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Sulfur Analysis with Unprecedented Precision

From ultra low sulfur diesel and gasoline, to heavy fuel oil and crudes, Sindie® 7039 Gen 3 delivers improved precision and accuracy. Sindie 7039 is the ideal analytical solution for the refining industry where detection, performance and reliability are critical.

Applications

- Total sulfur analysis from ultra low sulfur fuels to crudes
- For use in refinery labs, pipeline terminals, additive plants, testing vans and inspection laboratories

Features and Benefits

- LOD: 0.15 ppm at 300 s
- Dynamic Range: 0.15 ppm - 3000 ppm
- Use Accucells for hassle-free sample prep
- Easy to use
  - Intuitive touch screen
  - Just plug-in and measure
  - Measurement time: 30-900 s
- Extremely low maintenance: no conversion gasses, heating elements, columns, or quartz tubing
- 75 W air-cooled excitation tube
- Fits on any lab bench

Options

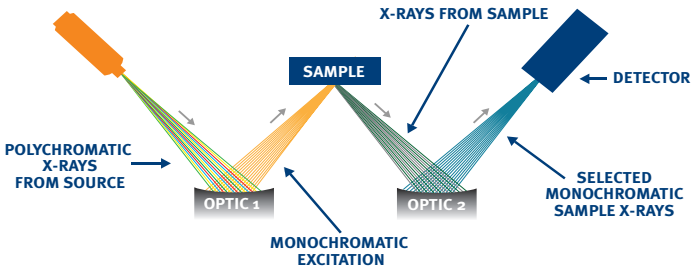
- Extended Range (XR): 0.3 wt% - 10 wt%
- 8-cell Autosampler
- LIMS data output compatible software

16 32.06 Sindie 7039 Sulfur Analyzer

ASTM D7039 and ISO 20884

TRUSTED PRECISION

Monochromatic Wavelength Dispersive X-ray Fluorescence (MWDXRF®) utilizes state-of-the-art focusing and monochromating optics to increase excitation intensity and dramatically improve signal-to-background over high power traditional WDXRF instruments. This enables significantly improved detection limits and precision, and a reduced sensitivity to matrix effects. A monochromatic and focused primary beam excites the sample and secondary characteristic fluorescence X-rays are emitted from the sample. A second monochromating optic selects the sulfur characteristic X-rays and directs these X-rays to the detector. MWDXRF is a direct measurement technique and does not require consumable gasses or sample conversion.



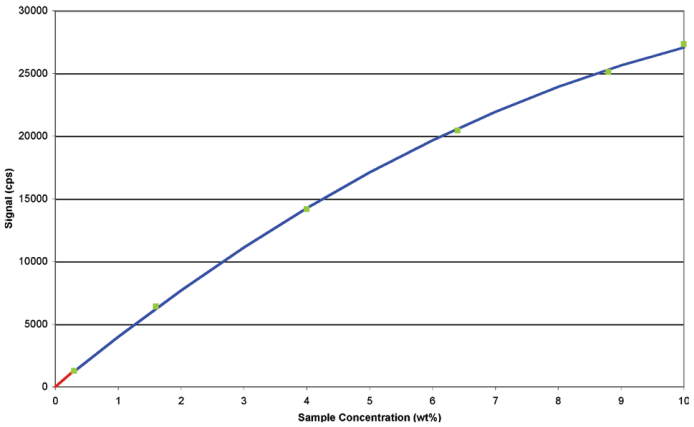
AUTOSAMPLER

- 8 sample cell capacity
- Increases productivity
- Utilizes XOS Accucell sample cups

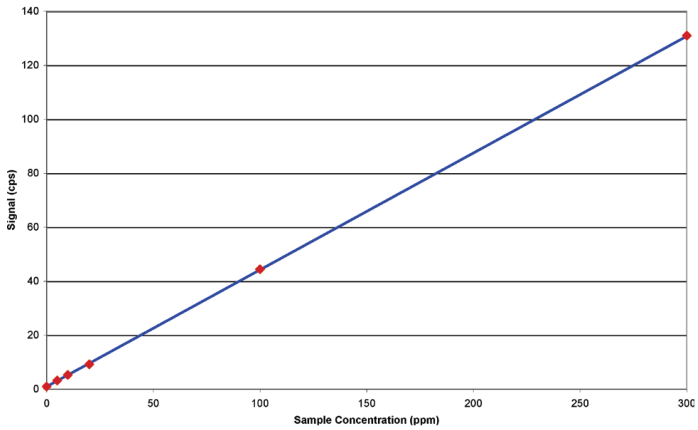
ACCUCELL SAMPLE CUPS

- No assembly of separate film & cup components
- Pre-vented sample cups
- Eliminates contamination
- One discharge of 1 ml pipette will fill the cup

High Range Calibration



Low Range Calibration



Product Specifications

Model	Sindie 7039 Gen 3
Test Method	ASTM D7039 and ISO 20884
Dimensions	37 cm (w) x 50 cm (d) x 34 cm (h)
Power	100-120 VAC, 47-63 HZ at 6.0 Amps/ 200-240 VAC, 47-63 HZ at 6.0 Amps
Sample Cup Volume	1 ml
Ambient Temperature Requirements	5-40° C (40-104° F)
Dynamic Range	Standard: 0.15 ppm - 3000 ppm Extended Range (XR): 0.3 wt% - 10 wt%
Measurement	User selectable: 30-900 s
Calibration	8 calibration curves. Automatic and manual calibration functionality

Precision

Typical repeatability (r) and reproducibility (R) values in diesel fuel, at 95% confidence. 300 s measurement time.

