Exhaust Gas Cleaning Systems

Exhaust Gas Cleaning

ECOSPRAY
technologies for the planet

The EGCS family

Inline & U-Type

Inline
1750

Inline
2600

Inline
3600

U-Type
2200

U-Type
3400

U-Type
5000

Exhaust Gas Cleaning

A **wide range of EGCS** to meet all DeSOx needs:

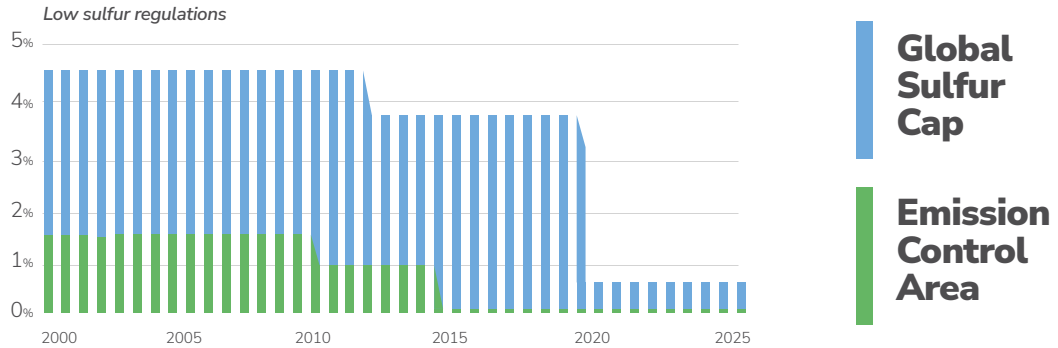
- Open Loop and Hybrid
- Inline and U-Type configuration
- From 1750 to 5000 mm in diameter
- From 5 to 48 MW rated engines power

Turn your fleet green with Ecospray advanced air quality systems: based on a proprietary multi-pollutant technology, they are available both for retrofit and newbuilding, on board of any vessel.

Overview

Ensure compliance

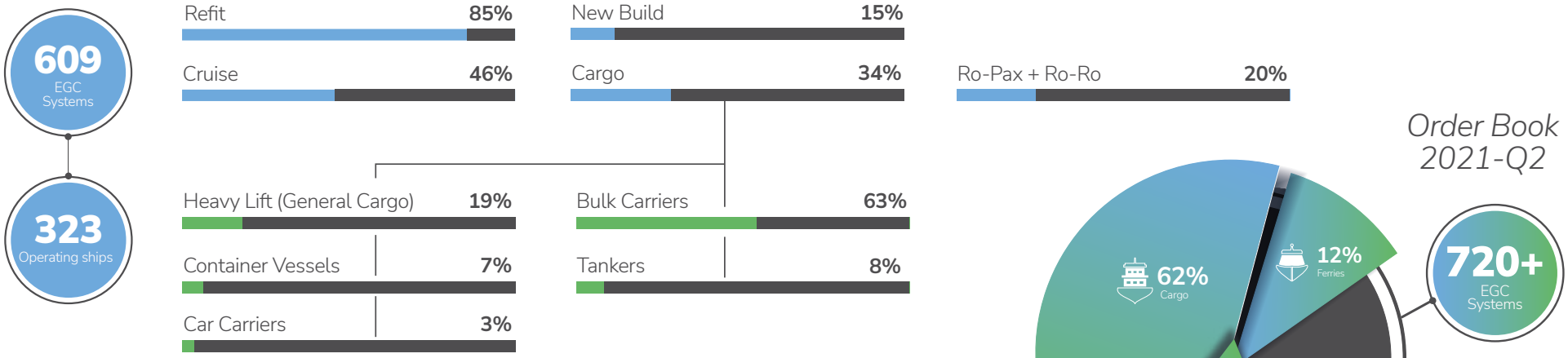
IMO established tough marine SOx regulations aiming to reduce air pollution related to fuel sulfur content, including the 2020 Global Sulfur Cap.



