Technical Datasheet

High Temp DL401

Daylight Resin

Photocentric

High Temp DL401

Tensile Modulus (Low – High)

Temperature Resistance (Low – High)

Compatible Printers

Liquid Crystal MAGNA

Liquid Crystal TITAN

Colour

Traslucent

Available in

5kg bottle

Shoe mould

Photocentric High Temp DL401 is a rigid resin designed for moulding applications, possessing both high stiffness and ductility, and capable of withstanding high temperatures. Parts created in DL401 show superior compression behaviour, and resistance to fatigue, temperature, and moisture without bending or deforming. High Temp DL401 is perfect for fast-printing applications, capable of curing layers up to 350 microns thick.

Optimised for:

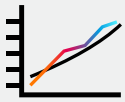
- Hot fluid and gas manifolds
- Moulds and inserts
- Heat resistant housings and fixtures
- Outdoor applications

Revision 10
25/07/2025

Unique features:

Excellent long-lasting performance under heat and stress

Quick and fast prototyping 350 µm layer



Simulating the strength and stiffness of glass filled Nylon 6

Smooth surface finish and ability to print fine detail

Minimal shrinkage, dry surface touch

Ideal for plastic injection moulding

High Temp DL401 Properties

Tensile Properties		
Tensile Modulus *	3180 MPa	ASTM D638
Ultimate Tensile Strength *	77 MPa	ASTM D638
Elongation at break *	4.8%	ASTM D638
Flexural Properties		
Flexural Modulus *	3240 MPa	ASTM D790
Flexural Strength *	123 MPa	ASTM D790
Impact Properties		
Impact Strength Notched Izod *	16 J/m	ASTM D256
Advanced Thermal Properties		
Thermal Conductivity, 23°C	0.20 W/(m.K)	ASTM D7984
Thermal Conductivity, 100°C	0.21 W/(m.K)	ASTM D7984
Specific Heat Capacity, 23°C	1.36 J/(g.K)	ASTM D7984
Specific Heat Capacity, 100°C	1.69 J/(g.K)	ASTM D7984
Dielectric Properties		
Relative Permittivity, 20°C	3.5	-
Relative Permittivity, 100°C	4.05	-
Dielectric Loss Factor, 20°C	30 x 10-3	-
Dielectric Loss Factor, 100°C	31 x 10-3	-
General Properties		
Hardness *	92 D	ASTM D2240
Heat Deflection Temperature (@ 0.45 MPa)	270°C	ASTM D648
Heat Deflection Temperature (@ 1.82 MPa)	97°C	ASTM D648
Water Absorption (Short Term)	0.28%	1 x 1 x 1cm cube
Viscosity	700 cPs	At 25°C Brookfield spindle 3
Liquid Density	1.1 g/cm3	Internal
Storage	10<T<50°C	

*Mechanical properties stated based on fully cured material. Post cured for 2hrs at 60°C in Cure L2 or Cure XL

We are constantly reviewing and improving our range of high-performance materials.
For the very latest information, please visit the Photocentric website

Design & Print Orientation Consideration Parameters

Printed on Photocentric LC Magna (100 µm layer height)

Properties	Parameters
Minimum feature size (pins)	0.6mm
Minimum hole diameter	0.6mm
Minimum slot thickness	0.3mm
Minimum wall thickness	0.3mm
Overhangs	Successful for overhangs ≤ 15°
Recommended Orientations	45°

Pre-Print Instructions

Printing on LC Magna

1. To print with Photocentric Liquid Crystal Magna, choose High Temp DL401 - Translucent and the desired layer thickness when preparing your print file in Photocentric Studio.
2. Heat the resin to 60°C for 5 hours or until the resin is fully liquified in the bottle. Failure to do so prior to printing may result in the resin crystalizing, leading to print failures.
3. Shake the resin bottle for 2 minutes before pouring into the LC Magna resin vat.

Printing on LC Titan

1. To print with Photocentric Liquid Crystal Titan, choose High Temp DL401 - Translucent and the desired layer thickness when preparing your print file in Photocentric Studio.
2. Heat the resin to 60°C for 5 hours or until the resin is fully liquified in the bottle. Failure to do so prior to printing may result in the resin crystalizing, leading to print failures.
3. Shake the resin bottle for 2 minutes before pouring into the LC Titan resin tank.

Post-Print Instructions

Printing on LC Magna

1. It is recommended to drain and clean the vat after printing if ambient temperatures are below 23°C.
2. Place the platform into the Photocentric Air Wash L.
3. Parts can be washed for no more than 5 minutes using Photocentric Resin Cleaner 30.
4. Once washed, rinse with warm water for maximum of 10 minutes.
5. Dry well with compressed air to remove any remaining water.
6. Place the platform into the Cure L2 set to 60 °C with no UV light. Allow the part to reach temperature, then hold for 1 hour for small parts or 3 hours for large parts
7. Turn on the light and cure for minimum of 1 hour at 60°C with light on in Cure L2.
8. Remove the platform from the Cure L2, allow to cool down and remove parts from the platform. Parts printed in DL401 can be thermally shocked for easier removal.

Printing on LC Titan

1. Place the platform into the Photocentric Wash XL.
2. Each part can be washed for 5 minutes using Photocentric Resin Cleaner 30.
3. Once washed, rinse with warm water for maximum of 10 minutes.
4. Dry with compressed air to remove any remaining water.
5. Place the platform into the Photocentric Cure XL, start ‘Dry’ cycle for 1 hour at 60°C (WITH NO UV LIGHT) to ensure parts are fully dry (we recommend 1 hour for small parts and 3 hours for large parts).
6. Start ‘Cure’ cycle, and leave to cure for minimum of 1 hour at 60°C.
7. Remove the platform from the Cure XL, allow to cool down and remove parts from the platform. Parts printed in DL401 can be thermally shocked for easier removal.

Post-Curing steps to achieve Ultimate High-Temp Performance

1. Place the platform into the Cure unit set to 60 °C with no UV light. Allow the part to reach temperature, then hold for 1 hour for small parts or 3 hours for large parts
2. Turn on the LEDs to post-cure for 1 hour.
3. Transfer the parts into a high temperature oven that has been pre-heated to 60°C.
4. Have the oven ramp up at 1°C/min to 120°C.
5. Hold at 120°C for 2 hours.
6. Allow to cool slowly.

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