



BlueWave® MX-275 UV LED Curing System

High-Intensity UV LED Flood-Curing System with Line Pattern Emitters

The BlueWave® MX-275 curing system is a high-intensity UV LED flood-curing system. Light energy is delivered in a line pattern instead of the traditional round spot or rectangular flood curing patterns. 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. As with other emitters from the MX product family, the MX-275 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. Emitters can be paired with MX-series single or multichannel controllers.

System Features & Benefits

Features	Benefits
High intensity	<ul style="list-style-type: none"> Quickly cures a variety of materials.
Scalability	<ul style="list-style-type: none"> The 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 BlueWave® MX-series 2-channel and 4-channel controllers can be utilized to add emitters and grow with your application* Rows of emitters can be used for staged cure cycles
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 consistently curing batches of parts for maximum productivity Well suited for conveyor applications where products move under the light source.
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
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 Temperature monitoring assures maximum LED life

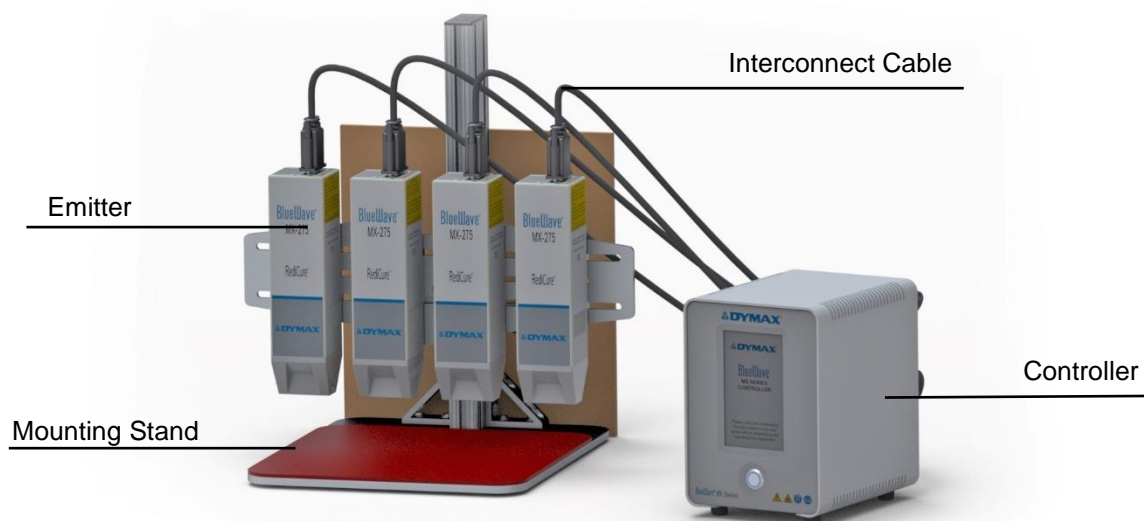
**Controller software upgrade may be required for compatibility*

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.

Ordering Information

A complete BlueWave® MX-275 system features a controller/power supply and LED Emitter. MX-275 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 warrantied against defects in material and workmanship for one year from date of purchase.







PART NUMBERS

System Components

Line Pattern LED Emitters	43094	BlueWave® MX-275 Emitter, RediCure® (365 nm)
	43098	BlueWave® MX-275 Emitter, PrimeCure® (385 nm)
	43102	BlueWave® MX-275 Emitter, VisiCure® (405 nm)
BlueWave® MX-Series 2-CH Controller – Powers up to 2 Emitters*	43184	No Power Cord
	43185	North American Power Cord
	43186	Asian Power Cord (Type G)
BlueWave® MX-Series 4-CH Controller – Powers up to 4 Emitters*	43181	No Power Cord
	43182	North American Power Cord
	43183	Asian Power Cord (Type G)
Interconnect Cables	42287	Interconnect Cable Assembly (2 meter)
	42889	Interconnect Cable Assembly (5 meter)
	43010	Interconnect Cable Assembly (10 meter)
	43011	Interconnect Cable Assembly (20 meter)

*NOTE: 2-channel and 4-channel controllers sold without interconnect cables or foot pedals.

