high speed scanning in pocket size

SCANLAB's *SCAN*cube series of **scan heads** are characterized by their remarkably compact construction. These **2D scan systems** enable deflecting and positioning of laser beams in the working plane.

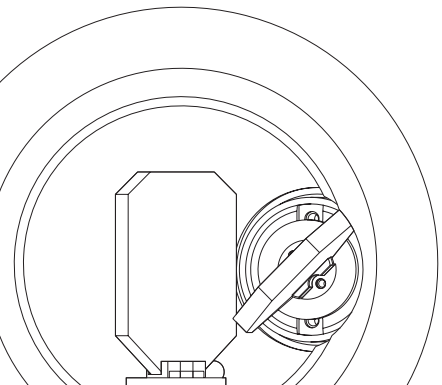
In addition to its robust housing, the SCANcube series offers an attractive price/performance ratio, making it the best choice for your standard applications.

Key Features

- Compact & lightweight design
- Robust, sealed housing
- High dynamic performance
- Large selection of mirror coatings

Typical Applications

- Marking tasks
- Semiconductor-industry materials processing
- Microstructuring
- Processing-on-the-fly



SCANLAB
innovators for industry

Features of the *SCAN*cube und *SCAN*cube III Product Lines

Summary

The *SCAN*cube product line is optimized for the demands of typical marking applications.

*SCAN*cube III scan heads address marking tasks that prioritize faster write speeds and far higher precision, along with long-term stability.

Shared Characteristics

- Full electrical compatibility
- Full mechanical compatibility
- Design optimized for labeling and marking in industrial environments

*SCAN*cube III Performance Enhancements

Boosts in:

- Scan speed: up to 100%
- Dynamic performance: up to 50%

Reductions in:

- Long-term drift: more than 50%
- Temperature drift: more than 40%
- Heat generation: more than 50%

Options & Variants

Extensions

- vario*SCAN*: Extension into a 3-axis scan system
- Camera adapter: Optical process monitoring

Mirrors

- Over 40 standard coatings for various wavelengths
- Maximum average powers up to 250 W for standard systems

Objectives

- Standard range of over 330 objectives available for the SCANcube series from leading manufacturers to achieve various image fields and focal lengths
- Matching mechanical objective mount on scan head, optimized to take occurring back reflections into account
- Objective-specific correction files

Control boards

- RTC4 (PCIe, Ethernet) or RTC5

Software

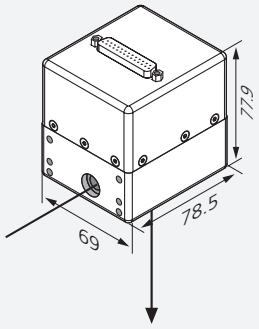
- *SCAN*align: software for automatic and exact placement of laser beams; process integratable high-precision calibration solution
- laserDESK: Professional software for laser marking and laser processing of materials
- correXion pro: System-specific customizing of correction files

