



# BlueWave<sup>®</sup> 200 Light-Curing Spot Lamp

## The Process Control You Need Without the Added Cost!

The BlueWave<sup>®</sup> 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<sup>™</sup> 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.



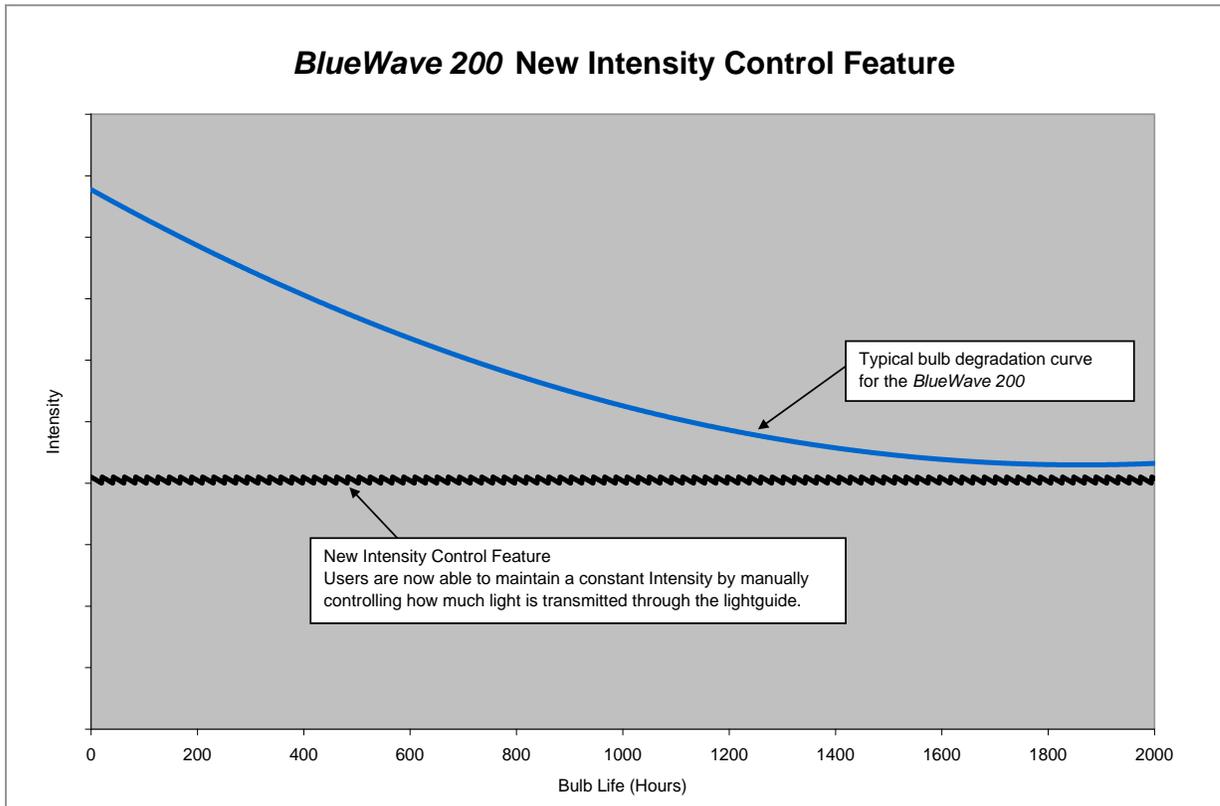
*BlueWave 200* Light-Curing Spot Lamp with Patented Intensity Adjustment and Four-Pole Lightguide

FEATURES	
Patented intensity adjustment feature	>17,000 mW/cm <sup>2</sup> 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 <sup>™</sup> " 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 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.

## Intensity Adjustment Options



Intensity adjustment knob for fingertip adjustment



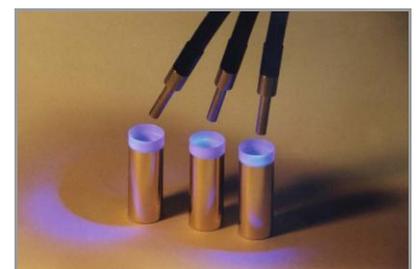
Intensity adjustment, with knob removed, performed with adjustment tool

SPECIFICATIONS	
<b>Initial Intensities</b>	<b>Total</b> (280-450 nm) 40+ W/cm <sup>2</sup> <b>Visible</b> (400-450 nm) 17+ W/cm <sup>2</sup> <b>UVA*</b> (320-395 nm) 17+ W/cm <sup>2</sup> <b>UVB</b> (280-320 nm) 7 W/cm <sup>2</sup>
<b>Intensity Adjustment</b>	Manual from 1% to 100% output
<b>Power Requirements</b>	90-264V, 47-63 Hz
<b>Power Supply</b>	Solid-state, 200 Watt
<b>Bulb</b>	200 Watt mercury bulb included; replacement in less than one minute
<b>Reflector</b>	Elliptical; glass with dichroic coating to reflect UV and minimize IR
<b>Shutter Timer</b>	Digital LCD timer up to 99.99 seconds; manual or timed shutter
<b>Shutter Activation</b>	Foot switch or PLC
<b>I/O Port</b>	9 pin D – sub-miniature connector
<b>Signals (PLC Integration)</b>	<b>Inputs:</b> Shutter activate, shutter deactivate <b>Outputs:</b> Lamp on, lamp off, replace lamp Shutter opened, shutter closed, shutter fault
<b>Cooling</b>	Filtered, dual-fan arrangement; thermally controlled to maintain proper lamp temperature
<b>Hour Meter</b>	Digital LCD; total unit operating hours (non re-settable) and total bulb hours (re-settable)
<b>Overall Dimensions</b>	12" x 12" x 6.5" (30.5 cm x 30.5 cm x 16.5 cm)
<b>Weight</b>	12 lbs. (5.4 kg)
<b>System Warranty</b>	One year from purchase
<b>Bulb Warranty</b>	Ignition warranted for 2,000 hours
<b>Replacement Bulb</b>	<b>38465</b>
<b>PART NUMBERS</b>	
North American Version(115V Standard Plug)	<b>38905</b>
Asian Version (Type G Plug)	<b>38605</b>
Unit With No Power Cord	<b>38903**</b>

\* 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.

\*\* Contains the appropriate power cord for Europe.

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



Trifurcated wand curing metal-to-plastic assembly

<sup>1</sup> 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.



**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**  
Clear PN **35284** ■ Tinted PN **35285**  
Dark Tint PN **35286**



**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<sup>2</sup>) PN **38699**  
5" x 5" Area (~30 mW/cm<sup>2</sup>) PN **38698**

#### FREE DYMAX EQUIPMENT EVALUATION

Contact your Dymax representative to initiate rental of Dymax UV light-curing equipment. The highlights of the Dymax Trial Rental/Lease program are:

- Two (2) weeks free evaluation and 3% per week thereafter
- Eight (8) weeks of rental fees are deducted from the price at purchase
- 50% of additional rental fees are deducted
- Customer pays shipping both ways



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**Please note that most dispensing and curing system applications are unique.** Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application and use is strictly limited to that contained in Dymax's standard Conditions of Sale. Dymax recommends that any intended application be evaluated and tested by the user to insure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation by offering equipment trial rental and leasing programs to assist in such testing and evaluations. Data sheets are available for valve controllers or pressure pots upon request.

LIT218 11/05/2012

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