Advanced gas analysis – kept simple

Airloq
Gas Analysis
Profile

Airloq Gas Analysis is part of the FLSmidth Group, Denmark’s largest industrial enterprise group, supplying complete plants and equipment, primarily to the cement and minerals industries.

Airloq Gas Analysis was established as an independent enterprise in 1977, but is now an integral part of the FLSmidth Group.

Gas analysis specialists

FLSmidth is Denmark’s largest supplier of gas analysis equipment. Our know-how is based on more than 30 years’ experience of measuring and controlling gases in the cement and incineration industry.

Being part of the FLSmidth Group give us access to knowledge and resources that will benefit our customers.

While allowing us to retain our keen business sense. We can, therefore, offer our customers a unique combination of international expertise and local presence.

From our headquarters in Mariager, on the Danish peninsula attached to the European mainland, our skilled and dedicated employees strive to innovate and provide the best service to our customers: power plants, waste incinerators, refineries, district heating plants, cement plants and enterprises in the processing industry. Our rolling team of service technicians are fully trained to service the most complex instruments.

Supplier independence, top service and on-time delivery at the agreed price: these three principles form the foundation of our success.

We keep our promises, so that our customers can count on us to delivery on time and on budget. We do not rely on one instrument supplier, but represent a range of leading suppliers of gas analysis instruments, including ABB, Emerson Process Management, Durag, NEO Monitors and Siemens. This allows us to design the right solution for each customer.

A complete solution includes the design, quality control and documentation of the overall system, as well as user training and the delivery, commissioning and maintenance of the system.

FLSmidth’s products afford the customer 100 percent peace of mind.

We make advanced gas analysis very simple.
Outline

**Service**
Nationwide service, a 24 hour hotline and call-out service and highly skilled service technicians are the key elements of our service concept.

**Design, production, testing**
We develop unique solutions to meet our customers’ needs. Our approach to our products can be described in one word: quality.

**Systems**
Our probe systems are the best on the market, and three of our probe systems have global patents. GASloq is FLSmidth’s proprietary gas analysis system.

**Analysers (gas)**
We provide the analyser that is best suited to the gas to be measured, the process conditions, maintenance and economic considerations.

**Analysers (flow and dust)**
Dust and flow meters are often supplied as part of the emission measuring equipment in order to complete the emission measurement package.

**ReportLoq, environmental reporting**
ReportLoq is FLSmidth’s web-based environmental reporting system for waste incinerators, large combustion plants and cement plants.

**Product overview**
A quick overview of our standard products.
Denmark’s best gas analysis service

Service is our primary focus. We have invested heavily in creating an efficient and comprehensive service organisation.

A high level of service and qualified employees have made FLSmidth the leading gas analysis enterprise in the Danish market.

Service is our primary focus. We have invested heavily in creating an efficient and nationwide service organisation. Our objective is to ensure maximum customer satisfaction and confidence.

Gas analysis systems are very complex and it is essential that the persons dealing with repairs and the delivery of spare parts and new products are familiar with the equipment. The ongoing training and upskilling of our service team is an integral part of our service concept.

**Internal service**

We prioritise personal contact, and our customers always receive help when they contact us.

Our in-house service department primarily provides telephone support and answers all incoming emails.

Internal service also manages after sales orders, complaints, service agreements, training and the coordination of service visits.

**External service**

Our external service technicians roll out when the customer needs emergency assistance and for the commissioning of new installations, preventive servicing and AST/QAL2 function tests. Upon request by the customer, we also offer 24-hour service agreements.

All service visits are concluded with a detailed service report, which is given to the customer before we leave.

Our service vehicles are equipped with the appropriate spare parts for the gas analysis equipment and the correct measurement and calibration equipment for performing external services. This means that most service tasks can be completed on the first service call.

**Short repair times**

If our external service technicians cannot resolve the issue onsite, we bring the equipment back to our service centre in Mariager.

Here, our internal service team daily calibrates, linearsises and repairs analysis instruments and handles part replacements.

