

POWDER BED FUSION

FORMUP 350



An industrial modular and scalable PBF machine configured to your manufacturing needs with best-in-class surface finish.



AddUp
THINK SMART. MANUFACTURE DIFFERENT.

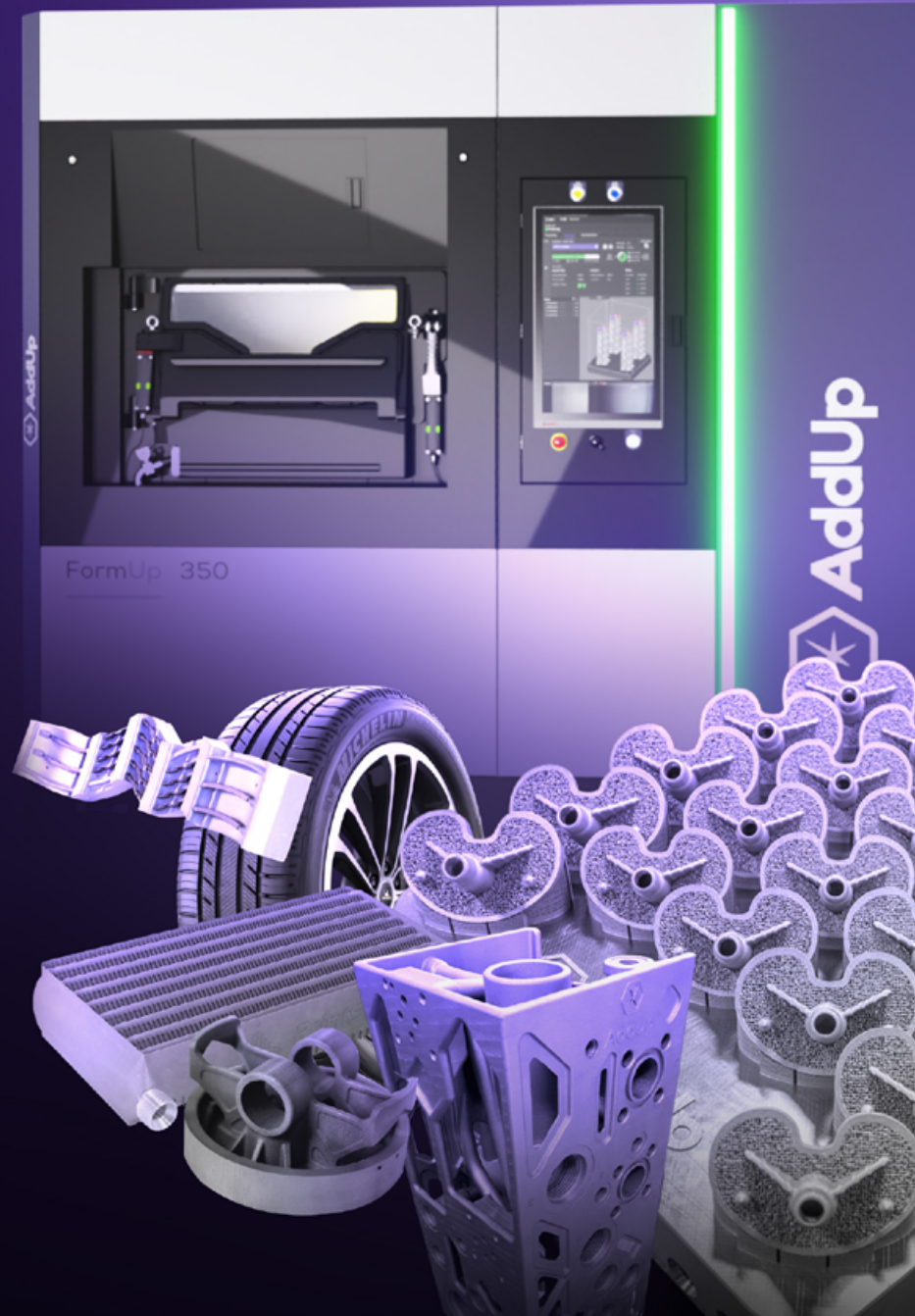
FORMUP 350

THE BENCHMARK IN RELIABLE, REPEATABLE, INDUSTRIAL PBF MACHINES

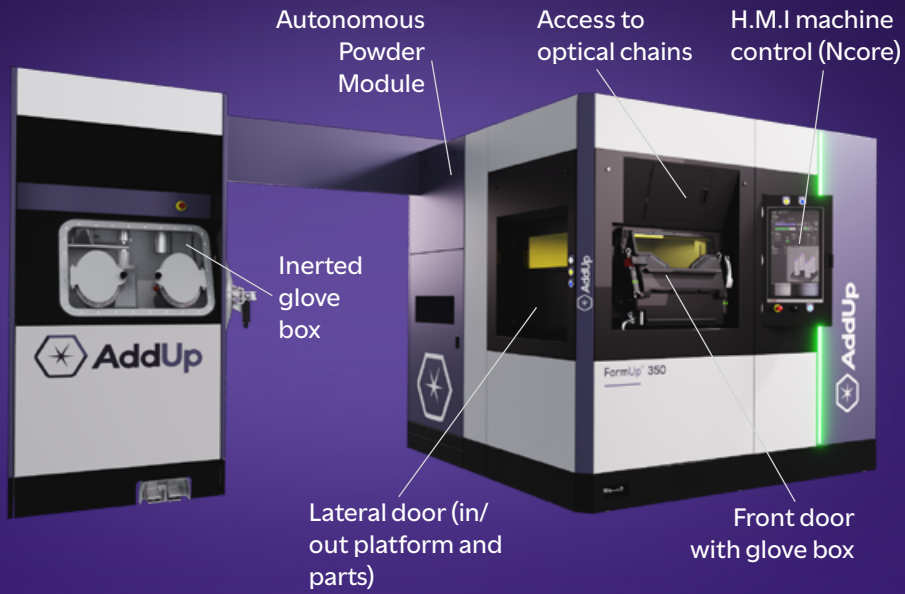
AddUp is an additive manufacturing OEM built upon the pedigree of industry pioneers Michelin and Fives. We bring the latest multi-technology production systems, but we also come from the world of manufacturing.

We understand the world of manufacturing because we were born from it. We understand industrial challenges because we have lived them. This is why we are industrializing additive manufacturing. We know how to use it, qualify it, and scale it; making it a reliable and repeatable solution for your business.

