INSTRON®

The difference is measurable®

Averaging Axial and Biaxial Clip-On Extensometers

Measure averaging axial and transverse strain on polymer matrix composites, metals, and plastics.

Extend your testing range with the ability to attach to various specimen types using interchangeable contact options.

Single-handed operation ensures consistent results and facilitates safe use within a temperature chamber.

High-strength aluminum, titanium, and stainless steel construction provides reliable operation under demanding conditions, such as testing inside a temperature chamber.

Meets calibration requirements of ASTM E83 class B1, ISO 9513 class 0.5, and ISO 527.

Unique electronic serial number ensures correct calibrations when using extensometer on multiple machines.

Principle of Operation

These Bi-axial and Averaging Axial clip-on extensometers use strain gauges for measurement and are constructed from high-strength aluminium, titanium, and stainless steel. All of the extensometers feature simple, single- handed operation. The extensometer incorporates automatic electrical calibration and transducer recognition including a unique digital serial number.

All of the extensometers measure the axial strain on both sides of the specimen. Versions are available that provide either a single averaged axial strain output or two independent axial strain outputs. In all cases, the use of average axial strain corrects for any specimen bending due to mis-alignment for the consistent and accurate determination of modulus. The independent output versions allow simultaneous monitoring of both; the average axial and the bending strain. Additionally, the biaxial versions measure transverse strain that allows for the determination of Poisson's Ratio and the in-plane shear modulus.

Conical points are provided as standard with the extensometer and are recommended for most composite materials. A range of contact options are available: line contacts, which are recommended for use with soft materials, such as thermoplastics; and vee profiles, which are most suitable for thin section test pieces.

Specifications – Averaging Axial Extensometers

		2650-560[1] 2650-570[2]	2650-562[1] 2650-572[2]	2650-564[1] 2650-574[2]	2650-566[1] 2650-576[2]
Axial Gauge Length	mm	25	50	—	—
	in	—	—	1	2
Axial Travel	mm	-0.5 to +1.25	-0.5 to +1.25	—	—
	in	—	—	-0.02 to +0.05	-0.02 to +0.05
Axial Strain	%	-2 to +5	-1 to +2.5	-2 to +5	-1 to +2.5
Specimen Thickness	mm	0 to 34	0 to 34	0 to 34	0 to 34
	in	0 to 1.34	0 to 1.34	0 to 1.34	0 to 1.34
Specimen Width	mm	0.1 to 55	0.1 to 55	0.1 to 55	0.1 to 55
	in	0.004 to 2.17	0.004 to 2.17	0.004 to 2.17	0.004 to 2.17
Weight	gm	130	150	130	150
	oz	4.6	5.3	4.6	5.3
Dimension (L × W × H)	mm	110 × 120 × 40	110 × 120 × 65	110 × 120 × 40	110 × 120 × 65
	in	4.3 × 4.7 × 1.6	4.3 × 4.7 × 2.6	4.3 × 4.7 × 1.6	4.3 × 4.7 × 2.6
Temperature Range	°C	-200 to 200	-200 to 200	-200 to 200	-200 to 200
	°F	-328 to +392	-328 to +392	-328 to +392	-328 to +392
Classifications					
ASTM E 83		B1	B1	B1	B1
ISO 9513		0.5	0.5	0.5	0.5
ISO 527-1 (in annex C)		Yes	Yes	Yes	Yes

Specifications – Biaxial Extensometers

All specifications as averaging axial extensometers above + additional specifications below.

		2650-561[1] 2650-571[2]	2650-563[1] 2650-573[2]	2650-565[1] 2650-575[2]	2650-567[1] 2650-577[2]
Axial Gauge Length	mm	25	50	—	—
	in	—	—	1	2
Axial Travel	mm	-0.5 to +1.25	-0.5 to +1.25	—	—
	in	—	—	-0.02 to +0.05	-0.02 to +0.05
Axial Strain	%	-2 to +5	-1 to +2.5	-2 to +5	-1 to +2.5
Transverse Travel	mm	±0.5	±0.5	—	—
	in	—	—	±0.02	±0.02
Max. Crosstalk[3]	% of FS	0.5	0.5	0.5	0.5
Transverse Classifications[4]					
ASTM E 83		B1	B1	B1	B1
ISO 9513		0.5	0.5	0.5	0.5

Notes:
1. Single average axial output
2. 2x Independent axial outputs
3. Maximum change in transverse output (% of full scale) due to a full scale axial strain
4. Over specimen widths between 10 - 32 mm (0.4 to 1.26 in)

Specifications – Optional Specimen Contacts

	2601-112	2601-111	2601-110
Description	Conical Contacts	Vee Contacts	Line Contacts
Recommended For	Most composite laminates, rigid plastics, metals	Thin (<0.5 mm) test specimens	Plastics

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