

# XLS Product Brochure

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Universal's XLS product family represents the pinnacle of laser material processing solutions, delivering unparalleled performance and the ultimate in flexibility, accuracy, productivity and safety. With its modular design architecture, your company can create the optimal DLMP™ (Digital Laser Material Processing) system to meet the most demanding application needs for a variety of environments—from research and development to prototyping and manufacturing.

## The Ultimate Solution for Laser Material Processing

The XLS product family consists of modules that work together like building blocks to create the perfect solution to meet present and future business needs. This modular design architecture allows for the customized selection from modules that include feature-rich, highly configurable platforms, lasers, focusing optics, workflow and process optimization, safety and facility, and software. At the core of the XLS product family, in addition to our flexible, modular design architecture, is 25 years of expertise in laser-material interaction, enabling us to develop unique solutions that address diverse material processing needs—from the everyday to the unusually complex.

### Highlights

#### *Configurable Platforms*

The platforms have a 40 x 24 in (1016 x 610 mm) laser material processing area and an advanced beam delivery system. The platforms provide high-speed, accurate and repeatable laser beam positioning by utilizing an extremely rigid, yet friction-free motion system, with high-performance servo driven motors. Additional features include:

- Support for multiple lasers
- Support for multiple wavelengths using patented Multiwave Hybrid™ Technology
- Touchscreen with full color LCD
- Multiple focusing modes
- Extensive safety features
- Laser System Manager software features a Materials Database and Estimation Tool

#### *Lasers*

A selection of CO<sub>2</sub> lasers are available for the laser system, in either single or multiple laser configuration. The lasers in the system can be individually or simultaneously controlled, quickly delivering a wide range of power from 10 to 150 watts. Also available are 9.3μ CO<sub>2</sub> and 1.06μ Fiber lasers.

#### *Focusing Optics*

Multiple focusing optics kits are available to ensure excellent results with different materials and processes.

#### *Workflow & Process Optimization*

An extensive list of workflow and process optimization modules can be integrated into the DLMP system, allowing the system to expand its capabilities on demand.

#### *Safety & Facility*

With the addition of robust industrial safety and facility modules, the DLMP system can operate in almost any environment.

#### *Control, Management and Usability Software*

Universal's advanced laser system software, Laser System Manager, is built into the DLMP system, giving ultimate control and management of material processing. Several additional software modules are also available.

## **DLMP™ System Building Blocks**

The XLS product family modules are the building blocks that create the ideal DLMP system. The full range of XLS modules are listed below:

### *Configurable Platform*

XLS 10.150D

XLS 10MWH

### *Lasers*

CO<sub>2</sub> (10.6μ) 10, 25, 30, 40, 50, 60, 75 (for single or dual configuration);

Up to 150 watts total with two combined 75 watt lasers

CO<sub>2</sub> (9.3μ): 30, 50

Fiber (1.06μ): 40, 50 (10MWH only)

### *Focusing Optics*

2.0 in Focusing Lens Kit

3.0 in Focusing Lens Kit

HPDFO™ (High Power Density Focusing Optics) Kit

### *Workflow & Process Optimization*

Cutting Table

Pin Table

Rotary Fixture

Coaxial Gas Assist

Angular Gas Assist

Universal's Camera Registration (UCR)

SuperSpeed™ (10.150D only)

Traveling Exhaust

Class 4 Pass Through

Automation Kit

Embedded PC

### *Safety & Facility*

UAC 4000 Air Cleaner Unit

Fire Suppression Unit

### *Control, Management and Usability Software*

Direct Import

Advanced Materials Database

## **DLMP™ System Building Block Descriptions**

### **Focusing Optics**

#### **HPDFO™ (High Power Density Focusing Optics)**

The HPDFO option provides the smallest laser spot size available for CO<sub>2</sub> and fiber lasers. This provides very finely detailed marking and engraving, and can also be used for cutting on CO<sub>2</sub> systems. The small spot size also concentrates the laser beam to enable the only CO<sub>2</sub> laser process that can mark directly on steel, stainless steel and titanium without the need for metal marking compound. HPDFO functionality is built into the 10MWH platform.

