



# AZSCAN SERIES FLEXISCAN SERIES

**AZSCAN S20 / S35 / HR70 / HRTRIPLE**  
**FLEXISCAN M220 / M230**

High-performance  
**2 & 3-Axis** Scan Heads

# Experience Rooted in Passion

AZSCAN and FLEXISCAN series are designed, developed, and manufactured in El.En.'s Italian facilities.

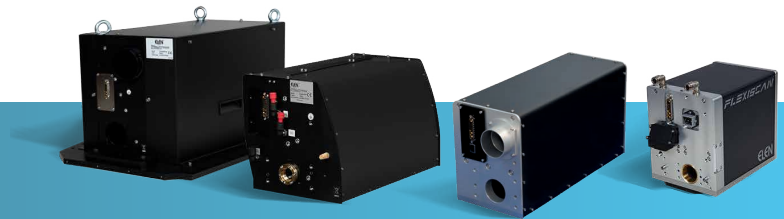
For over 40 years, El.En. has passionately committed itself to achieving the highest levels of engineering and reliability, creating devices with advanced technological capabilities.

In addition to scan heads, El.En. also develops laser sources and galvanometric components for a perfect integration. With more than 4000 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.

## Total control for maximum performance

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

## 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.

The two scan heads series enable a comprehensive integration of El.En.'s cutting-edge technologies within the same system: laser sources, scan heads and dedicated software control are designed to operate 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 accurately engineered to deliver exceptional performance and reliability. Whether it's precision cutting, engraving, or marking, these scan heads provide the versatility for a wide range of applications.

## Introducing the 3-Axis Scan Heads series

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### AZSCAN S20

**AZSCAN S20** with 20mm mirrors, for working areas from 100x100 to 300x300mm, with CO<sub>2</sub> laser powers up to 900W, is the most compact, cost effective but fast solution for paper engraving, coding, flexible packaging and industrial laser cleaning.

### AZSCAN S35

**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

**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 engraving, and much more.



### AZSCAN HRTRIPLE

**AZSCAN HRTRIPLE** is an integrated modular solution, housing three high-resolution scan heads with 70mm mirrors. Each scan heads 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.





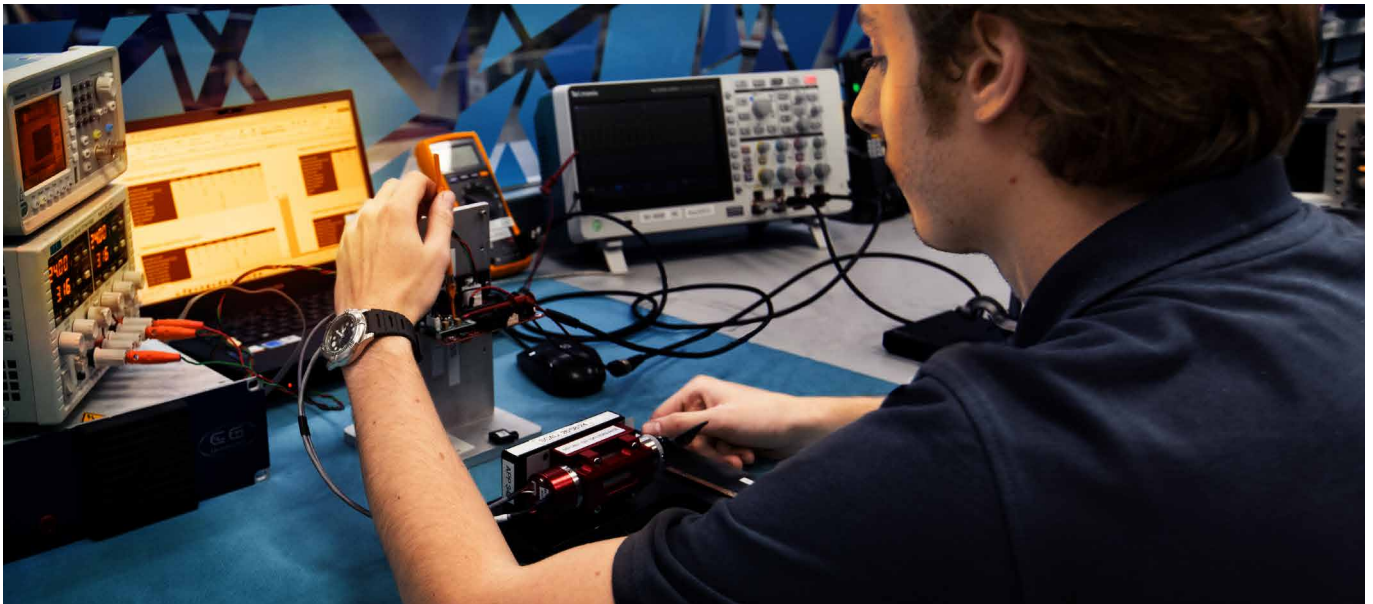
## Introducing the 2-Axis Scan Heads series



