TWIN SQUIRREL

compact scan head series

The ARGES scan head product line is available with a variety of apertures, mirror coatings and f-theta lenses as complete scan solution for industrial system manufacturers and integrators.

The electronic design in state of the art surface mount technology maximizes thermal stability, static and dynamic optical performance in robust housings.

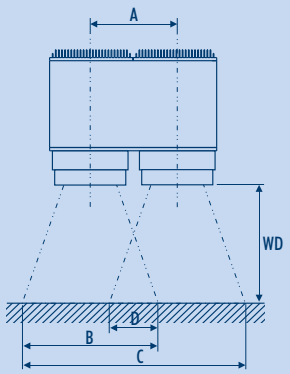
The compact scan head series can be purchased with various interfaces: standard analog inputs, standard XY2-100 protocol but with up to 4 axes simultaneously or the ARGES proprietary interface implementing new features and Plug&Play operation.

The new ARGES scan heads are putting class leading performance into a series of functional designed and ultra compact housings.

The TWIN SQUIRREL is an unique solution to extend the flexibility of your laser system. Two scan heads in one housing either double the processing performance by parallel operation or significantly extend the scan field using individual data for each head.

The TWIN SQUIRREL is available with a distance of 95mm or 115mm between the optical output axes.

Past options like the high performance and the ultra low drift unit are standard now.



f	WD @ 1064nm	scan field A	scan field B	scan field C	overlap D
163	190	115	120	235	5
254	299	115	180	295	65
100	118	95	79	165	–
160	189	95	120	215	25

dimensions in mm

Examples of scan field overlap

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TWIN SQUIRREL

specifications

aperture [mm]	6	11	16
step response time 1% of full scale [ms]	0.19	0.30	0.42
10% of full scale [ms]	0.27	0.49	0.71
100% of full scale [ms]	2.16	4.80	8.40
typical tracking error [ms]	0.12	0.22	0.30
repeatability [µrad]	<20		
long term offset drift [mrad] (const. ambient and operating conditions over 8 hours)	<0.3		
typical scan angle [rad]	0.87		
gain drift [ppm/K]	20		
offset drift [µrad/K]	30		
skew [mrad]	<1.2		
linearity [%]	>99.9		
operating temperature range [°C] (non-condensing conditions)	10 to 40		
approx. weight (lens excluded) [kg]	5.8		
power supply voltage DC [V]	± 24 (± 13.5 to 28)		
standby power consumption [W]	<24		
max. average current per axis [A]	2		

(all angles in optical degrees)

options (and additional approximate weight)

thermal stabilization (25 g)
on request each side of TWIN SQUIRREL can be ordered for different wavelengths

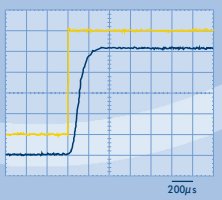
interfaces (for more information see data sheet INTERFACES)

digital	16 bit unidirectional	standard XY2-100 protocol – and – SPDIF protocol
	16 bit bidirectional	
	20 bit unidirectional	
	20 bit bidirectional	
analog	in	0 to 20 mA, 500 Ω, uni- or bipolar – or – 2.5, 5, 10 V or customer specified, uni- or bipolar
	out	actual position or posack signal, digital status signals

mirror coatings (for more information see data sheet MIRRORS AND COATINGS)

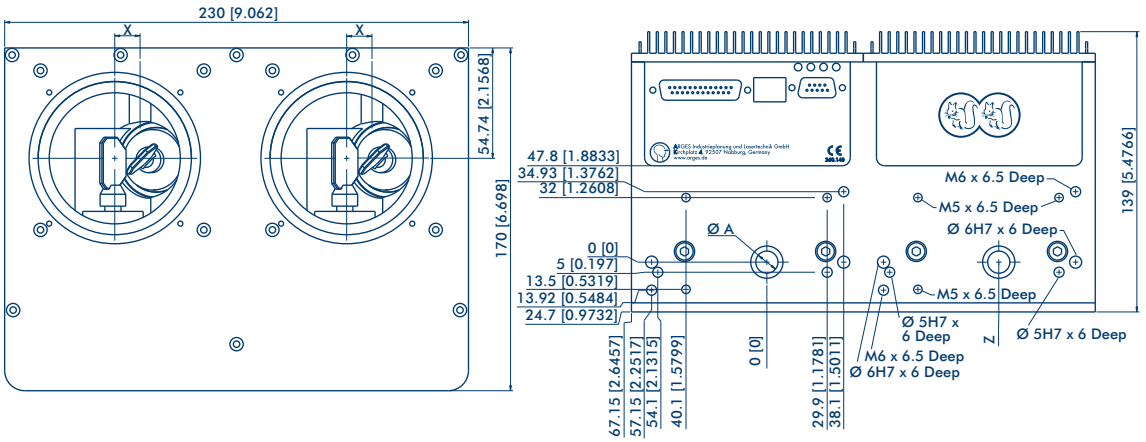
CO_2 10600 nm, dielectric or enhanced Au on silicon substrate	
Nd:YAG 1064/630-670, 1064/532/355, 532, 532 (high power), 355, 266 nm, all Nd:YAG coatings are ion plated	
Excimer 308, 248, 193 nm	ultra short pulse 800 nm
Diode 808/940/980 (ultra high power), 808 (high power) nm	
VIS 400-1200 nm, enhanced Al coating	
other coatings on request	

typical step response time at small signal and 11 mm aperture



mechanical dimensions in mm [inches]

aperture Ø A [mm]	6	11	16
beam displacement X [mm]	6.8	12.6	18.4
distance between optical output axes Z [mm]	95 or 115	95 or 115	115



performance in combination with typical f-theta lenses

aperture 11 mm	Nd:YAG	Nd:YAG	Nd:YAG	Nd:YAG 2nd	Nd:YAG 3rd	CO_2	CO_2	CO_2
wavelength [nm]	1064	1064	1064	532	355	10600	10600	10600
focal length [mm]	100	160/163	254	160	254	100	200	300
maximum field size [mm]	70×70	120×120	180×180	120×120	120×120	70×70	140×140	210×210
spot size TEM00 [µm]	~26	~42	~65	~21	~22	~160	~310	~460
working distance [mm]	118	189	299	188	261	127	262	371
power capability, cw [W/cm²]	750	750	750	500	500	150	150	150
power capability, 10 ns pulsed [MW/cm²]	120	120	120	100	80	500	500	500
protection glass	yes	yes	yes	yes	yes	no	no	no