# Light-Curing Equipment
## Selector Guide


SPOTS | FLOODS | CONVEYORS | RADIOMETERS | ACCESSORIES

DYMAX®

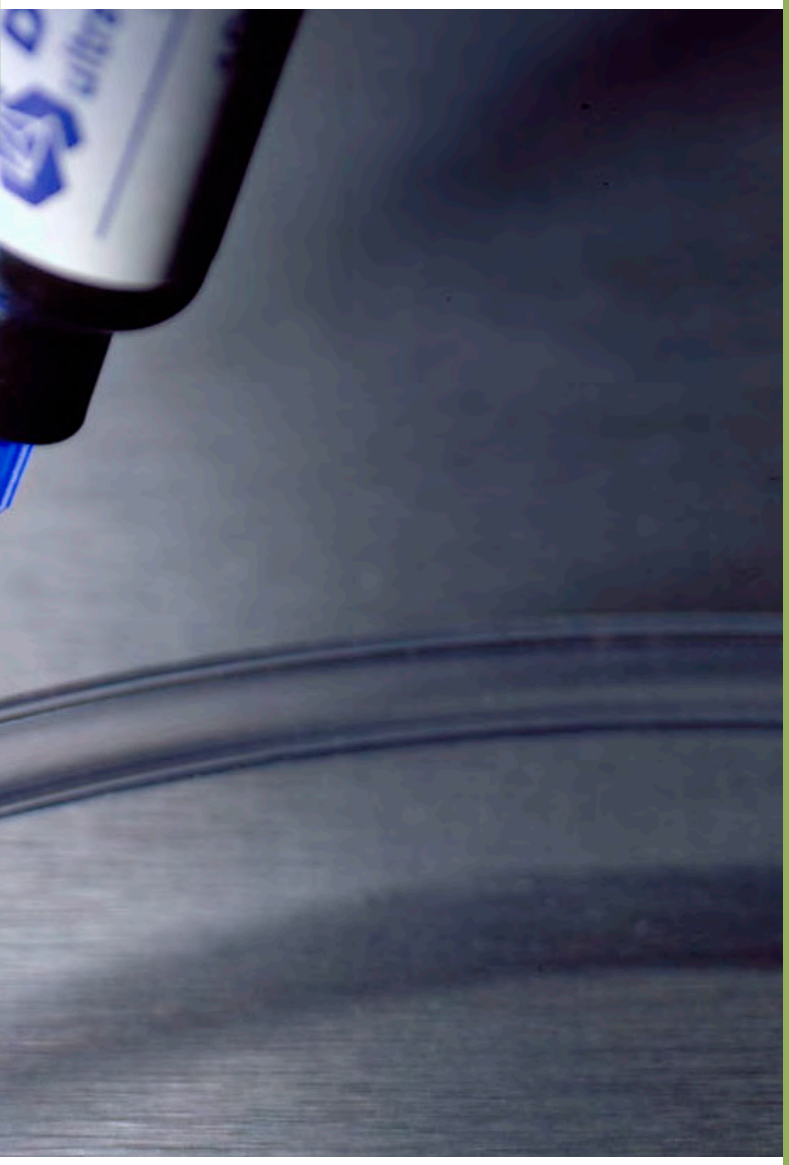
# DYMAX LIGHT-CURING TECHNOLOGY

For more than 35 years, light-curing technology has allowed manufacturers to lower processing costs, produce higher quality products, and eliminate the use of harmful chemicals from the workplace. First introduced in the early 1980s for ink and thin coating applications, the technology has advanced tremendously over the last three decades, becoming the method of choice for many other industrial bonding, sealing, coating, potting, and tacking applications.

Light curing's popularity stems from its ability to deliver fast, durable bonds in seconds, on demand. Faster on-demand cures result in more efficient manufacturing processes by providing shorter cycle times, reduced labor costs, and reduced work-in progress. In addition to its efficiency, light-curing technology is also environmentally and worker friendly.  It utilizes no explosive equipment, is associated with fewer health issues, and requires lower regulatory and disposal costs than other technologies.

Dymax has specialized in light-curing assembly solutions since the introduction of the technology. Today, we offer the broadest range of light-curable materials available and a complete line of conventional and LED light-curing equipment. Our light-curing equipment offers manufacturers safe, reliable curing in a number of different configurations including spot, flood, and conveyor systems.

Where other companies only supply products, we are committed to developing a true collaborative partnership, bringing our unsurpassed expertise in light cure technology and total process knowledge to our customers' specific application challenges. Because we understand



the process as a whole, and not just individual aspects of it, we can offer our customers a solution where chemistry and equipment work seamlessly together with maximum efficiency.

Our application engineering team works side-by-side with customers, providing assistance with product and process design, testing, evaluation, and pre-production trials throughout the life of the assembly process. That's the perfect combination of technology and expertise for a competitive advantage you can't get anywhere else.

## Our Technology.
## Your Advantage.®

This selector guide provides an overview of Dymax's light-curing systems. Additional information for all systems is available on our website at dymax.com. For answers to your specific application questions, please contact our Application Engineering Team. They are available to help recommend a light-curable material and help design a dispensing and curing process for your specific application. Whenever possible, our Application Engineers will also conduct testing on your specific parts to ensure the chosen products meet all application requirements. If testing indicates our standard formulations or light-curing systems are not suitable, our Application Engineers can also help you find an alternative solution for your assembly process.

### Equipment Evaluation

Take advantage of the opportunity to evaluate our light-curing systems through our Equipment Evaluation Program. This program is a low-risk way to evaluate Dymax equipment in your application. An assortment of conveyors, spot lamps, and flood lamps have been allocated for this program for your in-house evaluation. Contact Dymax Customer Support for more information on this program.

# 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

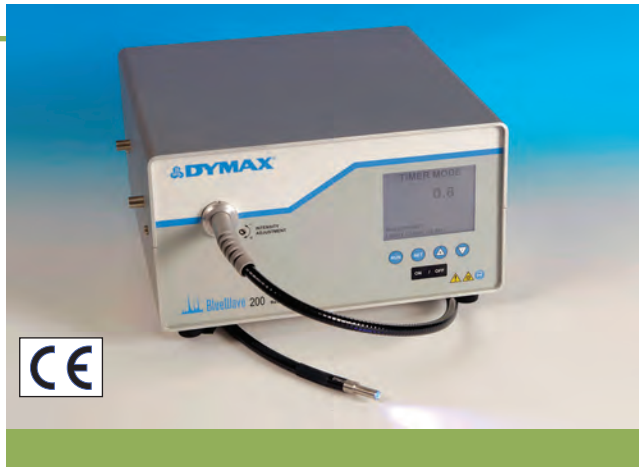
Dymax multi-spectrum spot lamps cure using high-pressure metal-halide lamps that produce light energy in the 300 to 450 nm range. These spot lamps can be equipped with rod lenses or single- or multiple-pole lightguides in various diameters (3, 5, and 8 mm) and lengths (up to 3 meters) for a variety of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

