



BlueWave® MX-250 LED Flood-Curing System High-Intensity Curing System with Expansion Capabilities

Dymax's next-generation curing system, the BlueWave® MX-250, 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.

System Features & Benefits

Features	Benefits
High intensity	<ul style="list-style-type: none"> • Quickly cures a variety of materials
Very high uniformity across entire cure area over a wide range of working distances	<ul style="list-style-type: none"> • Consistent dosage over entire cure area minimizes variation in bond line cure characteristics. • Allows for the ability to cure small batches of parts under cure area simultaneously. • Ability to group emitters together for large curing patterns
LED emitters available in 365, 385, or 405 nm wavelengths	<ul style="list-style-type: none"> • Compatible with a variety of UV and visible light-curable materials • Wavelength flexibility allows co-optimization of adhesive and curing system for optimal cure results
Admin and production modes	<ul style="list-style-type: none"> • Production Mode for simple on/off operation • Curing programs can be saved and easily recalled • Units can be password protected so only Production Mode can be accessed by workers
Touch screen with full keyboard	<ul style="list-style-type: none"> • Improved user interface • Curing programs can be easily entered, stored, and recalled when needed
MX Series controllers can be utilized to power both MX-250 and MX150 emitters	<ul style="list-style-type: none"> • Prior MX-150 customers can upgrade the software in the controller to also run MX-250 emitters. • Provides greater flexibility to switch between LED Spot and Flood curing configurations.
Instant on-off	<ul style="list-style-type: none"> • No warm-up period • More energy efficient
Efficient LED temperature management and system monitoring	<ul style="list-style-type: none"> • Maximized continuous operation without overheating • Comfortable hand-held operating temperature • Temperature monitoring assures maximum LED life
Remote I/O interface	<ul style="list-style-type: none"> • Easily incorporated into automated systems

Admin and Production Modes

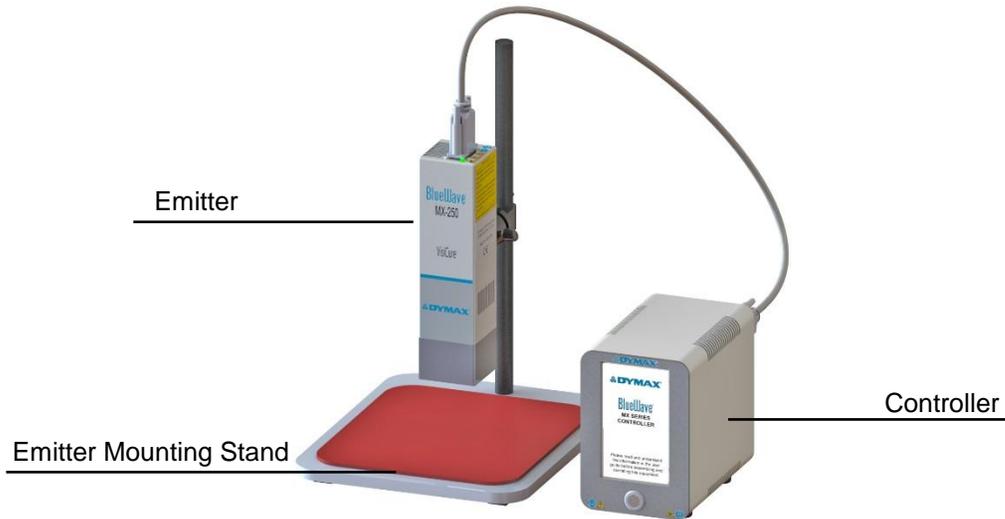
Admin mode fully unlocks the device and allows for setting curing time and intensity cycles. Each individual curing cycle can be entered and saved as a program, and recalled when needed. The production mode is designed for simple operation by manufacturing personnel. Settings and access to admin mode can be password protected using the full QWERTY keyboard.

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. Visit www.led.dymax.com for more information on LED light-curing technology.

