

ASPHALT MIXTURE PERFORMANCE TESTER HY-AMPT-30

HY-AMPT-30 asphalt mixture performance tester adopts hydraulic loading method, realizes the waveform output of loading force by controlling the hydraulic servo valve. At the same time, high-precision displacement sensors are used to accurately measure the deformation of the specimen during the test, so as to accurately evaluate the strength, dynamic modulus, fatigue and other properties of the pavement material, and simulate the various mechanical effects that the pavement material is subjected to during actual use.



TECHNICAL SPECIFICATIONS

Maximum loading capacity	30KN
Confining pressure range	0~300kPa
Pressure measurement accuracy	5N
Displacement measurement accuracy	+2.5μm
Frequency range	0.01~25Hz
Control method	Hydraulic loading
Environmental chamber dimensions	Inner diameter 320mm, inner height 395mm
Environmental chamber temperature	-10-60℃
Temperature control method	External circulating air
Triaxial cell dimensions	Ø340mm×395mm
Noise level	<60dB (within 2m)
Operating system	Windows 11
Power supply	380V 50Hz
Host dimensions	700×700×1400mm

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FEATURES

HOST

- Built-in dynamic load hydraulic cylinder + high-frequency solenoid valve to generate various pressure waves (sine wave, sine wave, triangle wave, trapezoidal wave, etc.) required for the test.
- The main displacement sensor is installed inside the hydraulic cylinder to save space.
- The pressure sensor is installed on the top of the piston rod to avoid the generation of pressure components.
- The triaxial column reaction frame has higher structural stability.



ENVIRONMENTAL CHAMBER

- Use double-cavity vacuum composite glass to achieve efficient heat insulation while improving test visibility.
- Adopts pneumatic lifting system, which can be lifted with one button, providing 360mm barrier-free operating space for test operations.
- The small space design has higher temperature control accuracy and efficiency, while also reducing energy consumption.
- Confining pressure tests such as dynamic modulus and flow value times can be carried out directly without the need for confining pressure cylinder.
- Adopts advanced multi-hole directional airflow circulation system to make the temperature more uniform.

EXTERNAL CIRCULATION TEMPERATURE CONTROL SYSTEM

- Independent temperature control system, based on the frequency conversion control principle to control the cooling or heating power.
- Uses a color LCD touch screen control to accurately adjust the compressor speed and the power of the heating device to achieve precise temperature control.
- The temperature control system and the host are connected with flexible materials to avoid the influence of the vibration of the temperature control system on the test results.



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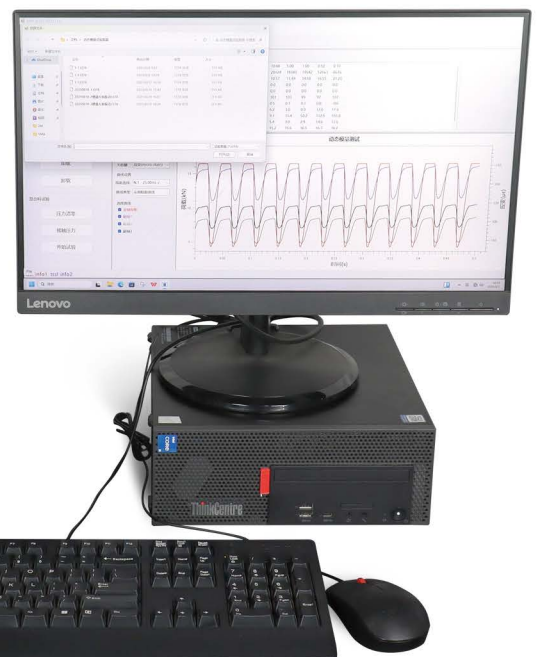
HYDRAULIC UNIT

- The silent design of the servo motor replacing the traditional three-phase motor effectively avoids the noise impact on other tests being conducted simultaneously.
- Install high-precision filters at the oil inlet and outlet to extend the service life of the hydraulic cylinder.
- Integrated valve block design simplifies the oil circuit.



CONTROLLER

- Includes data acquisition system and control software, which can perform closed-loop control on 4 target components at the same time and collect 13 physical quantities.
- Data collection is stable and data algorithms fully comply with specifications.
- The controller has a built-in library of standard test methods from which users can choose. Users can also perform custom tests according to their needs to meet non-standard test requirements.
- Automatically matches the sensors required for the test.
- Monitor the working status of the sensor in real time and stop loading to protect the equipment when the limit is exceeded.
- Real-time monitoring of data and display of change curves during the test. Fault alarms will be issued when the data deviates from the normal value, and the reasons will be prompted.
- The total acquisition frequency can reach 15KHZ.
- Record the original test data for data retrieval and analysis.



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FIXTURES

★ The fixtures need to be ordered separately.



MARSHALL STABILITY TEST



TENSILE SPLITTING TEST



BENDING TEST



UNIAXIAL
COMPRESSION TEST



IDEAL RUTTING TEST (IRT)
ASTM WK71466
ASTM D8360



SEMI-CIRCULAR BEND (SCB) TEST
AASHTO T394
ASTM D8044



TACK COAT/INTERLAYER BOND
STRENGTH TEST (DIRECT SHEAR TEST)
EN 12697-48
AASHTO TP114



UNIAXIAL
PENETRATION TEST



DYNAMIC MODULUS TEST
AASHTO T378



DYNAMIC MODULUS
TEST (SMALL DIAMETER)
AASHTO TP132



DIRECT TENSION TESTING
AASHTO T400



DIRECT TENSION TESTING
AASHTO T411



FLOW NUMBER TEST
AASHTO T378



INDIRECT TENSILE TEST
EN 12697-24 METHOD E



INDIRECT TENSILE TEST
EN 12697-24 METHOD F



FOUR-POINT BENDING TEST
AASHTO T321



COMPRESSION
FATIGUE TEST