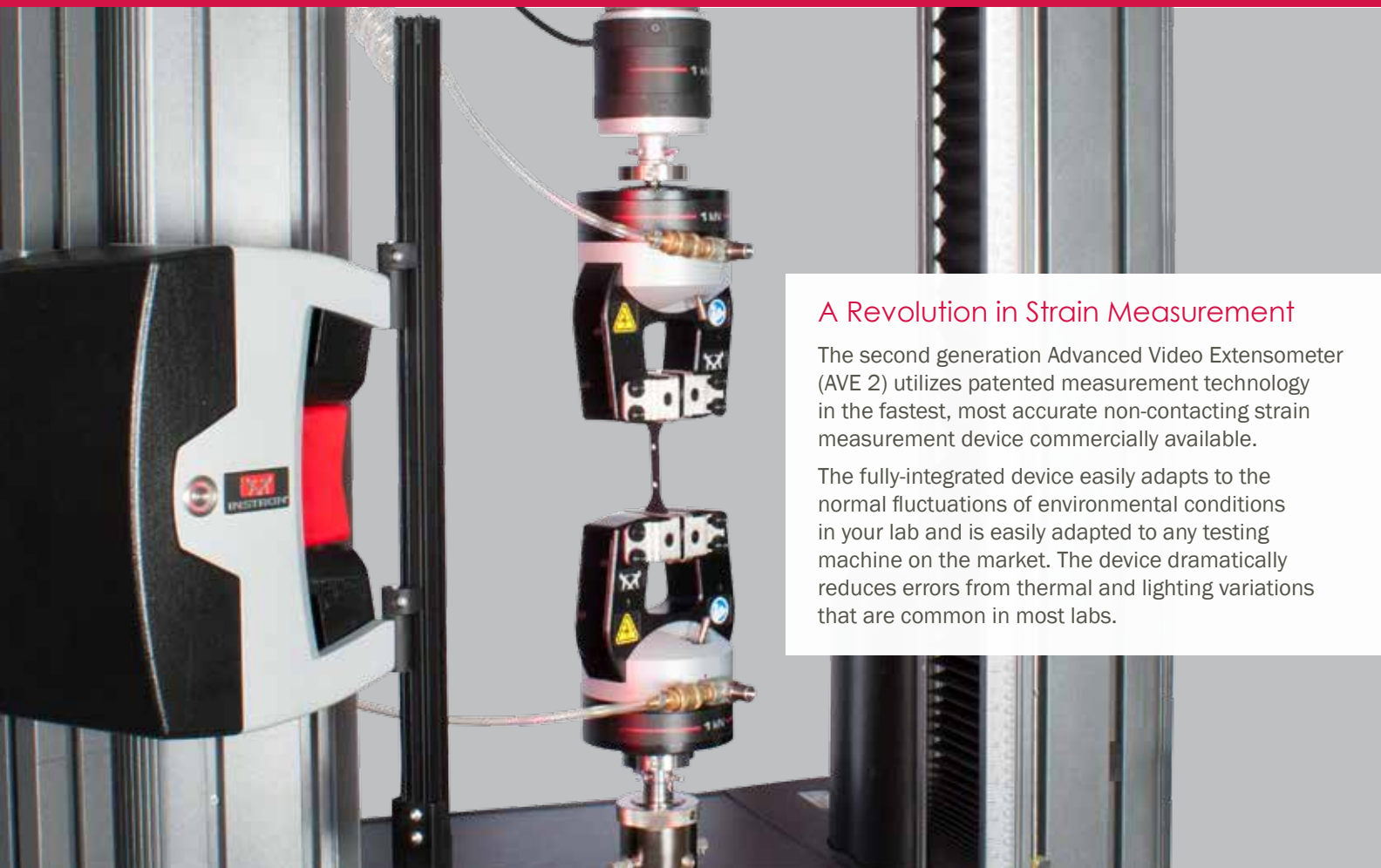


AVE 2 | Non-Contacting Video Extensometer



A Revolution in Strain Measurement

The second generation Advanced Video Extensometer (AVE 2) utilizes patented measurement technology in the fastest, most accurate non-contacting strain measurement device commercially available.

The fully-integrated device easily adapts to the normal fluctuations of environmental conditions in your lab and is easily adapted to any testing machine on the market. The device dramatically reduces errors from thermal and lighting variations that are common in most labs.

