

X CARMEL 1400C



Xjet Carmel1400C - Ceramic AM system NanoParticle Jetting (NPJ) technology

Unprecedented Productivity & Quality

- Unlimited design flexibility with unrepresented accuracy fine details and surface finish
- High productivity & repeatability enabling solutions from prototyping to full fledge manufacturing
- Addressing wide range of applications such as healthcare, aerospace, automotive, telecom and more

Revolutionary Powderless Technology

- No hazardous materials using sealed cartridges for safe & simple operation
- Automated support planning
- Soluble support material for easy & manual-free support removal
- Best-in-class part properties

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CARTRIDGE LOADING

No-hassle cartridge loading:

Solid nanoparticles suspended in liquid are delivered within convenient sealed cartridges of build or support materials, which are loaded safely and easily into the system.

MATERIAL JETTING

State-of-the-art ink jetting:

Printheads with thousands of inkjet nozzles jet millions of ultrafine drops, simultaneously jetting build and support materials onto the build tray in ultrathin layers.

SUPPORT REMOVAL

Easy support removal:

Support structures, made from special soluble material, easily dissolve in water in a rapid hands-free process without harming the produced parts.

FINAL SINTERING

Simple final sintering:

Produced parts undergo a simple and relatively short overnight sintering process in a common sintering oven.

System Specifications

Build area (w/d) on removable build tray	2 trays, 500 x 140 mm / 19.7 x 5.5 in, each
Layer thickness	10 microns
Building speed	Up to 1 mm height per hour
Dimensions (w/h/d)	310 x 212 x 185 cm / 122 x 84 x 73 in
Weight	3 tons 6,614 lb
Electrical power	EU: 400 VAC; 3 phases; 3 x 30 A; 50/60 Hz US: 208 VAC; 3 phases; 3 x 50 A; 60 Hz
Operating environment	18° - 25°C; 64° - 77°F; < 50% relative humidity
Regulations conformity	CE; FCC; UL (in-process)

Materials

Materials	Alumina (2.4 kg cartridge) Zirconia (3 kg cartridge) Soluble support ceramics (2.3 kg cartridge)
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Part Quality¹

Accuracy ²	± 50 micron on dimensions up to 5 mm 1% of larger dimensions up to ± 100 micron
Minimum feature size	200 microns
Density ³	Zirconia: > 6.02 g/cm ³ (>99.5%) Alumina: > 3.93 g/cm ³ (>99.5%)
Flexural strength ³	Zirconia: > 830 MPa Alumina: > 400 MPa
Surface roughness	N7 - N9
Shrinkage (linear and isotropic)	Zirconia: 17.8% per dimension Alumina: 14.5% per dimension

1. All measurements are based on internal XJet lab testing made on lab specimens.

2. Depending on geometry, build parameters and model orientation.

3. Measured according to ASTM C1161, ISO 18754.



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