

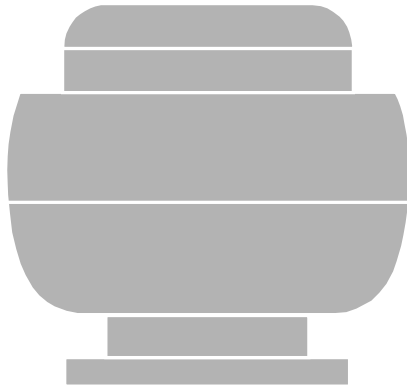
VCR



COOK

VCR

Restaurant Exhaust Ventilator



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INTRODUCTION

COOK Restaurant Exhaust Ventilator provides maximum performance and durability in kitchen hood exhaust applications.

- VCR unit top cap assembly is designed to provide weather protection for the motor and drive components while maintaining easy tool free access for inspection and maintenance.
- Standard lifting lugs, located under the top cap, provide for safe, fast and efficient lifting of the unit to a rooftop.
- One piece fan base, which includes a high-efficiency inlet venturi and continuously welded curb cap corners, insures weathertight conditions.
- One piece spun aluminum leak-free baffle is designed to provide smooth, turbulent-free airflow.
- Wheels are centrifugal type featuring non-overloading, backward-inclined blades and a tapered inlet shroud.
- Optional Wall Mounting Flange is available up to size 245.
- Accurate performance is assured through compliance with the AMCA Certified Ratings Program. All units are licensed to bear the AMCA Certified Ratings Seal for Air and Sound Performance.

VCR/VCRD

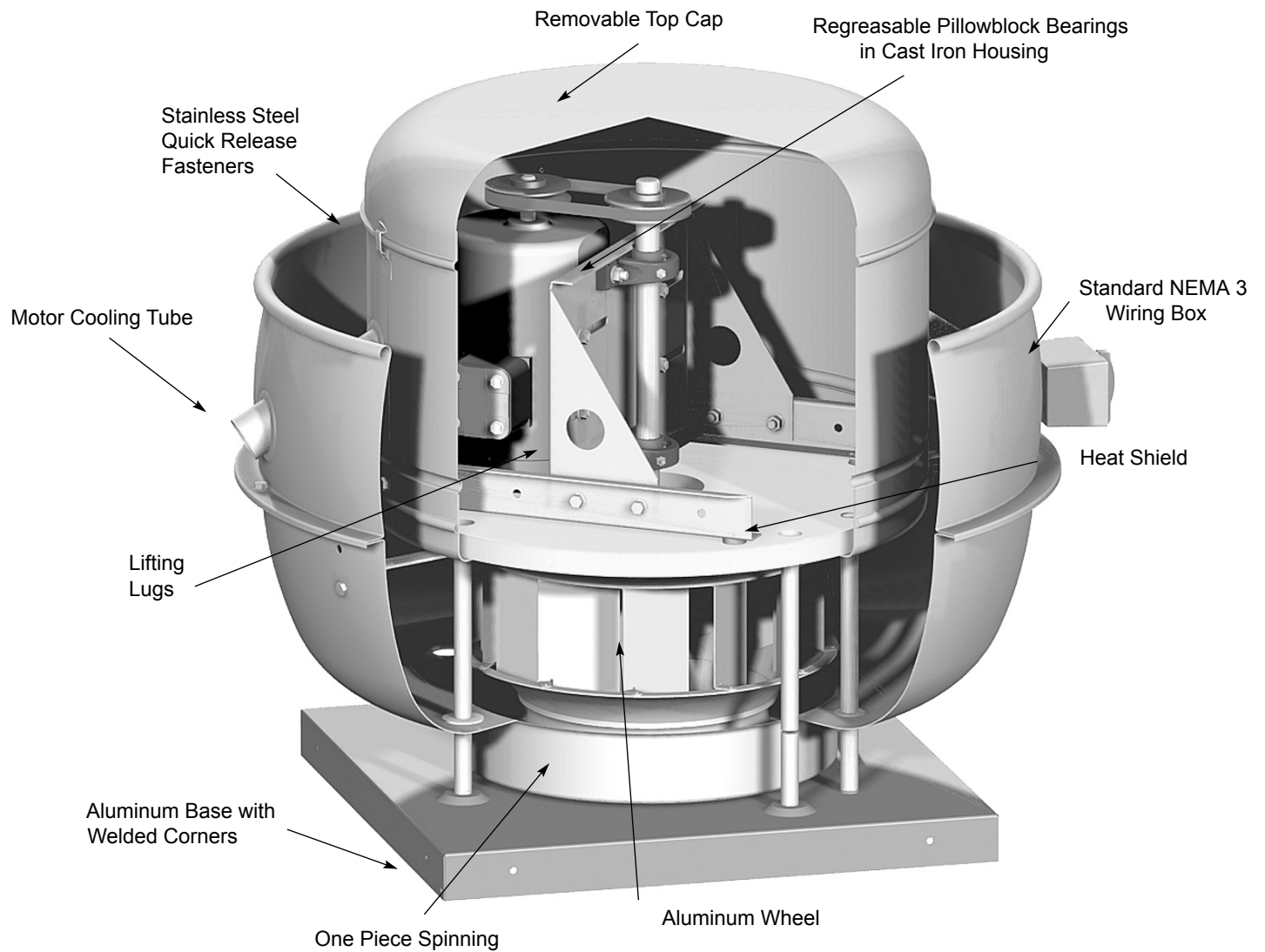
Upblast Centrifugal Restaurant Exhaust Ventilator



- VCR available in 6 direct drive sizes and 17 belt drive sizes. Capacities range from 400 to 28,800 CFM, with static pressures from 0 to 1-1/2 inches.
- VCR-HP available in 4 direct drive sizes and 11 belt drive high pressure sizes. Capacities range from 700 to 19,200 CFM, with static pressures from 1/4 to 2-1/2 inches.
- VCR-XP available in 3 direct drive sizes and 10 belt drive extended pressure sizes. Capacities range from 800 to 11,000 CFM, with static pressures from 1 to 4-1/2 inches.
- VCRD-EC models with electronically commutated (EC) motors are available in 6 direct drive sizes with capacities from 74 to 2598 cfm.
- VCR / VCR-HP / VCR-XP are UL Listed to operate continuously up to 300°F.

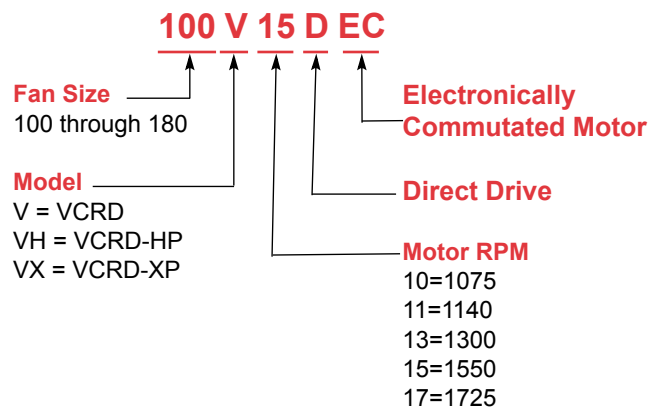
VCR

Upblast Centrifugal Restaurant Exhaust Ventilator

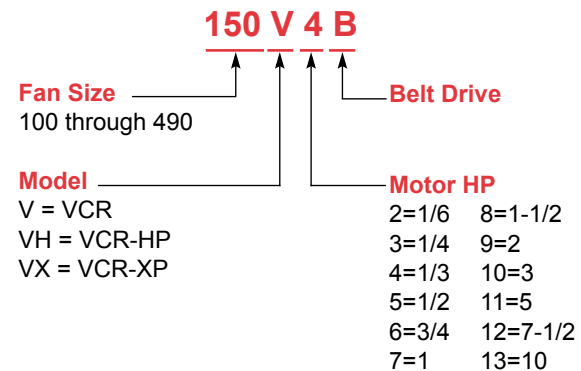


Model Number Chart

Direct Drive Models



Belt Drive Models



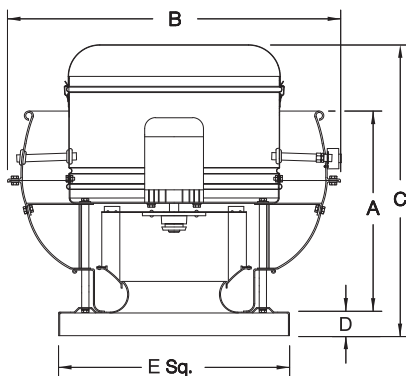
Upblast Centrifugal Restaurant Exhaust Ventilator Roof Mounted Direct Drive



LOREN COOK COMPANY certifies that the VCRD, VCRD-EC, VCRD-HP, VCRD-XP, VCRDEC-HP, VCRDEC-XP shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



Type VCRD, VCRD-EC, VCRD-HP, VCRD-XP, VCRDEC-HP, VCRDEC-XP are furnished standard with UL 762 and cUL 762 listings (Power Ventilator for Restaurant Exhaust Appliances/YZHW) when furnished with factory supplied motor.



Description: Fan shall be a spun aluminum, roof mounted, direct driven, upblast centrifugal exhaust ventilator.

Certifications: Fan shall be manufactured at an ISO 9001 certified facility. Fan shall be listed by Underwriters Laboratories (UL 762) and UL listed for Canada (Power Ventilator for Restaurant Exhaust Appliances). Fan shall bear the AMCA Certified Ratings Seal for Sound and Air Performance.

Construction: Fan shall be of bolted and welded construction utilizing corrosion resistant fasteners. The spun aluminum structural components shall be constructed of minimum 16 gauge marine alloy aluminum, bolted to a rigid aluminum support structure. The aluminum base shall have a one piece inlet spinning and continuously welded curb cap corners for maximum leak protection. The windband shall have a rolled bead for added strength. A two piece top cap shall have stainless steel quick release latches to provide access into the motor compartment without the use of tools. An external wiring compartment with integral conduit chase shall be provided into the motor compartment to facilitate wiring connections. The motor shall be enclosed in a weather-tight compartment, separated from the exhaust airstream. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM and static pressure. Unit shall be shipped in ISTA Certified Transit Tested Packaging.

Wheel: Wheel shall be centrifugal backward inclined, constructed of 100 percent aluminum, including a precision machined cast aluminum hub. Wheel inlet shall overlap an aerodynamic aluminum inlet cone to provide maximum performance and efficiency. Wheel shall be balanced in accordance with AMCA Standard 204-05, Balance Quality and Vibration Levels for Fans.

Motor: Motor shall be heavy duty type with permanently lubricated sealed bearings and furnished at the specified voltage, phase and enclosure.

Motor EC: Motor shall be an electronically commutated motor rated for continuous duty and furnished either with internally mounted potentiometer speed controller or with leads for connection to 0-10 VDC external controller.

Product: Fan shall be model VCRD, VCRD-HP or VCRD-XP as manufactured by LOREN COOK COMPANY of Springfield, Missouri.

VCRD / VCRD-HP / VCRD-XP Dimension Data

Size	A	B	C			D	E Sq.	Roof Opening Square*	Ship. Wt.
			VCRD	VCRD-HP	VCRD-XP				
101	12-1/2	25-1/4	20-3/16	-	-	2	18	13-1/2	30
120	19-1/16	30-3/16	28-1/4	-	-	2	20	15-1/2	61
135	19-1/16	30-3/16	28-5/8	-	-	2	20	15-1/2	66
150	20-15/16	34-11/16	30-1/4	27-1/2	-	2	24	19-1/2	77
165	20-15/16	34-11/16	30-3/4	27-3/4	26-11/16	2	24	19-1/2	83
180	24-13/16	39-7/16	35-7/8	33-3/8	31-9/16	3	30	25-1/2	100
195	24-13/16	39-7/16	-	33-1/2	32-1/8	3	30	25-1/2	110

All dimensions in inches. *Roof opening size for curbs supplied by LOREN COOK COMPANY only. Weights in pounds, less motor.

**Upblast Centrifugal
Restaurant Exhaust
Ventilator
Roof Mounted
Belt Drive**



LOREN COOK COMPANY certifies that the VCR, VCR-HP and VCR-XP shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and AMCA Publication 311 and comply with the requirements of the AMCA Certified Ratings Program.



Type VCR, VCR-HP, VCR-XP are furnished standard with UL 762 and cUL 762 listings (Power Ventilator for Restaurant Exhaust Appliances/YZHW) when furnished with factory

Description: Fan shall be a spun aluminum, roof mounted, belt driven, upblast centrifugal exhaust ventilator.

Certifications: Fan shall be manufactured at an ISO 9001 certified facility. Fan shall be listed by Underwriters Laboratories (UL 762) and UL listed for Canada (cUL 762). Fan shall bear the AMCA Certified Ratings Seal for Sound and Air Performance.

Construction: Fan shall be of bolted and welded construction utilizing corrosion resistant fasteners. The spun aluminum structural components shall be constructed of minimum 16 gauge marine alloy aluminum, bolted to a rigid aluminum support structure. The aluminum base shall have a one piece inlet spinning and continuously welded curb cap corners for maximum leak protection. The windband shall have a rolled bead for added strength. A two piece top cap shall have stainless steel quick release latches to provide access into the motor compartment without the use of tools. An external wiring compartment with integral conduit chase shall be provided into the motor compartment to facilitate wiring connections. The motor, bearings and drives shall be mounted on a minimum 14 gauge steel power assembly, isolated from the unit structure with solid vibration isolators. These components shall be enclosed in a weather-tight compartment, separated from the exhaust airstream. A one-inch thick, three pound density foil back heat shield shall be utilized to protect the motor and drive components from excessive heat. Lifting lugs shall be provided to help prevent damage from improper lifting. Unit shall bear an engraved aluminum nameplate. Nameplate shall indicate design CFM, static pressure and maximum fan RPM. Unit shall be shipped in ISTA Certified Transit Tested Packaging.

Wheel: Wheel shall be centrifugal backward inclined, constructed of 100 percent aluminum, including a precision machined cast aluminum hub. Wheel inlet shall overlap an aerodynamic aluminum inlet cone to provide maximum performance and efficiency. Wheel shall be balanced in accordance with AMCA Standard 204-05, Balance Quality and Vibration Levels for Fans.

Motor: Motor shall be NEMA design B with class B insulation rated for continuous duty and furnished at the specified voltage, phase and enclosure.

Bearings: Bearings shall be designed and individually tested specifically for use in air handling applications. Construction shall be heavy duty regreasable ball type in a cast iron pillowblock housing selected for a minimum L50 life in excess of 200,000 hours at maximum cataloged operating speed.

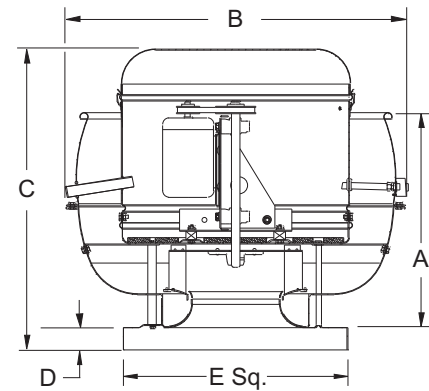
Belts and Drives: Belts shall be oil and heat resistant, static conducting. Drives shall be precision machined cast iron type, keyed and securely attached to the wheel and motor shafts. Drives shall be sized for 150 percent of the installed motor horsepower. The variable pitch motor drive must be factory set to the specified fan RPM.

Product: Fan shall be model VCR, VCR-HP or VCR-XP as manufactured by LOREN COOK COMPANY of Springfield, Missouri.

VCR/VCR-HP/VCR-XP Dimension Data

Size	A	B	C			D	E Sq.	Roof Opening Square*	Ship. Wt.
			VCR	VCR-HP	VCR-XP				
100	12-1/2	25-1/4	20-3/16	-	-	2	18	13-1/2	30
120	19-1/16	30-3/16	28-1/4	-	-	2	20	15-1/2	61
135	19-1/16	30-3/16	28-5/8	-	-	2	20	15-1/2	66
150	20-15/16	34-11/16	30-1/4	27-1/2	-	2	24	19-1/2	77
165	20-15/16	34-11/16	30-3/4	27-3/4	26-11/16	2	24	19-1/2	83
180	24-13/16	39-7/16	35-7/8	33-3/8	31-9/16	3	30	25-1/2	100
195	24-13/16	39-7/16	36-3/8	33-1/2	32-1/8	3	30	25-1/2	110
210	25-15/16	45-1/4	38-3/8	35-3/8	32-3/4	3	30	25-1/2	220
225	25-15/16	45-1/4	38-1/8	35-1/2	33-5/16	3	30	25-1/2	242
245	28-1/2	49-1/4	41-1/16	37-5/16	34-1/16	3	30	25-1/2	264
270	28-1/2	49-1/4	41-1/16	37-5/16	35	3	36	31-1/2	286
300	33-7/8	54-1/4	49-15/16	45-15/16	41-7/16	3	36	31-1/2	336
330	34-1/8	54-1/4	50-7/16	46-11/16	43-1/8	3	42	37-1/2	374
365	36-3/8	64-1/4	52-7/16	48-7/16	44-1/4	3	42	37-1/2	420
402	37-7/8	64-1/4	54-11/16	-	-	3	48	43-1/2	484
445	31-5/8	76-1/4	57-3/16	-	-	3	54	49-1/2	556
490	33-3/8	76-1/4	58-1/16	-	-	3	54	49-1/2	715

All dimensions in inches. *Roof opening size for curbs supplied by LOREN COOK COMPANY only. Weights in pounds, less motor.



Seismic Rating

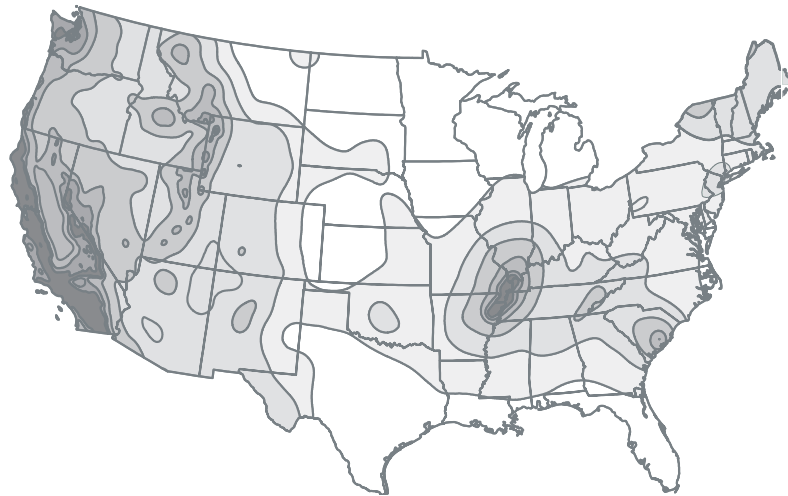
The VCR has been shaketable tested to a spectral response acceleration of 1.93G's. ($S_{DS} = 1.93$). The tests were conducted in accordance with the criteria specified in AC156.

The unit and roof curb were tested as an assembly. The test were accepted by California OSHPD as part of the preapproval of these products.

California OSHPD – Office of Statewide Health Planning and Development. OSHPD is the only state or federal organization that preapproves mechanical equipment as seismically sound. OSHPD requires that the shaketable testing be witnessed by a California professional engineer and the test report must be reviewed by a California structural engineer.



USGS National Seismic Hazard Maps



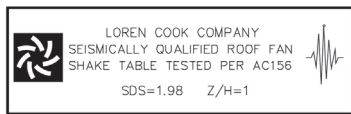
Highest hazard

32+
24-32
16-24
8-16
4-8
2-4
0-2

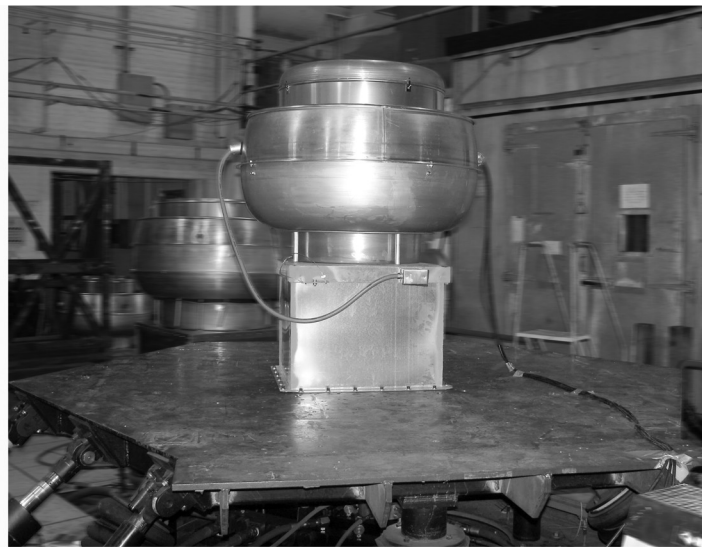
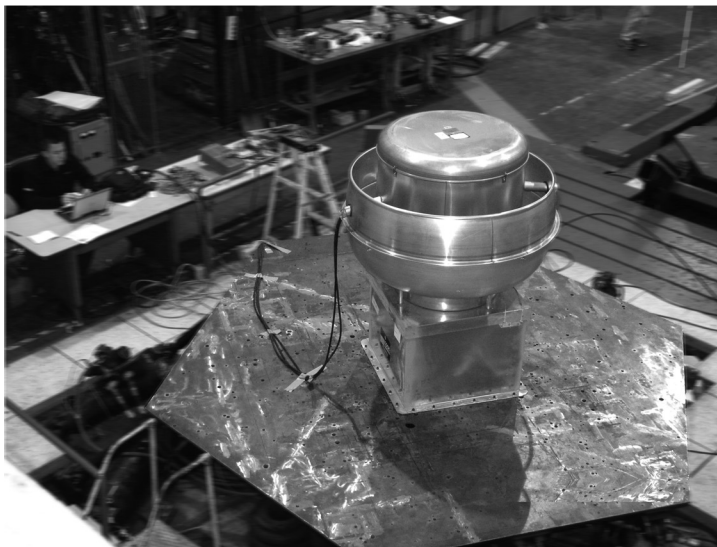
% g

Lowest hazard

Data from 2008



Example of a product label.



Seismic Simulation Test on Multi-Axis Shake Table

Miami-Dade County Product Control Approved Florida Product Approval

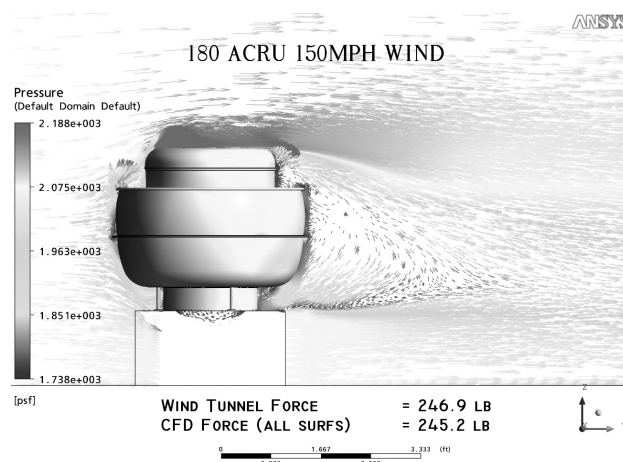
LOREN COOK COMPANY'S "Hurricane Rated Construction" option was developed for the demands of high wind and coastal areas. Through rigorous research and testing, this construction option was developed to meet the demands of Miami-Dade County's Testing Application Standards (TAS) 201, 202 and 203. Each of these fan has passed all three of the TAS testing protocols. In addition, all of these products have received approval from the Florida Building Commission.

