

# Stratasys



# FDM 3D Printers and Materials.

Reliable. Repeatable. Exceptional.



# FDM

# Stronger. Faster. Better.

The FDM technology with unmatched versatility and proven performance.



## Flexible options. Durable results.

FDM® (fused deposition modeling) 3D printers offer unparalleled versatility to turn your CAD files into durable parts. These parts are tough enough to be used as advanced conceptual models, functional prototypes, manufacturing tools and production parts. Engineers can produce a wide variety of products just by loading different files and materials. No traditional machining process can do that.



## Superior materials. Unrivalled repeatability.

FDM technology works with standard, engineering and high-performance thermoplastics to build strong, long-lasting and dimensionally stable parts with unmatched accuracy and repeatability. FDM printers make parts with common plastics such as ASA and ABS, as well as more specialty thermoplastics such as carbon fiber, thermoplastic polyurethane and PEKK-based materials. This broad range of FDM materials enables a wide range of applications that include manufacturing tooling, prototyping and production parts.





## **Bigger parts. Improved designs.**

FDM systems are as versatile and durable as the parts they produce. FDM 3D printers boast the largest build envelopes and material capacities in their class, delivering longer, uninterrupted build times, bigger parts and higher production run quantities than other additive manufacturing systems. Plus, they're true production workhorses, delivering the high throughput, duty cycles and utilization rates that make digital manufacturing not only possible, but practical.



## **Faster workflow. Efficient processes.**

FDM 3D printers can streamline processes from design through manufacturing, reducing costs and eliminating traditional barriers along the way. With FDM technology a designer can create an idea, and test it the same day. Industries can cut lead times and costs, products turn out better, and get to market faster. Breakthrough designs, process innovations, just-in-time manufacturing — whatever you can imagine, FDM technology can make it happen.

