

# ECS3030

nanoprecise open loop stepper positioner for linear, horizontal motion

## Technical Specifications

### Technology

travel mechanism inertial piezo drive

### Size and Dimensions

footprint; height 30 x 30; 9.5 mm  
maximum size 30 x 51.6; 9.5 mm  
weight (aluminum/stainless steel) 29/51 g

### Coarse Positioning Mode

input voltage range 0 .. 60 V  
typical actuator capacitance 1.15  $\mu$ F @ 300 K  
travel range (step mode) 20 mm  
typical minimum step size 0.05  $\mu$ m  
maximum drive velocity (@ 45 V) 4.5 mm/s

### Fine Positioning Mode

input voltage range 0 .. 60 V  
fine positioning range 0 .. 1.6  $\mu$ m  
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 90 N (9 kg)  
maximum dynamic force along the axis 1 N  
/HL/RT - ambient conditions ---  
/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

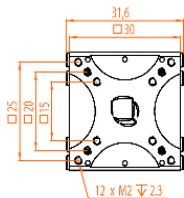
	/RT Versions	all /HV, /UHV Versions
connector type	14-pole connector	15-pin D-Sub connector
	50 cm cable with connector	50 cm cable with connector
electrical feedthrough solution	---	VFT/HV, VFT/UHV

### Article Numbers

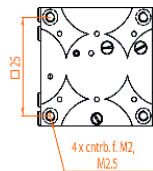
/RT version aluminum	1005651
/RT version stainless steel	1005665
/HV version stainless steel	1005677
/UHV version stainless steel	1005689
/HL/RT version	---
/HL/HV version	1011196
/HL/UHV version	1011197

## Technical Drawings

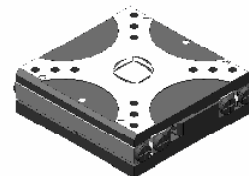
top view



bottom view



3D view



inner position



outer position

