LED.
LIGHT.
GROW.

Water-cooled LED GROW LIGHTS

oreon
LED. LIGHT. GROW.

DIGITAL COMPANY BROCHURE

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ADVANTAGES OF WATER COOLING

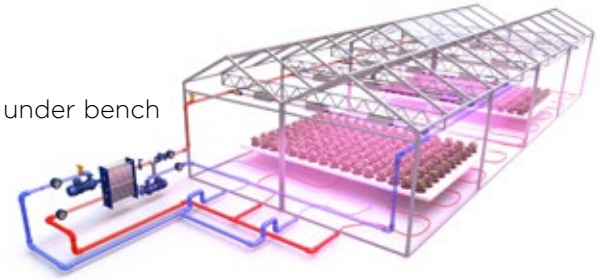
Oreon developed a unique, active water cooling technique to cool its LED fixtures and to ensure a low operating temperature, benefitting the light output, efficiency and the lifespan of the electronics and leds.
Using water-cooled LED grow lights enables a grower to separate light from heat resulting in a controllable greenhouse climate; less radiant heat means fewer temperature fluctuations, resulting in stable temperature, humidity and CO_2 values.

Another advantage is the possibility of reusing the dissipated heat. By making use of a heat exchanger, this energy can be reused to heat the greenhouse (if necessary) or increasing the temperature of, for instance, spray water. Taking sustainability into count; reusing dissipated heat means making full use of the energy consumption of the LED fixture and saving on HVAC, resulting in maximum energy savings.

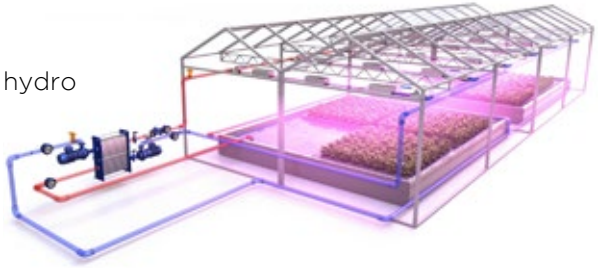
The water cooling technique allows Oreon to design a compact and high light output fixture which can be mounted directly under the trellis. Due to this combination less fixtures are needed for the perfect light distribution and therefor less sunlight is being blocked so a grower can make optimal use of natural sunlight.

