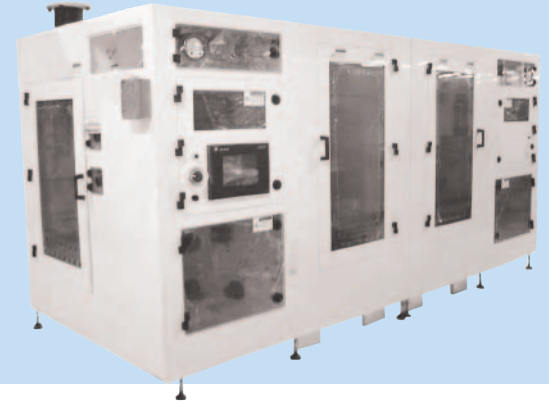


# MegaFlow™ VI— Model 300 Series

## Precision Slurry Blending and Distribution System

- » System designed for challenging CMP applications
- » Designed for medium to large volume production
- » High blend accuracy and repeatability for next generation technology
- » Automatic flushing of tanks between blends



### Product Overview

MegaFlow VI - model 300 series is designed for precision slurry blending and distribution system for copper, low-k and other CMP applications. It is developed to meet the challenges of 130nm and beyond technologies, and 300mm wafer fabrication for medium to high volume production

### System Operation

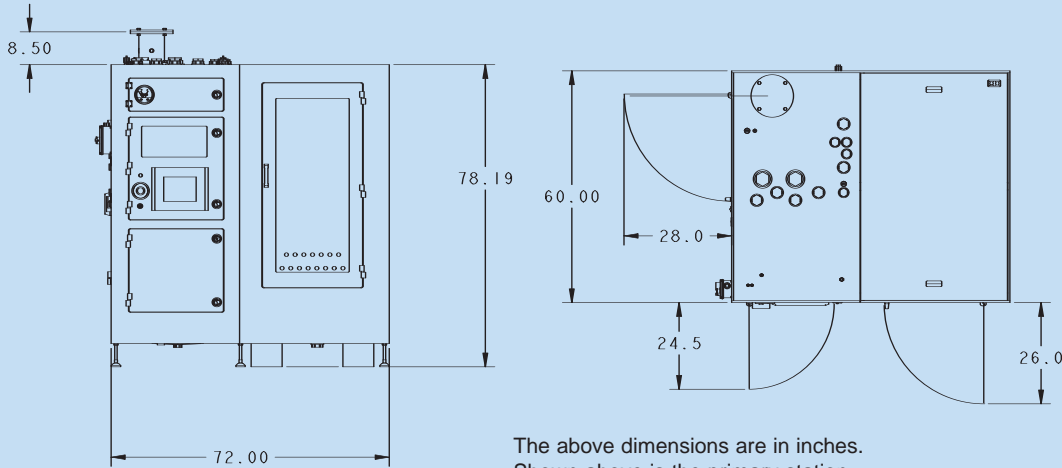
The MegaFlow VI consists of two blend-distribution stations (primary and secondary). The system blends raw slurry, de-ionized water and up to two chemicals. Raw slurry is drawn from drums or totes by pumps located in both the primary and secondary stations or from a Tote Station for remotely located drums or totes.

The primary station makes a blend and distributes it to the global loop. The secondary station makes a blend when the primary level reaches the user defined setpoint level. When the primary reaches a low-low level, the remaining contents of the primary tank are transferred to the secondary tank and the secondary station begins supplying slurry to the global loop without interruption. Once the primary tank is emptied, an automatic flush sequence is initiated and the tank is ready for the next blend. This sequence is repeated for the secondary station.

### Features and Benefits

- System is designed for challenging CMP applications
  - Able to keep even the most difficult slurries in suspension without sedimentation

- Automatic flushing of tanks between blends
  - Prevents slurry scaling and ring formation
- High blend accuracy and repeatability for low concentration batches
  - Ideal for the exacting specifications of new generation slurries
- Automatic drum switchover
  - Eliminates downtime to connect a new drum
- Adjustable batch sizes and recipes
  - Allows user to configure batch sizes and recipes based on current Fab demand
- Slurry drum circulation with user configurable timers
  - Drum circulation ensures that slurry is in suspension before being used in a blend
  - User configurable timers enable the customer to adjust the time of circulation for their slurry type
- Humidified nitrogen blanket for all slurry drums and tanks
  - Prevents slurry drying
  - Prevents scaling and ring formations that can lead to particle growth
- Analytical package for monitoring pH and density with user configurable setpoints
  - Alerts user to out of specification blends, before slurry contacts the wafer surface



The above dimensions are in inches.  
Shown above is the primary station.  
The secondary station is a mirror image of the primary.

Facility requirements	MF VI	Connection Type
DI water supply	5 GPM @ 25 psi	3/4" Teflon™ Flaretek
DI water return	5 GPM @ max.	1/2" Teflon™ Flaretek
N <sub>2</sub>	2 SCFM, 90 psi	3/8" SS Swagelok
CDA (with drum pumps)	25 SCFM, 75 psi	1/2" SS Swagelok
Power	120 VAC, 15 AMP, 60 Hz	3/4" Conduit
Exhaust	150 SCFM, 2" H <sub>2</sub> O	6" Flange
Process drain	30 psi, 5 GPM	1" FNPT
Cabinet drain	Gravity	2" FNPT

- Two cabinets instead of one large cabinet
  - Cabinets can be mated together or separated to maximize the available space
- Integrated sample compartment
  - Provides easy and safe access

## System Specifications

- Blend Accuracy:
  1. Less than 0.4% for density
  2. ±0.02% for H<sub>2</sub>O<sub>2</sub>- based applications
- Blend Make-up: up to 2 - 4 gpm\*
- Flow Rate: up to 6 gpm @ 20psi
- 10 - 15 points-of-use\*
- Availability: > 99.9%
- MTBF: > 2,500 hours
- MTTR: < 2 hours

\*Specification will vary depending on application

## Control System

- Allen-Bradley series PLC
- Allen-Bradley PanelView™ series operator interface
- Connectivity to MegaView™ Supervisory System via a DH+ or Ethernet network
- Local and Remote EMO capabilities

## Options\*

- Drum pumps of Tote Station
- High accuracy chemical addition package
- Various sized blend-distribution tanks
- Pump assisted cabinet drain
- Proprietary CuJet™ mixing technology
  - Keeps slurry in suspension without requiring the use of external mixers
- Integrated auto backpressure regulator for global loop
- Analytical instrumentation for
  - Conductivity - Particle size distribution
  - Oxidizer concentration analysis and replenishment
- Filtration
- MegaView™ Supervisory System
  - Provides historical and real time trending of process parameters
- CE mark - 220V, 50Hz
- Light tower

\*Not all options have been listed. Please contact a Celerity sales representative for additional information.



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