



INTELLIGEN® HV AND IMPACT® HV FLUID DISPENSE SYSTEM

Advanced two-stage technology enables precise dispense and filtration of high-purity, high-viscosity fluids

Overview

The IntelliGen® HV dispense system with the Impact® HV filter offers the industry's first Connectology® filter solution for high viscosity applications. Building on Entegris' industry-proven, two-stage dispense technology, the IntelliGen HV dispense system uses the design principles of the IntelliGen® Mini to deliver a tremendous advance in the filtration and dispense of high-viscosity fluids. Featuring simplified programming and filter priming, along with the ability to detect and remove air bubbles, the IntelliGen HV prevents many of the coating issues that are common in dispensing of high-viscosity chemistries and offers an excellent return on investment.

Two-stage Advantage

Highly Repeatable Dispense

During dispense the filter is isolated from the dispense chamber to minimize pressure changes that effect dispense repeatability.

Constant Pressure Filtration

Dual pressure transducers are used to provide real-time feedback control. This allows fluid to pass through the filter at the optimum rate for the chemical and pore size. The pressure information is also key in bubble detection and removal, preventing voids in the coating process that cause rework or lost yield.



Simplified Programming

The IntelliGen HV features active pressure control, which dramatically reduces the complexity of recipe programming and filter priming.

Cleanliness, Rapid Changeouts and Safety

Impact HV disposable filters eliminate operator handling of the filter element to minimize contamination risk. The disposable design also reduces the potential operator exposure to chemicals during installation and disposal.

Features and Benefits

Feature	Benefits
Short cycle time	Less than 60 seconds for typical process
	Dispense and fill pump operate simultaneously
	Active pressure control to eliminate programmed delays in the previous generation (Encompass®) pump
Simplified programming	Intuitive programming interface
	Flash software download for easy upgrades
	Ability to upload recipes, pressure profiles and error log to factory host computer via network platform
Bubble detection and prevention	New Impact HV filter to trap and remove air bubbles from high-viscosity fluids
	Pressure sensors in both stages to monitor pressure drop and notify when filter changeout is needed
High reliability	Direct drive system – completely eliminates hydraulics
	Active software controls prevent recipe errors
	Uses the proven technology from the IntelliGen Mini
Easier filter changeout	No tools required using Entegris' Connectology filter design
	No chemical spillage and minimal operator exposure to chemicals
	Dual pressure transducers allow for detection of filter clog or need for filter changeout

Specifications

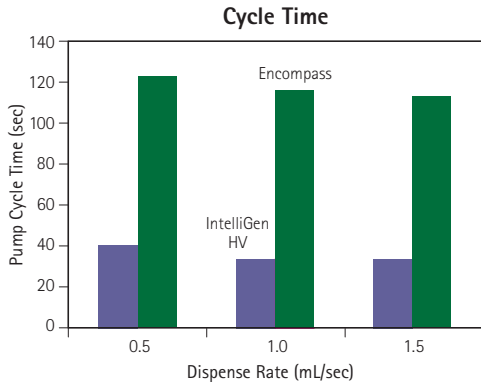
Materials:	Pump	Wetted parts	PTFE, modified PTFE, Kalrez®
	Filter	Membrane	Ultra-high molecular weight polyethylene (UPE)
		Core, cage, end cap	Polyethylene
		Housing	High-density polyethylene (HDPE)
Dispense performance:	Repeatability	<0.03 mL 3 sigma	
	Maximum dispense volume	16 mL	
	Dispense rate	0.1–3.0 mL/sec	
	Viscosity range	100–20,000 cP	
	Maximum dispense pressure	1.7 MPa (250 PSI)	
	Fill rate	0.1–3.0 mL/sec (automatically controlled)	
	Filtration rate	0.1–3.0 mL/sec (automatically controlled)	
Connection type:	Insert style		
Inlet gas type:	Regulated N2		
Inlet gas pressure:	0.41–0.45 MPa (60 – 65 PSI)		
Inlet gas minimum flow rate:	3.0 SLPM		
Vacuum:	-68 kPa (20" Hg)		
Electrical:	24 VDC, 1.75A		

Note: Preliminary specifications and features subject to change.