### FLEXISCAN M220/M230

The FLEXISCAN Series is the 2-axis deflection unit equipped with SiC mirrors and compatible with off-the-shelf f-theta lenses.

Available with 20 or 30mm high performance mirrors and for most common wavelengths, it is the first choice to ensure seamless integration and optimal performance for every application.



### VOYAGER & PARSEC CONTROL UNITS

Voyager Control Unit and the new generation Parsec platform are digital devices 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. These control platforms include 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. Both the platforms are available in rack standard box and the new Parsec unit also in compact DIN Omega rail version.

### SMART SCANNER

Smart Scanner DLL is the software library interface to our control units, communicating 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 & Parsec Control Units, managing all the system's potentiality.

### VOYAGER MANAGER & PARSEC STUDIO

Voyager Manager and its evolution, Parsec Studio, are the calibration softwares for El.En. scanning systems with a user friendly interface for a quick setup of all parameters during system integration.

The softwares include diagnostic and testing tools and the possibility to import and process user files.

## Applications

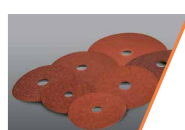
The AZSCAN and FLEXISCAN series are versatile and can be utilized in various applications, including advanced remote processing, cutting and engraving of plastics, wood, leather, fabrics and many other materials, digital converting for the packaging industry, high-speed cutting of paper and cardboard, 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



Abrasive  
Materials



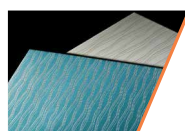
Cardboard &  
Corrugated



Food



Plastic  
Film



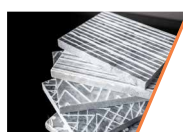
Ceramic &  
Alumina



Fabrics &  
Denim



Plastics



Marble &  
Stone



Glass &  
Quartz



Wood &  
Derivatives

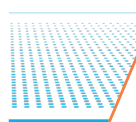
## Processing



Laser  
Cleaning



Laser  
Cutting



Laser Micro  
Perforation



Laser  
Marking



Laser  
Drilling



Laser  
Kiss-Cutting



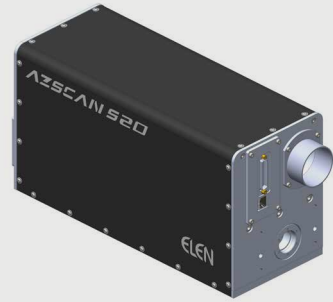
Laser  
Welding



Laser  
Ablation



**FLEXISCAN M220 / M230**



**AZSCAN S20**

## Laser Specifications

Model	FLEXISCAN M220	FLEXISCAN M230
Description	2-axis scan head	2-axis scan head
Available working area (mm)	from 50x50 to 300x300	from 50x50 to 300x300
Working distance (mm)	depending on f-theta	depending on f-theta
Wavelength (µm) <sup>(1)</sup>	10.6 ± 0.4	10.6 ± 0.4
Dimensions (mm)	220x148x203	220x148x203
Weight (kg)	6	6

