



# AZSCAN SERIES FLEXISCAN SERIES

**FLEXISCAN M220**

**FLEXISCAN M230**

**FLEXISCAN M330**

**AZSCAN S35**

**AZSCAN HR70**

**AZSCAN HRTRIPLE**



High-performance  
2 & 3-axis scanning heads



## Total control for maximum performance

The AZSCAN is a compact and versatile series of integrated 3-axis scanning heads designed for CO<sub>2</sub> laser systems, also suitable for high-power laser applications. The scanning heads are equipped with high-performance mirrors and DSP digital drivers to provide the highest level of accuracy and dynamic performance. The scanning heads incorporate a Z linear motor axis for accurate real-time laser beam focusing, ensuring optimal engraving spot quality. High torque and precision galvanometers provide high acceleration and speed all over the field of view with the highest stability.

The spatial alloys mirrors of the scanning heads provide high stiffness while minimizing the moment of inertia, allowing for faster and more accurate mirror movements.

## Key features

- High performance mirrors
- On-the-fly processing capability
- Small spot
- Fast Z-axis
- High accuracy & high dynamic performances
- Wide selection of working areas
- DSP galvo drivers



## Experience Rooted in Passion

AZSCAN and FLEXISCAN series are designed, developed, and manufactured in El.En.'s Italian facilities. For over 40 years, El.En. has passionately committed itself to achieving the highest levels of engineering and reliability, creating devices with advanced technological capabilities.

In addition to scanning heads, El.En. also develops laser sources and galvanometric components for a perfect integration. With more than 3000 industrial installations, El.En. has been chosen to achieve exceptional performance in a wide range of industries.

Embrace the precision, innovation, and expertise of El.En.'s laser solutions, empowering your industrial applications with cutting-edge technology.



Digital drivers with self-tuning capability ensure low settling time for high precision details in all patterns. The scanning heads are equipped with optical optimized multilens objective for the best spot in the field of view.

Three integrated 3D scanner models are available:

**AZSCAN S35** with 35mm mirrors, for working areas from 150x150 to 800x800mm, with CO<sub>2</sub> laser powers up to 1000W, is the most versatile, compact and cost effective solution, for paper engraving and cutting, fabrics decoration, flexible packaging and industrial laser cleaning.

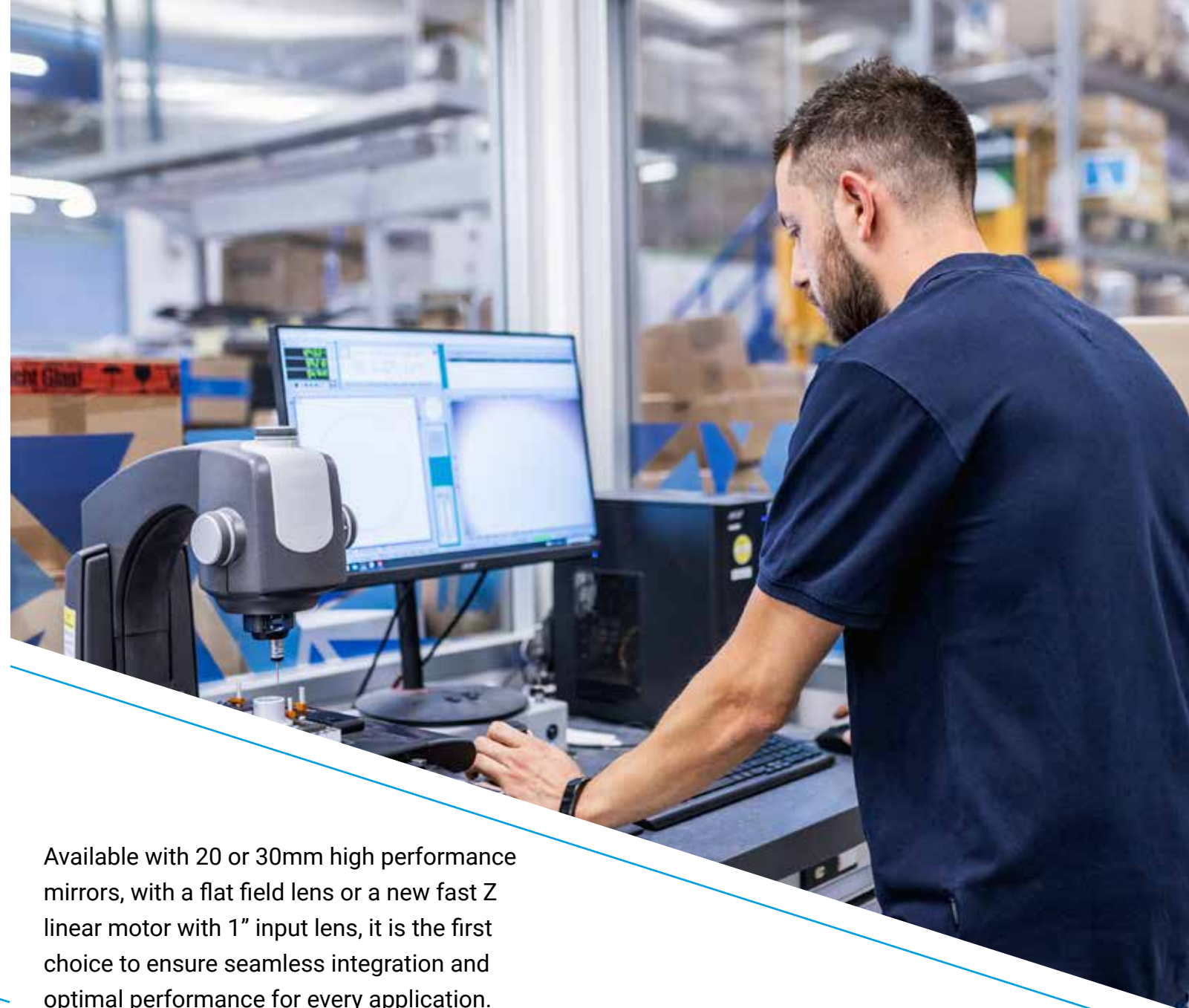
**AZSCAN HR70** with 70mm mirrors for working areas up to 1800x1800mm with CO<sub>2</sub> laser powers up to 2500W, for high resolution & dynamics for ultimate control and precision.