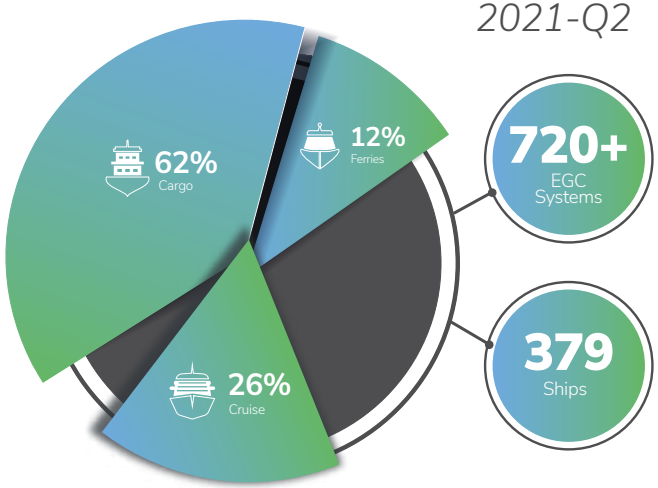
Fact & figures

Ecospray, with his experience gained thanks to more than ***600*** successful certified installations can help shipowners to meet IMO SOx limits without switching to more expensive low-sulfur fuel, by installing his proven technology DeSOx EGCS.

Certified systems



Order Book 2021-Q2



Main benefits

Why choose Ecospray EGCS?

1. Time-tested systems: more than15 years of **experience** in exhaust gas cleaning.
2. Proven and certified **performances**.
3. **Flexible**, **compact** and **easy** to install.
4. **Reliable** equipment, **tested** and **optimized** by thousands of hours of operation at sea.
5. **Skilled** project management to assure hassle-free installation.
6. Global **after sales Service** (operations support; performance optimization, lifecycle management, spares and consumables).
7. Thanks to **One**, our signature platform, **everything is now connected**: from real-time awareness to performance, analytics, and maintenance services, your system is under control.
8. **Lower environmental impact** in terms of air emissions and wash water.
9. Additional Class Notations – i.e. the **Ultra-Low Emission Vessel** (ULEV) – can be obtained implementing a mix of ourtechnologies: Advanced Wash Water Filtration, Wet ElectroStatic Precipitator for black smoke and PM abatement, Water Fuel Emulsion for NOx, PM and fuel consumption reduction.

Performance	
SO_2 Removal	SO_2 (ppm) / CO_2 (% v/v) ≤ 4,3
SW turbidity (DeSOx Tower discharge)	< 25 FNU
SW pH (after dilution)	≥ 6,5 at 4 mt from OB (IMO) ≥ 6,0 at OB
SW PAH (DeSOx Tower discharge)	< 50 microg/L normalized at 45 t/MW(MCR)/h

