

HITEX



HIGH TEMPERATURE EXTENSOMETER FOR THERMO-MECHANICAL FATIGUE TESTING

Built for the Heat. Ready for the Cycle.



Integrated infrared camera: Real-time monitoring of specimen temperature and thermal gradients.



Laser illumination for high-contrast optical tracking: Laser light enables reliable strain measurement even at high temperatures.



Designed for Thermo-mechanical Fatigue (TMF) experiments: Reliable measurements under extreme thermal conditions.



Supports Low Cycle Fatigue (LCF) testing: Can also be used for measurements where high strain amplitudes occur.

HITEX SPECIFICATIONS:

- ▶ **Field of View:** 36 x 28 mm
- ▶ **Resolution:** 1.3 MPx
- ▶ **Lens Type:** Telecentric with band-pass filter
- ▶ **Default Sampling Rate:** 170 Hz
- ▶ **Working Distance:** 125 mm $\pm$ 1 %
- ▶ **Accuracy Class:** ISO 9513 Class 0.5
/ASTME 83 Class A
- ▶ Alpha DIC SW Module: **Axial**
- ▶ Additional components: Thermal camera,
Line laser, Built-in relay



TMF TEST SETUP



Hitex supports a wide range of thermomechanical fatigue experiments, including axial, torsional, and combined loading conditions.



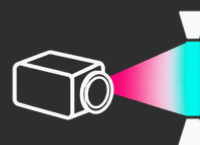
THERMAL CYCLING
Controlled heating & cooling

+



MECHANICAL LOADING
Cyclic tension /
compression / torsion

+

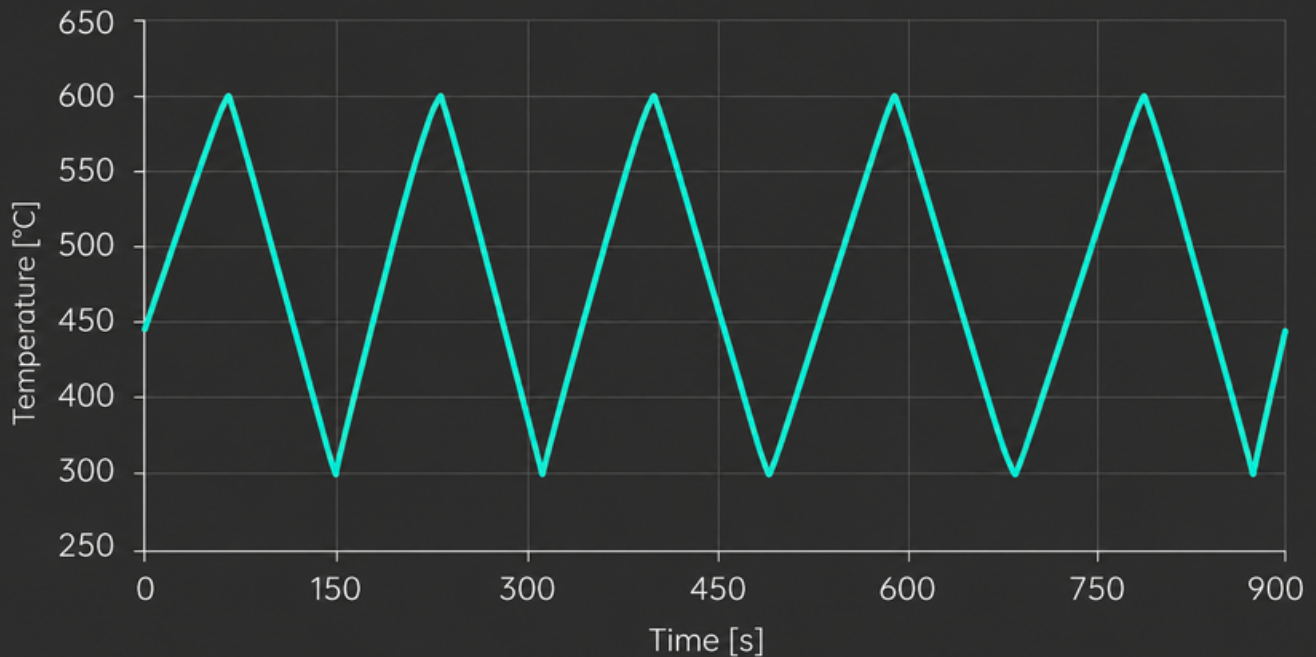


HITEX MEASUREMENT
Non-contact strain
measurement

TMF TEST RESULTS



Strain measurement throughout repeated thermal and mechanical loading cycles



▲ Thermal cycling: 300–600 °C at 0.005 Hz

TMF testing of a 22Cr rotor steel specimen demonstrates the material response under combined cyclic mechanical loading and thermal cycling. The measured stress–strain response forms a characteristic hysteresis loop.

▼ Tension-compression stress-strain hysteresis loop

