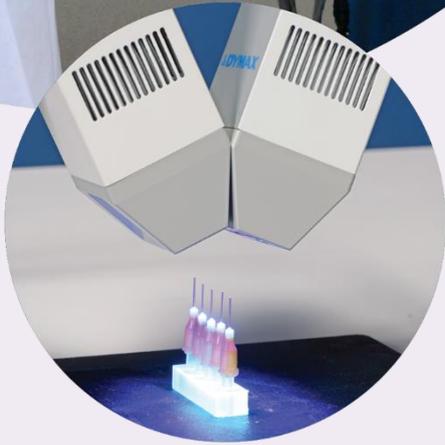


Light Shield

For use with BlueWave[®] LED
Flood Systems
User Guide





About Dymax

UV/Visible light-curable adhesives. Systems for light curing, fluid dispensing, and fluid packaging.

Dymax manufactures industrial, light-curable, epoxy, and activator-cured adhesives. We also manufacture a complete line of manual fluid dispensing systems, automatic fluid 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 by offering equipment trial rental and leasing programs to assist in such testing and evaluations. 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 a Dymax LED Light Shield safely and efficiently.

Intended Audience

Dymax prepared this user guide for experienced process engineers, technicians, and manufacturing personnel. If you are new to UV light curing 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 and email in the United States, Monday through Friday, from 8:00 a.m. to 5:30 p.m. Eastern Standard Time. You can also email Dymax at info@dymax.com. Contact information for additional Dymax locations can be found on the back cover of this user guide.

Additional resources are available to ensure a trouble-free experience with our products:

- Detailed product information on www.dymax.com
- Dymax adhesive Product Data Sheets (PDS) on our website
- Safety Data Sheets (SDS) provided with shipments of Dymax adhesives

Safety



WARNING! *If you use this light shield without first reading and understanding the information in this user guide, injury can result from exposure to high-intensity light. To reduce the risk of injury, read and ensure you understand the information in this user guide before assembling and operating a Dymax LED flood system with light shield.*

General Safety Considerations

All users of Dymax equipment should read and understand this user guide before assembling and using the equipment.

To learn about the safe handling and use of light-curable formulations, obtain and read the SDS for each product. Dymax includes an SDS with each adhesive sold. In addition, fluid product SDS can be requested on the Dymax website.

Specific Safety Considerations

The light shield is designed to maximize operator safety and minimize exposure to light-curing energy. To use the shield safely, it must be set up and operated in accordance with the instructions in this user guide. Please also read and understand the safety considerations unique to LED flood light-curing systems.

Safety Symbol Index

The following symbols are displayed on the Dymax light shield. Please see below for their meanings.



Refer to Manual



Gloves Required



Eye Protection Required



Warning!



Caution! Hot Surface



Warning! UV Light Hazard

Product Overview

Description of the LED Light Shield System

The LED light shield is designed to prevent worker exposure to high-intensity light when used in conjunction with the BlueWave LED Flood Light-Curing System. Together these components create a unique bench-top LED light-curing system that can be used to cure photosensitive adhesives, coatings, and inks applied to various size and shape parts.

The LED Light Shield System (PN 41321) features an ECE light shield and an interface adapter plate that allows the BlueWave LED Flood System to be easily mounted onto the light shield. Users who already have an ECE Light Shield can retrofit it to use the BlueWave LED Flood System by ordering just the Light Shield Interface Kit (PN 41578).

NOTE: Users considering special or customized configurations should contact Dymax Application Engineering for recommendations and/or guidance to prevent equipment malfunction. Dymax cannot foresee every possible use of these light sources and reserves the right to invalidate warranties, expressed or implied, due to non-recommended installation or use of this equipment.

