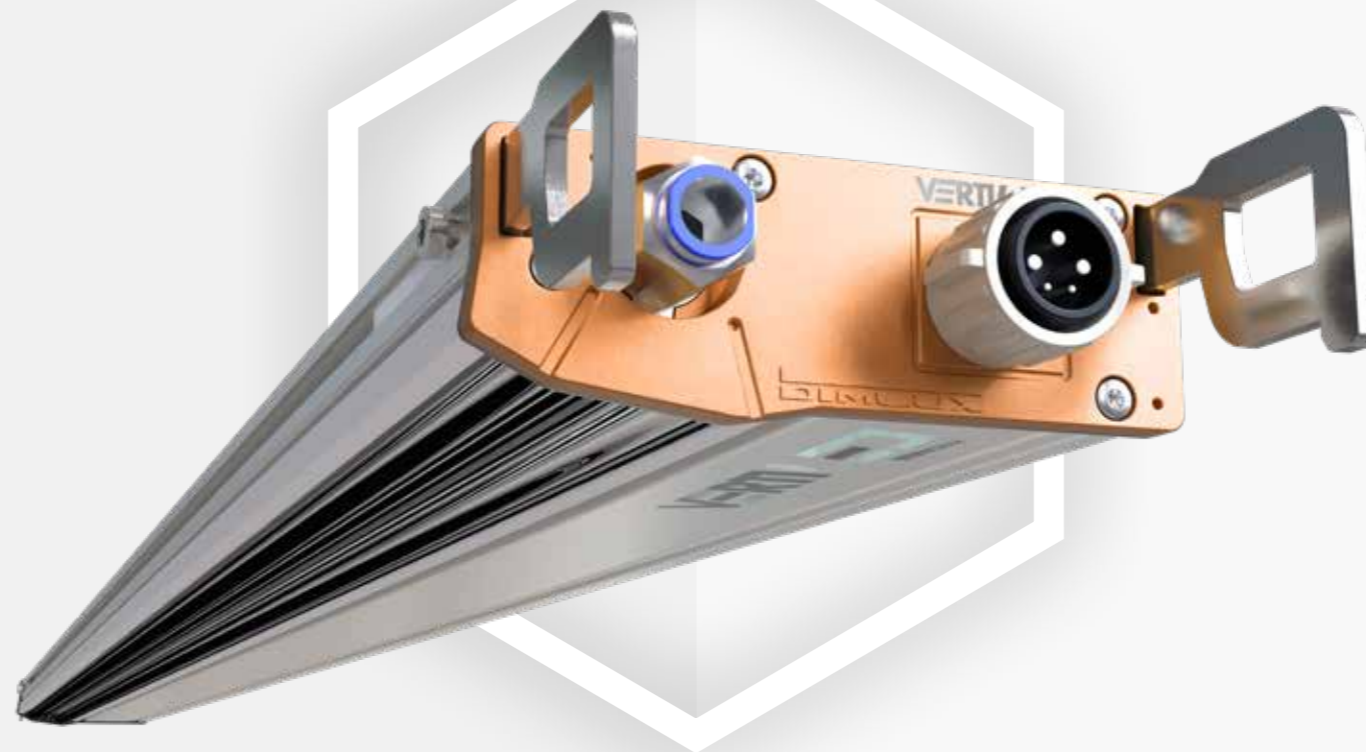
The vertiLED has **no cooling fins and has a waterproof housing**. This allows the fixture to be cleaned with water and sanitising agent.

HIGHEST ENERGY EFFICIENCY

The top bin LEDs in combination with the water cooling make the vertiLED one of **the most efficient fixtures available**. The Vertiled comes in 2 efficacy models. The Standard Efficacy and the Xtreme Efficacy models.

PASSIVE AIR AND WATER COOLED

DUTCH DESIGN, ENGINEERING AND QUALITY



INNOVATIVE LIGHTING

INDEPENDENT DYNAMIC CONTROL OF 4 SEPARATE LED COLOR CHANNELS FOR REDUCING ENERGY COSTS

The **variable spectrum and dynamic color control** can be used to work with different crops with different optimal spectrum requirements in the same grow cell or growrack.

SPECTRUM COMPOSER

Dimlux is continuously improving the vertiLED package and optics specifically for the customers needs. Due to the inhouse development of the Spectrum Composer, a software tool in which **we can simulate every LED spectrum** from every high class LED producer. Thanks to this powerful tool we can simulate and very quickly determine which options are available and which LED combination has the best results.