It is the perfect choice for fast-cutting on thin materials and heavy-duty operations on marble, granite, and similar materials. With its exceptional capabilities, AZSCAN HR70 empowers laser wood marking, cardboard and corrugated board cutting for packaging, fabrics decoration, marble cleaning, and much more.

**AZSCAN HRTRIPLE** is an integrated modular solution, housing three high-resolution scanning heads with 70mm mirrors. Each scanning head can be individually adjusted to deliver maximum quality across the 800x400mm working area. Compatible with CO<sub>2</sub> lasers up to 2500W per module, it ensures exceptional performance for state of the art digital converting applications. AZSCAN HRTRIPLE is the unique solution on the market for top speed applications in a modular and compact design.

#### **FLEXISCAN M220/M230/M330**

The FLEXISCAN Series is the new solution joining a compact 2-axis deflection unit with an optimized Z-axis module add-on.



Available with 20 or 30mm high performance mirrors, with a flat field lens or a new fast Z linear motor with 1" input lens, it is the first choice to ensure seamless integration and optimal performance for every application.

#### **VOYAGER CONTROL UNIT**

Voyager Control Unit is a digital device designed to manage galvo-scanning units and laser modulation. The integrated 32-bit controller ensures real-time and highly accurate control of galvo systems during laser processes.

The Voyager Control Unit includes Ethernet, Encoder and I/O inputs for direct interfacing with PLC or CNC devices.

The full encoder compatibility and the high-performance real-time capability enable an effective and deterministic on-the-fly laser processing for inline production.

#### **SMART SCANNER**

Smart Scanner DLL is the software library interface of the Voyager Control Unit that communicates with it via TCP/IP protocol,

making it easily integrable into client's software. With Smart Scanner, users can send system configuration parameters, marking patterns, and dynamic marking process parameters, such as laser speed and power, to the Control Unit. The library is the complete way to control and operate with Voyager Control Unit, managing all the system's potentiality.

#### **VOYAGER MANAGER**

Voyager Manager is the calibration software for El.En. scanning systems with a user friendly interface which allows users to quickly setup all the scanner parameters during system integration.

Voyager Manager includes diagnostic and testing tools and the possibility to engrave simple patterns.





## Seamless integration

The AZSCAN and FLEXISCAN series versatility enables seamless integration into a wide range of systems, providing flexibility to adapt to different power requirements and diverse operational scenarios.

An additional advantage of the two series is the comprehensive integration of El.En.'s cutting-edge technologies within the same system.

This includes laser sources, scanning heads, galvanometric systems, and dedicated software control. By optimizing this technological ecosystem, the series delivers exceptional performance as all components are designed to work together synergistically.

This versatile and harmonized integrability empowers customers or integrators with enhanced efficiency, productivity and performance across various applications and industries.

