

2-Circle Goniometer 415/415A*

The system 415 is a combination of two 1-Circle Goniometers 410 or 410A*. Both circular motions are independent of each other.

The upper circle is equipped with a 2-Theta arm with a prism guide and carriage.

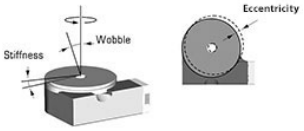
A further prism guide with carriage is mounted on the side of the housing of the upper circle.

- four precision configurations
- two load configurations

Application specific versions:

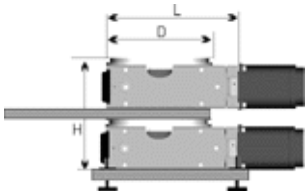
- vacuum suitable
- antimagnetic
- radiation resistant
- in black

Precision configurations:



	X1	X2	X3	XE
Accuracy ["]:	<=40	30	15	on request
Repeatability (unidir.) ["]:	<=4	2	2	on request
Reversal error ["]:	<=20	10	7	on request
Eccentricity [µm]:	<=5	3	2	2
Wobble ["]:	<=8	4	3	3

Dimensions [mm]:



D:	L:	H:
138	171	168

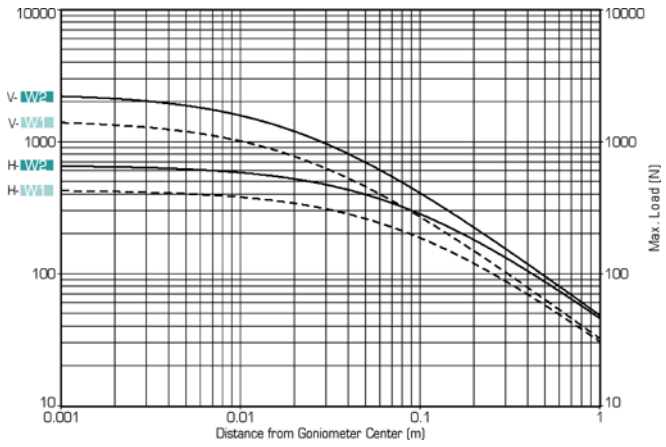
Accessories:

Motors:	2-/3-/5-Ph.
	Servo/DC
Hand wheels:	0056
Gear boxes:	2056.05
	2056.10
	2056.20
Limit switches:	included
Zero-point control:	9100
Encoder XE :	incremental
	absolute
Control system:	9300
Goniometer head mounting:	1412, 1413
Arms:	analyser, counter weight
Counter weight:	optional
Base plate:	423.12 included

Maximum load Theta circle (vertical goniometer axis):

Max. load [N] W1 :	1450
Max. load [N] W2 :	2300

Maximum load 2-Theta circle:



- vertical goniometer axis (V- W1 , V- W2)
- horizontal goniometer axis (H- W1 , H- W2)
- The maximum load on the 2-Theta arm is depending on the

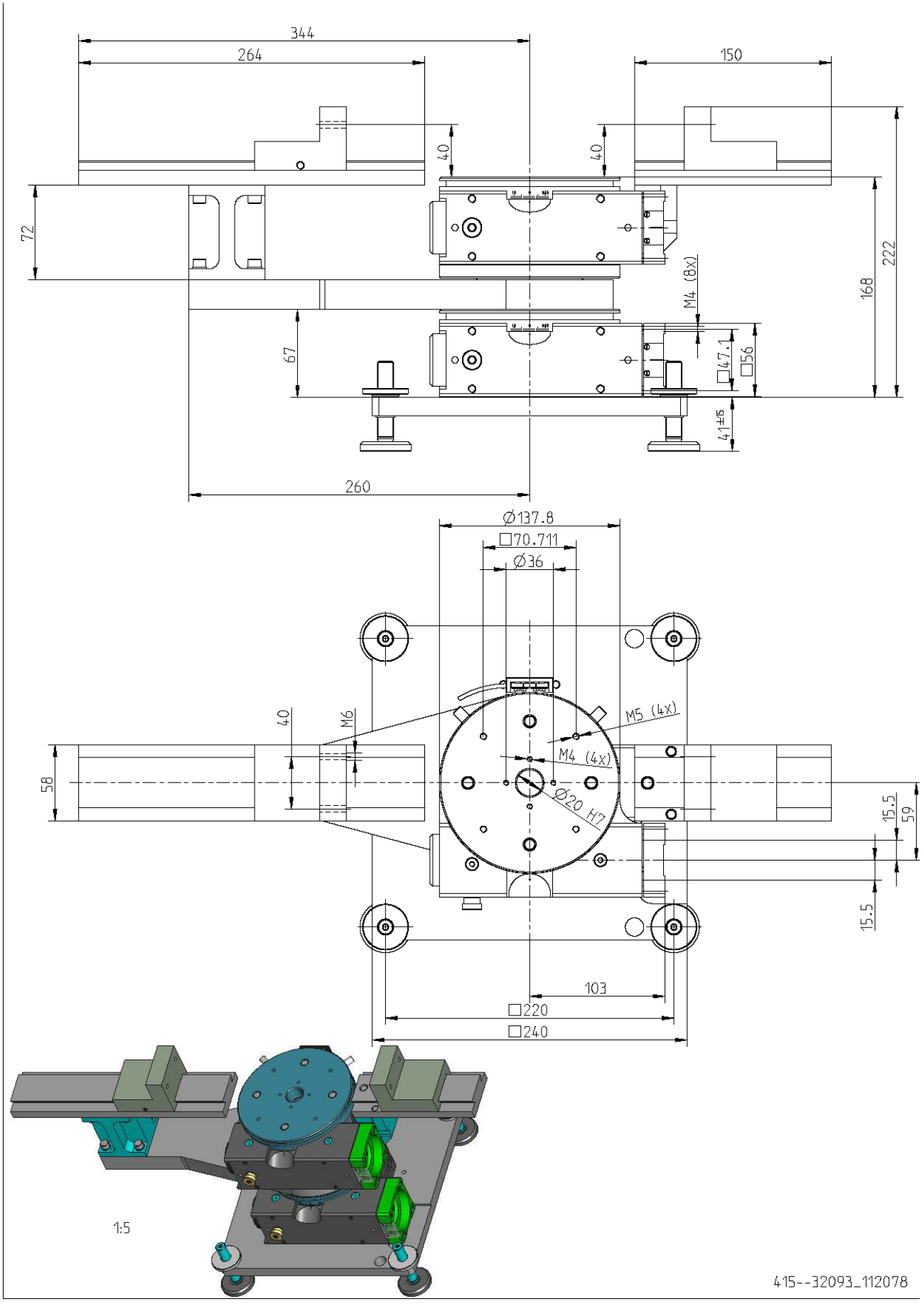
distance (momentum).

Specifications:

Travel range [°]:	360
Material (housing/worm gear):	Aluminium/Bronze
Gear ratio:	360:1 / 180:1*
Resolution [°]:	0.001/0.002* **
	0.00005 / 0.0001* minimum (with gear ratio 20:1)
Min. drive torque [Nm]:	0.10 / 0.13*
Weight [kg]:	13
Flange size [mm]:	56

* values concerning 2-Circle Goniometer 415A

** step motor, 1000 steps/revolution


344
264
150
40
40
72
222
168
M4 (8x)
67
□47.1
□56
41±5
260
Ø137.8
□70.711
Ø36
40
M6
M5 (4x)
M4 (4x)
Ø20 H7
58
15.5
59
15.5
103
□220
□240
1:5
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