

ECS5050/NUM

linear, horizontal stepper positioner for RT

Technology	
travel mechanism	inertial piezo drive

Size and Dimensions	
footprint; height	50 x 50 ; 9.5 mm
maximum size	50 x 66.6 ; 9.5 mm

Coarse Positioning Mode	
travel range	50 mm
typical minimum step size	50 nm
maximum input voltage	60 V
maximum speed (@1kHz/5kHz)	1 mm/s / 4.5 mm/s

Fine Positioning Mode	
fine positioning range	0 .. 1.6 µm
fine positioning resolution	sub-nm resolution
input voltage range	0 .. 45 V
typical actuator capacitance	1.46 µF

Materials (non-magnetic)	
positioner body	Aluminum / Stainless steel
actuator	PZT ceramics
connecting wires	insulated twisted pair, Cu
weight (Aluminum/Stainless steel)	71 g / 129 g

Load	
maximum vertical load for horizontal operation	150 N
maximum horizontal load for vertical operation	1 N
blocking force	4 N

Mounting	
frontside mounting	4 through holes M2 x 2.5 mm
backside mounting	4 threads M2,5 x 2.5 mm
load mounting	12 threads M2 x 2.3 mm
vertical mounting	L-bracket

Article Numbers	
/RT Version Aluminum	
/RT Version Stainless Steel	
/HV Version Stainless Steel	
/UHV Version Stainless Steel	

Compatibility with Electronics	
ECC100 piezo step controller	all versions
ANC35 piezo motor controller	all versions
ANC300 piezo step controller	all versions
ANC350 piezo positioning controller	all versions

Working Conditions	
mounting orientation	arbitrary
magnetic field range	---
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

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

Accuracy of Movement	
repeatability of step sizes	typically 5 % over full range
yaw angle (Gierwinkel) over 10 mm travel	< 0.1 mrad
pitch angle (Nickwinkel) over 10 mm travel	< 0.1 mrad
roll angle (Rollwinkel) over 10 mm travel	< 0.1 mrad

Position Encoder	
readout mechanism	optoelectronic encoder (non-contact)
sensor resolution	10 nm
sensor repeatability	± 200 nm
sensor accuracy	0.01%

