

Features

- 1 Fluorescent light fixture with interior sealed glass offering a safe and bright working area (100 foot candles)
- 2 SEFA-8 Superior chemically resistant paint finish
- 3 Large louvered by-pass area for optimal air balancing
- 4 32" high front opening creating superior interior viewing
- 5 Generous 26 1/2" interior working depth while maintaining a 32 3/4" exterior overall dimension
- 6 Optional pre-plumbed service fixtures using approved flexible materials
- 7 Interior lining components are available in non-metallic or stainless steel finishes
- 8 Aerodynamic sash opening designed for minimal air turbulence
- 9 Self supporting steel structure adding strength and flexibility
- 10 All electrical components are CSA/UL approved and prewired for final single point connection
- 11 Optional audible and visible low velocity alarm
- 12 All electrical and plumbing components are safely located outside of the hood chamber
- 13 Laminated safety glass sash
- 14 Listed by Intertek to UL 1805 standard
- 15 Interior access panels are easily removable and replaceable without the used of special tools
- 16 Convenient pre-punched interior & exterior service holes for plumbing additions
- 17 Factory set interior baffles
- 18 Stainless steel air foil designed with electrical cord access

[Secure Containment]

Laboratory personnel safety is the primary performance criteria of a fume hood. Vanguard's Critical Airflow Path (CAP) design includes a high containment baffle configuration that controls and increases the air velocity within the hood to create a constant laminar flow at the face opening.

To confirm our own research we had our hoods tested by SIEMENS, a recognized independent testing company, using the ASHRAE 110-1995 AM protocol. Face velocities of 100 FPM and 60 FPM were used and in both cases performance results far exceeded industry standards.

Superior containment even at lower face velocities*

Industry Standard
ANSI/AIHA Z9.5-2003
.05 ppm

Example: VBA-48 with full sash open	
Vanguard at 100 fpm	Vanguard at 60 fpm
0.001 ppm	0.003 ppm

* Results taken from Siemens test reports

Superior face velocity uniformity*

Industry Standard
ANSI/AIHA Z9.5-2003
+20%
-20%

Example: VBA-48 with full sash open	
Vanguard at 100 fpm	Vanguard at 60 fpm
+7.1%	+8.6%
- 5.1%	- 6.4%

* Results taken from Siemens test reports

Vanguard hoods meet or exceed the following industry standards:

- ▶ **SEFA 1-2010** Laboratory Fume Hoods Recommended Practices
- ▶ **ANSI/AIHA Z9.5-2012** An American National Standard for Laboratory Ventilation
- ▶ **MD 15128-2013** Laboratory Fume Hoods
- ▶ **CSA Standard C22.2 No. 1010.1-92 & CSA-US**
- ▶ **NFPA 45-2001** Standard on Fire Protection for Laboratories using Chemicals
- ▶ **OSHA 1010.1450 - 2011** Occupational Exposure to Hazardous Chemicals in Laboratories
- ▶ **Prudent Practices in the Laboratory: Handling and Disposal of Chemicals (2011)** National Research Council
- ▶ **Industrial Ventilation (27th Edition)**
- ▶ **UL 1805 - 2002** Standard for Laboratory Hoods and Casework

