ELEGOO Rapid PLA Plus Filament

Technical Specification Sheet

Revision 1.0 | November 2025

Product Overview

ELEGOO Rapid PLA Plus is an advanced polymer material engineered specifically for high-speed Fused Deposition Modeling (FDM) 3D printers. Its formulation achieves exceptional melt flow rate, enabling reliable printing speeds up to 600 mm/s while significantly improving model strength and toughness compared to standard PLA.

Material Characteristics

- **Material Type:** Poly(lactic acid) enhanced composite (PLA+)
- **Filament Diameter:** 1.75 mm
- **Dimensional Accuracy:** Superior precision, ± 0.02 mm
- **Toughness:** High flexural modulus and elongation at break
- **Flow Rate:** Optimized for high-speed extrusion

Recommended Printing Parameters

The following settings serve as a general guideline. Optimal settings may vary depending on the specific printer model and environment (e.g., ELEGOO Neptune 4 Series).

Table 1: **ELEGOO Rapid PLA Plus Printing Guidelines**

Parameter	Typical Value	Notes
Nozzle Temperature	$210°\text{C} - 230°\text{C}$	Start at $215°\text{C}$ for best results.
Build Plate Temperature	$50°\text{C} - 65°\text{C}$	Recommended on PEI spring steel plate.
Printing Speed (Max)	**600** mm/s	Requires high-flow hotend and rigid frame.
Cooling Fan Speed	100%	Essential for high-speed layer cooling.
Layer Height	0.1 mm $- 0.3$ mm	Consistent layer stack-up is key.

Physical and Mechanical Properties

- **Density:** 1.24 g/cm^3 (Approximate)
- **Melt Flow Index (MFI):** High (optimized for rapid melt)
- **Tensile Strength:** Enhanced compared to standard PLA
- **Notched Impact Strength:** Significantly improved for anti-brittleness
- **Heat Deflection Temp. (HDT):** Requires post-processing for high-temp applications

Storage and Handling

Shelf Life: 12 months when stored properly.
Storage Temperature: Optimal at $20°$C $- 25°$C ($68°$F $- 77°$F).
Humidity: Keep dry. Store in a sealed container or filament dryer after opening.
Packaging: Vacuum-sealed with desiccant. Eco-friendly cardboard spool.

Disclaimer: The data presented herein are typical values and are not intended for use in establishing specification limits or for use alone in design. ELEGOO assumes no liability for the suitability of this product for specific applications.