

# MATERIAL SPECIFICATIONS

## PA 803-CF

### HIGHLIGHTS

- Melt mixed black carbon fiber filled nylon 11
- Superior stiffness and mechanical properties
- Parts produce an alluring black detailed surface finish
- Excellent resistance to warping at elevated temperatures

### APPLICATIONS

- High impact sports equipment
- High performance racing applications
- Wind tunnel model testing
- Ideal for outdoor applications requiring strength and toughness

## TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	U.S. STANDARD	METRIC
Colour/Appearance	Visual	Black	Black
Bulk Density	ASTM D1895	0.277 oz/in <sup>3</sup>	0.48 g/cm <sup>3</sup>
Average Particle Size (D50)	Laser Diffraction	0.002 inches	50 microns
Particle Size Range (D10-D90)	Laser Diffraction	0.001 - 0.003 inches	30 - 78 microns
Sintered Part Density	ASTM D792	0.676 oz/in <sup>3</sup>	1.17 g/cm <sup>3</sup>
Heat Deflection Temperature	ASTM D648	343°F @ 264 psi	182°C @ 1.82 MPa
Heat Deflection Temperature	ASTM D648	377°F @ 66 psi	186°C @ 0.45 MPa
Ultimate Tensile Strength (XY)	ASTM D638	12,781 psi	88 MPa
Ultimate Tensile Strength (Z)	ASTM D638	6,447 psi	45 MPa
Tensile Modulus (XY)	ASTM D638	1,191,000 psi	8,211 MPa
Tensile Modulus (Z)	ASTM D638	211,000 psi	1,453 MPa
E longation at Break (XY)	ASTM D638	8%	8%
Elongation at Break (Z)	ASTM D638	4%	4%

For reference use only. Actual properties may vary significantly from those listed above based on processing parameters, operating conditions and end use applications. The above properties were based on virgin ALM PA 803-CF using normal processing parameters on a 2500+ platform as outlined in the ALM Material Processing Guide. Advanced Laser Materials, LLC makes no warranties of materials for any application, nor does it make a warranty of any type, expressed or implied, but not limited to, the warranties of merchantability for a particular purpose.



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