PRODUCT SPEC SHEET
MEDICAL

J850™ Digital Anatomy® 3D Printer

Plan every surgical procedure with precision.

The J850™ Digital Anatomy® 3D Printer is the most advanced platform for creating biomechanically accurate anatomical models that replicate the look, feel, and responsiveness of human tissue and bone.

This multi-color, multi-material platform leverages a unique voxel-based engine to automatically generate detailed anatomical structures with over 1,000 clinically validated presets. Four exclusive base materials — TissueMatrix®, GelMatrix®, BoneMatrix®, and RadioMatrix™ combine with the full material library to create high-fidelity, complex anatomy.

Ideal for point-of-care and academic medical centers seeking to enhance surgical planning, training, and patient education, as well as for medical device companies looking to accelerate product development with highly repeatable benchtop testing.

Model Materials	**Rigid materials:** VeroUltra™ opaque family materials Vero™ and VeroVivid™ families colors materials Transparent VeroClear™ and VeroUltraClear ToughONE™ for excellent impact resistance and flexibility DraftGrey™ **Rubber like materials:** Agilus30™ Clear and Colors flexible materials **Digital Anatomy™ materials:** TissueMatrix® (MED310) TissueMatrix®Red (MED311) GelMatrix® (FLG110) BoneMatrix® (RGD516) RadioMatrix™ (MED410) **Biocompatible materials:** Biocompatible Clear (MED610S™ or MED610S-DSG™) Biocompatible Opaque (MED615S™) Biocompatible Digital ABS Plus™ (MED531S™ and MED515S™) Biocompatible MED625FLX™ (Flexible and transparent)
Digital Materials	**Unlimited number of composite materials, including:** • Over 600,000 colors with VeroUltra • Rubber-like materials in a variety of Shore A values • Ultra-soft rubber-like material with a Shore 00 value • Translucent color tints
Support Materials	SUP705B (waterjet removable) SUP706B (soluble) GelMatrix (waterjet removable)
Build size	490 x 390 x 200 mm (19.3 x 15.35 x 7.9 in.)
Layer Thickness	Horizontal build layers down to 14 microns (0.00055 in.)
Network Connectivity	LAN – TCP/IP
System Size and Weight	1,400 x 1260 x 1,100 mm (55.1 x 49.6 x 43.4 in.); 430 kg (948 lbs.)
Material Cabinet	670 x 1,170 x 640 mm (26.4 x 46.1 x 25.2 in.); 152 kg (335 lbs.)
Operating Conditions	Temperature 18 – 25 °C (64 – 77 °F); relative humidity 30 – 70% (non-condensing)
Power Requirements	100 – 120 VAC, 50 – 60 Hz, 13.5 A, 1 phase 220 – 240 VAC, 50 – 60 Hz, 7 A, 1 phase
Regulatory Compliance	CE, FCC, EAC
Software	GrabCAD Print Digital Anatomy software Optional add-on GrabCAD Print Pro and/or Digital Anatomy Creator software Digital Anatomy Twin™
Build Modes	High Quality (HQ) – 7 different materials / 14µm layers High Mix (HM) – 7 materials / 27µm High Speed (HS) – 3 materials / 27µm, x2 speed Super High Speed (SHS)- 1 material / 54 µm, x4 speed
Accuracy	Typical deviation from STL dimensions, for models printed with rigid materials, based on size: under 100 mm: ±100µ; above100 mm: ±200µ or ± 0.06% of part length, whichever is greater. Please refer to material-specific spec sheets for accuracy estimates.

[1] Severseike, Leah et al., "Polyjet 3D Printing of Tissue-Mimicking Materials: How Well Can 3D Printed Synthetic Myocardium Replicate Mechanical Properties of Organic Myocardium?," bioRxiv, 2019, doi.org/10.1101/825794.

[2] Sparks, Adam et al., "Digital Anatomy Printing (DAP): A Direct Characterization of DAP Materials for Use as Compliant 3D-Printer Arteries Using Intravascular Ultrasound (IVUS)," The Jacobs Institute, 2020.

[3] Dahan, Gal, "Synthetic Bones vs. Human Bones for Screws Testing: A Literature Survey", 2020.

[4] Barak, Yaron, "Biomechanical Evaluation of a Printed Digital Anatomy Lumbar (L3-S1 Spine Model), Technion Institute of Technology Materials Science and Engineering Laboratory, Final Report (2020).

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