

BlueWave® MX-150™ LED Spot-Curing System High-Intensity Curing System with the Flexibility of Multiple Systems

The BlueWave® MX-150™ 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 lightguide can be connected to the system for specialized applications.

System Features & Benefits

Features	Benefits
High Intensity of up to 40 W/cm ²	<ul style="list-style-type: none"> Quickly cures a variety of materials
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
LED chip located in the emitter, not the controller	<ul style="list-style-type: none"> Consistent intensity Mounted emitter saves the cost of lightguides Eliminates potential intensity loss from long or bent lightguides Easily mounted to robotic arms with no intensity variation Emitter can be mounted closer to application, while the controller remains close to the operator
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 the 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
Compatible with 3- and 5-mm lightguides with Wolf Connector	<ul style="list-style-type: none"> Utilizes standard/readily available lightguides
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 Checks presence of lightguide or other delivery optic
PLC interface	<ul style="list-style-type: none"> Easily incorporated into automated systems

Heat Control

For applications with heat-sensitive components, interruptions in the exposure duration can slow the materials' temperature climb during the cure process. This isn't a concern with the BlueWave® MX-150™ because the curing profile can be optimized to reduce the risk of substrate damage.

Admin and Production Modes

The 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 spot-curing systems generate curing energy using high-intensity LEDs instead of conventional metal-halide or mercury-arc lamps. The relatively narrow frequency band of energy emitted by LEDs results in cooler 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

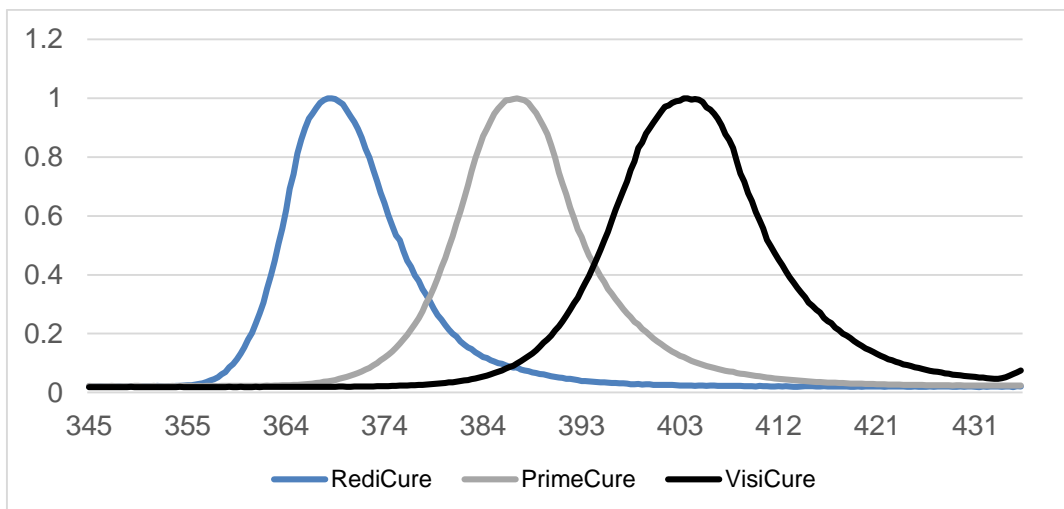
bulbs to change, and more consistent frequency and intensity output for better process control. Visit www.led.dymax.com for more information on LED light-curing technology.

System Specifications

Property	Specification		
MX-150 Emitter	RediCure™	PrimeCure™	VisiCure®
Output Frequency	365 nm	385 nm	405 nm
Intensity Output*	30 W/cm ²	44 W/cm ²	41 W/cm ²
Power Supply Input	100-240V≈ 2.5A, 50-60Hz		
LED Timer	0 to 999 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: 1.4 lbs. (0.64 kg)		
Unit Warranty	1 year from purchase date		
Operating Environment	10-40°C		