Moreover, the AZSCAN and FLEXISCAN series ensure compatibility with components

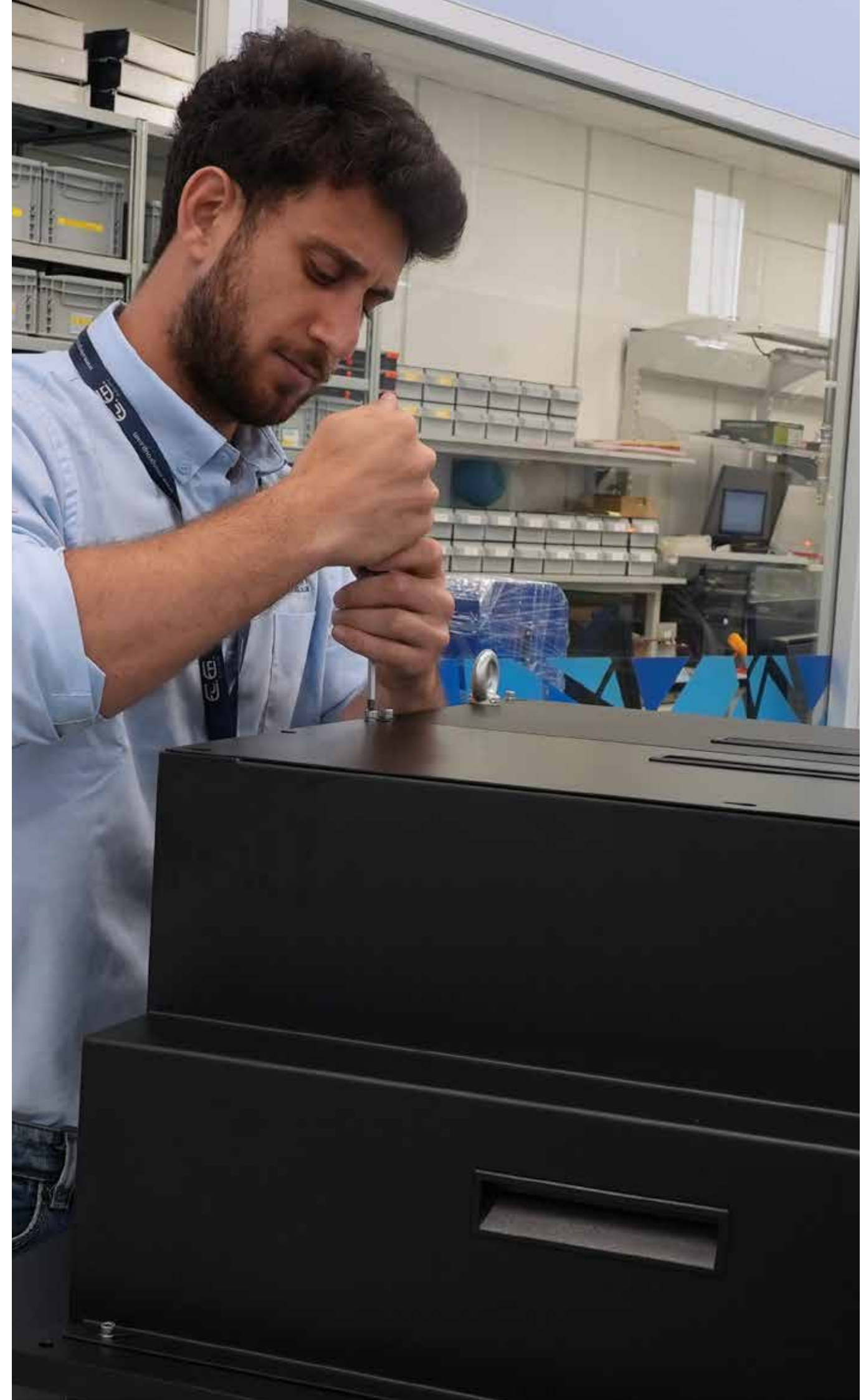


other than those from El.En., offering added convenience for integration into existing setups. Each model has been meticulously engineered to deliver exceptional performance and reliability. Whether it's precision cutting, engraving, or marking, these scanning heads provide the versatility for a wide range of applications.

# Applications

The AZSCAN and FLEXISCAN series are versatile and can be utilized in various applications, including advanced remote processing, cutting and engraving of plastics, wood, leather, fabrics and many other materials, digital converting for the packaging industry, high-speed cutting of paper and cardboard, label kiss-cutting and laser cleaning for the automotive industry. With their adaptability and capabilities, the two series prove to be a reliable choice for a wide range of industries, enhancing productivity and offering excellent laser processing in diverse applications.

