SELECTOR GUIDE



Manufacturer:

Dymax

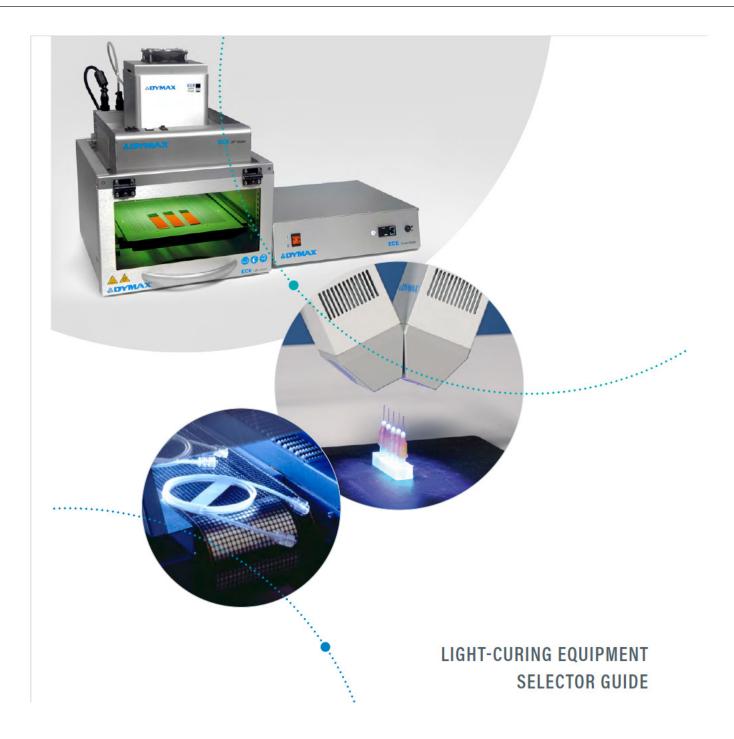
Product Name:

Dymax BlueWave® 200 UV Curing Spot Lamp with Foot Switch (V3.1)

Manufacturer Part Number:

41015

► Click here for more details on the Dymax BlueWave® 200 UV Curing Spot Lamp with Foot Switch (V3.1)





UV Broad-Spectrum & LED Spot-Curing Systems

Spot-cure systems deliver optimized curing energy to a very precise location. They can be used manually by an operator in a turnkey bench-top system or incorporated into a high-speed automated assembly line. They are ideal for curing small areas quickly in R&D laboratory environments as well as low- and high-volume production applications in the medical, industrial, electronics, automotive, and optical industries.

Dymax spot systems are worker friendly, utilizing an integral timed/manual closure control and typically requiring little external shielding. Dymax systems also feature a patented intensity adjustment feature which aids users in both validating and controlling the light-curing process. Dymax spot systems are designed with either arc lamp or LED energy sources.

Conventional Arc Lamp Spot-Curing Systems

Dymax multi-spectrum spot lamps cure using highpressure metal-halide lamps that produce light energy in the 300 to 450 nm range. These spot lamps can be equipped with rod lenses or single- or multiple-pole lightguides in various diameters (3, 5, and 8 mm) and lengths (up to 3 meters) for a variety of curing options.

LED Spot-Curing Systems

Dymax LED spot-curing systems generate curing energy using an array of surface-mounted LEDs instead of traditional metal halide or mercury bulbs. They are semiconductor energy sources that emit very discrete wavelengths of energy, resulting in a single, narrow, bell-shaped emission spectrum.

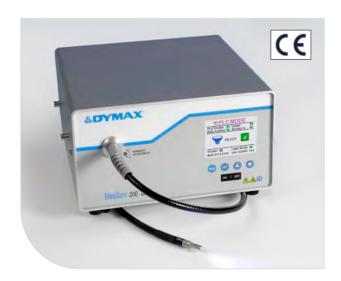
These units offer cooler cures compared to traditional lamp-style curing systems as well as longer service life that eliminates lamp replacement and reduces maintenance costs, higher electrical efficiency and instant on/off capability that lowers operating costs, and "green" attributes that eliminate mercury and ozone safety risks and handling costs.

