

# 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 1.106µF @ 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 high load option (maximum dynamic force) 5 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

### Article Numbers

/RT version aluminum 1006124  
/RT version stainless steel 1006126  
/HV version stainless steel 1006128  
/UHV version stainless steel 1006130  
Article Numbers /HL Option 0

### 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

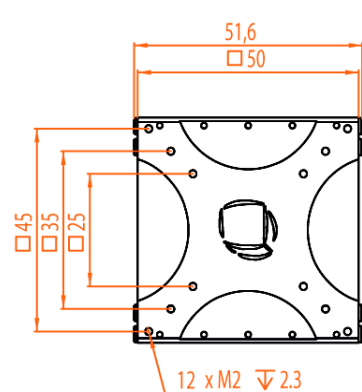
#### /RT Versions

#### all /HV, /UHV Versions

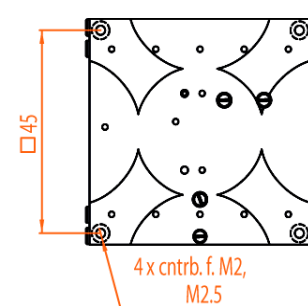
connector type 14-pole connector 15-pin D-Sub connector  
50 cm cable with connector 50 cm cable with connector  
electrical feedthrough solution --- VFT/HV, VFT/UHV

## Technical Drawings

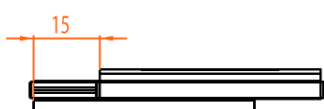
top view



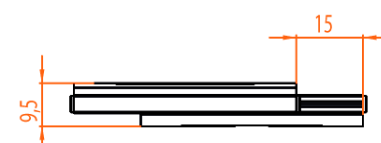
bottom view



inner position



outer position



3D view