- Leather
- Paper / Label
- Food
- Plastic film
- Plastics
- Marble & stone
- Abrasive materials
- Cardboard & Corrugated
- Ceramic & alumina
- Fabrics & Denim



- Glass & quartz
- Metals
- Rubber & foam
- Wood & derivatives

# Processing

- Laser cleaning
- Laser cutting
- Laser drilling
- Laser kiss-cutting
- Laser micro perforation
- Laser marking
- Laser welding
- Laser ablation



FLEXISCAN M220



FLEXISCAN M230



FLEXISCAN M330



AZSCAN S35



AZSCAN HR70



AZSCAN HRTRIPLE



## Scanner Specifications

Model	FLEXISCAN M220	FLEXISCAN M230	FLEXISCAN M330	AZSCAN S35	AZSCAN HR70	AZSCAN HRTRIPLE
Description	2-axis scanning head	2-axis scanning head	3-axis scanning head	3-axis scanning head	3-axis scanning head	3-axis triple scanning head
Working area (mm)	(*)	(*)	300x300 ÷ (600x600)	300x300 <sup>(***)</sup>	1800x1800 <sup>(****)</sup>	770x390
Working distance (mm)	(**)	(**)	412 ÷ (824)	412	2473	535
Wavelength (µm)	10.6 ± 0.4	10.6 ± 0.4	10.6 ± 0.4	10.6 ± 0.4	10.6 ± 0.4	10.6 ± 0.4
Dimensions (mm)	220x148x203	220x148x203	422x148x219	382x220x222	750x405x381.5	939x816x372
Weight (kg)	6	6	9,5	10,5	46,5	133

## Optical & Electrical specifications

Mirror aperture (mm)	20	30	30	35	66	66
Spot diameter 1/e <sup>2</sup> (µm) <sup>(1)</sup>	(**)	(**)	340 ÷ (670)	320 <sup>(****)</sup>	830 <sup>(****)</sup>	260
Max collimated beam diameter (mm)	20	30	19	19	19	19
Typical scan angle (optical) (rad)	± 0,35	± 0,35	± 0,35	± 0,35	± 0,35	± 0,35
Deflection unit step response time (µs) <sup>(2)</sup>	370	800	800	550	1400	1400
Deflection unit tracking error (µs) <sup>(3)</sup>	450	750	750	600	1000	1000
Max scanning speed (optical) (rad/s) <sup>(4)</sup>	80	80	80	40	36	36
Max laser power (W)	2500	2500	2500	900	2500	2500
Power supply (Vdc)	± 24	± 24	± 24	± 24	± 24	± 24

