

# MATERIAL SPECIFICATIONS

## PA 603-CF

### HIGHLIGHTS

- Carbon fiber filled nylon 12
- 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 applications requiring the highest stiffness and heat resistance

## TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	U.S. STANDARD	METRIC
Colour/Appearance	Visual	Black	Black
Bulk Density	ASTM D1895	0.237 oz/in <sup>3</sup>	0.41 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 - 0.004 inches	35 - 100 microns
Sintered Part Density	ASTM D792	0.634 oz/in <sup>3</sup>	1.10 g/cm <sup>3</sup>
Heat Deflection Temperature	ASTM D648	343°F @ 264 psi	173°C @ 1.82 MPa
Heat Deflection Temperature	ASTM D648	354°F @ 66 psi	179°C @ 0.45 MPa
Ultimate Tensile Strength (XY)	ASTM D638	12,328 psi	85 MPa
Tensile Modulus (XY)	ASTM D638	1,145,797 psi	7,900 MPa
Flexural Modulus (XY)	ASTM D790	1,329,995 psi	9,170 MPa
Elongation at Break (XY)	ASTM D638	4%	4%
Izod Impact Strength - Notched (XY)	ASTM D256	1.58 ft-lb/in	84 J/m
Izod Impact Strength - Un-Notched (XY)	ASTM D256	3.03 ft-lb/in	161 J/m

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 603-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.



RP Support Ltd.  
14 Bridgegate Business Park  
Gatehouse Way  
Aylesbury  
Buckinghamshire  
HP19 8XN  
United Kingdom  
☎ +44 (0)1296 425665  
☎ +44 (0)1296 425665  
✉ support@rpsupport.co.uk



ALM PA 603-CF: 02.25.2013