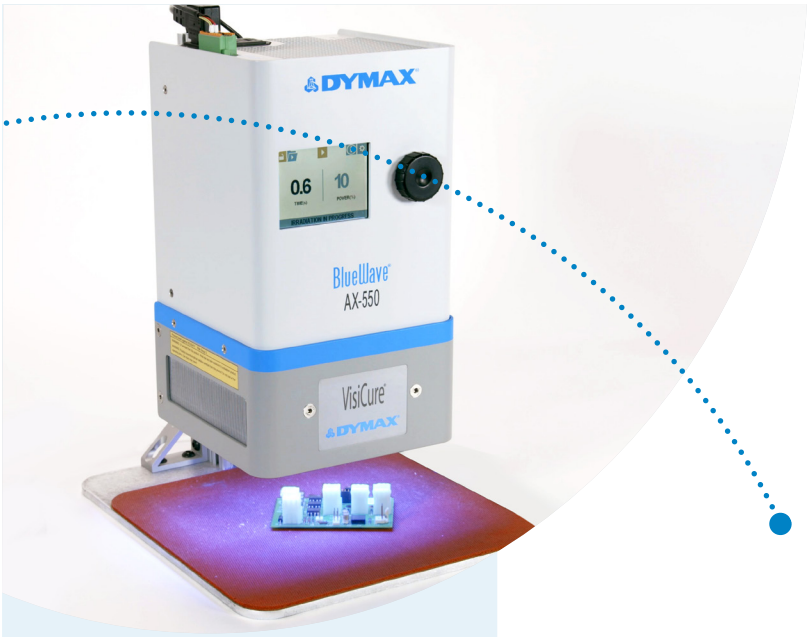


BlueWave® AX-550 V2.0 LED Flood-Curing System

All-in-One, High-Intensity System for Quiet, Efficient LED Curing

- Three wavelength emitters available - 365, 385, & 405 nm
- Simple, easy to navigate controls
- PLC activation and control
- Can be used in a benchtop configuration, mounted on a UVCS conveyor system, or integrated onto larger automated systems
- Mounting provisions for stability and easy machine installation
- Field upgradable emitters
- LED curing technology - no warm-up period, cooler curing environments, and many other advantages
- Standard recipe storage for program recall

The BlueWave® AX-550 V2.0 is a high intensity flood LED-curing system that combines a controller, emitter, and power supply into a compact, all-in-one design. For the user who needs to flood cure a large area, with a small installation footprint, the BlueWave AX-550 V2.0 provides a 5" x 5" (125 mm x 125 mm) curing area in an unobtrusive package with quiet, efficient operation. The tight design eliminates the need for a large, traditional–style controller, making it easily integrated into Dymax UVCS conveyor systems or larger automated systems. The new controller design features an easy-to-navigate user interface with pushbutton controls. It can be activated, controlled, and remotely monitored by PLC, and also store recipes and parameters for repeatable processes. The emitters are detachable, and the system is field-upgradable by customers so they can switch to another wavelength or upgrade to a more powerful emitter as improved LED dies become available without changing the controller. Units can also be password protected to limit access to only authorized users and protect process parameters

The BlueWave AX-550 V2.0 thrives on the versatility of its design. It can be paired with a light shield and other accessories for use as a bench-top flood-curing system, mounted on a Dymax UVCS conveyor system or integrated into more complex machines. Our UVCS conveyors are designed for fast curing of adhesives, coatings, and inks that react in the UVA and/or visible spectral ranges. The conveyors can be outfitted with any wavelength of BlueWave AX-550 V2.0 LED flood lamps and can accommodate up to four emitters.

