



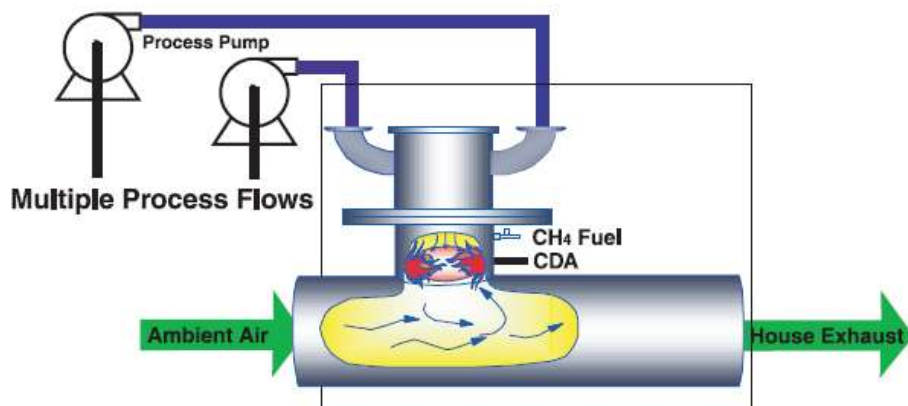
Guardian GS8

COMBUSTION ABATEMENT

The Guardian series is the industry standard for reliable, thermal oxidation and combustion of process gases. Guardian systems are designed to thermally oxidize spent process gases using active flame oxidation. The effluent gases pass through a wall of flame in the main chamber, guaranteeing the ignition of flammable and pyrophoric process gas by-products.

In the Guardian, an active flame front is produced by injecting a small quantity of hydrogen or methane fuel ignited by redundant, fail-safe igniters. Dilution air enters the chamber perpendicular to the process gas flow. This creates a swirling action for high-efficiency air and process gas mixing. The combustion chamber and gases are air-cooled, eliminating the need for water cooling. The cooled reaction gases exit the Guardian and flow to the house exhaust system. Multiple safety interlocks provide a high level of safety during operation.

Over 1,500 installations worldwide have proven the Guardian series is safe and effective at treating flammable gases from process effluents and gas cabinet vent lines. Instantaneous shutoff of fuel and igniters eliminates a potential ignition source from upstream gas flows. With no moving parts, maintenance intervals are extended with MTBF measured in years. Guardian technology is a proven effective solution for thermal oxidation.



APPLICATION

- Polysilicon
- CVD
- Pyrophoric/flammable gas combustion
- Gas cabinet vent purge

CONFIGURATIONS

- Floor-mount

ADVANTAGES

- Simultaneous treatment for multiple process chambers and/or furnace tubes
- Low cost of ownership
- No electrically heated elements for immediate cooldown
- Flame flashback prevention system for safe, reliable operation
- Natural gas fueled
- Low maintenance requirement
- MTBF measured in years
- S2-93 compliant
- CE-mark certified

Specifications

OPERATING PARAMETERS

Process Gas Capacity per System	400 slm (14.1 scfm)
Exhaust Air Flow ⁽¹⁾	22 – 57 m ³ /min (800 – 2,000 scfm)
Fuel Consumption	
Methane, CH ₄	15–25 slm (0.5–0.9 scfm)
Hydrogen, H ₂ (Option)	25 slm (0.9 scfm)
Power Consumption	200 W
Clean Dry Air, CDA	3–5 slm (6.4–10.6 scfh)
Nitrogen, N ₂ ⁽²⁾ (only used with optional Flashback Arrestor)	100 slm (3.5 scfm)

