

Technical Data Sheet

PET-CF Filament

PET-CF is a kind of FDM 3D printing filament, which is produced using LUVOCOM® 3F PET CF modified material as the main raw material. PET-CF is a polyester modified material containing 10% carbon fiber. It has the characteristics of temperature resistance, low shrinkage and easy printing. It can be used on non-heated chamber FDM 3D printers. It has excellent rigidity and tensile strength and can be used for a long time at temperatures of 150°C.

Main features:

High stiffness/Low warping/High temperature resistance

Main Specifications:

Physical Properties	Test Means		
Density	ISO 1183	g/cm ³	1.3~1.31
MFR(190°C/2.16Kg)	ISO 1133	g/10min	3~6
Moisture Absorption(23°C/24h)	ISO 62	%	<0.3
Mechanical Properties			
Tensile strength (X-Y)	ISO 527	Mpa	75~85
Elongation at break (X-Y)	ISO 527	%	4~5
Elongation at break (X-Z)			1.5~2.5
Flexural Modulus (X-Y)	ISO 527	Mpa	4500~5000
Flexural Modulus (X-Z)			2000~2500
Flexural Strength (X-Y)	ISO178	Mpa	140~150
Impact Strength (X-Y)	ISO180	KJ/m ²	25~30
Thermodynamic Properties			
HDT@ 0.455 MPa(66 psi)	ISO75	°C	190
Continuous Use Temperature	IEC 60216	°C	150

Test Sample Printing Conditions:

3D Printer	Bambu X1C
Nozzle Diameter	0.6mm
Nozzle Temperature	280 °C
Printing Speed	100mm/s
Layer	1.8mm
Infill	100%
Standard Printed Sample	See blew attachment

Recommended Printing Parameters:

Parameters	
Nozzle Temperature	260~290 °C (recommend 280 °C)
Bed Temperature	70~100 °C (recommend 90 °C)
Bed Materials	Tempered glass, BuildTak, Carbon fiber board
Nozzle Diameter	φ 0.4/0.6mm (φ 0.4mm recommended)
Nozzle and Feeding Gear Material	High Strength Steel
Model Cooling Fan	OFF
Layer	0.12~0.3mm
Printing Speed	60~150mm/s (recommend 100mm/s)
Idle Speed	60~250mm/s
Printing Environmental Temperature	Room temperature ~50 °C
Retraction Distance	1.5~3mm
Retraction Speed	40~60mm/s

Note:

To prevent moisture absorption and contamination, the packaging of filament should be kept closed and intact before use. For the same reason, partially used supplies should be resealed before storage.

If the consumables absorb moisture and deteriorate, they should be dried before use. It is recommended to dry the consumables in a hot air oven at 90 °C~100 °C for at least 12 hours

to ensure the success rate and quality of the printed model.

If PET-CF is used as its own support material, please remove the support structure after the model has cooled. After the model absorbs moisture, the support structure may become glued to the model and will be difficult to remove.

After the model is printed, it is recommended to dry it in an oven at a temperature of 120~130°C for 6~8 hours to improve the strength of the model.

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Attachment: Test sample dimensions and printing direction

