

# MATERIAL SPECIFICATIONS

## PA 602-CF

### HIGHLIGHTS

- Carbon fiber filled nylon 12
- Excellent stiffness and mechanical properties
- Parts produce a high detailed surface finish and small feature resolution
- Good dimensional stability at elevated temperatures

### APPLICATIONS

- Under hood engine components
- Rapid tooling applications
- Wind tunnel prototypes and models
- Ideal for applications requiring stiffness and sustainable accuracy at elevated temperatures

## TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	U.S. STANDARD	METRIC
Colour/Appearance	Visual	Dark Grey	Dark Grey
Bulk Density	ASTM D1895	0.254 oz/in <sup>3</sup>	0.44 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	0.618 oz/in <sup>3</sup>	1.07 g/cm <sup>3</sup>
Heat Deflection Temperature	ASTM D648	289°F @ 264 psi	143°C @ 1.82 MPa
Heat Deflection Temperature	ASTM D648	347°F @ 66 psi	175°C @ 0.45 MPa
Ultimate Tensile Strength (XY)	ASTM D638	9,572 psi	66 MPa
Tensile Modulus (XY)	ASTM D638	711,699 psi	4,907 MPa
Flexural Modulus (XY)	ASTM D790	730,990 psi	5,040 MPa
Elongation at Break (XY)	ASTM D638	5%	5%
Izod Impact Strength - Notched (XY)	ASTM D256	1.02 ft-lb/in	54 J/m
Izod Impact Strength - Un-Notched (XY)	ASTM D256	2.10 ft-lb/in	110 J/m
CLTE 77°F - 212°F (25°C - 100°C)	ASTM E831	124.5 uin/in°F	224.1 um/m°C
CLTE 212°F - 338°F (100°C - 170°C)	ASTM E831	176.6 uin/in°F	317.9 um/m°C

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 602-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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