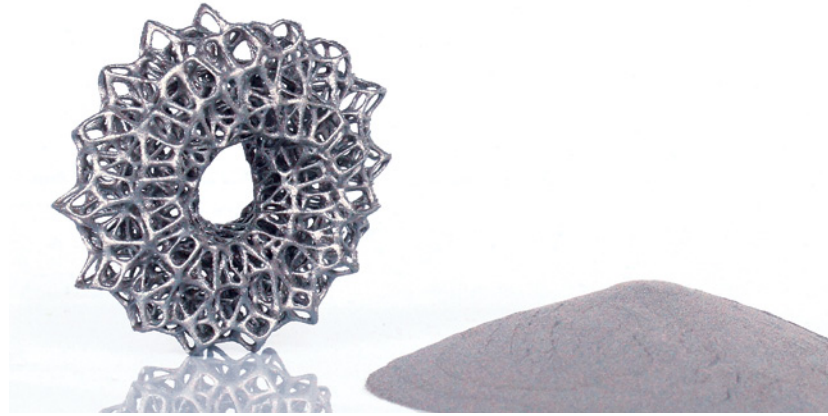


## intelliSCAN<sub>se</sub> 20, intelliSCAN<sub>se</sub> 30 Scan Heads

intelliSCAN<sub>se</sub> series now also available with large apertures, thanks to dynAXIS<sub>se</sub> L digital encoders

# Digital Encoder Scanners With Highest Performance



## Proven Digital Encoder Technology

All **intelliSCAN<sub>se</sub>** scan heads are equipped with digital **se**-encoders to deliver the best dynamics with highest resolution, low dither and lower drift.

System advantages based on **se**-encoder technology:

- Superlative precision – ideal for additive manufacturing and micro-structuring applications.
- The **dynAXIS<sub>se</sub>** galvanometer scanners' high dynamics enables maximized throughput and productivity.
- Very high long-term stability and linearity ensure ultimate process precision even under changing environmental or production conditions. Perfectly suitable for additive manufacturing methods.
- Proven reliability of the **intelliSCAN** series, and impressive versatility through a large scope of available tunings, cooling options, mechanics and add-ons – also optimally combinable with **varioSCAN**.
- Drop-in-replacement for **intelliSCAN** scan heads, thanks to identical interfaces – with a better price/performance ratio compared to **intelliSCAN<sub>de</sub>**.

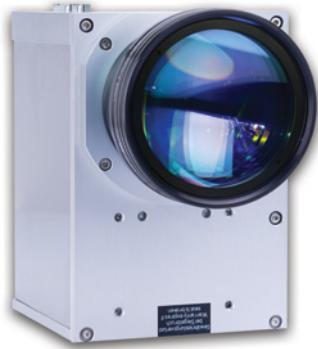
## High-End **se**-Systems with Large Apertures

The new high-performance **intelliSCAN<sub>se</sub> 20** and **intelliSCAN<sub>se</sub> 30** scan heads are the first products to feature SCANLAB-developed **dynAXIS<sub>se</sub>L** galvanometers with patented, ultra-low-inertia **se** digital encoders.

These recently introduced systems with large apertures (20 mm and 30 mm) now extend the application coverage of **intelliSCAN<sub>se</sub>** scan heads for situations requiring high power compatibility, smaller spots or larger working volumes.

## Typical Applications

- Additive manufacturing
- Micro-cutting
- Micro-drilling
- Micro-welding



## intelliSCAN<sub>se</sub> 20 and 30

Aperture	20 mm	30 mm
<b>Dynamics</b> <sup>(1)</sup>		
Tracking error	0.32 ms	0.55 ms
<b>Typical speeds</b> <sup>(1), (2)</sup>		
Marking speed	1.0 m/s	0.7 m/s
Positioning speed	11.0 m/s	9.0 m/s
Writing speed		
good quality	340 cps	220 cps
high quality	230 cps	150 cps

