UVCS V3.0 LED Conveyor

Modern, Easy-to-Use Conveyor for High-Speed and Precision Operations

- Compatible with BlueWave® FX-1250 LED systems
- 8" touch screen HMI
- 12" -wide belt
- Automated sensing for curable parts
- PLC activation and control
- Speed control from 1.3 ft/min to 25.6 ft/min
- Reversible conveyor operation
- Low noise and heat output
- Adjustable from 0.5" to 10"

The UVCS V3.0 LED is a modernized conveyor platform designed to operate with Dymax's latest high-power LED flood emitters. It combines a new industrial design with the latest features in curing system technology, providing ease of use and the highest quality of life for operators.

Each facet of the design was curated to maximize and enhance operations. It improves monitoring and facilitates control of the curing process directly from the conveyor by incorporating speed control, automatic part sensing, and control of the installed emitters. Additionally, the UVCS V3.0 LED was carefully developed for easy integration into larger manufacturing systems and processes.

The conveyor has a 12"-wide belt and offers multiple operation modes, ranging from an oven mode, which cures parts in a stationary belt position, to a high-speed conveying mode, which enables high throughput. The conveying direction can also be reversed.

A variety of mounting arrangements are available to ensure parts receive the necessary exposure and dose for curing. Arrangements include a single emitter, 1x2 and 1x3 line arrays, and 2x2 square arrays. Belt and Edge-Carry versions are available for different carrying methods.

A high-performance exhaust system keeps the chamber cool for temperature-sensitive parts, and an automatic part-sensing feature controls exposure time, ensuring the safety of the process.

To guarantee the safety of the operator, the system has full UV shielding and a noise-reducing enclosure that keeps hot exhaust out of the operating area. In addition, E-stops ensure the operator can safely and immediately halt the process in an emergency.

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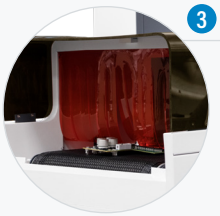
System Features & Benefits

1 High-Contrast Touch Screen HMI

- 8" touch screen
- Easy-to-use modern UI
- Includes storage and programming modes
- Controls emitters

2 Multiple Operation Modes

- Manual static mode to use conveyor as cure oven
- Manual moving for conveyor operations
- PLC mode with multichannel I/O for remote operation in larger processes



3 Part Sensing and Speed Control

- Accurate and precise control
- Eliminates risk of over or under curing
- Parts stay safely on belt when conveyor isn't operating

4 High-Power Exhaust System

- Keeps chamber cool for temperature-sensitive parts
- Keeps heat out of the room

5 Fully Enclosed Lap Installation

- Minimizes noise
- Reduces heat generation

6 Uses BlueWave® FX-1250 Emitters

- High-power LED lamps
- Instant on-off with no warm-up period
- More energy efficient

Operation Modes

Manual Static

In manual static mode, the part-detection sensor identifies when a part is in the conveyor. This prompts the belt to stop, and the LED emitter(s) to illuminate for a predetermined duration. After the time elapses, the part is sent out of the conveyor.

Manual Moving

In manual moving mode, the conveyor operates continuously at a set speed, controlled by time and delay settings for the start and stop of the emitter. This mode allows for a steady, uninterrupted flow of parts moving through the conveyor.

Program

The conveyor's HMI allows users to create and store up to 16 custom programs, each with unique parameters such as emitter intensity and conveyor speed. Saving and recalling custom programs enable easy and repeatable curing processes.

PLC

PLC mode enables the conveyor to be operated and controlled remotely, ideal for larger processes.

