

# MINISCAN II



2-AXIS DEFLECTION UNITS

FOR COMPACT INDUSTRIAL APPLICATIONS



- Very low drift
- Extreme compact design
- Robust and dust proof for industrial conditions
- Insensitive to external temperature conditions
- Available input apertures: 7, 10, 14, 20 mm

## MINIMUM SIZE, MAXIMUM PERFORMANCE.

### YOUR BENEFITS

The MINISCAN II is the new generation of scan heads with compact design and the performance optimized to achieve 50% less drift values. Its completely dust proof housing cover makes the MINISCAN II perfect for working in rough industrial conditions.

### INNOVATION AND QUALITY

Innovation and maintaining high product quality standards are our priorities at RAYLASE. All our products are developed, built and tested in our own laboratories and production facilities. Through our world-wide support network we can offer best maintenance and rapid service for our customers.

### MIRRORS AND OBJECTIVES

Scan mirrors and objectives with optimized mounts are available for all typical laser types, wavelengths, power densities, focal lengths, and working fields. Customer specific configurations are also possible.

### INTERFACES

The deflection units are compatible to the XY2-100 standard protocol. They can be controlled digitally by a control card, such as the SP-ICE-1 PCI PRO or via an analog current or voltage interface.

### TYPICAL APPLICATIONS

Material processing such as marking, drilling, cutting, welding, hardening, texturing.

### OPTION

RAYLASE offers a camera adapter for process monitoring.

## GENERAL SPECIFICATIONS

Power supply <sup>1</sup>	Voltage	±15 V to ±18 V	Humidity	≤ 80 % non-condensing	
	Current	2 A, RMS, max. 10 A		Typical deflection (optical)	± 0.393 rad
	Ripple / Noise	Max. 200 mVpp, @ 20 MHz bandwidth		Resolution	12 µrad
Interface signals	Analog	±5 V, ±10 V	Repeatability (RMS)	2 µrad	
	Digital	XY2-100 protocol	Max. Gaindrift <sup>2</sup>	15 ppm/K	
Ambient temperature	+15°C to +35 °C		Max. Offsetdrift <sup>2</sup>	10 µrad/K	
Storage temperature	-10°C to +60 °C		Long-term drift <sup>2,3</sup>	< 150 µrad	

<sup>1</sup> **NOTE:** It must be ensured at all times that at least ± 15 V is supplied to the deflection unit, even during peak current requirements due to the laser process. Since less robust power supply units may experience voltage drops during peak current requirements, it is recommended to set the voltage to ± 16.5 V.

<sup>2</sup> Drift per axis. <sup>3</sup> After 30 min warm-up, at operating temperature, variations of ambient temperature <1K

## APERTURE DEPENDENT SPECIFICATIONS

Deflection unit	MINISCAN II-7	MINISCAN II-10	MINISCAN II-14	MINISCAN II-20
<b>Mechanical data:</b>				
Max. input beam diameter [mm]	7.0	9.0	14.0	20.0
Beam displacement [mm]	9.0	12.4	17.0	26.0
Weight (without objective) [kg]	approx. 0.8	approx. 0.8	approx. 1.6	approx. 2.2
Dimension (L x W x H) [mm]	100.0 x 77.0 x 79.5	100.0 x 77.0 x 77.5	134.0 x 98.0 x 93.5	145.0 x 116.0 x 103.5
<b>Dynamic data:</b>				
Acceleration time [ms]	0.19	0.23	0.50	0.70
Writing speed [cps] <sup>1,2</sup>	900	500	400	300
Processing speed [m/s] <sup>1</sup>	> 10	7	6	5
Positioning speed [m/s] <sup>1</sup>	> 10	7	6	5

<sup>1</sup> With F-Theta Lens f = 163 mm / field size 120 mm x 120 mm. <sup>2</sup> Single-stroke font with 1 mm height.

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