



Elastic DL160

460nm

Optimised for:

Sportswear protection and helmets

Vibration and impact dampening

Padding for prolonged skin contact

Gaskets and seals



Elastic DL160 is a 3D printing resin engineered for energy dampening and elastomeric flexibility, remaining resilient down to -24°C. With 90% energy absorption, high elongation at break and accurate, z-bleed-free printing, it's a dependable choice for sports and military protection, padding and vibration-dampening components.

This Technical Data Sheet details the resin's mechanical properties, processing parameters and performance characteristics.

Compatibility:

460nm LCD 3D Printers
Such as LC Magna

Colour

Translucent , Black



Available:

5kg bottles



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Key Features



Energy Dampening

Absorbs 90% of impact energy, staying resilient even at -24°C.



High Elongation at Break

Stretches significantly before breaking, suited to repeated-flex applications.



Elastomeric Properties

Rubber-like flexibility and resilience for padding, seals and gaskets.



Accurate Printing

Precise, detailed parts with no z-bleeding, even in soft, flexible builds.



Elastic DL160 Translucent Properties

Tensile Properties*	Green	Post-Cured	Method
Tensile Modulus	1.48 MPa	13 MPa	ASTM D412
Ultimate Tensile Strength	0.98 MPa	12 MPa	ASTM D412
Tensile strength at 50% Elongation	-	2 MPa	ASTM D412
Tensile strength at 100% Elongation	-	4 MPa	ASTM D412
Elongation at Break	-	162%	ASTM D412

Mechanical Properties*	Post-Cured	Method
Tear Strength	20 kN/m	ASTM 624
Rebound Resilience	10%	ASTM D7121

General Properties*		
Shore Hardness	70 Shore A	ASTM D2240
Tg (DSC, S1 -57, S2 8)	-24°C	Internal
Water absorption (%)* after 24 hrs	0.34%	ASTM D570
Water absorption (%)* after 72 hrs	0.38%	ASTM D570
Water absorption (%)* after 7 days	0.56%	ASTM D570

* Post cured for 2 hours at 60°C with Photocentric Cure L2

Liquid Properties	Value	Method
Viscosity	1100 cPs	At 25°C Brookfield spindle 3
Liquid density	1.04 g/cm ³	-
Storage	10<T<50°C	-



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



Elastic DL160 Black Properties

Tensile Properties	Green	Post-Cured	Method
Tensile Modulus	1.60 MPa	19.5 MPa	ASTM D412
Ultimate Tensile Strength	1.16 MPa	18.6 MPa	ASTM D412
Tensile strength at 50% Elongation	-	2.5 MPa	ASTM D412
Tensile strength at 100% Elongation	-	18 MPa	ASTM D412
Elongation at Break	-	149%	ASTM D412

Mechanical Properties	Post-Cured*	Method
Tear Strength	23.2 kN/m	ASTM 624
Rebound Resilience	9.5%	ASTM D7121

General Properties		
Shore Hardness	74 Shore A	ASTM D2240
Tg (DSC, S1 -57, S2 8)	-24°C	Internal
Water absorption (%)* after 24 hrs	0.29%	ASTM D570
Water absorption (%)* after 72 hrs	0.45%	ASTM D570
Water absorption (%)* after 7 days	0.62%	ASTM D570

* Post cured for 2 hours at 60°C with Photocentric Cure L2

Liquid Properties	Value	Method
Viscosity	1100 cPs	At 25°C Brookfield spindle 3
Liquid density	1.04 g/cm ³	-
Storage	10<T<50°C	-



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Design & Print Orientation Consideration Parameters

Properties	Parameters
Minimum feature size (pins)	0.6mm
Minimum hole diameter	1mm
Minimum slot thickness	1.2mm
Minimum wall thickness	0.5mm
Overhangs	Successful for overhangs $\leq 45^\circ$
Scaling factor	N/A (Photocentric Studio profiles reflect this value, no need for adjustment)
Scaling factor for lattice structure with beam thickness $\leq 2\text{mm}$	-4% XY and N/A Z (requires adjustment on Photocentric Studio profiles)

Correct shrinkage

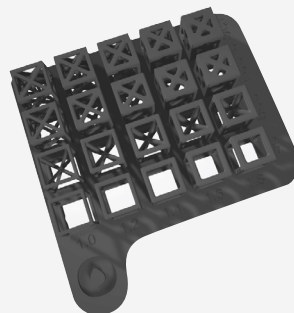
☒ Shrinkage correction scale xyz

0.9600	0.9600	1.0000
96.00%	96.00%	100.00%

Lattice Parameters

Photocentric applications team designed the following lattice test piece, as a recommendation for the user's first print with any flexible resin. By doing so, the user will understand the resin properties in relation to design parameters and assist them to design their next parts accordingly.

To download the file please click [here](#).



Photocentric worked closely with General Lattice Frontier Software, a free-to-search material library of validated mechanical property data designed to support users in the selection of the best lattice, material, and hardware combination.

Elastic DL160 is one of the validated materials on Frontier library.