Sulfur Concentration (ppm)	r	R
2	0.3	0.7
5	0.5	0.8
8	0.6	1.0
15	0.8	1.4
100	2	4
500	5	10

XOS®
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Sulfur Analysis in Liquid Hydrocarbons

From ultra low sulfur diesel and gasoline, to heavy fuel oil and crudes, Sindie® 7039 Gen 2 delivers unprecedented precision and accuracy. Sindie 7039 is the ideal analytical solution for the refining industry where detection, performance and reliability are critical.

Applications

- Total sulfur analysis from ultra low sulfur fuels to crudes
- For use in refinery labs, pipeline terminals, additive plants, testing vans and inspection laboratories

Features and Benefits

- LOD: 0.4 ppm at 300 s
- Dynamic Range: 0.4 ppm - 3000 ppm
- Easy to use
  - Intuitive touch screen
  - Just plug-in and measure
  - Measurement time: 30-900 s
- Extremely low maintenance: no conversion gasses, heating elements, columns, or quartz tubing
- 75 W air-cooled excitation tube
- Fits on any lab bench

Options

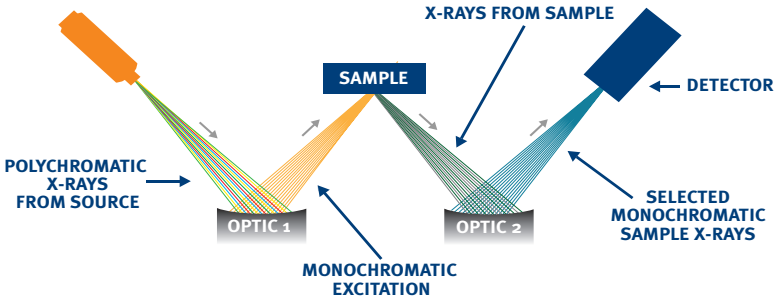
- Extended Range (XR): 0.3 wt% - 10 wt%
- LIMS data output compatible software

16 32.06 Sindie 7039 Sulfur Analyzer

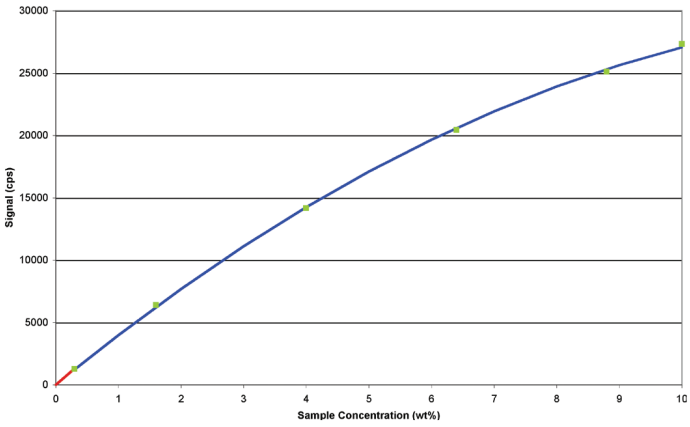
ASTM D7039 and ISO 20884

TRUSTED PRECISION

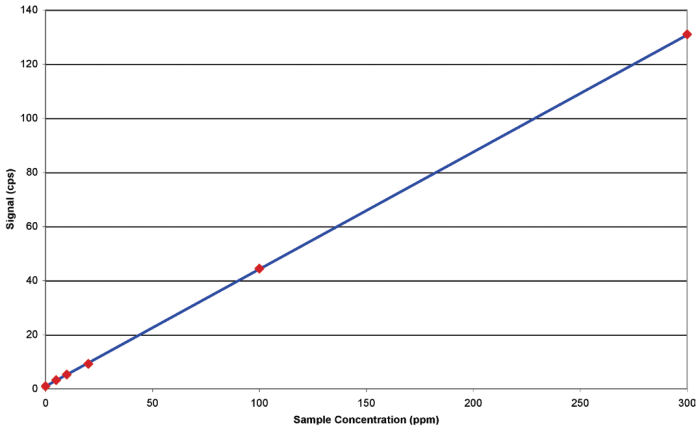
Monochromatic Wavelength Dispersive X-ray Fluorescence (MWDXRF®) utilizes state-of-the-art focusing and monochromating optics to increase excitation intensity and dramatically improve signal-to-background over high power traditional WDXRF instruments. This enables significantly improved detection limits and precision, and a reduced sensitivity to matrix effects. A monochromatic and focused primary beam excites the sample and secondary characteristic fluorescence X-rays are emitted from the sample. A second monochromating optic selects the sulfur characteristic X-rays and directs these X-rays to the detector. MWDXRF is a direct measurement technique and does not require consumable gasses or sample conversion.



High Range Calibration



Low Range Calibration



Sindie uses a weighted least squares regression in low range which is extremely linear and easy to set up. Typical correlation (R value) is expected to be on the order of 0.999 or better.

Product Specifications

Model	Sindie 7039 Gen 2
Test Method	ASTM D7039 and ISO 20884
Dimensions	37 cm (w) x 50 cm (d) x 34 cm (h)
Power	100-120 VAC, 47-63 HZ at 6.0 Amps/ 200-240 VAC, 47-63 HZ at 6.0 Amps
Sample Cup Volume	10 ml
Ambient Temperature Requirements	5-40° C (40-104° F)
Dynamic Range	Standard: 0.4 ppm - 3000 ppm Extended Range (XR): 0.4 ppm - 10 wt%
Measurement	User selectable: 30-900 s
Calibration	8 calibration curves. Automatic and manual calibration functionality

Precision
Typical repeatability (r) and reproducibility (R) values in diesel fuel, at 95% confidence. 300 s measurement time.

Sulfur Concentration (ppm)	r	R
2	0.4	1.0
8	0.7	1.2
15	0.9	1.7
100	3	6
500	6	12

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