CE

System Features & Benefits

Field Upgradable Emitters

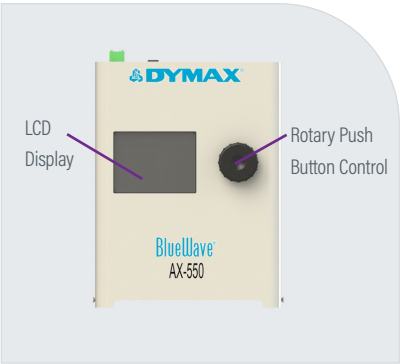
- Enable quick change out of emitters for optimization of application-specific frequency emissions without the need to purchase additional controllers or return or upgrade the entire unit
- Existing units can be quickly upgraded as new emitter frequency and higher power level models become available
- Provide flexibility to meet changing application requirements

Standard SD Card Access Port

- User firmware upgrades can be completed without the need to return the units
- Allows for quick upgrade to latest performance parameters and firmware

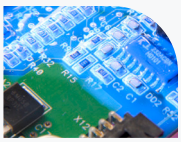
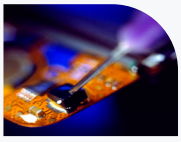
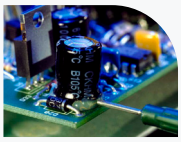
Improved User Interface with Rotary Push-Button Control

- Simple, easy-to-navigate controls
- Provides system status and troubleshooting
- Intuitive, menu-driven programming and operation



Compatible Materials & Applications

The BlueWave® AX-550 V2.0 sis ideally suited for a number of applications in the medical, consumer electronics, automotive, aerospace and defense, optical, and appliance industries. The chart below displays some of the materials commonly used in those industries and where the BlueWave® AX-550 V2.0 can be considered as a curing system.

Materials		
Adhesives		Medical device (catheter, needles, tube set, facemask) assembly; glass bonding (stemware, furniture, etc.); automotive headlamp assemblies; camera module assemblies; appliance assembly; speaker assembly; optical display bonding
Conformal Coatings		Printed circuit board protection in aerospace avionics, automobiles, appliances, and consumer electronics; camera module assembly; electric vehicle battery management systems
Potting Compounds		Tamper proofing; potting electrical connectors, switches, and sensors; cable potting; medical potting*
Maskants		Surface protection for turbine blades and rotorcraft components during processing; protection for surfaces during metal finishing processes; protection of orthopaedic parts during processing; protection of PCB components for consumer electronics, automotive electronics, avionics, and medical electronics; protection for surfaces during metal finishing processes*
Encapsulants		Chip encapsulation on PCBs used in automobiles, plane and helicopter control panels, consumer electronics, appliance, and medical diagnostic equipment*
Ruggedization Materials		Flex circuit reinforcement; wire tacking; ball grid array (BGA) ruggedization; Videos graphics arrays (VGA) ruggedization; shock absorption; underfill alternative*

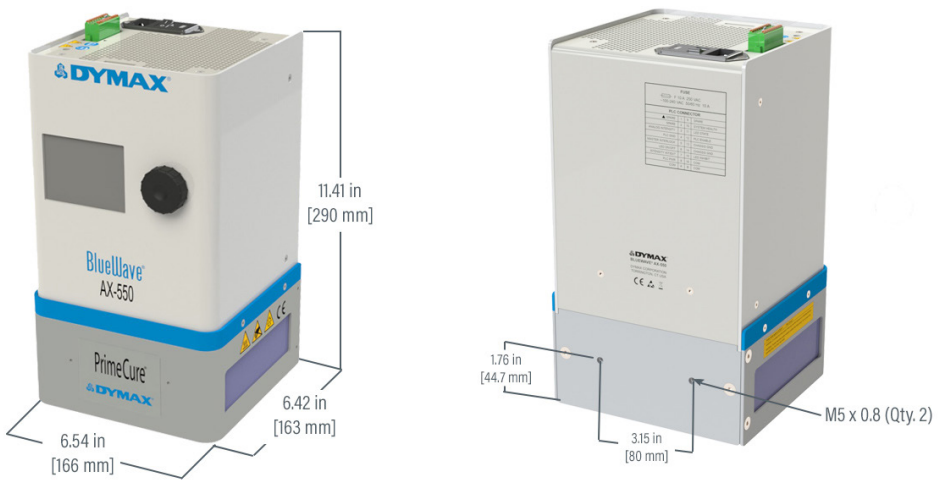
* Materials cured with BlueWave® AX-550 to be evaluated in customer application to their performance requirements.