FACILITIES REQUIREMENTS

Connections	
Process Inlet	1 – 8 Inlets (KF-40, KF-50, 1/2" VCR)
Process Exhaust	8" I.D. (203 mm) 8.62" O.D. (219 mm)
Fuel Supply	
Methane, CH ₄	3.0 in w.c. (7.5 mbar) 1/2" Compression Fitting
Compressed Gas	
Nitrogen, N ₂ (Flashback Arrestor Option)	80 – 100 psig (5.5 – 6.7 bar) 1/4" Compression Fitting
Clean Dry Air, CDA	80 psig (5.5 bar) 1/4" Compression Fitting
Electrical Supply	115 VAC, 50/60 Hz, 10A
Overall Dimensions	58.2" H x 21" W x 76" D (1,479 x 533 x 1,930 mm)
Clearance	Front 36" (914 mm) Top 16.5" (419 mm)
Weight	600 lbs (272 kg)

(1) Airflow is dependent on the application for balancing cooling, inert load, and particle evacuation.

(2) Nitrogen consumed only when activated.

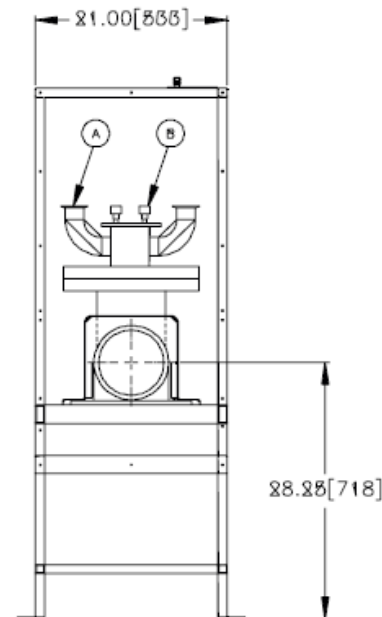
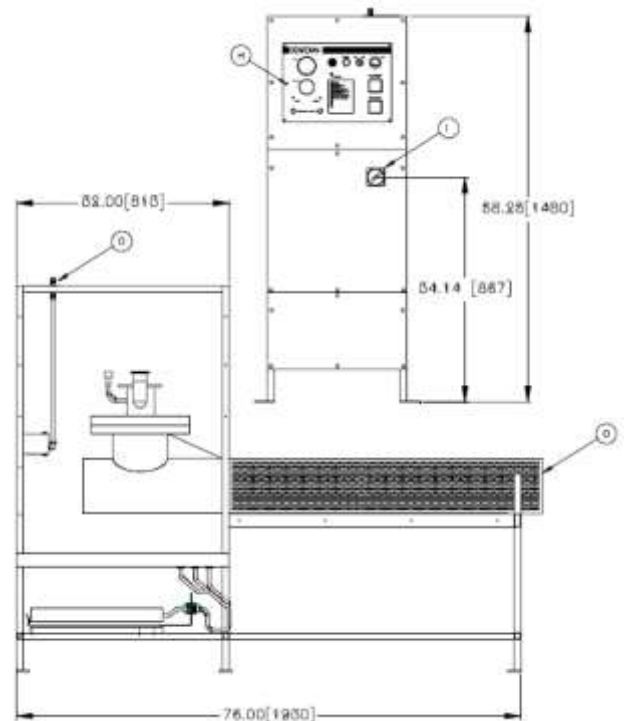
COMMUNICATION AND INTERLOCKS

- 15-pin, D-sub female pin connector
- Ethernet

OPTIONAL

- **Flashback Arrestor (FBA)** – Suppresses flame from traveling back to process tool in exhaust streams at atmosphere and above LEL
- **FlameGard™** – Infrared detector to monitor for presence of flame
- **Simple Remote Panel (SRP)** – Monitors Guardian status from an alternative location
- **KF Purge Adapter Kit** – Enables inert gas purge connection on unused KF inlets
- **220 VAC/50 Hz Power**

Product Dimension



EcoSys Pte. Ltd.

Blk 30 Kallang Place #01-23/24 Kallang Basin Industrial Estate Singapore, 339159
Tel: +65 6297 9741 Fax: +65 6296 7298 email: sales@ecosysgrp.com <https://ecosysgrp.com>

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