

CE



# BlueWave® MX-250 LED Flood-Curing Emitters

User Guide

 **DYNAMAX®**



## About Dymax

Light-curable adhesives. Systems for light curing, fluid dispensing, and fluid packaging.

Dymax manufactures industrial adhesives, light-curable adhesives, epoxy resins, cyanoacrylates, and activator-cured adhesives. We also manufacture a complete line of manual fluid dispensing systems, automatic dispensing systems, and light-curing systems. Light-curing systems include LED light sources, spot, flood, and conveyor systems designed for compatibility and high performance with Dymax adhesives. Dymax adhesives and light-curing systems optimize the speed of automated assembly, allow for 100% in-line inspection, and increase throughput. System designs enable stand-alone configuration or integration into your existing assembly line.

Please note that most dispensing and 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 the Dymax standard Conditions of Sale. 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. Data sheets are available for valve controllers or pressure pots upon request.

# Contents

<b>Introduction</b> .....	<b>4</b>
Where to Get Help.....	4
<b>Safety</b> .....	<b>4</b>
<b>Product Overview</b> .....	<b>5</b>
Description of BlueWave MX-250 Emitters .....	5
<b>Unpacking</b> .....	<b>6</b>
Parts Included .....	6
<b>Installation</b> .....	<b>6</b>
Important Information.....	6
Mounting/Connections.....	7
<b>Troubleshooting &amp; Maintenance</b> .....	<b>9</b>
Product Cleaning and Care.....	10
Glass Window Replacement .....	10
<b>Spare Parts</b> .....	<b>11</b>
<b>Compatible Devices</b> .....	<b>12</b>
<b>Specifications</b> .....	<b>13</b>
<b>Declaration of Conformity</b> .....	<b>14</b>
<b>Warranty</b> .....	<b>16</b>
<b>Index</b> .....	<b>17</b>

# Introduction

This guide describes how to set up, use, and maintain BlueWave® MX-250 emitters safely and efficiently.

## Intended Audience

This user guide is meant for experienced process engineers, technicians, and manufacturing personnel. If you are new to high-intensity LED light sources and do not understand the instructions, contact Dymax Application Engineering for answers to your questions before using the equipment.

## Where to Get Help

Dymax Customer Support and Application Engineering teams are available by phone in Germany, Monday through Friday, from 8:00 a.m. to 5:00 p.m. Central European Time. You can also email Dymax Europe GmbH at [info\\_de@dymax.com](mailto:info_de@dymax.com). Contact information for additional Dymax locations can be found on the back cover of this user guide. For more information about this product, visit [dymax.com](http://dymax.com).

# Safety



**WARNING!** *Under NO circumstances should the interconnect cable from the controller to the LED emitter be connected or disconnected while power to the unit is on. This procedure is usually called “hot swapping” and should not be performed as it could cause damage to the controller or the emitter. Always power down the equipment before disconnecting or connecting any of these devices.*

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**WARNING!** *If you use this UV LED light source without first reading and understanding the information in the UV Light Safety Guide, SAF001, injury can result from exposure to high-intensity light. To reduce the risk of injury, please read and ensure you understand the information in that guide before assembling and operating the Dymax UV LED light source.*



### **Specific Safety statements for this device:**

*This device falls under IEC 62471 Risk Group 3 for UVA and Blue Light Emissions:*

