



CHARON2 XY with AccurET Modular

Data Sheet



HIGH PRECISION POSITIONING STAGE

TESTING CONDITIONS TESTING CONDITIONS Obtain controller Accuracy Position controller Action controller Action controller Action controller Action controller Action controller Action controller Accuracy Ac	bottom axis) DD ar 300 7/15 Arms UltimE 5 96 247 mm above bo 22 ±1 QuiET 698 835 219 365 16.8 42.3	96 Ittom surface
Position controller Motion controller Rated payload Rated input voltage Tool point position Ambient temperature Isolation system DIMENSIONAL DATA Stage width Stage length Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) DYNAMIC PERFORMANCE Maximum payload DYNAMIC PERFORMANCE Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) MDC MDC MDC MAX MAX MAX MAX MAX MAX MAX MA	17 300 7/15 Arms UltimE 5 96 247 mm above bo 22 ±1 QuiET 698 835 219 365 16.8	Modular 300 7/15 Arms T 96
Position controller Motion controller Rated payload Rated input voltage Tool point position Ambient temperature Isolation system DIMENSIONAL DATA Stage width Stage length Stage length Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Max. detent force (average to peak) Dynamic friction (maximal value) Dynamic friction (maximal value) DYNAMIC PERFORMANCE Maximum payload DYNAMIC PERFORMANCE Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) MCCURACY Positioning accuracy (without mapping) MCCURACY VINIT Maximum Ambient Maximum acceleration Mod Maximum acceleration Mod Maximum acceleration Mod Maximum acceleration Mod Mod Mod Maximum acceleration Mod	UltimE 5 96 247 mm above bo 22 ±1 QuiET 698 835 219 365 16.8	T 96 strom surface
Position controller Motion controller Rated payload Rated input voltage Tool point position Ambient temperature solation system DIMENSIONAL DATA Stage width Stage length Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) DYNAMIC PERFORMANCE Maximum payload DYNAMIC PERFORMANCE Maximum speed Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) MDC MDC MDC MDC Mod Ag WDC WDC WDIT WNIT WMA WAG WAG WAG WAG WAG WAG WAG	UltimE 5 96 247 mm above bo 22 ±1 QuiET 698 835 219 365 16.8	T 96 strom surface
Motion controller Rated payload	UltimE 5 96 247 mm above bo 22 ±1 QuiET 698 835 219 365 16.8	T 96 strom surface
Rated payload Rated input voltage Tool point position Ambient temperature Rotage width Stage width Stage length Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) Dynamic friction (maximal value) Dynamic payload DYNAMIC PERFORMANCE Duty cycle Maximum payload Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) Maximum payload Reg VDC Mmm Mm AUNIT N UNIT N UNIT N UNIT N UNIT VMM VM(m/s) VM(m/s) VM VM VM VM VM VM VM VM VM V	5 96 247 mm above bo 22 ±1 QuiE1 698 835 219 365 16.8	96 Ittom surface
Rated input voltage Tool point position Ambient temperature Stage width Stage length Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) DYNAMIC PERFORMANCE Duty cycle Maximum payload Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) DINIT Maximum payload ACCURACY Positioning accuracy (without mapping) DINIT Maximum maximu	96 247 mm above bo 22 ±1 QuiE1 698 835 219 365 16.8	ttom surface
Tool point position Ambient temperature Isolation system DIMENSIONAL DATA Stage width Stage length Stage length Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) Dynamic friction (maximal value) DYNAMIC PERFORMANCE Duty cycle Maximum payload Maximum speed Maximum speed Maximum sceleration Typical position stability at 2kHz MCCURACY Positioning accuracy (without mapping) MINIT ACCURACY Positioning accuracy (without mapping) MINIT MINI	247 mm above bo 22 ±1 QuiE1 698 835 219 365 16.8	ttom surface
Ambient temperature solation system DIMENSIONAL DATA Stage width Stage length Stage height Total stroke Moving mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Wax. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) DYNAMIC PERFORMANCE DYNAMIC PERFORMANCE DUNIT DUNIT DYNAMIC PERFORMANCE DUNIT DUNIT DUNIT DYNAMIC PERFORMANCE DYNAMIC POSITION STABILITY AND S	22 ±1 QuiET 698 835 219 365 16.8	
DIMENSIONAL DATA Stage width Stage length Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES DYNAMIC PERFORMANCE Maximum payload DYNAMIC PERFORMANCE Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) LUNIT ACCURACY Positioning accuracy (without mapping)	QuiE1 698 835 219 365 16.8	
DIMENSIONAL DATA Stage width Stage length Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz Positioning accuracy (without mapping) Positioning accuracy (without mapping) Imm UNIT UNIT UNIT VACCURACY Positioning accuracy (without mapping) Prositioning accuracy (without mapping)	698 835 219 365 16.8	
Stage length Stage length Stage length Foral stroke Moving mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Outy cycle Maximum speed Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) Imm Imm Imm Imm Imm Imm Imm Imm Imm	835 219 365 16.8	
Stage length mm Stage length mm Fotal stroke mm Moving mass (without payload) kg FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) N/(m/s) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Outy cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) Imm Imm Imm Imm Imm Imm Imm Imm Imm	835 219 365 16.8	
