

August 20, 2018



As Carbon Fiber Applications Multiply, Stratasys Ships \$70,000 3D Printer

Industrial 3D Printer is Dedicated to Carbon-Fiber-Filled Nylon 12 on Proven Industrial Platform

MINNEAPOLIS & REHOVOT, Israel--(BUSINESS WIRE)-- In response to the growing use of composites across industries, [Stratasys](#) (Nasdaq:SSYS) is now shipping an affordably priced additive manufacturing system dedicated for [carbon-fiber-filled Nylon 12](#). The Fortus [380mc Carbon Fiber Edition](#), previewed at RAPID 2018, is an industrial quality system that is being offered at \$70,000 in the US. It began shipping last week.

This press release features multimedia. View the full release here: <https://www.businesswire.com/news/home/20180820005606/en/>



For both IndyCar and NASCAR circuits, Team Penske uses Stratasys FDM and carbon-fiber-filled Nylon 12 for strong, lightweight parts. (Photo: Team Penske)

a six to eight percent increase in fuel economy.

Stratasys was one of the first to offer a carbon fiber filled composite for additive, but it previously offered the material only on high-end production 3D printers in the \$200K-\$350K range. "Our customers are pushing us for easier access to carbon fiber," says Stratasys Senior Vice President of Sales, Pat Carey. "They've told us they want an affordable solution but in a reliable, industrial-quality system. So we're now offering a more accessible system

Recently composite material has seen a year-over-year market growth between 8 to 12 percent. Carbon fiber composite applications and carbon fiber reinforced polymers are considered clean energy technologies by the U.S. Department of Energy because they enable "light-weighting," which reduces energy consumption. It's estimated that each ten percent reduction in vehicle mass drives

that's based on our Fortus 380mc platform. Because the 380mc CFE is dedicated only to carbon-fiber-filled Nylon 12 and one other material, we're able to currently offer it at the lowest price for any of our industrial printers."

"For many years, the additive manufacturing industry has seen a need for a diversity of machines that produce parts in high-strength composite materials," says Terry Wohlers of Wohlers Associates, an additive manufacturing industry consultancy. "I'm hopeful the newest machine from Stratasys will help to meet this need by offering strong parts in carbon fiber and Nylon 12."

For both its IndyCar and NASCAR race cars, Team Penske uses FDM to produce prototypes and end-use parts from carbon-fiber-filled Nylon 12 composite material. The team recently used the composite to produce a mirror housing for its NASCAR race teams. After designing the mirror housing, engineers then customized the design for each of their Cup Series drivers before building the final parts from the composite via FDM. The carbon-fiber-based material enabled Team Penske to produce lightweight mirror housings with high impact resistance and high stiffness, each of which is critical in motorsports. The composite's stiffness is especially beneficial when making thin-walled parts, so the parts won't flex under the aerodynamic loads produced on track.

Additive applications for carbon-fiber-filled Nylon 12 may include:

- Functional prototyping of composite or metal parts
- Short production runs in a high-strength material
- Producing lightweight assembly tools for better ergonomics and reduced worker fatigue
- Replacing metal parts with high strength, lightweight composite ones

Stratasys expects the quickest adopters of its Fortus 380mc CFE 3D Printer to be those making tooling and fixtures and those in industries that include Automotive; Recreational Sporting Equipment; Marine; Orthosis and Prosthesis; Defense; Aerospace; Medical Equipment; Oil and Gas.

Similar to a typical injection molded carbon fiber reinforced plastic part, Stratasys Nylon 12CF is 35 percent chopped carbon fiber by weight, and it exhibits the highest stiffness-to-weight ratio of any FDM or FFF 3D printed part.

The Fortus 380mc CFE is based on a proven platform that produces parts with repeatable dimensional accuracy. Parts don't exhibit appreciable warpage or shrinkage and will hold to a tight tolerance. Stratasys Nylon 12CF is up to four times stronger than a competitively priced alternative in the X and Y axis, and it will maintain its mechanical properties at a 40 percent higher temperature. The Fortus 380mc CFE is between two and five times faster than the competitively priced carbon-fiber-based 3D printer.

