OMNI™ Filament

Product Specifications:

Material: ALGIX 3D OMNI™ Filament	
Color Name:	**Pantone Number:**
Inferno Red	2035C
Lightning Bolt Yellow	102C
Olympus Green	347C
Poseidon Blue	072C
Chimera Black	True Black 6C
Heavenly White	Natural
Filament Diameter	1.75 and 2.85 mm

Packaging	
Filament Quantity	100 Gram Coil and 375 Gram Spool
Spool Diameter	17.8 cm (7 in)
Spool Width	2.8 cm (1 1/8 in)
Spool Hub Hole	5.2 cm (2 in)

General Information

ALGIX 3D OMNI™ filament is the perfect material for your FFF 3D printing needs, because it is easy to use and outperforms conventional PLA and ABS in many areas. OMNI™ does not release toxic fumes and does not require a heated bed or heated chamber like ABS. Final parts printed with OMNI™ have a very smooth finish. OMNI™ has better heat resistance and layer adhesion than PLA and has higher print resolution than ABS. OMNI™ filament is made from majority renewable content and is compostable. By special order, OMNI™ is available in a formulation made from food grade certified resin.

Professional Production

ALGIX 3D is part of the ALGIX family of companies. ALGIX is a distinguished leader in compounding and additives for the bioplastics industry. Our polymer science expertise and strategic partnerships are driving material innovations and quality. All ALGIX 3D filaments are produced in the Solaplast bioplastic production facility located in Meridian, Mississippi. We source all of the finest raw materials, including resins, pigments and additives in the making of our ALGIX 3D OMNI™ filament, so that we can ensure the most consistent and highest quality product for every order. You can expect our polymer scientists to continually develop innovative new materials focused on performance, sustainability and quality.

Quality Control

Our filament extrusion system uses dual axis micrometer measurement systems to check the diameter and roundness during production. This helps us guarantee that each spool of ALGIX 3D filament is produced with a precision tolerance. We can guarantee ±3% on our ALGIX 3D OMNI™ filament, which means you can rest assured that your printer is extruding the exact amount of material without causing jams, clogs and headaches. The ALGIX 3D printing test lab features many popular 3D printers, and we're continuously

testing our filament on these 3D printers to monitor quality using advanced statistical practices.

3D Printing Tips

- Always print in an area with good airflow and minimal temperature fluctuations.
- Be sure your build plate is level, clean and oil-free before printing. OMNI™ filament adheres well to glass or plastic and does not require a heated build plate like ABS filament.
- If your machine does have a heated build plate, we do advise using it for larger prints set at a temperature of 50°C, and if your machine has a fan, we recommend using it for most prints.
- It is recommended to use high water content hairspray (as opposed to high ethyl alcohol content) lightly sprayed on the surface and allowed to dry before starting prints to ensure the first layer of the print sticks to the plate.
- This filament will run best at an extrusion temperature of 195-215°C (2.85mm filament usually prints at the higher end of this range).
- If prints appear stringy lower temp in 5°C increments until your prints appear satisfactory.
- For more stability and a higher quality print, consider experimenting with infills, print speeds, and layer heights.
- For prints with curvatures, it is recommended to turn on rafts and supports in your settings.

Competitive Filament Comparison

Physical Properties	OMNI™	**Characteristic Effects**
Melting Point (°C)	160	Polymer melting temperature
Diameter Tolerances (%)	± 3%	Variation in filament size
Ovality (mm)	0.04	Difference between two diameters measured across the filament's profile
Density (g/cm^3)	1.29	Density of filament material
Melt Flow Index (195°C)	11.5	Viscosity of filament in molten state
Tensile Strength at Yield (MPa)	41.85	The force required to deform
Tensile Elongation @ Yield (%)	3.88	The amount of stretching before deforming
Tensile Modulus (MPa)	2100	The rigidity or resistance to stretching
Toughness (J)	**0.20**	**The amount of energy required to deform**
Failure Mode	**Brittle**	**Type of failure experienced at deformation**
Heat Deformation Temp (°C)	**60**	**Temperature at which a part will begin to deform**
Volatile Compounds Detected	6	Number of identified compounds released during 3D printing
Volatiles with Toxicity Concerns	**≤ 1◆**	**Number of identified compounds with a toxic health hazard rating according to GHS exceeding the exposure threshold**

*Dependent on manufacturer

◆Presence fluctuates and not present in food grade certified resin (available by special order)