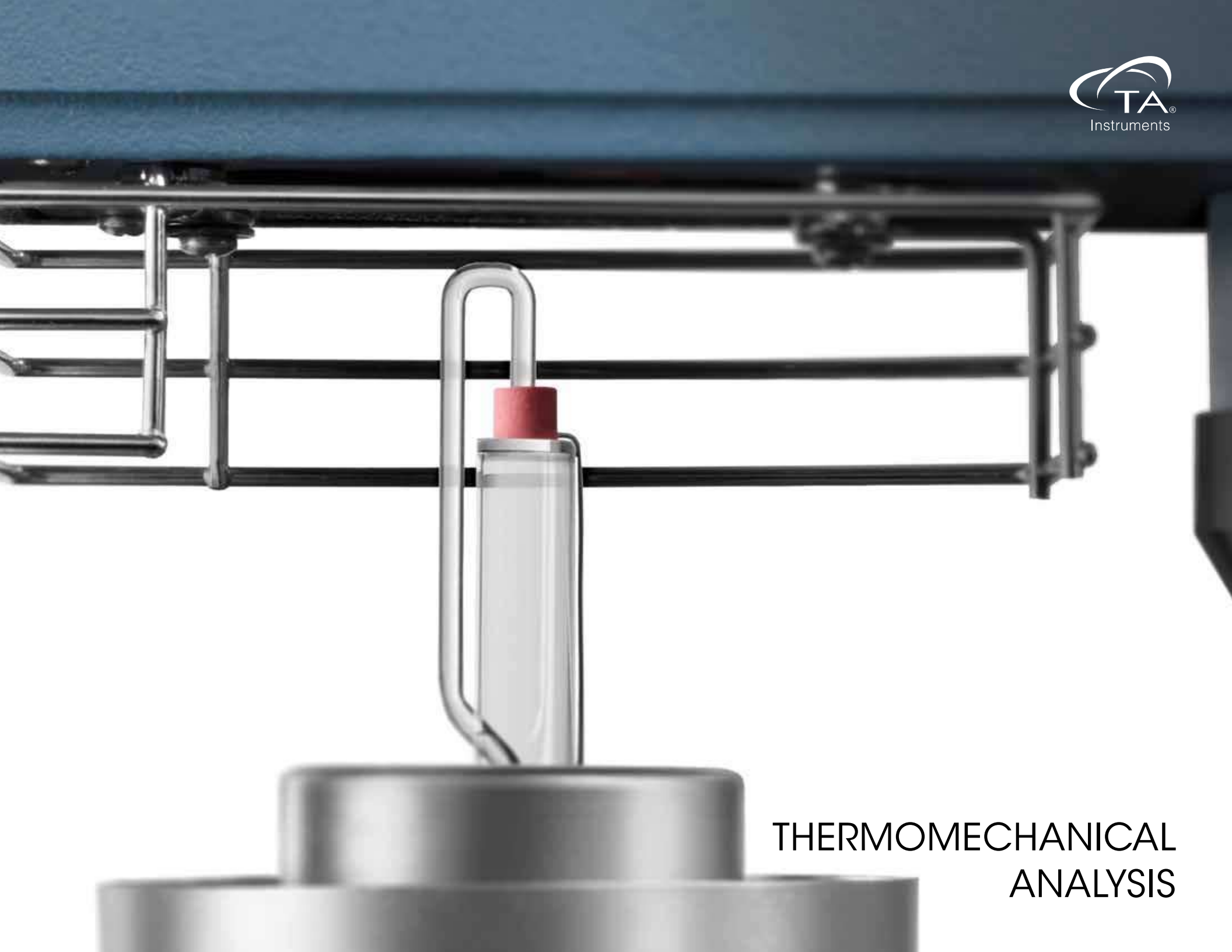

TA Instruments

THERMOMECHANICAL ANALYSIS

Q400EM/Q400

Sensitive Measurement
Unmatched Versatility

The Q400EM is the industry's leading research-grade thermomechanical analyzer with unmatched flexibility in operating modes, test probes, and available signals. The Enhanced Mode (EM) allows for additional transient (stress/strain), dynamic and Modulated TMA™ experiments that provide for more complete viscoelastic materials characterization plus a way to resolve overlapping thermal events (MTMA). The Q400 delivers the same basic performance and reliability as the Q400EM but without the latter's advanced features. It is ideal for research, quality control, and teaching applications.

PERFORMANCE SPECIFICATIONS

	Q400EM	Q400
Temperature Range (max)	-150 to 1,000°C	-150 to 1,000°C
Temperature Precision	± 1°C	± 1°C
Furnace Cool Down Time (air cooling)	<10 min from 600°C to 50°C	<10 min from 600°C to 50°C
Maximum Sample Size - solid	26 mm (L) x 10 mm (D)	26 mm (L) x 10 mm (D)
Maximum Sample Size - film/fiber		
Static Operation	26 mm (L) x 1.0 mm (T) x 4.7 mm (W)	26 mm (L) x 1.0 mm (T) x 4.7 mm (W)
Dynamic Operation	26 mm (L) x .35 mm (T) x 4.7 mm (W)	—
Measurement Precision	± 0.1%	± 0.1%
Sensitivity	15 nm	15 nm
Displacement Resolution	<0.5 nm	<0.5 nm
Dynamic Baseline Drift	<1 µm (-100 to 500°C)	<1 µm (-100 to 500°C)
Force Range	0.001 to 2 N	0.001 to 2 N
Force Resolution	0.001 N	0.001 N
Frequency Range	0.01 to 2 Hz	—
Mass Flow Control	●	●
Atmosphere (static or controlled flow)	Inert, Oxidizing, or Reactive Gases	Inert, Oxidizing, or Reactive Gases
Operational Modes		
Standard	●	●
Stress/Strain	●	—
Creep	●	—
Stress Relaxation	●	—
Dynamic TMA (DTMA)	●	—
Modulated TMA™ (MTMA™)	●	—

● Included
— Not Available