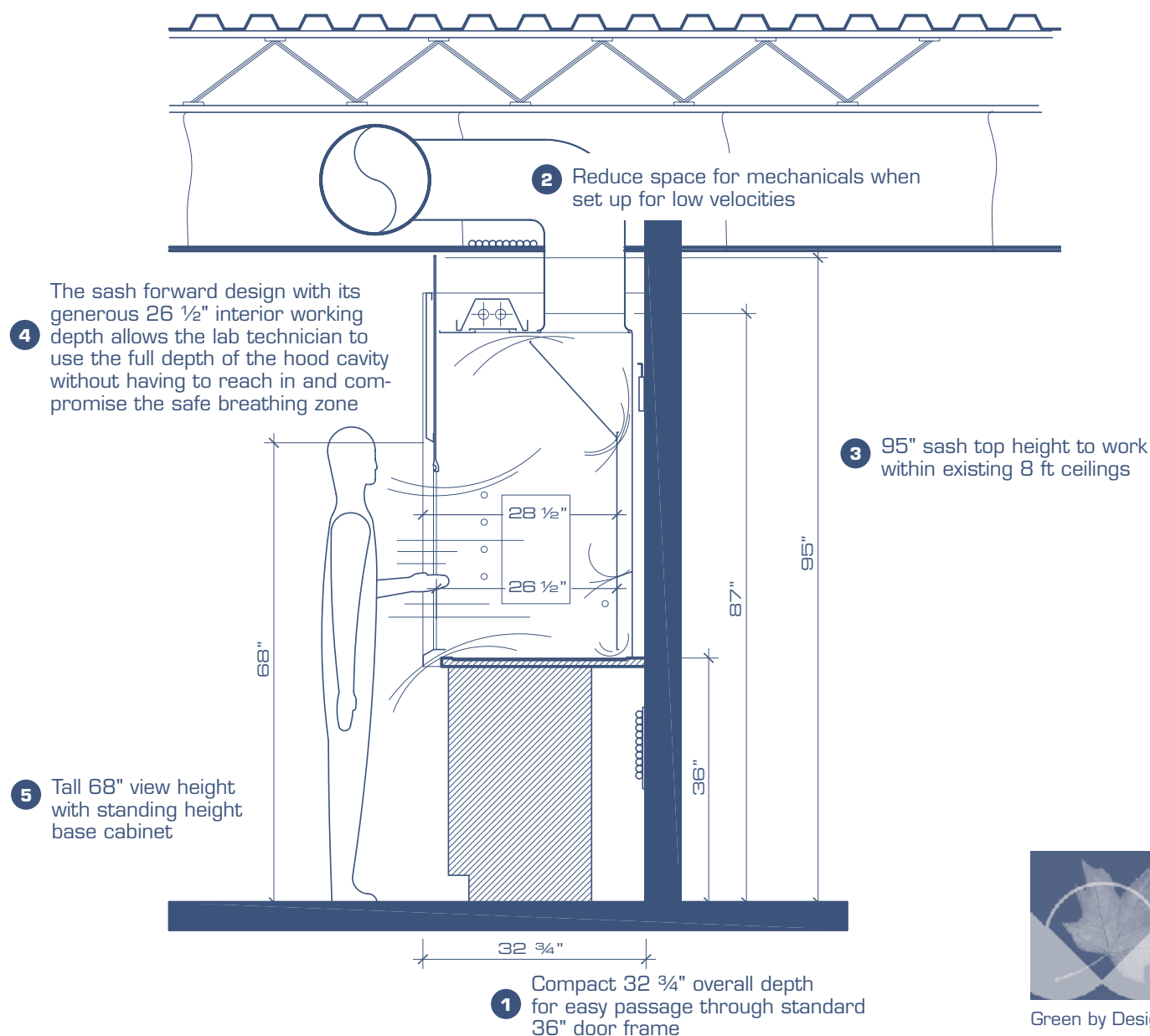


[Low Velocity Capability]

In appropriate laboratory environments, low velocity fume hoods are an effective tool for designers and facilities managers who want to build green and maximize economic and environmental performance. Their low exhaust volume can considerably reduce a laboratory's energy consumption. In addition to reduced operating costs, a low velocity hood set-up can also significantly reduce HVAC infrastructure costs.

The performance of a fume hood is measured by its ability to move air cleanly through the hood and away from the user. We focused on the critical airflow paths to provide optimal containment and then further improved the design to maintain high performance at reduced face velocities.

The Vanguard was designed using advanced 3-D engineering software. The computer models helped us shape the airflow within the parameters of conventional laboratory use, and the subsequent months of fine-tuning allowed us to effectively maintain superior containment with face velocities down to 60 FPM. Numerous minute adjustments were tested in our in house testing facility to further eliminate turbulence and dead air pockets. The result is true high performance by design. With the Vanguard there is no need to work with restrictive sash openings to reduce the amount of exhausted air, its performance numbers are achieved with a full open sash.



