stratasys | ALTEM TECHNOLOGIES

BROCHURE
FDM

F870

Run Longer. Print Faster. Produce Stronger.

Meet large-part manufacturing demands with the Stratasys® F870™ FDM ® printer.

The F870 delivers, large-part production for jigs, fixtures, and prototypes, with continuous printing, high-throughput output, and materials built for the manufacturing floor.

As manufacturing teams shift from prototyping to full-scale tooling, the F870 fills a gap in the Stratasys FDM lineup: a large-format system built for the factory floor, not just the prototyping lab.





Built for the Manufacturing Floor

As manufacturing teams move additive production from the prototyping lab to the factory floor, they need a printer that can produce large, strong parts reliably and repeatedly. The F870 is purpose-built for that shift: a large-format FDM printer designed to print jigs, fixtures, and full-scale prototypes on the factory floor.

Large Build Volume.

The F870 has a 1,000 x 610 x 610 mm (39.4 x 24 x 24 in.) build envelope, 372,000 cm^3 (22,677 in^3), with a fully heated chamber for consistent, high-quality large parts. That is enough room to print full-scale jigs, fixtures, and prototypes in a single build.

Nine Materials at Launch, One Support System.

The F870 launches with nine Stratasys Preferred Materials: FDM® Nylon 12CF™ for high-strength tooling, FDM® ASA in six colors (white, natural, light gray, black, red, and yellow), ABS-M30™ in one color (black), and the new FDM® ABS Draft™ (Gray) for cost-effective large prototypes. A single soluble support material, SR-35™, works across the material lineup, so switching applications does not mean switching support systems. Materials can be swapped in under 20 minutes.

The F870 is designed to fit seamlessly into existing Stratasys FDM operations with a common spool design shared with the F3300®. Using the same high-capacity material spools across both platforms gives manufacturers the flexibility to interchange materials, streamline inventory, and reduce downtime, making it easier to scale production and adapt to changing application requirements

Uninterrupted Production.

Four onboard dryer bays, two for model material and two for support, use regenerative drying to keep filament at the moisture level it needs for consistent, repeatable prints. Paired with 4,100 cm^3 (250 in^3) spools and automatic material changeover, the F870 supports up to two weeks of continuous, unattended printing, reducing operator intervention and the material-related variability that can derail a long print.

High-Throughput.

Three new “N” style print heads, N14, N20H, and N25, give the F870 flexibility across speed, strength, and resolution. The N25 high-speed head prints ASA up to two times faster than the standard N14 head, so large parts move through production faster without sacrificing accuracy.

Choose the Right Head for the Job.

Print head	Materials	Layer resolution	Throughput
N14	ASA (all colors), ABS-M30, ABS Draft SR-35 support	0.18, 0.25, 0.33 mm (0.007, 0.010, 0.013 in.)	Up to 25 cm^3/hr (1.5 in^3/hr)
N20H	FDM Nylon 12CF (hardened drive and tip for composite material)	0.25 mm (0.010 in.)	Up to 21 cm^3/hr (1.3 in^3/hr)
N25 (high-speed)	ASA (all colors)	0.33 mm (0.013 in.)	Up to 66 cm^3/hr (4 in^3/hr), up to 2x faster than N14



Simplify Your Factory Workflow

Program jobs for the F870 using GrabCAD Print™ or Insight. GrabCAD Print is ideal for processing multiple parts at once with some customization, while Insight is best for processing parts that require a high level of customization. Use companion Insight in conjunction with GrabCAD Print for packing jobs, or FDM Control Center to pack jobs when Insight is installed separately.

For expanded workflow capabilities, users can upgrade to GrabCAD Print Pro™ to access labeling, textures, 2D and 3D arrays, and part cost estimation along with many other advanced features.

The system is MTConnect-enabled for integration with factory monitoring systems.



Built for Real Manufacturing Applications

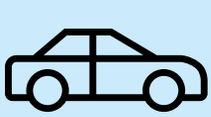
The F870 is designed for factory-floor jigs and fixtures, large functional prototypes, and production support tooling across automotive, aerospace, and industrial manufacturing.

