



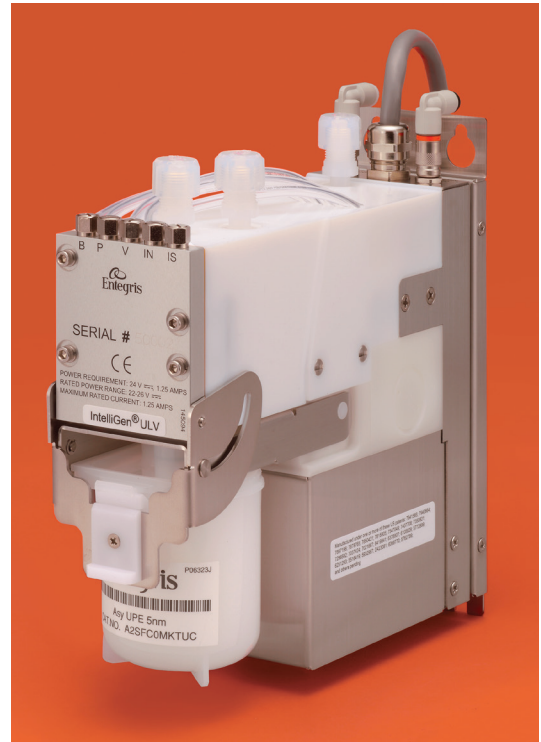
INTELLIGEN® ULV DISPENSE SYSTEM

Advanced two-stage system enabling superior dispense and filtration of ultra-low viscosity fluids

Overview

Building on the proven performance of the two-stage dispense technology combined with Entegris' innovative Connectology® filter design, IntelliGen® ULV dispense system integrates high-purity filtration with repeatable dispense of low-viscosity fluids (1–100 cP or at higher viscosities when dispense pressure does not exceed 29 psi). IntelliGen ULV can dispense a more uniform topography of photochemical coating on the wafer. It also helps to shorten start-up times and provides intelligent dispense diagnostics. The compatible Impact® 8G or Impact 2 V2 (OF style) filter easily slides into IntelliGen ULV's compartment. Fluid passes through the Impact filter at the optimum flow rate for the specified retention rating, improving throughput and increasing uptime.

The integrated, dual pressure sensor provides real-time alerts and enhances filter priming by providing several confirmation features including, dispense confirmation, cycle time confirmation and delta P confirmation. This helps to prevent costly wafer defects due to coating problems as well as random DC error occurrences triggered by backlash issues at lower ready pressure levels. The state-of-the-art air detection feature pinpoints when air enters the outlet tubing from a leak or from minute air bubble formations that gradually accumulate over time. The compact design, superior performance and interactive diagnostics make IntelliGen ULV dispense system the right choice for ultra-low viscosity photoresist to ensure dispense repeatability, longer filter life and a greater return on investment.



Features and Benefits

Features	Benefits
Two-stage dispense technology with Connectology filter design	<ul style="list-style-type: none"> • Integrates high-purity filtration with excellent dispense repeatability of low-viscosity fluids (1 – 100 cP or higher viscosities when dispense pressure does not exceed 29 psi) • Independently optimized dispense and filtration sequences • Advanced closed-loop software control with several additional fault detection features • Integrates with Impact 8G or Impact V2 (OF style) <ul style="list-style-type: none"> – Slides into ULV compartment for bubble, gel and particle removal
Built-in technology enhancements – PCB and dual sensors added	<ul style="list-style-type: none"> • Enhanced filtration control • Expandable capabilities without memory limitations • Extension of confirmation tools <ul style="list-style-type: none"> – Delta P • Better startup and filter priming technology • Real-time clock technology with traceability
More reliable dispense settings	<ul style="list-style-type: none"> • Ball screw incorporated into dispense motor • Lower ready pressure setting available
Improved chemical turnover technology	<ul style="list-style-type: none"> • Chamber design facilitates chemical turnover • Adjustable fill chamber reduces hold-up volume • Valve design more effectively clears contaminants
Optional enhancements	<ul style="list-style-type: none"> • Initial cleanliness technologies <ul style="list-style-type: none"> – Introduction of unique post production cleaning procedure • Flow meter RSQ confirmation <ul style="list-style-type: none"> – Finer one-shot volume detection – Microbubble detection

