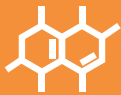




Technical Datasheet

Rigid DL240 Plant-Based



Daylight Resin

Photocentric



Rigid DL240 Plant-Based

Accuracy (Low – High)



Shore Hardness (Low – High)



Compatible Printers



Liquid Crystal
MAGNA

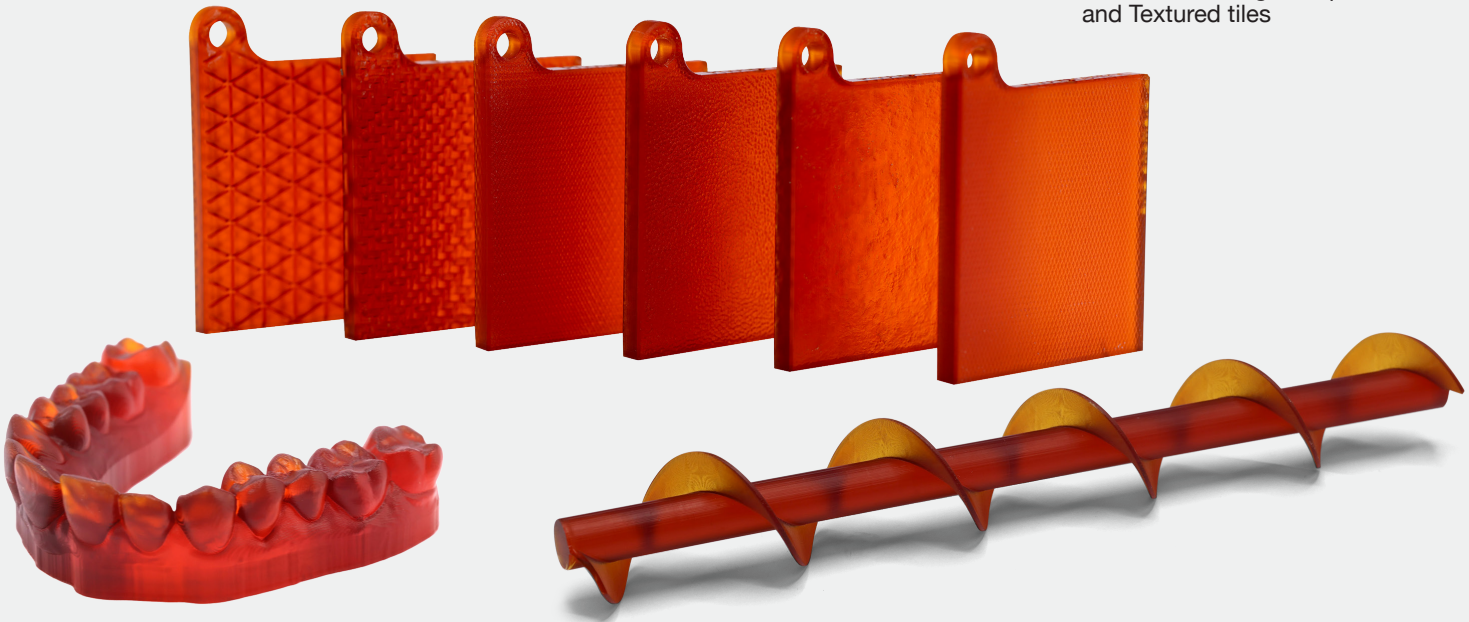
Colour



Translucent

Available in
5kg bottle

Dental model aligner, Spiral
and Textured tiles



Rigid DL240 Plant-Based is a high-performance rigid 3D printing resin which consists of 50% bio-based raw materials, offering a substantial reduction on net CO₂ emission compared to conventional resins. It is remarkably easy to handle and process, along with exhibiting outstanding properties.

Rigid DL240 Plant-Based has high accuracy, with over 98% of scanned data within +/- 100µm for dental models printed horizontally and over 83% of scanned data within +/- 100µm for dental models printed vertically, increasing output for overnight production. It enables quick design iterations by offering 250 and 350µm layer thickness print profiles.

