DISTECH CONTROLS™

Smart Air Control Valve

Specification Guide

Connecting People with
Intelligent Building Solutions

Smart Air Control Valve

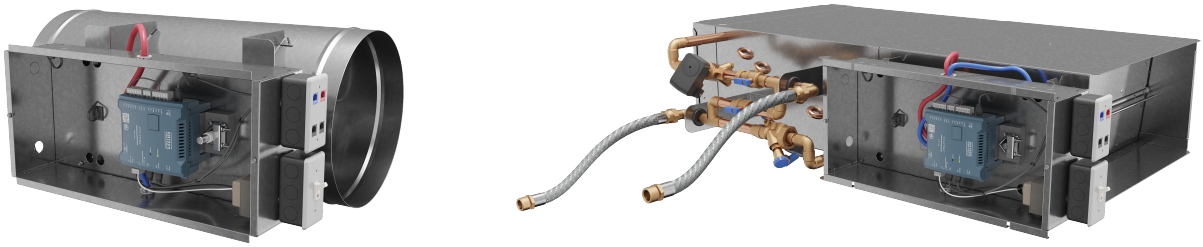


Figure 1: Smart Air Control Valve Round and Rectangular (with Hydronic Reheat) Commercial Models

Overview

Distech Controls' Smart Air Control Valve is a highly accurate, fully dynamic, pre-assembled air control valve solution. It has a superior turndown ratio and measures airflows as low as a few CFM. With this low airflow design, the same Smart Air Control Valve model can be used to control the airflow required for various applications and at a much wider range of space occupancy levels. It offers a breakthrough air flow measurement technology that results in energy efficiency and low EUI (Energy Use Intensity), superior IEQ (Indoor Environmental Quality) and IAQ (Indoor Air Quality).

Features & Benefits

- Simplifies engineering design thanks to its optimal airflow accuracy and turndown ratio, thus offering a more concise selection of models.
- Reduces fan energy consumption with a lower minimum airflow capability and more precise airflow delivery across the entire operating range, allowing for a low Energy Use Intensity (EUI) operation.
- Breakthrough airflow measurement technology precisely measures and controls airflow to as low as a few CFM.
- Full turnkey solution with factory programmed, tested, balanced, and packaged unit that reduces risks and complexity associated with project execution, schedules, and coordination.
- Easy installation and pre-balanced, which greatly reduces the overall system balancing time.
- Every unit ships with a factory standard 700-point commissioning report. Factory witness testing available on request.
- Simplifies new tenant outfits with a future-ready design that easily adapts to new floor layouts and airflow requirements.
- Superior acoustical performance with the capability of a low air velocity operation and standard indoor air quality (IAQ) liner.
- Delivers advanced demand control ventilation when combining the Smart Air Control Valve's low airflow capabilities and an optional CO_2 sensor.
- Available in stainless and galvanized steel, with a hydronic reheat option, as well as several box sizes and shapes for various CFM requirements and multiple airflow conditions for construction, performance, and quality.

Qualification Checklist

The Smart Air Control Valve offers superior airflow control when operated under low pressure and low velocity conditions. Typically, a maximum inlet pressure of about 1.5 in.WC is required for the optimal operation of the SACV. The Qualification Checklist aims to provide some guiding principles to ensure that the SACV is within its operable range of inlet pressures.

Application

- Is the desired application for a commercial space or critical environment?

The Smart Air Control Valve does not support higher-pressure mechanical system designs.

Mechanical Design

- Is the desired application for a new construction or a building retrofit?
- If a retrofit is required, is the mechanical system being designed for low pressure operation?
- If a retrofit is required, are balancing dampers available upstream of the desired terminal unit?

The Smart Air Control Valve is designed for low-velocity and low-pressure operation and its performance may be limited when operated above 1.5 in.WC of static pressure. In some cases, balancing dampers may be used to reduce the pressure entering the SACV. Refer to the chart in Back Pressure Recommendations for Optimal SACV Performance or contact your RSM for more information.

Ductwork

- What is the design operating static pressure of the system for the desired application?
- What is the flow range for the desired application?
- Does the design operating static pressure allow the desired flow range?

The Smart Air Control Valve operates best under 1.5 in.WC of static pressure. Use the SACV Selection Tool for indication of performance and to build your performance schedule, or contact your RSM to seek assistance with the application design.

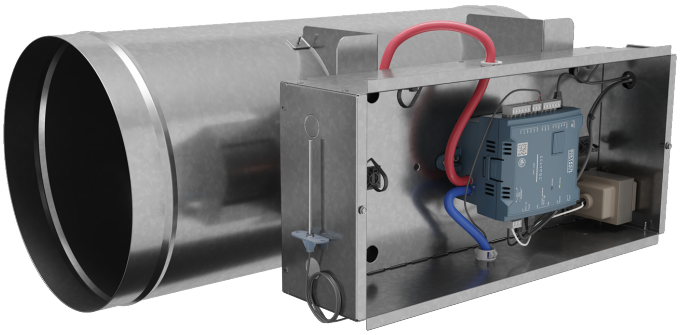
SACV Equipment Selection

- Do the standard coil selections satisfy the performance criteria of the project?

If a standard coil selection is not available, contact your RSM to discuss the implications of a custom coil selection.

Model Selection

Round Duct Models

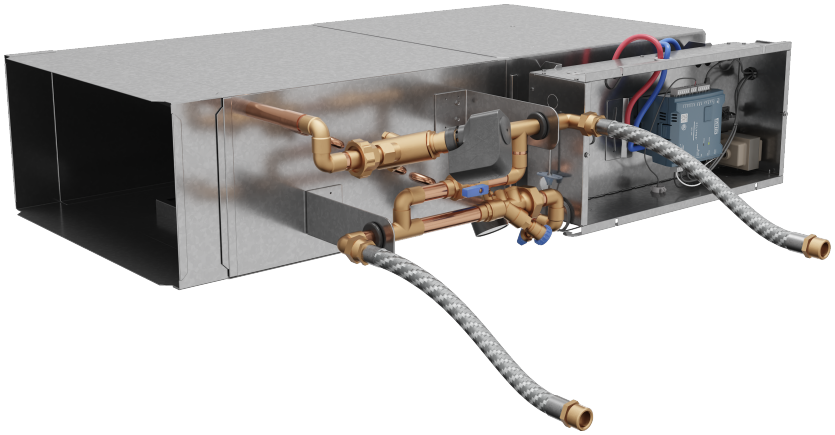


	SACV-	RR	12	G	S	P	S	S	S	N	N	Y	1
Unit Type / Handling[1]	RR: Round (Right Hand Unit) RL: Round (Left Hand Unit)												
Dimensions	08: 8-inch 12: 12-inch 16: 16-inch												
Construction	G: Galvanized Steel S: Stainless Steel												
Application[2]	S: Supply E: Exhaust[3]												
Sensor Type	P: Pitot Tube O: Orifice Ring												
Flow Accuracy	S: Standard (8%)												
Connection	S: Standard F: Flanged												
Actuator Speed	S: Standard												
Transformer Options[4]	D: Disconnect (24V) only T: Transformer (120-24V) + Disconnect I: Isolation Transformer + Disconnect												
Reheat Type	N: None												
Controller	Y: ECLYPSE												
Generation	1: 1st Generation												

Notes:

1. Unit handing will define the control handing
2. All SACV models include factory standard ½” externally mounted acoustical liner
3. Exhaust applications are only compatible with orifice ring sensors
4. Disconnect is available on all SACV models

Rectangular Duct Models



	SACV-	TR	1015	G	S	S	S	N	H	Y	1
Unit Type / Handling[1]	TR: Rectangular (Right Hand unit) TL: Rectangular (Left Hand unit)										
Dimensions[2]	1015: 10 x 15 inch 1021: 10 x 21 inch										
Construction	G: Galvanized Steel S: Stainless Steel										
Flow Accuracy	S: Standard (8%)										
Connection	S: Standard										
Actuator Speed	S: Standard										
Transformer Options[3]	D: Disconnect (24V) only T: Transformer (120-24V) + Disconnect (Hydronic only) I: Isolation Transformer + Disconnect (Hydronic only)										
Reheat Type[4]	N: None H: Hydronic										
Controller	Y: ECLYPSE										
Generation	1: 1st Generation										

Notes:

1. Pitot Tube is the default sensor type for rectangular SACV models
2. All SACV models include factory standard ½" externally mounted acoustical liner
3. Disconnect is available on all SACV models
4. Coil option must be defined when Hydronic reheat type is selected

Rectangular Hydronic Coil Models

SACV-TR1015GSSSNHY1-	H	H	1	A	2	B	P	D
Coil Type	H: Heating C: Cooling							
Coil Performance	H: High Performance (Slanted Coil) C: Custom							
Heating Options	1: 1-Row Coil 2: 2-Row Coil 3: 3-Rows Coil							
Max Flow Rate (GPM)	A: 0.25 B: 0.50 C: 0.75 D: 1.0 E: 1.25 F: 1.50 G: 1.75 H: 2.0 I: 2.25	J: 2.50 K: 2.75 L: 3.0 M: 3.25 N: 3.50 O: 3.75 P: 4.0 Q: 4.25 R: 4.50	S: 4.75 T: 5.0 U: 5.25 V: 5.50 W: 5.75 X: 6.0 Y: 6.25 Z: 6.50 1: 6.75	2: 7.0 3: 7.25 4: 7.50 5: 7.75 6: 8.0 7: 9.0 8: 10 9: Custom				
Valve Configuration	2: 2-Way Modulating 3: 3-Way P: PICV							
Valve Trim	B: Bronze S: Stainless							
Valve Type	P: Normally Open C: Normally Closed							
Actuator Manufacturer	D: Distech Controls							

Notes:

1. Coil models are *only* valid with Rectangular SACV models when Hydronic Reheat type is selected
2. Coil handling follows unit handling. i.e., the coil will be on the same side as the control panel
3. Max Flow Rate depends on design airflow, coil size and number of coil rows. Refer to Performance tables in this specifications sheet for more selection details.
4. 24” SS Flex Hose Kit is standard on all coil models.