The hurricane rated construction option was engineered so that the fans have the same physical size as the standard construction units. In addition, the fan's air and sound performance, as shown in the product catalogs and Compute A Fan® selection software, remains identical to the standard construction products Approved attachment details are included in the Notice of Acceptance documents on the Miami-Dade County Florida website (miamidade.gov) and the Florida Building Commission website (floridabuilding.org). The approved attachment details do not require the use of external tie downs to the roof. Installation of the fans to an approved roof curb must be in accordance with these details to meet the Miami-Dade County and Florida Building Commission approvals

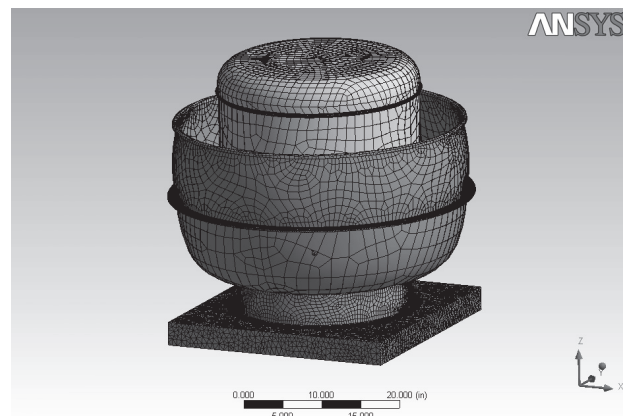
In the early stages of development, products were modeled with Computational Fluid Dynamics (CFD) to determine the stress points as air flowed around the fans at speeds of 150 MPH. Next, Finite Element Analysis (FEA) was utilized to model and evaluate stress plots. Finally, the proper material gauges and hardware were determined so the fans would survive these high wind loads.

In the next step of testing, products were placed in an aerodynamic wind tunnel. They were tested to a 150 MPH sustained wind to determine the product's resistance to wind load.

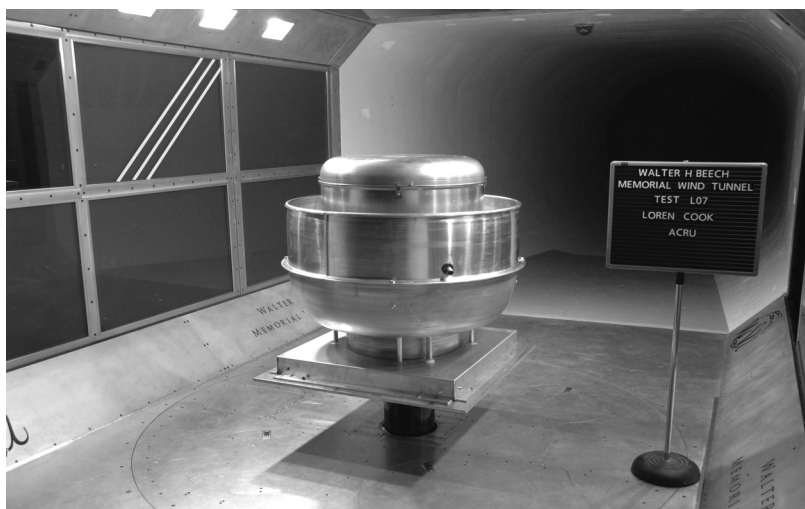
(Continued next page.)



Computational Fluid Dynamics



Finite Element Analysis



Full Scale Wind Tunnel Testing

Hurricane & High Wind Construction

Finally, the fans passed *not one, not two, but all three approval tests.*

TAS-201: Large Missile Impact Test - determines sufficient resistance to wind-borne debris as determined by the Florida Building Code, Section 1626 for maintaining the envelope of the building. Test employs an 8* foot Southern Pine 2" x 4" beam, weighing 9* pounds; shot from an air cannon at (50 ft/ sec) with resulting damage not to exceed specified tolerances allowed by *Section 1626.2.8.*

TAS-202: Uniform Static Air Pressure Test - determines sufficient resistance to wind forces as determined by Florida Building Code, Section 1620 and Section 1625 for maintaining the overall envelope of the building. Test employs a sealed pressure envelope both inside and outside of the test product (allowing for both positive and negative static pressure tests) to determine if the product provides sufficient resistance to wind forces as required by Section 1620.

TAS-203: Cyclic Wind Pressure Test - determines sufficient resistance to fatigue failure due to repeated exposure to wind pressure as required by Florida Building Code *Section 1620* . Test employs a sealed pressure envelope to repeatedly apply (671 cycles) positive and negative static pressure forces, lasting 1 to 3 seconds each, on the product surface following completion of the missile impact test.

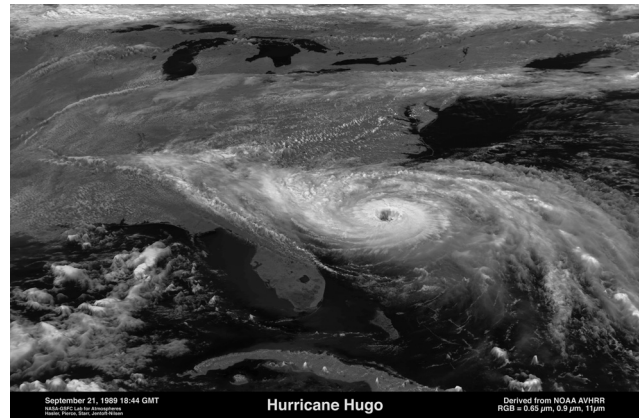
** Indicates an approximate value based on a range allowed by specified test standards.*

Note: High wind models do not have easy access tops.

All tests were performed in the progressive manner of TAS-202, TAS-201, then TAS-203 on the same piece of equipment in an accredited independent laboratory.

Products	Sizes	TAS-201	TAS-202	TAS-203	NOA Number / Expiration Date*	Florida Product Approval
ACEB	60 - 300	PASSED	PASSED	PASSED	08-0424.03 / 10-2-2013	FL11693
ACED	70 - 180	PASSED	PASSED	PASSED		
ACRUB, ACRUB-HP, ACRUB-XP	100 - 300	PASSED	PASSED	PASSED	08-0902.01 / 11-13-2013	FL11695
ACSC, ACSC-HP, ACSC-XP	100 - 300	PASSED	PASSED	PASSED		
ACRUD, ACRUD-HP, ACRUD-XP	70 - 195	PASSED	PASSED	PASSED		
VCRD, VCRD-HP, VCRD-XP	100 - 195	PASSED	PASSED	PASSED		
VCR, VCR-HP, VCR-XP	100 - 300	PASSED	PASSED	PASSED	08-0314.05 / 9-4-2013	FL11691
SRSH-B	60 - 270	PASSED	PASSED	PASSED		
SRSH-D	60 - 180	PASSED	PASSED	PASSED		
CPS** / CPS-A** / CPV**	60 - 245	PASSED	PASSED	PASSED	08-0424.02 / 10-2-2013	FL11692
TLCH-B	100 - 365	PASSED	PASSED	PASSED	09-0423.06 / 4-22-2014	FL3287
TLCH-D	70 - 180	PASSED	PASSED	PASSED		

*NOA Number / Expiration Date issued by Miami-Dade County, Florida Building Code Compliance Office, Product Control Division **Tested with Inlet Box and Curb Cap



Missile Impact Testing



Pressure Testing



Automatic Belt Tensioner



The automatic belt tensioner maintains constant tension on the drive belt which offers two distinct benefits. It reduces startup and maintenance costs by continuously tensioning the belt throughout its life and also increases belt life by reducing slippage. Engineering studies indicate properly tensioned belts can operate at 15° to 20° F cooler internal temperature than poorly tensioned belts. A drive belt industry rule of thumb is that every 18° F increase in internal temperature will reduce belt life by 50%. The automatic belt tensioner will easily double belt life compared to installations where belt tension is not properly maintained. COOK's spun aluminum fans have stainless steel quick release latches on the topcap, providing tool free access to the automatic belt tensioner and motor compartment. The drive belt can be replaced in moments (by almost anyone) without the special skills and tools normally needed to achieve proper belt tension. Too much belt tension can reduce the life of both the fan and motor bearings. The COOK automatic belt tensioner will assure proper belt tension throughout the life of the fan; maximizing bearing life and fan reliability. Available on sizes 100 - 490.

Extended Lube Lines

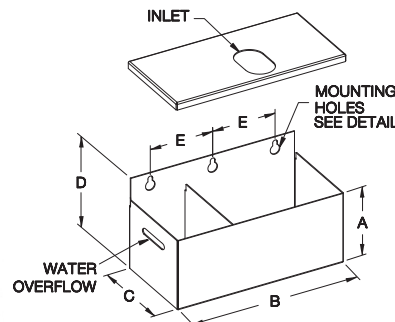


Extended lube lines provide a quick and convenient way to lubricate the bearings while the fan is operating.

Tie Downs

Tie downs offer locations for field attachment of the fan to the roof deck or supporting structure. The tie down points help protect against high windloads.

Grease Trough

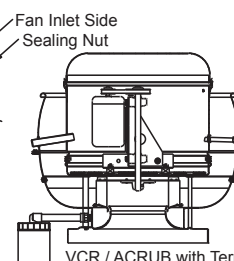
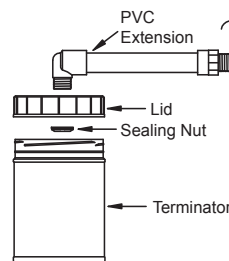
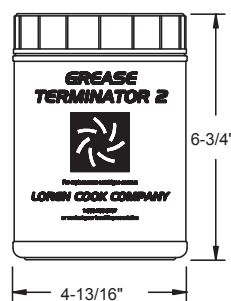


A	B	C	D	E
5	12	6-1/16	6-1/2	4-1/2

All dimensions in inches.

A grease trough provides for collection of grease from a VCR unit. The lid is removable for cleaning. The grease trough is shipped loose for field mounting. To provide for more thorough periodic cleaning, the grease trough should be mounted to the unit for easy removal.

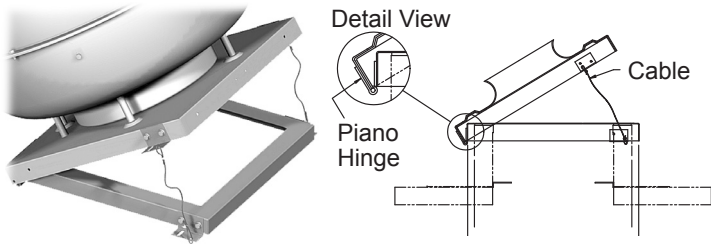
Grease Terminator



The Grease Terminator 2 is a grease-capture and containment system.

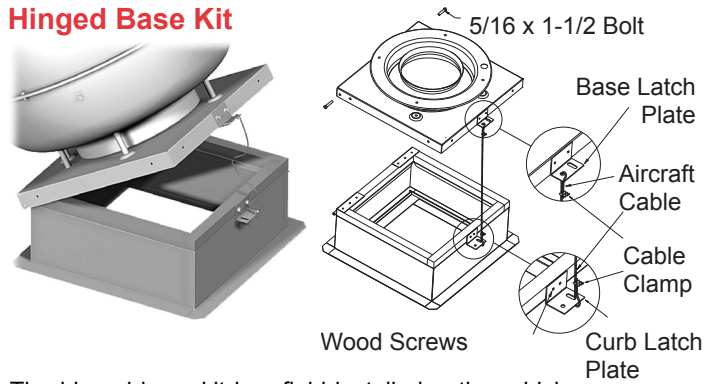
ACCESSORIES

Hinged Base



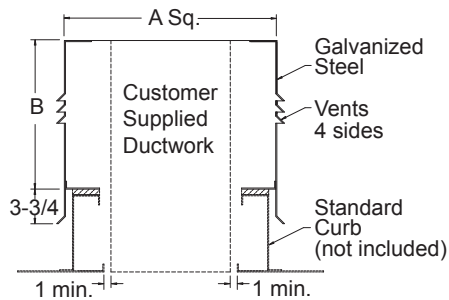
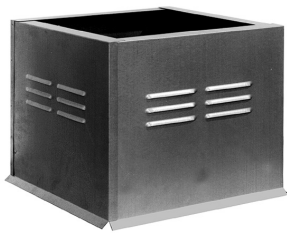
The hinged base is a factory welded sub-base, hinge and locking hasp that provides a secure and stable means of access to the inlet and interior ductwork for cleaning and inspection. Galvanized aircraft cable is installed on the hinged base to support the fan in an open position. Available on sizes 100 through 300, consult factory on larger sizes.

Hinged Base Kit



The hinged base kit is a field installed option which provides a lockable, hinged connection between the fan and curb. This allows easy access to the wheel and inlet of the fan as well as the interior ductwork. The kit includes two hinge plates, two latch plates, hinge bolts, aircraft cable and clamps. Available on sizes 100 through 300, consult factory on larger sizes.

Vented Extension

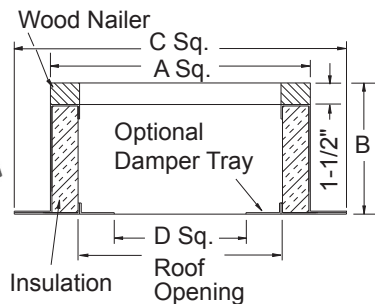
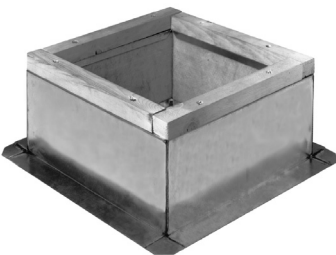


Unit Size	Cat. No.	A Sq.	B
100, 101	VE-17	17	20
120, 135	VE-19	19	16
150, 165	VE-23	23	16
180, 195, 210, 225, 245	VE-29	29	16
270, 300	VE-35	35	16
330, 365	VE-41	41	16
402	VE-47	47	16
445, 490	VE-53	53	16

All dimensions in inches. Roof opening size for curbs supplied by LOREN COOK COMPANY only.

The vented extension, constructed of galvanized steel, is used to increase the discharge height of the fan. Vents in the extension allow the interior ductwork to dissipate heat.

Roof Curb



VCR Unit	Catalog Number		A Sq.	B	C Sq.	D Sq.	Roof Opening
	Galvanized	Aluminum					
60 - 101	RCG-16	RCA-16	16-1/2	9-1/2	20-1/2	9-3/4	13-1/2
120 - 135	RCG-18	RCA-18	18-1/2	9-1/2	22-1/2	11-3/4	15-1/2
150 - 165	RCG-22	RCA-22	22-1/2	9-1/2	26-1/2	15-3/4	19-1/2
180 - 245	RCG-28	RCA-28	28-1/2	9-1/2	32-1/2	21-3/4	25-1/2
270 - 300	RCG-34	RCA-34	34-1/2	9-1/2	38-1/2	27-3/4	31-1/2
330 - 365	RCG-40	RCA-40	40-1/2	9-1/2	44-1/2	33-3/4	37-1/2
402	RCG-46	RCA-46	46-1/2	9-1/2	50-1/2	39-3/4	43-1/2
445 - 490	RCG-52	RCA-52	52-1/2	9-1/2	56-1/2	45-3/4	49-1/2
540	RCG-64	RCA-64	64-1/2	9-1/2	68-1/2	56-3/4	61-1/2

All dimensions in inches. When motor operated damper is used, a wood nailer is required.

Standard Construction Features

- 18 gauge galvanized steel (RCG) or .080 aluminum (RCA).
- 1-1/2", 3 lbs. density thermal and acoustical insulation.
- Continuously welded corners.
- Wood nailer.

Options

- No wood nailer (deduct 1-1/2" for actual height).
- 13-1/2" tall construction.

Optional Coatings

Lorenized® is an electrostatically applied, baked polyester powder coating. Each component shall be subject to a five stage environmentally friendly wash system, followed by a minimum 2 mil thick baked powder finish. Coating must exceed 1,000 hour salt spray under ASTM B117 test method.

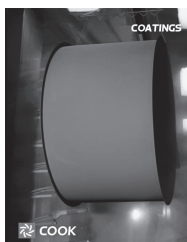
COOK Epoxy Powder is an electrostatically applied, baked epoxy powder coating. Final coating thickness is 2.5 - 3.5 mils. For outdoor applications an optional UV resistant topcoat is available to prevent cosmetic chalking of the coating.

COOK Phenolic Epoxy Powder is an electrostatically applied, baked phenolic epoxy powder coating. Final coating thickness is 2 - 4 mils. For outdoor applications an optional UV resistant topcoat is required to prevent deterioration of the coating.

COOK Easy Clean Powder is an electrostatically applied, baked modified epoxy silicone powder producing a high temperature "non-stick" coating. Final coating thickness is 1.3 - 1.7 mils.

Air Dry Phenolic (Heresite VR-504) is a conventional spray applied phenolic resin coating. Final coating thickness is 4 - 6 mils. For outdoor applications an optional UV resistant topcoat (Heresite UC-5500) is required to prevent deterioration of the coating.

Refer to the corrosion resistance guide in the Compute-A-Fan software for a listing of the coatings above and their resistance to a variety of chemicals. Additional special coatings are available.



[Read more in the Coating catalog](#)

Motors

Direct Drive

All direct drive motors are standard single phase 115-volt.

- Size 100 are either shaded pole or permanent split capacitor type motors.
- Sizes 120 through 180 are either permanent split capacitor (1075, 1300, or 1550 rpm motors) or split phase (1140 or 1725 rpm motors).
- FSC can only be used on either shaded pole or permanent split capacitor type motors.

Optional motors:

- Two speed, single-phase open motors supplied as 1725 RPM motors are 1725/1140, or 1140 RPM motors are 1140/860.
- Explosion proof motors are available for some units, contact factory for details.
- These optional motors cannot use an FSC.
- Three-phase standard efficiency and three-phase Variable Frequency Drive (VFD) compatible motors are available, consult factory for details.

Vari-Flow® EC Motors

Electronically Commutated (EC) Motors offer significantly improved energy efficiency and controllability over traditional fractional HP motors. COOK EC motors are offered in 1/4, 1/2 and 3/4 HP sizes for 120 volt, single phase applications. These totally enclosed, non-ventilated (TENV) motors have an adjustable speed range from 500 to 1725 RPM.

There are 2 versions of the EC motor:

- The “Motor Mounted Speed Control” version includes an integral potentiometer mounted on the exterior of the motor (as shown above) for precise adjustment of the motor speed. A screwdriver is used during field balancing to set the desired speed. This is a “set it and forget it” fan speed control.
- The “External Signal Speed Control” version requires a 0-10 volt DC signal to adjust the speed of the motor. This external signal speed control option is used when you need to adjust the fan speed during typical operation. The designer may choose to change fan speed due to changes in duct pressure, building load, temperature, time, etc. This motor can be paired with our optional fan speed control or pressure controller or connected to the building automation system. The motor will operate from 2-10 VDC and will turn off when the control signal is below 1.9 VDC.

Belt Drive

Single-phase motors:

- Open drip motors from 1/6 to 1-1/2 HP.
- Two-speed, motors in 1725/1140RPM, from 1/6 to 1 HP.
- TEFC and Class 1, Group D, explosion proof motors from 1/4 to 1 HP.

Three-phase motors:

- Three-phase ODP motors from 1/4 to 10 HP.
- Two-speed, two winding motors in 1725/1140 RPM, from 1/3 to 5 HP.
- TEFC and Class 1, Group D, explosion proof motors from 1/4 to 10 HP.
- Variable Frequency Drive (VFD) compatible motors are available, contact factory for details.

All single-phase and three-phase, single speed, open drip motors listed in performance tables are shipped factory installed.

Fan Speed Control



5 AMP FSC 10 AMP FSC

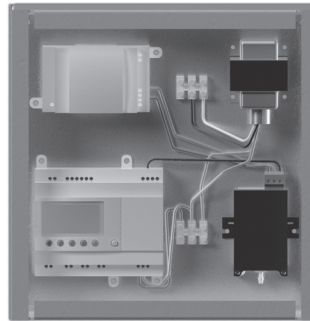
COOK’s FSC is a variable speed controller which can offer excellent energy conservation and lower sound levels when 100 percent of a direct drive fan operating capacity is not required. The FSC employs solid state circuitry for long-life and dependability. The FSC is available only on 115V and 230V shaded pole or permanent split capacitor direct drive motors and is not available on 1140 RPM and 1725 RPM motors. The FSC is normally shipped loose for field installation. Optional pre-wiring is available.

Fan Speed Control for EC Motors



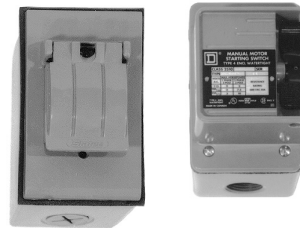
External Speed Control for the COOK EC Motor allows the fan speed to be adjusted remotely via an easy to read dial. The controller allows for adjustment from 20-100% of the fan speed. The controller works with the external signal version of the COOK EC Motor and requires 24 VAC power for operation. It is shipped loose for field installation.

Pressure Control for EC Motors



Constant pressure controller for the COOK EC Motor is for applications where the fan is intended to maintain a near constant pressure in a system such as dryer vents. The pressure controller reads the pressure in a duct system via the provided pressure transducer and automatically adjusts the fan rpm to maintain a preset value. The controller works with the external signal version of the COOK EC Motor and is shipped loose for field installation.

