

WORLD'S BEST PERFORMING AND COOLED LED GROW LIGHTS



COMMANDER

THE NEXT LEVEL HYBRID-COOLED LED TOP LIGHT



OREON LED INNOVATOR

WORLD'S BEST PERFORMING AND COOLED LED GROW LIGHTS

Oreon is a forerunner in the development and production of sustainable lighting solutions with advanced, quality LED technology. Active since 2009 in the field of LED lighting in greenhouses and vertical farms. Here, innovation is leading to ensure optimal growing conditions and energy efficiency.

PRODUCT SOLUTIONS

Oreon offers high-quality, customized and highly-efficient LED solutions for greenhouse horticulture.

Our portfolio consists of both water-cooled and air-cooled fixtures; thus, we can offer a solution for all types of growers and crops. The **water-cooled** variant ensures that LED grow lights are continuously cooled. As a result, the lamp always performs optimally, the lifespan is extended and there's an opportunity to re-use the gained heat.



Our **hybrid (air)-cooled** fixture is based on combined technologies resulting in the next level grow light that rivals water-cooled LED in terms of performance and reliability. The 4-channel driver offers ultimate flexibility and high light output makes it possible to light greenhouses with fewer fixtures.



SMART LED SOLUTIONS FOR EVERY CROP

Every crop requires a unique lighting strategy. Thanks to our years of experience in greenhouse farming, we develop lighting solutions that perfectly match growers' specific assimilation lighting needs. Our Monarch 3C and Commander fixtures combine advanced technology with practical applicability and meet virtually all industry requirements.

With fully adjustable spectrums, individually dimmable multi-channel options and water or hybrid cooling, our fixtures offer maximum flexibility, high uniformity and long life. Whether you need energy efficiency, spectrum control, uniformity, crop penetration or far-red switching, Oreon has the solution. Our lamps are designed to respond to energy prices, re-use heat and maintain a stable growing environment.

The Commander is ideal for growers who want maximum control over spectrum and efficiency. The Monarch 3C offers an excellent balance between performance and cost, including a budget option for situations where fixed spectrum is sufficient.

Whether your goal is low cost per μmol , minimal installation costs or top-level sustainability, we listen to the needs of your crop and provide an appropriate solution. Not a standard story, but configure-to-order customization.



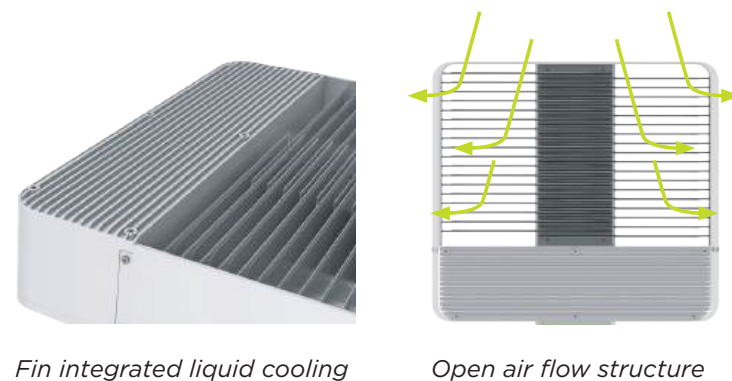
COMMANDER

THE NEXT LEVEL HYBRID-COOLED LED TOP LIGHT

Oreon is well known for its water cooled fixtures. The **COMMANDER** responds to the demand for Oreon's quality grow lights, without external water cooling. Heat management is essential for LED lighting. Our innovative combined technology results in 'the next level' LED grow light that rivals the performance and reliability of Oreon's water-cooled lights.

HYBRID-COOLED: EFFICIENT & FAST

Cooling fins with an integrated liquid cooling system have been developed in cooperation with Cooler Master, experts in complex cooling systems. The highly effective heat distribution and open structure allows air cooling to do its job optimally.



TOP EFFICACY: HIGHEST POWER & OUTPUT

The result of this hybrid cooling technology is a LED top light with a max. output of 7400 $\mu\text{mol/s}$ at 1840W. The very high energy efficiency of 4.0 $\mu\text{mol/J}$ at 100% power contributes to environmentally friendly cultivation. The high light output enables growers to light their greenhouses with fewer fixtures, making the **COMMANDER** a cost-effective LED solution. The existing Oreon flat glass cover plate and IP67 standard makes cleaning easy, which also reduces maintenance costs. This combination represents the best TCO in the market.



