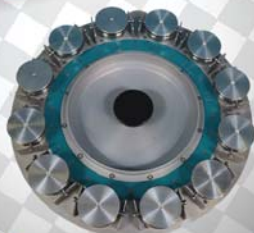


MINIFLASH FP VISION

Industry 4.0-Ready Flashpoint Analyzer

12-Position Autosampler



MINIFLASH FP(H) VISION

Industry 4.0-ready flash point analyzer

MINIFLASH FP VISION is part of Grabner Instruments Vision analyzer family. The flash point tester MINIFLASH FP 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 for Vision analyzer.



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 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 Vision uses the latest Peltier cooling technology for fastest cooling cycle times.

- The FPH 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 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 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



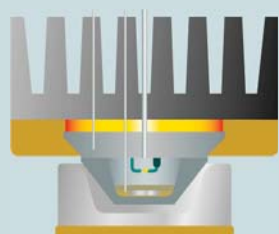
Advanced Peltier Cooling Technology



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)
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)

MINIFLASH FPA VISION

The MINIFLASH FPA Vision autosampler is the latest addition to the Grabner Instruments Vision-series product line, an automated accessory specifically developed for use with any MINIFLASH FP Vision analyzer. Its modular design creates scalability, giving the option to expand with an autosampler at any time. Full-compatibility with Grabner's Vision-series of flashpoint analyzers allows a single autosampler to handle flashpoint measurements between -13 and 752°F (-25 and 400°C) and exchanging analyzers can be performed within seconds.



KEY FEATURES

- 12-position Sample Carousel**
 FPA Vision delivers a 50% increase in sample position over the previous FLA model, making it the highest sample throughput flashpoint autosampler available.
- Small Footprint**
 With a benchtop footprint of only ~1.9 ft² (0.18 m²), the FPA consumes minimal bench space and maintains Grabner's focus on the "mini methods".
- Modular Design**
 The standalone flashpoint autosampler can be combined with any Grabner Instruments Vision-series flashpoint analyzer.
- Robustness**
 Industrial-grade coatings, electronics motors and hardware. Engineered and built for severe duty in the busiest of laboratories. External switch-mode power supply for lightweight, clean power.
- Cabinet Cooling**
 When external liquid cooling is connected, the sample cabinet temperature can be controlled.

During continuous operation in harsh environments, maintaining a controlled internal environment ensures that samples will not be exposed to elevated temperatures.

Key Benefits

- Increased Sample Throughput**
 A sample position increase of 50% results in less-frequent carousel changes and longer, uninterrupted runtimes. This resource efficiency translates into increased profitability from FP-Vision analyzers as daily sample-throughput can be significantly increased while reducing cost of operation.
- Cockpit PC Software™**
 When combined with the Industry 4.0-ready FP Vision analyzer, the FPA autosampler joins the Vision platform and integrates with enterprise level networks via Cockpit PC Software. This allows autosampler measurement play lists and results to be transferred instantly between locations.
 The Cockpit PC Software can organize the data from a global network of Vision-series analyzers on any enterprise server, allowing access anytime from anywhere.

- Flexibility and Reliability**
 When connecting either FP Vision or FPH Vision, a single autosampler is transformed into a high or low temperature flashpoint laboratory. FPA's modular design practically eliminates downtime during scheduled maintenance or service by attaching a spare or rental FP(H)Vision. By separating the analyzer and autosampler, each component may be moved or shipped with ease.

Key Specifications

- 100-264 VAC, 45 - 63 Hz, max. 50W (Switching Power Supply, external)
- Physical Dimensions: W x D x H: 435 x 425 x 415 mm (17 x 17 x 16")
- Total Height with Instrument (FPV, FPHV): 530 mm (21")
- Weight: 15.9 kg; (35 lbs) turn-table; 2.2 kg (5 lbs); fully equipped turn-table: 4.2 kg (9 lbs)
- Hardware: Interface for connection to FP Vision
- Software: Integrated into Vision platform, the autosampler performs measurements according to play lists created with Cockpit PC Software.
- CE Class: Laboratory instruments according to EN

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