## Optical & Electrical specifications

Mirror aperture (mm)	20	30
Spot diameter 1/e <sup>2</sup> (µm) <sup>(2)</sup>	depending on f-theta	depending on f-theta
Max collimated beam diameter (mm)	20	30
Typical scan angle (optical) (rad)	± 0,35	± 0,35
Deflection unit step response time (µs) <sup>(3)</sup>	370	800
Deflection unit tracking error (µs) <sup>(4)</sup>	450	750
Max scanning speed (optical) (rad/s) <sup>(5)</sup>	80	80
Max laser power (W)	2500	2500
Power supply (Vdc)	± 24	± 24

(1) Other wavelengths available on request

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

(3) 10%-90% @1% of full scale

(4) Full scale 20Hz triangle wave

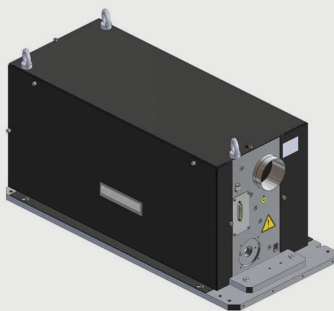
(5) Calculated from full scale 0-100% step response time

(\*) i.e. for working area 300x300mm, working distance is 412mm, spot diameter 1/e<sup>2</sup> is 320µm

(\*\*) i.e. for working area 1800x1800mm, working distance is 2473mm, spot diameter 1/e<sup>2</sup> is 830µm



