

## ➤ 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 X120S	Standard technical conditions	Unit	Nominal values	Min. values	Max. values
Notes		-	Preliminary data	-	-
Sensor options	SG	-	-	-	-
Mastered motions	TX	-	-	-	-
Max. no load displacement	Quasistatic excitation, blocked-free	μm	115	104	127
Out of plane Z displacement		μm	0.50	0.30	0.70
Max. parasitic Z rotation		μrad	-	-	-
Max. parasitic XY rotation		μrad	3.0	2.4	3.6
Blocked force	Quasistatic excitation, blocked-free	N	38	34	42
Stiffness	Quasistatic excitation, blocked-free	N/μm	0.33	0.30	0.36
Unloaded resonance frequency (in the actuation's direction)	Harmonic excitation, blocked-free, on the admittance curve	Hz	1200	1080	1320
Unloaded response time	Quasistatic excitation, blocked-free	ms	0.42	0.31	0.40
Capacitance (per electrical port)	Harmonic excitation, blocked-free, on the admittance curve	μF	1.55	1.40	1.71
Resolution		nm	1.15	-	-
Height		mm	12.00	11.90	12.10
Length		mm	30.00	29.90	30.10
Width		mm	30.00	29.90	30.10
Mass		g	70.0	-	-
Standard mechanical interface (payload)	4 M3 threaded holes on [ ] 17*17	-	-	-	-
Standard mechanical interface (frame)	4 Ø 3.5 mm holes on [ ] 17*17	-	-	-	-
Standard electrical interface	2 PTFE insulated AWG30 wires 100 mm long with Ø1 banana plug	-	-	-	-

## ➤ PROPERTIES STANDARD TECHNICAL CONDITIONS OF USE AND MEASUREMENT

<b>Free-free</b>	: The actuator is not fixed
<b>Blocked-free</b>	: The actuator is fixed to a mechanical support assumed infinitely stiff
<b>Quasistatic excitation</b>	: AC voltage between -20 and 150 V at 1 Hz
<b>Harmonic excitation</b>	: Voltage of 0.5 Vrms, sinusoidal mode from 0 to 100 kHz
<b>Max. harmonic excitation</b>	: Voltage defined by the measurement of max. displacement, sinus at resonance frequency
<b>Displacement measurement</b>	: Laser interferometer, capacitive displacement sensor
<b>Admittance measurement</b>	: HP 4194 A or Cypher C60 electrical impedance analyser
<b>Environment</b>	: 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

## ➤ EXTRA FACTORY TESTS

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

## ➤ MECHANICAL INTERFACE

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> [ FI ] Flat Interface   | <input type="checkbox"/> [ H ] Flat Interface with hole | <input type="checkbox"/> [ TH ] Flat Interface with threaded hole |
| <input type="checkbox"/> [ SV ] Specific version | <input type="checkbox"/> [ FF ] Free-free Interface     | <input type="checkbox"/> [ SI ] Specific interface                |

## ➤ AVAILABLE OPTIONS

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> [ SG ] Strain gauges | <input type="checkbox"/> [ ECS ] Eddy Current Sensor | <input type="checkbox"/> [ NM ] Non-magnetic |
| <input checked="" type="checkbox"/> [ VAC ] Vacuum       |  |  |