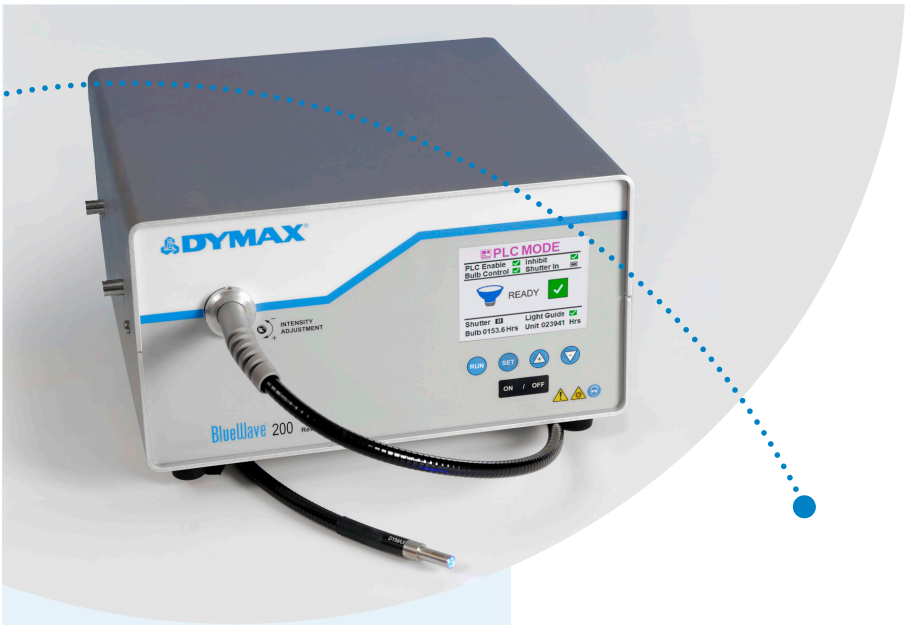


BlueWave® 200 Version 3.1 Light-Curing Spot Lamp

The Process Control You Need Without Added Cost

- Patented intensity adjustment feature
- >17,000 mW/cm² initial intensity
- Simple to operate and adjust
- Up to 2,000 hours useful bulb life
- Integral shutter with digital timer
- Foot switch or PLC integration
- Proprietary "Cool Blue™" filter virtually eliminates liquid lightguide degradation
- Wide range of lightguides available (liquid/fiber, single/multi-pole, various lengths)
- Easy-to-read, lighted front panel LCD display with enhanced unit status and notification displays
- Controlled power-up sequence ensures proper temperature
- Improved user interface for easier operation
- Smooth front panel surface that is easier to clean
- Extended exposure time settings to 9,999.9 seconds
- Fast bulb replacement

BlueWave® 200 3.1 is a high-intensity, light-curing spot-lamp system. This spot-curing lamp emits energy in the UVA and visible portion of the spectrum (300-450 nm) for light curing of adhesives, coatings, and encapsulants. Ideally suited for either manual or automated processes, the unit contains an integral shutter which can be actuated by a foot pedal or PLC and a universal power input that provides consistent performance at any voltage. A wide range of lightguides in various materials and configurations are available for use with this unit, providing application flexibility.

The system's faceplate design features an improved operator interface with an easy-to-read LCD display. Also located on the faceplate is the unit's patented intensity adjustment control. This feature is important for validating an appropriate intensity range and maintaining that range during production. Users can manually adjust the unit's intensity to accommodate for bulb degradation and other factors that may affect intensity.

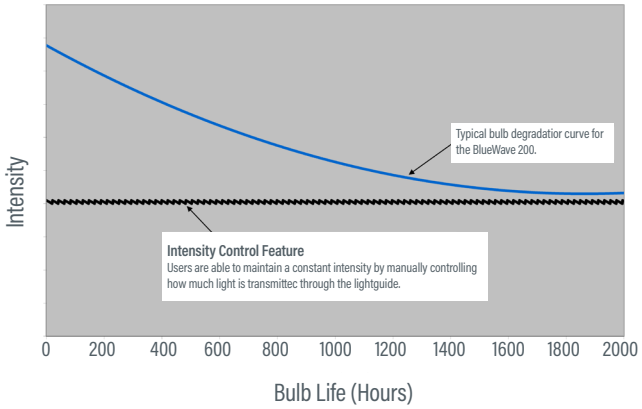
Version 3.1's design includes:

- Updated front panel and large color LCD display
- Smooth, easy-to-clean front faceplate
- Improved operator interface
- Controlled warm-up sequence
- Extended exposure timer setting to 9,999.9 seconds
- No light leakage from enclosure

How Does the BlueWave® 200's Patented Intensity Adjustment Feature Work?

