FX20™

Available From:

ADDITIVE X

Authorized Value Added Reseller

The Digital Forge™, scaled up.
FX20 is Markforged’s new flagship 3D printer — a machine that brings The Digital Forge platform and Continuous Fiber Reinforcement (CFR) technology to a new realm of parts, problems, and industries. Designed to tackle some of the most demanding manufacturing industries — aerospace, automotive, defense. FX20 is bigger, faster, and more sophisticated than any of our other 3D printers. Whether your needs are tooling, prototypes, or production parts, FX20 is ready to push the bounds of additive manufacturing as we know it.
Production-Ready Performance

FX20 is a precise, sensor-driven machine that delivers breakthrough reliability with a simple user experience. Fully integrated storage and handling ensures materials stay dry for printing, while sensors measure each part of the extrusion system. Linear encoders on the gantry and print bed provide precise, real-time feedback on machine position resulting in highly accurate parts.

From Factory to Flight

FX20 extends the transformational benefits of The Digital Forge to new applications and industries. It was built to produce everything from performance tooling and fixtures to flight-ready production parts. For the first time, Markforged users can reinforce ULTEM™ 9085 Filament parts with CFR technology — bringing high-strength 3D printed composites to even more demanding applications.

Massive Builds, Faster

FX20 pairs size and throughput to make significantly larger parts at incredible speeds. The FX20 build chamber is nearly 5x larger than any other Markforged machine. And its completely redesigned motion and extrusion systems enable high-speed printing without sacrificing quality.
Markforged offers a simple, smart, scalable additive manufacturing platform designed to seamlessly fit into your manufacturing operation. Our software Eiger™ was built for scale delivering a single user experience, digital part repository, and fleet management across the entire Markforged portfolio, including FX20.
ULTEM™ 9085 Filament capable
ULTEM™ 9085 Filament is Markforged's first high temperature printing polymer. It’s an extremely durable thermoplastic that exhibits excellent flame, smoke, and toxicity (FST) characteristics.

Large, heated build chamber
The FX20’s massive heated build chamber contains a 525 mm x 400 mm x 400 mm build volume capable of printing at 200°C.

Three-nozzle print heads
FX20 is capable of printing two polymers and a fiber simultaneously — enabling Support for ULTEM™ Filament material to be printed with ULTEM™ 9085 Filament and continuous fibers.

Large touchscreen
Connect to the Digital Forge platform through a 7” touchscreen. Start builds, monitor machine status, and perform maintenance all in one place.

Advanced material cabinet
An inboard material cabinet stores four XL (3200 cc) spools with precise humidity controls. XL spools each contain 4x material as a standard spool.
ULTEM™ 9085 Filament

Carbon Fiber, meet ULTEM™ Filament

FX20 is Markforged’s first machine capable of printing ULTEM™ 9085 Filament — an extremely durable thermoplastic that exhibits excellent flame, smoke, and toxicity (FST) characteristics. When paired with continuous Carbon Fiber, it can be used to fabricate high-strength, aerospace-grade composite parts.
### Hardware

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Build Volume</td>
<td>625 x 400 x 400 mm (20.7 x 15.7 x 15.7 in)</td>
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<tr>
<td>Z Resolution Range</td>
<td>50 - 250 μm</td>
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<tr>
<td>Build Chamber</td>
<td>Heated up to 200° C</td>
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<tr>
<td>Materials (Compatible)</td>
<td></td>
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<tr>
<td>Plastics:</td>
<td>ULTEM™ 9085 Filament, Onyx™, Onyx FR™, Onyx ESD™, Nylon</td>
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<tr>
<td>Continuous Fibers:</td>
<td>Carbon Fiber, Carbon Fiber FR, Fiberglass, Aramid Fiber (Kevlar®), HSHT Fiberglass</td>
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<tr>
<td>Power</td>
<td>200-240VAC 3P+E, 24A or 347-416VAC 3P+N+E, 14A; 8 kW</td>
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<tr>
<td>Weight</td>
<td>453 kg (1000 lb)</td>
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<tr>
<td>Footprint</td>
<td>1325 x 900 x 1925 mm (52 x 36 x 76 in)</td>
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