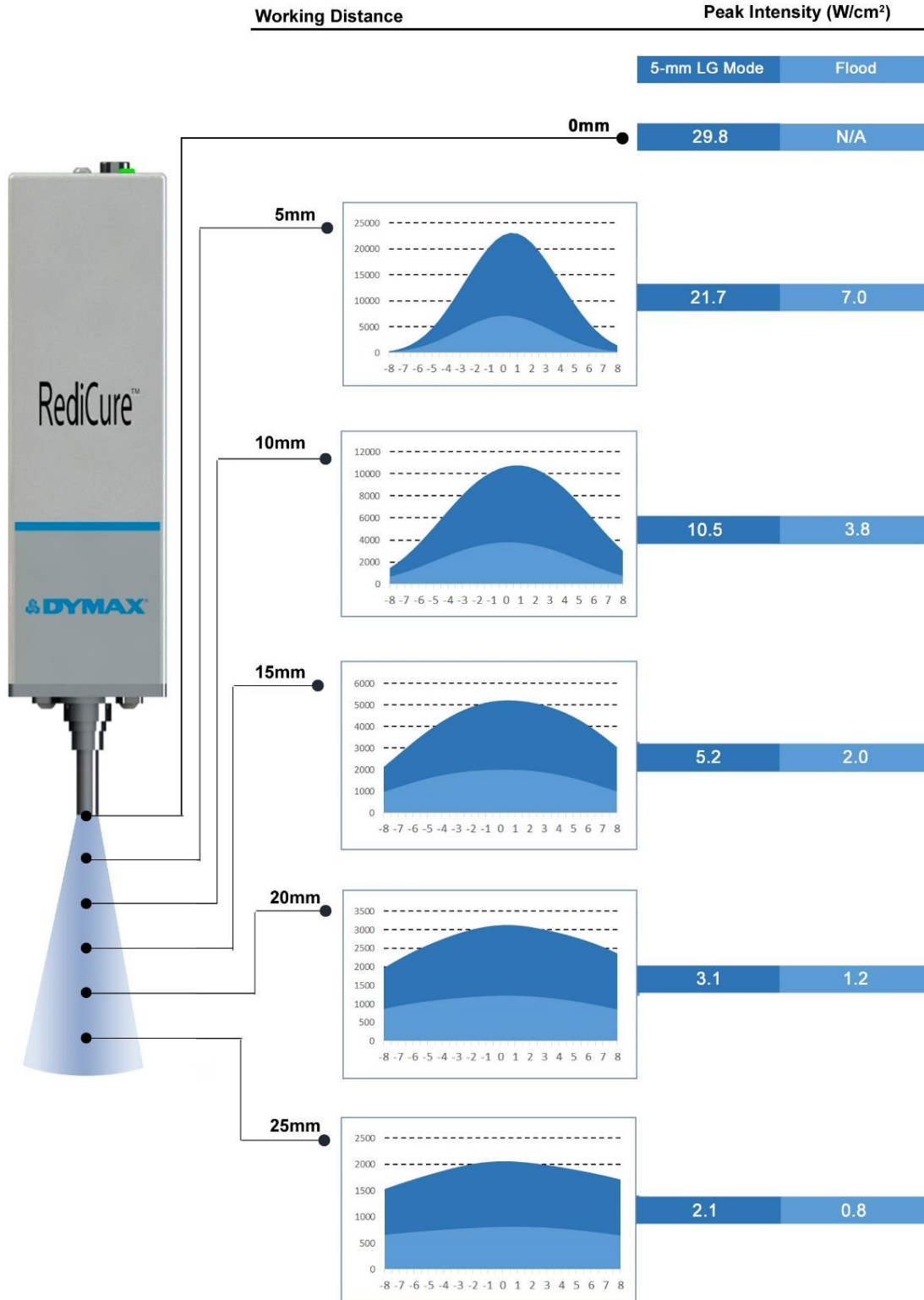
* Measured using a Dymax ACCU-CAL™ 50-LED Radiometer at a distance of 0 mm.

