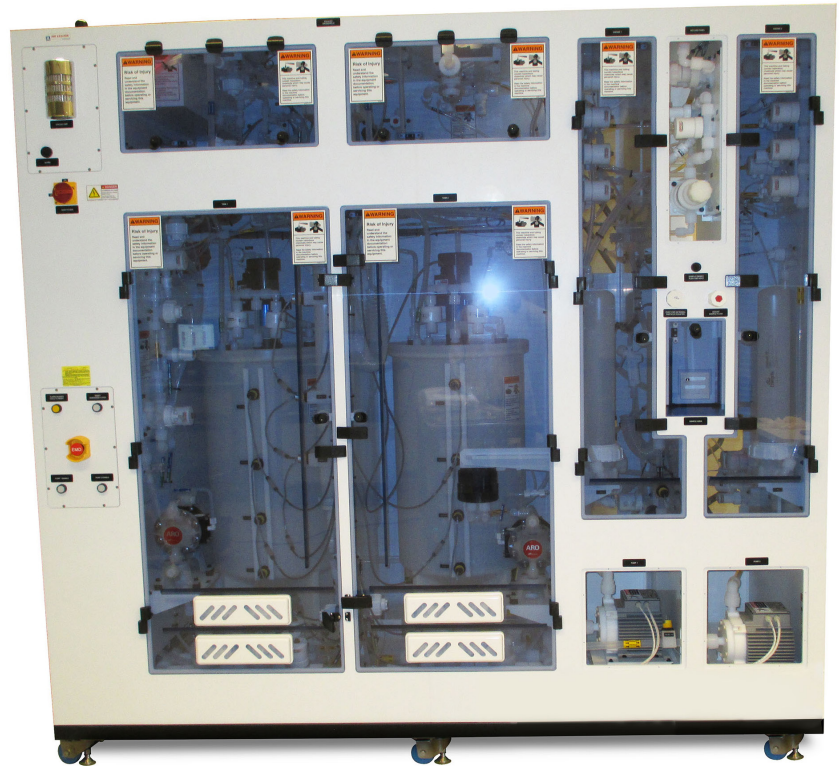




ChemFlex™ CMP IC Slurry Blend & Dispense Platform

The ChemFlex CMP IC is a slurry blend and dispense system designed for low to medium-volume applications. It houses dual blend/day tanks within the cabinet to reduce the overall footprint and facilitization costs.



Product Overview

Chemical and slurry are supplied by pressurized sources elsewhere in the fab enabling the ChemFlex CMP IC to produce high-accuracy, weight-based blends. Two internal tanks alternate between being the day tank and the blend tank.

The ChemFlex CMP IC has two fully redundant and isolated dispense engines, allowing online maintenance without impacting the flow of slurry to the fab. Each engine has a centrifugal dispense pump to provide a pulsation-free supply of slurry to the Points of Use (POU's).

Features and Benefits

- Designed for reliability and slurry health
 - Low-impact transitions between engines
 - Ability to perform online maintenance
 - ± 1 psi loop pressure control capability
- Configurable options offer additional functionality
 - Optional inline metrology enables real-time monitoring of the slurry health
 - Optional dosing package to monitor and control H_2O_2 concentration
- Built in a center of manufacturing excellence
 - ISO9001 certified
 - Formal QA/QC procedures, documentation standards, and final test procedures