Optimised for

● Fast & Accurate Prototyping

● Dental Models for Aligner manufacturing

Unique features



High accuracy



Exceptional surface finish and smooth feel



Quick design iterations



Rigid



50% of components from plant-based materials



Dry to touch



Fast post curing



Rigid DL240 Plant-Based Properties

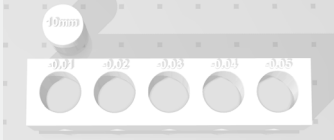
Tensile Properites	Green	Post-Cured	Method
Tensile Modulus	1210 MPa	2440 MPa	ASTM D638
Tensile Strength (Break)	27 MPa	56.6 MPa	ASTM D638
Tensile Strength (Yield)	24.3 MPa	64.5 MPa	ASTM D638
Elongation at Break	19.2%	6.1%	ASTM D638
Flexural Properties			
Flexural Strength	-	108 MPa	ASTM D790
Flexural Modulus	-	2656 MPa	ASTM D790
Impact Properties			
Impact Strength Notched Izod	-	12.2 J/m	ASTM D256
Impact Strength Notched Izod	-	2.2 kJ/m2	ISO 180
General Properties			
Shore Hardness	-	88 Shore D	ASTM D2240
HDT (@ 0.455 MPa)	-	78.4°C	ASTM D648
HDT (@ 1.82 MPa)	-	62.6°C	ASTM D648
Water absorption (%)* after 24 hrs	-	0.470%	ASTM D570
Water absorption (%)* after 72 hrs	-	0.625%	ASTM D570
Water absorption (%)* after 7 days	-	0.933%	ASTM D570
Liquid Properties		Value	Method
Viscosity		580 cPs	At 25°C Brookfield spindle 3
Density		1.10 g/cm³	-
Storage		10<T>50°C	-

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



Design & Print Orientation Consideration Parameters

There are some design guidelines for printing parts with Liquid Crystal Magna

Properties	Parameters
Minimum feature size (pins)	0.2mm
Minimum hole diameter	0.4mm
Minimum slot thickness	0.4mm
Minimum wall thickness	0.3mm
Overhangs	Successful for overhangs $\leq 15^\circ$
Round Dim Fit	Parts fit with no resistance at 0.09mm offset Click to view sample
	
Square Dim Fit	Parts fit perfectly with no resistance at 0.06mm offset Click to view sample
	
Minimum wall thickness unsupported	Minimum wall thickness unsupported is 1mm with maximum height of 100mm.



Pre-Print Instructions

1. To print with Photocentric Liquid Crystal Magna, choose Rigid DL240 Plant-Based - Translucent at desired layer thickness when preparing your print file in Photocentric Studio.
2. Heat the resin to 30°C in the bottle.
3. Shake the resin bottle for 2 minutes before pouring into the resin vat.



Post-Print Instructions

1. Parts can be washed in 15 minutes using Photocentric Resin Cleaner or alternatively, in 10 minutes using Photocentric Resin Cleaner 30.
2. Make sure you do not exceed the recommended wash cycles as it might have adverse effect on the mechanical properties.
3. Once washed, rinse with warm water for 1-2 minutes
4. 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 using just the UV light with no heating. For medium to large parts post curing might take between 3 to 4 hours again just using the UV light with no heating.
 - If only 'dry to touch' finish is required, for example for dental models, 30 minutes post curing should be adequate.

