

# ECS3070

nanoprecise open loop stepper positioner for linear, horizontal motion

## Technical Specifications

### Technology

travel mechanism inertial piezo drive

### Size and Dimensions

footprint; height 30 x 70; 9.5 mm  
maximum size 30 x 111.6; 9.5 mm  
weight (aluminum/stainless steel) 69/129 g

### Coarse Positioning Mode

input voltage range 0 .. 60 V  
typical actuator capacitance 1.15  $\mu$ F @ 300K  
travel range (step mode) 40 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 210 N (21kg)  
maximum dynamic force along the axis 1 N  
/HL high load option (maximum dynamic force) 5 N

### Mounting

from the top 8 through holes dia 2.2 mm, cntrbr. f. M2  
from the bottom 8 threads M2.5 x 2.5 mm  
load on top 16 threads M2 x 2.3 mm  
load at the front L-bracket

### Article Numbers

/RT version aluminum 1005656  
/RT version stainless steel 1005669  
/HV version stainless steel 1005681  
/UHV version stainless steel 1005693  
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

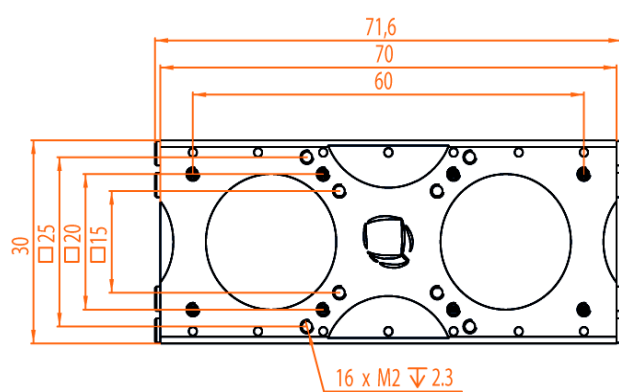
encoder options -

### Connectors and Feedthroughs

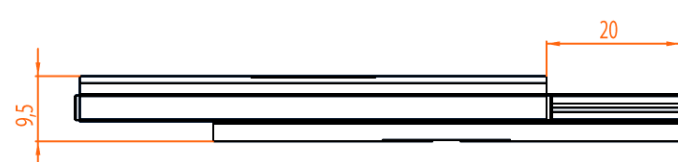
	/RT Versions	all /HV, /UHV Versions
connector type	14-pole connector	15-pin D-Sub connector
	50 cm cable with connector	50 cm cable with connector
electrical feedthrough solution	---	VFT/HV, VFT/UHV

## Technical Drawings

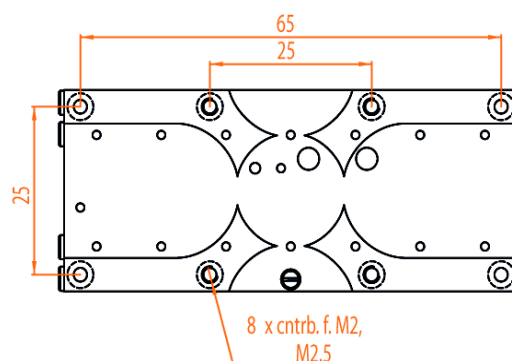
top view



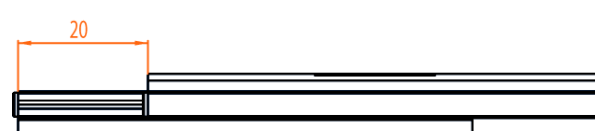
inner position



bottom view



outer position



3D view