### **Workflow & Process Optimization**

#### **Cutting Table**

The Cutting Table is designed to maximize air flow through the work piece during laser cutting and also to minimize laser reflection back onto the work piece.

#### **Pin Table**

The Pin Table is designed to eliminate certain scorch marks and other defects which may occur when cutting acrylic, wood, or other sensitive materials using conventional laser cutting tables. By using specially coated aluminum pins to elevate the material being processed, the Universal Pin Table greatly reduces the amount of laser energy reflected back into the material from the table surface.

#### **Rotary Fixture**

The Rotary Fixture is designed with holding attachments to clamp and rotate cylindrical and conical objects 360 degrees for laser processing.

#### **Computer Controlled Air/Gas Assist with Optics Protection**

Computer controlled air/gas assist automatically turns the compressor on and off and adjusts the air or gas flow rate based on the laser material processing application being run. It is included on all XLS platforms.

#### **Coaxial Air/Gas Assist (Cone)**

With Coaxial Air/Gas Assist, compressed air is directed along the path of the laser beam. It protects the laser optics and is also helpful when processing flammable materials. It is typically used with material cutting. A Coaxial Air/Gas Assist (cone) is included with each lens kit.

#### **Angular Air/Gas Assist (Backsweep)**

With Angular Air/Gas Assist (backsweep), compressed air is directly tangential to the work surface. It is useful for removing solid residues when cutting or engraving certain polymer materials.

#### **Compressed Air Source**

The Universal Air Compressor provides a clean, water- and oil-free source of optical quality compressed air for use in air-assisted laser material processing applications. It also supplies air for optics protection. The compressor is integrated into the XLS platform.

#### **Camera Based Registration**

Universal's Camera Registration (UCR) features a camera mounted inside the laser system that locates and determines the exact positions of registration marks on printed materials. Software adjusts the pre-defined cut path to fit the material. A laser system user simply places material close to the correct posi-

tion in the laser system and the UCR automatically makes adjustments to the cut path to fit the material where it is placed.

### **SuperSpeed™ (10.150D)**

The SuperSpeed option requires Dual Lasers. Beam combiner optics creates two laser beams that are parallel and slightly offset from one another. Each beam is controlled independently in order to produce two raster scan lines simultaneously. In vector mode, the two beams are automatically combined to provide higher cutting power.

### **Traveling Exhaust**

The Traveling Exhaust is attached to the motion arm. It is designed to provide local exhaust flow in the vicinity of laser processing area and it is ideal for large work pieces.

### **Class 4 Pass Through**

The patented Class 4 Pass Through module allows operation of a laser system in both CDRH Class 1 and CDRH Class 4. When operating the laser system in Class 4, the system can accommodate oversized objects or continuously pass materials or objects via an external device.

### **Automation Kit**

A module that provides connection to an automation device such as a computer or PLC. The automation kit enables the laser system to control or be controlled by an external device.

### **Embedded PC**

The embedded PC option allows the laser system to operate without the need for a wired connection to an external computer.

## **Safety & Facility**

### **UAC 4000 Air Cleaner Unit**

The UAC 4000 provides a complete, ready-to go-solution for laser material processing. It incorporates a three stage filtration consisting of a pre filter, HEPA filter and dual carbon filters. The patent pending two stage carbon filter with sensors allows carbon stages to be consumed more completely, while maintaining air quality and ensuring a safe environment.

### **Fire Suppression Unit**

Available exclusively with the XLS Series, deploys fire suppressant onto the laser processing area in the event of a fire. Plumbing for this option is built into the XLS series, so a fire suppression unit can be added to an XLS at any time. Pressure in the suppressant tank is constantly monitored and laser processing is prevented if the suppressant tank is empty. Redundant sensors monitor temperatures in the laser processing chamber and in the exhaust flow and trigger release of suppressant.