Stands & Shielding	
	42390 Single Emitter Mounting Stand
	43070 MX Multiple Emitter Stand with Acrylic Back Shield
	41395 Three-Sided Acrylic Shield – Works with Stand 43070
	42909 Single Emitter Mounting Kit
	43019 Multiple Emitter Mounting Kit – Works with LED Flood Stand 41268

ACCU-CAL™ 50-LED Radiometers



40505 ACCU-CAL™ 50-LED Radiometer Kit for LED Spots, Floods, and BlueWave® QX4®

The typical intensity output degradation rate of the unit when run at 100% power and a 100% duty cycle is approximately 8% per 2,000 hours of run time based on worse case wavelength. 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-275 can be measured with a standard ACCU-CAL™ 50-LED radiometer using flood-lamp intensity mode for initial process and operational setup.

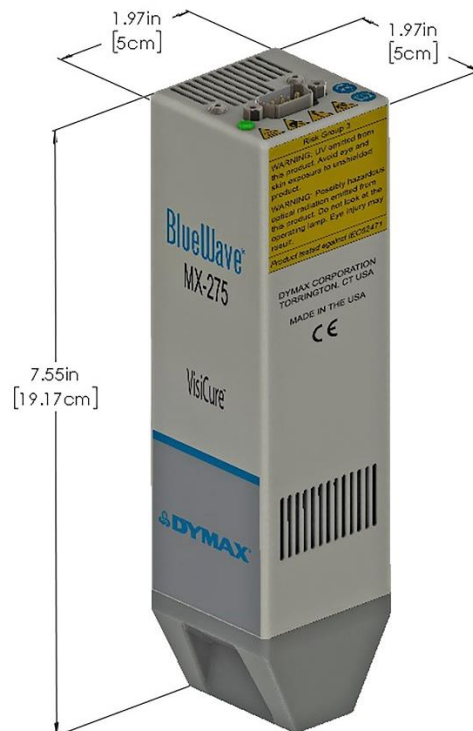
NOTE: At the time of release of this bulletin, the ACCU-CAL™ 50-LED radiometer is being revised to support a fixturing aperture device with special “Line Mode” calibration to be released in early 2019. Current users will be able to upgrade their radiometers for the MX-275 Line Mode upon release.

System Specifications

Property	Specification		
MX-275 Emitter	RediCure®	PrimeCure®	VisiCure®
Output Frequency	365 nm	385 nm	405 nm
Intensity Output*			
At 10-mm Working Distance	1,460 mW/cm ²	1,870 mW/cm ²	1,750 mW/cm ²
At 25-mm Working Distance	960 mW/cm ²	1,220 mW/cm ²	1,100 mW/cm ²
Cooling	Air cooled		
Dimensions (H x W X D)	Emitter: 7.9" x 1.97" x 1.97" (20.06 cm x 5 cm x 5 cm)		
Weight	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 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.