## LED (Light-Emitting Diode) 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 3.0



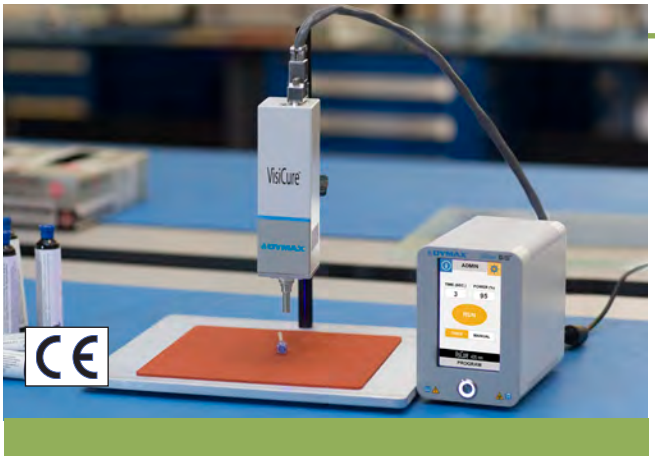

The BlueWave® 200 3.0 is a high-intensity, light-curing spot-lamp system. This spot-curing lamp emits energy in the UVA and visible portion of the spectrum (300-450 nm) for light curing of adhesives, coatings, and encapsulants. Ideally suited for either manual or automated processes, the unit contains an integral shutter which can be actuated by a foot pedal or PLC and a universal power input (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/cm$^2$ 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 3.0 System** | **41013** |

NOTE: The appropriate power cord for the location will be added prior to shipment.




# 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 spot-cure 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 Wolf-style lightguide can be connected to the system for specialized applications.

- High Intensity of up to 40 W/cm$^2$ 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.

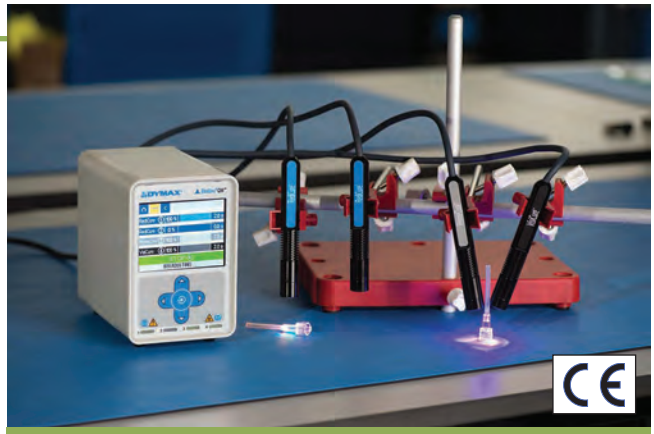
| | PrimeCure® 385 nm | VisiCure® 405 nm | RediCure® 365 nm |
|---|---|---|---|
| **LED Emitters**<br>Note: 5-mm lightguide simulator comes with every emitter | **42337** | **42338** | **42336** |
| **Controller Only** | **43184*** BlueWave® MX-Series 2-Channel Controller<br>**43181*** BlueWave® MX-Series 4-Channel Controller<br>**43299** BlueWave® MX-MIM Machine Interface Module | | |
| **Accessories** | **36987** 5-mm Lightguide Simulator<br>**41148** Adjustable Taper Shoulder Focusing Lens (5 mm) | | |
| **Interconnect Cables** | **42287** Interconnect Cable Assembly (2 meter)<br>**42889** Interconnect Cable Assembly (5 meter)<br>**43010** Interconnect Cable Assembly (10 meter)<br>**43011** Interconnect Cable Assembly (20 meter) | | |

*The appropriate power cord is included for orders in Europe.

# BlueWave® QX4®

The BlueWave® QX4® high-intensity spot-curing system features all the benefits of LED-curing technology in a smaller, more versatile unit. This system is comprised of a controller and up to four LED heads. LED heads are available in 365, 385, and 405 nm and can be outfitted with 3-, 5-, or 8-mm diameter focusing lenses. LED heads and focusing lenses can be used in any combination and can be controlled through the system's variable mode, a feature that allows each head to be individually programmed for intensity and cycle times. Individual exposure times and intensity settings can be set in 1% increments for each LED head, giving users maximum curing flexibility.

In addition to its curing flexibility, the BlueWave® QX4® also features an easy-to-use control interface that allows flexibility in setup and use of the unit. The unit can be activated by front panel, foot pedal, or through an I/O interface connection, allowing it to be easily incorporated into automated systems.



- One controller controls up to four heads
- LED heads in 365, 385, or 405 nm wavelengths
- Variable mode allows each LED head to be programmed independently
- Interchangeable/Replaceable focusing lenses in 3-, 5-, and 8-mm diameters
- Instant on/off for a more energy efficient unit with no warm-up period
- Efficient LED-head temperature management
- PLC interface that is easily incorporated into automated systems

A complete BlueWave® QX4® system features a controller and up to four LED heads/lenses. Each LED head must have a lens in order to operate properly. Components are sold separately.

| | PrimeCure® 385 nm | VisiCure® 405 nm | RediCure™ 365 nm |
|---|---|---|---|
| **LED Heads** | **43162** | **43163** | **43161** |
| **Controller Only** | **41572*** | | |
| **Lens Only** | **43164** 3-mm Lens<br>**43165** 5-mm Lens<br>**43166** 8-mm Lens | | |
| **Accessories & Spare Parts** | **41563** 0.5 M Extension<br>**41564** 1.0 M Extension<br>**41565** 1.5 M Extension<br>**41566** 2.0 M Extension | | |

*The appropriate power cord is included for orders in Europe.

# 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:

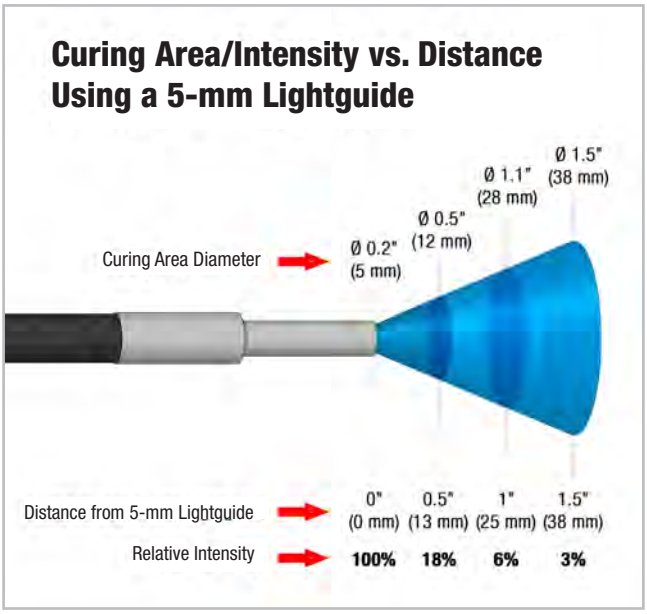
**Length** – Lightguides are commonly one meter long although other lengths are available.