Figure 1. BlueWave® MX-150™ Spectral Output Chart



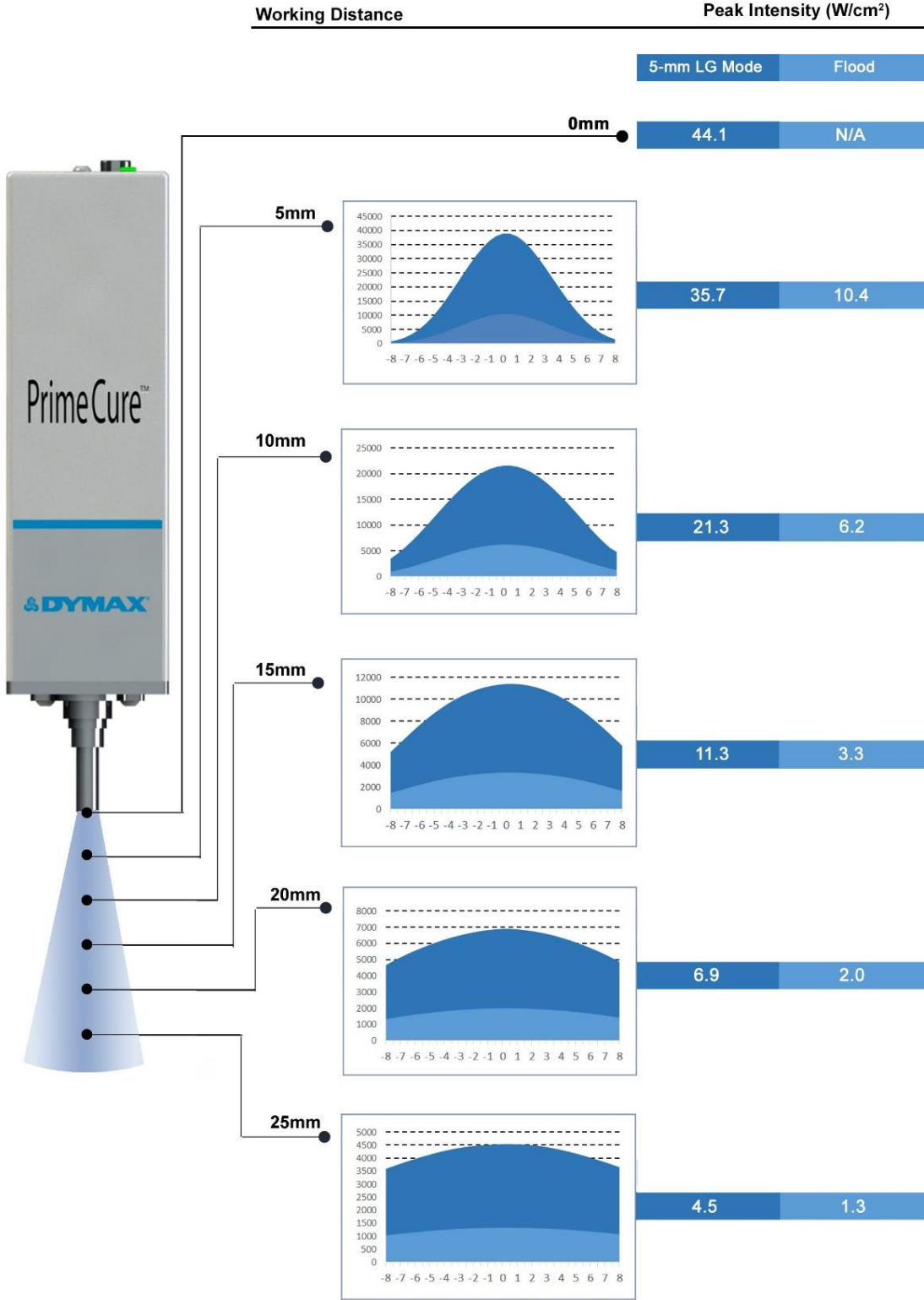
System Intensity Using Emitters

Figure 2. RediCure™, 365 nm - Intensity at Various Working Distances
 Measured with an ACCU-CAL 50-LED in both 5-mm lightguide (LG) and flood source modes*