**WARNING.** *UV emitted from this product. Avoid eye and skin exposure to unshielded products.*

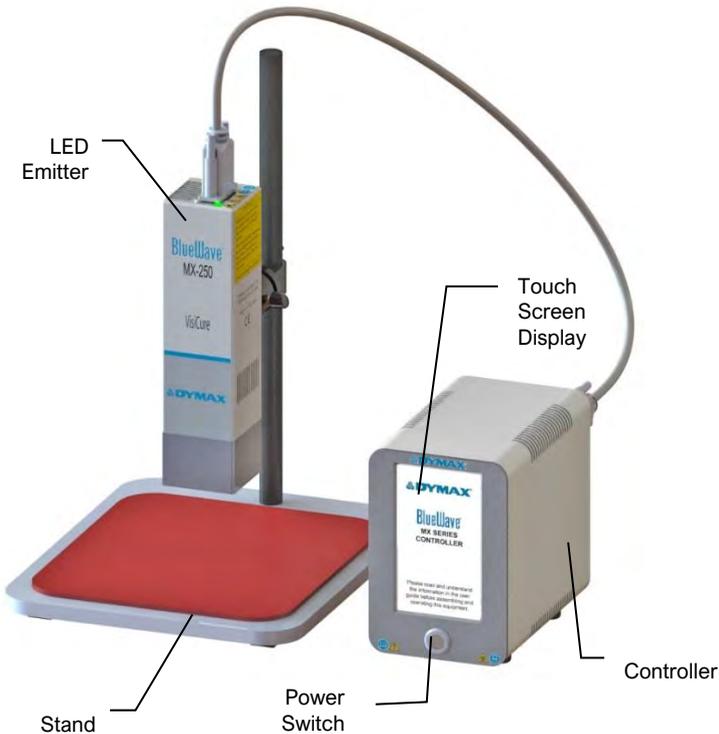
**WARNING.** *Possibly hazardous optical radiation emitted from this product. Do not look at operating lamp. Eye injury may result.*

# Product Overview

## Description of BlueWave MX-250 Emitters

- When paired with a MX-series controller, BlueWave MX-250 emitters function as a mini- flood-curing system with a 50 mm x 50 mm (2 in x 2 in) asserted curing area. They provide manufacturers with curing flexibility and expansion capabilities.
- The BlueWave MX-250 emitter is air cooled using an axial fan.
- The BlueWave MX-250 emitter can be mounted using one of two hole patterns in the housing body.

**Figure 1,**  
Main Components of BlueWave MX-250 System



# Unpacking

Upon arrival, inspect all boxes for damage and notify the shipper of box damage immediately. Open each box and check for equipment damage. If parts are damaged, notify the shipper and submit a claim for the damaged parts. Contact Dymax so that new parts can be shipped to you immediately.



**WARNING!** *Until the BlueWave MX-250 emitter is attached to a controller via the interconnect cable it is susceptible to ESD damage, handle according to ESD standards using a ground strap and do not touch exposed connector pins.*

The parts below are included in every package/order. If parts are missing from your order, contact your local Dymax representative or Dymax Customer Support to resolve the problem.

## Parts Included

- BlueWave MX-250 LED Emitter Assembly
- User Guide

# Installation

The BlueWave MX-250 emitter is part of a MX-series curing system and requires connection to a controller via an interconnect cable for proper operation.

## Important Information

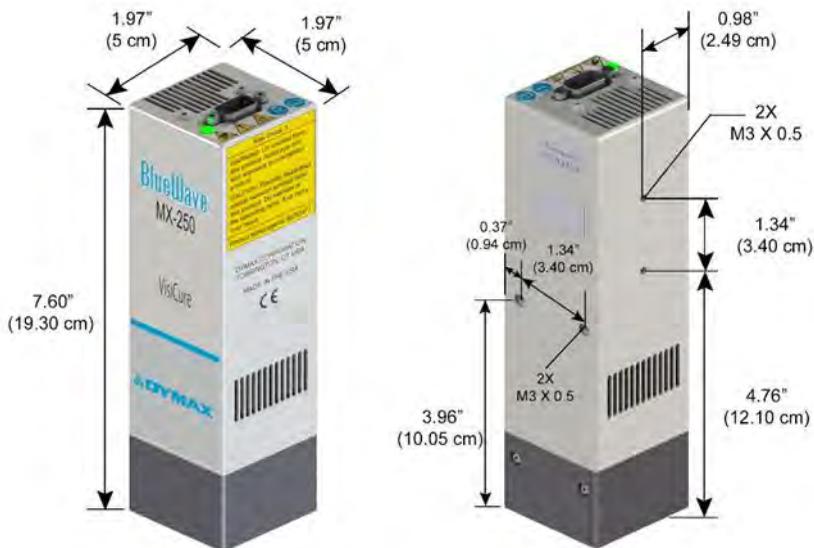
- Do not connect any components while power is applied.
- Mount the BlueWave MX-250 emitter to a rigid support, such as the emitter stand PN 42390, prior to connecting the interconnect cable to prevent handling damage.
- Do not touch the emitter aperture glass. This can result in poor performance and broken glass due to heating. Inspect before each use and clean with isopropyl alcohol if contaminated.

