

Quick Start Guide

LumiGrow® Pro 325™, Pro 325™ HV, Pro 650™ & Pro 650™ HV

LumiGrow products are engineered from the ground up to promote healthy plant growth without energy waste. That's why LumiGrow smart horticultural lighting solutions are the #1 choice of leading growers.

LumiGrow is also the only LED product line tested and selected for use by leading agricultural research institutions. In side-by-side comparisons, the LumiGrow Pro 325 solution consistently outperforms 1000-Watt high-intensity discharge (HID) lamps while it consumes 70% less energy. The LumiGrow Pro 650 shatters the PAR barrier and provides twice as much blue and red as a 1000-Watt HID lamp while it consumes 40% less energy.

The LumiGrow team is committed to ensuring that your LumiGrow lights perform as expected. Remember that help is just a phone call or mouse click away. To reach a technical expert, visit <http://www.lumigrow.com/support> or call 800-514-0487, ext. 2. For international support, call +1-415-382-0733.

Safety First - IMPORTANT

Take common sense precautions when operating your LumiGrow system. Always keep in mind the following:

- Do not immerse the unit in water or expose it to water for prolonged periods
- Do not use the unit with a damaged power cord, plug or electrical outlet
- Do not unplug the unit by pulling on the power cord
- Connect the unit to a properly grounded outlet only
- Bare wired units must be installed by a certified electrician
- Do not place lens of powered unit directly on table or other flat objects
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.
- This Class B digital apparatus complies with Canadian ICES-003. Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Technical Specifications

SPECIFICATION	Pro 325	Pro 325 HV	Pro 650	Pro 650 HV																								
Energy Consumption	325 Watts		650 Watts																									
Operating Voltage	100-240 V _{AC}		100-240 V _{AC}																									
Recommended Electrical Service Allowance	<table border="1"> <tr><td>120V</td><td>240V</td></tr> <tr><td>5A</td><td>2.5A</td></tr> </table>	120V	240V	5A	2.5A	<table border="1"> <tr><td>277V</td><td>347V</td><td>400V</td><td>480V</td></tr> <tr><td>2A</td><td>1.6A</td><td>1.4A</td><td>1.2A</td></tr> </table>	277V	347V	400V	480V	2A	1.6A	1.4A	1.2A	<table border="1"> <tr><td>120V</td><td>240V</td></tr> <tr><td>8.5A</td><td>5A</td></tr> </table>	120V	240V	8.5A	5A	<table border="1"> <tr><td>277V</td><td>347V</td><td>400V</td><td>480V</td></tr> <tr><td>4A</td><td>3.2A</td><td>2.8A</td><td>2.4A</td></tr> </table>	277V	347V	400V	480V	4A	3.2A	2.8A	2.4A
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Dimensions	9-7/8" W x 10-5/8" L x 5-3/4" H		9-7/8" W x 16-5/8" L x 5-3/4" H																									
Weight	9 lbs (4 kg)	10 lbs (4.5 kg)	16 lbs (7.2 kg)	21.5 lbs (9.7 kg)																								
Operating Frequency	50-60 Hz																											
Operating Temperature	-4° F to 140° F (-20° C to 60° C)																											
Power Factor	> 0.95																											

Getting Started

1. Remove the LumiGrow Pro fixture from the box and unwrap it.
2. Attach the 2 enclosed hangers to the hanger brackets.
3. Use rope (e.g. 1/2" nylon) or chain capable of holding 75 lbs to hang the LumiGrow Pro fixture at the appropriate distance to achieve desired coverage. The closer you hang the LumiGrow Pro fixture to the plant canopy the more energy you transfer to your plants.

General Guidelines (refer to the chart below for light coverage areas) Coverage area depends on crop type and whether the fixture is being used as a supplement to other lighting or as sole-source lighting. A general rule of thumb is that the coverage is comparable to that of a 1,000-Watt HID, i.e. 64-100 square feet for supplemental and 16-36 square feet for sole source applications.

Height (ft)	Coverage to 25% (sq ft)	Pro 325 & Pro 325 HV	Pro 650 & Pro 650 HV
		PPFD ($\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$)	PPFD ($\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$)
2	16	510	995
2.5	25	326	637
3	36	227	442
3.5	49	167	325
4	64	128	249
4.5	81	101	196
5	100	82	159
5.5	121	67	132
6	144	57	111
6.5	169	48	94
7	196	42	81
7.5	225	36	71
8	256	32	62
8.5	289	28	55
9	324	25	49
9.5	361	23	44
10	400	20	40

Understanding Photosynthetic Photon Flux Density (PPFD)

Photosynthetic Photon Flux Density (PPFD) is a measure of the number of photons in the range of the Photosynthetically Active Region (400-700nm) falling on a 1 meter square area per second ($\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$).

LumiGrow fixtures are engineered to maximize output in the red and blue portions of PAR. These are the spectra of greatest use to plants. A spectroradiometer measuring $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{sec}^{-1}$ reveals that a 1000W HID light produces approximately 2.5% of its total output in blue PAR range and approximately 10% in the red PAR range. By contrast, a LumiGrow fixture produces approximately 17% of its total output in the blue region (430-480nm), 67% in the red region (630-680nm) and 10% between the red and blue region (480-630).

