



AERONEX® GAS PURIFICATION SYSTEM HX SERIES

*Continuous high-flow, ultrapure hydrogen or
nitrogen at a low cost of ownership*



continuous ultrapure H_2 or N_2 gas at a low cost of ownership

Overview

Advanced Technology in High-flow Gas Purification

The Aeronex® Gas Purification System (AGPS), HX series, is the latest continuous service high-flow gas purification system from Entegris. The system brings advanced technology to high-flow gas purification providing semiconductor manufacturers with an innovative, efficient and cost-effective solution to purify purge and carrier gasses used in compound semiconductor applications.

The Entegris AGPS represents the culmination of 15 years of experience in gas purification and delivery technologies. It delivers ultrapure hydrogen or nitrogen purge and carrier gasses to today's MOCVD platforms, enabling industry leading photoluminescence in LED production.

The new "HX" media represents the latest advancement in purification technology from Entegris, providing for outlet purity in the sub parts-per-billion (ppb) and parts-per-trillion (ppt) levels. The system applies ambient temperature purification, so heating is not required for purification. This means resource conservation and lower energy costs. The AGPS effectively and efficiently removes contaminants such as H_2O , O_2 , CO , CO_2 and nonmethane hydrocarbons from hydrogen or nitrogen gas.

Applications

- Metalorganic Chemical Vapor Deposition (MOCVD)
- Atomic Layer Deposition (ALD)
- Low Temperature Epitaxy (LTE)
- Photolithography
- Other applications that require ultrapure hydrogen or nitrogen gas

Features and Benefits

- Power failure will not damage the purification system
- Completely automatic operation saves time, increases reliability
- Purifies to sub-ppb and sub-ppt levels
- Low pressure drop means no changes to inlet pressure are required
- Includes inlet and outlet process gas pressure transducers
- Self-regenerating purifiers provide the lowest cost of ownership
- Ambient temperature purification means lower energy costs and resource conservation
- CE and SEMI® certified
- Start-up service is provided, making it easy to integrate the unit
- Ethernet connection allows for remote monitoring capability
- Designed for easy field maintenance and upgrades
- Available worldwide through Entegris' global infrastructure

Models Available

Model	Description
AGPS2CHX	Enclosed model for use with applications requiring a flow rate up to 2000 SLM
AGPS2EHX	Enclosed model for use with applications requiring a flow rate up to 5000 SLM

Safety Features

Feature	Description	AGPS2CHX	AGPS2EHX
Earth leakage circuit breaker	Provides additional electrical protection to the system.	Yes	Yes
Over temperature rise condition	Monitored via thermocouple. Heaters sized to prevent runaway conditions. As a secondary precautionary device, a high-temperature hardware interlock is included on all systems.	Yes	Yes
Hydrogen detector	Triggers an EMO alarm and shuts down the system in the event of a gas leak of hydrogen inside the system enclosure.	Yes	Yes
Rate-of-rise detector	If the detector senses a rapid increase in temperature inside the system enclosure, an EMO alarm will be activated and shut down the system.	Yes	Yes
EMO button	When activated, power is removed from the main enclosure. The front panel and controller remain powered. Process gas flow is shut off.	Yes	Yes
Remote EMO	Provides input for remote EMO activation. In the event of an EMO shutdown, the system will send an output signal to an external sensing device that alerts the facility of the alarm.	Yes	Yes
Remote alarm	In the event of a minor alarm in the system not requiring an EMO shutdown, the system will send an output signal to an external sensing device that alerts the facility of the alarm.	Yes	Yes
Visual alarm	Alarm conditions will result in a visual alarm on the top of the electrical enclosure.	Yes	Yes
Audible alarm	Alarm conditons will result in an audible alarm.	Yes	Yes
Isolated electrical enclosure	Electronics are physically isolated from the main purifier cabinet in an attached electrical enclosure.	Yes	Yes

Product Specifications

Model	AGPS2CHX	AGPS2EHX
Gases purified:	Hydrogen or nitrogen	
Media type:	Inorganic	
Contaminants removed:	Nitrogen	H ₂ O, O ₂ , CO, CO ₂ , H ₂ and nonmethane hydrocarbons
	Hydrogen	H ₂ O, O ₂ , CO, CO ₂ and nonmethane hydrocarbons
Outlet purity:	<100 ppt H ₂ O, <1 ppb all other listed contaminants	
Operating pressure range:	5.51–10.34 bar (80–150 psig)	
Pressure drop:	<7 psi @ 100 psig and max rated flow	<10 psi @ 100 psig and max rated flow
Maximum flow rate:	2000 SLM (120 Nm ³ /hr)	5000 SLM (300 Nm ³ /hr)
Gas operating temperature:	15°–40°C (60°–104°F)	
Outlet filtration:	ISO Class 1 (<10 particles per m ³ @ 0.1 µm, <2 particles per m ³ @ 0.2 µm)	
Leak rating:	1 × 10 ⁻⁹ atm cc/sec	

