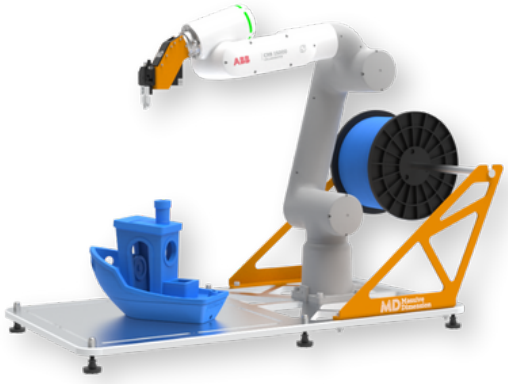
MDAC1 3D Printing Cell



Massive Dimension

Product Data Sheet

Six-axis printing, simplified

The MDAC1 robotic 3D printing cell is designed with ease of use in mind, eliminating barriers for users looking to move into the future of fused deposition modeling with six-axis motion. In a compact, lightweight package, the printing cell is easy to transport and deploy and can run on single-phase, low-voltage electrical supplies. ABB's printing software for RobotStudio enables users to go from CAD model to toolpath in thirty minutes or less.

A robot that is strong, yet safe

The GoFa CRB 15000 robot from ABB is designed to handle payloads up to 5kg. It has integrated torque sensors in each of its six joints, offering superior power and force-limiting performance. Together, these bring GoFa to an immediate stop if it senses any contact with an object.

Easy set-up and operation

Set-up and configuration is easy with intuitive, graphical Apps directly on the FlexPendant. With the 3D Printing Powerpac add-in for RobotStudio, converting print files from your preferred slicer into RAPID modules is simple and straightforward.

Compact and mobile

The entire MDAC1 assembly is built on an industrial strength protective frame with an integrated heated build plate, and can be easily mounted on a tabletop or cart. Rugged leveling feet ensure that you can place it where you want it and get to production.

Key Features:

Filament Extruder

The filament extruder on the MDAC1 is compatible with any 1.75mm filament and can be configured with nozzle sizes from 0.4mm to 1.2mm. Nozzle changes are quick and easy, as is switching materials. The extruder is direct-drive, eliminating troublesome jams more common with Bowden configurations.

Massive Build Volume

The MDAC1 will allow you to break into the world of large-format printing with a 21.5in x 21.5in x 20in build volume.

Go far beyond XYZ

Thanks to the additional degrees of freedom granted by a six-axis robot, the MDAC1 allows slicing strategies beyond the traditional horizontal deposition of gantry-based printers. Explore non-planar, multi-planar, and angled printing as solutions to the limitations of conventional printing, such as unsupported overhangs, or to improve surface finish and mechanical strength.

All-Metal Hot End

The MDAC1 comes standard with an all-metal hot end, capable of withstanding temperatures up to 500° C, allowing you to print with the entire range of thermoplastics including high-performance engineered polymers.

Process Cabinet

The MD Process Cabinet controls temperature settings for the heated build surface and extruder hot end through simple-to-use PIDs that can be configured to match your polymer of choice. Additionally, the process cabinet includes digital and analog I/O cards that can communicate with the Omnicore controller via network - ensuring seamless motor control for the filament drive.

Specifications

Robot Version

GoFa CRB 15000

Robot Reach

950mm

Robot Payload

5 kg

Number of axes

6

Controller

OmniCore C30

Filament Size

1.75mm

Hot End

500° C Temperature Rating

Nozzle Size

0.4mm to 1.2mm

Build Volume

21.5in x 21.5in x 20in

Power Input

120 VAC (OmniCore Controller)

208-240 VAC (MD Process Cabinet)

Physical Characteristics

Weight: 130 lbs

Dimensions: 53in (L) x 26in (W) x 38in (H)

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MDAC1 Includes:

- ABB GoFa CRB 15000 Robot
- MD Process Cabinet
- MD Filament Extruder
- All-Metal Hot End
- Heated Build Surface
- 1 kg PLA Filament