

Technical Datasheet

Prusament PLA Lightweight

OpenPrintTag
compatible



1 Identification

Trade Name	Prusament PLA Lightweight
Chemical Name	Polylactic Acid filled with foaming additives
Usage	FFF/FDM 3D printing
Diameter	1.75 ± 0.03 mm
Manufacturer	Prusa Polymers a.s., Prague, Czech Republic

1.1 Recommended print settings

Nozzle Temperature [°C]	215-250
Heatbed Temperature [°C]	60 ± 10
Print Speed [mm/s]	up to 100
Cooling Fan Speed [%]	30 (only when printing bridges, it is at 100%)
Bed Type	Smooth PEI / Satin

2 Typical material properties

Metric	Typical Value	Method
MFR [g/10 min]	N/A	ISO 1133
MVR [cm ³ /10 min]	N/A	ISO 1133
Density [g/cm ³]	1.18	ISO 1183
Moisture Absorption in 24 hours [%](1)	0.29	Prusa Polymers
Moisture Absorption in 7 days [%](1)	0.34	Prusa Polymers
Tensile Yield Strength for Filament [MPa]	39.7±0.7	ISO 527

(1) 25 °C; humidity 30%

2.1 Mechanical properties of 3D printed testing specimens at 215 °C (2)

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Property\Print Direction	Horizontal	Vertical xz	Method
Tensile Yield Strength [MPa]	37.1±1.2	40.5±1.3	ISO 527-1
Tensile Modulus [GPa]	2.1	2.2	ISO 527-1
Elongation at Yield Point [%]	2.7±0.1	2.7±0.1	ISO 527-1
Flexural Strength [MPa]	64.5±1.7	73.5±1.5	ISO 178
Flexural Modulus [GPa]	2.7±0.1	2.5±0.2	ISO 178
Deflection at Flexural Strength [mm]	7.7±0.1	8±0.5	ISO 178
Impact Strength Charpy [kJ/m ²](3)	14±1	15.5±0.7	ISO 179-1
Impact Strength Charpy Notched [kJ/m ²](4)	7±0.3	6.2±0.5	ISO 179-1
Hardness – Shore D	78	N/A	Prusa Polymers
Heat Deflection Temperature (0.45 MPa) [°C]	78.8	N/A	ISO 75
Heat Deflection Temperature (1.80 MPa) [°C]	52	N/A	ISO 75
Interlayer Adhesion [MPa]	N/A	16.4±0.7	Prusa Polymers

2.2 Mechanical properties of 3D printed testing specimens at 235 °C (2)

Property\Print Direction	Horizontal	Vertical xz	Method
Tensile Yield Strength [MPa]	6.4±0.1	7.1±0.1	ISO 527-1
Tensile Modulus [GPa]	0.6	0.6	ISO 527-1
Elongation at Yield Point [%]	1.6	1.5±0.1	ISO 527-1
Flexural Strength [MPa]	11.4±0.3	13.4±0.2	ISO 178
Flexural Modulus [GPa]	0.6	0.6	ISO 178
Deflection at Flexural Strength [mm]	9.4±0.6	9.7±0.6	ISO 178
Impact Strength Charpy [kJ/m ²](3)	5	6±0.4	ISO 179-1
Impact Strength Charpy Notched [kJ/m ²](4)	2.1±0.1	2.2±0.1	ISO 179-1
Hardness – Shore D	38	N/A	Prusa Polymers
Heat Deflection Temperature (0.45 MPa) [°C]	65.3	N/A	ISO 75
Heat Deflection Temperature (1.80 MPa) [°C]	64.9	N/A	ISO 75
Interlayer Adhesion [MPa]	N/A	16.4±0.7	Prusa Polymers

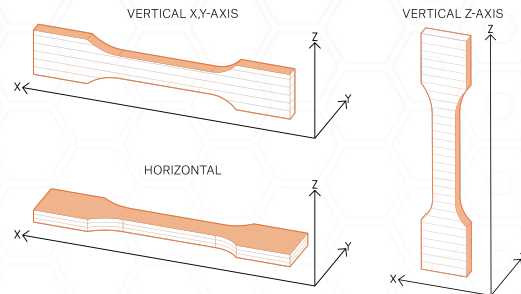
(2) The Original Prusa MK4S printer was used

to make testing specimens.

Prusa Slicer 2.9.6 was used to create G-codes with the following settings:

- Prusament PLA Lightweight Filament;
- Print Settings: 0.20 mm (layers 0.20 mm);
- Solid Layers: Top: 0, Bottom: 0;
- Perimeters: 2;
- Infill: 100% rectilinear;
- Infill Print Speed: 50 mm/s;
- Nozzle Temperature: 215 °C all layers / 235 °C all layers;
- Bed Temperature: 60 °C all layers
- Extrusion multiplier: 1 (for 215 °C) / 0.38 (for 235 °C);
- Infill/perimeters overlap: 30 % (for 215 °C) / 15 % (for 235 °C);
- Cooling disabled

Other parameters are left at default values.



(3) Charpy unnotched – Edgewise direction of blow according to ISO 179-1

(4) Charpy notched – Edgewise direction of blow according to ISO 179-1

Disclaimer:

The results presented in this data sheet are just for your information and comparison. Values are significantly dependent on print settings, operator experiences, and surrounding conditions. Everyone has to consider suitability and possible consequences of printed parts usage. Prusa Polymers can not carry any responsibility for injuries or any loss caused by using Prusa Polymers material. Before using Prusa Polymers material read properly all the details in the available safety data sheet (SDS).