Special Features & Benefits

| Feature | Benefit |
|--|--|
| Accommodates parts for curing up to 7.5" [19.05 cm] high | Can be used for a variety of part configurations. |
| Work surface may be adjusted from 1.5"- 5.5" [3.81 cm - 13.97 cm] from the cover of the enclosure. | The light shield tray can be used with light-curing applications for a variety of size products. |
| Door interlock | Extra safety precaution preventing the LED unit from being activated when the light shield door is open. |

System Components

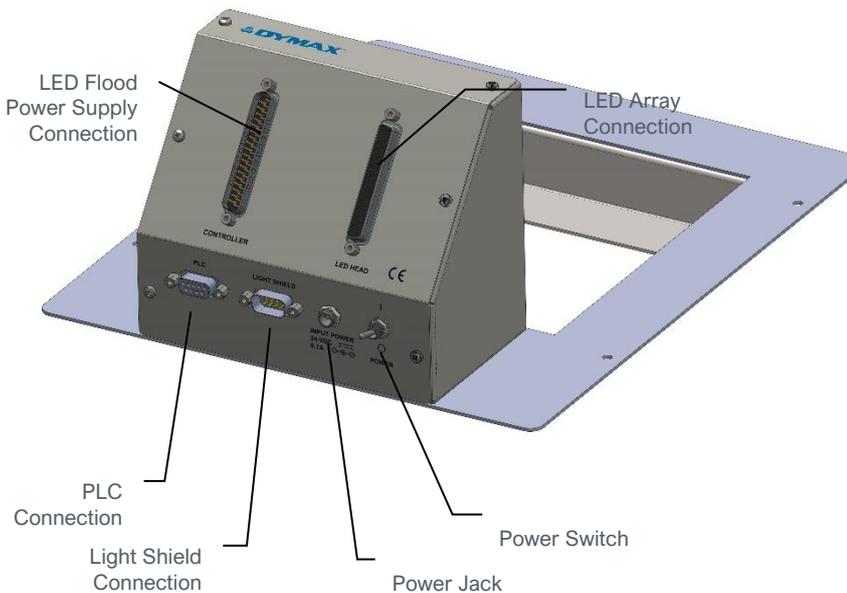
ECE Light Shield (Figure 1) - The light shield is the base of the flood system and is constructed so the operator can safely observe objects during the curing process. Its front-loading door swings up and down on dual supporting hinges and has an interlock switch that prevents the LED Flood Array from activating when the light shield door is open. Inside the unit is a fireproof tray that slides along adjustable height rails and can be easily removed and replaced.

Interface Adapter Plate (Figure 2) - Along with the light shield, the LED light shield system contains an interface adapter plate that is to mount the LED flood array to the light shield.

Figure 1.
Main Components of the LED Light Shield System



Figure 2.
Interface Adapter Plate



Assembly and Setup

Unpacking and Inspecting Your Shipment

When your LED Light Shield arrives, inspect the 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.

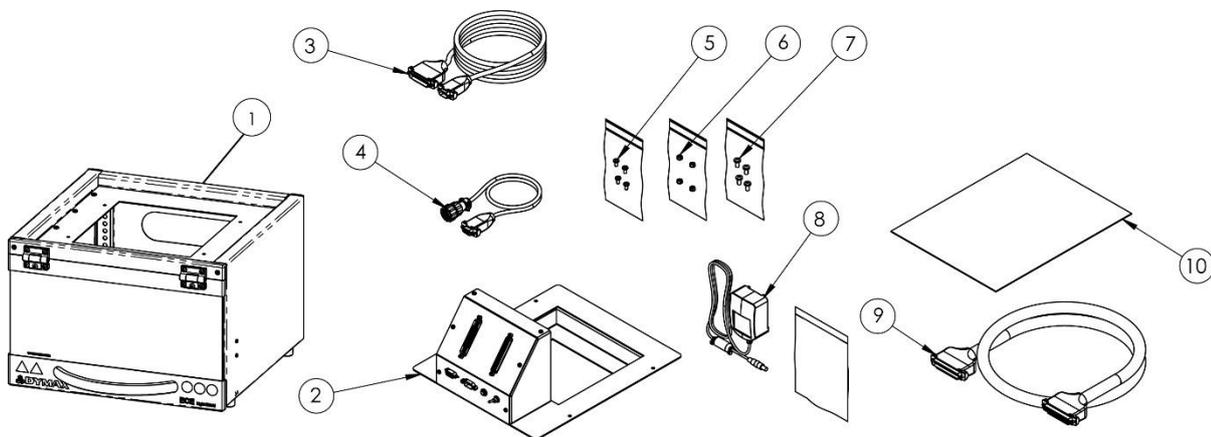
Check that the parts included in your order match those listed below. If parts are missing, contact your local Dymax representative or Dymax Customer Support to resolve the problem.

