



OPTIMAL LED PERFORMANCE FOR UNDERBENCH AND VERTICAL FARMING



EMBRACE XL

THE DUTCH POWERHOUSE

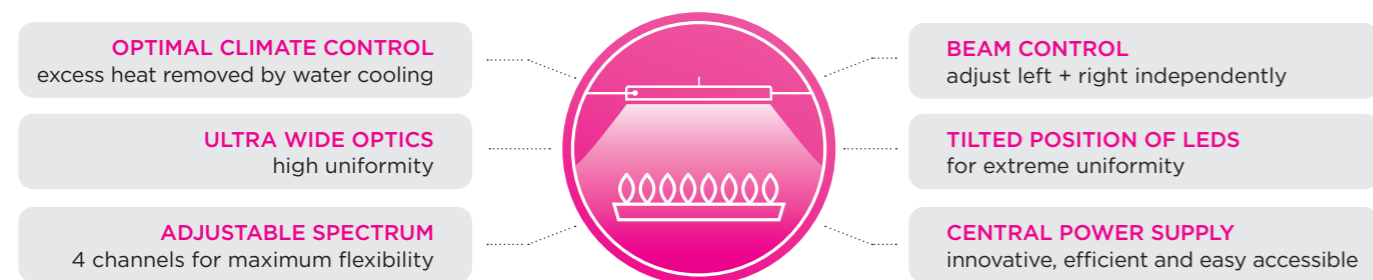


EMBRACE XL POWER MEETS PRECISION

The Embrace XL combines Oreon’s advanced water-cooled LED technology with an impressive light output up to 2900 $\mu\text{mol/s}$, allowing you to achieve uniform target light levels with fewer fixtures and greater efficiency.

Designed for close-to-crop applications, it delivers uniform light distribution even at just 30 cm from the crop: perfect for multi-layer systems and under bench propagation. With four independently controllable colour channels, the Embrace XL offers exceptional flexibility for any crop and every growing phase. The water-cooled design enables both horizontal and vertical installation, giving you complete freedom in your cultivation setup. The water cooling removes all excess heat and ensures a better balanced climate.

High output. Full control. Optimized growth.



CENTRAL POWER SUPPLY

Oreon moves the AC/DC conversion out of the fixture and into a central 20kW Power Supply Unit (PSU). This keeps functions connected to the AC power grid such as EMI filtering, power factor correction and surge protection in one central, robust location instead of repeating them in every fixture. Inside the fixture remains only what needs to be local: independent current control for each LED channel. A simple and robust design: less heat and easier service.

In addition, fixtures can be daisy-chained from the central PSU, reducing cabling and making installation faster and cleaner. Thanks to its three-phase design, the PSU requires fewer lifetime-limiting energy storage capacitors, resulting in an exceptionally long PSU lifetime rating.



MULTIPLE APPLICATIONS

The Embrace XL is applicable to different setups due to its power and spectral flexibility.

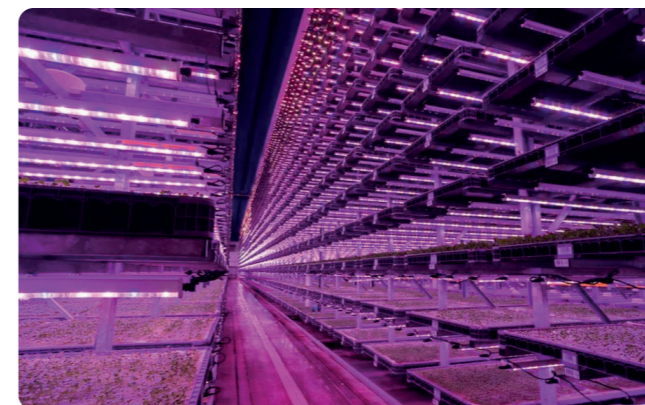


Figure 1 | vertical farm area with +/- 35 cm height between crop and lights.