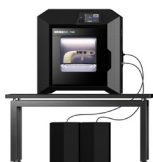


**More  
materials.  
More  
benefits.**

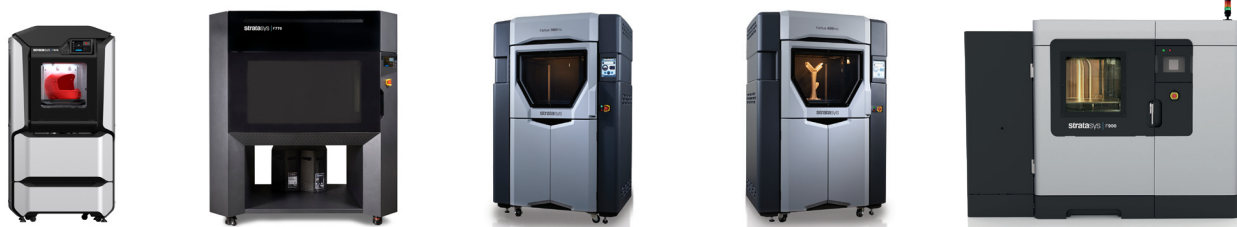


Material	Highlights
Antero™ 800NA (polyetherketoneketone)	<ul style="list-style-type: none"> <li>• High heat and chemical resistance</li> <li>• Low outgassing and high dimensional stability</li> <li>• Excellent strength, toughness and wear-resistant properties</li> </ul>
Antero 840CN03 (polyetherketoneketone)	<ul style="list-style-type: none"> <li>• Excellent ESD (electrostatic dissipative) properties</li> <li>• High heat and chemical resistance</li> <li>• Low outgassing and high dimensional stability</li> <li>• Excellent strength, toughness and wear-resistant properties</li> </ul>
ULTEM™ 1010 resin (polyetherimide)	<ul style="list-style-type: none"> <li>• Highest heat resistance, chemical resistance and tensile strength</li> <li>• Outstanding strength and thermal stability</li> </ul>
ULTEM™ 9085 resin (polyetherimide)	<ul style="list-style-type: none"> <li>• High heat and chemical resistance; highest flexural strength</li> <li>• Ideal for commercial transportation applications such as airplanes, buses, trains and boats</li> <li>• Meets FST (flame, smoke, toxicity) requirements</li> </ul>
PPSF (polyphenylsulfone)	<ul style="list-style-type: none"> <li>• Mechanically superior material, greatest strength</li> <li>• Ideal for applications in caustic and high heat environments</li> </ul>
ST-130™ (sacrificial tooling)	<ul style="list-style-type: none"> <li>• Designed specifically for hollow composite parts</li> <li>• Fast, hands-free dissolution time</li> <li>• High heat and autoclave pressure resistance</li> </ul>
FDM® Nylon 6 (polyamide 6)	<ul style="list-style-type: none"> <li>• Combines strength and toughness superior to other thermoplastics</li> <li>• Produces durable parts with a clean finish and high break resistance</li> </ul>
FDM® Nylon 12 (polyamide 12)	<ul style="list-style-type: none"> <li>• The toughest nylon in additive manufacturing</li> <li>• Excellent for repetitive snap fits, press fit inserts and fatigue-resistant applications</li> <li>• Simple, clean process – free of powders</li> </ul>
FDM® Nylon 12CF (polyamide 12 carbon fiber)	<ul style="list-style-type: none"> <li>• Carbon fiber reinforced thermoplastic with excellent structural characteristics</li> <li>• Highest flexural strength</li> <li>• Highest stiffness-to-weight ratio</li> </ul>
PC (polycarbonate)	<ul style="list-style-type: none"> <li>• Most widely used industrial thermoplastic with superior mechanical properties and heat resistance</li> <li>• Accurate, durable and stable for strong parts, patterns for metal bending and composite work</li> <li>• Great for demanding prototyping needs, tooling and fixtures</li> </ul>
