



STANHOPE-SETA

# Seta PM-93 35000-0

## Automated Pensky-Martens Flash Point

ASTM D93 Procedures A, B & C; ASTM D8175; IP 34 Procedures A, B & C; ISO 2719 Procedures A, B & C MIL-STD-3004-1; MIL-DTL-5624; MIL-DTL-16884; MIL-DTL-83133

- Fast, accurate & safe
- Easy operation
- Single action raising & lowering of lid
- Superior safety
- Patented 'SafeFlash' auto fire extinguisher
- Complies with ISO 2719 annex b
- Gas or electronic ignition
- Unique test profiles
- Large touch screen
- Memory storage for 2000 results
- Compact footprint
- Statistical Quality Control software



Diesel • Biodiesel (FAME) • Heating Oil • Turbine Fuels  
Lubricating Oils • Paints & Varnishes • Residual Fuel Oils • Bitumen

P.O. Box 1128  
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#### PM-93, three easy steps

**Load** → **Lower** → **GO**

PM-93 is the new solution for automatic Pensky-Martens flash point determinations, providing the ultimate level of fast, accurate and safe analysis.

Designed to provide operators with a high level of functionality combined with a class leading ease of use, robustness and safety.

Flash points can be determined up to 400°C using standard mode, where the flash point is known, or search mode.

Fully compliant with international standard test methods and supplied pre-programmed with ASTM D93 test protocols for procedures A, B and C.

All routine functions are accessed by an intuitive menu system on a super-size industrial 8.4" colour touch screen. Test progress is clearly displayed, with large format characters for long range viewing.

"Safeflash" fire extinguisher system is available as a factory option for the latest ISO 2719 annex b requirements. An integrated and sealed CO<sub>2</sub> cylinder punctures automatically and discharges over the sample cup and lid, eliminating the need for external gas lines.

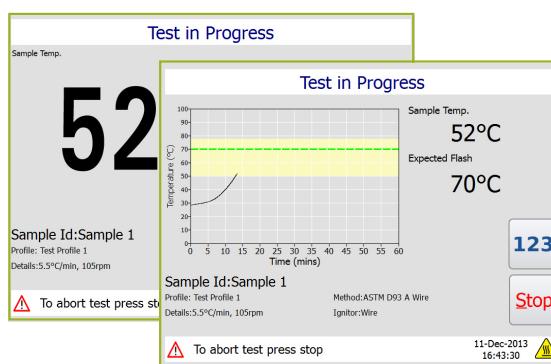
PM-93 Statistical Quality Control (SQC) software provides detailed analysis of test results, calculated mean, standard deviation, standard error, repeatability and plot of results in accordance with ASTM D6299 Statistical Standard.



#### Operator Interface

**Start of Test**

Operator:	Seta Operator A1
Sample Id:	SMPL4
Test profile:	Lube oil
Test method:	ASTM D93 B
Exp.flash:	199 °C
Comment:	
<input type="button" value="GO"/> <input type="button" value="Press Go to start test"/>	
<small>10-May-2013 19:54:00</small>	



**Test Results**

Test Id	Sample	Result
000451	SUNFLOWER	36°C
000450	SUNFLOWER	71°C
000449	SUNFLOWER	73°C
000448	SUNFLOWER	71°C
000447	SUNFLOWER	72°C
000446	SUNFLOWER OIL	82°C
000445	SUNFLOWER OIL	56°C

Select a test result

05-02-2014 10:20:39

> Enter test details

> Run test

> View test results

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### Ease Of Use

- Single raising or lowering action when loading or removing test cup
- Simple 3 step test operation - load, lower and go
- Intuitive user menu with colour touch screen operation
- Real time display of test progress
- Large capacity memory allows storage of test profiles, operator names, test methods and results
- Test status and results are graphically displayed
- Data format is compatible with most PC spreadsheets and a USB port allows results to be saved to portable memory devices
- QR code data transfer



### Precision and Accuracy

- Automatic flash point testing ensures test repeatability
- Unique alignment design ensures lid and cup locate perfectly every time
- Password protected 'calibration' mode allows verification of instrument performance
- SQC software to maintain instrument accuracy and enable product quality monitoring