SACV Specifications

Dimensions

Round Duct	8”, 12”, 16”
Rectangular Duct	10” x15”, 10” x 21”
Dry Weight	8” models: 20 lbs (9 kg) 12” models: 25 lbs (11.3 kg) 16” models: 34 lbs (15.4 kg) 10” x 15” models: 35 lbs (15.9 kg) 10” x 21” models: 40 lbs (18.1 kg)
Wet Weight	10” x 15” models: 75 lbs (34 kg) 10” x 21” models: 80 lbs (36.3 kg)

Materials within air stream

Galvanized Construction	22-gauge galvanized steel casing 18-gauge galvanized steel damper 20-gauge galvanized steel orifice (optional) Stainless steel pitot tubes Advanced low leak aerospace damper gasket
Stainless Steel Construction	20-gauge stainless steel casing 18-gauge stainless steel damper 20-gauge stainless steel orifice (optional) Stainless steel pitot tubes Advanced low leak aerospace damper gasket
Damper Shaft	PTFE shaft bushings ½” (12.7mm) diameter stainless steel shaft
Flanges	Complies with SMACNA specifications (Stainless steel only)

Materials outside air stream

External Insulation	½” (12.7mm) closed cell insulation material
Control Enclosure	22-gauge galvanized steel
Pneumatic Tubing	UL 94 rated
Pneumatic Fittings	Brass or Plastic

Airflow Measurement/Control

Sensing System	Factory-installed and calibrated patented airflow sensing system
Orifice Plate	Patented variable orifice plate technology (for round models only)
Control Damper Blade	Single blade matching unit size and shape

Accuracy

Standard Accuracy Flow Measurement	8% down to 200 fpm[1]
Maximum operating pressure	2 in.WC[2]
Recommended Maximum Operating Pressure	1.5 in.WC

1. Minimum flow accuracy for commercial applications.
2. Refer to the *Back Pressure Recommendations for Optimal SACV Performance* chart for more information

Hydronic Coils

Configuration	Low profile, slanted coil for reheat or cooling
Construction	½” (12.5 mm) OD copper tubes, minimum wall thickness of 0.016” (0.4 mm) spaced approximately 1-1/2” (38 mm)
Rating	Maximum of 200 lbs (90.7 kg) per square inch at 200°F (93.3°C)
Fins	10 aluminum plate fins (0.0045" thickness) per inch (rated ARI 410) in high heat transfer sine wave configuration
Compatibility	Rectangular SACV models only
Custom coils	Custom coil packages and designs available upon request
Supply Piping	1 x Y strainer 1 x Pressure Gauge 1 x Air chamber 1 x Shut-off valve
Return Piping	1 x Union 1 x ATC 1 x Shut-off/Balancing valve 1 x Air Chamber
Bypass Valve	Same a shut-off valve

Controls

Installation and Calibration	Factory-installed controls and pre-calibration. Some field adjustment may be necessary to compensate for duct leakage.
Controls Enclosure	UL-508A Control Panel for single point access to all utilities
Communication Protocols	BACnet/IP
Wi-Fi Network Types[1,2]	Client, Access Point, Repeater

1. Available with optional ECLYPSE Wi-Fi adapter.

2. Wi-Fi signals attenuate through metal. Refer to the ECLYPSE User Guide for more information on Wi-Fi networking and limitations when using the ECLYPSE Wi-Fi adapter.

Environmental

Operating Temperature	40 to 120°F (4 to 49°C)
Relative Humidity	0% to 95% non-condensing

Installation Details

Upstream Duct Clearance	3x equivalent duct diameters
Downstream Duct Clearance	3x equivalent duct diameters
Labels	Project-specific labels included in each unit, includes serial number and TAG

DAT Sensor Details

Number Sensing Points	One
Operating Temperature Range	-4 to 167°F (-20 to 75°C)
Operating Humidity Range	0 to 100% RH, non-condensing
Sensing Element	Thermistor 10k Type II
Probe Material	¼” Stainless Steel
Probe Type/Length	Duct, 4” (102 mm)
Enclosure	No box
Lead Length	120” (3048 mm)

Accessories and Options[1]

Room Sensors	Distech Controls Allure sensor variations available as options
Temperature Sensors	**Cooling only units:** 1 Discharge Air Temperature (DAT) sensor included by default **Units with reheat:** 2 temperature sensors included by default for BTUh monitoring
Insulation	Standard factory installed external insulation
Installation	Ships with factory-installed aircraft hangers
Ionization Accessories	Optional ionization accessories available for superior IAQ & IEQ
Lighting Integration	Optional factory installed and pre-configured lighting controls
Electrical Accessories	Optional factory-supplied wired stepdown transformer

1. Contact your local RSM for details on availability of any additional options, accessories or custom coil designs.

Standards and Compliances

ASHRAE 241, 170, 62.1	C411: Standard Test Method for Hot-Surface Performance of High-Temperature Thermal Insulation.
	E162: Standard Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source.
	G21: Standard Practice for Determining Resistance of Synthetic Polymer Materials to Fungi.
NFPA	90B: Standard for the Installation of Warm Air Heating and Air-Conditioning Systems.
	255: Standard Methods of Test of Surface Burning Characteristics of Building Materials.
SMACNA	ANSI/SMACNA HVAC Duct Construction Standards - Metal and Flexible
Indoor Air Quality (IAQ) compliance	ASHRAE 36, 62.1, 62.2, 90.1, 195

VAV Controller Specifications

Power Supply Input (ECY-VAV Models)

Voltage Range[1]	24VAC/DC; ±15%; Class 2
Nominal Power Consumption	7VA; all external loads excluded, no USB peripherals
Full Load Power Consumption	20VA; external 24VAC loads excluded
Frequency Range	50 to 60Hz
Overcurrent Protection	Field replaceable fuse
Fuse Type	3A, fast-acting, 5 × 20mm (GMA-2A)
Power Factor	>90%

1. 24VDC does not support DO (triac outputs).

Communications

Ethernet Connection Speed	10/100 Mbps
Cable Type	Cat 5e, 8 conductor twisted pair (unshielded)
Addressing	IPv4 or Hostname
BACnet Profile	BACnet Building Controller (B-BC), AMEV AS-A and AS-B
BACnet Listing	BTL, WSP B-BC
BACnet Interconnectivity	BBMD forwarding capabilities
BACnet Transport Layer	IP
Web Server Protocol	HTML5
Web Server Application Interface	REST API
Wireless Adapter	Optional, USB Port Connection
Wi-Fi Communication Protocol	IEEE 802.11b/g/n
Wi-Fi Network Types	Client, Access Point, Hotspot

Subnetwork

Communication	RS-485
Cable Type	Cat 5e, 8 conductor twisted pair
Connector	RJ-45
Connection Topology	Daisy-chain
Maximum number of standard room devices supported per controller combined[1]	4
Allure EC-Smart-Vue Series[2]	4
Allure EC-Smart-Comfort Series	4
Allure EC-Smart-Air Series[2]	4
EC-Multi Sensor	4
ECx-Light-4 / ECx-Light-4D / ECx-Light-DALI[2]	4
ECx-Blind-4 / ECx-Blind-4LV[2]	4
Maximum number of Bluetooth low energy room devices per controller combined[3]	4
Allure UNITOUCH™	2
EC-Multi-Sensor-BLE	4

1. For more details about supported quantities, see the ECLYPSE Selection Tool.xlsm spreadsheet file available for download on the Documentation and Resources Portal.

2. A controller can support a maximum of 2 Allure sensor models equipped with a CO_2 sensor. Any remaining connected sensors must be without a CO_2 sensor.

3. A mixed architecture with standard room devices and Bluetooth low energy enabled devices is not recommended.

Hardware

Processor	Sitara ARM processor
CPU Speed	600MHz
Memory	4GB Non-volatile Flash (applications & storage) 512MB RAM
Real Time Clock (RTC)	Real Time Clock with rechargeable battery Supports SNTP network time synchronization
RTC Battery	20 hours charge time, 20 days discharge time Up to 500 charge / discharge cycles
Cryptographic Module	FIPS 140-2 Level 1 Compliant
Ethernet (ECY-VAV)	2 × switched RJ-45 Ethernet ports with integrated fail-safe for daisy-chaining
USB Connections	2 × USB 2.0 Ports 1 × Micro-USB 2.0 Ports
Subnet	RJ-45
Green LED	Power status, Subnet TX, and Ethernet Traffic
Orange LED	Controller status, Subnet RX, and Ethernet Speed

Open-to-Wireless Adapter

Communication Protocol	EnOcean wireless standard[1]
Connector Type	USB
Number of Wireless Inputs	Unlimited[2]

1. Available when an optional external ECLYPSE Open-to-Wireless Adapter is connected to the controller. Refer to the Open-to-Wireless Application Guide for a list of supported EnOcean wireless modules.

2. Wireless inputs will only be limited by physical distance between the EnOcean devices and the ECLYPSE Open-to-Wireless Adapter.

Integrated Damper Actuator

Motor	Belimo brushless DC motor
Torque	45 in-lb, (5 Nm)
Degrees of Rotation	95º adjustable
Shaft Diameter	5/16 to 3/4” (8.5 to 18.2mm)
Acoustic Noise Level	< 35 dB (A) @ 95º rotation in 95 seconds

Mechanical

Enclosure Material[1]	FR/ABS
Enclosure Rating	Plastic housing, UL94-5VB flammability rating

1. All materials and manufacturing processes comply with the RoHS directive and are marked according to the Waste Electrical and Electronic Equipment (WEEE) directive

Environmental

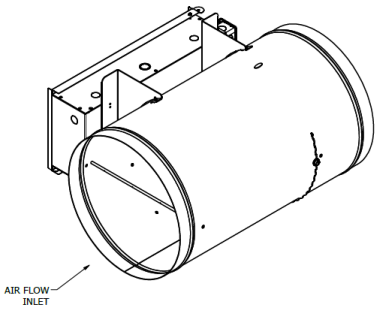
Operating Temperature	32 to 122°F (0 to 50°C)
Storage Temperature	-4 to 122°F (-20 to 50°C)
Relative Humidity	0 to 90% non-condensing
Ingress Protection Rating	IP20 (IEC 60552)
Nema Rating	1

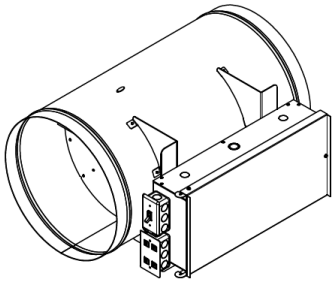
Standards and Regulations

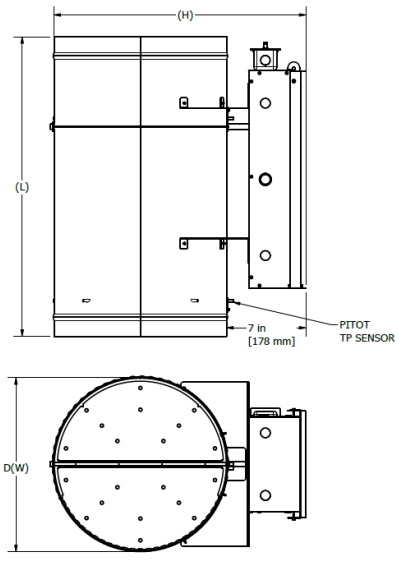
CE Emission	EN61000-6-3: 2007+A1:2011
CE Immunity	EN61000-6-1: 2007
FCC	Compliance with FCC rules part 15, subpart B, class B
UL Listed (CDN & US)	UL916 Energy management equipment
	UL2043 Suitable for use in air handling spaces (for Plenum-rated models only)

