


SONY

Stereo lithography machine

Solid Creation System



 Safety note: Be absolutely sure to familiarize yourself with the Operating Instructions to ensure that this product will be used safely. The specifications and exterior described in this catalog are subject to change without notice due to improvement.

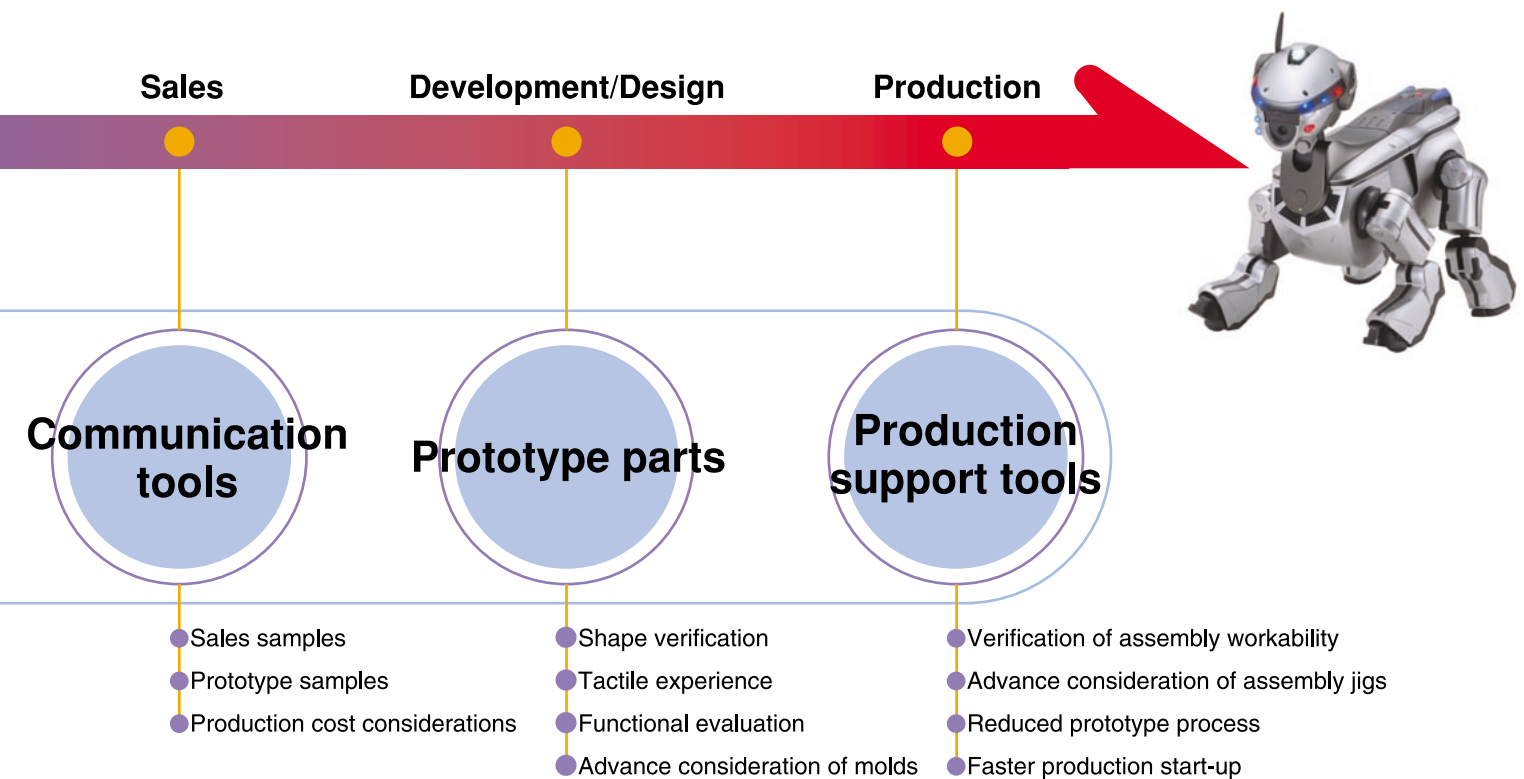
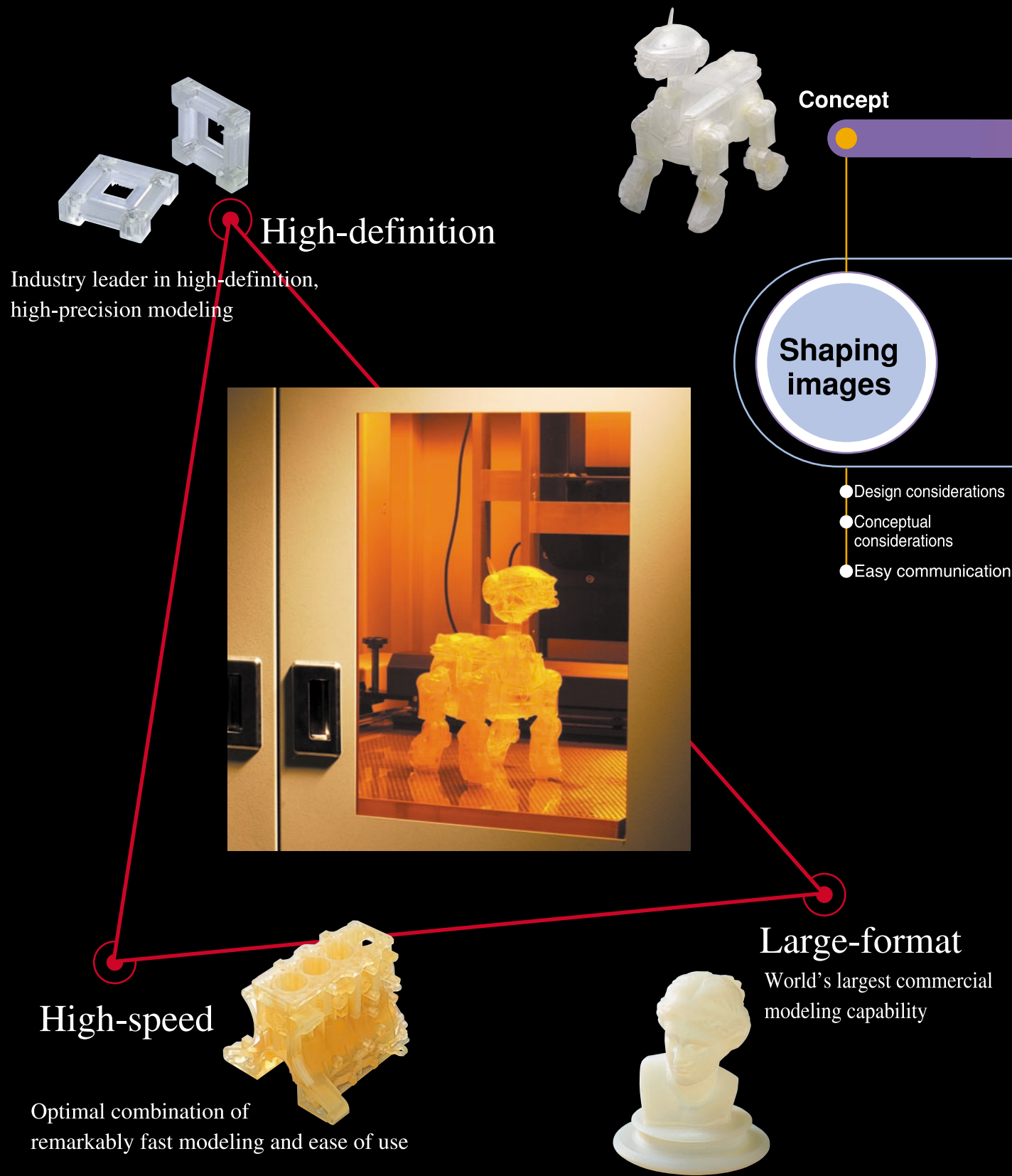
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* We ask your understanding that we may change the specifications and appearance of the products presented here for purposes of improvement with no prior notice.

