Hyper-PLA RFID Filament Technical Data Sheet

Version 1.0

1. Product introduction

Hyper PLA RFID filament (with smart tag recognition) features excellent flowability and fast curing properties. It is a 3D printing filament developed based on PLA. This filament is suitable for both high-speed and low-speed printing, supporting printing speeds up to 600mm/s, and offers exceptional mechanical performance and tensile strength. Compared to standard ABS filament, Hyper PLA RFID has a low shrinkage rate, preventing edge warping during printing and ensuring successful print completion. Its integrated RFID tag enables the printer to automatically identify and track the filament, manage remaining material levels, store color information, and ultimately enhance printing efficiency.

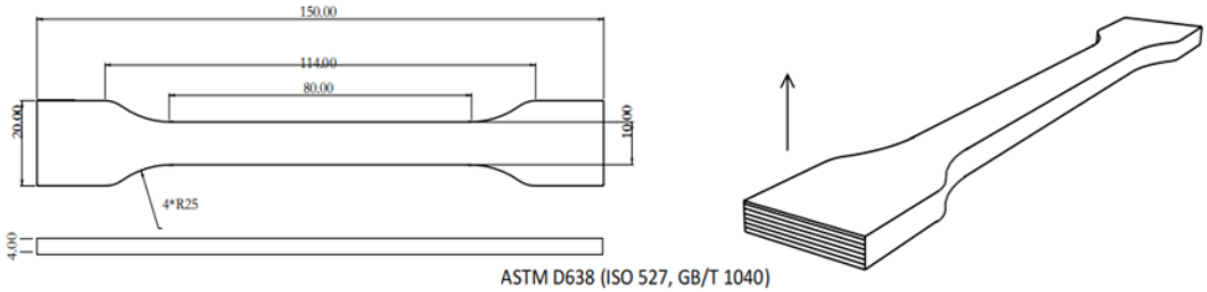
2. Physical Performance Parameters

Items	Testing Criteria	Parameters
Density	ASTM D792 (ISO 1183, GB/T 1033)	1.24 ±0.1 (g/cm^3 at 21.5˚C)
Glass transition temperature	DSC, 10°C/min	62 (°C)
Vicat Softening temperature	ASTM D1525 (ISO 306 GB/T 1633)	62.3 ±0.5 (˚C)
Melt index	190°C, 2.16kg	3-5 (g/10 min)

3. Mechanical Performance Parameters

Printing parameters and styles of printing conditions:

Print Conditions	Parameters
Nozzle Temperature	220°C
Hot Bed Temperature	60°C
Printing Speed	300mm/s
Infill	100%



ASTM D638 (ISO 527, GB/T 1040)

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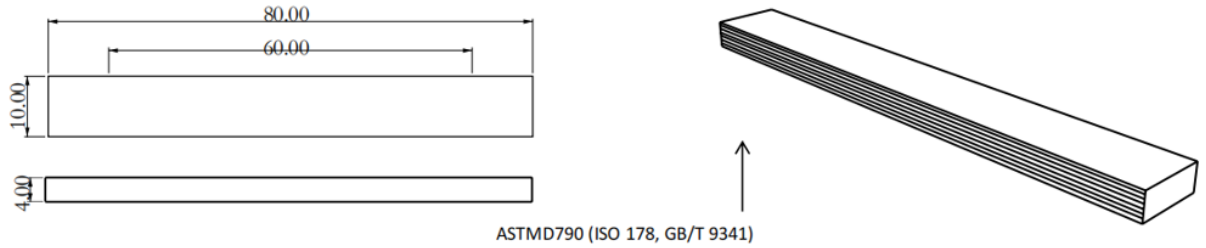

ASTMD790 (ISO 178, GB/T 9341)

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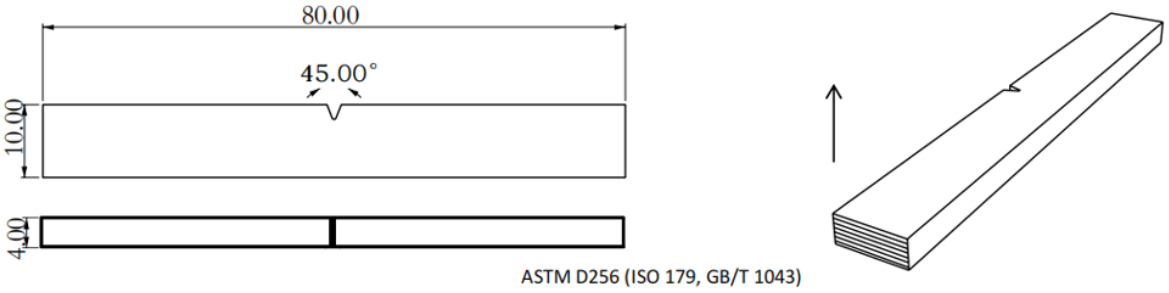

ASTM D256 (ISO 179, GB/T 1043)

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Items	Testing Criteria	Parameters
Tensile strength (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	43.357 (MPa)
Elasticity modulus (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	1885.947 (Mpa)
Elongation at break (X-Y)	ASTM D638 (ISO 527, GB/T 1040)	12.358 (%)
Tensile strength (Z)	ASTM D638 (ISO 527, GB/T 1040)	27.949 (Mpa)
Elasticity modulus (Z)	ASTM D638 (ISO 527, GB/T 1040)	1678.200 (Mpa)
Bending strength (X-Y)	ASTMD790 (ISO 178, GB/T 9341)	75.858 (MPa)
Bending modulus (X-Y)	ASTMD790 (ISO 178, GB/T 9341)	2881.747 (MPa)
Charpy impact strength (X-Y)	ASTM D256 (ISO 179, GB/T 1043)	17.586 (kJ/m^2)

4. Recommended printing conditions

Print Temperature	Hotbed Temperature	Ambient Temperature	Print Speed	Pumping Distance
190-230°C	25-60°C	0-50°C	40-600mm/s	1-5mm

5. Compatible Models

Hyper PLA RFID is wildly used in FDM 3D printers on the market.

6. Storage Condition

Please place this product in a dry and ventilated environment, avoiding high temperatures, direct sunlight, or humid conditions. If it is not used up shortly after opening, it is recommended to store it with a drying box for future use.

7. Disclaimer

The values given in this data sheet are for reference and comparison only. Actual values may vary with printing conditions, and the end-use performance of printed models depends on model designs, environmental conditions, printing conditions, etc.