**Diameter** – Single-pole lightguides 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.

**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 lightguide emits equal intensity (typically ±10% for liquid-filled lightguides) and all share a common shutter. Each pole of a multi-pole lightguide has an inside diameter of 3 mm. 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 below 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<br>BlueWave® 200<br>BlueWave® LED Prime UVA<br>BlueWave® LED VisiCure®<br>BlueWave® DX-1000<br>BlueWave® DX-1000 VisiCure® |
| 5721 | Single Pole | 5 mm x 1.5 M | |
| 5722 | Single Pole | 8 mm x 1 M | |
| 38476 | Two Pole | 3 mm x 1 M | |
| 38477 | Three Pole | 3 mm x 1 M | |
| 38478* | Four Pole - Fiber Optic | 3 mm x 1 M | Compatible with All BlueWave® Spot Lamps |
| 36619 | Single Pole - Wolf Style | 3 mm x 1 M | BlueWave® MX-150 |
| 37043 | Two Pole - Wolf Style | 3 mm x 1 M | |
| 35101 | Single Pole - Wolf Style | 5 mm x 0.5 M | |
| 35102 | Single Pole - Wolf Style | 5 mm x 1 M | |
| 36238 | Single Pole - Wolf Style | 5 mm x 1.5 M | |
| 38998 | Single Pole - Wolf Style | 5 mm x 2 M | |
| 38676* | Four Pole - Extended Range | 3 mm x 1.5 M | |
| 38851* | Four Pole | 3 mm x 1.5 M | |
| 39791* | Four Pole - Fiber Optic | 3 mm x 1 M | |

*Lightguide adapter conversion kit (PN 42932) required for use with BlueWave® MX-150.

# 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.

**41325 - Acrylic Lightguide Mounting Stand**
Multiple lightguides can be securely mounted on this stand for repeatable, hand-free spot curing.

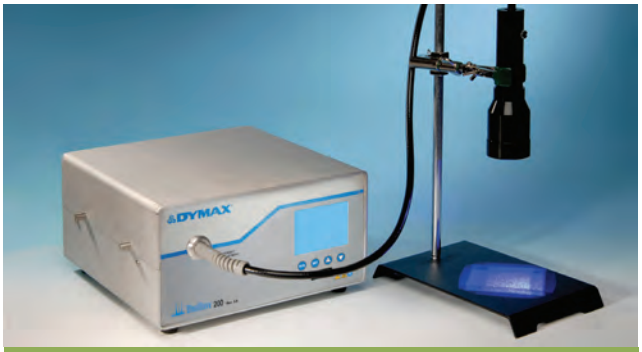
**41595 - Lightguide Stand Expansion Kit**
Allows the Dymax acrylic lightguide mounting stand to hold up to four lightguide poles.


Mounting Stands: PN 39700 (Left) & PN 41325 (Right)

## Rod Lenses

Turn a spot into a flood lamp with shutter! A rod lens re-focuses 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 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**
**36987 - Lightguide Simulator, 5-mm Diameter**

## Lightguide Terminators

Lightguide terminators can be attached to the end of a lightguide to help users get UV light to those difficult-to-reach locations.

**39029 – 3 mm/60°**
**39030 – 3 mm/90°**
**38042 – 5 mm/60°**
**38049 – 5 mm/90°**
**39334 – 8 mm/60°**
**39333 – 8 mm/90°**

## Emitter Stands & Shields

**42390 - BlueWave® MX-Series Mounting Stand**
Mounting stand with adjustable height for a single MX-series emitter.

**43019 - BlueWave® MX-Series Single Emitter Mounting Kit**
Mounting adapter for attaching MX-series emitters.

**43070 - BlueWave® MX-Series Multi-Array Mounting Stand**
Accommodates up to 4 MX-series emitters.

**42426 - Emitter Holder Assembly Bracket**
Securely mount an emitter to the side of the BlueWave® MX-150 controller for configurations using a lightguide.

**41395 - Three-Sided Acrylic Shield**
Compatible with the BlueWave® MX-150. A simple and cost effective three-sided shield that is removed manually.

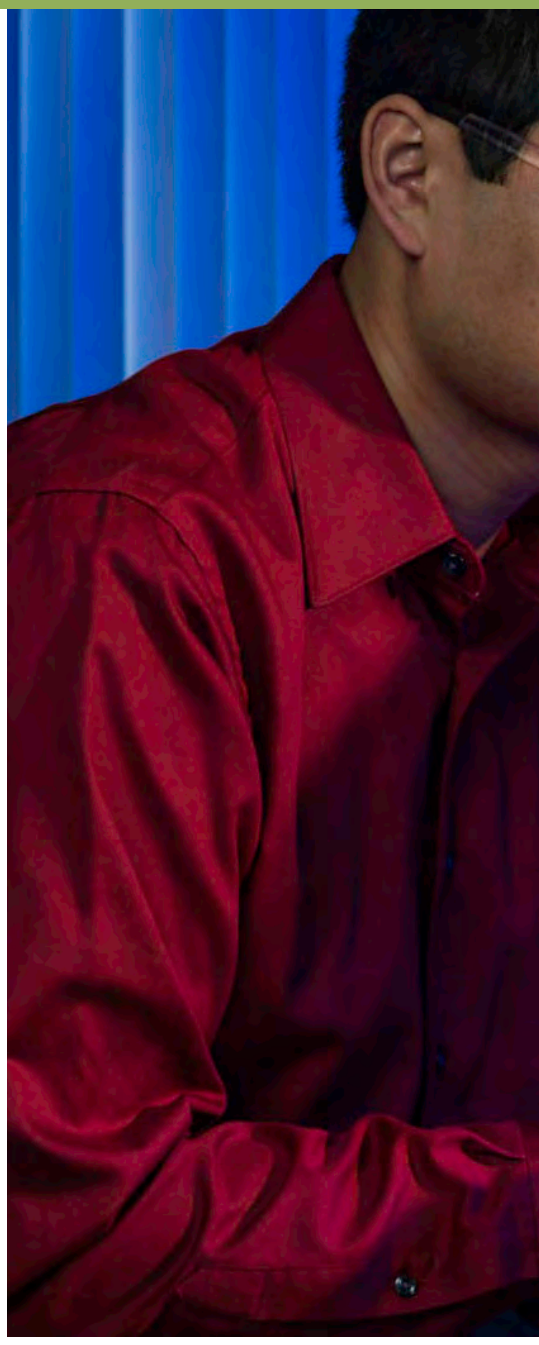


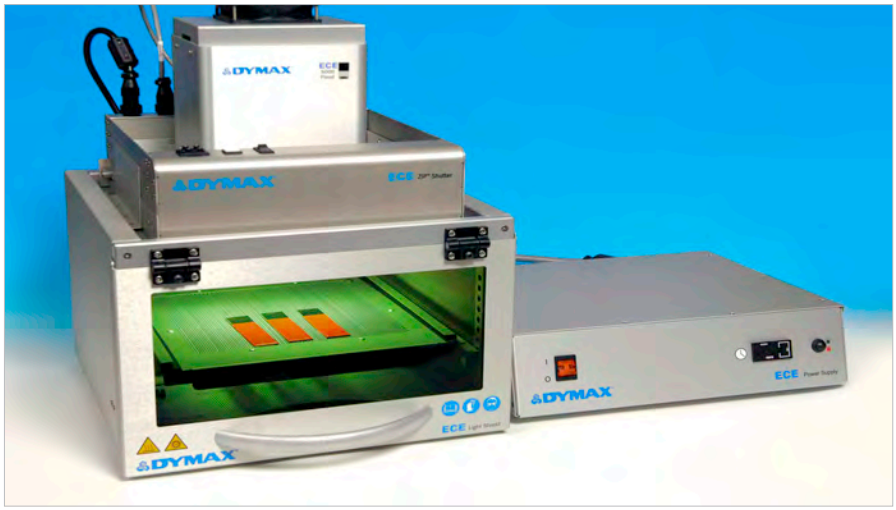
Emitter Mounting Stand with Three-Sided Acrylic Shield (Left) & Holder Assembly Bracket (Right)

# 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 in 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 bench-top curing systems.