BlueWave® 200 Version 3.1

The BlueWave® 200 3.1 is a high-intensity, light-curing spotlamp 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 (100-240 V, 50-60 Hz) 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 BlueWave® 200'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.

- Manual intensity adjustment, >17,000 mW/cm² initial intensity
- Large, easy-to-read front panel LCD display
- Improved user interface for easier operation
- Extended exposure time settings to 9,999.9 seconds
- Controlled power-up sequence ensures proper temperature





BlueWave® 200 Version 3.1	41015 North American Version (115V Standard Plug)

BlueWave® MX-150

This curing system provides manufacturers with the curing flexibility they need, in a smaller, more efficient design. The unit is comprised of two main parts, a controller with an easy-to-use touchscreen interface and a high-intensity LED emitter which is uniquely designed to offer higher, more consistent curing intensity than traditional spot-curing systems. Curing energy is created using an LED chip in the emitter, unlike traditional spotcure systems, where it is located in the controller. Locating the LED chip at the point-of-cure provides more consistent curing by addressing potential intensity loss caused by the use of long or bent lightguides.

With this new design, the system can be truly tailored to users' curing needs - allowing them to choose from three different wavelength LED emitters (365, 385, or 405 nm) so optimal cures are achieved. Users also have endless set up flexibility; for automated curing processes, the emitter can be easily mounted to robotic arms or further from the controller without fear of intensity variations. When used as a bench-top curing system, the unit can be paired with a stand and shielding or a Wolfstyle lightguide can be connected to the system for specialized applications.



- High intensity of up to 40 W/cm² for faster curing
- Touchscreen interface for easier operation
- Emitter design for set up flexibility and consistent intensity
- LED emitters in 365, 385, and 405 nm wavelengths
- Admin and production modes with the ability to save curing programs for repeated use
- Instant on/off for a more energy efficient unit with no warm-up period
- PLC interface that is easily incorporated into automated systems

A complete BlueWave" MX-150 system features a controller and an LED emitter. Components are sold separately. Wolf-style lightguides and other accessories can be added for specific applications. See pages 7 and 8 for additional accessories.

	PrimeCure® 385 nm	VisiCure® 405 nm	RediCure® 365 nm
LED Emitter*	42337	42338	42336
BlueWave® MX-Series 2-Channel Controller Only	43185 North American Version (115V	Standard Plug)	

Lightguides

Lightguides transmit UV and visible energy from a source mounted inside of a spot-curing unit to the curing area. When choosing a lightguide for your system, the following factors should be considered:

Length - Lightguides are commonly one meter long although other lengths are available.

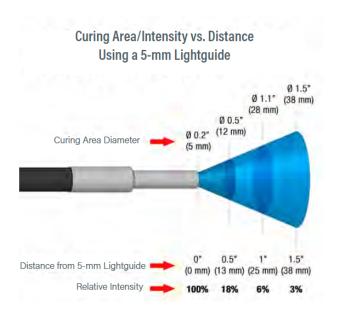
Diameter - Single-pole lightquides are available with 3-mm, 5-mm, or 8-mm inside diameters. Although the 5-mm lightguide will register a higher intensity, the 8-mm lightguide provides more curing power (intensity x area) because a larger lightguide opening captures more of the light emitted from the bulb. Each pole of a multi-pole lightguide has an inside diameter of 3 mm.

Multiple Poles - Light emitting from a spot lamp can be channeled through a single lightguide (single pole) or split between multiple lightguides (multiple poles). Each pole of a multi-pole lightquide emits equal intensity (typically ±10% for liquid-filled lightguides) and all share a common shutter. Both liquid-filled and quartz-fiber multi-pole lightguides are available from Dymax.

Connection - There are basically two types of connectors used in the spot lamp industry, "Wolf" and "D" connectors. Dymax provides lightguides with both connector types,

although "D" connectors are an industry standard and compatible with current Dymax lamp designs (older Dymax designs utilized "Wolf" connectors).