<https://www.generallattice.com/frontier>

Recommended orientations to print	45° angle or vertical as possible.
Recommended support structure to print	Depending on part size, choose a desired support profile in Photocentric Studio.



Pre-Print Instructions

- To print with Photocentric Liquid Crystal Magna, choose Elastic DL160 - Translucent at desired layer thickness when preparing your print file in Photocentric Studio.
- Heat the resin to 30°C in the bottle.



Post-Print Instructions

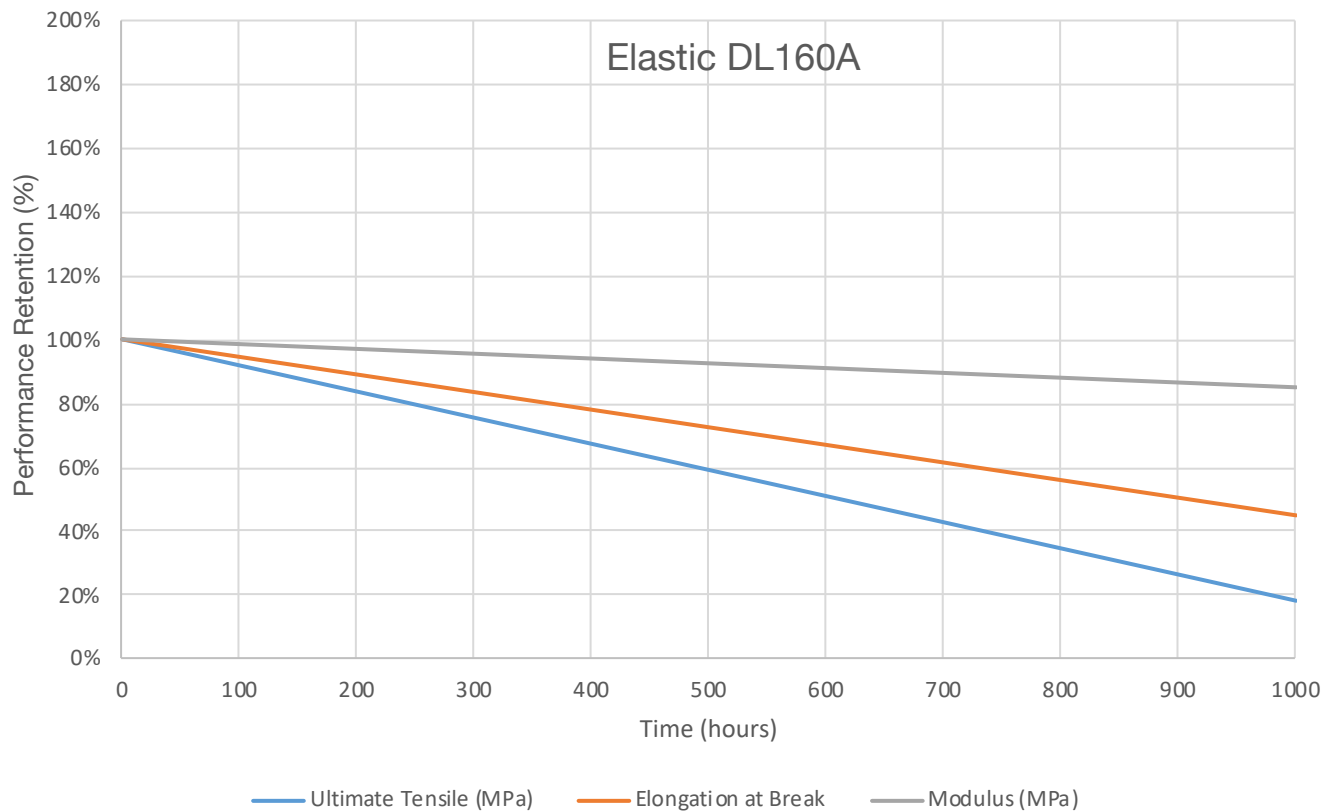
1. Parts can be washed in 'Photocentric Air Wash L' for 10-12 minutes using 'Photocentric Resin Cleaner 30'.
2. Make sure you do not exceed the recommended wash cycles as it might have an adverse effect on the mechanical properties.
3. Once washed, rinse with lukewarm water for 1-2 minutes. Parts can deform in hot/warm water.
4. Gently dry with compressed air to remove any remaining water. Or alternatively, leave to air-dry.
5. To reach the ultimate mechanical properties: Place the platform into the Photocentric Cure L2 for a minimum of 2 hours at 60°C.
6. Remove the platform from the Cure L2 and remove the part/s from the platform with using a scraper. It is easier to remove parts when they are still warm.



Elastic DL160 Translucent UV Aging

Specific UV ageing testing in accordance with 'ISO 4892 Part2 Method A Cycle 1 for a duration of 1000 hrs' was externally performed on Photocentric Elastic DL160 - Translucent Resin.

Mechanical properties including Tensile Modulus, Tensile Strength at Break and Elongation at Break were evaluated after 1000 hours of exposure and compared against a zero-hour control.*



*All mechanical testing was carried out under ASTM D412 (Type C) for flexible/elastomeric materials, and ASTM D638 (Type IV) for rigid/durable materials.