

OTHER DEVICES

CONTRAST DELIVERY SYSTEMS

Company Name	Product Name	Applications	Flow Range (mL/s)	Volume Range (mL)	Delivery Pressure Range, Bar (PSI)
Acist Medical Systems, Inc.	Cvi Contrast Delivery System	Angiography for coronary arteries, ventriculography, aortography, peripheral angiography	0.8–40 responsive variable rate; 0.1-mL increments	User-responsive variable range 0.8–99.9 in 0.1-mL increments	System limits of 200–1,200; user-defined program limits dependent on procedure parameter of choice
Covidien, Liebel-Flarsheim	Angiomat Illumena	Angiography, CT	Angiography: 0.1–4; CT: 0.1–10	0.1–200	75 to 1,200 PSI
	CT 9000 ADV	CT	0.1–10		25 to 300 PSI
	Optistar Elite	MRI	Side A: 60-mL syringe, 0.1–10 mL/s; 10-, 15-, 20-, 30-mL syringe, 0.1–8 mL/s; side B: 0.1–10 mL/s in 0.1-mL increments	0.1–60	10, 15, 20, 30, 50 mL prefilled syringes at 200 PSI; 60 mL empty syringes at 150 PSI
	Optistar LE				
	Optistat	CT	0.1–6	1–130	Pressure limit is variable dependent on the flow rate up to 225 PSI
	OptiVantage DH		0.1–10	1–125 mL or 1–200 mL depending on syringe size	25–325 PSI

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Adjustable Rise Time	Syringes	Syringe Capacity (mL)	Disposable	Prefilled	Comments
Yes, 0–1 seconds in 0.1 second increments	Up to 5-times use, disposable	100	Disposable multiuse syringe, patient kits with integrated pressure transducer, and hand controller.	N/A	From the inventors of variable-rate technology, designed for coronary injections as well as large volume injections (LV, AO, etc.) and all peripheral procedures; air column detector distal to patient tubing connection, autocontrast refill, and air purge; tracks contrast delivered and used per injection and case; multiple sensors
Yes, 1–10 seconds	Prefilled and disposable	150, 200	150, 200	50, 75, 100, 125	Versatile exam modes with just the touch of a button, you can switch between cardio, angio, and CT modes
No		200	200 front loading	50, 75, 100, 125	Optional Optibolus bolus shaping software improves CTA images and contrast agent utilization
		60 mL on A and B (contrast and saline)	60 mL on A and B (contrast and saline)	Contrast: 10, 15, 20, 30 mL; saline: 50 mL	Battery-free power source patency check; status line indicator; color-coded push rods; auto retract; power-head recessed start button; battery-free power source
					Battery-free power source
			130	130	50, 75, 100, 125
		200 mL	200 mL front loading	Contrast: 50, 75, 100, 125 mL; saline 125 mL	Optional Optibolus bolus-shaping software improves CTA images and contrast-agent utilization; RFID technology, an automatic identification technology that captures, stores, and transmits data between the Ultraject syringe and the Optivantage DH power injector using devices called RFID transponders, or tags; prevents use of previously used syringe

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LeMaitre Vascular, Inc.	LeverEdge Contrast Injector	Angiography	Variable	0.1–32	70–600
Medrad Interventional	Mark V ProVis	Angiography	0.3–50	0.1–200	100–1,200
			10–59 mL/min		
			10–59 mL/h		
	Avanta	Variable flow: 1–10 mL/sec in 0.1 mL/sec increments Fixed flow: 1–45 mL/sec in 1 mL/sec increments	Volume 1–150 mL in 1 mL increments; refillable from attached bulk source of up to contrast bottle size		
Medrad, Inc.	Stellant D	CT	0.1–10	Integral auto load allows user-defined contrast and saline volumes, based on procedure, to load automatically; 200 mL maximum per syringe	50–325 PSI maximum
	Stellant SX			Integral auto load allows user defined contrast and saline volumes, based on procedure, to load automatically; 200 mL maximum per syringe	
	Spectris Solaris EP			MRI	

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Adjustable Rise Time	Syringes	Syringe Capacity (mL)	Disposable	Prefilled	Comments
N/A	Disposable; single-use	35	Yes	N/A	Provides manual operator with complete control; patented design injects contrast at pressures six times greater than standard manual syringe
Yes, 0–9.9 seconds in 0.1-second increments	Single-use, disposable	60, 150, 200	60, 150, 200	N/A	Exclusive Mechanical Stop, patented FluiDots, Sentinel Air Check Reminder, 100% OEM compatibility, multiple configurations (table, pedestal, overhead mounts), 99.9% average up-time
Rise time 0–9.9 seconds (fixed flow)	Disposable multiuse	150	150	N/A	Multiple air detectors, saline flush capability, multipatient use disposables, patented FluiDots, 100% OEM compatibility, multiple configurations (table, pedestal mounts)
N/A	Disposable	Saline: 200 mL; contrast: 200 mL	200-mL syringes	Yes, exclusive compatibility with more than one contrast manufacturer	Patented P3T products offer personalized patient injection protocols; enable consistent vascular attenuation for CCTA images across a broad patient population and helps ease entry into CCTA by suggesting injection protocols; the DualFlow feature can enhance of both sides of the heart uniformly
		200			
		Saline: 115 mL; contrast: 65 mL	Yes		