All bulbs used to power high-intensity light-curing spot lamps degrade over time from normal use. This typically results in a gradual decrease in total intensity as the bulb ages (shown in Chart 1). For this reason, UV light-curing processes are usually validated using the lowest acceptable intensity level to maximize bulb life. However, this means that for the majority of the production process, curing is being done with a higher intensity level than is actually necessary, therefore, it can be expected that the intensity will decrease over time. With the BlueWave® 200's patented intensity adjustment feature, users can maintain the qualified intensity range by manually increasing intensity output to offset this degradation. The adjustment is easily accomplished with the provided adjusting tool or by using the removable knob as shown in the photograph below. This feature is useful for both process validation and subsequent process control during production.

Chart 1. BlueWave® 200 Intensity Control Feature



Validation

Prior to production, Dymax advises customers to conduct testing to determine the exposure time and intensity required to achieve full cure. Validating a UV light-curing process can be accomplished in one of two ways:

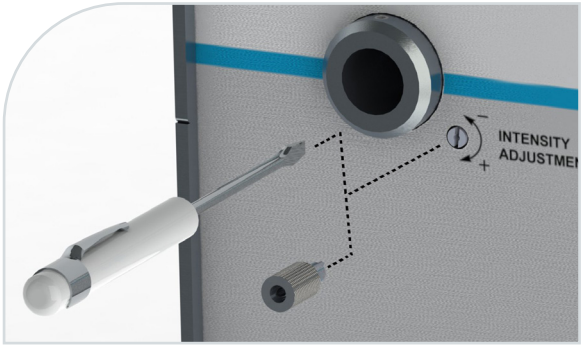
Set Exposure Time, Determine Intensity

Users can specify a cure time and, through empirical testing, determine the intensity required to achieve full cure.

Set Intensity, Determine Exposure Time

Users can specify intensity (perhaps one that maximizes bulb life) through empirical testing to determine the exposure time required to achieve full cure. Note: As with any manufacturing process, it is advisable to incorporate a safety factor.

Intensity Adjustment Options



The unit includes an intensity adjustment knob for fingertip adjustment or the adjustment can be performed with a flat-head screwdriver when the knob is removed.

Control

UV process validation identifies a minimum acceptable intensity range that ensures complete cure in an acceptable cycle time. Users can choose to operate at full intensity (intensity adjusted to 100%) or maintain a constant intensity (at some lower level) through periodic manual adjustments. The average BlueWave 200 bulb will typically degrade <1% per eight hours of normal use. The good manufacturing practice of routine intensity measurement with a calibrated radiometer will determine when and if any adjustments are required.

Specifications

Specifications	
Part Numbers	41013 BlueWave® 200* 38465 Replacement Bulb
Initial Intensities	Total (280-450 nm) 40+ W/cm² Visible (400-450 nm) 17+ W/cm² UVA** (320-395 nm) 17+ W/cm² UVB (280-320 nm) 7 W/cm²
Intensity Adjustment	Manual from 1% to 100% output
Power Requirements	100-240 VAC, 50-60 Hz, 2.5 Amps
Power Supply	Solid-state, 200 Watt
Bulb	200 Watt metal-halide bulb included; replacement in less than one minute
Reflector	Elliptical; glass with dichroic coating to reflect UV and minimize IR
Shutter Timer	Digital LCD timer up to 9,999.9 seconds; manual or timed shutter
Shutter Activation	Foot switch or PLC
I/O Port	15 pin D – sub-miniature connector
Signals (PLC Integration)	Inputs: Shutter activate, shutter deactivate, lamp control, PLC enable Outputs: Unit status, temperature fault, shutter fault, lamp status, power status, shutter status, lightguide status, bulb life warning, bulb life expired
Cooling	Filtered fan arrangement; thermally controlled to maintain proper lamp temperature
Display	LCD, monochromatic, 320 by 240 pixels
Overall Dimensions (W x D x H)	12.5" x 12" x 6.5" (31.8 cm x 30.5 cm x 16.5 cm)
Weight	12.75 lbs. (5.78 kg)
System Warranty	One year from purchase
Bulb Warranty	Ignition warranted for 2,000 hours

* For customers in Europe, the appropriate power cord will be added.