PC-ISO™ (polycarbonate)	<ul style="list-style-type: none"> <li>• Sterilizable using gamma radiation or ethylene oxide (EtO) sterilization methods</li> <li>• Best fit for applications requiring higher strength and sterilization</li> </ul>
PC-ABS (polycarbonate - acrylonitrile butadiene styrene)	<ul style="list-style-type: none"> <li>• Superior mechanical properties and heat resistance of PC</li> <li>• Excellent feature definition and surface appeal of ABS</li> <li>• Hands-free support removal with soluble support</li> </ul>
ASA (acrylonitrile styrene acrylate)	<ul style="list-style-type: none"> <li>• Build UV-stable parts with the best aesthetics of any FDM material</li> <li>• Ideal for production parts for outdoor infrastructure and commercial use, outdoor functional prototyping and automotive parts and accessory prototypes</li> </ul>
ABS-ESD7™ (acrylonitrile butadiene styrene - static dissipative)	<ul style="list-style-type: none"> <li>• Electrostatic-dissipative with surface resistance 10<sup>4</sup>-10<sup>9</sup> ohms</li> <li>• Makes great assembly tools for electronic and static-sensitive products</li> <li>• Widely used for functional prototypes of cases, enclosures and packaging</li> </ul>
ABS-M30™ (acrylonitrile butadiene styrene)	<ul style="list-style-type: none"> <li>• Versatile material: good for form, fit and functional applications</li> <li>• Familiar production material for accurate prototyping</li> </ul>
ABS-CF10 (acrylonitrile butadiene styrene - carbon fiber)	<ul style="list-style-type: none"> <li>• Strong, stiff material filled with carbon fiber for jigs, fixtures and other tooling applications</li> <li>• Over 50% stiffer and 15% stronger than ABS-M30</li> </ul>
Diran™ 410MF07	<ul style="list-style-type: none"> <li>• Good mechanical properties and toughness</li> <li>• Smooth texture with low sliding friction</li> <li>• Best fit for production of jigs, fixtures and manufacturing aids</li> </ul>
PLA (polylactic acid)	<ul style="list-style-type: none"> <li>• Fast printing</li> <li>• Economical and user-friendly</li> <li>• Ideal for concept models</li> </ul>
FDM™ TPU 92A (thermoplastic polyurethane)	<ul style="list-style-type: none"> <li>• Elastomer material with Shore A value of 92</li> <li>• Extremely flexible, durable and resilient</li> <li>• Compatible with soluble support</li> <li>• Accelerates elastomer prototyping without the need for molds</li> </ul>
ABS-M30i (acrylonitrile butadiene styrene - biocompatible)	<ul style="list-style-type: none"> <li>• Strong, biocompatible material capable of sterilization and suitable for use in medical devices</li> <li>• Complies with the test requirements of ISO 10993, USP Class VI and ISO 18562</li> </ul>

