

# ECS3070

nanoprecise open loop stepper positioner for linear, horizontal motion

## Technical Specifications

<b>Technology</b>		<b>Compatibility with Electronics</b>	
travel mechanism	inertial piezo drive	ECC100 piezo positioning controller	all versions
<b>Size and Dimensions</b>		<b>Working Conditions</b>	
footprint; height	30 x 70; 9.5 mm	mounting orientation	arbitrary
maximum size	30 x 111.6; 9.5 mm	temperature range (/RT, /HV, /UHV)	0 .. 100 °C
weight (aluminum/stainless steel)	69/129 g	max. bake out temperature (/UHV)	150 °C
<b>Coarse Positioning Mode</b>		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)	40 mm	<b>Accuracy of Movement</b>	
typical minimum step size	0.05 µm	repeatability of step sizes	typically 5 % over full range
maximum drive velocity (@ 45 V)	4.5 mm/s	forward / backward step asymmetry	10%
<b>Fine Positioning Mode</b>		yaw angle (over 10 mm travel)	< 0.1 mrad
input voltage range	0 .. 60 V	pitch angle (over 10 mm travel)	< 0.1 mrad
fine positioning range	0 .. 1.6 µm	roll angle (over 10 mm travel)	< 0.1 mrad
fine positioning resolution	sub-nm	<b>Position Encoder</b>	
<b>Materials</b>		encoder options	-
positioner body (/RT)	aluminum	<b>Connectors and Feedthroughs</b>	
positioner body (/HV, /UHV)	stainless steel	<b>/RT Versions</b>	<b>all /HV, /UHV Versions</b>
actuator	PZT ceramics	connector type	14-pole connector
connecting wires	insulated twisted pair, copper		50 cm cable with connector
bearings	stainless steel	electrical feedthrough solution	---
<b>Load (@ ambient conditions)</b>		<b>Article Numbers</b>	
maximum load	210 N (21kg)	/RT version aluminum	1005656
maximum dynamic force along the axis	1 N	/RT version stainless steel	1005669
/HL/RT - ambient conditions	5 N	/HV version stainless steel	1005681
/HL/UHV - UHV conditions	3 N	/UHV version stainless steel	1005693
<b>Mounting</b>		/HL/RT version	1008838
from the top	4 through holes dia 2.2 mm, cntrbr. f. M2	/HL/HV version	1011212
from the bottom	8 threads M2.5 x 2.5 mm	/HL/UHV version	1011213
load on top	16 threads M2 x 2.3 mm		
load at the front	L-bracket		

## Technical Drawings