One Device, Any Machine

Don't have an Instron® in your lab? The AVE 2 will still work for you. Regardless of the machine currently installed in your lab, the AVE 2 can be integrated with any non-Instron or past-generation Instron system that uses a $\pm 10\text{V}$ analog input.*

One Device, Endless Applications

Do you wish you had one device for use at ambient, high/low temperatures, or for use with specimens and components submersed in a bath? Do you need a device that can meet the needs of your lab over the next five years? The versatility of the new AVE 2 allows for testing under multiple environmental conditions, and can be used for advanced strain measurement with Digital Image Correlation (DIC). Additionally, the AVE 2 conforms to the most rigorous testing standards, such as ISO 527 and ASTM D638.

Designed by Customers, Engineered by Instron

How often do you find that your testing equipment isn't quite what you need or expected? Learning what is critical for our customers allows us to develop technology that is intuitive and eliminates unnecessary steps and complicated set up procedures. Every interaction that our global sales and service teams have with customers allows us to gain valuable insight into customer problems, providing the input for us to engineer customized solutions that address these important customer concerns.

* Performance depends on system, analog output has 18 bit resolution

Meeting Your Endless Applications

- Meets a broad range of international testing standards, including ISO 527, ASTM D638, and ASTM D3039
- Utilize the real-time 490 Hz data rate to capture quickly changing measurement events
- Measure both modulus and strain to failure of almost any material including plastics, metals, composites, textiles, films, elastomers, paper, components, and bio-materials
- Record images of the test for synchronized playback or for post-analysis with Digital Image Correlation
- A single device in your lab now accommodates test specimens with multiple gauge lengths or varied elongations

Conveniently Installs on any Machine within Your Lab

- Its versatility allows for testing specimens and components at ambient and high/low temperatures, or while submersed in a bath
- Can be used on ANY system in your lab that accepts a $\pm 10V$ analog input, regardless of age or manufacturer
- Mounts easily to testing frame and can quickly be moved from machine to machine within the lab

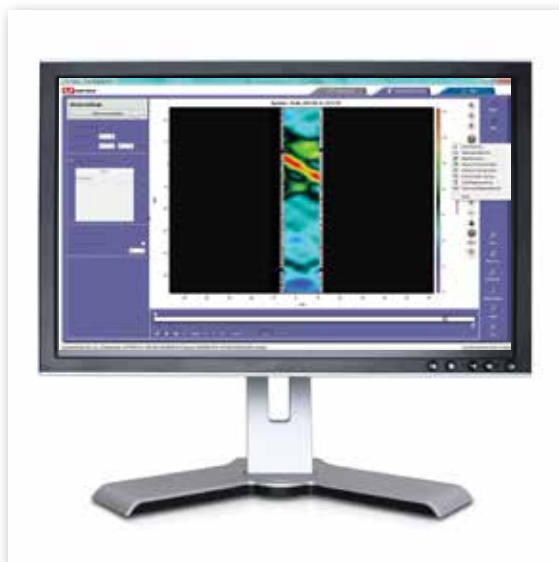
Delivering a Robust Solution with Potential for Future Expansion

- Depending on your application, you can now take measurements using a variety of marking methods — dots, lines, speckle, or even natural patterns
- Plug-and-play installation dramatically reduces dependency upon PC requirements
- Streamlined operator controls are integrated directly into Bluehill® 3 Software, removing confusing and unnecessary steps
- Patented* technology reduces errors from thermal and lighting fluctuations that are common in most labs
- On-board measurement technology means that data is processed in real time

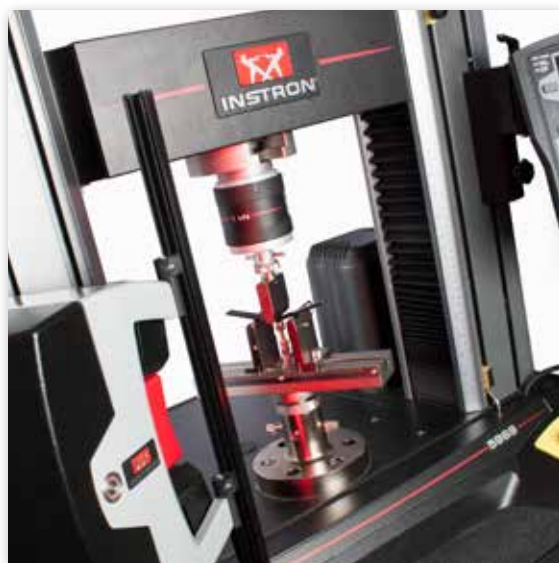
* Instron holds US and European patents for the control of air currents between the camera and specimen that eliminates noise caused by refraction of light; and for the low-voltage LED illumination system that ensures optimum lighting under all lighting conditions. US 7,047,819 B2, US 7,610,815 B2, and EP 1,424,547, B1.



