ENVIRONMENTAL MONITORING

CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)
MEASURING WITH THE SPEED OF LIGHT.
NO SAMPLING. NO CONTACT.

With just one analyser, the continuous emission monitoring system (CEMS) measures relevant gases, such as SO$_2$, CO$_2$ in up to nine stacks.

Thanks to the cross-stack In Situ method, the system is perfect for the harsh environments, as it does not require any contact with the gas. No sampling is required, simplifying operation and maintenance.

**Consilium OPSIS M800**

OPEN-PATH TECHNOLOGY
ONE OF THE ADVANTAGES

The Consilium OPSIS M800’s open-path technology is very well suited for exhaust gas monitoring after a scrubber, where the flue gas can be both very wet and corrosive, causing problems for extractive systems.

MONITORING SYSTEMS
FOR A BETTER PLACE

The global environmental impact from ship emissions is significant and the International Maritime Organization (IMO) is enforcing new regulations in order to reduce the emissions.

Ships passing through Environmental Control Areas (ECA) must use low sulfur fuel (0.1% S) or install scrubbers to reduce the SO$_2$ emissions. Ship owners using scrubbers must monitor both SO$_2$ and CO$_2$ in the scrubber exhaust.

The IMO regulations from 2020 stipulate a worldwide limit for SOx emissions of 0.5 per cent. Installing scrubbers or switching to LNG are two ways of reducing sulphur. In both cases, Consilium has the equipment you need to secure operations.

Our CEMS monitors emissions with the speed of light, all while giving you a long-lasting and trustworthy product.

**Consilium OPSIS M800** is tested and type approved by DNV-GL, for installation on ships/sea vessels. Consilium OPSIS UV/IR systems are also approved for land installations by organizations such as TUV, MCERTS and U.S. EPA.

TEST AND APPROVALS

REMOTE

Remote playback gives you easy access to data stored in your CEMS for performance and incident analysis purposes. Remote diagnostics make it possible to check system functionality from land, allowing proactive maintenance and well-prepared service visits. All data is transferred safely via a highly innovative and encrypted cloud service.

LOW MAINTENANCE, LOW LIFETIME COST

Thanks to the combination of our non-sampling method and the optical monitoring technique, our CEMS system has many efficient features.

Easy installation, minimal maintenance, and a self-operating system allows our CEMS to be highly reliable, saving you both time and money.

OPTICAL MEASURING
AT THE SPEED OF LIGHT

As the Consilium OPSIS M800 is an optical measuring system, no pumps, filters, or heated lines are required. A light beam is sent across the stack and the captured light is sent to an analyser through an optical fibre cable.

The response time is very fast, enabling accurate monitoring of each measuring point within seconds. This exceptional response time meets and exceeds the requirements stipulated.

TROUBLE FREE
MONITORING SYSTEM

Our monitoring systems have been installed all over the world, many of them with more than 15 years trouble free operation. The system has proven to be the most reliable and cost efficient solution possible for continuous emission monitoring.

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”Customer

Consilium"
**CONSLILUM OPSIS M800 SYSTEM**

**ONLY FIBER OPTIC CABLE NEEDED.**

### SYSTEM DATA

- **Power consumption (typical):** 1350W
- **Required air flow:** 80 liters per path
- **Electrical communication protocols:** RS232, RS485, TCP-IP, Analogue 4-20mA
- **Software communication protocols:** Modbus RTU
- **Type approvals:** DNV-GL, BV, LR, RINA
- **Maximum stacks that can be monitored:** 9 paths
- **Ingress protection Cabinet:** IP53
- **Ingress protection Emitter/Receiver:** IP54
- **Size of cabinet (HxWxD):** 2140x600x800mm

### PERFORMANCE DATA

<table>
<thead>
<tr>
<th>Compound</th>
<th>Max. measurement range</th>
<th>Lowest measurement range according to EN15267</th>
<th>Min. detectable quantities (monitoring path 1m, measurement time 30 sec.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO₂</td>
<td>0-5000 ppm</td>
<td>0-25 ppm</td>
<td>0.2 ppm</td>
</tr>
<tr>
<td>CO₂</td>
<td>0-100% Vol.</td>
<td>0-10% Vol.</td>
<td>0.2% Vol.</td>
</tr>
</tbody>
</table>

- **Accuracy:** Better than 2% of measured value or equal to the minimum detection limit (whichever is greater).
- **Span drift:** Less than 2% per year.
- **Zero drift:** Less than 2% of measurement range per year.
- **Linearity error:** Less than 1% of measurement range.
TALK SAFETY WITH US.

There are thousands of questions regarding safety onboard. But there are also thousands of answers.
Talk safety with us – we are ready when you are.

“State-of-the art products and worldwide support on strategic locations are a strong combination.”

Jerry Lindskog
Global Sales Manager Passenger Vessel,
Consilium Marine & Safety AB

THERE ARE MANY GLOBAL CHALLENGES. LOCAL SUPPORT IS ONE OF THEM.

In the cruise sector, you need quick access to service and support. In the local language, with local knowledge. We are present in more than 55 countries with certified technicians.

WORLDWIDE LOCAL REACH

55+ COUNTRIES

Local Consilium offices
Service and support representatives

SYSTEM OVERVIEW
TYPICAL INSTALLATION
FOR ALL THOSE MOMENTS
WHEN SAFETY MATTERS

Consilium is a producer of safety technologies for the marine, oil and gas, transport and building sectors. Our commitment goes beyond the products:

We protect the lives of mothers and fathers, sisters and brothers, colleagues and friends. With representation in more than 55 countries in all time zones, we are always close to you.