PRODUCT PORTFOLIO

introduced by Global Pathways Group LLC

Engineering the Future of Clean Fabs

COMPANY PROFILE

VTEco Semiconductor Equipment Co., Ltd. is a next-generation semiconductor equipment manufacturer that brings together best-in-class Korean engineering and local manufacturing expertise. With a strong focus on R&D, we deliver critical systems for advanced chipmaking environments.

The name “VTEco” reflects our commitment to innovation across three core technology platforms:

V (Vacuum): High-precision vacuum pump systems engineered for stability and performance in high-vacuum semiconductor process applications.

T (Temperature): Precision chiller systems providing advanced temperature control for lithography, etching, deposition, and other heat-sensitive semiconductor processes.

E (Exhaust): Scalable and efficient exhaust gas abatement (scrubber) systems designed to meet the stringent environmental standards of modern fabs.

With production facilities in South Korea and China — and plans for localized support in the U.S. — VTEco is positioned to serve leading semiconductor manufacturers and integrators with fast turnaround, competitive total cost of ownership, and direct technical support.

Our team combines top-tier Korean design talent with scalable manufacturing capacity, offering high-reliability systems for wafer fabrication, packaging, and testing. As a strategic partner, VTEco is committed to helping customers enhance yield, improve sustainability, and accelerate production ramp-ups in the U.S. and beyond.

COMPANY CULTURE

mission

Empower the manufacturing of core semiconductor equipment with cutting-edge technology and continuous innovation, promoting efficient and green sustainable development.

Through independent R&D and international cooperation, overcome the "bottleneck" problems of core semiconductor equipment, provide customers with high-performance, low-energy consumption, and environmentally friendly solutions, help the global industrial chain reduce costs and increase efficiency, and fulfill environmental protection commitments.

COMPANY CULTURE

vision

To become an innovation leader in the global core semiconductor equipment field, driving the future of the industry with sustainable technologies.

Focusing on the strategic technology domains of vacuum, temperature control, and exhaust gas treatment, we aim to build a leading domestic semiconductor equipment enterprise with independent innovation and world-class technology. We promote the deep integration of intelligent and green manufacturing, contributing to both human technological progress and the Earth's ecological balance.

COMPANY CULTURE

values

Innovation-Driven: Leveraging technological breakthroughs as the core driving force. Continuously leading innovation in the semiconductor equipment field.

Excellent Quality: Adhering to the "zero defect" standard to ensure high reliability and process stability.

Lean Production: Implementing lean production management to improve efficiency and deliver high cost-performance products to customers.

Green Future: Integrating environmental protection concepts throughout the entire product life cycle to achieve low-carbon production.

Customer-Oriented: Focusing on customer needs by providing rapid response and customized services.

Collaborative Win-Win: Strengthening Korea-China technical collaboration. Building a global semiconductor industry ecosystem through strategic partnerships.

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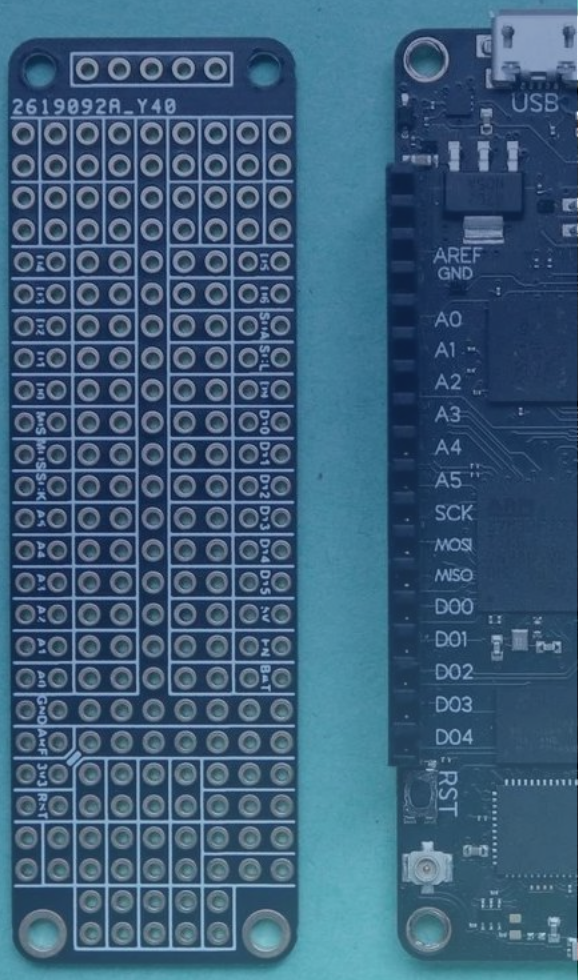
SCRUBBERS

