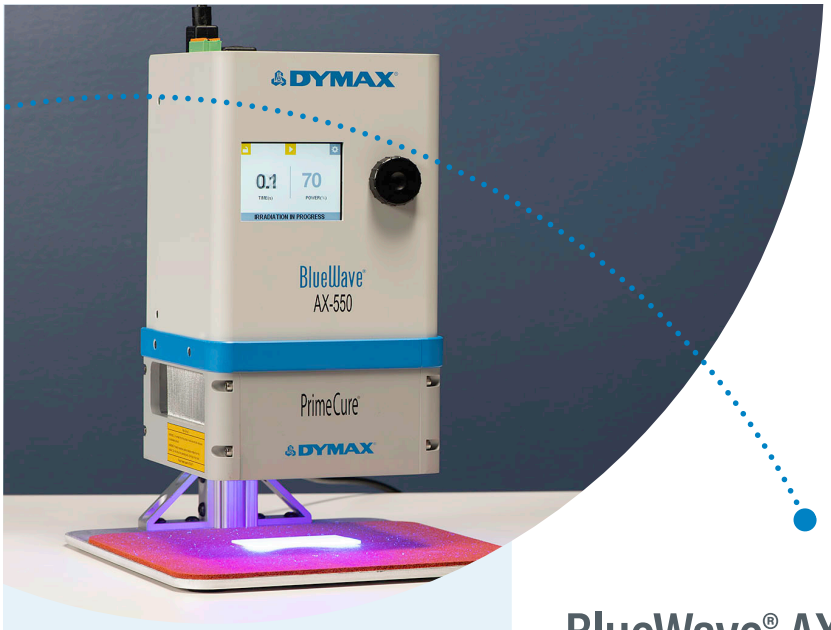


BlueWave® AX-550 LED Flood-Curing System

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
- Field upgradable emitters
- LED curing technology - no warm-up period, cooler curing environments, and many other advantages

The BlueWave® AX-550 is an LED-curing system that combines a controller, emitter, and power supply into a compact, all-in-one design. Eliminating the need for a large, traditional–style controller, this unit has a greatly reduced footprint and is easily integrated into Dymax UVCS conveyor systems. The emitters are de-tachable, 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 die become available.

The system features a large 5″ x 5″ (125 mm x 125 mm) curing area along with an easy-to-navigate user interface with push-button controls. Units can be password protected to limit access to only authorized users and protect process parameters.

The BlueWave® AX-550 can be paired with a light shield and other accessories for use as a bench-top flood-curing system or can be mounted on a Dymax UVCS conveyor system. 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 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

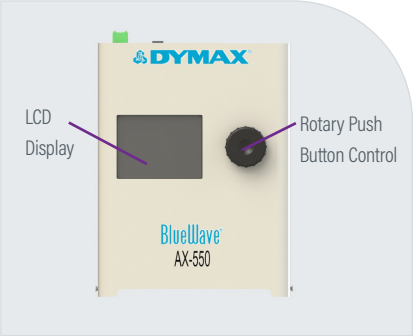
- User firmware upgrades can be completed without the need to return the units
- Allows for quick upgrade to latest performance parameters and firmware

Improved User Interface with Rotary Push-Button Control

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

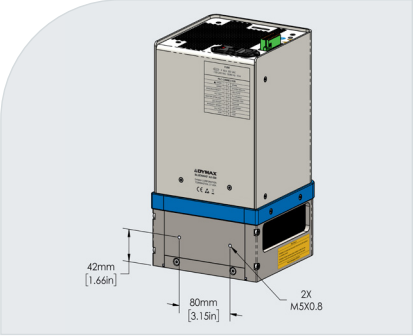
Easily Incorporated into Automated Systems

- Machine Mountable - Direct-to-frame pre-drilled holes for stability and easy mounting and integration into automated systems
- PLC activation and control allows for control and monitoring of power levels, exposure times/routines, and system health and safety lockout via PLC interface



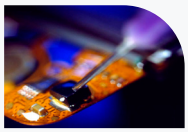
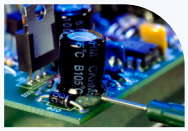
LED Light-Curing Technology

Dymax LED curing systems generate curing energy using high-intensity LEDs in lieu of conventional arc lamp technology. The relatively narrow frequency band of energy emitted by LEDs results in cooler curing environments and substrate temperatures compared to traditional UV-style lamp systems, making them ideal for curing thermally sensitive materials. Dymax LED-curing systems offer many energy and cost-saving benefits, such as no warm-up period, lower energy consumption, no bulbs to change, and more consistent frequency and intensity output for better process control.



Compatible Materials & Applications

The BlueWave® AX-550 is 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 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

✓ BlueWave® AX-550 compatible with this material

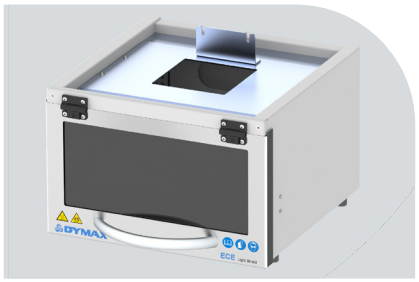
* Materials cured with BlueWave® AX-550 to be evaluated in customer application to their performance requirements.