Curing Area/Intensity vs. Distance - The UV and visible light emitted from a lightguide diverges. As a result, intensity decreases and curing area increases with distance from the end of the light guide. The chart to the right describes this relationship clearly for the 5-mm liquid lightguide.



Part Number	Lightguide Description (all noted are liquid filled; quartz fiber are also available)		Compatible Dymax Systems	
5720	Single Pole	5 mm x 1 M	BlueWave® 75	
5721	Single Pole	5 mm x 1.5 M	BlueWave® 200	
5722	Single Pole	8 mm x 1 M	BlueWave® LED Prime UVA BlueWave® LED VisiCure®	
38476	Two Pole	3 mm x 1 M	BlueWave DX-1000	
38477	Three Pole	3 mm x 1 M	BlueWave® DX-1000 VisiCure®	
38478*	Four Pole	3 mm x 1 M	Compatible with All BlueWave® Spot Lamps	

Accessories

Lightguide Mounting Stands

39700 Single Lightguide Mounting Stand

Utilizes a 24" flexible arm for mounting 3, 5, and 8-mm lightguides. This stand offers a 5" x 5" (127 mm x 127 mm) working area and allows repeatable, hands-free spot curing.



Single Lightguide Mounting Stand

Rod Lenses

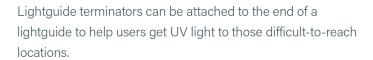
Turn a spot into a flood lamp with shutter! A rod lens refocuses the UV light emitted from a spot lamp to create a very uniform (<5% variation) 2" x 2" (50.8 mm x 50.8 mm) or 5" x 5" (127 mm x 127 mm) curing area. These rod lenses attach to the UV light-curing spot system using an 8-mm lightguide (sold separately).

38699 Rod Lens, 2" x 2" (50.8 x 50.8 mm) Area 38698 Rod Lens, 5" x 5" (127 x 127 mm) Area



BlueWave® 200 with Rod Lens

Lightguide Terminators



39029 3 mm/60° 39030 3 mm/90° 38042 5 mm/60° 38049 5 mm/90°



Lightguide Simulators

A lightguide simulator can be used to accurately measure the direct light intensity from the system's energy source.

38408 Lightguide Simulator, 7-mm Diameter



UV Broad-Spectrum & LED Flood-Curing Systems

Flood-style curing systems usually provide moderate to high-intensity light. These units have the advantage of being able to cure a tray of parts, or parts with large bonded or coated areas. These kinds of lamps are commonly integrated into existing manufacturing processes by mounting them above high-speed assembly lines. Fairly deep cures can be achieved by these relatively inexpensive units at 10- to 30-second exposure times. Wide-area flood lamps are used successfully to cure substrates that are somewhat heat-sensitive, such as certain plastics.

Dymax currently offers both broad-spectrum and LED flood curing systems to fit a wide variety of curing applications. Shutter assemblies, mounting stands, shields, and other accessories are available to order to create custom benchtop curing systems. CE marked units are available for manufacturers in Europe.

Broad-Spectrum Flood Lamps

Dymax broad-spectrum flood curing systems use moderate-to high-intensity (105-225 mW/cm²) UV/visible light to cure UV light-curable adhesives, coatings, and inks in as little as 5-30 seconds. Systems are available with 5" x 5" (127 mm x 127 mm) or 8" x 8" (203 mm x 203 mm) curing areas. They come standard with a 400 watt metal-halide bulb but can be outfitted with longwave, shortwave, UV, and visible replacement bulbs to fit unique applications. All bulbs have a long service life and come with a 2,000 hour warranty.

LED Flood Curing Systems

Dymax LED flood lamp systems use high-intensity LEDs to cure a 5" x 5" (12.7 cm x 12.7 cm) area. Because these flood systems use a high-intensity LED as the curing source they produce faster cure times, more consistent frequency and intensity output, a cooler curing environment for thermally sensitive substrates, and longer bulb life than conventional arc lamps. Systems are available in three different wavelength arrays (365, 385, and 405 nm) so users can fully optimize the curing process between their light-curable material and the curing system. costs, and "green" attributes that eliminate mercury and ozone safety risks and handling costs.