## Broad-Spectrum Flood Lamps

Dymax broad-spectrum flood curing systems use moderate- to high-intensity (75-225 mW/cm$^2$) 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's 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.

# BlueWave® AX-550

The BlueWave® AX-550 combines a controller, emitter, and power supply into a compact, all-in-one LED flood-curing system. Eliminating the need for a large, traditional–style controller and bulky cables, this unit has a greatly reduced footprint and is easily integrated into automated processes.

The system features a large 5" x 5" (12.5 x 12.5 cm) curing area, which is controlled by an easy-to-navigate user interface with push-button controls or through a PLC interface. Dymax offers the system with three different wavelength emitters (365, 385, and 405 nm), which are field-upgradable by customers so they can switch to another wavelength easily if needed.

| | RediCure® 365 nm | PrimeCure® 385 nm | VisiCure® 405 nm |
|---|---|---|---|
| **Typical Intensity Output,** mW/cm²* | 425 | 800 | 650 |
| **Dimensions (H X W X D)** | 6.61" x 11.45" x 6.88" (16.8 cm x 29.1 cm x 17.5 cm) | | |
| **Curing Area** | 5" x 5" (12.5 cm - 12.5 cm) | | |
| **Power Requirements** | 100 – 240 VAC 50/60Hz (Auto-Ranging) | | |

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

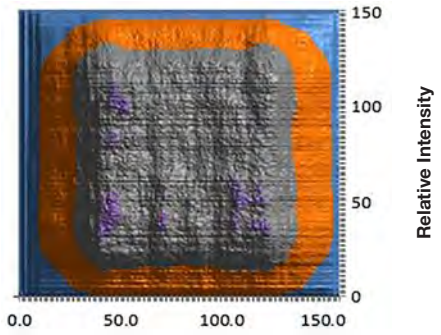

BlueWave® AX-550 Flood Curing System
Show with VisiCure® Emitter and Mounting Stand

- Large curing area, 5" x 5" (12.5 cm) active area
- All-in-one design for small footprint and no bulky cables
- User interface with touchscreen and rotary push button control
- Emitters available in 365, 385, and 405 nm wavelengths
- Unit can be used as a bench-top cure system or incorporated into an automated process or conveyor
- Direct-to-frame pre-drilled holes for stability and easy mounting and integration into automated systems
- PLC interface that allows for control and monitoring of power levels, exposure times/routines, and system health and safety lockout

## SYSTEM UNIFORMITY

System uniformity is important to ensure a consistent cure across the entire cure area. The graph to the right illustrates the Dymax BlueWave® AX-550's high uniformity.

**BlueWave® AX-550 with PrimeCure® Emitter at 12.75 mm**




| | RediCure® (365 nm) | PrimeCure® (385 nm) | VisiCure® (405 nm) |
|---|---|---|---|
| **Part Number** | 43315 | 43318 | 43321 |

NOTE: The appropriate power cord is included for orders in Europe.

# BlueWave® LED Flood

The BlueWave® LED Flood System offers high-intensity curing energy over a 5" x 5" (12.7 cm x 12.7 cm) area. Cure times in the 5-30 second range are typical when using Dymax light-curable materials. This unit is simple to operate and can be used as a stand-alone system or easily integrated into automated assembly systems. Dymax offers the system with 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.

The BlueWave® LED Flood System offers all the benefits of LED light-curing technology including more consistent intensity, less energy consumption, a shutter-free design, instant on/off, and cooler curing temperatures.

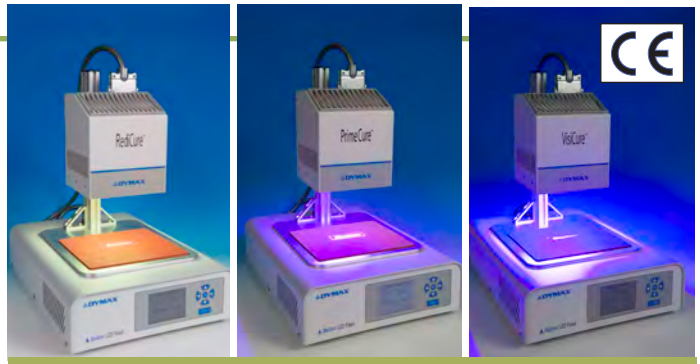
| | RediCure® 365 nm | PrimeCure® 385 nm | VisiCure® 405 nm |
|---|---|---|---|
| **Typical Intensity Output,** mW/cm²* | 500 | 850 | 950 |
| **Dimensions (H X W X D)** | Irradiator: 4.48" x 6.38" x 5.79" (19.0 cm x 16.2 cm x 14.7 cm)<br>Power Supply: 4.5" x 13" x 18.25" (11.4 cm x 33.0 mm x 46.4 cm) | | |
| **Curing Area** | 5" x 5" (12.7 cm - 12.7 cm) | | |
| **Power Requirements** | 100 – 240 VAC 50/60Hz (Auto-Ranging) | | |

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

### SYSTEM UNIFORMITY

When compared to other LED units, the BlueWave® LED Flood provides much higher intensity and more overall uniformity across the active area. These benefits allow shorter cure times, and in turn, faster manufacturing throughput.

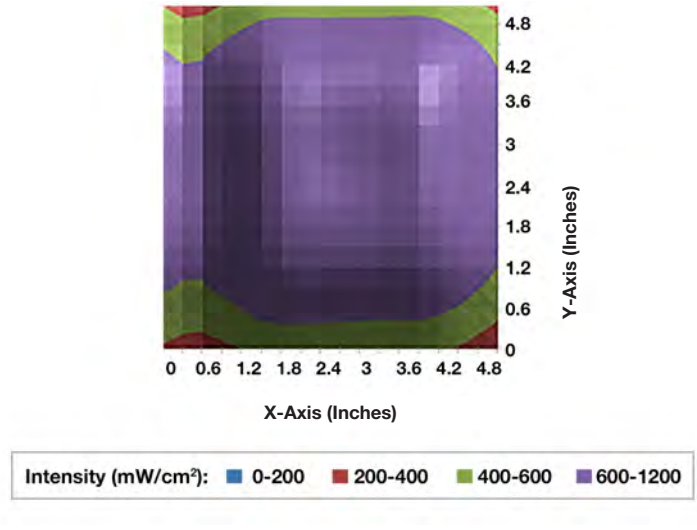
The graph to the right illustrates the Dymax BlueWave® LED Flood's high uniformity when multiple arrays are positioned next to each other. This is especially important in conveyor applications to ensure a consistent cure across the entire substrate.



