

ECS3070

linear, horizontal stepper positioner for RT

| 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 |
| Coarse Positioning Mode | |
| travel range | 40 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) | 69/129 g |
| Load | |
| maximum vertical load for horizontal operation | 210 N |
| maximum horizontal load for vertical operation | 1 N |
| blocking force | 4 N |
| Mounting | |
| frontside mounting | 8 through holes M2 x 2.5 mm |
| backside mounting | 8 threads M2,5 x 2.5 mm |
| load mounting | 16 threads M2 x 2.3 mm |
| vertical mounting | L-bracket |
| Article Numbers | |
| /RT Version Aluminum | 1005656 |
| /RT Version Stainless Steel | 1005669 |
| /HV Version Stainless Steel | 1005681 |
| /UHV Version Stainless Steel | 1005693 |

| 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 | 2-pole pin plug (PEEK), ø 0.5 mm, d = 2 mm, |
| | 50 cm cable with connector | 50 cm cable with connector |
| electrical feedthrough solution | | 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 |

