

UviLux PAH+

Compact hydrocarbon sensor for exhaust gas wash water monitoring

Compatible with the Sea Sentry Wash Water Monitoring system.





UviLux PAH+

BACKGROUND

UviLux PAH+ is a robust UV fluorometer designed for real time, in situ detection of polycyclic aromatic hydrocarbons (PAH) in exhaust gas cleaning system wash water

Key features

- **Full PAH Range** – Full 0 – 4,500µg/L PAH_{phe eq} measurement which provides full compatibility with all scrubber system flow rates
- **Two year calibration intervals** – allowing for uninterrupted monitoring
- **Easy to use onboard sensor check** – solid standards kit allows you to verify the sensor calibration onsite with easy to operate, robust and stable solid standards as part of the commissioning process, without the need for liquids or chemicals
- Compliant with current and upcoming IMO regulations
- Temperature compensated, referenced output
- High ambient light and turbidity rejection
- Robust and easy to clean

Applications

- Exhaust gas cleaning systems (EGCS) wash water monitoring systems
- Suitable for both new ship and retrofit installations
- Compatible with Open Loop and Hybrid systems

Operational support

- **Training** – Chelsea scientists and engineers provide training for integrators and operators of exhaust gas cleaning systems looking to integrate Chelsea sensors to their offering. Training can be provided online, remotely or onsite.
- **Technical support** – as designers and manufacturers of the PAH and turbidity sensors, Chelsea scientists and engineers can provide technical support and commissioning services.
- **Spares provision** – spare parts and sensors can be provided as an additional package and are available as needed from the UK headquarters
- **Sensor calibration** – comprehensive calibration services are provided by Chelsea calibration scientists on an ad hoc basis or under long term support contracts.



Image 1: UviLux PAH+ Sensor



Image 2: Sea Sentry

Exhaust gas cleaning systems (EGCS) and wash water monitoring

Exhaust emissions from ships engines using heavy fuel oils release gases and particulates that can be detrimental to human health and the environment. To reduce this pollution the IMO established regulations through the Marine Environment Protection Committee (MEPC). Ships must now reduce nitrogen dioxide (NOX), sulphur dioxide (SOX) and particulate emissions. To meet the sulphur limit for 2020 of 0.5% the shipping industry is implementing strategies, which includes installing Exhaust Gas Cleaning Systems (scrubbers) to neutralize the sulphur. Any discharge into the environment must be monitored to ensure nothing harmful is discharged. Ships need to fit monitoring systems and should ensure that it performs the full regulatory analysis, as required by the IMO, including PAH, pH, turbidity and temperature, to enable robust and accurate measurements are made in accordance with the regulatory requirements.

Green ship solutions from Chelsea Technologies

Established over 50 years ago, Chelsea Technologies specialises in the design, development and manufacture of a range of sensors and systems for the marine, maritime, environmental and defence markets. Sea Sentry is based on our high precision PAH and turbidity sensors, which have a proven record in a wide range of monitoring applications.



Conformability

- Compliant with current and upcoming IMO regulations for EGCS wash water monitoring



55 **YEARS** **OVER**
BUSINESS

Specifications

Measurement outputs	PAH _{phe eq} (uncorrected) (µg/l), Absorbance (cm ⁻¹), Transmission (%), PMT eht (V), Error Code
Data output	Digital RS232 Option 2 x 4-20mA or RS422
Operating temperature	-1 to + 55 °C
Input voltage	9 to 36 Vdc
Power	<100 mA @ 15 V
Size	70 mm diameter by 170 mm length (excluding connector)
Weight	850 g
Pressure rating	6 ba
Calibration interval	2 year, return to Chelsea Technologies Ltd
Materials	Housing - Acetal C, or rigid PVC

PAH_{phe eq}

Measurement principle	Absorbance corrected fluorescence
Reported parameter	Polycyclic aromatic hydrocarbon in phenanthrene equivalence, PAH _{phe eq} (uncorrected)
Units	µg/L
Dynamic range	0 - 4500 µg/L, Full MEPC range
Measurement Sensitivity	0.04 µg/L
Validation	Solid standard for on-site sensor check

Absorbance

Reported parameter	Absorbance
Units	Absorbance per unit path length (cm ⁻¹)
Dynamic range	0 - 3.5 cm ⁻¹
Sensitivity	0.002 cm ⁻¹
Validation	Solid standard for on-site sensor check

*In view of our continual improvements, the designs and specifications of our products may vary from those described.



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