Figure 1. BlueWave® MX-275 Emitter Dimensional Drawing



Emitter Performance

Figure 2. BlueWave® MX-275 Emitter Spectral Output Chart

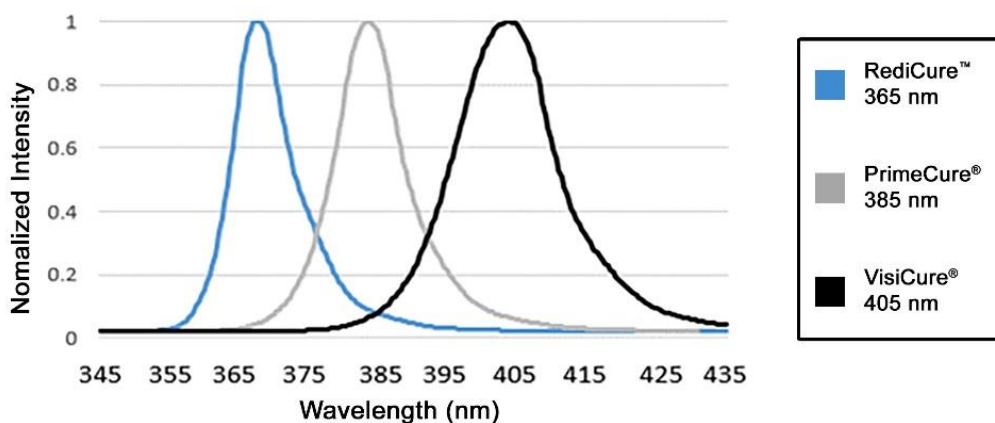


Figure 3. BlueWave® MX-275 Emitter Relative Intensity vs. Distance

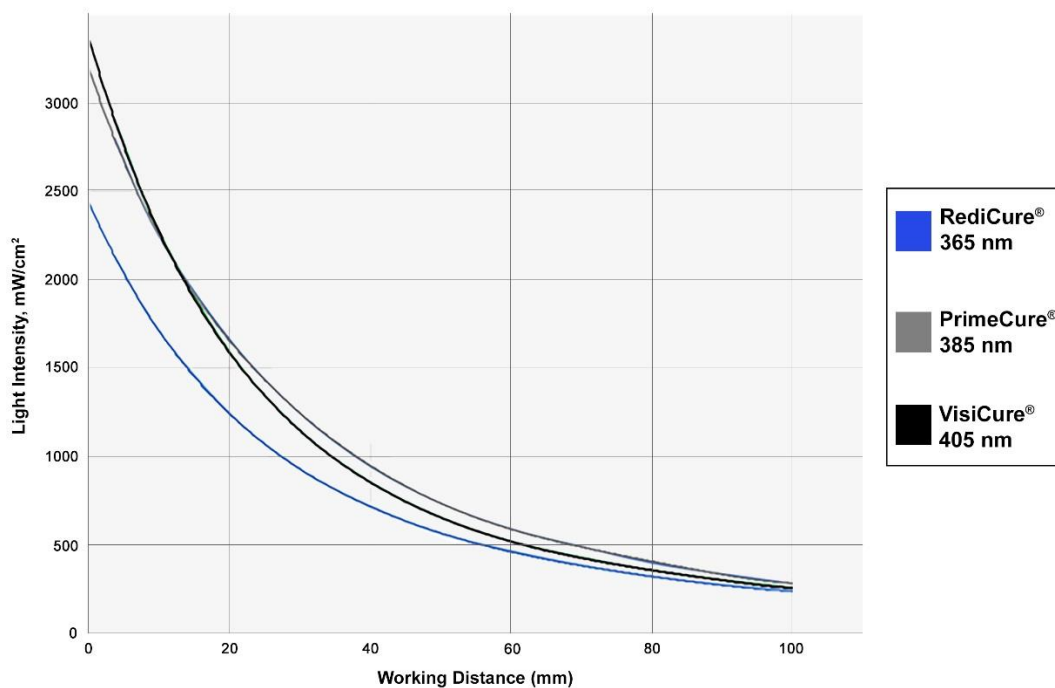