System Specifications

Property	Specification		
Emitter	RediCure®	PrimeCure®	VisiCure®
Output Frequency	365 nm	385 nm	405 nm
Intensity Output*	650 mW/cm^2	800 mW/cm^2	800 mW/cm^2
Curing Area	5" x 5" (125 mm x 125 mm)		
Power Requirements	100-240 V≈ 10 Amps, 50-60 Hz		
Cooling	Air cooled		
Dimensions (H x W X D)	6.54" x 11.41" x 6.75" (166 mm x 290 mm x 171 mm)		
Weight	14.1 lbs. (6.4 kg)		
Unit Warranty	1 year from purchase date		
Operating Environment	10 to 40°C (50°F to 104°F) 0-80% relative humidity, non-condensing 2000-meter max. altitude		
Shipping and Storage Conditions	Temperature: -20°C to +50°C Humidity 10-80% RH, non-condensing Ship via standard ground, ocean or air freight.		

* Measured using a Dymax ACCU-CAL™ 50-LED radiometer in flood mode at 25-mm working distance.

Figure 1. BlueWave® AX-550 V2.0 Dimensions



Emitter Performance

Figure 2. BlueWave® AX-550 V2.0 Emitter Spectral Output Chart

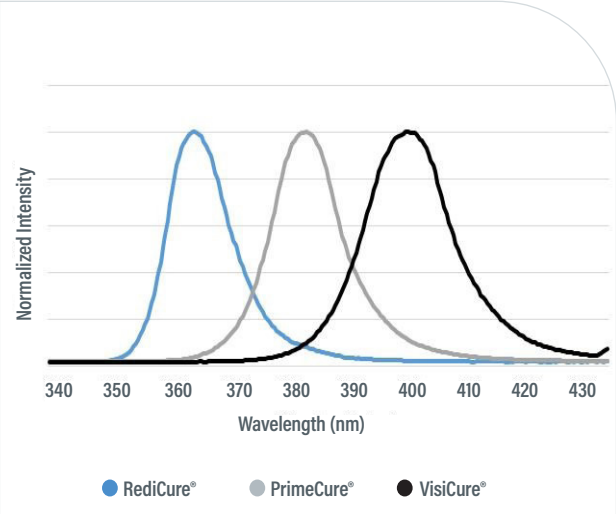


Figure 3. BlueWave® AX-550 V2.0 Emitter Relative Intensity vs. Distance

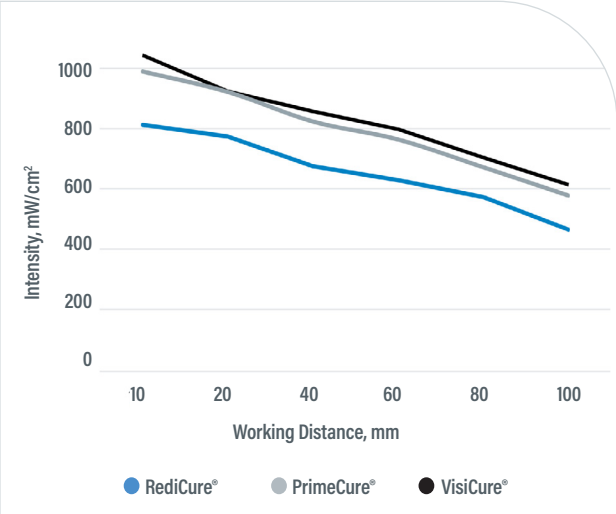
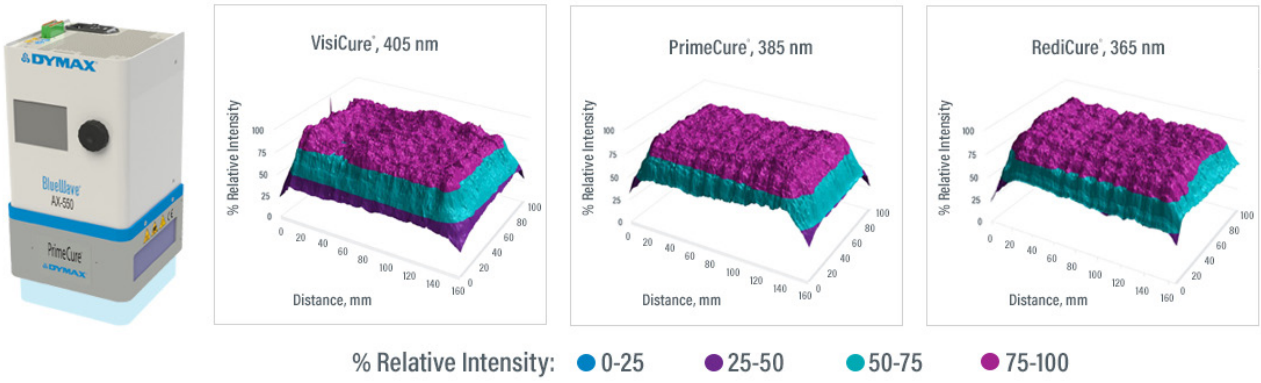


