

Markforged Composite 3D Printers

Markforged offers a smart, scalable additive manufacturing platform designed to seamlessly fit into your operation. Markforged has manufactured and distributed best-in-class industrial and desktop composite printers built around Continuous Fiber Reinforcement (CFR) since 2014.

The Digital Forge Platform includes Eiger software, built for scale — delivering a single user-experience, digital part repository, and fleet management across the entire Markforged portfolio.

Carbon Fibre Strength

Only Markforged offers CFR: a groundbreaking technology designed to fabricate parts as strong as and capable of replacing machined aluminum today.

Accurate and Reliable

Markforged composite 3D printers reliably yield accurate parts with excellent surface finish. Their precision-machined hardware, advanced sensors, and unique software drive first-class customer results.

Built for Functional Requirements

Whatever your functional requirements - flame resistance, chemical resistance, energy absorbance, precision, or speed - our composite printers have an industrial material or print mode capable of fabricating a functional part for you.

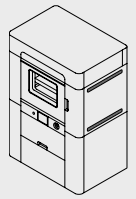


Base Materials

- + Onyx
- + Onyx FR (UL94 V0 Rated)
- + Onyx ESD (ESD Safe)
- + Nylon
- + ULTEM™ 9085 Filament
- + Vega (PEKK)
- + TPU 95A
- + PLA

Continuous Fibres

- + Carbon Fibre
- + Carbon Fibre FR
- + Fiberglass
- + HSHT Fiberglass
- + Aramid Fibre (Kevlar)



FFF Printer Comparison

Desktop

Reliable entry-level machines. Accurate parts with good surface finish. Prints with standard materials.

Industrial

Industrial-grade machines with large build envelope and in-chamber sensors for optimized performance. Superior accuracy, resolution, and speed. Full industrial material portfolio.

	Onyx Pro	Mark Two	X7	FX10	FX20
Process					
Fused Filament Fabrication	Thermoplastic-based filaments are heated and extruded through a nozzle in discrete layers				
Continuous Fiber Reinforcement	Continuous fibers laid down in-layer, reinforcing FFF infill to aluminum-strength				
Engineering Thermoplastics³					
Onyx™ (Micro carbon fiber filled nylon)	x	x	x	x	x
Onyx ESD™			x		x
Onyx FR™ ²			x		x
Nylon		x	x		
Precise PLA	x	x	x		
Smooth TPU 95A	x	x	x		
ULTEM™ 9085 Filament ¹					x
Vega™ (Micro carbon fiber filled PEKK)					x
Continuous Fibers³					
Continuous Fiberglass	x	x	x		x
Continuous Carbon Fiber		x	x	x	x
Continuous Carbon Fiber FR ²			x		x
High Temperature Carbon Fiber ¹					x
Continuous HSHF Fiberglass		x	x		
Continuous Aramid Fiber (Kevlar®) ⁴		x	x		x
Advanced Features					
Out-of-Plastic Detection	x	x	x	x	x
Out-of-Fiber Detection			x	x	x
Fiber Jam Detection	x	x	x	x	x
Adaptive Bed Leveling			x	x	x
Automated Bed Leveling				x	x
Micron Precision Linear Encoders					x
Max Speed	1x	1x	2x	4x	4x
Inspection (compatible)			x	x	
Hardware					
Build Volume	320 x 132 x 154 mm, 6.5 L (12.6 x 5.2 x 6.0 in)		330 x 270 x 200 mm, 17.8 L (13.0 x 10.6 x 7.9 in)	375 x 300 x 300, 33.8 L (14.8 x 11.8 x 11.8 in)	525 x 400 x 400 mm, 84 L (20.7 x 15.7 x 15.7 in)
Print Bed	Flat to within 160 µm; Kinematic coupling Manual shim leveling		Flat to within 80 µm; Kinematic coupling Manual laser-assisted leveling	Heated, Precision-ground aluminum vacuum bed, Auto leveling	Precision ground aluminum vacuum bed Auto leveling
Z Resolution Range	100 - 200 µm		50 - 250 µm	125-250 µm	50 - 250 µm
Build Chamber	Not heated			Heated up to 60°C	Heated up to 200°C
Material Storage	Outboard dry box		Inboard dry box	Humidity controlled material drawer, 4 spool bays	
	800cc spool		800cc spool	800cc spools	800cc or 3200cc spools
Supports	Same material breakaway supports				Same material breakaway supports (Onyx) Dedicated breakaway support (Ultem™ Filament and Vega)
Infill	Closed-cell infill; Multiple geometries available				
Specifications					
Storage	Cloud included; Offline available				
Power	100-240 VAC, 150W (2A peak)			100-120 VAC, 12A or 200-240 VAC, 6A	200-240VAC 3P+E, 24A or 347-416VAC 3P+N+E, 14A; 8 kW
Weight	16 kg (35 lb)		48 kg (106 lb)	109 kg (240 lb)	530 kg (1170 lb)
Footprint	584 x 330 x 355 mm (23 x 13 x 14 in)		584 x 483 x 914 mm (23 x 19 x 36 in)	760 x 640 x 1200 mm (30in x 25in x 46in)	1325 x 900 x 1925 mm (52 x 36 x 76 in)

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²Available in -A version with traceability.

³Support for all Markforged plastic and fiber materials on the FX20 and FX10 will be added over time, although not every combination.

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