

## Laboratory Exhaust Systems Variable Geometry Nozzle Selection Criteria & Consideration Facts

Building Value in Air.		Greenheck			Loren Cook
Feature	Benefit / Comment	Vektor®-HS	Vektor®-MS	Vektor-CS	Power Plume® (PP-50)
Performance Ranges	Volume and static pressure each fan is capable of exhausting.	1,000 - 26,000 cfm Up to 3.5 in. wg	2,000 - 32,000 cfm Up to 10 in. wg	1,500 - 32,000 cfm Up to 10 in. wg	Up to 31,220 cfm
AMCA Certification	Independent, third-party certification of air and sound performance.	Air	Sound and Air	Sound and Air	FEI, Sound and Air
UL Certification	Independent, third-party certification of UL 705 for electrical.	UL 705	UL 705	UL 705	UL 705
Windload Certification	MPH rating the entire system can withstand without the use of guy wires.	125 mph	125 mph	125 mph	125 mph
Vibration Balance/Testing AMCA 204-05	Level of factory testing performed. Written vibration report available from Greenheck at no charge.	Application Category BV-3 <0.15 in/sec peak	Belt: Category BV-4 <0.10 in/sec peak Direct: Category BV-5 <0.08 in/sec peak	Belt and Direct: Category BV-4 <0.10 in/sec peak	No Data
Variable or Constant Volume	Ability to meet demands of a variable or constant volume application	Variable Volume	Variable Volume	Variable Volume	Both
Drive Arrangement	Belt: More flexibility for field adjustments.	Arrg. 9	Arrg. 9	Arrg. 10	No
	Direct: Locked into specific motor RPM.	No	Arrg. 4	Arrg. 8 Direct Coupled	Arrg. 4
Wheel Type	Type of wheel used in fan housing.	Centrifugal	Mixed Flow	Centrifugal, backward inclined or airfoil	Mixed Flow
Materials of Construction and Finish	Material for correct application and finish. Offer superior resistance and longevity for lab exhaust applications. Epoxy and FRP material break down with exposure to sunlight.	Coated Steel with LabCoat™ (4 to 6 mils)	Coated Steel with LabCoat™ (4 to 6 mils)	Coated Steel with LabCoat™ (4 to 6 mils)	Fiberglass Reinforced Plastic (FRP) and Aluminum Phenolic Epoxy Powder with UV Topcoat (5 mils)
Discharge / Outlet	System sized to handle an outlet velocity up to 4000 fpm. Use of discharge caps or hinged covers impede exhaust and are not recommended.	Yes	Yes	Yes	Yes
Nozzle Construction	Material for correct application and finish. Epoxy and FRP material break down with exposure to sunlight.	Coated Steel with LabCoat™	Coated Steel with LabCoat™	Coated Steel with LabCoat™	Fiberglass Reinforced Plastic (FRP) and Aluminum
Dilution / Nozzle	Entrains ambient air to dilute the lab exhaust air. Results in greater mass flow at discharge.	No Dilution	No Dilution	No Dilution	Yes
Spark Proof Construction	Ability to meet demands of application for spark resistance.  NOTE: FRP blowers require optional graphite liner.	AMCA B	AMCA B or C	AMCA B or C	No Data
Bearings	Bearing type and life.	Concentric Lock L <sub>10</sub> 100,000 hrs	Concentric Lock L <sub>10</sub> 200,000 hours	Concentric Lock L <sub>10</sub> 80,000 hours, standard L <sub>10</sub> 200,000 hours, optional	No Data
Drain in Housing and/or Plenum	Allows for removal of rain or condensation.	Fan and Plenum	Fan and Plenum	Fan and Plenum	No Data
Sizing of Belts	Indication of durability. Industry Standard = 150% of BHP.	200%	200%	200%	Not Applicable
Vibration Isolation	Used to isolate the fan from building structure. Isolation may be required in seismic zones.	Not Required	Not Required	Restrained Vibration Isolators	Not Required

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