THE HIGHEST "FULL WIDTH" UNIFORMITY

The unique angled position and asymmetric high-precision secondary optics distributes the light uniformly over the full width of the grow bed. The optics amplify the light that falls on the grow bed where it is most needed.

ONE SIZE FITS ALL?

Unfortunately, there is no ideal fixture for all situations. The initial and final distance of the fixture to the crop, the width of the grow bed, the desired PPFD and the spectrum all influence the optimal design. **The vertiLED can be made in such a way that it most closely matches the ideal fixture.**

ROBUST AND FLEXIBLE LENGTH DESIGN

The vertiLED fixture is very **robust and especially designed for horticultural use**. Aluminium die-cast components, thick-wall anodized extrusions and powder-coated corrosion protection ensures the housing will last as long as the LEDs. The vertiLED fixtures are very solid and can be used as supports for plant gutters. **The unique customizable length design assures a perfect fit for every structure.**

ULTRA HIGH TRANSMISSION LENS MADE OF PMMA

PMMA has proven to be by far the best solution for protecting LEDs. The vertiLED fixture is **composed of special PMMA with extremely high transmittance and does not block UV-A rays**. The patented lens design prevents light from reflecting back to the LED and prevents absorption and reflection losses. The special PMMA is designed for horticultural applications and will not age or yellow during its service life. PMMA is virtually unbreakable and therefore the safest choice to protect the LEDs.

LONG LIFE EXPECTANCY

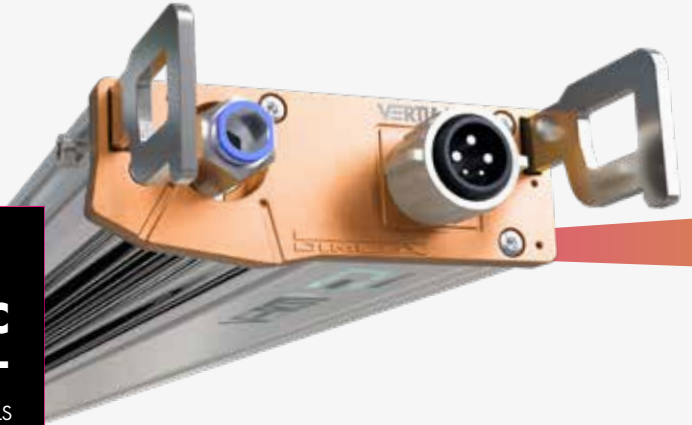
The vertiLED retains 90% of its light output in **at least 95% of the luminaires after 50,000 hours**: L90 B05 50,000 hours for the standard specification (SE). For the Xtreme specification (XE) the light output is **still guaranteed after 54,000 hours**.

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FEATURES

- The **highest “full width” uniformity** using unique angled position and asymmetric high-precision optics.
- **Independent dynamical control** of 4 separate LED color channels.
- Up to **10 fixtures can be connected in series** using **combined power** and communication cables .
- **Water cooled and passive air cooled.**
- **Stable climate using active water cooling** so no ventilation is needed, reducing cooling costs. **Stable temperature, humidity and homogeneous growing climate.**
- **Each fixture has a unique address and can be independently controlled** and asked for system status and fixture / cooling water temperature.
- **Multi option mounting system for top and side mounting.** For any mounting option, mounting brackets can be custom-made.

SPECIFICATIONS

EXAMPLES OF FIXTURES WE PRODUCE

EXAMPLE 1

Channel 1:	White 4000K	300W	800 µmol/s
Channel 2:	Deep Red 180W + Far-red 20W		610 µmol/s

EXAMPLE 2

Channel 1:	White	455nm peak	66W	155µmol/s	2.31µmol/J
Channel 2:	Deep Red	660nm	259W	940µmol/s	3.62µmol/J
Channel 3:	Far Red	730nm	33W	86µmol/s	2.6µmol/J
Channel 4:	Blue	455nm	66W	152µmol/s	2.3µmol/J

COLORS

UV-A (broadband or narrow-band) White (435nm blue peak), White (455nm blue peak), Blue, Lime, Red, Deep Red, Far-red. White options can have different color temperatures.

SPECIFICATIONS

Voltage:	100-300V
Pipe thread:	G 3/8"
IP Rating:	IP66
Weight:	Max. 9.5kg
Measurements:	750 — 2200mm x 143mm x 50.8mm
Warranty:	5 Years

DIMLUX

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**THE FUTURE OF GROWING
JUST GOT BRIGHTER.**