REUSE OF HEAT

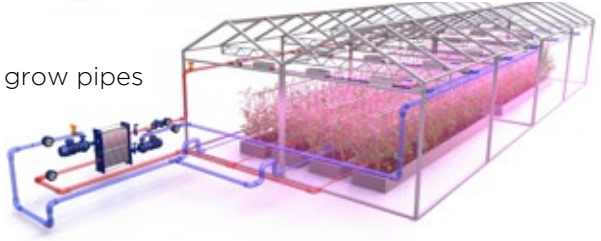
under bench



hydro



grow pipes



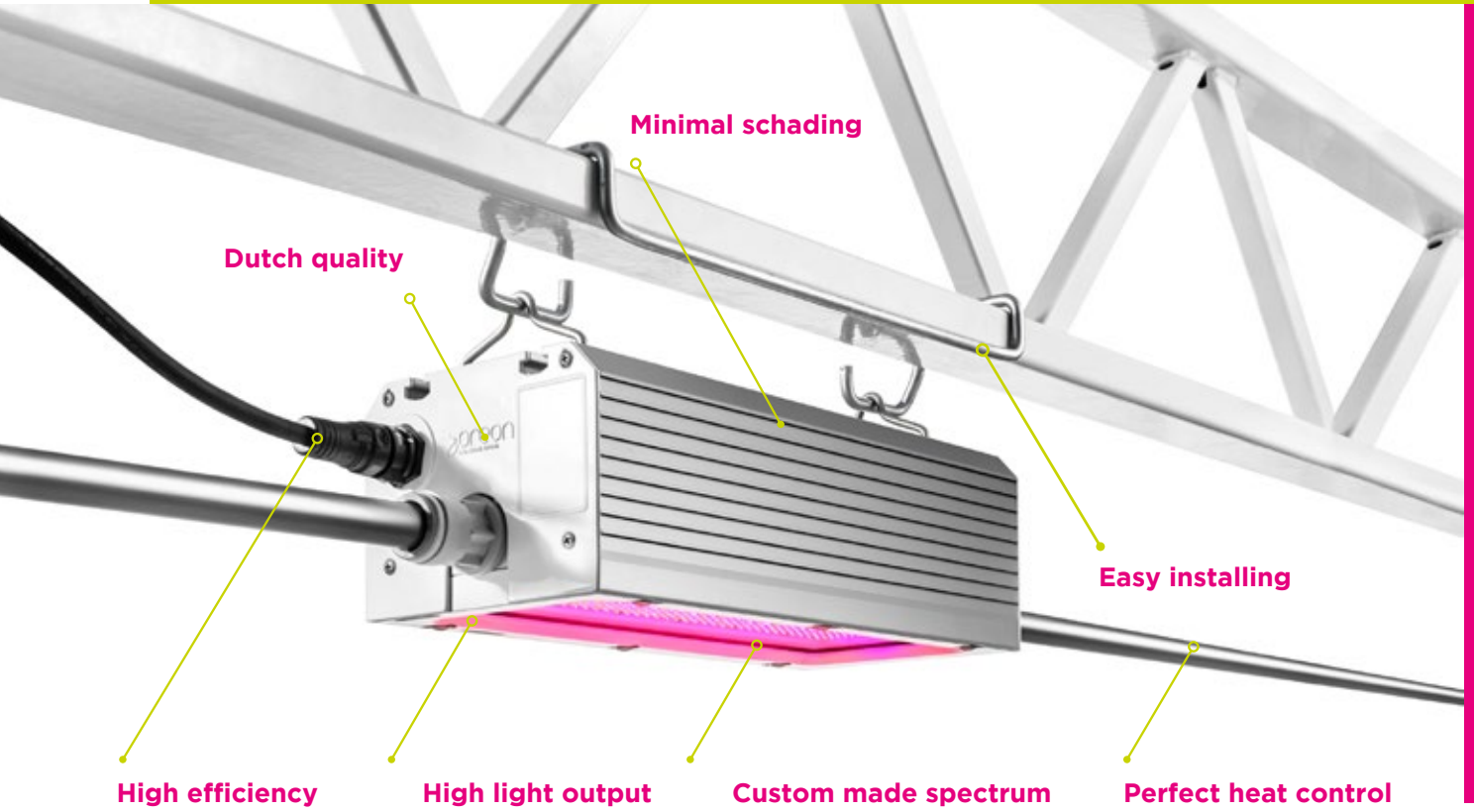
When the heat from this fixtures is re-used, the water cooling system consists 2 water circuits that are separated by a heat exchanger. The first circuit provides a constant flow of water from the heat exchanger to and from the fixtures. Cool water is pumped to the LED fixtures. There, the water absorbs the excess heat from the fixtures and then flows back to the heat exchanger. In the heat exchanger, the heated water is actively cooled by a second circuit.

There are various possibilities to sustainable re-use the heat from the fixtures. The heat can be reused directly under the crop under benches or in a grow pipes or hoses. Also the spray water or the water in hydrophonic ponds can be heated on colder days.
When the heat is eliminated, the water from the second circuit can come from an outside pond, but can also be actively cooled by a dry-air cooler, chiller, HVAC or a cooling tower.

There are various options and together with the installer it is determined which solution best suits the specific business operations of the grower. In close collaboration with installers and manufacturers, Oreon has selected installation materials (couplings, pipes, etc.) that ensure that the LED fixtures, including cooling installation, can be installed quickly and easily.

DISCOVER MORE Water cooling SOLUTIONS

TOP LIGHTING



The water cooling technology allows Oreon to design the smallest LED top light with the biggest impact. They can achieve an extremely high light output and efficiency. The fixtures can be mounted under the trellis and because of the compact design, less sunlight is being blocked. Replacing a 1000W HPS fixture with the Monarch gives a grower almost twice as much light on his crop.

This means even more light and fewer fixtures in the greenhouse against a lower investment and lower installation costs. Not only for lighting, but also HVAC costs, because what doesn't heat up, doesn't need to cool down.