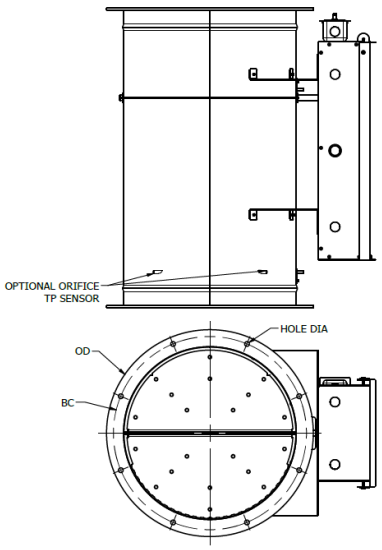
Dimensions

Round SACV with and without Optional Flange



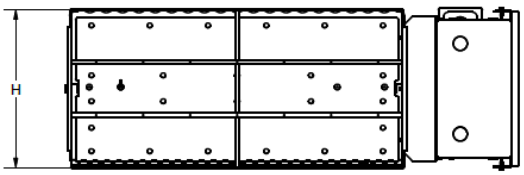


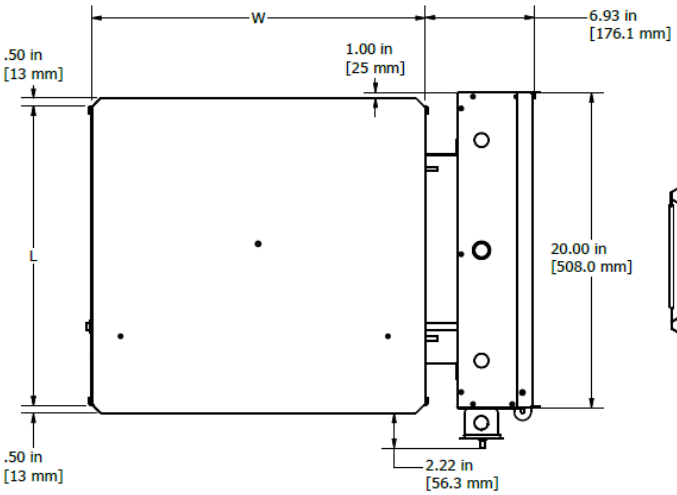


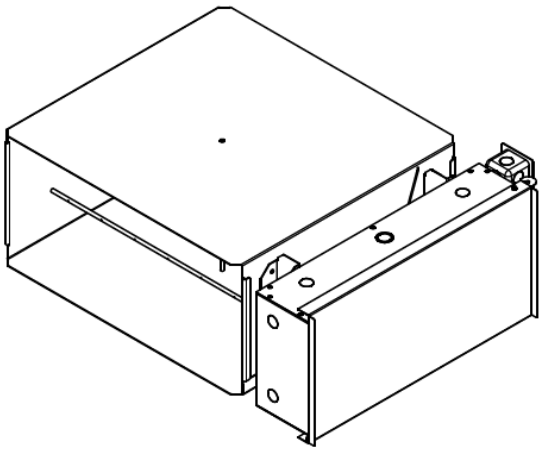


Dimensions								
Unit Size	D	L	W	H	Flange (optional)			
					BC	OD	# of Holes	Hole Dia
8”	7.875 in [200 mm]	16.00 in [406 mm]	10.00 in [254 mm]	15 in [381]	9.25 in [239 mm]	10.00 in [254 mm]	6	0.4375 in [11 mm]
12”	11.875 in [302 mm]	26.81 in [681 mm]	12.00 in [305 mm]	18 in [457 mm]	13.25 in [337 mm]	14 in [356 mm]	6	0.4375 in [11 mm]
16”	15.875 in [403 mm]	27.500 in [699 mm]	15.875 in [403 mm]	23 in [584 mm]	17.75 in [451 mm]	19 in [483 mm]	8	0.4375 in [11 mm]

10-inch x 21-inch / 10-inch x 15-inch Rectangular SACV (Cooling Only)

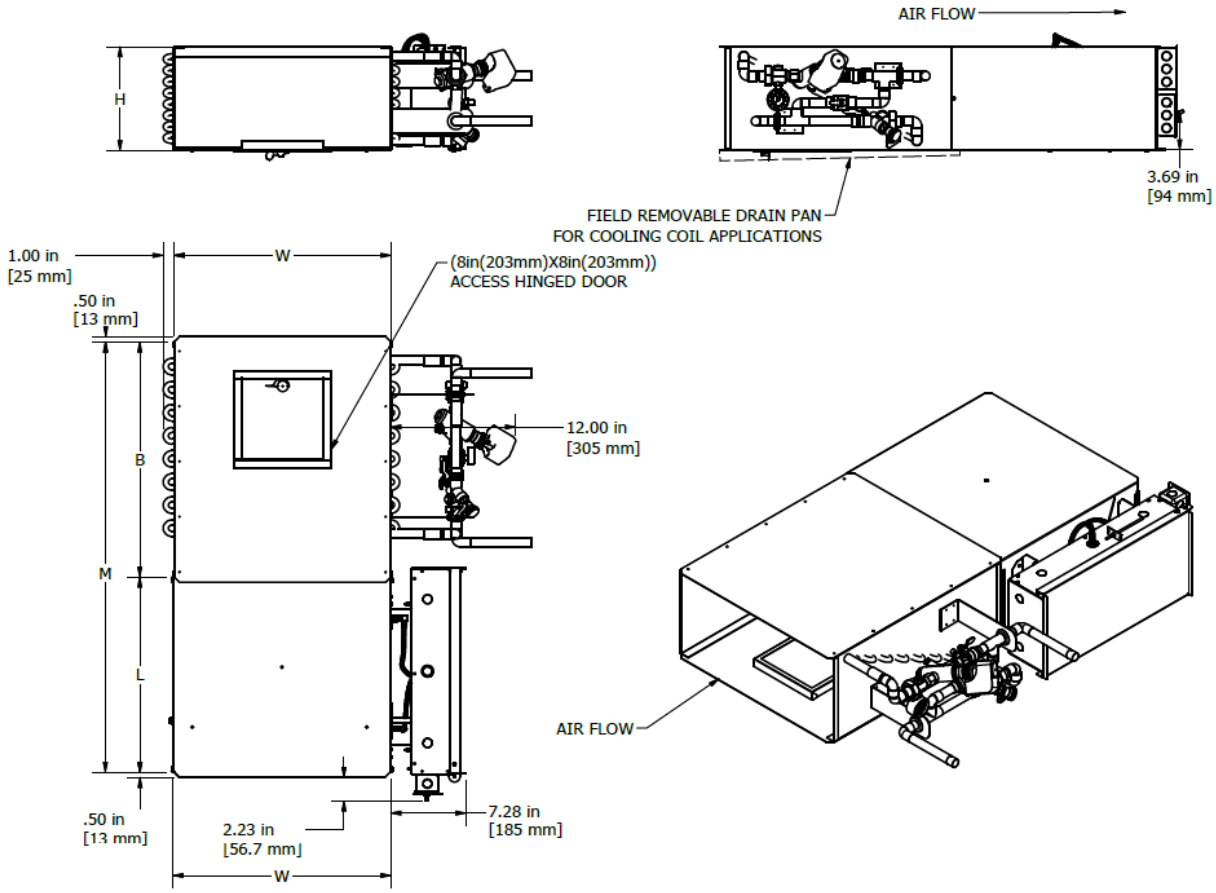






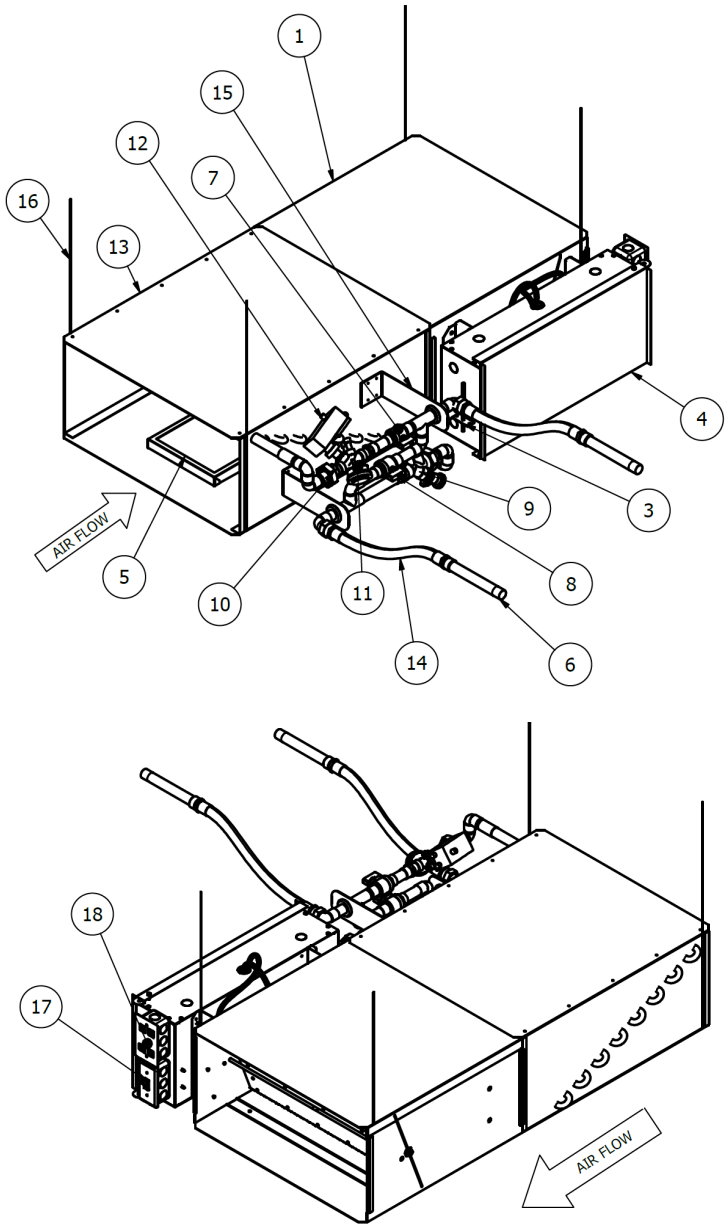
Dimensions				
Unit	H	W	L	Area
10x21-inch	10 in [254 mm]	21 in [534 mm]	19 in [483 mm]	1.45 ft² [0.135 m²]
10x15-inch	10 in [254 mm]	15 in [381 mm]	19 in [483 mm]	1.04 ft² [0.096 m²]

