Selective Laser Sintering Printers

Production thermoplastic parts with ProX® and sPro™ SLS 3D printers

3D Systems' Selective Laser Sintering (SLS) 3D printers produce tough, functional complex parts, with excellent surface finish, resolution, accuracy, repeatability and low total cost of operations.

Limitless possibilities with tool-less manufacturing

The ultimate 3D printing technology for thermoplastic parts, without compromise

ELIMINATE THE TIME AND EXPENSE OF TOOLING

Direct 3D production from a CAD file eliminates the cost and time involved in tooling and fixtures.

STREAMLINE YOUR WORKFLOW

Eliminate extensive programming and fixturing to free up your machinists. Drastically reduce assembly times by reducing total part count.

INCREASE MANUFACTURING AGILITY

Additive manufacturing requires no tooling, reducing overhead and increasing economies of scope.

DESIGN FOR FUNCTION

SLS technology frees designers from the restrictions of traditional manufacturing. Complete assemblies can be printed as one part, improving functionality, reducing cost and increasing reliability.

ProX® SLS 6100 Printer

Newest integrated SLS technology for production quality at a prototyping price

Produce tough, durable parts with uniform 3D mechanical properties and unmatched part quality at fast build speed and low total cost of operations.

HIGH THROUGHPUT – Faster build times than other SLS printers in its price point, high performance nesting and high density capability for a 25% larger build volume capacity.

MAXIMIZE YOUR INVESTMENT – Automated production tools, remarkably high throughput, 95% material efficiency, and repeatability, combined to a competitive initial purchase price, deliver a 20% lower total cost of operations over similar printers.

sPro™ 60 HD-HS SLS Printer

Broadest applications versatility for large quantities of parts

Repeatedly and economically 3D print medium sized or multiple parts at high throughput with high resolution in the broadest range of thermoplastic, composite and elastomeric materials available in Selective Laser Sintering (SLS).

HIGH DEFINITION AT HIGH SPEED – With its high production speed and the ability to stack parts in the entire build volume, the sPro 60 HD-HS offers both a faster and a more economic solution to other printer technologies.

CONSISTENT, DURABLE PARTS – With the broadest range of materials available in SLS, the sPro 60 HD-HS produces strong parts with high thermal and chemical resistance.

sPro™ 140 & 230 SLS Printers

Low cost of ownership with high throughput and large capacity for end-use parts

Ideal for volume production of 3D printed small to medium sized parts, as well as the production of large parts in one single piece for increased part strength and reduced assembly time.

HIGH CAPACITY MANUFACTURING – These printers address your high volume production needs with fast production, high-density build volume capacity, or building large parts up to 750 mm/30 in long with the sPro 230 printer.

LOW COST OF OWNERSHIP – Offering high throughput and large capacity, the sPro 140 and 230 produce high quality, robust nylon or composite parts with lower cost of ownership.

Robust Thermoplastics for a Variety of Applications

Produce tough, durable parts from the wide DuraForm® materials portfolio that has been optimized, validated and tested to ensure quality, with uniform 3D mechanical properties. When you compare material properties, you'll find DuraForm SLS materials compare very well with common injection molding materials. These materials are ideal for both production and prototype parts.

NYLON/POLYAMIDE 12 THERMOPLASTICS

Extra strong thermoplastics with superior mechanical properties, surface quality and fine-feature resolution for end-use parts that stand up to the rigors of long-term real world use, replacing traditionally injection molded articles. Food-grade, medical grade, flame-retardant capable.

FILLED NYLON/POLYAMIDE THERMOPLASTICS

For even greater engineered end-use part performance, 3D Systems has developed DuraForm SLS materials with fillers such as glass, aluminum and mineral fiber. These materials offer a choice of advanced properties in terms of stiffness, temperature resistance, strength and surface finish.

NYLON/POLYAMIDE 11 THERMOPLASTICS

Tough, impact and fatigue-resistant Nylon 11 materials for prototypes and end-use parts requiring molded-part performance in harsh environments. Ideal for snap-fit and living hinges - plastic parts that are flexible and bounce back to their original shape.

ELASTOMERIC THERMOPLASTICS

Elastomeric and urethane thermoplastics for rubber-like flexibility prototypes and production parts with excellent memory, tear and abrasion resistance.

CASTABLE POLYSTYRENE

Compatible with most standard foundry processes, this polystyrene produces sacrificial patterns with short burnout cycle and generating low ash content, ideal for prototype metal castings and low to medium production runs without tooling.

Note: availability varies by printer model. Please check our SLS materials selection guide for compatibility

HOUSINGS

Manufacture in small to medium lot sizes, and bridge the time until final tools are manufactured.

JIGS AND FIXTURES

Print complex assembly aids and free up CNC time for other projects.

MACHINERY COMPONENTS

Integrate functionality and replace complex assemblies.

MEDICAL DEVICES

Production of patient-specific medical devices

FUNCTIONAL TESTING

Test your prototypes for functionality— such as heat run cycle tests

CONSUMER GOODS

High-speed production for small lots and custom products.

