

**PA 3200 GF**

PA12-GB

EOS GmbH - Electro Optical Systems

**Product Texts**
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PA 3200 GF is a whitish, glass-filled polyamide 12 powder, which is characterised by an excellent stiffness in combination with good elongation at break. Laser-sintered parts made from PA 3200 GF possess excellent material properties:

- high stiffness
- high mechanical wear-resistance
- good thermal loadability
- excellent surface quality
- high dimensional accuracy and detail resolution
- good processability
- excellent long-term constant behaviour

A typical application for PA 3200 GF is the usage e.g. for final parts within the engine area of cars, for deep-drawing dies or any other application which requires particular stiffness, high heat distortion temperature and low abrasive wear.

Mechanical properties	Value	Unit	Test Standard
Izod Impact notched (23°C)	<b>4.2</b>	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact unnotched (23°C)	<b>21</b>	kJ/m <sup>2</sup>	ISO 180/1U
Shore D hardness (15s)	<b>80</b>	-	ISO 868
Ball indentation hardness	<b>98</b>	MPa	ISO 2039-1

3D Data	Value	Unit	Test Standard
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The properties of parts manufactured using additive manufacturing technology (e.g. laser sintering, stereolithography, Fused Deposition Modelling, 3D printing) are, due to their layer-by-layer production, to some extent direction dependent. This has to be considered when designing the part and defining the build orientation.

Tensile Modulus (X Direction)	<b>3200</b>	MPa	ISO 527-1/-2
Tensile Modulus (Y Direction)	<b>3200</b>	MPa	ISO 527-1/-2
Tensile Modulus (Z Direction)	<b>2500</b>	MPa	ISO 527-1/-2
Tensile Strength (X Direction)	<b>51</b>	MPa	ISO 527-1/-2
Tensile Strength (Y Direction)	<b>51</b>	MPa	ISO 527-1/-2
Tensile Strength (Z Direction)	<b>47</b>	MPa	ISO 527-1/-2
Strain at break (X Direction)	<b>9</b>	%	ISO 527-1/-2
Strain at break (Y Direction)	<b>9</b>	%	ISO 527-1/-2
Strain at break (Z Direction)	<b>5.5</b>	%	ISO 527-1/-2
Charpy impact strength (+23°C, X Direction)	<b>35</b>	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength (+23°C, X Direction)	<b>5.4</b>	kJ/m <sup>2</sup>	ISO 179/1eA
Flexural Modulus (23°C, X Direction)	<b>2900</b>	MPa	ISO 178
Flexural Strength (X Direction)	<b>73</b>	MPa	ISO 178
Temp. of deflection under load (1.80 MPa, X Direction)	<b>96</b>	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa, X Direction)	<b>157</b>	°C	ISO 75-1/-2

Thermal properties	Value	Unit	Test Standard
Melting temperature (20°C/min)	<b>176</b>	°C	ISO 11357-1/-3
Vicat softening temperature (50°C/h 10N)	<b>179</b>	°C	ISO 306
Vicat softening temperature (50°C/h 50N)	<b>166</b>	°C	ISO 306

Other properties	Value	Unit	Test Standard
Density (laser-sintered)	<b>1220</b>	kg/m <sup>3</sup>	EOS Method
Powder colour (ac. to safety data sheet)	<b>White</b>	-	-

**Characteristics**

**Processing**

Laser Sintering, Rapid Prototyping

**Features**

Low Coefficient of Friction