

COMPARISON: H₂S MEASUREMENT TECHNOLOGIES

Measurement Technology	Tape Method - ASTM approved	UV-Vis / SW-NIR Absorbance Spectrophotometry	Tunable Diode Laser TDL	Electrochemical
Cost	✓ Cost-Effective	✗ Significantly higher cost than Tape Method	✗ Significantly higher cost than Tape Method	✓ Cost-Effective
ASTM approved methods	✓ YES D4084-82, D4468-85, & D4045-81	✗ NO	✗ NO	✗ NO
Specific to H ₂ S only	✓ YES directly measures H ₂ S without interferences. No false positives	✗ NO Interference with mercaptans (including naturally occurring mercaptans), hydrogen, ammonia, etc. giving false positives	✗ NO Interference with moisture and other sulfur components giving false positives	✗ NO Interference with mercaptans (including naturally occurring mercaptans), hydrogen, ammonia, etc. giving false positives
Accuracy	✓ ± 2% of full scale typical	±10% at 0-10ppm FS	✗ ± 4ppmv 0-10ppm FS	± 3-5% of FS
Sensor Zero Drift	✓ NO zero drift (automatic self zero, no zero air required)	✗ YES 5% in 24 hours for low ppm ranges	✗ YES	✗ YES
Versatility	✓ YES maintains accuracy despite process changes	✗ NO	✗ NO not versatile (loses accuracy with process changes requiring adjustment calibration)	✗ NO
Range	✓ PPB, PPM and up to 100% ranges with high accuracy	✗ Low ppm ranges not reliable	✗ Low ppm ranges not reliable	✗ Low ppm ranges not reliable
Calibration Stability	✓ Long-term even in demanding environments and process changes	✗ Unstable if process changes even slightly. Requires calibrations	✗ Unstable if process changes even slightly. Requires calibrations	✗ Requires monthly or bi-monthly calibrations
Innately Linear response	✓ Yes	✗ No	✗ No	✗ No
Maintenance	✓ LOW Tape change only 3 to 4 times per year	✗ HIGH Optics require frequent cleaning once a month or more	Optics require cleaning	Minimal
Consumables	✓ LOW tape & solution change every 3 or 4 months only	✗ Light source and scrubber materials require replacement	✗ Membrane separator/ Scrubber (Copper nanoparticle) replaced every year	Minimal

NOTE: Measurement methods and the data listed are not specific to any manufacturer and may vary. Data taken from product literature from various manufactures