**AZSCAN S35**



**AZSCAN HR70**

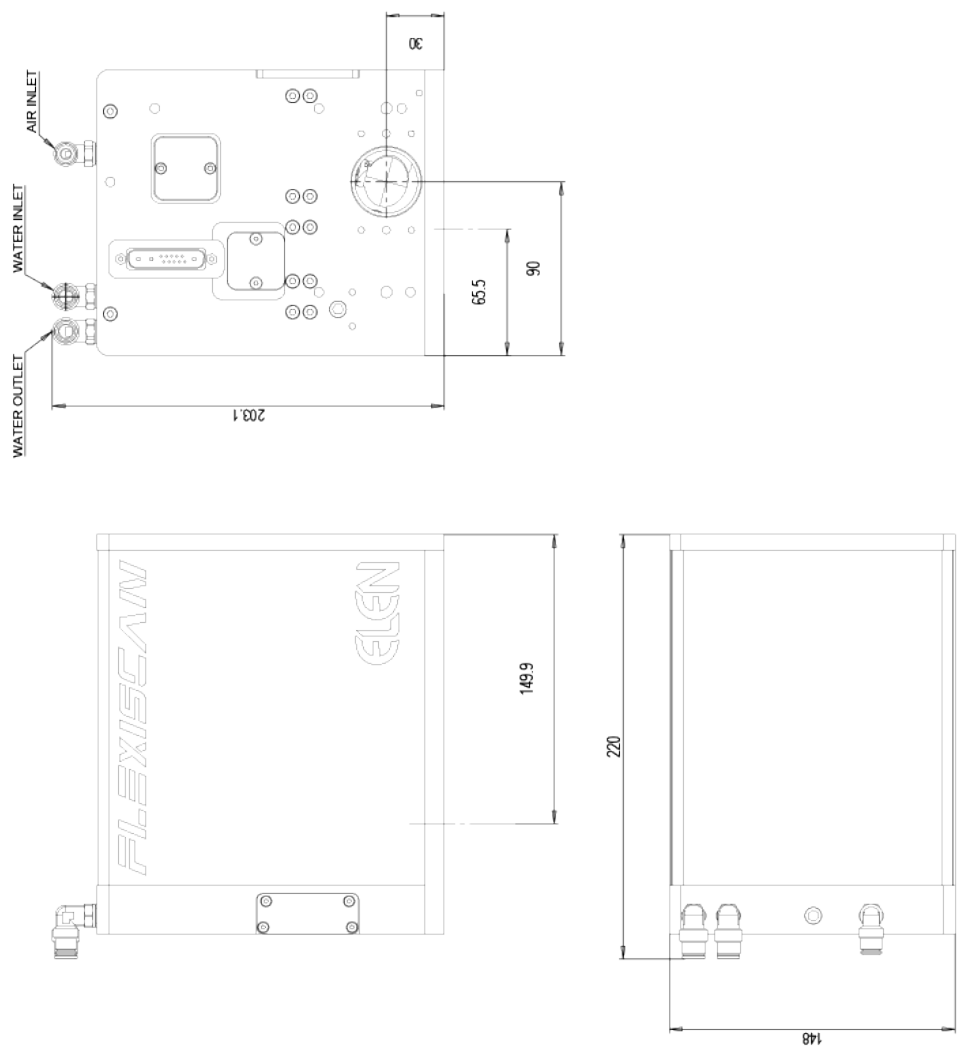


**AZSCAN HRTRIPLE**

AZSCAN S20	AZSCAN S35	AZSCAN HR70	AZSCAN HRTRIPLE
3-axis scan head	3-axis scan head	3-axis scan head	3-axis triple scan head
from 100x100 to 300x300	from 150x150 to 800x800	from 500x500 to 1800x1800	770x390
depending on working area	depending on working area <sup>(*)</sup>	depending on working area <sup>(**)</sup>	535
10.6 ± 0.4	10.6 ± 0.4	10.6 ± 0.4	10.6 ± 0.4
418.5x200.5x151.6	382x220x222	750x405x381.5	939x816x372
8,5	10,5	46,5	133
20	35	66	66
depending on	depending on	depending on	260
working area and distance	working area and distance <sup>(*)</sup>	working area and distance <sup>(**)</sup>	
11	19	19	19
± 0,35	± 0,35	± 0,35	± 0,35
370	550	1400	1400
450	600	100	100
80	40	36	36
900	900	2500	2500
± 24	± 24	± 24	± 24