DISCOVER THE FLEXIBILITY OF THE COMMANDER

The **COMMANDER** offers up to four (4) separately controllable channels and a power output up to 1840W. In addition, the grower determines its desired spectrum. The customized light recipe is dynamically adjustable and communicates with all climate computers. This makes it easy to respond to external factors such as sunlight and energy prices and specific needs of the crop during different stages of growth. Therefore the plug & play **COMMANDER** is suitable for all crops and usable in both retrofit and new installations.

HIGH UNIFORMITY

In close cooperation with external experts we developed a new lens. This lens ensures uniform light distribution even at shorter distances between crop and fixture. The **COMMANDER** is suitable for a variety of crops like high-wire crops, strawberries, flowers and lettuce.

HYBRID-COOLED

- Fins with integrated liquid cooling system
- Open structure for optimal air cooling

INPUT

- Custom-made 1000-1840W power input
- Flexible spectrum

CONTROL

- Up to 4 channels
- Channels individually dimmable
- Bluetooth® SIG Mesh
- HLP compatible



POWERED BY



OUTPUT

- Max. output of 7400 $\mu\text{mol/s}$
- Efficacy up to 4.0 $\mu\text{mol/J}$ at 100% power
- Sensor ready

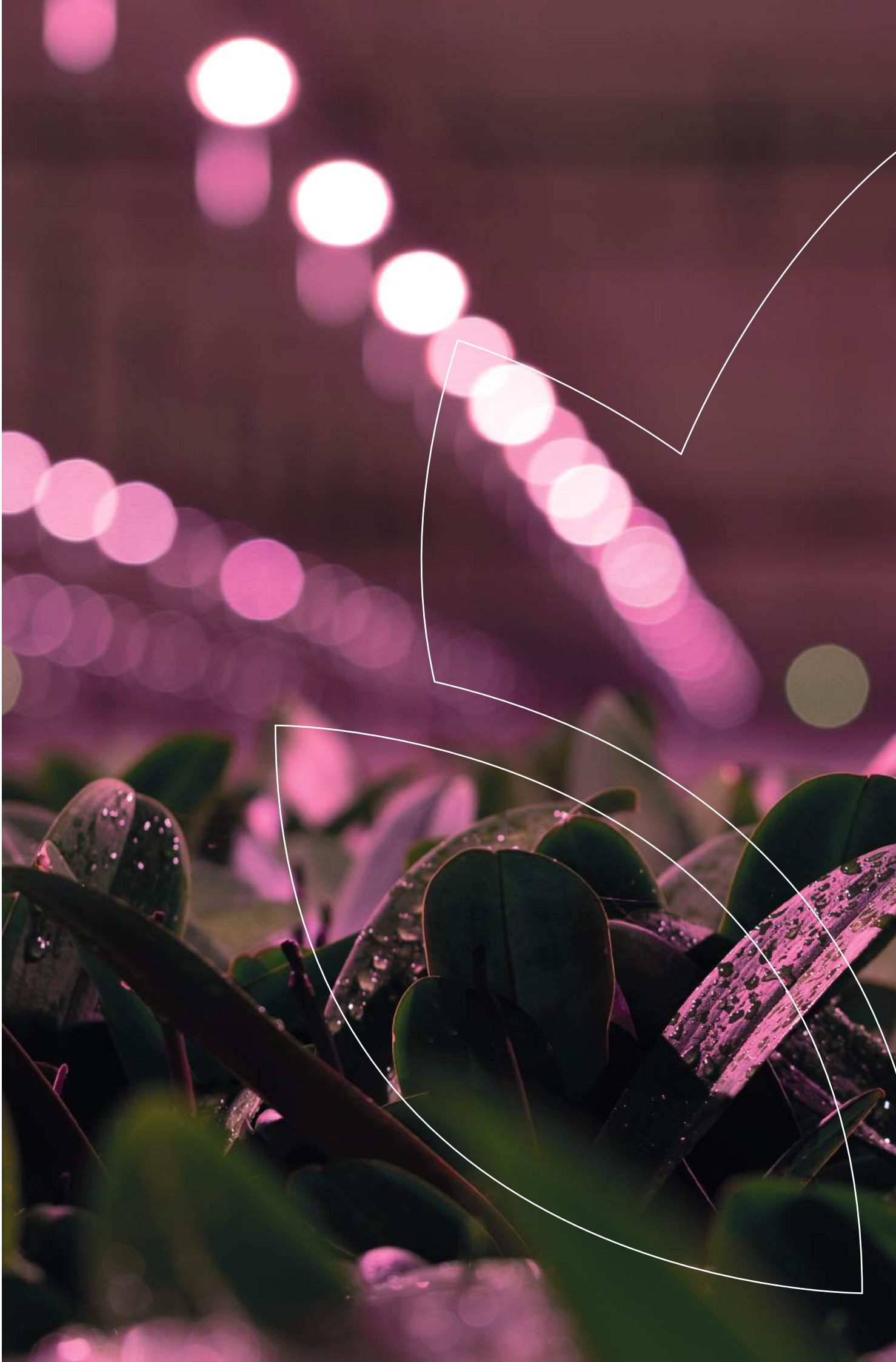
BLUETOOTH MESH NETWORK

The Oreon LED Control Center (OLCC™), a proven Bluetooth® SIG MESH network, dynamically controls all fixtures and offers growers infinite flexibility in grouping. Also, the OLCC provides information about each individual fixture such as temperature, voltage and power consumption. In the future, it will be possible to add sensors to individual fixtures.



GET A FREE QUICK SCAN