Green by Design

Standard Vanguard Features



Vanguard laboratory fume hoods, through high performance by design

- ▶ Low velocity capability on all models.
- ▶ 18 gauge painted steel exterior paneling.
- ▶ Galvanized steel structural frame holding the outside paneling and interior lining.
- ▶ Sash forward design that permits an ergonomic access to the work surface and extra inside depth.
- ▶ ¼" safety laminated glass used for various sashes and lamp protection shield.
- ▶ Aerodynamic Type 316 stainless steel air foil with electrical cord access.
- ▶ Rounded bell shaped Type 316 stainless steel duct stubs.
- ▶ Easily removable factory pre-set baffles installed with non metallic supports.
- ▶ Sash counter weight system using two 3/32" – 920 lbs breaking strength stainless steel cables and ball bearing pulleys with a full width balanced weight.
- ▶ Fluorescent lamp with switch creating a 100 foot candles inside hood.
- ▶ Two post mounted 120V/20A duplex outlets.
- ▶ All electrical components pre-wired to a junction box located on top of the hood.
- ▶ Pre-punched holes in lining and on front posts to receive optional plumbing services up to 5 per side.
- ▶ Easy access to plumbing services using outside removable side panels and/or interior leak free panels.
- ▶ Generous 26 ½" interior working depth on standard 32 ¾" outside fume hood depth.
- ▶ Listed by Intertek to UL 1805 and CSA standards.

Vanguard meets or exceeds SEFA (Scientific Equipment & Furniture Association) requirements



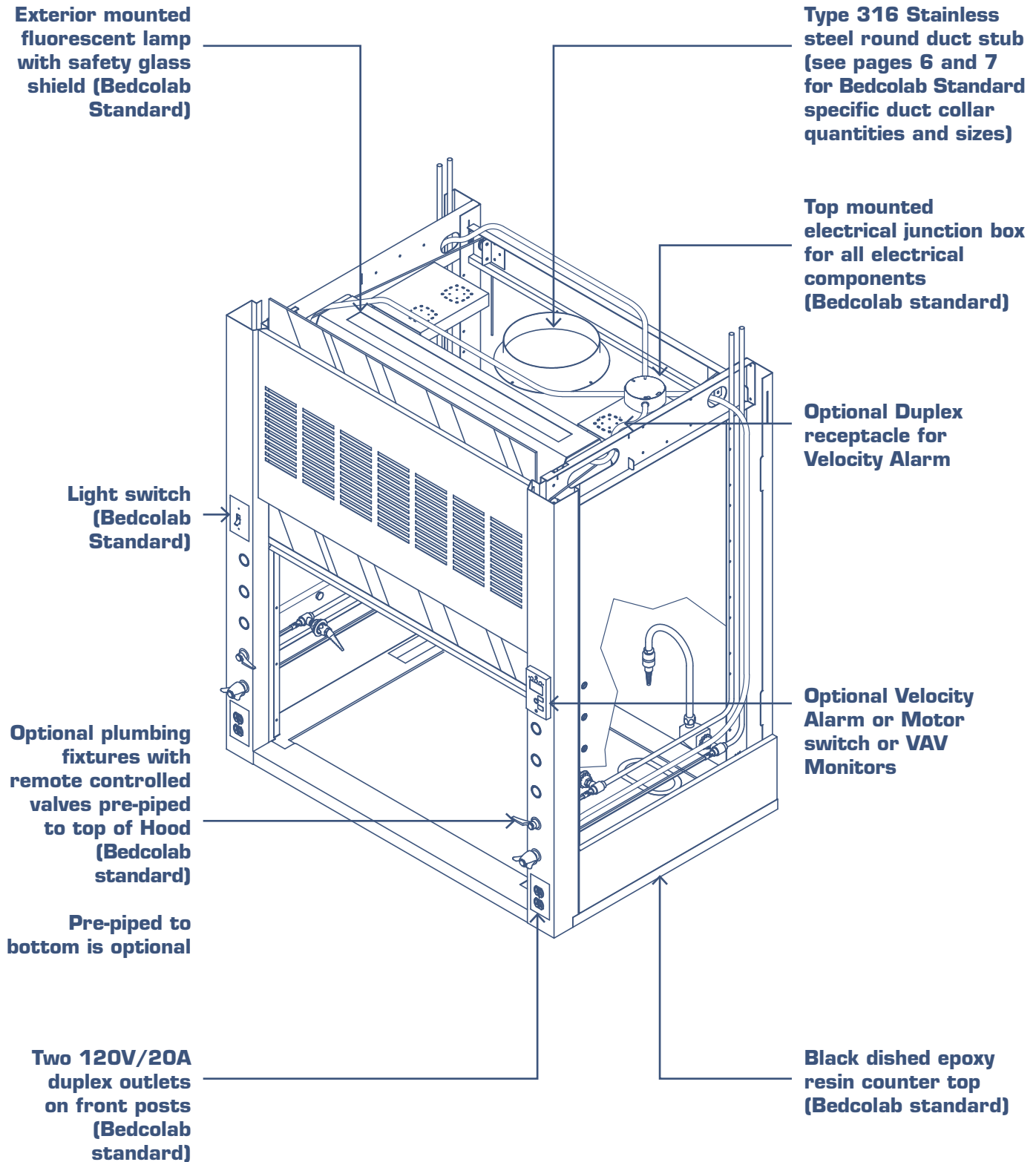
Manufactured under our ISO 9001 Quality Program