Performance Data

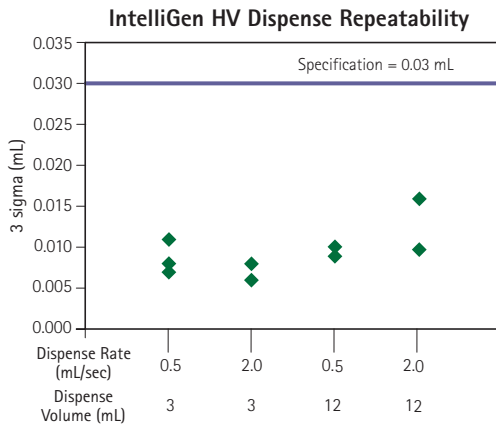
Cycle Time

Plot of cycle time for IntelliGen HV as compared to a previous generation product; the Encompass demonstrates a 70% shorter cycle time to support leading-edge process times.



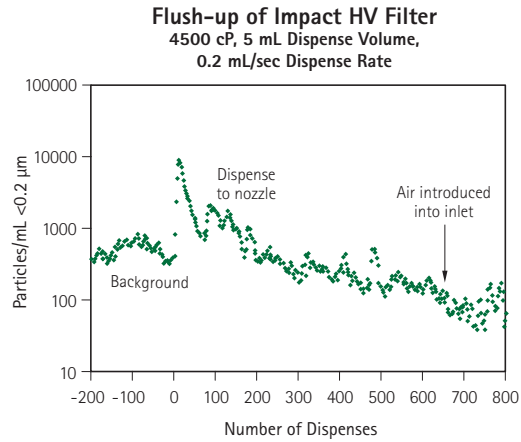
Dispense Repeatability

Plot of IntelliGen HV dispense repeatability, for multiple dispense volumes and dispense rates (media: 3900 cP viscosity oil).

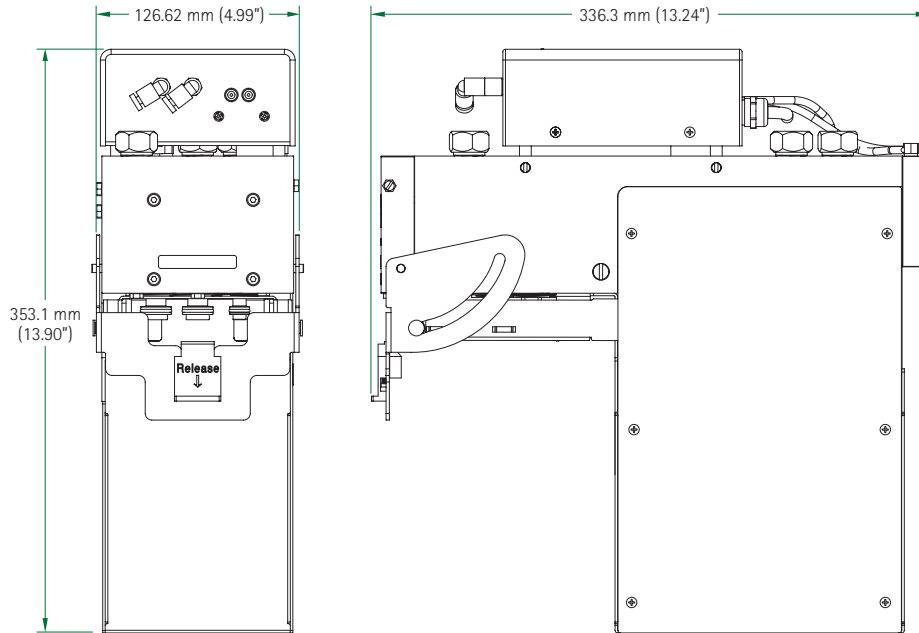


Fast Filter Flush-up and Prevention of Air Bubbles in Dispense

Plot of filter flush-up of Impact HV filter on the IntelliGen HV pump, demonstrating fast flush-up, and that any air introduced into the pump inlet is vented at the filter, and does not dispense onto the wafer.



Dimensions



Ordering Information

Part Number	Description
IGHVPU0	IntelliGen HV – 25 pin connector
IGHVINT02	Interface module
IGHVSP07	External valve – 3/8" to 1/4"
IGHVSP18	External valve – 3/8" to 3/8"
S4414R011B09	Impact HV filter, 1.0 µm retention rating
S4414R019B09	Impact HV filter, 0.5 µm retention rating

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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