CHILLERS



EPW SCRUBBER

plasma wet

Plasma Scrubber can decompose PFCs gases (greenhouse gases) including flammable, corrosive and toxic gases generated from the semiconductor, LCD/OLED manufacturing process equipment by using DC Thermal Plasma.

Plasma decomposition of PFCs gases using DC Thermal Plasma.
- Stable discharge can be maintained by applying a Plasma Torch with a permanent magnet.
- Using Lorentz Force, the high temperature range is expanded to increase the PFC gas decomposition efficiency.

Maximum support for a large capacity of 3000 LPM.

Self-developed power supply line and matching plasma power unit.
- Self-developed Power Supply Line-up (15kW, 20kW, 40kW).
- Matching plasma power supply improves process efficiency and reduces power consumption.
- Variable controllability for energy saving (when IDLE/PROCESS signal is connected). Energy Saving Mode feature enhances utility.

High-quality cathodes and anodes extend the service life of consumables, thereby reducing overall operating costs.

Self-cleaning and automated maintenance functions
- Self-cleaning reactor design extends PM interval.
- Automatic drainage system: The recirculating water system reduces wastewater discharge and water consumption.
- Gas vent: The chamber design reduces the emission of power and water vapor.
- PLC2 applied to prevent backflow.
- Pressure control: PLC real-time pressure regulation to prevent pipe blockage.
- Automatic control system: The touch screen interface supports automatic/manual modes and records faults/logs.

Reliable system design
- MTBF ≥ 6,000 hrs | MTTR < 1 hr

MODEL	CHANNEL	TOTAL CAPACITY (LPM)	DRE(%)	COMBUSTIBLE GAS	WATER SOLUBLE GAS	PFC GAS	PROCESS
EPW-600S	SINGLE	600	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EPW-1000S	SINGLE	1000	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EPW-2000S	SINGLE	2000	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EPW-3000S	SINGLE	3000	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF

EBW SCRUBBER

burn wet

The Burn Wet point-of-use abatement is a highly efficient system used in CVD and etching applications for photovoltaic, semiconductor, and related industries.

Destruction and Removal Efficiency (DRE) up to 99%
- High removal efficiency for PFCs and excellent by-product reduction
- Efficient treatment of opposition & etch gases
- Increased reactor volume for very high DREs

Maximum support for a large capacity of 3000 LPM

Easy and fast maintenance due to optimized interior design
- Design applied to prevent powder clogging & corrosion caused by process gas
- Top-down burner design minimizes clogging of burner nozzles
- Water-flushed reactor chamber prevents corrosion and clogging
- Improved corrosion-resistant reactor top plate
- Able to control humidity and dust emissions
- Automatic waste gas inlet cleaning device for increased MTBPM

Low COO due to process-dependent burner performance
- Wide range of fuel gases like LNG, city gas, hydrogen, etc.
- Dual has independent control configuration (=Single x 2 units)
- Each port can be controlled to minimize fuel usage when IDLE/RUN signals are connected

MODEL	CHANNEL	TOTAL CAPACITY (LPM)	DRE(%)	COMBUSTIBLE GAS	WATER SOLUBLE GAS	PFC GAS	PROCESS
EBW-600S	SINGLE	600	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EBW-1000S	SINGLE	1000	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EBW-1500S	SINGLE	1500	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EBW-3000S	SINGLE	3000	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EBW-600D	DUAL	600	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF
EBW-800D	DUAL	800	>= 99%	AsH_3, B_2H_6, DCS, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	CF_4, C_2F_6, C_3F_8, NF_3, SF_6	ETCH, CVD, METAL, DIFF

EHW SCRUBBER

heat wet

The electrical thermal decomposition scrubber uses an electrical heater as the heat source and decomposes flammable gases, combustible gases, and some peroxides at high temperatures of 700–800°C through indirect oxidation.