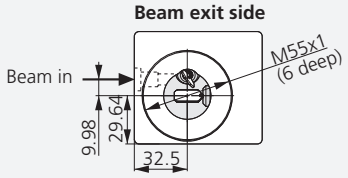
Laser Engraving

Marking

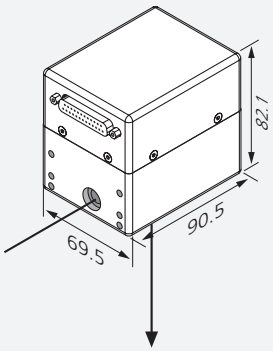
Day & Night Design

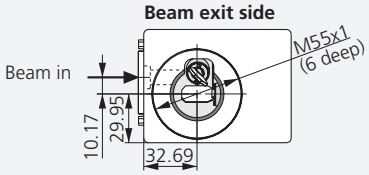
*SCAN*cube 7



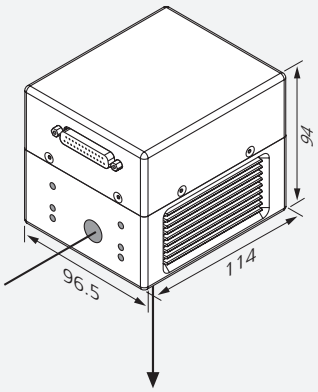


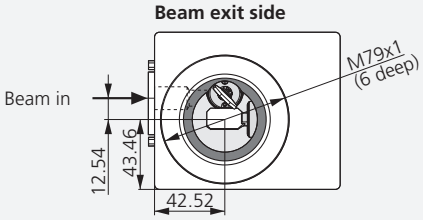
*SCAN*cube 8.5



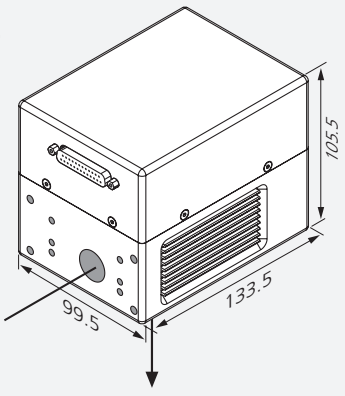


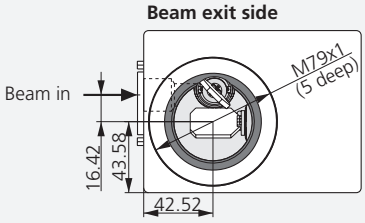
*SCAN*cube 10
*SCAN*cube III 10





*SCAN*cube 14
*SCAN*cube III 14





	*SCAN*cube		*SCAN*cube, *SCAN*cube III	
Aperture	7 mm	8,5 mm	10 mm	14 mm
Beam displacement	9,98 mm	10,17 mm	12,54 mm	16,42 mm
Weight	650 g	1 kg	1,9 kg	2,3 kg

all dimensions in mm

Specifications

Dynamics

	***SCAN*cube 7**	***SCAN*cube 8.5**	***SCAN*cube 10**		***SCAN*cube 14**	
Product line	*SCAN*cube	*SCAN*cube	*SCAN*cube	*SCAN*cube III	*SCAN*cube	*SCAN*cube III
Aperture [mm]	7	8.5	10	10	14	14
Tracking error [ms]	0.14	0.14	0.16	0.12	0.30	0.15
Typical speeds [1]						
Marking speed [m/s]	2.5	2.5	2.0	3.0	1.0	2.0
Positioning speed [m/s]	15.0	15.0	10.0	16.0	7.0	14.0
Writing speed [cps] [2]						
good writing quality [cps]	900	900	640	925	410	740
high writing quality [cps]	600	600	400	700	280	500
Step response time [3]						
1 % of full scale [ms]	0.25	0.30	0.40	0.30	0.65	0.35
10% of full scale [ms]	0.70	0.70	1.2	0.80	1.6	0.90

[1] with F-Theta objective, f = 160 mm
[2] single-stroke characters of 1 mm height
[3] settling to 1/1000 of full scale

Precision & Stability

	***SCAN*cube**	***SCAN*cube III**
Repeatability (RMS) [µrad]	< 2	< 2
Positioning resolution [bit] [4]	16	16
Nonlinearity	< 3.5 mrad / 44°	< 0.9 mrad / 44°
Temperature drift		
Offset [µrad/K]	< 30	< 25
Gain [ppm/K]	< 80	< 25
Long-term drift		
8-h-drift (after 30 min warm-up) [5]	< 0.3 mrad [6]	
Offset [µrad]		< 100
Gain [ppm]		< 100

[4] based on the full angle range (e.g. positioning resolution 11 µrad for angle range ±0,36 rad)
[5] at constant ambient temperature and load
[6] plus temperature-includet Gain and Offset drift

SCANcalc App

Google Play App Store

Common Specifications

	***SCAN*cube Serie**
Optical performance	
Typical scan angle [rad]	±0.35
Gain error [mrad]	< 5
Zero offset [mrad]	< 5
Power requirements	±15 V DC, max. 3 A each
Interface	
digital version	SL2-100 or XY2-100
analog version	±4.8 V
Operating temperature [°C]	25 ± 10

(all angles are in optical degrees)

06/2017 Information is subject to change without notice.
Product photos are non-binding and may show customized features.
Application pictures: iStock.com/JAlcaraz, iStock.com/scanrail, iStock.com/bernie_photo

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