

Technical datasheet

Light Weight PLA-HT (LW-PLA-HT)

colorFabb

Date of issue: November 28th, 2023
Version: v1.0

Description

Light Weight PLA-HT has a formulation featuring an increased temperature resistance compared to generic LW-PLA. Thinly printed structures will be able to handle heat from external sources at prologues exposure. The LW-PLA-HT is an excellent filament for printing RC Planes, Cosplay, and other light weight items.

Typical Properties

Mechanical Properties – 3D Printed

	Method	Value @ foaming		Unit
		210°C; 100%	230%; 60%	
Youngs Modulus	Tensile, ISO 527-1A	3000	1050	MPa
Tensile Strength	Tensile, ISO 527-1A	35	9	MPa
Elongation at break	Tensile, ISO 527-1A	3	1.8	%
Flexural Modulus	Flexural, ISO 178	N/A	N/A	MPa
Flexural Strength	Flexural, ISO 178	N/A	N/A	MPa
Impact Strength	Charpy Notch, ISO 179	2.6	<1	kJ/m ²
Heat Deflection Temp.	HDT-B, ISO 75	72	N/A	

Mechanical Properties – Injection Molded*

	Method	Value	Unit
Youngs Modulus	Tensile, ISO 527-1A	3800	MPa
Tensile Strength	Tensile, ISO 527-1A	55	MPa
Elongation at break	Tensile, ISO 527-1A	3	%
Flexural Strength	Flexural, ISO 178	N/A	MPa
Impact Strength	Charpy Notch, ISO 179	2.8	kJ/m ²
Density	ISO 1183	1,2	g/cm ³

Thermal Properties*

	Method	Value	Unit
Glass Transition Temp.	DSC, ISO 11357	55-60	°C
Melting Temp.	DSC, ISO 11357	150-160	°C
Decomposition Temp.	TGA, ISO 11358	N/A	°C
Heat Deflection Temp.	HDT-B, ISO 75	135	°C
Melt Flow Index	MFI, (210°C/2.16 kg), ISO 1133-A	6	g/10min
Melt Flow Index	MFI, (190°C/1.16 kg), ISO 1133-A	3	g/10 min

*These results are obtained from printed samples of UNFOAMED PLA-HP

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Filament Specifications

	Unit		
Diameter	mm	1.75	2.85
Max. roundness deviation	mm	± 0.05	± 0.1
Net. Filament weight	g	750	750

Guideline for print settings

	Unit	
Nozzle Temp.	°C	195-240
Bed Temp.	°C	50-60
Bed / surface modification	-	-
Active cooling fan	%	-
Print Speed	mm/s	40-100

Notes

The reported properties are an average of a batch of 3D specimens.

The specimens have been printed in XY plane, using 0.2 mm layer height, 100% infill, 0,4 mm nozzle, 200-250 °C nozzle temperature and 50°C bed temperature.

For printing thin structure (such as for RC plane parts), it is recommended to print the first layer at 100% flow using 200°C nozzle temperatures. Increasing the temperature for the second layer (roughly 235°C) to activate the foaming, and reduce the flow to 50-60% for maximum results.

Disclaimer

The product- and technical information provided in this datasheet is correct to the best of our knowledge. The information given is provided as a guidance for good use, handling and processing, and is not to be considered as a quality specification. The information only relates to the specific product and the material properties.