The EGCS Open Loop system

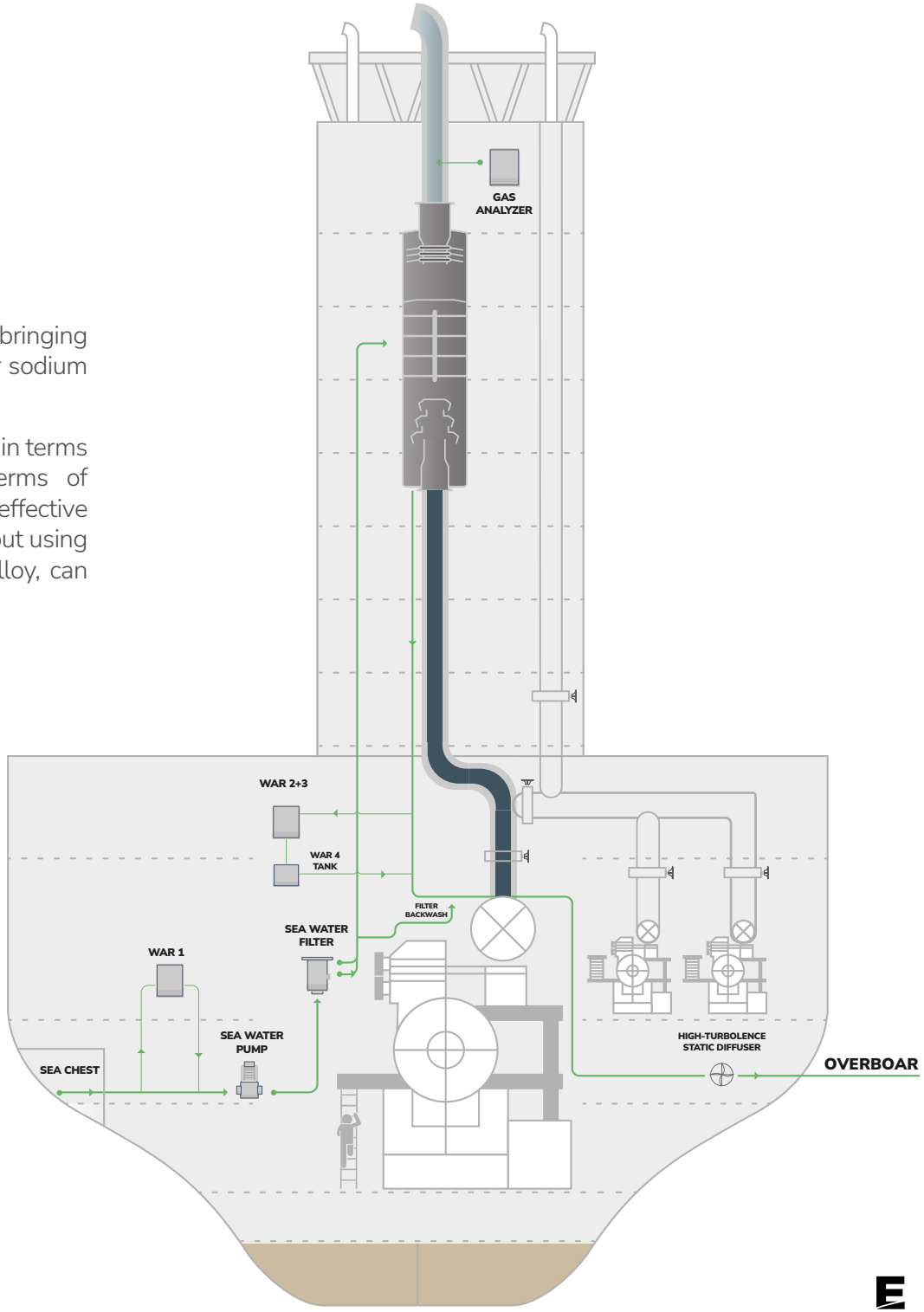
Our EGCS systems are available in two different configurations:
Open Loop and Hybrid systems.

The EGCS – Open Loop system uses only seawater to remove SOx bringing it below the IMO limit without the addition of any reagent like caustic soda or sodium carbonate.

The **Open Loop** configuration is characterized by simplicity and flexibility both in terms of installation, thanks to a limited number of components, and in terms of operation and maintenance. The Open Loop system represents the most cost-effective solution in terms of CAPEX and OPEX in order to meet sulfur regulations without using low Sulfur fuel. The DeSOx tower (scrubber), made in corrosion resistant alloy, can operate either in wet or dry conditions.

Options:

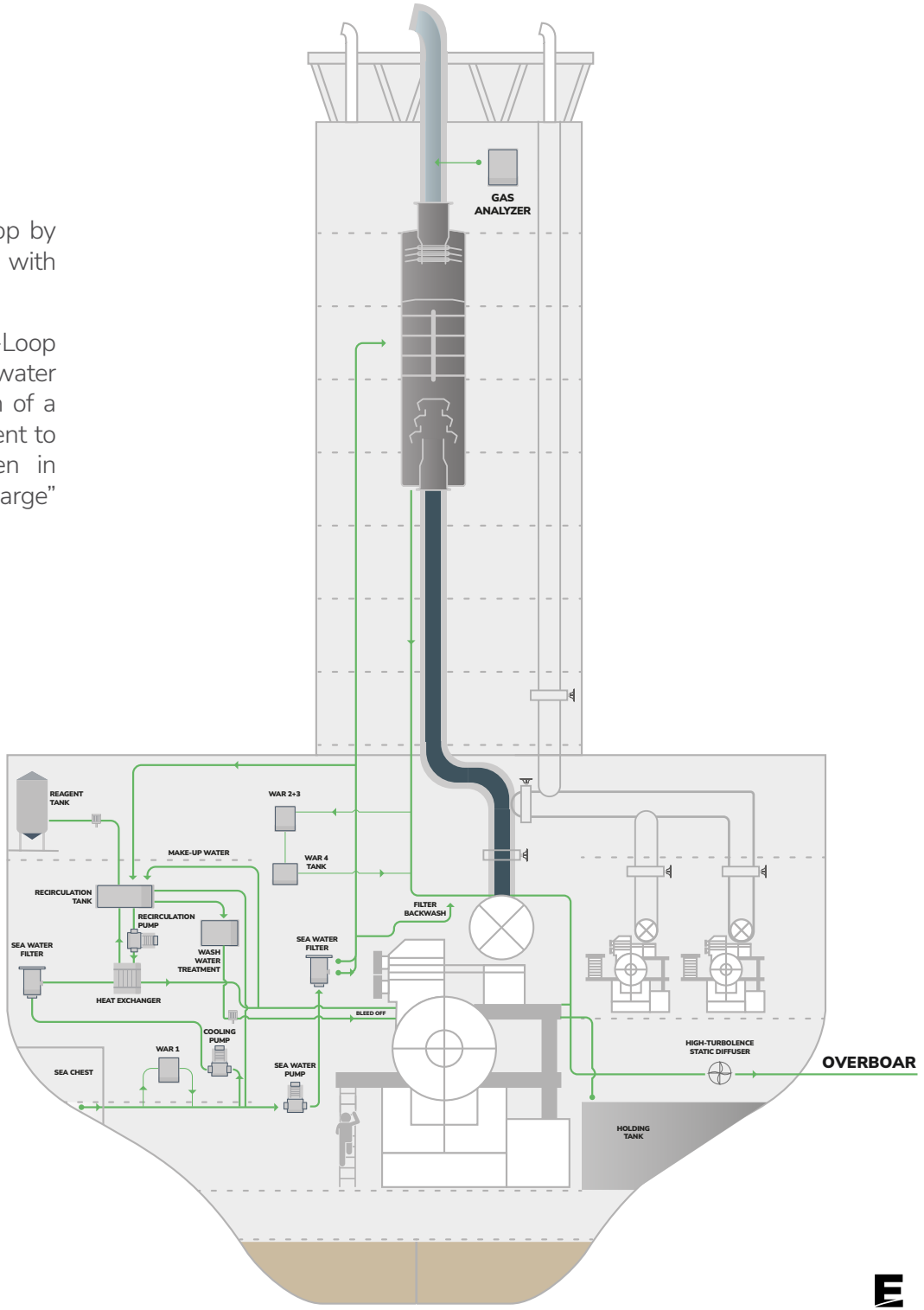
- WESP and Catalytic Dry Filter to remove PM, soot and uncombusted HC.
- Advanced Wash Water filtration system specifically engineered for maneuvering operation or ship alongside to avoid foam at the overboard and to further reduce PM in the wash water discharge.
- Water Fuel Emulsion for NOx, PM and fuel consumption reduction.
- Proprietary gas cooling (TTSMS-Thermal Transient Shock Mitigation System) to reduce the temperature of the gases (fogging technology) to prevent thermal shock to the DeSOx tower.



The EGCS Hybrid system

The Hybrid version can operate as an Open Loop EGCS or in Closed Loop by recirculating the seawater added with an alkaline additive to remove SOx, with no discharge overboard.

The **Hybrid system** can easily switch between Open Loop and Closed-Loop operation mode. In open-loop, the SO_2 removal is controlled only by sea water injection, while in closed loop the SO_2 removal is controlled by the addition of a reagent to the wash water. In Closed Loop mode the water blow down is sent to a water treatment system and then either discharged overboard when in compliance situation, or temporarily sent to a holding tank in case “zero-discharge” mode is required.