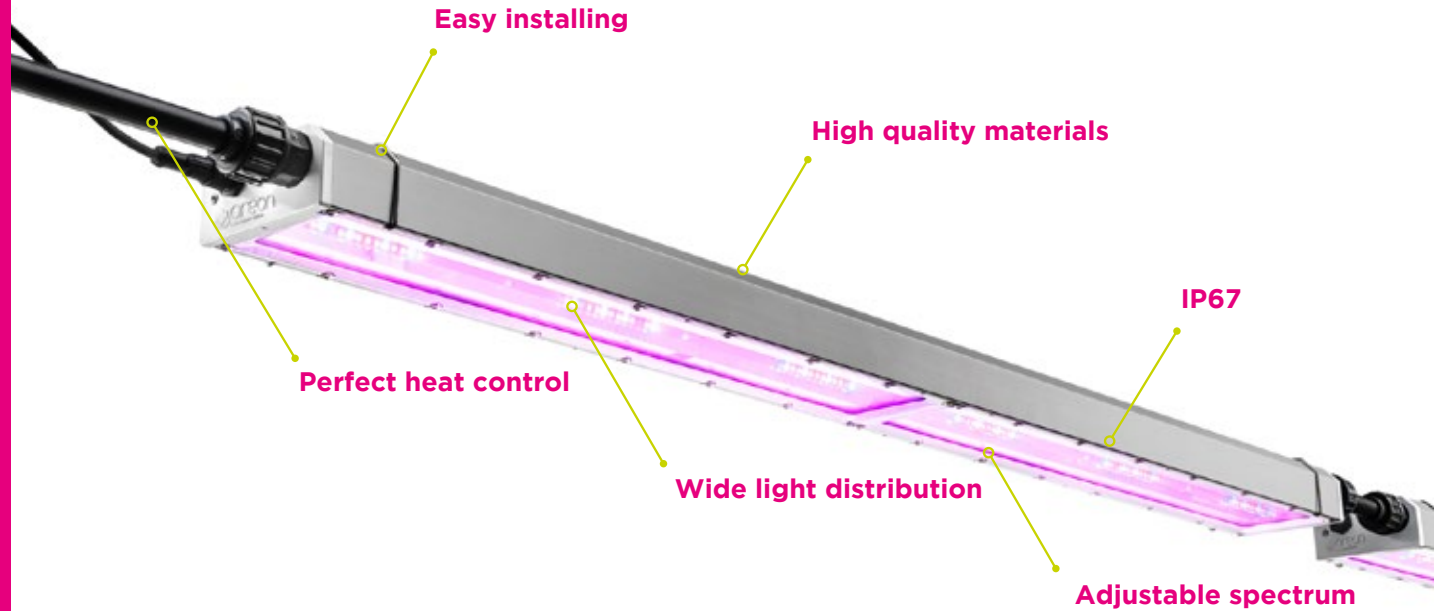
WATCH WATER COOLING VIDEO

MULTI-LAYER LIGHTING

Oreon's multi-layer fixture is specifically designed to distribute light uniformly, even with a little distance between fixture and crop.
Like the top lights, Embrace has a high light output, made of high quality materials, is IP67 certified and is very efficient. All radiated heat is dissapated via the active water cooling and can be reused if required.
Furthermore, this fixture is dimmable and controllable to program each color channel at any time, resulting in maximum flexibility.

The Embrace can be used for close-to-crop lighting, multi-layer systems, rack systems and under gutter illumination.

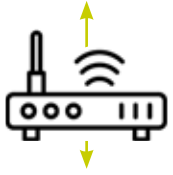
MORE ABOUT EMBRACE



LED CONTROL CENTER

Oreon's LED Control Center enables growers to control their assimilation lights with unsurpassed precision. Fluctuations in sunlight can be compensated and various areas in the greenhouse can get custom light levels at different times of the day.

Total flexibility for the grower is in the DNA of our system: the LED fixtures can be arranged in as many groups as desired. For each group multiple schedules can be made with unlimited changes per day, and fixtures can easily be moved from one group to another. In this way it is guaranteed that every inch of the greenhouse gets exactly the required amount of light.



Growing area

- Insert dongle to the fixture for a wireless connection.
- Dimming per group.
- Assign fixtures to groups (unlimited).
- Group assignment is flexible.

Gateway

- A gateway connects the network to online platform.
- Only wired ethernet connection needed.

Control center

- Access through Oreon online platform.
- Create schedules for the level of light intensity.
- Unlimited changes in light intensity per day.

Monarch

The Monarch is the smallest and most powerful LED fixture available in the market.

- 1-on-1 1000W HPS replacement
- Less fixtures needed in the greenhouse
- 1050 or 1200 W

MORE ABOUT MONARCH | DATASHEET MONARCH

Empress

The Empress is available in various light spectra for the most optimal light uniformity for every type of crop.