- If emitter aperture glass is permanently contaminated it must be replaced for safe operation.

## Mounting/Connections

- Each emitter has two sets of M3 x 0.5 mm holes (Figure 2) that align with Dymax stands and holders.
- When connecting the emitter to the controller, ensure proper strain relief to prevent pinching or kinking of the interconnect cable.
- The cooling air intake on top of unit must be free flowing, do not cover.
- Exhausting air on sides must be given at least 1 mm (0.04") of clear space to obstructions for safe use.

**Figure 2.**  
BlueWave MX-250 Emitter Dimensions



- When multiple emitters are mounted side-by-side, maintain 1 mm (0.04”) of clear space between units. For outermost units, maintain 20 mm (0.8”) of free space to obstructions for safe use.

**Figure 3.**  
Example of Installation Using Array Stand



# Troubleshooting & Maintenance

Problem	Possible Cause	Corrective Action
BlueWave MX-250 LED does not produce light	LED intensity adjustment set to 0% or too low	Increase LED intensity setting.
	LED cycle time is set to 0 seconds	0 Seconds sets manual mode and requires a trigger.
	Interlock is open	Verify interlock jumpers are in place. Verify PLC command structure for PLC mode.
	Interface cable connections loose or damaged	Check connections and condition of interface cable.
	Trigger setting not matched to input	Trigger setting on admin screen should match the desired input trigger channel.
	LED head is not connected to the correct port/channel	Verify that the head is connected to the desired port/channel.
BlueWave MX-250 LED suddenly stops producing light	Over-temperature shutdown was triggered	Verify alarms.
	Footswitch defective	Activate unit using the front control panel. Replace the footswitch if the unit operates from the front control panel.
	Interlock is open	Verify interlock jumpers are in place. Verify PLC command structure for PLC mode.
BlueWave MX-250 LED provides only low-intensity light	LED intensity adjustment set to minimum	Increase LED intensity setting on admin settings or I/O input for PLC mode.
	Contaminated/dirty lens optics	Clean the surface of the lens.

## Product Cleaning and Care

- Product cleaning is limited to wiping the product with a damp cloth. Do not soak. Isopropanol Alcohol or household cleaners may be used for cleaning the product.
- Always inspect the quartz window for cleanliness before use. Foreign material can cause permanent damage to the window. Clean with Isopropanol Alcohol to remove smudges or foreign material. Damaged or permanently etched windows should be replaced.
- Do not use compressed air to removed particle debris inside the emitter as it may damage the high-speed cooling fan.

## Glass Window Replacement

1. Before starting, disconnect power to the unit.
2. Lay the emitter on its side with the cover facing upwards. Using a 5/64" hex key, loosen and fully remove the two screws (Figure 4).
3. Remove the side cover by lifting from the bottom as shown in Figure 5.

**Figure 4.**  
Remove Screws



**Figure 5.**  
Remove Side Cover



4. Slide the damaged glass cover out (Figure 6), taking care not to touch the metallic reflector surfaces.

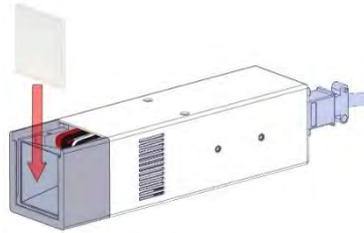
*NOTE: If the old window has shattered, be sure to remove all debris before attempting to install the new glass window.*

5. Unwrap the new window and carefully clean with the enclosed alcohol swab. Holding the window by its sides, slide into the groove (Figure 7). Take care not to touch the glass with bare hands, as any residue left on the window can adversely affect the performance of the unit.