Typical Disconnect Switches



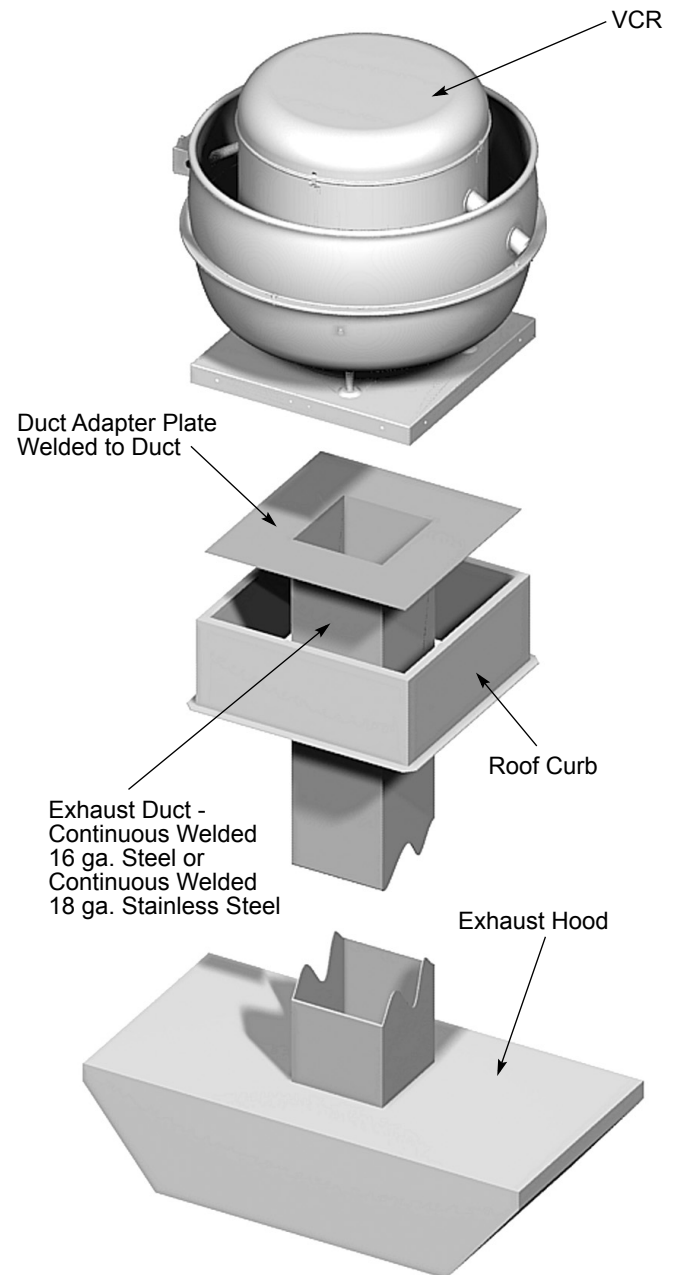
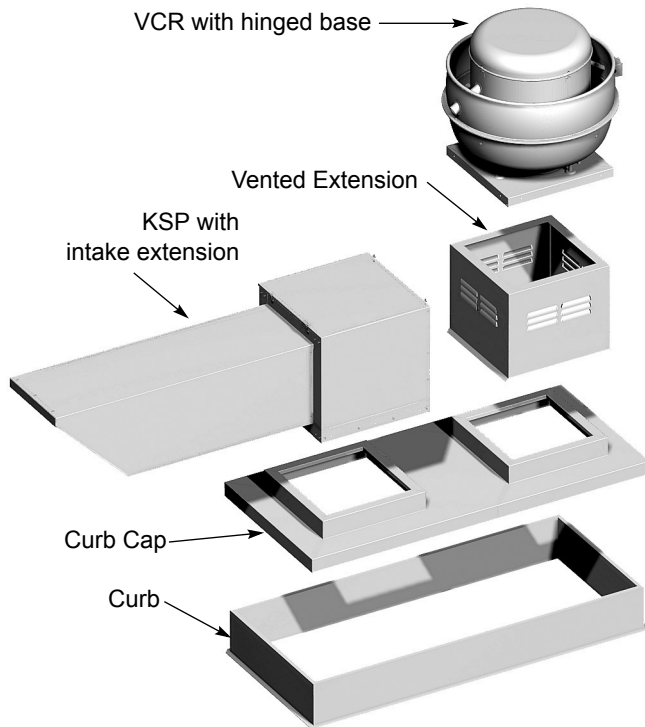
NEMA 3R

NEMA 4

NEMA 3R - Exterior mount, rain-tight.
NEMA 4 - Water-tight and dust-tight.

NFPA 96 Typical Specifications

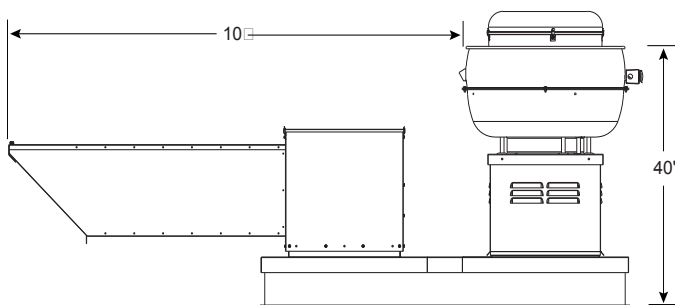
The NFPA 96 specification unit shall be a COOK VCR unit and COOK KSP unit mounted on a COOK common curb cap. The VCR shall include a hinged base or hinge kit, a vented extension, a drain tube to direct grease away from the fan, and a NFPA 96 compliant grease collection device such as the COOK aluminum grease trough or COOK Grease Terminator. The KSP unit shall include an intake extension. This will provide the minimum dimensions required to meet NFPA 96 requirements.



NFPA 96 Requirements

The exhaust fan must be installed so that the outlet of the fan is a minimum of 40 inches from the roof surface and the welded duct terminates at the bottom of the fan a minimum of 18 inches from the roof surface. The inlet of the supply fan must be a minimum of 10 feet away from the outlet of the exhaust fan. Where a 10 foot horizontal separation is not possible a 3 foot minimum vertical separation is acceptable and a special extended vented extension is required.

Standard Installation



101 - 135 VCRD-EC Data

Catalog Number	HP	Fan RPM	Tip Speed	Max Watts	CFM at Static Pressure																					
					0.00" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
					Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts
101V17DEC	1/4	468	1225	6	260																					
					0.2	6																				
		887	2322	23	494		392																			
					2.9	21	2.7	23																		
		1306	3419	61	727		653		589		512		359													
			7.7	54	7.6	56	7.4	59	6.9	61	6.5	55														
			960		902		850		803		750		690		626		465									
			11.5	114	11.5	117	11.4	121	11.3	124	10.9	128	10.5	131	10.2	129	9.9	116								
120V17DEC	1/2	471	1479	12	484																					
					0.8	12																				
		889	2792	55	914		795		651																	
					4.9	50	4.8	54	4.1	55																
		1307	4106	156	1343		1264		1182		1093		992		879											
			11.5	141	11.5	146	11.2	152	10.7	155	10.1	156	9.5	155												
			1773		1713		1652		1591		1527		1459		1386		1307		1224							
			17.6	311	17.6	318	17.6	326	17.4	332	17.1	339	16.7	343	16.4	346	16.1	346	15.8	344						
135V17DEC	3/4	561	1982	31	845		607																			
					2.3	29	1.9	31																		
		949	3354	118	1429		1303		1165		1006															
					7.4	106	7.4	112	6.9	117	6.3	118														
		1337	4725	311	2014		1925		1835		1740		1638		1526		1412		1284							
			15.1	276	15.1	285	15.1	294	14.7	301	14.2	307	13.5	309	13.1	311	12.7	309								
			2598		2529		2460		2390		2319		2245		2167		2085		1998		1820		1606			
			22	578	22	590	22	602	22	613	22	623	22	632	21	640	21	646	21	649	20	653	19.5	644		

Performance certified is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

100-180 VCRD

Catalog Number	Mtr. HP	Fan RPM	Tip Speed	Max. Watts	CFM at Static Pressure																					
					0.00" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
					Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
101V10D	1/25	1050	2749	-	585		504		399																	
					4.7	.03	4.6	.03	4.2	.04																
101V11D	1/4	1140	2985	-	635		560		479																	
					5.8	.04	5.7	.04	5.3	.05																
101V15D	1/8	1550	4058	-	864		808		754		697		628		484											
					9.9	.10	9.8	.10	9.7	.11	9.4	.11	9.0	.12	8.6	.11										
101V17D	1/6	1725	4516	-	961		911		862		813		760		695		569									
					11.5	.14	11.5	.14	11.4	.15	11.3	.15	10.9	.15	10.5	.16	10.2	.15								
120V10D	1/6	1075	3376	-	1095		998		892		779															
					7.6	.08	7.6	.09	7.1	.09	6.5	.09														
120V11D	1/6	1140	3581	-	1161		1070		971		868		733													
					8.7	.09	8.7	.10	8.3	.11	7.7	.11	7.1	.11												
120V13D	1/4*	1300	4084	-	1324		1244		1161		1072		981		867											
						11.4	.14	11.4	.15	11.1	.16	10.6	.16	10.0	.16	9.4	.16									
120V15D	1/4*	1550	4869	-	1579		1512		1444		1372		1298		1223		1143		1047		872					
						14.9	.24	14.9	.25	14.9	.26	14.5	.26	14.2	.27	13.9	.27	13.5	.28	13.2	.28	13.0	.27			
120V17D	1/3	1725	5417	-	1757		1697		1637		1574		1509		1442		1374		1304		1227		946			
					17.6	.33	17.6	.34	17.6	.35	17.4	.36	17.1	.37	16.7	.37	16.4	.37	16.1	.38	15.8	.38	15.2	.36		
135V10D	1/6	1075	3795	-	1656		1550		1441		1324		1177													
					9.6	.14	9.6	.15	9.2	.16	8.6	.16	8.0	.16												
135V11D	1/6	1140	4029	-	1756		1657		1555		1447		1325		1140		1325									
					11.2	.16	11.2	.18	10.9	.18	10.3	.19	9.7	.19	9.1	.19	9.7	.19								
135V13D	1/2*	1300	4595	-	2002		1915		1827		1736		1640		1535		1640		1152							
						14.6	.24	14.6	.26	14.5	.27	14.0	.28	13.5	.28	12.8	.28	13.5	.28	11.8	.27					
135V15D	1/2*	1550	5478	-	2387		2315		2241		2167		2091		2012		2091		1841		1736		1358			
						19.0	.41	19.0	.43	19.0	.44	18.8	.46	18.4	.47	18.1	.47	18.4	.47	17.5	.48	17.1	.48	16.5	.45	
135V17D	3/4	1725	6089	-	2657		2592		2526		2459		2392		2323		2253		2180		2103		1922	1614		
					23	.56	23	.58	23	.60	23	.62	23	.63	23	.64	22	.65	22	.65	22	.66	21	.67	21	.64
150R10D	1/3	1075	4225	-	2272		2154		2035		1910		1775		1601		1258									
					12.1	.23	12.1	.25	11.9	.26	11.4	.27	10.8	.27	10.2	.27	9.6	.25								
150R11D	1/3	1140	4477	-	2409		2298		2186		2071		1948		1808		1948									
					13.9	.27	13.9	.29	13.7	.31	13.3	.32	12.7	.32	12.1	.32	12.7	.32								
150R13D	3/4*	1300	5105	-	2747		2650		2553		2453		2351		2244		2351		1989		1791					
						18.0	.41	18.0	.43	18.0	.45	17.6	.46	17.2	.47	16.6	.47	17.2	.47	15.6	.48	15.1	.48			
150R15D	3/4*	1550	6087	-	3275		3194		3113		3030		2947		2862		2947		2685		2590		2365	1979		
						24	.69	24	.72	24	.74	24	.76	23	.78	23	.79	23	.78	22	.80	22	.81	21	.82	21
165R10D	1/3	1075	4644	-	2925		2728		2543		2359		2156		1981		1696									
					14.9	.37	14.9	.38	14.8	.39	14.4	.39	13.8	.39	13.3	.39	12.8	.39								
165R11D	3/4	1140	4924	-	3194		3041		2894		2753		2602		2428		2602		2050							
					16.9	.48	16.9	.50	16.9	.52	16.4	.54	16.0	.55	15.4	.55	16.0	.55	14.4	.55						
180R10D	3/4	1075	5066	-	4065		3936		3805		3667		3518		3344		3518		2899		2646					
					16.4	.61	16.4	.63	16.3	.65	15.6	.67	14.9	.69	14.4	.70	14.9	.69	13.6	.70	13.2	.69				
180R11D	3/4	1140	5369	-	4310		4189		4066		3939		3803		3653		3474		3261		3047					
					17.9	.73	17.9	.75	17.9	.77	17.2	.79	16.5	.81	15.9	.83	15.5	.84	15.2	.84	14.8	.83				

Performance certified is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels. *Motor is a 2-speed 1300/1550 RPM motor.

150 VCRDEC-HP / 165-180 VCRDEC-XP Data

150 VCRDEC-HP

Catalog Number	HP	Fan RPM	Tip Speed	Max Watts	CFM at Static Pressure																					
					0.00" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
					Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts
150VH17DEC	1/2	543	2132	20	523	355																				
		937	3679	78	903	819	724	610	471																	
		1331	5226	209	1282	1224	1164	1101	1032	953	871	783	677	206												
		1725	6774	443	1662	1617	1572	1525	1478	1429	1377	1321	1260	1134	996											
					14.8	360	14.8	370	14.8	380	14.8	390	14.8	401	14.7	421	14.6	428	14.6	433	14.4	441	13.7	443		

165-180 VCRDEC-XP

Catalog Number	HP	Fan RPM	Tip Speed	Max Watts	CFM at Static Pressure																					
					0.00" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
					Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts	Sone	Watts
165VX17DEC	1/2	528	2280	20	465	350																				
		927	4004	92	816	756	692	621	548	451																
		1326	5727	251	1167	1125	1083	1039	993	946	896	845	793	664												
		1725	7451	522	1518	1486	1454	1421	1388	1354	1320	1284	1248	1171	1093											
					16.4	376	16.3	389	16.1	402	16.0	416	15.8	429	15.7	443	15.5	456	15.3	469	15.0	481	14.6	501	14.2	522
180VX17DEC	3/4	555	2615	37	639	524	385																			
		945	4453	149	1089	1022	954	886	819	736	636	534														
		1335	6291	400	1538	1491	1443	1395	1347	1298	1251	1205	1157	1038	897											
		1725	8128	774	1987	1950	1914	1877	1840	1803	1766	1728	1691	1617	1545											
					20	589	19.7	607	19.4	624	19.1	641	18.8	658	18.5	675	18.2	691	18.1	707	17.9	722	17.7	750	17.6	774

Performance certified is for Installation Type A: free inlet, free outlet. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

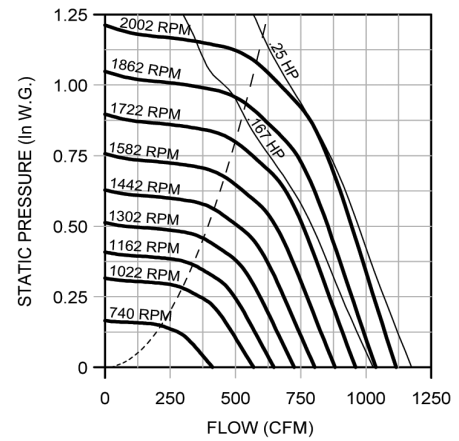
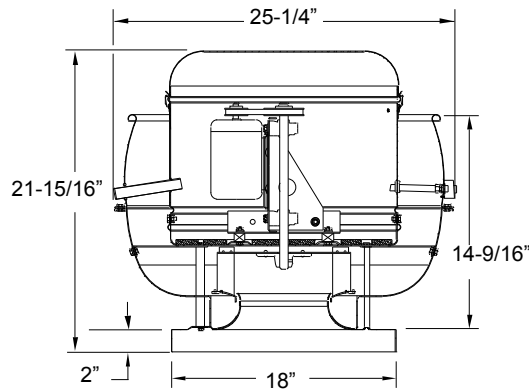
100, 120, 135 VCR Data

100 VCR

Wheel Diameter - 10"
Tip Speed (FPM) - 2.6 x RPM
Maximum RPM - 2002
Maximum BHP - .031 x (RPM/1000)³
Maximum Motor Frame - 48
Approx. Ship Wt. (Less Motor) - 30 lbs.
Roof Curb - RCG, RCA 16
Roof Opening - 13-1/2" Sq.

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .080
Base - .063

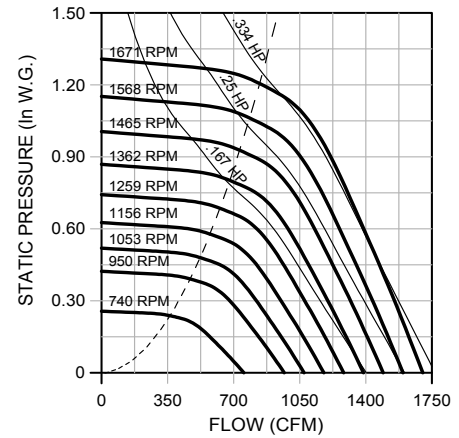
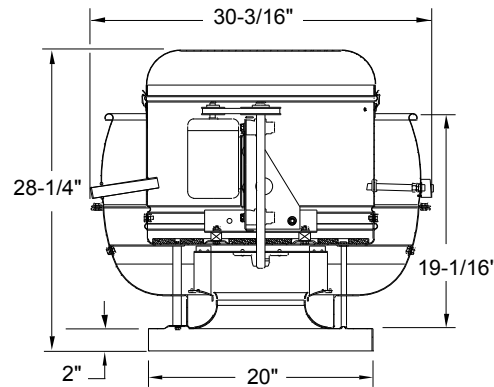


120 VCR

Wheel Diameter - 12"
Tip Speed (FPM) - 3.1 x RPM
Maximum RPM - 1669
Maximum BHP - .072 x (RPM/1000)³
Maximum Motor Frame - 56
Approx. Ship Wt. (Less Motor) - 61 lbs.
Roof Curb - RCG, RCA-18
Roof Opening - 15-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .063
Base - .063

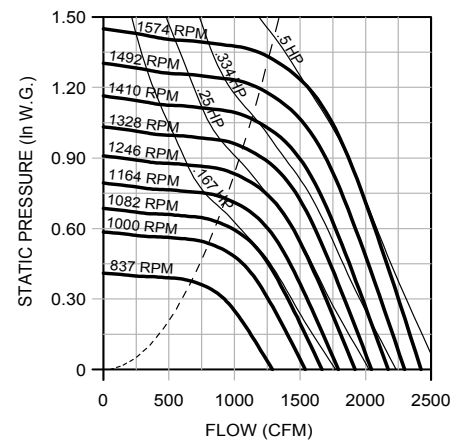
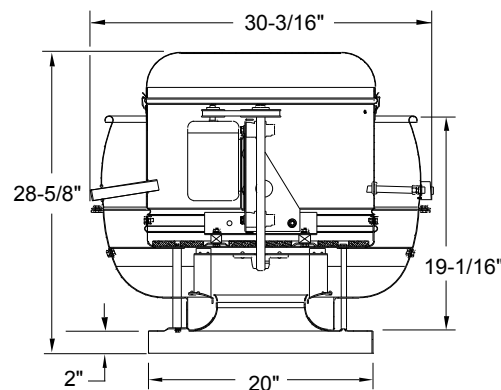


135 VCR

Wheel Diameter - 13.5"
Tip Speed (FPM) - 3.5 x RPM
Maximum RPM - 1574
Maximum BHP - .13 x (RPM/1000)³
Maximum Motor Frame - 56
Approx. Ship Wt. (Less Motor) - 66 lbs.
Roof Curb - RCG, RCA - 18
Roof Opening - 15-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .063
Base - .063



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan zones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical zone levels.

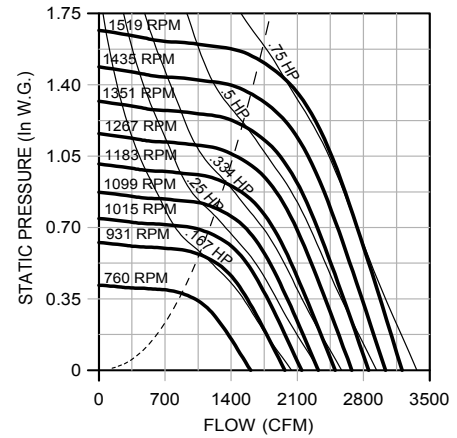
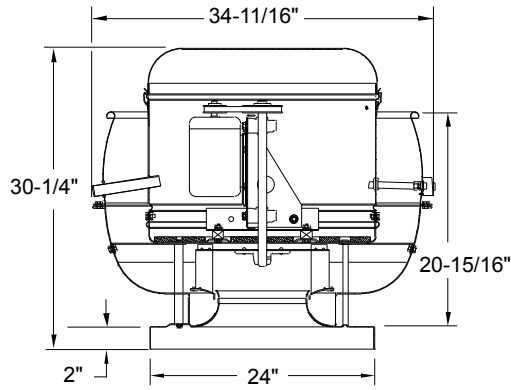
150 VCR/VCR-HP Data

150 VCR

Wheel Diameter - 15"
Tip Speed (FPM) - 3.9 x RPM
Maximum RPM - 1519
Maximum BHP - .22 x (RPM/1000)³
Maximum Motor Frame - 56
Approx. Ship Wt. (Less Motor) - 77 lbs.
Roof Curb - RCG, RCA - 22
Roof Opening - 19-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .063
Base - .063

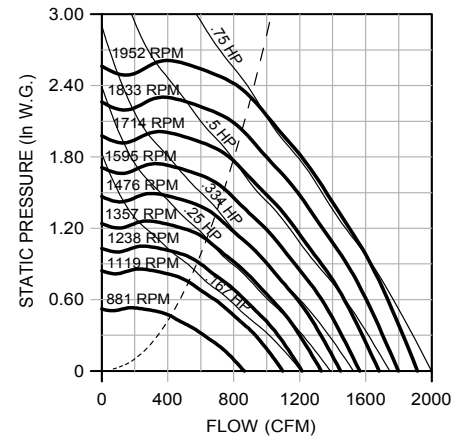
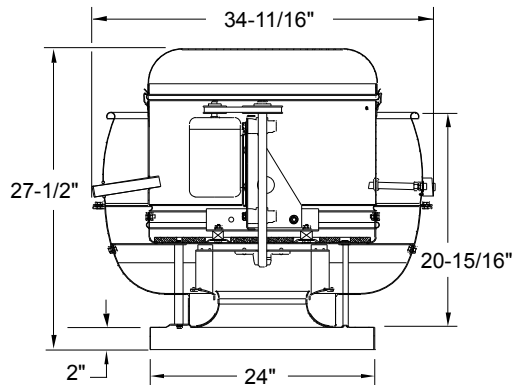


150 VCR-HP

Wheel Diameter - 15"
Tip Speed (FPM) - 3.9 x RPM
Maximum RPM - 1952
Maximum BHP - .10 x (RPM/1000)³
Maximum Motor Frame - 143T
Approx. Ship Wt. (Less Motor) - 77 lbs.
Roof Curb - RCG, RCA - 22
Roof Opening - 19-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .063
Base - .063



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

150 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP			
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
150V2B	1/6 15 lbs.	760	2984	1606		1439		1254		889																	
				6.0	.08	5.9	.09	5.3	.10	4.7	.09																
		832	3267	1758		1606		1444		1238																	
				7.1	.11	7.0	.12	6.6	.12	5.9	.13																
		904	3550	1910		1770		1625		1462		1193															
				8.4	.14	8.4	.15	8.0	.16	7.4	.16	6.8	.16														
150V3B	1/4 15 lbs.	972	3817	2054		1924		1790		1647		1468															
				9.7	.17	9.7	.19	9.4	.20	8.9	.20	8.3	.20														
		1040	4084	2198		2076		1952		1822		1677		1469													
				11.3	.21	11.3	.22	11.1	.24	10.5	.24	9.9	.25	9.4	.25												
150V4B	1/3 19 lbs.	1149	4512	2428		2318		2207		2093		1971		1835		1648											
				14.1	.28	14.1	.30	14.0	.31	13.6	.32	13.0	.33	12.4	.33	11.8	.33										
150V5B	1/2 23 lbs.	1235	4849	2610		2508		2405		2299		2190		2074		1940		1756									
				16.6	.35	16.6	.37	16.5	.39	16.1	.40	15.7	.40	15.0	.41	14.4	.41	13.8	.41								
		1320	5183	2789		2694		2598		2500		2400		2295		2183		2052		1877							
				18.4	.43	18.4	.45	18.4	.47	18.0	.48	17.6	.49	17.1	.50	16.5	.50	16.0	.51	15.7	.51						
150V6B	3/4 31 lbs.	1420	5576	3001		2912		2823		2733		2641		2546		2447		2342		2221		1834					
				20	.53	20	.55	20	.58	20	.59	19.8	.61	19.4	.61	19.0	.62	18.6	.62	18.3	.63	17.6	.61				
		1519	5965	3210		3127		3044		2960		2875		2788		2698		2605		2506		2260					
				23	.65	23	.67	23	.70	23	.72	22	.73	22	.75	22	.75	21	.76	21	.76	20	.77				

