



## high speed scanning in pocket size

SCANcube series combines a robust and compact design with an attractive price/performance ratio. It is the best choice for both standard and demanding laser applications.

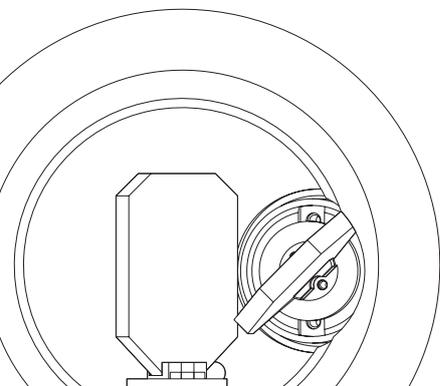
### Key Features

- Compact & lightweight design
- Robust, sealed housing
- High dynamic performance
- Large selection of mirror coatings
- Optional: readback function of actual position, temperature and status values

The latest generation of our versatile scan head series is now also available with readback functions.

### Typical Applications

- Marking tasks
- Semiconductor-industry materials processing
- Microstructuring
- Processing-on-the-fly
- Additive manufacturing (3D printing)



SCANcube



SCANcube III



SCANcube IV



<b>Apertures</b>	7 mm, 10 mm	10 mm, 14 mm	10 mm, 14 mm
<b>Interface</b>	analog, digital	analog, digital	digital
<b>Control</b>	analog	analog	digital
<b>Galvanometer</b>	dynAXIS	dynAXIS 3	dynAXIS 3
<b>Tuning(s)</b>	Fast-Vector	Fast-Vector	Fast-Vector, Sharp-Edge, Line Scan
<b>Readback function</b>	no	no	yes

Note: Comma-separated values imply selection options

## Options

- **Mirrors**  
Different wavelengths and laser powers
- **Objectives and objective holders**  
Several focal lengths and resulting image field sizes
- **Camera adapter**  
Various versions for optical process monitoring
- **Z axes**  
varioSCAN II, excellISHIFT
- **Control boards**  
RTC4, RTC5, RTC6
- **Correction files**  
Objective-specific RTC correction files
- **Laser processing software**  
 laser processing software

## Applications



Marking

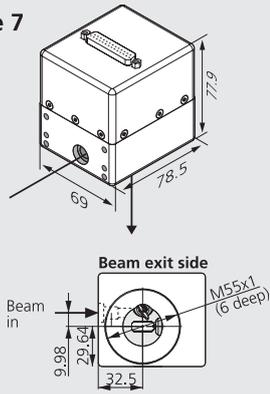


Laser engraving

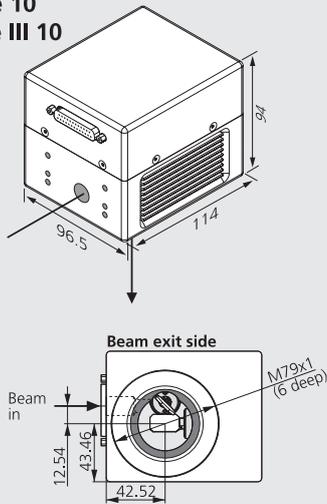


Additive manufacturing (3D printing)