BlueWave® LED Flood (From left: RediCure®, PrimeCure®, & VisiCure®)

- Large curing area, 5" x 5" (12.7 cm) active area
- More consistent frequency and intensity for better process control
- Greener technology - no ozone generation, mercury free, & lower energy consumption than conventional lamps
- Shutter-free design for reliable operation with lower mainenance costs (no moving parts)
- LED flood array available in 365, 385, and 405 nm wavelengths
- Unit can be used as a bench-top cure system or incorporated into an automated process or conveyor

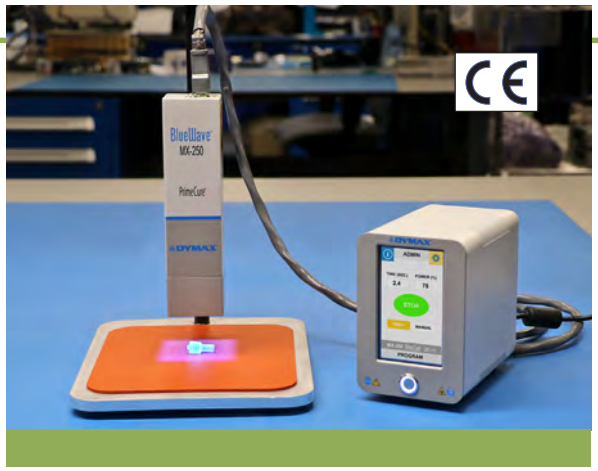
**BlueWave® LED Flood with VisiCure® Array**




| | RediCure® (365 nm) | PrimeCure® (385 nm) | VisiCure® (405 nm) |
|---|---|---|---|
| **Part Number** | 41262 | 41261 | 41260 |

NOTE: The appropriate power cord for the location will be added prior to shipment.

# BlueWave® MX-250




This curing system provides manufacturers with the curing flexibility of past systems but with new expansion capabilities. The unit is comprised of two main parts, a controller with an easy-to-use touchscreen interface and a uniquely designed, high-intensity LED emitter. The LED emitter provides better uniformity and more consistent curing-energy emissions than traditional flood-curing systems over a 50 mm x 50 mm curing area. Curing energy is created using a micro-processor-controlled LED chip set in the emitter. Multiple systems can be grouped together to create larger curing pattern matrixes as needed.

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) 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 - 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 auto-mated 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.

| | |
|---|---|
| **LED Emitter** | **42806** RediCure® (365 nm)<br>**42807** PrimeCure® (385 nm)<br>**42808** VisiCure® (405 nm) |
| **Controller Only** | **43184** BlueWave® MX-Series 2-Channel Controller*<br>**43181** BlueWave® MX-Series 4-Channel Controller*<br>**43299** BlueWave® MX-MIM Machine Interface Module |
| **Interconnect Cables** | **42287** Interconnect Cable Assembly (2 meter)<br>**42889** Interconnect Cable Assembly (5 meter)<br>**43010** Interconnect Cable Assembly (10 meter)<br>**43011** Interconnect Cable Assembly (20 meter) |

*NOTE: The appropriate power cord for the location will be added prior to shipment.

# 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/cm²* | 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.

BlueWave® MX-275 System Shown with Multiple Emitter Mounting Stand & 4-Channel Controller

- 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.

| | |
|---|---|
| **Line Pattern LED Emitters** | **43094** RediCure® (365 nm)<br>**43098** PrimeCure® (385 nm)<br>**43102** VisiCure® (405 nm) |
| **Controller Only** | **43184** BlueWave® MX-Series 2-Channel Controller*<br>**43181** BlueWave® MX-Series 4-Channel Controller*<br>**43299** BlueWave® MX-MIM Machine Interface Module |
| **Interconnect Cables** | **42287** Interconnect Cable Assembly (2 meter)<br>**42889** Interconnect Cable Assembly (5 meter)<br>**43010** Interconnect Cable Assembly (10 meter)<br>**43011** Interconnect Cable Assembly (20 meter) |

*NOTE: The appropriate power cord for the location will be added prior to shipment.

# ECE-Series Flood Lamp Systems

Dymax UV light-curing flood-lamp systems are ideal for light curing large parts or curing many small parts simultaneously. With intensities ranging from 105-225 mW/cm$^2$, 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
- Extended exposure time settings to 9,999.9 seconds
- Controlled power-up sequence ensures proper temperature


ECE 2000 Shown with ZIP™ Shutter & Light Shield


ECE 2000 Modular System

| | ECE 2000 | ECE 5000 |
|---|---|---|
| **Typical Intensity Output*** | 105 mW/cm$^2$ | 225 mW/cm$^2$ |
| **Curing Area** | 8" x 8" (20.3 cm) | 5" x 5" (12.7 cm) |
| **Working Distance** | 2"-6" (5.08 cm - 15.24 cm) | |
| **Typical Degradiation** | <20% over 2,000 hours | |
| **Power Requirements** | 100-240 VAC, +/- Single Phase 50-60 Hz | |

* Intensity readings vary widely depending on the make and model of the radiometer. These intensities were measured with the ACCU-CAL™ 50 radiometer.

| | ECE 2000 (8" x 8" (20.3 cm x 20.3 cm)) | ECE 5000 (5" x 5" (12.7cm x 12.7cm)) |
|---|---|---|
| **Modular (No Shielding or Shutter)** | **40965** | **40915** |
| **With Mounting Stand** | **40920** | **40970** |
| **With ECE Light Shield** | **40870** | **40900** |
| **With ECE Light Shield & Manual Shutter** | **40790** | **40850** |
| **With ECE Light Shield & ECE ZIP™ Shutter** | **40830** | **40840** |

NOTE: The appropriate power cord for the location will be added prior to shipment.

# Handlamp 250

The HL250 is a versatile, handheld UV curing lamp designed to provide reliable curing of light-curable adhesives and coatings. This system is comprised of two main parts, a high-performance 250 W handheld UV lamp and a separate power supply unit. It is portable and lightweight, weighing only 1.4 kg, making it ideally suited for mobile applications.

In addition to curing, this system can also be outfitted with a black light filter and used for fluorescent examination in quality control applications.