Our PBF machines offer users a complete set of digital manufacturing tools, focused on safety and quality with a best-in-class surface finish proven layer after layer on our machines currently in production with customers across the world.



MACHINE LAYOUT



TECHNICAL SPECIFICATIONS

Dimensions

L 6.30 x W 2.20 x H 2.45 m (see layout)

Global weight: ~ 5 T

Machine base: 4 T

APM: 600 kg

Glove box: 350 kg

Build volume

L 350 x W 350 x H 350* mm (~43 L)

O2 level

500 ppm

Laminar flow

Adjustable from 0.5 to 3 m/s

LASER lens protection

Cross Jet system

Up to 4 x 500W Ytterbium continuous fiber LASER (1070 nm)

Spot diameter: 70±5 µm

Optical chain

100% platform coverage by each LASER (full field)

3D scanners: 2 axis for X/Y displacements + 1 axis for focal adjustment

Max speed: ≤ 10m/s

Accuracy: 35 µm

Heating system: up to 200°C

Platform

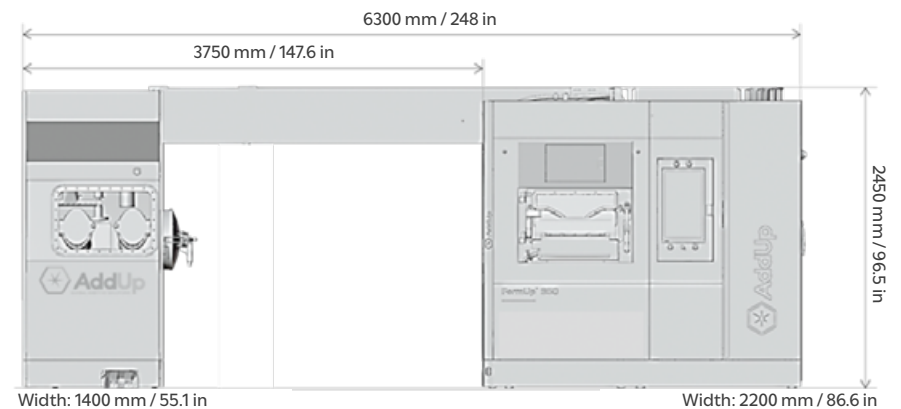
Cooling system to improve temperature drop time after production

