

PILODIST®

Laboratory & process technology

PILODIST® 1120 CC



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PILODIST® 1120 CC

Fully-automatic system for the determination of the equilibrium boiling point of engine coolants conforming to ASTM D1120 and brake fluids according to SAE-J1704 and other standards.

The system is designed for fully-automatic operation conforming to ASTM-D1120 to determine very precise and reproduceable the boiling point of engine coolants and brake fluids.

A complete test can be done in approx. 8-15 minutes. An indelible print out with all results is performed automatically and additionally a PDF-file can be created for network connectivity.

The product is being charged and heated up to the boiling point. The drop rate of the condensed product is being detected and registered by means of an optical sensor. Up to the point when the optimal and preselectable drop rate per second is achieved the system will control the heating power by pulse duration modulation. The system controls the operation until the required equilibrium is stabilized. The temperature of the liquid is being measured by means of of very precise temperature sensor.

By using a barometric sensor the boiling point correction is being calculated and presented via programmed formula. All parameters are variable in order to follow different applications and test procedures in the same system.

PILODIST 1120 CC can be operated in different measuring modes to be selected via an integrated touchpanel. All parameters are indicated during the measuring process as well as the results. The basically included test methods are:

- REFLUX BOILING POINT (ASTM-D1120)
- EQUILIBRIUM REFLUX BOILING POINT (SAE-J1704)

As a special feature there is an additional software available for measurements also the following characteristics according to SAE-J1703 & J1704 (Option 1):

- WET BOILING POINT
- CHEMICAL STABILITY
- HIGH TEMPERATURE STABILITY

All methods are also valid for the test standards:

- ISO 4925
- FMVSS 116

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Technical data:

Filling volume:	60ml
Working pressure:	ATM
Working temperature:	max. 450°C
Temperature measurement: <i>The basic system includes either Type A or B temp. measurement. See also option 2 for ordering both measuring types in one system at additional price</i>	Type A: Up to +320°C Resolution 0,01°C Accuracy 0,1°C <i>Alternatively (Desired range needs to be defined in the order)</i> Type B: Up to +450°C Resolution 0,1°C Accuracy 0,5°C
Pressure measurement:	900mbar bis 1100mbar (absolute) Resolution 0,1mbar Accuracy 1mbar
Dimensions (hxwx):	665x500x340 mm (without thermostat)

Key features:

- Easy operation
- Fast and precise operation
- Reduction of operator time by fully automatic process
- Traceable and indelible
- Assurance of conformity to test standard
- Flexible for different applications
- Compact design

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Software:

PD 1120 CC		02/18/2016 11:05:38	PILODIST
CHARGE-ID:	635168	00:00:35	
OPERATION MODE:	EQUILIBRIUM REFLUX BOILING POINT (SAE J1704)		
STANDBY			
TEMPERATURE OF IBP (FIRST DROP)	0.00	°C	
MAXIMUM FLASK TEMPERATURE	0.00	°C	
FLASK TEMPERATURE	0.00	°C	
AMBIENT PRESSURE	600.05	mmHg	
EQUILIBRIUM BOILING POINT	0.00	°C	

The software is easy to operate and self explaining. In a password protected service area all parameter recipes are saved by a supervisor and loaded by the operator in an different access modes.

The software provides in the password-protected area the possibility of a 2-point calibration of all sensors. A network connectivity is given to transfer results to other PCs and for PILODIST remote support.

Main system components:

- Glass distillation flask Ø60mm acc. to ASTM-D1120, Borosilikate glass 3.3
- Condenser, mantled for tempering and drop nozzle, Borosilikate glass 3.3
- High precision platinum-temperature sensor
- Electrical high temperature heating bath
- Optical sensor system for drop counting
- Table top mounting framework (housed with front doors in Polycarbonate)
- Barometric sensor for atmospheric pressure correction
- Controller DCD-1120
- Touchpanel 7" HD-Widescreen, Windows-7
- PILODIST control software with automatic process control
- High Performance two colour receipt printer
- Set of boiling stones/chips (50 gramm)
- 60ml measuring cylinder

Order-no.: 1120C-000-00

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Options (to be ordered additionally):

1. Additional software kit according to SAE J1704 & J1703

- To perform additionally tests conforming to SAE J1704 & J1703 for
- thermal boiling stability of break fluids
 - chemical boiling stability of break fluids
 - wet boiling point of break fluids
 - equilibrium-reflux-boiling point

Order-no.: 1120C-OP1-SE

2. Extension of automatic integration of both temperature ranges:

By using this option it will be possible to measure in a very high precision mode up to 320°C (0,01°C) and then then the system will switch over automatically to the extended temperature range of 450°C (0,1°C).

Without the option the system will be delivered just in Type A or Type B mode (to be specified in the order).

Order-no.: 1120C-OP2-TE

3. Automatic PDF-File Creator:

By using this option the system will automatically create and save a write protected PDF-File with all results and the Charge-ID. The files can be used as an archive for traceability and via a network connection tranfered to other PCs.

Order-no.: 1120C-OP3-PDF

4. Cooling circulation thermostat:

Coolung thermostat for cooling of the condenser:

- Temperature range: -20.....+100°C
- Temperature constancy: +-0,03°C
- Refrigeration capacity at 20°C: 0,26kW
- Heating capacity: 2000W

Order-no.: THERM-CD2-00

5. RCD protection (residual current device/FI)

System supply must be protected by RCD. If no RCD is integrated in the local on-site supply this adapter plug can be used alternatively.

Order-no.: PROTE-RCD-00

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Recommended spare parts (to be ordered additionally):

1	distillation flask	1120C-D60-38
1	temp.sensor PT-100, with ground joint & cable	1120C-PRT-FL
1	light barrier for drop detection	300CC-LB1-01
1	set of boiling stones/chips (50 gr.)	1120C-BOS-50
1	glass measuring cylinder (60ml)	1120C-GMC-60
1	roll of paper for receipt printer	1120C-PRP-00
1	two colour ribbon for receipt printer	1120C-CRP-00