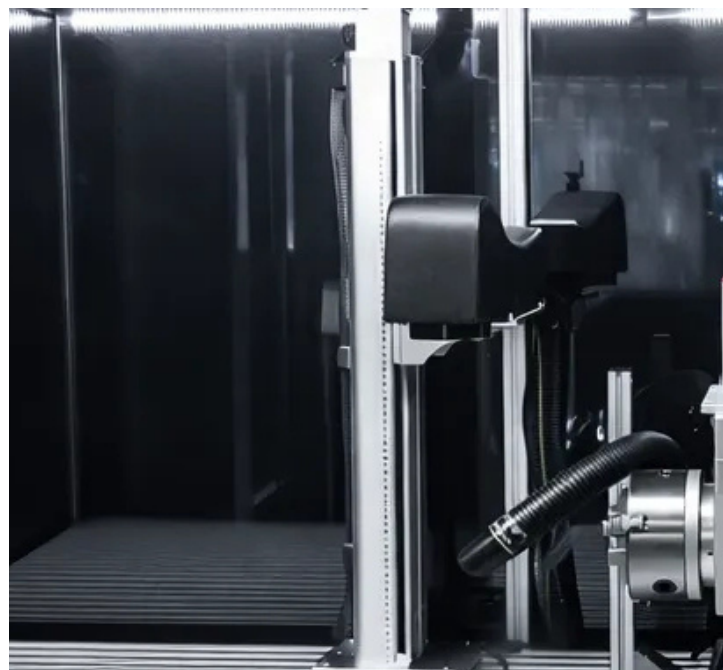
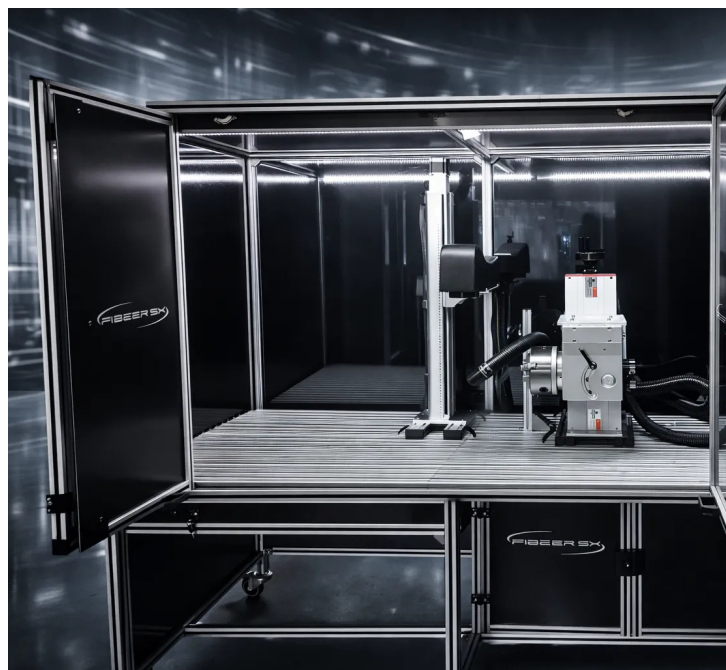


LASER BASIC WORKSTATION

In modern industrial environments, safety is no longer optional—it is a fundamental requirement alongside performance. FibeerSX enclosed laser workstations are designed around precisely this principle.

The system has been engineered to provide a high level of operational safety, process stability, and operator protection, even when using high-power laser sources classified as Class 4. To achieve this, the workstation operates within a fully enclosed safety housing designed to effectively prevent both direct and reflected laser radiation from escaping the processing area.

The system incorporates multiple layers of integrated safety measures, combining mechanical protection, electronic monitoring, and control logic to ensure that the equipment can only operate under controlled and predefined conditions. Built-in interlock systems, sensors, and safety circuits continuously monitor the system status and, whenever necessary, automatically prevent operation or initiate an immediate shutdown.



Ennek eredményeként a nagy energiájú lézertechnológia alkalmazása nem jelent kontrollálatlan kockázatot: a rendszer biztosítja a reprodukálható, kiszámítható és szabványoknak megfelelő működést, miközben minimalizálja a kezelői beavatkozásból eredő hibalehetőségeket és a munkavédelmi kockázatokat.