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The Solid Creation System Supports and Encourages User Creativity

Opens up new possibilities for creativity in manufacturers' product development operations with the ability to conduct high-definition, high-speed, large-format modeling.



In today's fast-changing marketplace, companies in various sectors are seeking shorter product development lead times, smaller lot production capabilities, reduced production costs and improved manufacturing efficiency. For these companies, stereolithography capable of performing 3-dimensional modeling at higher speeds and with greater precision is an essential technology for enhancing competitiveness.

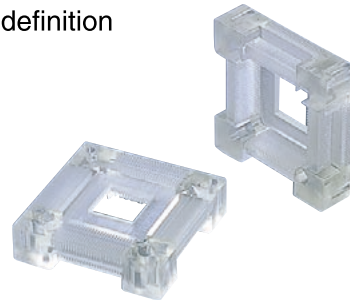
Sony has met these challenges with its Solid Creation System for advanced stereolithography.

Features Only Sony Offers Expand the Potential for Various Applications

Dramatically shortens product development lead times with its capability of performing high-definition, high-speed, large-format modeling.

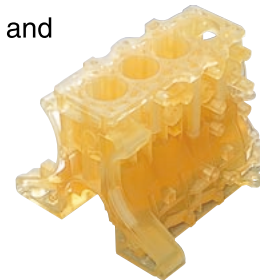
Sets industry standards for high-precision/high-definition modeling.

