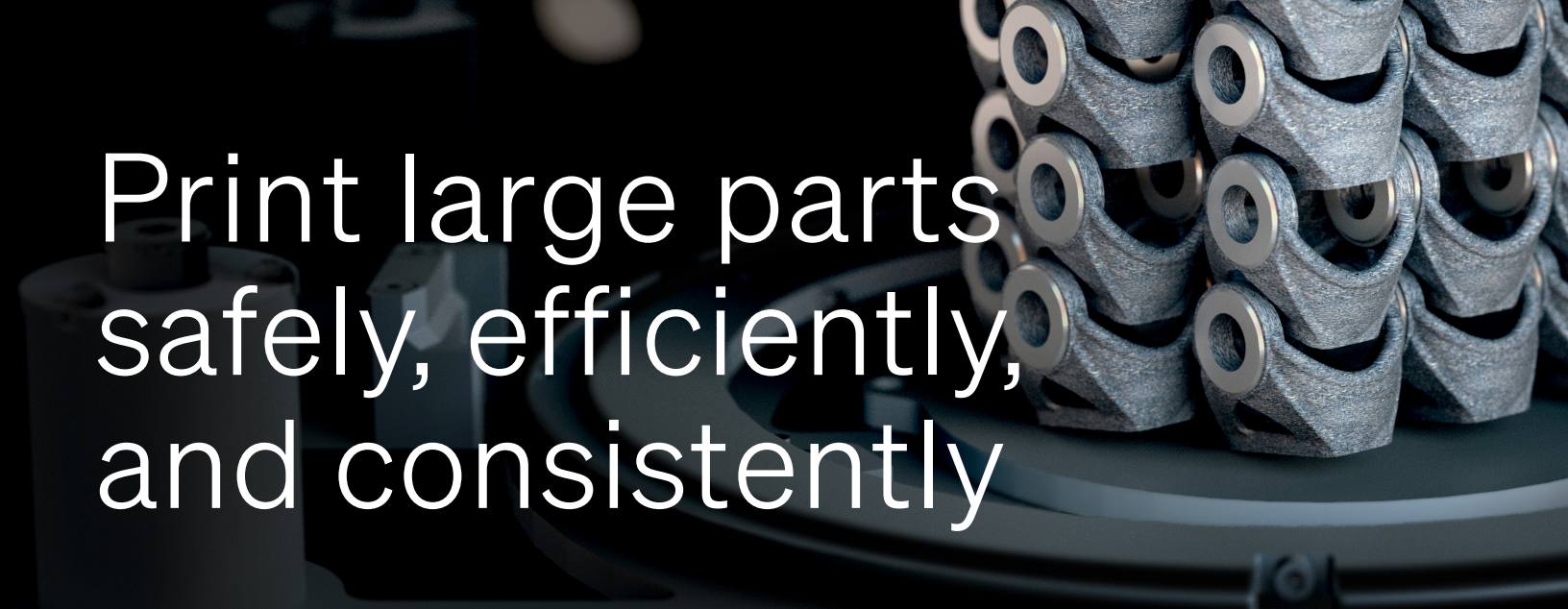


COLIBRIUM  
ADDITIVE  
a GE Aerospace company

# X Line 2000R

A unique capability to create large additive metal parts





# Print large parts safely, efficiently, and consistently

The X Line 2000R offers the unique ability to print otherwise impossible parts safely, efficiently, and consistently. With a generous build volume of 400 × 800 × 500 mm, the X Line 2000R offers reliable, consistent performance with one of the largest build volumes available today. The X Line 2000R was designed specifically for the production of large, quality parts, which makes it ideal for a variety of industries, including space, aviation, and automotive.

## **Built with efficiency in mind**

The X Line 2000R features a dual-processing chamber that enables the operator to unpack and set up a new build while another one is being printed. The mechanism rotates 180 degrees so a new build is automatically transferred from the handling to the process side, allowing for minimal downtime and faster turnarounds.

The separated material handling side features the glove box and a control panel for managing the glove box and the coupled build module. The working area of the handling station is the glove box, where the build module for the DMLM process is armed or disarmed. The protective door of the glove box is equipped with a large glass front panel to provide an optimum view.

Dual-laser technology, featuring two powerful 1,000-watt lasers, enables the production of large complex builds.

Smart software and control mechanisms ensure the lasers never operate “in-line,” ensuring the laser beams have a consistently clear and soot-free optical trajectory.

