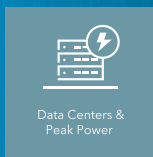


XEAMOS

Zero NOx

Reducing emissions together



Zero NOx

Xeamos solutions for data centers, CHP solutions and peak power stations with diesel and gas engines

Xeamos has developed a range of innovative and flexible solutions for SCR/DPF systems for data centers, CHP and peak power applications. These systems have been based on our extensive experience since the first solution was installed in 2011. Today our systems annually convert almost 1.9 million kilograms of NOx into harmless nitrogen. Leveraging on 20 years of providing first-class solutions we have successfully installed more than 700 systems in various market segments.

Xeamos SCR systems ensure that all kinds of diesel and gas engines comply with NOx and other emission requirements. Our systems can be designed with integrated sound attenuation and in any geometry allowed by the laws of physics. More than 5.5 million controlled running hours on 700 systems showcase our expertise in practice and we can handle projects in a seamlessly professional way.

- Tailor-made design and construction based on customer requirements
- Extensive experience with installation and commissioning procedures
- Custom line systems can be tailored for geometry, in- and outlet positions, sound attenuation and pressure drop
- Intelligent PLC control ensures trouble-free operation

Main features

- Standard and tailor-made systems
- Integrated silencer available upon request
- Designed for harsh environments
- CFD and FEM aided design
- Suitable for various fuels
- For up to 600°C exhaust gas temperature
- Actual urea flow measurement

Operational conditions

Application	Emergency Power, CHP, Peak Power
Ambient Temperature	-20 + 55°C (other on request)
Degree of Protection	IP55
Relative humidity	5 to 95% non-condensing
Inspection & service	

Supplies

Fuel	Diesel (EN590, HVO) or NG
AC power supply	3 x 400 VAC /50 Hz (4 wire)
DC power supply	24 VDC - 5A (uninterrupted)
Compressed air for	10-25 Nm ³ /h @ min. 6 bar (depending on system size)
Urea solution	(32,5 or 40%)

Design data

Materials	
reactor housing	EN235 JRG alternative 16Mo3 (alt. SS)
Mixing tube	SS
Max system pressure	Standard 100 mbar @ 520°C up to 500 mbar @ 600°C
Pressure drop (ΔP)	Approx. 20-40 mbar
Operational temperature	>220°C (EN590 fuel)
Control strategy	Closed loop with NOx sensor

Performance

NOx - Nitrogen oxides	80 - 97% reduction
Sound attenuation	Rw 25-45 dB(A), depending on system SPL 20-50 dB(A), depending on system

Emission standards

Specified by each country and local specifications

Clean emission target

Available on request

Optional

- Additional noise abatement
- Thermal insulation
- Heat tracing of urea lines at ambient temperatures < -10°C
- Compressor skid
- Heat exchanger

System selection

To configure your system we ask you for:

Engine model and power kW

Engine data at full and partial loads:

- Flow
- Temperature
- Emissions (NOx, CO, HC, PM, O2)

Exhaust system

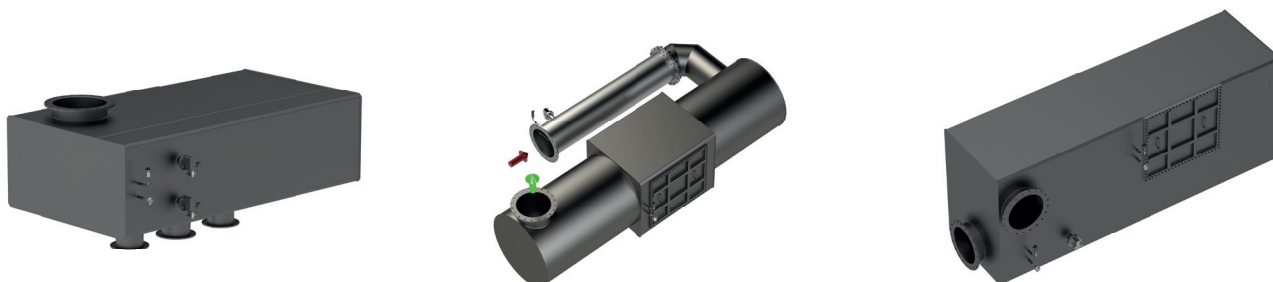
- Available backpressure mbar
- Running hours per year
- Average engine load %
- Fuel type Gas or Diesel etc. (specify max. sulphur content)

