

Modular Electro-mechanically operated Asphalt tester AsphaltQube



MAIN FEATURES

- Brand new technology including the new revolutionary EmS actuator
- Easy and versatile with his fully integrated modular system, that includes a 15 kN capacity CEMA1 actuator
- Enhanced environmental cabinet that grants a wide temperature range with fast and accurate temperature control
- Easy-to-use and ergonomic testing system
- Clarity in results with the Integrated Multi Axis Control System (IMACS)
- Fully integrated and very compact in design, a perfect solution for both static and mobile testing facilities
- Optional air compressor that comes integrated in the machine
- All-in-one touchscreen PC (optional)

EmS technology's main benefits:

- Improved dynamic performance over servo-pneumatics
- Stand-alone with no need of compressed air supply
- Lower maintenance
- Robust and durable giving a more resilient solution
- Compact design requiring, in general, a smaller footprint
- Easy to use

GENERAL DESCRIPTION

AsphaltQube is a fully integrated standard testing system based on the revolutionary EmS Electro-mechanical Servoactuated technology, suitable for QC / QA tests.

Now you can perform the most common asphalt standards in one compact, modular, easy to use machine.

The flexible system allows you to perform the test with AMPTQube (permanent deformation, cyclic compression, indirect tensile stiffness, indirect tensile fatigue, crack propagation, direct tension-compression, dynamic / complex modulus) plus triaxial compression, four-point and two -point stiffness and fatigue flexural tests.

The **AsphaltQube** can be used as part of your **Superpave performance based testing** program.

TECHNICAL SPECIFICATIONS

- Load capacity: Static 10 kN, Dynamic 15 kN
- Frequency range: 0.01 to 70 Hz sinusoidal loading
- Actuator stroke: 30 mm (+/- 15 mm stroke)
- Actuator type: E-Mech electro-mechanical actuator CEMA1
- Specimen size (dia x H): 100 x 150 nominally, 50 x 135, 38/50 x 110mm
- Noise level less than 70 db at 2m
- Computer control: integrated all-in-one PC touch screen (optional)
- Air compressor and dryer: low noise, integrated, automated-on-demand (optional)
- Dimensions (H x W x D): 1630 x 830 x 830 mm with environmental chamber
- Weight :: 250kg

Transducers

- o Load cell: low profile pancake type
- o Built-in LVDT actuator: 30 mm stroke
- o Plug-and-Play: up to 8 channels

Services

- o Power without air compressor: 230 V, 50 Hz, single phase, 9 A; 110 V, 60 Hz, single phase, 18 A
- o Power with air compressor: 230 V, 50 Hz, single phase, 11 A; 110 V, 60 Hz, single phase, 22 A
- o Air: Clean dry air at 450-800 kPa; 2 L / sec (optional integrated air compressor available)

ORDERING INFO

79-PV72Q02

AsphaltQube, complete with 10kN static / 15kN dynamic E-Mech actuator, 20kN load cell, 30mm actuator LVDT and IMACS. 208-230 V, 50-60 Hz, 1 ph.

79-PV72Q04

AsphaltQube, complete with 10kN static / 15kN dynamic E-mech actuator, 20kN load cell, 30mm actuator LVDT and IMACS. 100 V, 60 Hz, 1 ph.

ACCESSORIES

Environmental chambers for AsphaltQube and AST Pro

Standard range

79-PV72E12

Standard environmental chamber, +2 to + 60 ° C

- Temperature Range: +2 ° C to + 60 ° C ⁽¹⁾

- Temperature Accuracy: +/- 0.5 ° C ⁽²⁾

- Dimensions: 690 x 830 x 690 mm (H x W x D)

Extended range

79-PV72E22

Extended range environmental chamber, -10 to + 60 ° C

- Temperature Range -10 ° C to + 60 ° C ⁽¹⁾

- Temperature Accuracy: +/- 0.5 ° C ⁽²⁾

- Dimensions: 690 x 830 x 720 mm (H x W x D)

- Granting full compliance to NCHRP 9-29 (all temperatures including 4 ° C are restored in less than 5 'after sample setup)

- Requiring the connection to a suitable cooling unit (see below)

- Including integrated water cooling unit (cooling power 700 W)

⁽¹⁾ At ambient temperature of + 23 ° C

⁽²⁾ With temperature probe close to the specimen

Reaction frame

79-PV72001

Reaction frame kit

79-PV72002

All-in one touch screen PC, desktop version

79-PV71001

Integrated compressor assembly, max air flow 137 l / min, 8 Bar cap., 5 liter tank, with air dryer with molecular server.

For machines at 50Hz

79-PV71002

Integrated compressor assembly, max air flow 137 l / min, 8 Bar cap., 5 liters tank, with air dryer with molecular server.

For machines at 60Hz

ADDITIONAL INFORMATION

IMACS Digital Controller and Data Acquisition System

IPC Global's world leading IMACS digital controller and data acquisition system is at the heart of all our servo-controlled testing systems. It

provides excellent waveform fidelity from integrated channel acquisition and control functions, at speeds of up to 5 kHz simultaneously on all channels.

The IMACS utilizes flash-based firmware which allows updates of all modules onsite. Analogue inputs auto-calibrate on power-up giving confidence in readings and a low data noise performance with over-sampled data.

With up to 8 expandable control axes and 32 data acquisition channels, you can have total confidence in your testing results. It has an exceptional data resolution and control with up to 20 bit effective auto-ranging data acquisition and a real-time digital computer control with 32 bit processing.

Three versions are available: for Servo-Hydraulic, Servo-Pneumatic and Servo-Electromechanical systems.

UTS Software

IPC Global's powerful and professional UTS Software draws upon over 30 years of advanced materials testing experience. IPC Global's test and control software is known for its simplicity in use, clarity of results and analytical power.

It was developed from expert knowledge of applications to run automated test routines and therefore speeds up testing. It is written in powerful, professional Delphi and features real-time graphs for monitoring the specimen under test; portable binary data files or sharing, reviewing and analysis; and "live" transducer levels display.

The purpose-built UTS applications have dialogue help boxes for automated test routines and easy-to-read graphic screens for test set up and reviewing. The test is totally programmable from the user.



UTS software



IMACS



AsphaltQube fitted with Overlay testing jig