Enclosed System and Safe Operation

The laser operates within a fully enclosed working area designed in accordance with applicable industrial **safety standards**, with the primary objective of containing laser radiation and providing maximum protection for the operator and the surrounding environment. The enclosed design represents more than a physical protective housing; it forms part of a comprehensive safety system engineered to ensure that laser radiation remains safely contained throughout every phase of operation



The **enclosed processing area** effectively prevents both the direct laser beam and reflected radiation from escaping the machining zone. This is particularly important in high-power laser systems, where even brief exposure to laser radiation can present a significant safety risk. The enclosed design therefore **protects not only the operator, but also other personnel and equipment in the surrounding working environment**.



Another key advantage of the system is that it **significantly reduces the risk of accidents**, as operation is only permitted when all protective elements—such as doors, safety enclosures, and interlocks—are in the correct and secure state. The fully enclosed design also enables more stable and **controlled process execution**, minimizing variations caused by human error or external environmental influences.

As a result, the use of high-power laser technology, including Class 4 laser systems, can be implemented within a significantly **safer operating environment**, where the associated risks can be effectively controlled and managed. With appropriate **protective enclosure** and integrated **safety systems**, the equipment can provide a level of operational safety approaching that expected from lower-risk laser classifications, while still retaining the performance advantages of high-power laser technology.



Built-in Safety Functions

The laser workstation is not simply a mechanical protective enclosure, but a multi-level, **integrated safety system** that actively monitors and controls the processes throughout every phase of operation. The objective is not only to **prevent accidents**, but also to ensure that **production remains continuous, stable**, and free from unnecessary interruptions.

One of the **key elements** of the system is the **Emergency Stop**, which enables immediate intervention in the event of any abnormal operation. In critical situations, **this function immediately interrupts the power supply**, minimizing the risk of injury and material damage.



The **door locking and interlock system** ensures that the equipment can only **operate when it is fully closed** and in a safe condition. If the enclosure is open or not properly secured, the **system automatically prevents start-up or stops the process during operation**. This prevents the operator from being directly exposed to the laser beam in any way.



The **integrated sensors and safety relays** continuously monitor the system status, including electrical, mechanical, and environmental parameters. These components are designed to respond immediately to abnormal conditions, **allowing potential faults to be detected and addressed** at an early stage before they can develop into more serious issues.

The robust industrial design and proper grounding not only ensure the long-term reliability of the equipment but are also essential for electrical safety. **The precisely engineered structural components are designed to withstand the loads and operating conditions typical of industrial environments**, thereby reducing the risk of equipment failure.

The **dust and fume extraction support** is also an **important part of both safety and operational reliability**. Particles and fumes generated during laser processing may not only pose potential health risks but can also affect the long-term performance of the equipment. An effective extraction system helps maintain a clean working environment and contributes to extending the service life of the system.



Trained Operation and Predictable Performance

The operation of the laser workstation is intentionally based on professional competence, as it is a high-power technology where precision and safety go hand in hand. The system has been designed to be operated **exclusively within an appropriately trained operator environment, significantly reducing the risks associated with improper intervention or incorrect operation.**

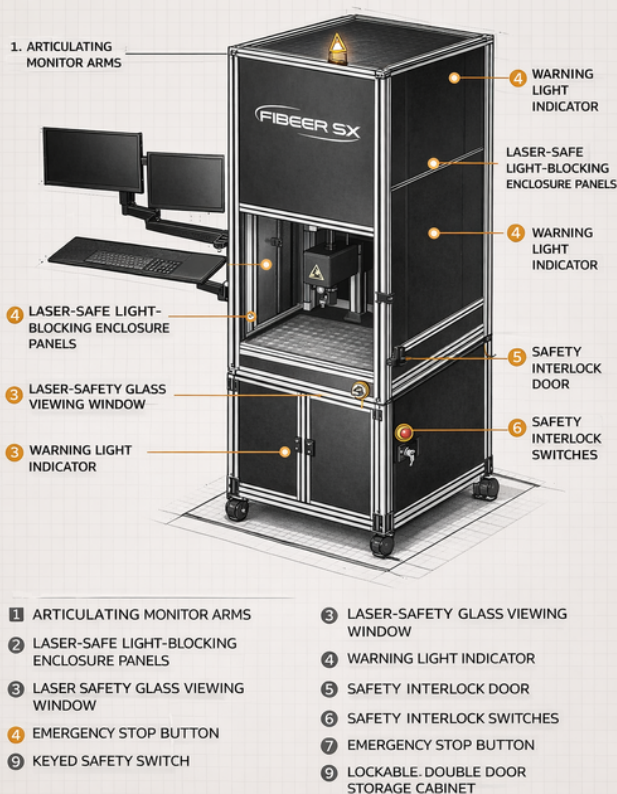
One of the key advantages of trained operation is the minimization of human error. A properly trained operator understands the system's operating logic, safety requirements, and optimal settings, making the processes not only safer but also considerably more efficient.