Specifications

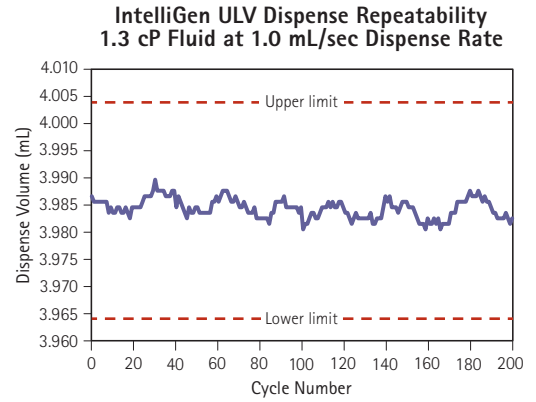
Dispense performance:	Volume	0.1 – 10.0 mL in 0.001 mL increments		
	Rate	0.1 – 3.0 mL/sec in 0.001 mL/sec increments		
	Repeatability	≤0.02 mL 3 sigma		
	Viscosity range*	1 – 100 cP		
	Maximum dispense pressure**	0.21 MPa (30 psi)		
Recharge performance:	Fill rate, filtration rate, vent rate, purge rate	0.1 – 3.0 mL/sec in 0.001 mL/sec increments		
	Vent frequency	Auto-venting or 1 – 10,000 dispense cycles		
Mechanical:	Wetted surfaces	Modified PTFE, PTFE, Kalrez®		
	Connection type	Insert style, Super Type Pillar® or Flowell™ 60 series		
	Filter	Impact 8G or Impact 2 V2 (OF style)		
	Inlet, outlet and vent tubing	OD	6.35 mm (0.25") or 6.0 mm (0.24")	
		ID	3.97 mm (0.15628") or 4.0 mm (0.16")	
	Gas	Inlet gas type	Regulated N ₂	
		Inlet gas pressure	0.26 MPa – 0.28 MPa (38 psi – 40 psi)	
	Vacuum	-68 kPa (20 in -Hg min.)		
Dimensions:	Height	200.1 mm (7.878")		
	Width	60.7 mm (2.39")		
	Depth	216.5 mm (8.52")		
Weight:	Approximately 5 kg (11 lb)			
Electrical:	Current rating	1.25A maximum		
	Input voltage (system)	24 VDC ±10%		
	Serial communication	Specifications are dependent on interface module use		
	Parallel communication	Triggers and acknowledgments		
Certifications:	See provided documentation			
Environment:	Indoor use only			
	Altitude below 2000 m (2187.22 yd)			
	Ambient temperature 5°C – 40°C (41°F – 104°F)			
	Maximum relative humidity 80% for temperatures up to 31°C (88°F) decreasing linearly to 50% relative humidity at 40°C (104°F)			
	Mains supply fluctuations from 22 – 26 VDC			
	Transient overvoltages of overvoltage category II			
	Pollution degree 2			

*Depends on tool configuration. Contact applications support for detailed window of operation.

**Maximum pressure is a limit on the Window of Operation. Actual volumes and rates may be restricted to comply with the pressure limits for a given viscosity, tubing diameter, tubing length and tubing height.

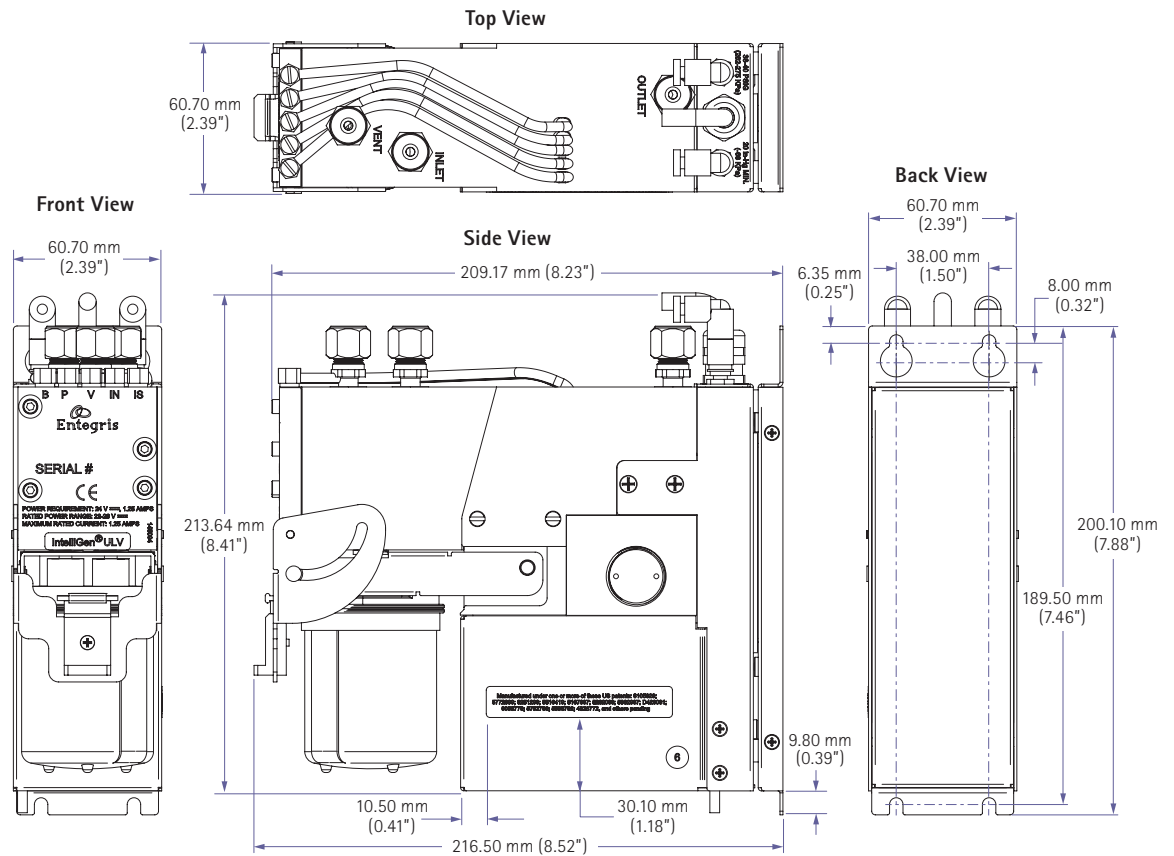
Performance Data

This graph shows dispense repeatability trending over a span of 200 dispense cycles at a dispense rate of 1.0 mL/sec.



