

# MATERIAL SPECIFICATIONS

## PA 650

### HIGHLIGHTS

- Clean, white surface finish
- Easy to process across most laser sintering platforms
- Excellent detail and feature resolution
- Increased recyclability over other comparable unfilled nylon 12 materials

### APPLICATIONS

- Thin wall ducting components
- Consumer products and sporting goods
- Prototypes requiring durability, accuracy and end-use functionality
- Ideal for low to mid-volume rapid prototyping and manufacturing

## TYPICAL PHYSICAL PROPERTIES

PROPERTY	TEST METHOD	U.S. STANDARD	METRIC
Colour/Appearance	Visual	White	White
Bulk Density	ASTM D1895	0.266 oz/in <sup>3</sup>	0.46 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	30 - 100 microns
Sintered Part Density	ASTM D792	0.590 oz/in <sup>3</sup>	1.02 g/cm <sup>3</sup>
Heat Deflection Temperature	ASTM D648	203°F @ 264 psi	95°C @ 1.82 MPa
Heat Deflection Temperature	ASTM D648	356°F @ 66 psi	180°C @ 0.45 MPa
Ultimate Tensile Strength (XY)	ASTM D638	6,962 psi	48 MPa
Tensile Modulus (XY)	ASTM D638	247,000 psi	1,700 MPa
Flexural Modulus (XY)	ASTM D790	217,000 psi	1,500 MPa
Elongation at Break (XY)	ASTM D638	24%	24%
Izod Impact Strength - Notched (XY)	ASTM D256	0.6 ft-lb/in	32 J/m
Izod Impact Strength - Un-notched (XY)	ASTM D256	6.3 ft-lb/in	336 J/m
Dielectric Constant	ASTM D150	2.73 @ 1KHz	2.73 @ 1KHz
Hardness (Shore D)	ASTM D2240	73	73

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 650 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)



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