



XEAMOS

Clean Air Engineering



Zero NOx System for IMO Tier 3

Our modular Zero NOx System for diesel engines in generator set applications offers reliable reduction of NOx to comply with the IMO Tier 3 NOx requirements for certain Emission Control Area's (ECA) which will be effective per January 1st 2016.

NOx is reduced by Selective Catalytic Reduction (SCR) with use of UREA (Ad Blue) injection in the exhaust stream.

- Both Inline and Compact Zero NOx System available, to suit limited space engine rooms when required.
- Combination possible with our customised Zero Soot Systems, to avoid VIP guests experience particulates on deck, common diesel fuel in swimming water and the smell of diesel fuel.
- Our standard system range (short delivery time) has been designed especially to form a perfect match with generator sets in the range of 100kW up to 1350kW engine size, for either dry or wet exhaust configurations. For larger engines of customised systems please contact us.
- Intelligent PLC controlled, all parameters, alarms & events available, ensures a trouble free operation.
- Integrated sound attenuation.

MAIN FEATURES

- Compact design.
- Operation with low exhaust temperatures > 220°C.
- Stainless steel housing.
- Robust and gas-tight reactor design.
- Long life pump and dosing components.
- Full extrudate catalyst elements.
- Actual urea flow measurement.
- PLC control terminal with full colour screen. included logging.
- Lloyds Register approved for marine applications.



North American and US Caribbean NOx ECA.

OPERATIONAL CONDITIONS

Application	Superyachts, other high end applications
Ambient Temperature	5 + 60°C (lower temperatures on request)
Degree of Protection	IP55
Relative humidity	5 to 95% Non-condensing
Inspection & service interval	Approximately 1x per year (normal conditions)
Compressed air for urea atomizer	8-12 Nm ³ /h @ min 6 barg
Urea nozzle type	2-phase nozzle, compressed air atomization
Urea specification	AUS32 or AUS40 or equivalent

SUPPLIES

Fuel	EN590 (Diesel), DMA, DMX (max 2000 ppm S)
Power supply	230VDC
Design data	
Materials	Aisi 304 / 316 (mixing tube)
Temperature exhaust in	0 - 520 °C (optional higher temperatures)
Max system pressure (design)	100 mbar (for housing design) - design temperature 600°C
Pressure drop (ΔP)	Approximately 20-30 mbar, clean without soot and ash
Emission reduction	NOx ca. 80% to reach IMO III Tier limit of 2 g/kWh
Operational temperature	>220°C (EN590 fuel) >250°C (max 2000 ppm sulphur)
Control strategy	Open loop (Standard) Sample based with NOx sensor (optional with EN 590 fuel only)
Supports	Bottom (standard), top support possible
Thermal insulation	Blankets or cladded insulation (by yard / customer)

LEGAL REQUIREMENTS AND STANDARDS

Standards	EMC directive - 2004/108/EC Machinery directive 2006/42/EC Low voltage directive NEN-EN-IEC 60204-1
Classification	Lloyds Register

SYSTEM PARTS

Controller	
Type	PLC control terminal with full color screen incl. logging.
Logging	Yes
Communication with engine	J1939
External I/O	Inputs: engine load signal, engine on Outputs: System ON, Alarm
Reactor Housing	Rectangle shape to reduce overall volume
Urea dosing unit	
Urea pump set	
Urea injector	
Sensors	Temperature transmitter
Wiring	Excluded (wiring by yard / customer)

PERFORMANCE

NOx - Nitrogen oxides*	>80 - 90% reduction
Sound attenuation **	ca. 10 / 20 dB(A)