Figure 1. Operation Mode Selection

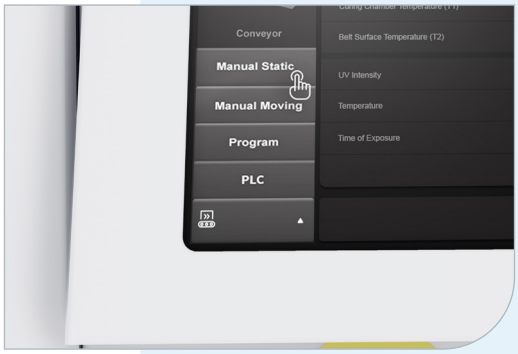
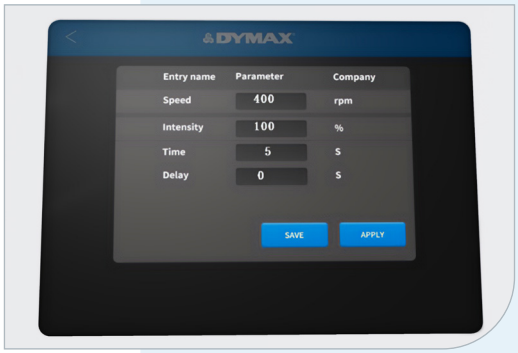


Figure 2. Parameter Setting



Carrying Methods

Dymax offers standard belt and edge-carry conveyors to facilitate the transport of different types of parts in curing processes.

Figure 3. Belt Version

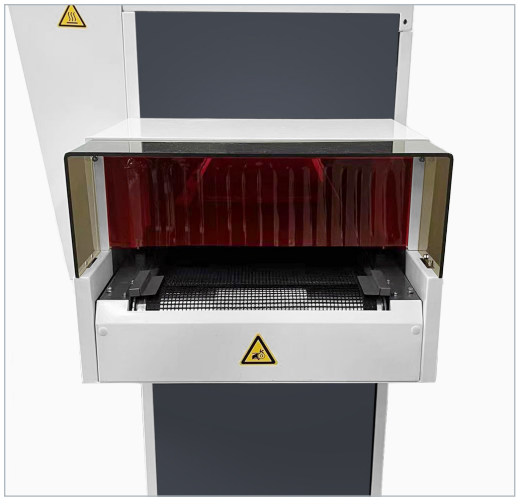
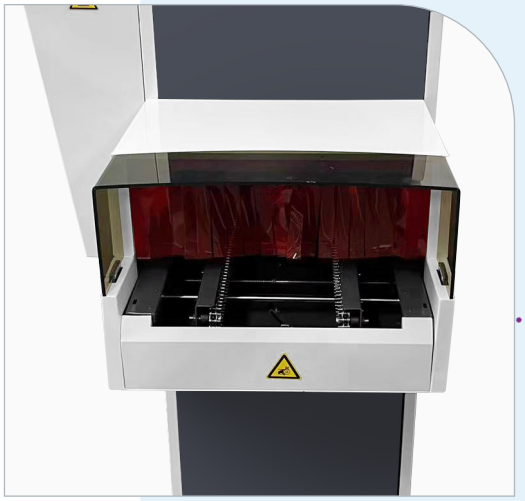
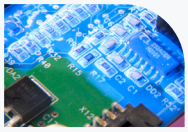
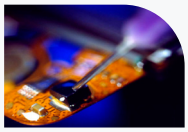
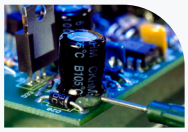


Figure 4. Edge-Carry Version



Compatible Materials & Applications

The UVCS V3.0 is ideally suited for a number of applications in the medical, consumer electronics, automotive, aerospace and defense, optical, and appliance industries. The chart below displays some of the materials commonly used in those industries and where the UVCS V3.0 can be considered as a curing system.