10-inch x 21-inch / 10-inch x 15-inch Rectangular SACV with High Performance Coil



Dimensions						
Unit	H	W	L	B	M	Area
10x21-inch	10 in [254 mm]	21 in [534 mm]	19 in [483 mm]	23 in [584 mm]	42 in [1066 mm]	1.45 ft² [0.135 m²]
10x15-inch	10 in [254 mm]	15 in [381 mm]	19 in [483 mm]	23 in [584 mm]	42 in [1066 mm]	1.04 ft² [0.096 m²]

Components - Rectangular SACV with Hydronic Coil



Item	Description	Item	Description
1	SACV	11	Pressure independent valve, 2-way or 3-way
2	ECY-VAV controller (not shown in diagram)	12	0-10V modulating actuator
3	Duct temperature sensor	13	Low profile high performance slanted coil, 1R/2R
4	Control cabinet	14	2 x 24” Kevlar lined SS hose with isolation valve
5	Low leak frameless hinged access door	15	2 x Piping bracket
6	2 x 6-in air chamber	16	Aircraft cable with corner saddle
7	Isolation valve	17	Disconnect box with switch
8	Flushing bypass valve	18	4-port junction box
9	Y strainer	19	Pressure gauge (not visible in diagram)
10	Union		

Back Pressure Recommendations for Optimal SACV Performance

Inlet Static (in.WC)	Maximum Airflow (CFM)
1.2	2500
1.25	2395
1.5	1365
1.75	635
2	0

Table 1: Maximum Airflow Velocity with 0 Back Pressure

Inlet Static (in.WC)	Minimum Back Pressure (in.WC)	Equivalent Duct Length[1] (ft)
1.2	0	0
1.25	0	0
1.5	0.01	0
1.75	0.24	150
2	0.43	387.5

Table 2: Minimum Back Pressure Required for 1800 FPM Airflow

Inlet Static (in.WC)	Minimum Back pressure (in.WC)	Equivalent Duct Length[1] (ft)
1.2	0	0
1.25	0.02	0
1.5	0.24	150
1.75	0.4	350
2	0.68	700

Table 3: Minimum Back Pressure Required for 2500 FPM Airflow

1. Equivalent Duct length is based on low pressure duct design of 0.08"/100' duct plus 0.03" pressure drop at diffuser

Minimum Pressure Drop without Hydronics

Unit Size	Airflow		Minimum Operating Pressure Drop	
	CFM	LPS	in.WC	Pa
8”	9	4.2	0.03	7.47
	175	82.6	0.03	7.47
	350	165.2	0.03	7.47
	700	330.4	0.07	17.44
	875	413.0	0.10	24.91
12”	25	12	0.03	7.47
	500	236	0.03	7.47
	1000	472	0.03	7.47
	1500	708	0.03	7.47
	2000	944	0.07	17.44
	2500	1180	0.10	24.91
16”	34	16	0.03	7.47
	500	236	0.03	7.47
	1000	472	0.03	7.47
	1500	708	0.03	7.47
	2000	944	0.07	17.44
	2500	1180	0.07	17.44
	3000	1416	0.07	17.44
	3500	1652	0.10	24.91
10” x 15”	25	12	0.03	7.47
	500	236	0.03	7.47
	1000	472	0.03	7.47
	1500	708	0.03	7.47
	2000	944	0.07	17.44
	2600	1227	0.10	24.91
10” x 21”	36	17	0.03	7.47
	500	236	0.03	7.47
	1000	472	0.03	7.47
	1500	708	0.03	7.47
	2000	944	0.07	17.44
	2500	1180	0.07	17.44
	3000	1416	0.07	17.44
	3700	1746	0.10	24.91

Table 4: Minimum Pressure Drop at Listed Airflow

Terminal Casing Leakage

SACV Casing Leakage (Per ASHRAE 130-1996)

Unit Size	0.03 in.WC	0.5 in.WC	1 in.WC	2 in.WC	3 in.WC
8”	<2.36	<2.36	<2.36	<2.36	<2.36
12”	<2.36	<2.36	<2.36	<2.36	<2.36
16”	<2.36	<2.36	<2.36	<2.36	<2.36
10” x 15”	<2.36	<2.36	<2.36	<2.36	<2.36
10” x 21”	<2.36	<2.36	<2.36	<2.36	<2.36

Table 5: Imperial Units (CFM, Inches Water)

Unit Size	8 Pa	125 Pa	250 Pa	500 Pa	750 Pa
8”	<1.11	<1.11	<1.11	<1.11	<1.11
12”	<1.11	<1.11	<1.11	<1.11	<1.11
16”	<1.11	<1.11	<1.11	<1.11	<1.11
10” x 15”	<1.11	<1.11	<1.11	<1.11	<1.11
10” x 21”	<1.11	<1.11	<1.11	<1.11	<1.11

Table 6: Metric Units (LPS, Pascals)

Terminal Damper Leakage

SACV Blade Seal Leakage (Per ASHRAE 130-1996)

Unit Size	0.03 in.WC	0.5 in.WC	1 in.WC	2 in.WC	3in.WC
8”	0.5	1.3	1.6	2.0	2.4
12”	1.5	2.5	4.4	5.8	7.1
16”	2.7	4.4	4.41	5.78	7.14
10” x 15”	2.5	8.1	9.1	10.3	11.4
10” x 21”	3.5	11.3	12.8	14.4	16

Table 7: Imperial Units (CFM, Inches Water)

Unit Size	8 Pa	125 Pa	250 Pa	500 Pa	750 Pa
8”	0.24	0.61	0.76	0.94	1.13
12”	0.71	1.18	2.08	2.74	3.35
16”	1.27	2.08	2.08	2.73	3.37
10” x 15”	1.18	3.82	4.29	4.86	5.38
10” x 21”	1.65	5.33	6.04	6.80	7.55

Table 8: Metric Units (LPS, Pascals)

Radiated Acoustics

Radiated Acoustics NC Ratings

0.2 in.WC. (50 Pa) is the recommended operating pressure drop.

NOTES:

1. Acoustics data is provided in this Specification Guide as tested. Conservative approximations have been made in the Smart Air Control Valve Selection Tool to align with other performance data, where applicable.
2. NC ratings are derived from sound power levels, which are obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
3. NC ratings are calculated based on typical attenuation values outlined in Appendix E, AHRI Standard 885-2008
   - Radiated NC ratings are based on 5/8" mineral fiber tile ceiling per AHRI 885-2008 attenuation values
   - Discharge NC ratings are based on environmental effect, end reflection, flex duct, sound power division and lined duct per AHRI 885-2008 attenuation values

Unit Size	Airflow		Air Pressure Drop			
	CFM	LPS	0.2 in.WC	0.5 in.WC	1.0 in.WC	2.0 in.WC
8"	30	14	5	5	5	5
	125	59	5	5	5	15
	175	83	5	5	5	15
	280	132	5	5	5	15
	350	165	5	5	5	20
	525	248	5	5	15	20
	700	330	5	15	20	25
	875	413	20	20	25	25
12"	70	33	5	5	5	5
	280	132	5	5	5	15
	393	185	5	5	5	20
	635	300	5	5	5	15
	786	371	5	5	5	20
	1178	556	5	5	15	25
	1571	741	5	15	20	25
	1964	927	20	20	25	25
16"	125	59	5	5	5	5
	281	133	5	5	5	5
	500	236	5	5	5	15
	781	369	5	5	5	15
	1125	531	5	5	5	15
	1532	723	5	5	5	20
	2000	944	5	5	15	20
	3194	1648	30	30	30	30
10" x 15"	280	132	5	15	20	25
	500	236	5	20	20	20
	780	368	5	15	25	30
	1120	529	5	15	25	30
	1530	722	15	20	25	30
	1995	942	20	25	30	35
	2600	1227	30	30	30	35
10" x 21"	392	345	5	15	20	25
	730	514	5	20	20	25
	1090	1034	5	20	20	30
	1570	1720	5	20	25	30
	2190	185	15	25	30	30
	2792	371	25	25	30	35
	3645	556	30	35	40	45

Table 9: Radiated Acoustics NC Ratings

Radiated Acoustics db Rating (LW dB, re 10^-12 Watts)

NOTES:
1. Test data obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
2. Sound power levels include duct end corrections per AHRI Standard 880-2017.

Values in ***BOLD*** lower than room ambient.

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)			
		175 / 83	350 / 165	525 / 248	875 / 413
0.2 in.WC	1	51.9	58.8	58.4	60.8
	2	38.1	42.4	46.3	54.2
	3	32.2	36.2	37.1	47.3
	4	24.9	30.9	35.6	55.2
	5	26.9	29.1	31	42.6
	6	17.6	24	27	37.6
	7	17.6	23.1	25.5	35.8
	8	21	21.3	21.5	24
0.5 in.WC	1	58.1	57.5	57.0	64.0
	2	40.0	46.0	50.5	58.6
	3	32.5	36.1	40.0	51.8
	4	30.9	35.4	39.6	55.9
	5	29.5	32.9	36.3	44.1
	6	27.7	29.9	34.2	40.3
	7	25.4	30.3	34.3	38.9
	8	21.2	22.8	26.6	27.2
1.0 in.WC	1	59.2	60.5	59.0	66.0
	2	44.5	49.5	54.4	61.9
	3	38.3	41.1	43.9	53.8
	4	39.7	41.1	43.0	56.1
	5	37.7	39.0	40.4	46.8
	6	35.8	37.3	38.2	44.6
	7	34.2	37.4	38.7	42.6
	8	24.4	29.9	32.9	33.8

Table 10: Radiated Acoustics in dB for 8” round duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)				
		393 / 185	786 / 371	1178 / 556	1571 / 741	1964 / 927
0.2 in.WC	1	***46.7***	47.6	***48.5***	51.1	***53.7***
	2	***36.1***	39.2	42.2	45.2	48.1
	3	***30.2***	33.8	37.3	41.9	46.5
	4	***24.7***	29.7	34.7	40.2	45.6
	5	***27.0***	28.3	***29.5***	34.8	40.1
	6	***16.0***	18.2	***20.3***	27	33.6
	7	***16.7***	17.1	***17.5***	22.7	27.9
	8	***20.3***	20.4	***20.4***	21.8	***23.2***
0.5 in.WC	1	***46.8***	50	***53.2***	56.7	***60.2***
	2	***36.8***	41.5	46.1	50.2	54.3
	3	***32.2***	36.2	40.1	44.2	48.2
	4	30.9	35.3	39.6	43.5	47.4
	5	***29.4***	32	34.6	38.4	42.1
	6	24.4	26.7	29	32.5	36.0
	7	***19.2***	21.7	24.2	27	29.7
	8	20.5	20.9	***21.2***	22.1	***22.9***
1.0 in.WC	1	***47.9***	53.1	***58.2***	61.0	63.7
	2	40.9	46.4	51.8	55.4	58.9
	3	38.5	41.2	43.9	47.5	51.1
	4	39.2	41.1	43.0	46.4	49.7
	5	36.9	38.2	39.5	42.5	45.4
	6	33.5	34.2	34.8	37.4	39.9
	7	28.7	29.4	30.1	32.4	34.6
	8	***23.4***	24.1	***24.7***	26.4	28.1
2.0 in.WC	1	***48.8***	56.0	***63.2***	66.1	68.9
	2	44.5	51.2	57.8	60.4	63.0
	3	43.3	46.1	48.8	51.7	54.6
	4	45.4	46.7	48.0	50.4	52.7
	5	44.8	45.3	45.7	47.7	49.7
	6	41.0	40.9	40.8	42.8	44.7
	7	36.1	36.4	36.7	38.3	39.9
	8	31.7	32.1	32.4	33.8	35.1