**Figure 6.**  
Slide Glass Cover Out



**Figure 7.**  
Insert New Glass Cover



6. Reinstall the side cover removed in Step 3.
7. Insert the two screws removed in Step 2 and tighten.

## Spare Parts

Item	Part Number
BlueWave MX-250 Emitter Glass Replacement Kit	42929

# Compatible Devices

Item	Part Number
<b>Controllers</b>	
BlueWave® MX Series 2-Channel Controller/Power Supply	43184*
BlueWave® MX Series 4-Channel Controller/Power Supply	43181*
<b>Emitters</b>	
BlueWave MX-250, VisiCure® (405 nm)	42808
BlueWave MX-250, PrimeCure® (385 nm)	42807
BlueWave MX-250, RediCure® (365 nm)	42806
<b>System Components</b>	
Interconnect Cable Assembly - 12 Inch	43453
Interconnect Cable Assembly - 2 Meter	42287
Interconnect Cable Assembly - 5 Meter	42889
Extended Interconnect Cable - 10 Meter**	43010
Extended Interconnect Cable - 20 Meter**	43011
<b>Radiometer</b>	
ACCU-CAL™ 50-LED Radiometer	40505
<b>Stands</b>	
Array Stand	43070
Single Emitter Mounting Stand	42390
Dual Emitter Mounting Bracket for MX Controller	60868
<b>Personal Protection Equipment</b>	
Three-Sided Acrylic Shield	41395
Protective Goggles — Green	35286
Protective Goggles — Gray (standard model included with unit)	35285
Face Shield	35186

\* Appropriate power cord included for European customers

\*\* Intended for machine installations only

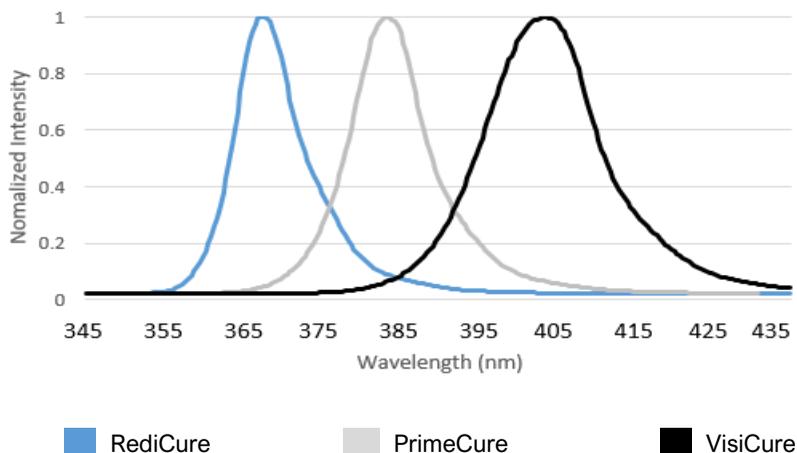
# Specifications



Property	Specification		
<b>Emitter</b>	RediCure	PrimeCure	VisiCure
<b>Output Frequency</b>	365 nm	385 nm	405 nm
<b>Typical Intensity Output*</b> At Array Surface At 25 mm	680 mW/cm <sup>2</sup> 255 mW/cm <sup>2</sup>	950 mW/cm <sup>2</sup> 355 mW/cm <sup>2</sup>	1,090 mW/cm <sup>2</sup> 375 mW/cm <sup>2</sup>
<b>Emitter Dimensions (W x D x H)</b>	5 cm x 5 cm x 19.3 cm [1.97" x 1.97" x 7.6"]		
<b>Weight</b>	0.74 kg [1.64 lbs.]		
<b>Unit Warranty</b>	1 year from purchase date		
<b>Operating Environment</b>	50°F to 104°F [10°C to 40°C], 0-80% relative humidity, non-condensing		

\* Measured using Dymax ACCU-CAL™ 50-LED radiometer in flood mode.

