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(54) **SYSTEMS AND METHODS TO CALIBRATE
OPTICAL EXTENSOMETERS**

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ABSTRACT

Disclosed example video extensometers include: a load string configured to secure a test specimen; an imaging device configured to capture images of a surface of the test specimen when secured in the load string; a storage device configured to store a plurality of first calibration parameters corresponding to intrinsic properties of the imaging device; and control circuitry configured to: perform a verification process using the first calibration parameters to verify that a plurality of second calibration parameters correspond to an arrangement of the test specimen with respect to the imaging device; and perform an optical strain measurement process to measure displacement of the test specimen based on the first calibration parameters and the second calibration parameters.