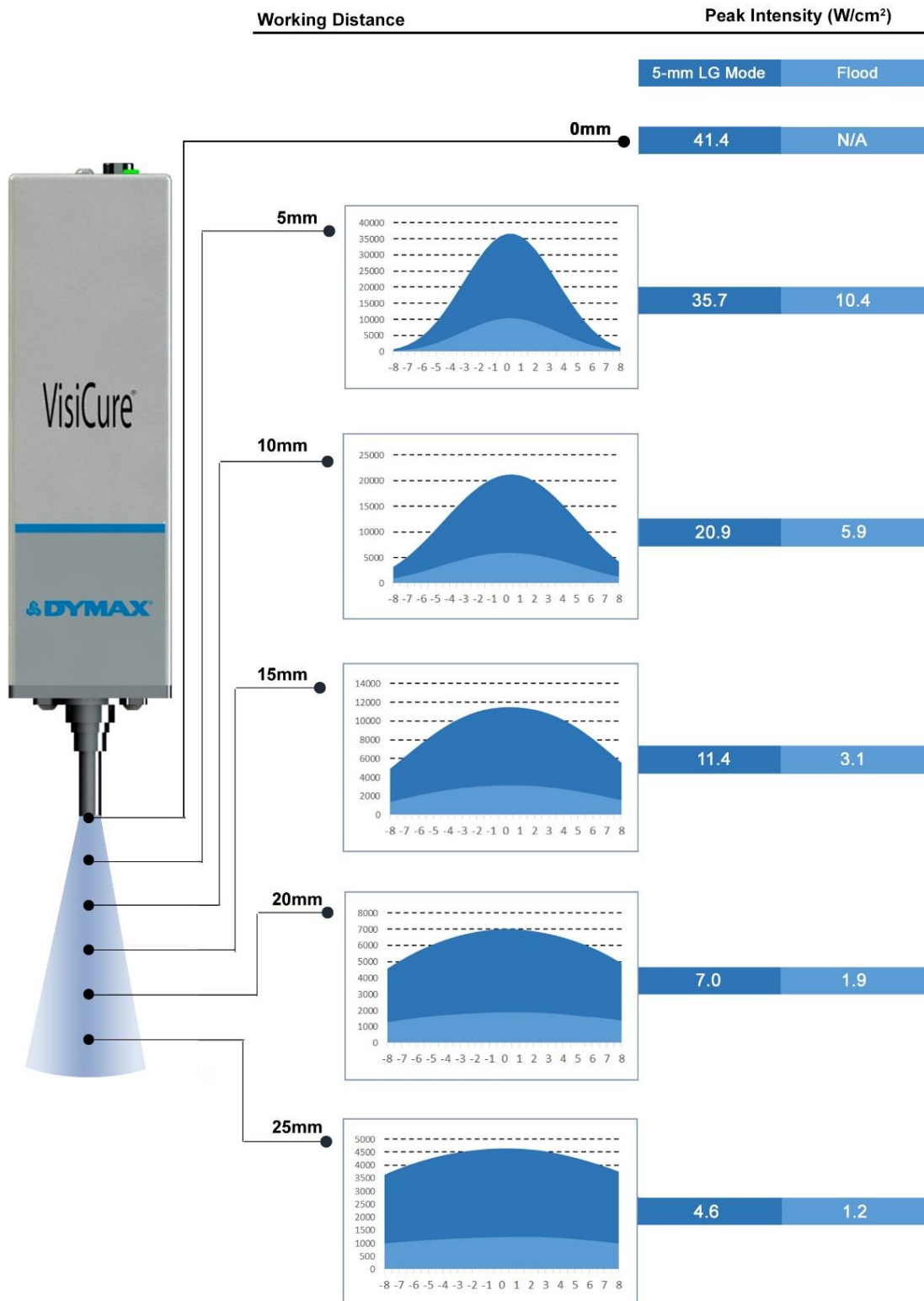
* Dymax recommends using the 5-mm lightguide source mode on the ACCU-CAL™ 50-LED, when measuring at 0 mm with the provided adapter in the ACCU-CAL kit. If measurements are made at greater working distance, Dymax recommends using the flood mode source for measurements. For convenience, both numbers are provided in this chart.

Figure 3. PrimeCure™, 385 nm - Intensity at Various Working Distances
 Measured with an ACCU-CAL 50-LED in both 5-mm lightguide (LG) and flood source modes*



* Dymax recommends using the 5-mm lightguide source mode on the ACCU-CAL™ 50-LED, when measuring at 0 mm with the provided adapter in the ACCU-CAL kit. If measurements are made at greater working distance, Dymax recommends using the flood mode source for measurements. For convenience, both numbers are provided in this chart.

Figure 4. VisiCure®, 405 nm - Intensity at Various Working Distances
 Measured with an ACCU-CAL 50-LED in both 5-mm lightguide (LG) and flood source modes*



* Dymax recommends using the 5-mm lightguide source mode on the ACCU-CAL™ 50-LED, when measuring at 0 mm with the provided adapter in the ACCU-CAL kit. If measurements are made at greater working distance, Dymax recommends using the flood mode source for measurements. For convenience, both numbers are provided in this chart.

Optional Lightguide Configuration

Dedicated optics are not necessary to accommodate larger irradiation areas such as an 8-mm diameter spot. These larger areas can be achieved by increasing the distance between the emitting end of the standard 5-mm optic to ~10 mm.