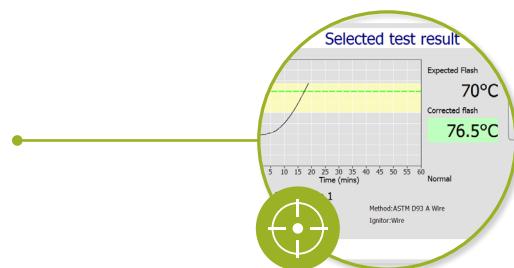
### Operator Safety

- A unique 'SafeFlash' system automatically and immediately activates an extinguisher in the event of excess flame or fire around the test cup
- If discharged, user is prompted to re-activate the extinguisher by replacing the integral CO<sub>2</sub> canister
- Additional safety features include PRT checks, safety dip before starting, over-temperature cut-out, gas flame relight, gas shut off and emergency stop
- Complies with ISO 2719 annex b



### Enhanced Test Throughput

- Unique test profiles enable the test to be set up and repeated quickly without re-entering the same information
- Once a test profile is stored to memory, a user can select this option without the need to program test parameters
- The lid module can be cleaned in-situ to minimise down time between tests
- Fast warm up and high capacity air cooling minimises cycle time



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Seta PM-93 35000-0 Technical Specifications	
Operation	
Test modes	Expected flash or search
Ignition system	Electric hot-wire or gas flame
Flash detection	Thermal
Cooling	Forced air (integral fan)
Heating rate	Fast heating mode (>10°C/min) and standard rate 5.5°C/min, 3°C/min, 1.3°C/min, 1°C/min
Calibration	Calibration dates/data stored to memory, easy retrieval and password protected
Application range	Ambient to +5°C to +400°C
Stirrer speed	0-250 rpm
Measurement	
Sample temperature	PT 100 stainless steel probe
Units of temperature	°C or °F (user selectable)
Barometric pressure correction	Automatic correction with built-in pressure sensor
Data Management	
Information	Real-time display on screen of test progress and results
Internal memory - parameters	30 programmable test profiles, sample ID's, operator names and test methods
Internal memory - results	In excess of 2000 test results
SQC	ASTM D6299 Statistical Standard
Safety	
Fire detection	Thermal with integral CO <sub>2</sub> fire extinguisher (factory fitted option)
External fire alarm relay contact	240Vac max, 1A max resistive. External warning: 12V dc signal output
Gas Supply (optional)	
Gas type	Butane, propane or natural gas source
Gas supply	30mbar (3kPa)
Power Requirements	
Voltage	230 Vac +/-15% or 110Vac +/-15%. Frequency 50/60 Hz. Auto sensing - no selector switch required
Power	1.1 kW
Interface Specifications	
Display	8.4" LCD colour touchscreen (resistive - can be used with gloves), 800 x 600 pixel, USB keyboard, mouse and bar code scanner
Data input/output	Connection to LIMS via; Ethernet RJ45, USB Type A (x2 front and back RS232C, test results can be emailed, saved to memory stick or transferred via QR code
Printer options	USB, Ethernet or RS232C
Language	User selectable - English (default), Russian, German
Environmental conditions	
Operating temperature	5 to 35°C (50 to 104°F)
Relative humidity	Up to 80% at 35°C (not condensing)
Altitude	2000m maximum
Physical	
Dimensions (HxWxD)	38.5 x 24 x 50cm
Weight	25kg

## Optional Accessories

Part No		Description
35002-0		Safeflash Fire Extinguisher System Note: Factory fit option only - must be ordered at time of purchase or the unit must be returned to the factory for installation. Comprises extinguisher, manifold assembly, regulator, fire sensor and remote operating button
35003-0		Barcode Scanner USB interface barcode scanner for 1D barcodes, connects in place of keyboard
81002-3		Printer RS 232, thermal printer, with power supply and connecting cable
99851-0		Multi-Test Verification Material, ASTM D93-IP34 Gas Oil Flash point range 56 to 80°C, 500ml
99852-0		Multi-Test Verification Material, ASTM D93-IP34 Fuel Oil Flash point range 92 to 122°C, 500ml
99853-2		Multi-Test Verification Material, ASTM D93-IP34 Lubricating Oil Flash point range 196 to 210°C, 500ml

## Minimal Servicing

### Monthly:

- Check operation of shutter and stirrer

### 6 Monthly:

- Service fire extinguisher system
- Pressure calibration

### Yearly:

- Temperature calibration
- Instrument verification using Certified Reference Material

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