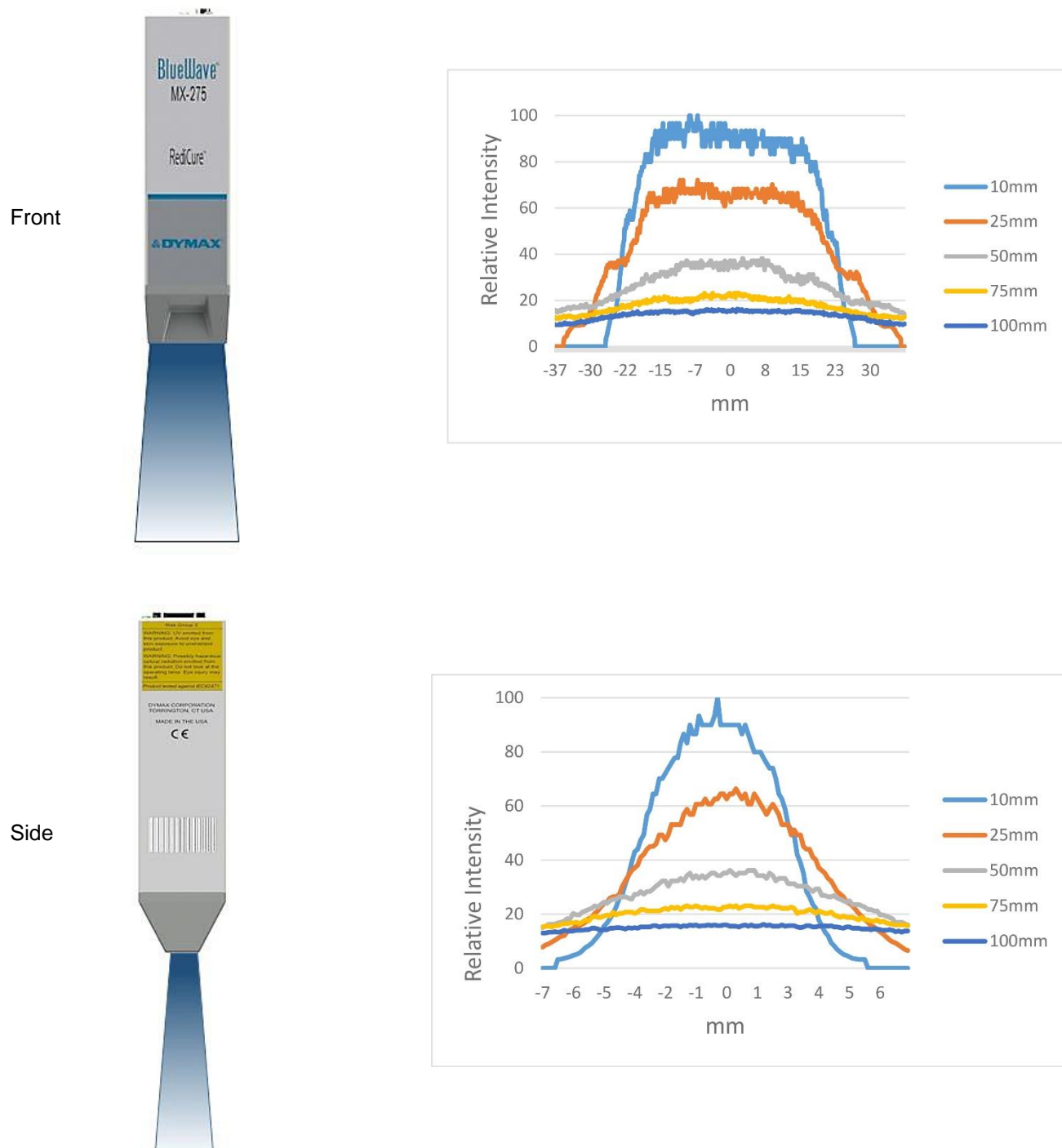
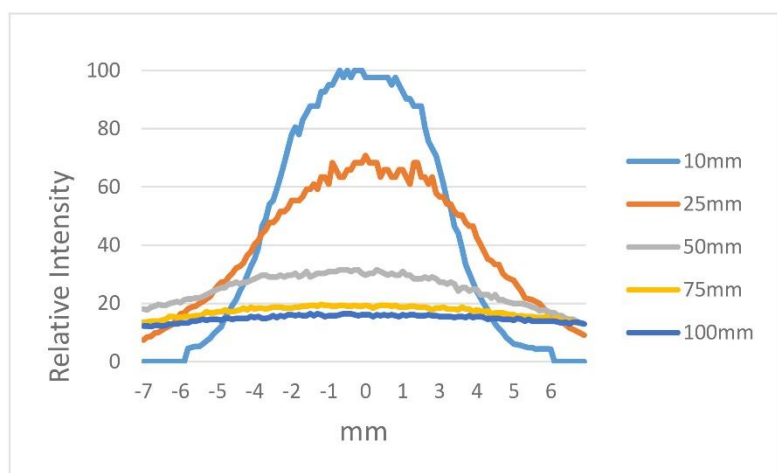
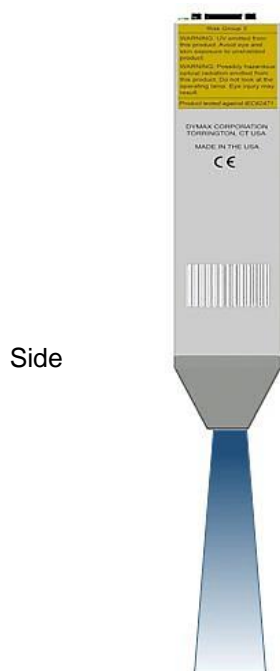
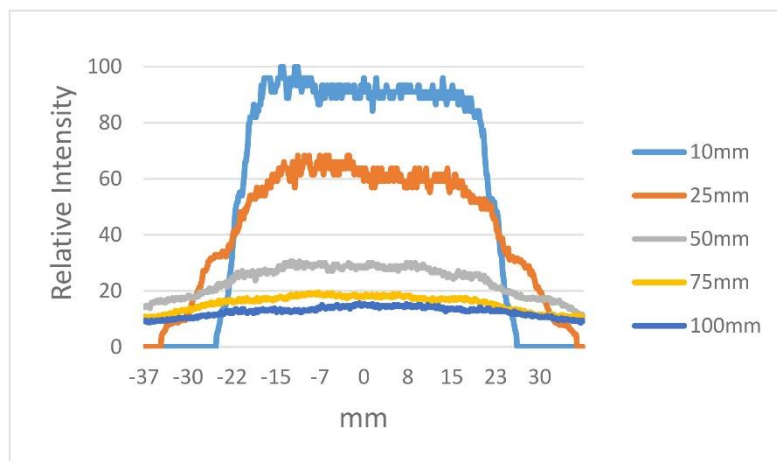