- Lightweight, portable curing unit
- Black filter glass available for use in quality inspections
- Wire mesh over filter glass for added user protection

Part Numbers

**HL250 - Handlamp 250**
**HL250BL - Handlamp 250 with Black Light Filter**

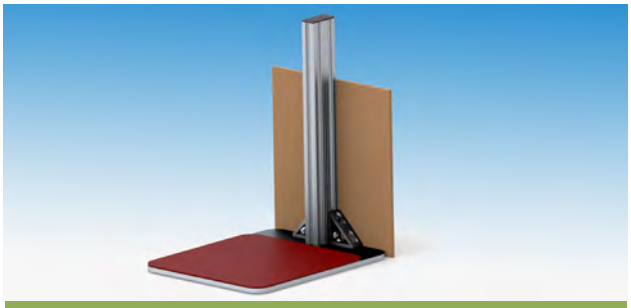
| | |
|---|---|
| **Light Source** | UV Handlamp |
| **Input Power** | 250 W |
| **Intensity in the UVA Range** | 20-30 mW/cm$^2$ |
| **Weight of Lamp** | 1.4 kg |
| **Weight of Operating Unit** | 2.8 kg |

# Accessories

Dymax light-curing flood lamps can be outfitted with the shutters and shielding shown below. Additional shutters, enclosures, and accessories may be available.

## Mounting Stands

**41268 - Standard Mounting Stand**
A simple and cost effective mounting stand with adjustable height. Includes an acrylic back shield.

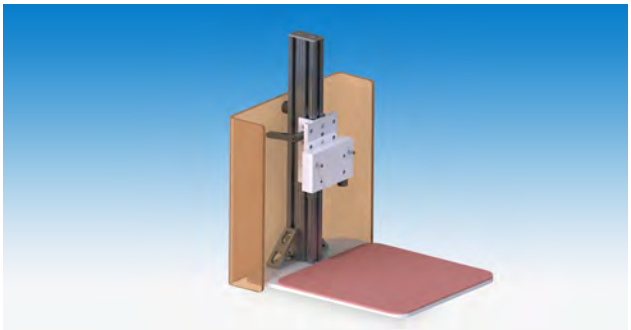


Standard Mounting Stand

BlueWave® AX-550

**43410 - BlueWave® AX-550 Stand**
Stand with acrylic back-shield. Includes mounting carriage PN 60036.

**60036 - BlueWave® AX-550 Mounting Carriage**
Mounting carriage to mount the BlueWave® AX-550 on stand PN 41268.



BlueWave® AX-550 Mounting Stand

BlueWave® MX-Series

**42909 - Single Emitter Mounting Kit**
Mounting adapter for attaching MX-series emitters.

**42390 - Single Emitter Mounting Stand**
Mounting stand with adjustable height for a single MX emitter.

Multi-Emitter Mounting Stand
for BlueWave® MX-Series Systems

**43019 - Multiple Emitter Mounting Kit**
Works with stand PN 41268.

**43070 - Multi-Emitter Stand with Acrylic Back Shield**
Mounting stand with acrylic back shield for multiple MX emitters. Works wiith stand PN 41395.

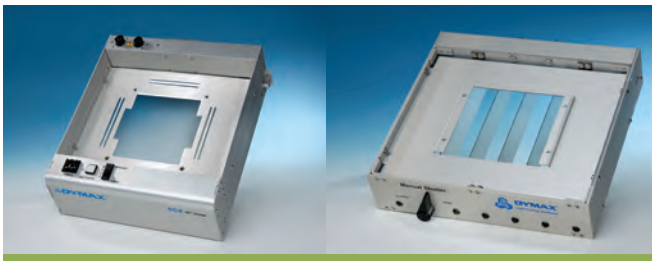
Multi-Emitter Mounting Stand
for BlueWave® MX-Series Systems

## 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.

**40885 – ZIP™ Shutter (ECE Floods)**
Timed and manual modes. Foot pedal or PLC controlled.

**35572 – Manual Shutter (ECE Floods)**
Most cost-effective shutter system.



ECE ZIP™ Shutter (Left) & Manual Shutter (Right)

## Shielding

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

### 40785 - ECE Flood Light Shield

360° shielding with lifting door and sliding curing shelf. Safety Interlock feature included. Compatible with Dymax shutters.

ECE Light Shield

### 41321 - BlueWave® LED Flood Light Shield

360° shielding with a swing-up door and slide-out shelf. Not compatible with Dymax shutters.

(Note: This light shield requires version 3.0 or greater BlueWave® LED flood software. Dymax can determine software version based on the BlueWave® LED flood serial number.)

### 41395 - 3-Sided Acrylic Shield

A simple and cost effective 3-sided shield that is removed manually. Compatible with the BlueWave® LED Flood and BlueWave® MX-250 systems.

3-Sided Acrylic Shield

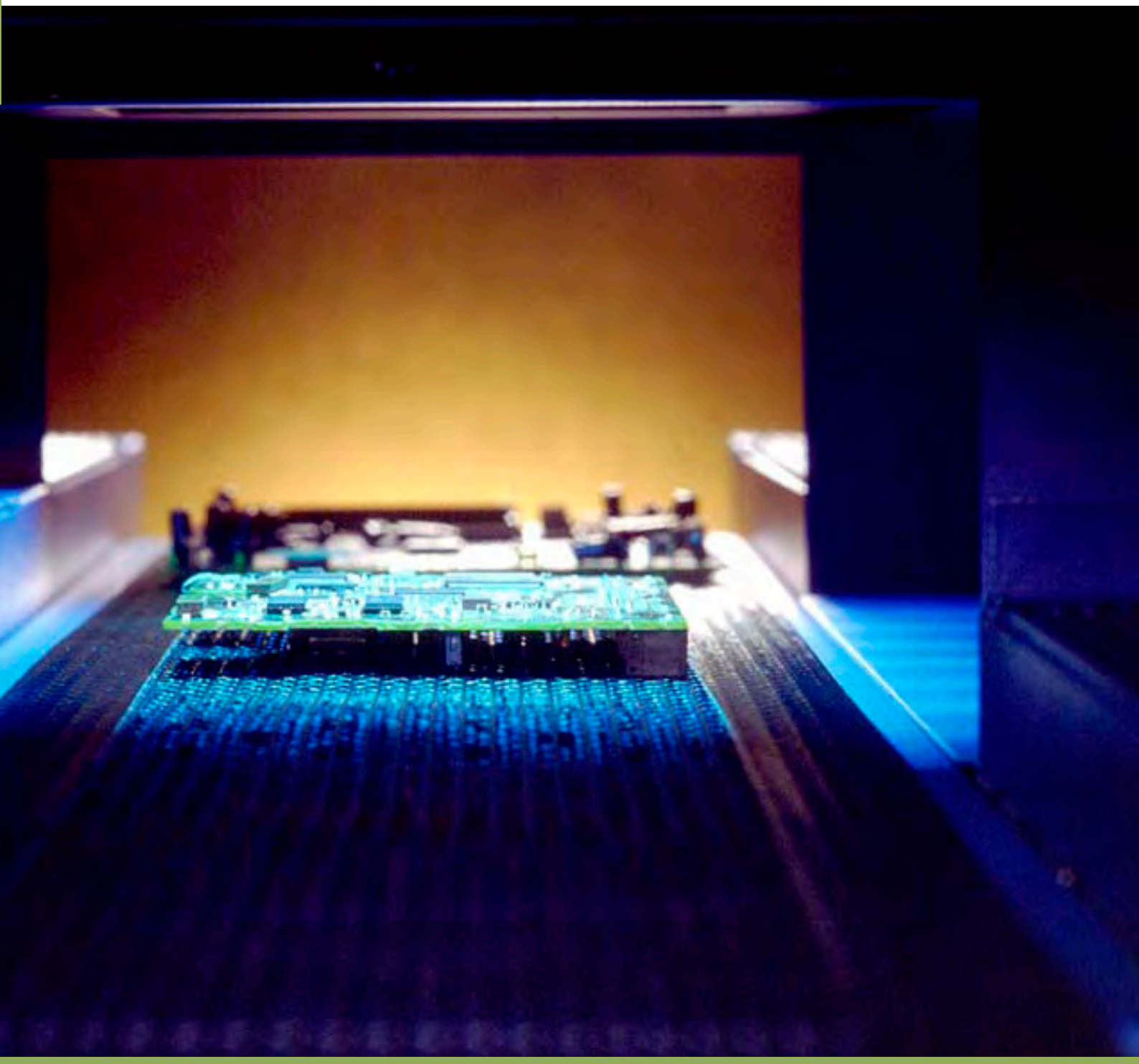
# UV BROAD-SPECTRUM & LED CONVEYOR SYSTEMS

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.