Facility Specifications

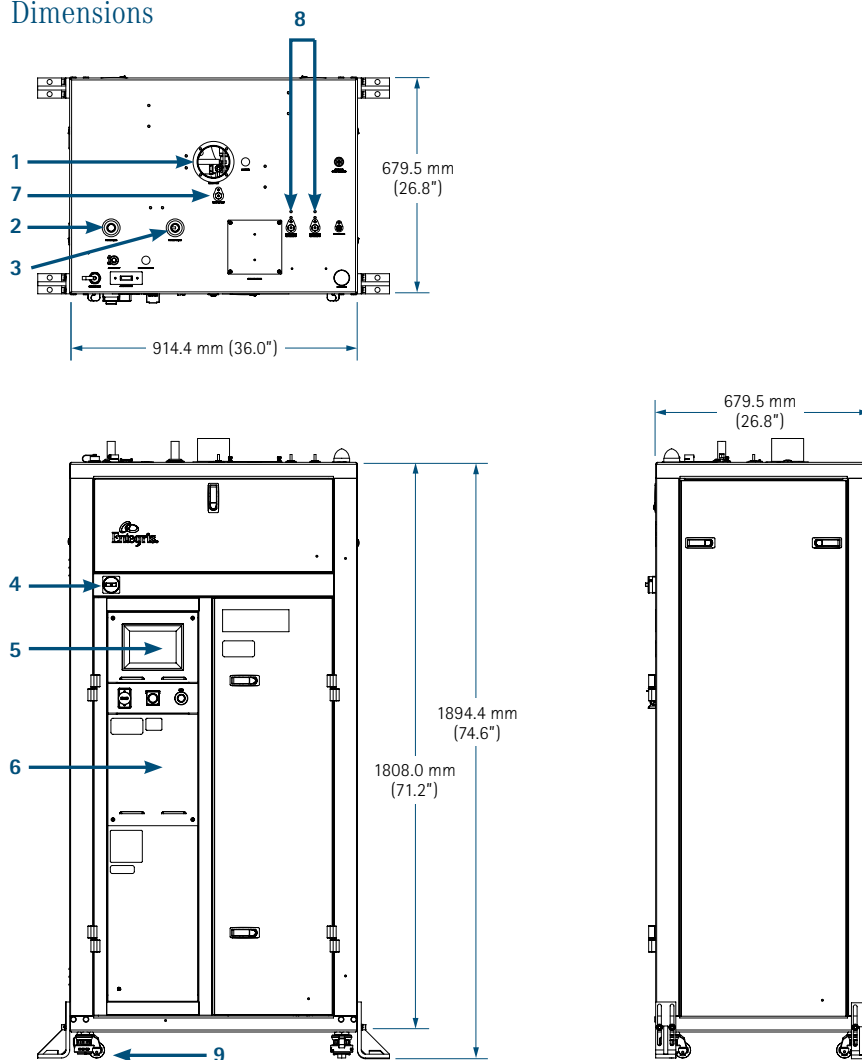
Specifications		AGPS2CHX	AGPS2EHX
Process gas input:	Mechanical connection	1" tube stub	1.5" tube stub
Process gas output:	Mechanical connection	1" tube stub	1.5" tube stub
Ventilation:	Mechanical connection	4" duct	
	Exhaust flow	300 cfm	
Power requirements:	Mechanical connection	3 pin mechanical disconnect	
	Power requirements	200–240 VAC single phase	
	Power consumption	150W at idle and online; 2000W at regen	
Regeneration:	Regen duration	24 hours for each purifier bed	
Regen gas input 1:	Mechanical connection	1/4" tube stub	
	Gas	N ₂ : 65–100 psig	
Regen gas input 2:	Mechanical connection	1/4" tube stub	
	Gas	H ₂ : 65–100 psig	
Regen gas output:	Mechanical connection	1/4" tube stub	
Instrument air:	Mechanical connection	1/4" compression fitting	
	Gas and pressure	CDA or N ₂ @ 90–125 psig	
Physical requirements:	Mounting	Floor	
	Recommended maintenance space	3 feet on all sides for minimum MTTR	
	Shipping weight	363 kg (850 lb)	544 kg (1200 lb)
	Operating conditions	15°–40°C indoor (60°–104°F indoor)	
	Humidity	10–90% RH noncondensing	

Note: It is the customer's responsibility to ensure that the equipment is installed according to local building code requirements.

