



BioAssemblyBot 400:

more than a bioprinter

Intelligent, precise, and scalable
automation solution for 3D biology



BioAssemblyBot 400 (BAB400) by Advanced Solutions

The BioAssemblyBot® 400 is an intelligent robot used by life scientists to build 3D model systems with increased throughput and precision, alleviating common concerns associated with manual workflows. As part of an optimized automation workflow that includes ImageXpress® Confocal HT.ai High-Content Imaging System and IN Carta® Image Analysis Software, the BAB's 6-axis robotic arm utilizes a wide range of interchangeable fabrication tools to reliably reproduce 3D tissues and organoids.



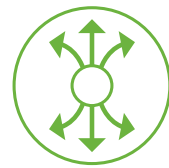
Develop new drug targets

Consistently dispense, place, and print organoids for use in drug discovery with higher throughput vs. manual workflows. Test drug toxicity or efficacy on 3D models that are representative of native human tissues.



Improved viability of 3D cell cultures

The reliability and reproducibility of BAB allows for consistency in maintaining improved viability of organoids over time.



Enhanced flexibility with integrated workflows

BAB seamlessly integrates with high-content imagers for monitoring cell health or improved efficiency in end point assays.

Features



Extend human ability

The precision of the BAB400's six-axis robotic arm exceeds human dexterity to bioprint, pick up biology, and complete complex assays while reducing human error, variability, and cost.



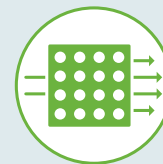
Automate with BioApps™

The user-friendly interface allows you to use existing protocols or customize your own.



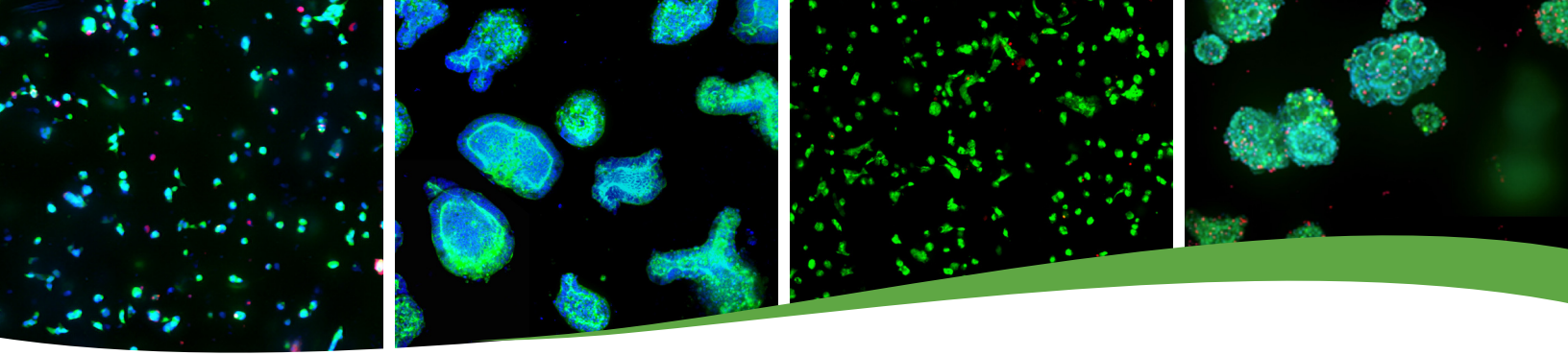
Can I have a hand?

BAB swaps "hands" giving users the ability to 3D bioprint while controlling temperature, pressure, UV exposure, and more with the ever-growing catalog of tools.



Load in materials and go

Add in your biomaterials and press "go." BAB will automate countless processes, including, bioprinting, organoid dispensing, media exchange and more. Once these processes are complete, the BAB will notify you that the work is completed.



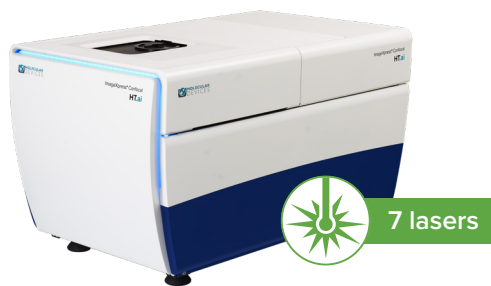
Expandable and designed for modern biology and drug discovery labs

Produce and maintain living tissues, organoids, and spheroids more consistently than ever before. Then analyze them without ever touching the well plate. BAB400 integrates seamlessly with the ImageXpress Confocal HT.ai and IN Carta software to round out your integrated organoid workflow with automated passaging, cell culture monitoring, suspension dispensing, and 3D bioprinting of tissues and organoids.

Applications

Simultaneous, programmable generation and organization of cell types with different origins and functions in artificial tissues could invigorate future biomedical 3D organ and tissue engineering.

- Regenerative therapies
- Drug screening
- Disease modeling



ImageXpress Confocal HT.ai High-Content Imaging System

Powerful multi-laser light sources, a deep tissue penetrating confocal disk module, water immersion objectives and modern machine learning analysis software

- Ideal for highly complex cell-based and 3D assays
- Seven-channel high-intensity lasers generating brighter images with higher signal-to-background
- Spinning confocal disk technology for deeper tissue penetration, resulting in sharper images with improved resolution
- Water immersion objectives offering quadruple the signal at lower exposure times for greater sensitivity and image clarity without sacrificing speed



IN Carta Image Analysis Software

Modern machine learning, high-content image analysis software

- Powerful analytics combined with an intuitive user interface simplify workflows for image analysis and phenotypic profiling.
- Advanced features provide the functionality you need to analyze data in 2D, 3D, and 4D – at scale – and deliver real-time insights without the need for complex pre- or post- processing operations.
- Improve specificity of your image analysis workflows by utilizing the SINAP deep-learning module and see for yourself that **Segmentation Is Not A Problem**.
- Put machine learning to work for you and perform complex phenotypic analysis within a user-friendly Phenoglyphs module

BioAssemblyBot 400 Key Features

6-axis

Robotic Arm

8

BioAssemblyTools
in a single run



Attached touch
screen controls



HEPA Filtration Optional

Clean Room

Ready



Compatible






Compatible

Accessory Ready

Works with BioStorageBlot
and third-party lab
equipment

BioAssemblyBot 400 Specifications

Build volume	12 in (l) x 10 in (w) x 7 in (h) 30.5 cm (l) x 25.4 cm (w) x 17.8 cm (h)
3D printing technology	Pneumatic or mechanical dispense
BioAssemblyTools compatibility	Works with all BioAssemblyTools
HEPA specifications	99.97% of particles to 0.3 μ
Air flow requirements	100 psi 1 cfm
Base	Optional table
Temperature controls	Stage: 10 to 60°C 3D Syringe Hot: Up to 150°C 3D Syringe Cold: Down to -4°C
Connections	Power supply input RJ45 CAT-5 Pneumatic air fitting

Electrical panel	Internal
Electrical requirements	Bioprinter: 208–220 50/60 Hz Single Phase @ 20 Amp Isolated Receptacle (NEMA 6 20R)
Bioprinter dimensions	36.8 in (w) x 29.5 in (d) x 52.9 in (h) 93.5 cm (w) x 75.0 cm (d) x 134.3 cm (h)
Bioprinter weight	600 lbs (272 kg)
Certifications	  

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