Ordering Information

A complete BlueWave® MX-250 system features a controller/power supply and LED emitter. Emitters are available in 365, 385, and 405 nm wavelengths. Accessories noted below can be added for specific applications. Components are sold separately. Units are warranted against defects in material and workmanship for one year from date of purchase.



PART NUMBERS		
System Components		
BlueWave® MX-Series 1-CH Controller/Power Supply	<p>42378 North American Power Cord</p> <p>42379 Asian Power Cord (Type G)</p> <p>42380 No Power Cord</p>	Note: Controller packages include a 2-1-meter long interconnect cable used to connect the controller to the emitter. If a longer length is needed, a second interconnect cable can be ordered separately to extend that distance without impacting performance.
LED Emitters**	<p>42806 BlueWave® MX-250 Emitter, RediCure™ (365 nm)</p> <p>42807 BlueWave® MX-250 Emitter, PrimeCure™ (385 nm)</p> <p>42808 BlueWave® MX-250 Emitter, VisiCure® (405 nm)</p>	
Accessories		
Stands & Shielding	<p>42390 Emitter Mounting Stand</p> <p>41395 Three-Sided Acrylic Shield</p>	
Interconnect Cable	42287 Interconnect Cable Assembly	
Emitter Mounting Bracket	42909 Single Emitter Mounting Kit	
Radiometers	40505 ACCU-CAL™ 50-LED Radiometer Kit for LED Spots, Floods, and BlueWave® QX4®	

ACCU-CAL™ 50-LED Radiometers



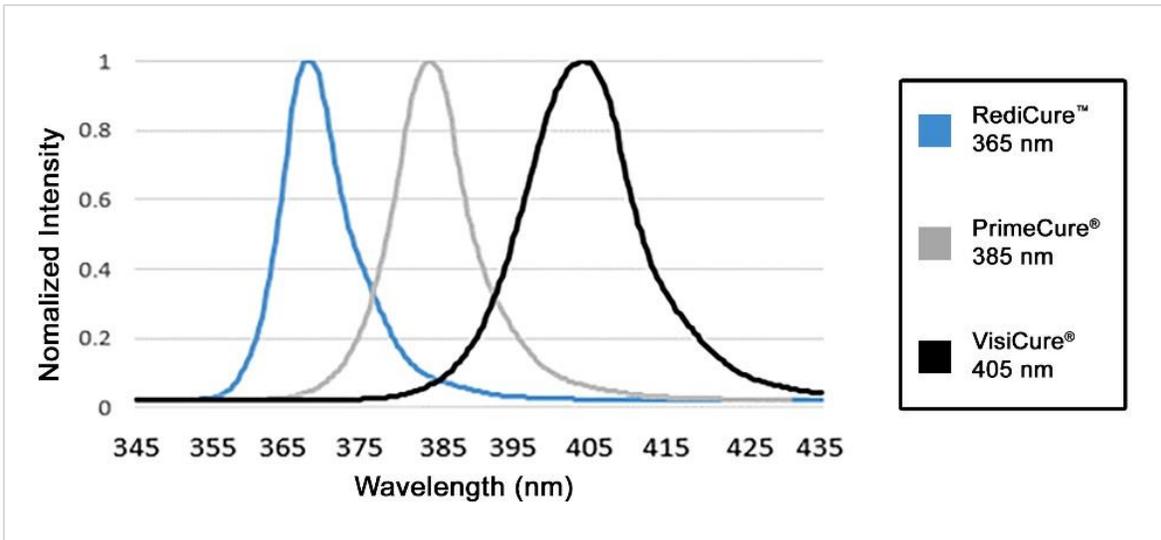
The typical intensity output degradation rate of the unit when run at 100% power and a 100% duty cycle is approximately 8% per 1,000 hours of run time. As with any type of energy source, environmental and operating conditions will have a direct effect on actual degradation rates. Intensity of the BlueWave® MX-250 can be measured with a standard ACCU-CAL™ 50-LED radiometer using flood-lamp intensity mode.