Therefore, for every 100 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ produced by a LumiGrow fixture, you receive 17 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ of blue and 67 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ of red PPFD. Similarly, for every 100 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{sec}^{-1}$ of PPFD produced by a 1000W HID, you receive just 2.5 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ of blue and 10 $\mu\text{mol} \cdot \text{m}^{-2} \cdot \text{s}^{-1}$ of red PPFD.

4. Connect AC input power cord to an appropriate power source. For bare wired installations, a certified electrician must perform installation. LumiGrow Pro luminaires should only be installed on an AC branch circuit protected by a Listed circuit breaker rated at 20A maximum.
5. Turn on your circuit breaker and power up the luminaire.

Operating Your LumiGrow Pro Fixtures

Adjusting the Red, White and Blue Control Knobs

LumiGrow is designed for simple, worry-free operation. Setting the red, white and blue knobs to 10 will achieve healthy plant growth.

The LumiGrow Pro series lights' independently adjustable knobs enable you to fine-tune lighting, providing plants with precisely the portion of the light spectrum they need at each growing phase.

Expert growers may desire to experiment with the ratio of blue to red to affect internodal length and flowering.

White-only View Mode

Use the white-only view mode to inspect your plants under white light. To turn on the white-only view mode flip the toggle switch to the eye icon.

LumiGrow® Product Warranty and Return Policy

LumiGrow, Inc. warrants to the purchaser of its LumiGrow products, when shipped in its original carton, that they will be free from defects in materials and workmanship for the time period set forth below. During the warranty period, LumiGrow, Inc. will, at its option, either repair the defect or replace the defective product or part thereof at no charge to the purchaser for parts during the warranty period.

The LumiGrow Pro 325™ and Pro 650™ carry five (5) year warranties from date of purchase.

Peripherals, accessories and other ancillary items purchased from LumiGrow, Inc. will carry their manufacturer's standard warranty.

This warranty does not apply to any product which has been damaged, defaced, subjected to misuse, abnormal service or handling (including shipping damage), or which has been altered in design or construction.

The warranty described above is in addition to whatever implied warranty may be granted to purchaser by law. (All implied warranties, including the warranty of merchantability and fit for use, are limited to the period(s) from date of purchase set forth above).

Neither sales personnel of the seller nor any other person is authorized to make any warranties other than those described above, or to extend the duration of any warranties beyond the time period described herein.

The warranty described above shall be the sole and exclusive warranty granted by LumiGrow, Inc. and shall be the sole and exclusive remedy available to the purchaser. Correction of defects, in the manner and period of time described herein, shall constitute complete fulfillment of all liabilities and responsibilities of LumiGrow, Inc. to the purchaser with respect to the product, and shall constitute full satisfaction of all claims, whether based on contract, negligence, strictly liability or otherwise.

In no event shall LumiGrow, Inc. be liable or in any way responsible for any damages or defects in the product which were caused by repairs or attempted repairs performed by anyone other than LumiGrow, Inc.

Nor shall LumiGrow, Inc. be liable or in any way responsible for any incidental or consequential economic or property damage. Some states do not allow the exclusion of incidental or consequential damages so the above exclusion may not apply to you. This warranty does not apply to improper installation or grounding, acts of God, such as lightning strikes and/or electrical line power surges, floods, earthquakes, hurricanes, tornados, vandalism, vermin such as slugs, ants, rodents, etc., or improper electrical connections.

Warranty Service Procedures

In order to enforce the rights under this limited warranty, the purchaser must notify LumiGrow, Inc., of a warranty claim by contacting (800) 514-0487, ext. 2. At that time, the purchaser will be asked to provide dated proof of original purchase. Acceptable forms of this shall be a photocopy or scanned image of the dated original invoice faxed or emailed

to LumiGrow, Inc. The purchaser will also need to provide a full description of the type of problem occurring, a contact name, address and telephone number and/or email.

LumiGrow Satisfaction Guarantee

LumiGrow wants you to be thrilled with your new lighting purchase. However, if you need to return an item, we're here to help.

All eligible LumiGrow products carry a 30-day satisfaction guarantee beginning from the day the product is received at the customer's shipping address. Ineligible products include LumiGrow Certified Refurbished lighting fixtures, discontinued products and software.

To process your return, please contact LumiGrow Customer Support at (800) 514-0487, ext. 2. For international support, call +1-415-382-0733. Submit online at <http://www.lumigrow.com/support/>.

Return shipping charges are the sole responsibility of the customer.

Should you wish to make an exchange, our friendly and knowledgeable sales staff is available to help you find the product that best fits your needs.

You can buy LumiGrow with confidence as every product we ship is covered by one the industry's best warranties, unless otherwise noted.

Returns

All returned merchandise must be in the original packaging with the UPC or bar code intact along with all components and accessories. Product that is returned incomplete, or damaged – if accepted – will require a deduction. This deduction is final. A 25% restocking fee will be applied based on the original sales price.

30-day money-back guarantee does not apply to special orders.

Please have the following information readily available before contacting your LumiGrow reseller or LumiGrow Customer Support: date of purchase, model name and serial number of the product.

Credits

Credit will be issued after our warehouse receives, inspects, and processes your return; however, if the purchase was made by credit card your credit card company determines when the issued credit will be reflected in your statement.

Happy growing!

LumiGrow Customer Service

(800) 514-0487, ext. 2, +1-415-382-0733

<http://www.lumigrow.com/support>