## **Control, Management & Usability Software**

### **Direct Import**

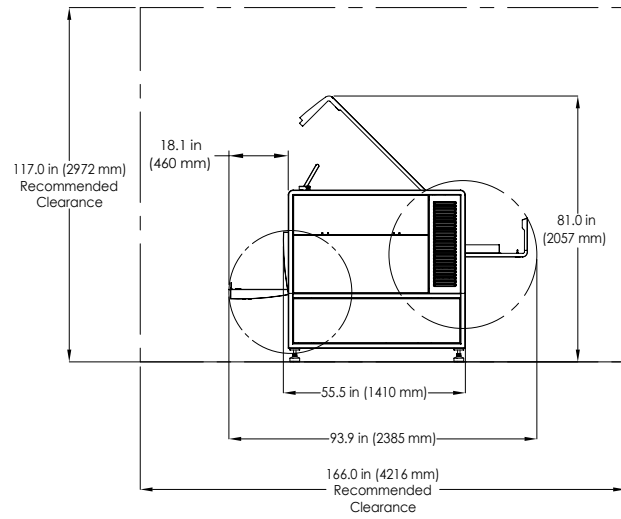
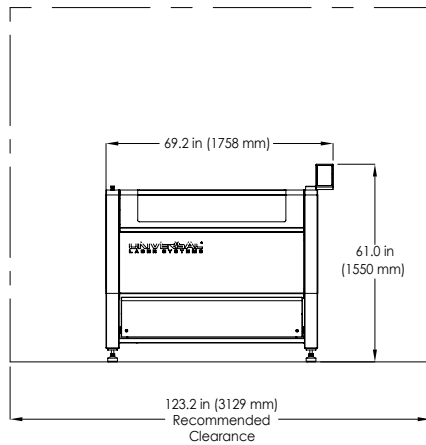
This software package allows a user to import PDF and DXF file types directly into the Universal Control Panel, without the need to use any third party software.

### **Advanced Materials Database**

This subscription-based service allows access to laser material processing parameters for a wide range of unique or exotic materials.

# XLS10.150D PLATFORM SPECIFICATIONS

Laser Material Processing Area (W x H)	40 x 24 in (1016 x 610 mm)
Maximum Part Size (W x H x D)	Within laser platform enclosure: 61 x 33 x 12 in (1550 x 838 x 304 mm) Class 4 Pass-Through mode: ∞ x 33 x 12 in (∞ x 838 x 304 mm)
Material Support	Up to 80 lbs (36 Kg) lift capacity
Laser Configurations Supported	Single or dual
Laser Power Range Supported	CO <sub>2</sub> (10.6μ) 10 to 150 W
Laser Safety	CO <sub>2</sub> Laser: Class 1 Diode Pointer: Class 2 Pass-Through mode: Class 4 (optional module required)
Standard Focusing Lenses	2.0 in (51 mm) or 3.0 in (76 mm)
Overall Dimension (W x H x D)	69.2 x 61 x 55.5 in (1758 x 1550 x 1410 mm)
Weight	Approximately 850 lbs (386 Kg) excluding lasers
Power Requirements	Dual receptacle 230V AC, 30A, 50/60Hz
Exhaust Requirements	External Exhaust or Air Cleaner Required (consult factory for specifications)
Computer Requirements	Dedicated PC with Windows 7 or higher, available USB 2.0 or 3.0 port





To learn more about the XLS10.150D, go to [www.ulsinc.com](http://www.ulsinc.com) or contact an authorized Universal representative in your local area.

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CDRH Class 1 safety enclosure for CO<sub>2</sub> laser. Class 2 for red laser pointer. CDRH class 1 laser safety enclosure for CO<sub>2</sub> laser provides for safe operation without the need for an interlocked room or protective eyewear.

