

DYMAX ASIA
PRODUCT SELECTOR GUIDE



Dymax Corporation, originally founded in 1980 as the American Chemical and Engineering Company, is a leading manufacturer of advanced light-curable adhesives, coatings, oligomers, light-curing equipment, and fluid dispense systems. We provide design engineers with the products and services they need to dramatically improve manufacturing efficiency and lower costs.

***Our Mission:** We make our customers more capable and efficient. Dymax solutions maximize capability and efficiency by increasing throughput, enhancing quality and performance, conserving energy, improving safety and reducing environmental impact.*

Dymax serves the needs of OEMs in the medical, electronics, optical, aerospace, automotive, appliance, metal finishing, and alternative energy markets. We sell our products directly and through a worldwide network of distributors and sales partners. Primary light-curable products include adhesives, coatings, encapsulants, gasketing resins, masking materials, and potting compounds.

We also manufacture a variety of conventional arc-bulb and LED light-curing equipment including spot lamps, flood lamps, conveyors, and radiometers. Automated and manual dispense systems are available for all types of low-to-medium viscosity fluid dispensing. Oligomers include multifunctional acrylates, polyether urethane acrylates and methacrylates, and polyester urethane acrylates and methacrylates.

Dymax employs more than 325 people worldwide and owns over 30 technology patents. Our corporate headquarters are in Torrington, Connecticut with additional facilities in Germany, China, Hong Kong, Korea, and Singapore.

Contents

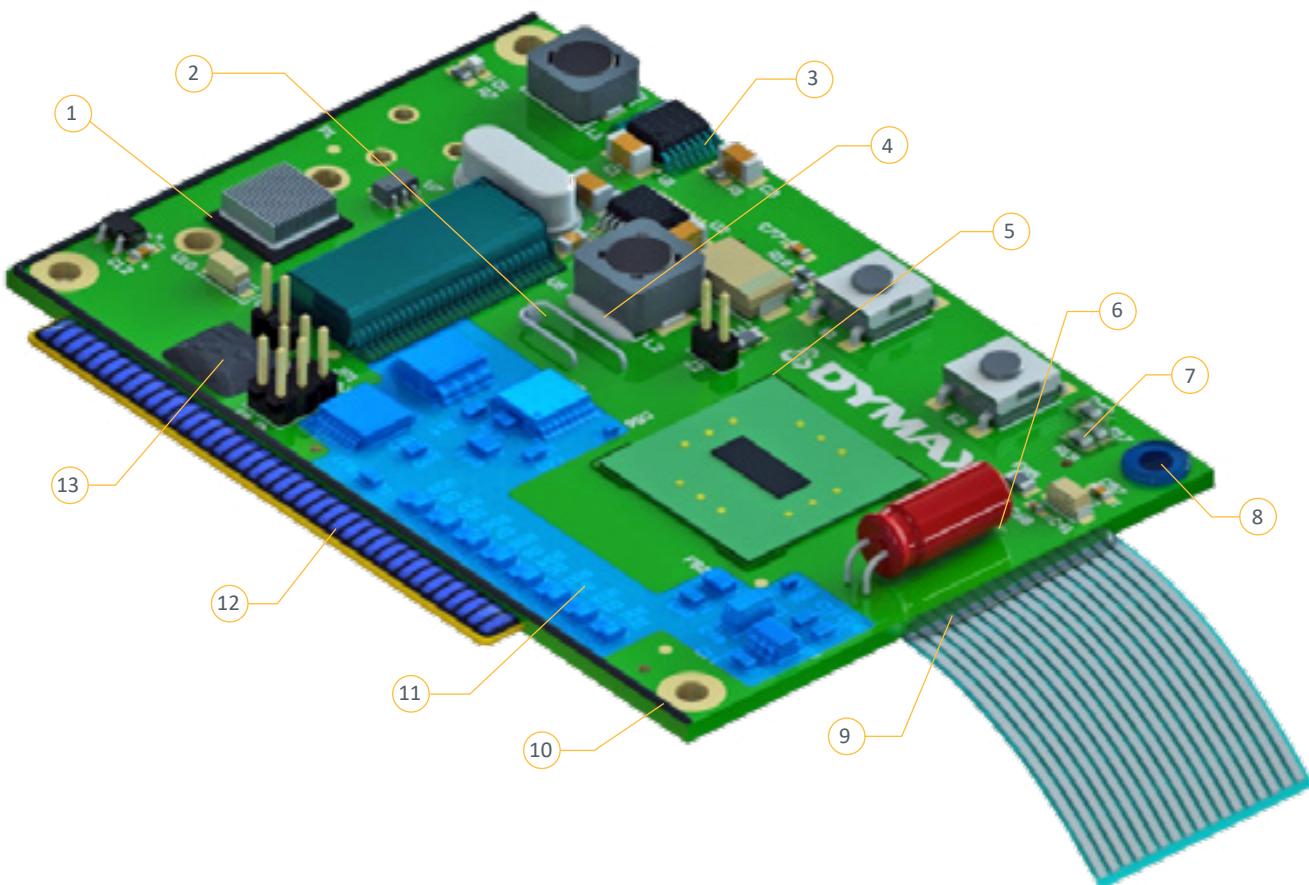
I. About Dymax	1
II. Contents	2
III. Adhesive	
Electronic Assembly Adhesive	3
LCMs for Electronic Assembly	
Materials for Consumer Wearable Device Assembly	
LCMs for Smart Connected Device Assembly	
LCMs for Electric Vehicle	
Optical Assembly Adhesive	13
Optical Assembly Adhesives	
Industrial Adhesive	14
Form-In-Place (FIP) and Cure-In-Place (CIP) Gaskets	
Dome Coatings	
Adhesives for Plastics, Glass and Metal	
SpeedMask® Masking Resins	
MD® Adhesive for Medical Device Assembly	19
Medical Electronic Coating	
Catheter Bonding Adhesive	
Respiratory Device Adhesive	
Needle Bonder	
Multipurpose Adhesive for Medical Device Assembly	
Materials for Medical Wearable Device Assembly	
IV. Equipment	
Dymax Equipment Overview	26
Curing System	27
Spot-Curing System	
Flood Curing System	
Conveyor System	
Radiometer	40
Dispensing Equipment	41
V. Adhesive Technology	43
VI. Reference Table	45

Electronic Assembly Material

Light-Curable Materials for Electronic Assembly

Dymax offers a broad range of light-curable materials for use in circuit protection and electronic assembly applications. These materials cure in seconds for faster processing and higher throughput and are available with many innovative and patented technologies that turn problems like shadow areas, cure confirmation, and difficult inspection into non-issues. The materials are electrically insulating, making them a perfect fit for conformal coating, encapsulation, bonding, thermal management, masking, and many other electronic assembly processes. Dymax light-curable materials have no solvents added and contain very low VOCs, eliminating the need for solvent handling, while enhancing worker safety and minimizing environmental impact. Most products are available in multiple-viscosity grades, so the material flow may be tailored to the individual application. IPC approved, MIL-I-46058C and UL listed self-extinguishing grades are available.

Typical Applications:



1. Thermal Interface	5. Ruggedization/ Cornerbond	8. Masking	12. Peelable Mask
2. Wire Tacking		9. Strain Relief	13. Glob Top Encapsulant
3. Encapsulation	6. Reinforcement	10. Cure-In-Place Gasket	
4. Staking	7. Encapsulation	11. Conformal Coating	

Conformal Coating

Reliable board protection in seconds

Product*	Description	Viscosity (cP)	Durometer Hardness	Modulus of Elasticity, MPa (psi)	Dielectric Strength (V/mil)	Approvals
9-20351-UR	<ul style="list-style-type: none"> Isocyanate free Easy one-pass coverage of high-profile leads and tall components without seeping into shadow areas Secondary heat cure for shadow areas 	10,000	D60	89.6 (13,000)	500	-
9-20557	<ul style="list-style-type: none"> Secondary heat cure for shadow areas Superior re-workability Chemical and thermal shock resistance 	2,300	D60	37.9 (5,500)	>1,500	<ul style="list-style-type: none"> MIL-I-46058C listed IPC-CC-830 approved UL 746 recognized UL 94V-I Flammability
9-20557-LV	<ul style="list-style-type: none"> Isocyanate free Medium viscosity for wetting components Low modulus for thermal cycling performance Secondary heat cure for shadow areas 	850	D70	310 (45,000)	>1,500	<ul style="list-style-type: none"> MIL-I-46058C listed IPC-CC-830 approved
9-20558-REV-A	<ul style="list-style-type: none"> High viscosity Thixotropic for minimal movement after dispense; Flexible Bonds well to FPCs 	24,000	D35	2.3 (340)	1,100	UL 94V-0 Flammability
984-LVUF	<ul style="list-style-type: none"> Isocyanate free Rigid for high chemical and abrasion resistance Secondary heat cure for shadow areas 	160	D85	724 (105,100)	1,800	<ul style="list-style-type: none"> MIL-I-46058 listed IPC-CC-830 approved UL 746 recognized UL 94V-0 Flammability
9451	<ul style="list-style-type: none"> True black coating ideal for covering sensitive information Secondary heat cure for shadow areas Optimized for single pass coating 	6,000	D80	717 (104,000)	1,200	UL 94V-0 Flammability
9452-FC	<ul style="list-style-type: none"> Extremely low viscosity for film/flow coating applications Very good thermal shock resistance LED curable Secondary heat cure for shadow areas Blue fluorescing 	20	D60	1,137 (165,000)	1,000	UL 94V-0 Flammability (Dymax internal tested)
9481-E	<ul style="list-style-type: none"> Room-temperature secondary moisture cure for shadow areas Highest chemical and abrasion resistance Low viscosity for thin coatings 	125	D75	150 (21,800)	>1,500	<ul style="list-style-type: none"> MIL-I-46058C listed IPC-CC-830B approved UL 746 recognized UL 94V-0 Flammability
9482	<ul style="list-style-type: none"> Secondary moisture cure for shadow areas Moisture and thermal resistant Superior re-workability Chemical and thermal shock resistance 	1,100	D70	275 (40,000)	1,100	<ul style="list-style-type: none"> MIL-I-46058C listed IPC-CC-830 approved UL 94V-0 Flammability UL 746 recognized
9483	<ul style="list-style-type: none"> Secondary moisture cure for shadow areas Excellent chemical resistance Thermal shock resistance Good adhesion to PCB 	750	D60	276 (40,000)	1,500	<ul style="list-style-type: none"> MIL-I-46058C IPC-CC-830B UL 94V-0 UL 746
9771	<ul style="list-style-type: none"> Low ionic content (Mil-Std 883 Method 5011 compliant) Meets ASTM E595 low outgassing Corrosion and temperature/humidity resistance Blue fluorescing 	780	D72	910.3 (132,026)	665	<ul style="list-style-type: none"> MIL-STD-883 Method 5011 UL 746E ASTM E595 UL 94V-0

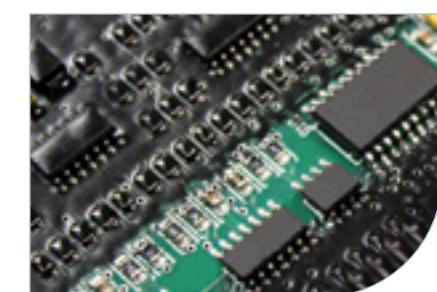
* Products noted in red are formulated with Ultra-Red® technology. Products noted in light blue fluoresce blue under 365nm 'black light' after cure.



Blue Fluorescing Coatings



Ultra-Red® Fluorescing Coatings



Black Conformal Coating

Ruggedization

Edgebond to reinforce the chip or the electronic part on PCB

Product*	Description	Viscosity (cP)	Durometer Hardness	Tensile at Break, MPa (psi)	Elongation at Break (%)
9309-SC	• Highly thixotropic • Formulated with See-Cure technology for easy visual confirmation of full cure	45,000	D57	22 (3,200)	140
9422-SC	• Highly thixotropic for optimal placement and wetting of components • Formulated with See-Cure technology for easy visual confirmation of full cure	38,000	D50	16 (2,300)	170

SpeedMask® Peelable Masks

Easy, residue-free removal when used on electronic parts

Product*	Description	Viscosity (cP)	Durometer Hardness	Tensile at Break, MPa (psi)	Modulus of Elasticity, MPa (psi)
9-20479-B-REV-A	• Blue in color for easy visual inspection • Compatible with gold and copper connector pins • High thixotropic for manual or automated dispensing • No nonreactive solvents	115,000	A75	3.37 (490)	4,13 (600)
9-318-F	• High thixotropic for manual or automated dispensing • Blue fluorescing for easy inspection • Silicone free • Very low VOCs	50,000	A55	3.0 (440)	2.0 (310)
9-7001	• Visible pink color in uncured state • Resistant to most solvent-based conformal coatings and primers • Compatible with gold and copper connector pins • Lower shrinkage	40,000	A70	3.8 (560)	1.9 (275)

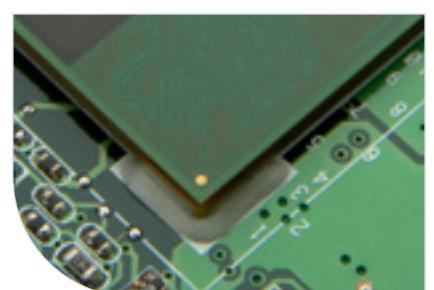
Acrylated Urethane Potting and Sealing

For shallow potting in 10-30 seconds or less – highest adhesion to substrates

Product*	Description and Applications	Recommended Substrates	UV Cure** Speed, (sec)/Depth (mm [in])	Durometer Hardness	Viscosity (cP)
921-T	• Connectors, thermal switches				3,000
921-VT	• Tamper proofing	ABS, Filled Nylon, Metal, Glass	30 / 6.4 [0.25]	D80	11,500
921-GEL	• Translucent bonds with high adhesion				25,000
9001-E-V3.1	• Sensors • Flexible • Excellent adhesion to engineering plastics	ABS, PC, PVC, FR-4, metals	15 / 6.4 [0.25]	D45	4,500
9037-F	• Secondary heat cure • Moisture and thermal resistant • Blue fluorescing	FR-4, Kapton®, Glass	-	D40	55,000

* Products noted in dark blue are formulated with See-Cure technology. Products noted in light blue fluoresce blue under 365nm 'black light' after cure.

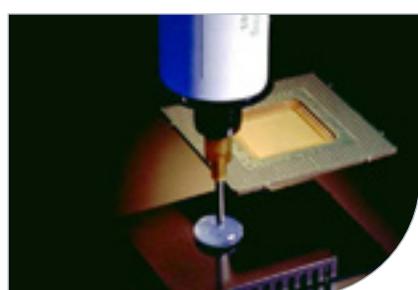
** UV cure speed depends on the intensity reaching the surface of the resin. Cure speed was measured at an intensity of 175 mW/cm².



Leadless Component Edgebonding



Peelable Mask



Bonding Heat Sinks

Wire Tacking

Multi-Cure® for wire tacking applied on wire bonding

Product*	Description	Nominal Viscosity (cP)	Durometer Hardness	Tensile at Break, MPa (psi)
9-911-REV-B	• On-demand cure for optimal positioning • Exposed areas cure in seconds for immediate strength • Secondary heat cure	25,000	D80	24 (3,500)

Thermal Interface Adhesives

Efficient thermal transfer between heat sinks and electronics

Product	Description	Applications	Thermal Conductivity	Nominal Viscosity (cP)
9-20801	• Light cure in seconds • Secondary activator or heat cure for shadowed areas • Highly thixotropic for optimal placement	• Mounting heat sinks on PCBs • LED heat	0.9 W/m*K	110,000

Chip Encapsulants and Wire Bonder

For superior protection on flexible and rigid platforms

Product*	Description	Application	Durometer Hardness	Viscosity (cP)	Elongation at Break (%)	Modulus of Elasticity, MPa (psi)
9001-E-V3.1	• UV/Visible light cure for fastest processing • Secondary heat cure for shadowed areas • Multiple viscosities available for optimal flow and coverage • Low modulus for wire bonding	• Chip-on-board • Chip-on-flex • Chip-on-glass • Wire bonding • Bare-die encapsulation	D45	4,500	150	17 (2,500)
9008	• Flexible • Highly moisture-resistant bonds to diverse surfaces such as polyimide, DAP, epoxy board, metal, PET • High adhesion, even at -40°C	• Chip-on-flex encapsulation • Flex circuit bonding and attachment to PCB and glass	D35	4,500	270	45 (6,500)
9014	• Secondary moisture cure • Shadow area performance • Moisture and thermal resistant • Blue fluorescing	• Chip-on-board • Chip-on-flex • Chip-on-glass • Wire bonding	A70	18,000	63	119 (17,300)
9037-F	• Secondary heat cure • Moisture and thermal resistant • Blue fluorescing	• Chip-on-board • Chip-on-flex • Chip-on-glass • Wire bonding	D40	55,000	110	6.2 (900)
9101	• UV/Visible light cure with secondary moisture cure	• Chip-on-board		7,000	38	17.5 (2,550)
9102	• Flexible	• Chip-on-flex		17,000	34	18.4 (2,670)
9103	• Moisture and thermal resistance • Optimized for single pass coating	• Chip-on-glass • Wire bonding		25,000	36	176 (2,560)
9-20558-REV-A	• Secondary heat cure • Thixotropic • High viscosity coating	• Conformal coating • Chip encapsulation • Wire bonding	D35	20,000	160	2.3 (340)

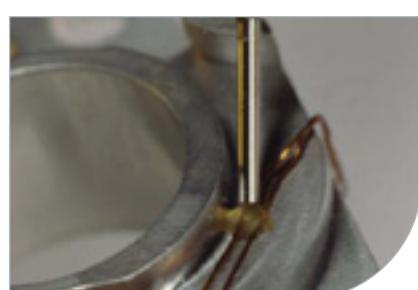
* Products noted in light blue fluoresce blue under 365nm 'black light' after cure.



Cable Potting



Smart Card Encapsulants



Wire Tacking

Materials for Consumer Wearable Device Assembly

Dymax 9200-W series adhesives are designed for the assembly of wearable consumer (non medical) electronic devices where materials of concern and proximity to skin matter. We have intentionally removed potential skin sensitizers like IBOA (isobornyl acrylate) or materials of concern to make our materials wearable-friendly without compromising trusted quality and high performance. This series includes materials for encapsulation, optical positioning, sealing, bonding, and general assembly.

