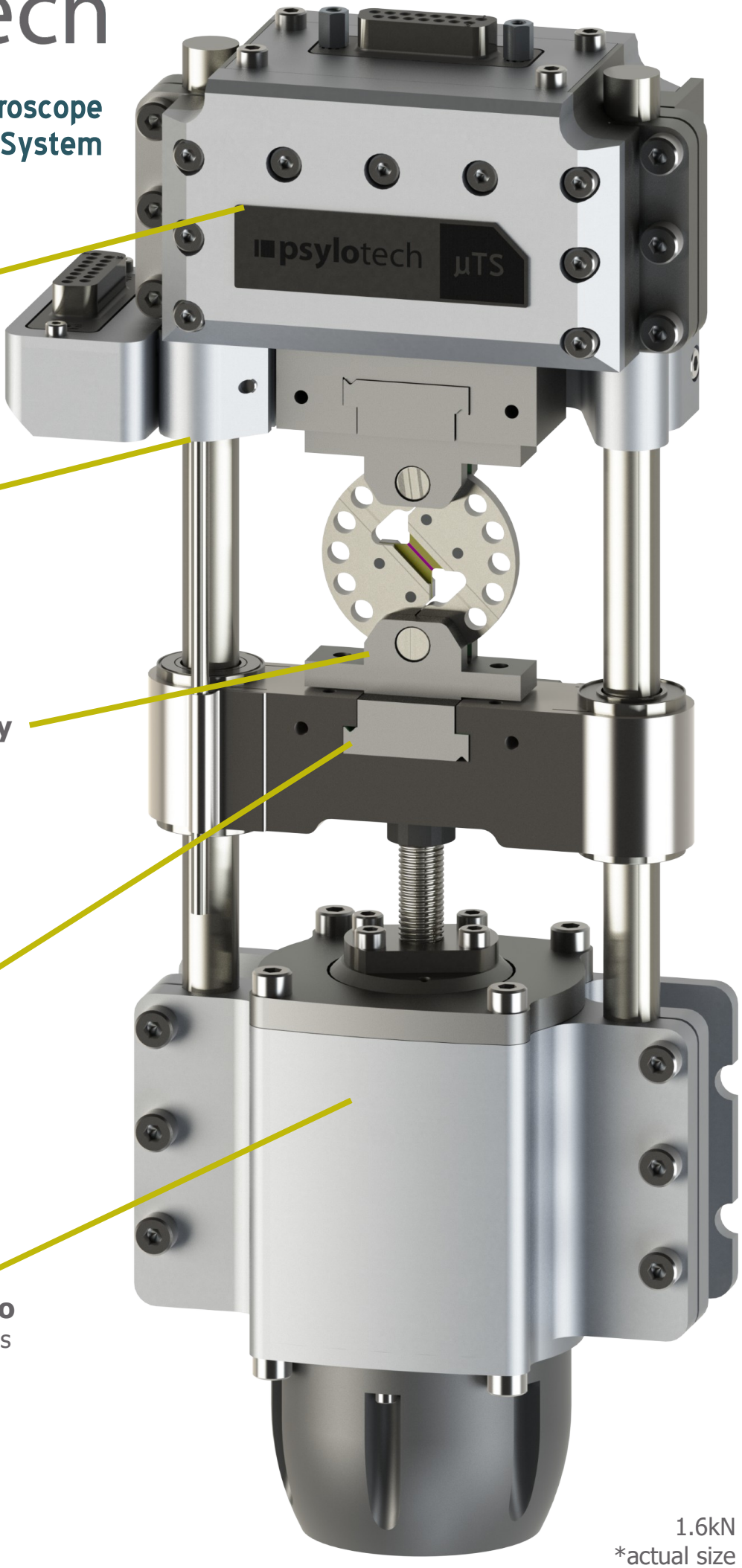
psylotech

µTS

Under Microscope Universal Test System



High-Res. Load Cell
100x resolution vs. strain gauge

High-Res. Local Displacement Sensor
pitch & yaw compensated center axis measurement