** As measured with a Dymax ACCU-CAL™ 50 Radiometer (320-395 nm) and lightguide simulator. Excessive on/off cycles and improper cooling may affect the bulb degradation and therefore no warranty is expressed or implied.

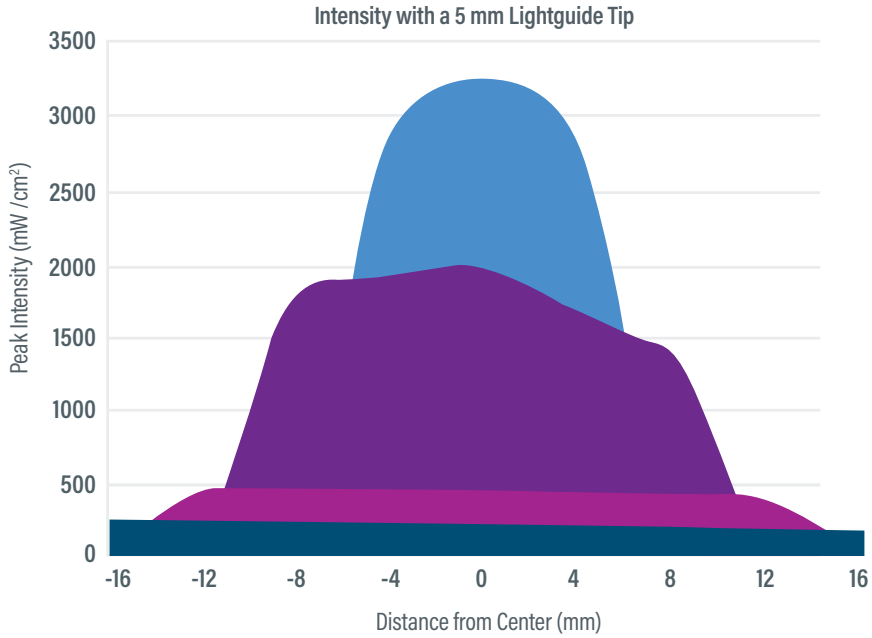
Recommended Lightguides (sold separately)				
Part Numbers	**Lightguide Description** (all noted are liquid filled, quartz fiber are also available)		**Typical Initial Intensity[1] (W/cm²)**	**Typical Intensity at 2,000 Hours[1] (W/cm²)**
5720	Single pole	5 mm x 1 Meter	17.0	8.0
5721	Single pole	5 mm x 1.5 Meters	16.0	7.5
5722	Single pole	8 mm x 1 Meter	13.0	6.5
38476	Two pole	3 mm x 1 Meter	10.5	5.2
38477	Three pole	3 mm x 1 Meter	9.0	4.5
38478	Four pole	3 mm x 1 Meter	7.4	3.7

[1] As measured with a Dymax ACCU-CAL™ 50 radiometer (320-395 nm) and lightguide simulator. Excessive on/off cycles and improper cooling may affect bulb degradation and therefore no warranty is expressed or implied.

Accessories	
Rod Lenses (rod lenses require an 8-mm lightguide)	38699 2" x 2" Area (~100 mW/cm²) 38698 5" x 5" Area (~30 mW/cm²)
Collimator Lenses (40° focused output)	62649 3 mm Lightguide Tip 62651 5 mm Lightgiude Tip
Angled Terminators for Lightguides	39029 3 mm/60° 39030 3 mm/90° 38042 5 mm/60° 38049 5 mm/90°
Mounting Stand	39700 Fits 3-mm, 5-mm and 8-mm lightguides
Radiometer	39560 ACCU-CAL™ 50 Radiometer for measuring the UV intensity of spot lamps, flood lamps, and conveyor systems
UV-Blocking, Over-the-Glasses Eye Protection	35285 Gray Tinted * 9162044 Green Tinted

* For data sheets related to this product, please refer to the manufacturer. (35285 – *MCR Safety, TK112)*

Lightguide End with Collimator Lens



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