Combines Sony's original laser lithography system with a special UV-curable resin to realize high-precision/high-definition modeling.(SCS-1000HD)



Offers remarkably high-speed modeling combined with ease of use.

Utilizes a high-output solid-state semiconductor laser. Enables 2-beam lithography and high-speed modeling.(SCS-8000D/9000D)



World's largest-format modeling for commercial applications

Models products up to 1,000 x 800 x 500 mm(39.3 x 31.4 x 19.6in.) the world's largest.(SCS-9000/9000D)



"SCR Series" UV-curable resin available in a wide range of grades

Features remarkable mechanical characteristics including hardness, rigidity and durability after hardening. Comes in a broad selection of grades, with properties close to ABS polypropylene or polyethylene.



The Solid Creation System makes it easy for users to verify shapes in 3 dimensions and conduct functional assessments.

Design model



Design verification



Design verification



Art
Artist:Yukihiro Yoshihara



Design verification

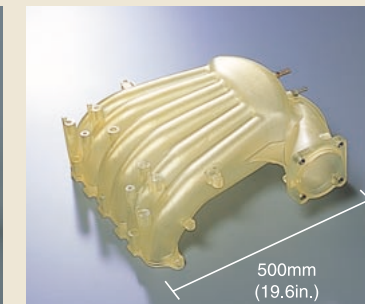
Working model



Function checking/touching



Function checking/touching



Mounting assessment
Courtesy of Nakakin Co.,Ltd



Assessment of air flow/noise

High-definition model



IC socket



Connectors

Master models



Vacuum-casting master



Casting master

Other wide-ranging applications



Medical models



Sales samples



Presentations



Direct molds
(injection-molded simple molds)

Principles of stereolithography

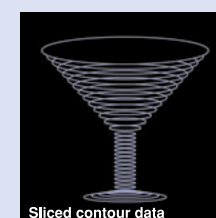
What is stereolithography?

Stereolithography is a technology for converting 3-D CAD design images into cross-section "slice" data and then employing a laser to harden UV-curable resin slice at a time. Since each slice is extremely thin, measuring approximately a mere 100 microns (.00394 in.), this process enables creation of delicate 3-D solid forms from the stacked resin slices.



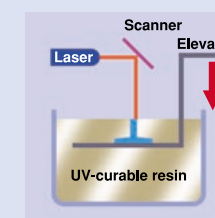
3-D CAD data

CAD-designed 3-D model is divided into many thin cross-sectional slices and converted to contour data.

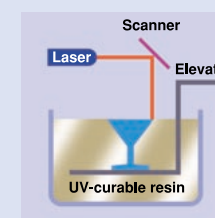


Sliced contour data

An ultraviolet laser employs the contour data as a basis for scanning the surface of UV-curable resin contained in a tank, and a cross-sectioned form is drawn. The laser-scanned surfaces are hardened, and cross-section layers are formed on an elevator.



The elevator descends a layer at a time, stacking the thin cross-section slices continuously to form a 3-D model.



The process is repeated until the 3-D model is completed. The elevator is then raised and the model removed for post-processing.

High-power, High-speed Stereolithography System

SCS-8000

A balance of operating ease and 4X modeling speed (compared with conventional models)

The SCS-8000 high-speed modeling machine is the first in the U.S. market to employ a high-powered, 800 mW, 60 kHz semiconductor excitation single laser for high-speed, high-precision modeling. This stellar performance is combined with remarkably easy operation featuring simplified parameter input and user-friendly one-touch menus.



Powerful, Ultra-high-speed Stereolithography System

SCS-8000D

An ultra-high-speed stereolithography environment that operates an astonishing 8X faster than conventional models!

- Dual Beam system offers substantially shorter drawing time
The Dual Beam system employs two laser beams simultaneously to draw each model.
Besides enhancing the laser power, the system reduces the drawing time to 1/8 that achieved by the previous conventional machine.
- The combination of a single laser emitting two beams with two scanners to perform the drawing results in a highly stable optical system.
This high-efficiency optical design optimizes use of the laser output.

- New Micro Modeling mode added. Allows easier modeling of precision parts, connectors and other ultra-small shapes.
- Effective laser power raised to 1.5 times that of conventional models.
Responds effortlessly to user needs with added high-speed modeling power.
- Stable modeling of large-surface barriershaped objects.
- Real-time data-processing function installed. Immediate transition from data-processing to modeling operations completely eliminates wasteful waiting time.
- Simplified resin exchange using atool-free, one-touch exchange Process.