Figure 5. BlueWave® MX-150™ with 5-mm lightguide simulator, measured 10 mm from the surface of the radiometer

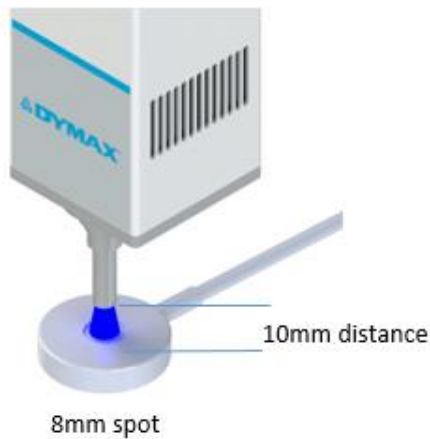


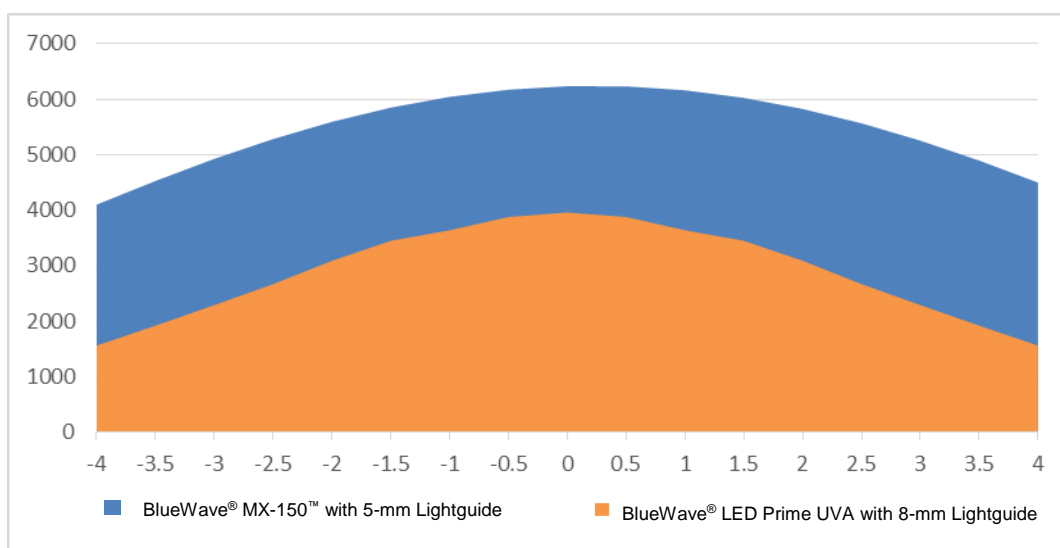
Figure 6. BlueWave® LED Prime using a 8-mm lightguide, measured directly on the surface of the radiometer



Both cover the same target cure area, however, the new BlueWave® MX-150™ provides a much higher intensity, see chart below.

Figure 7. Intensity Comparison

Intensity Measured with ACCU-CAL™ 50-LED



The system can be outfitted with a 3 or 5-mm Wolf-style lightguide. A 5-mm lightguide/simulator couples perfectly with the 5-mm aperture of the LED chip (Figure 8) while a 3-mm lightguide only transfers part of the UV light emitted by the LED chip (Figure 9), resulting in lower efficiency. See the intensity chart on the next page for more information.

