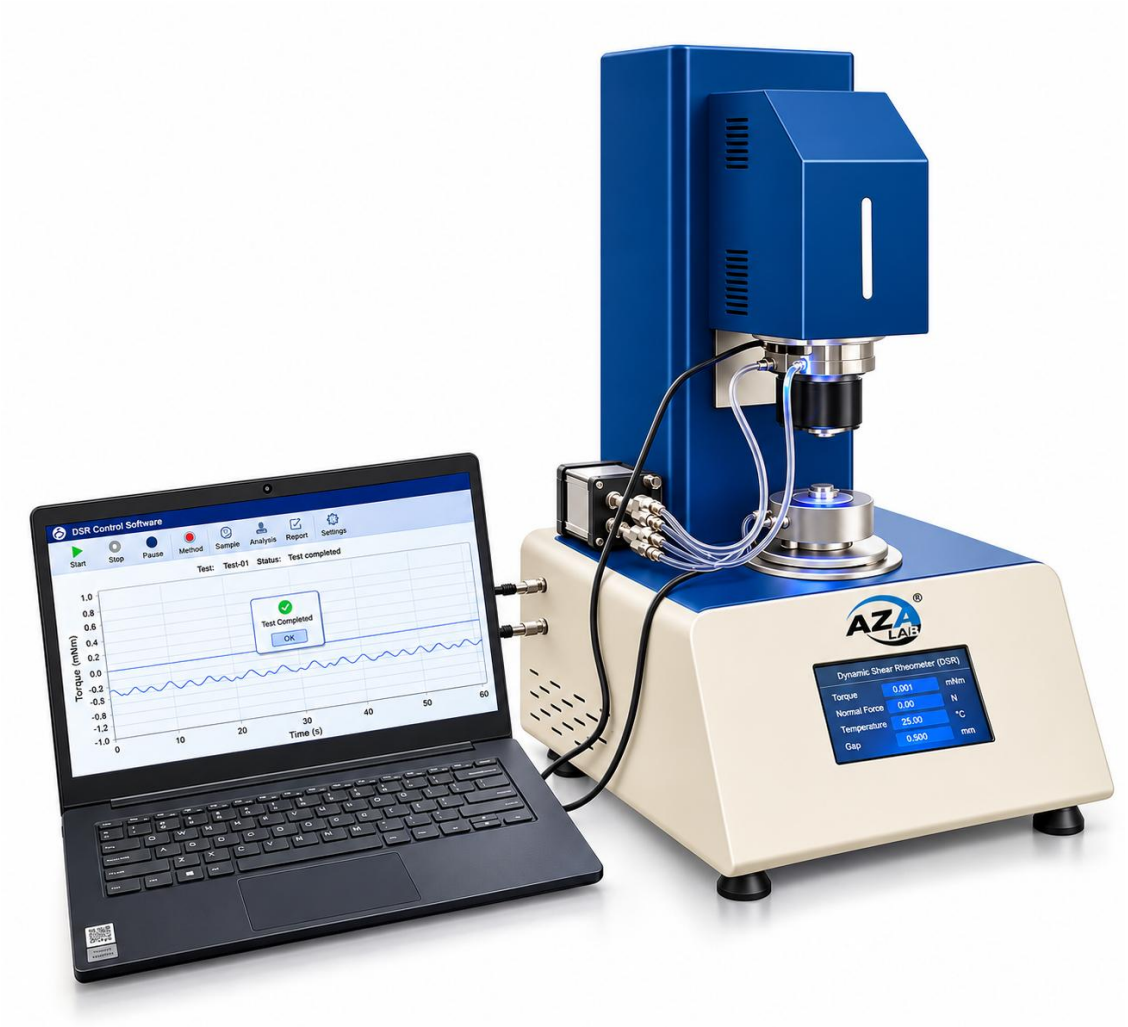
AZA LAB / MATERIAL TESTING EQUIPMENT

DYNAMIC SHEAR RHEOMETER (DSR)

AZA1180 | TECHNICAL DATASHEET



PRODUCT OVERVIEW

The Dynamic Shear Rheometer (DSR) is designed for rheological characterization of asphalt binders under controlled loading and temperature conditions. It measures complex shear modulus and phase angle to assess viscoelastic behavior.

Operating over 5–85°C, the instrument supports asphalt binder research and evaluation of rutting and fatigue-related performance. Precision torque, force, displacement and temperature controls enable repeatable laboratory measurements.

KEY CAPABILITIES

- Ultra-low-inertia servo motor for responsive torque and speed control
- Optical angular encoder with 10^{-4} rad resolution
- Sensitive normal-force and torque measurement systems
- 0.1 µm vertical displacement measurement resolution
- Dual-clamp Peltier temperature control, accuracy ±0.1°C
- Real-time software monitoring, rheological curves and TTS analysis

TECHNICAL SPECIFICATIONS

01 / INSTRUMENT PARAMETERS

Parameter	Specification
Torque range	0.001–200 mN·m
Torque resolution	0.001 mN·m
Normal force range	0.01–50 N
Normal force resolution	1 mN
Test plates	1 pair Ø8 mm and 1 pair Ø25 mm; customizable
Rotating speed	0.01–2850 r/min
Angular velocity range	0.01–300 rad/s
Deflection angle resolution	10^{-4} rad
Vibration frequency range	0.1–10 Hz
Temperature range	5–85°C
Temperature resolution	0.01°C
Temperature control accuracy	±0.1°C
Bearings	Porous carbon magnetic thrust bearings
Power supply	220 V AC, 50 Hz

02 / STANDARD CONFIGURATION

- Integrated rheometer and control system
- Upper/lower temperature-controlled clamps
- 8 mm and 25 mm plate pairs
- PC software interface

03 / AVAILABLE CUSTOMIZATION

- Customized test plates
- Software functions and analysis workflows

CONTACT

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