Load Plane Symmetry
maintains sample in plane for microscopy

Notched T-Slot
enables grip variety & enhances repeatability

Direct Drive Ballscrew Servo
hydraulic-like speeds

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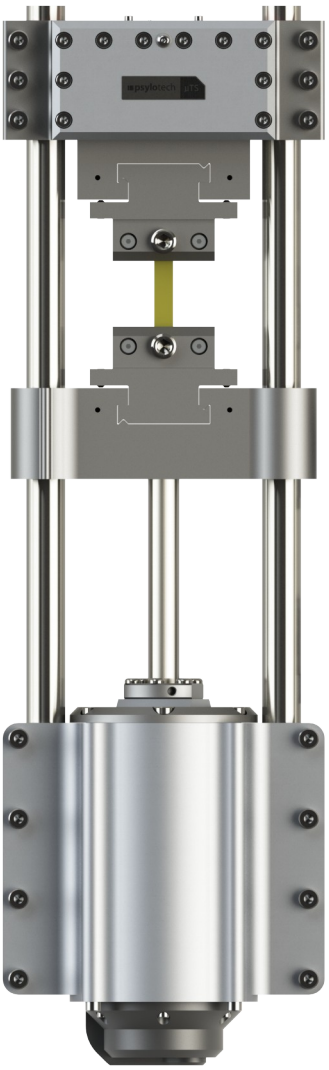
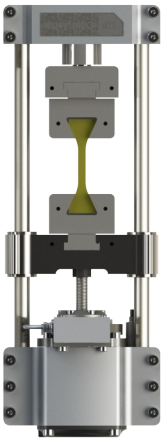
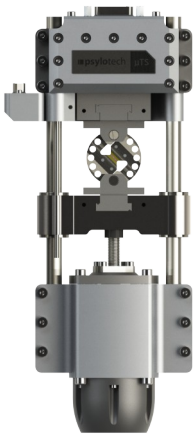
1.6kN
*actual size







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Multi-Length
-Speed
-Force miniature universal load frames

Multi-length scale

The µTS leverages digital image correlation (DIC) and microscopy to locally measure strain on small samples. The minimized out-of-plane motion is critical, particularly under high magnification in optical microscopes. Out-of-plane motion also produces false DIC strains.

Multi-speed scale

The direct drive ball screw actuators cover 7 orders of magnitude in speed. Speed is useful for fatigue, step loaded creep or stress relaxation tests, and effective load control

Multi-Force Scale

Psylotech's proprietary high-resolution force transducers enable a broader range of specimen sizes without the need for system re-alignment. They have high bending rigidity and excellent alignment, since they are wire EDMed form a singl block of metal.

Grip Variety

Shoulder mount & clamp tension grips, compression platens, 3 & 4 point bend fixtures and Arcan grips are available, as well as a platform grip with an M3 bolt pattern. The notched T-slot facilitates repetitive grip alignment in all 6 degrees of freedom.

Centering Stage

An available X-Stage option keeps the area of interest centered under the microscope throughout a test. The effective relative cross-head motion is software programable, so even a beam bending sample can be kept inside the field of view.

Available Options

Torque, temperature (-65 to 1600°C), and a 4-axis high resolution load cell are available. Actuators can be tuned for fatigue. The LabVIEW control source code is available upon request.

Specifications

force capacity (kN)	**1.6**	**4.5**	**10**	**25**	**45**
force resolution (mN)	3	10	20	50	5000
stroke (mm)*	40	24	25	25	100
max. speed (mm/s)**	145	36	175	70	2
system height (mm)***	450		236		850
angular resolution	26 bits (0.0000056°)				
bearing runout (µm)	2.5		4		8
nominal mass (kg)	6		20		65

*minimum value, longer strokes available at expense of system height
**higher speeds available at expense of force capacity
***minimum value, system height easily increased

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