System Specifications

Property	Specification		
MX-250 Emitter	RediCure™	PrimeCure™	VisiCure®
Output Frequency	365 nm	385 nm	405 nm
Intensity Output*			
At Array Surface	684 mW/cm ²	955 mW/cm ²	1,090 mW/cm ²
At 25 mm Working Distance	255 mW/cm ²	355 mW/cm ²	375 mW/cm ²
Power Supply Input	100-240 VAC ≈ 2.5 A, 50-60 Hz		
LED Timer	0 to 999 seconds		
Timer Resolution	0.1 Seconds		
LED Activation	Foot pedal, LCD touch screen, or PLC		
Cooling	Air cooled		
Dimensions (H x W X D)	Controller: 5.77" x 3.74" x 6.26" (14.6 cm x 9.5 cm x 15.9 cm) Emitter: 7.9" x 1.97" x 1.97" (20.06 cm x 5 cm x 5 cm)		
Weight	Controller: 2.6 lbs. (1.18 kg) / Emitter: 1.64 lbs. (0.74 kg)		
Unit Warranty	1 year from purchase date		
Operating Environment	10-40°C		

* Measured using a Dymax ACCU-CAL™ 50-LED Radiometer.

Figure 1. BlueWave® MX-250 Emitter Spectral Output Chart



System Intensity

Figure 2. BlueWave® MX-250 Emitter Intensity vs. Distance

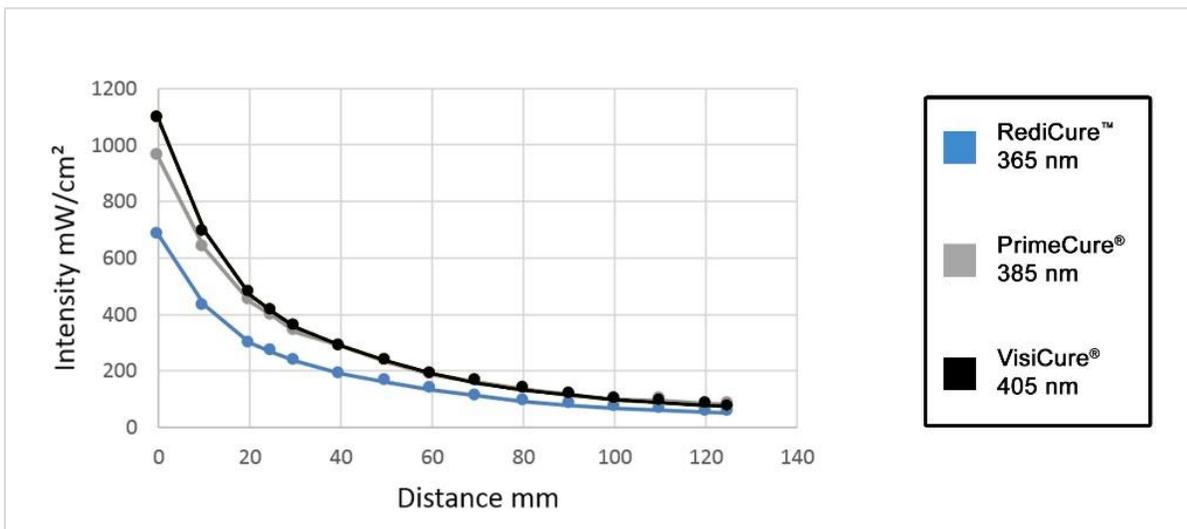
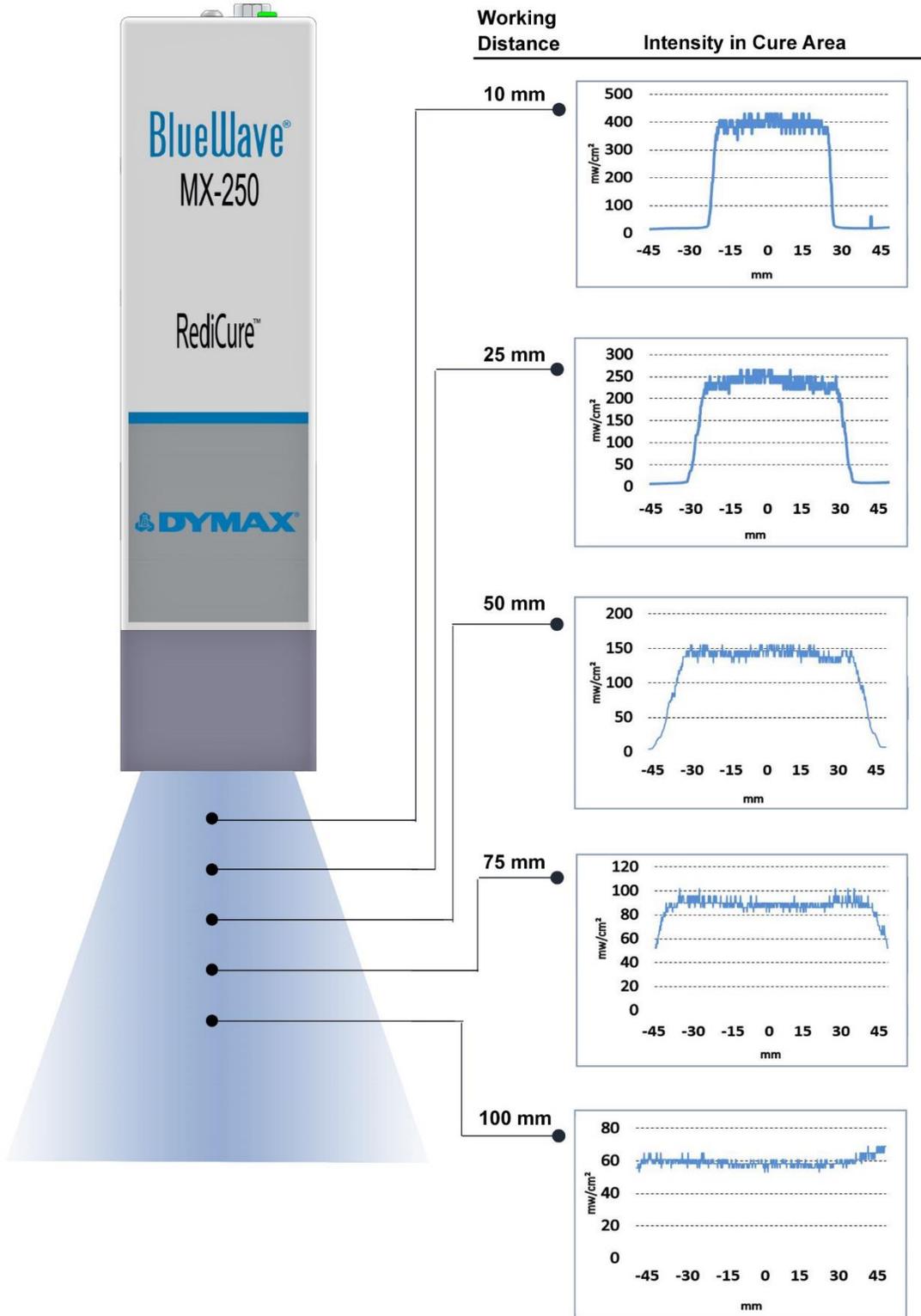
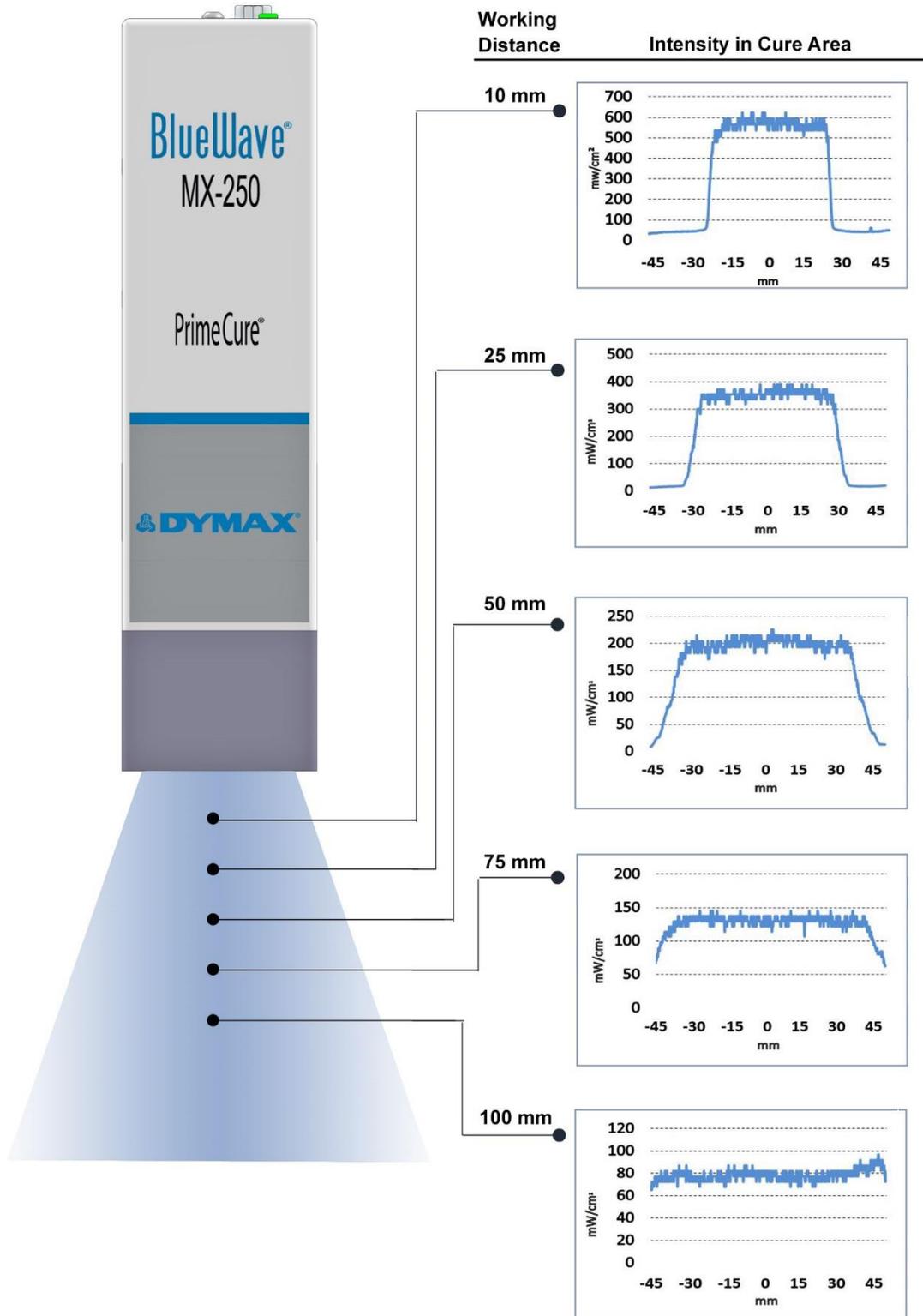


