

# GateKeeper® GPS B6K ZX Series Gas Purification System for 6600 Nm<sup>3</sup>/hr

*Leading-edge continuous service gas purification system delivering purified XCDA® gas to advanced lithography tools*

GateKeeper® B6K ZX series gas purification system (GPS) provides an innovative solution to continuous service gas purification in semiconductor manufacturing. At 6600 Nm<sup>3</sup>/hr (110,000 L/min) flow rate performance, the GateKeeper B6K ZX model efficiently supplies purified XCDA® (extreme clean dry air) to the most advanced scanner platforms, including immersion lithography tools.

The ZX media efficiently removes contaminants such as volatile acids and bases, refractory compounds, condensable and non-condensable organics, and moisture from CDA (air), providing for outlet purity in the parts-per-trillion (ppt) levels. Because the system uses ambient temperature purification, heating is not required for purification, thereby translating into greater resource conservation and lower energy costs.

## APPLICATIONS

- Photolithography
- FOUF cleaning and purging
- Stocker cleaning and purging
- Purge gas
- Central supply



## FEATURES & BENEFITS

- Advanced electrical design ensures a power failure will not damage the purification system
- Ambient temperature purification technology requires lower energy costs and resource conservation
- ZX media design performs at parts-per-trillion (PPT) levels and does not require adjustments to inlet pressure
- Self-regenerating purifiers provide the lowest cost of ownership
- System start-up service provides an easy facility integration
- Compact cabinet and instrumentation design allows for easy, front access to field maintenance and service components
- Active cooling/heating thermal management system (damper and fan) enables faster, more efficient operation
- Low CoC enables:
  - Quicker heating and cooling cycle
  - Shortened regen duration
  - Reduced power consumption and gas requirement
- Ethernet connection allows for remote monitoring capability
- CE and SEMI® certified

## SPECIFICATIONS

<b>Model</b>	GPSB6K	
<b>Gases purified</b>	CDA (air)	
<b>Media type</b>	Inorganic	
<b>Contaminants removed*</b>	Volatile acids	<1 pptV (as SO <sub>2</sub> )
	Volatile bases	<5 pptV (as NH <sub>3</sub> )
	Refractory compounds	<1 pptV (as HMDSO)
	Condensable organics	<1 pptV (measure as Toluene)
	Moisture (H <sub>2</sub> O)	<100 pptV
<b>Operating pressure range</b>	5.51–10.3 bar (80–150 psig)	
<b>Pressure drop</b>	1 bar (14.5 psi) @ 100 psig at max rated flow	
<b>Maximum flow rate</b>	6600 Nm <sup>3</sup> /hr (110,000 L/min)	
<b>Gas operating pressure</b>	15°–40°C (60°–104°F) indoors	
<b>Leak rating</b>	1 x 10 <sup>-9</sup> atm cc/sec	

\*Based on the maximum inlet challenge as stipulated by Entegris.

## SAFETY FEATURES

<b>Feature</b>	<b>Description</b>	<b>GPS series</b>
Earth leakage circuit breaker	Provides additional electrical protection to the system.	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
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
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
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
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
Visual alarm	Alarm conditions will result in a visual alarm on the top of the system.	Yes
Audible alarm	Alarm conditions will result in an audible alarm.	Yes
Pressure relief disc	For venting the excessive pressure in the event of blocked valve heating.	Yes

