

VANGUARD AND VANGUARD HS

S12 SLS® SYSTEMS

Technology: Selective Laser Sintering, SLS

Material Classes: Powder, Thermoplastic, Thermoplastic Elastomer, Metal, Composite



Build functional parts and tools directly from CAD files

Representing the fourth generation of SLS® (selective laser sintering) technology, Vanguard and Vanguard HS (High Speed) are the first SLS systems developed specifically for advanced manufacturing applications. With the Vanguard system you can move directly from a CAD file to a durable, functional plastic or metal part or tool — in a fraction of the time required for traditional machining and tooling processes.

Quickly generate small runs of production parts — without the tooling step. The Vanguard system takes you from CAD files to functional parts in as little as one day. Produce small volumes of plastic or metal parts faster, at less cost, without dependence on costly tooling or skilled labour.

Produce large volumes of parts with maximum efficiency. Use our metal materials to build durable, complex metal tooling inserts, ready for finishing in as few as two days.

Add parts during a build for maximum productivity. Nest, stack and add parts while the machine is building. Vanguard and Vanguard HS operate unattended: set it up, let it work, and your parts are ready for direct use or final finishing.

Build accurate, detailed parts, prototypes, patterns and tools — quickly and inexpensively. Create accurate, complex parts, casting patterns, and tools with features as small as 0.5 mm, and without spending days and money programming for CNC. Simply export any native STL file to a Vanguard system in one simple operation, and you are ready to build.

Use Vanguard or Vanguard HS system for:

- Plastic or metal parts, patterns & prototypes
- Complex metal tooling inserts
- Highly durable parts
- Parts with small features
- Short runs of plastic & metal parts

Benefits

- High part accuracy
- Highest build speed of all layer manufacturing systems
- Unattended operation
- Uses plastic or metal materials
- Respond to customer demands
- Worldwide service and support



Vanguard and Vanguard HS si2 SLS System Specifications



OPTICAL & SCANNING

| | |
|----------------------|--------------------------------|
| Laser | 25 or 100 Watt CO ₂ |
| Beam Delivery System | |
| Standard BDS | Maximum Scan Speed = 7.5 m/s |
| Celerity BDS | Maximum Scan Speed = 10 m/s |

CAPACITY

| | |
|---------------|-------------------------------------|
| Build Chamber | 381 w x 330d x 457h mm ³ |
|---------------|-------------------------------------|

SYSTEM & SOFTWARE

| | |
|------------------------|--|
| System requirements | 933 MHz Pentium III |
| Operating system | Windows 2000 with Service Pack 1 |
| Input data file format | .stl |
| Software | Vanguard Application Software Materialise NV Magics RP Software |

POWER REQUIREMENTS

| | |
|-------------|--------------------------------------|
| System only | 240 VAC, 12.5 KVA, 50/60 Hz, 3-phase |
|-------------|--------------------------------------|

ATMOSPHERIC REQUIREMENTS

| | |
|-------------------|--------------|
| Temperature range | 15°C to 27°C |
| Relative Humidity | = <70% |

SIZE

| | |
|---------------------------------|--|
| Process Station | W2.13 x D1.35 x H1.98 m (W84 x D53 X H78 in) |
| Computer Cabinet | W0.61 x D0.66 x H1.78 m (W24 x D26 X H70 in) |
| Chiller (U.S. and Asia Pacific) | W0.55 x D0.91 x H0.81 m (W22 x D36 X H32 in) |
| (Europe) | W54 x D71 x H93 cm (W21 x D28 X H37 in) |

WEIGHT

| | |
|---------------------------------|-------------------|
| Process Station | 1700 kg (3748 lb) |
| Computer Cabinet | 118 kg (260 lb) |
| Chiller (U.S. and Asia Pacific) | 113 kg (249 lb) |
| (Europe) | 64 kg (141 lb) |

OPTIONS

A number of peripheral pieces of equipment that help customers break out parts, sift powder, and clean the machine in the most efficient way are available. Contact your local 3D Systems representative for recommendations on a package that will meet your needs.

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