

Faculty Research Labs

(3D Printing and Prototyping)



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Bolton Tools 1430L

Electronic Dry Cabinet

Description:



The Bolton Tools 1430L Electronic Dry Cabinet is a large-capacity, digitally controlled dehumidifying storage solution designed to maintain low humidity levels, ranging from 1% to 10% RH. It is ideal for protecting sensitive equipment, such as lenses, cameras, electronics, and laboratory instruments, from moisture damage. With six adjustable tiers and precise humidity control, this dry cabinet is perfect for laboratories, manufacturing environments, and photography studios where moisture-sensitive items require secure, controlled storage.

Uses:

- **Moisture Protection:** Ideal for storing sensitive equipment, including cameras, lenses, precision electronics, and laboratory instruments.
- **Laboratory and Industrial Use:** Ensures proper storage conditions for tools and materials prone to moisture degradation.
- **Electronics Storage:** Suitable for keeping electronics safe from corrosion, oxidation, and other moisture-related damage.

Capabilities:

- **Humidity Control:** Maintains relative humidity between 1% and 10% RH with precise digital controls.
- **Large Capacity:** Offers 1430 liters of storage space with six adjustable tiers to accommodate various items.

Phase II 900-331 Analog Rockwell Hardness Tester



Description:

The Phase II 900-331 Analog Rockwell Hardness Tester is a precision instrument designed for testing the hardness of metals and alloys. It operates using the Rockwell hardness scale, which measures material resistance to indentation. The unit features an analog dial for reading test results, making it reliable and easy to use. This portable, bench-top tester is ideal for both fieldwork and laboratory environments and comes with a durable carrying case for easy transportation.

Uses:

- **Material Hardness Testing:** Suitable for measuring the hardness of metals like steel, iron, brass, and aluminum.
- **Quality Control:** Utilized in manufacturing and metalworking industries to ensure material strength and durability.
- **Field Testing:** Ideal for on-site hardness testing, thanks to its portability and ease of setup.

Capabilities:

- **Analog Dial:** Provides clear, easy-to-read results without the need for digital components.
- **Portability:** Compact design and carrying case allow for easy transport and field use.
- **Versatile Testing:** Capable of testing a wide range of metals and alloys, ensuring consistent and accurate results.

6800 Universal Testing by Instron

Description:



The Instron 6800 Series Universal Testing Machine is a state-of-the-art material testing system, designed to perform various mechanical tests such as tensile, compression, and flexural tests. Known for its high precision and reliability, it is widely used in both industrial and research applications. The 6800 series offers improved electronics, software integration, and enhanced safety features through retrofitting, ensuring compliance with modern testing standards and extending the system's operational life.

Uses:

- **Material Testing:** Ideal for testing metals, polymers, composites, and textiles.
- **Quality Control:** Essential in industries like aerospace, automotive, and manufacturing for verifying material properties.
- **Research and Development:** Supports product development and scientific research by assessing material performance.

Capabilities:

- **Precise Load Measurements:** Offers highly accurate load readings with a tolerance of $\pm 0.5\%$.
- **Versatile Testing Options:** Performs tension, compression, flexure, shear, and puncture tests.
- **Load Capacity:** Configurable to handle loads ranging from 0.02 N to 300 kN.

Elegoo Mars 4

Description:



The **Elegoo Mars 4** is a resin 3D printer designed for high precision and detail in miniature and intricate prints. With its advanced UV-LCD technology, it delivers exceptional resolution, making it an ideal choice for enthusiasts and professionals in industries such as jewelry design, dental applications, and tabletop gaming. The printer's user-friendly interface and compact design make it suitable for both beginners and experienced users.

Uses:

- **Miniature Models:** Perfect for creating detailed models for gaming, prototypes, and art projects.
- **Dental Applications:** Used in the dental industry for producing dental models and aligners.
- **Educational Purposes:** Ideal for teaching 3D printing technology in schools and universities.

Capabilities:

- **High Resolution:** Offers a resolution of up to 4K, providing fine details and smooth surface finishes.
- **Fast Printing Speed:** Capable of printing small models quickly, enhancing productivity.
- **Compact Design:** Space-saving design makes it suitable for small workspaces.
- **Compatible with Various Resins:** Works with a wide range of resin materials for different applications.

Intamsys Funmat HT



Description:

The **Intamsys Funmat HT** is an industrial-grade 3D printer known for its ability to print high-performance thermoplastics, including PEEK and ULTEM. This printer is engineered for reliability and precision, making it ideal for industries such as aerospace, automotive, and medical. Its heated chamber and advanced extrusion system ensure optimal print quality and material performance.

Uses:

- **Aerospace Parts:** Suitable for producing lightweight and durable components for aircraft.
- **Medical Applications:** Used for creating customized medical implants and prosthetics.
- **Automotive Components:** Ideal for prototyping and manufacturing high-performance automotive parts.

Capabilities:

- **High-Temperature Printing:** Capable of printing materials up to 300°C, suitable for high-performance thermoplastics.
- **Heated Chamber:** Ensures stable printing conditions, reducing warping and improving adhesion.
- **Dual Extrusion:** Allows for printing with multiple materials, enhancing design flexibility.
- **Large Build Volume:** Accommodates larger parts and assemblies.

RaiseTouch E2



Description:

The **RaiseTouch E2** is a versatile and reliable 3D printer designed for a variety of applications, from prototyping to small-scale production. Its sturdy construction and advanced features make it suitable for both hobbyists and professionals. The printer's user-friendly interface and high printing quality ensure a seamless 3D printing experience.