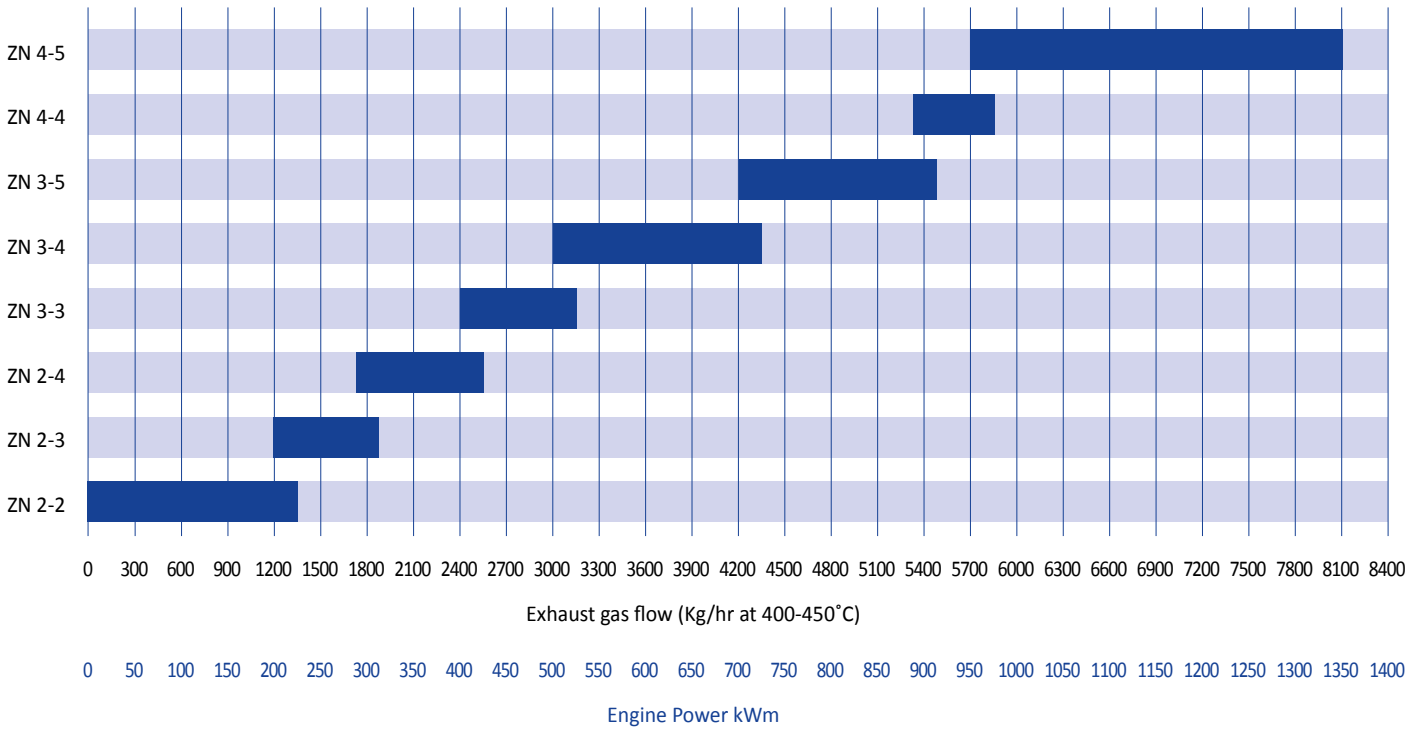
OPTIONAL

Remote access	Via LAN accessible for diagnostics/ remote services
NOx sensor	For optimized control & actual NOx value