AVE 2 Mounted on a Temperature Chamber



Adaptable with Digital Image Correlation



One Device, Endless Applications

Specifications

Axial Measurement

Lens Focal Length	mm	35	16	9	6
Field of View for Tabletop Static and Dynamic Systems ¹	mm in	100 3.94	240 9.45	425 16.73	620 24.41
Field of View for Floor Model Static Systems ²	mm in	130 5.11	310 12.2	560 22.04	840 34.46
Resolution	μm	0.5	0.5	1.5	3
Accuracy	μm	±1 or 0.5% of Reading*	±1 or 0.5% of Reading*	±3 or 1% of Reading*	±9 or 1% of Reading*
Data Rate	Hz	490	490	490	490
Minimum Gauge Length	mm in	5 0.2	6 0.23	12 0.47	15 0.59
Maximum Following Speed	mm/min in/min	2500 98.4	2500 98.4	2500 98.4	2500 98.4
Resolution with Chamber	μm	0.5 + 0.5/25 °C	0.5 + 0.5/25 °C	1.5 + 1/25 °C	3 + 1/25 °C
Accuracy with Chamber	μm	±2 or twice resolution or (0.5% + 0.015%/50 °C)*	±3 or twice resolution or (0.5% + 0.015%/50 °C)*	±10 or twice resolution or (1% + 0.03%/50 °C)*	±27 or twice resolution or (1% + 0.03%/50 °C)*

Transverse Measurement Option

Field of View for Tabletop Static and Dynamic Systems ¹	mm in	13 0.51	33 1.29	57 2.24	85 3.34
Field of View for Floor Model Static Systems ²	mm in	16 0.62	40 1.57	70 2.75	110 4.33
Resolution	μm	0.5	0.5	1.5	3
Accuracy	μm	±2.5 or 0.5% of Reading*	±2.5 or 0.5% of Reading*	±7.5 or 1% of Reading*	±22.5 or 1% of Reading*
Minimum Gauge Width	mm in	5 0.2	6 0.23	12 0.47	15 0.59

Classification to Standards

Classification to ISO 9513:2012	mm	Class 0.5	Class 0.5	Class 1 (Travel > 0.3)	Class 1 (Travel > 1)
Classification to ASTM E83-10	mm	Class B-1 (G.L. > 10)	Class B-1 (G.L. > 10)	Class C (G.L. > 15)	Class C (G.L. > 25)

*Whichever is greater

Notes:

1. 334X, 336X, 594X, standard width 596X, ElectroPuls™, and 8800 Systems

2. Standard width 3382, 5982, 5984, 5985

Hardware and Software Requirements

The AVE 2 runs on the same PC as the testing machine software. The minimum specification for the PC is: 3.06 GHz Pentium 4 with 512 MB memory and Microsoft® Windows® 7 Professional (32 and 64 bit).

www.instron.com



Worldwide Headquarters
825 University Ave, Norwood, MA 02062-2643, USA
Tel: +1 800 564 8378 or +1 781 575 5000

European Headquarters
Coronation Road, High Wycombe, Bucks HP12 3SY, UK
Tel: +44 1494 464646

Instron Industrial Products
900 Liberty Street, Grove City, PA 16127, USA
Tel: +1 724 458 9610

Instron is a registered trademark of Illinois Tool Works Inc. (ITW). Other names, logos, icons and marks identifying Instron products and services referenced herein are trademarks of ITW and may not be used without the prior written permission of ITW. Other product and company names listed are trademarks or trade names of their respective companies. Copyright © 2014 Illinois Tool Works Inc. All rights reserved. All of the specifications shown in this document are subject to change without notice.