

**NEW**  
GENERATION  
★★★★★

# Mercury CEMS Analyzer SM-5

EMISSIONS MONITORING SYSTEMS

The SM-5 mercury analyzer is designed to provide accurate and reliable continuous measurements of very low mercury concentrations in stack flue gases (CEMS).

Very low certification range, which meets national and international regulatory requirements.



## SPECIFIC FEATURES:

- QAL1 certification range **0-5 µg/m<sup>3</sup>**, the lowest on the market
- Additional ranges: 0-30; 0-45; 0-100; 0-1000 µg/m<sup>3</sup>
- Dynamic range switching for reliable measurement of Hg peak emissions
- Photometric measurement independent of the high-temperature converter to ensure very low maintenance times and costs
- High temperature conversion method: requires no reagent, water refill or cartridge replacement
- Does not require a calibrator (injection system for QAL3 calibration available as an option)
- Modular mercury injection system at the probe or at the analyzer for complete AMS checks
- Probe head port for optionally connecting a calibration system
- No need for carrier gas, dilution or air conditioning
- Sampling box mounted on the stack: no maintenance required
- Optional, two different power sources (protected/unprotected) in order to separate and secure the measuring system
- Automatic backflush function
- Low maintenance and optimized operating costs

## MAIN APPLICATIONS:

- › Regulatory control of mercury emissions: Waste-to-energy plants (WtE), Cement kilns, Sulfuric acid production plants, Steel industry, Coal-fired power plants...

## REGULATORY COMPLIANCE

**QAL 1 to EN 15267, EN 14181**  
2001/80/CE, 2000/76/CE



Tested AMS  
Regular  
Surveillance

www.tuv.com  
ID 000074628

QAL 1 CERTIFICATION  
**EN 15267, EN 14181**

# Continuous mercury monitoring SM-5

## MEASURING PRINCIPLE:

The SM-5 uses the principle of high temperature thermal conversion in combination with Cold Vapor Atomic Absorption Spectroscopy (CVAAS). The extractive sampling is performed without dilution using a heated probe coated with a specific surface treatment and equipped with a ceramic filter. A heated line transfers the sample to the analysis cabinet, where a high-temperature quartz furnace (950°C) thermally converts all forms of oxidized or particulate mercury into elemental mercury Hg.

## TECHNICAL SPECIFICATIONS

Certified measuring ranges	0-5 µg/m <sup>3</sup> Additional ranges : 0-30; 0-45; 0-100; 0-1000 µg/m <sup>3</sup>
Detection limit	< 0.05 µg/m <sup>3</sup> (system)
Precision	< 0.1 µg/m <sup>3</sup> / 3 months
Max.drift	< 0.15 µg/m <sup>3</sup> / 3 months
Operating temperature	+5°C to +40°C (without A/C)
Sample max temperature	200°C as standard (others as option)
Display	Touchscreen
Heated sampling line	custom-made: 2 to 60 m
Communication	4-20 mA, RS232, Modbus RTU/RS485, Modbus TCP/IP, USB, TCP-IP
Power supply	230 V / 50 Hz or 110 V / 60Hz
Power consumption	Analyzer cabinet: 1850W (total) Sampling box: 800W Probe: 600W (0,6m), 800W (1m) or 1200W (1.5m) Heated line: 120W/m
Air instrument consumption	5-10 bar, max. 16 L/min (for backflush)
Mounting flange	DN65 / PN6, other on request
Dimensions (H x L x P) cm	Analyzer cabinet: 190.5x80x65 Sampling box: 26x34x34.5 Probe controller: 25x35x15 (27x38x18 incl. fixations)
Weight	Analyzer cabinet: 224 kg Sampling box: 15.4 kg Stinger: 9 to 12 kg, depending on length Probe controller: 10 kg
Protection Rating	Analyzer cabinet IP55, Sampling IP54, Probe controller IP66



## MAIN OPTIONS :

- Other measuring ranges than specified
- Remote access for telemaintenance
- External HovaCal calibration system
- Reversible air conditioning (A/C) for analyzer cabinet (energy consumption 650W, weight 41 kg)

FEATURES	BENEFITS
Very low certification range	High measurement accuracy
Instrument certified to operate without calibration	Reliability & reduced operating costs
Simple and robust design	Maximum availability, easy servicing with low maintenance
Converter oven without catalyst	Requires no consumables, minimized operating costs
Very low instrument air consumption	Lower operating costs
Customizable heated sample line	Remote installation for easy access to the analysis cabinet
Over 20 years of expertise in mercury analysis	Guarantee of a high quality and high performance product

