

IPCON FILA™ PPA CF
Carbon Fiber Reinforced Polyphthalamide Filament



This is the filament's Technical Data Sheet (TDS). If you want the Material Safety Data Sheet (MSDS), please contact the customer service to download.

• Product Information

Item	Data
Filament Diameter	1.75 ± 0.05 mm
Net Filament Weight	0.75 kg ± 0.5%
Filament Length	250 m ± 2%
Spool Material	Cardboard (max heat resistance: 150 °C)
Spool Size	Outer Cardboard's diameter: 200 mm; Inner roller's diameter: 110 mm

• Filament's Properties

Physical Properties	Testing Methods	Data
Density	ISO 1183-3	1.26 g/cm ³
Saturated Water Absorption Rate	25 °C, 55% RH, room air	1.30%
Melt Index	290 °C, 2.16 kg	12.4 g/ 10 min
Melting Temperature	DSC, 10 °C/min	261 °C
Vicar Softening Temperature	ISO 306, GB/T 1633	233 °C
Heat Deflection Temperature	ISO 75, 0.45 MPa	227 °C

Mechanical Properties*	Testing Methods	Data*
Tensile Strength XY	ISO 527, GB/T 1040	169 MPa
Tensile Strength Z	ISO 527, GB/T 1040	58 MPa
Young's Modulus XY	ISO 527, GB/T 1040	12673 MPa
Young's Modulus Z	ISO 527, GB/T 1040	4269 MPa
Breaking Elongation Rate XY	ISO 527, GB/T 1040	2.2%
Breaking Elongation Rate Z	ISO 527, GB/T 1040	1.2%
Flexural Strength XY	ISO 178, GB/T 9341	256 MPa
Flexural Strength Z	ISO 178, GB/T 9341	80 MPa
Flexural Modulus XY	ISO 178, GB/T 9341	11384 MPa
Flexural Modulus Z	ISO 178, GB/T 9341	3278 MPa
Impact Strength XY	ISO 179, GB/T 1043	34.2 kJ/m ²
Impact Strength Z	ISO 179, GB/T 1043	4.6 kJ/m ²

*The mechanical properties were tested on specimens printed by IPCON using a Bambu X1C printer (nozzle temperature: 290 °C, bed temperature: 100 °C, printing speed: 150 mm/s, infill density: 100%, infill pattern: concentric) and black PPA CF Filament. The data is for user reference and comparison only. When using it, users are responsible for the safety, legal compliance and product performance.

• Main Features and Application Scenarios

1. Extreme temperature and humidity resistance (short-term peak of temperature resistance reaches 220 °C); lightweight; super strong and stiff; creep-resistant, ultra low shrinkage and warping, high precision; anti-static (XY direction).
2. ESD parts in the semiconductor and oil and gas industry; metal parts replacement in the drone, automotive and machinery industries.

• Recommended Printing Settings

Drying Settings Before Printing	100 - 140 °C, 6 - 8 h
Printing Temperature and Humidity	$\leq 120\text{ }^{\circ}\text{C}$, $\leq 20\%$ RH (Sealed with desiccant)
Storage Temperature and Humidity	$\leq 35\text{ }^{\circ}\text{C}$, $\leq 20\%$ RH (Sealed with desiccant)
Compatible Support Material	Itself or support filament for PA
Compatible Printer Type	Enclosed-frame (recommended), open-frame,
AMS or CFS	Not Compatible
Compatible Nozzle Material	Hardened steel, diamond, tungsten carbide, etc
Compatible Nozzle Size	0.6 mm (recommended) / 0.4 mm / 0.8 mm
Compatible Plate Type	Smooth / Textured PEI Plate or other plate
Plate Surface Preparation	Apply liquid glue or PVP solid glue stick if the first layer bonding is not firm enough
Nozzle Temperature	280 - 310 °C
Bed Temperature	100 - 120 °C
Fan Speed	0 - 40%
Max Print Speed	250 mm/s

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