NOTE: The LED power supply shown in Figure 7 must have firmware revision 3.00.00 or higher.

Parts Included in the LED Light Shield System (PN 41321)

- ECE Light Shield with Tray, PN 41860 (1)
- Light Shield Interface Kit, PN 41578
 - Kit includes:
 - Interface Adapter Plate (2)
 - PLC Interface Cable (3)
 - Cable, Light Shield to Interface Adapter Plate Assembly (4)
 - Screw, M4 x 8 mm (5)
 - Nut, M4 SS (6)
 - Screw, M5 x 10 mm (7)
 - Wall-Mount Power Supply (8)
 - Cable, LED Flood Array to Interface Adapter Plate Assembly (9)
 - Dymax LED Light Shield User Guide (10)

Figure 3.
LED Light Shield System Parts List (PN 41321)



System Interconnection

Place the Light Shield on the designated workbench. Remove all packaging used for securing the unit during shipping and save it in the event you need to repackage the unit for return.

Suggested Sequence of LED Flood-Curing System Connection

1. Align the two holes on the back of LED Array with the two holes on the Interface Adapter Plate (Figure 4). Insert an M5 x 10 screw in each hole and tighten (Figure 5).

Figure 4.
Mounting Holes

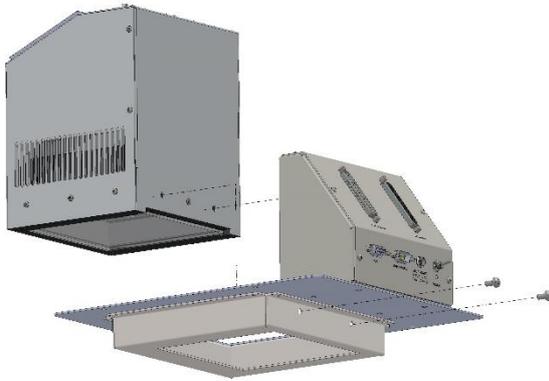
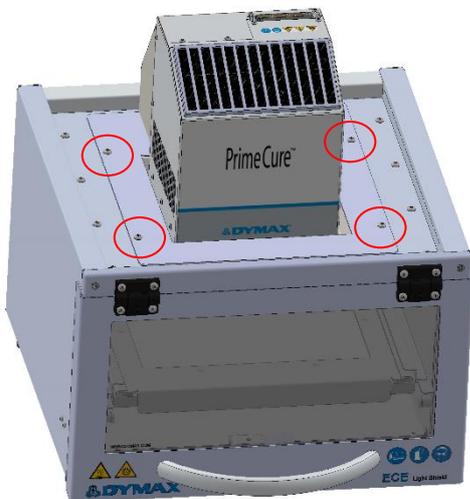


Figure 5.
Flood Array Mounted on Interface Adapter Plate



2. Place the LED Array/Interface Adapter Plate Assembly (Figure 5) on top of the Light Shield. Align the four Mounting Holes on the LED Array/Interface Adapter Plate Assembly with the four Mounting Holes on the Light Shield Cover (Figure 6). The front of both the LED Array and Light Shield should face the same direction.
3. Insert four M4 x 8 Screws through the Mounting Holes (Figure 6). Open the door on the Light Shield. From the inside of the Light Shield, thread and tighten an M4 Nut onto each of the four M4 x 8 Screws to secure the LED Array/Interface Adapter Plate Assembly in place.