## FACILITY SPECIFICATIONS

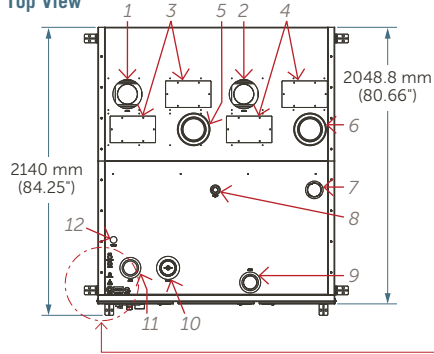
<b>Process gas input</b>	Mechanical connection	4" tube stub
<b>Process gas output</b>	Mechanical connection	4" tube stub
<b>Ventilation</b>	Enclosure mechanical connection	4" duct
	Enclosure exhaust flow	50 cfm
	Oven mechanical connection	6" duct (2 each)
	Oven exhaust output	900 cfm per oven during regen
<b>Power requirements</b>	Mechanical connection	8 pole ring lug mechanical switch
	Power requirements	480 V/3Ø/60 Hz, 25A
	Power consumption	250W at idle and online
		17kW at regen
<b>Regeneration</b>	Regen duration	<24 hours for each purifier bed
<b>Regen gas output</b>	Mechanical connection	1.50" tube stub
<b>Instrument air</b>	Mechanical connection	¼" compression fitting
	Gas and pressure	CDA or N <sub>2</sub> @ 6.21–10.34 bar (90–150 psig)
<b>Physical requirements</b>	Mounting	Floor
	Recommended maintenance space	3 feet in front of system
	Operating conditions	15°–40°C (60°–104°F) indoor
	Humidity	10–90% RH noncondensing
<b>Shipping weight</b>		4455 kg (9800 lbs)

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

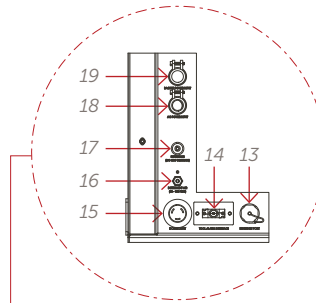
## DIMENSIONS

### Model GPSB6K

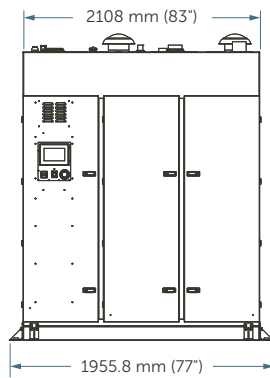
Top View



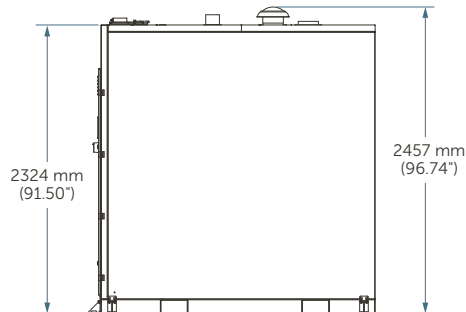
Detail



Front View



Side View



### System features

1	Fan exhaust A	11	Process in 1
2	Fan exhaust B	12	Overpressure vent
3	Vent actuator access covers A	13	Ethernet port
4	Vent actuator access covers B	14	Tool alarm interface
5	Inlet diffuser A	15	Dome light
6	Inlet diffuser B	16	Instrument air
7	Enclosure vent	17	Reference (pressure switch muffler)
8	Regeneration vent	18	AC power input
9	Process out	19	Backup power input
10	Process in 2		

## ORDERING INFORMATION

Model	Description
GPSB6KZX	Enclosed model for use with applications requiring a flow rate up to 6600 Nm <sup>3</sup> /hr

Options	GPS series
Inlet/Outlet manual isolation valves	Yes
Moisture indicator	Yes
Process gas mass flowmeter with totalizer	Yes
Separate control power (for UPS)	Yes
Pressure relief disc	Yes

## FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [entegris.com](http://entegris.com) and select the Contact Us link to find the customer service center nearest you.

## TERMS AND CONDITIONS OF SALE

All purchases are subject to Entegris' Terms and Conditions of Sale. To view and print this information, visit [entegris.com](http://entegris.com) and select the Terms & Conditions link in the footer.



Corporate Headquarters  
129 Concord Road  
Billerica, MA 01821  
USA

Customer Service  
Tel +1 952 556 4181  
Fax +1 952 556 8022  
Toll Free 800 394 4083

Entegris®, the Entegris Rings Design™, Pure Advantage™, and other product names are trademarks of Entegris, Inc. as listed on [entegris.com/trademarks](http://entegris.com/trademarks). All third-party product names, logos, and company names are trademarks or registered trademarks of their respective owners. Use of them does not imply any affiliation, sponsorship, or endorsement by the trademark owner.

©2018 Entegris, Inc. | All rights reserved. | Printed in the USA | 4507-8580ENT-0318