

## PRODUCT DESCRIPTION

Our carbon-fiber filled Nylon CF is ideal for conditions where heat is a concern and added strength a necessity. Nylon CF is our choice for motorsports, UAV, aviation, and aerospace applications. Nylon CF provides added strength compared to our standard Nylon 12 as well as improved heat deflection properties at elevated temperatures.

### MECHANICAL PROPERTIES

	VALUE	UNIT	TEST STANDARD
Flexural Modulus (XY)	3447/500	MPa/kpsi	ASTM D790
Izod Impact Strength Notched	54	J/m	ASTM D256
Izod Impact Strength Unnotched	110	J/m	ASTM D256
Heat Deflection Temp @ 0.45 MPa	178	°C	ASTM D648
Heat Deflection Temp @ 1.82 MPa	177	°C	ASTM D648
Volume Resistivity (22C, 50%RH, 500V)	7.8x10 <sup>14</sup>	ohm-cm	ASTM D257
Surface Resistivity (22C, 50%RH, 500V)	2.9x10 <sup>14</sup>	ohm	ASTM D257

### 3D DATA

The properties of parts manufactured using laser sintering are due to their layer-by-layer production, to some extent direction dependent. This has to be considered with designing the part and defining the build orientation.

	VALUE	UNIT	TEST STANDARD
Tensile Modulus (X Direction)	2896/420	MPa/kpsi	ASTM D638
Tensile Modulus (Y Direction)	2896/420	MPa/kpsi	ASTM D638
Tensile Strength (X Direction) Ultimate	66/9500	MPa/psi	ASTM D638
Tensile Strength (Y Direction) Ultimate	66/9500	MPa/psi	ASTM D638
Elongation at Break (X Y Direction)	3.6	%	ASTM D638

### THERMAL PROPERTIES

	VALUE	UNIT	TEST STANDARD
Melting Point	184	°C	ASTM D3418
Melting Flow Rate (3min, 5.0kg, 235C)	50/10	grams/min	ASTM D1238

### OTHER PROPERTIES

	VALUE	UNIT	TEST STANDARD
Density (Laser Sintered)	1.07	grams/CC	ASTM D792

### CHARACTERISTIC

#### Processing –

Laser Sintering

#### Delivery Form –

Black

#### Chemical Resistance –

General Chemical Resistance

#### Manufacturer –

ALM (PA 601-CF)

Source: Advanced Laser Materials, LLC  
Last Change: 2011-09-28

The data corresponds to our knowledge and experience at the time of publication. They do not on their own represent a sufficient basis for any part design, neither do they provide any agreement about or guarantee the specific properties of a product or part or the suitability of a product or part for a specific application. It is the responsibility of the producer or customer of a part to check its properties as well as its suitability for a particular purpose. This also applies regarding the consideration of possible intellectual property rights as well as laws and regulations. The data are subject to change without notice as part of NWRapid's continuous development and improvement processes.

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- ▶ Architectural
- ▶ Motorsports (cars and motorcycles)
- ▶ Safety Systems (emergency response)
- ▶ Military
- ▶ Direct-Food-Contact, FDA-Compliant Products
- ▶ Sporting Goods
- ▶ Light and Heavy Manufacturing
- ▶ University Technology Departments
- ▶ The Art Community



## SERVICES AVAILABLE:

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