Reduction of mist emission by applying gravity-sedimentation demister
- A demister based on gravity sedimentation can effectively separate gas and liquid phases, reducing mist emissions.

Semi-permanent MTBF after installation based on user and process optimization
- By optimizing process parameters and user operations, the equipment can achieve long-term stable operation.

Additional heating option is available according to specific process / Maximize equipment runtime
- Heating functions can be flexibly configured according to process requirements to extend equipment runtime.

Low maintenance costs due to use of corrosion-resistant materials
- Using corrosion-resistant materials like stainless steel and titanium significantly reduces maintenance frequency and costs.

Excellent gas removal efficiency due to the rotary water injection structure
- Rotary water injection enhances gas-liquid contact for improved separation efficiency.

MODEL	CHANNEL	TOTAL CAPACITY (LPM)	DRE(%)	COMBUSTIBLE GAS	WATER SOLUBLE GAS	PFC GAS	PROCESS
EHW-600S	SINGLE	600	>= 99%	AsH_3, B_2H_6, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	N/A	ETCH, CVD, METAL, DIFF
EHW-1500S	SINGLE	1500	>= 99%	AsH_3, B_2H_6, GeH_4, H_2, PH_3, SiH_4, Si_2H_6, TEB, TEOS	BCl_3, Cl_2, HF, HCl, HBr, NH_3, WF_6	N/A	ETCH, CVD, METAL, DIFF
EWW-600S	SINGLE	600	>= 99%	N/A	BCl_3, Cl_2, HF, HCl, NH_3, WF_6	N/A	ETCH, CVD, METAL, DIFF
EWW-1000S	SINGLE	1000	>= 99%	N/A	BCl_3, Cl_2, HF, HCl, NH_3, WF_6	N/A	ETCH, CVD, METAL, DIFF
EWW-1500S	SINGLE	1500	>= 99%	N/A	BCl_3, Cl_2, HF, HCl, NH_3, WF_6	N/A	ETCH, CVD, METAL, DIFF

EDD SCRUBBER

dry

The Dry scrubber offers a safe, efficient, and reliable point-of-use abatement solution.
Chemisorptive resins are optimized to treat toxic, reactive, ignitable, and corrosive components in process waste gases. The resins convert the gases into non-volatile, stable inorganic solids by irreversible chemical reaction at ambient temperatures. The system is passive, requiring no additional resources (e.g., water, fuel) and continues operating during power failures.

When replacing the canister, the main equipment operation is not interrupted by applying a small bypass canister
- The bypass design allows the main system to remain operational during maintenance, reducing downtime.

Environmentally friendly equipment that uses no fuel or water
- Some scrubber types (e.g., dry) achieve pollution control through chemisorption or resin media without consuming water or fuel.
- However, wet scrubbers may use water (e.g., seawater or freshwater) for neutralization, depending on the specific type.

Canister replacement time can be confirmed by applying an exhaust gas detection system
- Real-time monitoring of exhaust gas composition ensures canister efficiency, prevents premature replacement or pollution leakage, and complies with environmental regulations.

Resin media configuration is capable of absorbing each hazardous gas
- Customized resins or chemical solutions can neutralize various pollutants such as sulfur dioxides (SOx), chlorides, and volatile organic compounds (VOCs), adapting to complex industrial scenarios.