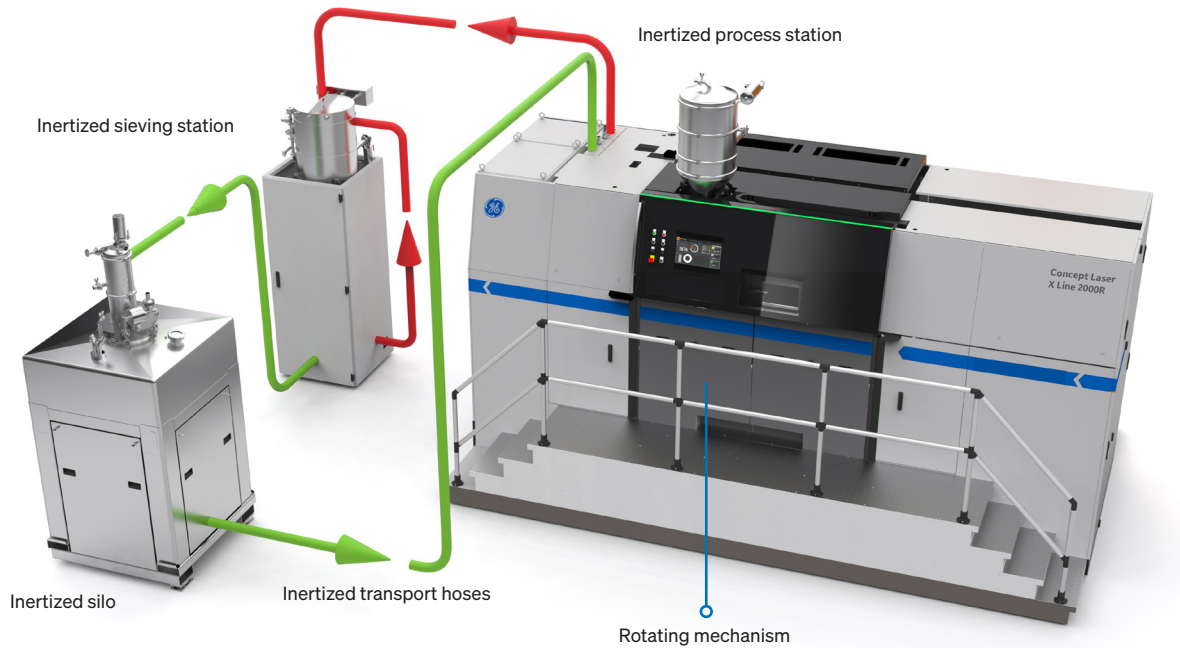
## **Powder handling**

A unique, closed-loop powder handling system automatically transports unused powder from the overflow containers of the X Line 2000R to an inertized sieving station – where large particles are removed – into an inertized silo and then back to the machine. This eliminates operator contact with the powder and promotes safer handling of reactive materials.

## **X Line 2000R Benefits**

- Automatic powder handling under inert conditions
- Protection of the powder from oxidation
- Fully inertized machine, sieving station, silo and transport hoses
- Safe, contactless powder handling (no need for operation)
- Maximum operator safety





## Superior part quality and consistency

The process chamber features an optimized upper and lower gas flow for better part quality and consistency.

- High volume flows in the upper areas of the build chamber eliminate the possibility for soot or powder particles to deposit on the chamber windows.
- 3D-printed plenum ensures the highest level of flow uniformity, while the aerodynamically designed guide vane delivers a steady, high velocity lower gas flow over the powder bed.

The improved thermal system now offers a system cooling capacity of 12 kW, providing more optical stability and robustness. The result: increased capacity, stability and control for long and complex builds.

