www.cedrat-technologies.com | actuator@cedrat-tec.com


## TABLE OF STANDARD PROPERTIES OF USE AND MEASUREMENT

*The properties defined in the table below, are set up according to the technical conditions of use and measurement. These properties are warranted within their variation range and in compliance with the standard technical conditions of use.*

| PROPERTIES | STANDARD TECHNICAL CONDITIONS | UNIT | NOMINAL VALUES | MIN. VALUES | MAX. VALUES |
|---|---|---|---|---|---|
| *Notes* | | - | - | - | - |
| *Max. no load displacement* | Quasistatic excitation, blocked-free | µm | 73 | 58 | 86 |
| *Blocked force* | Quasistatic excitation, blocked-free | N | 66.0 | 52.8 | 79.2 |
| *Stiffness* | Quasistatic excitation, blocked-free | N/µm | 0.905 | 0.724 | 1.00 |
| *Resonance frequency (free-free)* | Harmonic excitation, free-free, on the admittance curve | Hz | 13024 | 11070 | 14326 |
| *Response time (free-free)* | | ms | 0.04 | 0.03 | 0.04 |
| *Resonance frequency (blocked-free)* | Harmonic excitation, blocked-free, on the admittance curve | Hz | 2863 | 2434 | 3149 |
| *Response time (blocked-free)* | | ms | 0.17 | 0.16 | 0.20 |
| *Capacitance* | Quasistatic excitation, free-free, on the admittance curve | µF | 1.55 | 1.40 | 2.02 |
| *Max. no load displacement at resonance* | Max. harmonic excitation, free-free | µm p-p | 66 | 52 | 79 |
| *Max. voltage at resonance* | Max. harmonic excitation, free-free | Vrms | 9.00 | 7.20 | 10.80 |
| *Force limit (0-pk)* | Max. harmonic excitation, free-free | N | 33.00 | 26.40 | 36.30 |
| *Resolution* | Quasistatic excitation | nm | 1 | - | - |
| *Height (in actuation direction)* | | mm | 15.00 | 14.90 | 15.10 |
| *Length* | | mm | 29.20 | 29.10 | 29.30 |
| *Width (excl. wedge & wires)* | | mm | 5.00 | 4.95 | 5.05 |
| *Width (incl. wedge & wires)* | | mm | 9.00 | 8.00 | 10.50 |
| *Mass* | | g | 8.5 | - | - |
| *Standard mechanical interface* | 2 flat surfaces 2.5*5 mm² with M2 threaded hole | - | - | - | - |
| *Standard electrical interface* | 2 PTFE insulated AWG30 wires 100 mm long with Ø 1 banana plug | - | - | - | - |

## PROPERTIES STANDARD TECHNICAL CONDITIONS OF USE AND MEASUREMENT

**Free-free** : The actuator is not fixed
**Blocked-free** : The actuator is fixed to a mechanical support assumed infinitely stiff
**Quasistatic excitation** : AC voltage between –20 and 150 V at 1 Hz
**Harmonic excitation** : Voltage of 0.5 Vrms, sinusoidal mode from 0 to 100 kHz
**Max. harmonic excitation** : Voltage defined by the measurement of max. displacement, sinus at resonance frequency
**Displacement measurement** : Laser interferometer, capacitive displacement sensor
**Admittance measurement** : HP 4194 A or Cypher C60 electrical impedance analyser
**Environment** : Ambient temperature (15-25 °C) and dry air (Humidity < 50 % rH)

*Any technical conditions of use, different from those defined above, can lead to temporary or definitive alterations of properties. Thank you to contact CEDRAT TECHNOLOGIES before using actuators under non standard technical conditions.*

## FACTORY TESTS CARRIED OUT

☑ Test 1 : Electrical admittance vs. Frequency, free-free
☑ Test 2 : Displacement vs. input voltage

## OPTIONAL EXTRA FACTORY TESTS

☑ Test 3 : Gain and linearity of the sensor
☑ Test 4 : Step response in closed loop
☑ Test 5 : Stability in closed loop

## OPTIONAL MECHANICAL INTERFACE

☑ [ FI ] Flat Interface
☐ [ FF ] Free-free Interface
☑ [ H ] Flat Interface with hole
☑ [ SI ] Specific interface
☑ [ TH ] Flat Interface with threaded hole

## AVAILABLE OPTIONS

☑ [ SG ] Strain gauges
☑ [ NM ] Non-magnetic
☐ [ ECS ] Eddy current displacement sensor
☑ [ VAC ] Vacuum
☑ [ SV ] Specific version / customization

## 2D CONFIGURATION