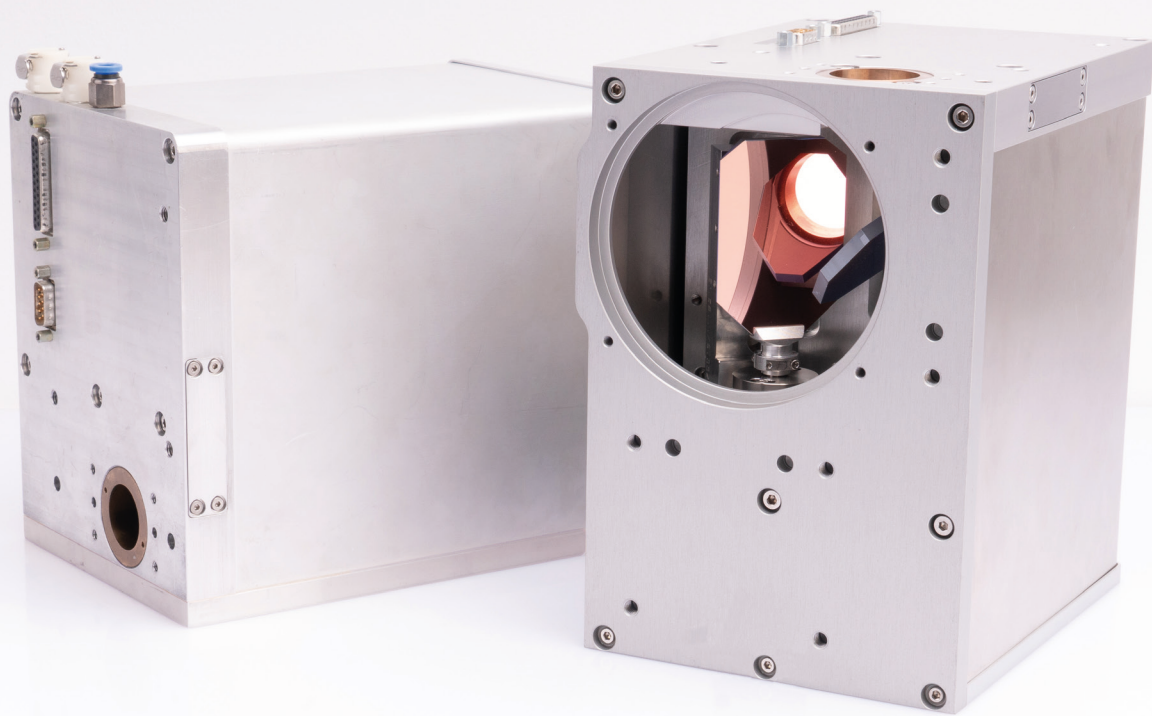




hurrySCAN

Optics

Scan mirrors and objectives with optimized mounts are available for all typical laser types and working fields.

Cooling

The hurrySCAN 20 and 30 scan heads provide water-cooling connections for the entrance aperture, electronics and galvanometer scanners, along with air-cooling of the deflection mirrors. This ensures constant working conditions and excellent long-term stability, thus guaranteeing reliable operation even in high-laser-power applications.

Options

- varioSCAN II: upgrade to a 3-axis scan system
- Available as a scan module without housing (except hurrySCAN 30)
- Water and air cooling (standard for hurrySCAN20 and 30)
- Camera adapter for optical process monitoring

Control

All scan heads of these series are equipped with either analog or digital standard interfaces and are easily controlled via SCANLAB's RTC control boards.

Attachment Provisions

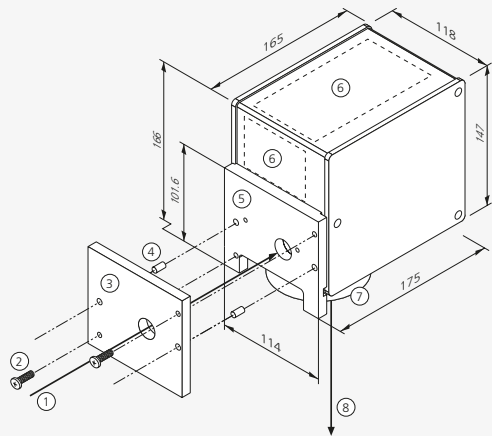
Threaded and non-threaded holes at the housing's beam entrance side of hurrySCAN 20 and 30 facilitate mounting of the scan head and installation of fiber optic outputs.

On the beam exit side, threaded holes are available for attaching add-on components such as cross jets, illumination, distance sensors or thermal shields.