# A printer for every purpose.



	F120™	F170™	F270™
Build Envelope	10 x 10 x 10 in. (254 x 254 x 254 mm)	10 x 10 x 10 in. (254 x 254 x 254 mm)	12 x 10 x 12 in. (305 x 254 x 305 mm)
System Size/Weight	35 x 35 x 29 in. (889 x 889 x 721 mm), 275 lbs (124 kg)	64 x 34 x 28 in. (1626 x 864 x 711 mm) 500 lbs (227 kg) with consumables	64 x 34 x 28 in. (1626 x 864 x 711 mm) 500 lbs (227 kg) with consumables
Material Options	ABS-M30, ASA	ABS-M30, ASA, PLA, FDM TPU 92A, ABS-CF10	ABS-M30, ASA, PLA, FDM TPU 92A, ABS-CF10
Part Accuracy <sup>1</sup>	Parts are produced within an accuracy of +/- .008 in. (.200 mm), or +/- .002 in./in. (.002 mm/mm), whichever is greater.	Parts are produced within an accuracy of +/- .008 in. (.200 mm), or +/- .002 in./in. (.002 mm/mm), whichever is greater.	Parts are produced within an accuracy of +/- .008 in. (.200 mm), or +/- .002 in./in. (.002 mm/mm), whichever is greater.
Software	<b>GrabCAD Print™:</b> GrabCAD Print simplifies the traditional 3D print preparation workflow and provides intelligence around printer usage so your team can get quality prints, faster. Print directly from CAD, organize print queues, monitor material levels and work with detailed views of your model. The tray and slice preview feature supports adjustments before going to print.		



	F370™	F770™	Fortus 380mc™ <sup>3</sup>	Fortus 450mc™	F900™
Build Envelope	14 x 10 x 14 in. (355 x 254 x 355 mm)	39.4 x 24 x 24 in. (1,000 x 610 x 610 mm)	14 x 12 x 12 in. (355 x 305 x 305 mm)	16 x 14 x 16 in. (406 x 355 x 406 mm)	36 x 24 x 36 in. (914 x 610 x 914 mm)
System Size/Weight	64 x 34 x 28 in. (1,626 x 864 x 711 mm) 500 lbs (227 kg) with consumables	69 x 49 x 77 in. (1,752 x 1,244 x 1,955 mm) 1450 lbs (658 Kg)	50 x 35.5 x 76.5 in. (1,270 x 901.7 x 1,984 mm) 1,325 lbs (601 kg)	50 x 35.5 x 76.5 in. (1,270 x 901.7 x 1,984 mm) 1,325 lbs (601 kg)	109.1 x 66.3 x 79.8 in. (2,772 x 1,683 x 2,027 mm) 6,325 lbs (2,869 kg)
Material Options	ABS-M30, ABS-CF10, ASA, PC-ABS, PLA, Diran 410MF07, ABS-ESD7, FDM TPU-92A	ABS-M30, ASA	ABS-M30, ABS-M30i, ABS-ESD7, ASA, PC-ISO, PC, PC-ABS, FDM Nylon 12 <b>Fortus 380mc Carbon Fiber Edition:</b> <sup>3</sup> ASA and FDM Nylon 12CF	ABS-M30, ABS-M30i, ABS-ESD7, Antero 800NA, Antero 840CN03, ASA, PC-ISO, PC, PC-ABS, FDM Nylon 12, FDM Nylon 12CF, ST-130, ULTEM™ 9085 resin, ULTEM™ 1010 resin	ABS-M30, ABS-M30i, ABS-ESD7, Antero 800NA, Antero 840CN03, ASA, PC-ISO, PC, PC-ABS, PPSF, FDM Nylon 12, FDM Nylon 12CF, FDM Nylon 6, ST-130, ULTEM™ 9085 resin, ULTEM™ 1010 resin
Part Accuracy <sup>1</sup>	Parts are produced within an accuracy of: +/- .008 in. (.200 mm), or +/- .002 in./in. (.002 mm/mm), whichever is greater.	Parts are produced within an accuracy of +/- .010 in. (.254 mm) or +/- .002 in./in., (.002 mm/mm) whichever is greater.	Parts are produced within an accuracy of +/- .005 in. (.127 mm) or +/- .0015 in./in. (.0015 mm/mm), whichever is greater.	Parts are produced within an accuracy of +/- .005 in. (.127 mm) or +/- .0015 in./in. (.0015 mm/mm), whichever is greater.	Parts are produced within an accuracy of: +/- .0035 in. (.09 mm) or +/- .0015 in./in. (.0015 mm/mm), whichever is greater. <sup>2</sup>
Software	<p><b>Insight™:</b> Insight software prepares 3D digital part files (output as an STL) to be manufactured on an FDM 3D printer by automatically slicing and generating support structures and material extrusion paths in one push of a button. If necessary, users can override Insight's defaults to manually edit parameters that control the look, strength and precision of parts as well as the time, throughput, expense and efficiency of the FDM process.</p> <p><b>Control Center™:</b> Control Center is the software that communicates between the user workstation(s) and the FDM system(s), managing jobs and monitoring the production status of FDM systems. This software application provides the control to maximize efficiency, throughput and utilization while minimizing response time. Control Center is included with Insight software.</p> <p><b>GrabCAD Print:</b> GrabCAD Print simplifies the traditional 3D print preparation workflow and provides intelligence around printer usage so your team can get quality prints, faster. Print directly from CAD, organize print queues, monitor material levels and work with detailed views of your model. The tray and slice preview feature supports adjustments before going to print.</p>				

