

# PARTICULATE CEMS MONITORS

## QAL 181

### Forward ProScatter™ technology

Suitable for measuring low and high particulate concentration levels after both bag-filter and electrostatic precipitator arrestment plant.



- Forward scatter technology provides improved measurement due to reduced cross-sensitivity in particle type & size
- Robust & rugged for challenging temperature stack conditions (optional to 500°C) and ex-hazardous zones
- Forward Scatter measurement technique with automatic zero logging & span self-checks (QAL 3)

	PM
QAL 181	0-1 000 mg/m <sup>3</sup>

## QAL 182 WS

### Forward ProScatter™ technology

Gas particulate analyzer for emissions from wet scrubbers, especially suitable for applications after wet FGD (flue gas desulfurization) as found on coal fired power stations.



- Higher durability with composite material
- Highly sensitive (<0.1 mg/m<sup>3</sup>) particulate concentrations in wet flue conditions
- System self-checks with logging of Zero & Span check data for QAL 3 reporting, manual audit functionality
- Isokinetic sampling with automatic adjustment (option)

	PM
QAL 182 WS	0-500 mg/m <sup>3</sup>

## STACK 710

### LED Opacity Measurement Technique

The STACK 710 is a cross stack Continuous Opacity Monitoring System (COMS).



- Light extinction used to determine optical density & emission concentrations
- “No moving parts” optical system offering reliability & proven low level measurement capability beyond most standard opacity monitors.
- For dry applications with flue gas temperature max at 600°C
- The transceiver houses the optical and electro-optic components.
  - Flood LED used for highest levels of accuracy & stability
  - A homogeneous pulsed LED source
- Automatic in-situ zero & span check

	Opacity (%)	PM
STACK 710	0-10 / 0-100	0-15 mg/m <sup>3</sup>

## QAL 991

### ElectroDynamic™ Probe Electrification technology

The QAL 991 is ideally suited to low emission monitoring with high quality with its patented technology.



- Suitable for bag-filter applications with ELV of 10 mg/m<sup>3</sup> (Incineration) & 30 mg/m<sup>3</sup> (Co-incineration)
- Upgradeable to include control for up to 16 sensors plus additional 16 calculated channels (e.g. Mass)
- Advanced sensor design includes zero, span & unique contamination checks (QAL 3)
- Rugged operation and advanced diagnostics capability for managing the operation of bag-filter arrestment plant

	PM
QAL 991	0 - 1000 mg/m <sup>3</sup>

## QAL 260 / QAL 360

### Backward ProScatter™ technology

A non-intrusive particulate monitor series used for dust concentration measurements in combustion, incineration and other industrial stacks (Power, Cement & Metal Smelting Processes).



Audit Unit and Attenuator (Optional)

- With single side stack installation, it can be used at low or high dust levels
- Automatic Functionality check: fully interrogates optical systems
- Designed to operate in non-condensing stack environments and to overcome acid & dew point issues
- Laser Backscattering technology (light backscattering); detection limit <1 mg/m<sup>3</sup>

	PM
QAL 260	0 - 500 mg/m <sup>3</sup>
QAL 360	0 - 500 mg/m <sup>3</sup>

# MERCURY, DIOXINS, FURANS & BIOGENIC CO<sub>2</sub> SAMPLERS



Sampling unit  
AMESA

## AMESA-D®

### Dioxins & Furans

The AMESA-D utilizes the water cooled probe method with Isokinetic sampling system coupled with XAD-II adsorbent cartridge for Long-term sampling of dioxins (PCDD), furans (PCDF) and other persistent organic contaminant (POPs).

- Isokinetic sampling by a built-in Pitot tube on the sampling probe
- Automatic continuous sampling from 4 hours to 6 weeks (programmable)
- Adsorption on exclusive XAD-II cartridge
- Dioxins of all 3 phases (gaseous, solid and liquid bounded) are collected in one cartridge
- High efficient dust filter
- Fully automated and sampling operating conditions storage
- Cooled probe composed of different materials and lengths to fit the application



AMESA  
Control unit

I-TEQ (TÜV)

AMESA-D 0 - 0.5 ng/m<sup>3</sup>

## AMESA-B®

### Continuous monitoring of Biogenic CO<sub>2</sub> emissions

The AMESA-B uses a CO<sub>2</sub> sampling method on an adsorber cartridge filled with Ascarite or soda lime, to determine the biogenic fraction of CO<sub>2</sub> emissions.

Biogenic or carbon-neutral stack CO<sub>2</sub> gas can be deductible from any company's greenhouse gas inventory which is required for reporting under various regulations.

- Sampling period between several hours and 1 month
- Allows to determine the ratio of biogenic and fossil-derived CO<sub>2</sub> by C<sup>14</sup> dating measurement

Applicable to waste-to-energy, electricity generation, coal co-firing, steel, cement and lime processes to quantify their biogenic CO<sub>2</sub> emissions as CO<sub>2</sub> neutral, for regulatory compliance:

- Cost savings for operator
- CO<sub>2</sub> emission trading
- Helps governments demonstrate green energy policy



Available in  
2 formats

pMC (percent Modern Carbon)

AMESA-B 0 - 100 %

## AMESA-M®

### Mercury Sorbent Trap System

The AMESA-M's independent stand-alone design is based on experience gained with the AMESA-D dioxin sampler. It uses similar technology with a smaller, simplified design that is more cost-effective for Mercury Monitoring.

- Sorbent Trap Monitoring System (STMS according to US-Environmental Protection Agency (EPA) performance standard 12B
- Extracts a part of the flue-gas through a heated sampling probe
- Sampling of mercury on paired sorbent traps (for QA purposes, as required by regulations)
- Fully automatic sampling between 30 minutes and 4 weeks
- Storage of operating data protocol
- The AMESA-M system has a fully functional HMI at the probe.
- All system parts are installed in an IP54 enclosure (wall-mounted / cabinet version)

Hg

AMESA-M 0 - 10 / 10000 µg/m<sup>3</sup>