- More light exposure with the same energy consumption
- Perfect climate control in the greenhouse
- 710 W

MORE ABOUT EMPRESS | DATASHEET EMPRESS

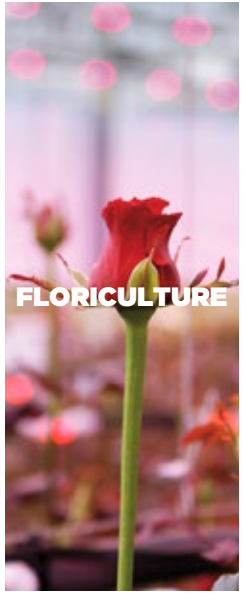
Embrace

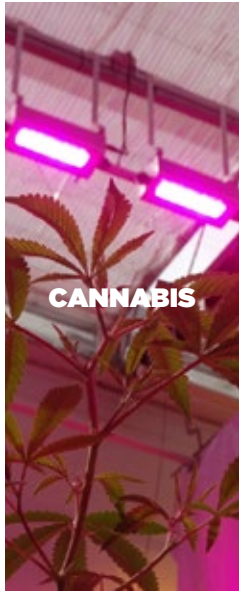
A water-cooled fixture for multi-layer purposes, vertical farming or other close-to-crop applications.

- Climate control in a small growing space
- Wide beam optics
- Dynamically adjustable spectrum
- 4 hardware spectrum versions

MORE ABOUT EMBRACE | DATASHEET EMBRACE

CROPS



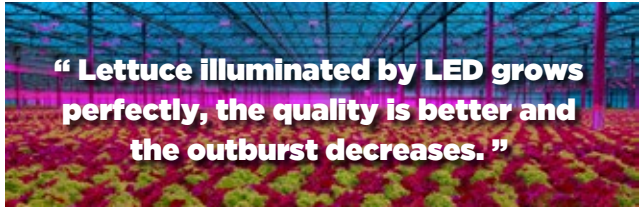


Oreon produces and develops highly efficient and sustainable LED grow lights, especially for greenhouse horticulture. Every crop has its own assimilation lighting needs. Thanks to years of knowledge and experience in this industry, we can develop the perfect light recipe with you.

Click on the crops to find out more about the benefits of LED lighting and the water cooling solutions that Oreon can offer for each crop.

MORE ABOUT CROPS

BUSINESS CASES



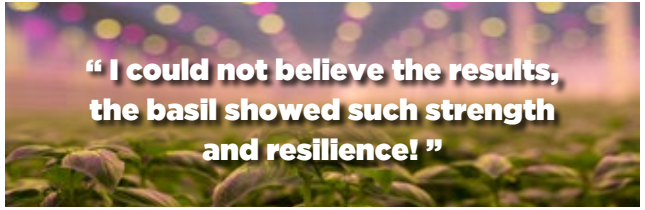
FromBoer

The lettuce growers in Dinteloord have been using Oreon LED grow lights for years. As a result, he loses fewer plants and is able to deliver premium quality lettuce all year round.

READ ABOUT THIS CASE ON OUR WEBSITE

Testimonial grower

Testimonial installer PB Tec



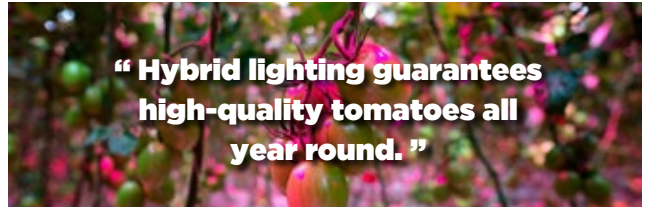
De Kruidenaer

De Kruidenaer in Etten-Leur had a hybrid light--ing method installed in their high-tech basil greenhouse. They have higher yields, better quality and improved plant resilience.

READ ABOUT THIS CASE ON OUR WEBSITE

Testimonial grower

Testimonial installer Voshol



HortiPower

A more generative plant, 10 to 12 percent more production, and Brix measurements at summer levels all year round are the key results of this hybrid lighting installation.

READ ABOUT THIS CASE ON OUR WEBSITE

Testimonial grower

Testimonial technical advisor

Oreon is a Dutch innovative developer and manufacturer of high-tech LED grow lights for the horticulture. Almost 15 years ago Oreon started in the horticultural LED business after being front leader in the development of LED in consumer goods and public lighting. LED lighting consumes up to 80% less energy compared to traditional lighting and is therefore of essential value for a sustainable future in greenhouse horticulture.