Although our average repair time is only 10 days, we never compromise on quality and safety. Every instrument that leaves our service centre has been tested and calibrated with certified test gases and is ready for use when returned to the customer.

**Buy spare parts at:**

All FLSmidth products feature unique item numbers, right down to the individual components, making it possible to identify even the smallest part. In our webshop, just enter the item number to see the price of the spare part and whether it is in stock. The availability of spare parts can be quickly and easily checked via our webshop.

We stock all relevant spare parts and part numbers going back ten years. We continuously update our stocks to ensure that all new products and spare parts are available.
Quality assurance and consulting

As part of our customer consultancy service we also offer advice on the specification, procurement, commissioning and maintenance/quality assurance of equipment to ensure compliance with specific legislation. Working with CEN standards can prove to be difficult and extensive. For this reason, we offer:

- Preparation of uncertainty budgets (QAL1)
- Advice on planning and executing QAL2
- Training of operating staff in QAL3 procedures
- Meetings with an accredited measurement company regarding coordination
- Planning of QAL2 and AST
- Our consultants can help with the preparation of quality manuals etc.
- Documentation and reporting of emission measurements.

Service agreements

Regular servicing reduces system break downs and optimises operations. A service contract with FLSmidth makes for a reliable and stable gas analysis system.

The service contract may be expanded to include a 24-hour hotline service scheme, under which we guarantee to begin resolving any issues/faults within two hours.

If a problem cannot be resolved through telephone support or online connection to the equipment, we will visit the plant as quickly as possible. In Denmark, the travel time is very short and visits can be carried out by car, meaning we are never more than a few hours away.

Our service department handles all customer requests. We provide services in the following areas:

- Commissioning the system
- Preventative maintenance
- Repairs
- 24 hour hotline service and call outs
- Spare parts
- Technical support
- Training
- Service agreements
- Troubleshooting
- Consultancy
- Complaints
Quality above all else

We think of everything, right down to the last detail. This ensures that all of our product components can be identified and that the project is thoroughly documented.

We often develop unique solutions for our customers’ specialised needs and circumstances. Our approach to our products can be described in one word: quality.

The highly skilled employees in our project department make sure that design, production and testing closely follow our extensive quality requirements.

We follow carefully coordinated procedures before issuing the final product: The project is thoroughly documented. We thoroughly test all of our products and train the customer in their use.

Our many years of experience in the industry have given us a unique understanding of what works. And we only deliver solutions that our service technicians can support.

As a customer of FLSmidth, you are guaranteed product confidence and quality above all else.

Know-how
In our project department in Mariager, experienced engineers design, test and document all of our gas analysis solutions in accordance with our quality management system. We have a wealth of process know-how and can advise customers on technology and the most advantageous solution.

Experience
FLSmidth’s gas analysis systems are used in Denmark and all over the world. We provide gas analysis and gas analysis solutions for a multitude of applications: incinerator optimisation, filter protection in coal mills, emission measurements, analysis of medical gases for the health sector, safety measurements etc.
Quality control
We place great emphasis on test procedures and quality control. Our extensive quality assurance is an integral part of all projects, from start to commissioning. We use well-documented, written procedures consisting of descriptions of the process, the desired result and an indication of the actual result. We use detailed checklists and all documents are signed by a project engineer upon completion of the tests.

We carry out the following for every project:
- Access control from subcontractors
- Tracking of each part in the system
- Verification of bills of material against delivery
- Data recycling throughout the system to minimise data entry and possible errors
- Verification of the system against the documentation
- Verification of drawings against “as built”, to ensure that the drawings are consistent with the delivered product
- Signal test
- Configuration in accordance with the accompanying documentation
- Exit inspection before shipment
Custom-made systems

We prioritise R&D, and this benefits our customers. Our probe systems are the best on the market, and three of our probe systems have worldwide patents. We offer a wide range of suction probes containing heated, non-heated and high-temperature probes made from special high-temperature steel.

All suction probes are fitted with filters to remove particles from the gas before it is fed through suction hoses and GASloq analysis systems. Probes are selected on the basis of application experience and familiarity. Filter type and pore size are selected individually for each task.

