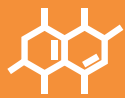




Technical Datasheet

Flexible DL220B



Daylight Resin

Photocentric



Flexible DL220B

Shore Hardness (Low – High)



Elongation (Low – High)



Compatible Printers

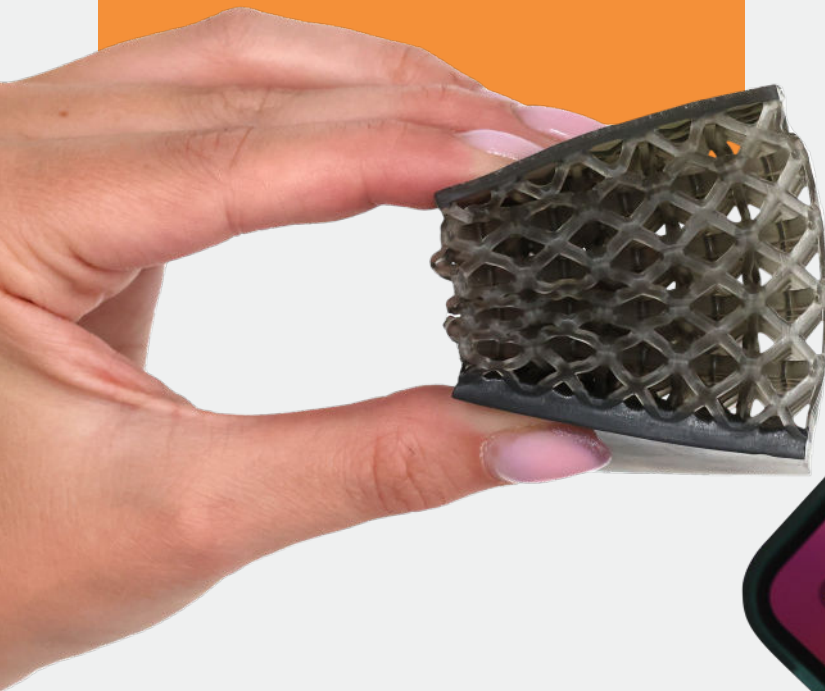


Liquid Crystal
MAGNA

Colour



Black
Translucent



Phone case

Creating complex geometries like lattices, with 'Flexible' materials, allows the user to maximise the benefits of 3D printing, making a part with dynamic properties with only one step manufacturing instead of several.

Photocentric is introducing its first ever industrial Daylight Flexible Resin- 'Flexible DL220B' – an optimised solution for applications which require a combination of impact absorption, high elongation, efficient energy damping, good tear strength and exceptionally low water absorption.

Printing of flexible materials has never been easier, owing to its superior green strength and excellent definition.

Optimised for:

- | | |
|--------------------|-------------------------------|
| ● Sport protection | ● Shock and impact absorption |
| ● Cushioning | ● Vibration damping |

Unique features:



Remarkable elongation at break
>200%



Slow rebound and efficient energy damping



Exceptionally low water absorption
(<1% after 7days)



High definition



Flexible DL220B Properties

| Tensile Properites | Green | Post-Cured | Method |
|------------------------------------|------------|------------------------------|-----------------|
| Tensile Modulus | 20 MPa | 66.4 MPa | ASTM D412 |
| Tensile Strength (Break) | 2.6 MPa | 14 MPa | ASTM D412 |
| Elongation at Break | 107% | 211% | ASTM D412 |
| Mechanical Properties | | | |
| Tear Strength | - | 21 kN/m | ASTM 624 Type C |
| Rebound Resilience | - | 19.6% | ASTM D7121 |
| General Properties | | | |
| Shore Hardness | - | 80 Shore A | ASTM D2240 |
| Water absorption (%)* after 24 hrs | - | 0.32% | ASTM D570 |
| Water absorption (%)* after 72 hrs | - | 0.53% | ASTM D570 |
| Water absorption (%)* after 7 days | - | 1.09% | ASTM D570 |
| Liquid Properties | Value | Method | |
| Viscosity | 1600 cPs | At 25°C Brookfield spindle 3 | |
| Density | 1.06 g/cm3 | - | |
| Storage | 10<T>50°C | - | |

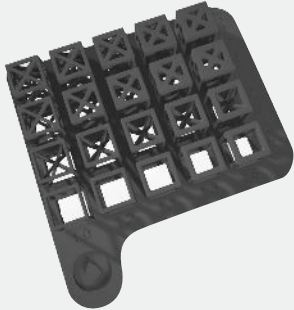
* Post cured for 10 hours at 60°C with Photocentric Cure L2



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

| Properties | Parameters |
|--|---|
| Minimum feature size (pins) | 0.7mm |
| Minimum hole diameter | 1mm (but no deeper than 5mm) |
| Minimum slot thickness | 0.7mm |
| Minimum wall thickness | 0.5mm |
| Overhangs | Successful for overhangs $\leq 15^\circ$ |
| Minimum wall thickness unsupported | Minimum wall thickness unsupported can be 2mm, while the Z built height should be <60mm Or can be 3mm, while the Z built height should be <110mm |
| Scaling factor | N/A |
| Lattice Parameters | <p>Photocentric applications team designed the following different lattices test piece as a recommendation for user's first print with any flexible resin.</p> <p>By doing so, user will understand resin properties in relation to design parameters and assist them to design their next parts accordingly.</p> <p>To download the file please click here.</p>  |
| 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 'Flexible DL220B' at desired layer thickness when preparing your print file in Photocentric Studio.
- Heat the resin to 30°C in the bottle.
- Shake the resin bottle for 2 minutes before pouring into the resin vat.
- Shaking the resin before it's poured into the vat ensures pigments and other constituents of the resin are evenly dispersed.



Post-Print Instructions

1. Parts can be washed in 'Photocentric Air Wash L' for no longer than 15 minutes using 'Photocentric Resin Cleaner' or '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 warm water for 1-2 minutes
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 10 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.