High value sustainable designs to meet environmental challenges of the laboratory industry



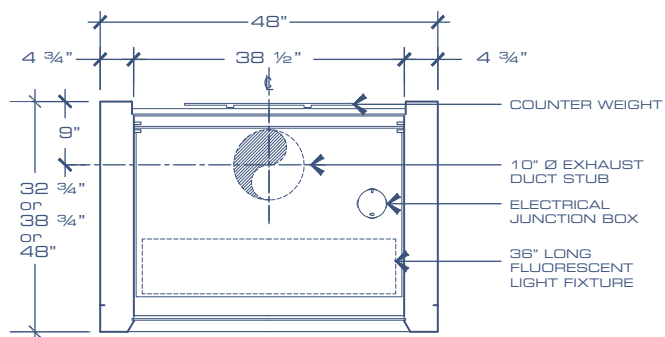
Green by Design



Typical Vanguard Bench Mounted Top Views

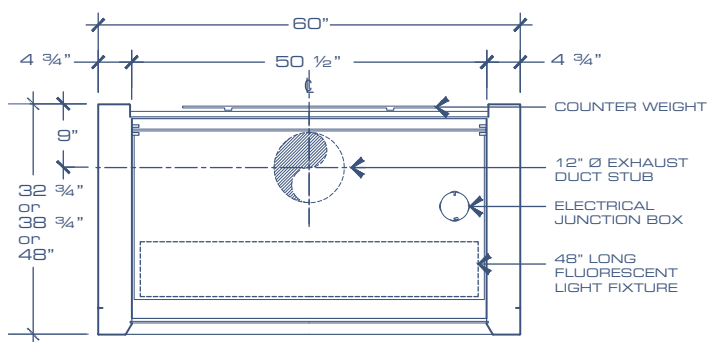


Dimensions apply to all Vanguard bench mounted fume hoods and floor mounted fume hoods with vertical sash (not applicable to pass-through bench mounted fume hoods – see page 28 for details)