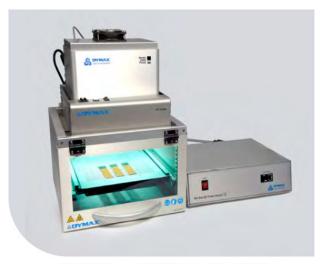
EC-Series Flood Lamp Systems

EC-series flood-lamp systems are ideal for light curing large parts or curing many small parts simultaneously. With intensities ranging from 105-225 mW/cm², Dymax flood lamps are capable of curing most UV light-curable adhesives, sealants, and coatings, tack free in 30 seconds or less. These flood lamps can be incorporated into automated assembly systems or mounted onto conveyors. Dymax flood units can also be used as turnkey bench-top units (with optional shutters).

- Large curing area, 5" x 5" (12.7 cm) or 8" x 8" (20.3 cm)
- Adjustable lamp height
- 100% shielding with safety interlock kit
- Two bulb options: shortwave or longwave

	1200-EC	2000-EC	5000-EC
Typical Intensity Output, mW/cm²*	350	105	225
Curing Area	1" x 6" (2.5 x 15.2 cm)	8" x 8" (20.3 x 20.3 cm)	5" x 5" (12.7 x 12.7 cm)
Working Distance	2"-6" (5.08 cm - 15.24 cm)		
Typical Degradation	<20% over 2,000 hours		
Power Requirements	90-264V, 47-63 Hz		

^{*} Measured with a Dymax ACCU-CAL™ 50 Radiometer (320-395 nm) at a lamp height of 3" using a standard metal halide bulb.



5000-EC Shown with ZIP™ Shutter & Light Shield



Modular 2000-EC Flood

System Options**	2000-EC	5000-EC
Modular (No Shielding or Shutter)	38105	38100
With Mounting Stand	39730	39830
With EC Light Shield	39720	39820
With EC Light Shield & Manual Shutter	39723	39823
With EC Light Shield & ZIP™ Shutter	39721	39821

^{**}All part numbers include a North American power cord (120V plug)

BlueWave® FX-1250

The BlueWave® FX-1250 is a high intensity flood-curing system that delivers true, high-irradiance LED light for better speed, depth, and fullness of cure. The system provides the best cure by combining intensities of over 2 W/cm² with a 5" x 5" (12.7 cm x 12.7 cm) curing area and high uniformity.

The BlueWave® FX-1250 is comprised of a controller and up to two LED emitters. The controller features a 7" touch screen with an intuitive, easy to use interface. It can be activated, controlled, and remotely monitored by PLC, and also store programs and parameters for repeatable processes. The controller also continuously monitors the health of the system. LED emitters are available in three wavelengths for greater curing flexibility.

	RediCure® 365 nm	PrimeCure° 385 nm	VisiCure° 405 nm
Typical Intensity Output, mW/cm ^{2*}	1700	2100	2000
Dimensions (W X H X L)	Emitter: 6.7" x 5.3" x 6.4" (170 mm x 134 mm x 162 mm) 1CH Controller: 4.5" x 13" x 18.25" (11.4 cm x 33.0 mm x 46.4 cm) 2CH Controller: 16.5" x 13.8" x 5.8" (420 mm x 350 mm x 165 mm)		
Curing Area	5" x 5" (12.7 cm x 12.7 cm)		
Power Requirements	100-240 V≈ 10 Amps, 50-60 Hz		

^{*} When measured at 25-mm distance with an ACCU-CAL™ 50-LED radiometer in flood mode.