Product	Features	Cure Mechanism	Substrates	Viscosity, cP	Durometer Hardness	Water Absorption, % (25°C, 24h)	Tensile at Break, MPa [psi]	Modulus of Elasticity, MPa [psi]	Halogen Free?
9201-W	IBOA-free encapsulant / Moisture, thermal, and impact resistance / Ideal for chip on board, chip on flex, or wire bond encapsulation / Excellent component protection against chemical or environmental exposure	UV broad spectrum / UV LED 365 nm / Moisture cure	ABS, FR4, PA, PI, PET, TPU	32,000	D20-D40	0.13	11.1 [1,614]	322 [46,790]	
9202-W	IBOA-free positioning adhesive / Low shrinkage and out-gassing / Moisture resistance / Low CTE / Designed for optical alignment and lens positioning	UV broad spectrum / UV LED 405 nm	PC, PET, PMMA, Glass, SS	260,000	D88	0.14	35.9 [5,200]	4,214 [611,150]	
9204-W*	Low stress plastic bonder / Low shrinkage / High viscosity / Ideal for bonding and sealing	UV broad spectrum	LCP, PC, PS, Silicone	30,000	A85	11.13	0.079 [11.36]	4.88 [709]	
9210-W	IBOA-free encapsulant / Moisture resistance / Great reliability testing performance / ideal for component encapsulation, FPC reinforcement, & selective protection	UV broad spectrum / Moisture cure	FR4, PA, PI	29,000	D55-D75	0.13	15.3 [2,222]	561 [81,369]	
9211-W	IBOA-free plastic bonder / Low stress / Ideal for CCM barrel and holder assembly / Adheres to a wide range of plastics	UV broad spectrum	ABS, FR4, LCP, PA6, PC, PET, PETG, PI, PU, TPU	25,000	D63	2.98	16.4 [2,378]	700 [101,540]	

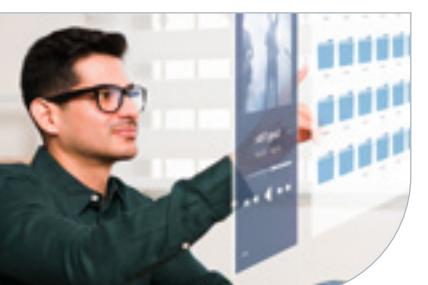
* Available for sale in Asia only.



Fitness Tracker



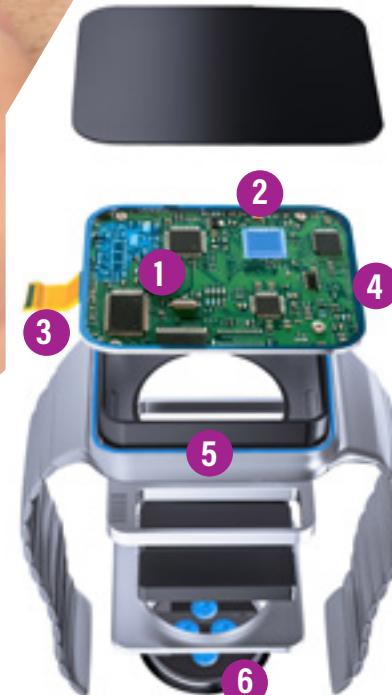
Earbuds



Smart Glasses



Smart Watch



9200-W Series Adhesives Application Areas

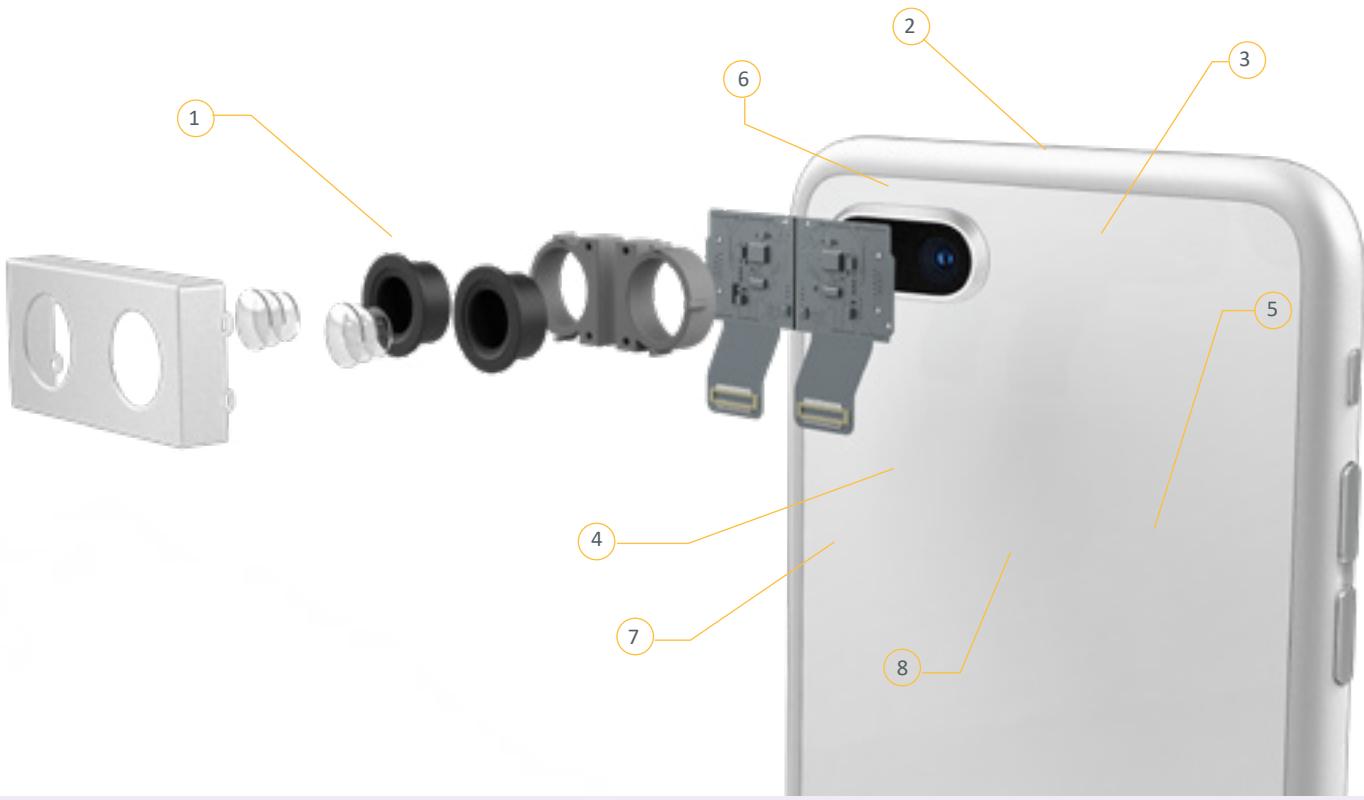
1. Selective coating or environmental protection
2. Component encapsulation
3. FPC reinforcement
4. Assembly & sealing enclosures
5. Structural bonding
6. Sensor encapsulation

Applicable Devices

- VR goggles & smart glasses
- Headbands
- Headphones & earbuds
- Smartwatches
- Smart garments
- Biomechanical shoe inserts
- Smart rings
- Fitness belts & trackers

Light-Curable Materials for Smart Connected Device Assembly

Typical Applications:



1. Dual Camera Module Assembly

2. Micro Speaker Assembly

3. Flex Circuit Bonding

4. IC- Ruggedization (Underfill Alternative)

5. Masking for Protection During Processing

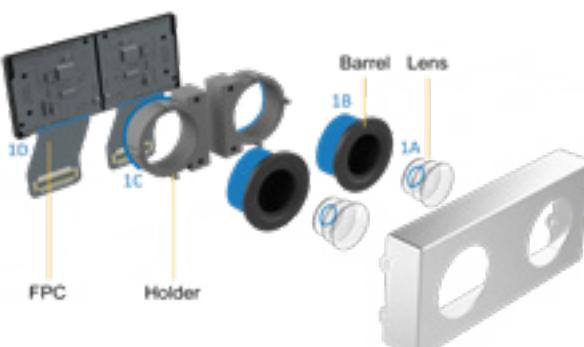
6. Tamper Proofing

7. PCB - Conformal Coating

8. PCB - Masking

Dual Camera Module Applications

1A - Bonding the Camera Lenses



1B - Fixturing Lens Barrel to the Lens Holder

1C - Bonding Lens Holders to the PCB
(Active Alignment)

1D - Reinforcing Flexible PCBs

Camera Module Assembly

Product*	Light Cure	Moisture Cure	Heat Cure	Features	Substrates	Viscosity (cP)	Tensile at Break, MPa (psi)	Modulus of Elasticity, MPa (psi)
1A - Bonding the Camera Lenses								
9951-LR	●			• Low reflection • Easy to dispense • Room temperature storage	PC	19,000	48 (6,900)	760 (110,000)
9951-LR-G	●			• Ultra-low reflection surface • Room temperature storage	PC, ABS	63,000	30 (4,300)	1,200 (172,360)
OP-4-20655-GEL	●			• Moisture resistant • Thermal resistant	Glass, AL, ABS, PC	156,092	1.94 (281)	17.26 (2,504)
1B - Fixturing the Camera Lens Barrel to the Lens Holder								
3094-GEL-REV-A	●			• Fast curing • Low shrinkage and stress	LCP, PC, PU, PS	30,000	12.4 (1,800)	179 (26,000)
3094-T-REV-A	●				LCP, PC, PU, PS	11,750	14 (2,000)	698 (101,300)
3094-T-TF	●				PA, PC, PMMA, PS	6,500	14.89 (2,160)	482 (69,944)
1C - Bonding Lens Holders to the PCB (Active Alignment)								
9900-AA	●		●	• Moisture and thermal resistant • Flexible • Cured in 3-5 sec	LCP, PCB, FPC, Ceramic	72,500	57.7 (8,373)	1,962 (284,578)
9906-AA	●		●	• Moisture and thermal resistant • 1-5°C cold shipping and storage	LCP, PCB, FPC, PPS, Metal	86,000	36.7 (5,328)	3,983 (578,000)
1D - Flexible PCB Reinforcement								
9008	●			• Remains flexible to -40°C • Moisture resistant	Kapton®, DAP, Glass, Epoxy Board, Metal	4,500	10 (1,500)	45 (6,500)
9101	●	●		• Flexible • Moisture and thermal resistant	FR4, Kapton®, Glass	7,000	5.06 (735)	17.5 (2,550)
Other Applications								
6-621-GEL	●		●	• Hard and clear bonds	Metals, Glass, PA, Ceramic	25,000	28 (4,000)	730 (106,000)
9001-E-V3.0	●		●	• Low ionic • Good electrical properties	PC, Flex Circuit	400	5.17 (750)	17.2 (2,500)
9309-SC	●			• Adhesion to various PCB substrates • Formulated with See-Cure color-change technology	Leadframe, Ceramic, PCB, Silicon	45,000	22 (3,200)	163 (23,800)

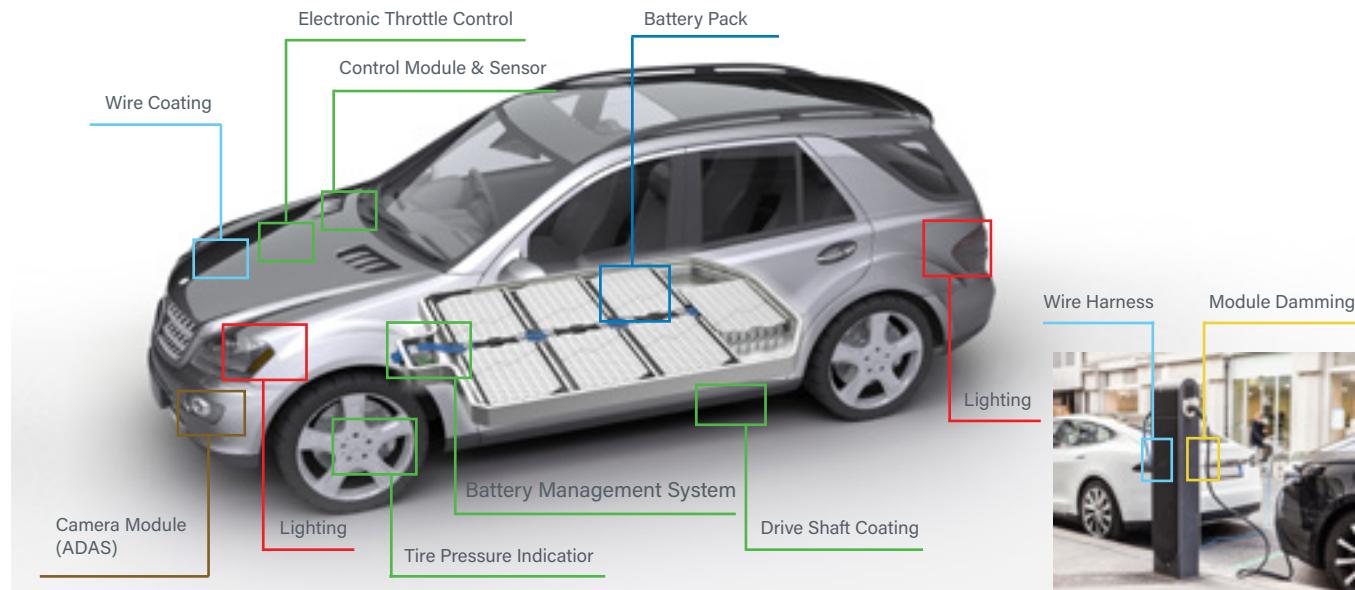
Micro Speaker Assembly

Product*	Description	Viscosity (cP)	Shore Hardness	Tensile at Break, MPa (psi)	Modulus of Elasticity, MPa (psi)
3013	• UV/Visible light cure • Fluoresces blue for easy inspection • Clear, moisture resistant • Good adhesion to basket and housing	150	D70	18 (2,400)	350 (50,000)
3013-GEL		27,000		19.9 (2,885)	697 (101,172)
3083 Series	• UV/Visible light cure • Excellent adhesion to PET and R-PET	550 / 3,500	A65	6.2 (900)	4.1 (400)
9-20763	• UV/Visible light cure • Black color • High adhesion to voice coil and membranes	13,000	D60	37 (5,300)	14 (21,000)
9671	• UV/Visible light cure • Bright red color • High adhesion to LCP, voice coil • Thick viscosity for easy application	45,000	D55	15.8 (2,100)	179.2 (26,000)

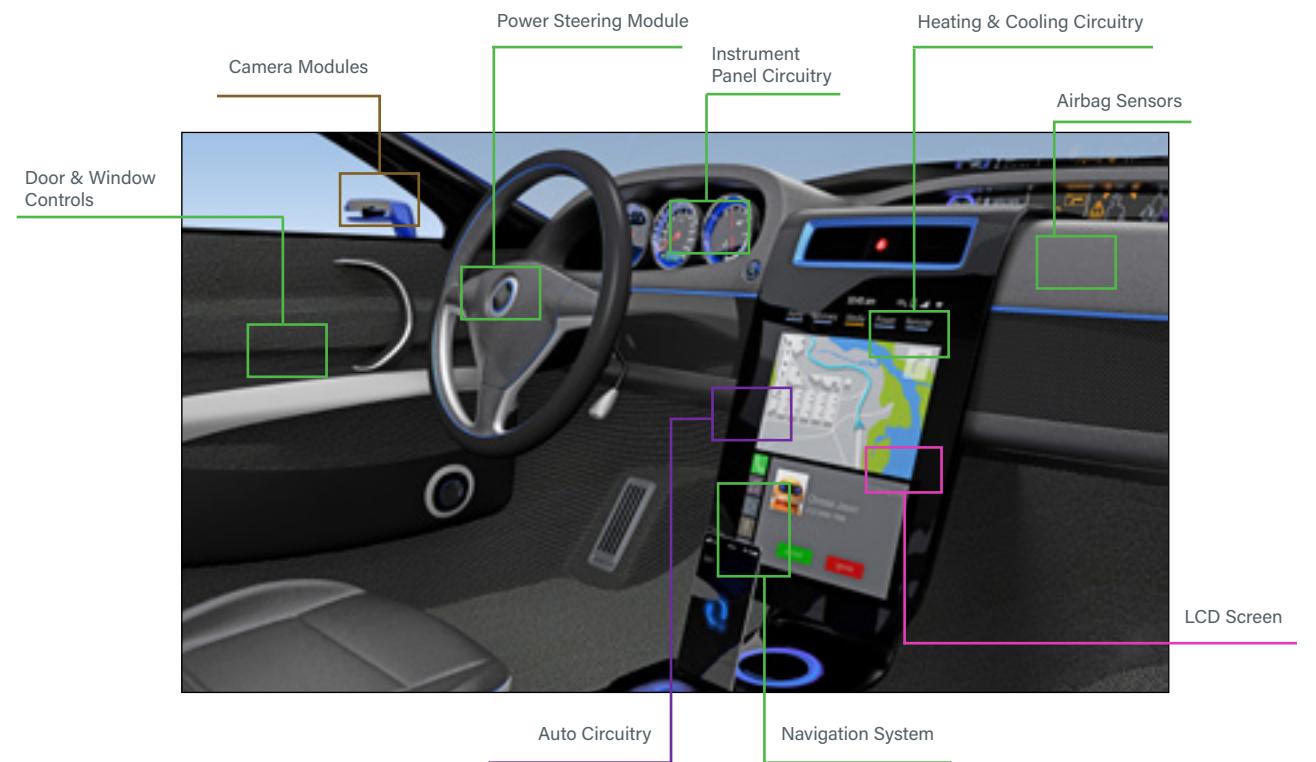
* Products noted in dark blue are formulated with See-Cure technology. Products noted in light blue fluoresce blue under 365nm 'black light' after cure.

Light-Curable Materials for Electric Vehicles

The automotive industry is evolving at a faster rate than ever before. Today's complex designs, innovative materials, and increased focus on the environment can present manufacturers with many challenges. Whatever demands or challenges you face, Dymax is here to work with you and provide the solutions you need for a more efficient process and higher quality end product.