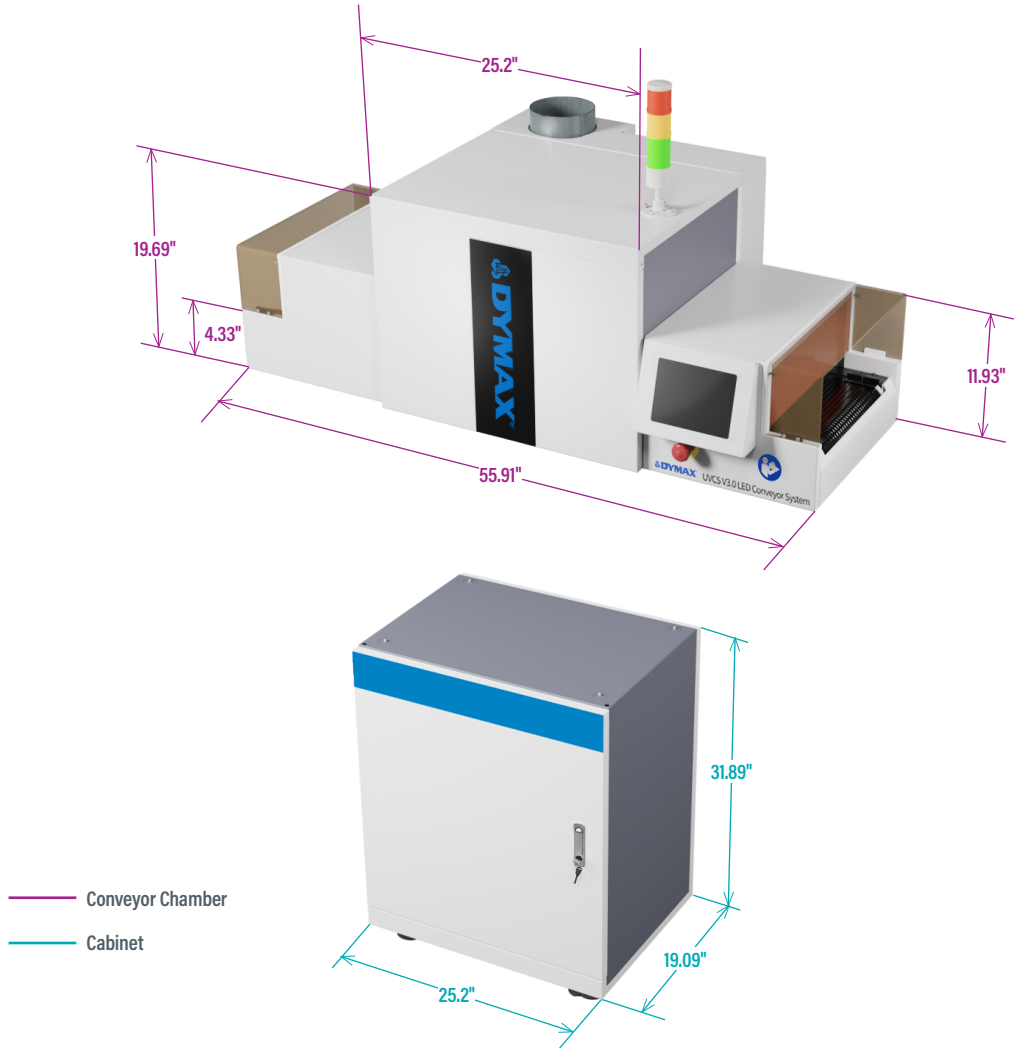
Materials		
Adhesives		Medical device (catheter, needle, tube set, facemask) assembly; glass bonding (stemware, furniture, etc.); automotive headlamp assemblies; camera module assemblies; appliance assembly; speaker assembly; optical display bonding
Conformal Coatings		Printed circuit board protection in aerospace avionics, automobiles, appliances, and consumer electronics; camera module assembly; electric vehicle battery management systems
Potting Compounds		Tamper proofing; potting electrical connectors, switches, and sensors; cable potting; medical potting*
Maskants		Surface protection for turbine blades and rotorcraft components during processing; protection for surfaces during metal finishing processes; protection of orthopedic parts during processing; protection of PCB components for consumer electronics, automotive electronics, avionics, and medical electronics*
Encapsulants		Chip encapsulation on PCBs used in automobiles, plane and helicopter control panels, consumer electronics, appliance, and medical diagnostic equipment*
Ruggedization Materials		Flex circuit reinforcement; wire tacking; ball grid array (BGA) ruggedization; video graphics array (VGA) ruggedization; shock absorption; underfill alternative*

* Materials cured with BlueWave® curing lamps need to be evaluated in customer applications to meet their performance requirements.