GASloq is FLSmidth’s proprietary gas analysis system. As the largest operator in Denmark, we design all of the analysis systems for dry, extractive gas analysis in our workshop. Because we are supplier-independent, we can choose the most appropriate individual components and build the most optimal and customised system for each customer every time. Measuring principles and analyser type are selected on the basis of the customer’s needs, application data, accuracy, emission regulations and legislation and price.
A probe installed in a flanged pipe for external mounting, for example on a flue duct. This probe is used when an extractive probe may not be used directly in the process to be analysed.

A simple and robust probe for analysis in processes with low dust content.

A suction probe for process gas analysis at extreme temperatures and with a lot of dust. This patented probe boasts a unique design that allows easy maintenance. The probe has an extensive range of attachments, including solutions for water cooling, automatic extraction and powerful purging.

A simple and robust probe for analysis in processes with high dust content. The probe is available in single and double configurations. The double configuration is used when full, continuous analysis is required.

A heated suction probe for emission and process analysis. The probe has an extensive range of attachments, including solutions for heated probe tubes and process filters for high dust loads.
An extractive analysis system for general use. The system is configured with an analysis module. The system is a Plug & Play system and can be ordered as a mobile device.

An extractive analysis system for general and specialised use. The system can be configured with two 19" analysis modules. A controller and operator interface can be installed on this system. The system is available with a variety of communication options (Ethernet, ProfiBus, ControlNet, fibre optics etc.).
GASloq CUBE and accessories

Accessories for the GASloq system
There is a wide selection of accessories available for the GASloq analysis systems.

Calibration gasses, commissioning parts, wear- and spare-parts and commissioning and service agreements are among the accessories that are most often delivered with a complete gas analysis solution.

GASloq CUBE
If it is not possible to install the GASloq system indoor, a good alternative is the GASloq CUBE analysis housing. The GASloq CUBE comes as a Plug & Play installation which is ideal for installation, operation, commissioning and ongoing maintenance, as the instruments are installed in a dust-free and temperature-stable environment.

As all of the components for both gas conditioning and gas analysis are mounted on the wall of the GASloq CUBE, the system is extremely easy to service.

GASloq CUBE
Analysis housing for Plug & Play installation of the analysis system. The housing is delivered fully tested and with lights, air conditioning, a desk and calibration gas bottle fastener.
The most suitable analyser

Our specialists have extensive experience of choosing the correct analyser.

We choose independently between the analysers of manufacturers such as ABB, Emerson Process Management, Mess- & Analysentechnik, NEO and Siemens. We have extensive product knowledge and can therefore select the analyser that is best suited to the combination of gases to be measured, process conditions, maintenance and financial considerations.

Our analysers can measure up to 60 different gases, of which the most common are CH₄, O₂, CO, CO₂, HCl, H₂O, NH₃, NO, NO₂, SO₂ and TOC.

**Extractive or in situ**

Our product range includes both extractive and in situ analysers.

Extractive analysers are often used to analyse wet and corrosive gases when a short response time is crucial. An extractive measurement means that a small amount of exhaust gas is taken out of the process, filtered, cooled etc. and then sent to the analyser for analysis.