Product*	Light Cure	Heat Cure	Moisture Cure	Nominal Viscosity (cP)	Durometer Hardness	Tensile at Break, MPa (psi)	Modulus, MPa (psi)	Features
Materials for Battery Pack Assemblies								
CN-3103-B	•			6,914	D77	28 (4,059)	1,020 (147,973)	For battery bonding application / Excellent adhesion to various plastics and metal
3022-GEL	•			50,000	D80	47 (6,800)	830 (120,000)	For solder joint application / Tack-free / Thermal shock resistance
9422-T-SC	•			8,000	D50	16 (2,300)	98 (14,000)	For solder joint application / Blue to clear upon exposure to UV/visible light / Thixotropic for minimized movement after dispense
Conformal Coating (UL 94V-0 Flammability)								
9451	•	•		6,000	D80	42.7 (6,200)	717 (10,400)	True black coating / Tamper evident security applications
984-LVUF	•	•		160	D85	55.8 (8,100)	724 (105,100)	Thin / Chemical and abrasion resistance / Isocyanate free
9481-E	•		•	125	D75	11 (1,600)	150 (21,800)	Dual-Cure for shadow areas / Low viscosity / Excellent chemical resistance / Rigid
9482	•		•	1,100	D70	15.8 (2,300)	275 (40,000)	Dual-Cure for shadow areas / Blue fluorescing / Flexible
9483	•		•	750	D60	16.2 (2,350)	276 (40,000)	Excellent chemical resistance / Thermal shock resistance / Good adhesion to PCB
Ruggedizing/ Edgebond Materials for BGSS & VGAs								
9309-SC	•		•	45,000	D57	22 (3,200)	163 (23,800)	Formulated with See-Cure technology / Highly thixotropic
9422-SC	•		•	38,000	D50	16 (2,300)	98 (14,000)	Formulated with See-Cure technology / Reduces stress on board components / Highly thixotropic for minimal movement after dispense
Materials for Speaker Applications								
9-20763	•			1,100	D60	37 (5,300)	140 (21,000)	Black color / High adhesion to voice coil and membranes
9671	•			45,000	D55	15.8 (2,100)	179.2 (26,000)	Bright red color / High adhesion to LCP, voice coil / Thick viscosity for easy application



Product*	Light Cure	Heat Cure	Moisture Cure	Nominal Viscosity (cP)	Durometer Hardness	Tensile at Break, MPa (psi)	Modulus, MPa (psi)	Features
Materials for Camera Module Assemblies								
3094-GEL-REV-A	•			30,000	D67	12.4 (1,800)	179 (26,000)	Fast curing / Low shrinkage and stress
3094-T-REV-A	•			11,750	D65	14 (2,000)	698 (101,300)	Fast curing / Low shrinkage and stress
9900-AA	•			72,500	D92	57.7 (8,373)	1,962 (284,578)	Moisture and thermal resistant / Flexible / Cured in 3-5 sec
9951-LR Series	•			19,000 / 63,000	D75	48 (6,900) / 30 (4,300)	760 (110,000) / 1,200 (172,360)	Low reflection / Easy to dispense / Room temperature storage
Gaskets								
GA-140 Series	•			39,000 / 35,000	A35	1.5 (21) / 1.3 (200)	0.71 (104)	Low outgassing / Excellent tear resistance
Encapsulants for Printed Circuit Boards and Wire Coatings								
9-20558-REV-A	•	•		20,000	D35	6.2 (900)	2.3 (340)	Formulated with See-Cure technology / Highly thixotropic
9014	•		•	18,000	A70	8.2 (1,200)	119 (17,300)	Flexible / Cures with UV light but includes a secondary moisture cure function for shadow areas
9037-F	•	•		55,000	D40	5.8 (850)	6.2 (900)	Flexible / Moisture and thermal resistance
9100 Series	•		•	7,000 / 17,000 / 25,000	D30-D50	5.06 (735) / 4.8 (703) / 4.9 (718)	175 (2,550) / 18.4 (2,670) / 17.6 (2,560)	Dual-Cure for shadow areas / Flexible / Moisture and thermal resistance
Potting Materials								
9-20557 Series	•	•		2,300 / 850	D60 / D70	15.8 (2,300) / 21.7 (3,150)	37.9 (5,500) / 310 (45,000)	Low modulus for enhanced thermal cycling performance / Isocyanate free / One part - no mixing or dilution required
9008	•			4,500	D35	10 (1,500)	45 (6,500)	Also for encapsulant / Remains flexible at low temperatures / Highly moisture resistant

* Products noted in dark blue are formulated with See-Cure technology. Products noted in light blue fluoresce blue under 365nm 'black light' after cure.

Optical Assembly Adhesives

Dymax light curable adhesives for optical assembly and lens bonding include grades for VCSEL potting, lens fixturing, lens laminating, lens positioning, and fiber-optic assembly. Dymax optically clear adhesives feature low-shrink, low-stress characteristics, are single component, and exhibit gap filling to 1/4".

OP-series UV/Visible light curable adhesives are ideal for optical assembly applications such as lens and optical mounting and the attachment of ceramic, glass, quartz, metal, and plastic components.

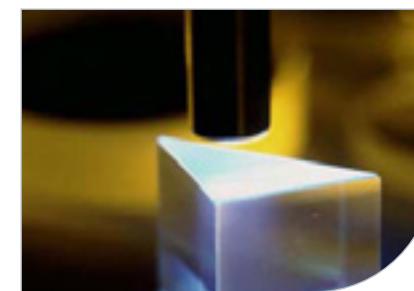
Product	Nominal Viscosity (cP)	Durometer Hardness	Refractive Index (%)	Linear Shrinkage (%)	Features
OP-4-20641	23,000	D55	1.50	0.9	<ul style="list-style-type: none"> Very soft with low modulus Good for bonding and laminating, fiber optic couplings, gratings, lens, and prisms
OP-4-20655	800	00-40	1.48	1.9	<ul style="list-style-type: none"> Low stress for cold thermal cycling Good for bonding and laminating, fiber optic couplings, gratings, lens, and prisms Low Tg Very soft with low modulus
OP-18	48,000	A75	N/A	1.9	<ul style="list-style-type: none"> Translucent yellow; blue fluorescing Peelable; for temporary bonding or masking
OP-20	1,000	D60	1.50	2.7	<ul style="list-style-type: none"> Optically clear Flexible; high strength Ideal for lens bonding, fixturing, and tacking Broad temperature range
OP-21	450	D55	1.51	2.7	<ul style="list-style-type: none"> Optically clear Flexible; high strength Ideal for lens bonding, fixturing, and tacking Broad temperature range
OP-24-REV-B	800	D80	1.50	0.39	<ul style="list-style-type: none"> Opaque Moisture resistant Tack and bond with UV, heat or activator curing Bonds to phenolic, ABS, glass, and metal
OP-29	2,500	D60	1.50	0.79	<ul style="list-style-type: none"> Multi-purpose Optically clear Low stress optical adhesives Bonds glass, metal, and plastics
OP-29-GEL	20,000	D65	1.50	0.79	
OP-30	400	D45	1.51	2.2	<ul style="list-style-type: none"> Multi-purpose Optically clear Resilient No Yellowing Pass thermal shock, vibration, and impact Bonds glass, metal, and plastics, ideal for large or small areas
OP-32	4,500	D45	1.51	2.3	
OP-52	5,000	D85	1.52	1.9	<ul style="list-style-type: none"> Multi-purpose optical adhesive No yellowing Bonds glass, metal, and plastics
OP-54	105	D85	1.48	1.8	<ul style="list-style-type: none"> Good adhesion of glass to AL, ABS and PC Moisture resistant Thermal resistant
OP-56	1,900	D80	1.52	0.8	<ul style="list-style-type: none"> Low shrinkage and outgassing High Tg and optical transmission Excellent thermal cycling Ideal for bonding fiber optic couplings and prisms
OP-60	150,000	D80	-	0.8	<ul style="list-style-type: none"> Heat cycle stable Opaque Low moisture absorption No movement during cure or thermal excursions Complete cure in seconds
OP-81-LS	60,000	D90	-	1.5	<ul style="list-style-type: none"> Off white/opaque epoxy Low temp heat cure that can be used as the sole cure mechanism or secondary for shadow areas; Low shrinkage Low CTE; 1-5°C storage



Diode Curing



Lens Laminating



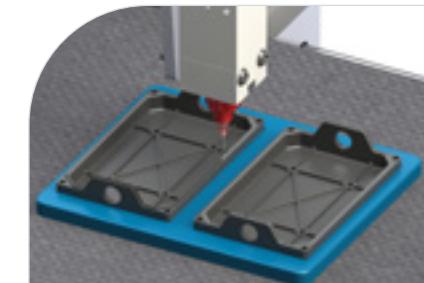
Prism Curing

Industrial Adhesives

Form-In-Place (FIP) and Cure-In-Place (CIP) Gaskets

FIP/CIP gaskets have fast cure, low compression set, and a wide range of properties which makes them the lowest per-unit cost choice for many gasketing applications.

Product	Nominal Viscosity (cP)	Durometer Hardness	Compression Set % (after 85°C, 22HR)	Elongation at Break (%)	Features
GA-103	60,000	00-75	14.9	63	Excellent heat, water and chemical resistance / Self-leveling liquid / Soft
GA-108	45,000	00-70	41.1	220	Soft and tacky / Good adhesion to Nylon and metals
GA-112	40,000	A50	15.0	360	Soft and tack free / Moisture resistant / Low outgassing / Abrasion resistant / Adhesion to metals
GA-120	1,000	00-50	0.17	110	Flexible / Soft and tacky / Self-leveling viscosity / Greatest deflection
GA-140	39,000	A35	14.9	167	Tack free / Low outgassing / Excellent tear resistance
GA-142	40,000	00-50	31.0	330	Soft, sticky and flexible / Excellent adhesion to nylon, plastics and metals
GA-142-F	40,000	00-60	34.0	240	Blue Fluorescing / Soft, sticky, and flexible / Good adhesion to Nylon, plastics, and metals
GA-201	55,000	A35	26.0	165	Tack free after proper cure / Moisture and chemical resistant / Adhesion to plastics



Compatible with Automated Dispensing System



Clear FIP Gasket



Gasket on Plastic Cover

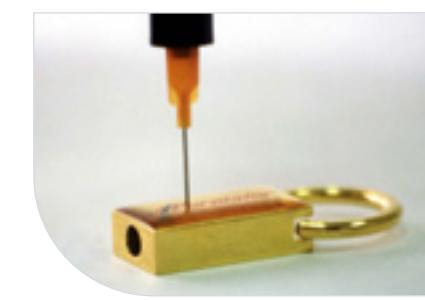
Dome Coatings

Light-curable dome and decorative coatings are ideal for coating labels, badges, nametags, pens, key chains, and decals.

Product	Nominal Viscosity (cP)	Durometer Hardness	Features
4-20508	735	D80	Rigid and scratch resistant / Suitable for indoor and some outdoor applications
4-20577	1,500	A70	Clear / Soft / Flexible / Springs back when dented
4-20806	1,750	A80	Non-yellowing / Fast curing/ Flexible and rigid substrate applications / Suitable for indoor and some outdoor applications



Knife Handle Coating



Keychain Dome Coating



Name Plating Coating

Adhesives for Plastics, Glass & Metal Products

Product*	UV (280-395 nm)	LED (385 nm)	Visible Light (400-450 nm)	Nominal Viscosity (cP)	Durometer Hardness	Tensile at Break (psi)	Elongation at Break (%)	Features	ABS	CAP	HDPE/LOPE	PA	PC	PC/ABS	PC/PTG	PCTG	PEEK	PEI	PET	PETG	PI	PMMA	PP	PP0	PS	PU	PVC (RIGID)	PVC (FLEXIBLE)	SAN	TPU	FR-4	GL	STAINLESS STEEL 13	STAINLESS STEEL 304
Adhesives for Plastics																																		
3013	●			●	150					●	●	ST		●					●	●	●	●	●	●	●	●	●	●	●	●				
3013-GEL	●			●	27,000					●	●	ST		●					●	●	●	●	●	●	●	●	●	●	●	●	●			
3025	●			●	300					●	●	ST	●	●																				
3041	●			●	450					●	●	ST																						
3043	●			●	550					●	●	ST																						
3043-T	●			●	3,500					●	●	ST																						
3054	●			●	41,000					●	●	ST																						
3094-GEL-REV-A	●	●	●	●	30,000					●	●	ST	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
3099 Series	●			●	10,000/ 15,000					●	●	ST	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
3220-SC	●			●	450					●	●	ST	●	●																		●		
3220-GEL-SC	●			●	38,000					●	●	ST	●	●																	●			
3221-SC	●			●	300					●	●	ST	●	●																		●		
3223-SC	●			●	150					●	●	ST	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
3225-T-SC	●			●	9,500					●	●	ST	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
3-20809	●			●	16,000					●	●	ST	●	●																	●			
3401	●	●	●	●	150	D55-75	4,400	13	Excellent adhesion to PC and ABS / Moisture and thermal resistance / Secondary moisture cure / Blue fluorescing for easy inspection	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				

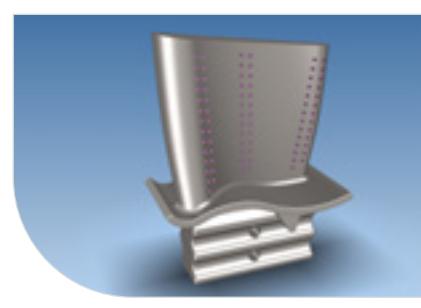
Product*	UV (280-395 nm)	LED (385 nm)	Visible Light (400-450 nm)	Heat	Activator	Nominal Viscosity (cP)	Durometer Hardness	Tensile at Break, (psi)	Elongation at Break (%)	Features	Glass	Ceramic	Aluminum 113	Aluminum 2024	Brass	Copper	C.R. Steel	Stainless Steel 13	Stainless Steel 304	ABS	Cap	HDPE/LOPE	PA	PC	PC/ABS	PC/PTG	PCTG	PEEK	PEI	PET	PETG	PI	PMMA	PP	PP0	PS	PU	PVC (RIGID)	PVC (FLEXIBLE)	SAN	TPU	FR-4
Adhesives for Glass																																										
429 Series	●	●				2,500/ 5,000/ 20,000	D60	3,000/ 3,140	120	LED curable / Optically clear structural adhesive for large areas / High impact / Resistant to yellowing and thermal shock	●	●	○	●		○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	●							
431	●	●				500	D70	3,900	61	LED curable / High-temperature and moisture-resistant glass-to-metal bonder / Low shrinkage	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
4-20418 Series	●	●	●	●		450/ 35,000	D60	3,000/ 1,650	200/ 130	Fast cure / Excellent adhesion / One component	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
Adhesives for Metal and Glass																																										
6-621-VT	●	●	●	●	●	14,000	D80	4,000	20	LED curable / Adhesive for phenolic and filled plastics, glass, and metal / Hard and clear bonds	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
6-630-T	●	●	●	●	●	6,000	D70	4,100	130	LED curable / Clear bonds / Flexible / High-temperature resistance / Moisture resistant	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
846-GEL				●	Thixotropic Gel	N/A	2,800	N/A		Low-volatility, high-strength structural adhesive / Bonds dissimilar substrates / Tough durable bonds / Good thermal shock characteristics / Use with 501-E-REV-A or 535-A-REV-A activators	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●										
7501-T-UR-SC	●	●	●			6,500	D79	2,600	125	Fast rate of cure / Encompass technology / Deeper section cure																																
Activators																																										
501-E-REV-A	●	●	●	●	●	30-40	N/A	N/A	N/A	Activator for fast, reliable structural bonding / Fixtures in 10-20 seconds / No solvent flash-off time / No VOCs and ODCs																																
535-A-REV-A	●	●																																								

SpeedMask® Masking Resins

SpeedMask® light-curable, removable masking resins^a are ideal for temporary surface protection and cavity sealing for metal finishing processes. The resins can be moved with no residue through peeling, burn-off, or dissolving in water.