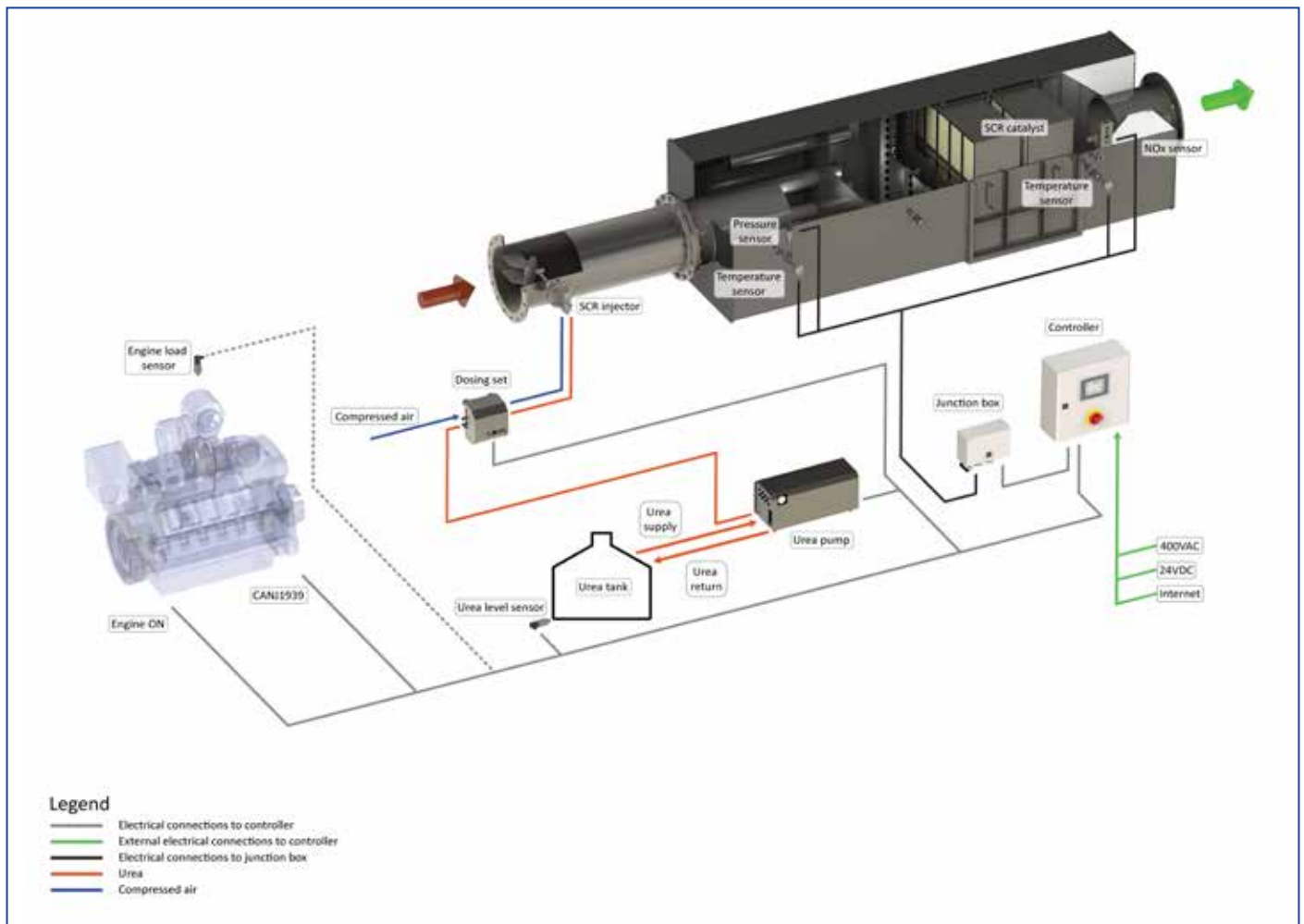
* depending on exhaust temperatures

** lower value for In-Line systems / higher value for compact systems

ZERO NOX SYSTEM FOR IMO TIER 3



For indication only, please contact us for exact unit selection or custom solutions.