Table 11: Radiated Acoustics in dB for 12” round duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)							
		125 / 59	281 / 133	500 / 236	781 / 369	1125 / 531	1532 / 723	2000 / 944	3491 / 1648
0.2 in.WC	1	59.7	58.6	58.3	52.8	57.5	60.7	60.1	62.0
	2	38.8	37.9	39.8	38.4	39.7	43.0	47.0	55.2
	3	38.3	32.7	33.1	32.5	32.5	36.6	35.9	47.4
	4	28.4	25.6	25.2	24.9	26.4	31.1	35.7	56.8
	5	27.3	27.4	27.0	26.5	26.9	29.2	31.3	43.0
	6	21.5	18.8	24.9	17.9	20.9	25.0	28.1	38.3
	7	18.6	17.8	20.4	17.7	19.8	24.1	26.9	37.1
	8	21.3	21.2	21.6	21.1	21.2	21.4	21.7	24.1
0.5 in.WC	1	59.7	61.5	61.2	60.0	56.7	55.8	57.7	64.6
	2	43.1	40.9	40.1	40.5	44.0	46.8	51.3	59.3
	3	33.3	38.5	34.9	32.5	36.7	35.8	39.3	52.4
	4	27.0	33.8	32.9	30.7	33.5	35.4	39.5	57.3
	5	28.8	31.1	32.2	29.5	31.9	33.1	36.6	44.5
	6	24.2	29.1	27.4	28.3	30.9	30.5	35.1	41.0
	7	23.9	24.2	25.7	26.5	30.8	31.8	36.0	40.5
	8	21.3	21.5	21.5	21.3	22.9	23.1	27.5	27.9
1.0 in.WC	1	59.2	62.6	60.5	61.1	58.6	61.8	59.1	66.4
	2	39.1	49.8	45.1	45.1	46.8	50.0	54.9	62.4
	3	32.3	41.2	38.6	37.1	39.0	40.6	43.9	54.3
	4	30.0	33.6	37.7	39.8	40.4	40.8	42.7	57.2
	5	32.3	33.3	35.8	37.8	38.5	39.1	40.5	47.0
	6	31.7	33.4	34.6	36.2	38.0	37.8	38.8	45.4
	7	34.8	31.8	35.8	35.1	37.8	38.8	40.2	44.0
	8	23.5	24.1	23.6	24.6	25.4	30.9	34.3	34.8
2.0 in.WC	1	61.2	62.8	58.0	60.2	61.3	61.9	62.3	68.7
	2	63.0	52.0	50.5	51.6	52.2	53.6	56.5	64.6
	3	54.6	42.5	44.4	43.2	43.8	46.6	48.5	55.2
	4	52.7	39.7	41.8	44.6	45.0	47.1	47.3	57.5
	5	49.7	38.4	40.1	42.5	45.3	47.4	46.7	50.7
	6	44.7	37.8	39.8	42.3	43.8	47.0	45.5	49.6
	7	39.9	38.4	38.3	41.9	42.7	45.0	45.1	48.5
	8	31.9	30.6	31.6	31.4	31.7	37.4	38.6	40.8

Table 12: Radiated Acoustics in dB for 16” round duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)						
		280 / 132	500 / 236	780 / 368	1120 / 529	1530 / 722	1995 / 942	2600 / 1227
0.2 in.WC	1	***49.0***	***48.8***	***49.9***	***50.9***	***52.2***	55.4	60.9
	2	***40.4***	***38.3***	43.7	46.3	47.9	51.1	55.5
	3	39.3	***34.9***	38.4	39.0	44.4	48.5	54.0
	4	36.4	33.9	35.8	37.3	42.3	45.9	54.8
	5	33.2	32.6	32.7	33.9	38.2	39.9	43.2
	6	29.0	27.5	29.5	30.7	35.4	35.6	38.7
	7	***20.0***	***19.1***	***20.6***	***22.2***	***26.4***	***27.9***	31.0
	8	20.4	***20.0***	***19.9***	***19.9***	***21.0***	***20.7***	***23.9***
0.5 in.WC	1	***51.5***	***50.0***	***49.8***	53.9	58.1	59.8	64.6
	2	46.5	44.5	49.8	53.3	57.4	58.0	61.1
	3	43.1	44.7	44.7	45.5	49.8	53.5	56.2
	4	42.1	45.3	42.8	43.8	46.2	49.4	56.4
	5	42.3	44.0	41.0	41.6	43.8	45.6	48.5
	6	35.9	37.5	38.1	39.3	48.2	42.3	45.1
	7	***26.6***	30.7	32.2	34.6	37.6	39.4	41.7
	8	***20.8***	***21.7***	***21.7***	***21.8***	***25.0***	28.8	32.5
1.0 in.WC	1	52.0	***49.7***	***52.2***	56.1	60.0	65.9	69.5
	2	48.1	47.4	53.0	56.3	61.1	66.0	67.6
	3	46.3	44.3	51.5	51.6	54.0	57.9	60.0
	4	44.7	46.4	50.9	49.2	51.3	53.6	57.2
	5	43.5	44.7	50.9	47.7	49.0	50.6	52.2
	6	39.1	41.3	45.9	45.0	46.3	47.9	49.5
	7	32.0	35.0	41.2	42.1	44.2	46.0	46.9
	8	***23.2***	25.4	31.8	32.4	35.3	38.5	40.4
2.0 in.WC	1	56.2	54.8	57.9	60.2	62.0	66.0	71.2
	2	57.4	55.6	56.0	58.8	62.4	65.8	70.9
	3	54.5	50.0	53.1	57.2	59.6	62.5	65.7
	4	53.4	47.2	55.3	57.2	56.6	58.4	61.0
	5	51.0	46.9	55.5	56.7	54.7	55.6	57.1
	6	43.3	42.5	50.0	52.4	51.9	52.9	54.3
	7	38.3	38.3	46.0	49.9	51.5	51.6	52.4
	8	32.3	32.1	38.7	42.6	44.8	46.5	48.4

Table 13: Radiated Acoustics in dB for 10” x 15” rectangular duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)			
		730 / 345	1090 / 514	2190 / 1034	3645 / 1720
0.2 in.WC	1	47.1	48.7	50.3	64.2
	2	44.6	47.7	50.9	59.6
	3	44.2	46.0	47.9	55.5
	4	36.5	38.9	41.3	54.3
	5	37.0	35.6	34.2	45.0
	6	20.8	25.3	29.7	39.5
	7	21.4	22.0	22.6	32.1
	8	24.6	23.1	21.5	25.1
0.5 in.WC	1	46.2	53.7	61.1	72.8
	2	45.5	54.0	62.4	68.9
	3	43.7	48.1	52.5	60.4
	4	44.0	45.8	47.6	58.8
	5	43.8	41.9	40.0	49.7
	6	37.5	36.2	34.9	45.6
	7	31.6	30.3	29.1	38.3
	8	31.6	28.4	25.2	31.9
1.0 in.WC	1	48.4	56.8	65.3	78.6
	2	47.7	57.5	67.3	76.8
	3	44.6	50.2	55.8	65.2
	4	44.0	47.8	51.5	61.7
	5	43.8	44.7	45.6	55.1
	6	37.5	38.9	40.2	51.9
	7	31.6	33.9	36.2	45.0
	8	31.6	32.2	32.8	38.5
2.0 in.WC	1	53.7	63.5	69.5	80.3
	2	52.6	60.2	67.9	79.0
	3	45.3	53.4	61.5	68.9
	4	46.5	41.6	56.8	63.1
	5	52.8	55.0	57.1	59.3
	6	49.8	50.5	51.3	53.7
	7	41.8	44.6	47.3	49.9
	8	37.6	40.3	43.0	45.1

Table 14: Radiated Acoustics in dB for 10” x 21” rectangular duct models

Discharge Acoustics

Discharge Acoustics NC Ratings

0.2 in.WC. (50 Pa) is the recommended operating pressure drop.

NOTES:

1. Acoustics data is provided in this specifications guide as tested. Conservative approximations have been made in the Smart Air Control Valve Selection Tool to align with other performance data, where applicable.
2. NC ratings are derived from sound power levels, which are obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
3. NC ratings are calculated based on typical attenuation values outlined in Appendix E, AHRI Standard 885-2008
   - Radiated NC ratings are based on 5/8" mineral fiber tile ceiling per AHRI 885-2008 attenuation values
   - Discharge NC ratings are based on environmental effect, end reflection, flex duct, sound power division and lined duct per AHRI 885-2008 attenuation values

Unit Size	Airflow		Air Pressure Drop			
	CFM	LPS	0.2 in.WC	0.5 in.WC	1.0 in.WC	2.0 in.WC
8"	30	14	5	5	15	20
	125	59	5	5	5	25
	175	83	5	5	15	20
	280	132	5	5	20	25
	350	165	5	5	20	20
	525	248	5	20	25	25
	700	330	15	25	30	35
	875	413	20	30	35	35
12"	70	33	5	5	15	20
	280	132	5	5	5	25
	393	185	5	5	15	20
	635	300	5	5	20	25
	786	371	5	5	20	20
	1178	556	5	20	25	25
	1571	741	15	25	30	35
	1964	927	20	30	35	35
16"	125	59	5	5	15	20
	281	133	5	5	30	30
	500	236	5	5	5	25
	781	369	5	5	20	25
	1125	531	5	5	20	25
	1532	723	5	20	25	30
	2000	944	15	25	30	30
	3491	1648	30	35	35	40
10" x 15"	280	132	5	5	15	20
	500	236	5	15	20	25
	780	368	5	15	25	30
	1120	529	5	15	25	35
	1530	722	5	20	25	35
	1995	942	5	25	30	35
	2600	1227	20	25	35	35
10" x 21"	392	345	5	5	20	30
	730	514	5	15	20	30
	1090	1034	5	15	25	30
	1570	1720	5	15	25	30
	2190	185	15	25	30	35
	2792	371	20	25	30	35
	3645	556	20	35	40	40

Table 15: Discharge Acoustics NC Ratings

Discharge Acoustics dB Ratings (LW db, re 10^-12 Watts)

NOTES:
1. Test data obtained in accordance with AHRI Standard 880-2017 and ASHRAE Standard 130-2016.
2. Sound power levels include duct end corrections per AHRI Standard 880-2017.