150 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
150VH2B	1/6 15 lbs.	881	3459	672		536		339																	
				4.4	.07	4.1	.07	3.7	.06																
		1162	4563	1012		932		835		606															
				7.4	.15	7.5	.16	7.6	.16	6.8	.16														
150VH3B	1/4 15 lbs.	1249	4904	1108		1039		954		763		491													
				8.5	.19	8.6	.20	8.7	.20	8.2	.20	7.3	.18												
		1336	5246	1202		1141		1069		899		689													
				9.6	.23	9.6	.24	9.8	.24	9.8	.25	8.7	.24												
150VH4B	1/3 19 lbs.	1407	5525	1277		1221		1158		1000		818		587											
				10.6	.26	10.4	.27	10.6	.28	10.9	.29	10.0	.29	9.1	.27										
		1478	5804	1352		1300		1242		1098		940		743											
				11.4	.30	11.3	.31	11.3	.32	11.6	.34	11.1	.33	10.2	.33										
150VH5B	1/2 23 lbs.	1587	6232	1466		1419		1368		1245		1102		940		753									
				12.9	.37	12.8	.38	12.8	.39	12.8	.41	12.9	.42	12.0	.41	11.3	.40								
		1696	6660	1579		1536		1489		1384		1253		1118		952		775							
				14.4	.45	14.4	.46	14.3	.47	14.3	.49	14.2	.51	13.9	.50	13.2	.50	12.6	.48						
150VH6B	3/4 31 lbs.	1824	7162	1711		1671		1629		1538		1427		1301		1174		1014		852					
				16.2	.56	16.2	.57	16.2	.58	16.2	.60	16.2	.62	16.1	.63	15.6	.63	15.1	.62	14.7	.60				
		1952	7665	1842		1805		1766		1685		1591		1477		1361		1239		1087		938			
				18.5	.68	18.5	.69	18.5	.71	18.4	.73	18.3	.75	18.3	.77	18.3	.77	17.8	.77	17.4	.76	17.1	.74		

Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

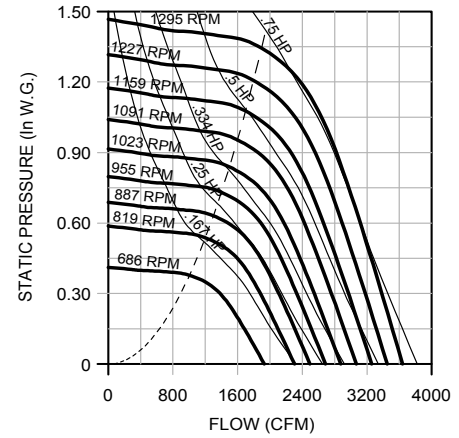
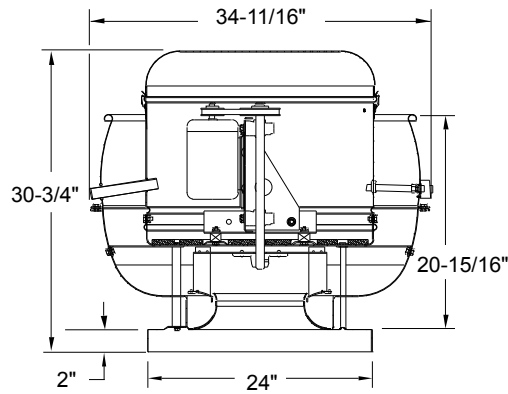
165 VCR/VCR-HP/VCR-XP Data

165 VCR

Wheel Diameter - 16.5 inches
Tip Speed (FPM) - 4.3 x RPM
Maximum RPM - 1295
Maximum BHP - .35 x (RPM/1000)³
Maximum Motor Frame - 56
Approx. Ship Wt. (Less Motor) - 83 lbs.
Roof Curb - RCG, RCA - 22
Roof Opening - 19-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .063
Base - .063

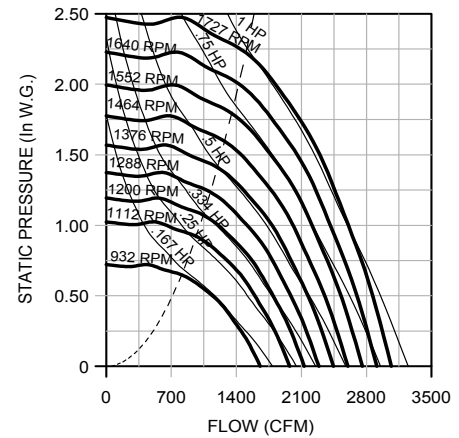
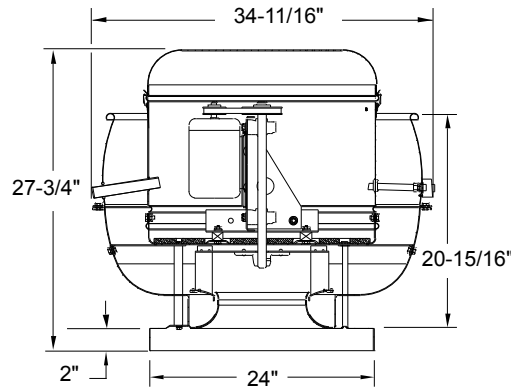


165 VCR-HP

Wheel Diameter - 16.5 inches
Tip Speed (FPM) - 4.3 x RPM
Maximum RPM - 1727
Maximum BHP - .20 x (RPM/1000)³
Maximum Motor Frame - 143T
Approx. Ship Wt. (Less Motor) - 83 lbs.
Roof Curb - RCG, RCA - 22
Roof Opening - 19-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .063
Base - .063

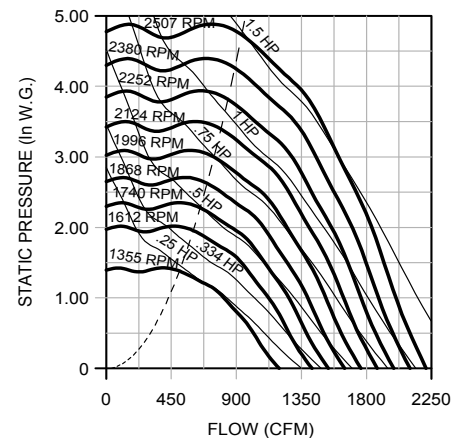
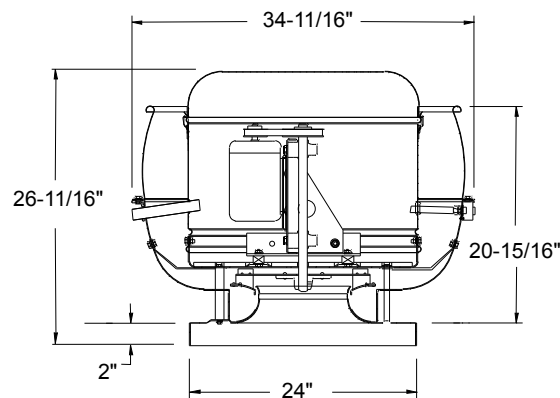


165 VCR-XP

Wheel Diameter - 16.5 inches
Tip Speed (FPM) - 4.3 x RPM
Maximum RPM - 2507
Maximum BHP - .19 x (RPM/1000)³
Maximum Motor Frame - 143T
Approx. Ship Wt. (Less Motor) - 83 lbs.
Roof Curb - RCG, RCA - 22
Roof Opening - 19-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .063
Base - .063



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

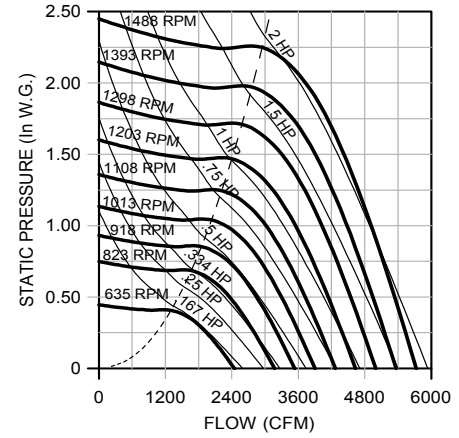
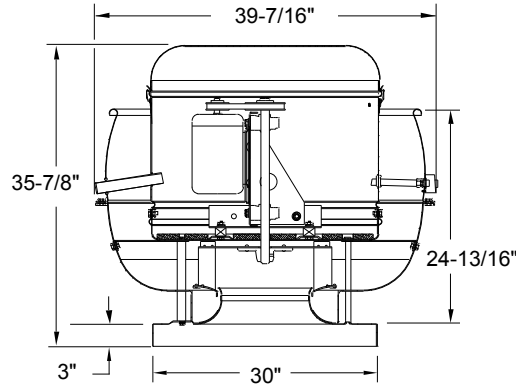
180 VCR/VCR-HP/VCR-XP Data

180 VCR

Wheel Diameter - 18 inches
Tip Speed (FPM) - 4.7 x RPM
Maximum RPM - 1488
Maximum BHP - .57 x (RPM/1000)³
Maximum Motor Frame - 145T
Approx. Ship Wt. (Less Motor) - 100 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .080
Base - .080

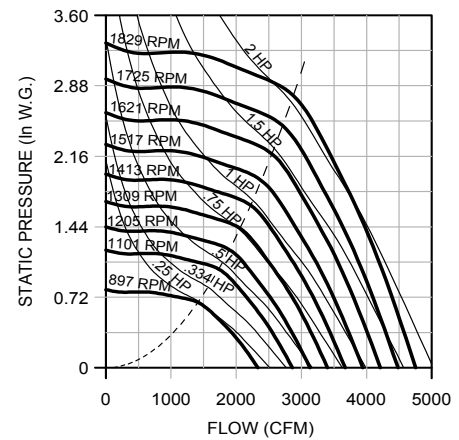
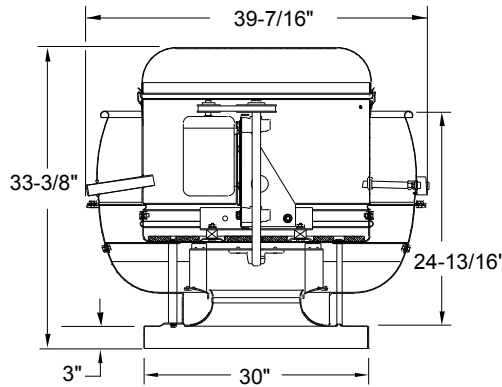


180 VCR-HP

Wheel Diameter - 18 inches
Tip Speed (FPM) - 4.7 x RPM
Maximum RPM - 1829
Maximum BHP - .31 x (RPM/1000)³
Maximum Motor Frame - 145T
Approx. Ship Wt. (Less Motor) - 100 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .080
Base - .080

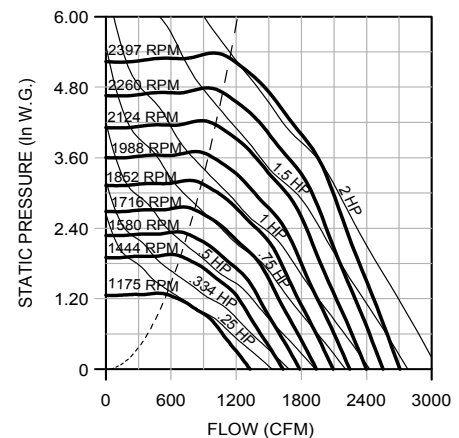
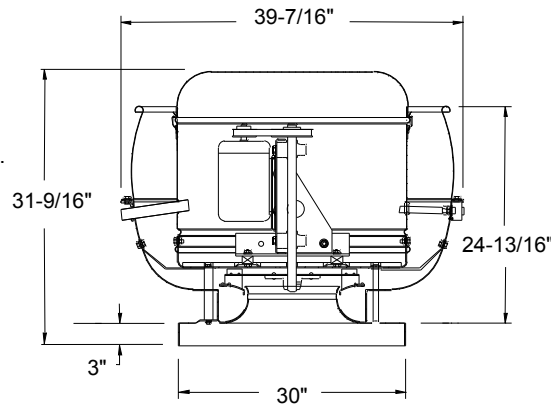


180 VCR-XP

Wheel Diameter - 18 inches
Tip Speed (FPM) - 4.7 x RPM
Maximum RPM - 2397
Maximum BHP - .15 x (RPM/1000)³
Maximum Motor Frame - 145T
Approx. Ship Wt. (Less Motor) - 100 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

180 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
180V2B	1/6 15 lbs.	635	2992	2446		2214		1945		1541															
				5.9	.14	5.6	.15	5.0	.16	4.5	.16														
180V3B	1/4 15 lbs.	730	3440	2812		2612		2395		2138		1751													
				7.6	.21	7.5	.23	6.9	.24	6.5	.25	6.0	.24												
180V4B	1/3 19 lbs.	807	3802	3109		2928		2738		2526		2272		1872											
				9.3	.29	9.3	.30	8.7	.32	8.2	.33	7.7	.33	7.3	.32										
180V5B	1/2 23 lbs.	927	4368	3571		3414		3253		3082		2893		2677		2401									
				12.2	.43	12.2	.45	11.8	.47	11.2	.49	10.7	.50	10.3	.51	9.9	.50								
180V6B	3/4 31 lbs.	1066	5023	4106		3970		3832		3690		3539		3376		3199		2997		2741					
				16.1	.66	16.1	.68	16.0	.71	15.3	.73	14.6	.74	14.2	.76	13.8	.77	13.4	.77	13.0	.76				
180V7B	1 36 lbs.	1176	5541	4530		4407		4283		4155		4023		3885		3738		3579		3405		2948			
				18.6	.89	18.6	.91	18.6	.94	18.1	.96	17.4	.98	16.7	1.00	16.3	1.01	15.9	1.02	15.5	1.03	14.8	1.02		
180V8B	1-1/2 38 lbs.	1264	5956	4869		4755		4639		4522		4402		4277		4146		4007		3860		3523		3029	
			21	1.10	21	1.13	21	1.16	20	1.18	19.7	1.20	19.0	1.23	18.4	1.24	18.0	1.26	17.6	1.27	16.9	1.28	16.3	1.25	
	1351	6366	5204		5097		4989		4880		4769		4655		4536		4413		4283		3999		3658		
180V9B	2 50 lbs.	1419	6686	5466		5364		5262		5158		5053		4946		4835		4721		4601		4345		4054	
			24	1.56	24	1.59	24	1.62	24	1.65	24	1.68	23	1.70	23	1.73	22	1.75	22	1.77	21	1.80	20	1.81	
	1488	7012	5732		5635		5537		5439		5339		5238		5134		5027		4916		4681		4423		
				26	1.80	26	1.83	26	1.86	26	1.89	26	1.92	25	1.95	25	1.98	24	2.00	24	2.02	23	2.06	22	2.08

180 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
180VH3B	1/4 15 lbs.	897	4227	2068		1910		1724																	
				8.8	.22	8.4	.23	7.9	.24																
180VH4B	1/3 19 lbs.	992	4674	2344		2212		2060		1704															
				10.6	.30	10.3	.31	9.9	.32	8.8	.33														
180VH5B	1/2 23 lbs.	1139	5367	2759		2652		2534		2258		1939													
				13.7	.44	13.5	.46	13.1	.47	12.2	.49	11.0	.51												
180VH6B	3/4 31 lbs.	1225	5772	2998		2900		2796		2557		2278													
			1311	6177	3234		3144		3050		2839		2592		2323										
	180VH7B	1 36 lbs.	1446	6814	3602		3521		3438		3260		3057		2827		2583								
20					.88	20	.90	20	.92	19.5	.95	18.7	.98	17.8	1.01	16.8	1.03								
180VH8B	1-1/2 38 lbs.	1553	7318	3891		3817		3741		3580		3403		3204		2984		2756							
			22	1.08	22	1.11	22	1.13	22	1.17	21	1.19	20	1.22	19.5	1.26	18.7	1.28							
	1660	7822	4178		4109		4039		3893		3735		3561		3367		3159		2945		2674				
180VH9B	2 50 lbs.	1744	8218	4403		4338		4271		4134		3988		3829		3655		3464		3264		3057		2785	
			27	1.52	27	1.55	27	1.57	27	1.62	26	1.66	25	1.69	25	1.72	24	1.76	23	1.80	22	1.82	22	1.80	
	1829	8618	4630		4568		4505		4376		4240		4093		3935		3761		3575		3385		3185		
				29	1.75	29	1.78	29	1.80	29	1.86	28	1.90	28	1.93	27	1.96	26	2.00	26	2.05	25	2.08	24	2.10

180 VCR-XP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
180VX3B	1/4 15 lbs.	1175	5537	848		595																			
				8.9	.25	9.1	.23																		
180VX4B	1/3 19 lbs.	1300	6126	1089		918		698																	
				10.7	.32	10.7	.34	11.0	.32																
180VX5B	1/2 23 lbs.	1492	7030	1354		1274		1156		988		774													
				14.0	.45	13.7	.47	13.6	.50	14.0	.51	14.3	.48												
180VX6B	3/4 31 lbs.	1717	8091	1650		1578		1511		1436		1322		1174		1022									
				17.8	.65	17.6	.68	17.4	.70	17.3	.73	17.2	.76	17.4	.77	17.7	.76								
180VX7B	1 36 lbs.	1805	8505	1764		1694		1629		1564		1486		1368		1227									
			19.3	.74	19.1	.77	19.0	.80	18.8	.83	18.7	.85	18.7	.89	18.9	.90									
	1894	8925	1879		1811		1746		1685		1622		1543		1422		1155								
180VX8B	1-1/2 38 lbs.	2034	9585	2058		1993		1930		1871		1814		1756		1688		1466		1216					
			24	1.02	23	1.06	23	1.10	23	1.13	23	1.16	23	1.19	23	1.22	23	1.28	23	1.27					
	2175	10249	2235		2175		2115		2056		2001		1948		1894		1760		1536		1301				
180VX9B	2 50 lbs.	2286	10772	2372		2316		2258		2201		2146		2094		2044		1938		1780		1558		1320	
			28	1.40	28	1.45	28	1.49	28	1.53	28	1.57	28	1.60	28	1.64	28	1.70	28	1.78	28	1.82	29	1.78	
	2397	11295	2508		2455		2401		2346		2292		2240		2191		2094		1981		1802		1593		
				31	1.60	30	1.65	30	1.69	30	1.74	30	1.78	30	1.82	30	1.85	30	1.92	30	1.99	30	2.08	31	2.10

Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

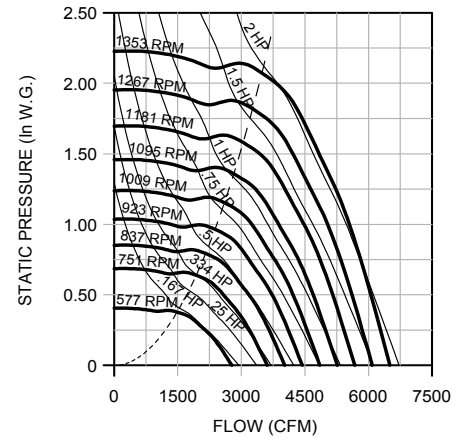
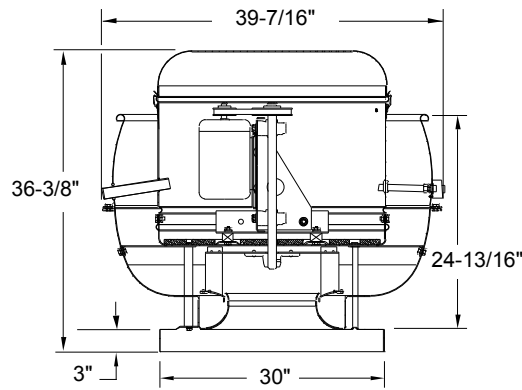
195 VCR/VCR-HP/VCR-XP Data

195 VCR

Wheel Diameter - 19.5 inches
Tip Speed (FPM) - 5.1 x RPM
Maximum RPM - 1353
Maximum BHP - .85 x (RPM/1000)³
Maximum Motor Frame - 145T
Approx. Ship Wt. (Less Motor) - 110 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .080
Base - .080

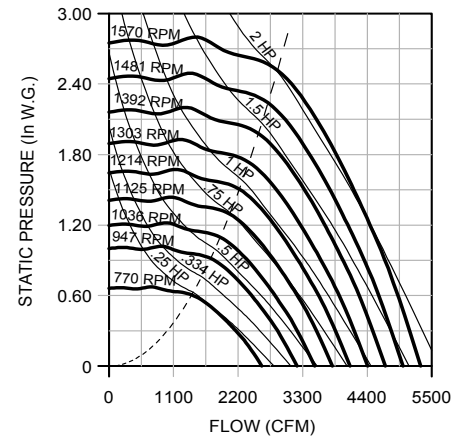
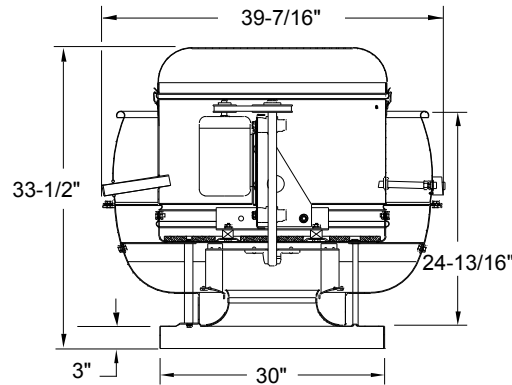


195 VCR-HP

Wheel Diameter - 19.5 inches
Tip Speed (FPM) - 5.1 x RPM
Maximum RPM - 1570
Maximum BHP - .54 x (RPM/1000)³
Maximum Motor Frame - 145T
Approx. Ship Wt. (Less Motor) - 110 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .080
Base - .080

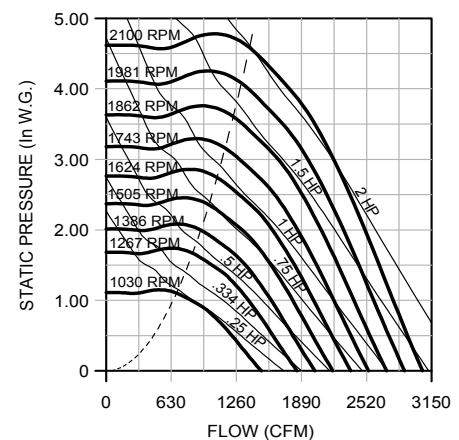
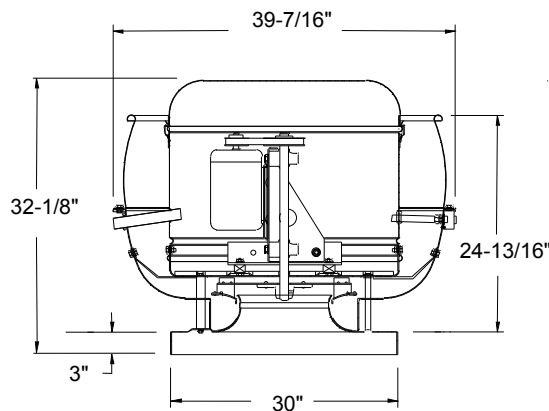


195 VCR-XP

Wheel Diameter - 19.5 inches
Tip Speed (FPM) - 5.1 x RPM
Maximum RPM - 2100
Maximum BHP - .23 x (RPM/1000)³
Maximum Motor Frame - 145T
Approx. Ship Wt. (Less Motor) - 110 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .050
Top Cap Cylinder - .040
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