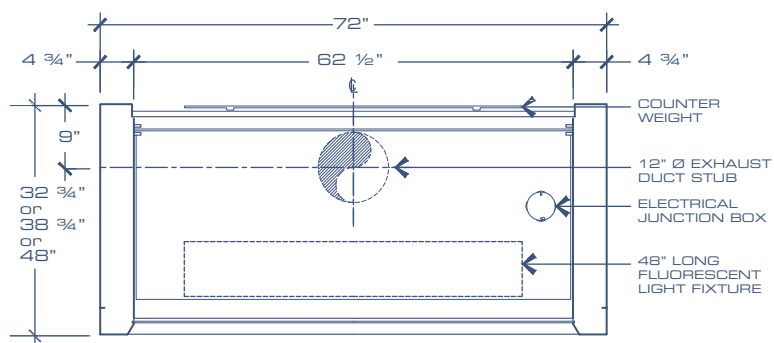
Dimensions apply to all 48" Fume Hoods
Model number • 5 First digits

C10-48	V10-48	C11-48	V11-48
C12-48	V12-48	C13-48	V13-48
C14-48	V14-48	C15-48	V16-48
C20-48	V20-48	C30-48	C40-48
V40-48	C50-48	C70-48	



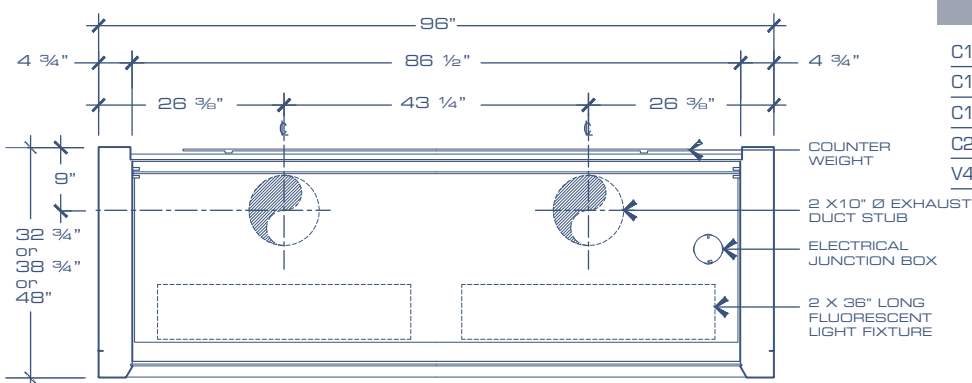
Dimensions apply to all 60" Fume Hoods
Model number • 5 First digits

C10-60	V10-60	C11-60	V11-60
C12-60	V12-60	C13-60	V13-60
C14-60	V14-60	C15-60	V16-60
C20-60	V20-60	C30-60	C40-60
V40-60	C50-60	C70-60	



Dimensions apply to all 72" Fume Hoods
Model number • 5 First digits

C10-72	V10-72	C11-72	V11-72
C12-72	V12-72	C13-72	V13-72
C14-72	V14-72	C15-72	V16-72
C20-72	V20-72	C30-72	C40-72
V40-72	C50-72	C70-72	



Dimensions apply to all 96" Fume Hoods
Model number • 5 First digits

C10-96	V10-96	C11-96	V11-96
C12-96	V12-96	C13-96	V13-96
C14-96	V14-96	C15-96	V16-96
C20-96	V20-96	C30-96	C40-96
V40-96	C50-96	C70-96	

Standard Hood with Vertical Sash



Constant Air Volume or Variable Air Volume models no.

Standard Features

- ▶ Vertical rising sash with black PVC handle.
- ▶ Generous 26.5" interior dept with standard 32.75" O.D (32.5" ID with 38.75" OD hood).
- ▶ Tall front opening view height of 68" with standard 36" base cabinet.
- ▶ Aerodynamic T.316 Stainless steel air foil with electrical cord access.
- ▶ Removable factory set interior baffles.
- ▶ Fluorescent light, light switch and 2 duplex 120V - 20A with internal wiring on 1 circuit.
- ▶ Front corner posts & interior side panels pre-punched to accept up to 10 plumbing fixtures.
- ▶ Removable and easy replaceable interior access panel on each side wall for plumbing access.
- ▶ Removable exterior side panels.
- ▶ Upper and lower bypasses with interior adjustable top front panel. For VAV models only.
- ▶ Cable and pulley sash system.
- ▶ Stainless steel 316 round exhaust collar.
- ▶ White polyester FRP lining $\frac{3}{16}$ " thickness.