Ordering Information

A complete BlueWave® AX-550 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	Asian Power Cord (Type G)	No Power Cord*
Systems			
BlueWave® AX-550 RediCure® (365 nm)	43316	43317	43315
BlueWave® AX-550 PrimeCure® (385 nm)	43319	43320	43318
BlueWave® AX-550 VisiCure® (405 nm)	43322	43323	43321
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
Recipe Storage Kit This upgrade kit allows the storage and easy recall of recipes and programs so users can change over between applications quickly. Customers can upgrade their unit's firmware on-site using an SD card. Easy-to-follow instructions to quickly update the firmware in your unit and start using the recipe storage feature are included in the kit.			43573
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

Recipe Storage Kit

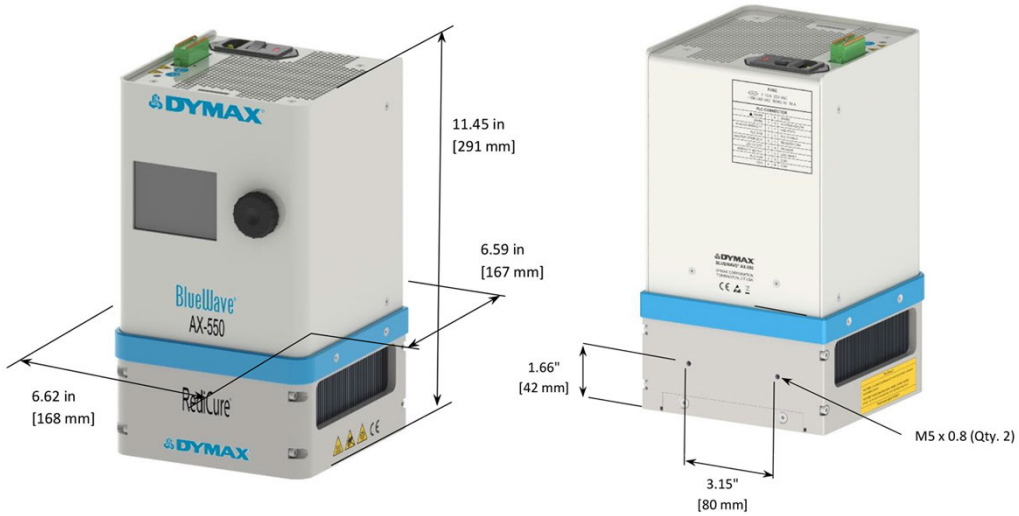
ACCU-CAL 50-LED Radiometer Kit

System Specifications

Property	Specification
Output Frequency	RediCure® - 365 nm PrimeCure® - 385 nm VisiCure® - 405 nm
Intensity Output*	RediCure® - 425 mW/cm² PrimeCure® - 800 mW/cm² VisiCure® - 650 mW/cm²
Cooling	Air cooled
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)
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) 0-65% 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 Dimensions



