



BlueWave[®] MX-250 LED Flood-Curing Emitters

User Guide





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.

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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

Customer Support and Applications Engineering teams are available by phone and email 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. Please see the back cover for worldwide contact information. For more information about this product, visit dymax.com.

Safety



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.*

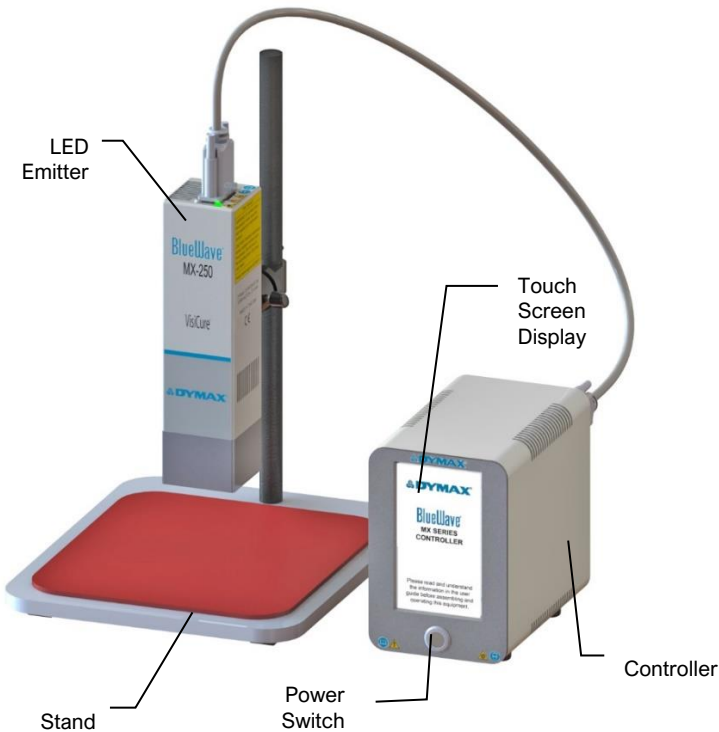
WARNING. *Possibly hazardous optical radiation emitted from this product. Do not look at operating lamp. Eye injury may result.*

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

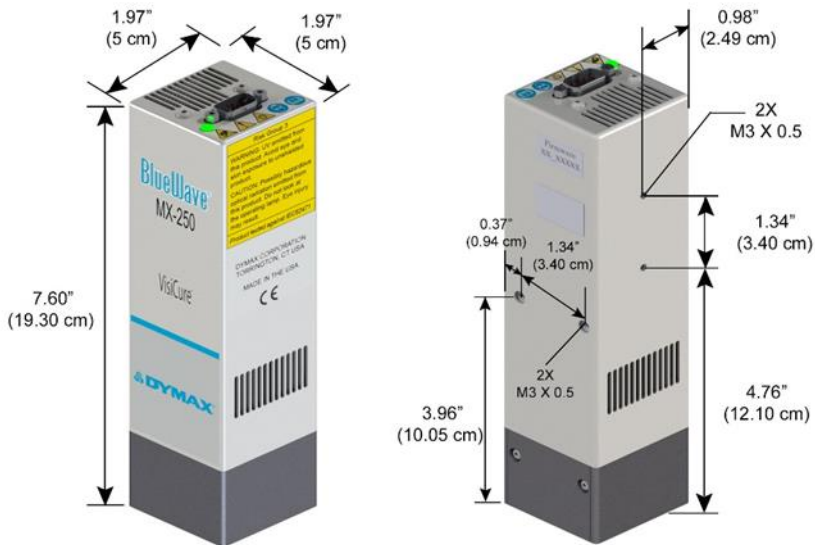
- Do not connect any components while power is applied.
- Mount the BlueWave MX-250 emitter to a rigid support, such as the emitter stand PN 42390, prior to connecting the interconnect cable to prevent handling damage.
- Do not touch the emitter aperture glass. This can result in poor performance and 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

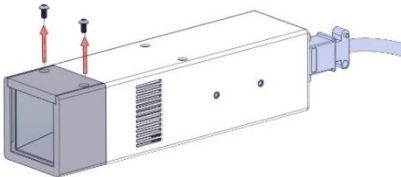
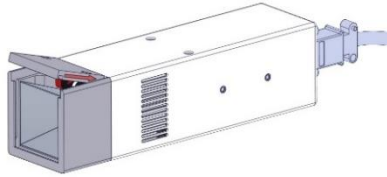


Figure 5.
Remove Side Cover



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

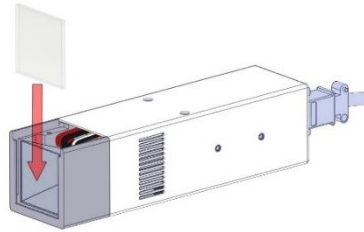
NOTE: If the old window has shattered, be sure to remove all debris before attempting to install the new glass window.

