

Flash Point and Sustained Burning of Liquids

Closed Cup Apparatus

Flash Point by Small Scale Closed Tester

Sustained Burning of Liquid Mixtures by Setaflash Tester (Open-Cup)

test method

Verifies the flash point or the sustained burning qualities of small samples in the range of -30°C to $+300^{\circ}\text{C}$.

rapid flash tester

- Conforms to ASTM D3278, D3828, D4206; DOT CFR 49-173.115; IATA; ISO 9038 and related specifications
- One minute test with a 2mL sample
- Simple to operate

Rapid Tester® provides rapid determinations of flash point or sustained burning qualities by using a small sample. A flash/no flash test result is achieved in one minute for flash points below 212°F (100°C) with a 2mL sample. Ideally suited for quality assurance and environmental compliance testing as well as actual flash point for paints, fragrances, hydrocarbons and other liquids. Open cup models are used for determining sustained burning qualities characteristics of mixtures of flammable and nonflammable liquids or liquids with widely different flash points when assessing flammability characteristics. Features convenient semi-automatic operation for flash/no flash tests. Set the test temperature on the digital display and inject a 2mL or 4mL sample into the sample cup. The tester quickly stabilizes itself at the desired value, permitting the test flame to be applied and the result to be observed by the operator. Unit also performs conventional determinations of actual flash temperature by the small scale closed tester method.

Two models are offered: the Closed Cup Model is for routine flash point tests in the range from -30 to $+300^{\circ}\text{C}$ (-22 to $+572^{\circ}\text{F}$); the Open-Cup Model is for sustained burning tests in the range from ambient to 212°F (100°C). Both models include automatic temperature control with $^{\circ}\text{C}/^{\circ}\text{F}$ selector switch, syringe, electronic timer, integral NIST traceable thermometer, and an external fuel cylinder valve for connection to a customer-supplied fuel cylinder or other fuel source.

specifications

Conforms to the specifications of:

ASTM D3278, D3828, D4206; IP 303; ISO 3679, ISO 3680, ISO 9038; DOT CFR 49-173.115; IATA

Electrical Requirements

115V 60Hz 220-240V 50/60Hz

Included Accessories

Low Range Thermometer ($+32^{\circ}$ to $+230^{\circ}\text{F}$ / 0° to $+110^{\circ}\text{C}$)
Syringe

Dimensions l x w x h, in. (cm)

15x23.4x6.3 (38.1x58.6x16.2) Net Weight: 10 lbs (4.6kg)

Shipping Information

Shipping Weight: 16 lbs (7.26kg) Dimensions: 2.3 Cu. ft.



K16500 Rapid Flash Tester,
Closed Cup



K16503 Rapid Flash Tester,
Open Cup

ordering information

catalog no. description

K16500	Rapid Flash Tester, Closed Cup, 115V Aluminum Test Cup/Brass Lid & Shutter
K16591	Rapid Flash Tester, Closed Cup, 220-240V Aluminum Test Cup/Brass Lid & Shutter
K16502	Rapid Flash Tester, Closed Cup, 115V Stainless Steel Test Cup, Lid & Shutter
K16592	Rapid Tester, Closed Cup, 220-240V Stainless Steel Test Cup, Lid & Shutter
K16503	Rapid Flash Tester, Open-Cup, 115V Aluminum Test Cup
K16593	Rapid Flash Tester, Open-Cup, 220-240V Aluminum Test Cup
K16504	Rapid Flash Tester, Open-Cup, 115V Stainless Steel Test Cup
K16594	Rapid Flash Tester, Open-Cup, 220-240V Stainless Steel Test Cup

accessories

K16506	Fuel Cylinder Valve
K16507	Heat Transfer Compound for thermometer
K16508	Metal Cooling Block to facilitate cooling of the sample cup between tests
K16509	Refrigerant Charged Cooling Block to hold cooling mixture for subambient testing
K16510	Syringe 2mL/4mL
K16531	Low Range Thermometer ($+32^{\circ}$ to $+230^{\circ}\text{F}$ / 0° to $+110^{\circ}\text{C}$)
K16532	High Range Thermometer ($+212^{\circ}$ to $+450^{\circ}\text{F}$ / $+100^{\circ}$ to $+250^{\circ}\text{C}$)
K16533	Sub-Ambient Thermometer (-40° to $+185^{\circ}\text{F}$ / -40° to $+85^{\circ}\text{C}$)



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1. Introduction

Dear Sir or Madam,
Thank you very much for purchasing one of our products. Prior to operating the device, please read this manual carefully. You will get useful information about the device's functionality and safe operation.

2. Kindly note / Safety Instructions

- Check if contents of the package is undamaged and complete.
- Remove protection foil above the display.
- For cleaning the instrument please do not use an abrasive cleaner only a dry or moist piece of soft cloth. Do not allow any liquid into the interior of the device.
- Please store the measuring instrument in a dry and clean place.
- Avoid any force like shocks or pressure to the instrument.
- No responsibility is taken for irregular or incomplete measuring values and their results, the liability for subsequent damages is excluded!
- Do not use the device in explosive areas. Danger of death!
- Keep these devices and the batteries out of reach of children.
- Batteries contain harmful acids and may be hazardous if swallowed. If a battery is swallowed, this can lead to serious internal burns and death within two hours. If you suspect a battery could have been swallowed or otherwise caught in the body, seek medical help immediately.
- Batteries must not be thrown into a fire, short-circuited, taken apart or recharged. Risk of explosion!
- Low batteries should be changed as soon as possible to prevent damage caused by leaking. Never use a combination of old and new batteries together, nor batteries of different types.
- Wear chemical-resistant protective gloves and safety glasses when handling leaking batteries.