Emitter Performance

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

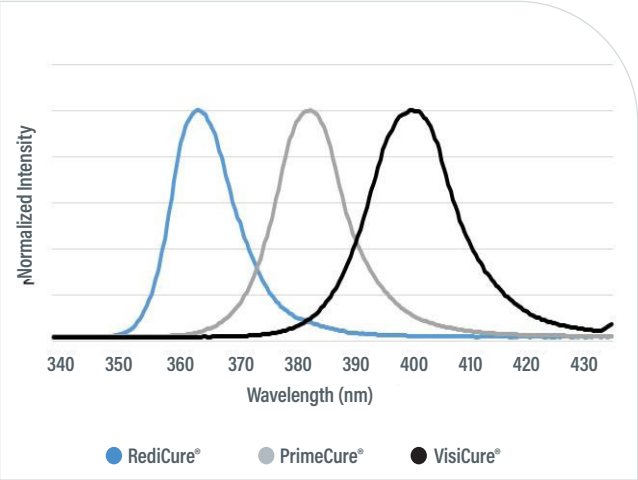


Figure 3. BlueWave® AX-550 Emitter Relative Intensity vs. Distance

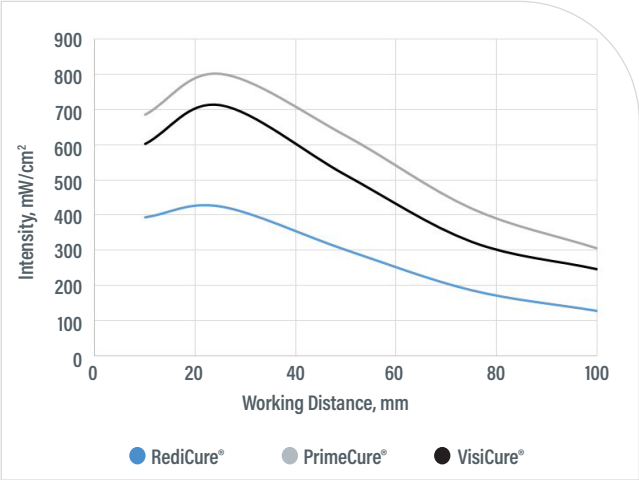
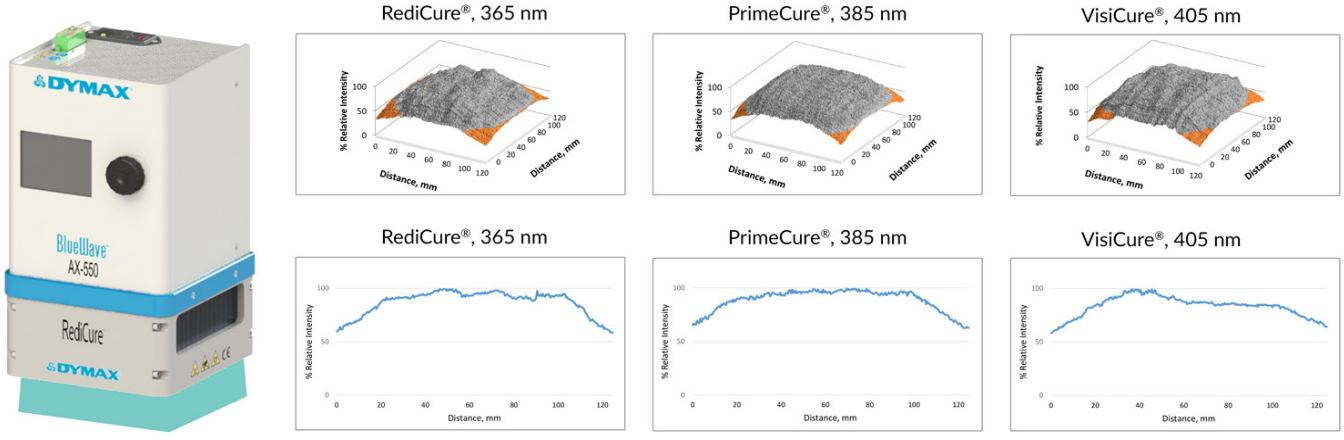


Figure 4. Uniformity/Intensity, 100% Intensity, 25-mm Working Distance



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

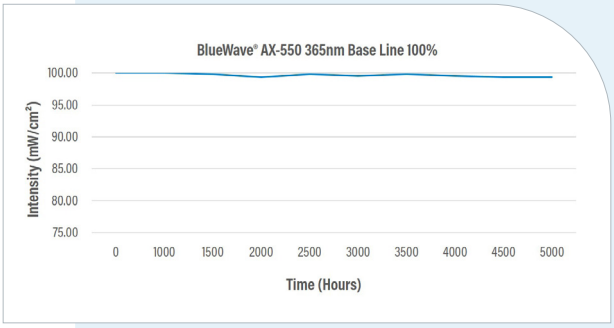
Degradation/Life Testing

Unlike broad-spectrum lamps, LED curing systems do not have bulbs that require regular replacement. Instead, LED curing systems operate with high-intensity LEDs. The instant on/off functioning of LEDs greatly increases the life of these LED systems. Long-term life testing of BlueWave® AX-550 systems was conducted for 5,000 continuous hours at 100% intensity. As noted in the graphs below, LED degradation was found to be very low for the BlueWave® AX-550 with less than 1% per 1,000 hours for all wavelengths. 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 0.13% degradation per 1,000 hours

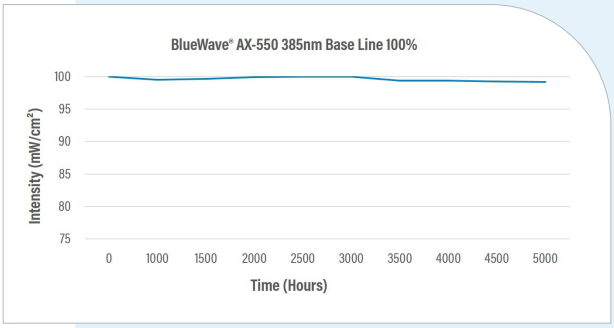
Figure 5. LED Degradion Testing - RediCure®



PrimeCure® (385 nm) Emitters

- 100% Intensity resulted in a 0.17% degradation per 1,000 hours

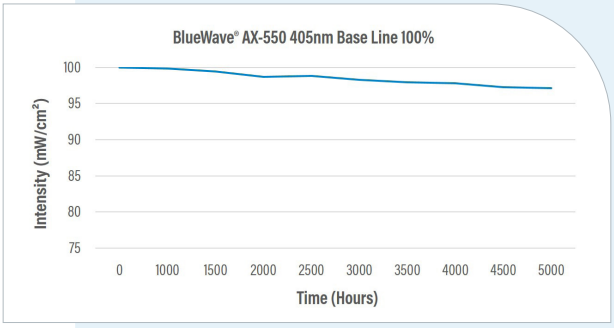
Figure 6. LED Degradion Testing - PrimeCure®



VisiCure® (405 nm) Emitters

- 100% Intensity resulted in a 0.58% degradation per 1,000 hours

Figure 7. LED Degration Testing - VisiCure®



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

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