<sup>1</sup> Accuracy is geometry-dependent. Achievable accuracy specification derived from statistical data at 95% dimensional yield. Z part accuracy includes an additional tolerance of -0.000/+slice height.

<sup>2</sup> See Fortus 900mc accuracy study white paper for more information.

<sup>3</sup> Fortus 380mc Carbon Fiber Edition runs only ASA and FDM Nylon 12CF, but is identical to the Fortus 380mc otherwise.

# Premium materials. Premium performance.

FDM 3D printers use a variety of engineering-grade and high-performance thermoplastics to manufacture functional parts direct from digital data. FDM thermoplastics are environmentally stable, so overall shape and part accuracy don't change with ambient conditions over time, unlike the powders in competitive processes. Materials are easy to change on FDM 3D printers, with no mess or complicated processes. When combined with FDM 3D printers, FDM thermoplastics give you high-quality thermoplastic parts that are ideal for concept modeling, functional prototyping, manufacturing tools or production parts.

	Antero 800NA <sup>12</sup>	Antero 840CN03 <sup>12</sup>	ULTEM™ 1010 resin <sup>12</sup>	ULTEM™ 9085 resin <sup>12</sup>	PSPF
System Availability	Fortus 450mc F900	Fortus 450mc F900	Fortus 400mc Fortus 450mc Fortus 900mc/F900	Fortus 400mc Fortus 450mc Fortus 900mc/F900	Fortus 400mc Fortus 900mc/F900
Layer Thickness	0.010 inch (0.254 mm)	0.010 inch (0.254 mm)	0.010 inch (0.254 mm) <sup>9</sup> 0.013 inch (0.330 mm) 0.020 inch (0.508 mm)	0.010 inch (0.254 mm) <sup>8</sup> 0.013 inch (0.330 mm)	0.010 inch (0.254 mm) <sup>3</sup> 0.013 inch (0.330 mm)
Support Structure	SUP8000B™ breakaway	SUP8000B breakaway	ULTEM™ 1010 resin support breakaway	ULTEM™ 9085 resin support breakaway	PSPF support breakaway
Available Colors	■ Natural	■ Natural	■ Natural	■ Natural ■ Black	■ Natural
Tensile Strength (peak) <sup>2</sup>	<b>XZ:</b> 13,100 psi (90.6 MPa) <b>ZX:</b> 8,270 psi (57.0 MPa)	<b>XZ:</b> 13,600 psi (93.9 MPa) <b>ZX:</b> 7,320 psi (50.5 MPa)	<b>XZ:</b> 11,500 psi (79.2 MPa) <b>ZX:</b> 4,080 psi (28.2 MPa)	<b>XZ:</b> 10,000 psi (69.2 MPa) <b>ZX:</b> 5,710 psi (39.4 MPa)	<b>XZ:</b> 8,000 psi (55 MPa)
Tensile Elongation @ break <sup>2</sup>	<b>XZ:</b> 6.1% <b>ZX:</b> 1.8 %	<b>XZ:</b> 6.5% <b>ZX:</b> 1.8%	<b>XZ:</b> 4.0% <b>ZX:</b> 1.1%	<b>XZ:</b> 5.4% <b>ZX:</b> 1.9%	<b>XZ:</b> 3.0%
Flexural Strength	<b>XZ:</b> 19,300 psi (133 MPa) <b>ZX:</b> 12,700 psi (87.9 MPa)	<b>XZ:</b> 19,600 psi (380 MPa) <b>ZX:</b> 9,760 psi (67.3 MPa)	<b>XZ:</b> 18,600 psi (128 MPa) <b>ZX:</b> 11,800 (81.6 MPa)	<b>XZ:</b> 15,000 psi (104 MPa) <b>ZX:</b> 10,600 psi (73.1 MPa)	<b>XZ:</b> 15,900 psi (110 MPa)
IZOD Impact, Notched	<b>XZ:</b> 0.828 ft-lb/in (44.2 J/m) <b>ZX:</b> 0.612 ft-lb/in (32.7 J/m)	<b>XZ:</b> 0.904 ft-lb/in (48.3 J/m) <b>ZX:</b> 0.518 ft-lb/in (27.7 J/m)	<b>XZ:</b> 0.498 ft-lb/in (26.6 J/m) <b>ZX:</b> 0.407 ft-lb/in (21.7 J/m)	<b>XZ:</b> 1.66 ft-lb/in (88.5 J/m) <b>ZX:</b> 0.735 ft-lb/in (39.2 J/m)	<b>XZ:</b> 1.1 ft-lb/in. (58.7 J/m)
Heat Deflection at 264 psi	147.23 °C	150.8 °C	212.2 °C	172.9 °C	189 °C
Unique Properties	High strength, and heat and chemical resistance, low outgassing	Electrostatic dissipative (ESD) properties, and high chemical resistance	High heat resistance and good compression strength for composite tooling	Flame, smoke, and toxicity (FST) rated, ULTEM™ 9085 resin Aerospace grade available	Highest heat resistance