195 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP				
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	
195V2B	1/6 15 lbs.	577	2945	2774		2506		2147		1510																		
				6.0	.14	5.7	.15	5.0	.16	4.6	.15																	
195V3B	1/4 15 lbs.	664	3389	3192		2963		2702		2329																		
				7.5	.21	7.4	.23	6.8	.24	6.3	.25																	
195V4B	1/3 19 lbs.	734	3747	3528		3323		3100		2816		2454																
				9.1	.29	9.1	.31	8.5	.32	8.0	.33	7.5	.33															
195V5B	1/2 23 lbs.	842	4298	4047		3869		3683		3476		3214		2899		2513												
				11.9	.44	11.9	.46	11.5	.48	10.8	.49	10.3	.50	9.9	.50	9.5	.49											
195V6B	3/4 31 lbs.	969	4946	4658		4504		4345		4178		3995		3776		3505		3231		2865								
				15.7	.67	15.7	.69	15.5	.71	14.9	.74	14.2	.75	13.8	.76	13.4	.77	12.9	.76	12.5	.74							
195V7B	1 36 lbs.	1069	5457	5139		4999		4857		4710		4554		4384		4184		3943		3695		3009						
				19.0	.89	19.0	.92	19.0	.95	18.4	.97	17.7	1.00	17.1	1.01	16.7	1.03	16.2	1.03	15.9	1.03	15.2	.98					
195V8B	1-1/2 38 lbs.	1149	5865	5523		5393		5262		5127		4986		4837		4674		4484		4259		3792						
				21	1.11	21	1.14	21	1.17	21	1.20	20	1.22	19.4	1.24	18.8	1.26	18.4	1.28	18.0	1.28	17.3	1.27					
				5903		5781		5659		5534		5405		5270		5127		4970		4791		4363		3912				
195V9B	2 50 lbs.	1290	6585	6201		6085		5969		5851		5729		5604		5472		5332		5178		4799		4386				
				25	1.57	25	1.60	25	1.64	25	1.67	24	1.70	24	1.73	23	1.75	22	1.78	22	1.79	21	1.81	21	1.80			
				6504		6394		6283		6170		6056		5938		5816		5687		5550		5226		4834				
		1353	6907	27	1.81	27	1.85	27	1.88	27	1.92	26	1.95	26	1.98	25	2.01	24	2.03	24	2.05	23	2.09	22	2.09			

195 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone
195VH3B	1/4 15 lbs.	770	3930	2251		2019		1747																		
				7.6	.23	7.1	.24	6.4	.25																	
195VH4B	1/3 19 lbs.	851	4344	2571		2374		2155																		
				9.3	.31	8.8	.32	8.2	.33																	
195VH5B	1/2 23 lbs.	977	4987	3044		2893		2718		2318																
				12.3	.45	11.8	.47	11.2	.48	10.0	.50															
195VH6B	3/4 31 lbs.	1051	5365	3315		3182		3029		2680		2254														
				14.1	.56	13.7	.58	13.3	.59	12.0	.62	10.6	.63													
				1124	5738	3579		3459		3324		3012		2656		2179										
195VH7B	1 36 lbs.	1240	6330	3994		3888		3775		3513		3217		2883		2453										
				18.8	.89	18.8	.92	18.4	.95	17.6	.98	16.1	1.01	14.7	1.03	13.6	1.01									
195VH8B	1-1/2 38 lbs.	1332	6799	4319		4223		4121		3892		3629		3342		3016		2594								
				21	1.10	21	1.13	21	1.16	19.9	1.20	18.6	1.23	17.3	1.26	16.0	1.28	14.9	1.25							
				1424	7269	4643		4554		4461		4259		4023		3768		3491		3176		2773				
195VH9B	2 50 lbs.	1497	7642	4899		4814		4727		4541		4327		4091		3840		3565		3250		2832				
				25	1.54	25	1.58	25	1.61	24	1.68	23	1.72	22	1.75	21	1.75	19.7	1.81	18.8	1.81	17.9	1.76			
				1570	8015	5154		5073		4991		4818		4326		4404		4173		3926		3654		3342		2913
				26	1.77	26	1.81	26	1.85	26	1.91	25	1.97	24	2.00	23	2.03	22	2.07	21	2.09	20	2.09	19.2	2.02	

195 VCR-XP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP		
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone
195VX3B	1/4 15 lbs.	1030	5258	823																						
				6.5	.25																					
195VX4B	1/3 19 lbs.	1139	5814	1117		879																				
				8.2	.33	7.7	.33																			
195VX5B	1/2 23 lbs.	1308	6677	1455		1324		1153		901																
				11.2	.47	10.8	.49	10.3	.51	9.7	.48															
195VX6B	3/4 31 lbs.	1505	7683	1806		1706		1596		1474		1315		1102												
				15.1	.68	14.6	.71	14.3	.74	13.8	.76	13.2	.77	12.7	.75											
195VX7B	1 36 lbs.	1583	8081	1939		1846		1747		1639		1517		1356		1150										
				16.5	.78	15.9	.81	15.6	.84	15.4	.87	14.7	.89	14.2	.90	13.7	.87									
				1660	8474	2068		1981		1889		1791		1686		1564		1402								
195VX8B	1-1/2 38 lbs.	1783	9102	2270		2190		2108		2022		1931		1834		1726		1423								
				20	1.06	19.7	1.11	19.2	1.15	18.8	1.18	18.6	1.21	18.4	1.24	17.8	1.27	16.8	1.27							
				1906	9730	2469		2394		2319		2242		2162		2077		1987		1780		1471				
195VX9B	2 50 lbs.	2003	10225	2624		2553		2482		2410		2336		2259		2177		2001		1775		1456				
				25	1.45	24	1.51	23	1.56	23	1.60	23	1.64	22	1.68	22	1.71	22	1.785	21	1.82	19.8	1.77			
				2100	10720	2778		2710		2643		2575		2506		2434		2360		2201		2020		1775		1455
				26	1.65	26	1.71	25	1.76	25	1.81	25	1.86	24	1.90	24	1.94	24	2.01	23	2.07	22	2.10	21	2.01	

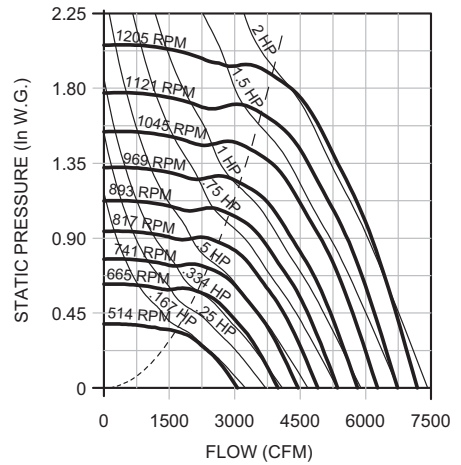
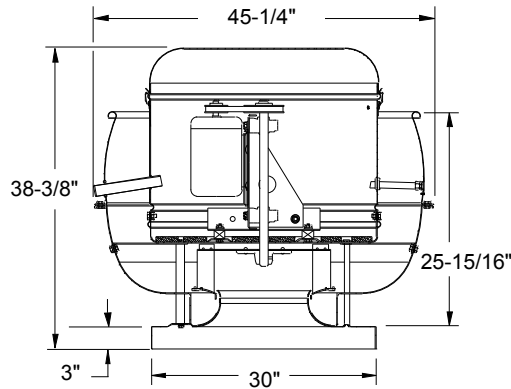
Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

210 VCR/VCR-HP/VCR-XP Data

210 VCR

Wheel Diameter - 21 inches
Tip Speed (FPM) - 5.5 x RPM
Maximum RPM - 1205
Maximum BHP - $1.2 \times (\text{RPM}/1000)^3$
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 220 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

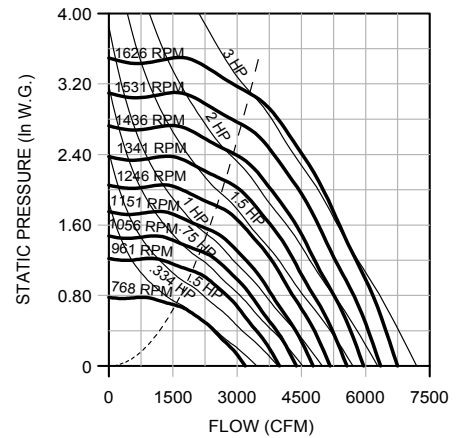
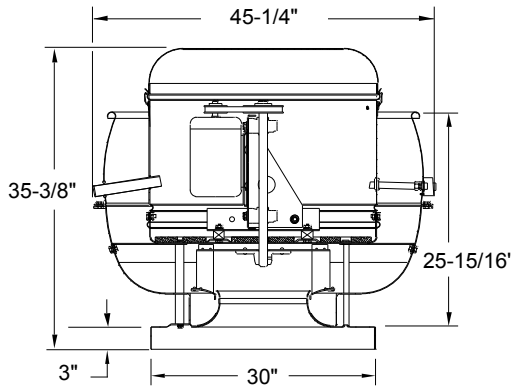
Material Gauges
Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



210 VCR-HP

Wheel Diameter - 21 inches
Tip Speed (FPM) - 5.5 x RPM
Maximum RPM - 1626
Maximum BHP - $.74 \times (\text{RPM}/1000)^3$
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 220 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

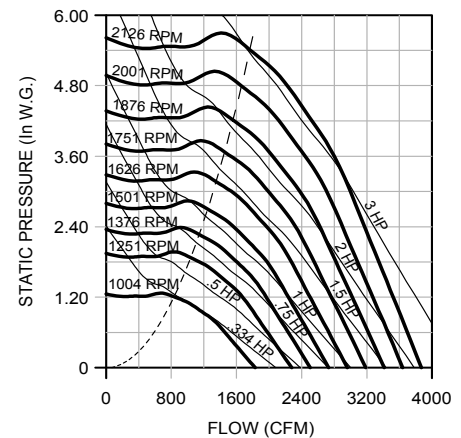
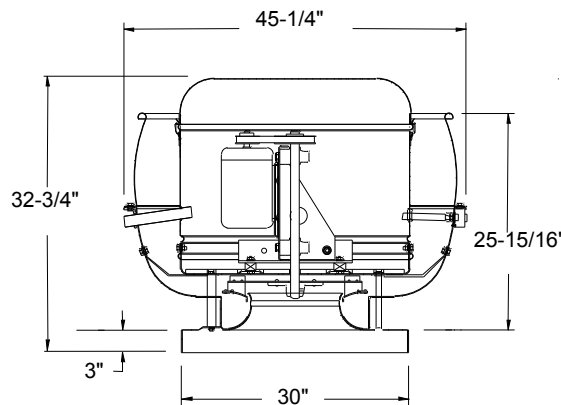
Material Gauges
Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



210 VCR-XP

Wheel Diameter - 21 inches
Tip Speed (FPM) - 5.5 x RPM
Maximum RPM - 2126
Maximum BHP - $.33 \times (\text{RPM}/1000)^3$
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 220 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges
Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

210 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	CFM at Static Pressure																					
				0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
210R2B 210SC2B	1/6 15 lbs.	514	2825	3052	2672	2247																			
210R3B 210SC3B	1/4 15 lbs.	591	3249	3509	3180	2836	2428																		
210R4B 210SC4B	1/3 19 lbs.	653	3590	3877	3580	3275	2940	2534																	
210R5B 210SC5B	1/2 23 lbs.	750	4123	4453	4195	3933	3661	3363	3019	2522															
210R6B 210SC6B	3/4 31 lbs.	863	4744	5124	4900	4674	4445	4206	3950	3667	3344	2864													
210R7B 210SC7B	1 36 lbs.	952	5233	5653	5449	5245	5039	4829	4611	4378	4126	3849	2960												
210R8B 210SC8B	1-1/2 38 lbs.	1022 1093	5618 6009	6068 6490	5879 6313	5689 6135	5498 5957	5304 5777	5106 5594	4899 5407	4681 5213	4446 5007	3904 4555												
210R9B 210SC9B	2 50 lbs.	1149 1205	6316 6624	6822 7155	6654 6994	6485 6834	6316 6672	6145 6510	5973 6346	5797 6181	5617 6012	5429 5838	5022 5467	4559											

210 VCR-HP

Catalog Number	Mtr. HP/Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
210VH4B	1/3 19 lbs.	768	4222	2769	2511	2235																			
210VH5B	1/2 23 lbs.	882	4849	3323	3093	2875	2341																		
210VRH6B	3/4 31 lbs.	1015	5580	3932	3759	3554	3176	2679	1793																
210VH7B	1 36 lbs.	1067 1120	5866 6157	4164	4008	3819	3452	3037	2485																
210VH8B	1-1/2 38 lbs.	1286	7070	5122	5007	4881	4572	4264	3965	3579	3133	2301													
210VH9B	2 50 lbs.	1352 1417	7433 7790	5406	5300	5184	4905	4600	4323	4009	3609	3164	2260												
210VH10B	3 74 lbs.	1521 1626	8362 8939	6131	6038	5942	5725	5462	5191	4944	4688	4374	4008	3618											

210 VCR-XP

Catalog Number	Mtr. HP/Drv. Wt.	Fan RPM	Tip Speed	1" SP		1-1/4" SP		1-1/2" SP		1-3/4" SP		2" SP		2-1/4" SP		2-1/2" SP		3" SP		3-1/2" SP		4" SP		4-1/2" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
210VX4B	1/3 19 lbs.	1004	5519	1127																					
210VX5B	1/2 23 lbs.	1153	6338	1558	1357	1102																			
210VX6B	3/4 31 lbs.	1327	7295	1950	1832	1684	1487	1253																	
210VX7B	1 36 lbs.	1464	8048	2243	2138	2030	1905	1734	1552	1301															
210VX8B	1-1/2 38 lbs.	1572 1681	8642 9241	2469	2370	2273	2172	2055	1900	1732															
210VX9B	2 50 lbs.	1767 1852	9714 10181	2869	2780	2691	2605	2518	2426	2322	2041	1710													
210VX10B	3 74 lbs.	1989 2126	10935 11688	3313	3235	3156	3077	2999	2922	2845	2679	2459	2192	1872											

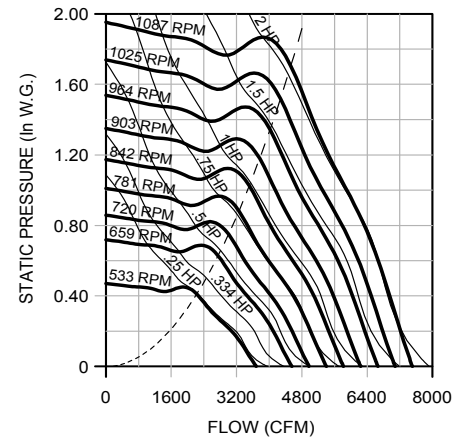
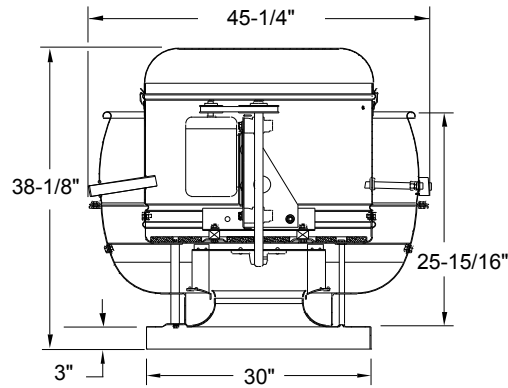
Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

225 VCR/VCR-HP/VCR-XP Data

225 VCR

Wheel Diameter - 22.5 inches
Tip Speed (FPM) - 5.9 x RPM
Maximum RPM - 1087
Maximum BHP - 1.6 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 242 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

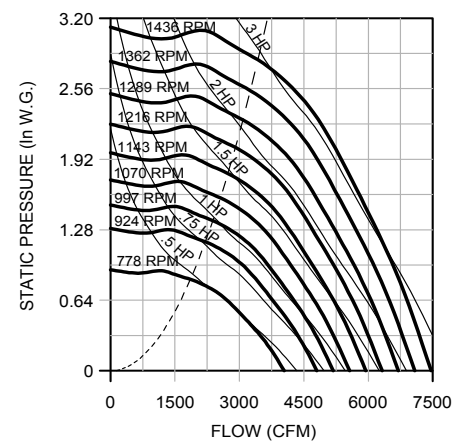
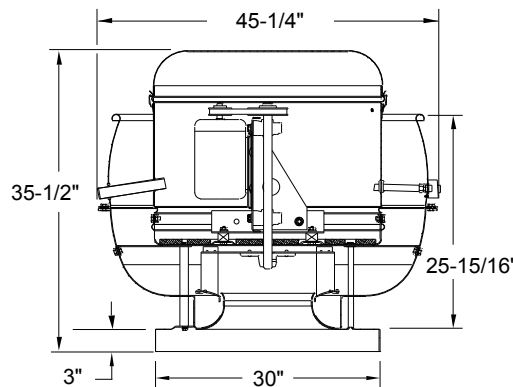
Material Gauges
Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



225 VCR-HP

Wheel Diameter - 22.5 inches
Tip Speed (FPM) - 5.9 x RPM
Maximum RPM - 1436
Maximum BHP - 1.1 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 242 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

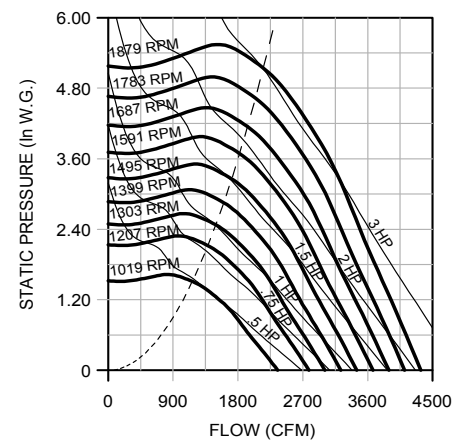
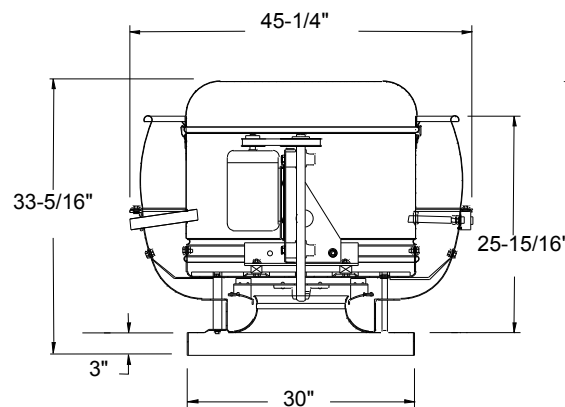
Material Gauges
Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



225 VCR-XP

Wheel Diameter - 22.5 inches
Tip Speed (FPM) - 5.9 x RPM
Maximum RPM - 1879
Maximum BHP - .48 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 242 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges
Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

225 VCR

Catalog Number	Mtr. HP/Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP			
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
225V3B	1/4 15 lbs.	533	3139	3684		3333		2854		2357																	
				8.4	.20	8.0	.24	7.4	.24	6.6	.25																
225V4B	1/3 19 lbs.	589	3469	4071		3753		3381		2873																	
				10.2	.27	9.8	.32	9.4	.32	8.5	.33																
225V5B	1/2 23 lbs.	677	3987	4680		4400		4119		3730		3288		2938													
				13.1	.41	12.7	.49	12.3	.48	11.8	.49	10.9	.49	10.2	.50												
225V6B	3/4 31 lbs.	779	4588	5385		5138		4904		4637		4281		3887		3565											
				17.3	.63	16.8	.74	16.4	.75	16.0	.73	15.4	.74	14.7	.75	14.0	.76										
225V7B	1 36 lbs.	819	4824	5661		5426		5204		4964		4655		4280		3932		3645									
				18.9	.73	18.5	.86	18.1	.87	17.7	.85	17.2	.85	16.5	.87	15.9	.87	15.2	.89								
225V8B	1-1/2 38 lbs.	923	5436	6380		6169		5971		5771		5548		5271		4942		4612		4330							
				24	1.05	23	1.20	23	1.25	22	1.24	22	1.22	21	1.22	21	1.24	20	1.25	19.5	1.26						
225V9B	2 50 lbs.	1036	6102	6816		6616		6430		6246		6049		5822		5544		5231		4923		4422					
				27	1.28	26	1.46	26	1.52	25	1.52	25	1.49	25	1.48	24	1.50	23	1.52	23	1.52	22	1.55				
225V9B	2 50 lbs.	1087	6402	7161		6970		6793		6618		6437		6236		5997		5716		5414		4878		4427			
				29	1.48	29	1.68	28	1.75	28	1.77	27	1.74	27	1.72	27	1.72	26	1.75	25	1.76	24	1.78	23	1.81		
225V9B	2 50 lbs.	1087	6402	7514		7332		7161		6994		6824		6643		6435		6191		5913		5357		4907			
				32	1.71	32	1.92	31	2.02	31	2.04	30	2.03	30	2.00	29	1.98	29	2.00	28	2.02	27	2.04	26	2.07		

225 VCR-HP

Catalog Number	Mtr. HP/Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP			
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
225VH5B	1/2 23 lbs.	606	3569	2553		2159		1479																			
				7.3	.23	7.0	.24	6.3	.22																		
225VH6B	3/4 31 lbs.	897	5283	3634		3370		3074		2328																	
				14.2	.46	13.9	.49	13.7	.50	13.1	.50																
225VH7B	1 36 lbs.	989	5825	4315		4110		3875		3356		2659															
				17.2	.69	17.0	.72	16.7	.74	16.3	.76	15.6	.77														
225VH8B	1-1/2 38 lbs.	1063	6261	4830		4656		4459		4009		3521		2800													
				19.6	.90	19.6	.94	19.3	.97	18.7	1.02	18.4	1.03	17.5	1.02												
225VH8B	1-1/2 38 lbs.	1136	6691	5238		5082		4910		4511		4073		3584		2781											
				21	1.11	21	1.15	21	1.19	21	1.25	20	1.27	19.7	1.28	18.8	1.22										
225VH9B	2 50 lbs.	1194	7369	5638		5495		5341		4987		4588		4169		3662		2808									
				23	1.34	23	1.39	23	1.43	23	1.50	22	1.54	22	1.55	21	1.56	20	1.45								
225VH9B	2 50 lbs.	1251	7369	5953		5819		5677		5354		4985		4593		4174		3604									
				26	1.55	26	1.60	26	1.64	25	1.72	24	1.78	23	1.80	23	1.81	22	1.81								
225VH10B	3 74 lbs.	1343	7910	6262		6135		6002		5705		5364		4996		4615		4180		3542							
				28	1.78	28	1.82	28	1.87	28	1.96	27	2.03	26	2.06	26	2.07	25	2.08	24	2.06						
225VH10B	3 74 lbs.	1436	8458	6757		6641		6520		6257		5958		5628		5281		4924		4520		3958					
				34	2.18	34	2.23	34	2.28	34	2.38	33	2.47	32	2.53	32	2.55	31	2.57	31	2.58	30	2.57				
225VH10B	3 74 lbs.	1436	8458	7256		7148		7037		6801		6536		6241		5926		5600		5266		4893		4408			
				40	2.65	40	2.71	40	2.76	40	2.86	40	2.96	39	3.05	39	3.10	38	3.12	38	3.14	38	3.15	37	3.16		