- Large curing area, 5" x 5" (12.7 cm x 12.7 cm)
- Excellent uniformity and higher intensity
- LED emitters available in 365, 385, and 405 nm wavelengths
- 7" Touch screen interface
- 1 & 2 channel controller options
- PLC activation and control
- Greener technology no ozone generation, mercury free, & lower energy consumption than conventional lamps
- Fully programmable with capability to store up to 16 programs
- Unit can be used as a bench-top cure system or incorporated into an automated process or conveyor

The BlueWave* FX-1250 is sold as a complete system or as separate components. Other accessories can be added for specific applications. See page 15 for additional accessories.

	RediCure® (365 nm)	PrimeCure® (385 nm)	VisiCure® (405 nm)
Complete System (ICH Controller, Interconnect Cable, 1X Emitter, Foot Switch, Power Cord)	88848 North American Version	88849 North American Version	88855 North American Version

BlueWave® MX-250

The BlueWave® MX-250 is comprised of two main parts, a controller with an easy-to-use touchscreen interface and a uniquely designed, high-intensity LED emitter. Curing energy is created using a micro-processor-controlled LED chip set in the emitter. The emitter provides a curing area of 50 mm x 50 mm but multiple systems can be grouped together to create larger curing pattern matrixes as needed.

This system's design allows it to be truly tailored to users' curing needs - allowing them to choose from three different wavelength LED emitters (365, 385, or 405 nm) and providing additional flexibility with the size and pattern of the active curing area. Users also have endless set up flexibility, as this system can be set up as a bench-top unit, or for automated curing processes, the emitter can be easily mounted to robotic arms or further from the controller without fear of intensity losses.

	RediCure* 365 nm	PrimeCure* 385 nm	VisiCure* 405 nm
Typical Intensity Output, mW/cm²*	255	355	375
Curing Area	1.97" x 1.97" (50 mm x 50 mm)		
Power Requirements	100 - 240 VAC ≈ 2.5 A, 50-60Hz		

^{*} Measured at 25-mm distance with an ACCU-CAL™ 50-LED radiometer.



- 1.97" x 1.97" (50 mm) curing area with the option for multiple systems to be grouped together to create larger curing patterns
- Touchscreen interface for easier operation
- Emitter design for set up flexibility and consistent intensity
- LED emitters in 365, 385, and 405 nm wavelengths
- Admin and production modes with the ability to save curing programs for repeated use
- Instant on/off for a more energy efficient unit with no warm-up period
- PLC interface that is easily incorporated into automated systems

A complete BlueWave® MX-250 system features a controller and an LED emitter. Components are sold separately. Other accessories can be added for specific applications. See page 15 for additional accessories.

	RediCure® (365 nm)	PrimeCure® (385 nm)	VisiCure® (405 nm)
BlueWave® MX-Series 2-Channel Controller Only	43185 North American Version (115V Standard	d Plug)	

BlueWave® MX-275

The BlueWave* MX-275 curing system is a high-intensity LED flood-curing system. Light energy is delivered in a line pattern instead of the traditional rectangular pattern. A single BlueWave* MX-275 emitter provides a 5 mm x 50 mm curing area, but when paired with a multichannel controller, up to four emitters can be used to produce a curing area as large as 5 mm x 200 mm.

BlueWave* MX-275 system emitters are available in three different wavelengths: 365, 385 and 405 nm. Emitters can be set up as a bench-top unit, on an array stand to create extended line patterns, or installed on automated curing processing equipment for maximum flexibility.

	RediCure* 365 nm	PrimeCure* 385 nm	VisiCure* 405 nm
Typical Intensity Output, mW/cm ^{2*}	1,460	1,870	1,750
Curing Area	0.20" x 1.97" (5 mm x 50 mm)		
Power Requirements	100 – 240 VAC ≈ 2.5 A, 50-60Hz		

^{*} Measured at a working distance of 10 mm using a Dymax ACCU-CAL™ 50-LED Radiometer with 3-mm aperture set to corresponding light measurement mode. This is preliminary intensity data for reference, tests using flood mode without an aperture will yield different results.