Figure 4. Uniformity at Various Working Distances - RediCure® Emitter, 365 nm



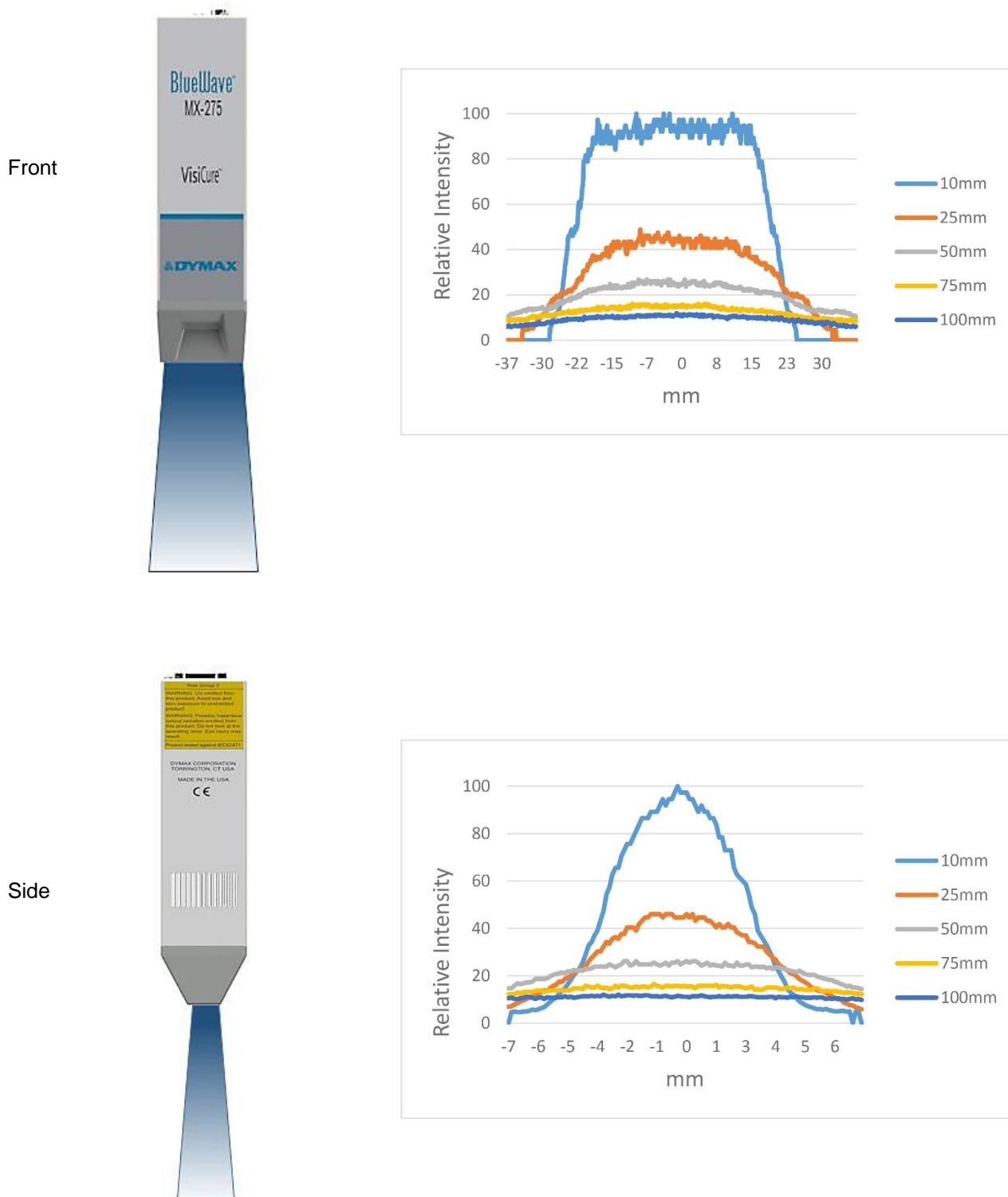
* Curing area data taken using Fuji UV Light Distribution Mapping System. Output intensity normalized using a Dymax ACCU-CAL™ 50-LED Radiometer w/3mm aperture prototype.

Figure 5. Uniformity at Various Working Distances - PrimeCure® Emitter, 385 nm



* Curing area data taken using Fuji UV Light Distribution Mapping System. Output intensity normalized using a Dymax ACCU-CAL™ 50-LED Radiometer w/3mm aperture prototype.

Figure 6. Uniformity at Various Working Distances - VisiCure® Emitter, 405 nm



* Curing area data taken using Fuji UV Light Distribution Mapping System. Output intensity normalized using a Dymax ACCU-CAL™ 50-LED Radiometer w/3mm aperture prototype.

