

Laboratory Exhaust Systems High Plume Selection Criteria & Consideration Facts

Building Value in Air.		Greenheck			Loren Cook		
Feature	Benefit / Comment	Vektor®-H	Vektor®-MH	Vektor®-CH	TCNHBLE	QMXLE (HP)	CPS-LE
Performance Ranges	Volume and static pressure each fan is capable of exhausting.	500 - 26,000 cfm Up to 4.5 in. wg	2,000 - 47,000 cfm Up to 11.0 in. wg	1,000 - 56,000 cfm Up to 12 in. wg	350 - 49,500 cfm Up to 4.0 in. wg	260 - 72,500 cfm Up to 5.25 in. wg	450 - 14,200 cfm 0.25 to 5.5 in. wg
AMCA Certification	Independent, third-party certification of air and sound performance.	FEI, Sound and Air	FEI, Sound and Air	FEI, Sound and Air	FEI, Sound and Air	No	FEI, Sound and Air
UL Certification	Independent, third-party certification of UL 705 for electrical or UL 762 for grease.	UL 705 UL 762	UL 705	UL 705	UL 705	UL 705 UL 762	UL 705 UL 762
Windload Certification	MPH rating the entire system can withstand without the use of guy wires.	125 mph	125 mph	125 mph	125 mph	125 mph	No Data
Vibration Balance/Testing AMCA 204-05	Level of factory testing performed. Written vibration report available from Greenheck at no charge.	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	Yes No Data	Yes No Data	No Data
Variable or Constant Volume	Ability to meet demands of a variable or constant volume application.	Both	Both	Variable Volume	Both	Both	
Drive Arrangement	Belt: More flexibility for field adjustments.	Arrg. 9	Arrg. 9	Arrg. 10	Arrg. 9	Belt	Belt
	Direct: Locked into specific motor RPM.	Arrg. 4	Arrg. 4	Arrg. 4 – sizes 12-30 Arrg. 8 – sizes 33-44		Direct	
Wheel Type	Type of wheel used in fan housing.	Centrifugal	Mixed Flow	Centrifugal, backward inclined airfoil	Centrifugal, backward inclined	Mixed Flow	Centrifugal, backward inclined airfoil
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)	Coated Steel with Phenolic Epoxy (5 mils)	Coated Steel with Lorenized Phenolic Epoxy (2 mils)	Coated Steel with Phenolic Epoxy (5 mils)
Discharge / Outlet	Cone sized to handle an outlet velocity up to 6000 fpm. Use of discharge caps or hinged covers impede exhaust and are not recommended.	Yes No cap	Yes No cap	Yes Up to 7000 fpm No cap	Yes No cap	Yes Cap present Hinged discharge damper	No Data
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	AMCA B	AMCA A, B or C	No Data
Bearings	Bearing type and life.	Concentric Lock L ₁₀ 100,000 hrs	Concentric Lock L ₁₀ 200,000 hrs	$\begin{array}{c} \text{Concentric Lock} \\ \text{L}_{10} \text{ 80,000 hours, std.} \\ \text{L}_{10} \text{ 200,000 hours, opt.} \end{array}$	Concentric Lock L ₁₀ 100,000 hrs	No Data L ₅₀ 200,000 hrs	No Data L ₅₀ 200,000 hrs
Drain in Housing and/or Plenum	Allows for removal of rain or condensation.	Fan and Plenum	Fan and Plenum	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%	150%	150%	150%
Vibration Isolators	Used to isolate the fan from building structure. Isolation may be required in seismic zones.	Not Required	Not Required	Restrained Vibration Isolators	Not Required	Not Required	Not Required

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Building Value in Air.		Greenheck			Twin City		Strobic Air	
Feature	Benefit / Comment	Vektor®-H	Vektor®-MH	Vektor®-CH	TFE	QFE	Not Available BS Series	Mono-Stack
Performance Ranges	Volume and static pressure each fan is capable of exhausting.	500 - 26,000 cfm Up to 4.5 in. wg	2,000 - 47,000 cfm Up to 11.0 in. wg	1,000 - 56,000 cfm Up to 12 in. wg	Up to 78,000 cfm Up to 8.0 in. wg	Up to 89,000 cfm Up to 9.0 in. wg	Up to 5.1 in. wg	Up to 24,000 cfm Up to 8.0 in. wg
AMCA Certification	Independent, third-party certification of air and sound performance.	FEI, Sound and Air	FEI, Sound and Air	FEI, Sound and Air	Sound and Air	Sound and Air	No	Sound and Air
UL Certification	Independent, third-party certification of UL 705 for electrical or UL 762 for grease.	UL 705 UL 762	UL 705	UL 705	UL 705	UL 705 UL 762	UL 705	No Data
Windload Certification	MPH rating the entire system can withstand without the use of guy wires.	125 mph	125 mph	125 mph	125 mph	125 mph	No Data	No Data
Vibration Balance/Testing AMCA 204-05	Level of factory testing performed. Written vibration report available from Greenheck at no charge.	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	Category BV-3 <0.15 in/sec peak	Category BV-3 <0.15 in/sec peak	No Data	Category BV-3 <0.15 in/sec peak
Variable or Constant Volume	Ability to meet demands of a variable or constant volume application.	Both	Both	Variable Volume	Both	Both	Both	
	Belt: More flexibility for field adjustments.	Arrg. 9	Arrg. 9	Arrg. 10	Arrg.9	Arrg. 9		
Drive Arrangement	Direct: Locked into specific motor RPM.	Arrg. 4	Arrg. 4	Arrg. 4 – sizes 12-30 Arrg. 8 – sizes 33-44			Direct	Direct
Wheel Type	Type of wheel used in fan housing.	Centrifugal	Mixed Flow	Centrifugal, backward inclined airfoil	Centrifugal, backward inclined airfoil	Mixed Flow	Mixed Flow	Centrifugal
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)	Coated Steel with Epoxy or Heresite	Coated Steel No Data	Coated Steel with Epoxy Phenolic	Coated Steel with Epoxy Phenolic
Discharge / Outlet	Cone sized to handle an outlet velocity up to 6000 fpm. Use of discharge caps or hinged covers impede exhaust and are not recommended.	Yes No cap	Yes No cap	Yes Up to 7000 fpm No cap	No Cap present	No Cap present	Yes No cap	Yes No cap
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	AMCA B or C	AMCA B or C	AMCA B or C	AMCA B or C
Bearings	Bearing type and life.	Concentric Lock L ₁₀ 100,000 hrs	Concentric Lock L ₁₀ 200,000 hrs	Concentric Lock L ₁₀ 80,000 hours, std. L ₁₀ 200,000 hours, opt.	Ball or Roller Type L ₁₀ 200,000 hrs	Ball or Roller Type L ₁₀ 200,000 hrs	Motor Bearing L ₁₀ 40,000 hrs	No Data
Drain in Housing and/or Plenum	Allows for removal of rain or condensation.	Fan and Plenum	Fan and Plenum	Fan and Plenum	Fan and Plenum	Fan and Plenum	No Data	No Data
Sizing of Belts	Indication of durability. Industry Standard = 150% of BHP.	200%	200%	200%	200%	200%	Not Applicable	Not Applicable
Vibration Isolators	Used to isolate the fan from building structure. Isolation may be required in seismic zones.	Not Required	Not Required	Restrained Vibration Isolators	Not Required	Not Required	No Data	No Data