Uses:

- **Prototyping:** Ideal for creating functional prototypes for testing and evaluation.
- **Small Batch Production:** Suitable for low-volume production runs of custom parts.
- **Educational Projects:** Great for educational institutions focusing on engineering and design.

Capabilities:

- **User-Friendly Touch Screen:** Features an intuitive touchscreen interface for easy operation.
- **High Precision:** Delivers accurate prints with a layer resolution of up to 50 microns.
- **Stable Frame Design:** Built with a sturdy frame to reduce vibrations and ensure print quality.

Elegoo Saturn S



Description:

The **Elegoo Saturn S** is a large-format resin 3D printer designed for high-speed printing with exceptional detail. It features a monochrome LCD screen for faster curing times and increased longevity. This printer is ideal for professionals and enthusiasts who require larger build volumes for intricate designs.

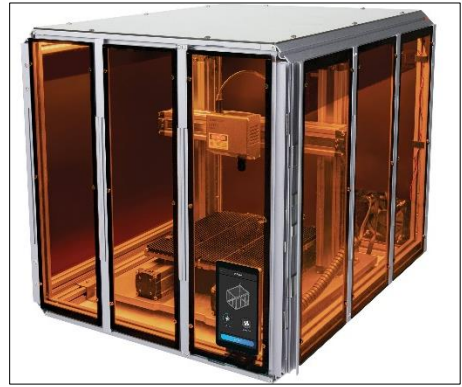
Uses:

- **Large Miniatures:** Suitable for printing larger miniatures and models for gaming and display.
- **Rapid Prototyping:** Ideal for quickly creating prototypes for design validation.
- **Industrial Applications:** Can be used for creating larger parts for various industries.

Capabilities:

- **Large Build Volume:** Offers a spacious print area, accommodating larger models.
- **Fast Printing Speed:** The monochrome screen reduces exposure times, allowing for quicker prints.
- **High Resolution:** Capable of producing prints with a resolution of 2K or higher.
- **Stable Construction:** Built with a robust frame to minimize vibrations during printing.

Snapmaker A250



Description:

The **Snapmaker A250** is a versatile 3-in-1 3D printer that combines 3D printing, laser engraving, and CNC carving capabilities in one machine. This all-in-one solution is perfect for makers and hobbyists who want to explore different forms of fabrication. The modular design allows users to switch between functions easily.

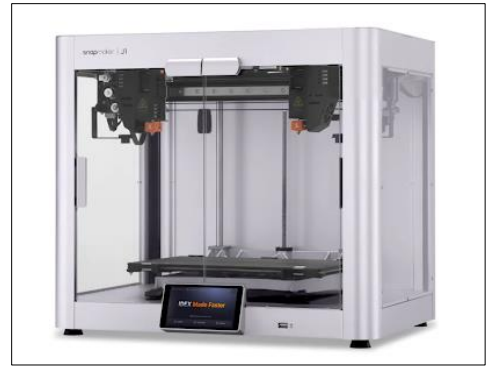
Uses:

- **Laser Engraving:** Suitable for engraving designs on wood, leather, and acrylic.
- **CNC Carving:** Can be used for precise carving on various materials, including wood and plastic.
- **Educational Projects:** Great for STEM education and workshops.

Capabilities:

- **Modular Design:** Easily interchangeable modules for different functions (3D printing, laser engraving, CNC).
- **High Precision:** Delivers accurate results with a layer resolution of up to 50 microns in 3D printing mode.
- **Large Build Volume:** Provides ample space for larger projects and designs.
- **User-Friendly Interface:** Features a touchscreen display for intuitive operation.

Snapmaker JS1



Description:

The **Snapmaker JS1** is a multifunctional 3D printer designed for educational and creative purposes. With its user-friendly design and multiple capabilities, it allows users to engage in various projects, including 3D printing, laser engraving, and CNC machining. This printer is perfect for schools, makerspaces, and hobbyists.

Uses:

- **Educational Projects:** Excellent for teaching 3D design and fabrication in schools.
- **Creative Projects:** Suitable for artists and designers looking to create custom designs.
- **Prototype Development:** Ideal for quickly developing prototypes and testing ideas.
- **Hobbyist Creations:** Great for DIY enthusiasts to explore their creativity.

Capabilities:

- **3-in-1 Functionality:** Combines 3D printing, laser engraving, and CNC machining in one device.
- **Easy Setup:** Quick assembly process for immediate use.
- **High Precision:** Produces high-quality prints with detailed accuracy.
- **User-Friendly Software:** Comes with software for easy design and operation.

Bambu Lab P1S



Description:

The **Bambu Lab P1S** is an advanced 3D printer known for its high-speed printing and exceptional build quality. Designed for professionals and serious hobbyists, this printer offers features that enhance performance, such as a fully enclosed design and advanced cooling systems. It is suitable for a variety of materials and applications.

Uses:

- **Rapid Prototyping:** Ideal for quickly creating functional prototypes for testing.
- **Small-Batch Production:** Suitable for producing low-volume runs of custom parts.
- **Complex Designs:** Capable of handling intricate designs with multiple filaments.

Capabilities:

- **High-Speed Printing:** Capable of printing at rapid speeds without compromising quality.
- **Fully Enclosed Build Chamber:** Provides a controlled environment for printing, reducing warping and improving adhesion.
- **Multi-Material Compatibility:** Works with a range of filament types, including PLA, PETG, and nylon.