If a short response time is required, an in situ analyser may be used instead. In which case, the measurements are carried out directly in the gas channel. The most widely used measurement techniques are zirconium oxide probes and laser technology.
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emerson X-STREAM</strong></td>
<td>A series of extractive multi-component analysers from Emerson, primarily for process measurement, IR, UV, TC and Paramagnetic.</td>
</tr>
<tr>
<td><strong>ABB Advance Optima</strong></td>
<td>Analysers from ABB with built-in calibration cuvettes for easy calibration. IR, UV, TC, paramagnetic, electrochemical and FID measuring principles.</td>
</tr>
<tr>
<td><strong>Siemens Ultramat/Oxymat</strong></td>
<td>Siemens’ analysers with fast oxygen analysis. IR, paramagnetic, electrochemical and FID measuring principles.</td>
</tr>
<tr>
<td><strong>M&amp;A Thermo FID</strong></td>
<td>A TOC analyser, which is available as a 19” rack model or as an integrated analyser with a heated probe for mounting directly onto the flue duct.</td>
</tr>
<tr>
<td><strong>Emerson Oxymitter 6888</strong></td>
<td>An in situ oxygen monitor with integrated, or separate, electronics, mounted in a flange for easy installation and maintenance.</td>
</tr>
<tr>
<td><strong>ABB ACF-NT</strong></td>
<td>Heated emission analyser which analyses up to 12 components in one instrument. The instrument is approved in accordance with EN 15267-3, having a maintenance interval of 6 months.</td>
</tr>
<tr>
<td><strong>ABB Endura AZ20</strong></td>
<td>An in situ oxygen monitor with separate electronics, mounted in a flange for easy installation and maintenance.</td>
</tr>
<tr>
<td><strong>Durag HM-1400 TRX</strong></td>
<td>An analyser for continuous analysis of total mercury levels, without continuous chemical consumption. The instrument is approved in accordance with EN 15267-3.</td>
</tr>
<tr>
<td><strong>NEO Lasergas monitor</strong></td>
<td>An in situ laser monitor with fast response time. Since the analyser is installed without contact process, it can be used in aggressive and corrective process gases.</td>
</tr>
</tbody>
</table>
Completes the emission measurement package.

Dust and flow meters are often supplied as part of the emission measuring equipment in order to complete the emission measurement package. Selecting the correct dust or flow monitor for a specific application depends on several factors: dust concentration, stack dimensions, other physical conditions, moisture content and the desired accuracy.

We primarily use flow and dust monitors from the supplier Durag. Durag’s products are a reliable choice of excellent German quality, ensuring that all legislative requirements are complied with. The devices are robust and the results are well documented. Durag’s flow and dust meters are easy to operate and maintain and can be configured onsite. Our experienced team of project and sales engineers has extensive experience of finding the best and most suitable instrument for the job.
<table>
<thead>
<tr>
<th>Product Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durag D-R 290</td>
<td>Continuous measurement of opacity and dust concentration with low detection limits. The monitor uses the transmission measuring principle and is mounted cross-stack. The monitor is approved in accordance with US legislation (EPA) and is suitability tested by TÜV.</td>
</tr>
<tr>
<td>Durag D-R 800</td>
<td>Continuous measurement of dust concentration with low to medium detection limits. The monitor uses the reflection principle and is based on innovative laser technology that enables simple flange mounting. The dust monitor complies with European regulations (EN14181) and is approved by TÜV.</td>
</tr>
<tr>
<td>Durag D-R 220</td>
<td>Continuous measurement of dust concentration with very low detection limits. The monitor uses the reflection principle and is mounted in a simple flange. The dust monitor complies with European regulations (EN14181) and is approved by TÜV.</td>
</tr>
<tr>
<td>Durag D-R 300-40</td>
<td>Continuous measurement of dust concentration with low detection limits. The monitor uses the transmission measuring principle and is mounted cross-stack. The monitor is approved in accordance with US legislation (EPA) and is suitability tested by TÜV.</td>
</tr>
<tr>
<td>Durag D-R 320</td>
<td>Dust meter for continuous analysis of low dust concentrations in condensed flue gas. Easy and straightforward installation. The meter is approved in accordance with EN 15267-3 and approved by TÜV.</td>
</tr>
<tr>
<td>Durag D-FL 100</td>
<td>Continuous measurement of flow, using the differential pressure principle. Because the meter can be configured with a length of up to 8 m, a measurement can represent the entire cross section of most flues.</td>
</tr>
<tr>
<td>Durag D-FL 220</td>
<td>Continuous measurement of flow. The monitor uses ultrasonic measurement. Because the transmitter and receiver are mounted across the flue-gas duct, a measurement can represent the entire cross-section. Approved in accordance with EN15267-3 and approved by TÜV.</td>
</tr>
<tr>
<td>Durag D-RX 250</td>
<td>Continuous measurement of dust concentration, flow, pressure and temperature. The monitor uses the trip-electrical principle and has an integrated differential pressure transmitter and an absolute temperature and pressure transmitter. The combined monitor is mounted in a simple flange.</td>
</tr>
<tr>
<td>Durag D-FW 230/231</td>
<td>Filter monitor for early detection of filter malfunctions. The monitor uses the trip-electrical principle and is mounted in a simple flange.</td>
</tr>
</tbody>
</table>
ReportLoq

Environmental reporting: – whenever and wherever you want

FLSmidth’s web-based environmental reporting system for waste incineration plants, large combustion plants and cement factories sets a new standard for data collection and emissions reporting.

