

ECS5050

nanoprecise open loop stepper positioner for linear, horizontal motion

Technical Specifications

Technology

travel mechanism inertial piezo drive

Size and Dimensions

footprint; height 50 x 50; 9.5 mm
maximum size 50 x 71.6; 9.5 mm
weight (aluminum/stainless steel) 70/149 g

Coarse Positioning Mode

input voltage range 0 .. 100 V
typical actuator capacitance 1.11µF @ 300K
travel range (step mode) 30 mm
typical minimum step size 0.05 µm
maximum drive velocity (@ 45 V) 4.5 mm/s

Fine Positioning Mode

input voltage range 0 .. 60 V
fine positioning range 0 .. 1.6 µm
fine positioning resolution sub-nm

Materials

positioner body (/RT) aluminum
positioner body (/HV, /UHV) stainless steel
actuator PZT ceramics
connecting wires insulated twisted pair, copper
bearings stainless steel

Load (@ ambient conditions)

mounting orientation: axis horizontal

maximum load 150 N (15 kg)
maximum dynamic force along the axis 1 N
/HL/RT - ambient conditions 5 N
/HL/UHV - UHV conditions 3 N

Mounting

from the top 4 through holes dia 2.2 mm, cntrbr. f. M2
from the bottom 4 threads for M2.5 x 2 mm
load on top 12 threads M2 x 2.3 mm
load at the front L-bracket

Compatibility with Electronics

ECC100 piezo positioning controller all versions

Working Conditions

mounting orientation arbitrary
temperature range (/RT, /HV, /UHV) 0 .. 100 °C
max. bake out temperature (/UHV) 150 °C
minimum pressure (/RT) 1E-4 mbar
minimum pressure (/HV) 1E-8 mbar
minimum pressure (/UHV) 5E-11 mbar

Accuracy of Movement

repeatability of step sizes typically 5 % over full range
forward / backward step asymmetry 10%
yaw angle (over 10 mm travel) < 0.1 mrad
pitch angle (over 10 mm travel) < 0.1 mrad
roll angle (over 10 mm travel) < 0.1 mrad

Position Encoder

encoder options -

Connectors and Feedthroughs

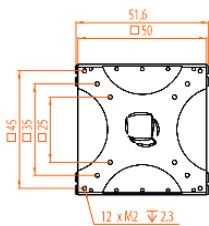
	/RT Versions	all /HV, /UHV Versions
connector type	14-pole connector	15-pin D-Sub connector
	50 cm cable with connector	50 cm cable with connector
electrical feedthrough solution	---	VFT/HV, VFT/UHV

Article Numbers

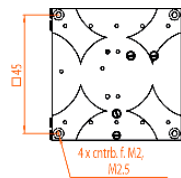
/RT version aluminum	1006124
/RT version stainless steel	1006126
/HV version stainless steel	1006128
/UHV version stainless steel	1006130
/HL/RT version	1008840
/HL/HV version	1011220
/HL/UHV version	1011221

Technical Drawings

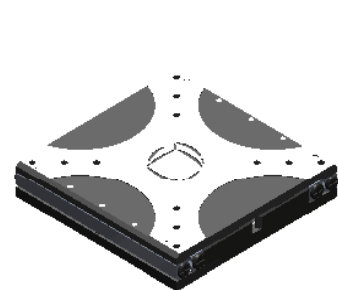
top view



bottom view



3D view



inner position



outer position

