

ECS3040/NUM(+)

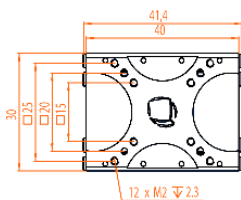
nanoprecise closed loop stepper positioner for linear, horizontal motion with optoelectronic sensor

Technical Specifications

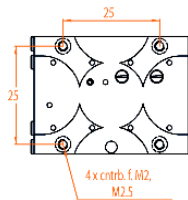
Technology		Compatibility with Electronics	
travel mechanism	inertial piezo drive	ECC100 piezo positioning controller	all versions
Size and Dimensions		Working Conditions	
footprint; height	30 x 40; 9.5 mm	mounting orientation	arbitrary
maximum size	30 x 66.6; 9.5 mm	temperature range (/RT, /HV, /UHV)	0 .. 100 °C
weight (aluminum/stainless steel)	39/71 g	max. bake out temperature (/UHV)	150 °C
Coarse Positioning Mode		minimum pressure (/RT)	1E-4 mbar
input voltage range	0 .. 60 V	minimum pressure (/HV)	1E-8 mbar
typical actuator capacitance	1.15 µF @ 300K	minimum pressure (/UHV)	5E-11 mbar
travel range (step mode)	25 mm	Accuracy of Movement	
typical minimum step size	0.05 µm	yaw angle (over 10 mm travel)	< 0.1 mrad
maximum drive velocity (@ 45 V)	4.5 mm/s	pitch angle (over 10 mm travel)	< 0.1 mrad
Fine Positioning Mode		roll angle (over 10 mm travel)	< 0.1 mrad
input voltage range	0 .. 60 V	Position Encoder	
fine positioning range	0 .. 1.6 µm	readout mechanism	optoelectronic: /NUM & /NUM+/(U)HV
fine positioning resolution	sub-nm	sensor power (when measuring)	/NUM: 300 mW & /NUM+/(U)HV: 50 mW
Materials		encoded travel range	entire travel
positioner body (/RT)	aluminum	wavelength of illumination	870 nm
positioner body (/HV, /UHV)	stainless steel	sensor resolution	1 nm
actuator	PZT ceramics	repeatability	50 nm
connecting wires	insulated twisted pair, copper	absolute accuracy	< 0.01% of travel range
bearings	stainless steel	Connectors and Feedthroughs	
Load (@ ambient conditions)		/RT Versions	all /HV, /UHV Versions
maximum load	120 N (12 kg)	connector type	14-pole connector
maximum dynamic force along the axis	1 N		50 cm cable with connector
/HL/RT - ambient conditions	---	electrical feedthrough solution	---
/HL/UHV - UHV conditions	3 N		50 cm cable with connector
Mounting			VFT/HV, VFT/UHV
from the top	4 through holes dia 2.2 mm, cntrbr. f. M2	Article Numbers	
from the bottom	4 threads for M2.5 x 2 mm	/RT version aluminum	1005660
load on top	12 threads M2 x 2.3 mm	/HV version stainless steel	1011436
load at the front	L-bracket	/UHV version stainless steel	1011437
		/HL/RT version	---
		/HL/HV version	1011202
		/HL/UHV version	1011203

Technical Drawings

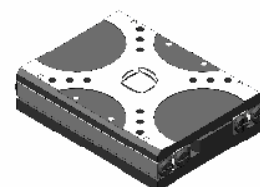
top view



bottom view



3D view



inner position



outer position

