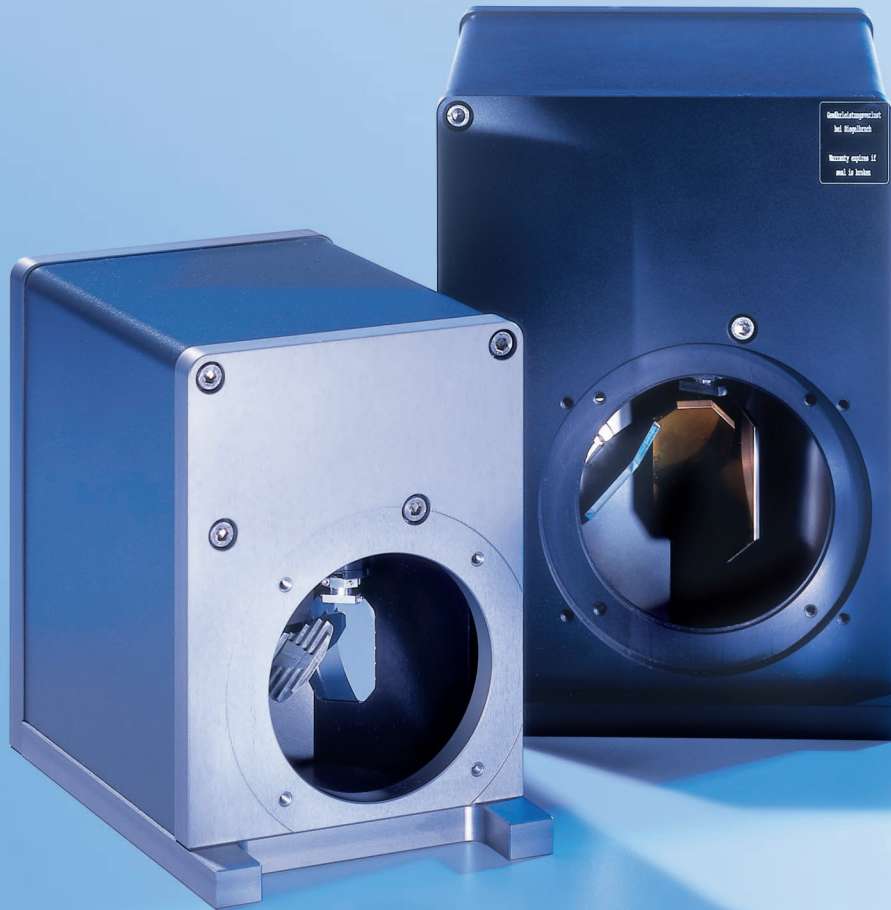


2-AXIS LASER BEAM DEFLECTION UNITS

SUPERSCAN-SC



XY-Deflection Units for Highest Speeds

- Superior throughput matched with stability and reliability
- Low drift and high accuracy
- Robust and dust proof (CE) for industrial conditions
- Easy integration
- Perfect for 3-axis laser beam subsystems

NEW
AVAILABLE NOW
SUPERSCAN-LD
Lowest drift values
at high acceleration speeds

2-AXIS LASER BEAM DEFLECTION UNITS

SUPERSCAN-SC

● DESIGN

The SUPERSCAN-SC XY-deflection units redefine the leading edge. Their high scan speed, long-term stability, and low drift values are trendsetting. The combination of fine tolerance mechanics, innovative mirror design, high performance electronics, and outstanding galvanometer scanners allows superior performance. Compact and robust design (CE) and low weight are further advantages.

● QUALITY

Maintaining high product quality standards is a priority at RAYLASE. Deflection units are shipped to customers only after passing extensive tests.

● MIRRORS AND OBJECTIVES

Outstanding mirror material. Mirrors, objectives and protection windows are available for CO₂ and Nd:YAG laser.

● INTERFACES

The deflection units are electrically and mechanically compatible to the XY2-100 standard. They can be controlled via high-speed data link, with a suitable control card, or by using an analog current or voltage interface.

● OPTION

SUPERSCAN-LD: This variation of the SUPERSCAN-SC offers preparation for water tempering and optional air flushing of the backs of deflection mirrors. Because of its excellent low drift behaviour combined with exceptionally high acceleration time the SUPERSCAN-LD is most suitable for material processing in the packaging and food industry. The unit is controlled digitally based on the XY2-100 standard.