A direct result of this is increased production stability.

Reproducibility is essential in laser processing: the same parameters should produce the same result. Appropriate operator competence ensures that process parameters are applied consistently, helping to reduce scrap, improve quality, and make the overall production process more predictable.

LASER WORKSTATION SAFETY DESIGN



The system is designed with a strong focus on compliance with applicable standards, supporting operation in accordance with relevant industrial and occupational safety requirements. This is particularly important in environments where auditability and traceability are also required.



However, safety does not depend solely on the operator. The equipment also plays an active role during the start-up sequence by performing preliminary safety checks, such as verifying the status of the enclosure, connections, and relevant system conditions. If any required condition is not met, the machine cannot be started, preventing operation under unsafe conditions.

Designed for Industrial Environments

Every component of the laser workstation has been specifically optimized for industrial applications, where reliability, durability, and continuous operation are not simply expectations, but fundamental requirements. The system was developed not only to provide advanced technological capabilities, but also to **deliver stable and predictable performance over the long term in real production environments**.



The enclosed, compact design allows the equipment to operate safely with a minimal footprint while maintaining full functionality. This is particularly important in production facilities where available floor space is limited and operational efficiency is essential.

One of the system's key advantages is its long service life, which, with proper operation and maintenance, can reach up to 100,000 operating hours. This provides not only **technical reliability**, but also a predictable **long-term investment with potentially lower lifecycle costs**.