Performance and Reliability

- Uptime >99.95%
- MTBF >4000 hours
- MTTR <2 hours

Theory of Operations

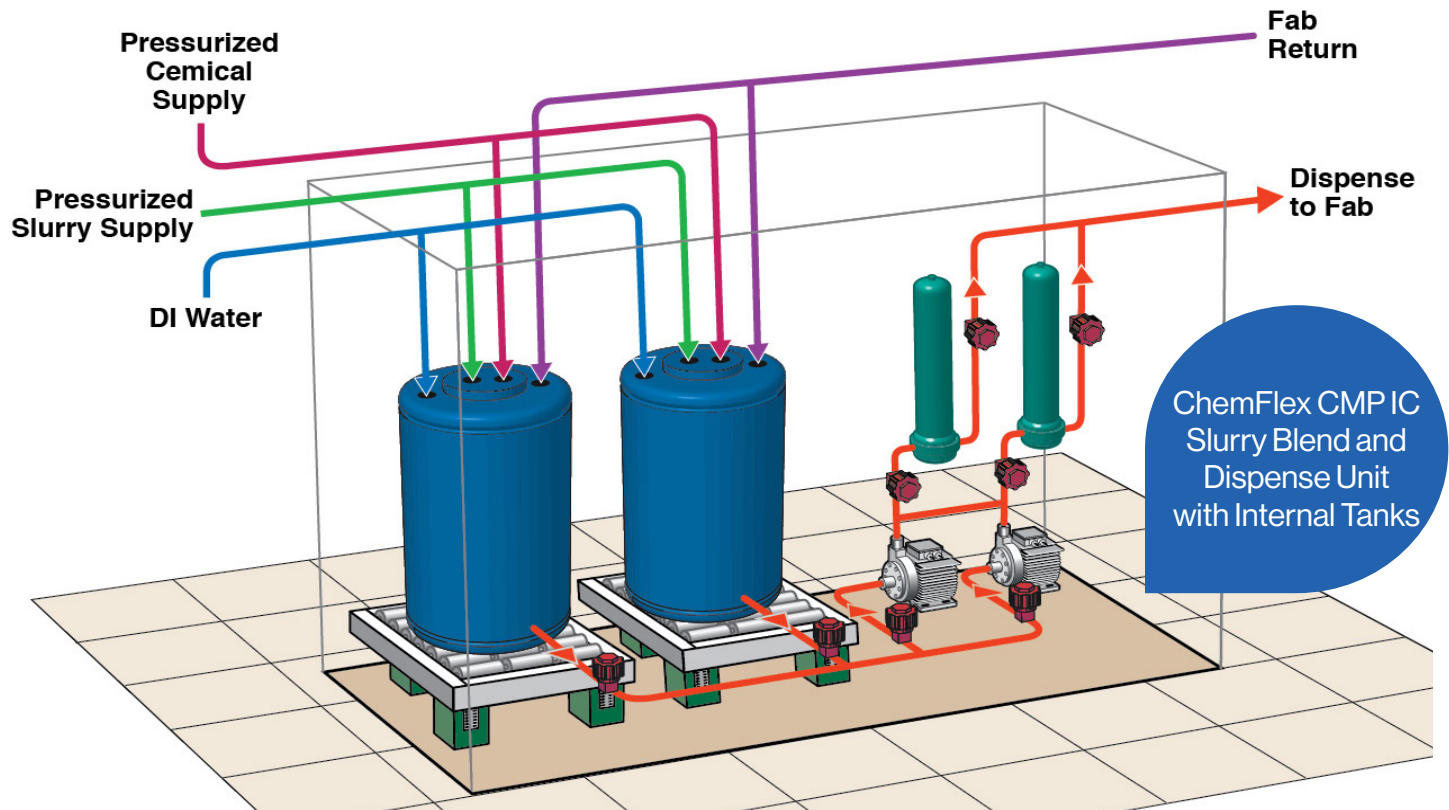
Raw chemical and slurry constituents are provided to the ChemFlex CMP IC as pressurized supplies. Air Liquide can provide a Slurry Pump Station if no pressurized supply is available.

The unit contains dual 115L tanks that alternate between being the blend tank and the daytank. Constituents are sequentially added to the blend tank based on weight as measured by a scale under the tank. When the constituents have been added, a mechanical stirrer and a pump are used to circulate the batch to achieve homogeneity.

