BlueWave® 200 Light-Curing Spot Lamp

The Process Control You Need Without the Added Cost!

The BlueWave® 200 light-curing spot lamp offers the highest intensity and most user-friendly operation in the industry. The patented intensity adjustment feature allows users to manually adjust intensity. The intensity adjustment feature assists users in validating an appropriate intensity range and maintaining that range during production. Intensity measurement is easily accomplished with the DYMAX ACCU-CAL™ 50 radiometer. Scheduled intensity measurements taken during the production process will indicate whether additional intensity adjustments are required. This method of measurement provides the most accurate readings as they are taken through the lightguide in the actual production setting.

The *BlueWave 200* spot lamp primarily emits UVA and blue visible light (300-450 nm) and is designed for light curing of adhesives, coatings, and encapsulants. It contains an integral shutter which can be actuated by a foot pedal or PLC making it ideal for both manual and automated processes. A universal power input provides consistent performance at any voltage (90-264V, 47-63 Hz). DYMAX also offers a wide range of long-lasting lightguides including liquid/fiber, single/multi-pole, and lightguides in various lengths. The *BlueWave 200* with manual intensity adjustment is the most versatile, user-friendly and reliable light-curing spot lamp available.

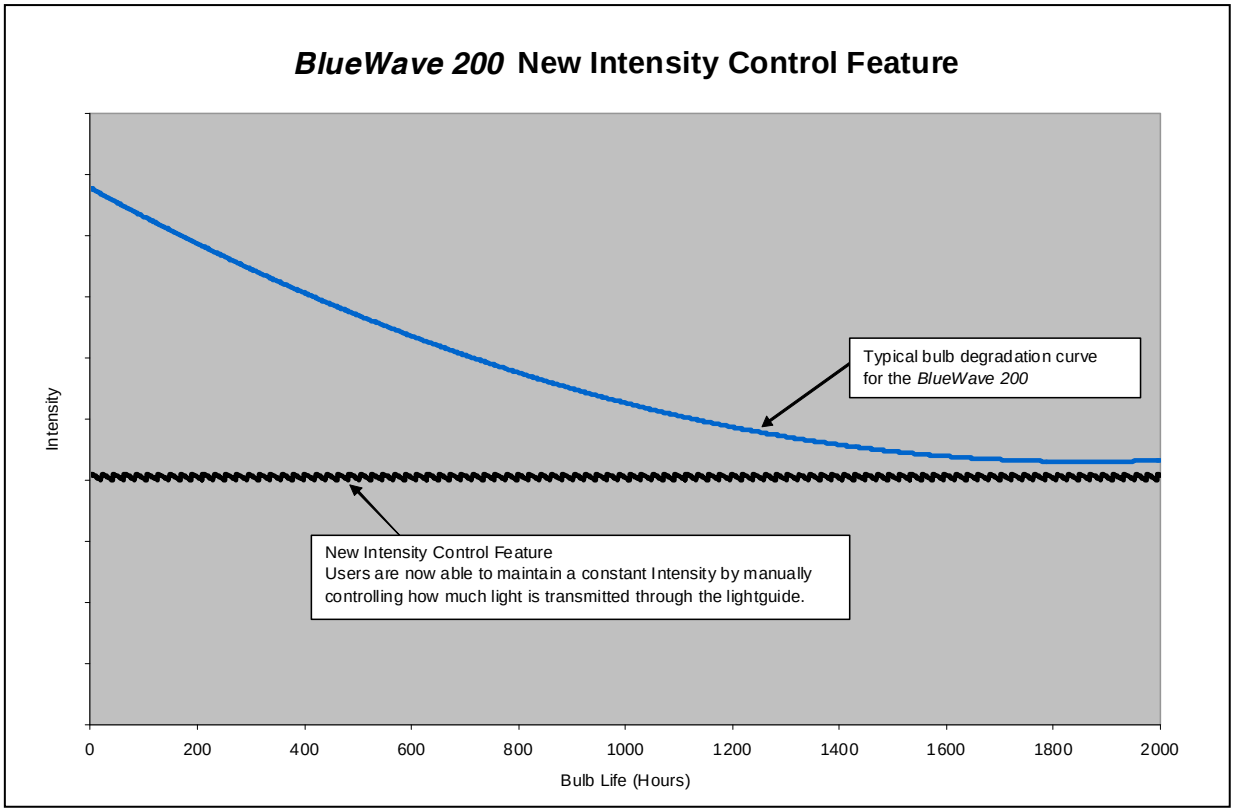
BlueWave 200 Light-Curing Spot Lamp with Patented Intensity Adjustment and Four-Pole Lightguide

FEATURES	
Patented intensity adjustment feature	>17,000 mW/cm^2 initial intensity
Simple to operate and adjust	2,000 hours useful 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)
Universal power input operates around the globe	Fast bulb replacement

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). Recognizing this, 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, and it can be expected that the intensity will be decreasing 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 photographs below. This feature is useful for both process validation and subsequent process control during production.