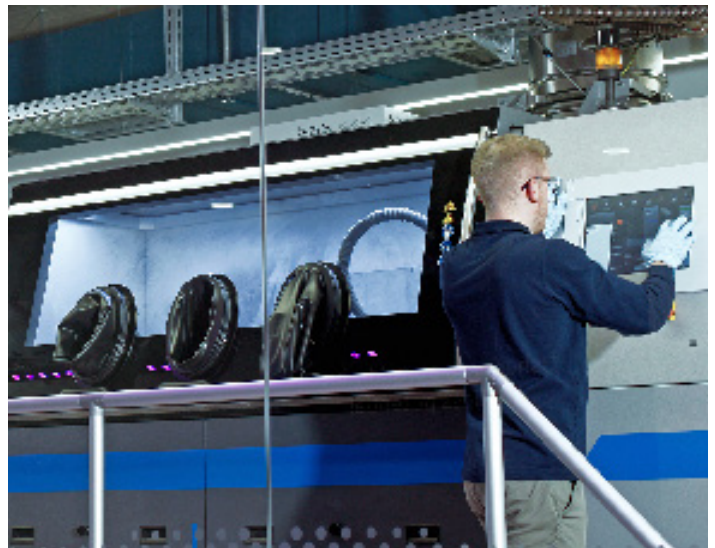
QM System software modules enable the monitoring, control, and validation of various system states, providing process repeatability and quality. Additional in-line process modules are available to further ensure reproducibility and process quality.

The X Line 2000R also features a filter module with extended filter life. Two high-volume modules filter soot and metal powder particles from the inert gas, for clean builds and better part quality.

## Innovative software helps to save time

The CL WRX Control software enables improved response times when operating the system. It further enables minimized waiting times when switching between parts or when shifting focus. This results in reduced machine downtimes.

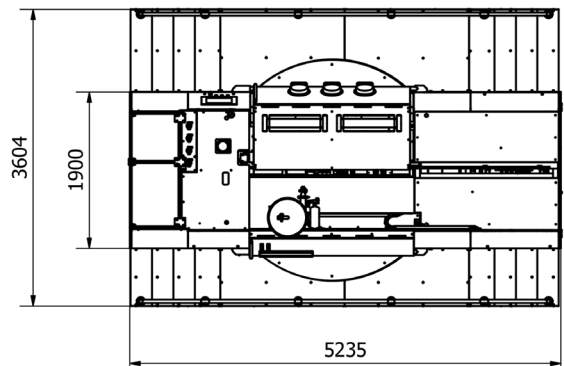
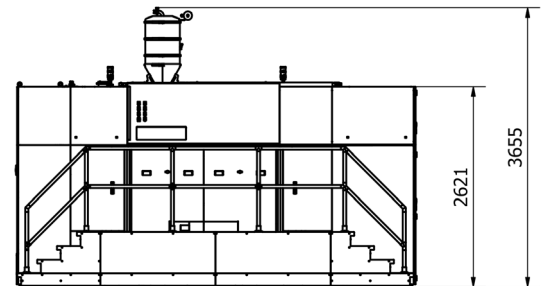
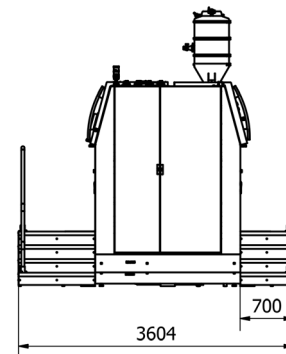
Additionally, the offline pre-calculation of complex parts eliminates layer delays and further reduces production time.



# X Line 2000R

## Technical Data

<b>Build envelope</b>	800 × 400 × 500 mm (x, y, z)
<b>Layer thickness</b>	30 – 150 µm
<b>Production speed</b>	up to 120 cm <sup>3</sup> /h (depending on material, parameter, geometry)
<b>Laser system</b>	2 fiber lasers, each 1,000 W (cw)
<b>Max. scanning speed</b>	7 m/s
<b>Focus diameter</b>	approx. 100 – 500 µm
<b>Heating</b>	9 kW, maximum temperature 200°C
<b>Connected loads</b>	Average power consumption 13 kW Power connection 3/N/PE AC 400 V, 50 A, 50 – 60 Hz
<b>Inert gas supply</b>	1 gas connection available
<b>Inert gas consumption</b>	approx. 17 – 34 l/min *
<b>Dimensions</b>	5,235 × 3,655 × 3,604 mm (B × H × T)
<b>Weight</b>	approx. 9,500 kg (tare weight)
<b>Operating conditions</b>	15 – 25°C
<b>Necessary peripheral equip.</b>	Sieving station, powder silo



### Materials Available

- Aluminum - AlSi10Mg
- Titanium - Ti64 ELI Grade 23
- Nickel - Ni718
- Stainless Steel - SS316L
- Nickel - Ni625
- Cobalt Chrome - CoCrMo

\*Inert gas consumption during the building process with N<sub>2</sub>