Specifications		
Model	SCS-8000	SCS-8000D
Laser	Solid-state semiconductor laser 800 mW, 60 kHz	Solid-state semiconductor laser 2,700 mW, 60 kHz
Modulator	AOM (acousto-optic element)	AOM (acousto-optic element)
Deflection equipment	Galvanometer mirror system (Includes sweep-defocus correction function)	Galvanometer mirror system(Dual beam) (Includes sweep-defocus correction function)
Model creation range	600 x 500 x 500 mm (23.6 x 19.6 x 19.6 in.)	600 x 500 x 500 mm (23.6 x 19.6 x 19.6 in.)
Spot size*	0.15 ~ 0.40mm (0.00591 ~ 0.0016 in.)(Automatic adjustment)	0.15~0.40mm (0.00591 ~ 0.0016 in.)(Automatic adjustment)
Max. scan speed*	10 m/sec (393.7 in./sec)	12 m/sec (472.4 in./sec)
Layer thickness*	0.10 ~ 0.2 mm (0.00394 ~ 0.00787 in.)	0.10 ~ 0.2 mm (0.00394 ~ 0.00787 in.)
Tank volume	265 L	265 L
Power source	100VAC 30A	100VAC 35A
Laser coolant	Attached (air cooling)	Attached (air cooling)
Main unit dimensions W x D x H, excluding projections & signal tower	1,660 x 1,400 x 1,840 mm (65.4x 55.1 x 72.4 in.)	1,660 x 1,400 x 2,070 mm (65.4x 55.1 x 81.5 in.)
Main unit weight (excluding resin)	Approx. 1,000 kg (2.205 lbs.)	Approx. 1,300 kg (2.866 lbs.)

* The spot size, the maximum scan speed and layer thickness vary depending on the resin used.

High Power & Large Format

SCS-9000/9000D

Reliable modeling in sizes ranging up to 1,000 mm (39.3 in.) .

The modeling range of 1,000 x 800 x 500 mm (39.3 x 31.4 x 19.6 in.)(W x D x H) leaves the competition far behind.
20 m/s (787.4 in./s) scanning speed meets the most demanding requirements.



Specifications		
Model	SCS-9000	SCS-9000D
Laser	Solid-state semiconductor laser 800 mW, 60 kHz	Solid-state semiconductor laser 2,700 mW, 60 kHz
Modulator	AOM (acousto-optic element)	AOM (acousto-optic element)
Deflection equipment	Galvanometer mirror system (Includes sweep-defocus correction function)	Galvanometer mirror system(Dual beam) (Includes sweep-defocus correction function)
Model creation range	1,000 x 800 x 500 mm (39.3 x 31.4 x 19.6 in.)	1,000 x 800 x 500 mm (39.3 x 31.4 x 19.6 in.)
Spot size*	0.20~0.40mm (Automatic adjustment)(0.00787 ~ 0.01575 in.)	0.20~0.40mm (Automatic adjustment)(0.00787 ~ 0.01575 in.)
Max. scan speed*	20 m/s (787.4 in./sec)	20 m/s (787.4 in./sec)
Layer thickness*	0.10 ~ 0.2 mm (0.00394 ~ 0.00787 in.)	0.10 ~ 0.2 mm (0.00394 ~ 0.00787 in.)
Tank volume	840 L	840 L
Power source	100VAC 35A	100VAC 40A
Laser coolant	Attached (air cooling)	Attached (air cooling)
Main unit dimensions W x D x H, excluding projections & signal tower	2,340 x 1,640 x 2,760 mm (92.1 x 64.5 x 108.6 in.)	2,340 x 1,640 x 2,760 mm (92.1 x 64.5 x 108.6 in.)
Main unit weight (excluding resin)	Approx. 2,000 kg (4.409 lbs.)	Approx. 2,050 kg (4.519 lbs.)

* The spot size, the maximum scan speed and layer thickness vary depending on the resin used.

High-precision, High-definition Modeling

SCS-1000HD

Sets the industry standard for high-precision/high-definition modeling

Combines a He-Cd laser with a tighter beam focus and a special UV-curable resin to attain the industry's highest level of performance in high-precision/high-definition modeling.

Specifications	
Model	SCS-1000HD
Laser	He-Cd laser 40 mW
Modulator	AOM (acousto-optic element)
Deflection equipment	Galvanometer mirror system (Includes sweep-defocus correction function)
Model creation range	300 x 300 x 270 mm (11.8 x 11.8 x 10.6 in.)
Spot size*	0.05~0.20mm (Automatic adjustment)(0.00197 ~ 0.00787 in.)
Max. scan speed*	2 m/sec (78.7 in./sec)
Layer thickness*	0.05 ~ 0.2 mm (0.00196 ~ 0.00787 in.)
Tank volume	45 L
Power source	100VAC 30A
Laser coolant	Not needed
Main unit dimensions W x D x H, excluding projections & signal tower	1,430 x 1,100 x 1,590 mm (56.3 x 43.3 x 62.6 in.)
Main unit weight (excluding resin)	Approx. 660 kg (1.455 lbs.)

* The spot size, the maximum scan speed and layer thickness vary depending on the resin used.