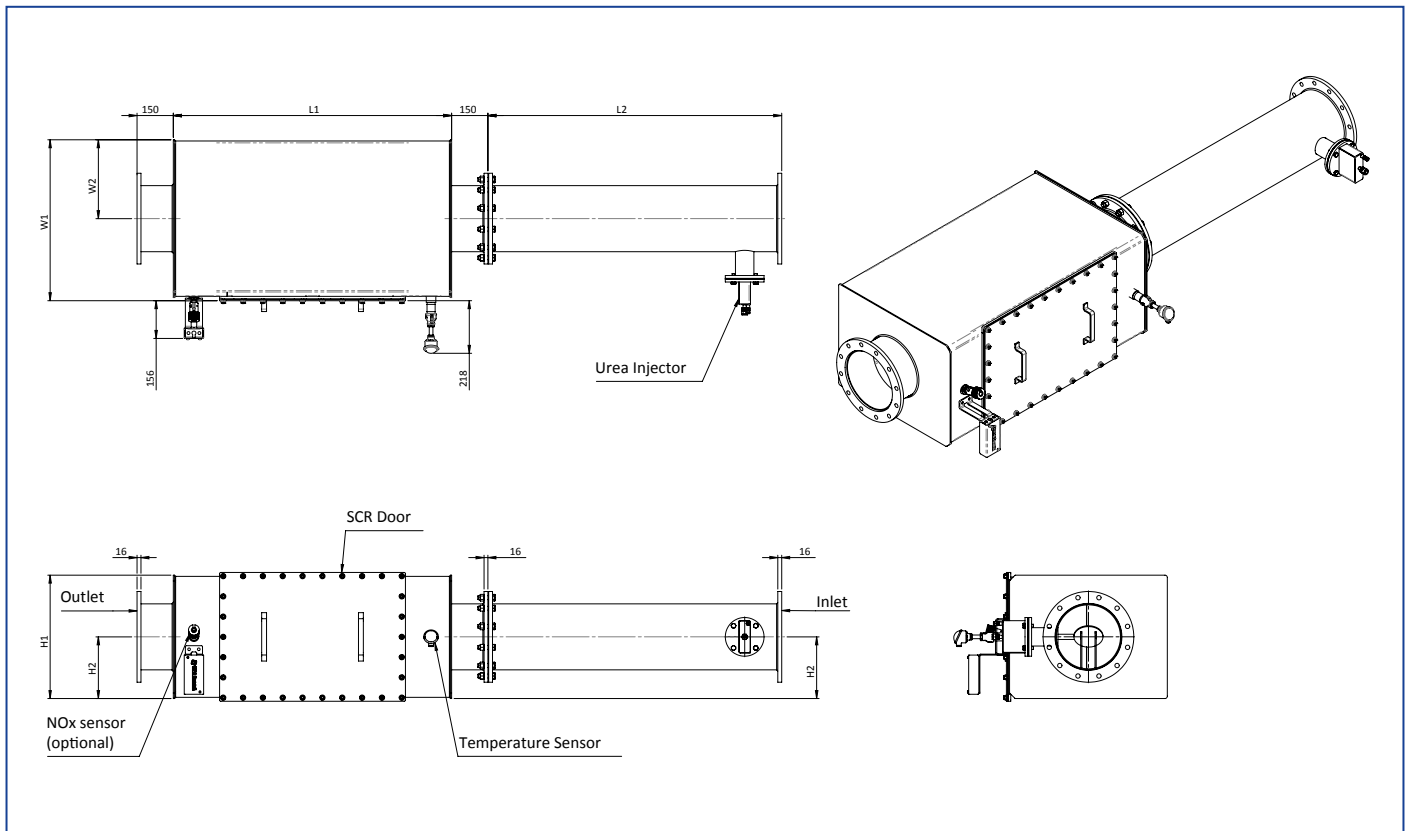


Principle of a SCR system.

ZERO NOX INLINE

Model	ZN 2-2	ZN 2-3	ZN 2-4	ZN 3-3	ZN 3-4	ZN 3-5	ZN 4-4	ZN 4-5
Flanges in & out	DN 150	DN 200	DN 200	DN 200	DN 250	DN250	DN 300	DN 300
L1	950	1050	1050	1050	1150	1150	1250	1250
L2	800	1000	1000	1000	1200	1200	1400	1400
W1	355	510	665	510	665	820	665	825
W2	175	255	255	255	335	410	335	335
H1	350	350	350	500	500	500	655	655
H2	175	175	175	255	255	255	335	335

Dimensions in mm.