Dymax UVC-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. UVC systems are available in two models: the UVC-5, a smaller bench-top conveyor, and the UVC-8, a full size, free standing conveyor. These cost-efficient and versatile light-curing systems are perfect for use in labs or manufacturing environments.


**ADVANTAGES OF UVC CONVEYOR SYSTEMS**

- Fast cures for high throughput
- Dependable, heavy-duty conveyor design
- Fully shielded lamp enclosures for operator safety
- Three bulb options available for customized curing



# UVC-5 Conveyor

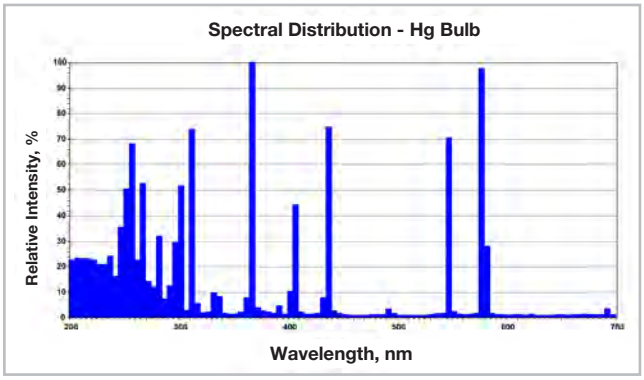
The Dymax UVC-5 Conveyor is designed for curing UV/Visible light-curable adhesives, coatings, and inks in a wide range of industries. This unit is ideal for curing smaller parts and can cure materials applied to a variety of substrates such as paper, plastic, metal, glass, laminated materials, printed circuit boards, and many others.

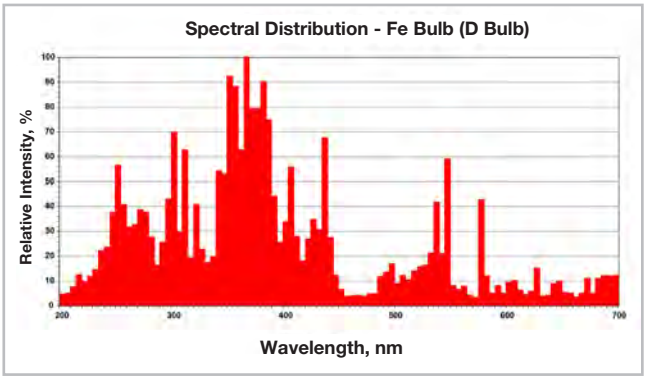
The UVC-5 Conveyor is equipped with a 120-mm wide Teflon®-coated belt and one UV lamp. The distance between the lamp and the belt can be manually adjusted (between 15-60 mm) as can the belt speed (2-26 m/min). This enables the operator to tailor curing conditions to specific application requirements. The conveyor also features a counter to track hours of operation, an electric control unit located in the transportation device, and an air-cooled casing with an aluminum reflector for the bulb.


- Maintenance-free, Teflon®-coated belt with adjustable belt drive (2-26 m/min range)
- Adjustable vertical clearance (15 - 60 mm)
- Fully shielded lamp enclosures for optimum protection
- High power lamp (910 or 800 W) with two bulb options

| | | UVC-5 |
|---|---|---|
| **Electrical Requirements** | | 230VAC / 50 Hz 5.9A |
| **Number of Lamps** | | 1 |
| **Lamp Power** | | 910W / Fe (800W / Hg)<br>Full: 920W<br>Half: 450W |
| **Intensity*** | | 400 mW/cm² at a distance of 60 mm |
| **Vertical Clearance** | | Adjustable 15-60 mm |
| **Overall Dimensions** (W x L x H) | | 369 mm x 700 mm x 299 mm |
| **Belt** | **Belt Material** | Teflon®-coated fiberglass |
| | **Belt Width** | 120 mm |
| | **Belt Speed** | Adjustable from 2-26 m/min |
| | **Vacuum Belt** | Yes |
| **Bulbs** | | Metal Halide (Fe) - Standard<br>Mercury (Hg) |
| **Net Weight** | | 20 kg |

* Measured with a Dymax ACCU-CAL™ 50 Radiometer (320-395 nm).



# UVC-8 Conveyor

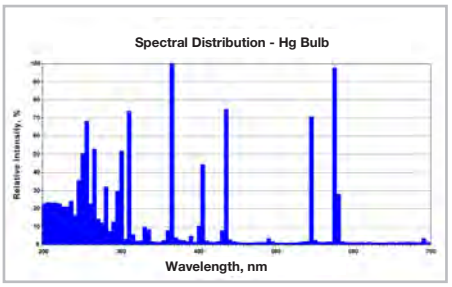
The Dymax UVC-8 Conveyor is designed for curing UV/Visible light-curable adhesives, coatings, and inks. This cost-efficient and versatile conveyor system is perfect for both production and lab environments, and can be used in a number of different industries. Typical substrates that are bonded, coated, or encapsulated include paper, plastic, metal, glass, laminated materials, printed circuit boards, and many others.

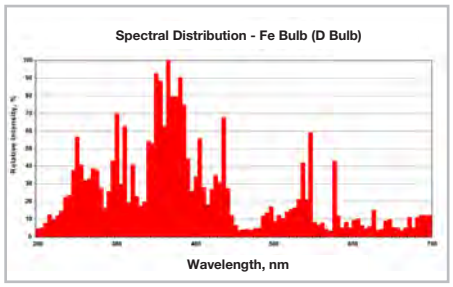
The UVC-8 Conveyor is equipped with a 220-mm wide Teflon®-coated belt and can be outfitted with one, two, or three UV lamps. The distance between the lamp and the belt can be manually adjusted (between 60-100 mm) as well as the belt speed (0.5-12 m/min). This enables the operator to tailor the curing conditions to the specific application. The conveyor also features a digital control panel where various parameters such as operating hours, lamp current, and the UV set point can be monitored.

