

SAFETY FIRST

FLASH POINT



MINIFLASH FP(H) VISION

Industry 4.0-ready flash point analyzer

MINIFLASH FP(H) VISION is part of Grabner Instruments Vision analyzer family. The flash point tester MINIFLASH FP(H) Vision combines the field-proven advantages of Grabner analyzers with a convenient touch-screen design. The Industry 4.0-ready instrument fully integrates with enterprise level networks and the COCKPIT™ Software.

KEY FEATURES

• Advanced Flash Point Methods

Measurements in accordance with the safest flash point methods ASTM D6450 and D7094. Results are rated equivalent to ASTM D93/ISO 2719 Pensky Martens method and are in excellent correlation with ASTM D56, ISO 13736, and IP 170. Also available are methods for simulation of ISO 3679 and ISO 3680 testing, fuel dilution measurement for used oil analysis, and fast screening programs.

OFFICIAL ASTM FLASHPOINT COMMITTEE STATEMENT

"There is no statistically significant bias observed between ASTM D7094 and ASTM D93 Procedure A."

• Combustion Analysis

Samples with small concentrations of flammable compounds sometimes do not show a definite flash point. MINIFLASH FP(H) Vision detects the smallest flash point and displays the sample contamination graphically.

• Advanced Peltier Cooling Technology

For a quick sample turnaround and extended instrument life, Grabner Instruments developed fast thermoelectric regulation of heating and cooling.

• The FP(H) Vision uses the latest Peltier cooling technology for fastest cooling cycle times.

• The FP(H) Vision uses the patented cooling block that provides a high thermal contact conductance when the oven is needed to cool down between tests. A Peltier element (thermoelectric cooling device) prepares the cooling block by cooling it before being moved into place to remove heat from the oven.

• Patented Ignition Protection Technology

FP(H) Vision's patented ignition protection technology reduces power consumption by at least 80%, compared to previous models and similar closed cup flashpoint analyzers on the market. The highly stable and robust ignition design, in addition to its efficiency, prevents high-power peaks and makes burning or damage to the electrodes impossible.

• Automatic Ignition Cleaning Program

This method removes tenacious residuals from the ignition system.

• Maximum Safety

Ignition Protection Technology is intrinsic to the MINIFLASH design. Only 1-2 ml of samples are required for testing - without



an open flame! The continuously closed cup design, automatic explosion probing and a controlled air feed protect against fire and offensive fumes. The automatic sample intake drawer ensures unmatched safety and highest comfort.

FP(H) Vision's ejecting sample drawer allows for easiest and safest sample cup insertion. The open-tray design minimizes the risk of sample spillage during loading of the sample cup and keeps the operator's hands away from the oven surface, which is especially important for high temperature applications.

• Ease of Use

MINIFLASH FP(H) Vision features intuitive menu navigation, no training is required. Hassle free communication with USB, LAN, LIMS and PC is assured.

• Access. Anywhere. Anytime.

MINIFLASH FP(H) Vision supports COCKPIT™ Software. Lab managers can use the software to gather on-site measurements and statistics in a central database and bridge the gap between the lab and the field. With the COCKPIT™ SQC version, accuracy, precision and stability tests according to ASTM D6299 are also available.

AVAILABLE METHODS

- ASTM D6450 (SHT0768) & D7094
- Excellent correlation to Pensky Martens Method - ASTM D93, ISO 2719, DIN 51758, IP 34, JIS K 2265
- TAG Closed Cup Method - ASTM D56
- Abel Closed Cup - ISO 13736, IP 170
- Excellent correlation to equilibrium and small scale methods EN ISO 3679/3680, ASTM D3828 A/B, IP 523/IP 524
- Fuel dilution flash point testing
- Flash / No flash methods
- Fast screening methods
- Customized methods for higher flexibility in flash point testing

MINIFLASH TESTER LINE

- Maximum safety with continuously closed cup technology
- No open flame, no hazardous vapors
- 1-2 ml sample size
- Automatic stand-alone operation
- Fast and accurate
- Easy to use, easy to clean
- Electric arc ignition
- Portable for field use
- US D.O.T, RCRA, NAVY, NATO approved
- Approved for various ASTM specifications for fuels and oils
- Worldwide market leader for the flavors and fragrance industry

KEY FEATURES

- Intuitive menu navigation on 10" color touch-screen
- Full network, PC and LIMS integration via LAN
- USB printer support and data transfer
- Digital manual reading and export
- Extended temperature range
- User rights management with COCKPIT™ Software
- Unlimited number of methods and results
- Automatic ignition cleaning program
- Automatic sample loading and ejection



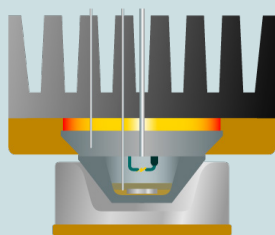
Advanced Peltier Cooling Technology



Ignition Protection Technology



Combustion Analysis



Closed Cup Design

TECHNICAL DATA

Temperature Range	FP Vision: <ul style="list-style-type: none"> • 0 to 120°C (32 to 248°F) without cooling • Down to -25°C (-13°F) with water cooling FPH Vision: <ul style="list-style-type: none"> • 10 to 400°C (50 to 752°F)
Temperature Stability	FP Vision: ±0.05°C (0.09°F) FPH Vision: ±0.07°C (0.13°F)
Precision (FP VISION)	ASTM D6450: Repeatability ±0.4°C (0.7°F) Reproducibility ±0.9°C (1.6°F) ASTM D7094: Repeatability ±0.5°C (0.9°F) Reproducibility ±0.9°C (1.6°F)
Sample Volume	1 ml (ASTM D6450) or 2 ml (ASTM D7094)
Fast Sample Throughput	Up to 16 samples/hour, depending on method
Interfaces	4x USB, 2x LAN
Remote Control	Remote Control via COCKPIT™ Software for Vision analyzers
Power Supply	100/110/120/230/240 V AC, 50/60 Hz, max. 180W (optional car adapter for field use)
Dimensions (WxHxD)	253 x 368 x 277 mm (10 x 14.5 x 10.9 inch)
Weight	10.2-11.2kg (22.4-lb)

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