	ST-130	FDM Nylon 6	FDM Nylon 12 <sup>12</sup>	FDM Nylon 12CF <sup>12</sup>	PC <sup>12</sup>
System Availability	Fortus 450mc Fortus 900mc/F900	Fortus 900mc/F900	Fortus 360 Fortus 380mc Fortus 400mc Fortus 450mc Fortus 900mc/F900	Fortus 380mc CFE Fortus 450mc F900	Fortus 360mc Fortus 380mc Fortus 400mc Fortus 450mc Fortus 900mc/F900
Layer Thickness	0.013 inch (0.330 mm)	0.010 inch (0.254 mm) 0.013 inch (0.330 mm)	0.007 inch (0.178 mm) 0.010 inch (0.254 mm) 0.013 inch (0.330 mm)	0.010 inch (0.254 mm)	0.005 inch (0.127 mm) <sup>1, 5</sup> 0.007 inch (0.178 mm) 0.010 inch (0.254 mm) 0.013 inch <sup>5</sup> (0.330 mm)
Support Structure	ST-130 support breakaway	SR-110 soluble support	SR-110 soluble support	SR-110 soluble support	PC support breakaway, SR-110 soluble support
Available Colors	■ Natural	■ Black	■ Black	■ Black	□ White
Tensile Strength (peak) <sup>2</sup>		<b>XZ:</b> 9,800 psi (67.6 MPa) <b>ZX:</b> 5,300 psi (36.5 MPa)	<b>XZ:</b> 7,140 psi (49.3 MPa) <b>ZX:</b> 6,060 psi (41.8 MPa)	<b>XZ:</b> 12,100 psi (83.5 MPa) <b>ZX:</b> 4,750 psi (32.7 MPa)	<b>XZ:</b> 8,390 psi (57.9 MPa) <b>ZX:</b> 5,150 psi (35.5 MPa)
Tensile Elongation @ break <sup>2</sup>		<b>XZ:</b> 38.0% <b>ZX:</b> 3.2%	<b>XZ:</b> 30.0% <b>ZX:</b> 6.5%	<b>XZ:</b> 2.4% <b>ZX:</b> 1.2%	<b>XZ:</b> 5.2% <b>ZX:</b> 2.0%
Flexural Strength		<b>XZ:</b> 14,100 psi (97.2 MPa) <b>ZX:</b> 11,900 psi (82 MPa)	<b>XZ:</b> 8,190 psi (56.5 MPa) <b>ZX:</b> 7,900 psi (54.5 MPa)	<b>XZ:</b> 22,200 psi (153 MPa) <b>ZX:</b> 9,080 psi (62.4 MPa)	<b>XZ:</b> 13,100 psi (90.0 MPa) <b>ZX:</b> 10,900 (75.0 MPa)
IZOD Impact, Notched		<b>XZ:</b> 2.0 ft-lb/in. (106 J/m) <b>ZX:</b> 0.8 ft-lb/in. (43 J/m)	<b>XZ:</b> 2.58 ft-lb/in (138 J/m) <b>ZX:</b> 1.33 ft-lb/in (71.0 J/m)	<b>XZ:</b> 1.99 ft-lb/in (106 J/m) <b>ZX:</b> 0.45 ft-lb/in (24.0 J/m)	<b>XZ:</b> 1.44 ft-lb/in (76.8 J/m) <b>ZX:</b> 0.503 ft-lb/in (26.9 J/m)
Heat Deflection at 264 psi	108 °C	93 °C	84.3 °C	153.7 °C	142.2 °C
Unique Properties	Soluble for sacrificial tooling applications	Very high strength and toughness combined	Fatigue resistance, high elongation at break	Stiffest FDM material	Strong (tension)

# Premium materials. Premium performance.

(Continued)