Options:

- Plume reducer systems.
- WESP and Catalytic Dry Filter to remove PM, soot and uncombusted HC.
- Water Fuel Emulsion for NOx, PM and fuel consumption reduction.
- Proprietary gas cooling gas cooling (TTSMS-Thermal Transient Shock Mitigation System) to reduce the temperature of the gases (fogging technology) to prevent thermal shock to the DeSOx tower.

Key Features

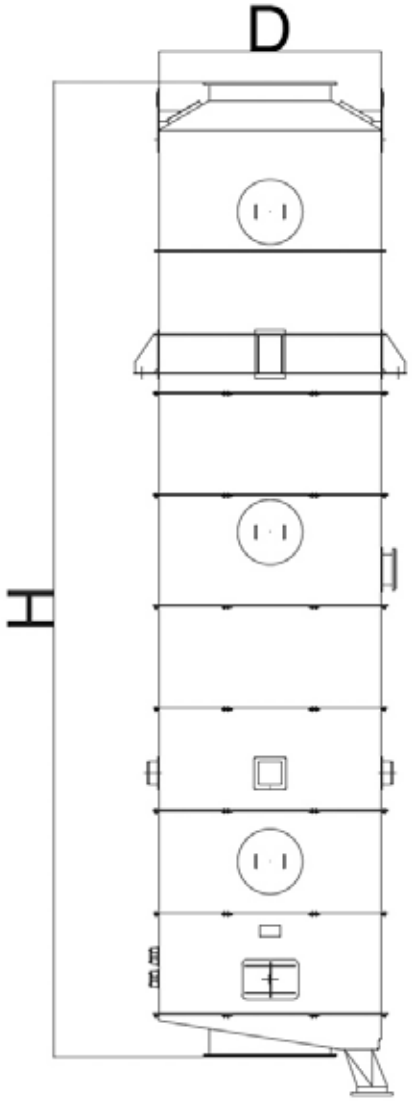
Designed for your needs

The core of our system is the **DeSOx tower**, available in a wide range of sizes to serve different kind of ships.

1. Proprietary spraying technology to **maximize efficiency** and **minimize pressure drop**.
2. **High efficiency reflecting** in low power consumption.
3. DeSOx tower made in corrosion **resistant materials**.
4. **Multiple inlets** design available.
5. Compact design to **minimize installation** downtime **and costs**.
6. **TTSMS** (Thermal Transient Shock Mitigation System) for inline scrubbers: consists of an inlet evaporative gas cooling system to mitigate the thermal transient shocks in the DeSOx tower during the start up in hot conditions.