FLSmith’s many years of experience and wealth of know-how in the area of emissions reporting forms the basis for the new system, which combines tried and tested technologies with new cloud technology.

ReportLoq allows employees with responsibility for the environment to extract up-to-date reports and monitor the system wherever and whenever they want. The application can be launched from any browser and any portable unit, thereby providing a whole new degree of flexibility. This makes for simple and easy access to emissions data from home, the office and the control room and via tablets or mobile units.

All data is securely stored on FLSmidth’s servers, which also ensure automatic backup. ReportLoq also removes the need for operation and maintenance of local server solutions, resulting in a flexible, more secure solution than traditional analysis systems provide.

With its user-friendly interface and wide range of reporting functions, ReportLoq also provides new possibilities for the proactive use of data. And multiple users can be set up in the system as needed.
ReportLoq is monitored 24/7 and the system is updated regularly in accordance with current standards. ReportLoq is available at an attractive subscription price, covering all software costs associated with operation and maintenance of the system.

**Sparring partner for industry**
Waste incineration plants, large combustion plants, cement factories and many other industries need to comply with all kinds of regulations and requirements on emissions reporting.

FLSmidth participates in the standardisation process in the EU. This process ensures that we keep up-to-date at all times with the latest information in the area of emissions: gas analysis, reporting, upcoming legislation etc., which is a huge benefit for our customers.

**Secure data collection**
ReportLoq consists of an on-site PC that collects all environmental components from the analysis equipment. All analysis data is transferred, via a secure connection, to FLSmidth’s server farm, where all environmental reports are generated.

The analysis system communicates with the on-site PC using a controller. Thus, it is possible to input corrective calculations directly into the industrial control system (ICS).

**Data security**
Should the internet connection go down between the on-site PC and
FLSmidth, the collection of data will continue on the on-site PC, which has the capacity to store up to a year’s worth of raw values.

The internet connection can thus be re-established without any loss of raw data. As an extra security function in the ReportLoq system, the installed controller can also store raw values for up to 30 days.

**Real-time monitoring**

ReportLoq ensures that operating technicians can monitor the current emissions values – not only traditional raw values, but also QAL3- and QAL2-corrected, normalised and validated values. Everything is easily monitored from ReportLoq’s innovative and simple user interface.

Trends can be quickly and easily generated according to user needs, be they emissions components or desired time intervals.

Instances of environmental exceedings will appear as alarms which can be commented on directly in ReportLoq. These comments can be printed as environmental exceeding reports and forwarded directly to the environmental authorities or used internally.

Advanced prevention alarms, based on projections of current emissions data, enable the operator to respond...
appropriately in order to avoid non-compliance with environmental requirements.

**Quality assurance EN14181**
ReportLoq has integrated functions for controlling and recalculating data in connection with QAL2 and QAL3 calibration functions, and the values can be entered via a web browser. ReportLoq registers and calculates QAL3 adjustments based on the CUSUM method specified in EN14181.

**Data validation**
Our ongoing development of ReportLoq incorporates advanced data validation methods, ensuring that the quality of every single data set is precise. These validation methods are continuously used in connection with system updates, guaranteeing that all data is correct and functional.

**Ongoing maintenance**
Backup and data protection of all environmental data are carried out by FLSmidth’s IT department.

Monitoring of site data – age of logged data, controller status, on-site PC, etc. – is carried out by experts from our reporting department to prevent any problems.

Similarly, the ReportLoq system will be regularly adjusted and updated with functionality improvements.