(1) Maximum spot diameter over the working field calculated with M2=1 input beam

(2) 10%-90% @1% of full scale

(3) Full scale 20Hz triangle wave

(4) Calculated from full scale 0-100% step response time

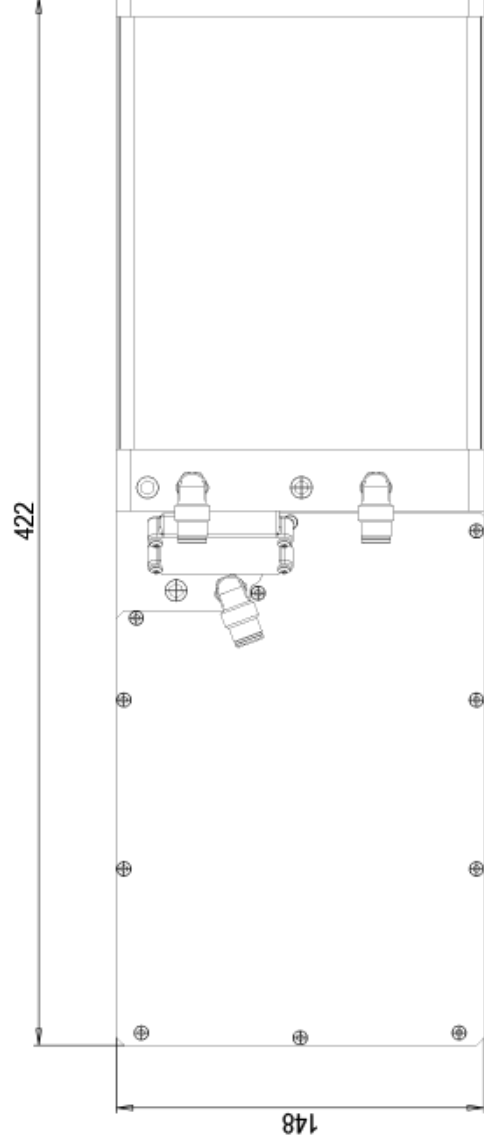