CONSTANT AIR VOLUME CAV - VERTICAL SASH - 32.75" OD DEEP (STANDARD DEFAULT)

WIDTH	FRP (standard)	SS304 PANELS	SS316 PANELS	SS304 SEAMLESS	SS316 SEAMLESS	WHITE HDPE
48"	C10-48A-100	C10-48A-200	C10-48A-250	C10-48A-300	C10-48A-350	C10-48A-400
60"	C10-60A-100	C10-60A-200	C10-60A-250	C10-60A-300	C10-60A-350	C10-60A-400
72"	C10-72A-100	C10-72A-200	C10-72A-250	C10-72A-300	C10-72A-350	C10-72A-400
96"	C10-96A-100	C10-96A-200	C10-96A-250	C10-96A-300	C10-96A-350	C10-96A-400

CONSTANT AIR VOLUME CAV - VERTICAL SASH - 38.75" OD DEEP (OPTIONAL)

WIDTH	FRP	SS304 PANELS	SS316 PANELS	SS304 SEAMLESS	SS316 SEAMLESS	WHITE HDPE
48"	C10-48B-100	C10-48B-200	C10-48B-250	C10-48B-300	C10-48B-350	C10-48B-400
60"	C10-60B-100	C10-60B-200	C10-60B-250	C10-60B-300	C10-60B-350	C10-60B-400
72"	C10-72B-100	C10-72B-200	C10-72B-250	C10-72B-300	C10-72B-350	C10-72B-400
96"	C10-96B-100	C10-96B-200	C10-96B-250	C10-96B-300	C10-96B-350	C10-96B-400

VARIABLE AIR VOLUME VAV - VERTICAL SASH - 32.75" OD DEEP (STANDARD DEFAULT)

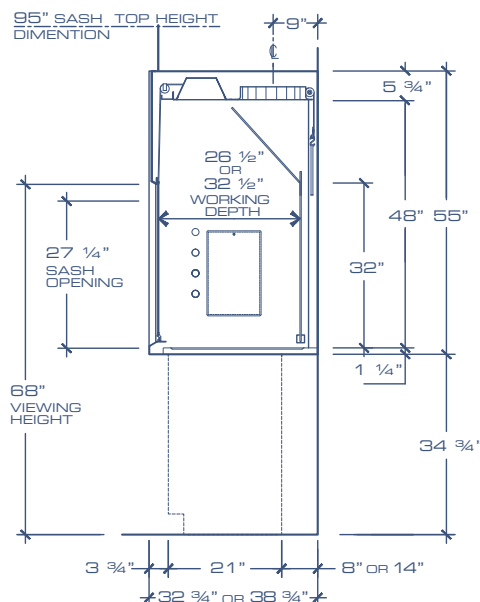
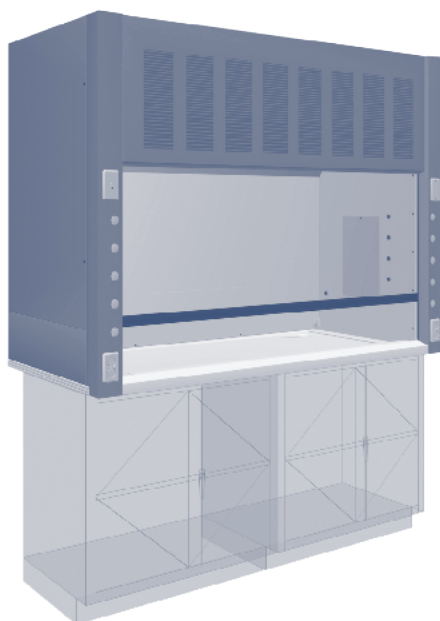
WIDTH	FRP (standard)	SS304 PANELS	SS316 PANELS	SS304 SEAMLESS	SS316 SEAMLESS	WHITE HDPE
48"	V10-48A-100	V10-48A-200	V10-48A-250	V10-48A-300	V10-48A-350	V10-48A-400
60"	V10-60A-100	V10-60A-200	V10-60A-250	V10-60A-300	V10-60A-350	V10-60A-400
72"	V10-72A-100	V10-72A-200	V10-72A-250	V10-72A-300	V10-72A-350	V10-72A-400
96"	V10-96A-100	V10-96A-200	V10-96A-250	V10-96A-300	V10-96A-350	V10-96A-400

