Horticultural Lighting & Accessories
Horticultural Lighting: The Basics

Light Spectrum

Photon: a particle of light.

Photosynthesis: a process used by plants to convert light into chemical energy to fuel the plant’s growth.

PAR (μmol): Photosynthetic Active Radiation; PAR light is the wavelengths of light within the range of 400 to 700 nanometers (nm) that drive photosynthesis.

PPF (μmol/s): Photosynthetic Photon Flux; PPF measures the total amount of PAR light that is produced by a lighting fixture each second.

PPFD (μmol/m²/s): Photosynthetic Photon Flux Density; PPFD measures the number of photosynthetically active photons that fall on a given surface each second. It is measured in micromoles per square meter per second. Light intensity decreases as distance increases.

PAR/Photon Efficacy (μmol/J): refers to how efficient a horticulture lighting system is at converting electrical energy into photons of PAR.

Joule: a unit of energy (J). The amount of electricity required to light a 1 watt LED for 1 second.

Micromole: a unit of measure of light at the molecular level. 1 mole = 1,000,000 micromoles.

Daily Light Integral (mol m⁻²): DLI measures the number of photons in the PAR range accumulated in a square meter over the course of a day.
The Westinghouse Lighting Advantage

Successful cultivation begins with the right lighting fixtures

ENGINEERED FOR SUCCESS

- Our fixtures are designed and engineered to the highest standards with heavy duty, commercial grade construction.
- We use only top quality diodes and binning from respected suppliers: Bridgelux, Epileds, etc.
- Backed by a five-year limited warranty against defects in materials and workmanship.
- Designed with optimal thermal management ensuring proper cooling and reduced maintenance, unlike products that use mechanical cooling solutions with parts to maintain.
- Passive cooling design prevents our LEDs from being overdriven, eliminating the need for excess heat dissipation.
- IP65 rated - resistant to humidity, dust and easy to clean.
- Efficient top brand LED driver with auto-sensing multi-range input voltage of 100-277V.
- Certified to U.S. and international standards, UL/CUL listed.
- Approved for use in damp locations.

SUPERIOR OUTPUT

- Our fixtures come standard with engineered broad spectrum light output based on 7+ years of research.
- Broad spectrum light promotes maximum production and supports all stages of a crop’s growth cycle.
- Broad spectrum light is very similar to sunlight, boasting optimal PAR photon efficacy to promote comprehensive plant growth throughout the entire cycle.
- Unlike competitors that focus only on red and blue wavelengths, our fixtures cover the entire PAR area, including Far Red and UV A.
- Proven to increase crop yield and quality, enhance crop appearance, improve taste and extend crop’s shelf life.
- Quality and color of light enhances clarity and comfort for crop workers and inspectors.
- LED fixtures generate less heat than HID lamps, allowing fixtures to be placed much closer to the plants to deliver more light, while protecting plants from damaging leaf burn.
- Secondary optics provide even illumination and ensure uniform photon delivery.
- 50,000 hours life.

VERSATILE APPLICATIONS

- Replicate the sun in grow houses and grow tents where there are no lights or sunlight.
- Use to supplement the sun in greenhouses.
- Ideal for controlled plant growth environments.
- Indoor farming.
- Commercial greenhouses.

INSTALLATION

- Multiple fixtures can be connected to increase light output and coverage.
- Mounting hardware is included.
- Available comprehensive light mapping software for recommended fixture placement.

LED ENERGY EFFICIENCY

- Provide up to 45% energy savings over HID and fluorescent grow light fixtures.
- Long-lasting, energy-saving performance.

LED OR HPS: WHAT’S THE DIFFERENCE?

- LEDs consume up to 45% less energy vs. HPS while delivering better results.
- Our fixtures generate less heat, allowing the fixtures to be placed much closer to plants to deliver more light because light intensity increases as distance decreases
- LED fixtures offer broad spectrum technology, while HPS lamps offer red spectrum only. Broad spectrum is desired for all phases of a plant’s cycle.
- High LED CRI of 77-95 versus HPS CRI of 20-40 makes it easier to inspect plants for pest or mold problems, which helps sustain a healthy crop.
- Maintain higher light output over the lifetime of the fixture compared to HID due to substantially higher lumen maintenance of LED vs. HPS light sources.