# Technical Drawings 2-Axis Scan Heads series\*

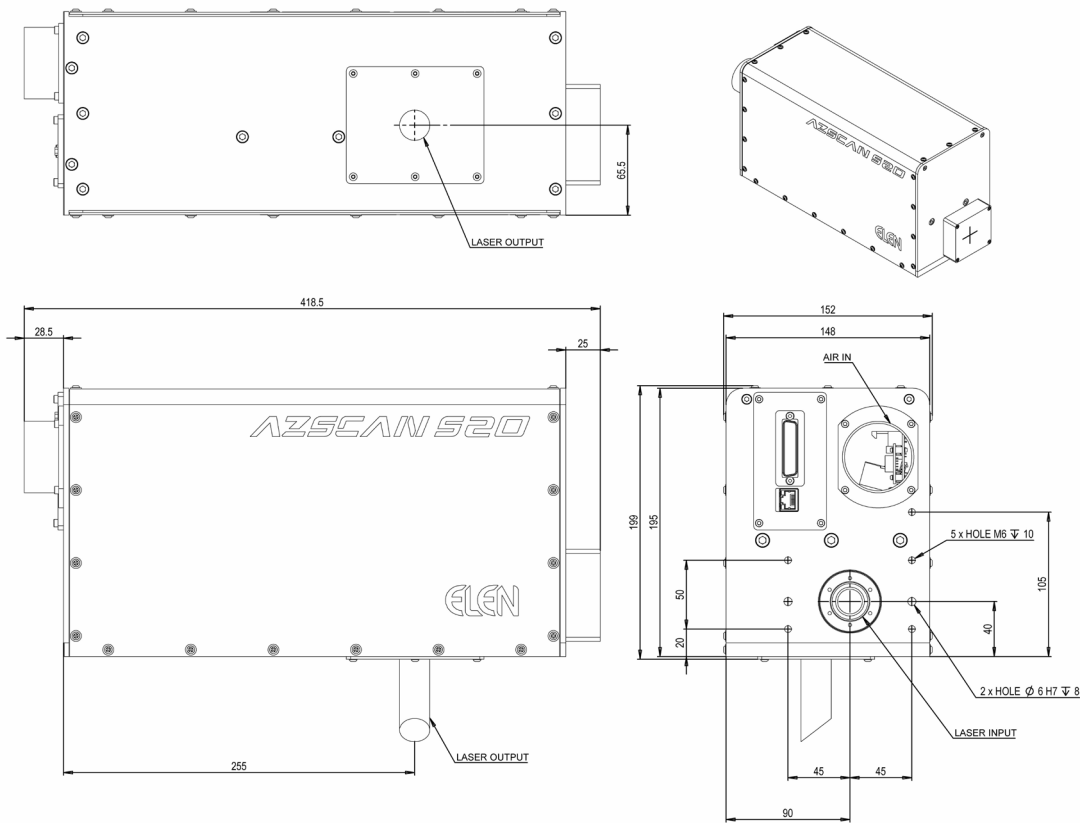
FLEXISCAN M220 / M230



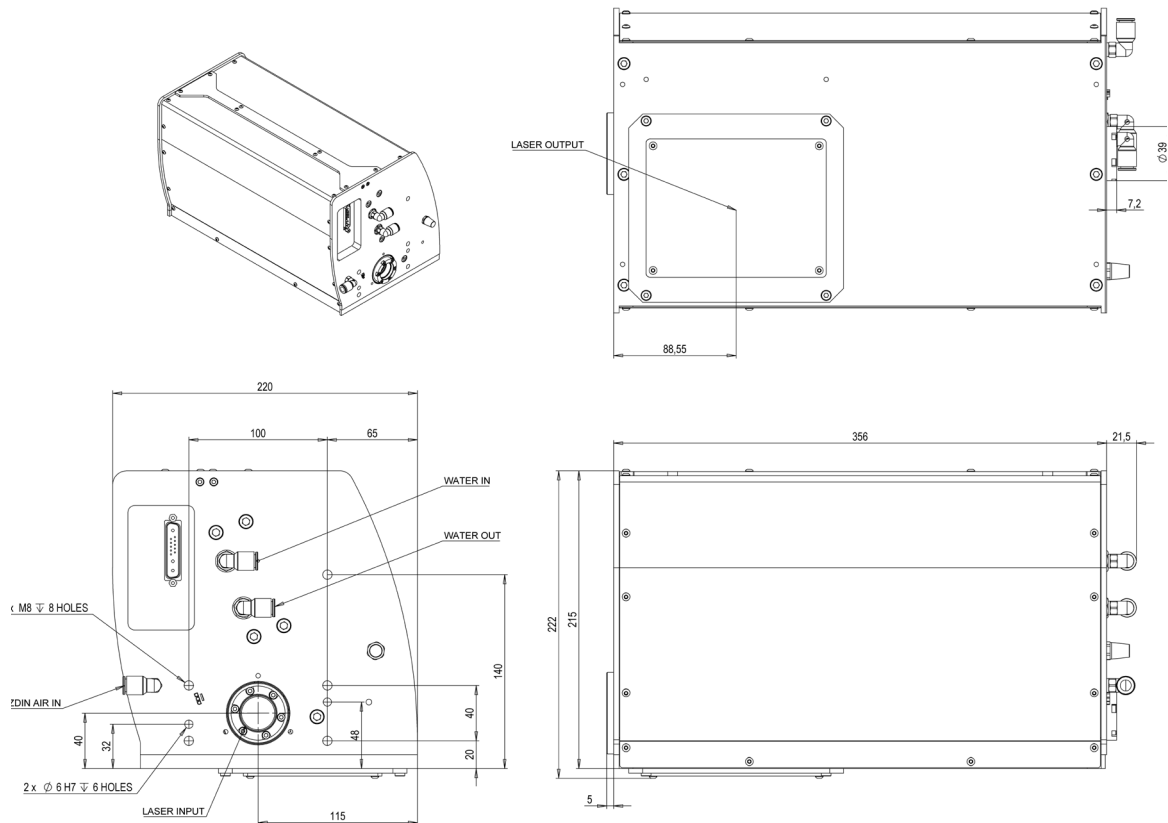


# Technical Drawings 3-Axis Scan Heads series<sup>®</sup>