Figure 4. Uniformity/Intensity, 100% Intensity, 25-mm Working Distance



NOTE: Curing area data taken using Fuji UV Light Distribution Mapping System. Output intensity normalized using a Dymax ACCU-CAL™ 50-LED Radiometer.

Degradation/Life Testing

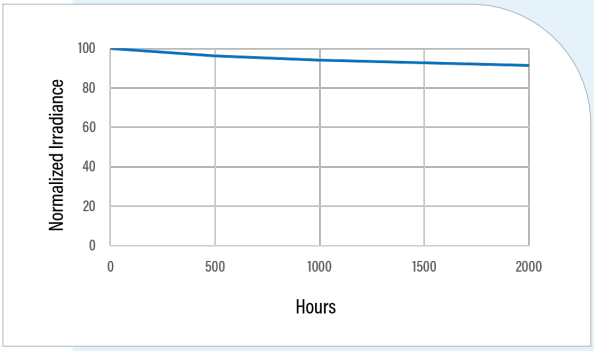
LED curing systems use high intensity LEDs which do not require regular replacement, unlike broad spectrum lamps. At Dymax, we provide high quality, reliable LEDs, which experience minimal degradation over long periods of use. Long-term life testing of BlueWave AX-550 V2.0 systems was conducted for 5,000 continuous hours at 100% intensity.

Our high intensity emitters can often lengthen their lifetime by running at intensities below 100%. To extend lifetime even further, LEDs can be turned on and off instantly, with no warm-up period. Contact Dymax Application Engineering for additional details on setting up an LED curing process for maximum throughput and LED die life.

RediCure® (365 nm) Emitters

- 100% Intensity resulted in a 4.3% degradation per 1,000 hours

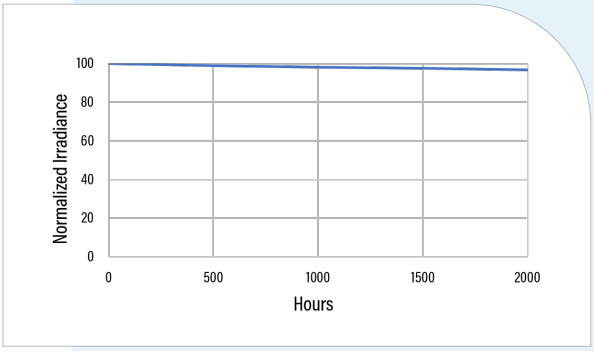
Figure 5. LED Degradion Testing - RediCure®



PrimeCure® (385 nm) Emitters

- 100% Intensity resulted in a 1.65% degradation per 1,000 hours

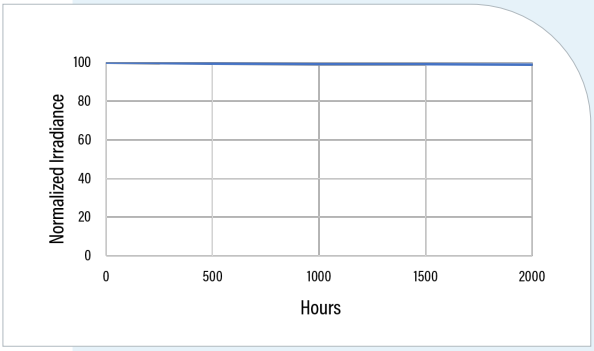
Figure 6. LED Degradion Testing - PrimeCure®