Technical Information

Inline

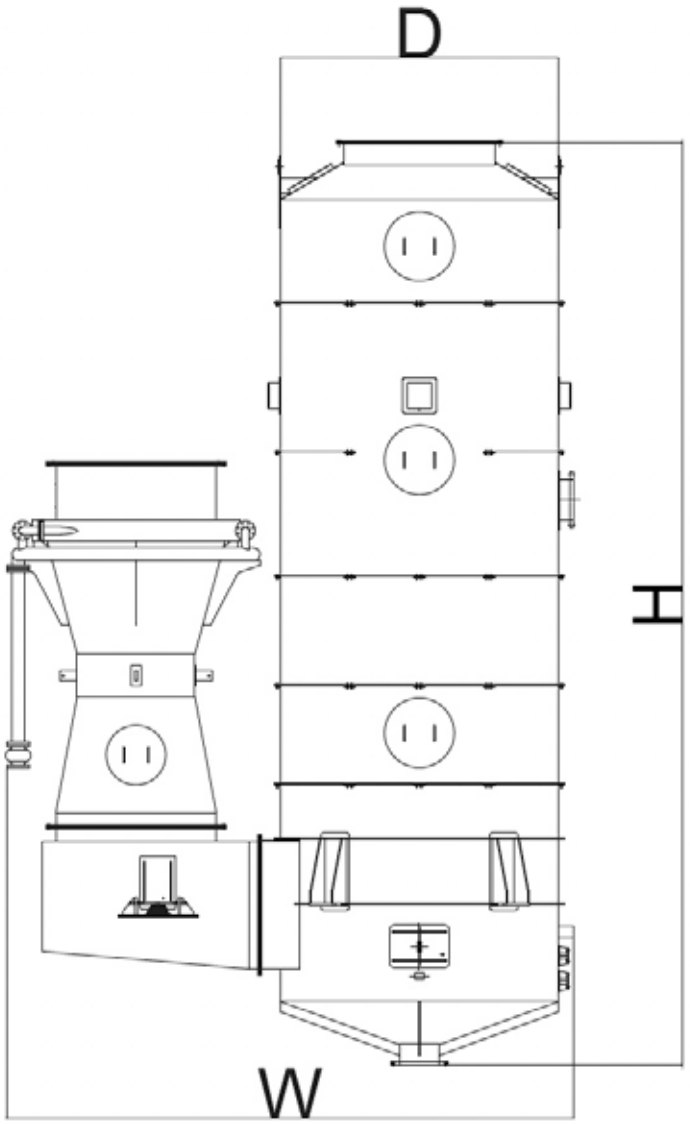


Maximum nominal power	Tower size	Demister type	Tower diameter (D)	Tower height (H)	Dry weight	Avg. El. Power consumption
MW	-		*mm*	*mm*	*kg*	*kW*
6	**1750**	Chevron	1.750	8.000	4.200	85
8	**2000**	Chevron	2.000	9.800	5.200	110
9	**2100**	Chevron	2.100	8.400	5.300	125
10	**2200**	Chevron	2.200	10.200	6.400	140
12	**2400**	Chevron	2.400	10.500	7.100	175
14	**2600**	Chevron	2.600	10.800	8.000	210
16	**2800**	Chevron	2.800	11.000	9.000	255
18	**3000**	Chevron	3.000	11.200	12.400	290
20	**3200**	Chevron	3.200	11.500	13.300	300
23	**3400**	Flat	3.400	11.000	13.800	345
26	**3600**	Flat	3.600	11.500	15.000	390

Note:
Not binding weights and dimensions

Technical Information

U-Type



Maximum nominal power	Tower size	Demister type	Tower diameter (D)	Tower height (H)	Tower width (W)	Dry weight	Avg. El. Power consumption
MW	-		*mm*	*mm*	*mm*	*kg*	*kW*
6	**1800**	Chevron	1.800	8.370	3.800	6.000	85
8	**2000**	Chevron	2.000	9.260	4.200	6.800	110
10	**2200**	Flat	2.200	8.900	4.550	6.900	140
12	**2400**	Flat	2.400	9.200	5.000	7.800	170
14	**2600**	Flat	2.600	8.900	5.250	8.900	195
16	**2800**	Flat	2.800	7.700	5.700	10.300	240
18	**3000**	Flat	3.000	8.250	6.000	12.000	270
20	**3200**	Flat	3.200	8.800	6.500	14.050	290
23	**3400**	Flat	3.400	9.340	6.850	16.000	330
26	**3600**	Flat	3.600	9.860	7.200	17.600	375
33	**4000**	Flat	4.000	10.800	8.050	21.000	480
39	**4300**	Flat	4.300	11.600	8.600	24.600	565
48	**4600**	Flat	4.600	12.500	9.200	28.100	695
58	**5000**	Flat	5.000	13.500	10.100	34.200	840

Note:
Not binding weights and dimensions

Technology Map

Exhaust Gas Cleaning

Advanced DeSox

Exhaust Gas Cleaning Systems

Catalytic Abatement

DeNOx SCR
Diesel Oxidation Catalyst
Methane Slip Reduction

Filtration

Wet Electrostatic Precipitator
Diesel Particle Filtration
Filter Cassettes

Carbon Capture

Carbon Capture and Sequestration

Scrubbing with Ammine
Scrubbing with Calcium Hydroxide
Molten Carbonate Fuel Cells

Liquefaction

CO_2 Liquefaction

Clean Fuel

Pre-Treatment and Upgrading

Smart Blending
Pre-Treatment
Biogas Upgrading

Liquefaction

Biomethane Liquefaction
Natural Gas Liquefaction
Nitrogen Rejection Unit

Green Power Generation

Lean Gas To Power

Lean Gas To Power

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Get in Touch. Book a Meeting.

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any detail around our technology and solutions.

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