

# MATERIAL SPECIFICATIONS

## PA 617-GS

### HIGHLIGHTS

- Black 50% glass filled nylon 12
- Parts exhibit excellent stiffness and mechanical properties
- Tightly controlled glass particle size for a higher detailed surface finish
- Powder flow optimized for most LS machines

### APPLICATIONS

- Automotive engine components
- Mould and tooling applications
- Complex geometries requiring accuracy and feature resolution
- Ideal for rugged applications requiring stiffness at elevated temperatures

## TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	U.S. STANDARD	METRIC
Colour/Appearance	Visual	Black	Black
Bulk Density	ASTM D1895	0.387 oz/in <sup>3</sup>	0.67 g/cm <sup>3</sup>
Average Particle Size (D50)	Laser Diffraction	0.002 inches	55 microns
Particle Size Range (D10-D90)	Laser Diffraction	0.001 - 0.004 inches	35 - 100 microns
Sintered Part Density	ASTM D792	0.861 oz/in <sup>3</sup>	1.49 g/cm <sup>3</sup>
Heat Deflection Temperature	ASTM D648	273°F @ 264 psi	134°C @ 1.82 MPa
Heat Deflection Temperature	ASTM D648	354°F @ 66 psi	179°C @ 0.45 MPa
Ultimate Tensile Strength (XY)	ASTM D638	5,500 psi	38 MPa
Tensile Modulus (XY)	ASTM D638	857,172 psi	5,910 MPa
Flexural Modulus (XY)	ASTM D790	478,624 psi	3,300 MPa
Elongation at Break (XY)	ASTM D638	2%	2%
Izod Impact Strength - Notched (XY)	ASTM D256	1.8 ft-lb/in	96 J/m
Izod Impact Strength - Un-notched (XY)	ASTM D256	2.3 ft-lb/in	120 J/m
Dielectric Constant	ASTM D150	3.7	3.7
Chemical Resistance		Alkalines, hydrocarbons, fuels, solvents	

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 617-GS 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](mailto:support@rpsupport.co.uk)



ALM PA 617-GS: 03.12.2013