The Fortus 380mc CFE builds parts in 0.010 in. (0.254 mm) layer thickness. The system is also compatible with ASA thermoplastic, for which it can build in either 0.010 or .005 in. (0.127 mm) layer thicknesses. The 3D printer's build chamber measures 14 x 12 x 12 in. (355 x 305 x 305 mm). It offers water-soluble support material removal, which eliminates the need for manual labor to remove the supports. This in turn allows the creation of fine and

intricate geometries, which wouldn't be possible without the soluble support material, because the fine features could be destroyed during cleaning, or intricate geometries might be too laborious or impossible to remove the support material.

The Fortus 380mc Carbon Fiber Edition 3D Printer and a Team Penske NASCAR race car will be on display at the Stratasys IMTS booth # 431600 September 10 — 15 at Chicago's McCormick Place.

Stratasys is a global leader in additive manufacturing or *3D printing* technology, and is the manufacturer of FDM[®] and PolyJet[™] 3D Printers. The company's technologies are used to create prototypes, manufacturing tools, and production parts for industries, including aerospace, automotive, healthcare, consumer products and education. For 30 years, Stratasys products have helped manufacturers reduce product-development time, cost, and time-to-market, as well as reduce or eliminate tooling costs and improve product quality. The Stratasys 3D printing ecosystem of solutions and expertise includes: 3D printers, materials, software, expert services, and on-demand parts production. Online at: www.stratasys.com, <http://blog.stratasys.com> and [LinkedIn](#).

Stratasys, FDM, and Fortus are registered trademarks, and Nylon 12CF and 380mc CFE and the Stratasys signet are trademarks of Stratasys Ltd. and/or its subsidiaries or affiliates.

Note Regarding Forward-Looking Statements

The statements in this press release relating to Stratasys' beliefs regarding the benefits its customers will experience from the Fortus 380mc Carbon Fiber Edition and Nylon 12CF, as well as its possible applications, are forward-looking statements reflecting management's current expectations and beliefs. These forward-looking statements are based on current information that is, by its nature, subject to rapid and even abrupt change. Due to risks and uncertainties associated with Stratasys' business, actual results could differ materially from those projected or implied by these forward-looking statements. These risks and uncertainties include, but are not limited to: the risk that customers will not perceive the benefits of the Fortus 380mc Carbon Fiber Edition or Nylon 12CF to be the same as Stratasys does; and other risk factors set forth under the caption "Risk Factors" in Stratasys' most recent Annual Report on Form 20-F, filed with the Securities and Exchange Commission (SEC) on February 28, 2018. Stratasys is under no obligation (and expressly disclaims any obligation) to update or alter its forward-looking statements, whether as a result of new information, future events or otherwise, except as otherwise required by the rules and regulations of the SEC.

Attention Editors, if you publish reader-contact information, please use:

- USA 1-877-489-9449
- Europe/Middle East/Africa +49-7229-7772-0
- Asia Pacific +852 3944-8888

View source version on businesswire.com:

<https://www.businesswire.com/news/home/20180820005606/en/>

Stratasys Media Contacts
Stratasys Corporate & North America

Craig.Librett@stratasys.com

+1 518-424-2497

or

Joe.Hiemenz@stratasys.com

+1 952-906-2726

or

Europe, Middle East, and Africa

Jonathan Wake / Miguel Afonso

Incus Media

stratasys@incus-media.com

+44 1737 215200

or

Greater China, Southeast Asia, ANZ, and India

Alison.Yin@stratasys.com

+ 86-21-33196051

or

Japan and Korea

Aya.Yoshizawa@stratasys.com

+81 3 5542 0042

or

Mexico, Central America, Caribe and South America

Yair.Canedo@stratasys.com

+52 55 4169 4181

or

Brazil

Caio.Ramos@GPcom.com.br

or

Nando@GPcom.com.br

GP Communications

+55 (11) 3129 5158

Source: Stratasys