Based on your specific greenhouse- and crop preconditions, Oreon can easily provide tailored light plans including the optimal fixture and light configuration. Combining our proven technology and a flexible, customized plug & play LED top light, Oreon ensures you're ready for the future: the right spectrum, the right intensity, the right time at lower costs. Even a crop change is possible with the flexible **COMMANDER**.





COMMANDER TECHNICAL DATASHEET

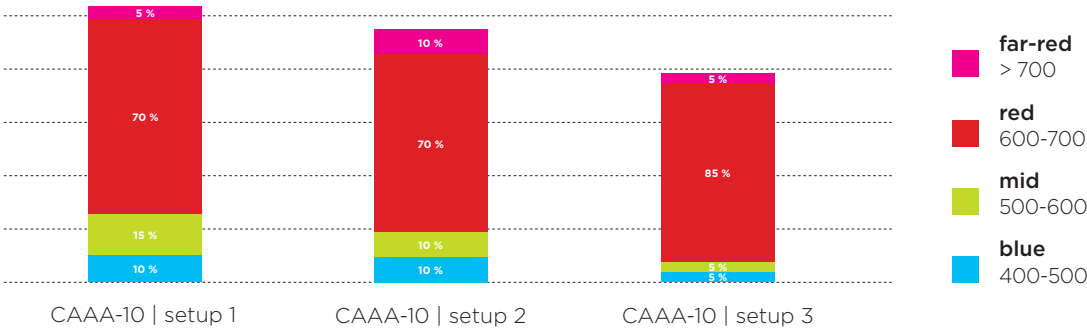
Ready for the future with ultimate spectrum flexibility

The Commander is a modular, customizable grow light designed to meet your unique lighting needs. Choose up to four colors, specify the deviation (%) of each color, and set a total maximum power consumption. Each color is individually dimmable, with adjustable brightness levels ranging from 0% to 100% for complete control. Based on your preferences, we will craft a Commander tailored precisely to your needs.

SPECTRAL DATA		OPTICAL PROPERTIES*1			SPECTRAL SPECIFICATIONS*1			
Spectra	PhotonFlux (μmol/s)*2	Consumed Power (W)	Efficacy (μmol/J)	Efficacy 50% (μmol/J)	blue 400-500	mid 500-600	red 600-700	far-red >700
CAAA-10 setup 1	6125	1825	3.4	3.7	10 %	15 %	70 %	5 %
CAAA-10 setup 2	5815	1670	3.5	3.8	10 %	10 %	70 %	10 %
CAAA-10 setup 3	4930	1301	3.8	4.1	5 %	5 %	85 %	5 %
CABL-10 setup 1	6800	1840	3.7	4.0	8 %	1 %	82 %	9 %
CABL-10 setup 2	6550	1820	3.6	3.9	3 %	10 %	87 %	0 %
CABL-10 setup 3	6330	1675	3.8	4.1	5 %	5 %	90 %	0 %
CAAS-8 setup 1	6290	1757	3.6	3.9	6 %	6 %	88 %	0 %
CAAS-8 setup 2	6145	1695	3.6	3.9	5 %	5 %	90 %	0 %
CAAS-8 setup 3	6145	1743	3.5	3.8	6 %	8 %	77 %	9 %
CABK-8 setup 1	5700	1631	3.5	3.8	8 %	8 %	76 %	8 %
CABK-8 setup 2	5760	1535	3.8	4.1	5 %	0,1 %	94,7 %	0,2 %
CABK-8 setup 3	6180	1713	3.6	4.0	5 %	5 %	85 %	5 %