Figure 6.
Mount LED Array/Interface Adapter Plate Assembly on Light Shield

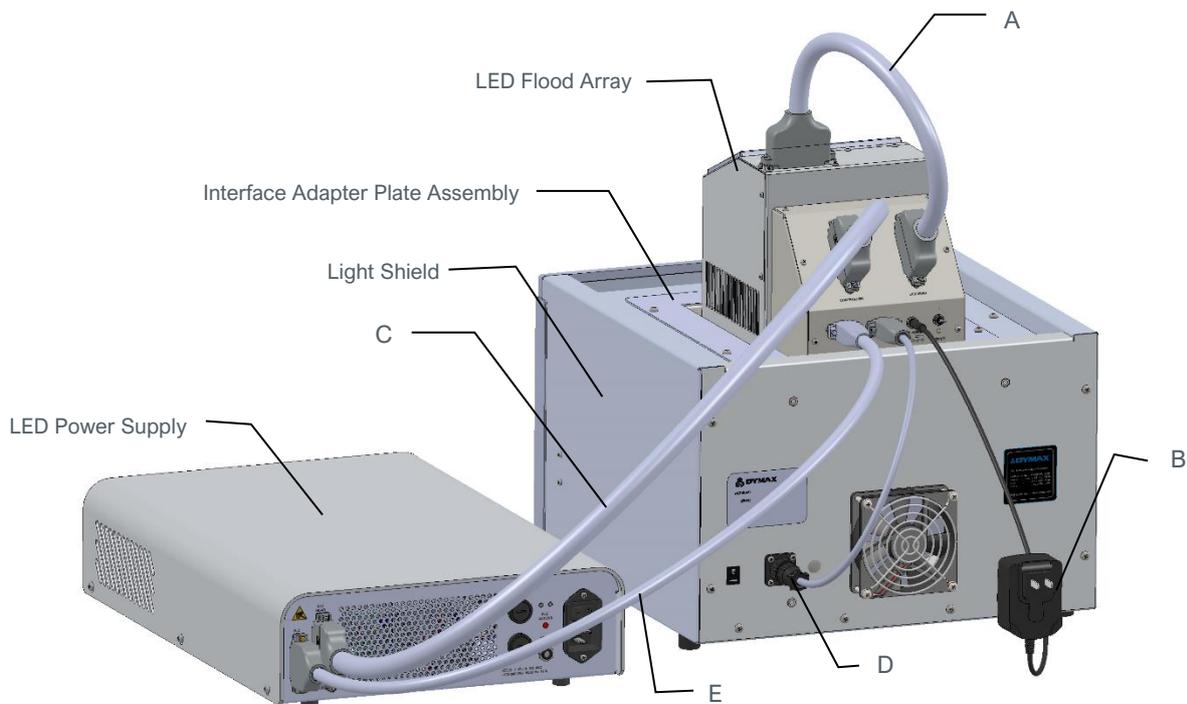


4. Connect all components with appropriate cables (Figure 7).
 - A. **Short, 37-Pin Cable** – Connects the LED Array to the connector labeled “LED HEAD” on the Interface Adapter Plate Assembly.

- B. **Wall-Mount Power Supply** – Connects to the jack labeled “INPUT POWER” on the Interface Adapter Plate Assembly.
- C. **Long, 37-Pin Cable** – Connects the LED Power Supply to the connector labeled “CONTROLLER” on the Interface Adapter Plate Assembly.
- D. **Round, 9-Pin Cable** – Connects the back of the Light Shield to the D-Sub Receptacle Connector labeled “LIGHT SHIELD” on the Interface Adapter Plate Assembly.
- E. **PLC Interface Cable** – Connects the back of LED Power Supply to the D-Sub Plug Connector labeled “PLC” on the Interface Adapter Plate Assembly.

NOTE: If retrofitting an ECE Flood-Lamp System with a BlueWave LED Flood, disconnect the cable connecting the Light Shield to the ECE Flood Lamp and save it with the Flood Lamp. Use the new cables provided in the Interface Kit (PN 41578).

Figure 7.
LED Flood Light-Curing System Interconnect Diagram



5. Plug the LED Power Supply’s AC Power Cord into an AC Power Outlet.
6. Select the proper AC Electrical Adapter for your Region (Figure 8) and snap it onto the Interface Adapter Plate Assembly’s Wall-Mount Power Supply. Plug into an AC Power Outlet.