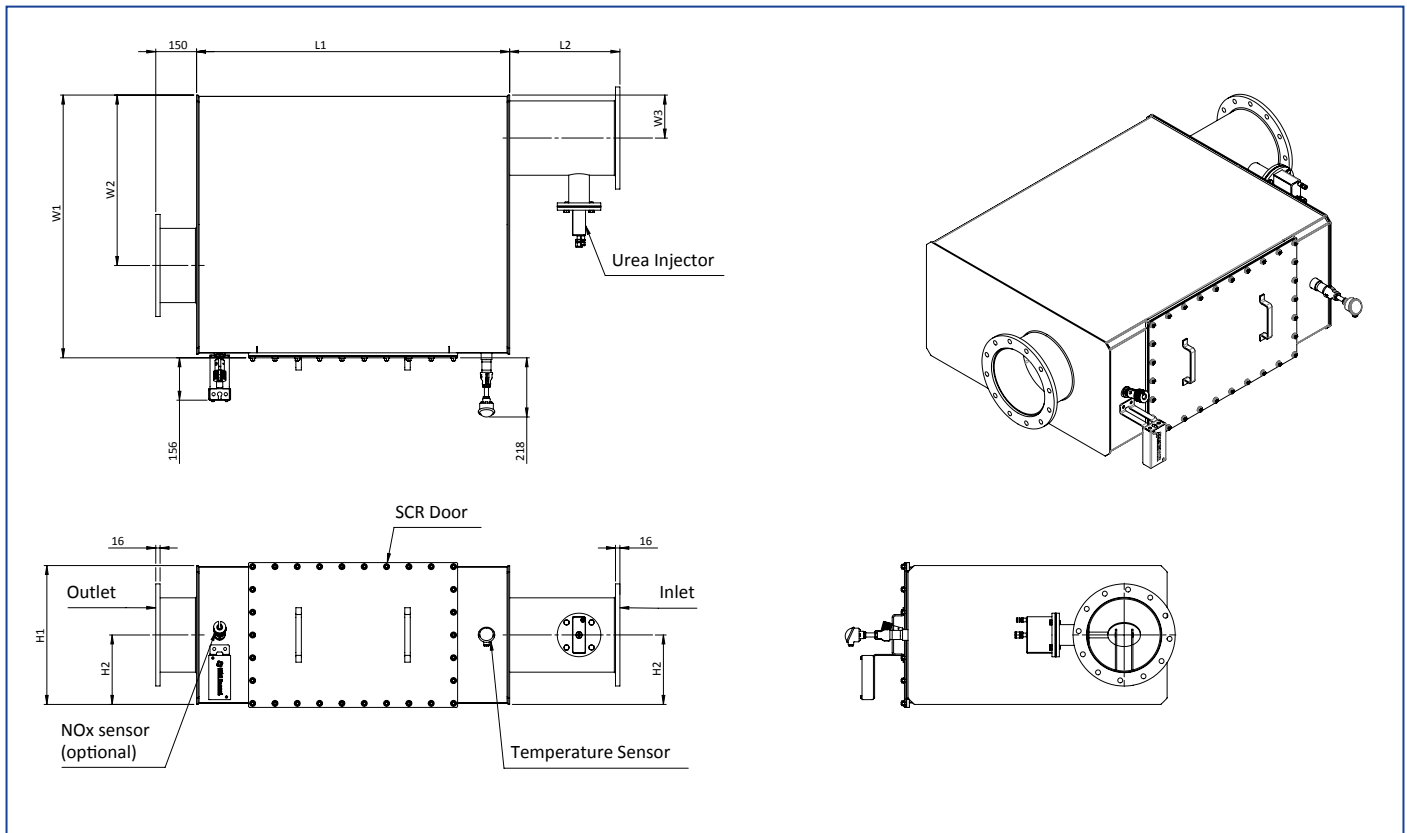
Note:

This drawing is preliminary & provided for reference only and is not intended for installation purpose. Contact us either your local distributor for detailed information.

ZERO NOX COMPACT

Model	ZN 2-2	ZN 2-3	ZN 2-4	ZN 3-3	ZN 3-4	ZN 3-5	ZN 4-4	ZN 4-5
Flanges in & out	DN 150	DN 200	DN 200	DN 200	DN 250	DN250	DN 300	DN 300
L1	950	1050	1050	1050	1150	1150	1250	1250
L2	370	370	370	370	405	405	485	485
W1	555	760	970	760	965	1120	1015	1170
W2	370	500	700	500	625	705	675	830
W3	200	135	135	135	160	160	185	185
H1	355	355	355	510	510	510	665	665
H2	175	175	175	255	255	255	335	335

Dimensions in mm.



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