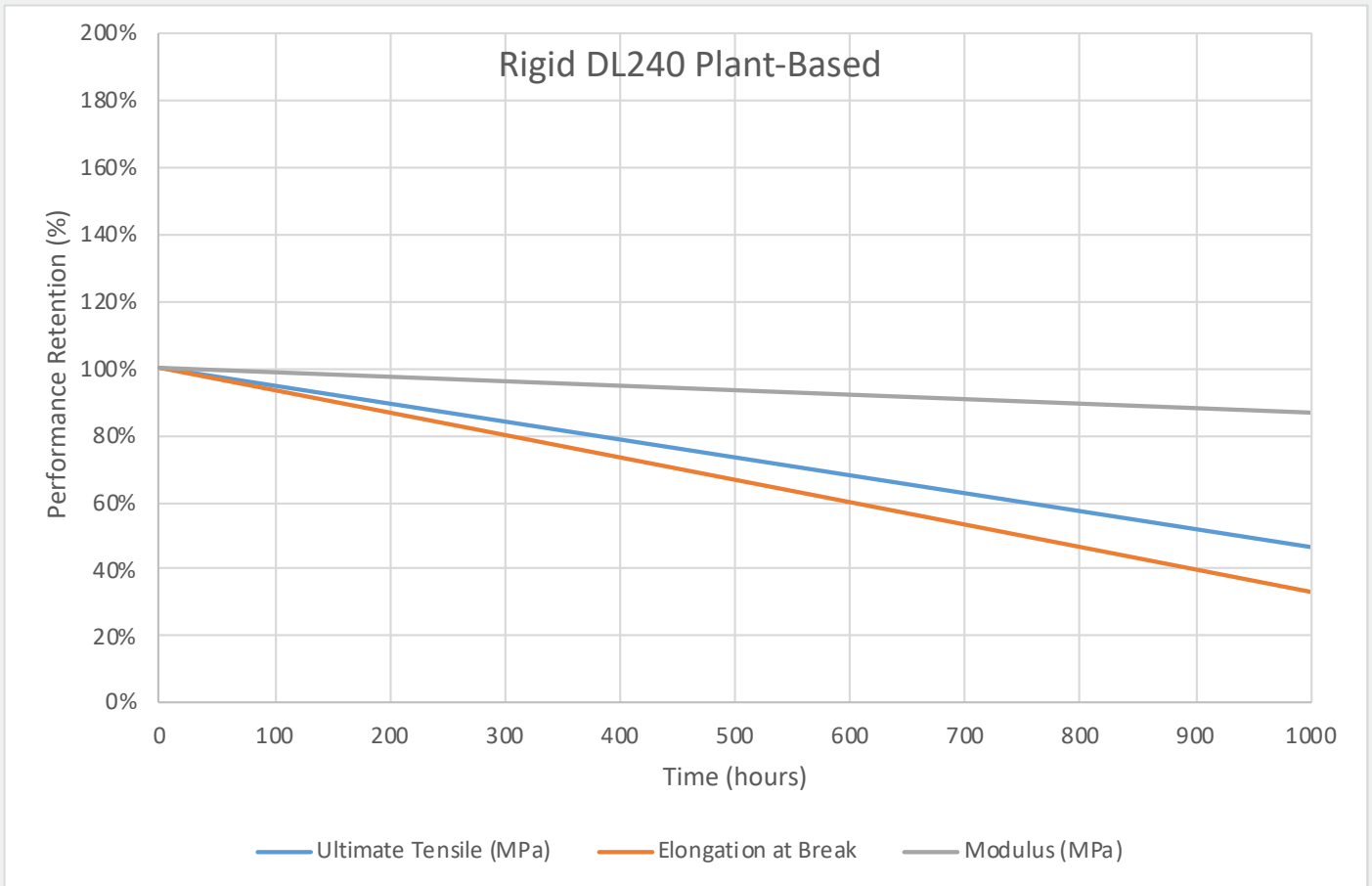
For this resin, we suggest printing parts on supports for easy removal from the platform.

6. Remove the platform from the Cure L2 and immediately leave it for 2 minutes under running cold water below 14°C for thermal shocking. Parts can be removed from the platform with minimal effort.



Rigid DL240 Plant-Based Aging

Specific UV ageing testing was externally performed on Photocentric Rigid DL240 Plant-Based - 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.