Figure 8.
AC Electrical Adapters for Wall-Mount Power Supply



7. Switch the I/O (On/Off) Switch on the back panel of the LED Power Supply to the I (ON) position. Switch the I/O Switch on the Interface Adapter Plate Assembly to the I (ON) position to turn on the Light Shield. Verify that the Fan on the back of the Light Shield is operating.
8. When the initialization finishes on the LCD Display of the LED Power Supply, the screen will show the symbol 'LS' on the bottom left of the screen. This indicates that the Light Shield is connected (Figure 9). Depending on how the controller was last used, either the timer or manual mode screen will display.

Figure 9.
"LS" Appears to Verify That the Light Shield is Connected



NOTE: If your unit doesn't display the 'LS' symbol on the screen, remove all power and do not operate the unit. Contact Dymax for assistance.

NOTE: PLC mode is not available when using the light shield option.

9. Set the curing parameters according to application requirements. Instructions for setting these parameters and complete unit operation can be found in the BlueWave LED Flood System's User Guide.
10. Estimate the height of the curing part in respect to its base, or to the base of the part holder (if the object to be cured is not free standing), and then adjust the position of the tray to a proper distance from the curing part. Use a ruler for setting accuracy.

NOTE: Verify that the Pad Lock Symbol is displayed on the screen before adjusting the Tray. Curing cycles cannot be started while the Pad Lock Symbol is displayed, preventing accidental light exposure.

You can set working distances for each type of LED array assembly differently to optimize your throughput with respect to adhesive properties and irradiant energy required to achieve the best curing quality in the shortest time. Dymax Application Engineering is ready to assist you if needed.

11. The system is ready for operation.

Retrofitting the ECE Flood Lamp with an LED Flood Using the Light Shield

1. Remove the ECE Reflector Assembly from the Light Shield by unscrewing the four M4 x 8 mm screws from the Light Shield's Cover (Figure 10).

Figure 10.

Remove ECE Reflector Assembly



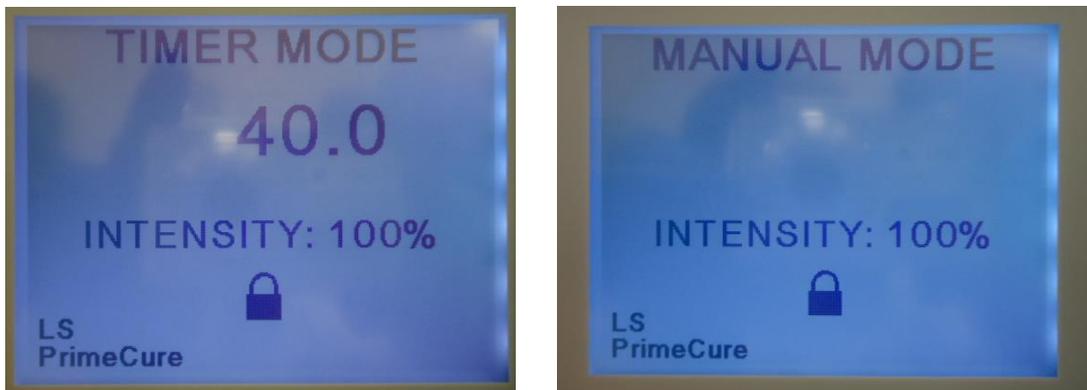
2. Follow the “Suggested Sequence of LED Flood-Curing System Connection” on page 9 of this guide.

Operation

For a detailed description of LED flood operation, maintenance, and troubleshooting, see the appropriate LED flood operation manual. Below is a general, suggested sequence of activities that can be altered to better match your working conditions, process requirements, and work habits.

1. To begin production curing, place the item to be cured inside the Light Shield. Close the Door and a click sound should be heard.
2. Initiate the cure cycle by pressing the Foot Switch or “RUN” Button on the front panel of the LED Power Supply.
3. Once the cure cycle is completed, open the Light Shield and unload the cured parts.
4. If the Light Shield’s Door is opened at any time, the Pad Lock Symbol (Figure 11) will be shown on the screen and the curing cycle cannot be started. If the Door is opened during a cycle, the cycle will be terminated immediately, and the Pad Lock Symbol will appear on the screen. The Pad Lock Symbol will also appear if the switch on the Interface Assembly is not turned on.