Primary Applications

- End effectors: end-of-arm tools that let a robot interact with its environment.
- Ergonomic aids: hand tools, lift assists, and safety tools.
- Alignment fixtures: temporarily align one or more components for accurate assembly.
- Drill guides and alignment jigs.
- Large prototypes, using ABS Draft (Gray) for cost-effective iteration.

Target Markets

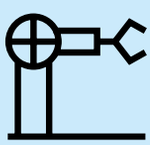
Automotive



Aerospace



Industrial manufacturing



Consumer goods



Get Global Service and Support

To help eliminate production downtime, Stratasys support offers priority service, quick response times, fast delivery of replacement parts, and scheduled preventive maintenance. Stratasys also provides expert technical training, predictable maintenance expenditures for easier budgeting, and scheduled software and hardware updates.





System Specifications

Build Envelope (XYZ)	1,000 x 610 x 610 mm (39.4 x 24 x 24 in.) Maximum diagonal build length: 1,171 mm (46.1 in.)
Material Delivery	Four 4,100 cm^3 (250 in^3) material spools with automatic material changeover. Shared consumable platform with Stratasys F3300®.
Material Drying	Integrated regenerative drying system for up to 4 spools.

Stratasys Preferred Materials

Material	Layer Thickness			Support Structure	Available Colors
	0.178 mm (0.007 in.)	0.254 mm (0.010 in.)	0.330 mm (0.013 in.)		
FDM Nylon 12CF	○	●	○	SR-35 (soluble)	■ Black
ABS-M30	●	●	●	SR-35 (soluble)	■ Black
FDM® ASA	●	●	●[1]	SR-35 (soluble)	□ White ■ Black ■ Light Gray ■ Natural ■ Red ■ Yellow

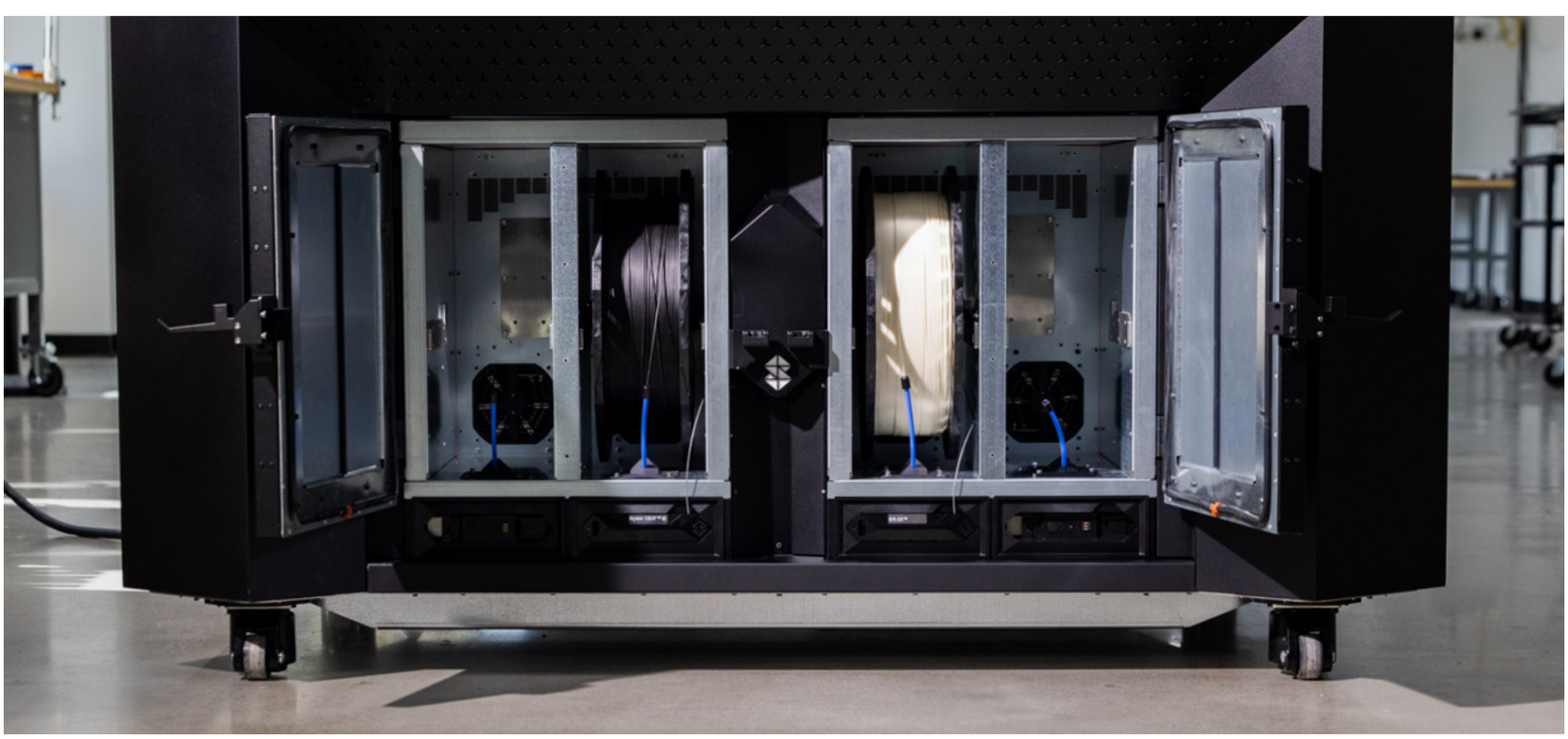
[1] The N25 head is only compatible with 0.330 mm (0.013 in.) layer height.