Product*	UV (280-395 nm)	Visible Light (400-450 nm)	Features	Removal Options	Nominal Viscosity, cP (20 rpm)	Uncured Appearance	Durometer Hardness	Elongation at Break, %	Modulus of Elasticity, MPa (psi)	Chemical Processes		Coatings		Media Finishing		Manufacturing Aids		PCB Processes				
										Anodizing	Plating	Acid Stripping	Chemical Etching	Air Plasma Spray	HVOF	Painting & Powder Coatings	Grid Blasting	Shot Peening	Vibratory Finishing	Machining	Buffing/Polishing	Airflow Testing
706	•		High adhesion / Excellent surface and cavity protection / Hard & durable / Chemical resistance	Incineration	42,500	Colorless Translucent Gel	D75	5.5	965 (140,000)	20	•	•					•					
707	•		Prevents beam impingement / Secondary heat cure for shadowed areas / Reduces spatter / Hard and durable	Incineration	500	Colorless Translucent Liquid	D70	71	270 (39,000)	1												•
718	•	•	High adhesion / Resists flame-spray processes / Excellent surface and cavity protection during APS and HVOF	Incineration	46,000	Opaque Gel	D80	3	965 (140,000)	20		•	○									
724	•	•	Good surface protection / Fast curing / Easy peel off	Incineration	70,000	Colorless Translucent Gel	D40	200	2.7 (390)	15				•	•	•	•	•	•	•	•	•
726-SC	•	•	See-Cure technology transitions resin from blue to pink upon sufficient exposure to light energy / Excellent surface protection / Easy peel off after heat exposure / Spray or dip	Peelable	52,000	Blue Translucent Gel	D40	160	3.9 (560)	8	•	•	•	•	•	•	•	•	•			
728-G	•	•	High adhesion / Excellent surface protection to aggressive chemical processes / Easy removal after hot-water soak / Sprayable	Peelable or Incineration	25,000	Green / Blue Translucent Gel	D55	265	55 (8,024)	10	•	•	•					•	•	•	•	
728-G-LV	•	•	High adhesion / Excellent surface protection and chemical resistance / Easy peel-off after hot-water soak / Spray and dip	Peelable or Incineration	2,500	Green / Blue Transparent Gel	D60	260	293 (42,500)	17	•	•	•	•				•	•	•	•	•
729	•		High adhesion / Resists acids and alkalis / Hard and durable / Spray or dip	Incineration	20,000	Clear Translucent Gel	D75	19	289 (42,000)	30	•	•										
730-BT	•	•	Excellent chemical resistance / Spray or dip / Trimmable after cure/ Easy peel off / ISO 10933-5	Peelable or Incineration	22,000	Blue Translucent Gel	D35	300	3.4 (500)	4	•	•	•	•	•	•	•	•	•	•	•	•
731-REV-A	•	•	Excellent surface protection / Sprayable / Easy peel after hot-water soak / High adhesion / Fluoresces yellow	Peelable or Incineration	18,000	Yellow Translucent Gel	D55	300	28 (4,200)	70	•	•						•	•	•		
733-G-REV-A	•	•	Excellent surface protection and chemical resistance / Sprayable / Fast curing / Easy peel off	Peelable or Incineration	25,000	Opaque	D50	294	193 (27,960)	10				•	○	•	•	•				
734-BT	•	•	Excellent surface protection and chemical resistance / Moderate adhesion / Spray or dip / Trimmable after cure	Peelable or Incineration	24,000	Blue Translucent Gel	D35	235	35 (5,044)	5	•	•	•	•	•	•	•	•	•	•	•	•
740-BT	•	•	Low-medium adhesion / Compatible with MEK-based and heat-cure paint	Peelable or Incineration	45,000	Blue Translucent Gel	A65	203	2.42 (350)	35							•					
750	•	•	High adhesion / Cures tack free / Hard and durable / Resilient to blast media	Peelable or Incineration	30,000	Translucent Pink Gel	A50	140	2.5 (370)	45				•	○	•	•	•	•	•		
750-SC	•	•	Turns purple to pink after sufficient exposure to UV/Visible light / Sprayable / High adhesion	Peelable or Incineration	30,000	Translucent Purple Gel	A85	124	4.5 (690)	10	•	•		•	○	•	•					
758-H	•	•	Secondary heat cure / Low shrinkage / Trimmable / Sprayable / Optimized to cure with 405 nm LED	Peelable or Incineration	11,500	Red Opaque Gel	A80	140	2.3 (330)	45	•	•						•				
7601	•	•	Color change upon cure / Moderate adhesion / Blue fluorescing / Resistant to strong acids and etchants / Trimmable	Peelable	25,000	Translucent Pink Gel	A70	180	48.2 (7,000)	3	•	•	•									
7701	•	•	For metal finishing / Flexible after heat exposure / Low-medium adhesion / Spray or dip	Peelable	45,000	Colorless Translucent Gel	D30	225	7.6 (1,100)	1	•	•					•	•	•			
9-20479-B-REV-A	•	•	Compatible with gold and copper pins / Exceptionally thixotropic for manual or automated dispense	Peelable	115,000	Blue Translucent Gel	A75	140	4.13 (600)	10												•
9-318-F	•	•	Medium adhesion / Blue fluorescing / Highly thixotropic for manual or automated dispense	Peelable	50,000	Translucent Yellow	A55	130	2.0 (310)	2												•
9-7001	•	•	Compatible with gold and copper pins / Lower shrinkage / Non-slumping / Resistant to most solvent-based conformal coatings and primers	Peelable	40,000	Pink Translucent Gel in Uncured State	A70	180	1.9 (275)	3												•
<small>* Products noted in green are in green color. Products noted in dark blue are formulated with See-Cure technology. Products noted in light blue fluoresce blue under 365nm 'black light' after cure. ** Cure time based upon Dymax 5000-EC Light-Curing Flood Lamp (250 mW/cm²). ** Decorative Etching</small>																						
<small>●=Recommended Adhesive ○=Limited Applications</small>																						

* Products noted in green are in green color. Products noted in dark blue are formulated with See-Cure technology. Products noted in light blue fluoresce blue under 365nm 'black light' after cure.
** Cure time based upon Dymax 5000-EC Light-Curing Flood Lamp (250 mW/cm²). ** Decorative Etching



Plasma Spray



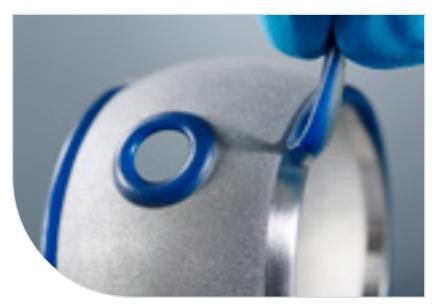
Turbine Blades



CNC Machining



Peelable Mask



Grid Blast Mask



Plating

MD® Adhesives for Medical Device Assembly

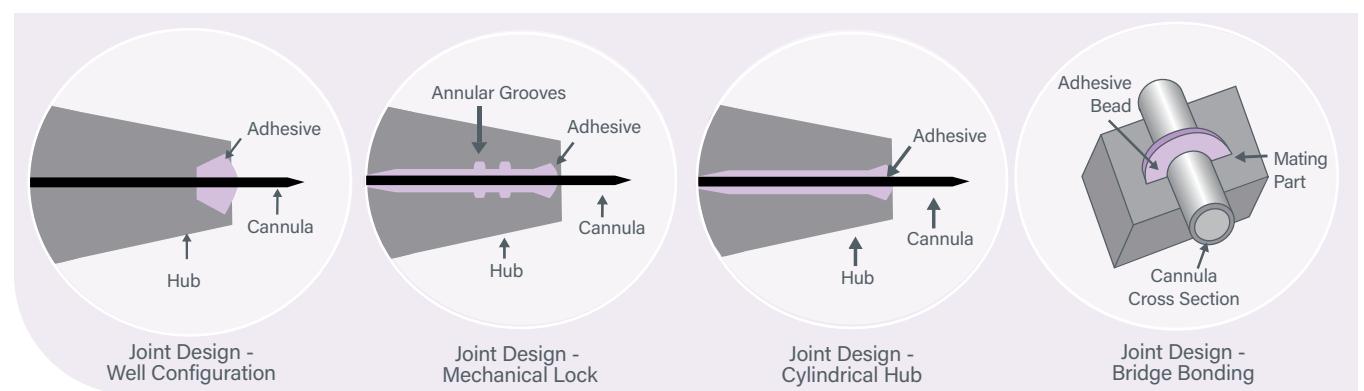
Product*	UV (280-395 nm)	LED (385 nm)	Visible Light (400-450 nm)	Applications	Nominal Viscosity, cP	Durometer Hardness	Tensile at Break, MPa (psi)	Elongation at Break, %	Features
Needle Bonder, Multipurpose Adhesive for Medical Device Assembly									
1040-M	●		●	Assemblies requiring repeat sterilization / RFID and sensor potting, encapsulation / Housing assemblies / Medical PCB coating	750	D60	2,700	8	Survives repeated autoclave cycles / Low water absorption
1120-M-UR	●	●	●	Tube sets / Reservoirs / Port fittings / Drug delivery devices / Pumps	250	D70	1,800	22	Ultra-Red® fluorescing / Adhesion to a variety of plastics / Moisture resistant
1121-M	●		●	Tube sets / Pumps / Single-use devices / Plastic fittings / Blood therapy	450	D65	2,300	225	Blue fluorescing / Self leveling / Moisture resistant
1128-A-M	●		●	Needle bonding / Metal bonding / Heat exchanger assembly	600	D80	4,300	13	Blue fluorescing / Secondary heat cure / Impact resistant
1180-M	●	●	●	Lumen sealing / Balloon bonding / Tube joining / Catheter bonding / Needle bonding / Reservoirs	150	D70	2,500	66	Blue fluorescing / General purpose adhesives / Very flexible / Low stress / Low water absorption / Moisture resistant
1187-M	●		●	Tube sets / Reservoirs / Disposable devices / Pumps / Port fittings	450	D60	2,900	200	Blue fluorescing / Flexible plastic bonder / Moisture resistant
1193-M-SV05	●		●	Needle bonding / Heat exchanger assembly	2,800	D70	2,600	180	Blue fluorescing / Moisture resistant / Narrow viscosity range for batch-to-batch consistency
1201-M series	●		●	Tube sets / Reservoirs / Catheters	600 / 8,000	D60 / D55	2,680 / 2,000	215 / 170	See-Cure technology / Flexible
1204-M-SC	●		●	Tube sets & fittings/ Face masks / Tracheal tubes	12,000	A60	1,000	380	See-Cure technology / Very flexible / Low shrinkage
1209-M-UR-SC	●	●	●	Bonding assemblies / Tube sets / Needle bonding / Potting	1,200	D60	2,275	170	Encompass® technology / Self-leveling newtonian formulation
1402-M	●	●	●	Needle bonding / Plastic disposable items	150	D70	3,200	160	Blue fluorescing / Low viscosity for improved wetting
1403-M	●	●	●	Needle bonding / Medical device assembly /Disposable applications	450	D62	2,500	80	Blue fluorescing / Low viscosity for easy dispense / Tack-free cure / Moisture resistant
1404-M-UR	●	●	●	Needle bonding / Tube sets / Reservoirs / Plastic disposable items	6,000	D65	3,400	150	Ultra-Red® fluorescing / Low wicking / Higher viscosity
1405M-T-UR-SC	●	●	●	Needle bonding / Winged infusion sets / Dialyzers	150	D70	2,700	150	Encompass® technology / Deeper section cure / Low viscosity for tight tolerance applications
1406-M	●	●	●	Thin needle bonding / Syringe/needle assemblies / Single use assemblies	150	D70	2,200	120	Blue fluorescing / Resists yellowing / Low viscosity for improved wetting / Superior water resistance
1501-M-UR	●	●	●	Transparent or half-transparent medical devices (black exceptional)	275	D70	2,600	80	Shadow cure technology / Ultra-Red® fluorescing / Light sensitive / Cure with low energy / Moisture resistant

* Products noted in red are formulated with Ultra-Red® technology.

Products noted in dark blue are formulated with See-Cure technology.

Products noted in light blue fluoresce blue under 365nm 'black light' after cure.

Products noted in orange are formulated with Encompass® technology.

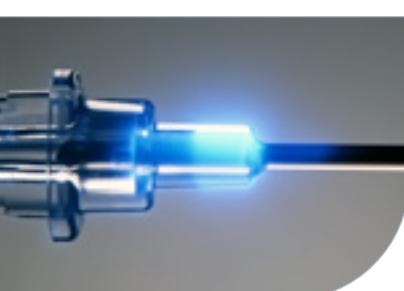
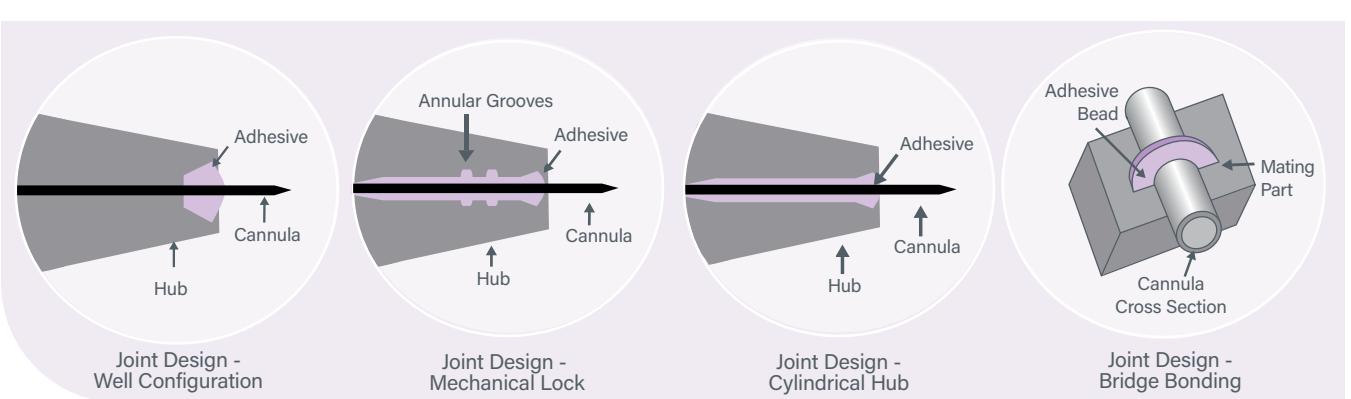


Product \ Substrate	ABS	CAP	NITI	PA	PC	PC/PC/TG	PCTG	PEBA	PEEK	PEI	PET	PETG	PI	PMMA	PP	PPO	PS	PSU	PU	PVC	SAN	TPU	EVA	GL	SS	Al	Others		
Needle Bonder, Multipurpose Adhesive for Medical Device Assembly																													
1040-M	●	○	●		●		●				○		●		●						●	○		●	●	●	BR		
1120-M-UR	●	●	●			●															●	●							
1121-M	●				●	●		○	○	○	●		●							●	●	●	●						
1128-A-M	●		●					●	●																			CU, CRS	
1180-M	●				●	●					●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●			
1187-M	●		●				●				●	●									●								
1193-M-SV05	●		●					○	●											●	ST	○	●			●	●		
1201-M series	●		●				●	●			●	●								○		○	●						
1204-M-SC	●		●								●	●	○							○		○	●	●	●	●	SEBS		
1209-M-UR-SC	●											●								●		●	●	●					
1402-M	●	●	●																	●	ST		●						
1403-M	●																			●	ST	●							
1403-M	●																			●	ST	●							
1404-M-UR	●																			●	ST	●							
1405M-T-UR-SC	●																			●		●	●	●	●	●	●		
1406-M	●	●	●																	●	ST	●							PE (ST)
1501-M-UR	●	●	●										○	●	ST	○	●	●	●	●	●	●	●	●	●	●	●		

●=Recommended Adhesive

○=Limited Applications

ST=Surface treatment required in addition to adhesive (plasma, corona, UV, chemical, etc.)



Product*	UV (280-395 nm)	LED (385 nm)	Visible light (400-450 nm)	Applications	Nominal Viscosity, cP	Durometer Hardness	Tensile at Break, MPa (psi)	Elongation at Break, %	Features
Respiratory Device Adhesive									
104-MSK	●		●	Oxygen masks / Anesthesia masks / Nasal pillow masks / Laryngeal masks	500	D60	2,400	220	Flexible
108-MSK	●	●	●	Facemasks / Breathing circuits / Tube sets & fittings / Resuscitator bags	600	D75	3,700	70	Blue fluorescing / PVC adhesion
111-MSK	●	●	●	Oxygen masks / Anesthesia masks / Nasal pillow masks / Laryngeal masks	250	D55	1,100	400	Flexible / Low water absorption
Catheter Bonding Adhesive									
201-CTH-T	●	●	●	Lumen sealing / Balloon bonding / Splicing / tube joining / Sheave sealing	6,500	D30	1,200	280	Low durometer adhesive for plastics and metals / Very flexible / Low stress / Low water absorption
203A-CTH-F	●		●	Guidewire / Lumen sealing / Sensor / Attachment	600	D80	4,300	13	Blue fluorescing / Secondary heat cure / Impact resistant
204-CTH-F	●	●	●	Balloon to lumen / Hub to lumen / Thermistor potting / Marker band adhesive	500	D58	2,500	200	Blue fluorescing / Moisture resistant / Flexible / Adhesives for Nylon and PEBA
206-CTH	●	●	●	Lumen sealing / Balloon bonding / Tube joining / Catheter bonding / Needle bonding / Reservoirs	150	D70	2,500	90	Blue fluorescing / General purpose adhesives / Very flexible / Low stress / Low water absorption / Moisture resistant
208-CTH-F	●	●	●	Balloon to lumen / Hub to lumen / Thermistor bonding	225	D55	1,300	250	Blue fluorescing / No added solvents / Flexible
209-CTH	●		●	Balloon to lumen / Hypotube to hub / Manifold to lumen	300	D70	2,500	120	Blue fluorescing / No added solvents / Flexible
211-CTH-SC	●	●	●	Y-Connector assembly / Catheter bonding / Connectors to tubing	450	D70	2,400	100	See-Cure technology / Tack free cure in as little as 4s / Adhesion to wide variety of plastics
212-CTH-UR-SC	●	●	●	Catheter assembly / Marker band adhesive	10,000	D62	2,600	185	Encompass® technology / Ideal for Nylon 12 applications
215-CTH-SV01-UR-SC	●	●	●	Balloon to lumen / Hub to lumen / Manifold bond joints	1,100	D55	1,600	300	Encompass® technology / Adhesion to a range of difficult to bond substrates
250-CTH	●	●	●	Catheter assembly / Endoscope assembly / Lens positioning	58,000	D90	7,500	2	Heat curing at 80-85°C / Volume shrinkage at 1.3% / Semi-opaque white color
Medical Electronics Coating									
1072-M	●	●	●	Microfluidics / Lab-on-chip / Reservoir Assembly / Medical Potting	1,100	A70	800	550	Resilient / Moisture resistant
1181-M	●	●	●	Reservoir Assembly / Transducer / Medical Potting	5,750	D80	8,100	17	Blue fluorescing / Fast curing
1184-M-B	●	●	●	Electronic coating on medical boards / Concealing components / Visible colored coating	6,000	D80	8,000	7	Visible blue-black color / Secondary heat cure
1184-M-T-R	●	●	●	Coating of medical electronic / Sealing	4,000	D80	8,600	5	Red color for visual or automated inspection
1901-M	●	●	●	Coating of medical micro circuit / Sealing / Moisture barrier	3,000	A67	290	45	Flame retardant / No added solvents / Repairable / Suitable for flexible or rigid substrates / Secondary heat cure capable

* Products noted in red are formulated with Ultra-Red® technology.

Products noted in light blue fluoresce blue under 365nm 'black light' after cure.

Products noted in dark blue are formulated with See-Cure technology.

Products noted in orange are formulated with Encompass® technology.



