UGC-VE-2102

2000 Series · Single-Camera · 2 MPx

UGC-VE-2102 · 200 MM HOUSING

2000 SERIES · VIDEO EXTENSOMETER

Single-Camera Video Extensometer

2 MPx non-contact optical extensometer, 200 mm all-in-one housing.

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. Class 0.5 measuring length of 110 mm suits standard dog-bone and strip specimens.

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
- 90 Hz typical sampling; up to 1 kHz with a narrowed view
- Real-time output to your test machine controller (digital, analog, pulse)
- Stackable — add camera units to join fields of view

90 Hz
TYPICAL SAMPLING RATE

110 mm
CLASS 0.5 MEAS. LENGTH

190 mm
CLASS 1 MEAS. LENGTH

380 mm
CLASS 2 MEAS. LENGTH

1 × 2 MPx
CAMERA UNITS

TECHNICAL SPECIFICATIONS

Model	UGC-VE-2102 · 2000 Series, single-camera
Cameras	1 × 2 MPx industrial camera
Sampling rate	90 Hz typical · 43 Hz at full view · up to 1 kHz with reduced view width
Measuring length (ISO 9513)	Class 0.5: 110 mm · Class 1: 190 mm · Class 2: 380 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	200 mm blue LED (465 nm, 165 lm, 8 W), USB-switched
PC interface	USB 3.0 per camera (1 total) + USB 2.0 for light relay; 3 m cables standard
Housing dimensions	221 × 187 × 80 mm (L × W × H)
Weight	1.4 kg
Power	24 V DC via RJ45 power cable (802.3af Mode B); 12 W

IN USE

Video extensometer mounted beside a universal testing machine.

WHAT'S INCLUDED

- VE unit with lens, 200 mm LED & built-in USB relay
- Mono 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-2102

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	110	70	–	134	237	322	430
1	190	120	176	253	416	571	785
2	380	238	379	523	841	1,155	1,630

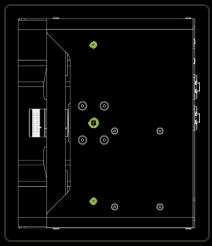
Working distance is measured from the front cover. Measuring length, lens focal length and working distance are linked — choose two and the third follows. Longer distances reduce LED intensity and may require longer shutter times.

HOW TO READ THE MODEL NUMBER

UGC-VE-2102

2 — Series (2000 Series, 200 mm housing) · **1** — Number of camera units (1–3) · **02** — Camera resolution code (2 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
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 (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) + 1 × 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-2102