Metrology options are available to validate the blended batch. If the metrology readings are within the specified range, the batch is validated. If the batch is out-of-spec, the operator is notified. Once a tank is validated, it is available for distribution to the POU's. When a daytank becomes empty, the ChemFlex CMP IC blends a new batch in that tank.

The ability to add small volumes of H_2O_2 to the blend is available as an option. The H_2O_2 option includes a small, weight-based vessel for high-accuracy addition, and may include a Refractive Index probe for H_2O_2 assay analysis.

Example Flow Path



Slurry Pump Station

If no pressurized slurry supply is available, the ChemFlex CMP IC can be paired with a Slurry Pump Station (SPS). The SPS is a simple, single-pump transfer unit. It manages dual drums or totes of concentrated slurry and transfers the raw slurry to the blend tank based on a demand signal from the ChemFlex CMP IC. The Slurry Pump Station can manage slurry agitation via circulation or mechanical stirrers with user-configurable stirring parameters.

Safety Features

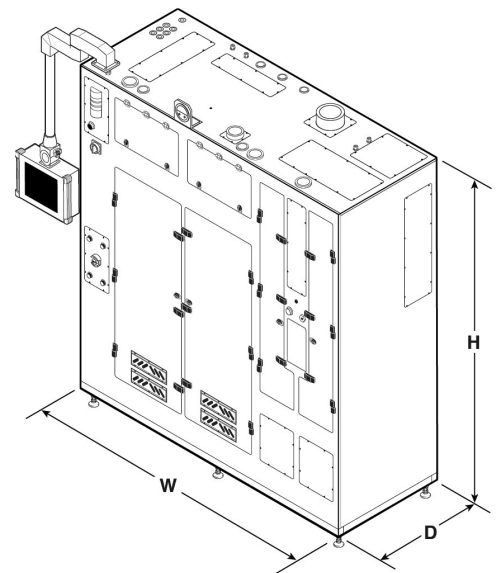
- Segregated cabinet compartments with 110% volume containment
- Dual-level cabinet leak detection
- Door interlocks
- DIW spray-guns
- CDA-purged electrical compartment
- Audible and visual warnings and alarms
- Local and remote EMO
- Transparent door panels for safe viewing and trouble-shooting
- Options for exhaust sensor type, high-flow sensor and other instrumentation
- Designed for compliance with SEMI S2, S8 and S14 guidelines, and CE low-voltage, Machinery and EMC directives

Typical Utility Requirements

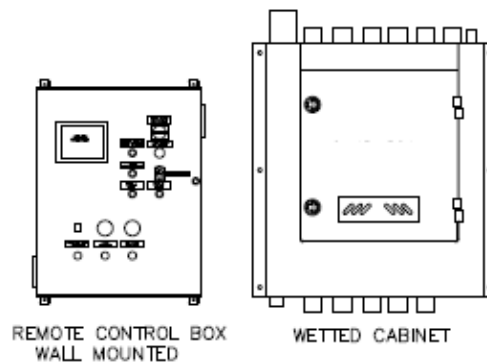
Utility	Connection Type	Flow/Pressure
Electrical	N/A	208V, 3-Ph, 60 Hz
UPW Supply	½" Flaretek	40-60 psi
UPW Return	½" Flaretek	<25 psi
CDA	¾" SST compression	100-125 psi
Process N ₂	½" SST compression	100-125 psi
Exhaust	6" connection	0.5" WC minimum

Cabinet Layouts & Dimensions

Cabinet Type	W x D x H in Inches (mm)
ChemFlex CMP IC	95" x 36" x 99" (2413 x 915 x 2515)
Slurry Pump Station	Wall-mounted wetted compartment: 32" x 25.5" x 38" (813 x 648 x 965) Wall-mounted electrical compartment: 24" x 13" x 30.5" (610 x 330 x 778)



ChemFlex CMP IC



Slurry Pump Station

Contact Us

Air Liquide Electronics
Advanced Equipment Systems Division (AES)
Phone: 952-937-6340
ww-sales-equipment@airliquide.com



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