

Nylon PA 12 Black Datasheet



Overview

Nylon PA 12 Black is a high-performance polyamide engineered for use with selective laser sintering (SLS). It is an excellent choice for functional prototypes and production-grade parts such as enclosures, housings, hinges, snap-fit components, and fixtures.

As-printed Part's Tolerance: $\pm 300\mu\text{m}$ or 0.3%

Maximum Printing Size: 645*325*520mm

Properties

Thermal Properties	Metric	Method
Heat Deformation (0.46 MPa)	180.85°C	ASTM D648M
Heat Deformation (1.82 MPa)	115.4°C	ASTM D648M
Mechanical Properties	Metric	Method
Tensile Strength	50MPa	ASTM D638M
Tensile Modulus	2000MPa	ASTM D638M
Elongation at Break	11.5%	ASTM D638M
Flexural Properties	Metric	Method
Flexural Modulus	1900MPa	ASTM D790
Flexural Strength	60MPa	ASTM D790
Impact Properties	Metric	Method
Notched Impact Strength	21 J/m	ASTM D256
Unnotched impact strength	294 J/m	ASTM D256
Density Properties	Metric	Method
Density	0.95 g/cm³	DIN 53466

Pros

SLS 3D printed Nylon PA 12 Black is known for its impressive tensile strength, precise dimensional stability, and low moisture absorption. It's widely used for both functional prototypes and end-use components across industries like automotive, aerospace, and consumer products.

Cons

Parts produced with powder-based materials often feature a rough, grainy texture and may retain powder residue in hollow sections.

Applications

Automotive Components

Structural and High-stress Parts

Gears

Electrical Connectors

Enclosures and Housings

Jigs and Fixtures

Sensor Components

Surgical Tools

Brackets and Gaskets