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PAVELAB50 PRO

Automatic Closed-system Asphalt Analyzer



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PAVELAB50 PRO

A revolution in binder extraction

PAVELAB50 Pro is the most advanced system for automatic separation and extraction of bitumen, filler, and aggregates from asphalt samples by use of solvents. It delivers high-precision quantitative determinations of bitumen in asphalt mix for specification acceptance, service evaluation, control, and research.

Customizable

PAVELAB50 Pro can be supplied complete with a wide range of accessories and option, to have a machine tailored around the user's needs. Accessories include the water-cooling system, to reduce the need of external water, and the solvent pumping device for solvent filling and removal, to improve the operator safety.

Fully integrated

PAVELAB50 Pro includes a solvent extractor, centrifuge, solvent recycler, and aggregate dryer. There's the option to add a weighing system for a complete all-in-one unit with no need for additional items in your laboratory.

Fast and automatic

The process including solvent extraction, aggregate, filler separation and drying. Solvent distillation is typically performed in 50 mins or less. The optional integrated balance allows to determine the binder content easily.

Flexible

PAVELAB50 Pro can be easily adapted for use of different solvents. Additionally, operators can modify the washing programs and extraction parameters such as centrifuge speed to suit different mixes, including rubber, polymers and recycled asphalt.

User-friendly

PAVELAB50 Pro has been designed to improve operability and maintenance operations. The optional pH-meter inbuilt into PAVELAB50 Pro solvent tank monitors the solvent in real time, warning the operator about the need to check the solvent quality.

Clean and safe

PAVELAB50 Pro's fully sealed and closed-loop construction minimizes exposure of laboratory and workers to fumes and solvent, without the need of protective hoods, masks or goggles.

Main features

7” touch screen
The 7” touch screen swinging panel displays in real time all the machine functions, easily allowing the machine setup. The machine version with integrated balance also allows to manage a test database, including weighing information and the calculated binder content.

Versatile washing chamber
The main washing chamber can be used with different washing drums. The asphalt mix is subjected both to solvent action and ultrasonic vibration for optimal solvent removal.

Direct connection for rotary evaporator for binder recovery (optional)
A special extraction procedure allows to get solvent batches with high binder content.

Inbuilt pH-meter (optional)
The solvent tank has inbuilt an optional pH-meter monitoring the solvent in real time, avoiding the risk of damages on the machine due to aggressive solvent.

High speed filterless centrifuge for filler separation
The operator can adjust the rotating speed up to 8,000 rpm to avoid filler degradation.

Automatic valve
The automatic valve for internal flow management optimizes the solvent needed for a single extraction and also enables the recovery of the solvent.

PC and printer connection
It is possible to connect a PC for remote management of the washing procedures with dedicated software and, for the version with integrated balance, to export the extraction results to PC, or to print them on serial printer.



PAVELAB50 PRO

Standards **EN 12697-1 | ASTM D8159**

PAVELAB50 Pro enhances all the main features of our previous ranges of IPC Global automatic closed-loop solvent extractors. The new centrifuge for binder recovery, combined with the automatic valve for binder flow control precisely optimizes all the solvent flows in the unit. This reduces extraction time and the need to clean solvent for each extraction. All test parameters can be modified using the control panel; this includes all temperatures as well as the centrifuge speed which allows the machine to adapt easily to different solvent and different type of mixes, just out from the box.



PAVELAB50 Pro includes:

- A main washing chamber where a washing drum is subjected to the action of solvent, rotation, and ultrasonic vibration.
- A high-speed centrifuge for the separation of filler material, and a solvent recycling unit.
- A solvent recycling unit

At the end of the washing phase, aggregates and filler are dried by forced air circulation and the residue of solvent is recovered by condensation.

Safer

PAVELAB50 Pro is the safest solution to solvent extraction. Thanks to its fully sealed construction, PAVELAB50 Pro ensures a fully clean and safe operation that minimizes exposure to fumes and solvent, well within OSHA limits for workplace security. A range of accessories, including the solvent pumping system for solvent tank filling, allows to minimize the contact with solvent also during the machine setup and maintenance phases.

Flexible

PAVELAB50 Pro can be adapted out from the box to different non-explosive solvents. Its programmable washing and drying sequences, also programmable from remote, allow the unit to easily adapt to different mixes, such as hot-mix asphalt, or asphalt material with rubber, polymers and recycled asphalt, or asphalt shingles. If equipped with optional fast connection to rotary evaporator, for binder recovery purposes, PAVELAB50 Pro includes a special extraction procedure allowing a non-contaminated solvent/binder batch collection, thanks to the included automatic valve.

More cost-effective

PAVELAB50 Pro is high performing, minimizing the cost of each extraction test. A complete extraction, including aggregate and filler drying, is typically performed in about 50 minutes, and minimal maintenance are needed daily. PAVELAB50 Pro reduces the need of solvent for each extraction, and it's able to recycle 99% of the used solvent for further tests. The version including an integrated balance is able to drive the operator through all the pre- and post-test weighing procedures, reducing the possibility of errors.