3. Delivery contents

- Precision Thermometer
- Bag
- 2x Battery 1,5 Volt AA (already inserted)
- Calibration certificate
- Operation manual

4. Application area

The measuring device is used to measure temperatures in liquids, in air or in semi-solid (plastic or organic) materials.

Note on the maximum immersion depth for the measuring medium:

V215: <140°C maximum 160 mm

V315: <140°C maximum 260mm

V215: >140°C maximum 120 mm

V315: >140°C maximum 200 mm

See Fig. G: If the maximum device temperature (temperature measurement by a sensor at the display) is exceeded, the device must be taken into a cooler environment immediately!

5. Device operation

5.1 Starting up the device

5.1.1 Power on / off

Take the device out of the bag. The battery cover is on the back. The battery is factory installed already. When switched off, the display shows the battery capacity. The device has two buttons. (Fig. A). To switch on, press one of the two buttons.

Note: Both buttons switch the device on

The display briefly shows the firmware version and then the currently measured temperature. The temperature sensor is located in the probe tip. In order to measure the correct temperature, the sensor should be at least 50 mm in the medium to be measured. To switch off device, press power key for 2seconds. Device confirms on and off with a beep. The black/white display orientation auto-adjusts to the device position in space, reading direction is always correct. Device switches to standby after 10 minutes. When switching off, the display flickers for 3 seconds. This is required to correctly clear the paperwhite display.

5.1.2 Deactivating turn-off timer

During normal operation, the measuring device shows the remaining operating time in minutes and seconds in the right-hand corner of the display (Fig: C, 7). The device switches off after the time has elapsed. A short press of the power key or use of the menu key restarts the counter. This turn-off timer can be deactivated: While switching the device on, press and hold the power button (1) for 4 seconds until the beep. The device now shows the symbol ∞ (Fig: C, 8), indicating continuous operation mode. To deactivate this function, repeat the process.

5.1.3 Setup menu

Pressing and holding the mode button takes you to a submenu. The device remains in the submenu until the mode button is released. It toggles through menu items every second. Once the key is released, the selected function is changed:

Menu items

MIN-MAX on/off

Switch minimum, maximum and average values on or off. Statistics reset with each activation of MIN-MAX values.

°C/°F

Select Celsius or Fahrenheit display

0,01/0,1 (Display resolution)

The display resolution changes between 0.1° and 0.01°

BACK

Exit setup menu without changes

5.1.4 Trend display

The measured device temperature is shown in connection with a trend display (Fig. C, 9):

-  : temperature rises rapidly
-  : temperature rises slowly
-  : temperature remains constant
-  : temperature drops rapidly
-  : temperature drops slowly

5.1.5 Ambient conditions (Fig. G)

The permitted device temperature is 32°F - 122°F. A separate temperature sensor measures the device temperature directly behind the display. If the device temperature exceeds the allowed range, a warning flashes on the display. Return device to regular temperature immediately to avoid damage.

5.2 Battery replacement / Battery status display

Replace batteries when the low battery indicator in the right corner of the display (Fig. C, 6) appears .

- Open battery compartment screw with a Phillips screwdriver. Replace the two batteries. Polarity is indicated on battery case bottom.
- Close battery compartment.

6. Technical data

Temperature:

Measuring range: -58°F...+482°F / -50...+250°C

Resolution: 0.1°/0.01° selectable

Display: paperwhite-display

50 x 26mm

Working temperature: 32°F...122°F / 0°C...50°C

Dimensions: V215: 255 x 110 x 60 mm

V315: 355 x 110 x 60 mm

Sensor tube: V215: 215 x 6mm (tip reduced 30 x 4 mm)

V315: 315 x 6mm (tip reduced 30 x 4 mm)

Weight: V215: 165g / V315: 200g

Battery: 2 x 1.5 Volt AA (LR6)

Battery life: appr. 500 hours

7. Explanation of symbols

 This sign certifies that the product meets the requirements of the EEC directive and has been tested according to the specified test methods.

8. Waste disposal

This product and its packaging have been manufactured using high-grade materials and components which can be recycled and reused. This reduces waste and protects the environment.

Dispose of the packaging in an environmentally friendly manner using the collection systems that have been set up.

Disposal of the electrical device

 Remove non-permanently installed batteries and rechargeable batteries from the device and dispose of them separately.

This product is labelled in accordance with the EU Waste Electrical and Electronic Equipment Directive (WEEE).

 This product must not be disposed of in ordinary household waste.

As a consumer, you are required to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment, in order to ensure environmentally-compatible disposal. The return service is free of charge. Observe the current regulations in place!

Disposal of the batteries

 Batteries and rechargeable batteries must never be disposed of with household waste. They contain pollutants such as heavy metals, which can be harmful to the environment and human health if disposed of improperly, and valuable raw materials such as iron, zinc, manganese or nickel that can be recovered from waste. As a consumer, you are legally obliged to hand in used batteries and rechargeable batteries for environmentally friendly disposal at retailers or appropriate collection points in accordance with national or local regulations. The return service is free of charge. You can obtain addresses of suitable collection points from your city council or local authority.

The names for the heavy metals contained are: Cd = cadmium, Hg = mercury, Pb = lead.

Reduce the generation of waste from batteries by using batteries with a longer lifespan or suitable rechargeable batteries. Avoid littering the environment and do not leave batteries or battery-containing electrical and electronic devices lying around carelessly. The separate collection and recycling of batteries and rechargeable batteries make an important contribution to relieving the impact on the environment and avoiding health risks.

WARNING! Damage to the environment and health through incorrect disposal of the batteries!

9. Cleaning

- Clean the device with a soft, slightly damp cloth. Do not use abrasives or solvents!
- Remove the battery if you will not be using the device for a long period of time.
- Keep your device in a dry place.