- Delivers high-intensity light energy in a line pattern
- 5 mm x 50 mm cure area can be scaled up by placing emitters side-by-side to provide a large, continuous band of UV LED energy
- Up to 5 mm x 200 mm cure area when paired with
 4-channel controller
- Wavelength flexibility allows co-optimization of adhesive and curing system
- Can be set up as bench-top unit, on array stand, or in automated system for maximum flexibility
- Well-suited for conveyor applications where products move under light

A complete BlueWave® MX-275 system features a controller and an LED emitter. Each emitter requires an interconnect cable. Components are sold separately.

	RediCure® (365 nm)	PrimeCure® (385 nm)	VisiCure® (405 nm)
BlueWave® MX-Series 2-Channel Controller Only	43185 North American Version (115	V Standard Plug)	

Accessories

Shielding

Dymax offers several standard shielding options for flood lamps. All shields are 100% UVA blocking and visibly tinted.

41175 EC Flood Light Shield

360° shielding with lifting door and sliding curing shelf. Compatible with Dymax shutters.

Shutters

Turning a bulb off and on between cycles is not practical since each off/on cycle shortens bulb life and requires a 5-minute warm-up period. A shutter, however, can be used to shield a flood system between cycles. Shutters control exposure time, reduce heat on the work surface, and shield operators from exposure to UV light. Dymax carries two types of shutters,

ZIP™ and manual.

37863 ZIP™ Shutter (EC Floods)

Timed and manual modes. Foot pedal or PLC controlled.

35572 Manual Shutter (EC & ECE Floods)

Most cost-effective shutter system.





UV Broad-Spectrum & Conveyor Systems

Dymax UVCS-series conveyor systems are an ideal choice for manufacturers who need to cure light-curable adhesives, coatings, and inks on larger parts or on large quantities of smaller parts. Standard UVCS systems consist of a 12"-wide belt that can be outfitted with a variety of broad-spectrum and LED curing flood lamps. Conveyors outfitted with broad-spectrum flood lamps are available with standard metal halide (longwave UV), mercury (shortwave UV), or visible bulbs to accommodate various applications. Conveyors that utilize LED floods are available in 365, 385, and 405 nm curing wavelengths. Specialty conveyors are available for applications that require a wider belt or for parts that need to be cured from the sides and/ or the bottom.

All Dymax conveyor systems are designed to offer consistent, fast, and safe curing. The systems are extremely easy to use and keep users safe by offering complete shielding from UV light. Consistent belt transport speed, adjustable lamp height, and stable lamp intensity provide a consistent light-curing process for repeatable process and optimized throughput.

Custom Conveyor Systems

Looking for a wider conveyor, shorter conveyor, or one with more clearance? Dymax can custom design a conveyor to your specifications. Contact Dymax for more information on customized conveyors.



Accessories

Carts

39215 Transportation Cart

Easily move your conveyor with one of these durable, rolling carts.



Replacement Bulbs

38560 Metal-Halide Bulb (Standard, UVA, Longwave)

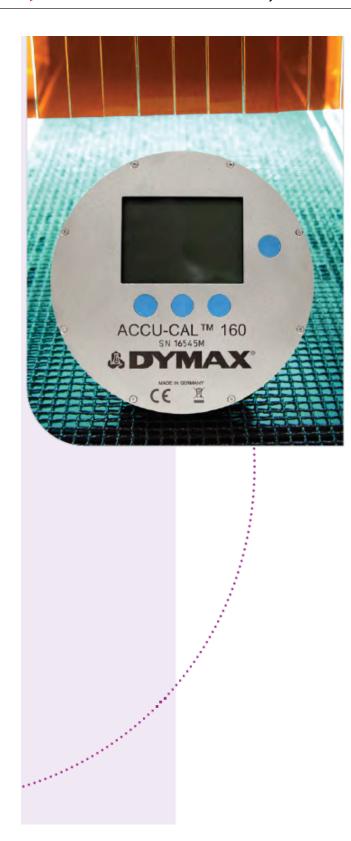
For use with UVCS, SideCure, & Edge-Carry conveyors outfitted with Dymax EC-series flood lamps.

