

Statement of Compliance

This is to confirm that the undernoted product has been tested in accordance with the relevant requirements of MEPC.259(68) and MEPC.340(77) in respect of washwater/discharge water.

Endress+Hauser Conducta GmbH + Co. KG

Company	Endress+Hauser Conducta GmbH+Co. KG Dieselstr. 24 70839 Gerlingen Germany
Product Description	Fluorescence Sensor for PAH _{PHE Eq} measurement
Type	CFS51
Range of Application:	CFS51 is intended to measure PAH _{PHE Eq} in a washwater/discharge water monitoring system installation on-board vessels operating an exhaust gas cleaning system (EGCS).

CFS51 is found to be in compliance with the requirements of

- Resolution MEPC.259(68) adopted on 15 May 2015 "2015 Guidelines for exhaust gas cleaning systems", Chapter 10 "Washwater"
- Resolution MEPC.340(77) adopted on 26 November 2021 "2021 Guidelines for exhaust gas cleaning systems", Chapter 10 "Discharge Water"

CFS51 meets the following requirements:

- Definition of Phenanthrene equivalent (MEPC.340(77), 2.3.1, Table 3)
- Principle of detection for PAH_{PHE Eq} (MEPC.259(68) and MEPC.340(77), 10.1.3.3)
- Measurement range for PAH_{PHE Eq} (MEPC.259(68) and MEPC.340(77), 10.1.3.3)
- Turbidity influences on PAH_{PHE Eq} (MEPC.259(68), 10.2.3 and MEPC.340(77), 10.2.4)
- Sampling frequency (MEPC.340(77), 10.4.1)

The effectiveness of the robustness against air bubbles by using the flow assembly kit for CFS51 and the use of the supplied solid-state reference to adjust the sensor have been demonstrated under the surveillance and to the satisfaction of DNV.

Documents: Test specifications and reports:
"CFS51_Performance_Tests_Summary"
Version 1.0 dated 2022-06-07



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Technical Data

CFS51			
Component	Type(s)	Sensor type	Range ^{*)}
PAH _{PHE Eq}	CFS51	Fluorescence	0 – 5000 µg/l

*) For any washwater flow rate ≤ 2.5 t/MWh the use of UV light measurement technology is recommended. The CFS51 have been demonstrated the equivalence to cover all-ranges of flow rates under the surveillance and to the satisfaction of DNV.

This is to Note

1. The CFS51 shall be installed, calibrated and operated in accordance with the CFS51 requirements and intervals as specified in the respective operating instruction.
2. The specified measurement accuracy is valid in the process temperature range of -5°C to 55°C.
3. The recommended on-site calibration interval for the CFS51 sensor is 1 year and can be done with the supplied solid-state reference.
The on-site calibration with the solid-state reference is valid over the entire measurement range of the sensor irrespective of the nominal standard test concentration of the solid-state reference.
The drift will not exceed 5% over this period provided the optical windows remain clean.
The operating temperature range of the solid-state reference is -5°C to 60°C.
4. The recommended replacement interval for the CFS51 is 4 years.
5. The Turbidity correction provides PAH_{PHE Eq} measurement values that deviate not more than 5% across the range of 0 – 50 FNU.
6. In case sensors are mounted in a bypass of the discharge water system, the manufacturer shall take measures to ensure continuous flow within the bypass.
7. In order to completely fulfil the requirements of MEPC.259(68) and MEPC.340(77) additional equipment (e.g. data recording) will have to be installed.

Remark The compliance with relevant requirements of the DNV rules for classification – Ships, offshore units, and high speed and light craft has been type approved by DNV, Certificate No: TAA00002HC



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