Automatic clamping system with 100% of the platform surface available

Part properties

Precision: up to 0.1 mm**

Density: up to 99.99%**

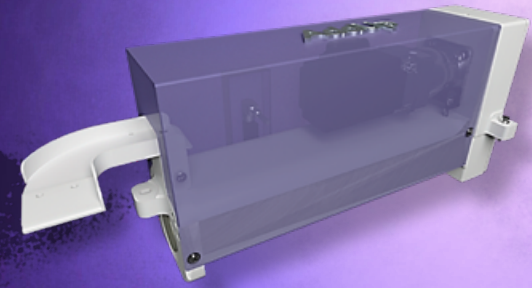


POWDER HANDLING

Powder type	Reactive & non-reactive, fine & medium sized powders***
Powder capacities	Principal module (main tank): 59 L
	Hopper: 60 L (with glove box)
	Machine buffer tanks: 4 L
	Filling duration (full main tank): ~ 1 hour (1 L/min)
Powder recoating device	Bidirectional Scraper or Roller option
	Interchangeable
Autonomous Powder Module	Layer thickness: 20 to 120 µm
	Feeds powder to the machine
	Re-filling possible during production
	Powder humidity removal & fluidification
	Ensures inert condition during powder conveying and storage
	Powder recovery from build surplus & recycling (closed loop)
	Sieve and regenerate powder
	Facilitates powder samples
	Powder vacuum inside build chamber & recycling
	Drains powder from the machine
Ensure safety with "no powder contact"	
Siever type	Ultrasonic (adjustable mesh)
	Sieving duration (full main tank): ~ 1 hour (1 L/min)
Fume and fusion residue management	Filtration device with automatic unclogging system
	Calcium carbonate residue passivation
	Filters lifetime > 3 years
Cooling device	Air / water (independent) or connection to workshop water circuit (option)

*Up to 370mm using a thinner platform ** Depending on part geometry, material and melting parameters used ***Submitted to AddUp Validation

SOME OF OUR CUSTOMER'S FAVORITE MATERIALS VALIDATED ON THE FORMUP 350:



BEST-IN-CLASS SURFACE FINISH WITH ROLLER TECHNOLOGY

Achieve optimal Powder Bed Density with a fine feature surface finish and minimal post processing with the optional bidirectional roller / fine power combo.

- Consistent, silky smooth surface
- Versatile recipe parameters
- Compatible with standard (D90 < 63µm) and fine (D90 < 16µm)
- Configure speed, rotation sense, and vary layer thickness during the build to optimize trade-off between finish and productivity

A MACHINE DESIGNED WITH USER SAFETY IN MIND

Our Autonomous Power Module (APM), was developed exclusively for the FormUp in partnership with AZO. Keep powder in a fully inert condition from start to finish, guaranteeing a constant supply of powder, without interrupting production, regardless of the production quantity.

Complete inerting of the APM for powder storage, conveying, and handling with use of a glove box during the loading and unloading of the powder ensures that the users and environment are not exposed to the powder. The APM's powder sampling device allows for easy extraction at any time through the glove box, minimizing risk of exposure to powder.





A GOLD STANDARD OF SERVICE

When you choose AddUp, you're choosing a partner who will be with you every step of your journey. Experience best in class safety on a repeatable, reliable platform, with support at every stage to realize the full potential digital manufacturing has to offer.