VARIABLE AIR VOLUME VAV - VERTICAL SASH - 38.75" OD DEEP (OPTIONAL)

WIDTH	FRP	SS304 PANELS	SS316 PANELS	SS304 SEAMLESS	SS316 SEAMLESS	WHITE HDPE
48"	V10-48B-100	V10-48B-200	V10-48B-250	V10-48B-300	V10-48B-350	V10-48B-400
60"	V10-60B-100	V10-60B-200	V10-60B-250	V10-60B-300	V10-60B-350	V10-60B-400
72"	V10-72B-100	V10-72B-200	V10-72B-250	V10-72B-300	V10-72B-350	V10-72B-400
96"	V10-96B-100	V10-96B-200	V10-96B-250	V10-96B-300	V10-96B-350	V10-96B-400

Technical Information

Fume hood Dimensions	Exterior Dimensions			Sash Opening	Interior Dimensions			Viewing Dimensions
	Width	Depth	Height		Width	Depth	Height	
48" type	48"	32.75" or 38.75"	55"	38.5" x 27.25"	38.5"	26.5" or 32.5"	48"	38.5" x 32"
60" type	60"	32.75" or 38.75"	55"	50.5" x 27.25"	50.5"	26.5" or 32.5"	48"	50.5" x 32"
72" type	72"	32.75" or 38.75"	55"	62.5" x 27.25"	62.5"	26.5" or 32.5"	48"	62.5" x 32"
96" type	96"	32.75" or 38.75"	55"	86.5" x 27.25"	86.5"	26.5" or 32.5"	48"	86.5" x 32"



Exhaust data with 27.25" full open sash

Hood width	Face Opening	Duct collar size diameter	100 feet/minute velocity			80 feet/minute velocity			60 feet/minute velocity		
			Exhaust CFM	Duct collar FPM	Static pressure loss	Exhaust CFM	Duct collar FPM	Static pressure loss	Exhaust CFM	Duct collar FPM	Static pressure loss
48"	38.5" x 27.25"	1x 10"	728	1334	0.18"	583	1069	0.12"	437	801	0.065"
60"	50.5" x 27.25"	1x 12"	955	1215	0.25"	765	973	0.17"	573	730	0.09"
72"	62.5" x 27.25"	1x 12"	1183	1506	0.30"	946	1205	0.22"	710	904	0.15"
96"	86.5" x 27.25"	2x 10"	1636	1499	0.20"	1310	1200	0.14"	982	900	0.08"

Exhaust data with 18" open sash

Hood width	Face Opening	Duct collar size diameter	100 feet/minute velocity			80 feet/minute velocity			60 feet/minute velocity		
			Exhaust CFM	Duct collar FPM	Static pressure loss	Exhaust CFM	Duct collar FPM	Static pressure loss	Exhaust CFM	Duct collar FPM	Static pressure loss
48"	38.5" x 18"	1x 10"	481	882	0.12"	385	706	0.08"	289	530	0.05"
60"	50.5" x 18"	1x 12"	631	803	0.18"	505	643	0.12"	379	298	0.06"
72"	62.5" x 18"	1x 12"	781	994	0.21"	625	795	0.15"	469	597	0.11"
96"	86.5" x 18"	2x 10"	1081	992	0.14"	865	794	0.10"	649	595	0.06"

It is recommended to add a 3 % safety leak factor to all above exhaust calculated volumes in order to compensate normal site system air leakage.