Analyze Sulfur with Unparalleled Precision

Easier to use than ever, Sindie R3 is our most advanced sulfur analytical solution for compliance with ASTM D2622, ASTM D7039, and ISO 20884 methods, enabling complete flexibility for your analytical needs. Advanced R3 optics, provide extremely low limits of detection, allowing for cycle time flexibility to save up to hours per day in testing time.*

APPLICATIONS

- Petroleum Products (diesel, jet, kerosene, other distillate oil, naphtha, residual oil, lubricating base oil, hydraulic oil, crude oil, gasoline, gasoline-ethanol blend, coal and petroleum cokes)
- First and second-generation biofuels (biodiesel, ethanol, renewable diesel, HVO, SAF)
- (Edible) oils and fats (UCO, tallow, palm oil, corn oil, soybean oil, etc.)
- Chemicals (toluene, xylene, methanol, benzene, etc)
- Water

FEATURES AND BENEFITS

- **LOD:** 0.18 mg/kg (ppm) at 300s, 0.15mg/kg (ppm) at 600s**
- **Range:** 0.18 mg/kg (ppm) – 10 wt%
- Advanced R3 optics allow for optional lower background measurement time
- Easy to use
  - Intuitive 10-inch touch screen
  - Just plug in and measure
  - **Measurement time:** 10-999 s
- **Low and high range calibrations available:**
  - **Low range:** 0.18 mg/kg (ppm) – 3000 mg/kg (ppm)
  - **High range:** 0.3 wt% – 10 wt%
- **Low maintenance:** no gasses, heating elements, columns, or quartz tubing
- Traditional 43 mm XRF sample cups or XOS Accucells – decided at time of order
- Small footprint
- LIMS integration for data management and transfer
- Custom sample presets to save data entry time and minimize mistakes on common samples
- Bar code reader autofills sample name to reduce data entry time
- Storage capacity for more than 50,000 measurement results
- Supports up to 30 calibration curves
- USB connectivity in front and back for connecting to printer, keyboard, mouse, and memory stick
- Supports USB and network printers
- Large, easy-to-remove side panels for easy serviceability
- Advanced error reporting and diagnostics
- Optional autosampler: 8-cup standard (43 mm) cup or 10-cup Accucells

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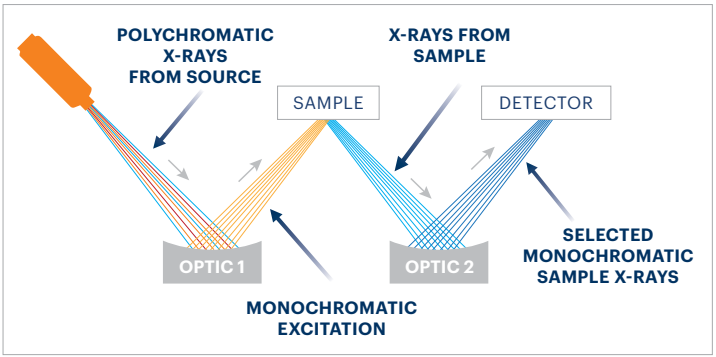
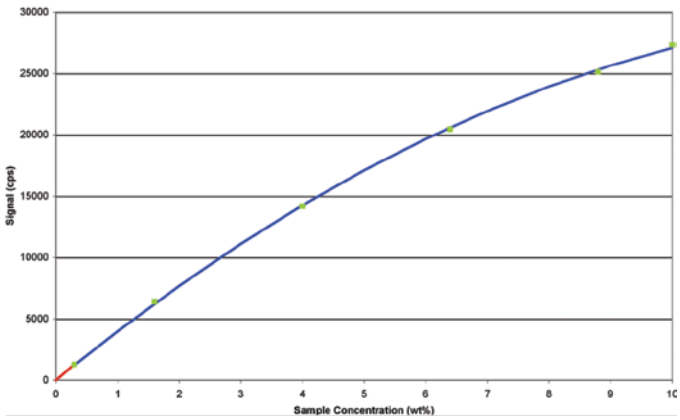
TRUSTED PRECISION

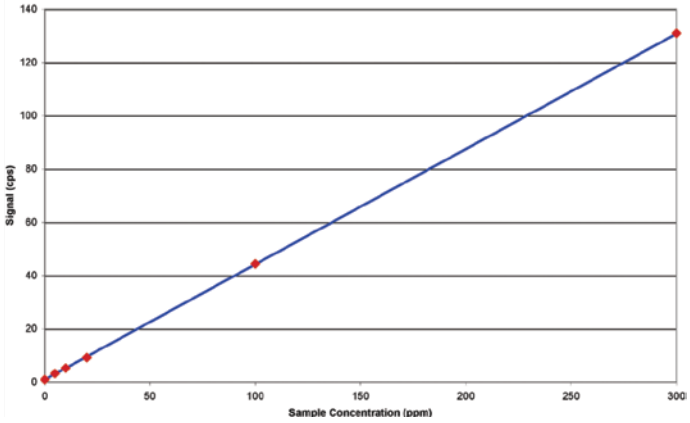
Monochromatic Wavelength Dispersive X-ray Fluorescence (MWDXRF®) utilizes state-of-the-art focusing and monochromating optics to increase excitation intensity and dramatically improve signal-to-background over high-power traditional WDXRF instruments. This enables significantly improved detection limits 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



PRODUCT SPECIFICATIONS

Model	Sindie R3
Test Method	ASTM D7039, ASTM D2622, and ISO 20884
Dimensions	42 cm (h) x 40 cm (w) x 54 cm (d) 16.5 in (h) x 15.8 in (w) x 21 in (d)
Power	100-120 VAC, 47-63 HZ at 5.0 Amps/ 200-240 VAC, 47-63 HZ at 2.5 Amps
Minimum Sample Cup Volume	Standard – 5 mL, Accucell – 1 mL
Ambient Temperature Requirements	5-40°C (40-104°F)
Optical Path	Vacuum
Excitation Source	75 W air-cooled

Examples of High and Low Range Calibration Curves on Sindie R3

All qualification herein are subject to user guide specifications. If you have further questions, reach out to our team of experts at **info@xos.com.*

***Longer cycle time increases counts and lower LOD, but sample conditions over time must be considered. For further inquiries, please contact us at **info@xos.com**.*

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.

PRECISION

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

Sulfur Concentration (pmm)	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

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