Catheter Bonding



Catheter System



Facemask

Product \ Substrate	ABS	CAP	NI71	PA	PC	PCTG	PEBA	PEEK	PEI	PET	PETG	PI	PMMA	PP	PP0	PS	PSU	PU	PVC	SAN	TPU	FR-4	GL	SS	AL	Others
Respiratory Device Adhesive																										
104-MSK	●				●	●			○	●	○					○		●	●	●						
108-MSK	●	●			●		●	●									●		●	●						
111-MSK	●			●								●	●			●		●	●	●	●				SEBS	
Catheter Bonding Adhesive																										
201-CTH-T	●		●	○	●		○		●	○	○	●	●	●	○	●	○	○	●	○	●	○	○	○	HPBE, LDPE (ST)	
203A-CTH-F	●		●	○	●		○		●								●	○	●	●	●	●	●	●	●	CU
204-CTH-F	●		●		●		○			○		●	○			●	●	●	●	●	●	●	●	●	●	
206-CTH	●			●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	HPBE, LDPE (ST), CER	
208-CTH	●			●	●	●	○		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
209-CTH	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
211-CTH-SC	●	●	●	●	●	●																				
212-CTH-UR-SC	●	●	●	●	●	●																				PL
215-CTH-SV01-UR-SC	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Nylon 12	
250-CTH	●	●	●		●	●	ST		●	○	●	○				●		●	●	●	●	●	●	●	●	
Medical Electronics Coating																										
1072-M	●	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	COC, COP, EVA, CER	
1181-M	●		●			●																				
1184-M-B	●	●	●																							
1184-M-T-R	●	●	●																							
1901-M	●	●	●																							

●=Recommended Adhesive

○=Limited Applications

ST=Surface treatment required in addition to adhesive (plasma, corona, UV, chemical, etc.)



Blood Oxygenator



Hearing Aid Coating



Insulin Pump

Materials for Medical Wearable Device Assembly

Product	Features	Cure Mechanism	Nominal Viscosity, cP	Viscosity, cP	Water Absorption, % (25°C, 24h)	Tensile at Break, MPa [psi]	Modulus of Elasticity, MPa [psi]	10933 Cytotoxicity	10933 Irritation	10933 Sensitization	Formulated Without BOA	Formulated Without TPO
2022-MW	Ideal for general bonding, encapsulation, and coating / Low water absorption	UV broad spectrum / UV LED 365 nm	750	D60	0.5	19.3 [2,80]	620.5 [90,000]	●	●	●	●	●
2101-MW-UR	Ultra-Red® fluorescing / Ideal for general bonding of medical wearables / Adhesion to a variety of substrates including PC, PVC, TPU	UV broad spectrum / UV LED 405 nm	5,500	D77	2.1	24.8 [3,600]	1,020.4 [148,000]	●	●	●	●	●
2103-MW-UR	Ultra-Red® fluorescing / Ideal for general bonding / Moisture resistant / Adhesion to a variety of substrates including PC, PVC, TPU	UV broad spectrum / UV LED 405 nm	5,500	D70	0.1	13.8 [2,000]	448.2 [65,000]	●	●	●	●	●
1172-M-UR	Ultra-Red® fluorescing / Ideal for general bonding / Low water absorption	UV broad spectrum / UV LED 385 nm	1,100	A70	1.0	4.1 [600]	8.8 [1,270]	●				
1405M-T-UR-SC	Encompass® technology / Ideal for general bonding, encapsulation, and coating	UV broad spectrum / UV LED 385 & 405 nm	7,000	D70	3.1	23 [3,400]	379 [55,000]	●				
1901-M	Ideal for encapsulation and coating / Low water absorption / Flame retardant (meets UL 94 V-0) / Repairable / Suitable for both flexible and rigid substrates	UV broad spectrum / UV LED 385 nm; Heat cure	3,000	A67	1.5	2 [290]	3 [480]	●				

* Products noted in red are formulated with Ultra-Red® technology.

Products noted in orange are formulated with Encompass® technology.

Product	ABS acrylonitrile-butadiene-styrene	CAP cellulose acetate propionate	COC/COCP cyclo olefin copolymer	PA polyamide	PC polycarbonate	PCTG poly(cyclohexylene dimethylene terephthalate)/glycol	PEBA polyether block amide	PEEK polyetheretherketone	PEI polyetherimide	PET poly(ethylene terephthalate)	PEG poly(ethylene terephthalate) glycol	PI polyimide	PMMA poly(methyl methacrylate)	PPG poly(phenylene oxide)	PS polystyrene	PSU polysulfone	PU polyurethane	PVC poly(vinyl chloride)	SAN styrene-acrylonitrile	TPU thermoplastic polyurethane	CER ceramic	GL glass; borosilicate, quartz, mica	FR4 glass-reinforced epoxy resin laminate	AL aluminum	BR brass	SS stainless steel	PCB printed circuit board	
2022-MW	●	○			●	●				○	●	○							●	○		●	○					
2101-MW-UR	●				●	●				○	●								●	●	●	○	○					
2103-MW-UR	●				●		○												●		●					●		
1172-M-UR	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
1405M-T-UR-SC	●			○	●	●				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
1901-M		●		○						○									●	○			●					

●=Recommended Adhesive

○=Limited Applications

ST=Surface treatment required in addition to adhesive (plasma, corona, UV, chemical, etc.)

Individual Product Data Sheets (PDS) list complete test data, with copies of test reports available upon request.



Applicable Devices

- Medical smart monitoring devices
- Patient monitoring devices
- Large volume injectors
- Vital sign monitoring devices
- Hearing aids
- Continuous glucose monitors
- Diabetes care devices
- Pain management devices
- Sleep monitoring devices

Materials for HLC™ (Hybrid Light-Curable) Technology

A revolutionary patented adhesive platform, HLC™ (Hybrid Light-Curable) technology, combines the best qualities of anionic and free radical chemistries. HLC materials exhibit the exceptional physical and performance properties of Dymax standard light-curable materials and the rapid on-contact cure of anionics. The incorporation of contact curing allows these materials to be used with a larger range of substrates and provides curing in dark areas not reachable by light.

HLC materials are ideal for medical assemblies where dark areas are a concern, including bonding applications on catheters, tube sets, diagnostic and therapeutic devices, auto-injectors, and endoscopes.

Key Attributes

- Fast, tack-free cure with UV light - broad spectrum or LED
- Cures with very low intensity (~20 mW/cm²)
- On-contact dark area cure capability
- Improved physical properties with low to no blooming after proper light cure
- Heat and humidity resistance
- Wicking-grade viscosity available for fast flow into tight-fitting assemblies
- ISO 10993 compliant
- Cold ship/storage

Product	Features & Applications	Recommended Substrates	Nominal Viscosity, cP	Durometer Hardness	Modulus of Elasticity, MPa (psi)	Tensile at Break, MPa [psi]	Elongation at Break, %	Linear Shrinkage, %
HLC-M-1000	Hybrid light and contact cure adhesive; low to no blooming with light cure; wicking grade viscosity; Passes ISO 10993 biocompatibility testing for medical device assembly*	ABS, PC, PCTG, PEBA, PETG, PMMA, PS, SAN, SS	3	D80	2,144.3 [311,000]	49 [7100]	4	0.7

*Please see product data sheet for a complete list of biocompatibility testing.



Equipment

Dymax designs and manufactures a wide range of curing equipment including spot lamps, flood lamps, and conveyor systems, as well as radiometers and other accessories. Dymax systems are optimized to work with light-curable adhesives to gain process efficiencies by targeting rapid surface curing, depth of cure, and speed of cure, all while delivering light in a rapid and economical way. CE marked equipment is available.

Spot Lamps

Spot lamps provide a wide variety of methods to deliver light to a very precise location. They can be used manually by an operator or incorporated into a high-speed automated assembly line. Dymax offers multi-spectrum light-emitting lamps which use high-pressure mercury vapor bulbs, as well as light-emitting diode spot lamps, which use an array of surface-mounted LEDs instead of traditional metal halide or mercury bulbs.

Conveyor Systems

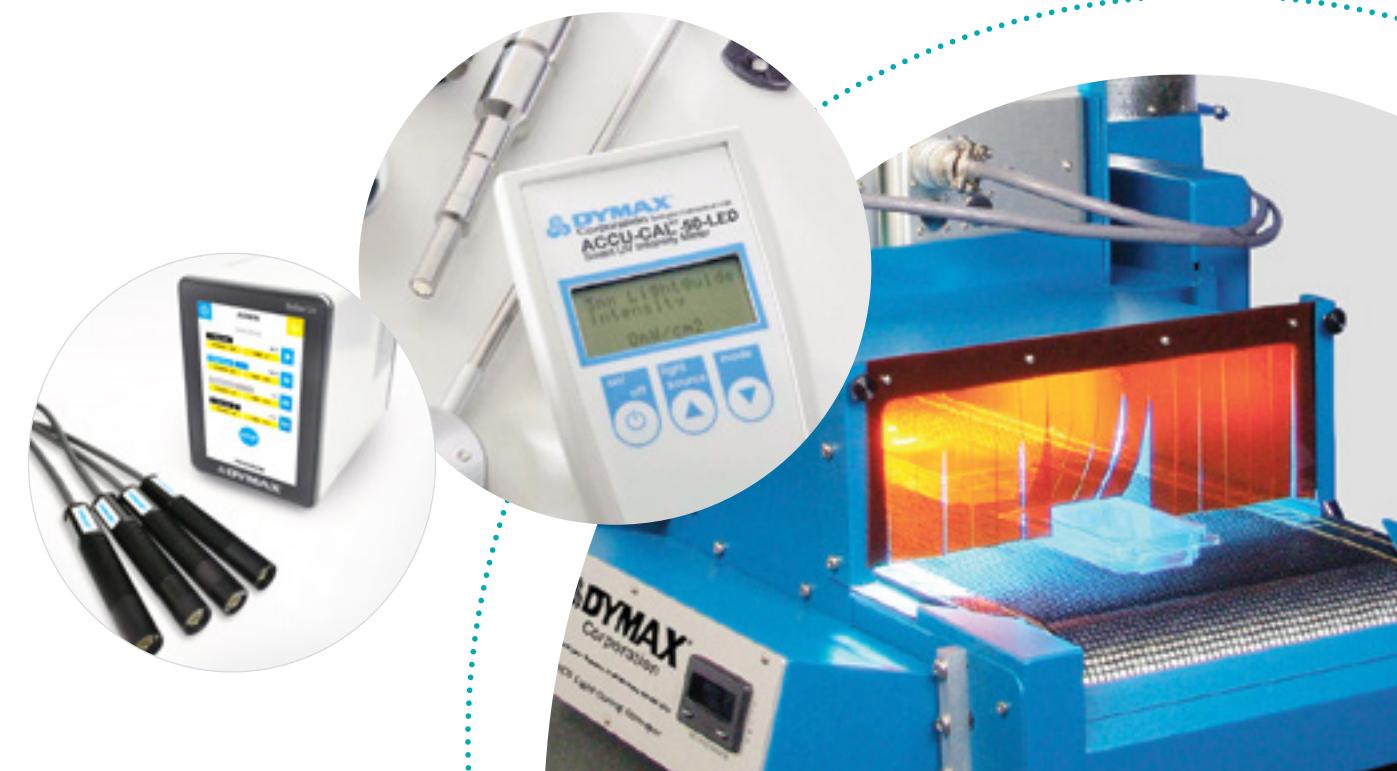
Conveyor systems consist of a moving belt that passes through a curing tunnel with multi-spectrum lamps mounted above or on each side for fast curing of parts. These conveyor systems are designed to offer consistent, fast, and safe curing. They can be outfitted with standard metal halide (longwave UV), mercury (shortwave UV), visible bulbs, or LED flood arrays. Consistent line speed, lamp height, and intensity provide a consistent light-curing process for high throughput.

Flood Lamps

Static flood-lamp systems are suited for area curing or for curing multiple assemblies. Dymax offers UV models which use moderate- to high-intensity, multi-spectrum UV/Visible light and LED models that use light-emitting diodes for fast curing. Dymax flood lamps can be easily integrated into existing manufacturing processes by mounting the lamps above high-speed assembly lines to achieve rapid cures. Shutter assemblies, mounting stands, and shields are available to create a custom curing system.

Radiometers

Measurement of the lamp intensity and dosage is critical to the successful implementation of light-curing technology. Dymax radiometers allow operators to monitor and document a light-curing process.



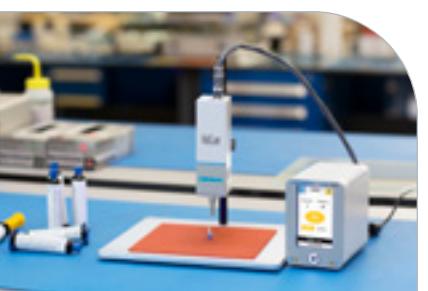
Spot Curing System System



BlueWave® 200 Version 3.1
UV Light-Curing Spot Lamp



BlueWave® QX4® V2.0 LED Spot-Curing System



BlueWave® MX-150™ LED Spot-Curing System

	BlueWave® 200 V3.1 UV Light-Curing Spot Lamp	BlueWave® QX4® V2.0 LED Spot-Curing System			BlueWave® MX-150 LED Spot-Curing System					
		RediCure® 365 nm	PrimeCure® 385 nm	VisiCure® 405 nm	RediCure® 365 nm	PrimeCure® 385 nm	VisiCure® 405 nm			
Power Requirements	100-240 VAC, 50-60Hz, 2.5 Amps	100-240V~ 2A, 50-60Hz			100-240V~ 2A, 50-60Hz					
Intensity Output	>17 W/cm² initial intensity	16.9 W/cm²	32.9 W/cm²	22.0 W/cm²	24 W/cm²	38 W/cm²	36 W/cm²			
Intensity Adjustment	1% - 100%	10% to 100%			10% to 100%					
Bulb Ignition Warranted	2,000 hr (200 Watt mercury bulb)	20,000 hr (LED Chip)			20,000 hr (LED Chip)					
LED Timer	0.1 to 9,999 seconds	0.1 to 999 seconds			0.1 to 999 seconds					
LED Activation	Foot pedal, front panel, or PLC	Foot pedal, LCD touch screen, or PLC		Foot pedal, LCD touch screen, or PLC						
Dimensions (W x D x H, cm)	31.8 x 30.5 x 16.5	Controller: 9.0 x 14.1 x 13.7			Controller: 14.6 x 9.5 x 15.9 Emitter: 20.06 x 5 x 5					
Part Number										
Unit	41014 (Type G Plug)	88823 (Controller only, Type G Plug)		42379 (1-Channel Controller Only, Type G Plug) 43186 (2-Channel Controller Only, Type G Plug) 43183 (4-Channel Controller Only, Type G Plug)						
LED Head / LED Emitter	N/A	88807	88808	88809	42336	42337	42338			
Lens Only		5-mm lightguide simulator comes with every emitter			N/A					
Accessories & Spare Parts		84103 AC Power Adapter 84123 North American Power Cord 84121 UK Power Cord 84104 China Power Cord		36987 5-mm Lightguide Simulator 41148 Adjustable Taper Shoulder Focusing Lens (5 mm) 43299 Machine Interface Module Only BlueWave M-MIM 43453 Interconnect Cable Assembly (12") 42287 Interconnect Cable Assembly (2M) 42889 Interconnect Cable Assembly (5M) 43010 Interconnect Cable Assembly (10M) 43011 Interconnect Cable Assembly (20M)						

Lightguides

Lightguides transmit UV and visible energy from a source mounted inside of a spot-curing unit to the curing area. When choosing a lightguide for your system, the following factors should be considered:

Length – Lightguides are commonly one meter long although other lengths are available.

Diameter – Single-pole lightguides are available with 3-mm, 5-mm, or 8-mm inside diameters. Although the 5-mm lightguide will register a higher intensity, the 8-mm lightguide provides more curing power (intensity x area) because a larger lightguide opening captures more of the light emitted from the bulb. Each pole of a multi-pole lightguide has an inside diameter of 3 mm.

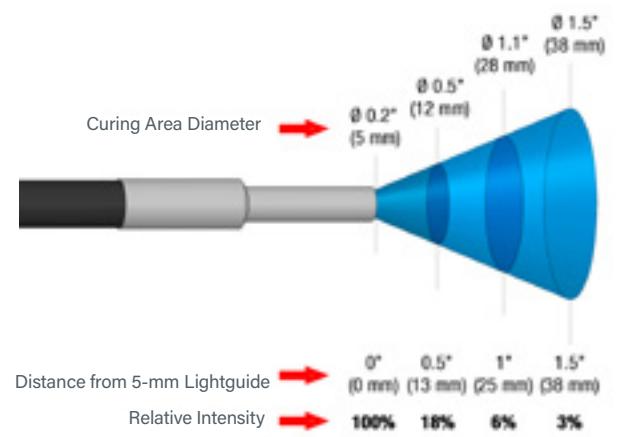
Multiple Poles – Light emitting from a spot lamp can be channeled through a single lightguide (single pole) or split between multiple lightguides (multiple poles). Each pole of a multi-pole lightguide emits equal intensity (typically $\pm 10\%$ for liquid-filled lightguides) and all share a common shutter. Both liquid-filled and quartz-fiber multi-pole lightguides are available from Dymax.

Connection – There are basically two types of connectors used in the spot lamp industry, "Wolf" and "D" connectors. Dymax provides lightguides with both connector types, although "D" connectors are an industry standard and

compatible with current Dymax lamp designs (older Dymax designs utilized "Wolf" connectors).

Curing Area/Intensity vs. Distance – The UV and visible light emitted from a lightguide diverges. As a result, intensity decreases and curing area increases with distance from the end of the light guide. The chart to the right describes this relationship clearly for the 5-mm liquid lightguide.

Curing Area/Intensity vs. Distance Using a 5-mm Lightguide



Part Number	Lightguide Description (all noted are liquid filled; quartz fiber are also available)	Compatible Dymax Systems
5720	Single Pole	5 mm x 1 M
5721	Single Pole	5 mm x 1.5 M
5722	Single Pole	8 mm x 1 M
38476	Two Pole	3 mm x 1 M
38477	Three Pole	3 mm x 1 M
38478*	Four Pole - Fiber Optic	3 mm x 1 M
36619	Single Pole - Wolf Style	3 mm x 1 M
37043	Two Pole - Wolf Style	3 mm x 1 M
35101	Single Pole - Wolf Style	5 mm x 0.5 M
35102	Single Pole - Wolf Style	5 mm x 1 M
36238	Single Pole - Wolf Style	5 mm x 1.5 M
38998	Single Pole - Wolf Style	5 mm x 2 M
38676*	Four Pole - Extended Range	3 mm x 1.5 M
38851*	Four Pole	3 mm x 1.5 M
39791*	Four Pole - Fiber Optic	3 mm x 1 M

* Lightguide adapter conversion kit (PN 42932) required for use with BlueWave® MX-150.

