

# Introducing the Water-Cooled **BioPhotonic 2.0** Grow Light Designed for Industrial Indoor Cultivation Facilities

## Features

- **Water cooling.** Allows the LEDs to run 40° cooler than conventional LED fixtures assuring long life and maximum output and efficiency. In addition, water-cooling allows waste heat from the lights to be removed from the grow facility minimizing HVAC requirements on the grow room and enabling efficient energy use for other applications.
- **Low voltage external power bus.** Power for the lights is provided by 48VDC bus powered by supplies mounted external to the grow room. This insures a quality environment for the power electronics and also removes dangerous high voltage AC wiring from the grow room environment, a much safer installation.
- **Waterproof light fixtures.** The LEDs are enclosed in a watertight Pyrex envelope that provides excellent optical coupling which totally protects the LED array from the ambient environment. The enclosure is rated IP67 and can be exposed to direct water spray while operating at full power.
- **Uniform illumination of the crop canopy.** A unique optical arrangement provides a uniform illumination over the crops. No more need to rotate plants or move lights around due to the “hot spots” that occur under conventional sources.
- **Easily cleanable configuration.** The waterproof configuration means that the fixture can be hosed down *while operating*. There are no interior air passages for mold spores to hide in. The stainless steel reflector is designed to stay bright in wet and humid environments.
- **Scalable light power.** These lights are designed to be installed in a linear array. Single lines of R48K-1,000s provide 250 watts of LED lighting per foot. Multiple rows can be installed adjacent to provide powers of 500 watts to 1,000 watts per linear foot to supercharge your grow room. Lights can be installed at the roof peak of greenhouses to boost light dosage with minimum obscuration to any desired power delivery at the plant canopy.

The **BioPhotonic 2.0** grow light has been designed for industrial use.

- Rugged and efficient
- Configured for use in large-scale grow facilities with challenging environments
- Standard mix of red, blue and white LEDs to produce an ideal spectrum for growing crops indoors
- Simple installation for minimum costs
- Readily expandable to arbitrary light levels
- Fully IP-67 waterproof construction
- Easily maintainable and cleanable while online
- Uniform illumination profile within 5% over beam width



Contact us for pricing and ordering information.

415.310.8866 | [info@biophotonicsystems.com](mailto:info@biophotonicsystems.com)



# BioPhotonic 2.0

## Specifications

Electrical power	1,000 watts
Dimensions	48" x 12" x 5"
Illumination uniformity	+/- 5% over the beam width
Cooling	Liquid
Power	48 VDC low voltage bus
Enclosure	Waterproof - IP67

## Performance \*

Height above plants	24"	36"	48"
PAR flux ( $\mu\text{moles}/\text{square meter}/\text{sec}$ )	1,130	708	460
Beam width (+/- 5% uniformity)	32"	46"	54"

## Available Sizes

500 Watts	1,000 $\mu\text{moles}/\text{sec}$	30"
1,000 Watts	2,000 $\mu\text{moles}/\text{sec}$	48"
1,500 Watts	3,000 $\mu\text{moles}/\text{sec}$	66"

\*Incident flux with no sidewalls. Reflective sidewalls will increase PAR flux substantially.

Rob McCullough did his graduate work in Stanford University's High Temperature Gasdynamics Lab.

Dr. McCullough has 40 years of experience developing electro-optical systems for industry and government agencies. He has been developing LED based systems since 2007.



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