Universal Grip Co.

PRODUCT DATA SHEET

UGC-VE-2316

2000 Series · Triple-Camera · 16 MPx

UGC-VE-2316 · 200 MM HOUSING · 3 UNITS

2000 SERIES · VIDEO EXTENSOMETER

Triple-Camera Video Extensometer

16 MPx non-contact optical extensometer, 200 mm all-in-one housing, 3 camera units joined into one field of view.

OVERVIEW

A universal video extensometer for tensile, compression, flexural, shear and torsion tests. Gauge marks are tracked optically — nothing touches the specimen, so it can stay on through break. Strain, total length, delta length and angle are reported at once. Stacked camera units are calibrated with a joined grid, nearly doubling the measuring length per added camera.

KEY FEATURES

- All-in-one: camera, C-mount lens, blue LED light and USB light relay
- Non-contact — no knife edges, safe to measure through break
- 70 Hz typical sampling; up to 1 kHz with a narrowed view
- Real-time output to your test machine controller (digital, analog, pulse)
- Joined fields of view for long or high-elongation specimens

70 Hz TYPICAL SAMPLING RATE

920 mm CLASS 0.5 MEAS. LENGTH

1900 mm CLASS 1 MEAS. LENGTH

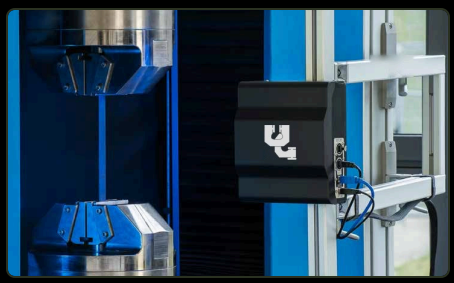
3850 mm CLASS 2 MEAS. LENGTH

3 × 16 MPx CAMERA UNITS

TECHNICAL SPECIFICATIONS

Model	UGC-VE-2316 · 2000 Series, triple-camera
Cameras	3 × 16 MPx industrial cameras
Sampling rate	70 Hz typical · 23 Hz at full view · up to 1 kHz with reduced view width
Measuring length (ISO 9513)	Class 0.5: 920 mm · Class 1: 1900 mm · Class 2: 3850 mm
Working distance	300–500 mm typical from front cover; extendable on request
Lens	C-mount; 12, 16, 25, 35 or 50 mm focal length selected per application
Light	3 × 200 mm blue LED (465 nm, 165 lm, 8 W), USB-switched
PC interface	USB 3.0 per camera (3 total) + USB 2.0 for light relay; 3 m cables standard
Housing dimensions	221 × 187 × 80 mm (L × W × H) per unit
Weight	1.4 kg per unit
Power	24 V DC via RJ45 power cable (802.3af Mode B); 12 W per unit

IN USE



Video extensometer mounted beside a universal testing machine.

WHAT'S INCLUDED

- 3 × VE unit with lens, 200 mm LED & built-in USB relay
- Joined calibration grid sized to the application
- Cable harness, 24 V power supply
- Software on installation USB + USB license key
- Axial software module (perpetual license)
- 1 year software updates & technical support

UGC-VE-2316

FIELDS OF VIEW & WORKING DISTANCES

ISO 9513 Class	Field of View [mm]		Working Distance [mm] by Lens Focal Length				
	Height	Width	12 mm	16 mm	25 mm	35 mm	50 mm
0.5	920	188	262	352	556	782	1,122
1	1900	376	533	714	1,122	1,575	2,254
2	3850	752	1,077	1,439	2,254	3,159	4,518

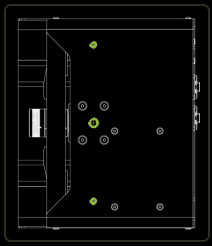
Working distance is measured from the front cover. Measuring length, lens focal length and working distance are linked — choose two and the third follows. Longer distances reduce LED intensity and may require longer shutter times.

HOW TO READ THE MODEL NUMBER

UGC-VE-2316

2 — Series (2000 Series, 200 mm housing) · **3** — Number of camera units (1–3) · **16** — Camera resolution code (16 MPx). Resolution codes: 01, 02, 05, 06 (ASTM-focused), 09, 16.

MECHANICAL INTERFACE



Mount to a tripod head through the 1/4"-20 UNC thread in the center of the bottom plate, or fix it to the test frame with two M6 screws on a 165 mm vertical span.

Dimensions	221 × 187 × 80 mm
Weight	1.4 kg per unit
Tripod thread	1/4"-20 UNC (center)
Frame mount	2 × M6, 165 mm span
Environment	Indoor; 5–40 °C, 30–70 % RH

LIGHT & POWER

LED active length	200 mm
Wavelength	465 nm (blue)
Luminous flux	165 lm
Consumption	Camera 3 W · Relay 1 W · LED 8 W = 12 W per unit
Supply	24 V DC, RJ45 power port; DC I/O port for daisy-chain or aux. light

CONNECTIVITY & DATA OUTPUT

- USB 3.0 camera link per camera (PCIe USB 3.0 card recommended); extendable with active optical cables
- Digital: DOLI Binary, MODBUS, HP Video, TCP/IP, RS232
- API: JSON API and MRT API — remote Start/Stop, method switch, set gauge length
- Analog output via auxiliary D/A converters
- Encoder-style quadrature pulse output with optional pulse generator
- Input of external force, temperature or pressure signals (Device Input module)

SOFTWARE & MEASURING PROBES

Runs on Windows 10/11 64-bit or Windows Server 2019/2022. Line-based probes measure in real time with online data transfer to the test machine; the perpetual license lives on a USB key, so the software can be installed on any PC.

Module	Probes / Function
AX (included)	Point, Line and Extreme Line probes — axial strain & elongation
TR	Transverse line & bend line — r-value, Poisson's ratio, deflection
TO / CR	Torsion line / crack-opening probe
ITT	Rebar line for reinforcing-steel testing
DIC / PP	DIC area strain mapping / post-processing of recorded tests
HS / DI / LVD	High-speed recorder / auxiliary signal input / color value distribution

PC REQUIREMENTS

Processor	Min. 2 GHz dual-core · Recommended 4 GHz, 8+ cores · 8 GB free disk min., SSD recommended
Graphics / memory	OpenGL 3.0, 1024×768 min. (1920×1200 rec.) · 4 GB RAM min., 16 GB DDR4 rec.
Ports	1 × USB (license key) + 3 × USB 3.0 + 1 × USB 2.0 (relay); optional Ethernet for MODBUS / TCP/IP

Ordering & configuration: Specify the lens focal length (or your specimen gauge length and preferred working distance), test machine make/model for the data interface, and mounting method. Calibration grids, tripods, polarization kits, PCIe USB 3.0 cards and additional software modules available. Upgrade path to 2200 / 2300 multi-camera configurations.

Specifications are typical and may vary with lens, working distance and configuration; confirm at time of quote. Measuring lengths per ISO 9513 accuracy class. Part ref. UGC-VE-2316