Specifications

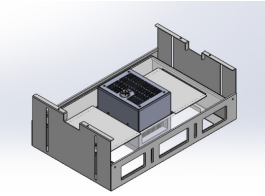
UVCS V3.0 LED Conveyor		
Conveyor Voltage	220V	110V
Amperage (With Emitters)	3A	1.5A
Belt Width	12" (30 cm)	
Belt Speed	1.3 ft/min ~ 25.6 ft/min, in 0.3 ft/min increments (0.4 m/min ~ 7.8 m/min, in 0.1 m/min increments)	
Load Capacity	Left to Right: 66.1 lbs (30 kg) max. Right to Left: 55.1 lbs (25 kg) max	
Emitter Adjustment Range	0.47"~6" (12-152 mm)	
Noise Level	75dBa (No emitter inside, fan speed 3000rpm)	
Operating Conditions	+10 to +40°C, 0-80% relative humidity, non-condensing	
Shortage Temperature	-20 to +50°C	
Weight (Conveyor Only)	197 lbs (90 kg)	
Crated Dimensions (L x W x H)	68" x 41" x 31" (1730 x 1046 x 795 mm)	
Regulatory	CE, RoHS, Machinery Directive, UKCA, China GB4793.1-2007	

Figure 2. UVCS V3.0 LED Dimensions

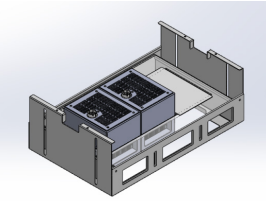


LED Flood Emitter Arrangements

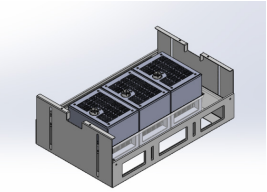
The UVCS V3.0 LED Conveyor can be used with one, two, or four BlueWave® FX-1250 LED flood emitters. When using two emitters, it is possible to mount them in a horizontal (H) or vertical (V) position as shown below. Each BlueWave® FX-1250 emitter provides high-intensity curing energy over a 5" x 5" (12.7 cm x 12.7 cm) curing area. 365 nm, 385 nm, and 405 nm wavelength configurations are available. The selection of the correct wavelength emitter will depend on the material being used and other application requirements. Contact Dymax Application Engineering for more information.



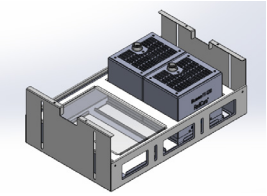
One Emitter, H



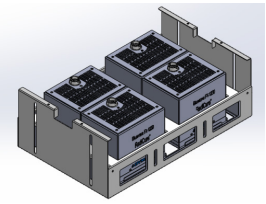
2x1 Line, H



3x1 Line, H



1x2 Line, V



2x2 Square, V

Emitter Performance

The BlueWave® FX-1250 LED flood emitters compatible with the UVCS V3.0 LED Conveyor offer exceptional uniformity across the whole curing area, without hotspots or significant loss of intensity at the edges.