	PC-ISO	PC-ABS <sup>12</sup>	ASA <sup>12</sup>	ABS-ESD7 <sup>12</sup>	ABS-M30 <sup>2</sup>
System Availability	Fortus 380mc Fortus 400mc Fortus 450mc Fortus 900mc/F900	F170/270/370 Fortus 360mc Fortus 380mc Fortus 400mc Fortus 450mc Fortus 900mc/F900	F120/170/270/370 F770 Fortus 360mc Fortus 380mc Fortus 380mc CFE Fortus 400mc Fortus 450mc Fortus 900mc/F900	F370 Fortus 400mc Fortus 380mc Fortus 450mc Fortus 900mc/F900	F120/170/270/370 F770 Fortus 360mc Fortus 380mc Fortus 400mc Fortus 450mc Fortus 900mc/F900
Layer Thickness	0.010 inch (0.254 mm) 0.013 inch (0.330 mm) 0.020 inch (0.508 mm)	0.005 inch (0.127 mm) <sup>1</sup> 0.007 inch (0.178 mm) 0.010 inch (0.254 mm) 0.013 inch (0.330 mm)	0.005 inch (0.127 mm) 0.007 inch (0.178 mm) 0.010 inch (0.254 mm) 0.013 inch (0.330 mm) 0.020 inch (0.508 mm)	0.007 inch (0.178 mm) 0.010 inch (0.254 mm)	0.005 inch (0.127 mm) <sup>1</sup> 0.007 inch (0.178 mm) 0.010 inch (0.254 mm) 0.013 inch (0.330 mm)
Support Structure	PC support breakaway	QSR soluble support, SR-20™ soluble support, SR-110™ soluble support	QSR soluble support, SR-30™ soluble support, SR-35™ soluble support	QSR soluble support, SR-30 soluble support, SR-35 soluble support	QSR soluble support, SR-20 soluble support, SR-30 soluble support, SR-35 soluble support
Available Colors	□ White ■ Translucent Natural	■ Black □ White <sup>2</sup>	■ Ivory <sup>10</sup> ■ Black ■ Dark Gray ■ Light Gray □ White ■ Red ■ Orange ■ Yellow ■ Green ■ Dark Blue	■ Black	■ Ivory □ White ■ Black <sup>11</sup> ■ Dark Gray ■ Red ■ Blue ■ Orange <sup>6</sup> ■ Yellow <sup>6</sup> ■ Green <sup>6</sup>
Tensile Strength (peak) <sup>2</sup>	<b>XZ:</b> 8,300 psi (57 MPa)	<b>XZ:</b> 5,300 psi (36.5 MPa) <b>ZX:</b> 3,760 psi (25.9 MPa)	<b>XZ:</b> 4,750 psi (32.8 MPa) <b>ZX:</b> 4,110 psi (28.3 MPa)	<b>XZ:</b> 5,130 psi (35.4 MPa) <b>ZX:</b> 3,920 psi (27.0 MPa)	<b>XZ:</b> 4,470 psi (30.8 MPa) <b>ZX:</b> 3,990 psi (27.5 MPa)
Tensile Elongation @ break <sup>2</sup>	<b>XZ:</b> 4.0%	<b>XZ:</b> 4.7% <b>ZX:</b> 1.8%	<b>XZ:</b> 5.9% <b>ZX:</b> 1.8%	<b>XZ:</b> 3.40% <b>ZX:</b> 1.59%	<b>XZ:</b> 8.1% <b>ZX:</b> 1.8%
Flexural Strength	<b>XZ:</b> 13,100 psi (90 MPa)	<b>XZ:</b> 8,970 psi (61.9 MPa) <b>ZX:</b> 6,700 psi (46.2 MPa)	<b>XZ:</b> 8,930 psi (61.5 MPa) <b>ZX:</b> 7,390 psi (51.0 MPa)	<b>XZ:</b> 9,800 psi (67.5 MPa) <b>ZX:</b> 6,440 psi (44.3 MPa)	<b>XZ:</b> 8,510 psi (58.7 MPa) <b>ZX:</b> 6,910 psi (47.7 MPa)
IZOD Impact, Notched	<b>XZ:</b> 1.6 ft-lb/in. (86 J/m)	<b>XZ:</b> 4.52 ft-lb/in. (241 J/m) <b>ZX:</b> 0.637 ft-lb/in. (34.0 J/m)	<b>XZ:</b> 0.808 ft-lb/in. (43.1 J/m) <b>ZX:</b> 0.445 ft-lb/in. (23.8 J/m)	<b>XZ:</b> 0.678 ft-lb/in. (36.2 J/m) <b>ZX:</b> 0.384 ft-lb/in. (20.5 J/m)	<b>XZ:</b> 1.89 ft-lb/in. (101 J/m) <b>ZX:</b> 0.603 ft-lb/in. (32.2 J/m)
Heat Deflection at 264 psi	126°C	102.9 °C	97.9 °C	101.4 °C	99.9 °C
Unique Properties		Strong (impact)	UV stable with the best aesthetics of any FDM material	Electrostatic-dissipative (ESD) properties	Variety of color options

