

Grabner

인화점 분석기 | FP Vision

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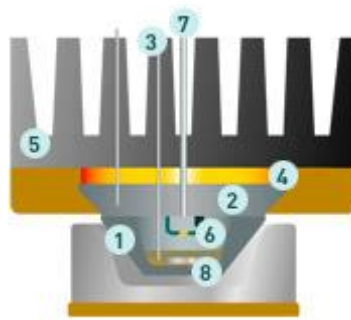
- 인화점(flash point)이란 가연성 액체나 고체의 표면에 순간적으로 화염을 접근시켰을 때 시료의 증기에 순간적으로 불이 붙는 최저 온도로 정의되며, 액체의 인화성, 위험도를 판단하는 데에 주로 사용됩니다.
- Grabner의 MiniFlash FP Vision은 Grabner사의 독자적인 기술로 ASTM D6450, D7094 밀폐형 시험법에 따라 물질의 인화점을 측정합니다 (분석범위: 0 to 120 °C). 최대 400 °C 까지 인화점을 측정할 수 있는 고온 전용 모델 FPH Vision도 있습니다 (분석범위: 10 to 400 °C).
- 기존의 ASTM D93 Pensky-Martens, TAG 시험법과 동일한 결과를 1-2 ml의 아주 적은 샘플량으로 빠르고 안전하게 얻을 수 있습니다. ASTM flash point committee에서 기존 D93 시험법과 결과가 동일함을 공식적으로 인증하였습니다. "There is no statistically significant bias observed between ASTM D7094 and ASTM D93 Procedure A"
- 소모품이 없어 유지비가 들지 않으며, 연소 후 자동 세척 기능과 automatic drawer로 여러 개의 샘플도 간편하게 분석이 가능합니다 (시간당 최대 16개). 작고 가벼운 사이즈로 휴대할 수 있으며, 자동차 배터리 커넥터에 연결하여 사용할 수 있습니다.



Grabner | FP Vision

Principal

- 알루미늄 컵(1, 용량 7 ml)에 샘플을 2 ml 채움
- 분석을 위해 샘플이 담긴 컵이 오븐(2)으로 올라간 후 밀폐됨
- 오븐의 온도는 Peltier elements(4)와 air cooled heat sink(5)에 의해 조절됨
- Rotating magnet(8)에 의해 샘플이 교반되며 샘플의 온도는 thermocouple(3)에 의해 측정됨
- High voltage arc(6)에 의해 증기가 인화됨
- 인화점에 도달하면 내부 압력이 급격히 증가하며 pressure transduce(7)에 의해 인화점이 감지됨



Specifications

| | |
|------------------------|--|
| Method | ASTM D6450/SHT0768 (Flash Point by Continuously Closed Cup) and ASTM D7094 (Flash-Point by Modified Continuously Closed Cup) |
| Correlation | Equivalent EN ISO 2719, excellent correlation to ASTM D56, ISO13736, IP170 |
| Temperature range | FP Vision * 0 to 120 °C without cooling * down to -25 °C with water cooling FPH Vision * 10 to 400 °C |
| Temperature stability | FP Vision: ± 0.05 °C FPH Vision: ± 0.07 °C |
| 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 | 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 | 253 x 368 x 277 mm |
| Weight | 10.2-11.2 kg |

SAFETY FIRST

FLASH POINT



MINIFLASH FP 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 double Peltier cooling technology for fastest cooling cycle times.
- The FPH Vision uses the patented cooling block technology and the latest generation of double Peltier elements to ensure fastest cooling cycle times.

• 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.

• 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



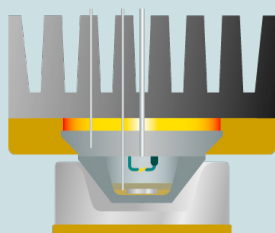
Advanced Peltier Cooling Technology



Ignition Protection Technology



Combustion Analysis



Principle of Operation

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) |

Your distributor:

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