● TYPICAL APPLICATIONS

Material processing such as drilling, ablation, welding, perforating, cutting and kiss cutting. Processing on the fly and of large objects.

● GENERAL SPECIFICATIONS

Deflection Unit		SUPERSCAN-SC	SUPERSCAN-LD
Power Supply	Voltage	±15 to ±18 V	±15 to ±18 V
	Current	3 A, RMS, max. 10 A	3.5 A, RMS, max. 10 A
	Ripple	≤ 200 mV	≤ 200 mV
	Noise	≤ 0.5 % DC to 30 MHz	≤ 0.5 % DC to 30 MHz
Interface Signals	Digital	XY2-100 Protocol	XY2-100 Protocol
Ambient Temperature		+15 to +35 °C	+15 to +35 °C
Storage Temperature		-10 to +60 °C	-10 to +60 °C

(1) Drift per axis. (2) After warming-up, variations of ambient temperature < 1K.

Deflection Unit		SUPERSCAN-SC	SUPERSCAN-LD
Humidity		≤ 80 % non-condensing	≤ 80 % non-condensing
Typical Deflection		±0.393 rad	±0.393 rad
Resolution		12 µrad	12 µrad
Repeatability		20 µrad	20 µrad
Max. Gaindrift ⁽¹⁾		0.005 %/K	0.005 %/K
Max. Offsetdrift ⁽¹⁾		30 µrad/K	30 µrad/K
Long-term Drift ^(1,2)		< 300 µrad over 8 hours	< 200 µrad over 24 hours

● APERTURE DEPENDENT SPECIFICATIONS

Deflection Unit		SUPERSCAN-SC-15	SUPERSCAN-SC-30	SUPERSCAN-LD-30
Mechanical Data:				
Input Aperture (mm)		15.0	30.0	30.0
Beam Displacement (mm)		16.4	35.7	35.7
Max. Immersion Depth for Objectives (mm) ⁽¹⁾		17.5	17.0	17.0
Weight (kg) (without objective)		approx. 2.9	approx. 5.3	approx. 8.4
Dynamic Data:				
Writing Speed (cps) ^(2,3)		> 650	-	-
Positioning Speed (m/s) ⁽²⁾		> 9	> 6	> 6

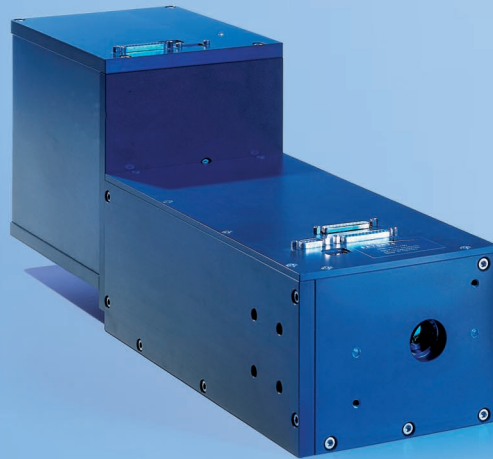
(1) From bearing surface of objective ring, incl. 1 mm safety clearance. (2) Field size 140 mm x 140 mm. (3) Single-stroke font with 1 mm height.

● MIRROR SPECIFICATIONS

Laser	CO ₂
Wavelength (nm)	10,600
Coating	dielectric
Min. Reflectivity @ Wavelength (nm)	99.9 % @ 10,600 60.0 % @ 450 - 650
Flatness @ 10,600 nm	λ/5
Max. Laser Power, cw (W/cm ²)	500
Max. Laser Power, 100 ns Pulse Width (MW/cm ²)	400
Surface Quality (Scratch / Dig)	40 / 20

Mirrors for other wavelengths available on request.

● EXAMPLE CONFIGURATION



3-Axis Laser Beam Subsystems AXIALSCAN B0

● OBJECTIVE INFORMATION FOR SUPERSCAN-SC-15

Laser	CO ₂		
Wavelength (nm)	10,600	10,600	10,600
Objective (f in mm)	f = 100	f = 200	f = 300
Typical Field Size (mm x mm)	70 x 70	140 x 140	210 x 210
Spot Diameter TEM00 (µm)			
Aperture 15 mm	~180	~270	~375
Working Distance (mm) ⁽¹⁾			
Aperture 15 mm	91	193	292

(1) Distance between edge of deflection unit and working surface. This distance is dependent on the objective model and will vary with laser divergence and objective tolerance.

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