

# Fortus 450mc

## Industrial FDM technology with an open material ecosystem for advanced prototyping, tool production and end-use parts.

Bring the speed, agility and design freedom of advanced additive manufacturing to your business while gaining the latest advances in FDM® technology. The Fortus 450mc™ 3D printer builds high-requirement functional prototypes, rugged manufacturing tooling and custom production parts in its large 406 x 355 x 406 mm (16 x 14 x 16 in.) build envelope. Fourteen Stratasys Preferred Materials<sup>1</sup>, multiple Stratasys Validated Materials<sup>2</sup> and soluble support address a wide variety of applications.

OpenAM™ software lets users alter print parameters to optimize material capabilities and print results. GrabCAD Print™, GrabCAD Print Pro™, and Insight™ software provide an easy CAD-to-print workflow and in-depth print processing control. MTConnect and Stratasys Software Development Kits let you integrate the Fortus 450mc into your connected factory floor. Data security, including U.S. Department of Defense STIG compliance, is provided by Stratasys ProtectAM™ technology.

### System Specifications

|                      |   |
|----------------------|---|
| Build Envelope (XYZ) | <b>450mc:</b> 406 x 355 x 406 mm (16 x 14 x 16 in.)   |
| Material Delivery    | <b>450mc:</b> Two bays each for material and support canisters. Auto changeover between canisters |

### Material Options

#### Stratasys Preferred Materials

| Material          | Layer Thickness         |                         |                         |                         | Support Structure  | Available Colors  |
|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------|---|
|                   | 0.330 mm<br>(0.013 in.) | 0.254 mm<br>(0.010 in.) | 0.178 mm<br>(0.007 in.) | 0.127 mm<br>(0.005 in.) |                    |   |
| ABS-ESD7™         | ○                       | ●                       | ●                       | ○                       | Soluble            | ■ Black   |
| ABS-M30™          | ●                       | ●                       | ○                       | ●                       | Soluble            | ■ Ivory<br>■ Black<br>■ Blue<br>□ White<br>■ Red<br>■ Dark Gray   |
| ABS-M30i™         | ●                       | ●                       | ●                       | ●                       | Soluble            | ■ Ivory   |
| Antero™ 800NA     | ○                       | ●                       | ○                       | ○                       | Breakaway          | ■ Natural   |
| Antero 840CN03    | ○                       | ●                       | ○                       | ○                       | Breakaway          | ■ Natural   |
| ASA               | ●                       | ●                       | ●                       | ●                       | Soluble            | ■ Black<br>■ Dark Gray<br>■ Light Gray<br>□ White<br>■ Ivory<br>■ Dark Blue<br>■ Green<br>■ Yellow<br>■ Orange<br>■ Red |
| FDM Nylon 12™     | ●                       | ●                       | ●                       | ○                       | Soluble            | ■ Black   |
| FDM Nylon 12CF™   | ○                       | ●                       | ○                       | ○                       | Soluble            | ■ Black   |
| PC                | ●                       | ●                       | ●                       | ●                       | Breakaway, Soluble | □ White   |
| PC-ABS            | ●                       | ●                       | ●                       | ●                       | Soluble            | ■ Black   |
| PC-ISO™           | ●                       | ●                       | ●                       | ○                       | Breakaway          | ■ Translucent Natural<br>□ White  |
| ULTEM™ 9085 resin | ●                       | ●                       | ○                       | ○                       | Breakaway          | ■ Tan<br>■ Black  |
| ULTEM™ 1010 resin | ●                       | ●                       | ○                       | ○                       | Breakaway          | ■ Natural   |
| ST-130            | ●                       | ○                       | ○                       | ○                       | Breakaway          | ■ Tan   |

<sup>1</sup> Stratasys Preferred Materials are developed by Stratasys or a third-party provider, and have been engineered and tested to provide the optimal combination of material and printer performance.

<sup>2</sup> Stratasys Validated Materials are developed by Stratasys or a third-party provider, meet Stratasys quality standards, and have received basic reliability testing for use with Stratasys FDM printers.

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## Material Options

### Stratasys Validated Materials

| Material                            | Layer Thickness         |                         |                         |                         | Support Structure | Available Colors  |
|-------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------|---|
|                                     | 0.330 mm<br>(0.013 in.) | 0.254 mm<br>(0.010 in.) | 0.178 mm<br>(0.007 in.) | 0.127 mm<br>(0.005 in.) |                   |   |
| FDM HIPS                            | ○                       | ●                       | ○                       | ○                       | Breakaway         | ■ Light Gray  |
| Addigy® PA6/66-GF20 FR LS           | ○                       | ●                       | ○                       | ○                       | Breakaway         | ■ Black   |
| Victrex AM™ 200                     | ○                       | ●                       | ○                       | ○                       | Soluble           | ■ Natural   |
| Kimya Kepstan® PEKK-SC              | ○                       | ●                       | ○                       | ○                       | Breakaway         | ■ Natural   |
| Kimya PC-FR                         | ○                       | ●                       | ○                       | ○                       | Soluble           | ■ Light Gray  |
| ULTEM® 9085 Resin (colored)         | ○                       | ●                       | ○                       | ○                       | Breakaway         | ■ Red    □ White 7362<br>■ JanaWhite    ■ Gunship Gray<br>■ Dream Gray    ■ Aircraft Gray |
| PC (polycarbonate)                  | ○                       | ●                       | ○                       | ○                       | Soluble           | ■ Red    ■ Black  |
| PC-ABS<br>(polycarbonate/ABS blend) | ○                       | ●                       | ○                       | ○                       | Soluble           | ■ Red   |

## Other Specifications

|                        |   |
|------------------------|---|
| System Size and Weight | 129.5 cm x 90.2 cm x 198.4 cm (51 x 35.5 x 78.1 in.) 601 kg (1325 lbs.)   |
| Achievable Accuracy    | Parts are produced within an accuracy of $\pm .127$ mm ( $\pm .005$ in.) or $\pm .0015$ mm/mm ( $\pm .0015$ in/in), whichever is greater). Z part accuracy includes an additional tolerance of $-0.000/+$ slice height. Note: Accuracy is geometry dependent. Achievable accuracy specification derived from statistical data at 95% dimensional yield. |
| Network Communication  | 10/100 base T connection. Ethernet protocol.  |
| Operator Attendance    | Limited attendance for job start and stop required.   |
| Power Requirements     | 208VAC 3 phase, 50/60 Hz, consumes 18 Amps  |
| Regulatory Compliance  | CE, cTUVus, RCM, EAC, FCC Part B  |
| Software               | All Fortus systems include Insight™ and Control Center™ job processing and management software. Compatible with GrabCAD Print™ and GrabCAD Print Pro™ for use with job reports, scheduling and remote monitoring. OpenAM software is available through the purchase of an Open Material License.  |
| Operating System       | Microsoft Windows 10 (Pro, Enterprise, Education), Microsoft Windows 8.1 and Windows 8 (Pro, Enterprise), Microsoft Windows 7 (Pro, Enterprise, Ultimate), Microsoft Windows Server 2012 R2. Insight software requires a 64-bit operating system.   |

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