Values in ***BOLD*** lower than room ambient.

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)			
		175 / 83	350 / 165	525 / 248	875 / 413
0.2 in.WC	1	6.9	68.3	70.1	78.8
	2	51.7	60.2	64.4	73.4
	3	45.0	52.2	56.0	66.6
	4	42.6	50.3	54.4	68.9
	5	39.8	47.6	51.2	61.1
	6	37.4	45.5	48.5	58.9
	7	31.4	41.6	44.0	56.4
	8	24.6	34.4	38.1	54.3
0.5 in.WC	1	65.5	72.0	76.0	84.3
	2	57.8	65.7	70.1	78.6
	3	52.1	58.4	61.9	70.7
	4	49.8	55.7	59.3	70.9
	5	49.3	53.4	56.9	63.9
	6	49.1	51.5	54.5	61.6
	7	45.7	50.3	53.2	59.2
	8	41.4	46.8	50.1	56.0
1.0 in.WC	1	71.6	74.3	78.6	86.6
	2	64.5	69.2	73.7	81.4
	3	59.8	62.8	66.3	73.9
	4	57.1	59.9	62.8	72.0
	5	55.9	59.5	61.2	66.7
	6	57.1	58.4	59.7	65.2
	7	54.7	57.1	58.1	63.0
	8	53.9	55.0	57.0	60.8

Table 16: Discharge Acoustics in dB for 8” round duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)				
		393 / 185	786 / 371	1178 / 556	1571 / 741	1964 / 927
0.2 in.WC	1	***61.0***	63.9	66.7	69.3	71.9
	2	***47.1***	54.5	61.8	64.9	68.0
	3	43.3	48.9	54.4	57.9	61.4
	4	37.5	44.8	52.0	55.7	59.4
	5	***33.3***	40.3	47.3	52.0	56.7
	6	30.7	37.1	43.5	50.2	56.9
	7	25.9	32.6	39.3	47.2	55.1
	8	21.3	27.4	33.4	43.8	54.2
0.5 in.WC	1	***62.0***	67.7	73.3	77.2	81.1
	2	***52.8***	60.0	67.2	63.5	67.4
	3	49.6	54.6	59.5	63.5	67.4
	4	45.4	50.9	56.3	60.0	63.6
	5	44.3	48.4	52.5	56.3	60.0
	6	43.4	46.5	49.5	53.3	57.0
	7	40.7	44.2	47.7	50.7	53.7
	8	37.2	41.1	44.9	47.4	49.9
1.0 in.WC	1	***64.9***	71.0	77.1	80.7	84.3
	2	59.5	65.9	72.2	76.0	79.7
	3	55.5	59.4	63.2	67.0	70.7
	4	53.4	56.4	59.3	63.0	66.6
	5	53.9	55.4	56.8	59.8	62.8
	6	54.6	54.4	54.2	57.2	60.2
	7	50.9	51.9	52.8	55.3	57.8
	8	48.9	50.0	51.0	53.3	55.5
2.0 in.WC	1	***66.5***	73.8	81.0	84.2	87.3
	2	62.7	70.5	78.3	81.5	84.7
	3	60.3	64.3	68.3	71.8	75.2
	4	58.9	61.0	63.1	66.4	69.6
	5	62.8	62.7	62.6	64.9	67.2
	6	64.2	62.4	60.6	63.0	65.3
	7	59.4	59.2	58.9	60.8	62.7
	8	57.6	57.7	57.8	59.7	61.6

Table 17: Discharge Acoustics in dB for 12” round duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)							
		125 / 59	281 / 133	500 / 236	781 / 369	1125 / 531	1532 / 723	2000 / 944	3491 / 1648
0.2 in.WC	1	62.2	62.3	66.2	60.3	64.1	69.1	70.7	80.0
	2	50.0	47.4	52.7	52.5	57.5	61.2	64.8	74.3
	3	41.9	43.8	45.0	45.3	50.6	52.8	56.3	67.5
	4	33.0	43.9	41.0	43.5	48.5	51.3	54.8	70.5
	5	29.9	42.7	39.2	40.9	45.8	48.9	51.9	61.8
	6	28.5	34.3	35.5	38.6	44.0	46.9	49.3	59.2
	7	19.5	30.6	29.7	32.4	38.2	43.1	44.8	56.6
	8	21.0	23.2	23.6	25.6	31.3	35.6	38.9	54.3
0.5 in.WC	1	67.9	62.9	67.3	66.1	67.0	72.7	76.5	84.4
	2	59.7	58.1	56.1	58.6	62.7	66.7	70.6	79.2
	3	53.4	51.9	52.0	52.5	55.7	59.1	62.3	71.3
	4	45.1	45.1	50.2	50.6	53.7	56.5	59.8	72.2
	5	43.0	41.7	47.7	50.1	52.8	54.2	57.7	64.6
	6	42.1	44.2	49.0	50.1	51.7	52.4	55.3	62.4
	7	40.9	41.5	44.1	46.5	49.7	51.3	54.1	60.1
	8	33.3	32.3	39.6	42.1	45.1	47.8	51.0	57.1
1.0 in.WC	1	68.4	78.0	66.4	72.7	72.4	74.9	78.8	87.0
	2	59.3	706	60.7	65.3	65.8	69.8	74.0	81.7
	3	58.2	64.0	56.2	50.5	60.8	53.4	66.8	74.4
	4	50.8	54.0	53.7	57.7	58.7	60.5	63.4	72.9
	5	48.9	50.0	54.0	53.7	57.7	58.7	60.5	63.4
	6	50.1	49.0	53.7	57.5	59.2	59.1	60.6	66.0
	7	55.0	51.2	57.2	55.4	57.7	58.0	59.0	63.9
	8	51.5	46.2	48.9	54.7	55.3	55.9	58.0	61.7
2.0 in.WC	1	64.9	79.2	77.7	76.3	77.9	78.2	81.3	89.5
	2	56.2	71.5	71.7	68.8	70.8	72.6	77.2	86.3
	3	58.8	90.9	68.9	64.7	66.5	68.4	70.9	78.8
	4	64.4	62.1	61.1	62.5	64.6	65.5	67.6	75.2
	5	53.6	57.9	57.6	61.5	65.5	66.8	67.4	71.2
	6	54.9	58.1	57.7	61.8	66.4	66.8	67.2	70.9
	7	57.3	57.6	57.4	63.4	63.8	64.9	65.4	68.8
	8	61.7	58.7	61.0	61.1	61.3	62.9	63.5	66.7

Table 18: Discharge Acoustics in dB for 16” round duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)						
		280 / 132	500 / 236	780 / 368	1120 / 529	1530 / 722	1995 / 942	2600 / 1227
0.2 in.WC	1	63.8	70.2	70.5	64.1	66.5	71.7	78.0
	2	46.6	50.2	53.6	56.3	57.6	51.4	66.4
	3	46.6	41.6	47.0	50.6	54.9	57.4	61.8
	4	45.7	42.6	47.1	50.1	53.2	57.2	62.8
	5	39.6	38.8	43.2	45.5	48.1	51.5	56.4
	6	37.1	37.9	42.4	44.3	4732	51.1	54.9
	7	32.3	30.8	37.7	39.9	43.6	48.1	51.4
	8	25.0	23.0	30.7	33.9	38.7	43.8	46.9
0.5 in.WC	1	70.7	71.7	70.9	68.1	72.4	76.7	81.3
	2	50.7	55.4	59.9	63.0	67.0	68.1	71.5
	3	48.1	53.1	54.8	57.3	61.4	65.5	67.1
	4	50.3	54.2	53.5	56.1	59.4	63.9	69.3
	5	50.3	53.7	52.9	54.1	56.6	58.9	62.3
	6	48.0	54.2	53.1	53.9	56.8	59.0	62.1
	7	45.5	53.0	51.6	52.8	55.3	57.4	60.2
	8	39.2	50.8	50.2	4934	52.8	55.6	58.8
1.0 in.WC	1	71.3	72.5	70.8	71.9	75.3	79.5	83.8
	2	57.6	58.1	62.6	66.8	70.8	76.0	77.6
	3	54.4	55.2	60.3	62.6	64.9	69.3	72.4
	4	51.4	57.3	59.9	61.0	63.4	66.7	71.8
	5	52.2	57.8	61.9	60.4	61.8	63.5	66.4
	6	52.2	59.0	64.2	63.1	64.0	65.3	68.0
	7	53.7	57.6	63.5	62.5	63.8	64.7	66.6
	8	51.3	63.9	60.4	60.0	61.6	63.1	65.4
2.0 in.WC	1	75.9	75.6	76.6	76.1	77.7	80.8	84.8
	2	68.9	66.3	65.8	69.0	72.7	76.3	81.7
	3	66.2	62.7	63.4	66.9	69.6	73.6	77.9
	4	61.5	59.9	65.6	66.9	67.8	70.4	74.0
	5	61.4	62.0	67.1	68.3	67.7	68.7	70.3
	6	59.7	61.4	68.8	71.8	71.0	71.8	73.1
	7	62.4	63.3	68.7	73.5	75.3	74.1	73.6
	8	60.1	61.3	66.7	71.2	72.3	72.2	72.2

Table 19: Discharge Acoustics in dB for 10” x 15” rectangular duct models

Air Pressure Drop	Octave Band	Airflow (CFM / LPS)			
		730 / 345	1090 / 514	2190 / 1034	3645 / 1720
0.2 in.WC	1	56.9	68.3	79.8	84.2
	2	45.6	54.1	62.5	69.6
	3	46.0	52.4	58.9	61.9
	4	40.7	48.1	55.5	56.1
	5	41.9	47.1	52.2	54.7
	6	43.6	46.7	49.4	47.9
	7	35.2	40.0	44.8	40.5
	8	26.6	33.4	40.2	36.7
0.5 in.WC	1	58.0	69.7	81.4	86.3
	2	51.7	61.2	70.7	77.1
	3	53.0	59.2	65.4	72.9
	4	50.2	55.7	61.2	70.5
	5	52.6	54.9	57.3	63.7
	6	55.7	56.4	57.1	62.8
	7	51.3	52.1	52.9	57.5
	8	45.5	48.5	51.4	55.7
1.0 in.WC	1	63.8	72.4	81.0	90.2
	2	57.4	66.6	75.8	83.1
	3	54.7	61.3	67.9	77.3
	4	55.5	59.5	63.4	72.7
	5	58.6	60.5	62.4	67.8
	6	61.9	62.2	62.4	67.2
	7	58.2	59.8	61.5	65.1
	8	56.2	57.3	58.3	62.6
2.0 in.WC	1	72.0	78.0	84.0	92.1
	2	62.0	70.3	78.6	87.1
	3	56.2	64.8	71.3	82.0
	4	57.0	62.0	67.0	74.0
	5	67.3	68.5	69.6	72.8
	6	67.2	67.7	68.2	71.7
	7	69.5	69.1	68.7	71.7
	8	65.6	65.7	65.8	68.9

