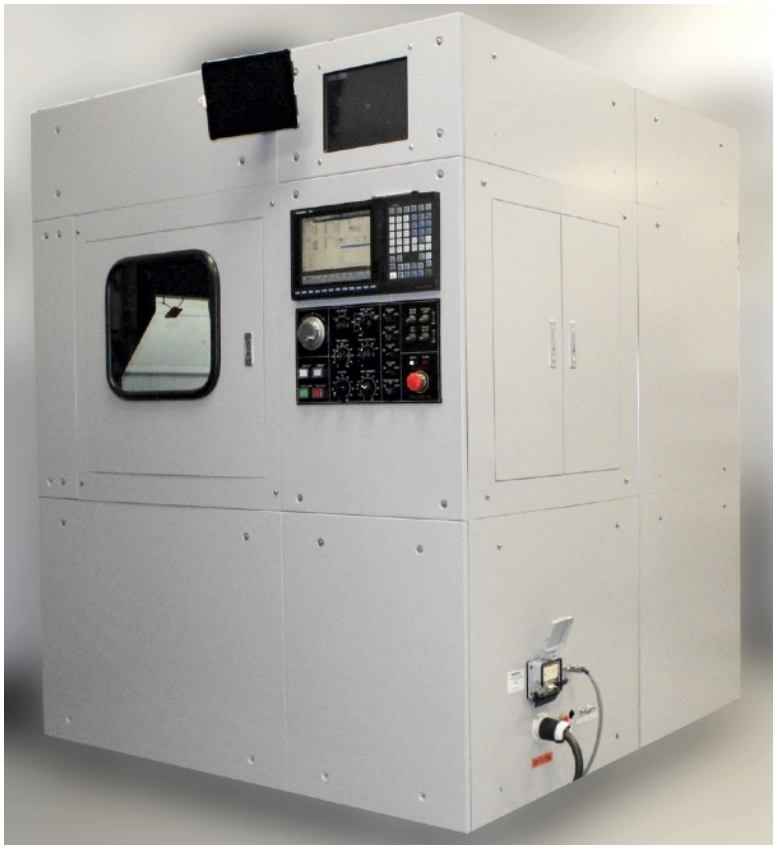
Clark-MXR, Inc.

# UMW-Series

## Ultrashort Pulse Laser Micro-machining Workstation

Innovative Ultrafast Laser Solutions



### ADVANTAGES

Fully-integrated system including:

- Field-proven laser source technology (CPA-Series or IMPULSE)
- Multi-axis positioning system
- Beam delivery system
- Selection of processing parameters
- Class I enclosure
- Integrated, intelligent, on-axis machine vision and inspection system
- Motion control
- Repetition rate control, pulse grouping and pulses-on-demand capabilities
- Optional digital and/or analog IO
- Complete computer control
- Granite base mounted on pneumatic vibration isolators
- Small footprint

### APPLICATIONS

- Micro-machining
- Photo-polymerization /3D printing
- Direct-write waveguides
- Laser ablation
- Micro/Nano patterning
- 3D Tomography

Over thirty years experience with ultrashort pulse laser manufacturing combined with hundreds of real world projects and years of processing know-how have led to our latest generation of femtosecond micro-machining workstations.

The UMW-Series encompasses everything you need to micro-machine with ultrashort pulse lasers. This design benefits from our years of experience learning the optimum combination of components, performance parameters, and software required to micro-machine materials with ultrashort pulses of light.

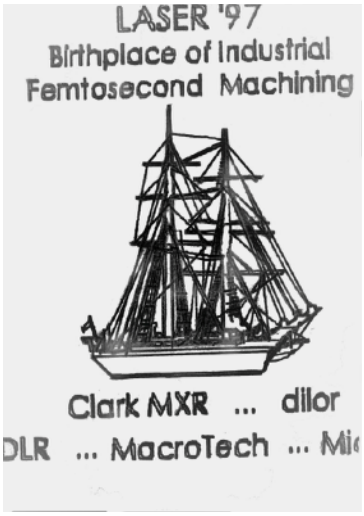
The UMW-Series provides ample space for custom beam delivery and manipulation. It also includes a sophisticated machine vision and inspection system and complete computer control. The software interface provides powerful and intuitive access to all system functionality including the laser, motion, and machine vision systems, and provides advanced intercommunication between them.

**Specifications:**
*(all the specifications are customizable)*

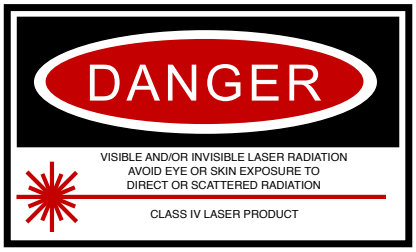
| | |
|---|---|
| Laser Source | IMPULSE Yb-doped fiber oscillator/amplifier<br>CPA-Series fiber seeded Ti:Sapphire regenerative amplifier |
| Positioning System | X, Y and Z axis translations stages and/or Galvanometer Scanner |
| Vision System | On-axis, intelligent machine vision system with LED illumination |
| Enclosure | Class I enclosure with interlocks |

**20 years of serving the following industries**

Life Sciences Semiconductor Medical Automotive




*Left: First demonstration of industrial femtosecond laser machining during the Laser World of Photonics in Munich, Germany in 1997.*

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