VisiCure® (405 nm) Emitters

- 100% Intensity resulted in a 0.6% degradation per 1,000 hours

Figure 7. LED Degration Testing - VisiCure®



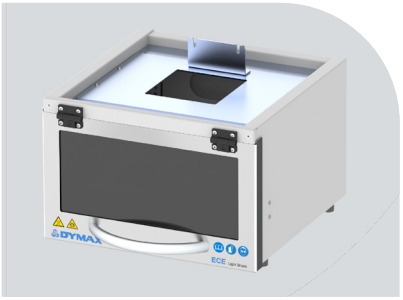
Note: Testing conducted at 70ºF +/-3°F and 30% +/-10% Relative Humidity

Ordering Information

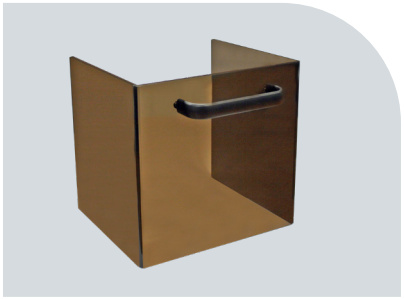
A complete BlueWave® AX-550 V2.0 system features a combined controller and emitter. The system is available in 365, 385, and 405 nm wavelengths. Accessories noted later in this bulletin can be added for specific applications. The units are warrantied against defects in material and workmanship for one year from the date of purchase.

	North American Power Cord (120V Standard Plug)	Unit with Type I Power Cord (China)	Unit with Type G Power Cord (UK/Asia)	No Power Cord*
Systems				
BlueWave® AX-550 V2.0 RediCure® (365 nm)	60875	60876	64040	60877
BlueWave® AX-550 V2.0 PrimeCure® (385 nm)	60878	60879	64042	60880
BlueWave® AX-550 V2.0 VisiCure® (405 nm)	60881	60882	64044	60883
Accessories				
Light Shield 360° shielding. Swing-up door and slide-out shelf. Not compatible with Dymax shutters.			60419	
3-Sided Acrylic Shield			41395	
Mounting Stand with Acrylic Back Shield Includes mounting carriage PN 60036			43410	
Mounting Carriage For use with mounting stand PN 41268			60036	
ACCU-CAL® 50-LED Radiometer Kit Note: The intensity of the BlueWave® AX-550 can be measured using flood-lamp intensity mode for initial process and operational setup.			40505	

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

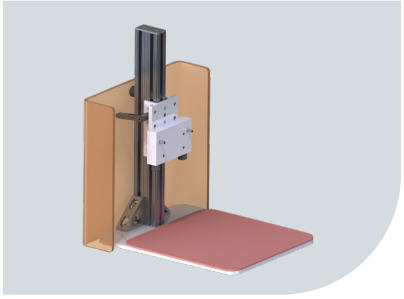


Light Shield

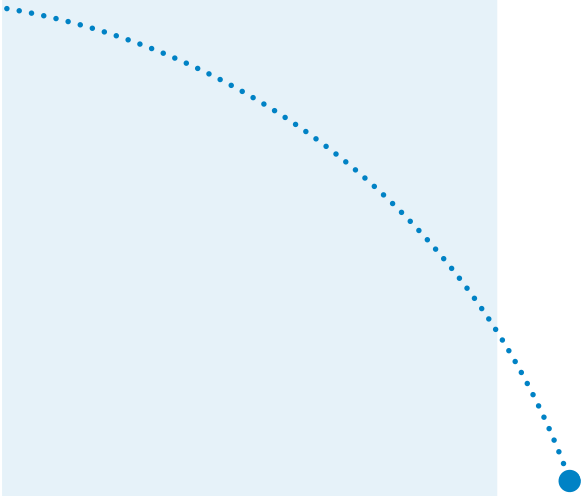


3-Sided Acrylic Shield

ACCU-CAL 50-LED Radiometer Kit



Mounting Stand with Acrylic Back Shield



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