



ENGINE EFFICIENCY MONITORING SYSTEM

Evolution EMS™ is the world's first NO_x, SO_x and CO₂ emissions monitoring system, providing a raft of operational advantages for ship owners, managers and operators.

The system has been designed to be 'future-proof' against upcoming regulations, allowing simple 'plug and play' analyser inputs and ensuring no additional ship emissions reporting system will ever need to be purchased.

The system provides monitoring of exhaust gases and engine/ambient parameters to calculate NO_x emissions and enables continuous optimisation of engine performance to deliver fuel savings of up to 4%, providing rapid return on investment.

- More than 5 million engine monitoring hours real time application experience across over 100 shipsets
- Fully automatic IMO compliance test without user intervention during normal ship operation
- Fully automatic mandatory IMO calibration system
- Proven NDIR analyser technology - >30,000 analyser in service over 20 years
- Single "daisy-chain" sample line installation for multiple engines - massively reduces cost/time of installation
- No requirement for instrument quality dry air at each monitoring point
- Two stage gas filter probe - 6 monthly* maintenance interval
- No heated sample selection manifold

SYSTEM CAPABILITIES	
REPORTING CAPABILITIES:	NOx Compliant with MARPOL Annex VI Reg. 13" Instantaneous specific NOx g/kWh Totalised mass NOx emissions kg/tonnes (ISO 14001 reporting) Automatic monthly NOx compliance tests during normal vessel operations Pre-configured fir Tier 1, Tier II and Tier III emission limits
	SOx Compliant with MARPOL Annex VI reg. 14 (4) (b) i. SO2 / CO2 ratio ii. Fuel oil sulphur content (% w/w) iii. Totalised mass SOx emissions kg/tonnes
	CO2 Instantaneous % totalised mass CO2 emissions kg/tonnes CO2 emission indexing in line with MEPC Circ. 471, e.g. g CO2/tonne nm' CO/CO2 combustion efficiency ratio capability
STANDARD ANALYSERS:	NOx, CO2
OPTIONAL ANALYSERS:	SOx, CO, O2, NH3, Hydrocarbons & Particulate matter
ANCILLARY INPUTS:	Engine performance parameter sensors, ambient temperature, pressure & humidity sensors, as required by 'The NOx Technical Code (2008)'.
SECURITY:	Data encryption to ensure tamperproof emissions reporting
ENVIRONMENTAL TESTING:	Certified to IACS E10 / LR ENV 2 / DNV Class A/B/BV spec Pt C, Ch 3, section 6
TYPE APPROVAL:	Lloyds Register
SYSTEM DIAGNOSTICS:	Automated system condition monitoring with maintenance indicators
EMISSIONS REPORTING:	DATALINK™ - Windows-based user emissions reporting software, displays multi-engine details and emissions value in a simple, user friendly format