BEFORE PURCHASE

- Acquire basic knowledge in metal additive manufacturing
- Optimize parts for the L-PBF or DED process
- Produce your proof of concept
- Calculate your ROI and consolidate your business model
- Evaluate with on-site inspections
- Define your future additive manufacturing workshop

AFTER PURCHASE

- White-glove installation service to get you up and running in less than 2 weeks
- Operator training adapted to your employees
- Support services for the qualification of your application

AFTER INSTALL

- Rapid response times
- Maintenance contracts adapted to the needs of your business
- Spare part kits that allow you to restart quickly
- Process experts and application engineers available
- Material development services
- Support as your business grows by upgrading equipment
- A pathway to fully automate your AM workshop

Electrical	Power: 25 kW
	Intensity: 40 A
	Circuit voltage: 400 V – 50 Hz
	480 V – 60 Hz (option)
	Connection type: 3P+T without neutral
Exhaust	Control circuit voltage: 24 V DC
	Cabinet protection level: IP55
	Air / inert gas mixture
	Flow rate: 660 NL/min
	Connection: smooth sleeve Ø4" OD
Gas	Fan to force extraction (option)
	Filtration: HEPA13
	Must be evacuated outside of the building
	Argon or nitrogen
	Argon purity >99.998% according to ISO 14175-11-Ar
Compressed air	Nitrogen purity >99.97%
	Pressure: 4 to 5 bar
	Maximum flow rate: 660 NL/min
	Minimum set point: 500 ppm
	Gas consumption (production): 2.5 NL/min (at 500 ppm O2 level)
Compressed air	Connection: for pipe Ø12 OD
	Air purity: class 4 for category B (water) and class 3 for other categories (solid particles and oils) - according to ISO 8573-1:2010
	Pressure: 5 to 7 bar
	Maximum flow rate: 100 NL/min
	Nominal (prod.): 25 NL/min
	Connection: for pipe Ø12 OD

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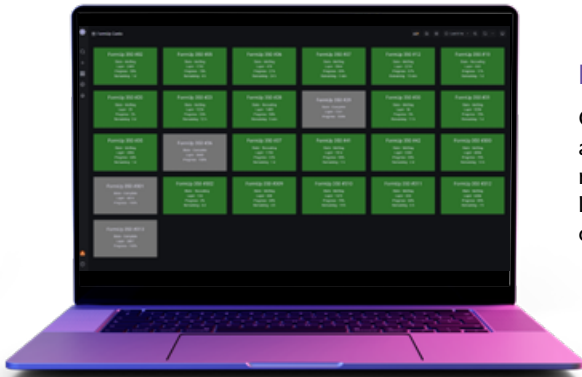
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SOFTWARE AND VISIBILITY

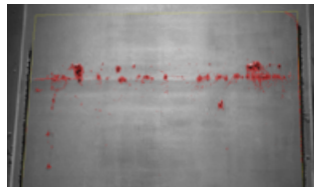
Interoperability	OPC-UA / MQTT (option)
CAM solutions	AddUp Manager or NTwin
Simulation software	Distortion Simulation AddOn (option)
	AddUp Dashboards (option)
Monitoring	Recoating monitoring (option)
	Melting monitoring (option)
Remote Maintenance	AddUp Remote Control
	MyAddUp 24/7 Online platform
Visualization	Supervision camera for live stream
	HD camera for pictures (option)

QUALITY ASSURANCE ORIENTED



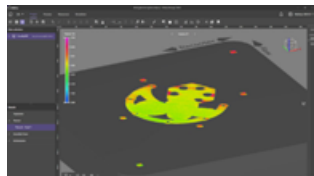
Dashboards

Collects and displays data for an unlimited number of AddUp machines regardless of their location and displays a summary on an overview home screen.



Recoating Monitoring

An automatic analysis of the quality of the powder bed, which proactively corrects faults during production. Operates on a closed loop principle.



Melting Monitoring

Provides visibility of the printing at the microscopic scale in real time. This system makes it possible to characterize any defects without destroying the part.

YOUR MACHINE. YOUR IP.

We guarantee total confidentiality of information, requiring no Internet connection or information sharing under production conditions.

OUR CERTIFICATIONS

We operate with a strong focus on quality, efficiency, and customer-centricity. Our processes and systems have been reviewed and validated for compliance to applicable ISO standards.



CONNECT



AddUp Solutions



AddUp Solutions



addupsolutions.com

THINK SMART. MANUFACTURE DIFFERENT.



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