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Laboratory Exhaust Systems High Plume Selection Criteria & Consideration Facts

Building value in Air.		Greenheck			PennBarry	MK Plastics	ACME
Feature	Benefit / Comment	Vektor®-H	Vektor [®] -MH	Vektor®-CH	vPlume™	KVC	TIB-LE
Performance Ranges	Volume and static pressure each fan is capable of exhausting.	500 - 26,000 cfm Up to 4.5 in. wg	2,000 - 47,000 cfm Up to 11.0 in. wg	1,000 - 56,000 cfm Up to 12 in. wg	220 - 7,100 cfm Up to 3.0 in. wg	450 - 38,000 cfm Up to 8.0 in. wg	283 - 17,500 cfm Up to 5.0 in. wg
AMCA Certification	Independent, third-party certification of air and sound performance.	FEI, Sound and Air	FEI, Sound and Air	FEI, Sound and Air	Sound and Air	No	No
UL Certification	Independent, third-party certification of UL 705 for electrical or UL 762 for grease.	UL 705 UL 762	UL 705	UL 705	UL 705	No Data	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	No Data	125 psf
Vibration Balance/Testing AMCA 204-05	Level of factory testing performed. Written vibration report available from Greenheck at no charge.	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	Category BV-3 <0.15 in/sec peak	Category BV-3 <0.15 in/sec peak
Variable or Constant Volume	Ability to meet demands of a variable or constant volume application.	Both	Both	Variable Volume	Both	Both	Both
Drive Arrangement	Belt: More flexibility for field adjustments.	Arrg. 9	Arrg. 9	Arrg. 10	Belt	Arrg. 9	Belt
	Direct: Locked into specific motor RPM.	Arrg. 4	Arrg. 4	Arrg. 4 – sizes 12-30 Arrg. 8 – sizes 33-44		Arrg. 4	
Wheel Type	Type of wheel used in fan housing.	Centrifugal	Mixed Flow	Centrifugal, backward inclined or airfoil	Centrifugal, airfoil	Centrifugal	Centrifugal
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)	Coated Steel with Phenolic Epoxy	Coated Steel with Plastifier™ Polyester (4 to 6 mils)	Coated Steel with Polyester with Zinc Primer (4 to 6 mils)
Discharge / Outlet	Cone sized to handle an outlet velocity up to 6000 fpm. Use of discharge caps or hinged covers impede exhaust and are not recommended.	Yes No cap	Yes No cap	Yes Up to 7000 fpm No cap	Yes	Yes No cap	Yes No cap
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	AMCA B	AMCA A, B or C	AMCA B
Bearings	Bearing type and life.	Concentric Lock L ₁₀ 100,000 hrs	Concentric Lock L ₁₀ 200,000 hrs	$\begin{array}{c} \text{Concentric Lock} \\ \text{L}_{10} 80,000 \text{ hours, std.} \\ \text{L}_{10} 200,000 \text{ hours, opt.} \end{array}$	Concentric Lock L ₁₀ 100,000 hrs	Pillow Block L ₁₀ 200,000 hrs	Concentric Lock L ₁₀ 100,000 hrs
Drain in Housing and/or Plenum	Allows for removal of rain or condensation.	Fan and Plenum	Fan and Plenum	Fan and Plenum	Fan Only	No Data	Fan and Plenum
Sizing of Belts	Indication of durability. Industry Standard = 150% of BHP.	200%	200%	200%	150%	150%	200%
Vibration Isolators	Used to isolate the fan from building structure. Isolation may be required in seismic zones.	Not Required	Not Required	Restrained Vibration Isolators	Not Required	Neoprene Vibration Pads	Not Required

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