	Diran 410MF07	PLA	FDM TPU 92A	ABS-CF10	ABS-M30i
System Availability	F370	F170 F270 F370	F170 F270 F370	F170 F270 F370	Fortus 380mc Fortus 450mc Fortus 900mc/F900
Layer Thickness	0.007 inch (0.178 mm) 0.010 inch (0.254 mm) 0.013 inch (0.330 mm)	0.010 inch (0.254 mm)	0.007 inch (0.178 mm) 0.010 inch (0.254 mm)	0.007 inch (0.178 mm) 0.010 inch (0.254 mm) 0.013 inch (0.330 mm)	0.013 inch (0.330 mm) 0.010 inch (0.254 mm) 0.007 inch (0.178 mm) 0.005 inch (0.127 mm) <sup>5</sup>
Support Structure	SUP4000B™ breakaway support	PLA model (breakaway)	QSR soluble support	QSR soluble support	QSR soluble support
Available Colors	■ Dark Gray	<ul style="list-style-type: none"> <li>■ Black</li> <li>□ White</li> <li>■ Light Gray</li> <li>■ Medium Gray</li> <li>■ Red</li> <li>■ Blue</li> <li>■ Natural Translucent</li> <li>■ Red Translucent</li> <li>■ Blue Translucent</li> <li>■ Yellow Translucent</li> <li>■ Green Translucent</li> </ul>	■ Black	■ Black	■ Ivory
Tensile Strength (peak) <sup>2</sup>	<b>XZ:</b> 6,490 psi (44.8 MPa) <b>ZX:</b> 4,460 psi (30.7 MPa)	<b>XZ:</b> 6,990 psi (48 MPa) <b>ZX:</b> 3,830 psi (26 MPa)	<b>XY:</b> 2,432 psi (16.8 MPa) <b>XZ:</b> 2,519 psi (17.4 MPa)	<b>XZ:</b> 5,465 psi (37.7 MPa) <b>ZX:</b> 3,100 psi (21.3 MPa)	<b>XZ:</b> 4,650 psi (36 MPa)
Tensile Elongation @ break <sup>2</sup>	<b>XZ:</b> 12.0% <b>ZX:</b> 3.1%	<b>XZ:</b> 2.5% <b>ZX:</b> 1.0%	<b>XY:</b> 552% <b>XZ:</b> 482%	<b>XZ:</b> 2.70% <b>ZX:</b> 1.49%	<b>XZ:</b> 4%
Flexural Strength	<b>XZ:</b> 8,690 psi (59.9 MPa) <b>ZX:</b> 6,770 psi (46.7 MPa)	<b>XZ:</b> 12,190 psi (84 MPa) <b>ZX:</b> 6,570 psi (45 MPa)	-	<b>XZ:</b> 10,000 psi (69.0 MPa) <b>ZX:</b> 4,240 psi (29.2 MPa)	<b>XZ:</b> 8,800 psi (61 MPa)
IZOD Impact, Notched	<b>XZ:</b> 8.28 ft-lb/in (442 J/m) <b>ZX:</b> 0.502 ft-lb/in (26.8 J/m)	<b>XZ:</b> 0.5 ft-lb/in. (27 J/m)	-	<b>XZ:</b> 0.962 ft-lb/in (51.4 J/m) <b>ZX:</b> 0.381 ft-lb/in (20.3 J/m)	<b>XZ:</b> 2.6 ft-lb/in (139 J/m)
Heat Deflection at 264 psi	70 °C	51 °C	-	99 °C	82 °C
Unique Properties	Smooth, lubricious texture with low sliding friction	Low-cost, fast-draft printing	Elastomer	Carbon fiber-filled 10%	Biocompatible

<sup>1</sup> 0.005 in. (0.127 mm) layer thickness not available for the Stratasys F900.

<sup>2</sup> See individual material datasheets for testing details.

<sup>3</sup> 0.013 in. (0.330 mm) layer thickness for PPSF not available on the Stratasys F900.

<sup>4</sup> It is the responsibility of the finished device manufacturer to determine the suitability of all the component parts and materials used in their finished products.

<sup>5</sup> PC can attain 0.013 in. (0.330 mm) layer thickness when used with breakaway support. PC can attain 0.005 in. (0.127mm) layer thickness when used with SR-100™ soluble support.

<sup>6</sup> Available only on the Stratasys F123™ Series.

<sup>7</sup> Available only on the Stratasys F370.

<sup>8</sup> Available on Fortus 400mc and Stratasys F900.

<sup>9</sup> Available on the F170, F270, F370 and F900.

<sup>10</sup> ASA is only available in Ivory on the F120 and F770.

<sup>11</sup> ABS-M30 is only available in Black on the F120 and the F770.

<sup>12</sup> As printed on the F900.

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