Figure 5. BlueWave® FX-1250 Uniformity Chart

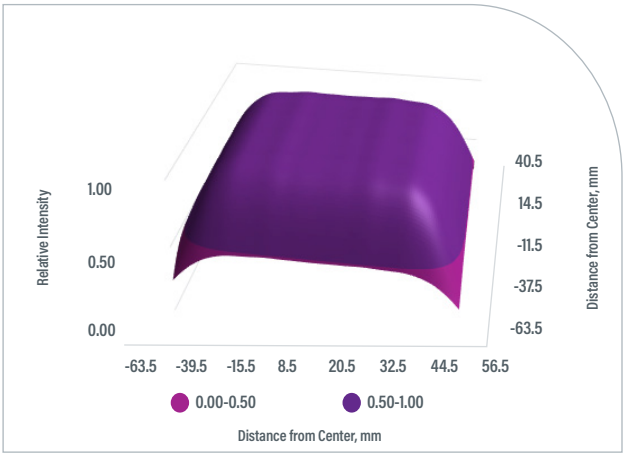
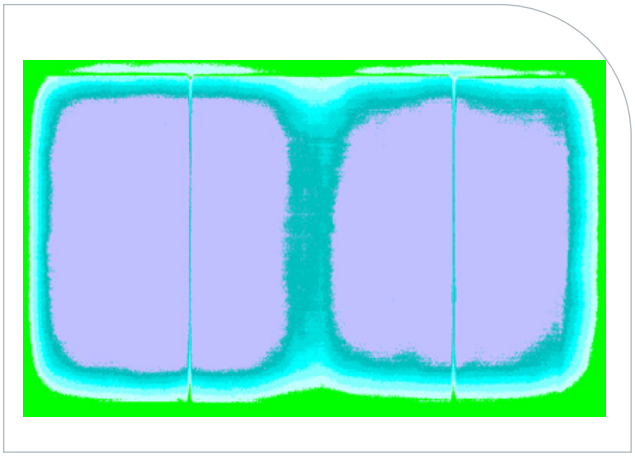


Figure 6. Uniformity of Two Emitters Side-by-Side



Ordering Information

The UVCS V3.0 LED system features multiple options for configuring a complete system. Base conveyors are provided ready for installation of the curing emitters in any desired configuration. Emitters, controllers and interconnect cables are sold separately. BlueWave® FX-1250 controllers are available in 1-channel and 2-channel variants. Emitters are available in 365, 385, and 405 nm wavelengths. One interconnect cable per emitter is necessary. Accessories can be added for more specific applications.

UVCS V3.0 LED Conveyor, Base	North American (110V)	Asian (220V)	European (220V)
Belt Version			
H-Cradle Configuration	88880	88884	88888
V-Cradle Configuration	88881	88885	88889
Edge-Carry Version*			
H-Cradle Configuration	-	-	-
V-Cradle Configuration	-	-	-
Accessories			
Cabinet	80020		
Emitter Cradles	80021 Horizontal Configuration 80022 Vertical Configuration		
BlueWave® FX-1250	**North American (110V)**	**Asian (220V)**	**No Power Cord****
Controllers			
1-Channel Controller	88846	88805	88850
2-Channel Controller	88847	88804	88851
Emitters			
RediCure® (365 nm)	88801		
PrimeCure® (385 nm)	88802		
VisiCure® (405 nm)	88803		
Complete System (1CH Controller, Interconnect Cable, 1X Emitter, Foot Switch, Power Cord)			
RediCure® (365 nm)	88848	88859	88856
PrimeCure® (385 nm)	88849	88860	88857
VisiCure® (405 nm)	88855	88861	88858
Accessories			
Interconnect Cables	84025 Type L & L 84026 Type I & L		

*Edge-Carry version not available at this time.

**For European customers, the appropriate power cord will be added.

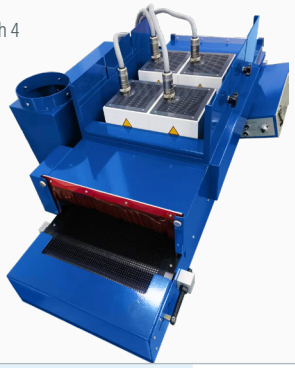
ACCU-CAL® 160 Radiometer

BlueWave® FX-1250 Emitter in Cradle

Connection Cables (Type I&L and L&L)

Custom SideCure Conveyor with 6 BlueWave® AX-550s

Custom UVCS V2.0 with 4 BlueWave® FX-1250s



Custom Conveyor Systems

Dymax understands customers may have unique requirements for their UV curing needs. For applications that require features beyond standard conveyor system offerings, Dymax offers customized conveyor systems tailored specifically to the needs of customers.

For additional information, please contact Dymax Equipment Services at equipmentservices@dymax.com

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