To view the complete line of Westinghouse Lighting products, visit www.westinghouselighting.com.
SunForce 330

Improves crop yield and quality, making this an excellent choice for commercial growers.

63659
330W Broad Spectrum LED Horticultural Fixture
Includes 330 Watt Integrated LED

SunForce Features & Benefits:

- SunForce 330 is a high-power LED fixture for cultivating cannabis, flower, vegetable and fructing crops.
- Efficient top brand LED driver with auto-sensing multirange input voltage 100-277V.
- Brightness of 39,327 lumens, 3900K, CRI 95.
- Broad Spectrum PPF Efficacy (μmol/J) of 2.04.
- PPF of 687.
- 90-degree beam angle with secondary optics.
- Provides 45% energy savings over HPS.
- Includes plug-in cord and 2 rope ratchets for easy installation.

Photometrics
SunStream 250
Streamlined design fits narrower grow spaces to optimize light distribution.

63660
250W Broad Spectrum LED Horticultural Fixture
Includes 250 Watt Integrated LED

SunStream Features & Benefits:
• SunStream 250 is a high-power LED fixture for cultivating cannabis, flower, vegetable and fruiting crops.
• Efficient top brand LED driver with auto-sensing multirange input voltage 100-277V.
• Brightness of 27,800 lumens, 3900K, CRI 95.
• Broad Spectrum PPF Efficacy (μmol/J) of 2.04.
• PPF of 485.
• 90-degree beam angle with secondary optics.
• Provides 38% energy savings over HPS.
• Includes plug-in cord and 2 rope ratchets for easy installation.

Photometrics

Accessory

636596933
Mounting Rope Ratchet for LED Horticultural Fixtures

Mounting Rope Ratchet is compatible with all LED Horticultural Fixtures.

To view the complete line of Westinghouse Lighting products, visit www.westinghouselighting.com.
## LED HORTICULTURAL LIGHTING SPECIFICATIONS

<table>
<thead>
<tr>
<th>Item No.</th>
<th></th>
<th>63659</th>
<th>63660</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Name</td>
<td></td>
<td>SunForce 330</td>
<td>SunStream 250</td>
</tr>
<tr>
<td>Energy Used (Watts)</td>
<td></td>
<td>330</td>
<td>250</td>
</tr>
<tr>
<td>PPF Efficacy ($\mu$mol/J)</td>
<td></td>
<td>2.04</td>
<td>2.04</td>
</tr>
<tr>
<td>PPF ($\mu$mol/s)</td>
<td></td>
<td>687</td>
<td>485</td>
</tr>
<tr>
<td>Spectrum</td>
<td></td>
<td>Broad Spectrum</td>
<td>Broad Spectrum</td>
</tr>
<tr>
<td>Driver Type</td>
<td></td>
<td>MeanWell</td>
<td>MeanWell</td>
</tr>
<tr>
<td>Input Voltage</td>
<td></td>
<td>100-277</td>
<td>100-277</td>
</tr>
<tr>
<td>Kelvin</td>
<td></td>
<td>3900</td>
<td>3900</td>
</tr>
<tr>
<td>CRI</td>
<td></td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>Initial Lumens</td>
<td></td>
<td>39,327</td>
<td>27,800</td>
</tr>
<tr>
<td>Lifetime Hours</td>
<td></td>
<td>50,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Beam Angle</td>
<td></td>
<td>90°</td>
<td>90°</td>
</tr>
<tr>
<td>Approved Damp</td>
<td></td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Equiv. Watts</td>
<td></td>
<td>600W HPS/HID</td>
<td>400W HPS/HID</td>
</tr>
<tr>
<td>Approval</td>
<td></td>
<td>UL/CUL</td>
<td>UL/CUL</td>
</tr>
<tr>
<td>Net Weight Lbs/Unit</td>
<td></td>
<td>15.87</td>
<td>11.66</td>
</tr>
<tr>
<td>Body Material</td>
<td></td>
<td>Aluminum Extrusion</td>
<td>Aluminum Extrusion</td>
</tr>
<tr>
<td>Warranty</td>
<td></td>
<td>5 Year Limited</td>
<td>5 Year Limited</td>
</tr>
</tbody>
</table>

All fixtures in this brochure are CUL Listed.