



# Datasheet

## RS PRO – ULTRA DIAMOND PLA

Stock numbers:

183-0301/ 183-0303 / 183-0304 / 183-0305 / 183-0308 / 183-0310

EN

ULTRA DIAMOND PLA is a game changing material using completely new nano composite technology for 3D printing. The Nano composite technology gives this material very high tensile. ULTRA DIAMOND PLA is easy to print and can withstand high temperatures. ULTRA DIAMOND PLA is a perfect alternative for a Nylon Carbon Filament, and is ideal for printing mechanical parts.

### Features:

- One of the most rigid material on the market
- Easy to print like PLA, though performs like high end polymers
- Nonabrasive and non-hygroscopic
- >100°C HDT in non-annealed samples (125°C annealed)
- Fast printing and very smooth surface

### Colours:

RS PRO – ULTRA DIAMOND PLA is available from stock in a large selection of colours

### Packaging:

RS PRO – ULTRA DIAMOND PLA is available in 1 kg packaging.



Filament specs.		
Size	Ø tolerance	Roundness
1,75mm	± 0,05mm	≥ 95%
2,85mm	± 0,10mm	≥ 95%

Physical properties		
Description	Testmethod	Typical value
Specific gravity (g/cm <sup>3</sup> )	ISO 1183	1,35
MFR 210°C/2,16 kg		10
Tensile modulus	ISO 527	6300 Mpa
Thermal conductivity		0,4±0,02
Tensile strength at Max Load	ISO 527	43.5 Mpa
Strain at break	ISO 527	3,2 %
Impact strength - Charpy method 23°C	ISO 179	3,4 kJ/m <sup>2</sup>
Moisture absorption	ISO 62	1968 ppm

Thermal properties		
Description	Testmethod	Typical value
Printing temp.	-	230±15°C
Melting temp.	-	205±15°C
Heat deflection temp. 0.45 MPa	ISO 75-2:2013 B	107°C
Annealed heat deflection temp. 0.45 MPa	ISO 75-2:2013 B	125°C

### Additional information:

ULTRA DIAMOND PLA cannot be printed without a heated bed. If you have a heated bed the recommended temperature is ± 50-60°C. ULTRA DIAMOND PLA adheres to any print surface though we always recommend some adhesive or a print sticker. ULTRA DIAMOND PLA can be used on most common desktop 3D printers (FDM or FFF technology).

Storage: Cool and dry (15-25°C) and away from UV light. This enhances the shelf life significantly.

- Bed adhesion: Dimafix
- Print speed: Medium
- Fan speed: Medium
- Retraction: +-5mm
- Layer Height: >0,1mm