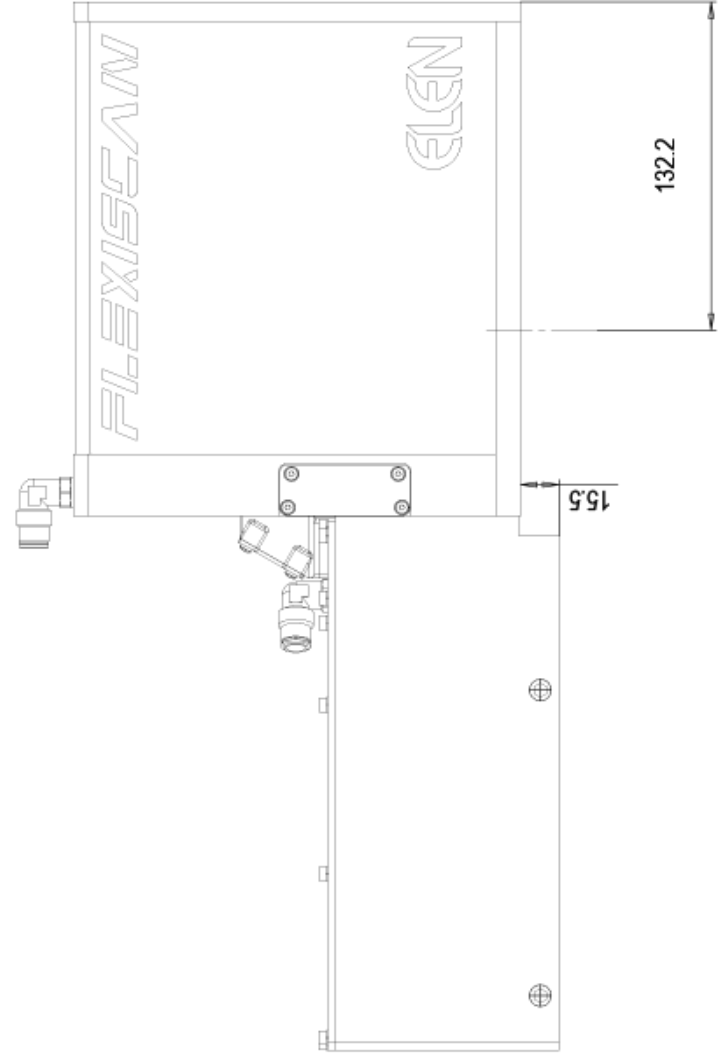
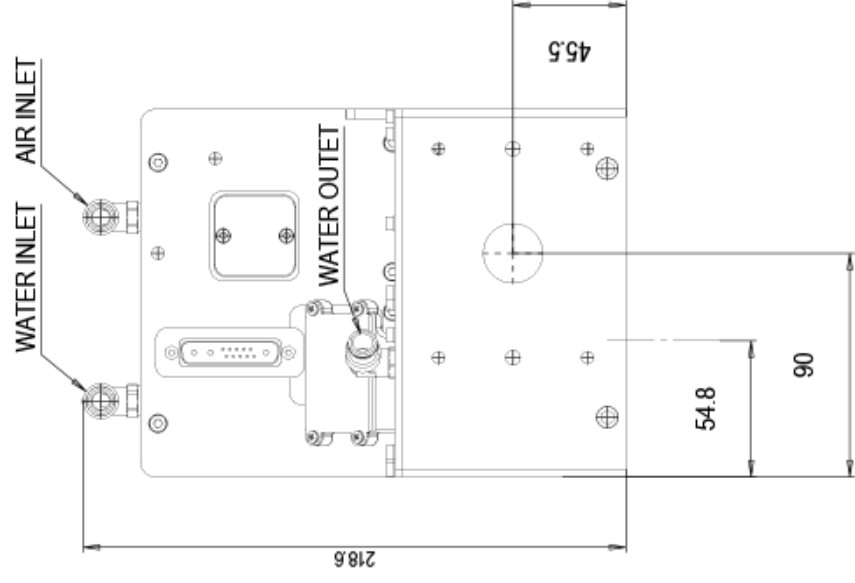
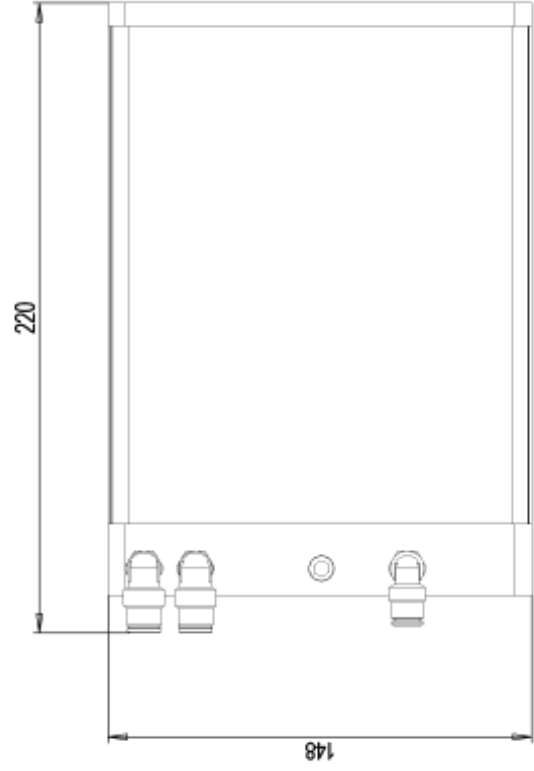
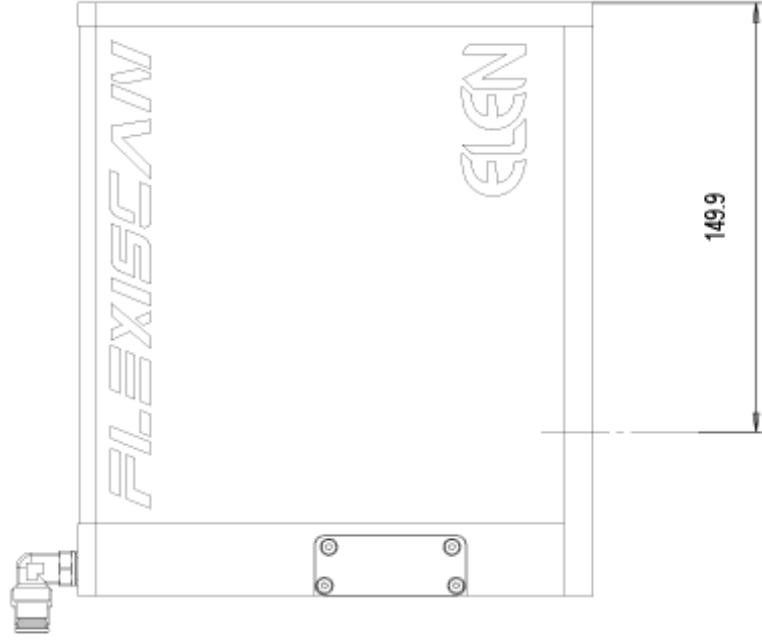
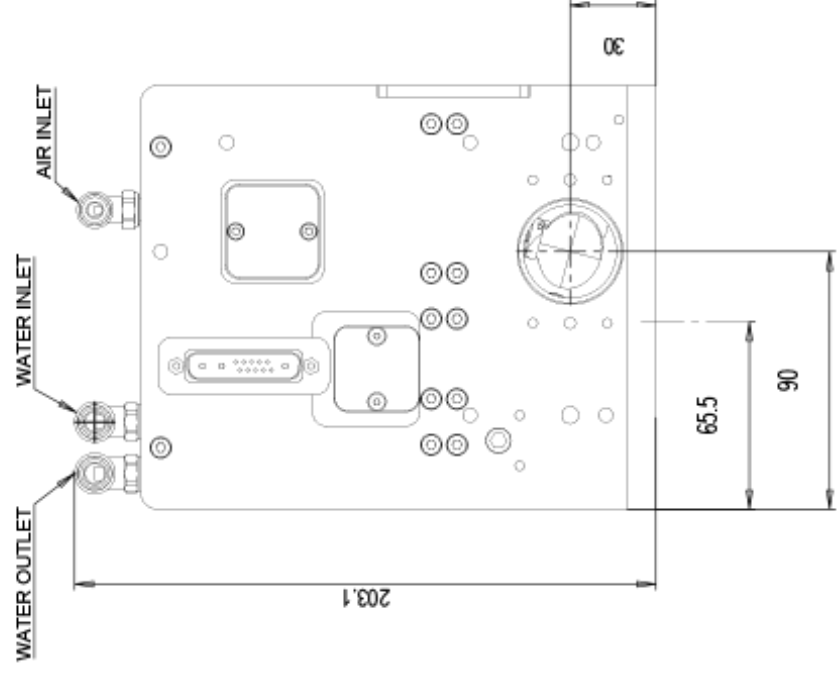
(\*) available working field from 50x50mm to 300x300mm

