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Smart One Big

Precision meets Economy

Machine at a Glance

Preliminary Details	Build Volume	500x500x500mm (X,Y,Z)	
	Filament Diameter	1.75mm	
	Machine Size	870 x 870 x 1350mm	
	Machine Weight	100kg (Without Packaging) Approx	
	Heated Chamber	Controlled heated environment up to 60*C	
	Number of Extruders	2	
	Extruder Max Temp	Upto 420 Degree C (For Both Extruders)	
	Layer Resolution	0.06mm to 0.32mm (for 0.4 mm Nozzle) varies based on Nozzle size	
	Positional Accuracy	X/Y Axes	5 Microns
		Z Axis	1 Microns.
Compatible Materials	**Metals**	Copper, Bronze, 316L, H13, 17-4PH, Inconel	
	Ceramics	White Zirconia, Black Zirconia, Alumina	
	Polymers	Standard	PLA, PETG
		Engineering	ASA, ABS, Carbon Fibre Infused, Glass Fibre Infused, Wood Infused PP, PC-ABS, PC, TPU, TPE, PC
		Support	HIPS, PVA, Aquateck PVA, Thermax HTS High Temp
		High temperature	PEEK
System Compatibility	WGindows, Mac, Linux		
Operating Conditions	8-50 degree Celsius		
Certifications and Regulatory Compliances	CE Zero Defect Zero Effect (ZED) ISO 9001/2015		

Detailed Technical Specifications

Build Plate	Type	Aluminum heated bed with: • Magnetic PEI sheet • Borosilicate glass
	Max Temperature	• Up to 135 Degree C, • AC powered quick heating, reaches 80 Degree C in 3-4 min
Extruder	Extruders/Hot End	Direct Drive Dual Hobbed Pulley - All Metal Extruders (Short Length Extruder under 85mm)
	Extruder Max Temperature	• Max Temperature of 420 Degree C (For Both Extruders) • 250 degree C achievable in 2-3 min
	Extruder Weight	<350g
	Maximum Flow Rate	26.8 mm cube/sec
Nozzle	Nozzle Sizes	0.3-1mm,
	Nozzle Material	Hardened SS
	Smart Nozzle Self-Cleaning System	Delivers flawless first layers every time with an automated nozzle cleaning cycle that eliminates residue and keeps the printer performance crisp and consistent.
Print Head	Travel Speed	Upto 180mm/s
	Printing Speed	Upto 120mm/s
	Motion System	Core XY
	Linear Rails/Guides	HIWIN Guide Rails.
	Z-Axis Type	Precisely machined ball screw, with HIWIN Guide Rails

Detailed Technical Specifications

Material Feeder	Seamless Auto Spool Swap	Print non-stop with an intelligent dual-spool system that instantly switches to the backup filament when one runs out, ensuring uninterrupted production for long, critical jobs.
Printer Body	Frame Material	High Grade Aluminum
	Enclosure	Yes, Powder coated aluminum enclosure
Storage and Connectivity	Firmware	Klipper
	Processor	Quad core cortex-A72 (ARM v8) 64-bit SoC @ 1.8GHz
	RAM & Storage	4GB RAM, 32GB Storage
	Touchscreen Display	7 Inch Full View Color Display Touch Screen
	CAN Bus Toolhead Control	Provides high-speed, single-cable communication for cleaner wiring, smarter toolhead control, and enhanced print reliability.
	Driver Types	TMC 2209
	Supported Connectivity	USB/Wifi/LAN
Slicer	Slicer Software	**4DS Smatrix** Some Features of Software 1. Multi-Build Plate Management 2. Integrated Object Splitting, Dove Tail Joint 3. Seam Control via Painting 4. Corner Brim (Brim Ears) Generation 5. Built-in Calibration Tools 6. Integrated Embossing Tool 7. Direct Printer/Device Control 8. Automated Part Orientation and Layout

Detailed Technical Specifications

Slicer	Supported Input File Formats	STL/OBJ/3MF, Output File Format - G code
Power and Voltage requirements	Voltage Input	220-240VAC, 50Hz
	Wattage	1000W - Without Chamber Heater 2000W - With Chamber Heater
	Requirements	Universal power
	Supply	MEANWELL

Additional Features

Safety	Thermal Runaway Protection	Automatic shutdown prevents overheating and ensures maximum user and machine safety.
	Fully Enclosed Safety Chamber	Complete enclosure protects the operator and maintains a stable printing environment.
	Instant Emergency Stop Button	One-touch emergency button instantly halts all printer operations during critical situations.
	Auto-Idle Temperature Shutdown	Hot-end and heated bed automatically turn off during idle periods to save energy and extend component life.
	30-Minute Auto Power-Off	Printer automatically powers off after 30 minutes of inactivity for enhanced safety and energy efficiency.

Additional Features

Operation and Performance Features	Smart Remote Control & Monitoring	Live camera feed and full remote control including Start, Pause, Stop, Resume, Cancel, and file upload.
	Ultra-Precise Mesh Bed Leveling	Highly precise mesh bed leveling using proximity sensor.
	Power Loss Recovery	Automatically resumes printing after sudden power interruption.
	Dual Independent Filament Detection	Separate filament sensors for each extruder to avoid print failures.
	On-The-Fly Parameter Adjustments	Basic parameters like temp, speed, flow etc can be changed during printing process.
	Live Z-Axis Micro-Tuning	Fine-tune Z-height during printing for perfect adhesion.
	Integrated Storage Compartment	Storage space for securely storing 4–5 kg of filament.
	Active Heated Chamber	Maintains ideal ambient temperature for stable printing of advanced materials.
	Advanced Air Filtration	HEPA + Carbon filtration system removes hazardous fumes.
	LED Status Indicators	Multi-color LED indicators show real-time printer status.
	Dedicated Web UI	Full-featured web interface for remote access and control.
	Enhanced Motion Performance	Input Shaping and Pressure Advance for high-speed, high-quality printing.
	Operation Noise	55db<, Quiet, Smooth and Reliable printing

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4DS

About 4DSimulations

4D Simulations, a brand of Adroitec Information Systems Pvt. Ltd., stands at the cutting-edge of Additive Manufacturing. Every day, we're committed to exploring new frontiers in 3D printing, providing tailor made solutions across diverse sectors.

Boasting over 35+ years of rich heritage, our journey intertwines the art of traditional engineering with the latest advancements in additive manufacturing and smart engineering techniques. We represent the evolution of technology, from past to future.

Our collaboration with renowned international players enables us to specialize in a variety of 3D printing technologies, including Fused Deposition Modeling, Fused Granular Fabrication, Stereolithography, SLM(Selective Laser Melting/Powder Bed Fusion/ DED), Programmable Photopolymerization technology (P3™), PolyJet, SAF (Selective Absorption Fusion) and more. We're not just participants in the industry; we're innovators shaping its future.

Our expertise encompasses a wide spectrum, from CAD, Reverse Engineering, and Concept Design to 3D Printing, Tooling, and Digital Creation. We offer end-to-end solutions, focusing on enhancing our customers' capabilities in research and development, rapid prototyping, and personalized engineering projects.

We provide technologies that not only fit but advance our customers' business objectives, leading to higher productivity, faster prototyping cycles, and the adoption of the latest in smart engineering and reverse engineering methodologies. This commitment to excellence ensures our clients experience remarkable business growth.

At 4D Simulations, we invite our customers to join us on this journey of innovation. Together, let's grow and uncover the limitless possibilities in the dynamic realm of Additive Manufacturing.

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