Model AGPS2CHX

Specific information on all models is available on request.

Dimensions



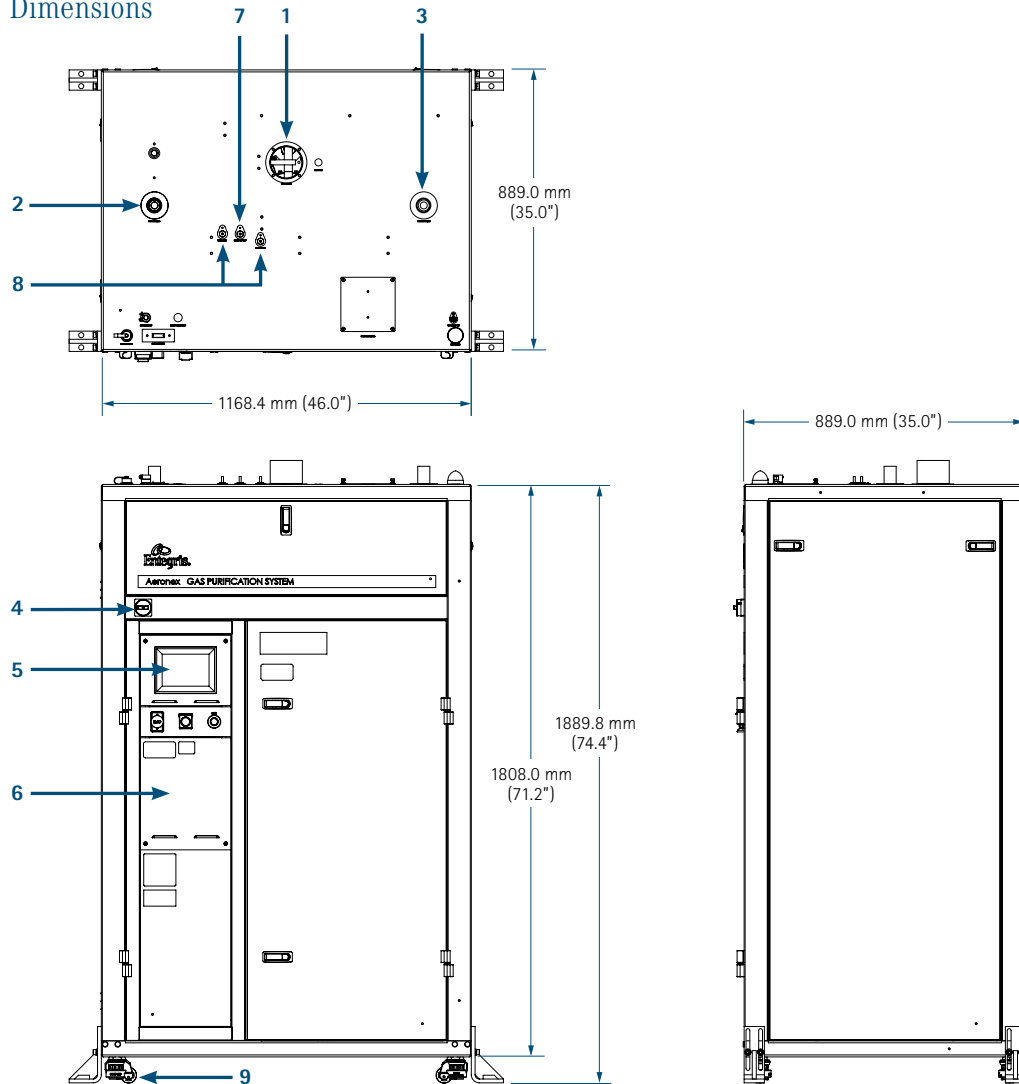
System Features

1	Exhaust Vent	Allows ventilation
2	Process gas input	Customer-supplied unpurified hydrogen or nitrogen line
3	Process gas output	Purified hydrogen or nitrogen line
4	System switch	Emergency ON/OFF switch for the system
5	Touch screen	For system status and interface
6	Instrument panel	Contains USB interface, start/clear button and EMO button
7	Regeneration vent	Exhaust for regeneration gases
8	Regeneration gas inputs	Customer-supplied regeneration gas lines for hydrogen and nitrogen
9	Casters	Casters with integrated leveling feet. System includes seismic restraint brackets.