MODEL	CHANNEL	TOTAL CAPACITY (LPM)	DRE(%)	COMBUSTIBLE GAS	WATER SOLUBLE GAS	PFC GAS	PROCESS
EDD-50S	SINGLE	50	>= 99%	AsH_3, PH_3, BF_3	N/A	N/A	IMP, ETCH, CVD, Ashing
EDD-100S	SINGLE	100	>= 99%	AsH_3, PH_3, BF_3	N/A	N/A	IMP, ETCH, CVD, Ashing
EDD-200S	SINGLE	200	>= 99%	AsH_3, PH_3, BF_3	N/A	N/A	IMP, ETCH, CVD, Ashing
EDD-200D	DUAL	200	>= 99%	AsH_3, PH_3, BF_3	BCl_3, Cl_2, HF, HCl, HBr	N/A	IMP, ETCH, CVD, Ashing
EDD-400D	DUAL	400	>= 99%	AsH_3, PH_3, BF_3	BCl_3, Cl_2, HF, HCl, HBr	N/A	IMP, ETCH, CVD, Ashing

TTE CHILLER

thermoelectric

Thermoelectric technology utilizes the Peltier effect, whereby heat is transferred from one side to the other when an electric current flows through semiconductor materials, enabling cooling without compressors or refrigerants, and allows precise temperature regulation via PID controllers.

Eco-friendly, non-refrigerant
- Environmentally friendly, refrigerant-free: Utilizes thermoelectric cooling technology without traditional refrigerants like Freon, eliminating environmental pollution.

TEM monitoring with self-diagnosis
- Integrated alarm system provides real-time fault alerts via touchscreens and remote PC control.

Temp precision and excellent responsiveness through close installation
- Enhanced temperature precision (±0.1°C) and responsiveness: Enabled by proximity installation and anti-lag cascade algorithms.

MODEL	CHANNEL	TEMP RANGE (°C)	TEMP STABILITY (°C)	COOLING CAPACITY	PROCESS	INDUSTRY
TTE-0080S	SINGLE	0 ~ +80°C	±0.1°C	5kW (@20°C)	ETCH, CVD	SEMICONDUCTOR
TTE-1080S	SINGLE	-10 ~ +80°C	±0.1°C	6kW / 8kW (@20°C)	ETCH, CVD	SEMICONDUCTOR
TTE-2080S	SINGLE	-20 ~ +80°C	±0.1°C	12kW (@20°C)	ETCH, CVD	SEMICONDUCTOR

TRE CHILLER

refrigerant

Refrigeration systems rely on refrigerant phase-change cycles: liquid refrigerant absorbs heat and vaporizes in the evaporator, is pressurized and heated by the compressor, releases heat and condenses in the condenser, then returns to the evaporator via an expansion valve, continuously transferring heat to achieve cooling.

Wide temperature control range
- Supports precise temperature control from ultra-low to high temperatures, meeting stringent requirements in semiconductor manufacturing.

Environmentally friendly refrigerant
- Utilizes refrigerants with low ODP (Ozone Depletion Potential) and GWP (Global Warming Potential) to minimize environmental impact.

Choice of working fluid (coolant)
- Supports multiple circulating fluids (e.g., fluorinated liquid, glycol solution, pure water) for diverse application scenarios.

Electric expansion valve increases compressor working capacity
- Optimizes compressor load and energy efficiency via precise refrigerant flow regulation through an electronic expansion valve.

Multi-channel option available
- Multi-circuit design ensures continuous operation even if partial circuits fail.

MODEL	CHANNEL	TEMP RANGE (°C)	TEMP STABILITY (°C)	COOLING CAPACITY	PROCESS	INDUSTRY
TRE-2060S	SINGLE	-20 ~ +60°C	±0.1°C	5kW (@20°C)	ETCH, CVD	SEMICONDUCTOR
TRE-2060D	DUAL	ch1: -20 ~ +60°C ch2: -20 ~ +60°C	±0.1°C	2.5kW (@20°C)	ETCH, CVD	SEMICONDUCTOR
TRE-3090S	SINGLE	-30 ~ +90°C	±0.1°C	2.5kW–8.0kW (@20°C)	ETCH, CVD	SEMICONDUCTOR
TRE-3090D	DUAL	ch1: -30 ~ +90°C ch2: -30 ~ +90°C	±0.1°C	2.5kW–8.0kW (ch1 & ch2, @20°C)	ETCH, CVD	SEMICONDUCTOR
TRE-4580D	DUAL	ch1: -45 ~ +40°Cch2: 10 ~ +80°C	±0.1°C	2.5kW–8.0kW(ch1 & ch2, @20°C)	ETCH, CVD	SEMICONDUCTOR

TRC CHILLER

cryogenic

Cryogenic cooling technology achieves breakthrough: By integrating multi-stage cascade systems with refrigerant-based cycles, it shatters the barrier of single-stage compression, delivering precise temperature control at -90°C.