Dimensions

The following drawings show dimensions for all available IntelliGen ULV fitting configurations.



Ordering Information

The following table lists the IntelliGen ULV dispense system part numbers.

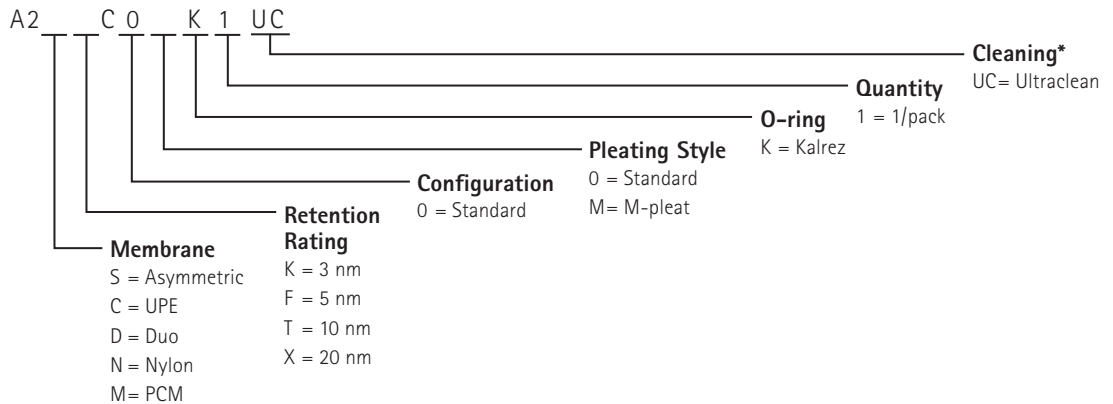
Part Number	Dispense System	Style	Fitting Type	Cable Length	Cable Connector
IGULVPVAP1	IntelliGen ULV	Vertical	1/4" Super Type Pillar	3.0 m (9.84 ft)	D-Sub 15 pin
IGULVPVCP1	IntelliGen ULV	Vertical	1/4" Super Type Pillar	0.8 m (2.62 ft)	D-Sub 15 pin
IGULVPVBP1	IntelliGen ULV	Vertical	1/4" Super Type Pillar	1.25 m (4.10 ft)	Like P05140J
IGULVPVAW1	IntelliGen ULV	Vertical	1/4" Flowell 60 series	3.0 m (9.84 ft)	D-Sub 15 pin

Note: For maximum retention performance, use IntelliGen ULV dispense system with Impact 8G series filters.

The following ordering information serves as a guide. Please contact your local representative to confirm part numbers.

Impact 8G and 8G UC Series Filters

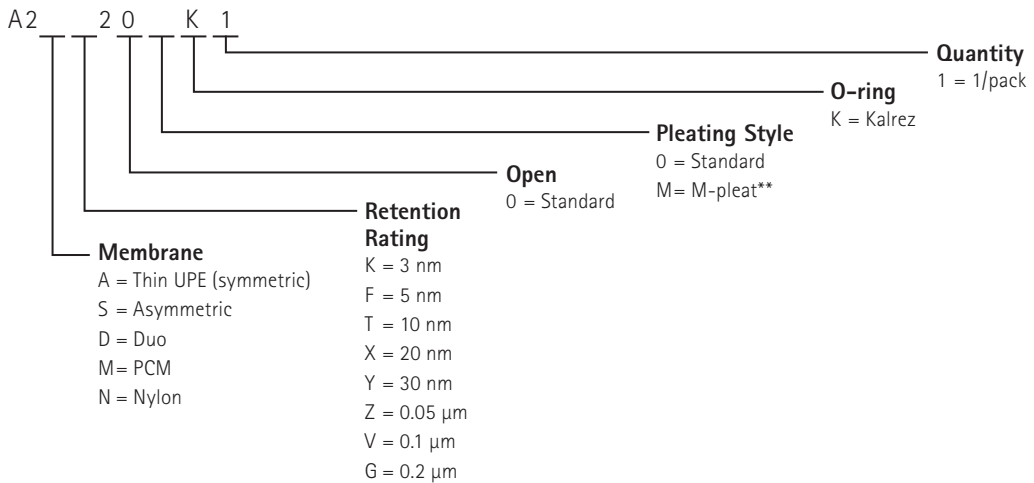
Part Number



*Cleaning only applies to Impact 8G UC series filters.

Impact 2 V2 Filters

Part Number



**The M-pleat style only applies to Impact filters with a UPE membrane of up to 30 nm.

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.

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