Table 20: Discharge Acoustics in dB for 10” x 21” rectangular duct models

Hydronic Coil Performance Data

Air & Water Pressure Drops

Air Pressure Drop

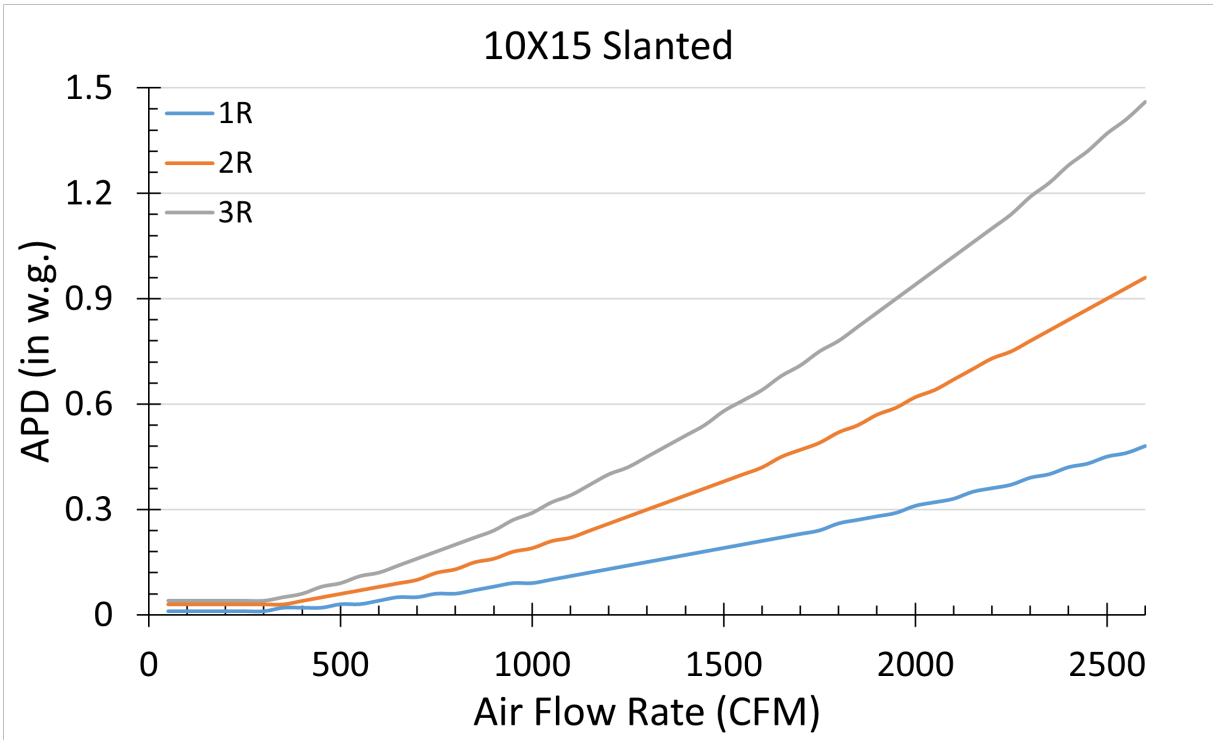


Figure 2: SACV 10" x 15" Air Pressure Drop (APD Vs CFM)

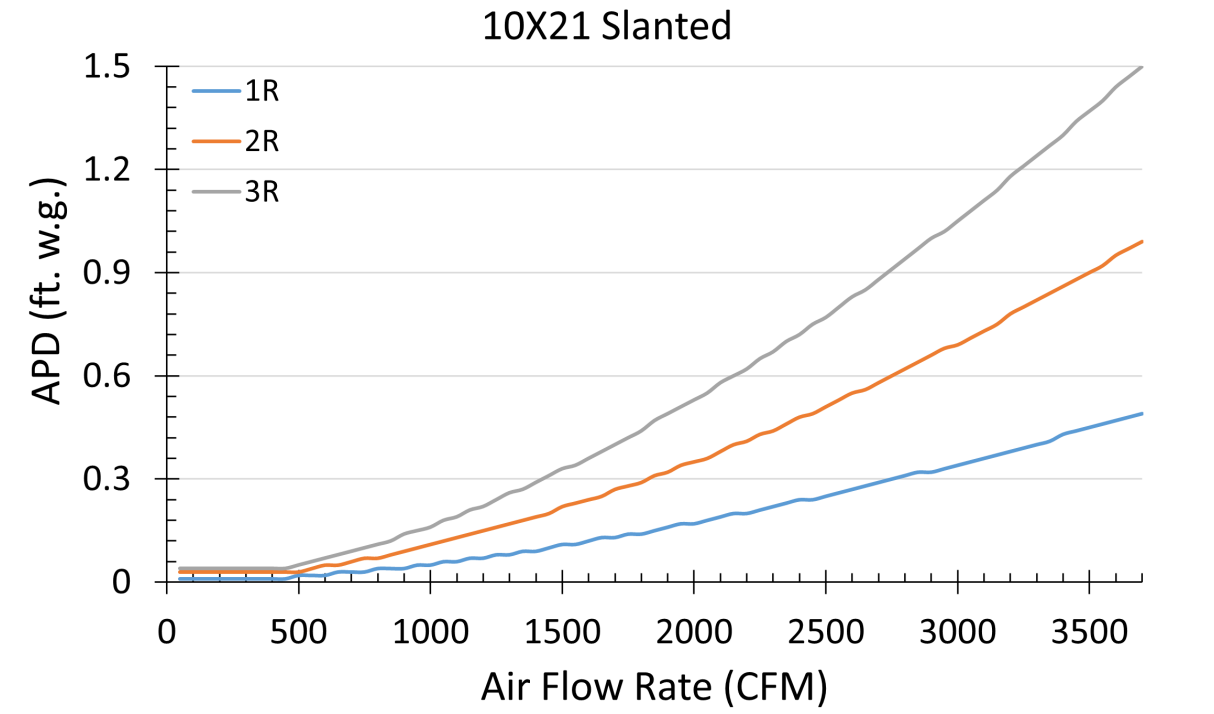


Figure 3: SACV 10" x 21" Air Pressure Drop (APD Vs CFM)

Water Pressure Drop

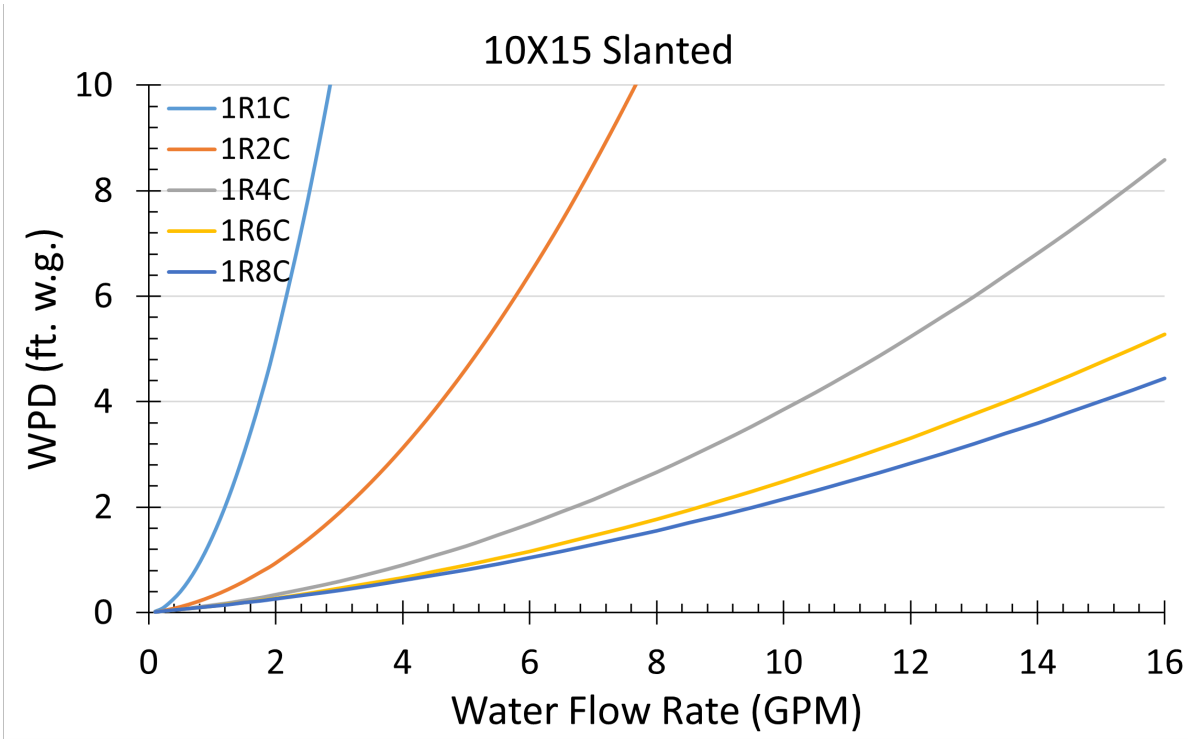


Figure 4: SACV 10" x 15" Water Pressure Drop - 1 row coil (WPD Vs GPM)

