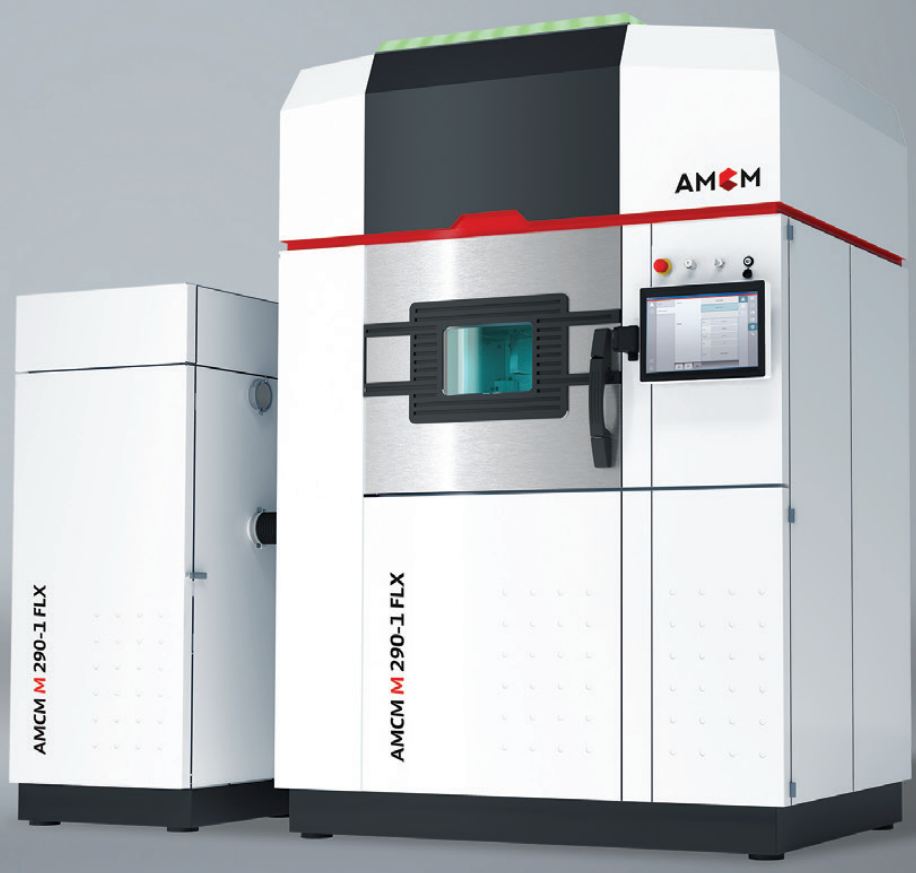
AMCM

Additive Manufacturing
Customized Machines

# AMCM M 290 FLX

With single or dual laser setup.
From Gaussian to ring-shaped beams.
Also with FDR – fine detail resolution.

**For highest productivity.**



# AMCM M 290 FLX

## Benefits

AMCM M 290-1 FLX, AMCM M 290-2 FLX
configuration with up to 2 x nLIGHT AFX-1000 lasers:

- Compatible with legacy EOS M 290 (400 W) process for 85 µm spot process
- Up to 3x higher productivity with 316L steel and aluminum (compared to standard 400 W process)
- Process gas cooling for constant process conditions
- Machine design e.g., gas flow or thermal management adapted to the higher laser power
- Single or dual laser setup
- Full field overlap possible with the AMCM M 290-2 FLX
- Starting from 85 µm (index 0) Gaus, up to 210 µm (index 6) Ring

AMCM M 290-1 FLX (FDR), AMCM M 290-2 FLX (FDR)
configuration with up to 2 x nLIGHT AFX-1000 and FDR (fine detail resolution):

- For demanding applications with focus down to 55 µm with Gaussian Beam
- Open software for process optimization
- High productivity due to dual laser setup
- Starting from 55 µm (index 0) Gaus, up to 140 µm (index 6) Ring