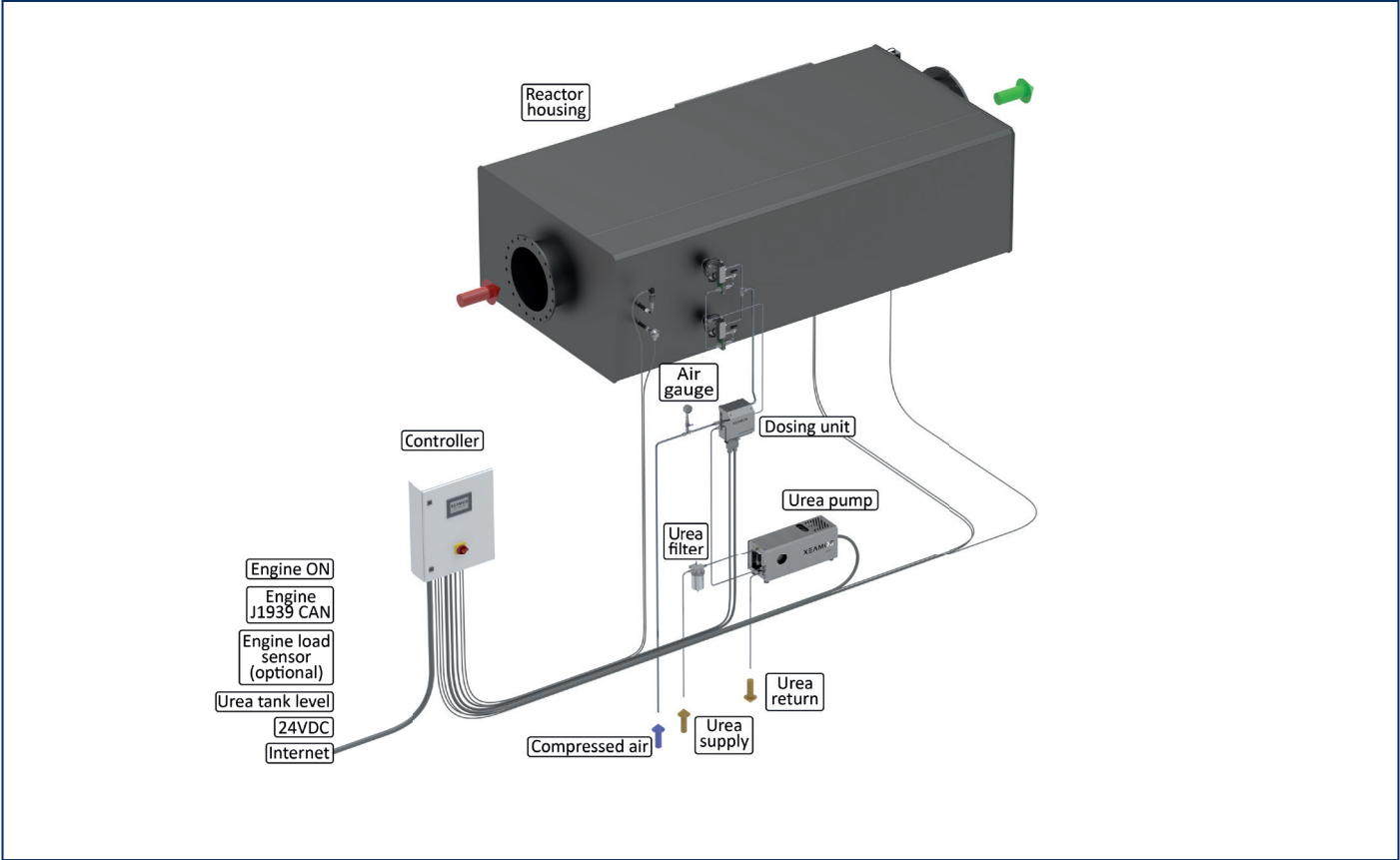
Dimensions

Dimensions for standard examples of Inline Zero NOx system.