Throughout many years of research, numerous successful tests have been implemented in greenhouses and research facilities. In 2009 Oreon installed its first commercial project with water-cooled LED grow lights in a Dutch tomato greenhouse. Since then, the LED fixtures of Oreon are being used in greenhouses and indoor growing facilities above different types of crops, all over the world.

Oreon stands for innovation and high quality. By continuing to devote a great deal of care and attention to Research & Development in combination with durability, Oreon is able to provide the world's best greenhouse lighting. The highest quality materials and robust parts are being used which are especially designed for the harsh greenhouse conditions.

RESEARCH & COLLABORATION

Oreon collaborates with a large number of renowned (inter)national partners and leaders in the horticultural industry. This has led to a close cooperation with WUR's (Wageningen University & Research) Club of 100, Delphy and PSKW (Proefstation voor de Groenteteelt in Belgium). We also work in close collaboration with customers to improve our products. This kind of collaborations give Oreon the opportunity to acquire a great deal of knowledge and experience and to subsequently put this into practice.

CONTACT

Sales

Service

Research & Development

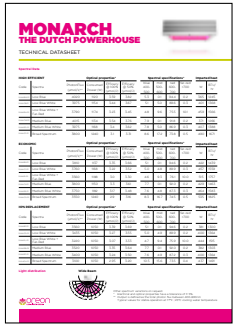
Marketing

Finance

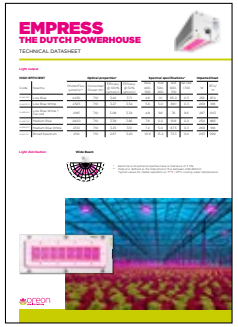
Production

Supply chain

DOWNLOADS



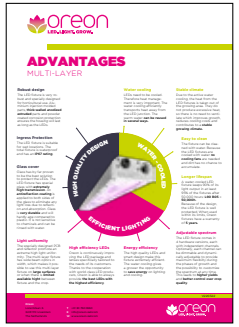
Datasheet Monarch



Datasheet Empress

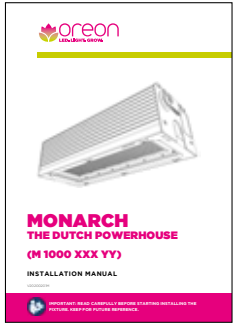
Datasheet Embrace

Advantages TL

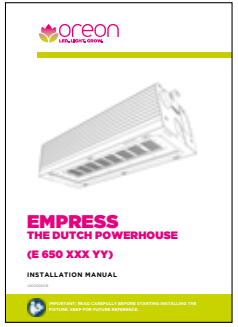


Advantages ML

Water cooling visuals

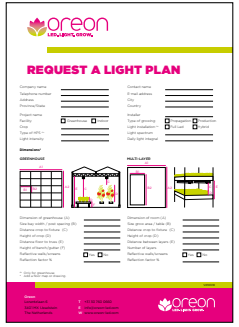


Installation Manual Monarch



Installation Manual Empress

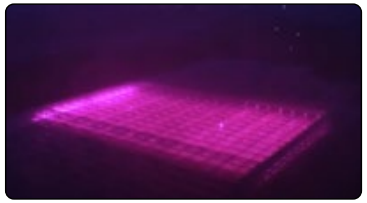
Installation Manual Embrace



Light plan form

Cannabis Flyer

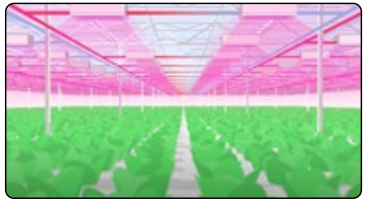
VIDEOS



We are Oreon

Monarch assembly video

Water cooling benefits



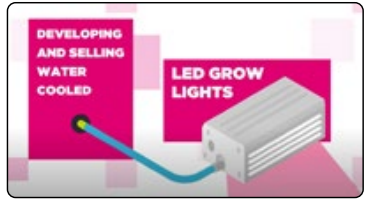
Water cooling explained

Embrace launch video

Sustainability campaign

LED lighting stadium grass

Embrace product video



Monarch introduction

LED'S. STAY. CONNECTED.

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