<sup>(1)</sup> with Fast Vector Tuning; other Tunings on request

<sup>(2)</sup> with F-Theta objective, f = 160 mm

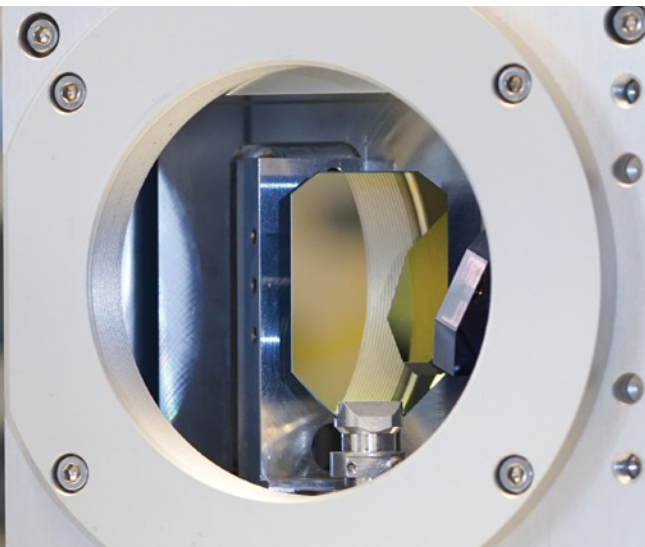
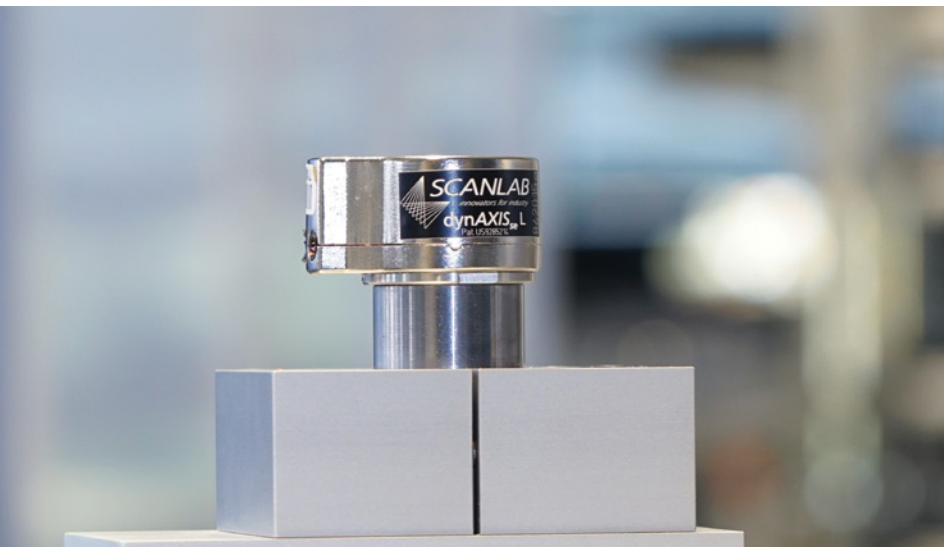
## Common specifications

Precision	
Repeatability (RMS)	< 0.4 $\mu$ rad
Positioning resolution <sup>(3)</sup>	20 bit
Nonlinearity	< 0.5 mrad/44°
Dither (position noise, RMS)	< 1.6 $\mu$ rad
Drift	
Temperature drift	
Offset	< 25 $\mu$ rad/K
Gain	< 10 ppm/K
24h Long-term drift (after 3 h warm-up)	
Offset	< 20 $\mu$ rad
Gain	< 25 ppm

(all angles are in optical degrees)

<sup>(3)</sup> based on the full angle range (e.g. positioning resolution 2.8  $\mu$ rad for angle range  $\pm 0,36$  rad), resolutions better than 16 bit (11  $\mu$ rad) only together with SL2-100 interface

<sup>(4)</sup> drift per axis; at constant ambient temperature and load; achievable even under varying load when equipped with temperature-controlled water cooling



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