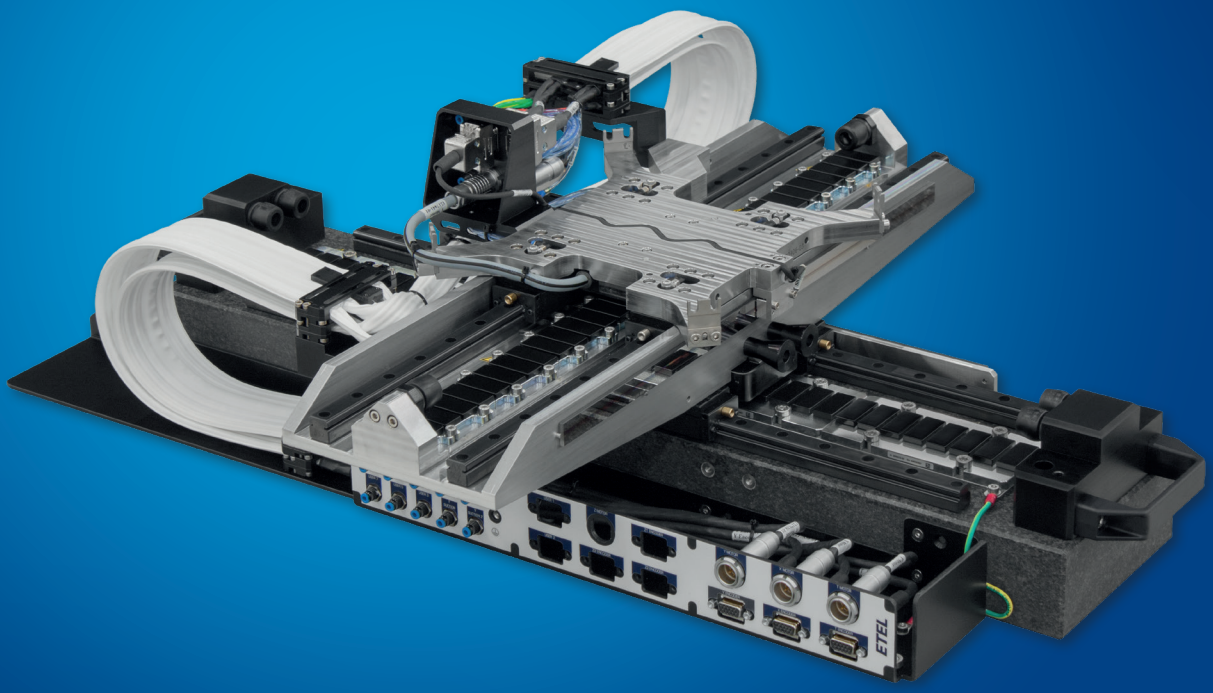

XY STACKED SYSTEM

ASME-NNNN-02-0365-0355xx

CHARON2 XY with AccurET Modular

Data sheet

Version 1.4

ETEL

AXIS DESIGNATION			
Number of controlled axes		2	
Axes name		X (bottom axis)	Y (top axis)
Thrust transmitter: DD (direct drive) or ID (indirect drive)		DD	DD

TESTING CONDITIONS	UNIT		
Position controller	-	Modular 300 7/15 Arms	Modular 300 7/15 Arms
Motion controller	-	UltimET	
Rated payload	kg	5	
Rated input voltage	VDC	96	96
Tool point position	mm	247 mm above bottom surface	
Ambient temperature	°C	22 ±1	
Isolation system	-	QuiET	

DIMENSIONAL DATA	UNIT		
Stage width	mm	698	
Stage length	mm	835	
Stage height	mm	219	
Total stroke	mm	365	355
Moving mass (without payload)	kg	16.8	4.6
Total mass (without payload)	kg	42.3	

FORCE CAPABILITIES (1)	UNIT		
Peak force	N	332	254
Continuous force	N	123	74.3
Standstill force	N	92.9	56.1
Max. detent force (average to peak)	N	7.1	7.9
Static friction (maximal value)	N	22	22
Dynamic friction (maximal value)	N/(m/s)	22	22

LOAD CAPACITIES	UNIT	
Maximum payload	kg	30

DYNAMIC PERFORMANCE	UNIT		
Duty cycle	%	25	25
Maximum speed	m/s	1	1
Maximum acceleration	m/s^2	10	10
Typical position stability at 2kHz	nm	±10	±10

ACCURACY	UNIT		
Positioning accuracy (without mapping)	µm	±20	
Positioning accuracy (with mapping)	µm	±1	
Bidirectional repeatability	µm	±0.4	
Horizontal straightness / radial runout	µm	±3	±3.5
Vertical straightness	µm	±2.5	±5
Orthogonality	arcsec	±15	
Roll	arcsec	±5	±10
Pitch	arcsec	±5	±15
Yaw	arcsec	±10	±10

WORKING ENVIRONMENT	
Clean room compatibility (2)	ISO 2

ELECTRICAL SPECIFICATIONS (1)		UNIT	X (bottom axis)	Y (top axis)
	Motor type	-	Ironcore	Ironcore
	Motor model	-	LMG10-030-3QB-H01	LMG05-030-3RA-H01
	Number of phases	-	3	3
Kt	Force constant	N/Arms	26.6	24.6
Ku	Back EMF constant (3)	Vrms/(m/s)	16.2	14.9
Km	Motor constant	Nm/√W	16.8	13.2
R20	Electrical resistance at 20 °C (3)	Ohm	1.68	2.31
L1	Electrical inductance (3)	mH	9.05	10.8
Ip	Peak current	Arms	15.0	15.0
Ic	Continuous current	Arms	4.79	3.13
Is	Standstill current	Arms	3.62	1.71
vs	Standstill speed	mm/s	0.22	0.20
Um	Max. input voltage	VDC	300	300
Pc	Max. cont. power dissipation	W	77.6	48.5
2τp	Magnetic period	mm	32	32

ENCODER CHARACTERISTICS	UNIT		
Encoder and signal type	-	Optical - incremental	Optical - incremental
Output signal	-	1 Vpp	1 Vpp
Signal period or line count	µm	4	4
Reference mark	-	One	One
Power supply	V	5	5

TYPICAL MOVE AND SETTLE TIMES	UNIT	
Move 1: 10 µm within ±100 nm window	ms	50
Move 2: 25 mm within ±100 nm window	ms	170
Move 3: 80 mm within ±100 nm window	ms	250

GUIDING ELEMENTS		
Type	Ball bearing	Ball bearing

MATERIAL AND FINISH		
Baseplate	Granite	Aluminum & Silicon alloy
Carriage	Aluminum & Silicon alloy	Stainless steel

According to the Machinery Directive 2006/42/EC, the system presently described falls into the "partly completed machinery" category and fully complies with it as long as the system is operated according to the working conditions described in the corresponding manual. Customer is responsible for setting safeties/limitations that will keep the motor in its safe operating area. ETEL cannot be held responsible if the system is used in an improper way.

Notes: The specifications given may be mutually exclusive. Unless stated otherwise, all measurements are made within the testing conditions.
(1) Tolerances on electrical parameters are available on request.
(2) Under laminar flow conditions at 0.25 m/s along Y axis. Measured at 230 mm from the bottom surface of the stage. Contact ETEL for more details.
(3) Terminal to terminal.