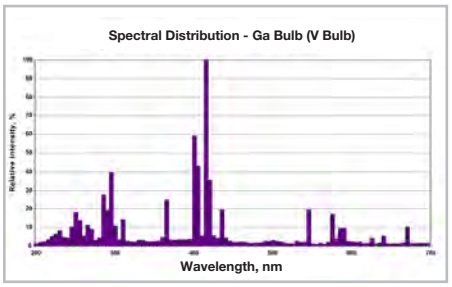
- Maintenance-free, Teflon®-coated belt with adjustable belt drive (0.5-12 m/min range)
- Fully shielded lamp enclosures for optimum protection
- Lamp height adjustment (60 – 100 mm) to accommodate various part heights
- Optional intensity adjustment (40-100%)
- Digital control panel, compact PLC

| | | UVC-8 |
|---|---|---|
| **Electrical Requirements** | | 3 x 400V/N/PE, 50 Hz |
| **Number of Lamps** | | 1, 2, or 3 UV lamps |
| **Lamp Power** | | 2000 W per bulb |
| **Intensity*** | | 800 mW/cm$^2$ at a distance of 60 mm |
| **Vertical Clearance** | | Adjustable 60-100 mm |
| **Overall Dimensions** (W x L x H) | | 1,100 mm x 1,000 mm x 1,200 mm |
| **Working Height (Floor to Belt)** | | 900 mm on wheel kit or 900 - 950 mm with adjustable screws |
| **Control** | | Compact PLC |
| **Belt** | **Belt Material** | Teflon®-coated fiberglass |
| | **Belt Width** | 220 mm |
| | **Belt Speed** | Adjustable from 0.5-12 m/min |
| **Bulbs** | | Metal Halide (Fe) - Standard<br>Mercury (Hg)<br>Gallium (Ga) |
| **Air Exhaust** | | 500 m$^3$/h |
| **Net Weight** | | 180 kg |

* Measured with a Dymax ACCU-CAL™ 50 Radiometer (320-395 nm).



# 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 heat-curing 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 light-curable 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. Please refer to Dymax's Radiometer Calibration Schedule, available to download on our website, for calibration requirements for your specific radiometer model. Calibration services are available through Dymax and can be scheduled by submitting the Calibration Request Form found on the dymax website or by contacting your local Dymax Customer Support Team.

# 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 mm, 5 mm, 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/cm$^2$ to 40 W/cm$^2$. A specially designed photo-sensor assembly protects the photo-sensor from the high temperatures sometimes associated with today's high intensity UV spot lamps.

- 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

## Part Numbers

**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 spot and flood lamps and conveyors**
Complete radiometer with lightguide adapters (3 mm, 5 mm, and 8 mm) and lightguide simulator*; includes storage/carrying case

*A lightguide simulator is used to measure direct spot lamp intensity (required to calculate lightguide transmission)

# ACCU-CAL™ 50V

The ACCU-CAL™ 50V radiometer is simple to operate and offers repeatable measurement of visible light. The ACCU-CAL™ 50V can measure visible light energy emitted from lightguides (3 mm, 5 mm, and 8 mm), flood systems, and conveyors. With a spectral sensitivity from 400 to 470 nm (blue portion of the visible spectrum), the ACCU-CAL™ 50V measures intensities from 1 mW/cm$^2$ to 40 W/cm$^2$. A specially designed photo sensor assembly protects the photo sensor from the high temperatures sometimes associated with today's high-intensity spot lamps.

- Spectral sensitivity of 400-470 nm (visible)
- 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

## Part Numbers

**40044 - ACCU-CAL™ 50V for flood lamps and conveyors**
Complete radiometer (without lightguide adapters or lightguide simulator*); includes storage/carrying case

**40043 - ACCU-CAL™ 50V for spot and flood lamps and conveyors**
Complete radiometer with lightguide adapters (3 mm, 5 mm, and 8 mm) and lightguide simulator*; includes storage/carrying case

*A lightguide simulator is used to measure direct spot lamp intensity (required to calculate lightguide transmission)

# 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 mm, 5 mm, and 8 mm), BlueWave® QX4® LED heads, and LED flood lamps. 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.

- 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

## Part Numbers

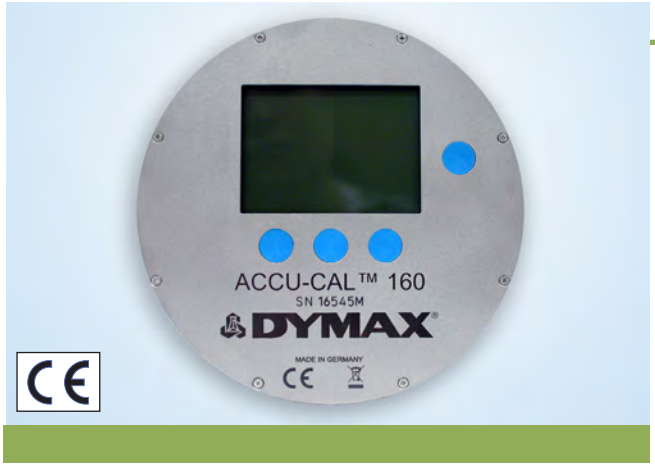
**40505 - ACCU-CAL™ 50-LED for LED spot and flood units**
Complete radiometer with 3 mm, 5 mm, and 8 mm lightguide adapters, lightguide simulator*, and an optical adapter for use with the BlueWave® QX4®; includes storage/carrying case

**40519 - ACCU-CAL™ 50-LED for LED floods and conveyors**
Complete radiometer (without lightguide adapters or lightguide simulator*); includes storage/carrying case

**39554 - Flood-to-Spot Adapter Kit**
Kit includes three lightguide adapters (3, 5, and 8 mm) and a lightguide simulator.

**42218 - BlueWave® QX4® Optic Adapter Upgrade Kit**
Kit includes the optic adapter and updated software and calibration for an existing radiometer. The customer's radiometer must be returned to Dymax for programming and calibration.

*A lightguide simulator is used to measure direct spot lamp intensity (required to calculate lightguide transmission)




# ACCU-CAL™ 160

The ACCU-CAL™ 160 radiometer is available in both a UV and LED model and can measure UV or LED light up to 10 W/cm² emitted from stationary light-curing flood lamps or lamps used in conveyorized processes. This radiometer can be used to determine intensity (measured in mW/cm²) or total energy as derived from intensity and exposure time (measured in mJ/cm²). The ACCU-CAL™ 160 offers a number of improved features and benefits including a longer calibration cycle (12 months instead of 6), an easier-to-use set-up screen, and a graphical display that is clearer and easier-to-read. The unit is simple to operate and can be controlled via four buttons on the faceplate. Measurement results are displayed on the integrated LCD display or transmitted by the USB interface to a computer. A data download kit is included with each radiometer at no charge and downloads easily into Microsoft Excel.

- LED or UVA models available
- Spectral sensitivity of 328-382 nm (UVA model) or 350-460 nm (LED model)
- 12 month calibration cycle
- +/- 0.5 accuracy
- Clear, easy-to-read graphical display
- For use with flood lamp or conveyor systems

## Part Numbers

**41590** - ACCU-CAL™ 160 UVA
**41585** - ACCU-CAL™ 160 LED

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