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 |
|---|-------------|
| Controllers | |
| BlueWave® MX Series 2-Channel Controller/Power Supply | 43184* |
| BlueWave® MX Series 4-Channel Controller/Power Supply | 43181* |
| Emitters | |
| BlueWave MX-250, VisiCure® (405 nm) | 42808 |
| BlueWave MX-250, PrimeCure® (385 nm) | 42807 |
| BlueWave MX-250, RediCure® (365 nm) | 42806 |
| System Components | |
| 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 |
| Radiometer | |
| ACCU-CAL™ 50-LED Radiometer | 40505 |
| Stands | |
| Array Stand | 43070 |
| Single Emitter Mounting Stand | 42390 |
| Dual Emitter Mounting Bracket for MX Controller | 60868 |
| Personal Protection Equipment | |
| 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

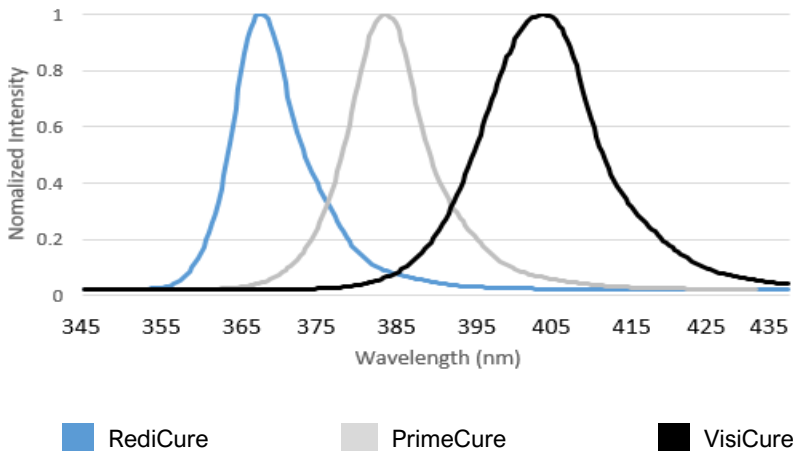
Specifications



| Property | Specification | | |
|--|---|--|--|
| Emitter | RediCure | PrimeCure | VisiCure |
| Output Frequency | 365 nm | 385 nm | 405 nm |
| Typical Intensity Output* At Array Surface At 25 mm | 680 mW/cm ² 255 mW/cm ² | 950 mW/cm ² 355 mW/cm ² | 1,090 mW/cm ² 375 mW/cm ² |
| Emitter Dimensions (W x D x H) | 5 cm x 5 cm x 19.3 cm [1.97" x 1.97" x 7.6"] | | |
| Weight | 0.74 kg [1.64 lbs.] | | |
| Unit Warranty | 1 year from purchase date | | |
| Operating Environment | 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:
Model name(s):

BlueWave® MX-250™ LED Flood Curing System
BlueWave® MX-250™ LED Emitter

This product complies with the following relevant Union Harmonization Legislation:

| | |
|---|---|
| Applicable EU Directives: Electromagnetic Compatibility Directive(2014/30/EU) | Applicable Harmonized Standards: EN5011:2016/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 |
| Low Voltage Directive(2006/95/EC) | |
| RoHS Directive 2011/65 EU (2015/863) | EN IEC 63000:2018 |
| Other Regulatory Compliance | Photo-biological Safety IEC 62471 (2006) |

Declaration:
This declaration of conformity is issued under the sole responsibility of the manufacturer.
Signed for and on behalf of:

 6/5/2023 Torrington, CT

Name Date Location

CE


Authorized Signatory:
Toby Trudeau
Engineering Manager, Equipment
Dymax Corporation
Torrington CT., USA


www.dymax.com

North America: +1 860.482.1010 | Europe: +49 811.962.7900 | Asia: +65.67522887

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Please note that most equipment and safety system applications are critical. Dymax does not warrant the fitness of the product for the most critical applications. Any warranty applicable to this product is specific and limited to the product as described in the attached Declaration of Conformity. Dymax reserves the right to alter product specifications and applications without notice. For the user, the only real safety performance criteria are outlined. Dymax is asking to insure users' behavior performance, safety and health by affixing appropriate electrical and bearing programs to assist in such testing and evaluation. Dymax does not warrant to make changes to its products without appropriate notice.

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

This product complies with the following relevant UK Legislation:

| | |
|---|---|
| Applicable UK Legislation: Electromagnetic Compatibility Regulations 2016 Electrical Equipment Safety Regulations 2016 The Restriction of the Use of Certain Hazardous Substances in Electrical And Electronic Equipment Regulations 2012 Other Regulatory Compliance | Applicable Harmonized Standards: 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 EN IEC 63000:2018 Photo-biological Safety IEC 62471 (2006) |
|---|---|

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

UK
 CA

Authorized Signatory:
 Toby Trudeau
 Engineering Manager, Equipment
 Dymax Corporation
 Torrington CT., USA



North America: +1 860-482-1010 | Europe: +49 611 962-7900 | Asia: +65 67522887

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 *Please note that most European and Asian system regulations are not listed. Please refer to the relevant regulatory body for the applicable regulations in your region.

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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North America: +1 860.482.1010 | Europe: +49 611.962.7900 | Asia: +65.67522887

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MAN098EU 6/27/2023