

# EOSINT M 280



Laser-Sintering for the production of tooling inserts, prototype parts and end products directly in metal

## **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 sector**

The EOSINT M 280 is the updated and further improved version of the EOSINT M 270, the leading system on the market for the additive layer manufacturing of metal components. It directly produces top-quality metal parts on the basis of three-dimensional

CAD data – fully automatically, in only a few hours, and with no need for tools. The Direct Metal Laser-Sintering (DMLS) process builds the parts up layer by layer by melting fine metal powder with a laser beam, which enables the creation of extremely complex geometries such as free form surfaces, deep grooves and three-dimensional cooling channels.

The system is optionally equipped with a solid state laser of either 200 or 400 watt. This laser provides an exceptionally high quality radiation and stable performance. The Laser Power Monitoring (LPM) makes it possible to control all this during the building process. Together with an optimized Gas Management System this guarantees optimal and consistent processing conditions for highest and constant part building qualities. The system operates in both

protective nitrogen and argon atmospheres. This allows the system to process a wide range of materials: from light metals to stainless and tooling steel to super alloys.

The process software has been further developed over a period of many years and contains an array of intelligent exposure strategies and features; these enable the optimization and adaption of the build process for a variety of material types and applications. For the EOSINT M 280 EOS offers a number of powdered metal materials with corresponding parameter sets that have been optimized according to the application. They produce parts with standardized property profiles (PPPs). In addition, EOS ensures maximum reliability by subjecting all the relevant products to an intensive process development

procedure and constant quality assurance.

The system's capacity can be adapted to different customer requirements with a variety of options and additional equipment. The Integrated Process Chain Management (IPCM) modules enable greater productivity, higher quality and increased user-friendliness, and can also be added to at any time.

The distinctive features of the EOSINT M 280 system are the quality of the parts it produces and the ergonomically designed peripherals. These features are what make the system the ideal production tool for the economical batch-size optimized manufacture of parts at all stages of the product life cycle. The system is therefore perfectly suited for an industrial environment.



e-Manufacturing Solutions

# EOSINT M 280

**Knee Implant**  
 Built in bio-compatible  
 Cobalt-Chrome alloy  
 using EOSINT M 280.  
 (Project: Stryker Orthopaedics)



**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.

Building volume (including building platform)	250 mm x 250 mm x 325 mm (9.85 x 9.85 x 12.8 in)
Laser type	Yb-fibre laser, 200 W or 400 W (optional)
Precision optics	F-theta-lens, high-speed scanner
Scan speed	up to 7.0 m/s (23 ft./sec)
Variable focus diameter	100 - 500 µm (0.004 - 0.02 in)
Power supply	32 A
Power consumption	maximum 8.5 kW
Nitrogen generator	integrated
Compressed air supply	7,000 hPa; 20 m <sup>3</sup> /h (102 psi; 26.2 yd <sup>3</sup> /h)
Argon supply	4,000 hPa; 100 l/min
<b>Dimensions (B x D x H)</b>	
System	2,200 mm x 1,070 mm x 2,290 mm (86.6 x 42.1 x 90.1 in)
Recommended installation space	min. 4.8 m x 3.6 m x 2.9 m (189 x 142 x 114 in)
Weight	approx. 1,250 kg ( 2,756 lb)
<b>Data preparation</b>	
Software	EOS RP Tools; EOSTATE Magics RP (Materialise)
CAD interface	STL. Optional: converter for all standard formats
Network	Ethernet

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