Stage length Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Maximum speed Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) mm mm mm mm mm mm Maximum mm Maximum mm Maximum Maxim	835 219 365 16.8	
Stage height Total stroke Moving mass (without payload) Total mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Maximum speed Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) Maximum mass (without payload) Maximum mmm Mmm mmm mm mm mm mm mm mm mm mm mm	219 365 16.8	
Total stroke Moving mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload Maximum payload Maximum speed Maximum speed Maximum sceleration Typical position stability at 2kHz Positioning accuracy (without mapping) Minus Maximum payload Maximum payload Maximum payload Maximum acceleration Typical position stability at 2kHz Maximum payload Maximum	365 16.8	
Moving mass (without payload) FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz Mount of the control of th	16.8	
FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload LOAD CAPACITIES DYNAMIC PERFORMANCE Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) LUNIT UNIT Wasimum by accuracy (without mapping) LOAD CAPACITIES Which is a company to the properties of the propert		355
FORCE CAPABILITIES (1) Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload LOAD CAPACITIES DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) UNIT UNIT WINIT UNIT UNIT Which is the stability of the stability at 2kHz UNIT UNIT UNIT Which is the stability at 2kHz UNIT UNIT ACCURACY UNIT Positioning accuracy (without mapping)	42.3	4.6
Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) N N N N N N N N N N N N N N N N N N		
Peak force Continuous force Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) N N N N N N N N N N N N N N N N N N		
Continuous force Standstill force Max. detent force (average to peak) N Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) N N N N N N N N N N N N N N N N N N	202	
Standstill force Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) N N N N N N N N N N N N/(m/s) N N/(m/s) UNIT White ACCURACY UNIT UNIT ACCURACY Positioning accuracy (without mapping)	332	254
Max. detent force (average to peak) Static friction (maximal value) Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) N N N N N N N N N N N N N N N N N N	123	74.3
Static friction (maximal value) Dynamic friction (maximal value) N/(m/s) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) N/(m/s) N/(m/s) N/(m/s) UNIT WIT VIII	92.9	56.1
Dynamic friction (maximal value) LOAD CAPACITIES Maximum payload DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) N/(m/s) UNIT White UNIT UNIT UNIT UNIT UNIT Positioning accuracy (without mapping)	7.1	7.9
LOAD CAPACITIES Maximum payload BYNAMIC PERFORMANCE UNIT UNIT UNIT UNIT Duty cycle Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) UNIT WIT UNIT UNIT Positioning accuracy (without mapping)	22	22
DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) kg UNIT White properties a second of the properties and the properties are properties as a second of the properties are properties a	60	60
DYNAMIC PERFORMANCE Duty cycle % Maximum speed m/s Maximum acceleration m/s² Typical position stability at 2kHz nm ACCURACY Positioning accuracy (without mapping) μm		
DYNAMIC PERFORMANCE Duty cycle Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) UNIT WINT UNIT UNIT	30	
Duty cycle Maximum speed Maximum acceleration Typical position stability at 2kHz ACCURACY Positioning accuracy (without mapping) ### UNIT		
Maximum speed m/s Maximum acceleration m/s² Typical position stability at 2kHz nm ACCURACY UNIT Positioning accuracy (without mapping) μm		
Maximum speed m/s Maximum acceleration m/s² Typical position stability at 2kHz nm ACCURACY UNIT Positioning accuracy (without mapping) μm	25	25
Maximum acceleration m/s² Typical position stability at 2kHz nm ACCURACY UNIT Positioning accuracy (without mapping) μm	1	1
Typical position stability at 2kHz nm ACCURACY UNIT Positioning accuracy (without mapping) µm	10	10
ACCURACY UNIT Positioning accuracy (without mapping) µm	±10	±10
Positioning accuracy (without mapping) µm		
Positioning accuracy (with mapping)	±20	
J J /	±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		±15
Yaw arcsec	±5	±10

	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
lp	Peak current	Arms	15.0	15.0
lc	Continuous current	Arms	4.79	3.13
ls	Standstill current	Arms	3.62	1.71
vs	Standstill speed	mm/s	0.22	0.20
Um	Max. input voltage	VDC	300	300
Рс	Max. cont. power dissipation	W	77.6	48.5
2τр	Magnetic period	mm	32	32
	der and signal type ut signal		Optical - incremental 1 Vpp	Optical - incremental 1 Vpp
-		-		
Signal period or line count Reference mark Power supply		μm	4	4
		-	One	One
Powe	r 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			
Туре	GOIDING ELEWENTS		Ball bearing	Ball bearing
	MATERIAL AND FINISH			
Base			Granite	Aluminum & Silicon alloy
	age		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.