Figure 3. RediCure™, 365 nm - Intensity at Various Working Distances



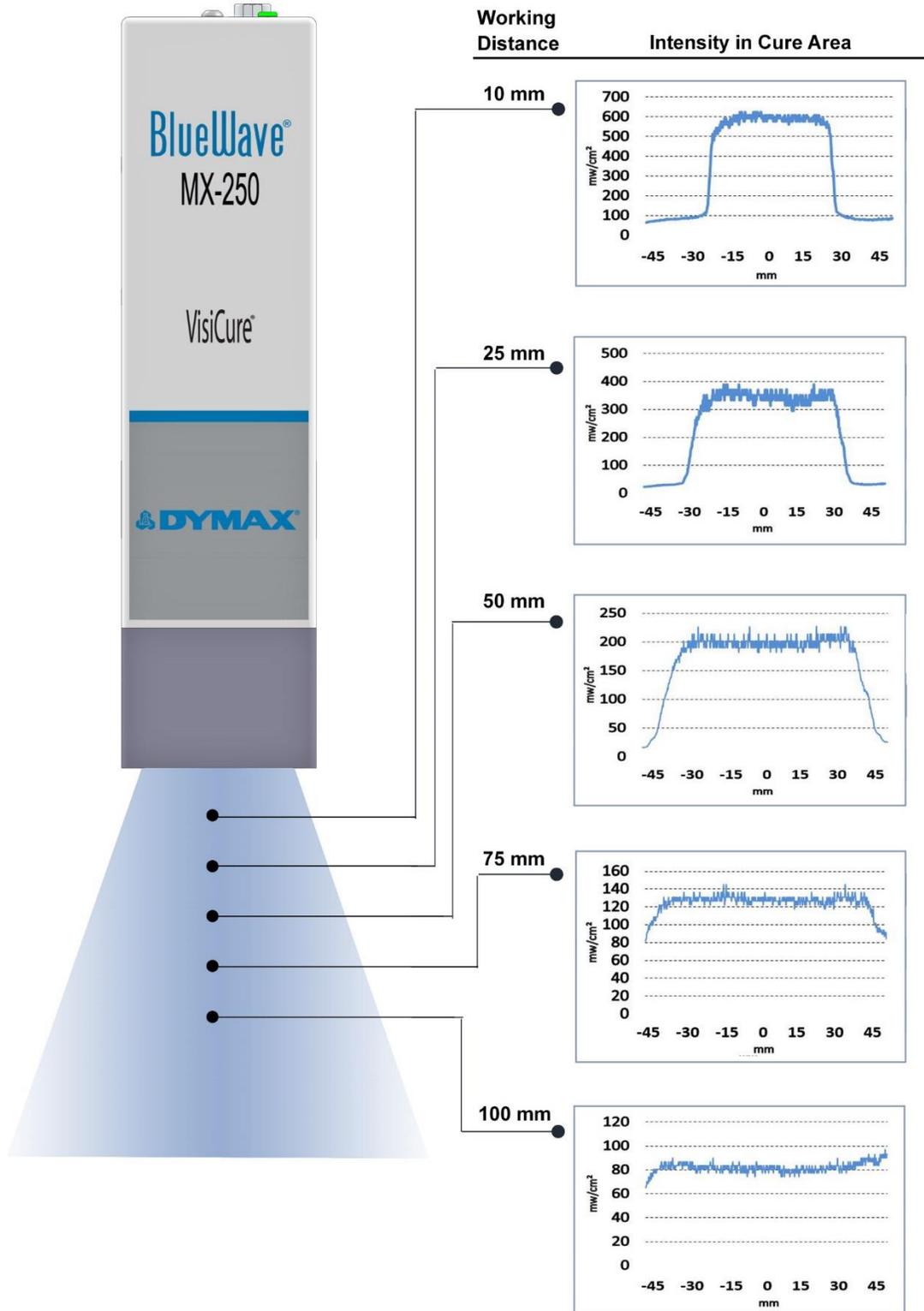
* Curing area data taken using Fuji UV Light Distribution Mapping System. Output intensity measured using a Dymax ACCU-CAL™ 50-LED Radiometer in flood-lamp intensity mode.

Figure 4. PrimeCure™, 385 nm - Intensity at Various Working Distances



* Curing area data taken using Fuji UV Light Distribution Mapping System. Output intensity measured using a Dymax ACCU-CAL™ 50-LED Radiometer in flood-lamp intensity mode.