DUCTING

Optimize flow and fit in tight spaces with the freedom to print duct-work that is impossible to mold.

Sp 3D Sprint®

All-in-one software for plastic printing

An exclusive software for 3D Systems plastic printers to prepare and optimize CAD data, and manage the SLS printing process. Tools for high-performance -- such as high-density automatic 3D nesting, quality checks for pre-build verification, repair options, print queue tool for efficient build planning, cage structure generator for small parts enclosure, and more features—bring increased productivity and quality to your SLS production process without needing additional third party software.

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	ProX® SLS 6100	sPro™ 60 HD-HS	sPro™ 140	sPro™ 230
PRINTER PROPERTIES				
3D Printer Size Crated (WxDxH)	204 x 153 x 258 cm (80 x 60 x 101 in)	191 x 140 x 229 cm (75 x 55 x 90 in)	229 x 178 x 257 cm (90 x 70 x 101 in)	267 x 224 x 292 cm (105 x 88 x 115 in)
3D Printer Size Uncrated (WxDxH)	174 x 123 x 230 cm (69 x 48 x 90 in)	175 x 127 x 213 cm (69 x 50 x 84 in)	213 x 163 x 241 cm (84 x 64 x 95 in)	251 x 208 x 274 cm (99 x 82 x 108 in)
3D Printer Weight Crated **3D Printer Weight Uncrated** (Weights do not incl. MQC, MDM or BOS)	1485 kg (3274 lb) 1360 kg (3000 lb)	1885 kg (4147 lb) 1865 kg (4103 lb)	2250 kg (4950 lbs) 2224 kg (4893 lbs)	2539 kg (5586 lbs) 2541 kg (5531 lbs)
Electrical Requirements				
System	208 VAC/10 kVA, 50/60 Hz, 3 PH	240 VAC/17 kvA, 50/60Hz, 3 PH	208 VAC/17 kvA, 50/60Hz, 3 PH	208 VAC/17 kvA, 50/60Hz, 3 PH
Single or dual MQCs	208-230VAC, 50/60Hz, 1PH			
Laser Power Type	100 W / CO_2	70 W / CO_2	70 W / CO_2	70 W / CO_2
Powder Recycling and Handling	Automatic (single or dual Material Quality Control systems or MQC servicing one or two printers respectively)	Manual (enables material changeovers)	Automatic	Automatic
Systems Warranty	One-year warranty, under 3D Systems purchase terms and conditions			
PRINTING SPECIFICATIONS				
Max Build Envelope Capacity (xyz)[1]	381 x 330 x 460 mm (15 x 13 x 18 in) 57.5 l (3510 cu in)	381 x 330 x 460 mm (15 x 13 x 18 in) 57.5 l (3510 cu in)	550 x 550 x 460 mm (22 x 22 x 18 in) 139 l (8500 cu in)	550 x 550 x 750 mm (22 x 22 x 30 in) 227 l (13900 cu in)
Layer Thickness Range (typical)	0.08 – 0.15 mm 0.003 – 0.006 in *(0.10 mm, 0.004 in)*	0.08 – 0.15 mm 0.003 – 0.006 in *(0.10 mm, 0.004 in)*	0.08 – 0.15 mm 0.003 – 0.006 in *(0.10 mm, 0.004 in)*	0.08 – 0.15 mm 0.003 – 0.006 in *(0.10 mm, 0.004 in)*
Volume Build Rate	2.7 l/hr	1.8 l/hr	3.0 l/hr	3.0 l/hr
Imaging System	ProScan™ DX Digital High Speed	ProScan™ CX (digital)	ProScan™ Standard Digital Imaging Systems	ProScan™ Standard Digital Imaging Systems
Scanning Speed				
Fill	12.7 m/s (500 in/s)	HD: 6 m/s (200 in/s); HS: 12.7 m/s (500 in/s)	10 m/s (400 in/s)	10 m/s (400 in/s)
Outline	5 m/s (200 in/s)	HD: 2.5 m/s (100 in/s); HS: 5 m/s (200 in/s)	5 m/s (200 in/s)	5 m/s (200 in/s)
Powder Layout	Variable Speed Counter Rotating Roller	Precision Counter Rotating Roller	Counter Rotating Roller	Counter Rotating Roller
MATERIALS				
Build Materials	See material selector guide and individual material datasheets for specifications on available materials.			
Material Packaging	7.5 kg bottles for hands-free automatic powder handling	10 kg boxes; 15 kg boxes for DuraForm GF only	100 kg IPCs (Intelligent Powder Cartidges); 150 kg IPCs for DuraForm GF only	
SOFTWARE AND NETWORK				
Included Software	3D Sprint®		Build Set up 3D Sprint support as virtual environment	
3D Sprint® Software	Prepares and optimizes design file data, and manages the additive manufacturing process on plastic 3D printers.			
3D Connect™ Capable	3D Connect Service provides a secure cloud-based connection to 3D Systems service teams for support.			

[1] Maximum part size is dependent on geometry, among other factors.

3D SYSTEMS®
Additive Manufacturing Solutions