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Fibreheart™ PPA-GF

White Black

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Fibreheart PPA-GF combines a high-performance Polyphthalamide (PPA) nylon base with specialized glass fiber (15%) reinforcement.

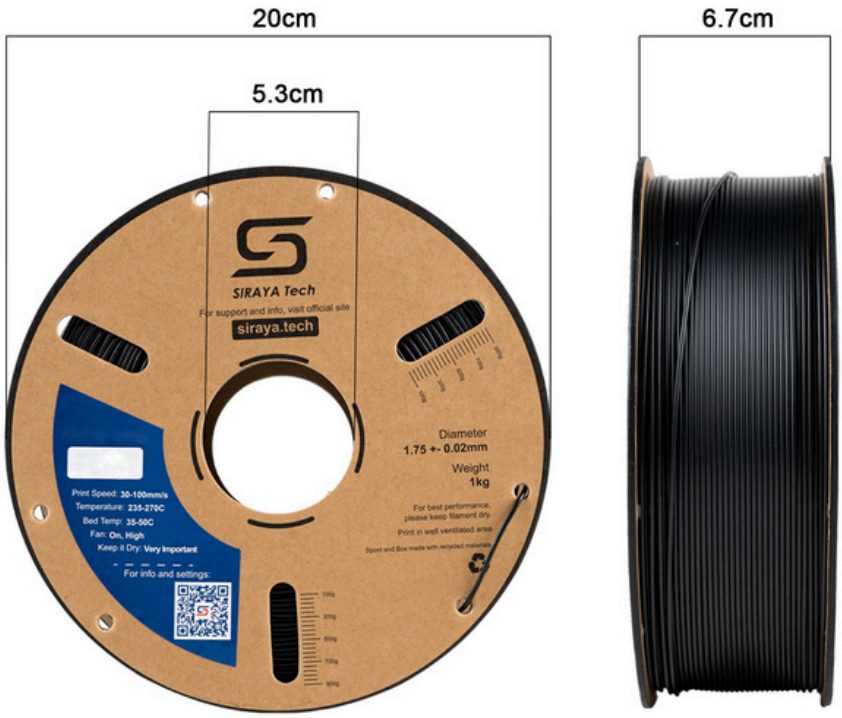
It is designed to deliver a superior combination of mechanical strength, high-temperature performance, chemical resistance, and exceptional dimensional stability.

Ideal for:

- Automotive,
- Industrial,
- Aerospace & UAV,
- Electronics,
- End-Use Components.

Specifications

Specifications	Data
Name	Fibreheart PPA-GF
Color	Black, White
SKU	ST3026
Net weight (KG)	1
Gross weight (KG)	1.5
Package Dimensions	21*21*7.5 cm
Diameter (mm)	1.75±0.03
Material Type	Polyphthalamide (PPA Nylon)
Filament Density (g/cm3)	1.27



Manual measurement data may have slight deviations

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Property Data

Mechanical Properties	Unannealed	Annealed	Method
Tensile Stress at Break (X-Y)	89 MPa	94 MPa	ASTM D638
Tensile Stress at Break (Z)	63 MPa	-	ASTM D638
Young's Modulus (X-Y)	5700 MPa	6000 MPa	ASTM D638
Young's Modulus (Z)	4200 MPa	-	ASTM D638
Elongation at Break (X-Y)	2.7 %	2.2 %	ASTM D638
Elongation at Break (Z)	1.85 %	-	ASTM D638
Charpy impact strength	12.2 KJ/m^2	7.1 KJ/m^2	ISO 179
Bending Strength	141 MPa	148 MPa	ISO 178
Bending Modulus	4200 MPa	5000 MPa	ISO 178

Other Properties	Unannealed	Annealed	Method
Vicat softening temperature	235 ℃	235 ℃	ISO 306
Glass Transition Temperature	80	80 ℃	ASTM D3418
Melting Point	232 ℃	232 ℃	ASTM D3418
HDT Method A	80 ℃	112.2 ℃	1.80 MPa
HDT Method B	84 ℃	185 ℃	0.45 MPa
Water Absorption	1.37	-	ISO 62 Method 1

Work Flow

Read Before Printing

Drying	Always dry the filament at 80-100°C for 4-6 hours before every print job.
Nozzle	A ≥ 0.4mm hardened steel or other wear-resistant nozzle (e.g., ruby, tungsten carbide) is mandatory
Hotend	An all-metal hotend capable of reaching and maintaining 320°C is required.
Enclosure	A passively heated or actively heated enclosed build chamber is recommended to maintain a stable ambient temperature, which prevents warping and improves layer adhesion.
Extruder	A direct drive extruder is the most recommended for precise control over filament flow and retraction.
Build Surface	A PEI sheet, Garolite (G-10), or glass bed with a PVP-based glue stick is recommended.
AMS	Not compatible
Best practices when printing	Print directly from a heated filament dryer or a dry box with active desiccant (<15% RH) to maintain a dry state throughout the printing process.

Recommend Print Setting

Nozzle Temp	300-320 °C
Build Plate Temp	80 - 110°C
Chamber Temp	60 - 80°C
Cooling Fan	0% (OFF)
Print Speed	30 - 100 mm/s

Retraction Distance	1 - 3mm (Direct Drive)
Retraction Speed	30 - 60 mm/s (1800-3600 mm/min)
First Layer Settings	Slower speed (20-30 mm/s) Increased height & width
Build Plate Adhesion	Brim (10-20 lines) or Raft

Work Flow

Post-Processing

Support Removal	• Wear safety glasses to protect your eyes from sharp fragments. • It's often easier to remove support structures while the part is still warm. • Use needle-nose pliers and flush cutters for precise removal.
Annealing (Optional Heat Treatment)	Annealing can significantly increase the heat resistance (HDT), stiffness, and strength of your PPA-GF parts. 1. Preparation: Clean the part and remove all support material. 2. Placement: Place the part on a flat, oven-safe surface (like a metal or glass sheet) to prevent distortion. For complex parts, consider placing them in a bed of sand to support all features. 3. Heating: Heat the part in a convection oven at 90°C for 4 hours. 4. Cooling: Turn the oven off and allow the part to cool down slowly to room temperature inside the oven. Do not remove it early, as this can induce thermal shock and stress.