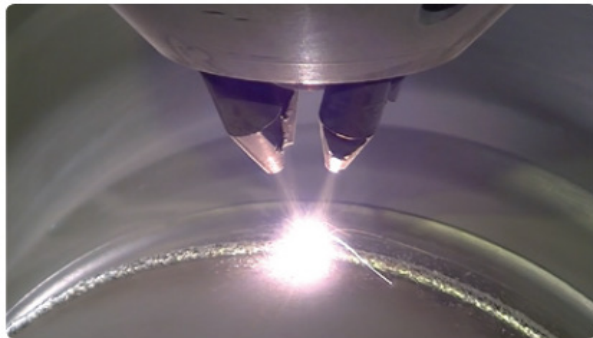




# LENS<sup>®</sup> 150 ADDITIVE MANUFACTURING CONTROLLED ATMOSPHERE SYSTEM

The LENS<sup>®</sup> 150 brings industrial-strength metal 3D Printing technology to the laboratory and classroom

Additive Manufacturing, also known as 3D Printing, has recently emerged as the first manufacturing revolution of the 21st Century. Industrial applications are growing rapidly and processes are being qualified in numerous industries. In the area of metal Additive Manufacturing, applications such as repair, rework, coating and low volume manufacturing are being implemented across a wide range of industries, including oil and gas, aerospace, mining, power generation and medical.



LENS in Action Repairing a Casing

The all-new LENS 150 system offers a low cost entry to metal Additive Manufacturing. With a 150mm cubed working volume, 400W fiber laser and full LENS control software, the LENS 150 gives the user the same process as the industry-proven LENS Classic and Machine Tool Series Systems, but with a smaller footprint and at a lower cost.

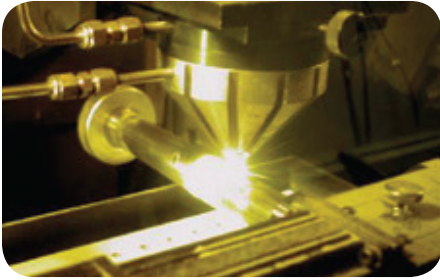
## LENS 150 AM CA FEATURES

- ▶ Blown Powder Deposition – visible, teachable process
- ▶ Industry-proven LENS process
- ▶ Rapid set-up – make a new material in ten minutes!
- ▶ High brightness solid-state Fiber Laser
- ▶ Rapid solidification rates (>1000C) – Novel microstructures
- ▶ Complete Atmosphere Control – full protection for highest quality
- ▶ Create mixtures - rapid alloy discovery

## LENS APPLICATIONS

- ▶ Teaching and research on metal 3D Printing
- ▶ Rapid Manufacturing
- ▶ Rapid Prototyping
- ▶ Hybrid Manufacturing
- ▶ Rapid Alloy Screening
- ▶ Repair & Remanufacture

## Laser Engineered Net Shaping



### How the LENS system works:

LENS systems utilize a high-power laser together with powdered metals to build fully dense structures directly from a 3-dimensional CAD solid model.

The CAD model is automatically sliced into a tool-path, which instructs the LENS machine how to build the part. The part is constructed layer by layer under the control of software that monitors a variety of parameters to ensure geometric and mechanical integrity.

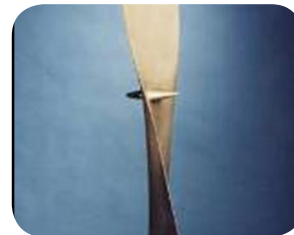
The LENS process is housed in a chamber which is purged with argon such that the oxygen level stays below 10 parts per million to ensure there is no impurity pick-up during deposition. The metal powder is fed to the process by Optomec's proprietary powder-feed system, which is able to flow small quantities of powder very precisely. When complete, the part is removed and can be heat-treated, Hot-Isostatic Pressed, machined, or finished in any other manner.

## 150 ADDITIVE MANUFACTURING CONTROLLED ATMOSPHERE SYSTEM

SPECIFICATIONS		CS 150 AM CA
AUTOMATION	XYZ Travel (mm)	150x150x150
	Table Size XY (mm) / Payload (kg)	229x229 / 50
	Positional Accuracy (mm)	± 0.014
	Positional Repeatability (mm)	± 0.003
	CNC Controller	Win7/Galil
	System Weight (kg)	600
	System Dimensions (mm)	2000x1000x1000
LENS DEPOSITION	CDRH Class 1 Airtight Enclosure	Standard
	Pneuma Seal Door	Standard Door
	Oxygen/Moisture Level (ppm)	< 10
	Standard Powder Feeders	Up to 4
	Laser Power Standard (W)	400
	2.5D Tool Path Software	Option



Defense Housing  
Fabricated by LENS System



Compressor Blade  
Repaired by LENS System



Exhaust Duct  
Fabricated by LENS System

## ABOUT OPTOMECC

Optomec® is a privately-held, rapidly growing supplier of Additive Manufacturing systems. Optomec's patented Aerosol Jet Systems for printed electronics and LENS 3D Printers for metal components are used by industry to reduce product cost and improve performance. Together, these unique printing solutions work with the broadest spectrum of functional materials, ranging from electronic inks to structural metals and even biological matter. Optomec has more than 300 marquee customers around the world, targeting production applications in the Electronics, Energy, Life Sciences and Aerospace industries. For more information about Optomec, visit <http://www.optomec.com>.



Production Grade 3D Printers... with a Material Difference

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