



Plastic Laser Sintering System **EOSINT P 760**
for Additive Manufacturing of Serial and Spare Parts, Functional
Prototypes and Patterns for Investment or Vacuum Casting

The Technology:

Laser Sintering - the Key to e-Manufacturing

Laser sintering is well known as the technology of choice for ensuring the quickest route from product idea to market launch. Innovative companies from a broad range of industries are using this technology for e-Manufacturing – the fast, flexible and cost-effective production directly from electronic data for every phase of the product life cycle.

The system: e-Manufacturing for the industrial environment

The EOSINT P 760 is an advancement of the EOSINT P 730 for plastic laser sintering. With this system fully functional plastic parts can be manufactured which are used for product development, in serial production or for spare part production. The system can build parts without the need for support structures. The maximum building height of 580 mm enables the construction of larger plastic components without the need for part assembly after production.

The modular nature of the EOSINT P 760 offers great flexibility with regard to functionality and budget. A newly developed laser optics module (Surface-Module) produces the best surface qualities. The Online Laser Power Control (OLPC) module monitors and controls the laser's power during the building

process, consequently ensuring a more constant laser power. In addition, the OLPC monitors quality-relevant laser characteristics and if necessary indicates an upcoming maintenance job. The Flash Recoating module, when in maximum productivity mode, halves the time needed for powder

recoating. Special parameter sets can be implemented according to material, layer thickness or particular benefits to achieve standardized Part Property Profiles. Subsequently, either particularly high cost benefits or the reproduction of the finest of details can be obtained. If the special



*Knee Joint
Built in Alumide
material using
EOSINT P 760.
(Project: EOS)*

parameter sets are not required, then the initial necessary investment decreases accordingly. Parameter sets and other modules can be added at any time. In order to optimize process flows, the technology also provides Integrated Process Chain Management (IPCM). This includes automatic powder conveying, an unpacking station and a powder recycling facility, all of which maintain dust-free as well as ergonomic working conditions. In addition to the exchangeable frame docking system,

these features guarantee maximum use of the machine's capacity. The quality of the manufactured parts as well as the productivity of the EOSINT P 760 system, its high degree of automation, professional materials management and the ergonomically designed peripheral devices are what make the system the ideal production tool for the economical, batch-size optimized manufacture of parts in all phases of the product

life cycle. It is therefore ideally suited for use in an industrial environment.

The software: Achieve maximum productivity automatically

EOS offers various software packages for processing CAD data and tracking production flows. EOSTATE was developed to provide users with an overview of all production-related data at any desired point in time. The soft-

ware processes production data for freely definable timeframes and displays it clearly. The user's requirements are accommodated within the integrated Basic, Quality Assurance, Controlling and Machine Park Management (MPM) modules. They ensure that production flows are easy to track and to manage.

Technical Data

Effective building volume	700 mm x 380 mm x 580 mm (27.6 x 15 x 22.9 in)
Building speed (material-dependent)	up to 32 mm/h (1.3 in/h)
Layer thickness (material-dependent)	0.06 mm (0.00236 in), 0.10 mm (0.00394 in), 0.12 mm (0.00472 in), 0.15 mm (0.00591 in), 0.18 mm (0.00709 in)
Support structure	not required
Laser type	CO ₂ , 2 x 50 W
Precision optics	F-theta-lens
Scan speed during build process	up to 2 x 6 m/s (19.7 ft/sec)
Power supply	32 A
Power consumption	maximum 12 kW / typical 3.1 kW
Nitrogen generator	integrated
Compressed air supply	20 m³/h; min. 6,000 hPa (26.2 yd³/h; min. 87.0 psi)

Dimensions (W x D x H)

System incl. switching cabinet	2,250 mm x 1,550 mm x 2,100 mm (88.6 x 61 x 82.7 in)
Control terminal	1,045 mm x 850 mm x 1,620 mm (41.1 x 33.5 x 63.8 in)
Powder conveying system	1,890 mm x 1,350 mm x 1,550 mm (74.4 x 53.1 x 61 in)
Unpacking station	1,600 mm x 800 mm x 1,370 mm (63 x 31.5 x 53.9 in)
Recommended installation space	4.8 m x 4.8 m x 3.0 m (189 x 189 x 118 in)
Weight	approx. 2,300 kg (5,071 lb)

Data preparation

PC	current Windows operating system
Software	EOS RP Tools; EOSTATE; Magics RP (Materialise)
CAD interface	STL (optional: converter to all common formats)
Network	Ethernet
Certification	CE, NFPA

EOS GmbH
Electro Optical Systems
Corporate Headquarters
Robert-Stirling-Ring 1
82152 Krailling/Munich
Germany
Phone +49 89 893 36-0
Fax +49 89 893 36-285

Further EOS Offices

EOS France
Phone +33 437 49 76 76

EOS India
Phone +91 44 28 15 87 94

EOS Italy
Phone +39 0233 40 16 59

EOS Korea
Phone +82 32 552 82 31

EOS Nordic & Baltic
Phone +46 31 760 46 40

EOS of North America
Phone +1 248 306 01 43

EOS Singapore
Phone +65 6430 05 50

EOS Greater China
Phone +86 21 602307 00

EOS UK
Phone +44 1926 62 31 07

www.eos.info • info@eos.info

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