225 VCR-XP

Catalog Number	Mtr. HP/Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
225VX5B	1/2 23 lbs.	1019	6002	1710		1493		1190																	
				11.5	.48	11.4	.51	11.3	.48																
225VX6B	3/4 31 lbs.	1173	6909	2147		2013		1847		1635															
				14.9	.69	14.9	.73	14.8	.76	14.7	.77														
225VX7B	1 36 lbs.	1294	7622	2474		2353		2232		2089		1908		1700											
				17.3	.89	17.2	.93	17.1	.97	17.0	1.01	16.9	1.03	16.9	1.02										
225VX8B	1-1/2 38 lbs.	1390	8187	2731		2613		2502		2388		2255		2091		1905									
				19.2	1.08	19.0	1.12	18.9	1.17	18.8	1.21	18.8	1.25	18.7	1.28	18.6	1.28								
225VX8B	1-1/2 38 lbs.	1486	8753	2986		2871		2763		2660		2553		2430		2282		1924							
				21	1.29	21	1.34	21	1.39	21	1.43	21	1.48	21	1.52	20	1.56	20	1.54						
225VX9B	2 50 lbs.	1562	9200	3185		3075		2968		2868		2770		2666		2547		2247		1852					
				23	1.48	23	1.53	23	1.58	23	1.63	22	1.68	22	1.73	22	1.77	22	1.82	22	1.75				
225VX9B	2 50 lbs.	1637	9642	3380		3274		3170		3071		2977		2882		2782		2534		2221					
				25	1.68	25	1.74	25	1.79	24	1.84	24	1.89	24	1.94	24	1.99	24	2.08	24	2.08				
225VX10B	3 74 lbs.	1718	10119	3587		3487		3387		3289		3197		3107		3017		2813		2548		2232			
				27	1.92	27	1.98	27	2.04	27	2.09	26	2.14	26	2.20	26	2.25	26	2.35	26	2.42	26	2.39		
225VX10B	3 74 lbs.	1799	10597	3793		3698		3602		3507		3415		3328		3243		3065		2847		2576		2254	
				30	2.17	29	2.24	29	2.30	29															

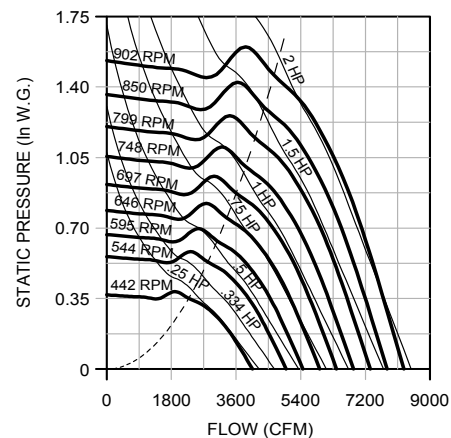
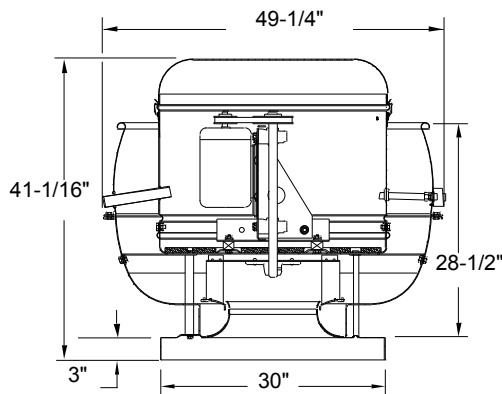
245 VCR/VCR-HP/VCR-XP Data

245 VCR

Wheel Diameter - 24.5 inches
Tip Speed (FPM) - 6.4 x RPM
Maximum RPM - 902
Maximum BHP - 2.8 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 264 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080

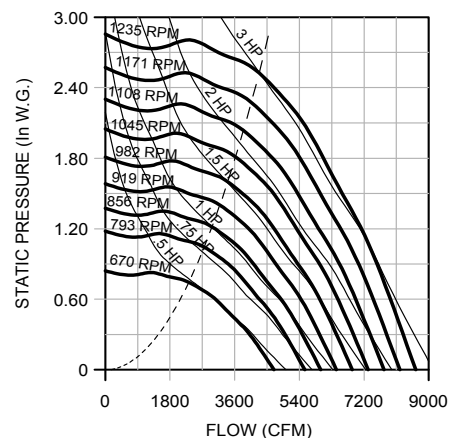
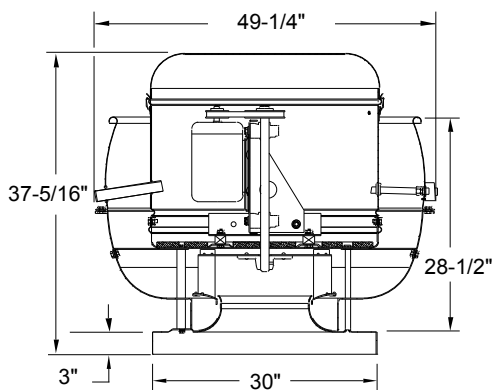


245 VCR-HP

Wheel Diameter - 24.5 inches
Tip Speed (FPM) - 6.4 x RPM
Maximum RPM (Standard Wheel) - 1185
Maximum RPM (Reinforced Wheel) - 1235
Maximum BHP - 1.6 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 264 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080

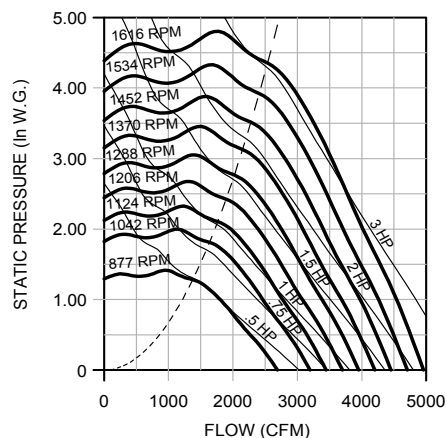
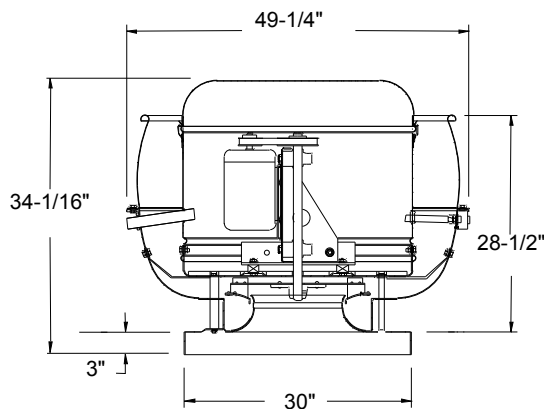


245 VCR-XP

Wheel Diameter - 24.5 inches
Tip Speed (FPM) - 6.4 x RPM
Maximum RPM (Standard Wheel) - 1616
Maximum BHP - .75 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 264 lbs.
Roof Curb - RCG, RCA - 28
Roof Opening - 25-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

245 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP															
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP												
245V3B	1/4 15 lbs.	442	2835	4058		3639		3116																															
				7.2	.22	6.8	.24	6.3	.24																														
245V4B	1/3 19 lbs.	489	3136	4490		4114		3691		3060																													
				9.0	.30	8.6	.32	8.2	.33	7.3	.33																												
245V5B	1/2 23 lbs.	561	3598	5151		4825		4481		4067		3471																											
				11.9	.45	11.6	.48	11.3	.50	11.0	.50	9.7	.49																										
245V6B	3/4 31 lbs.	646	4143	5931		5649		5359		5047		4674		4185																									
				14.8	.69	14.5	.72	14.2	.75	13.9	.77	13.6	.76	12.7	.76																								
245V7B	1 36 lbs.	679	4355	6234		5966		5692		5402		5074		4662		4104																							
				16.1		.80		15.7		.83		15.4		.86		15.1		.88		14.4		.87																	
				6537		6282		6022		5750		5453		5098		4650		3955																					
245V8B	1-1/2 38 lbs.	765	4906	7023		6786		6546		6297		6035		5741		5391		4962		4325																			
				19.7		1.14		19.4		1.18		19.0		1.21		18.7		1.25		18.3		1.27		17.3		1.27		16.4		1.25									
				7510		7288		7064		6835		6596		6341		6052		5713		5307																			
245V9B	2 50 lbs.	860	5516	7896		7685		7472		7255		7032		6797		6542		6251		5912		4947																	
				24		1.62		24		1.66		24		1.70		24		1.74		23		1.78		23		1.80		22		1.81		22		1.81					
				8281		8080		7878		7672		7461		7243		7011		6756		6465		5738																	
				27	1.86	27	1.91	26	1.96	26	2.00	26	2.04	25	2.07	25	2.08	24	2.09	24	2.08	22	2.05																

245 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP																			
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP																
245VH5B	1/2 23 lbs.	670	4297	4143		3805		3393																																			
				10.6	.47	10.0	.49	9.4	.50																																		
245VH6B	3/4 31 lbs.	771	4945	4929		4675		4369		3661																																	
				14.2	.71	13.8	.73	13.3	.74	12.0	.77																																
245VH7B	1 36 lbs.	811	5201	5233		4998		4730		4061		3255																															
				15.3		.81		15.0		.84		14.6		.86		13.4		.89		12.1		.88																					
				5528		5307		5065		4442		3783																															
245VH8B	1-1/2 38 lbs.	913	5856	5999		5796		5583		5056		4458		3732																													
				18.4		1.14		18.2		1.18		17.8		1.20		16.9		1.25		15.8		1.28		14.7		1.26																	
				6466		6279		6084		5640		5075		4522		3721																											
245VH9B	2 50 lbs.	1026	6580	6835		6657		6475		6076		5564		5036		4446																											
				22		1.59		22		1.64		22		1.68		21		1.72		19.9		1.75		18.9		1.81		18.1		1.80													
				7201		7033		6860		6494		6044		5526		5027		4353																									
245VH10B	3 74 lbs.	1156	7414	7785		7628		7470		7140		6769		6307		5832		5364		4738																							
				27		2.23		27		2.30		27		2.35		27		2.43		26		2.48		25		2.54		24		2.59		23		2.59		22		2.55					
				8358		8212		8065		7762		7437		7055		6603		6166		5725		5153																					
				31	2.70	31	2.77	31	2.84	30	2.93	30	2.99	29	3.05	28	3.12	27	3.16	26	3.16	25	3.12																				

245 VCR-XP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP															
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP												
245VX5B	1/2 23 lbs.	877	5625	1801		1469																																	
				10.8	.50	10.5	.50																																
245VX6B	3/4 31 lbs.	1009	6471	2337		2137		1898																															
				14.5	.73	14.4	.76	14.1	.77																														
245VX7B	1 36 lbs.	1113	7138	2730		2555		2374		2164		1887																											
				17.6	.94	17.6	.98	17.6	1.02	17.3	1.03	17.1	1.01																										
245VX8B	1-1/2 38 lbs.	1195	7664	3038		2866		2705		2534		2338		2099																									
				20		1.14		19.7		1.18		20		1.23		19.9		1.26		19.7		1.28		19.5		1.26													
				3348		3178		3023		2872		2711		2530		2320																							
245VX9B	2 50 lbs.	1343	8614	3586		3422		3267		3123		2978		2822		2647																							
				24		1.56		23		1.61		23		1.66		23		1.71		23		1.76		23		1.80		23		1.82									
				3820		3665		3511		3369		3233		3093		2941		2585																					
245VX10B	3 74 lbs.	1477	9473	4063		3920		3771		3628		3495		3365		3231		2928		2530																			
				27		2.03		27		2.09		27		2.14		26		2.20		26		2.25		26		2.31		26		2.36		26		2.42		25		2.38	
				4302		4170		4029		3888		3755		3629		3505		3237		2923																			
				29	2.30	29	2.37	29	2.43	28	2.48	28	2.54	28	2.60	28	2.66	27	2.75	27	2.77																		
				31	2.59	31	2.67	31	2.74	31	2.80	30	2.85	30	2.92	30	2.98	30	3.09	29	3.16	29	3.16	29	3.15														

Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free inlet hemispherical sone levels. **Shaded area indicates reinforced wheel required.**

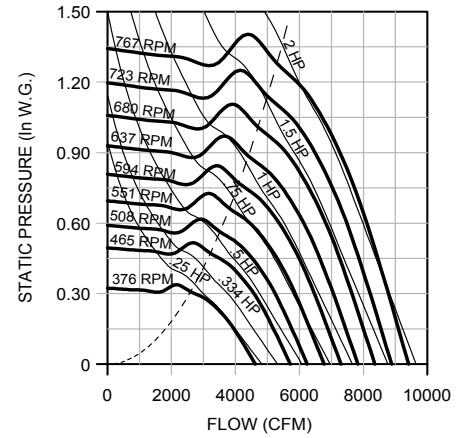
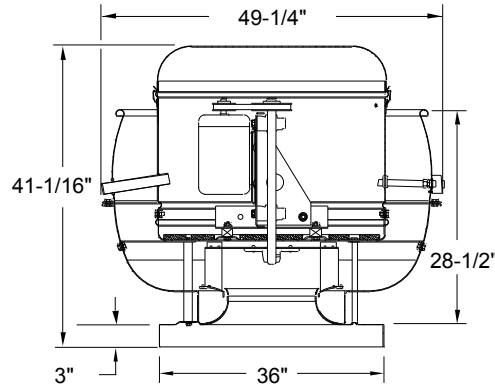
270 VCR/VCR-HP/VCR-XP Data

270 VCR

Wheel Diameter - 27 inches
Tip Speed (FPM) - 7.1 x RPM
Maximum RPM - 767
Maximum BHP - 4.6 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 286 lbs.
Roof Curb - RCG, RCA - 34
Roof Opening - 31-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080

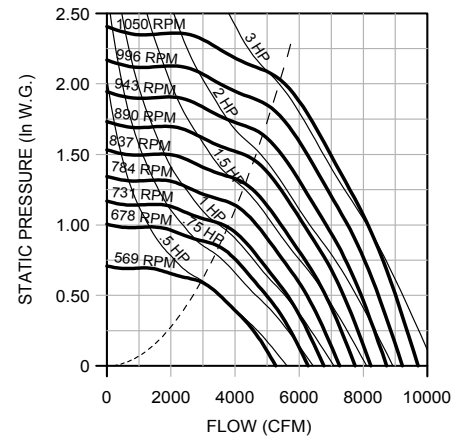
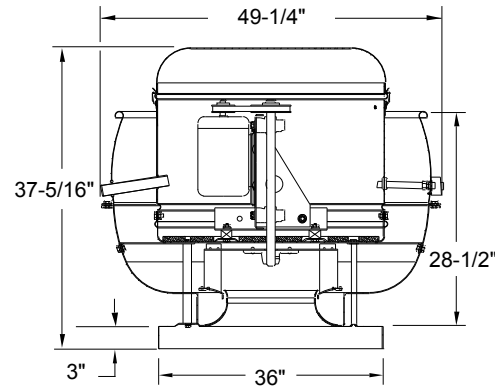


270 VCR-HP

Wheel Diameter - 27 inches
Tip Speed (FPM) - 7.1 x RPM
Maximum RPM (Standard Wheel) - 1025
Maximum RPM (Reinforced Wheel) - 1050
Maximum BHP - 2.7 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 286 lbs.
Roof Curb - RCG, RCA - 34
Roof Opening - 31-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080

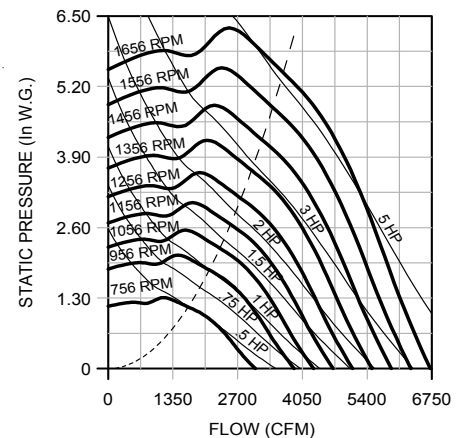
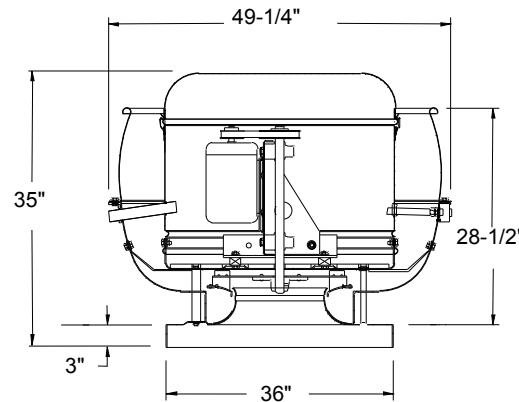


270 VCR-XP

Wheel Diameter - 27 inches
Tip Speed (FPM) - 7.1 x RPM
Maximum RPM - 1656
Maximum BHP - 1.17 x (RPM/1000)³
Maximum Motor Frame - 182T
Approx. Ship Wt. (Less Motor) - 286 lbs.
Roof Curb - RCG, RCA - 34
Roof Opening - 31-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .040
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

270 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
270V3B	1/4 15 lbs.	376	2657	4620		4073		3320																	
				5.0	.22	4.7	.24	4.1	.24																
270V4B	1/3 19 lbs.	416	2940	5112		4623		4039																	
				6.3	.30	6.0	.32	5.4	.33																
270V5B	1/2 23 lbs.	477	3371	5861		5439		4981		4381															
				8.4	.45	8.3	.48	7.5	.50	7.1	.50														
270V6B	3/4 31 lbs.	549	3880	6746		6381		6000		5576		5025		4158											
				11.5	.68	11.5	.72	10.6	.75	9.9	.77	9.4	.76	9.0	.72										
270V7B	1 36 lbs.	577	4078	7090		6743		6384		5995		5523		4889											
				12.4	.79	12.4	.83	11.6	.87	10.9	.89	10.4	.88	9.9	.87										
270V8B	1-1/2 38 lbs.	651	4601	7447		7116		6777		6416		6001		5472		4701									
				13.3	.92	13.3	.96	12.7	1.00	11.9	1.02	11.3	1.03	10.9	1.02	10.5	.98								
270V9B	2 50 lbs.	732	5174	7999		7692		7379		7052		6696		6274		5746		4965							
				14.9	1.14	14.9	1.18	14.5	1.23	13.7	1.26	13.1	1.28	12.6	1.27	12.2	1.26	11.7	1.20						
270V9B	2 50 lbs.	732	5174	8995		8722		8445		8162		7867		7549		7185		6753		6231					
				17.7	1.61	17.7	1.67	17.6	1.72	17.0	1.76	16.4	1.79	15.8	1.81	15.4	1.81	15.0	1.80	14.6	1.78				
270V9B	2 50 lbs.	767	5421	9425		9164		8901		8633		8355		8062		7740		7368		6930		5565			
				18.9	1.86	18.9	1.92	18.9	1.97	18.4	2.01	17.8	2.05	17.3	2.08	16.9	2.09	16.5	2.08	16.1	2.06	15.4	1.89		

270 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
270VH5B	1/2 23 lbs.	569	4022	4576		4080		3523																	
				9.9	.47	9.1	.50	8.4	.50																
270VH6B	3/4 31 lbs.	655	4629	5489		5136		4685		3652															
				13.9	.70	12.8	.73	12.0	.76	10.8	.76														
270VH7B	1 36 lbs.	689	4870	5837		5518		5122		4200															
				15.6	.81	14.5	.84	13.6	.87	12.3	.89														
270VH8B	1-1/2 38 lbs.	777	5492	6721		6461		6164		5406		4565													
				18.7	1.14	18.2	1.18	17.2	1.21	15.7	1.27	14.7	1.27												
270VH9B	2 50 lbs.	872	6163	7245		7008		6747		6098		5339		4405											
				21	1.37	21	1.42	19.5	1.46	17.8	1.53	16.7	1.56	16.1	1.53										
270VH9B	2 50 lbs.	915	6467	7656		7434		7195		6622		5908		5156											
				22	1.58	22	1.63	22	1.68	19.7	1.75	18.4	1.80	17.6	1.80										
270VH10B	3 74 lbs.	983	6948	8075		7867		7645		7132		6477		5789		4947									
				24	1.82	24	1.87	24	1.92	22	2.00	20	2.07	19.3	2.09	18.7	2.05								
270VH10B	3 74 lbs.	1050	7422	8734		8542		8342		7898		7352		6713		6066		5232							
				27	2.24	27	2.29	27	2.35	25	2.44	24	2.53	23	2.58	22	2.59	21	2.54						
270VH10B	3 74 lbs.	1050	7422	9378		9201		9018		8622		8159		7595		6995		6378		5574					
				31	2.71	31	2.77	31	2.83	29	2.94	27	3.03	26	3.11	25	3.15	24	3.15	23	3.09				

270 VCR-XP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
270VX5B	1/2 23 lbs.	756	5343	1974																					
				12.1	.51																				
270VX6B	3/4 31 lbs.	869	6142	2661		2374																			
				14.3	.74	14.5	.77																		
270VX7B	1 36 lbs.	959	6778	3117		2907		2647		2270															
				16.3	.96	16.3	1.00	16.5	1.03	17.0	1.02														
270VX8B	1-1/2 38 lbs.	1101	7782	3781		3624		3451		3253		3015		2697											
				19.3	1.37	19.3	1.44	19.3	1.49	19.4	1.53	19.7	1.56	20	1.56										
270VX9B	2 50 lbs.	1157	8178	4035		3888		3732		3559		3362		3125		2811									
				21	1.56	21	1.63	21	1.69	21	1.75	21	1.79	22	1.81	22	1.81								
270VX9B	2 50 lbs.	1214	8581	4289		4150		4008		3853		3682		3488		3256									
				24	1.77	23	1.85	23	1.92	23	1.98	23	2.03	23	2.07	24	2.09								
270VX10B	3 74 lbs.	1304	9217	4688		4558		4428		4294		4151		3994		3820		3379							
				27	2.14	27	2.23	27	2.31	27	2.38	27	2.45	27	2.51	27	2.55	28	2.59						
270VX10B	3 74 lbs.	1393	9846	5079		4954		4833		4711		4585		4452		4307		3974		3529					
				32	2.56	31	2.65	31	2.74	31	2.83	31	2.91	31	2.98	31	3.04	31	3.13	32	3.16				
270VX11B	5 98 lbs.	1525	10779	5655		5537		5423		5312		5201		5088		4971		4713		4414		4043		3519	
				39	3.27	38	3.38	38	3.48	38	3.58	38	3.68	38	3.76	38	3.85	38	3.99	38	4.10	39	4.15	40	4.10
270VX11B	5 98 lbs.	1656	11705	6223		6110		6001		5897		5794		5693		5590		5375		5137		4869		4552	
				43	4.09	43	4.22	43	4.34	42	4.45	42	4.56	42	4.66	42	4.76	42	4.94	42	5.10	42	5.22	43	5.3

Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels. **Shaded area indicates reinforced wheel required.**