Warning: Universal Laser Systems products are not designed, tested, intended or authorized for use in any medical applications, surgical applications, medical device manufacturing, or any similar procedure or process requiring approval, testing, or certification by the United States Food and Drug Administration or other similar government entities. For further information regarding this warning contact Universal Laser Systems or visit [www.ulsinc.com](http://www.ulsinc.com).

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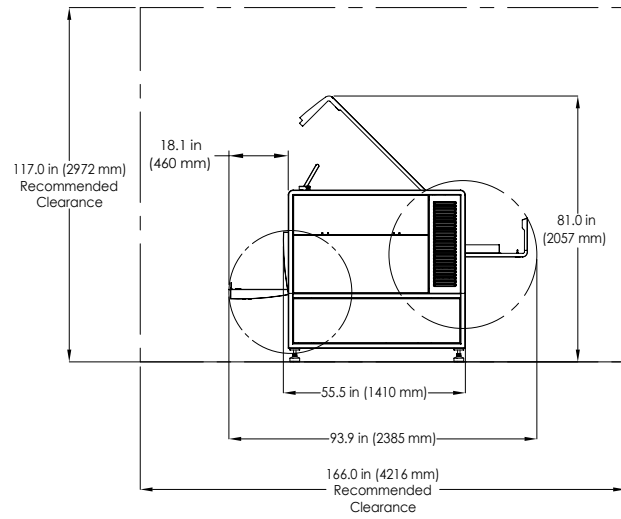
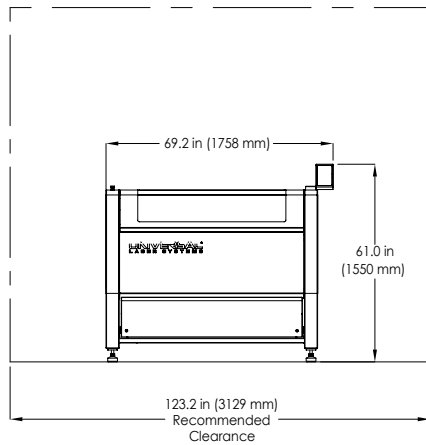


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# XLS10MWH PLATFORM SPECIFICATIONS

Laser Material Processing Area (W x H)	40 x 24 in (1016 x 610 mm)
Maximum Part Size (W x H x D)	Within laser platform enclosure: 61 x 33 x 12 in (1550 x 838 x 304 mm) Class 4 Pass-Through mode: ∞ x 33 x 12 in (∞ x 838 x 304 mm)
Material Support	Up to 80 lbs (36 Kg) lift capacity
Laser Configurations Supported	Multiple: (1) Fiber laser and up to (2) CO <sub>2</sub> lasers
Laser Power Range Supported	CO <sub>2</sub> (10.6μ) 10 to 150W; CO <sub>2</sub> (9.3μ): 30, 50W; Fiber (1.06μ): 40, 50W
Laser Safety	CO <sub>2</sub> and Fiber Laser: Class 1 Diode Pointer: Class 2 Pass-Through mode: Class 4 (optional module required)
Standard Focusing Lenses	2.0 in (51 mm) or 3.0 in (76 mm)
Overall Dimension (W x H x D)	69.2 x 61 x 55.5 in (1758 x 1550 x 1410 mm)
Weight	Approximately 850 lbs (386 Kg) excluding lasers
Power Requirements	Dual receptacle 230V AC, 30A, 50/60Hz
Exhaust Requirements	External Exhaust or Air Cleaner Required (consult factory for specifications)
Computer Requirements	Dedicated PC with Windows 7 or higher, available USB 2.0 or 3.0 port



To learn more about the XLS10MWH, go to [www.ulsinc.com](http://www.ulsinc.com) or contact an authorized Universal representative in your local area.

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