## AZSCAN S20

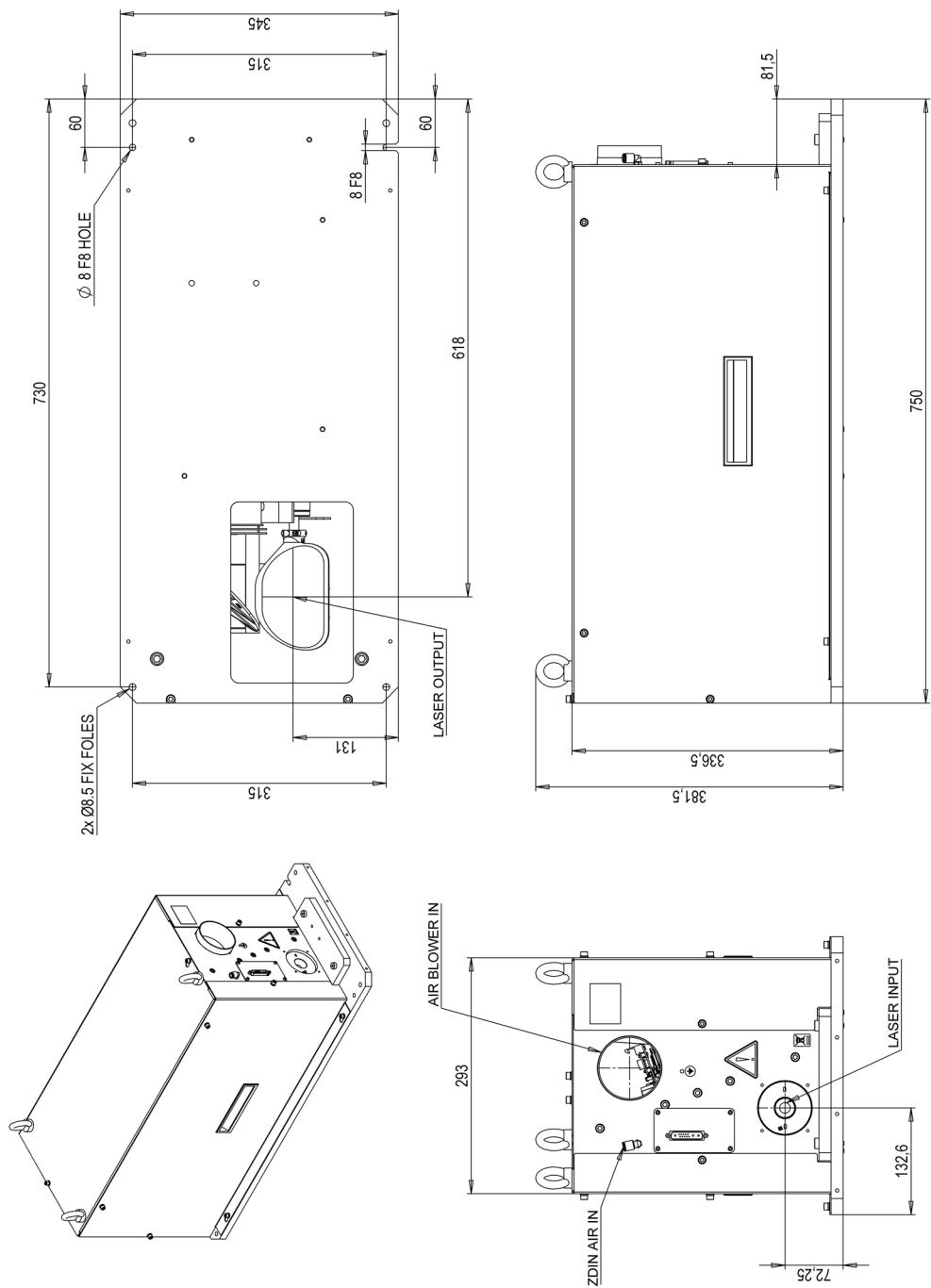


## AZSCAN S35



# Technical Drawings 3-Axis Scan Heads series\*

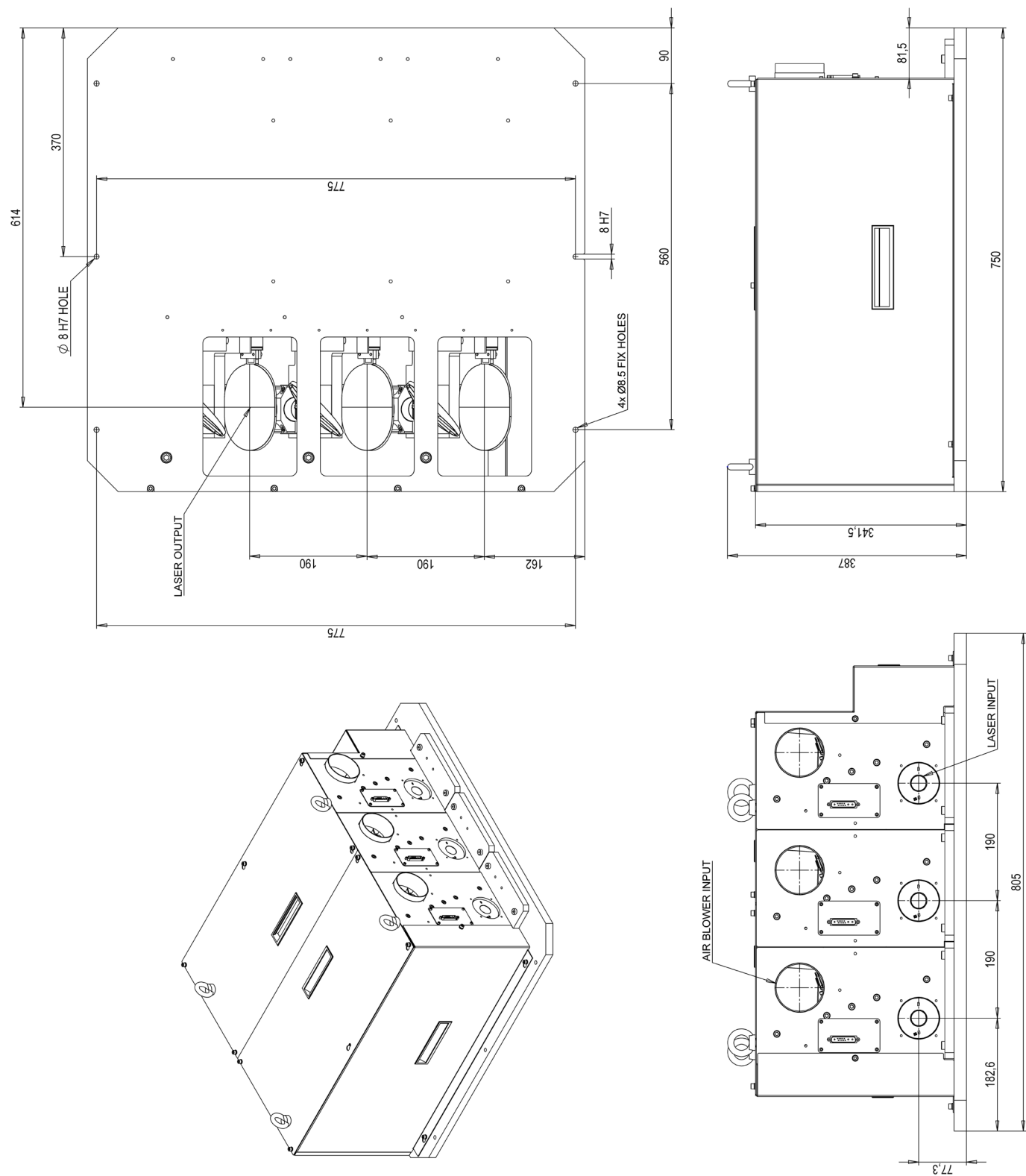
## AZSCAN HR70



\*Drawings not to scale

# Technical Drawings 3-Axis Scan Heads series\*

## AZSCAN HRTRIPLE





\*Drawings not to scale





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Discover more about  
**Laser Scan Heads Series**



 **SCAN ME**