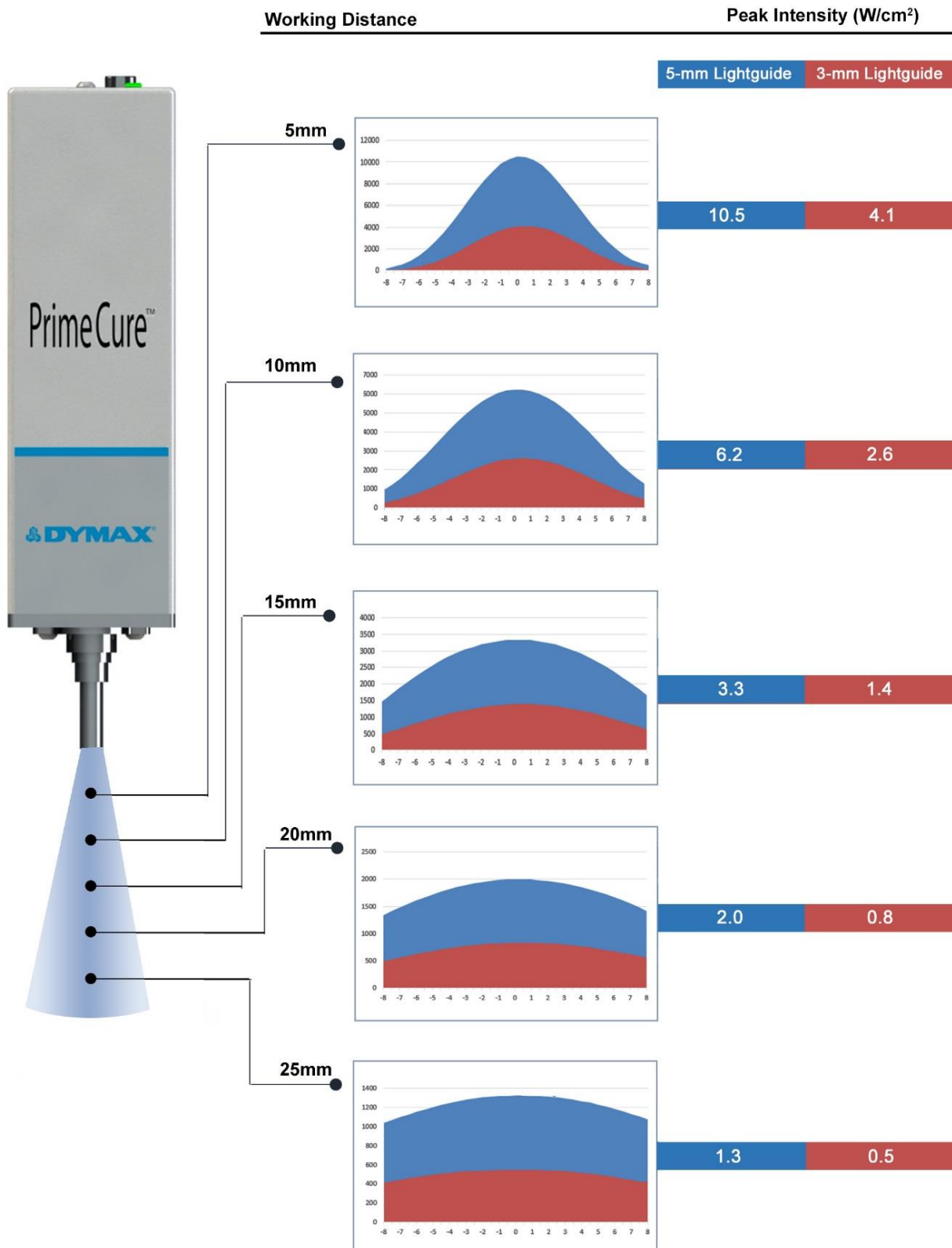
Figure 8. Aperture with 5-mm Lightguide



Figure 9. Aperture with 3-mm Lightguide



Figure 9. PrimeCure™, 385 nm - Intensity at Various Working Distances
 Measured with an ACCU-CAL 50-LED in flood mode.



*PrimeCure™ shown for illustrative purposes. Expect similar performance with the VisiCure® and RediCure™ systems. For more specific data at various working distances and optics, please consult with Dymax Application Engineering.

Systems and Accessories

A complete BlueWave® MX-150™ system features a controller/power supply and LED emitter. Emitters are available in 365, 385, and 405 nm wavelengths. Lightguides and other 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-150 Controller/Power Supply	42380	European Version (The appropriate power cord will be added)
LED Emitters**	42336	RediCure™ (365 nm)
	42337	PrimeCure™ (385 nm)
	42338	VisiCure® (405 nm)
Lightguides and Optics		
Lightguides*	39043	Single-Pole Lightguide, 3-mm x 500 mm
	38707	Single-Pole Lightguide, 3-mm x 1,500 mm
	38708	Single-Pole Lightguide, 3-mm x 2,000 mm
	37043	2-Pole Liquid-Filled Lightguide, 3-mm x 1,000 mm
	35101	Single-Pole Lightguide, 5-mm x 500 mm
	35102	Single-Pole Lightguide, 5-mm x 1,000 mm
	36238	Single-Pole Lightguide, 5-mm x 1,500 mm
	38998	Single-Pole Lightguide, 5-mm x 2,000 mm
Lightguide Simulators**	36987	Lightguide Simulator, 5-mm Diameter
Optics	41148	Adjustable Taper Shoulder Focusing Lens (5 mm)
Accessories		
Stands & Shielding	42390	Emitter Mounting Stand
	41395	Three-Sided Acrylic Shield
	42426	Emitter Holder Assembly Bracket
Radiometers	40505	ACCU-CAL™ 50-LED Radiometer Kit for LED Spots, Floods, and BlueWave® QX4

* All standard Wolf entrance fitting lightguides will physically couple to this system, but only configurations listed above have been tested and verified to be fully functional.

** 5-mm lightguide simulator comes with every emitter.



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