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**More values**
Compare measurements and identify correlations fast. You can even export the results to Excel for further analysis.

**Hour by hour**
Follow your measurements over time. You can zoom in to make point measurements, or zoom out to see the calculated monthly average.

**Visualise your data**
Follow your measurements in detail with raw, calculated and interval values. For example, you can easily compare raw, QAL2 and quality-assured values.
Subscription for security

Check out our demo site
At www.reportloq.com, you can find out more about ReportLoq and log onto our demo site, which will give you a detailed introduction to the system’s many functions and advantages.

ReportLoq is a subscription-based system that covers all software costs associated with operation, service and maintenance of the system. ReportLoq helps organise your environmental reporting and ensures a maintained solution that complies with the specific statutory requirements.
Features

- Environmental reporting with extra flexibility
- System access via browser
- Based on FLSmidth’s experience and knowledge base for reporting
- Reporting in compliance with the Directive 2010/75/EU on industrial emissions, Annex V (large Combustion plants) and Annex VI (waste incineration plants)
- Separate reporting system dedicated to environmental reporting
- Quality assurance in compliance with EN 14181
- Continuous adjustments and functionality improvements implemented in the system
- User-friendly display of emissions values
- Advanced data validation methods
- Quality assured emissions values
- Graphic data for raw values, QAL3, QAL2 and normalised values
- Integrated backup
- QAL3 calculations and corrections
- Direct comments on non-compliance incidents
- Simple and intuitive user interface
- Guaranteed secure data storage for 5 years
## List of products

**Helpful overview**
A complete list of FLSmidth’s products is presented here. The tables show the various analysis devices’ technical properties, measuring principles, material, weight and other properties.

This list provides a quick and simple overview of our products. If you wish to see a picture of individual products and read more information on them, you can look up the products in various sections inside this folder. You are also welcome to visit our website and view the relevant data sheets.

The table shows our standard products. We can always custom-build solutions to best suit the needs of our customers. FLSmidth offers a range of services, including preventive maintenance, repairs, 24-hour hotline, technical support and training.

### Systems

<table>
<thead>
<tr>
<th>ANALYSIS SYSTEMS</th>
<th>DIMENSIONS (W x H x D mm):</th>
<th>WEIGHT (Kg):</th>
<th>AMBIENT TEMP: (MIN - MAX °C):</th>
<th>TYPICAL USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GASloq 600</td>
<td>600 x 1900 x 500</td>
<td>150</td>
<td>5 - 35</td>
<td>System mounted with a single gas analyser for analysing a limited number of emission components, such as: system for raw-gas measurement or for safety monitoring.</td>
</tr>
<tr>
<td>GASloq 1200</td>
<td>1200 x 2100 x 600</td>
<td>350</td>
<td>5 - 35</td>
<td>System mounted with multiple gas analysers for analysing a large number of emission components or for demanding tasks in the cement and mineral industries.</td>
</tr>
<tr>
<td>GASloq CUBE st</td>
<td>1800 x 2200 x 2200</td>
<td>1000</td>
<td>(-)20 - 55</td>
<td>Prefabricated housing for outdoor installation of one analysis system.</td>
</tr>
<tr>
<td>GASloq CUBE db</td>
<td>3900 x 2200 x 2200</td>
<td>1800</td>
<td>(-)20 - 55</td>
<td>Prefabricated housing for outdoor installation of more than one analysis system.</td>
</tr>
<tr>
<td><strong>Communication:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HARDWIRE, ETHERNET, PROFIBUS, CONTROLNET, MODBUS ET AL.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Analysers (Gas)