Ultra-Low Temperature & High Cooling Capacity
- Supports ultra-low temperature operation with high cooling capacity, meeting stringent thermal management requirements in semiconductor manufacturing.

Compact Structural Design
- Optimized design achieves compact structure, minimizing space occupation while maintaining equivalent performance.

Anti-Condensation System
- Integrated special anti-dew mechanism ensures stable equipment operation in low-temperature environments.

Dynamic Load Stability
- Maintains stable operation during temperature load fluctuations via dynamic adjustment mechanisms to ensure reliability.

Rapid Temperature Switching Optimization*
- Specifically designed for rapid temperature switching scenarios in semiconductor testing to shorten process cycles.

MODEL	CHANNEL	TEMP RANGE (°C)	TEMP STABILITY (°C)	COOLING CAPACITY	PROCESS	INDUSTRY
TRC-7080S	SINGLE	-70 ~ +80°C	±0.1°C	11kW @ -60°C 8kW @ 30°C	ETCH, CVD	SEMICONDUCTOR
TRC-9020S	SINGLE	-90 ~ +20°C	±0.2°C	2kW @ -100°C 6kW @ -70°C	ETCH, CVD	SEMICONDUCTOR
TRC-8080D	DUAL	ch1: -80 ~ +50°C ch2: -55 ~ +60°C	±0.1°C (both channels)	1.5kW @ -80°C 5.3kW @ 20°C	ETCH, CVD	SEMICONDUCTOR
TRC-8090T	TRIPLE	ch1: -80 ~ +30°C ch2: +30 ~ +50°C ch3: +30 ~ +90°C	±0.1°C (all channels)	10kW @ -60°C 12kW @ 50°C 10kW @ 40°C	ETCH, CVD	SEMICONDUCTOR

THE CHILLER

heat exchanger

Heat Exchanger-Based Refrigeration Technology utilizes indirect heat exchange cycle. Utilizes non-contact energy transfer between external coolant (e.g., chilled water/glycol solution) circulating through plate/shell-and-tube heat exchangers and process fluids (e.g., water/fluorinated liquid), enabling efficient cross-media heat transfer.

Phase-Change-Free Refrigeration
- Compressor/refrigerant-free design with low maintenance costs.

High Compatibility
- Supports multiple coolant sources (e.g., industrial cooling water, chillers).

Low Energy Consumption
- Pump-driven operation consumes less energy than compressor-based systems.

MODEL	CHANNEL	TEMP RANGE (°C)	TEMP STABILITY (°C)	COOLING CAPACITY	PROCESS
THE-3040S	SINGLE	30 ~ +40°C	±0.1°C	4.3kW @ 35°C	ETCH, CVD
THE-3090S	SINGLE	30 ~ +90°C	±0.1°C	8kW @ 50°C	ETCH, CVD
THE-4034D	Dual (ch1, ch2)	ch1: 100 ~ +340°C ch2: 40 ~ +180°C	±0.1°C	ch1 (heating): 35.0 @ +150°C to +330°C ch2 (cooling): 360.0 @ +330°C to +150°C	ETCH, CVD
TRC-8090T	TRIPLE	ch1: -80 ~ +30°C ch2: +30 ~ +50°C ch3: +30 ~ +90°C	±0.1°C	10kW @ -60°C 12kW @ 50°C 10kW @ 40°C	ETCH, CVD

Global Pathways Group LLC partners with innovative manufacturers like VTECO to bridge global markets through strategic localization, business development, and technical alignment. We specialize in connecting Asia-based technology leaders with the U.S. semiconductor supply chain.

Powered by Global Pathways Group LLC

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For distributor inquiries, supplier registration, or custom collaboration opportunities, please reach out directly.

Notes & Disclaimer
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Specifications may vary based on regional compliance and fab-specific requirements.
For technical data sheets or integration guidelines, please contact us.