



3D-Bioplotter® 4th Generation

The 3D-Bioplotter® System is a suitable Rapid Prototyping tool for processing a great variety of biomaterials within the process of Computer Aided Tissue Engineering from 3D CAD models and patient CT data to the physical 3D scaffold with a designed and defined outer form and an open inner structure.

Tissue Engineering and Controlled Drug Release require 3D scaffolds with well defined external and internal structures. The 3D-Bioplotter® has the capacity of fabricating scaffolds using the widest range of materials of any singular Rapid Prototyping machine, from soft hydrogels over polymer melts up to hard ceramics and metals. The 3D-Bioplotter® is specially designed for work in sterile environments in a laminar flowbox, a requirement of Biofabrication, for example when using alginate cell suspensions for scaffold construction. In contrast to other Rapid Prototyping techniques, the 3D-Bioplotter® uses a very simple and straightforward technology, invented and developed at the Freiburg Materials Research Centre in Germany.

System	3D-Bioplotter®
Axis Resolution (XYZ)	0.001 mm (0.00004")
Speed	0.1 - 150 mm/s (0.004" - 5.91"/s)
Build Volume	150 x 150 x 140 mm (5.91" x 5.91" x 5.51")
Needle Sensor Resolution (Z)	0.001 mm (0.00004")
Camera Resolution (XY)	0.009 mm (0.00035") per Pixel
Minimum Strand Diameter	0.100 mm (0.004") - Material Dependent

System Data Handling

The 3D-Bioplotter® is delivered together with a PC workstation which operates and monitors the system. After transferring the 3D CAD data to the PC it is processed by the friendly and intuitive Bioplotter® Software Package. The preprocessed data is then transferred to the 3D-Bioplotter® using a network connection. The Bioplotter® Software monitors the working progress until it is completed.

System Properties

- » 3-Axis positioning system with automatic tool changer
- » Up to 5 different material cartridges can be used during the same build job
- » Strand diameter is controlled via high resolution camera feedback
- » Primary filter and sterile filter are included
- » High temperature dispensing head (up to 250°C)
- » Low temperature dispensing head (≈2°C to 70°C)
- » Easy to use and easy to clean cartridge system
- » Multi exchangeable base plate fixtures with heating and cooling capabilities (≈ 0°C to 65°C)

Footprint (L x W x H): 976 x 623 x 773 mm
(38.4" x 24.5" x 30.4")

Weight: 130 kg (286.6 lb)

Electrical Requirements: 100-240 V AC, F 50/60Hz

Patents Pending



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