

## > CTEC: COMPACT, DYNAMIC, PRECISE

Dynamic conditions are particularly challenging! They require systems capable of generating or handling large accelerations. Reactivity and reliability of actuators developed by CTEC make them unique for high dynamic applications.

However integration and loading conditions being equally important, we invite you to get in touch with our engineers at [actuator@cedrat-tec.com](mailto:actuator@cedrat-tec.com) to discuss your application.



NONCONTRACTUAL PICTURE

## > 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   |   | -    | -              | -           | -           |
| Sensor options  | SG, ECS   | -    | -              | -           | -           |
| Mastered motions  | TX, TY, TZ  | -    | -              | -           | -           |
| Max. no load displacement (Tx, Ty, Tz)                      | Quasistatic excitation, blocked-free                          | µm   | 200            | 180         | 250         |
| Max. parasitic Z rotation                                   |   | µrad | 240            | 204         | 276         |
| Max. parasitic XY rotation                                  |   | µrad | 50             | 43          | 58          |
| Blocked force   | Quasistatic excitation, blocked-free                          | N    | 118            | 94          | 142         |
| Stiffness   | Quasistatic excitation, blocked-free                          | N/µm | 0.59           | 0.47        | 0.65        |
| Unloaded resonance frequency (in the actuation's direction) | Harmonic excitation, blocked-free, on the admittance curve    | Hz   | 380            | 304         | 437         |
| Unloaded response time                                      | Quasistatic excitation, blocked-free                          | ms   | 1.32           | 0.00        | 1.51        |
| Capacitance (per electrical port)                           | Quasistatic excitation, blocked-free, on the admittance curve | µF   | 6.30           | 5.67        | 8.19        |
| Resolution  |   | nm   | 2.00           | -           | -           |
| Height (Z axis)   |   | mm   | 49.00          | 48.90       | 49.20       |
| Dimensions (X & Y axis)                                     |   | mm   | 100*100        | -           | -           |
| Mass  |   | g    | 540            | -           | -           |
| Standard mechanical interface (payload)                     | objective interface max 4/55*1.36 (to be specified)           | -    | -              | -           | -           |
| Standard mechanical interface (frame)                       | 4 Ø 4.5 mm holes on [] 84                                     | -    | -              | -           | -           |
| Standard electrical interface                               | 2 RG178B/U coaxial cables with Harwin connectors              | -    | -              | -           | -           |

## > 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

## > AVAILABLE OPTIONS

- [ SG ] Strain gauges
- [ ECS ] Eddy current displacement sensor (except Z Axis)
- [ SI ] Specific interface
- [ SV ] Specific version / customization
- [ VAC ] Vacuum
- [ NM ] Non-magnetic

## > 2D CONFIGURATION

