



TECHNICAL SPECIFICATION

Print technology	FFF (fused filament fabrication)	Max. build plate temperature	220 °C
Build volume XYZ	530 x 530 x 530 mm	Max. build chamber temperature	220°C
Chamber	Enclosed, isolated and actively heated	Built-in dryer for 4 filament spools	Yes (max. 4 x 3 kg), up to 120°C
Min. layer height	50 µm	Automatic filament change	Yes
Build Platform	Vacuum	Built-in spacious accessory drawer	Yes
Number of printing heads	2 - electronic lifting system	Communication	SD Card, Ethernet, WiFi, USB
Drive type	X, Y, Z axes - ball screw drives, all drives with encoders	Control	10.1" LCD, website, camera
Nozzle diameter	0,2 - 1,2 mm	Software	Orca Slicer
Filament diameter	1,75 mm	Defined print settings	Yes, for Omni3D filaments and Omni3D approved filaments.
Max. printing speed	90 cm ³ / h	Supported files	.stl, .obj, .3mf, .gcode, .factory
Printed part accuracy	+/- 0.12% (not less than +/- 0.12mm)	Power supply	230V/50Hz (3-phase)
Automatic platform calibration	Yes	Max power consumption	6 kW
Air filtration	CARBON + HEPA	Printer dimensions	160 x 110 x 150 cm
Max. head temperature	500 °C	Printer weight	520 kg



Headquartered in Poland, Omni3D is an **industrial-first manufacturer** specializing in high-temperature FDM systems. We deliver **certified production ecosystems** for Aerospace, Defense, and Automotive sectors. Our heritage in precision engineering ensures that every Omni3D unit acts as a bridge between CAD design and **functional, end-use reality**.

Ecosystem Features

Tangible ROI

Up to 90% cost savings on tooling and spare parts. Replace CNC-machined aluminum and steel components with high-strength polymers, achieving 80% weight reduction and a dramatic **reduction in Total Cost of Ownership**.

Full Thermal Control

Dimensional **accuracy** at scale. A precision-regulated build environment maintains uniform cooling rates across the entire build volume, eliminating internal stress, warping, and tolerance drift in large-format industrial components.

220°C Heated Chamber

Engineered for **PEEK, PEKK, and ULTEM™**. Sustained high-temperature environment ensures superior Z-axis bonding and isotropic strength, producing structural end-use parts with mechanical properties rivaling injection molding.

Patented liquid-cooled printhead

24/7 reliability at extreme temperatures. Our proprietary cooling system eliminates heat creep and filament jamming, enabling continuous high-temperature extrusion with zero thermal fluctuation or hardware degradation.

Filament Monitoring and Drying

Material integrity guaranteed. Automated sensors detect flow anomalies and end-of-spool events, while the integrated drying system **keeps hygroscopic materials moisture-free**, ensuring optimal tensile strength and zero-waste production.

45+ tested and preset materials

First-time-right results, every time. Choose from a library of 45+ tested industrial polymers with optimized presets, delivering **complete application flexibility and immediate compatibility** with demanding engineering requirements.

TCMS - Technical Condition Monitoring System)

Full process visibility. Real-time telemetry tracks every thermal gradient and mechanical movement remotely. Complete **traceability and reporting** built for ISO-certified production workflows.

Automated Build Plate Calibration

Repeatable precision. Zero setup errors. High-resolution surface mapping guarantees a perfect first layer every time, removing human error from the workflow so your engineers focus on design, not machine leveling.



www.omni3d.com

Contact our application team for a technical assessment or ROI analysis.
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