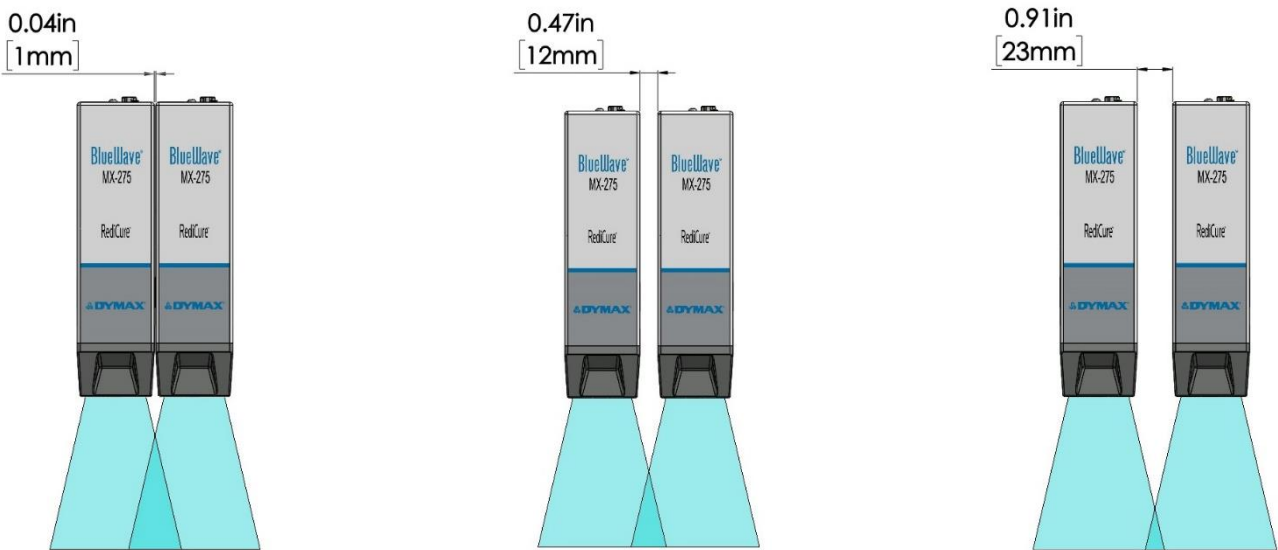
Multi-Emitter Performance

The following graphs illustrate the BlueWave® MX-275’s performance when multiple emitters are positioned next to each other. We recommend positioning emitters a minimum of 1 mm apart with vents on two outside units facing out.

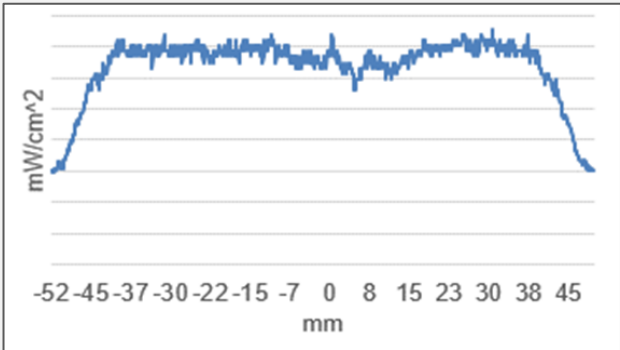
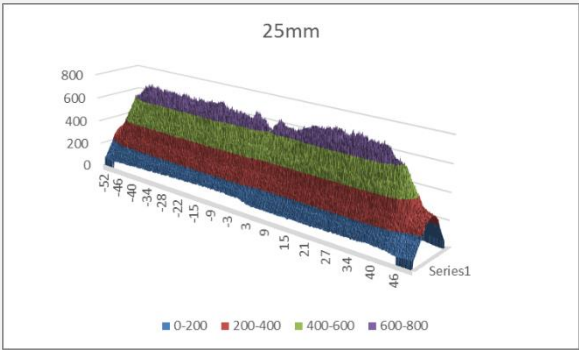
Table 1. Mounting Gap vs. Intensity Response for with two RediCure® Arrays side-by-side

Working Distance	Uniform Response Gap
25 mm	1 mm
50 mm	12 mm
75 mm	23 mm

Figure 6. Uniformity at Various Working Distances* – RediCure® Emitters (365 nm) Mounted Side-by-Side



Intensity Response at 25-mm Working Distance 1-mm Mounting Gap





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Please note that most curing system applications are unique. Dymax does not warrant the fitness of the product for the intended application. Any warranty applicable to the product, its application and use is strictly limited to that contained in Dymax standard Conditions of Sale published on our website. Dymax recommends that any intended application be evaluated and tested by the user to ensure that desired performance criteria are satisfied. Dymax is willing to assist users in their performance testing and evaluation by offering equipment trial rental and leasing programs to assist in such testing and evaluations.

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