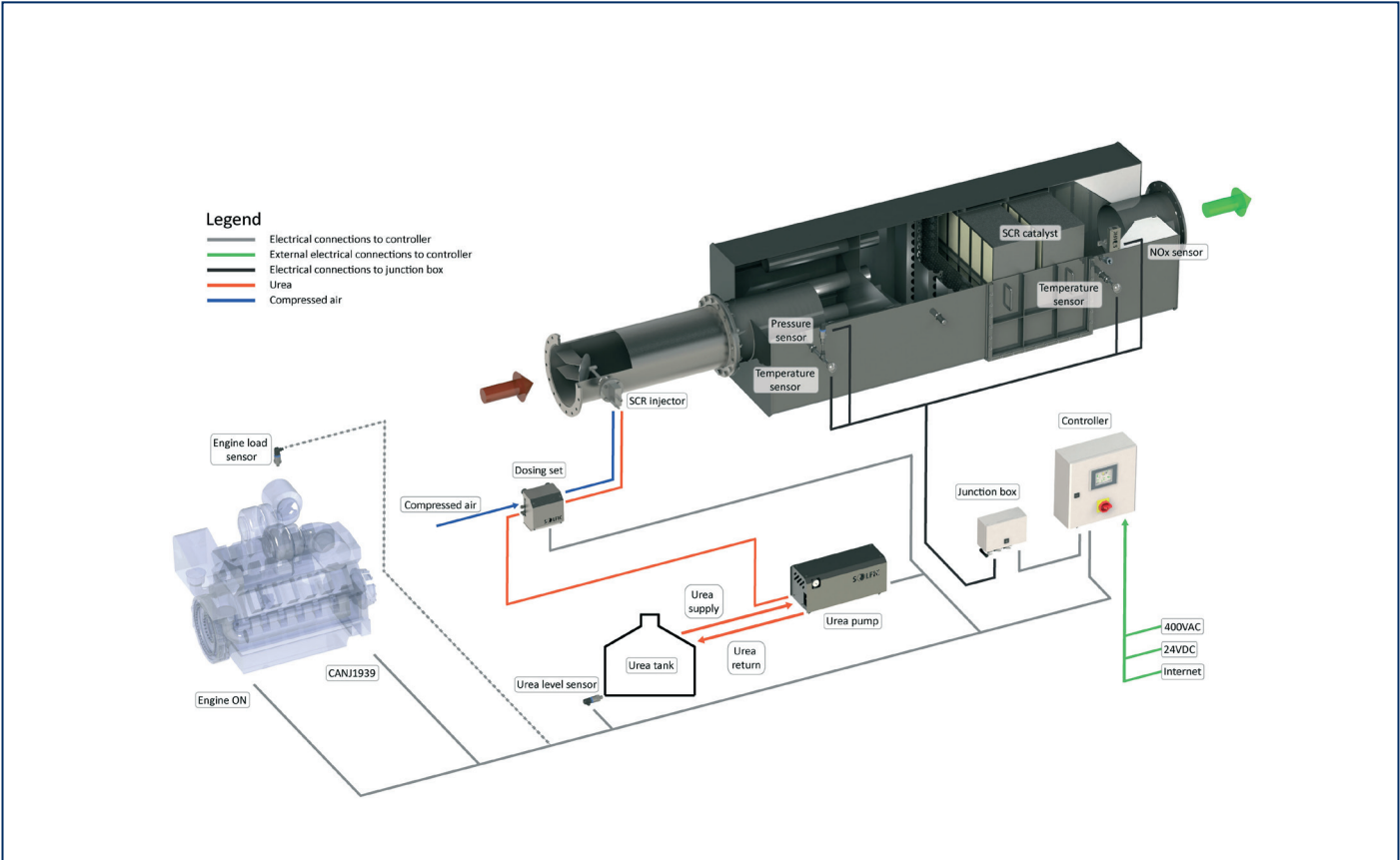
Multiple options and dimensions are possible per engine, also in a compact format with integrated mixing tubes. Ask us about the alternatives.

