

## **Spectrum ASA-X CF10 filament**

### **Resistance to outdoor conditions with a beautiful carbon finish**

Analysing the feedback from the users of our filament, we have decided to expand the range of materials for outdoor use in conditions of increased exposure to UV radiation, temperature and humidity. ASA, a well-known polymer that is a highly weather-resistant alternative to ABS, has become the base for another composite material, Spectrum ASA-X CF10.

Our paramount objective was to develop a material that would guarantee the printed models consistently high mechanical performance, especially in terms of hardness and stiffness, even under prolonged use in outdoor weather conditions. The result is the creation of Spectrum ASA-X CF10, a composite based on an appropriately selected ASA with carbon fibre filling.

We provide our users with filament that is resistant to external exposure, such as sunlight (UV) and humidity (hydrolysis), with a tensile strength of over 7.5 GPa and a thermal resistance of 101°C. At the same time, Spectrum ASA-X CF10 has low shrinkage and is, unusually for technical materials with comparable properties, easy to print. All of this, combined with a carbon matt surface that effectively masks the layers of the printed models, has made the Spectrum ASA-X CF10 a very popular choice among the 3D printing community.

#### **Advantages of the ASA-X CF10**

- 10% carbon fiber
- HDT thermal resistance - 95°C
- Vicat softening point – 101°C
- excellent resistance to outdoor exposure
- UV resistance
- option to print on desktop printers without a heated chamber
- carbon, matt printed surface
- perfect bonding of the layers
- easy to print compared to classic PLA

#### **Applications:**

- functional prototypes
- manufacturing equipment
- manufacture of housings and covers
- manufacture of parts subject to abrasive wear
- manufacturing tools
- components that need high resistance to outdoor exposure

### **Packaging**

Filament is reeled on the neat, transparent spool. Each spool contains information on the type of material, diameter and recommended printing temperature. Filament is vacuum-packed with a moisture absorber. Whole product packed in the original, folied Spectrum Filaments packaging.

### **VERIFY YOUR SPOOL – the most precise quality control system on the market**

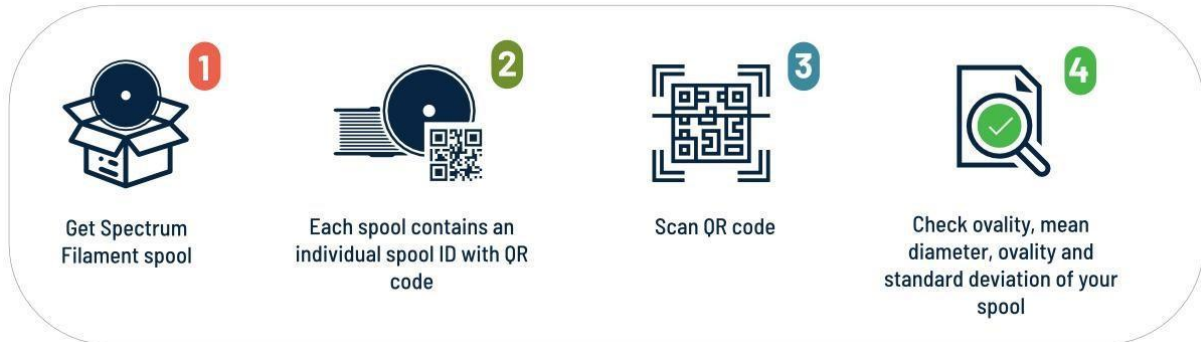
Filament for 3D printers is manufactured by the method of free extrusion, which is one of the most difficult processing techniques by extrusion, due to the particularly significant impact of process parameters on product dimensions and material homogenization.

During the production each 1mm of Spectrum Filament is being continuously measured in 2 axes with  $\pm 0.8\mu\text{m}$  accuracy, which allow obtaining a high-quality final product. To prove this, Spectrum Filaments, as one of the few manufacturers in the world, has introduced the possibility of online presentation, individually for each manufactured spool:

- the course of diameter on the entire length of the spool,

- mean diameter,
- ovality,
- standard deviation.

Precise survey guarantees that Spectrum Filaments products meet rigorous market requirements.



### Characteristics



Attribute	Value
Diameter	1.75 mm
Material	PLA PRO
Color	LION ORANGE
Mean diameter	1.745 mm
Ovality	0.5%
Standard deviation	8.9 $\mu$ m
Temperature	185–230°C
Hot pad	0–45°C
Date of production	2019-04-12

### Spool graph



### Specification

Name	Value
Nozzle temperature	235-260°C
Bed temperature	90-110°C
Printing speed	30-70 mm/s
Heated chamber	Not necessary
Verify your spool	YES (course of diameter – online graph - on the entire length of the spool, mean diameter, ovality, standard deviation individually for each manufactured spool)