## Technical Data

| | AMCM M 290-1 FLX | AMCM M 290-1 FLX (FDR) | AMCM M 290-2 FLX | AMCM M 290-2 FLX (FDR) |
|---|---|---|---|---|
| **Building volume (height incl. build plate)** | 250 x 250 x 325 mm<br>9.85 x 9.85 x 12.8 in | 220 x 220 x 325 mm<br>8.66 x 8.66 x 12.8 in | 250 x 250 x 325 mm<br>9.85 x 9.85 x 12.8 in | 250 x 220 x 325 mm<br>9.85 x 8.66 x 12.8 in |
| **Laser type** | Yb Fiber laser | | | |
| **Nominal power** | 1 x 1.2 kW | | 2 x 1.2 kW | |
| **Wave length** | 1070 nm | | | |
| **Precision optics** | F-theta-lens | | | |
| **Scanner** | standard scanner with active cooling | | | |
| **Scanning speed** | up to 7.0 m/s \| 23 ft./sec | | | |
| **Focus diameter** | approx. 85 – 210 µm<br>0.003 – 0.008 in | approx. 55 – 140 µm<br>0.002 – 0.006 in | approx. 85 – 210 µm<br>0.003 – 0.008 in | approx. 55 – 140 µm<br>0.002 – 0.006 in |
| **Process gas cooling** | x | x | x | x |
| **Power supply** | 32 A / 400 V | | | |
| **Power consumption** | 15 kW | | 17 kW | |
| **Inert gas supply** | 7,000 hPa; 20 $m^3/h$ \| 102 psi; 706 $ft^3/h$ | | | |
| **Dimensions (W x D x H)** | 2,680 x 2,120 x 2,400 mm<br>105.5 x 83.5 x 94.5 in | | | |
| **Recommended installation space** | min. 4,800 x 3,600 x 3,500 mm<br>189 x 142 x 138 in | | | |
| **Weight** | approx. 1,250 kg \| 2,756 lb | | approx. 1,350 kg \| 2,976 lb | |

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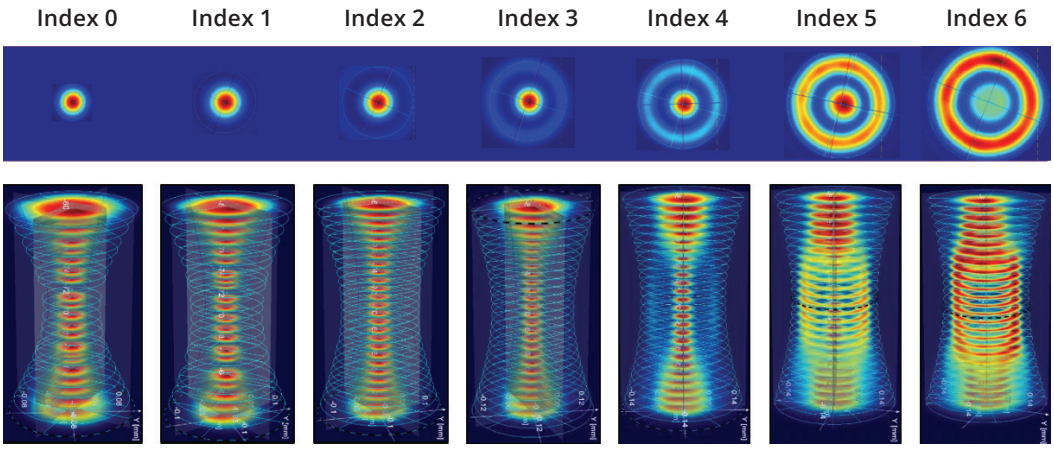


**Fig 1:** nLIGHT laser index properties. C = Centrum, R = Ring

**Fig 2:** 316L impeller made on an AMCM M 290-1 FLX system with the nLIGHT AFX-1000.
Spot size: 85 µm
Volume rate: 17 mm³/sec
Build in index: 0 and 4

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