MEGBÍZHATÓ ÉS
BIZTONSÁGOS



IPARI KÖRNYEZETRE
TERVEZVE

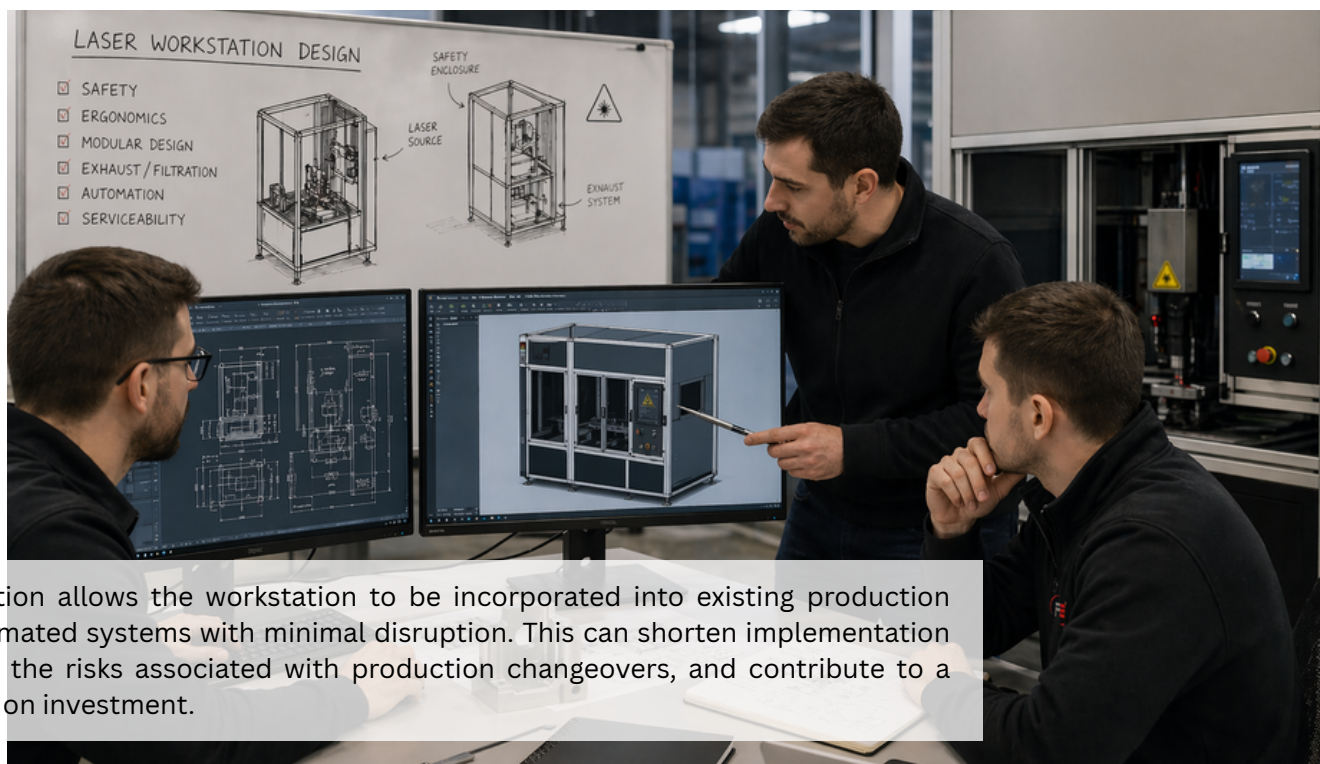


HATÉKONY
MŰKÖDÉS



HATÉKONY
MŰKÖDÉS

The equipment is designed to maintain stable performance even in continuous, multi-shift industrial operation. Its robust construction is engineered to withstand the demands of industrial environments while maintaining precision during intensive use, which is essential for consistent production efficiency.



Easy integration allows the workstation to be incorporated into existing production lines or automated systems with minimal disruption. This can shorten implementation time, reduce the risks associated with production changeovers, and contribute to a faster return on investment.

Why Choose a FibeerSX Workstation?

A well-designed safety and industrial system has a direct impact on both daily operations and overall business performance.

Reduced Risk of Accidents

The enclosed design and integrated safety functions minimize risks associated with operator error and external factors.

More Stable Production Processes

Controlled operation and repeatable process parameters help ensure consistent quality and predictable results.

Reduced Downtime

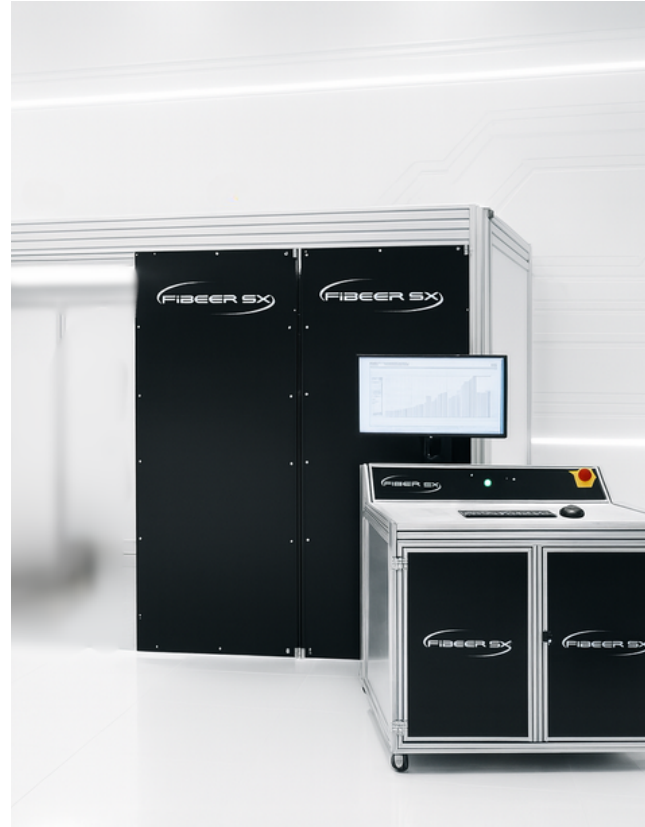
Continuous system monitoring and preventive safety measures help reduce unexpected failures and production interruptions.

Higher Operational Reliability

Reliable system performance and standardized operation contribute to stable and consistent production over the long term.

More Controlled and Predictable Operation

Greater process predictability provides both operators and management with better control over production, supporting more effective decision-making and efficient operations.



The Laser May Be Powerful, but the System Makes It Safe.

The real value lies not only in the technology itself, but in how it is implemented and controlled. A properly designed laser workstation delivers not only performance, but also safety, stability, and long-term business value.