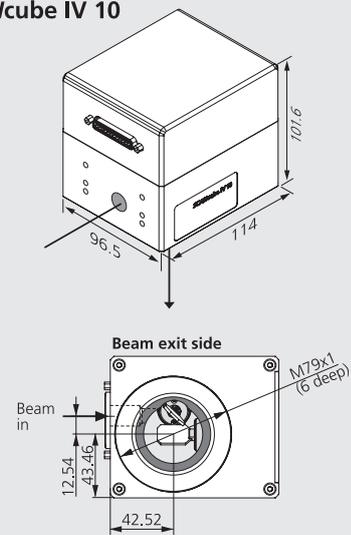
**SCANcube 7**



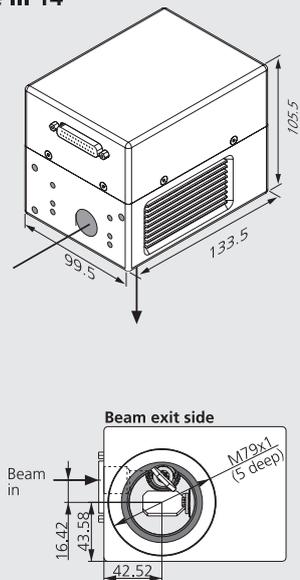
**SCANcube 10**  
**SCANcube III 10**



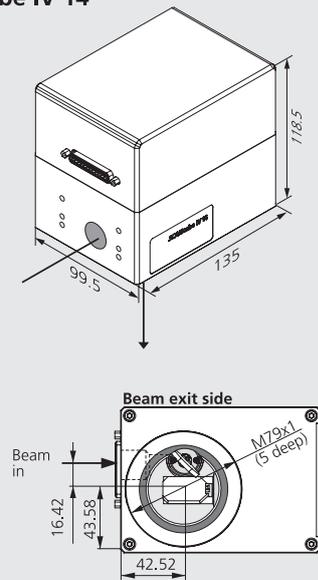
**SCANcube IV 10**



**SCANcube III 14**



**SCANcube IV 14**



all dimensions in mm

	SCANcube	SCANcube, SCANcube III		SCANcube IV	
<b>Aperture</b>	7 mm	10 mm	14 mm	10 mm	14 mm
<b>Beam displacement</b>	9.98 mm	12.54 mm	16.42 mm	12.54 mm	16.42 mm
<b>Weight</b>	650 g	1.9 kg	2.3 kg	2.1 kg	2.7 kg

# Specifications

## Dynamics

	SCANcube	SCANcube	SCANcube III	SCANcube IV <sup>(4)</sup>	SCANcube III	SCANcube IV <sup>(4)</sup>
<b>Aperture [mm]</b>	7	10	10	10	14	14
<b>Tracking error [ms]</b>	0.14	0.16	0.12	0.12	0.15	0.15
<b>Typical speeds <sup>(1)</sup></b>						
Marking speed [m/s]	2.5	2.0	3.0	3.0	2.0	2.5
Positioning speed [m/s]	15.0	10.0	16.0	20.8	14.0	14.4
<b>Writing speed [cps] <sup>(2)</sup></b>						
good writing quality [cps]	900	640	925	950	740	750
high writing quality [cps]	600	400	500	700	500	540
<b>Step response time <sup>(3)</sup></b>						
1 % of full scale [ms]	0.25	0.4	0.3	0.3	0.35	0.35
10% of full scale [ms]	0.7	1.2	0.8	0.8	0.9	1.2

<sup>(1)</sup> with F-Theta objective, f = 160 mm

<sup>(2)</sup> single-stroke characters of 1 mm height

<sup>(3)</sup> settling to 1/1000 of full scale

<sup>(4)</sup> specifications for vector tuning with 30 V power. More tunings on request.

## Precision & Stability

	SCANcube	SCANcube III	SCANcube IV
<b>Repeatability (RMS) [μrad]</b>	< 2	< 2	< 2
<b>Positioning resolution [bit] <sup>(5)</sup></b>	16	16	16
<b>Nonlinearity <sup>(6)</sup></b>	< 3.5 mrad	< 0.9 mrad	< 0.7 mrad
<b>Temperature drift</b>			
Offset [μrad/K]	< 30	< 25	< 20
Gain [ppm/K]	< 80	< 25	< 20
<b>Long-term drift</b>			
<b>8-h-drift (after 30 min warm-up) <sup>(7)</sup></b>	< 0.3 mrad <sup>(8)</sup>		
Offset [μrad]		< 100	< 50
Gain [ppm]		< 100	< 50

<sup>(5)</sup> based on the full angle range (e.g. positioning resolution 11 μrad for angle range ±0,36 rad)

<sup>(6)</sup> related to 0.77 rad

<sup>(7)</sup> at constant ambient temperature and load

<sup>(8)</sup> plus temperature-included Gain and Offset drift

## Common Specifications

	SCANcube SCANcube III	SCANcube IV
<b>Optical performance</b>		
Typical scan angle [rad]	± 0.35	± 0.35
Gain error [mrad]	< 5	< 5
Zero offset [mrad]	< 5	< 5
<b>Power requirements</b>	± 15 V DC, max. 3 A each	24 V DC, 30 V DC, max. 3 A each
<b>Interface</b>		
digital version	SL2-100 or XY2-100	SL2-100 or XY2-100
analog version	± 4.8 V	-
<b>IP protection class</b>	IP 50, IP 66 <sup>(9)</sup>	IP 50, IP 66 <sup>(9)</sup>
<b>Operating temperature [°C]</b>	25 ± 10	25 ± 10

(all angles are in optical degrees)

<sup>(9)</sup> on request

## Counterfeit Protection

We equip all scan systems and RTC control cards with a forgery-proof label that contains the following features:

- holographic elements
- authentication features that are not directly visible
- not removable without residue

The allocation and traceability is secured by individual coding in combination with uniquely assigned serial numbers.



SCANcalc App



Google Play

App Store

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