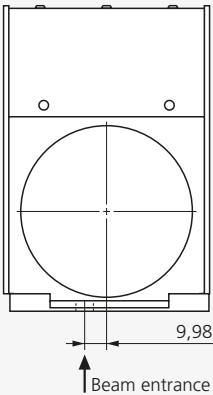
Quality

The high quality of SCANLAB's scan heads is the result of years of experience in the development and manufacture of galvanometer scanners and scan systems. In addition, every scan system must first pass the SCANcheck burn-in test before it is released for shipment to the customer.

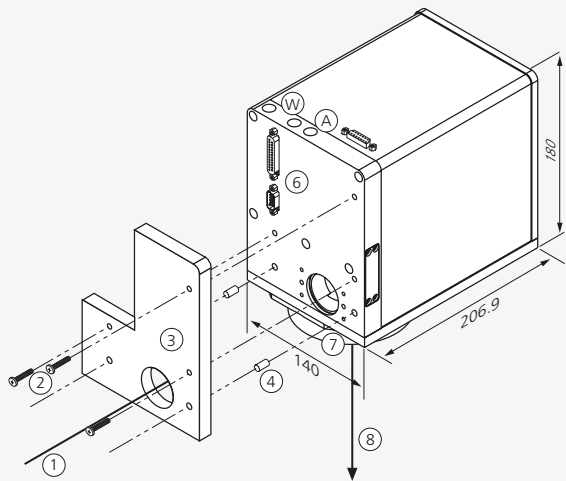
hurrySCAN II 7



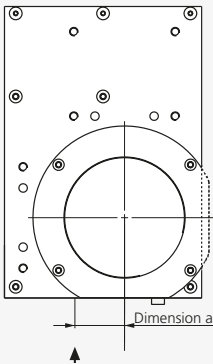
Beam exit side
with beam displacement



hurrySCAN 20
hurrySCAN 30



Beam exit side
with beam displacement



Legend

- | | |
|--|---------------------------------|
| 1 Beam entrance | 6 Electrical connections |
| 2 Mounting screws (M6 threads) ^(*) | 7 Objective |
| 3 Flange ^(*) | 8 Beam exit |
| 4 Alignment pins (6 _{h6}) ^(*) | A Connection for cooling air |
| 5 Scan head mounting bracket | W Connections for cooling water |

^(*) not included

Dimensions	hurrySCAN 20	hurrySCAN 30
Aperture	20 mm	30 mm
Beam displacement (Dimension a)	25.25 mm	35.53 mm

all dimensions in mm

Technical Specifications

Type-Dependent Specifications	hurrySCANII	hurrySCAN	
Aperture [mm]	7	20	30
Tracking error [ms]	0.11	0.35	0.55
Step response time ⁽¹⁾			
1 % of full scale [ms]	0.23	0.80	1.20
10% of full scale [ms]	-	2.50	4.50
Typical speeds ⁽²⁾			
Marking speed [m/s]	3.5	1.0	0.7
Positioning speed [m/s]	15.0	6.0	3.0
Writing speed			
Good writing quality [cps]	1100	320	220
High writing quality [cps]	800	210	150
Long-term drift (8-h-drift) [mrad]	< 0.3 ⁽³⁾	< 0.6 ⁽⁴⁾	< 0.6 ⁽⁴⁾
Weight [kg] (without objective)	approx. 3 ⁽⁵⁾	approx. 5.8	approx. 5.8

(all angles are in optical degrees)

⁽¹⁾ settling to 1/1000 of full scale
⁽²⁾ with F-Theta objective, f = 160 mm respectively f = 163 mm (hurrySCAN 20 und 30)
⁽³⁾ at constant ambient conditions, plus offset drift < 30 µrad/K and gain drift < 100 ppm/K
⁽⁴⁾ after warm-up
⁽⁵⁾ with optional water cooling up to 4.7 kg

Common Specifications

Repeatability (RMS) [µrad]	< 2
Positioning resolution [bit]	18 ⁽⁶⁾
Optical performance	
Typical scan angle [rad]	±0,35
Gain error [mrad]	< 5
Zero offset [mrad]	< 5
Orthogonality error [mrad]	< 1,5
Nonlinearity [mrad]	< 3.5 ⁽⁷⁾
Power requirements	±(15+1.5) V DC, max. 3 A (max. 6 A for hurrySCAN20 and 30)
Input signals	
Digital version	SL2-100 or XY2-100
Analog version	±4.8 V;
Operating temperature [°C]	25 °C ± 10 °C
Cooling options	water cooling, air cooling

(all angles are in optical degrees)

⁽⁶⁾ based on the full angle range (e.g. positioning resolution 2.8 µrad for angle range ±0.36 rad), resolutions better than 16 bit (11 µrad) only together with SL2-100 interface
⁽⁷⁾ related to 0.77 rad