Figure 2 | underbench setup with +/- 90 cm height between crop and lights.



ULTIMATE SPECTRUM MULTIPLE APPLICATIONS

The Embrace XL features four independently controllable channels, each dimmable from 0-100%, giving you full control over light output and spectrum.

This flexibility allows you to precisely tailor the light recipe to your crop, growth phase, and production goals - whether you aim to maximize output, steer plant morphology, or optimize efficiency.

Example configurations:

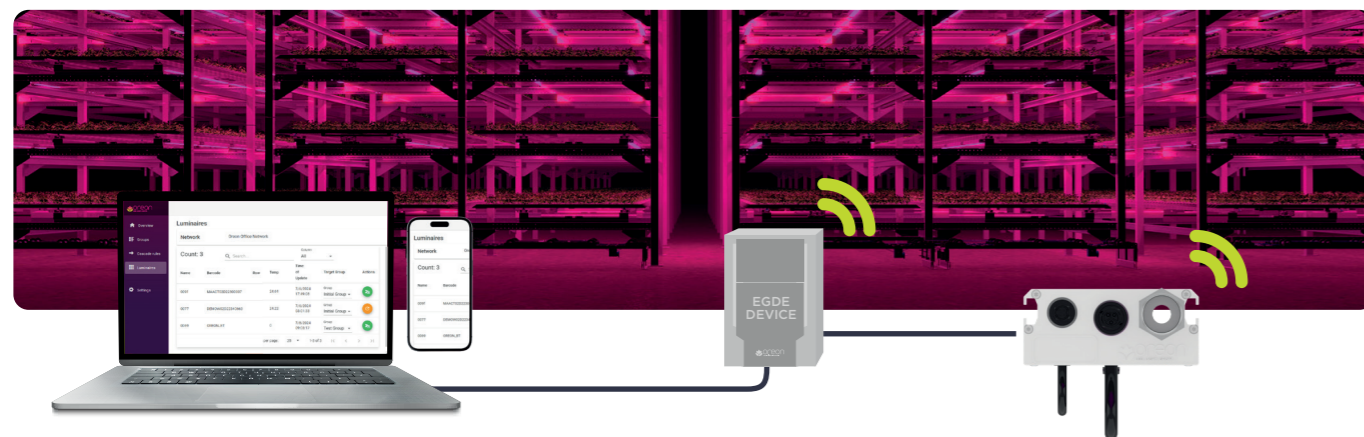
These examples demonstrate how the Embrace XL can be easily adapted to different cultivation strategies, providing both performance and flexibility in one solution.

	Maximum output		Less blue/FR		Efficient (7/16/76)		High efficiency (5/10/85)	
Blue (μmol/s)	533	19%	217	10%	136	7%	77	5%
Green (μmol/s)	562	20%	561	25%	298	16%	160	10%
Red (μmol/s)	1460	51%	1445	65%	1378	76%	1343	85%
Far-red (μmol/s)	307	11%	12	1%	8	0%	6	0%
Photon-Flux (μmol/s)	2868	100%	2234	100%	1820	100%	1587	100%

Power (W)	1030		783		566		464	
Imparted heat (W)	394	38%	338	43%	213	38%	163	35%
Efficiency (μmol/J)	2.78		2.85		3.22		3.42	

CONTROL CENTER

The Oreon LED Control Center (OLCC) connects Oreon lighting to the grower's existing climate computer, using the recognized Horti Lighting Protocol. Light levels are controlled per fixture or per zone. The Oreon Edge Device distributes the commands to the fixtures and keeps the installation connected for management and monitoring. For growers without a climate computer, the optional Scheduler module allows lighting schedules and treatments to be created directly in the Oreon Cloud.



