

CT-BW Burn-Wet Point-of-use abatement

Burn-Wet systems for waste gas treatment

Overview

The CT-BW point-of-use abatement is a highly efficient system used in CVD and etching applications for photovoltaic, semiconductor and related industries. As new process tools and technologies with highly corrosive gases and increasing gas loads are introduced, further improvements in abatement technologies are needed.

The CT-BW meets those requirements and is in compliance with international safety standards. furthermore it provides a couple of advantages such as a high destruction removal efficiency for all waste gases from CVD and etching processes, especially for PFC's as well as all kinds of solid and gaseous reaction by-products.

The system is designed for a reliable, resource- conserving performance even under harsh process conditions.

The separation of the functional units such as burner, combustion chamber, wet scrubber, waste gas inlet and cooling system allows a flexible setup for each application.

The customized abatement configuration is key to keep the maintenance interval as long as possible and to maximize the uptime.



Process technology

- Total gas load of up to 1.500 slm per module
- Efficient treatment of deposition & etch gases
- Highly effective particle reduction
- Monitored emergency bypass dilution
- Increased reactor volume for very high DREs



Schematic flow diagram



Features and benefits

- Destruction and removal efficiency (DRE) of up to 99.99 %
- Modularity:
 - One electrical cabinet for up to four individual modules
 - Cabinets are isolated from each other
 - Each module has its own independent safety chain (sensors, probes, etc.)
- One hook-up point for each media for up to 4 modules
- Customized back-up configurations
- Low CoO due to process dependant burner performance
- Improved corrosion resistant reactor top plate
- Top-down burner design minimizes clogging of burner nozzles
- Water flushed reactor chamber prevents corrosion and clogging
- Easy and fast maintenance due to optimized interior design
- Automatic waste gas inlet cleaning device for increased MTBPM
- · Graphical user interface with help text for easy troubleshooting
- Monitoring interface for Ethernet or RS485
- Tailor-made abatement setup to meet various process requirements
- Wide range of fuel gases like LNG, city gas, coal gas, hydrogen, propane, butane, etc.
- Individual temperature adjustment and rinsing of waste gas inlet piping
- In compliance with international safety standards and regulations
- Made in Germany

Dimensions



Technical data

	Medium	Pressure	Typical flow	Connection/ Material
Fuel gas	Methane	20 mbar – 1.2 bar [0.3 – 17.4 psi]	12 – 20 slm	1/2" Swagelok / ss
	Propane	0.25 – 1.2 bar [3.6 – 17.4 psi]	4.8 – 8 slm	1/2" Swagelok / ss
	Hydrogen	1.0 – 2.25 bar [14.5 – 32.6 psi]	48 – 80 slm	1/2" Swagelok / ss
Oxidation gas	Oxygen	3.0 – 5.0 bar [43.5 – 72.5 psi]	30 – 50 slm	1/2" Swagelok / ss
	Compressed air	5.0 – 6.0 bar [72.5 – 87.0 psi]	150 – 250 slm	1/2" Swagelok / ss
Additional Oxidation gas	Oxygen	3.0 – 5.0 bar [43.5 – 72.5 psi]	30 – 50 slm	1/2" Swagelok / ss
	Compressed air	5.0 – 6.0 bar [72.5 – 87.0 psi]	150 – 250 slm	1/2" Swagelok / ss
Nitrogen		7.0 – 10.0 bar [101.5 – 145.0 psi]	21 – 61 slm w/o emergency dilution	1/2" Swagelok / ss
Compressed air		6.0 – 8.0 bar [87.0 – 116.0 psi]	25 – 85 slm	1/2" Swagelok / ss
	Incl. dust reduction kit		375 – 535 slm	1/2" Swagelok / ss
Water	Fresh water	3.0 – 7.0 bar [43.5 – 101.5 psi]	2 slm	1/2" Swagelok / ss
	Waste water	no back pressure, vented	2 slm	NPT tread (PVC-U) 1/2" female, 1" male
	Cooling water	4.0 – 6.0 bar [58.0 – 87.0 psi	8.0 – 50.0 slm depending on process	3/4" Swagelok / ss
Exhaust	Clean gas	-5 – -7.5 mbar [-2.0 – -3.0 inH ₂ O]	depending on process	DN 100 (pipe 104x2)
	Cabinet ventilation	-0.6 – -2.5 mbar [-0.24 – -1.0 inH ₂ O]	>120 m³ / h [>70.63 cfm]	DN 100 (pipe 104x2)
Neutralisation	Sorption medium	< 2.0 bar [< 29.0 psi]	depending on process	ferrule fitting PTFE 1/2"
Power supply	L1/L2/L3/N/PE~400 V 50/60 Hz (20A)	0,6 kW w/o heating		
Weight	Control cabinet	120 kg		
	Gas cabinet	400 kg		
	Scrubber liquid circuit (filled)	80 kg		



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