<table>
<thead>
<tr>
<th>DIMENSIONS (L mm):</th>
<th>MATERIAL:</th>
<th>WEIGHT (Kg):</th>
<th>TEMP. PROCESS (MIN - MAX °C):</th>
<th>DUST (MAX. g/m³):</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDS</td>
<td>Stainless steel</td>
<td>25</td>
<td>0-200</td>
<td>2</td>
</tr>
<tr>
<td>SDFP</td>
<td>Stainless steel</td>
<td>15</td>
<td>0-200</td>
<td>2</td>
</tr>
<tr>
<td>SDOP</td>
<td>Stainless steel</td>
<td>12</td>
<td>0-400</td>
<td>200</td>
</tr>
<tr>
<td>DDOP</td>
<td>Stainless steel</td>
<td>24</td>
<td>0-400</td>
<td>200</td>
</tr>
<tr>
<td>SP 2000-H</td>
<td>Stainless steel</td>
<td>16</td>
<td>0-600</td>
<td>0.25</td>
</tr>
<tr>
<td>KilnLoq 400</td>
<td>Stainless steel high temp.</td>
<td>150</td>
<td>0-400</td>
<td>1000</td>
</tr>
<tr>
<td>KilnLoq 1200</td>
<td>Stainless steel high temp.</td>
<td>150</td>
<td>0-1200</td>
<td>1000</td>
</tr>
</tbody>
</table>

### Analysers (Flow and dust)

<table>
<thead>
<tr>
<th>DIMENSIONS (W x H x D mm):</th>
<th>MATERIAL:</th>
<th>WEIGHT (Kg):</th>
<th>TEMP. PROCESS (MIN - MAX °C):</th>
<th>APPLICATION:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probe Cooling</td>
<td>Stainless/galvanised steel</td>
<td>300</td>
<td>0-45</td>
<td>KilnLoq 1200</td>
</tr>
<tr>
<td>Utility Air</td>
<td>Stainless/galvanised steel</td>
<td>50</td>
<td>0-45</td>
<td>Dust &gt; 2 g/m³</td>
</tr>
<tr>
<td>Extraction Device</td>
<td>Stainless/galvanised steel</td>
<td>350-450</td>
<td>0-45</td>
<td>KilnLoq 400, 1200</td>
</tr>
</tbody>
</table>
### ANALYSERS (GAS)

<table>
<thead>
<tr>
<th>ANALYSIS OF:</th>
<th>MEASURING PRINCIPLE:</th>
<th>LINEARITY:</th>
<th>AMBIENT TEMP. (MIN - MAX °C):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emerson X-stream, NGA 2000</td>
<td>IR, UV, TC, Paramagnetic, FID, Electrochemical</td>
<td>+/-1%</td>
<td>5 - 35</td>
</tr>
<tr>
<td>ABB ADVANCE OPTIMA</td>
<td>IR, UV, TC, Paramagnetic, FID, Electrochemical</td>
<td>+/-1%</td>
<td>5 - 35</td>
</tr>
<tr>
<td>Siemens</td>
<td>IR, TC, Paramagnetic, FID, Electrochemical</td>
<td>+/-1%</td>
<td>5 - 35</td>
</tr>
<tr>
<td>M&amp;A Thermo FID</td>
<td>FID</td>
<td></td>
<td>5 - 35</td>
</tr>
<tr>
<td>ABB ACF-NT</td>
<td>FTIR, FID, Electrochemical</td>
<td>+/-2%</td>
<td>5 - 35</td>
</tr>
<tr>
<td>Durag HM-1400 TRX</td>
<td>UV</td>
<td>&lt; 1%</td>
<td>5 - 30</td>
</tr>
<tr>
<td>Emerson Oxymitter 6888</td>
<td>ZrO₂</td>
<td>+/-0,75%</td>
<td>-20 - 55</td>
</tr>
<tr>
<td>ABB Endura AZ20</td>
<td>ZrO₂</td>
<td>+/-0,75%</td>
<td>-20 - 50</td>
</tr>
<tr>
<td>NEO Lasergas monitor</td>
<td>ZrO₂</td>
<td></td>
<td>-20 - 55</td>
</tr>
</tbody>
</table>

### DUST METER

<table>
<thead>
<tr>
<th>ANALYSIS OF:</th>
<th>MEASURING PRINCIPLE:</th>
<th>LINEARITY:</th>
<th>AMBIENT TEMP. (MIN - MAX °C):</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₂, CO₂, C₂H₄, NO, NO₂, SO₂, TOC, H₂ Ar et al.</td>
<td></td>
<td>+/-1%</td>
<td>5 - 35</td>
</tr>
</tbody>
</table>