Model AGPS2EHX

Specific information on all models is available on request.

Dimensions



System Features

1	Exhaust Vent	Allows ventilation
2	Process gas input	Customer-supplied unpurified hydrogen or nitrogen line
3	Process gas output	Purified hydrogen or nitrogen line
4	System switch	Emergency ON/OFF switch for the system
5	Touch screen	For system status and interface
6	Instrument panel	Contains USB interface, start/clear button and EMO button
7	Regeneration vent	Exhaust for regeneration gases
8	Regeneration gas inputs	Customer-supplied regeneration gas lines for hydrogen and nitrogen
9	Casters	Casters with integrated leveling feet. System includes seismic restraint brackets.

Enclosure Information

The Aeronex HX series enclosure is designed for indoor applications only. The enclosure includes leveling feet with integrated casters and seismic restraint brackets to secure the system to the floor. Panels are removable on all four sides of the enclosure. The backup purifier compartment is accessible from a door on the front of the enclosure.

Options

Available Options	AGPS2CHX	AGPS2EHX
Manual bypass valve	Yes	Yes
Automatic bypass valve	Yes	Yes
Automatic bypass valve with integrated GateKeeper® backup purifier	Yes	Yes
Moisture indicator	Yes	Yes
Process gas mass flowmeter with totalizer	Yes	Yes

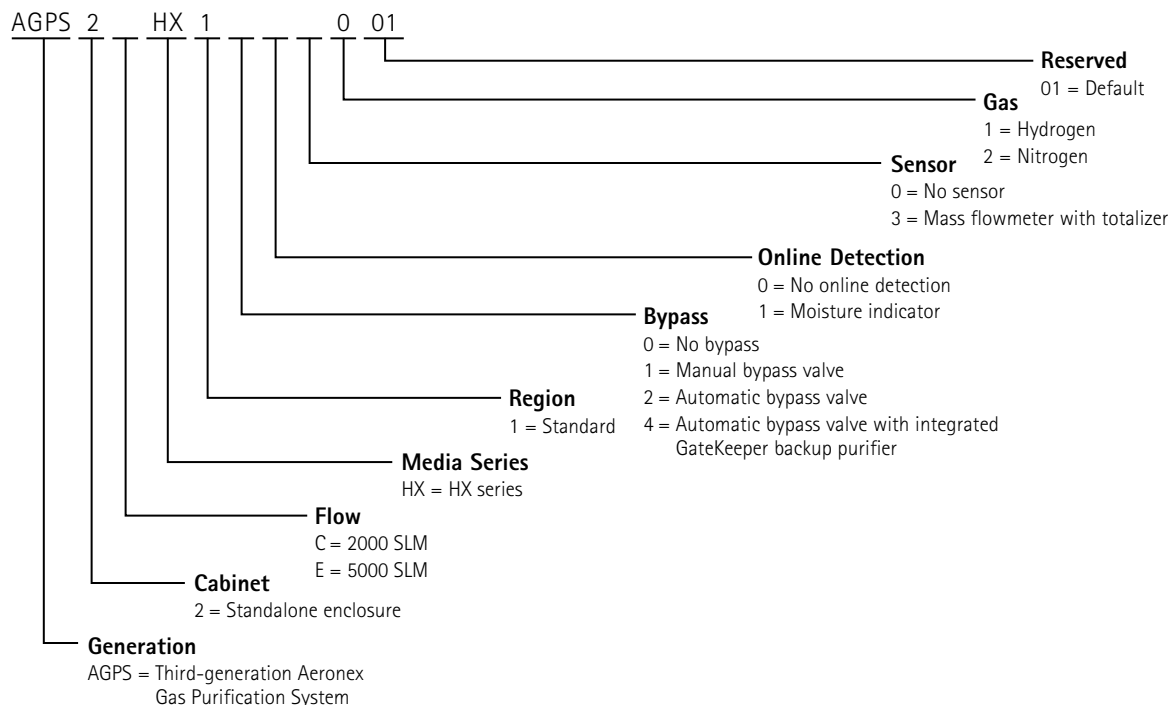


Aeronex model AGPS2CHX shown

Ordering Information

Aeronex HX Series Gas Purification System

Part Number



Note: Not all options are available for all configurations. Consult your local sales representative for more information and assistance to select a part number. All specifications subject to change.

For More Information

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit www.entegris.com and select the Customer Service link for the center nearest you.

Terms and Conditions of Sale

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Product Warranties

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