Spot-Curing Systems Accessories

Lightguide Mounting Stands

39700 Single Lightguide Mounting Stand

Utilizes a 24" flexible arm for mounting 3, 5, and 8-mm lightguides. This stand offers a 5" x 5" (127 mm x 127 mm) working area and allows repeatable, hands-free spot curing.

41325 Acrylic Lightguide Mounting Stand

Multiple lightguides can be securely mounted on this stand for repeatable, hand-free spot curing.

41595 Lightguide Stand Expansion Kit

Allows the Dymax acrylic lightguide mounting stand to hold up to four lightguide poles.



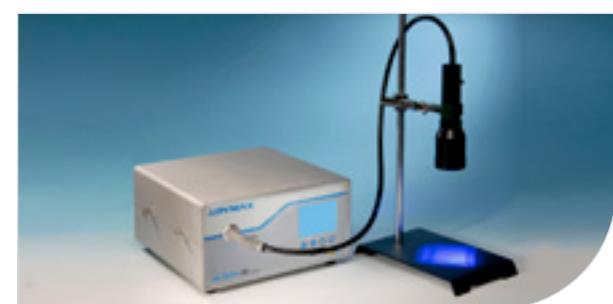
Single Lightguide Mounting Stand

Rod Lenses

Turn a spot into a flood lamp with shutter! A rod lens refocuses the UV light emitted from a spot lamp to create a very uniform (<5% variation) 2" x 2" (50.8 mm x 50.8 mm) or 5" x 5" (127 mm x 127 mm) curing area. These rod lenses attach to the UV light-curing spot system using an 8-mm lightguide (sold separately).

38699 Rod Lens, 2" x 2" (50.8 x 50.8 mm) Area

38698 Rod Lens, 5" x 5" (127 x 127 mm) Area



BlueWave® 200 with Rod Lens

Lightguide Terminators

Lightguide terminators can be attached to the end of a lightguide to help users get UV light to those difficult-to-reach locations.

39029 3 mm/60°

39030 3 mm/90°

38042 5 mm/60°

38049 5 mm/90°

39334 8 mm/60°

39333 8 mm/90°



Lightguide Simulators

A lightguide simulator can be used to accurately measure the direct light intensity from the system's energy source.

38408 Lightguide Simulator, 7-mm Diameter

36987 Lightguide Simulator, 5-mm Diameter

Emitter Stands & Shields

42390 BlueWave® MX-Series Mounting Stand

Mounting stand with adjustable height for a single MX-series emitter.

43019 BlueWave® MX-Series Single Emitter Mounting Kit

Mounting adapter for attaching MX-series emitters.

43070 BlueWave® MX-Series Multi-Array Mounting Stand

Accommodates up to 4 MX-series emitters.

42426 Emitter Holder Assembly Bracket

Securely mount an emitter to the side of the BlueWave® MX-150 controller for configurations using a lightguide.

41395 Three-Sided Acrylic Shield

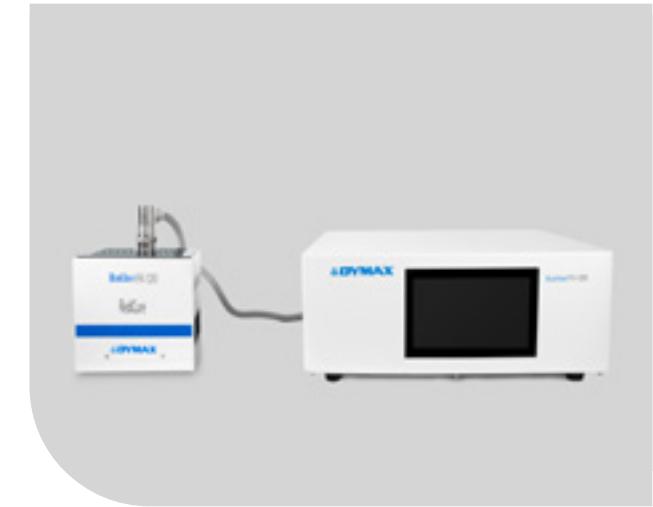
Compatible with the BlueWave® MX-150. A simple and cost effective three-sided shield that is removed manually.

Flood Curing System

BlueWave® FX-1250

The BlueWave® FX-1250 is a high intensity flood-curing system that delivers true, high-irradiance LED light for better speed, depth, and fullness of cure. The system provides the best cure by combining intensities of over 2 W/cm² with a 5" x 5" (12.7 cm x 12.7 cm) curing area and high uniformity.

The BlueWave® FX-1250 is comprised of a controller and up to two LED emitters. The controller features a 7" touch screen with an intuitive, easy to use interface. It can be activated, controlled, and remotely monitored by PLC, and also store programs and parameters for repeatable processes. The controller also continuously monitors the health of the system. LED emitters are available in three wavelengths for greater curing flexibility.



- Large curing area, 5" x 5" (12.7 cm x 12.7 cm)
- Excellent uniformity and higher intensity
- LED emitters available in 365, 385, and 405 nm wavelengths
- 7" Touch screen interface
- 1 & 2 channel controller options
- PLC activation and control
- Greener technology - no ozone generation, mercury free, & lower energy consumption than conventional lamps
- Fully programmable with capability to store up to 16 programs
- Unit can be used as a bench-top cure system or incorporated into an automated process or conveyor

	RediCure® 365 nm	PrimeCure® 385 nm	VisiCure® 405 nm
Typical Intensity Output, mW/cm ² *	1,700	2,100	2,000
Dimensions (W x H x L)	Emitter: 6.7" x 5.3" x 6.4" (170 mm x 134 mm x 162 mm) 1CH Controller: 4.5" x 13" x 18.25" (11.4 cm x 33.0 mm x 46.4 cm) 2CH Controller: 16.5" x 13.8" x 5.8" (420 mm x 350 mm x 165 mm)		
Curing Area	5" x 5" (12.7 cm x 12.7 cm)		
Power Requirements	100-240 V≈ 10 Amps, 50-60 Hz		

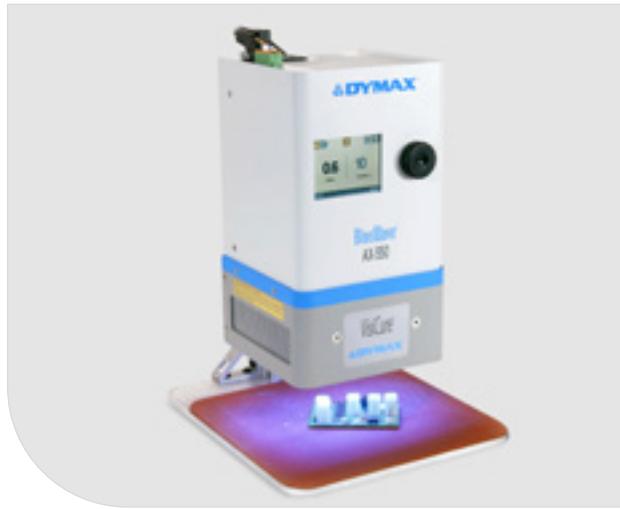
* When measured at 25-mm distance with an ACCU-CAL™ 50-LED radiometer in flood mode.

The BlueWave® FX-1250 is sold as a complete system or as separate components. Other accessories can be added for specific applications. See page 34 for additional accessories.

	RediCure® (365 nm)	PrimeCure® (385 nm)	VisiCure® (405 nm)
LED Emitter	88801	88802	88803
BlueWave® FX-1250 1-Channel Controller Only	88850 Unit with No Power Cord* 88805 Asian Version (Type G Plug) 88846 North American Version		
BlueWave® FX-1250 2-Channel Controller Only	88851 Unit with No Power Cord* 88804 Asian Version (Type G Plug) 88847 North American Version		
Complete System	88856 Unit with No Power Cord* 88859 Asian Version (Type G Plug) 88848 North American Version	88857 Unit with No Power Cord* 88860 Asian Version (Type G Plug) 88849 North American Version	88858 Unit with No Power Cord* 88861 Asian Version (Type G Plug) 88855 North American Version
Interconnect Cables	84025 Type L & L 84026 Type I & L		

*The appropriate power cord is included for orders in Europe.

BlueWave® AX-550 V2.0



The BlueWave® AX-550 combines a controller, emitter, and power supply into a compact, all-in-one LED flood-curing system. Eliminating the need for a large, traditional-style controller and bulky cables, this unit has a greatly reduced footprint and is easily integrated into automated processes.

The system features a large 5" x 5" (12.5 x 12.5 cm) curing area, which is controlled by an easy-to-navigate user interface with push-button controls or through a PLC interface. Dymax offers the system with three different wavelength emitters (365, 385, and 405 nm), which are field-upgradable by customers so they can switch to another wavelength easily if needed.

	RediCure® 365 nm	PrimeCure® 385 nm	VisiCure® 405 nm
Typical Intensity Output, mW/cm ² *	650	800	800
Dimensions (H X W X D)	6.54" x 11.41" x 6.75" (16.6 cm x 29.0 cm x 17.1 cm)		
Curing Area	5" x 5" (12.5 cm - 12.5 cm)		
Power Requirements	100 - 240 VAC 50/60 Hz (Auto-Ranging)		
Asian Version (Type G Plug)	60876	60879	60882

* When measured at 25-mm distance with an ACCU-CAL™ 50-LED radiometer.

BlueWave® MX-275



The BlueWave® MX-275 curing system is a high-intensity UV LED flood-curing system. Light energy is delivered in a line pattern instead of traditional patterns. A single BlueWave® MX-275 emitter provides a 5 mm x 50 mm curing area, but when paired with a multichannel controller, up to four emitters can be used to produce a curing area as large as 5 mm x 200 mm in line patterns.

	RediCure® 365 nm	PrimeCure® 385 nm	VisiCure® 405 nm
Typical Intensity, mW/cm ² *	1,460	1,870	1,750
Curing Area	1.97" x 1.97" (5 mm x 50 mm)		
Power Requirements	100 - 240 VAC ≈ 2.5 A, 50-60Hz		
Line Pattern LED Emitters	43094	43098	43102
BlueWave® MX-Series	43186 2-Channel Controller Only 43183 4-Channel Controller Only		
BlueWave® MX-MIM	43299 Machine Interface Module Only		
Interconnect Cables	42287 Interconnect Cable Assembly (2M) 42889 Interconnect Cable Assembly (5M) 43010 Interconnect Cable Assembly (10M) 43011 Interconnect Cable Assembly (20M)		

* Measured at a working distance of 10 mm using a Dymax ACCU-CAL™ 50-LED Radiometer with 3-mm aperture set to corresponding light measurement mode. This is preliminary intensity data for reference, tests using flood mode without an aperture will yield different results.

BlueWave® MX-250

The BlueWave® MX-250 is comprised of two main parts, a controller with an easy-to-use touchscreen interface and a uniquely designed, high-intensity LED emitter. Curing energy is created using a micro-processor-controlled LED chip set in the emitter. The emitter provides a curing area of 50 mm x 50 mm but multiple systems can be grouped together to create larger curing pattern matrixes as needed.

This system's design allows it to be truly tailored to users' curing needs – allowing them to choose from three different wavelength LED emitters (365, 385, or 405 nm) and providing additional flexibility with the size and pattern of the active curing area. Users also have endless set up flexibility, as this system can be set up as a bench-top unit, or for automated curing processes, the emitter can be easily mounted to robotic arms or further from the controller without fear of intensity.

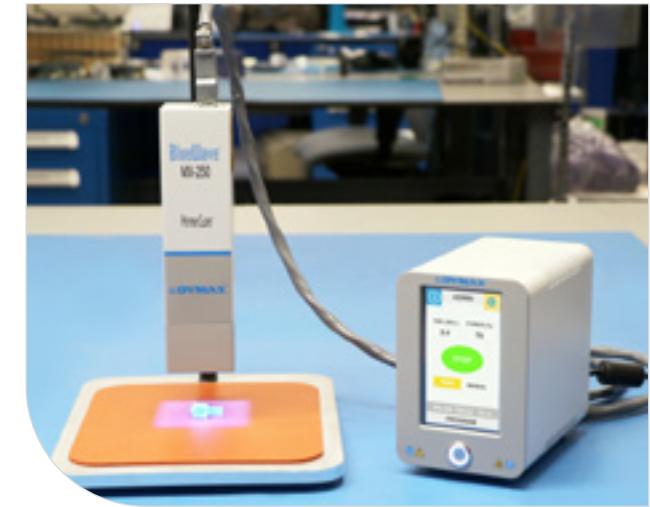
	RediCure® 365 nm	PrimeCure® 385 nm	VisiCure® 405 nm
Typical Intensity Output, mW/cm ² *	255	355	375
Curing Area	1.97" x 1.97" (50 mm x 50 mm)		
Power Requirements	100 - 240 VAC ≈ 2.5 A, 50-60Hz		

* Measured at 25-mm distance with an ACCU-CAL™ 50-LED radiometer.

A complete BlueWave® MX-250 system features a controller and an LED emitter. Components are sold separately. Other accessories can be added for specific applications. See page 27 for additional accessories.

	RediCure® 365 nm	PrimeCure® 385 nm	VisiCure® 405 nm
LED Emitter	42806	42807	42808
BlueWave® MX-Series 2-Channel Controller Only	43184 Unit with No Power Cord** 43186 Asian Version (Type G Plug) 43185 North American Version (115V Standard Plug)		
BlueWave® MX-Series 4-Channel Controller Only	43181 Unit with No Power Cord** 43183 Asian Version (Type G Plug) 43182 North American Version (115V Standard Plug)		
BlueWave® MX-MIM	43299 Machine Interface Module Only		
Interconnect Cables	43453 Interconnect Cable Assembly (12 inches) 42287 Interconnect Cable Assembly (2 meter) 42889 Interconnect Cable Assembly (5 meter) 43010 Interconnect Cable Assembly (10 meter) 43011 Interconnect Cable Assembly (20 meter)		

** The appropriate power cord is included for orders in Europe.



- 1.97" x 1.97" (50 mm) curing area with the option for multiple systems to be grouped together to create larger curing patterns
- Touchscreen interface for easier operation
- Emitter design for set up flexibility and consistent intensity
- Admin and production modes with the ability to save curing programs for repeated use
- Instant on/off for a more energy efficient unit with no warmup period
- PLC interface that is easily incorporated into automated systems

EC Series and ECE Series Flood Lamp Systems

Dymax UV light-curing flood-lamp systems are ideal for light curing large parts or curing many small parts simultaneously. With intensities ranging from 105-225 mW/cm², Dymax flood lamps are capable of curing most UV light-curable adhesives, sealants, and coatings, tack free in 30 seconds or less. These flood lamps can be incorporated into automated assembly systems or mounted onto conveyors. Dymax flood units can also be used as turnkey bench-top units (with optional shutters).



5000-EC with ZIP™ Shutter & Light Shield



ECE 2000 with ZIP™ Shutter & Light Shield



Modular ECE 5000

	2000-EC	5000-EC	ECE 2000	ECE 5000
Typical Intensity Output	105 mW/cm ²	225 mW/cm ²	105 mW/cm ²	225 mW/cm ²
Curing Area (cm)	20.3 x 20.3	12.7 x 12.7	20.3 x 20.3	12.7 x 12.7
Working Distance (cm)	5.08 - 15.24	5.08 - 15.24	5.08 - 15.24	5.08 - 15.24
Typical Degradation	<20% over 2,000 hr			
Power Requirements	90-264 V, 47-63 Hz	90-264 V, 47-63 Hz	100-240 V, 50-60 Hz	100-240 V, 50-60 Hz
Dimensions of Reflector and Power Supply (W x D x H, cm)	26.7 x 22.9 x 19.1, 40.6 x 30.5 x 10.8	17.2 x 17.2 x 20.3, 40.6 x 30.5 x 10.8	26.7 x 22.9 x 19.1, 40.6 x 30.5 x 10.8	17.2 x 17.2 x 20.3, 40.6 x 30.5 x 10.8
System Options with Part Numbers				
Modular (No Shielding or Shutter)	38105	38100	40995	40935
With Mounting Stand	39370	39380	41180	41140
With Light Shield	39720	39820	41200	41160
With Light Shield & Manual Shutter	39723	39823	40860	41100
With Light Shield & ZIP™ Shutter	39721	39821	41060	41050

Flood Curing System Accessories

Dymax light-curing flood lamps can be outfitted with the shutters and shielding shown below. Additional shutters, enclosures, and accessories may be available.

Mounting Stands

41268 Standard Mounting Stand

A simple and cost effective mounting stand with adjustable height. Includes an acrylic back shield.

BlueWave® AX-550

43410 BlueWave® AX-550 Mounting Stand

Stand with acrylic back-shield. Includes mounting carriage PN 60036.

60036 BlueWave® AX-550 Mounting Carriage

Mounting carriage to mount the BlueWave® AX-550 on stand PN 41268.



BlueWave® AX-550 Mounting Stand

BlueWave® MX-Series

42909 Single Emitter Mounting Kit

Mounting adapter for attaching MX-series emitters.

42390 Single Emitter Mounting Stand

Mounting stand with adjustable height for a single MX emitter.



Single Emitter Mounting Stand (Left)
Multi-Emitter Mounting Stand with Acrylic Back Shied (Right)

43019 Multiple Emitter Mounting Kit

Works with stand PN 41268.

43070 Multi-Emitter Stand with Acrylic Back Shield

Mounting stand with acrylic back shield for multiple MX emitters. Works with stand PN 41395.

Shutters

37863 ZIP™ Shutter (EC Floods)

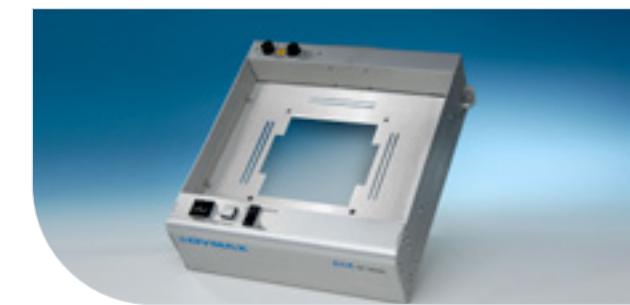
Timed and manual modes. Foot pedal or PLC controlled.

40885 ZIP™ Shutter (ECE Floods)

Timed and manual modes. Foot pedal or PLC controlled.