Maintenance-friendly

The new optional pH-meter inbuilt into PAVELAB50 Pro solvent tank, monitoring the solvent in real time, is able to warn the user about the need to check the solvent quality, to avoid the risk of damages on the machine due to aggressive solvent. Additionally, the unit is supplied complete with an equipment and solvent logbook helping to user to apply a correct maintenance to the unit, recommended to grant a long life to PAVELAB50 Pro.



Technical specifications

Maximum sample size: 3.5kg	**Power rating:** 6 kW (excluding water cooling system)
Centrifuge rotation speed: User adjustable up to 8000 rpm	**Optional inbuilt balance:** 10 kg capacity, ±0.1 g resolution
External cup nominal dimensions: 120 x 200mm (diameter x height)	**Flow control:** Automatic valve to control solvent flow between washing chamber and centrifuge
Maximum filler capacity: approx. 300g	**Weight:** approx. 240 kg
Extraction time (including drying of aggregate and filler): approx. 50 minutes	**Overall dimensions:** approx. 1400 x 750 x 1500 mm (w x d x h)
Solvent used per extraction: approx. less than 10 liters (recycled)	

Ordering information

Standard version

75-PV50A35
PAVELAB50 Pro - Automatic Closed-system Asphalt Analyzer for separation and extraction of bitumen, filler and aggregates from asphalt samples by use of solvents. 380 V, 50-60 Hz, 3 ph.

75-PV50A36
Same as above but 220 V, 60 Hz, 3 ph.

Version incorporating balance

75-PV50A45
PAVELAB50 Pro - Automatic Closed-System Asphalt Analyzer for separation and extraction of bitumen, filler and aggregates from asphalt samples by use of solvents. Complete with integrated scale. 380 V, 50-60 Hz, 3 ph.

75-PV50A46
Same as above but 220 V, 60 Hz, 3 ph.



Placing the washing drum into the machine



Recovery/distillation unit. Double chamber: one for distillation, one used for reservoir.



Placing the centrifuge cup into the centrifuge unit

Upgrades and accessories

Machine upgrades

75-PV5X100
Fast connection for rotary evaporator flask, for bitumen solution sampling (to be ordered at time of order)

75-PV50UP1
Upgrade of solvent tank with pH-meter, to monitor the solvent quality in real-time (to be ordered at time of order)

Washing drums cup and closing lid kit

75-PV50/KIT
Kit of accessories complete with:

75-PV5X010 washing drum, 0.063 mm mesh
75-PV5X040 closing lid for washing drums
75-PV5X150 centrifuge cup, 120 mm diameter
75-PV0005/2 lining paper for centrifuge cup. Pack of 100.

Alternative washing drums

75-PV5X010
Washing drum, 0.063 mm mesh

75-PV5X020
Washing drum, 0.075 mm mesh

75-PV5X030
Washing drum, 0.090 mm mesh

75-PV5X010/C
Washing drum, 0.063 mm mesh with traceable certificate of wire mesh opening

75-PV5X020/C
Washing drum, 0.075 mm mesh with traceable certificate of wire mesh opening

75-PV5X030/C
Washing drum, 0.090 mm mesh with traceable certificate of wire mesh opening

Manual solvent check and stabilization

75-PV5X110
Testing device to verify the stability of recycled solvent from the pH value.

75-PV5X120
Solvent stabilizer. 1000 ml bottle. For stabilization of recycled solvent.

Solvent pump

75-PV5X200
Solvent pumping device for safe solvent filling

Water cooling system

75-PV5X145
Water cooling system providing water between 10 and 15°C, flow rate 5 liters/min, pressure 3 bar. 380 V, 60 Hz, 3 ph.

75-PV5X146
As above but 220 V, 60 Hz, 3 ph.

75-PV5X170
Upgrade with additional electro valve when using cooling tap water

75-PV5X180
Fast connections for cooling pipes

Centrifuge cup

75-PV5X150
Centrifuge cup, 120 mm diameter.

75-PV0005/2
Lining paper for centrifuge cup. Pack of 100.

75-PV5X160
Device for the extraction of the centrifuge cup.


75-PV5X040


75-PV5X010


75-PV5X150



75-PV5X145

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شركة البرقان للمعدات

BURGAN EQUIPMENT CO.

KUWAIT

P.O. BOX : 4148, Safat Kuwait

+965 22437670, 22428730,
22450929
+965 22402294

contact@burganequip.com

burganequipment.com

DUBAI (UAE)

P.O. BOX : 47817 ,Dubai

+971 42724759
+971 50 8708303, +971 50 9033564

burgandubai@burganequip.com

burganuae.com

QATAR

P.O. BOX : 22036, Doha, Qatar

+974 44987832, +974 44310790
+974 66003993, +974 33468825

burganqatar@burganequip.com

burganequipment.com

ABU BHABI (UAE)

UNIT NO-47, MUSAFFAH

+971 564022059

burgandubai@burganequip.com

burganuae.com