Figure 5. VisiCure®, 405 nm - Intensity at Various Working Distances



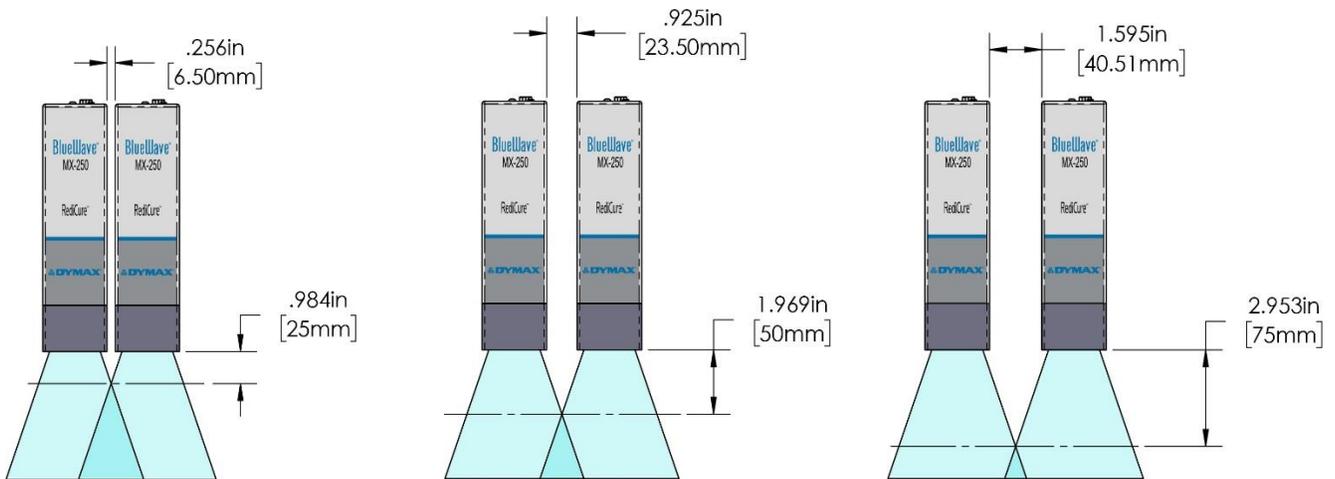
* Curing area data taken using Fuji UV Light Distribution Mapping System. Output intensity measured using a Dymax ACCU-CAL™ 50-LED Radiometer in flood-lamp intensity mode.

Multi-Array Uniformity

The following graphs illustrate the BlueWave® MX-250'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.

Table 1. Mounting Gap vs. Intensity Response for BlueWave® MX-250 LED Flood with Two RediCure® Arrays (Mounted Face-to-Face)

Distance	Uniform Response
25 mm	6.5 mm
50 mm	23.5 mm
75 mm	40.5 mm



Intensity Response at 25-mm Mounting Gap

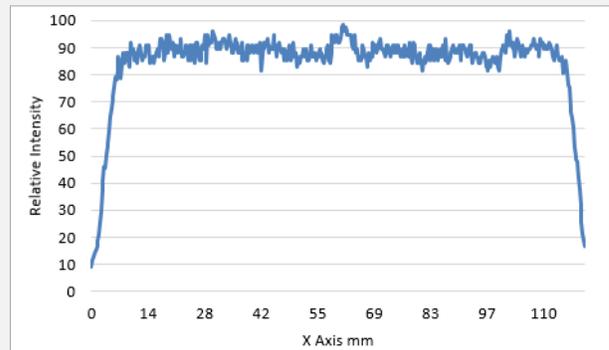
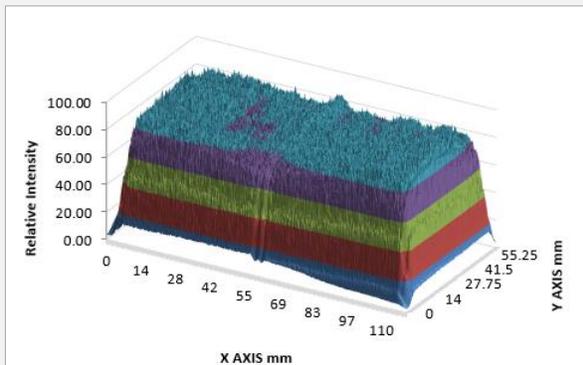


Table 2. MX-250 Emitter Curing Area vs. Working Distance

Working Distance	Curing Area
10 mm	45 mm x 45 mm
25 mm	50 mm x 50 mm
50 mm	75 mm x 75 mm
75 mm	90 mm x 90 mm
100 mm	110 mm x 110 mm
125 mm	125 mm x 125 mm



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