

NEW: SCANcube IV



SCANcube IV – Smart Scanning

Highlights

The proven SCANcube product family has received a facelift and offers an extended performance spectrum with the new SCANcube IV scan head.

Compared to the SCANcube III, the system's linearity has been improved by 30 percent. This facilitates calibration and enables more precise processing results, especially in applications with high scanning speeds. Furthermore, application-specific tunings are now available for the SCANcube IV.

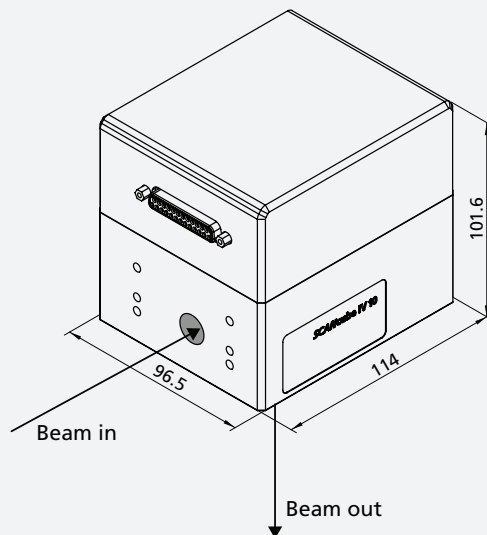
The SCANcube IV is the first representative of the SCANcube series to offer optional read-back functions. In combination with a RTC control board, additional functions for monitoring and system diagnostics are now available.

'Form follows function': The new, appealing housing design makes a decisive contribution to improved thermal management of the entire scan system.

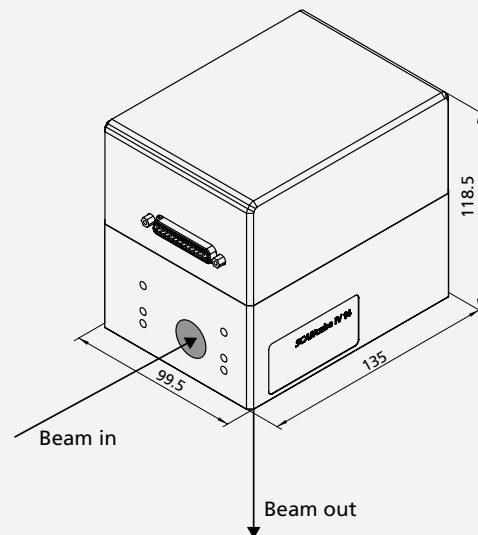
Key Features

- Application-specific tunings with high scan dynamics
- A 30% improvement in linearity compared to the SCANcube III series
- New housing design featuring an optimized thermal management
- Optional feedback functionality for position, temperature, and status signals

SCANcube IV 10



SCANcube IV 14

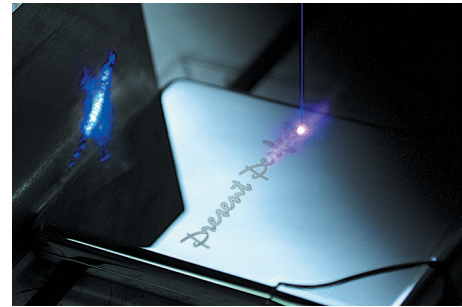


all dimensions in mm

Marking, Bitmaps



Engraving



The new *SCANcube IV* scanning systems offer

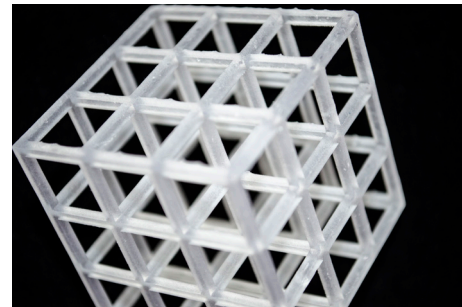
- **10 mm and 14 mm apertures** at product launch,
- **variants for high laser power,**
- **optional read-back functions**, previously only offered in the *intelliSCAN* product family,
- and feature **three different tuning variants** to meet the requirements of the respective applications.

- **Sharp edge tunings** with minimal tracking error for cleaning applications and hatching tasks
- **Vector tunings** with optimized dynamic performance for marking & labeling tasks
- **Line scan tunings** with high positioning speeds for bitmap applications

Laser Cleaning



Additive Manufacturing, Stereolithography



Preliminary Specifications

Dynamics

	SCANcube IV 10		SCANcube IV 14
Tuning	Sharp Edge (Si)	Vector (Si)	Vector (Si)
Tracking Error [ms]	0.07	0.12	0.15
Speed ⁽¹⁾			
Positioning speed [m/s]	6.4	20.8	14.4
Marking speed [m/s]	6	4.5	3.5
Writing speed ⁽²⁾			
Good writing quality [cps]	1150	950	750
Step Response Time ⁽³⁾			
1% of full scale [ms]		0.3	0.35
Mechanics			
Dimensions (L x W x H) [mm ³]	114 x 96.5 x 101.6		135 x 99.5 x 118.5
Beam displacement [mm]	12.54		16.42

⁽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

Repeatability (RMS) [μrad]	< 2
Positioning Resolution [Bit] ⁽⁴⁾	16
Nonlinearity	< 0.7 mrad/44 °
Temperature Drift	
Offset [μrad/K]	< 25
Gain [ppm/K]	< 25
Long-Term Drift	
Over 8 hours (after 30 min. warm-up) ⁽⁵⁾	
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

System Extensions

- Control boards: RTC4, RTC5, RTC6
- Z-Axis: varioSCAN (II)
- Laser marking software laserDESK

Common Specifications

Optical Performance	
Typical scan angle [rad]	±0.35
Gain error [mrad]	< 5
Zero offset [mrad]	< 5
Power Requirements	30 V, 3 A
Digital Interface	SL2-100 or XY2-100

(all angles are in optical degrees)

02/2021 Information is subject to change without notice.
Product photos are non-binding and may show customized features.
Application photos: Marking: istockphoto.com; Engraving: nwl-laser.de;
Laser Cleaning: cleanlaser.de; Stereolithography: istockphoto.com