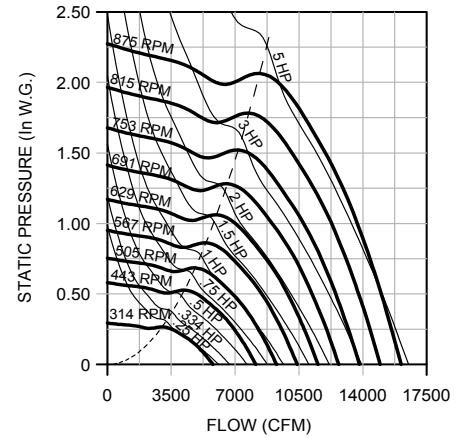
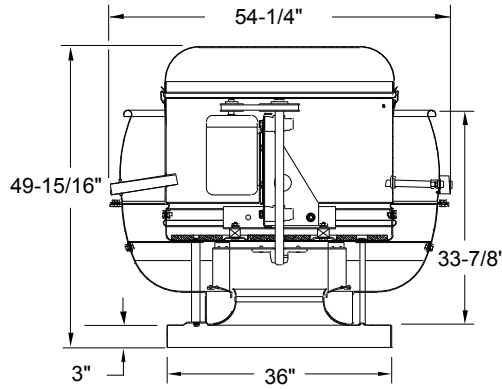
300 VCR/VCR-HP/VCR-XP Data

300 VCR

Wheel Diameter - 30 inches
Tip Speed (FPM) - $7.9 \times \text{RPM}$
Maximum RPM (Standard Wheel) - 837
Maximum RPM (Reinforced Wheel) - 875
Maximum BHP - $7.9 \times (\text{RPM}/1000)^3$
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 336 lbs.
Roof Curb - RCG, RCA - 34
Roof Opening - 31-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

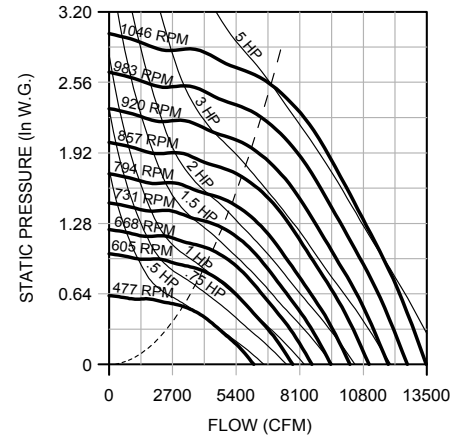
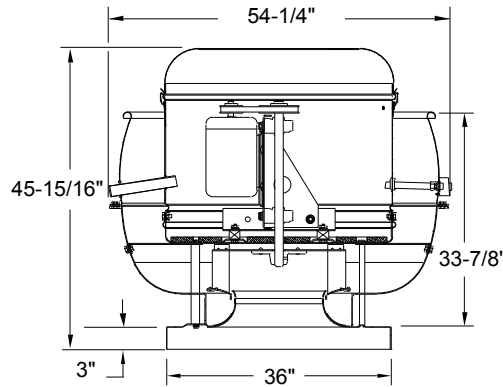


300 VCR-HP

Wheel Diameter - 30 inches
Tip Speed (FPM) - $7.9 \times \text{RPM}$
Maximum RPM (Standard Wheel) - 980
Maximum RPM (Reinforced Wheel) - 1046
Maximum BHP - $4.6 \times (\text{RPM}/1000)^3$
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 336 lbs.
Roof Curb - RCG, RCA - 34
Roof Opening - 31-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

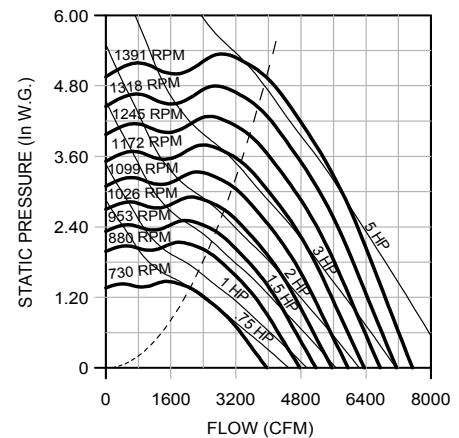
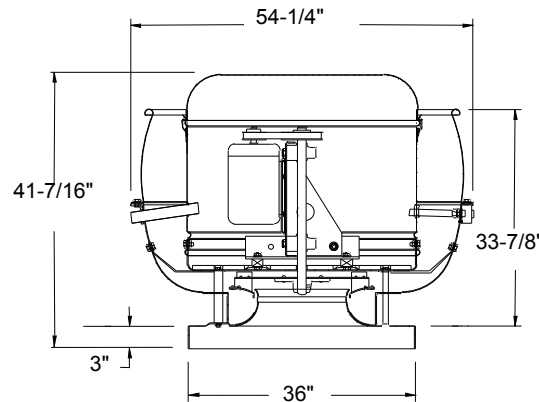


300 VCR-XP

Wheel Diameter - 30 inches
Tip Speed (FPM) - $7.9 \times \text{RPM}$
Maximum RPM - 1391
Maximum BHP - $1.97 \times (\text{RPM}/1000)^3$
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 336 lbs.
Roof Curb - RCG, RCA - 34
Roof Opening - 31-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

300 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
300V3B	1/4 15 lbs.	314	2466	5763		4932		3486																	
				4.8	.21	4.2	.24	3.3	.24																
300V4B	1/3 19 lbs.	348	2733	6387		5664		4589																	
				5.9	.29	5.4	.32	4.6	.33																
300V5B	1/2 23 lbs.	399	3133	7323		6716		5941		4788															
				7.7	.44	7.3	.47	6.6	.50	5.9	.50														
300V6B	3/4 31 lbs.	459	3604	8424		7910		7302		6532		5471													
				10.2	.67	9.8	.71	9.1	.75	8.4	.76	7.7	.76												
300V7B	1 36 lbs.	507	3981	9305		8845		8321		7709		6916		5907											
				12.4	.90	12.2	.94	11.4	.99	10.6	1.02	10.0	1.03	9.3	1.02										
300V8B	1-1/2 38 lbs.	582	4571	10682		10285		9855		9370		8822		8151		7327		6284							
				15.6	1.36	15.6	1.41	14.8	1.46	14.1	1.51	13.4	1.55	12.8	1.55	12.2	1.55	11.6	1.47						
300V9B	2 50 lbs.	641	5034	11765		11406		11027		10608		10150		9637		9023		8287		7461					
				18.2	1.81	18.2	1.87	17.7	1.93	17.0	1.99	16.3	2.04	15.7	2.07	15.1	2.08	14.5	2.07	13.9	2.05				
300V10B	3 74 lbs.	736	5780	13508		13197		12876		12534		12163		11768		11340		10862		10306		8982			
				23	2.74	23	2.81	23	2.88	22	2.95	21	3.01	21	3.07	20	3.11	19.6	3.14	19.1	3.14	18.0	3.13		
300V11B	5 98 lbs.	806	6330	14793		14509		14219		13917		13593		13248		12886		12497		12075		11058		9831	
				27	3.60	27	3.68	27	3.75	26	3.83	26	3.90	25	3.97	24	4.03	24	4.08	23	4.12	22	4.12	21	4.11
				16060		15798		15533		15260		14972		14668		14347		14013		13660		12868		11891	
		875	6872	31	4.61	31	4.69	31	4.77	31	4.85	30	4.93	29	5.01	29	5.09	28	5.16	27	5.21	26	5.28	25	5.27

300 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone
300VH5B	1/2 23 lbs.	477	3746	5050		4371		3466																		
				7.8	.48	7.1	.50	6.6	.49																	
300VH6B	3/4 31 lbs.	549	4311	6182		4607		5015																		
				10.5	.72	9.7	.74	9.0	.76																	
300VH7B	1 36 lbs.	606	4759	7030		6536		6007		4813																
				12.9	.94	12.1	.99	11.3	1.00	10.1	1.02															
300VH8B	1-1/2 38 lbs.	651	5112	7678		7244		6757		5746																
				14.8	1.15	14.1	1.20	13.4	1.23	12.0	1.27															
300VH9B	2 50 lbs.	767	6024	8312		7928		7487		6562		5467														
				17.0	1.39	16.2	1.45	15.5	1.49	14.0	1.53	12.9	1.55													
300VH10B	3 74 lbs.	823	6463	9295		8970		8600		7774		6920		5833												
				19.8	1.84	19.4	1.90	18.6	1.96	17.2	2.03	15.9	2.07	14.9	2.06											
300VH11B	5 98 lbs.	963	7563	10060		9767		9443		8695		7914		7081		5910										
				22	2.25	22	2.32	21	2.39	19.8	2.48	18.5	2.53	17.4	2.57	16.4	2.51									
300VH11B	98 lbs.	1046	8215	10832		10564		10276		9608		8882		8144		7319		6108								
				25	2.72	25	2.80	24	2.88	23	3.00	21	3.07	20	3.11	19.0	3.15	18.2	3.03							
				11947		11708		11457		10892		10245		9580		8903		8163		7185						
				28	3.53	28	3.62	28	3.71	27	3.86	25	3.97	24	4.03	23	4.08	22	4.12	21	4.06					
				13055		12837		12612		12124		11564		10956		10343		9721		9055		8249		7112		
				32	4.49	32	4.59	32	4.68	31	4.86	30	5.01	29	5.11	27	5.16	26	5.22	25	5.28	24	5.26	24	5.05	

300 VCR-XP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP		
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone
300VX6B	3/4 31 lbs.	730	5733	2786		2334																				
				12.1	.75	12.9	.77																			
300VX7B	1 36 lbs.	806	6330	3371		3029		2619																		
				13.9	.98	14.4	1.01	15.1	1.03																	
300VX8B	1-1/2 38 lbs.	866	6801	3787		3510		3171		2783																
				15.8	1.18	15.4	1.23	16.1	1.26	16.8	1.28															
300VX9B	2 50 lbs.	972	7634	4174		3938		3662		3333		2968														
				17.5	1.4	17.1	1.46	17.2	1.51	17.8	1.54	18.4	1.56													
300VX10B	3 74 lbs.	1095	8600	4472		4259		4018		3738		3411		3056												
				18.9	1.59	18.6	1.67	18.3	1.72	18.7	1.76	19.3	1.80	19.8	1.81											
300VX11B	5 98 lbs.	1280	10053	4764		4568		4353		4109		3827		3508		3164										
				20	1.79	20	1.88	19.9	1.95	19.8	2.00	20	2.04	21	2.08	22	2.08									
				5229		5051		4866		4663		4436		4179		3889		3227								
				23	2.15	23	2.26	23	2.36	22	2.43	22	2.48	23	2.53	23	2.57	25	2.56							
				5680		5516		5348		5172		4981		4770		4535		3989								
				26	2.56	26	2.68	26	2.79	25	2.89	25	2.96	25	3.02	25	3.07	27	3.15							
300VX11B	98 lbs.	1391	10924	6333		6182		6032		5879		5720		5552		5369		4954		4458		3906				
				31	3.26	31	3.38	30	3.51	30	3.63	30	3.74	30	3.84	29	3.91	30	4.02	31	4.11	32	4.12			
				6983		6843		6705		6567		6427														

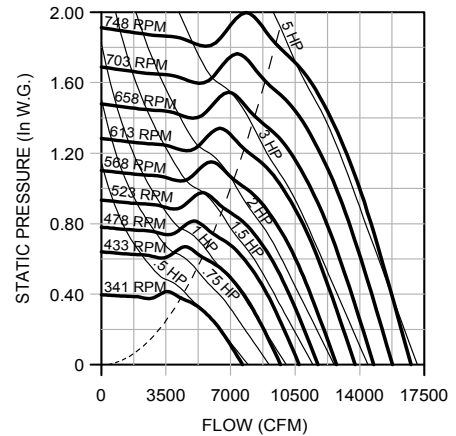
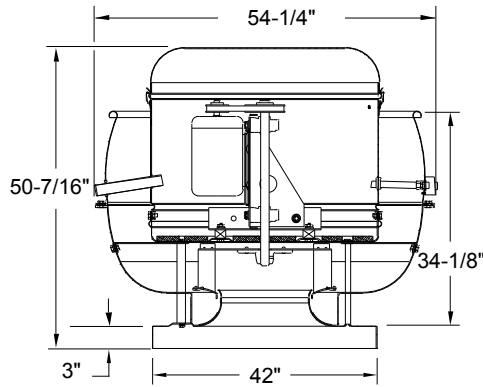
330 VCR/VCR-HP/VCR-XP Data

330 VCR

Wheel Diameter - 33 inches
Tip Speed (FPM) - 8.6 x RPM
Maximum RPM (Standard Wheel) - 716
Maximum RPM (Reinforced Wheel) - 748
Maximum BHP - 12.6 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 374 lbs.
Roof Curb - RCG, RCA - 40
Roof Opening - 37-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

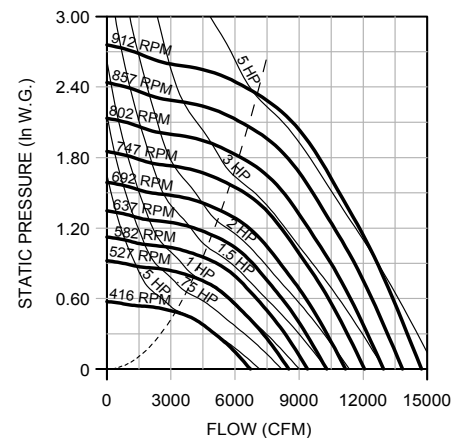
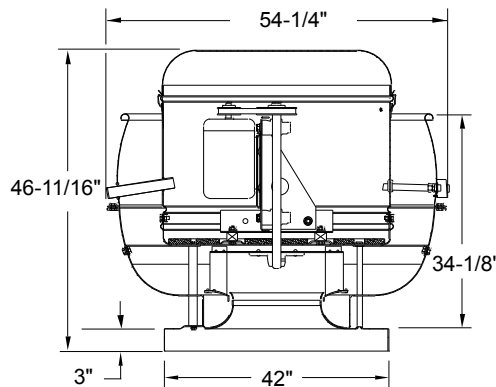


330 VCR-HP

Wheel Diameter - 33 inches
Tip Speed (FPM) - 8.6 x RPM
Maximum RPM (Standard Wheel) - 830
Maximum RPM (Reinforced Wheel) - 912
Maximum BHP - 7.0 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 374 lbs.
Roof Curb - RCG, RCA - 40
Roof Opening - 37-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

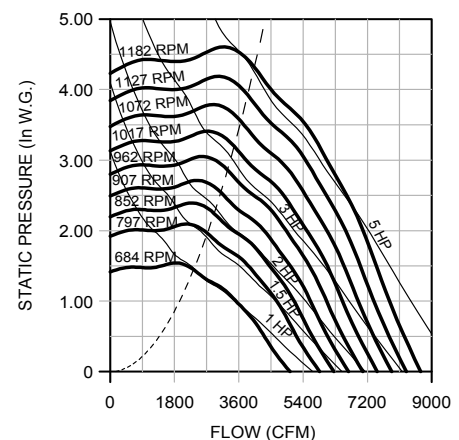
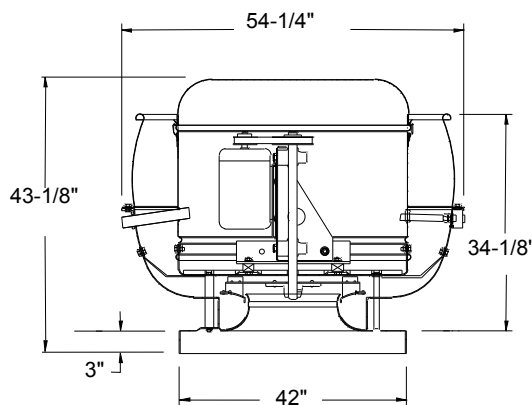


330 VCR-XP

Wheel Diameter - 33 inches
Tip Speed (FPM) - 8.6 x RPM
Maximum RPM - 1182
Maximum BHP - 3.21 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 374 lbs.
Roof Curb - RCG, RCA - 40
Roof Opening - 37-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

330 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP					
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
330V5B	1/2 23 lbs.	341	2946	7650		6920		6050		4379																			
				7.0	.45	6.5	.49	5.7	.50	4.9	.44																		
330V6B	3/4 31 lbs.	393	3395	8817		8189		7512		6630		5013																	
				9.2	.68	8.9	.73	8.0	.76	7.3	.76	6.6	.68																
330V7B	1 36 lbs.	433	3740	9714		9147		8551		7866		6934																	
				11.2	.91	10.9	.97	10.0	1.01	9.2	1.02	8.6	1.01																
330V8B	1-1/2 38 lbs.	498	4302	11173		10681		10176		9639		9024		8243		7127													
				14.6	1.39	14.6	1.45	13.7	1.51	12.9	1.55	12.1	1.56	11.5	1.54	10.8	1.49												
330V9B	2 50 lbs.	523	4518	11734		11265		10787		10286		9734		9066		8220		6813											
				16.0	1.61	16.0	1.68	15.2	1.74	14.3	1.78	13.6	1.80	12.9	1.79	12.2	1.77	11.7	1.62										
		548	4734	12294		11848		11394		10922		10416		9831		9115		8190											
				17.1	1.85	17.1	1.92	16.4	1.99	15.6	2.04	14.9	2.07	14.2	2.07	13.6	2.05	13.0	2.02										
330V10B	3 74 lbs.	588	5079	13192		12776		12354		11921		11468		10974		10400		9711		8849									
				19.0	2.29	19.0	2.36	18.4	2.43	17.8	2.49	17.1	2.54	16.5	2.56	15.8	2.55	15.2	2.53	14.6	2.50								
		629	5434	14112		13723		13331		12930		12516		12079		11598		11046		10395		8382							
				21	2.80	21	2.88	21	2.96	20	3.03	19.4	3.08	18.8	3.12	18.1	3.14	17.6	3.12	17.0	3.10	15.9	2.86						
330V11B	5 98 lbs.	689	5952	15458		15103		14746		14384		14014		13632		13231		12798		12312		11122		9180					
				25	3.68	25	3.77	25	3.85	24	3.93	23	4.00	23	4.06	22	4.10	21	4.12	21	4.12	19.6	4.06	18.5	3.76				
		748	6462	16781		16455		16127		15795		15459		15114		14761		14391		13997		13086		11937					
				28	4.71	28	4.80	28	4.90	28	4.99	27	5.07	26	5.14	26	5.20	25	5.25	25	5.27	24	5.25	22	5.19				

330 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP					
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
330VH5B	1/2 23 lbs.	416	3593	5392		4522																							
				8.0	.49	7.2	.50																						
330VH6B	3/4 31 lbs.	479	4138	6641		5951		5189																					
				10.7	.72	9.9	.75	9.1	.77																				
330VH7B	1 36 lbs.	528	4561	7553		6985		6319		4552																			
				13.0	.95	12.2	.99	11.5	1.02	10.0	1.00																		
330VH8B	1-1/2 38 lbs.	567	4898	8259		7756		7173		5850																			
				15.0	1.16	14.2	1.21	13.5	1.24	12.0	1.27																		
		606	5235	8953		8498		7990		6818		5091																	
				17.1	1.40	16.3	1.45	15.6	1.50	14.3	1.55	12.7	1.51																
330VH9B	2 50 lbs.	668	5771	10037		9640		9212		8210		7104																	
				19.9	1.85	19.5	1.91	18.8	1.96	17.5	2.05	16.1	2.08																
330VH10B	3 74 lbs.	718	6203	10900		10537		10153		9286		8292		7157															
				22	2.27	22	2.34	21	2.40	20	2.51	18.9	2.57	17.5	2.57														
		767	6626	11738		11402		11052		10285		9385		8439		7220													
				25	2.75	25	2.82	24	2.89	23	3.01	22	3.10	20	3.14	19.1	3.11												
330VH11B	5 98 lbs.	839	7248	12958		12654		12343		11680		10930		10083		9215		8146											
				28	3.56	28	3.64	28	3.72	27	3.87	26	3.99	25	4.07	24	4.12	22	4.09										
		912	7879	14186		13908		13626		13036		12395		11673		10888		10091		9164		7774							
				33	4.55	33	4.63	33	4.72	32	4.88	30	5.04	29	5.16	28	5.24	27	5.28	26	5.27	25	5.17						

330 VCR-XP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP					
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP		
330VX7B	1 36 lbs.	684	5909	3521		2913																							
				13.3	1.01	12.8	1.03																						
330VX8B	1-1/2 38 lbs.	735	6349	4058		3615		2932																					
				15.6	1.23	15.1	1.27	14.5	1.26																				
		786	6790	4558		4163		3739		3040																			
				17.0	1.46	17.1	1.52	16.5	1.56	16.1	1.54																		
330VX9B	2 50 lbs.	826	7136	4922		4580		4187		3731		3045																	
				18.0	1.65	18.4	1.74	18.0	1.79	17.6	1.81	17.4	1.76																
		866	7481	5266		4976		4613		4236		3699		3092															
				19.3	1.86	19.4	1.96	19.5	2.03	19.1	2.07	18.9	2.08	18.7	2.02														
330VX10B	3 74 lbs.	930	8034	5798		5560		5269		4925		4576		4124		3496													
				22	2.24	22	2.35	22	2.45	21	2.52	21	2.57	21	2.58	21	2.53												
		994	8587	6317		6104		5870		5588		5263		4937		4557		3487											
				24	2.66	24	2.79	24	2.90	24	3.01	24	3.08	24	3.13	24	3.15	23	3.04										
330VX11B	5 98 lbs.	1057	9131	6822		6623		6419		6190		5918		5611		5305		4463											
				26	3.13	26	3.26	26	3.39	27	3.52	27	3.62	27	3.70	26	3.75	26	3.78										
		1120	9676	7325		7132		6945		6748		6525		6265		5976		5389		4434									
				29	3.65	29	3.79	29	3.94	29	4.07	29	4.20	29	4.31	29	4.40	29	4.49	28	4.46								
1182	10211	7817		7629		7451		7272		7082		6865		6618		6069		5476		4502									

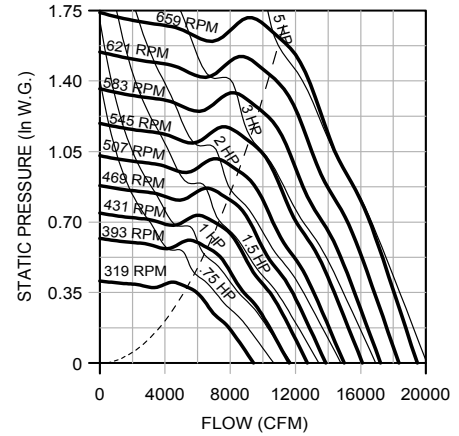
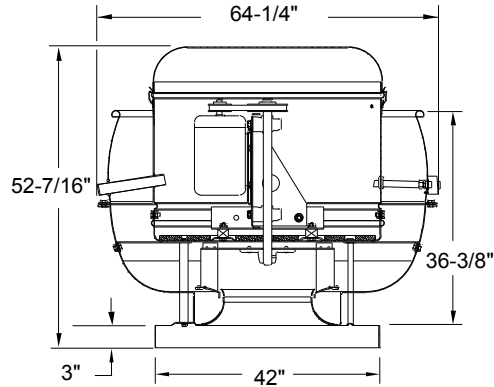
365 VCR/VCR-HP/VCR-XP Data

365 VCR

Wheel Diameter - 36.5 inches
Tip Speed (FPM) - 9.6 x RPM
Maximum RPM (Standard Wheel) - 624
Maximum RPM (Reinforced Wheel) - 659
Maximum BHP - 18.3 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 420 lbs.
Roof Curb - RCG, RCA - 40
Roof Opening - 37-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