Any desired spectrum is possible, variations on request.
 *1 Electrical and optical properties have a tolerance of +/- 5%.
 *2 Output is defined as the total photon flux between 400-800nm. Typical values for stable operation at 77°F | 25°C ambient temperature.

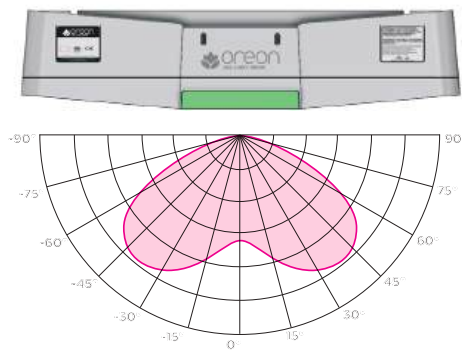
GRAPH: 3 DIFFERENT SETTINGS OF COMMANDER CAAA



TECHNICAL DATA

Power consumption	up to 1840 W
Photon flux	up to 7400 μmol/s
Efficiency	up to 4.0 μmol/J
Power factor	0.99 (100% load)
Total Harmonic Distortion (THD)	Typical 10%
Input range	347 - 480 VAC
Current range	0 - 5.5 A
Line frequency	50 or 60 Hz
Inrush current	30 A (2 ms)
Leakage current	< 2mA
Circuit connection	347 VAC Line to Neutral/ 400 VAC Line to Line/ 480 VAC Line to Line
Isolation class	Class I
Input connector type	Wieland RST20i3
Operation conditions	32 to 113°F 0 to 45°C / 95% RH
Storage conditions	32 to 140°F 0 to 60°C / 85% RH

WIDE BEAM LIGHT DISTRIBUTION



COOLING

Cooling	Air convection
Self protection cut off temperature	140°F 65°C

MOUNTING

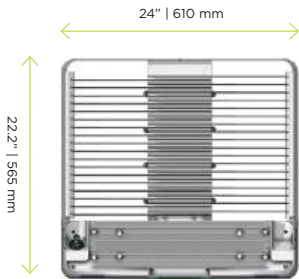
Top side has two dedicated mounting points for custom made brackets.

PRODUCT FEATURES

Housing material and finishing	Aluminium (IK10), powder coating RAL9016
LED protection cover	High transmission glass (transmission >98%) (IK07)
Beam angle	Wide Beam: 140°
Ingress Protection LED compartment	Rated IP67 and fully hermetically sealed, the luminaire is completely impervious to dust, water, and environmental contaminants.
Lifespan and warranty	L90 B0 - 60,000 hours, 7 year full warranty

WEIGHT AND DIMENSIONS

Nett weight	37.5 lbs 17 kg
Product dimensions (L x W x H)	24" x 22.2" x 5.3" 610 mm x 565 mm x 135 mm
Carton dimensions (L x W x H)	25.2" x 22.8" x 6.2" 632 x 580 x 158 mm



LOGISTIC SPECIFICATIONS

Quantity per pallet	30 pcs.	Sea/Road freight	36 pcs.
Gross weight per pallet	992 lb 500 kg		1.190 lb 600 kg
Pallet dimensions	31.5" x 47.24" x 80.31"		39.37" x 47.24" x 80.31"
	800 x 1200 x 2040 mm		1000 x 1200 x 2040 mm
HS-code	9405 42 39 90		9405 42 39 90

COMPLIANCE

Conforms to/Certified to
ANSI/CAN/UL 8800





V250603 | Subject to printing and typing errors.



Oreon

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