Stratasys Validated Materials

Material	Layer Thickness			Support Structure	Available Colors
	0.178 mm (0.007 in.)	0.254 mm (0.010 in.)	0.330 mm (0.013 in.)		
FDM® ABS Draft	●	●	●	SR-35 (soluble)	■ Gray

Other Specifications	
System Size and Weight	175 x 124 x 196 cm (69 x 49 x 77 in.) 817 kg (1,800 lbs.)
Dimensional Accuracy	**XY part accuracy:** ± 0.254 mm or ± 0.002 mm/mm (± 0.010 in. or ± 0.002 in./in.), whichever is greater. **Z part accuracy:** ± 0.200 mm or ± 0.002 mm/mm (± 0.008 in. or ± 0.002 in./in.), whichever is greater, plus one layer height. Accuracy is geometry and material dependent. Achievable accuracy specification derived from statistical data at 95% dimensional yield.
Software	GrabCAD Print, GrabCAD Print Pro[1], Insight, Control Center, MTConnect-enabled
Workstation Compatibility	Wired and wireless (with USB dongle) network interfaces using standard TCP/IP protocols at 100 MBPS minimum.
Wireless Network Connectivity	IEEE 802.11n-2009 IEEE 802.11g-2003 IEEE 802.11b-1999
Operating Conditions	**Operating temperature:** 15 °C to 30 °C (59 °F to 86 °F) **Operating humidity:** 30-60%
Noise Emission (Acoustic)	<65 dBA when idle and in operation
Regulatory Compliance	CE, cTUVus, RCM, EAC, FCC Part B
Electrical Requirements	Three-phase, 208V, 30A, five-wire, 47-63Hz frequency
Air Requirements	No shop air required. Integrated vacuum pump.
Facility Requirements	Double-door width required for installation. **Minimum Clearance:** 91 cm (36 in.) on the back and sides, 152 cm (60 in.) on the front, and 51 cm (20 in.) overhead of the printer
Installation Requirements	Forklift required for uncrating and installation. **Crate dimensions:** 186.7 x 146 x 225.4 cm (73.5 x 57.5 x 88.75 in.) **Crated weight:** 1,065 kg (2,350 lbs.)

[1] GrabCAD Print Pro is available on a subscription basis.





Ready to Print Bigger, Stronger Parts?

Learn more about the F870 FDM printer, or request a sample part, at **Stratasys.com**.

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