

VIDEO EXTENSOMETER QUANTUM-I



A non-contact optical measurement technology has made a major step in terms of speed and accuracy in recent years. The QUANTUM-I measurement system shows in practice following benefits - it measures general deformations (strains and displacements) and any distance change between two markers set in any axis with high sub-pixel accuracy. The QUANTUM-I is based on digital image correlation technology (DIC).

Deformation measurement in material testing with use of the Video extensometer QUANTUM-I allows applying multiple virtual probes (Movement Sensors) on markers and advanced image features to be tracked, including the natural pattern of the sample surfaces.



Typical use is the determination of various material properties (tensile tests, uni/biaxial properties, and contractions), measurement of large strain rates, high-speed testing, vibration measurement, crack propagation, dynamic testing and quality control

The common resolution of standard system is within 500 nm and 5 μ m. The system fulfils class 0.5 or B-1 of classification according to ISO 9513 and ASTM E83. In certain camera use case, the system resolution reaches the level of 100 nm - 500 nm and system fulfils the class 0.2. The strain resolution can reach 10 micro strains.

QUANTUM-I is available for deformation measurement on any test specimens that is visible by QUANTUM-I, for specimens inside environment chamber, just leave a transparent observing window to allow specimen to be 'Visible

TECHNICAL SPECIFICATION

- Vertical measuring range up to 1000mm
- Measurement resolution vertical down to 0.0005mm
- Measurement accuracy vertical \pm 0.5% of readout
- Measurement range horizontal up to 60mm
- Measurement resolution horizontal down to 0.0005mm
- Measurement accuracy horizontal \pm 0.5% of readout
- Typical test speed measurement up to 400mm/min
- Fastest test speed measurement up to 10,000mm/ min (requires 4,000 frames/sec camera)