

M LINE FACTORY Metal laser melting machine for series production

Modular machine concept with numerous innovative features, geared to the requirements of "Industrie 4.0".

Maximum productivity enables the economical series production of additive metal parts, supported by a unique safety concept.

Laser power of up to 4 x 1,000 watt.



MACHINE SOLUTIONS FOR INDUSTRIAL 3D METAL PRINTING

Additive manufacturing is currently progressing from prototyping to production.

Companies across all sectors face the challenge of how they can satisfactorily meet the increased demand in this area. More machines are required, the amount of space in production halls is often limited, the powder can no longer be easily managed with the increasing number of build jobs, and too many operators are required for all production steps.

The existing machine concepts, in the form of “stand-alone” solutions, barely allow economical series production under the changed frame conditions.

As a technology trendsetter, Concept Laser has taken up this challenge and developed innovative solutions: **M LINE FACTORY** offers a new type of modular machine architecture that allows economical series production on an industrial scale.



M LINE FACTORY PCG

M LINE FACTORY PRD

M LINE FACTORY MODULAR MACHINE ARCHITECTURE

- . **M LINE FACTORY PRD:** Production Unit with individually movable dose, build and overflow modules
- . **M LINE FACTORY PCG:** Processing Unit for set-up and dismantling processes, powder management with an additionally integrated sieving station
- . Movable modules for transport and supplying material
- . Integrated tunnel concept for module movements

Elements of the
CL WRX 3.0
software suite



CL WRX Manager 3.0:
Monitoring via mobile devices

CL WRX 3.0 MODULAR MACHINE SOFTWARE

- . Effective, user-friendly, individually expandable
- . Division into different user roles
- . Control of all production in one piece of software

BENEFITS

- . **Freedom to combine the machine modules**
- . **Parallel rather than sequential work processes with maximum level of automation:**
 - Minimal downtimes - 24/7 production
 - Automatic tool changeover without interrupting the build process
 - Unidirectional coating process that saves time
 - Switchable filter units for maximum productivity
 - Redundancy of build plate cover thanks to the lasers
- . **Unique innovative safety concept:**
 - Production Unit and Processing Unit are separated
 - No contact with powder by the operator
 - Water-flood passivation of filters
- . **Innovative features:**
 - 3D optics with maximum power of 4 x 1,000 watt
 - Build envelope 400 x 400 x up to 425 mm³
 - Modularly interlinked software architecture with numerous extra features

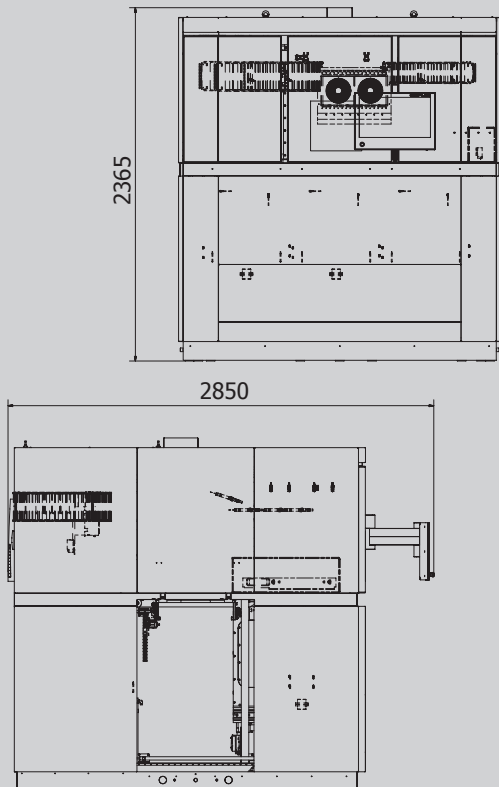
M LINE FACTORY TECHNICAL DATA

Build envelope LaserCUSING®	400 x 400 x up to 425 mm ³ (x, y, z) (further z-axis lengths in development)
Layer thickness LaserCUSING®	20 – 100 µm
Production speed LaserCUSING®	max. 4,5 m/s (depending on material, density, layer thickness)
Laser system	3D optics with maximum power of 4 x 1,000 W
Focus diameter	50 µm – 500 µm (dynamic focus adjustment)
Filter system	integrated with 2 x 20 m ² filter surface
QM modules	QM Meltpool 3D, QM Live View, QM Atmosphere, QM Powder, QM Documentation
M LINE FACTORY PRD Dimensions	2158 x 2850 x 2365 mm ³ (W x D x H)
M LINE FACTORY PRD Weight	approx. 5,700 kg
M LINE FACTORY PCG Dimensions	1258 x 2604 x 3552 mm ³ (W x D x H)
M LINE FACTORY PCG Weight	approx. 3,000 kg
Operating conditions	15 – 35°C
Materials LaserCUSING®	CL 20ES* Stainless steel (1.4404) CL 41TI ELI* Titanium alloy (TiAl64V ELI) CL 100NB* Nickel-based alloy (Inconel 718)