Figure 11.
Pad Lock Symbol on Timer Model & Manual Mode Screens



Cleaning & Maintenance

General

For detailed technical assistance, please call the Dymax Application Engineering.

Light Shield

The light shield is designed to be maintenance free. Periodic cleaning will ensure long, trouble-free operation.

LED Flood

See the appropriate LED flood manual for maintenance recommendations.

Troubleshooting

| Problem | Possible Cause | Corrective Action |
|---|---|--|
| The LED Array will not turn on and the Pad Lock Symbol is displayed | The Light Shield's Door not fully closed | Close the door until it clicks |
| | The DC Plug of Wall-Mount AC Power Supply is not firmly seated | Press the plug firmly into the jack |
| | The Wall-Mount AC Power Supply is not plugged into the wall | Plug it into the wall and verify proper voltage exists at the Wall Outlet |
| | Power Switch on the rear of the Interface Assembly is not turned on | Move the I/O Switch on the Interface Assembly to the I (ON) position |
| | PLC Cable is not fully plugged in on both ends | Firmly secure the PLC Cable on both ends. Verify the Connector Screws are engaged and fastened |
| | Either the long or short 37-Pin Cable is not fully plugged in on both ends | Firmly secure the 37-Pin Cable on both ends |
| The LED Array will not turn on and the Pad Lock Symbol is not displayed | Contact Dymax Customer Support or Application Engineering. Contact information is on page 4 in the "Where to Get Help" section. | |
| The LED Array will not turn on and the screen shows error E0010 | Connect the 37-pin cable directly between the controller and the LED Array. Turn on the unit. If any error occurs, contact Dymax Customer Support. Otherwise, note the firmware revision that appears on the LCD. If the firmware revision is not 3.00.00 or greater, contact Dymax Customer Support. | |

NOTE: If your unit displays an error message on the LCD screen, refer to the troubleshooting section of the BlueWave LED Flood System user guide for more information.