### DUST METER DIMENSIONS

<table>
<thead>
<tr>
<th>DUST METER</th>
<th>DIMENSIONS (W x H x D mm):</th>
<th>MATERIAL:</th>
<th>WEIGHT (Kg):</th>
<th>TEMP. PROCESS (MIN - MAX °C):</th>
<th>MEASURING RANGE (mg/m³):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durag D-R 290</td>
<td>185 x 363 x 398</td>
<td>Steel/aluminium</td>
<td>7</td>
<td>Above dew point - 250 (1000)</td>
<td>0-100...0-4000, 0-20...0-100% OP</td>
</tr>
<tr>
<td>Durag D-R 800</td>
<td>160 x 160 x 1000</td>
<td>Steel/aluminium</td>
<td>7</td>
<td>Above dew point - 220</td>
<td>0-10...0-200</td>
</tr>
<tr>
<td>Durag D-R 300-40</td>
<td>310 x 565 x 200</td>
<td>Steel/aluminium</td>
<td>18</td>
<td>Above dew point - 320 (600)</td>
<td>0-1...0-30</td>
</tr>
<tr>
<td>Durag D-R 320</td>
<td>200 x 190 x 260/410</td>
<td>Steel/aluminium</td>
<td>10</td>
<td>Above dew point - 600</td>
<td>0-0.25-0.50% OP 0-0.2/1.6 Ext.</td>
</tr>
<tr>
<td>Durag D-R 220</td>
<td>150 x 160 x 314</td>
<td>Steel/aluminium</td>
<td>7</td>
<td>Above dew point - 200 (500)</td>
<td>0-25/50/100% OP</td>
</tr>
<tr>
<td>Durag D-FW 230/231</td>
<td>80 x 180 x 670</td>
<td>Steel/aluminium</td>
<td>4.5</td>
<td>Above dew point - 200 (500)</td>
<td>0-100%</td>
</tr>
<tr>
<td>Durag D-R 820F</td>
<td>600 x 1750 x 550</td>
<td>Steel/aluminium</td>
<td>40</td>
<td>0 - 280</td>
<td></td>
</tr>
<tr>
<td>Durag D-R 820F</td>
<td>600 x 1050 x 1500</td>
<td>Steel/aluminium</td>
<td>90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### FLOW METER

<table>
<thead>
<tr>
<th>FLOW METER</th>
<th>DIMENSIONS (W x H x D mm):</th>
<th>MATERIAL:</th>
<th>WEIGHT (Kg):</th>
<th>TEMP. PROCESS (MIN - MAX °C):</th>
<th>MEASURING RANGE (Nm³/h) (m/s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durag D-FL 100</td>
<td>160 x 380 x 400-8000</td>
<td>Steel/aluminium</td>
<td>40</td>
<td>Above dew point - 400 (800)</td>
<td>0-3.000.000 3-40</td>
</tr>
<tr>
<td>Durag D-FL 220</td>
<td>190 x 190 x 570</td>
<td>Steel/aluminium</td>
<td>15</td>
<td>0-300</td>
<td>0-5.000.000 0-40</td>
</tr>
</tbody>
</table>

### COMBINATION METER DUST, FLOW, TEMPERATURE, PRESSURE

<table>
<thead>
<tr>
<th>COMBINATION METER DUST, FLOW, TEMPERATURE, PRESSURE</th>
<th>DIMENSIONS (W x H x D mm):</th>
<th>MATERIAL:</th>
<th>WEIGHT (Kg):</th>
<th>TEMP. PROCESS (MIN - MAX °C):</th>
<th>MEASURING RANGE (mg/Nm³), (Nm³/h), (°C), (HPa):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Durag D-RX 250</td>
<td>180 x 180 x 700</td>
<td>Steel/aluminium</td>
<td>9.5</td>
<td>Above dew point - 200 (350)</td>
<td>0-10...0-500, 0-9.999.999, 0-200, 930-1.300</td>
</tr>
</tbody>
</table>