Chart 1.



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.

Control

UV process validation indentifies 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.

Intensity Adjustment Options

Intensity adjustment knob for fingertip adjustment

Intensity adjustment, with knob removed, performed with adjustment tool

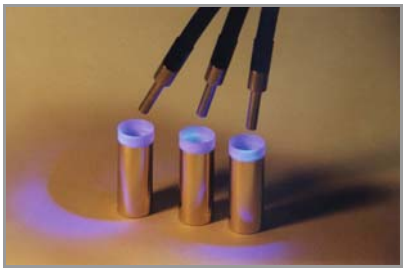
SPECIFICATIONS	
Initial Intensities	**Total** (280-450 nm) 40+ W/cm^2 **Visible** (400-450 nm) 17+ W/cm^2 **UVA** [1] (320-395 nm) 17+ W/cm^2 **UVB** (280-320 nm) 7 W/cm^2
Intensity Adjustment	Manual from 1% to 100% output
Power Requirements	90-264V, 47-63 Hz
Power Supply	Solid-state, 200 Watt
Bulb	200 Watt mercury 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 99.99 seconds; manual or timed shutter
Shutter Activation	Foot switch or PLC
I/O Port	9 pin D – sub-miniature connector
Signals (PLC Integration)	**Inputs:** Shutter activate, shutter deactivate **Outputs:** Lamp on, lamp off, replace lamp Shutter opened, shutter closed, shutter fault
Cooling	Filtered, dual-fan arrangement; thermally controlled to maintain proper lamp temperature
Hour Meter	Digital LCD; total unit operating hours (non re-settable) and total bulb hours (re-settable)
Overall Dimensions	30.5 cm x 30.5 cm x 16.5 cm (12” x 12” x 6.5”)
Weight	5.4 kg (12 lbs.)
System Warranty	One year from purchase
Bulb Warranty	Ignition warranted for 2,000 hours
Replacement Bulb	**38465**
PART NUMBERS *International Version (with no plug)*	**38605**

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

Table 1 – Recommended Lightguides *(sold separately)*

Part Number	Lightguide Description *(all noted are liquid filled, quartz fiber are also available)*		Minimum Initial Intensity[1] (W/cm^2)	Typical Intensity at 2,000 Hours[1] (W/cm^2)
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). Excessive on/off cycles and improper cooling may affect bulb degradation and therefore no warranty is expressed or implied.*



Trifurcated wand curing metal-to-plastic assembly

ACCU-CAL™ 50 Radiometer
for measuring the UV intensity of spot lamps, flood lamps and conveyor systems PN **39560**

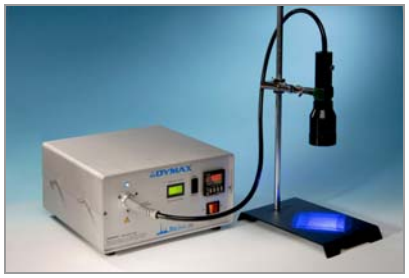
UV-Blocking, Over-the-Glasses Eye Protection

Gray Tinted PN **35285**
Green Tinted PN **9162044**

Lightguide Mounting Stand
(fits 3 mm, 5 mm and 8 mm lightguides)
PN **39700**

Liquid-Lightguides
available in 1, 2, 3 & 4-pole configurations *(see Table 1. on Page 2 for sizes and part numbers)*

Angled Terminators for Lightguides
3 mm/60° PN **39029** ■ 3 mm/90° PN **39030**
5 mm/60° PN **38042** ■ 5 mm/90° PN **38049**



Rod Lenses
Shown: *BlueWave 200* with 8 mm rod lens
(rod lenses require an 8 mm lightguide)
2" x 2" Area (~100 mW/cm^2) PN **38699**
5" x 5" Area (~30 mW/cm^2) PN **38698**

DYMAX EQUIPMENT EVALUATION

Contact your DYMAX representative to initiate rental of DYMAX UV light-curing equipment.

For further assistance with adhesive and equipment selection, contact DYMAX Applications Engineering.

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