35572 Manual Shutter (EC & ECE Floods)

Most cost-effective shutter system.



ZIP™ Shutter (ECE Floods)

Shielding

41175 EC Flood Light Shield

360° shielding with lifting door and sliding curing shelf. Compatible with Dymax shutters.

40785 ECE Flood Light Shield

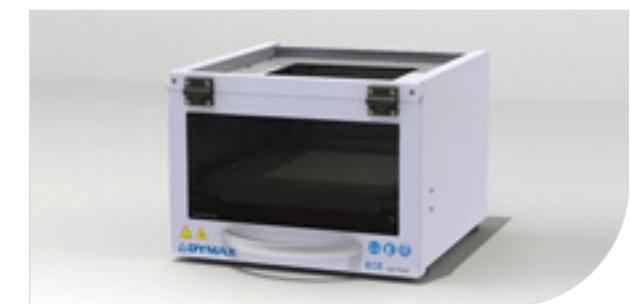
360° shielding with lifting door and sliding curing shelf. Safety Interlock feature included. Compatible with Dymax shutters.

41321 BlueWave® LED Flood Light Shield

360° shielding with a swing-up door and slide-out shelf. Not compatible with Dymax shutters.

41395 3-Sided Acrylic Shield

A simple and cost effective 3-sided shield that is removed manually. Compatible with the BlueWave® LED Flood and BlueWave® MX-250 systems.



ECE Flood Light Shield

Conveyors

UVCS 2.0 Conveyors

The standard Dymax conveyor platform, the UVCS series, has a belt width of 12" (304.8 mm) and can be outfitted with a number of different UV light-curing systems. Belt speed is accurately measured using an optical encoder and displayed on a digital LCD. The UVCS series conveyors are completely shielded from UV light for user protection. The standard UVCS 2.0 conveyor is most commonly outfitted with Dymax 5000-EC or Fusion® F300S curing lamps.



	One 5000-EC (CM)*	Two 5000-ECs (CM)*	Two 5000-ECs (FW)**	Four 5000-ECs (FW)**	One Fusion F300S (CM)*	Two Fusion F300S (FW)**		
Asian Version (Type G Plug)	-	-	-	-	42006	42007		
Conveyor Voltage	120V	220/230V	120V	220/230V	120V	220/230V		
Amperage (With Lamps)	4.8A	2.4A	4.8A	2.4A	4.8A	2.4A		
Belt Width	12" (30 cm)							
Belt Speed	1-27 feet per minute							
Cure Width	6" (15 cm)		12" (30 cm)		6" (15 cm)	12" (30 cm)		
Lamp Adjustment Range	1.7" to 5.5" (4.3 cm to 14 cm)							
Max. Parts Height	4.25" (10.8 cm) Adding risers increases to 10" (25.4 cm)							
Overall Dimensions (L x W x H) (Not Including Lamps)	50.5" x 29.8" x 16.4" (128 cm x 76 cm x 42 cm)							
Shipping Weight (With Crates & Lamps)	350-400 lbs. (159-181 kg)							
Crated Dimensions (L x W x H)	69" x 44" x 29" (175 cm x 112 cm x 74 cm)							

* CW (Center Mounted) - These conveyors have center-mounted lamps and are supplied with removable guides to channel parts into the middle 6" of conveyor.

** FW (Full Width) - These conveyors have lamps that span the full width of the conveyor.

UVCS LED Conveyors with BlueWave® AX-550 V2.0 Flood

Dymax UVCS bench-top conveyor systems are designed for fast curing of adhesives, coatings, and inks that react in the UVA and/or visible spectral ranges. The conveyors can be outfitted with one of three different wavelength BlueWave® AX-550 LED flood lamps (365 nm, 385 nm, or 405 nm) and can accommodate up to four emitters. If two emitters are used, they can be mounted side-by-side or front-to-back for additional process flexibility.

All UVCS conveyors have adjustable belt speeds of 1 to 32 fpm, as well as adjustable lamp-to-belt distance to address a variety of application requirements. When combined, the UVCS conveyors' consistent intensity, fast curing, and adjustable line speeds create an optimized LED light-curing process that enables high throughput.

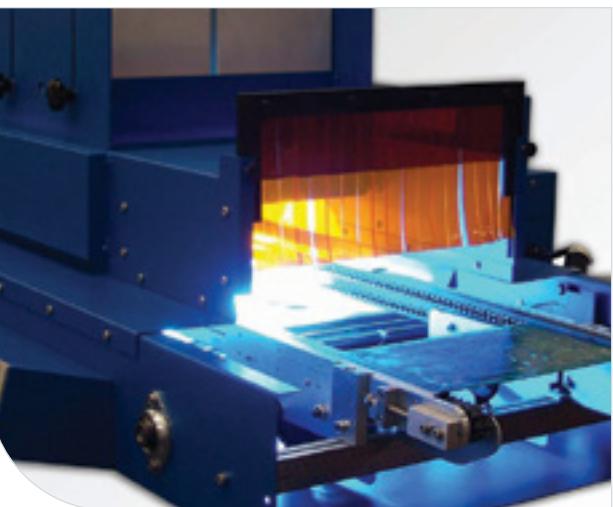


	1 Emitter		2 Emitters			4 Emitters**		
Base Conveyor	43555	43559	43556 FW	43557 FW	43557 CM	43561 CM	43558	43562
Conveyor Voltage (VAC)	120V	220V	120V	120V	220V	220V	120V	220V
Emitter	43248 RediCure® 43249 PrimeCure® 43250 VisiCure®		43549 RediCure® (Order Qty 2) 43550 PrimeCure® (Order Qty 2) 43551 VisiCure® (Order Qty 2)			43549 RediCure® (Order Qty 4) 43550 PrimeCure® (Order Qty 4) 43551 VisiCure® (Order Qty 4)		
Controller	43331		43331 (Order Qty 2)			43331 (Order Qty 4)		
Cure Width*	5" (13 cm)		10" (25 cm)		5" (13 cm)		10" (25 cm)	
Belt Width	12" (30 cm)							
Belt Speed	0.8 - 32.0 ft/min (0.3 - 9.7 m/min)							
Lamp Adjustment Range	1.5" - 4.5" (75 mm - 114 mm)							
Max. Parts Height	4.5" (10.8 cm)							
Overall Dimensions (L x W x H) (Not Including Lamps)	50.5" x 29.8" x 16.4" (128 cm x 76 cm x 42 cm)							

* CW (Center Mounted), FW (Full Width)

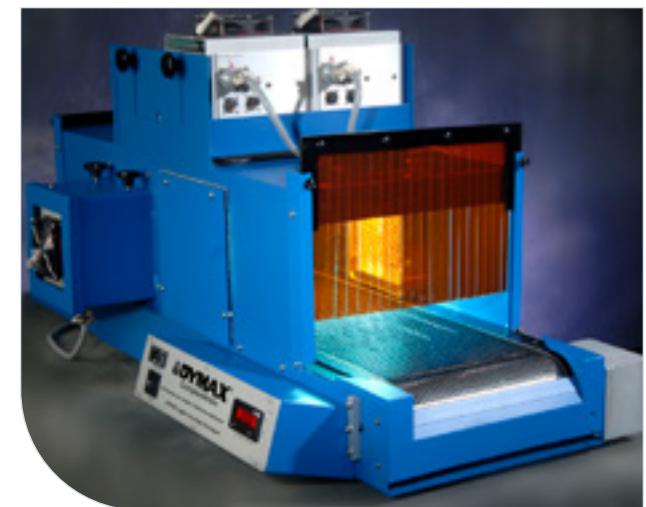
Edge-Carry Conveyors

Dymax Edge-Carry conveyors are designed for efficient curing of UV and/or visible light-sensitive adhesives, inks, and coatings. These conveyors can be outfitted with a variety of lamp configurations to address a variety of application specific requirements. They offer complete shielding from UV light and consistent cure times. Configuration options allow flexibility when defining intensity requirements to keep operating costs to a minimum. Standard height clearance is 0.75" across the entire 18" width, which is ideal for low profile parts such as PCBs, and up to 6 inches across a 13.75" width, which can be increased to either 8" or 12" with optional risers installed.



UVCS SideCure Conveyor

The UVCS SideCure conveyor system is designed for the UV curing of adhesives and coatings from the sides and/or top. The SideCure conveyor can be outfitted with up to eight 5000-EC UV curing flood lamps that offer complete shielding from UV light and consistent exposure times. The conveyor's 12" wide belt and 5" high side-curing capability makes the SideCure a very versatile UV curing solution. The SideCure conveyor is ideal for masking, medical, and electronic applications where 180° UV curing is required.



	5000-EC				2000/I200-EC		Fusion F300												
	1 Lamp, CM*		2 Lamps, CM*		2 Lamps, FW*		4 Lamps, FW*		1 Lamp, CM*		1 Lamp, CM*								
Part Number	40324	40328	40325	40329	40326	40275	40327	40331	40334 40335	40332 40333	40336	40280							
Conveyor Voltage	120V	230V	120V	230V	120V	230V	120V	230V	115 or 208-240V	208-240V									
Amperage (With Lamps)	9.6A	4.8A	17.6A	8.8A	17.6A	8.8A	33.6A	16.8A	TBD	TBD	16A	32.6A							
Max. Chain Spacing	18" (45.7 cm)																		
Conveyor Speed	1-32 feet per minute																		
Cure Width	6" (15 cm)		12" (30 cm)			9" (23 cm)		6" (15 cm)	12" (30 cm)										
Lamp Adjustment Range	3.5" - 7.3" (8.9 cm - 18.5 cm)																		
Max. Parts Height	6.25" (15.86 cm)																		
Overall Dimensions (L x W x H) (Not Including Lamps)	59" x 35" x 39.5" (150 cm x 89 cm x 100 cm)																		
Shipping Weight (With Crates & Lamps)	390 lbs. (177 kg)	410 lbs. (186 kg)		450 lbs. (204 kg)	390 lbs. (177 kg)	475 lbs. (215 kg)	580 lbs. (263 kg)												

* CW (Center Mounted) - These conveyors have center-mounted lamps and are supplied with removable guides to channel parts into the middle 6" of conveyor.

FW (Full Width) - These conveyors have lamps that span the full width of the conveyor.

UVCS SideCure with up to FOUR Side Lamps (lamps sold separately)		
Lamps (SideCure 5000-ECs PN 39798)	Up to eight	
Part Number	39767	39766
Conveyor Voltage	115V	220/230V
Amperage (With Lamps)	1.6A	0.9A
Belt Width	12" (30 cm)	
Belt Speed	1-27.5 feet per minute	
Cure Width	6" (15 cm) or 12" (30 cm) depending upon number and orientation of lamps	
Lamp Adjustment Range	Top Lamps: From 6.25" to 9" off the belt (16 cm to 23 cm) Side Lamps: From 3.5" to 6" off center (9 cm to 15 cm)	
Max. Parts Height	7" (17.8 cm)	
Overall Dimensions (L x W x H) (Not Including Lamps)	51" x 30" x 21.5" (130 cm x 76 cm x 55 cm)	
Shipping Weight (With Crates & Lamps)	450-500 lbs. (204-227 kg)	
Crated Dimensions (L x W x H)	72" x 52" x 31" (183 cm x 132 cm x 79 cm)	

WIDECURE® Conveyor

The WIDECURE® conveyor system is designed to offer consistent, fast, and safe curing. Equipped with a 25" (63.5 cm) wide belt, this system is ideal for curing light-curable materials on larger parts, or larger quantities of smaller parts. It can be outfitted with either a longwave (metal halide, UVA/Visible) bulb or a shortwave (mercury, UVB/UVC) bulb and delivers up to 700 mW/cm² of curing energy.



Radiometer

Radiometers measure the intensity of energy at specific wavelengths. UV light is, by definition, not visible to the human eye, so a radiometer is required to determine the amount of UV energy. The ability to measure light intensity is useful for three reasons:

- Maintaining a light-curing process – A radiometer can measure whether a light-curing system is providing intensity above the “bulb change” intensity. A radiometer is to a light-curing process what a thermometer is to a heat-curing process.
- Providing a worker-friendly light-curing process – A radiometer is required to determine if any UV light is reaching operators or bystanders.
- Measuring transmission rates through substrates – A radiometer can be used to measure the transmission rates of various wavelengths through substrates that absorb UV and/or visible light. To assure an effective curing process it is critical to measure the light intensity reaching the light-curable material below the intervening substrate.



WIDECURE® UV Light-Curing Conveyor System	
Part Number	41245-L Standard WIDECURE Conveyor where belt travels left-to-right 41245-R Optional WIDECURE Conveyor where belt travels right-to-left*
Conveyor Voltage	480V
Amperage (With Lamps)	30A
Belt Width	25" (63.5 cm)
Belt Speed	Adjustable 4 - 30 feet per minute
Cure Width	24" (61 cm)
Lamp Adjustment Range	4" to 24" (10.16 cm to 61 cm)
Max. Parts Height	18" (45.7cm)
Overall Dimensions (L x W x H) (Not Including Lamps)	113.5" x 46" x 76" (288.3 cm x 116.8 cm x 193 cm)
Shipping Weight (With Crate)	1,700 lbs. (771 kg)
Crated Dimensions (L x W x H)	120" x 56" x 90" (305cm x 142cm x 229cm)

* Requires modification charge and additional lead-time.

	ACCU-CAL™ 50	ACCU-CAL™ 50V	ACCU-CAL™ 50-LED	ACCU-CAL™ 160
Wavelength Range	320 - 395 nm	400 - 470 nm	350 - 450 nm	328 - 382 nm (UVA model) 350 - 460 nm (LED model)
Intensities Range	1.0 mW/cm ² - 40 W/cm ²	1.0 mW/cm ² - 40 W/cm ²	1.0 mW/cm ² - 40 W/cm ²	1.0 mW/cm ² - 40 W/cm ²
Battery Life	250 hr	250 hr	250 hr	10 hr (backlight on, no operation) or 6 hr (backlight on, full operation)
Part Number	39561 ACCU-CAL™ 50 for flood lamps and conveyors 39560 ACCU-CAL™ 50 for flood lamps, conveyors and spots, with lightguide adapter (3mm, 5mm and 8mm) and lightguide simulator	40044 ACCU-CAL™ 50V for flood lamps and conveyors 40043 ACCU-CAL™ 50V for flood lamps, conveyors and spots, with lightguide adapter (3mm, 5mm and 8mm) and lightguide simulator	40505 ACCU-CAL™ 50-LED for spot and flood units 40519 ACCU-CAL™ 50-LED for LED floods and conveyors 39554 Flood-to-spot Adapter Kit 42218 BlueWave® QX4® Optic Adapter Upgrade Kit 43383 Line Optic Adapter Upgrade Kit for the BlueWave® QX4® and BlueWave® MX-275	41590 ACCU-CAL™ 160 UVA 41585 ACCU-CAL™ 160 LED

Dispensing Equipment

Dymax is committed to providing the best chemistry, curing equipment, and dispensing systems that offer customers complete manufacturing solutions for their challenging applications. Dymax, in alliance with some of the world's leading dispensing companies, has developed high-quality, field-proven dispense systems to fit many adhesive dispensing applications. These systems include various automatic and manual dispense systems, spray valves, and related components for seamless integration into your assembly process.

Model Number	Micro-Dot™	Stepper™	SD-200	eco-PEN	200	300	400	455	HLC Dispense Pen	826	830	475	485	775-Series	SG-150	SG-200	455 Spray	eco-SPRAY	
																			
Dispense Data	Dispense Modes	Shot	Shot	Shot (timed), Continuous (bead)	Volumetric	Shot (timed), Continuous (bead)			Shot (timed), Continuous (bead)	Shot (timed), Continuous (bead)	Shot (timed), Continuous (bead)			Shot (timed), Continuous (bead)		Spray		Micro-Spray	Volumetric Micro-Spray
	Shot Sizes	0.0002 - 0.25 mL (15/18 GA Taper Tip)	0.01 - 0.10 mL 0.05 - 0.25 mL	-	.004 mL - continuous 0.50 - 6.00 mL/min	-	-	0.002 mL to Continuous Flow	0.003 mL (0.066" tubing) to Continuous Flow	-	0.005 mL	0.02 mL	0.004 mL to Continuous Flow	0.002 mL to Continuous Flow	0.01 mL to Continuous Flow	Flat: 0.75 - 2+" [1.91 - 5.08+ cm] Round: 0.25 - 2" [0.64 - 5.08 cm]	Round: 2 - 8" [5.08 - 20.32 cm]	.05 mL - continuous	Round: .05 mL - continuous 0.50 - 6.00 mL/min
	Viscosity Range	Medium to High	Medium to High	Low to High	Low to High	Up to 5,000 cP			Medium to High	Low to High	Low to High (including stringy)	High (including stringy)	Low to Medium	Low to High	Medium to High (including stringy)	RS: <10,000 cP RH: >10,000 cP	High	Low to Medium (<5,000)	Low to High
	Materials*	UV Adhesives, Greases, Inks	UV Adhesives, Greases, Inks, Medical Fluids	UV Adhesives, Greases, Inks	UV Adhesives, Cyanoacrylates, Inks	UV Adhesives, Cyanoacrylates, Inks	UV Adhesives, Inks	UV Adhesives, Cyanoacrylates, Inks	Hybrid Light-Curables	UV Adhesives, Cyanoacrylates, Inks	UV Adhesives, Cyanoacrylates	UV Adhesives, Inks	UV Adhesives, Greases, Inks	UV Adhesives, Inks	Conformal Coatings, UV Maskants		UV Adhesives, Cyanoacrylates, Inks	UV Adhesives, Cyanoacrylates, Inks	
Mechanical Specs	Operation	Manual Syringe Dispenser	Manual Pipette	Powered Syringe Dispenser	Volumetric Pump	Diaphragm	Diaphragm	Needle	Disposable Fluid Path	Diaphragm	Disposable Fluid Path	Disposable Fluid Path	Diaphragm	Needle	Spool	Needle		Disposable Fluid Path	Spray, Dispense
	Control	Manual Positive Displacement		Time Pressure	Programmable Positive Displacement	Manual Pressurized	Time Pressure	Time Pressure	Time Pressure	Manual Pressurized	Time Pressure	Time Pressure	Time Pressure			Fluid Pressure, Atomization Pressure		Time Pressure	Programmable Positive Displacement
	Disposable Fluid Path	Yes		Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No			No	No	Yes	No
	Controller	None		Integrated	EC-200 2.0	None	DVC-345	DVC-345	DVC-345	None	DVC-345	DVC-345	DVC-345			DVC-345		DVC-345	SC1200
	Operational Adjustments	Displacement		Time, Pressure, Suck-Back	Flow, Suck-Back	Flow	Flow	Flow	Over Pinch, Flow	Flow	Over Pinch, Flow, Suck-Back	Over Pinch, Flow, Suck-Back	Flow	Flow	Flow, Suck-Back	Flow		Over Pinch, Flow	Flow, Suck-Back
Utilities	Electrical Required	None		100-240 VAC	110V	None	110V (for controller only) 100-240 VAC		110V (for controller only) 100-240 VAC	None	110V (for controller only) 100-240 VAC		110V (for controller only) 100-240 VAC			110 V (for controller only) 100-240 VAC		110V (for controller only) 100-240 VAC	110V
	Compressed Air Required	No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes		Yes	Yes
Supply Reservoirs		3, 5, 10 cc Syringe (most brands)	1, 3, 5 cc Syringe	3, 5, 10, 30, 55 cc Syringe	Any	Cartridge or Pressure Pot	Cartridge or Tank	Cartridge or Tank	Cartridge or Pressure Pot	Pressure Pot	Cartridge or Pressure Pot	Cartridge or Pressure Pot	Syringe, Cartridge, or Tank			Cartridge or Tank		Cartridge or Pressure Pot	Any
Valve Materials	Valve Body	N/A		N/A	Anodized AL	Acetal	Acetal	Acetal	Anodized AL	N/A	Anodized AL	Anodized AL	SS, Anodized AL			SS		Anodized AL	Anodized AL
	Wetted Path	Syringe & Tip		Syringe & Tip	HD-POM / SS	Acetal	Acetal	SS/AL	Selected Tubing	Tube & Tip	Tube & Tip	Selected Tubing	Acetal	Acetal/SS	SS/AL	SS		Selected Tubing	HD-POM/SS
	Wetted Valve Seals	N/A		N/A	High-molecular PE, VisChem	PTFE	PTFE	Silicone	N/A	N/A	N/A	N/A	UHMW PE	Silicone	PTFE or FKM	PTFE, KFKM		N/A	High-Molecular PE, VisChem
	Tubing	N/A		N/A	N/A	Polyethylene	N/A												
CE Approval	N/A	N/A	✓	✓	✓	✓	✓	✓	✓	N/A	✓	✓	✓	✓	✓	✓	✓	✓	✓