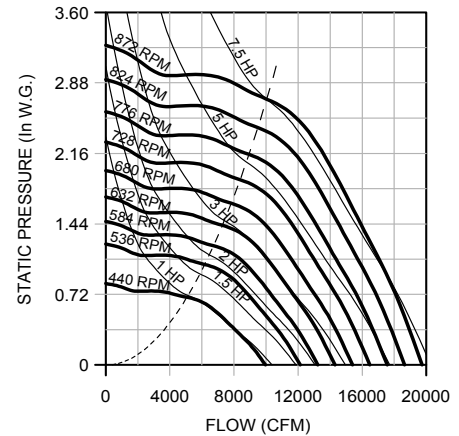
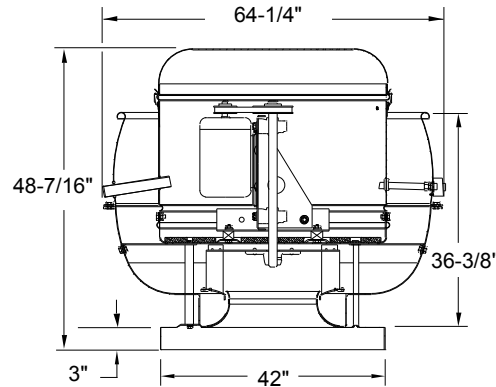


365 VCR-HP

Wheel Diameter - 36.5 inches
Tip Speed (FPM) - 9.6 x RPM
Maximum RPM (Standard Wheel) - 735
Maximum RPM (Reinforced Wheel) - 872
Maximum BHP - 12.0 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 420 lbs.
Roof Curb - RCG, RCA - 40
Roof Opening - 37-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

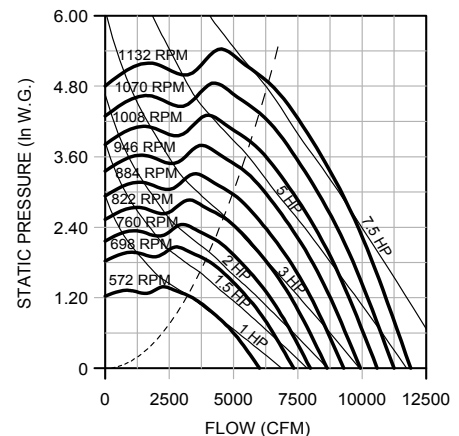
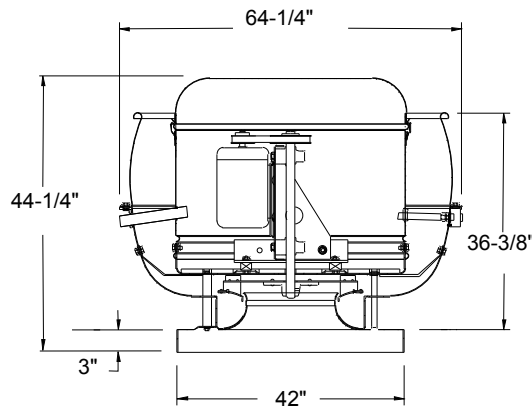


365 VCR-XP

Wheel Diameter - 36.5 inches
Tip Speed (FPM) - 9.6 x RPM
Maximum RPM - 1132
Maximum BHP - 5.48 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 420 lbs.
Roof Curb - RCG, RCA - 40
Roof Opening - 37-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

365 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP			
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
365V6B	3/4 31 lbs.	319 346	3048 3306	9425		8374		6939		5421																	
				7.6	.52	7.2	.55	6.4	.57	5.6	.59																
365V7B	1 36 lbs.	382	3650	10222		9257		8064		6842																	
				8.9	.66	8.6	.70	7.7	.72	6.9	.75																
365V8B	1-1/2 38 lbs.	438	4185	11286		10415		9479		8170		7149															
				10.9	.89	10.5	.93	9.7	.96	8.9	.99	8.2	1.02														
365V9B	2 50 lbs.	460 483	4395 4615	12940		12183		11406		10474		9322		8485													
				14.2	1.34	14.1	1.39	13.2	1.43	12.4	1.16	11.6	1.49	10.9	1.53												
365V10B	3 74 lbs.	519 555	4959 5303	13590		12870		12135		11323		10163		9336		8315											
				15.5	1.55	15.5	1.60	14.6	1.65	13.8	1.69	13.0	1.71	12.3	1.75	11.6	1.79										
365V11B	5 78 lbs.	607 659	5800 6297	14270		13584		12887		12148		11131		10177		9427											
				17.0	1.80	17.0	1.85	16.2	1.90	15.4	1.94	14.6	1.97	13.9	2.00	13.2	2.05										
				15333		14696		14050		13385		12617		11551		10780		10070									
				19.2	2.23	19.2	2.29	18.6	2.34	17.8	2.39	17.1	2.43	16.4	2.45	15.7	2.49										
				16397		15801		15199		14585		13932		13088		12113		11440		10773							
				21	2.73	21	2.79	21	2.85	19.9	2.90	19.1	2.95	18.4	2.98	17.8	3.01	17.2	3.06	16.6	3.11						
				17933		17389		16840		16284		15715		15096		14296		13383		12728		11446					
				24	3.57	24	3.64	24	3.70	23	3.77	23	3.82	22	3.87	21	3.90	21	3.93	20	3.98	18.9	4.10				
				19469		18968		18464		17955		17438		16907		16322		15583		14716		13515		12244			
				28	4.57	28	4.64	28	4.71	27	4.78	26	4.85	26	4.90	25	4.95	24	4.99	24	5.02	23	5.13	22	5.26		

365 VCR-HP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.250" SP		0.375" SP		0.500" SP		0.750" SP		1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP			
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
365VH7B	1 36 lbs.	440	4204	8756		7976		7188																			
				11.3	.97	10.8	1.00	10.1	1.02																		
365VH8B	1-1/2 38 lbs.	506	4835	10463		9834		9151		7719																	
				15.1	1.44	14.4	1.49	13.9	1.52	12.3	1.56																
365VH9B	2 50 lbs.	532 557	5083 5322	11111		10540		9893		8585		6358															
				16.7	1.67	16.0	1.72	15.3	1.76	13.9	1.80	12.4	1.72														
365VH10B	3 74 lbs.	599 640	5723 6115	11728		11204		10598		9362		7859															
				18.2	1.90	17.5	1.95	16.8	2.00	15.6	2.06	13.9	2.06														
365VH11B	5 98 lbs.	700 760	6688 7262	12749		12289		11757		10608		9416		7466													
				21	2.35	20	2.40	19.4	2.46	18.3	2.54	16.7	2.58	15.1	2.48												
365VH12B	7-1/2 120 lbs.	816 872	7797 8332	13735		13321		12854		11788		10714		9485													
				23	2.85	22	2.91	22	2.97	21	3.07	19.4	3.13	17.9	3.14												
				15163		14798		14402		13476		12491		11499		10348											
				26	3.70	26	3.76	26	3.83	24	3.96	23	4.05	22	4.10	20	4.11										
				16578		16251		15903		15109		14207		13306		12384		11327		9616							
				30	4.71	30	4.78	30	4.85	28	4.99	27	5.12	26	5.20	25	5.26	23	5.27	22	5.09						
				17890		17589		17275		16581		15774		14926		14088		13220		12240		10824					
				34	5.81	34	5.88	34	5.96	33	6.11	31	6.26	30	6.37	29	6.45	28	6.51	26	6.52	25	6.38				
				19197		18918		18631		18011		17298		16512		15723		14937		14122		13214		12026			
				38	7.07	38	7.15	38	7.23	37	7.39	36	7.55	35	7.70	34	7.81	32	7.89	31	7.94	29	7.96	28	7.86		

365 VCR-XP

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	1.000" SP		1.250" SP		1.500" SP		1.750" SP		2.000" SP		2.250" SP		2.500" SP		3.000" SP		3.500" SP		4.000" SP		4.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
365VX7B	1 36 lbs.	572	5465	4040																					
				10.8	1.02																				
365VX8B	1-1/2 38 lbs.	657	6278	5355		4807		4166																	
				13.3	1.49	13.5	1.54	14.4	1.55																
365VX9B	2 50 lbs.	691 724	6602 6918	5829		5344		4784		4112															
				14.5	1.70	14.4	1.76	15.1	1.81	16.2	1.78														
365VX10B	3 74 lbs.	778 831	7434 7940	6269		5836		5335		4770															
				15.8	1.92	15.7	2.00	15.9	2.06	16.7	2.08														
365VX11B	5 98 lbs.	909 988	8686 9441	6957		6591		6171		5698		5173		4532											
				18.0	2.31	17.7	2.42	17.6	2.50	17.9	2.56	18.8	2.58	19.9	2.53										
365VX12B	7-1/2 120 lbs.	1060 1132	10129 10817	7608		7288		6930		6526		6080		5590		5027									
				20	2.74	19.6	2.87	19.5	2.98	19.3	3.05	19.8	3.12	21	3.15	22	3.11								
				8537		8262		7967		7642		7282		6890		6465		5478							
				23	3.45	23	3.62	23	3.76	22	3.88	22	3.97	22	4.04	23	4.06	25	4.06						
				9456		9211		8955		8684		8390		8069		7721		6950		6050					
				27	4.29	26	4.49	26	4.66	26	4.82	25	4.95	25	5.05	25	5.14	26	5.28	28	5.23				

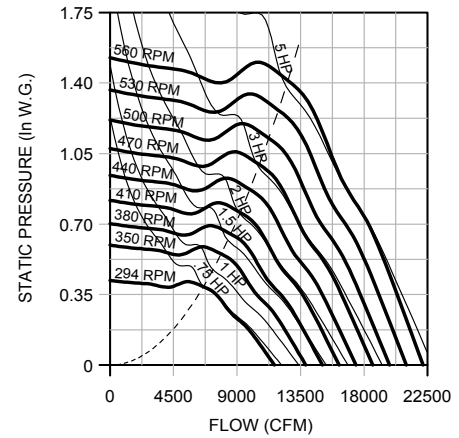
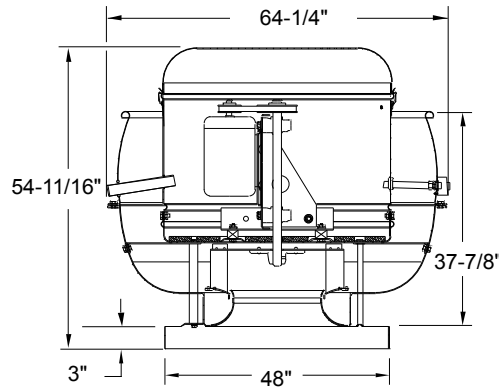
402, 445, 490 VCR Data

402 VCR

Wheel Diameter - 40.25 inches
Tip Speed (FPM) - 10.5 x RPM
Maximum RPM (Standard Wheel) - 539
Maximum RPM (Reinforced Wheel) - 560
Maximum BHP - 29.8 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 484 lbs.
Roof Curb - RCG, RCA - 46
Roof Opening - 43-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

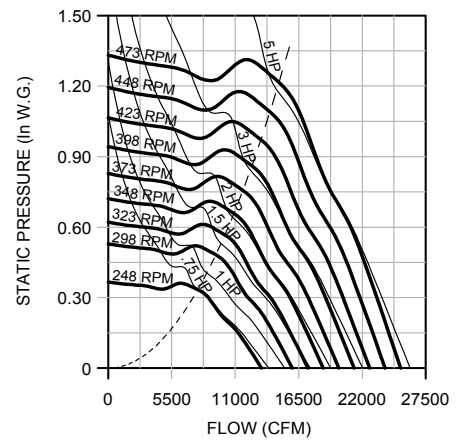
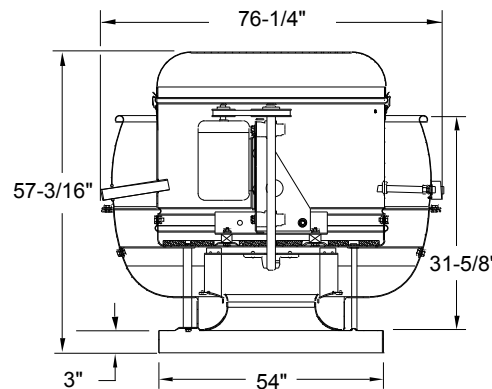


445 VCR

Wheel Diameter - 44.5 inches
Tip Speed (FPM) - 11.7 x RPM
Maximum RPM (Standard Wheel) - 463
Maximum RPM (Reinforced Wheel) - 473
Maximum BHP - 49.2 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 556 lbs.
Roof Curb - RCG, RCA - 52
Roof Opening - 49-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080

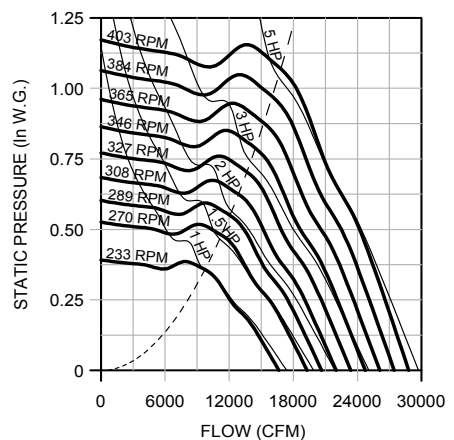
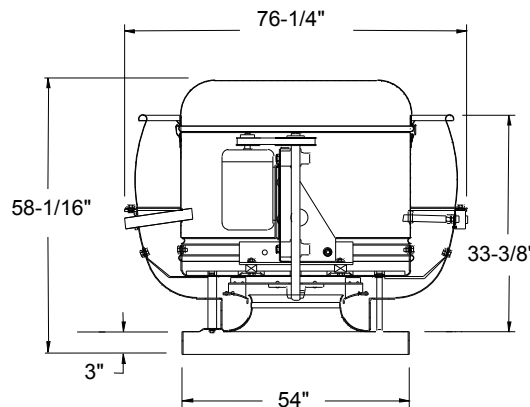


490 VCR

Wheel Diameter - 49 inches
Tip Speed (FPM) - 12.8 x RPM
Maximum RPM (Standard Wheel) - 360
Maximum RPM (Reinforced Wheel) - 403
Maximum BHP - 79.6 x (RPM/1000)³
Maximum Motor Frame - 213T
Approx. Ship Wt. (Less Motor) - 715 lbs.
Roof Curb - RCG, RCA - 52
Roof Opening - 49-1/2 inches

Material Gauges

Top Cap Lid - .063
Top Cap Cylinder - .050
Baffle - .080
Base - .080



Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sones at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free Inlet hemispherical sone levels.

402 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
402V6B	3/4 31 lbs.	294	3098	11648		10390		8682		7054															
				8.1	.66	7.6	.70	6.8	.73	6.0	.76														
402V7B	1 36 lbs.	324	3414	12836		11700		10378		8833															
				9.7	.88	9.3	.93	8.6	.96	7.7	.99														
402V8B	1-1/2 38 lbs.	348	3667	13787		12732		11600		10011		8786													
				11.2	1.09	10.9	1.15	10.0	1.19	9.2	1.21	8.4	1.26												
402V9B	2 50 lbs.	392	4130	14738		13752		12727		11292		10094				9511									
				12.7	1.34	12.5	1.39	11.7	1.44	10.9	1.47	10.0	1.51												
402V10B	3 74 lbs.	441	4647	15530		14596		13635		12443		11075		10008											
				14.1	1.57	13.9	1.62	13.1	1.67	12.2	1.71	11.4	1.74	10.7	1.79										
402V11B	5 98 lbs.	515	5426	16283		15393		14482		13456		12024		11041		9511									
				15.4	1.80	15.3	1.87	14.5	1.92	13.7	1.96	12.9	1.99	12.1	2.04	11.3	2.07								
402V11B	5 98 lbs.	560	5900	17472		16642		15799		14910		13702		12517		11618									
				17.4	2.23	17.4	2.29	16.7	2.36	15.9	2.41	15.1	2.44	14.4	2.48	13.7	2.53								
402V11B	5 98 lbs.	560	5900	18660		17884		17098		16289		15355		14058		13119		12256							
				19.6	2.71	19.6	2.79	18.9	2.85	18.1	2.91	17.4	2.95	16.7	2.98	16.0	3.04	15.3	3.10						
402V11B	5 98 lbs.	560	5900	20403		19694		18979		18250		17487		16555		15347		14475		13714					
				23	3.55	23	3.63	22	3.70	22	3.77	21	3.83	20	3.87	19.5	3.90	18.8	3.96	18.2	4.02				
402V11B	5 98 lbs.	560	5900	22186		21534		20878		20214		19536		18809		17911		16786		15939		14485			
				26	4.56	26	4.65	26	4.73	25	4.81	24	4.88	23	4.93	23	4.98	22	5.01	21	5.07	20	5.21		

445 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
445V6B	3/4 31 lbs.	248	2889	13278		11622		9396																	
				7.2	.66	6.8	.70	5.9	.73																
445V7B	1 36 lbs.	274	3192	14670		13181		11219		9428															
				8.8	.88	8.4	.94	7.5	.97	6.7	1.01														
445V8B	1-1/2 38 lbs.	294	3425	15740		14358		12758		10864															
				10.0	1.09	9.6	1.15	8.8	1.19	8.0	1.23														
445V9B	2 50 lbs.	331	3856	16865		15577		14198		12258		10768													
				11.4	1.34	11.1	1.41	10.3	1.45	9.4	1.49	8.6	1.54												
445V10B	3 74 lbs.	373	4345	17721		16498		15219		13393		11972													
				12.5	1.56	12.3	1.62	11.5	1.68	10.6	1.71	9.8	1.76												
445V11B	5 98 lbs.	436	5079	18578		17412		16208		14633		13043		11553											
				13.7	1.80	13.6	1.86	12.7	1.92	11.9	1.96	11.1	2.01	10.3	2.07										
445V11B	5 98 lbs.	473	5510	19970		18887		17779		16538		14792		13586		11818									
				15.7	2.23	15.7	2.31	14.8	2.37	14.1	2.42	13.2	2.46	12.4	2.52	11.6	2.56								
445V11B	5 98 lbs.	473	5510	21309		20294		19262		18173		16686		15247		14146									
				17.6	2.71	17.6	2.79	16.9	2.86	16.1	2.92	15.3	2.96	14.6	3.01	13.9	3.08								
445V11B	5 98 lbs.	473	5510	23343		22418		21481		20522		19455		17953		16703		15707		14305					
				21	3.56	21	3.65	21	3.73	19.3	3.81	18.6	3.87	17.8	3.90	17.2	3.96	16.5	4.04	15.8	4.11				
445V11B	5 98 lbs.	473	5510	25324		24471		23612		22737		21827		20762		19312		18178		17265					
				24	4.55	24	4.64	24	4.74	23	4.82	22	4.89	21	4.95	20	4.99	19.8	5.05	19.1	5.13				

490 VCR

Catalog Number	Mtr. HP/ Drv. Wt.	Fan RPM	Tip Speed	0.000" SP		0.125" SP		0.250" SP		0.375" SP		0.500" SP		0.625" SP		0.750" SP		0.875" SP		1.000" SP		1.250" SP		1.500" SP	
				Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP	Sone	BHP
490V7B	1 36 lbs.	233	2988	16655		14719		12081																	
				7.8	.88	7.3	.94	6.5	.97																
490V8B	1-1/2 38 lbs.	251	3219	17941		16152		13825		11666															
				9.0	1.10	8.7	1.16	7.8	1.21	6.9	1.26														
490V9B	2 50 lbs.	268	3437	19156		17486		15564		13259															
				10.3	1.34	9.9	1.41	9.1	1.46	8.3	1.50														
490V10B	3 74 lbs.	282	3617	20157		18572		16856		14496		12543													
				11.4	1.56	11.1	1.63	10.2	1.69	9.3	1.73	8.5	1.80												
490V11B	5 98 lbs.	295	3784	21086		19573		17979		15688		13990													
				12.3	1.78	12.1	1.86	11.3	1.93	10.4	1.97	9.5	2.03												
490V11B	5 98 lbs.	317	4066	22659		21253		19803		17934		15976		14252											
				14.1	2.21	14.0	2.30	13.1	2.37	12.3	2.42	11.4	2.47	10.7	2.55										
490V11B	5 98 lbs.	339	4348	24231		22918		21576		20073		17957		16493		14366									
				16.0	2.71	15.9	2.80	15.1	2.88	14.3	2.94	13.5	2.99	12.7	3.06	11.9	3.11								
490V11B	5 98 lbs.	371	4759	26519		25320		24103		22834		21216		19339		18035		16312							
				18.7	3.55	18.7	3.65	18.0	3.74	17.2	3.82	16.5	3.88	15.7	3.93	15.0	4.01	14.3	4.09						
490V11B	5 98 lbs.	403	5169	28806		27703		26589		25448		24206		22499		20872		19684		18279					
				22	4.55	22	4.66	21	4.76	20	4.86	19.6	4.93	18.8	4.98	18.1	5.04	17.4	5.13	16.7	5.23				

Performance certified is for Installation Type A: free inlet, free outlet. Power rating (BHP) does not include transmission losses. Performance ratings do not include the effects of appurtenances (accessories). The sound ratings shown are loudness values in fan sonas at 5 ft. (1.5m) in a hemispherical free field calculated per AMCA Standard 301. Values shown are for Installation Type A: free

UL 762 Listed for Restaurant Exhaust Appliances

COOK products, with UL 762 listing are designed to eject contaminated or grease-laden air. The products are UL listed to operate continuously at elevated temperatures, and continue operation during grease flare-up.

Products UL Listed to Operate up to 300°F

VCR/VCR-HP/VCR-XP
VCRD/VCRD-HP/VCRD-XP
Lo-Pro (requires diverters)
CPV/CPA/CPA-A
QMX/QMX-HP/QMXU/QMXU-HP/QMXLE/QMXLE-HP
CIC

CPV, CPA, CPA-A, QMX, QMX-HP and CIC must be ordered with drain and access door to comply with UL requirements. Weather covers are required for outdoor applications. When airstream temperatures are expected to exceed 180°F, high temperature accessories may be required.

LOREN COOK Products UL Listed to Operate up to 500°F

CPS/CPS-A
CA/CA-SWSI Arrangement 1, 9 and 10
CA-4/CA-4 SWSI Arrangement 1 and 2
CF/CF Arrangement 1, 9 and 10
CF-4/CF-4 Arrangement 1 and 2
QMX/QMX-HP Arrangement 9
CIC

These COOK products must be ordered with drain and access door to comply with UL requirements. Weather covers are required for outdoor applications.

When airstream temperatures are expected to exceed 180°F, high temperature accessories may be required.

All of the units are intended for installation in accordance with the Standard of the National Fire Protection Association for the installation of Equipment for the Removal of Smoke and Grease-Laden Vapors from Commercial Cooking Equipment, NFPA 96.



UL listed for Restaurant Exhaust Appliances

327Y



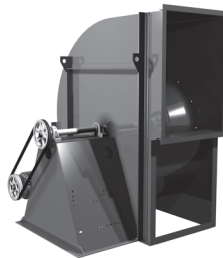
VCR / VCR-HP / VCR-XP
VCRD / VCRD-HP / VCRD-XP



Lo-Pro - Shown with diverters



CPS / CPA / CPS-A / CPA-A
Shown with weather cover



CA / CF



CA-4 / CF-4



QMX / QMX-



CIC



QMXLE / QMXLE-HP



QMXU / QMXU-HP



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