36970 Mercury Bulb (UVB, Shortwave)

For use with UVCS, SideCure, & Edge-Carry conveyors outfitted with Dymax EC-series flood lamps. These bulbs are primarily designed for curing UV inks and cationic epoxies.

36658 Visible Bulb

For use with UVCS, SideCure, & Edge-Carry conveyors outfitted with Dymax EC-series flood lamps. The bulbs are primarily designed for curing UV/visible curing adhesives through UV-blocked, but transparent substrates.



Radiometers for Spot, Flood, and Conveyor Systems

Radiometers measure the intensity of energy at specific wavelengths. UV light is, by definition, not visible to the human eye, so a radiometer is required to determine the amount of UV energy. The ability to measure light intensity is useful for three reasons:

- Maintaining a light-curing process A radiometer can measure whether a light-curing system is providing intensity above the "bulb change" intensity. A radiometer is to a light-curing process what a thermometer is to a heatcuring process.
- Providing a worker-friendly light-curing process A radiometer is required to determine if any UV light is reaching operators or bystanders.
- Measuring transmission rates through substrates A radiometer can be used to measure the transmission rates of various wavelengths through substrates that absorb UV and/or visible light. To assure an effective curing process it is critical to measure the light intensity reaching the lightcurable material below the intervening substrate.

Dymax ACCU-CAL™ Radiometers

Dymax offers ACCU-CAL[™] radiometers for spots, floods, and conveyors. Kits for spot lamps include the complete radiometer with 3, 5, and 8-mm lightguide adapters and a lightguide simulator. Adapter kits are available separately for users who have an existing flood/conveyor kit and need to use it for spot systems. All radiometer kits include a storage/carrying case. ACCU-CAL[™] radiometers are calibrated to measure either UV-A (320-390 nm), LED (~ 350-450 nm), or visible (395 nm to 465 nm) light intensity.

Radiometer Calibration

To ensure accurate readings, radiometers should be periodically calibrated. Calibration requirements differ from one model to another but calibration is typically required every six or twelve months.

ACCU-CAL™ 50

The ACCU-CAL™ 50 radiometer is simple to operate and offers repeatable measurement of UV light. The ACCU-CAL™ 50 can measure UV light emitted from lightguides (3, 5, and 8 mm), UV flood systems, and UV conveyors. With a spectral sensitivity from 320 to 395 nm (UVA), the ACCU-CAL™ 50 measures intensities from 1 mW/cm² to 40 W/cm². A specially designed photo-sensor assembly protects the photo-sensor from the high temperatures sometimes associated with today's high intensity UV spot lamps.

39561 ACCU-CAL™ 50 for flood lamps and conveyors Complete radiometer (without lightguide adapters or lightguide simulator*); includes storage/carrying case.

39560 ACCU-CAL™50 for spots, floods, and conveyors Complete radiometer with lightguide adapters (3, 5, and 8 mm) and lightguide simulator*; includes storage/carrying case.



- Spectral sensitivity of 320-395 nm
- 12 month calibration cycle
- Can be used to test spot or flood lamps, as well as conveyor systems
- Set screw locks lightguide in place
- PTB and NIST traceable

ACCU-CAL™ 50-LED

The ACCU-CAL™ 50-LED radiometer is simple to operate and offers accurate measurement of curing energy. The ACCU-CAL™ 50-LED can measure energy levels emitted from lightguides (3, 5, and 8 mm), BlueWave QX4 LED heads, LED flood lamps, and line-pattern curing systems. A spectral sensitivity range of 350 - 450 nm and intensity measurement from 1 mW/cm² to 40 W/cm², makes this unit ideal for measuring LED curing source energy levels. A specially designed photo-sensor assembly provides repeatable measurements and protection from high temperatures associated with some LED systems on the market.

39554 Flood-to-Spot Adapter Kit

Kit includes three lightguide adapters (3, 5, and 8 mm) and a lightguide simulator.



- Spectral sensitivity of 360-450 nm
- 12 month calibration cycle
- Can be used to test spot or flood lamps, as well as conveyor systems
- Set screw locks lightguide in place
- PTB and NIST traceable

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