Custom SCR design - examples





A standard Zero NOx system



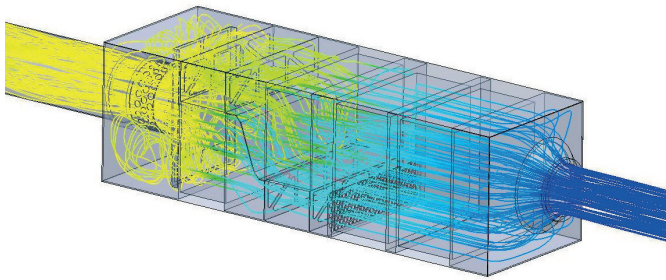
SCR system overview

Custom design is our standard

Custom SCR designs are meant to be 'first time right'. Using in-house developed calculation models and FEM and CFD software we can predict the performance of our systems up front to eliminate risk. Field experience and test bed testing have proven that Xeamos models are exceptionally accurate.

Using knowledge of the chemical reaction rates of specific catalyst types, the catalyst geometry is calculated for each specific engine and application.

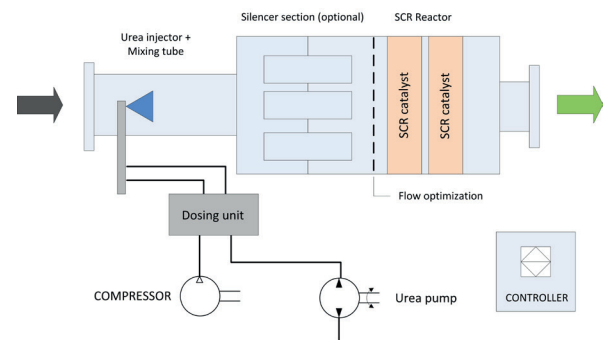
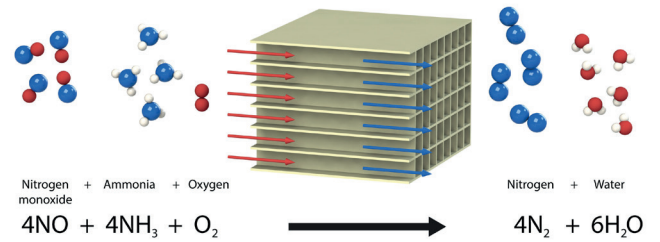
In many systems the back pressure needs to be accurately calculated. Using CFD software a "mbar" accuracy can be achieved. Based on modelling, all NOx critical parameters are calculated to ensure a "first time right" design.



Xeamos provides the best solutions for an accurate system. Tailormade on your demand and designed for low cost of ownership

NOx reduction "in a nutshell"

The harmful NOx can be reduced to almost zero by a Selective Catalytic Reduction (SCR) process. In this process, a urea solution is injected into the hot exhaust stream. The urea solution evaporates and decomposes into ammonia (NH₃), water (H₂O) and Carbon-dioxide (CO₂). The ammonia reacts with the nitrogen-oxides (NO and NO₂) to form harmless nitrogen (N₂) and water. This reaction is strongly accelerated by a specific type of catalyst.



Process schematic of a Zero NOx system

Maintenance

To ensure availability of the SCR systems and thus compliance with the legislation, Xeamos can offer a maintenance contract. We can offer periodic inspection, catalyst condition monitoring and replacement. We are happy to advise you about the possibilities.