Spare Parts and Accessories

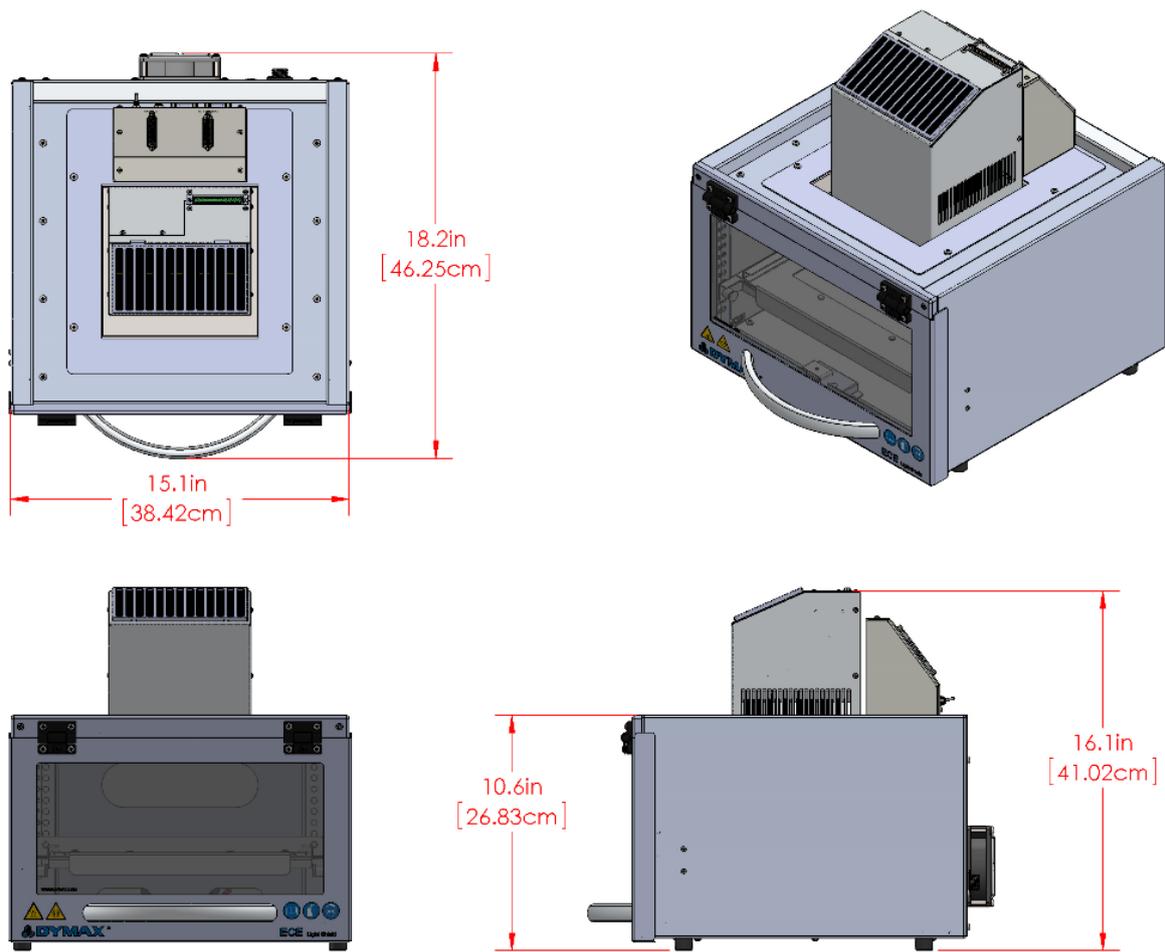
| Item | Part Number |
|--------------------------------------|-------------|
| Cables | |
| LFA Interface to Light Shield Cable | 41864 |
| PLC Interface Cable | 41865 |
| LFA Array Head to Light Shield Cable | 41869 |
| Radiometer | |
| ACCU-CAL™ 160-LED | 41585 |
| Misc. Replacement Parts | |
| Work Surface Tray Assembly | 40806 |
| 24V Wall Mount Power Supply Assembly | 41855 |



Specifications

| Property | Specification |
|--|--|
| Part Number | 41321 LED Light Shield System (Includes Light Shield & Interface Kit) 41578 Light Shield Interface Kit Only (For Retrofitting ECE Light Shield) |
| Compatible Dymax LED Flood Power Supply | 41276 LED Controller Power Supply |
| Compatible BlueWave® LED Flood Arrays | 41210 PrimeCure® – 385 nm Wavelength 41211 VisiCure® – 405 nm Wavelength 41212 RediCure® – 365 nm Wavelength |
| Work Area | 10" x 10" [25.4 cm x 25.4 cm] |
| Work Surface Load Capacity | Up to 5 lbs. [2.27 kg] |
| Overall Dimensions, W x D x H (Light Shield Only) | 15.1" x 18.2" x 10.6" [38.42 cm x 46.25 cm x 26.83 cm] |
| Overall Dimensions, W x D x H (with LED Flood Array) | 15.1" x 18.2" x 16.1" [38.42 cm x 46.25 cm x 41.02 cm] Need 6" [15.24 cm] clearance for cable on the top of LED flood array |
| Weight (Light Shield Only) | 12.75 lbs. [5.78 kg] |
| Weight (Interface Adapter Plate Only) | 1.705 lbs. [0.773 kg] |
| Unit Warranty | 1 year from purchase date |

Figure 12.
Dimensions - Light Shield with BlueWave LED Flood Array



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.

IMPORTANT NOTE: DYMAX CORPORATION RESERVES THE RIGHT TO INVALIDATE ANY WARRANTIES, EXPRESSED OR IMPLIED, DUE TO ANY REPAIRS PERFORMED OR ATTEMPTED ON DYMAX EQUIPMENT WITHOUT WRITTEN AUTHORIZATION FROM DYMAX. THOSE CORRECTIVE ACTIONS LISTED ABOVE ARE LIMITED TO THIS AUTHORIZATION.



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