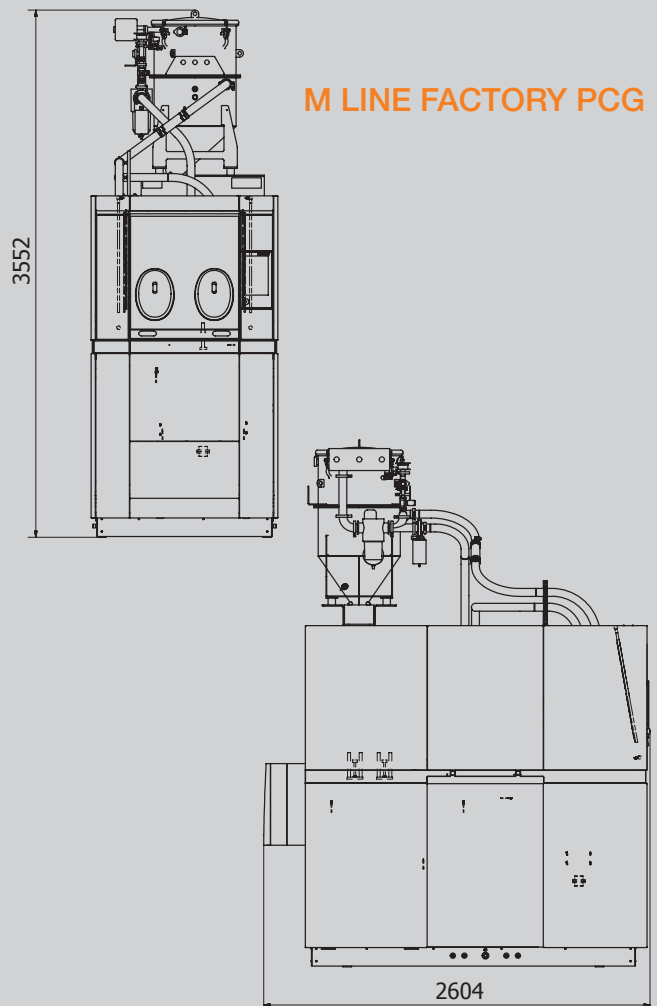
* The material is currently being prepared.



M LINE FACTORY PRD

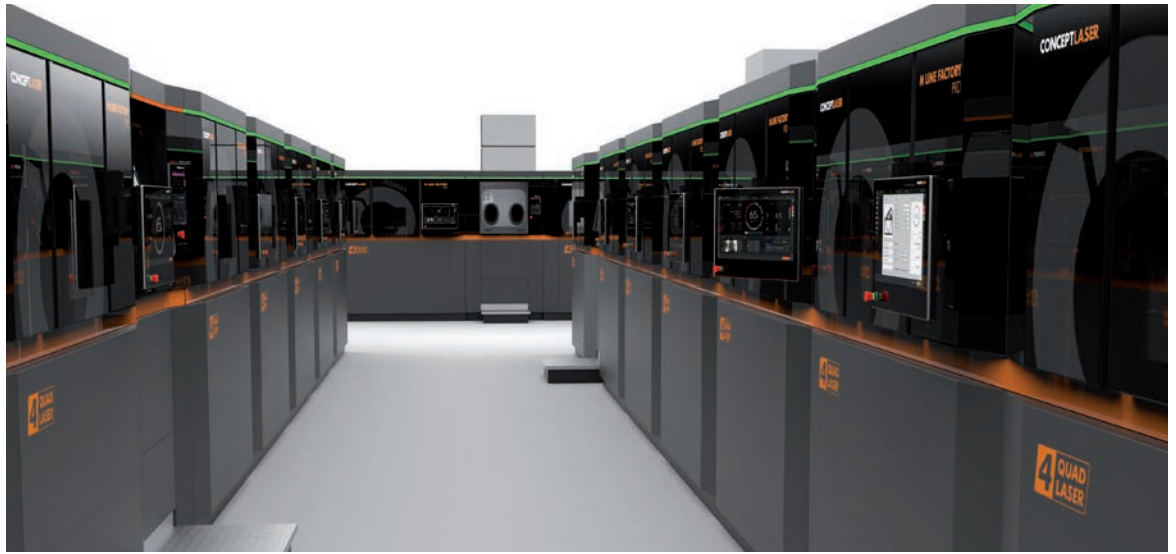


M LINE FACTORY PCG



AM FACTORY OF TOMORROW

With the integrated production concept of the “AM Factory of Tomorrow”, Concept Laser is consistently implementing the central ideas of “Industrie 4.0”: **automation, interlinking and digitization**. The modular structure of the M LINE FACTORY enables the economical series production of additive components as part of a “smart factory”!