* If there is any question about material compatibility, please contact Dymax Application Engineering. Valves containing disposable fluid path technology offer several choices of tubing to ensure proper compatibility with the fluid being dispensed.

APPLICATION OVERVIEW

	Micro-Dot™	Stepper™	SD-100	eco-PEN	200	300	400	455	HLC Dispense Pen	826	830	475	485	775-Series	SG-150	SG-200	455 Spray	eco-SPRAY
Viscosity Range**	Med-High	Med-High	Low-Med-High	Low-Med	Low-Med	Low-Med	Low-Med	Med-High	Med-High	Low-Med-High	High	Low-Med	Low-Med-High	Med-High	RS: Low-Med RH: Med-High	High	Low-Med	Low-Med-High
Microdots	●	●	●	●				●		●				●				
Dots	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●
Beads			●	●	●	●	●	●	●	●	●	●	●	●				●
Potting			●	●	●	●	●	●	●	●	●	●	●	●				●
Spray - Conformal Coatings																	●	●
Spray - Maskants																●	●	●

** Low Viscosity= < 1000 cP

Medium Viscosity= 1000 cP - 10,000 cP

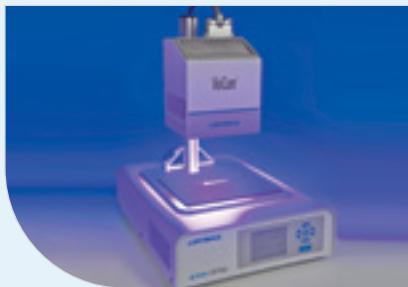
High Viscosity= >10,000 cP +

Adhesive Technology

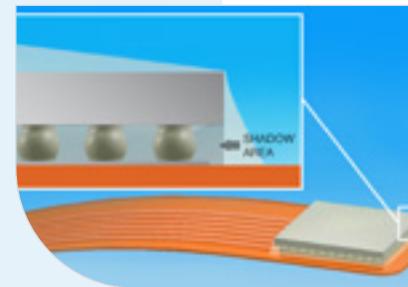
As an innovator in the adhesive and coating industries, Dymax strives to create new technologies that help manufacturers increase process efficiency, productivity, and throughput while decreasing costs and inventory. Through the years, our dedication to innovation has resulted in over 30 oligomer, adhesive, and equipment patents and numerous awards for our innovative technologies and service. Our R&D experts are always striving to create new technologies that will help manufacturers improve their processes and minimize risk. Our current portfolio of technologies provide a variety of benefits including easier bond line inspection and cure confirmation for better quality control, faster cures for quicker processing, and curing in shadowed areas to eliminate concerns about uncured material.

Speed up Production with Faster Cures - LED Light-Curing Technology

Dymax offers specially formulated LED light-curable adhesives that are optimized to work seamlessly with Dymax LED light-curing systems. The adhesives range from fast to ultra-fast cure speeds in order to accommodate specific assembly needs. LED-curing equipment is available in a number of different styles including spot lamps, flood lamps, and conveyors to accommodate various process requirements.



LED Light-Curing



Shadow Cure Technology



Ultra-Red® Technology

Enables Bond-Line Inspection and Product Authentication - Ultra-Red® Technology

Ultra-Red® fluorescing technology, formulated into Dymax adhesives, enhances bond-line inspection processes and product authentication. The adhesives remain clear until exposed to low-intensity UV light (360-380 nm) at which point they fluoresce bright red. This is particularly effective while bonding plastics that naturally fluoresce blue, such as PVC and PET. Ultra-Red technology also produces a unique spectral signature that can be used by manufacturers for product authentication.

Confirm Placement & Cure - See-Cure Technology

Dymax light-curable adhesives with patented See-Cure technology have built-in cure validation that makes it easy for operators or simple automated inspection equipment to confirm cure without investing in additional specialized equipment. See-Cure technology is an indicator of cure that intentionally transitions the color of the adhesive after it has cured and builds a visible safety factor into the assembly process.

Opaque Medical Substrate Bonding Solution - Shadow Cure Technology

Shadow Cure technology is designed for substrates blocking UV light or have areas where light exposure is limited (except for black). It benefits from internal reflections within the adhesive and substrate.

Enhance Bond-Line Inspection and Confirm Cure - Encompass® Technology

Dymax adhesives formulated with Encompass® technology incorporate Dymax exclusive Ultra-Red® fluorescing and See-Cure color change technologies into one light-curable product. As a result, manufacturers gain efficiencies from rapid on-demand curing with easy cure confirmation and post-cure bond-line inspection.

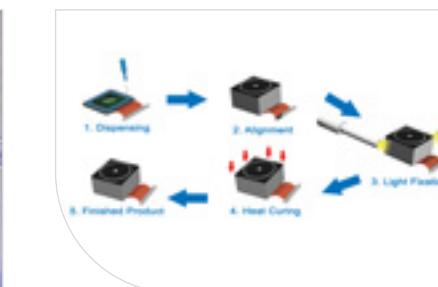
Increase Camera Module Productivity - Low Temperature Cure Technology for Active Alignment

Active alignment during the bonding of the camera module holder to printed flex circuit (PFC) decreases the fraction defective. Components are first fixtured in place using light and then heat is adopted for final adhesion.

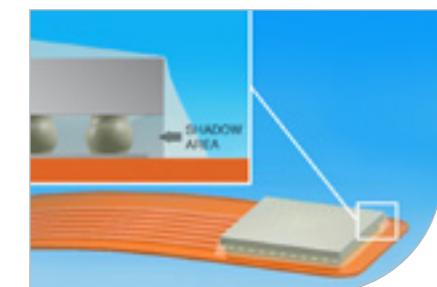
Dymax adhesives formulated with low-temperature cure technology are ideal for the active alignment process. They exhibit excellent adhesion to a variety of substrates. They are initially cured when exposed to LED light at 100m/W cm² for 3 to 5 seconds. The part is then heated at 80°C for camera module assembly. Adhesive in shadow areas will be fixed within 30 minutes and fully cured in 3 to 5 days.



Encompass Technology



Active Alignment Process



Dual-Cure Technology

Cure in Shadows -

1. Multi-Cure® Light/Heat-Cure Technology

Multi-Cure® adhesives combine the high-speed cure of UV or UV/Visible light with secondary cure mechanisms that enhance polymerization. Secondary cure mechanisms, which include thermal (heat) cure or activator cure, are useful when light can only reach a portion of the bond line, or when tacking a part prior to thermal cure to allow easier handling and transport during the manufacturing process.

2. Dual-Cure® Light/Moisture-Cure Technology

Dual-Cure coatings are formulated to ensure complete cure in applications where shadow areas on high-density circuit boards are a concern. Previously, areas shadowed from light were managed by selective coating – eliminating the need to cure in shadow areas – or a secondary heat-cure process. Shadowed areas cure over time with moisture, eliminating the need for that second process step or concerns of component life degradation due to temperature exposure.

Reference Table

Viscosity

When choosing a viscosity, consideration should be given to how the adhesive must flow (or not flow) on the part after the adhesive is applied. Part geometry, process design, and assembly speed and method should all be considered when selecting viscosity. Viscosity is a material's resistance to flow. Low-viscosity adhesives flow more readily than high-viscosity adheses. Thixotropic gels flow very slowly and are recommended when adhesive flow on a part after dispensing must be minimal.

Dymax adhesives are available in a variety of viscosities. The identifiers appear as suffixes on product names as follows:

VLV = Very Low Viscosity VT = Very Thick

LV = Low Viscosity GEL = Gel

T = Thick

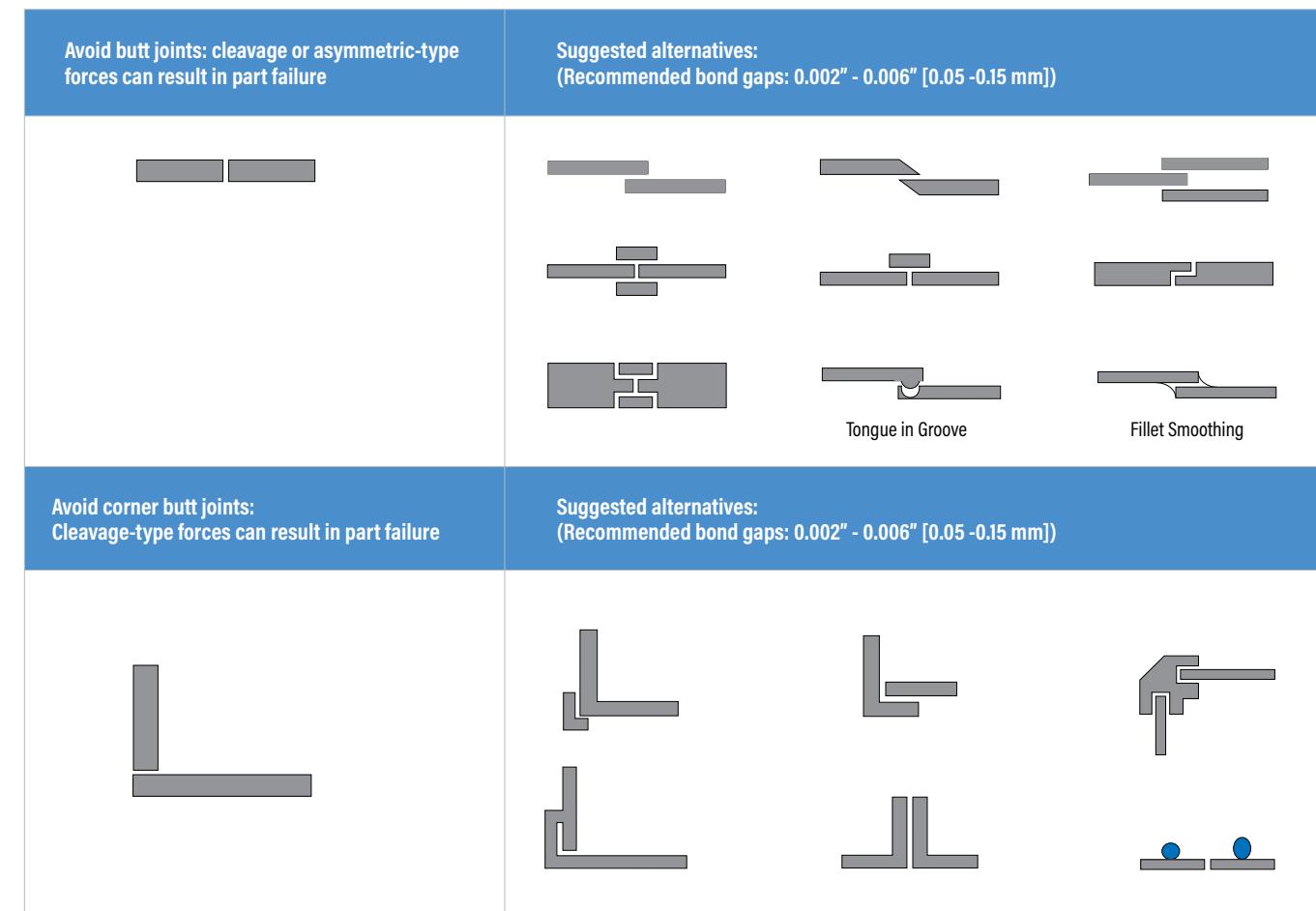
Standard viscosity products do not have a suffix.

Typical Centipoise (cP/MPas)	Typical Reference Liquids at 20°C
1	Water
10	Kerosene
110	SAE 10 Oil
200	Maple Syrup
440	SAE 30 Oil
1,100	Castor Oil
3,000	Honey
10,000	Molasses
18,000	Chocolate Syrup
65,000	Vaseline
100,000	Sour Cream
200,000	Peanut Butter
1,500,000	Shortening

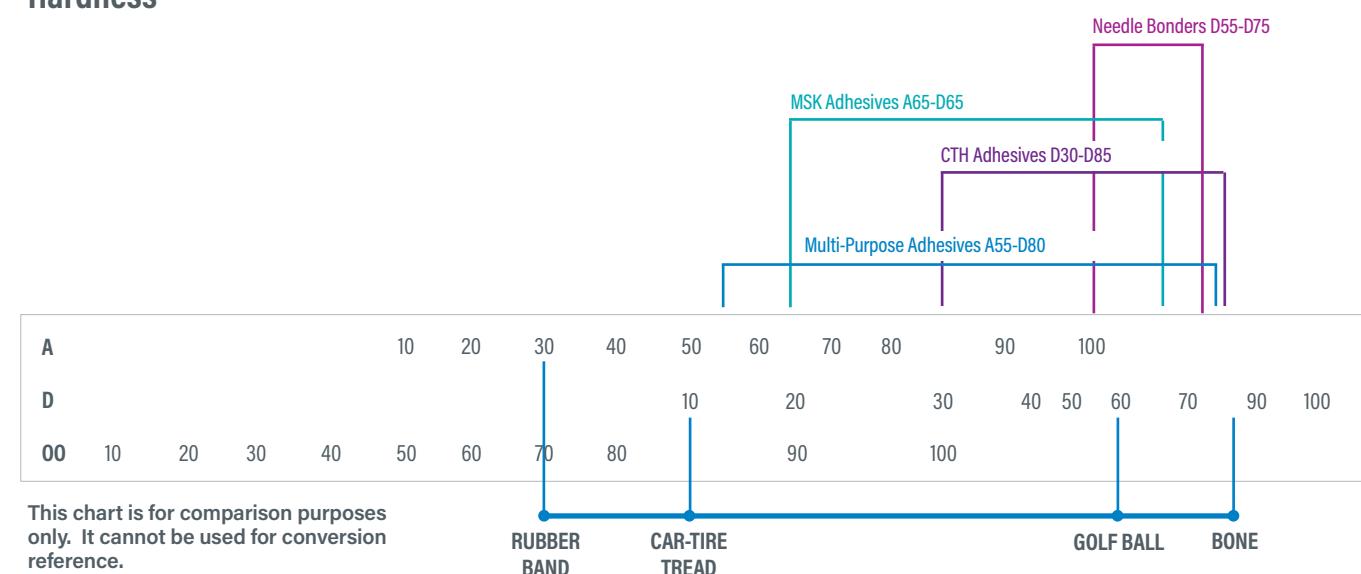


Dots

Volume of a dot is 1/2 the volume of a sphere $V=.2618D^3$					
Volume (uL)	0.10	0.51	0.05	0.01	0.00
Volume (mL)	0.0001	0.00050	0.0010	0.0050	0.0100
Diameter (mm)	0.73	1.241	0.56	2.673	0.37
Diameter (in)	0.0290	0.0490	0.0610	0.1030	0.1330



Hardness



Our Commitment to Greener, Safer Manufacturing

Dymax is committed to green manufacturing that reduces environmental impact, conserves energy, and provides greater worker safety. Over the last 40 years, our light-curable materials and curing equipment have become the industry standard for fast, environmentally conscious assembly. Dymax products are readily replacing technologies that contain hazardous ingredients, produce waste, or require higher amounts of energy to process.



Eco-friendly, one-component materials



Materials with no added solvents, halogens, or other materials of concern for improved worker and user safety



Fast curing products and equipment designed for less energy consumption



Dymax products conform to regulatory standards like RoHS and REACH



www.dymax.com

Americas

USA | +1.860.482.1010 | info@dymax.com

Europe

Germany | +49 611.962.7900 | info_de@dymax.com

Ireland | +353 21.237.3016 | info_ie@dymax.com

Asia

Singapore | +65.67522887 | info_ap@dymax.com

Shenzhen | +86.755.83485759 | info@hanarey.com

Hong Kong | +852.2460.7038 | dymaxasia@dymax.com

Korea | +82.31.608.3434 | info_kr@dymax.com