

# MATERIAL SPECIFICATIONS

## PA 635-GSL Preliminary

### HIGHLIGHTS

- Black, light weight glass filled nylon 12
- Parts exhibit superior weight reduction characteristics compared to other commercially available glass filled products
- Requires 30-40% less material by weight to fill a standard LS machine compared to other glass filled materials

### APPLICATIONS

- Wind tunnel model testing
- UAV and aerospace components
- Complex light weight geometries requiring accuracy and small feature resolution
- Ideal for applications with lighter weight and stiffness requirements

## TYPICAL PHYSICAL PROPERTIES

| PROPERTY                            | TEST METHOD       | U.S. STANDARD            | METRIC                 |
|-------------------------------------|-------------------|--------------------------|------------------------|
| Colour/Appearance                   | Visual            | Black                    | Black                  |
| Bulk Density                        | ASTM D1895        | 0.214 oz/in <sup>3</sup> | 0.37 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         | 0.445 oz/in <sup>3</sup> | 0.77 g/cm <sup>3</sup> |
| Heat Deflection Temperature         | ASTM D648         | Testing in Progress      | Testing in Progress    |
| Heat Deflection Temperature         | ASTM D648         | Testing in Progress      | Testing in Progress    |
| Ultimate Tensile Strength (XY)      | ASTM D638         | 5,939 psi                | 41 MPa                 |
| Tensile Modulus (XY)                | ASTM D638         | 282,000 psi              | 2,199 MPa              |
| Flexural Modulus (XY)               | ASTM D790         | 316,000 psi              | 2,179 MPa              |
| Elongation at Break (XY)            | ASTM D638         | 3%                       | 3%                     |
| Flexural Strength (XY)              | ASTM D790         | 8,210 psi                | 57 MPa                 |
| Izod Impact Strength - notched (XY) | ASTM D256         | Testing in Progress      | Testing in Progress    |
| Dielectric Constant                 | ASTM D150         | Testing in Progress      | Testing in Progress    |
| Chemical Resistance                 |                   | Testing in Progress      | Testing in Progress    |

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 635-GSL 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 635-GSL: 03.14.2013