M LINE FACTORY 11/2016
Subject to technical changes.
Machine layout & 3D graphics: newikon.info
Artwork: brandnew-design.de

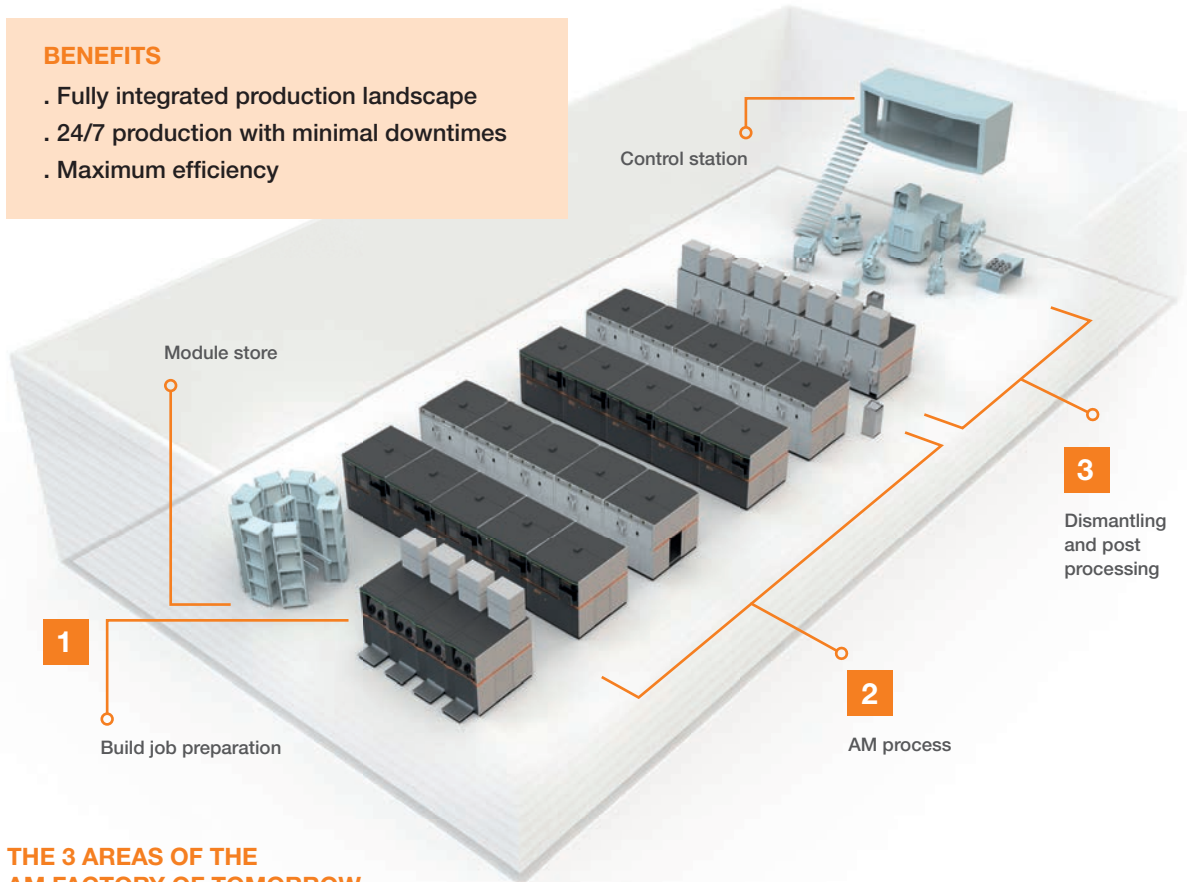


M LINE FACTORY

INDUSTRIAL SERIES
PRODUCTION
WITH LaserCUSING®
MACHINES FOR
THE LEADING
INDUSTRIES OF
THE FUTURE

BENEFITS

- . Fully integrated production landscape
- . 24/7 production with minimal downtimes
- . Maximum efficiency



THE 3 AREAS OF THE AM FACTORY OF TOMORROW

- . Powder storage and build job preparation
- . AM process production area
- . Dismantling and post processing with links to conventional manufacturing methods



Concept Laser GmbH
An der Zeil 8
D 96215 Lichtenfels

T: +49 (0)95 71. 1679 200
F: +49 (0)95 71. 1679 299
info@concept-laser.de

Concept Laser Inc.
1000 Texan Trail, Ste 150
Grapevine, TX 76051 USA

T: +1-817-328-6500
info@conceptlaserinc.com
www.conceptlaserinc.com