**Figure 8.**  
BlueWave MX Series Spectral Output



# Declaration of Conformity

**Figure 9.**  
Declaration of Conformity - CE



## EU Declaration of Conformity

**Manufacturer:**  
 Dymax Corporation  
 318 Industrial Lane  
 Torrington CT 06790, USA

**Product description:** BlueWave® MX-250™ LED Flood Curing System  
**Model name(s):** BlueWave® MX-250™ LED Emitter

*This product complies with the following relevant Union Harmonization Legislation:*

<p><b>Applicable EU Directives:</b></p> <p>Electromagnetic Compatibility Directive(2014/30/EU)</p> <p>Low Voltage Directive(2006/95/EC)</p> <p>RoHS Directive 2011/65 EU (2015/863)</p> <p><b>Other Regulatory Compliance</b></p>	<p><b>Applicable Harmonized Standards:</b></p> <p>EN55011:2016/A1:2017/A11:2020          EN 61000-3-2:2014 Class A          EN 61000-3-3:2013          EN 61326-1:2013          EN 61010-1:2010, AMD1:2019</p> <p>EN IEC 60300:2018</p> <p><b>Photo-biological Safety</b>          IEC 62471 (2006)</p>
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**Declaration:**  
*This declaration of conformity is issued under the sole responsibility of the manufacturer,  
 Signed for and on behalf of:*


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Name

6/5/2023

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Date

Torrington, CT

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Location



**Authorized Signatory:**  
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**Figure 10.**  
**Declaration of Conformity - UKCA**



## UK Declaration of Conformity

**Manufacturer:**  
 Dymax Corporation  
 318 Industrial Lane  
 Torrington CT 06790, USA

**Product description:** BlueWave® MX-250™ LED Flood Curling System  
**Model name(s):** BlueWave® MX-250™ LED Emitter

*This product complies with the following relevant UK Legislation:*

<p><b>Applicable UK Legislation:</b></p> <p>Electromagnetic Compatibility Regulations 2016</p> <p>Electrical Equipment Safety Regulations 2016</p> <p>The Restriction of the Use of Certain Hazardous Substances in Electrical And Electronic Equipment Regulations 2012</p> <p><b>Other Regulatory Compliance</b></p>	<p><b>Applicable Harmonized Standards:</b></p> <p>EN56011:2016/A1:2017/A11:2020          EN 61000-3-2:2014 Class A          EN 61000-3-3:2013          EN 61326-1:2013          EN 61010-1:2010/AMD 1:2019</p> <p>EN IEC 63000:2018</p> <p><b>Photo-biological Safety</b>          IEC 62471 (2006)</p>
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**Declaration:**  
*This declaration of conformity is issued under the sole responsibility of the manufacturer.*  
 Signed for and on behalf of:

  
 Name

6/5/2023  
 Date

Torrington, CT  
 Location



**Authorized Signatory:**  
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 Engineering Manager, Equipment  
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# Warranty

From date of purchase, Dymax Corporation offers a one-year warranty against defects in material and workmanship on all system components with proof of purchase and purchase date. Unauthorized repair, modification, or improper use of equipment may void your warranty benefits. The use of aftermarket replacement parts not supplied or approved by Dymax Corporation, will void any effective warranties and may result in damage to the equipment.

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# Index

- Cleaning, 10
- Compatible Devices, 12
- Components, 5
- Connections, 7
- Declaration of Conformity, 14
- Glass Window Replacement, 10
- Help, 4
- Installation, 6
- Maintenance, 9
- Mounting, 7
- Parts List, 6
- Product Overview, 5
- Safety, 4
- Spare Parts, 11
- Specifications, 13
- Spectral Output, 13
- Support, 4
- Troubleshooting, 9
- Unpacking, 6
- Warranty, 16





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