Seta C-92 35300-0

Automated Cleveland Open Cup Flash and Fire Point

ASTM D92; ASTM D8254; IP 36; ISO 2592; DIN 51 376; NF T60-118; JIS K 2265-4; AASHTO T48

- Easy operation
- Superior safety
- Gas or electronic ignition
- Real time display of test progress
- Unique test profiles
- Large touch screen
- Rapid cooling system
- Automatic snuffer and fire extinguisher
- Large memory storage
- Statistical Quality Control software

Lubricating Oils • Hydraulic Oils • Asphalt • Chemicals • Bitumen

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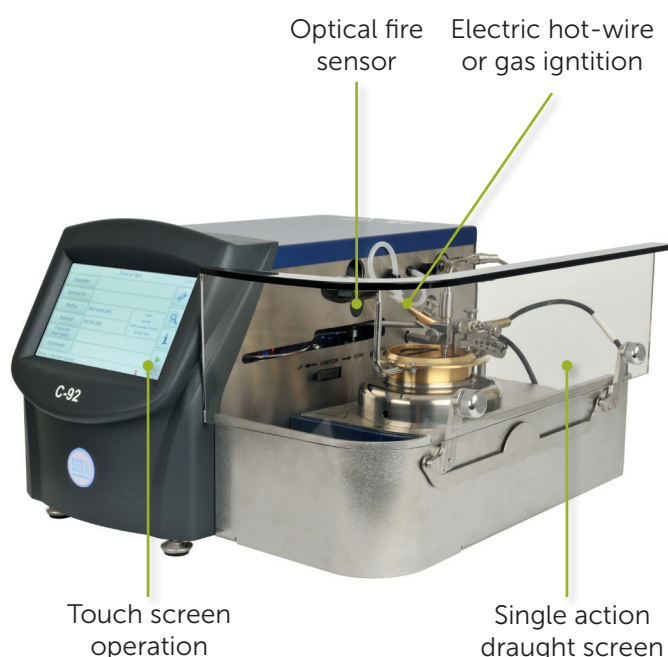
The C-92 Cleveland Open Cup Flash and Fire Point Tester is an automatic bench-top instrument, used to determine flash point and fire point temperatures of petroleum products at temperatures up to 400 °C.

The C-92 is controlled through a large colour touchscreen and allows test progress and results to be viewed from across the laboratory if required.

The instrument incorporates a heater, a removable test cup, interchangeable gas and electric hot-wire ignitors mounted on an automatic sweep arm, a platinum resistance thermometer (PRT) to measure the sample temperature, an ionisation ring to detect a flash/fire, a snuffer and a fire extinguisher. A draught screen around the test area ensures accurate results.

An automatic snuffer deploys to extinguish the burning sample at the end of a test and an optical fire sensor provides next level safety.

C-92 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.

Optical fire sensor

Electric hot-wire or gas igntition

Touch screen operation

Single action draught screen

Operator Interface
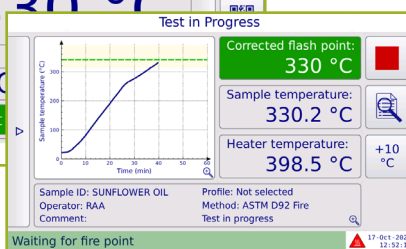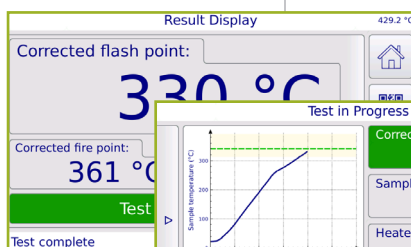
> Enter test details

> Run test

> View test results

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Operator Safety

- Snuffer automatically deploys when test ends to extinguish burning sample
- Snuffer can be manually deployed at any time
- Optical fire sensor provides another level of fire protection, inert gas is deployed around cup and cup area if persistent fire is detected
- If sensor detects a fire at any other time or it is not extinguished by the snuffer, the fire extinguisher deploys
- Additional safety features include over-temperature cut-out, optional safety sweeps, gas shut off and emergency stop

