

## CARBON FIBRE REINFORCED NYLON 12

## PA12-CF Filament

1.75 mm · 1 kg spool ·  $\pm 0.05$  mm tolerance

Carbon fibre reinforced nylon 12 based on LUVOCOM 3F PAHT CF, for rigid, dimensionally stable parts with low moisture uptake for a nylon.

- ✓ Based on LUVOCOM 3F PAHT CF
- ✓ Low moisture uptake for a nylon
- ✓ Dimensionally stable
- ✓ Hardened steel nozzle required

## Recommended Print Settings

|                    |                                   |
|--------------------|-----------------------------------|
| Nozzle temperature | 260–280 °C<br>270 °C recommended  |
| Bed temperature    | 60–90 °C<br>80 °C recommended     |
| Print speed        | 40–60 mm/s<br>50 mm/s recommended |
| Support material   | PVA                               |

- ⓘ Use a hardened steel nozzle and an enclosed printer. Dry thoroughly before printing.

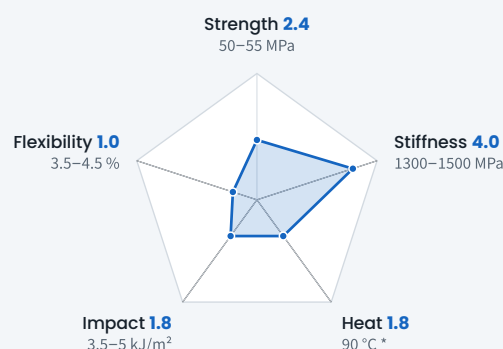
## Filament Specifications

|                     |                                  |
|---------------------|----------------------------------|
| Material            | Carbon fibre reinforced nylon 12 |
| Diameter            | 1.75 mm                          |
| Diameter tolerance  | $\pm 0.05$ mm                    |
| Net filament weight | 1 kg                             |

## Spool &amp; Packaging

|                      |                   |
|----------------------|-------------------|
| Empty spool weight   | 150 g             |
| Spool with filament  | 1.15 kg           |
| Spool outer diameter | 200 mm            |
| Hub diameter         | 52 mm             |
| Spool width          | 65 mm             |
| Shipping weight      | 1.3 kg            |
| Box dimensions       | 210 × 220 × 75 mm |

## Property Profile



Scores from 1 to 5 relative to the OzFDM filament range, based on the typical values in this sheet (stiffness and impact on a log scale).

\* Heat uses HDT at 1.8 MPa, which reads lower than the 0.455 MPa figures used for other materials.

## Storage &amp; Handling

**Drying**  
80 °C for a minimum of 12 hours in a filament dryer or food dehydrator.

**Storage**  
Airtight bag or container with desiccant in a cool, dark and dry area to prevent moisture absorption. For optimal long term storage we recommend drying the filament prior to sealing the filament spool in a vacuum bag with desiccant.

Mechanical Properties

| PROPERTY            | TEST METHOD | TYPICAL VALUE           |
|---------------------|-------------|-------------------------|
| Tensile strength    | ISO 527     | 50–55 MPa               |
| Elongation at break | ISO 527     | 3.5–4.5 %               |
| Tensile modulus     | ISO 527     | 1300–1500 MPa           |
| Flexural strength   | ISO 178     | 90–96 MPa               |
| Impact strength     | ISO 180     | 3.5–5 kJ/m <sup>2</sup> |

Physical Properties

| PROPERTY                          | TEST METHOD | TYPICAL VALUE               |
|-----------------------------------|-------------|-----------------------------|
| Density                           | ISO 1183    | 1.23–1.26 g/cm <sup>3</sup> |
| Melt flow rate                    | ISO 1133    | 3–6 g/10min                 |
| Moisture absorption (23 °C, 24 h) | ISO 62      | <0.3 %                      |

Thermal Properties

| PROPERTY                              | TEST METHOD | TYPICAL VALUE |
|---------------------------------------|-------------|---------------|
| Heat deflection temperature (1.8 MPa) | ISO 75      | 90 °C         |
| Continuous use temperature            | IEC 60216   | 120–160 °C    |
| Use temperature (200 hours)           | –           | 160 °C        |

Electrical Properties

| PROPERTY              | TEST METHOD | TYPICAL VALUE      |
|-----------------------|-------------|--------------------|
| Insulation resistance | IEC 60167   | ≤10 <sup>2</sup> Ω |
| Surface resistance    | IEC 60093   | ≤10 <sup>2</sup> Ω |

Available Colours 1



Carbon Fibre  
Black

Swatches are indicative only. Colours vary between screens and with print settings.

NOTES

Values shown are typical results measured on test specimens and are provided for guidance only. They are not guaranteed specifications and should not be used as design limits. Printed part properties vary with printer, settings, print orientation and part geometry. Test your parts for suitability before use in critical applications.