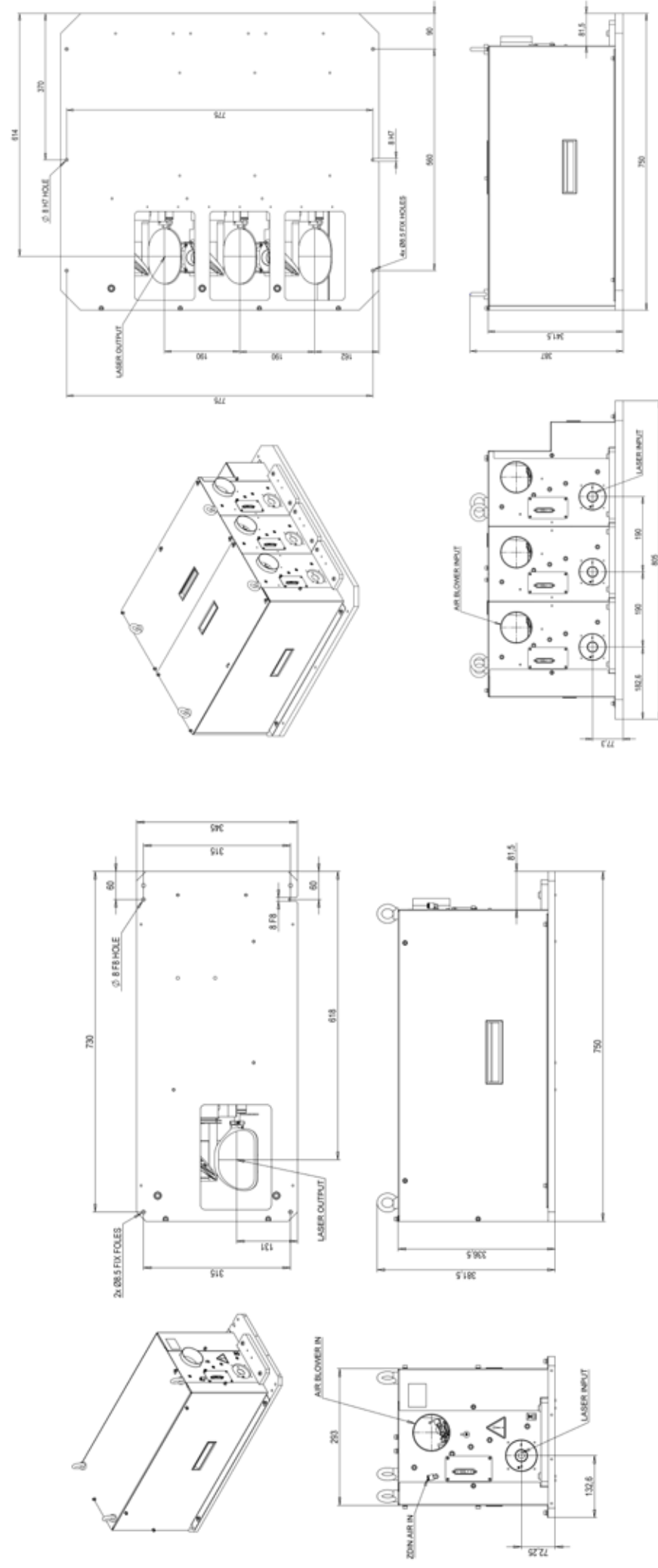
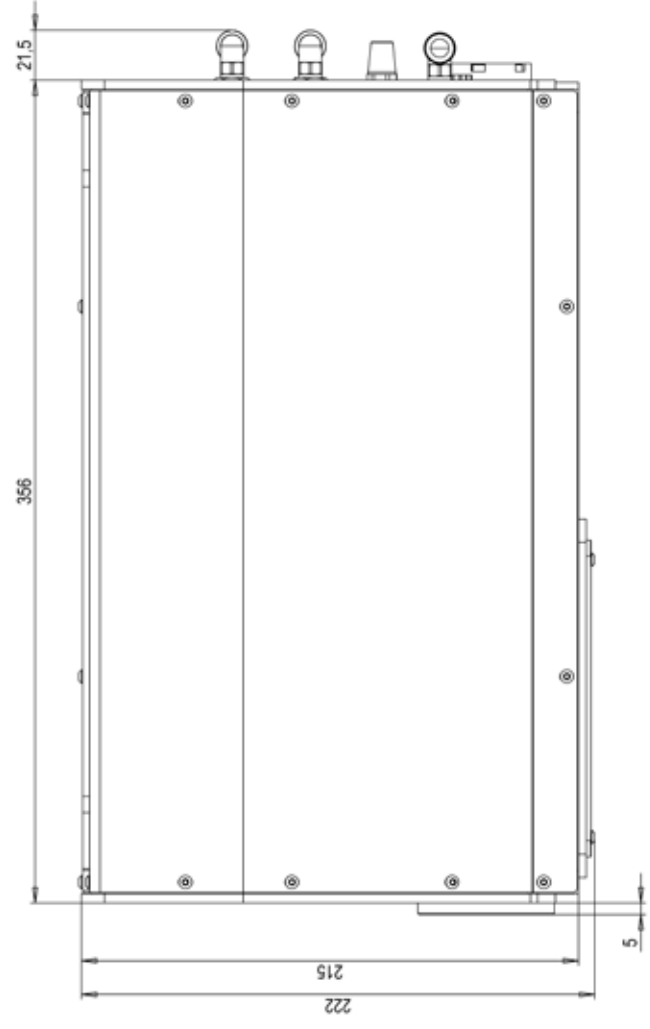
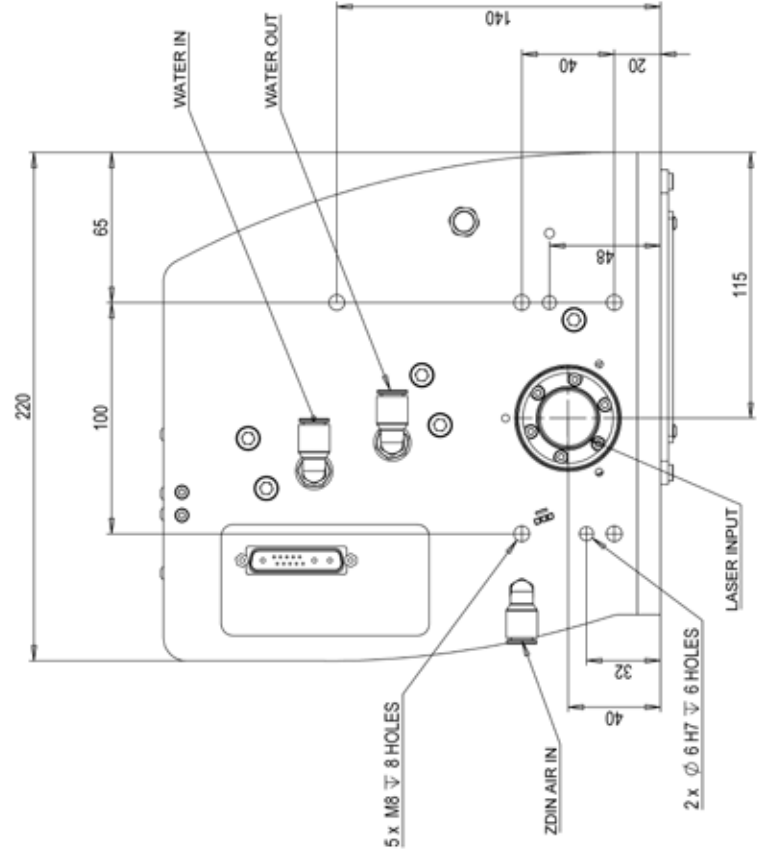
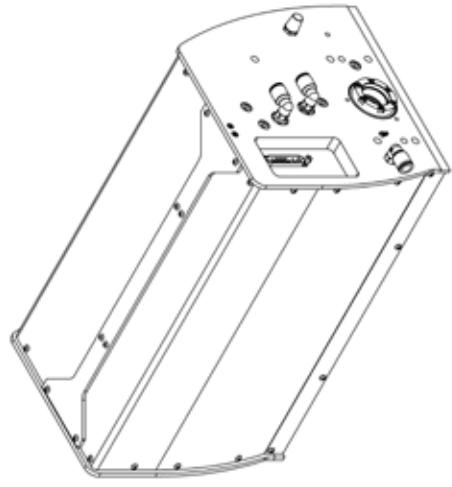
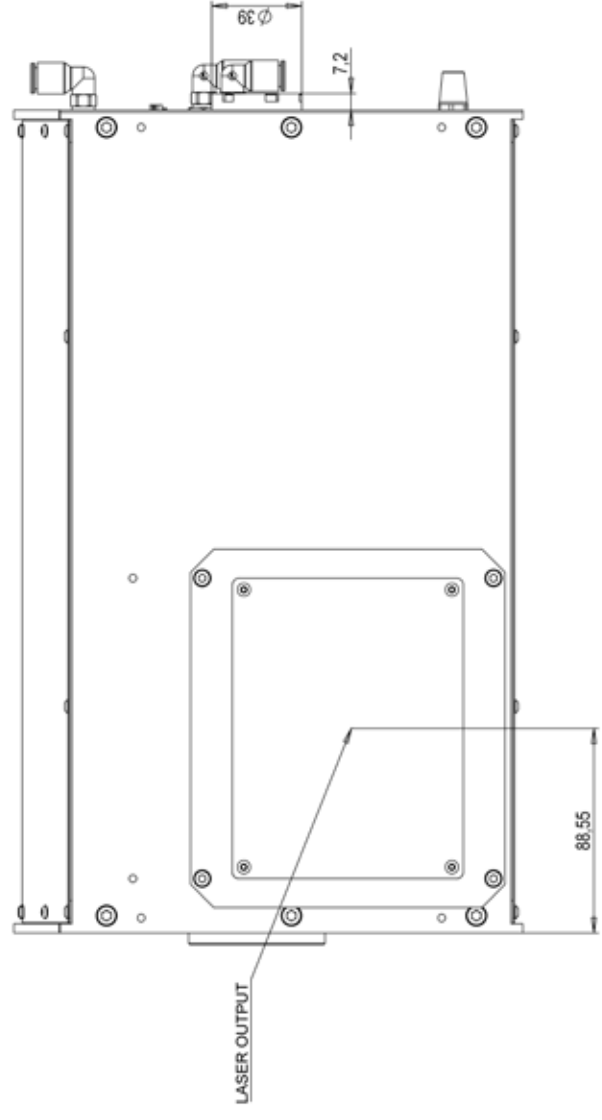
(\*\*) depending on f-theta

(\*\*\*) typical, available working field from 150x150mm to 800x800mm

(\*\*\*\*) depending on working area and distance

(\*\*\*\*\*) available working field from 500x500mm to 1800x1800mm










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