EDGE DEVICE

- Connects climate computer to Oreon fixtures
- Sends dimming commands per lighting zone
- Stable wired connection to lighting installation

CLOUD

- Management & monitoring
- Configure zones, fixtures and lighting settings
- Optional Scheduler for schedules and treatments

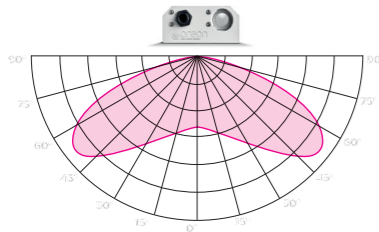
TECHNICAL DATA

Length
Heart tot heart
Photon flux
Efficiency
Power consumption

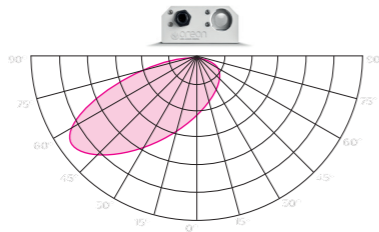
EMBRACE XL

2201 mm
2250 mm
up to 2900 $\mu\text{mol/s}$
up to 3.8 $\mu\text{mol/J}$
maximum 1030 W

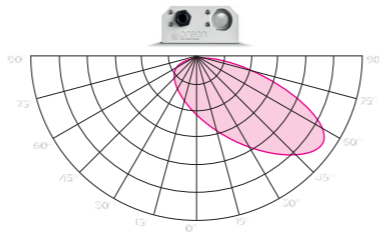
3:1 LIGHT DISTRIBUTION



INDEPENDENT BEAM ANGLE (L)



INDEPENDENT BEAM ANGLE (R)



PRODUCT FEATURES

Housing material and finishing
LED protection cover
Ingress Protection LED compartment

Aluminum (IK10). Finishing anodized/antifouling powder coating (dirt repellent)
High transmission glass (transmission >95%) (IK07)
IP67 (dust- and watertight, hermetically sealed). Fixtures can be cleaned by using pressurized water, the complete electrical circuit is sealed waterproof.
L90 B0 - 50,000 hours, 7 years warranty

Lifespan and warranty

COOLING LIQUID AND CIRCUIT

Cooling liquid
Cooling liquid temperature
Water connection

Water (pH 4-8)
From dew point to 113°F | 45°C
Pipe thread ISO 228-G 3/8" (2x)
Water connections between fixtures included.
Flow velocity must be at least 0.2 m/s and should not exceed 1.5m/s
 $v = Q \cdot n / 7200$ (velocity in m/s, channel inner diameter 15mm)
v: minimally required flow velocity of water in the cooling channel of the lamp (m/s)
q: heat imparted per fixture (Watt), n: number of fixtures in series on a cooling pipe.

Required flow velocity
Flow velocity formula

MOUNTING

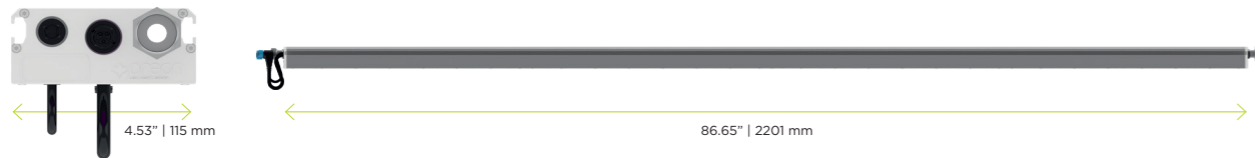
Installation

Horizontal or vertical, dedicated wire bracket

WEIGHT AND DIMENSIONS

Nett weight
Product dimensions (L x W x H)

12 kg | 24,46 lbs
86.65" x 4.53" x 1.97" | 2201 mm x 115 mm x 50 mm



LOGISTIC SPECIFICATIONS

Transport
HS-code

In consultation, depending on quantity/location
9405 4239 90

CERTIFICATION

Certifications

FCC, ETL, RoHS and CE



V260624 | Subject to printing and typing errors.



Oreon

Lorentzlaan 6, 3401 MX IJsselstein. The Netherlands.
+31 30 760 0660 | info@oreon-led.com | oreon-led.com