Ease Of Use

- 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/LIMS spreadsheets and a USB port allows results to be saved to portable memory devices
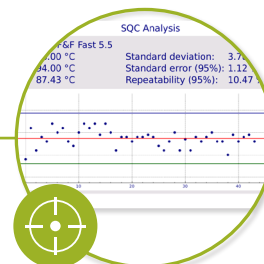- QR code data transfer
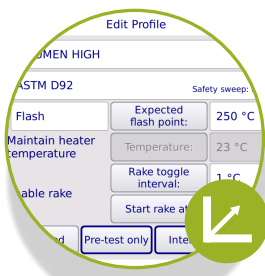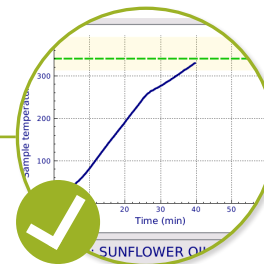
Enhanced Test Throughput

- Bespoke test profiles enable the test to be set up and repeated quickly without re-entering the same information
- Snuffer plate and ionisation ring are quickly and easily removed for cleaning to minimise down time between tests
- Built in cooling system helps maximise test efficiency by rapidly cooling the cup at the end of test, allowing next test to start as soon as possible

Precision and Accuracy

- Fully automated test process ensures repeatability and reproducibility
- On-board barometer automatically corrects test results for variations in atmospheric pressure
- Draught screen around test cup for consistency and accuracy of results
- Optional rake to remove skin on sample
- Password protected 'calibration' mode allows verification of instrument performance
- SQC software to maintain instrument accuracy and enable product quality monitoring

P.O. Box 1128
Granger, IN 46530

Lazar Scientific, Inc.

574-271-7020
sales@lazarsci.com
www.lazarsci.com

Seta C-92 35300-0 Technical Specifications

Operation	
Test methods	ASTM D92; D8254; IP 36; ISO 2592; DIN 51 376; NF T60-118; JIS K 2265-4; AASHTO T48
Test modes	Expected flash point, fire point and search mode
Ignition system	High purity platinum electric hot-wire or gas flame; automated gas flame relight; automatic electric ignitor failure detection
Flash detection	Ionisation ring
Fire detection	Ionisation ring and optical fire sensor
Cooling	Fast forced air (integral fan, adjustable)
Heating rate	Adjustable fast heating mode (up to 17 °C/min) and standard rate 5.50 °C/min
Calibration	Calibration and verification dates/data stored, easy retrieval and password protected
Application range	Ambient to 400 °C
Draught shield	Included, draughts protected on 3 sides, front and side move down for easy access

Measurement	
Sample temperature probe	Class A PT 100 stainless steel probe, 0.1 °C resolution, -50 °C to +450 °C
	Resistance calibration with unlimited data points (more than 5 is recommended)
Units of temperature	°C or °F (user selectable)
Barometric pressure	Automatic flash point correction with built-in pressure sensor, kPa (incudes alternative units such as hPa, mbar, mmHg)

Data Management	
Information	Real-time display on screen of test progress and results, results securely stored in a SQL database
Internal memory	More than 7 Gb of storage
Statistical quality control (SQC)	Built in SQC module according to ASTM D6299 to analyse SQC samples

Safety	
Fire extinguisher	Snuffer plate is automatically deployed at the end of test to extinguish fires in sample cup
	Optical sensor deploys inert gas* around cup and cup area if persistent fire is detected *requires a supply of inert gas (N2, Argon etc.) at 140 kPa to 160 kPa
	Manual fire extinguisher deployment switch is available as an option, and can be mounted at a discrete distance, outside the fume cupboard to enable a user to deploy the fire extinguisher manually if required
Over temperature cut-out safety device	>400 °C

Gas Supply (optional)	
Gas type	Butane, propane or natural gas source
Gas supply	30mbar (3kPa)

Power Requirements	
Power	100 V to 240 V, 47 Hz to 63 Hz, autosensing. Maximum 600 W, during typical test <100 W

Interface Specifications	
Display	Large 18 cm (7 inch) LCD colour touchscreen, 1024 x 768 pixels
Data input/output	Connection to LIMS via Ethernet RJ45, USB Type A (Qty 2), test results can be exported to memory stick in various formats (PDF or CSV) or transferred via QR code
Printer options	USB, Ethernet or RS232C
Language	User selectable - English (default)

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)	240 x 385 x 450 mm
Weight	15.5 kg