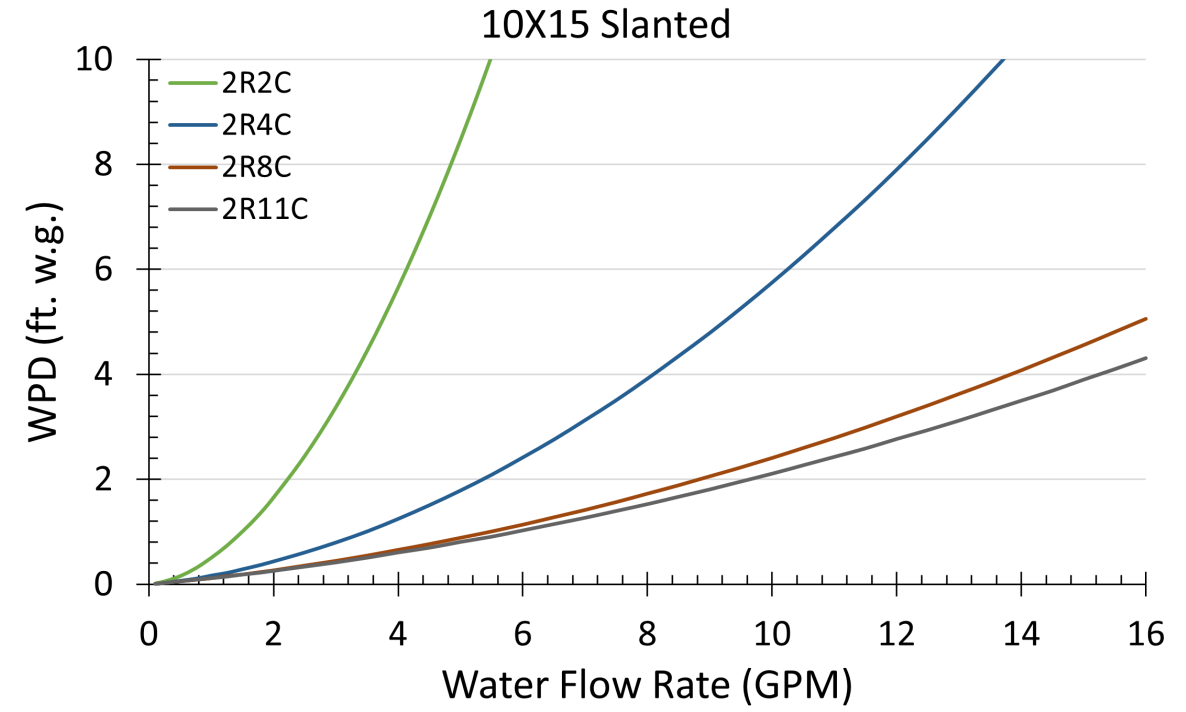


Figure 5: SACV 10" x 15" Water Pressure Drop - 2 row coil (WPD Vs GPM)

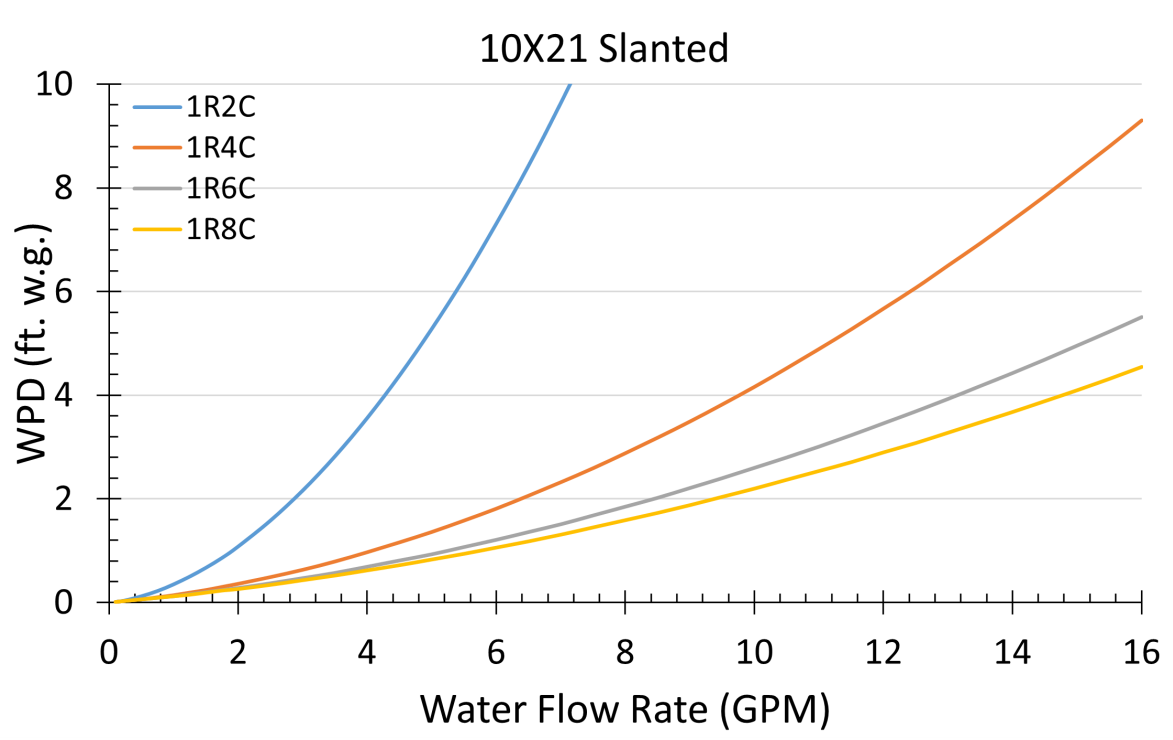


Figure 6: SACV 10" x 21" Water Pressure Drop - 1 row coil (WPD Vs GPM)

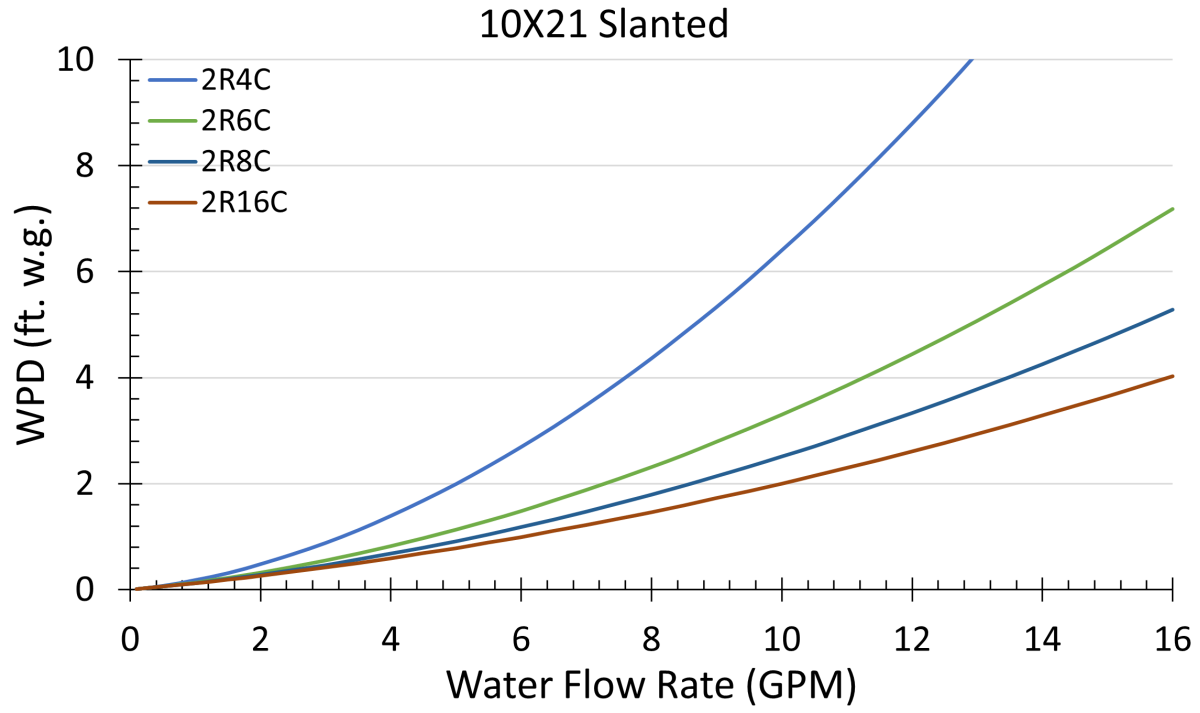


Figure 7: SACV 10" x 21" Water Pressure Drop - 2 row coil (WPD Vs GPM)

NOTE: Refer to the SACV Selection Tool for coil performance data in metric units.

Slanted Hydronic Reheat Coils for 10x15-inch Rectangular SACV

Entry Water Temperature (EWT) = 120°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		0.5 GPM	0.75 GPM	1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM
CFM	500	76/11/72	81/14/81	84/16/87	***91/19/99***	-	-	-	-
	1000	-	-	74/20/78	80/27/92	-	-	-	-
	1500	-	-	69/22/73	74/32/87	-	-	-	-
	2000	-	-	66/24/71	71/35/84	-	-	-	-
	2600	-	-	63/25/69	68/37/81	-	-	-	-

Table 21: SACV Standard Slanted Reheat Coils – 10x15, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***90/19/80***	***99/24/95***	***103/26/102***	***104/27/106***	***105/27/108***	-	-	-
	1000	76/23/72	86/33/85	***90/38/93***	***93/41/99***	***94/43/102***	-	-	-
	1500	70/25/68	78/38/80	83/46/89	85/50/94	87/53/98	-	-	-
	2000	67/26/66	74/41/77	78/50/85	81/56/91	82/60/95	-	-	-
	2600	64/27/65	80/44/75	74/55/83	76/62/88	78/67/92	-	-	-

Table 22: SACV Standard Slanted Reheat Coils – 10x15, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.

Entry Water Temperature (EWT) = 140°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		0.5 GPM	0.75 GPM	1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM
CFM	500	83/15/77	89/19/88	***94/21/96***	***103/26/113***	-	-	-	-
	1000	-	-	80/27/84	87/35/103	-	-	-	-
	1500	-	-	73/30/78	80/42/97	-	-	-	-
	2000	-	-	69/32/75	76/46/93	-	-	-	-
	2600	-	-	66/33/72	72/50/89	-	-	-	-

Table 23: SACV Standard Slanted Reheat Coils – 10x15, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***102/25/88***	***113/32/107***	***118/34/116***	***120/35/121***	***121/36/125***	-	-	-
	1000	-	***96/44/94***	***101/51/105***	***105/54/112***	***107/57/116***	-	-	-
	1000	-	***96/44/94***	***101/51/105***	***105/54/112***	***107/57/116***	-	-	-
	2000	-	-	85/67/94	***90/74/102***	***91/80/107***	-	-	-
	2600	-	-	-	83/82/98	86/88/104	-	-	-

Table 24: SACV Standard Slanted Reheat Coils – 10x15, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.

Entry Water Temperature (EWT) = 160°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		0.5 GPM	0.75 GPM	1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM
CFM	500	***90/19/82***	***98/19/82***	***103/26/106***	***114/32/126***	-	-	-	-
	1000	-	-	86/34/91	***95/44/114***	-	-	-	-
	1500	-	-	77/37/83	87/52/106	-	-	-	-
	2000	-	-	73/39/79	81/57/101	-	-	-	-
	2600	-	-	69/41/76	76/62/96	-	-	-	-

Table 25: SACV Standard Slanted Reheat Coils – 10x15, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***113/32/95***	***128/39/119***	***133/42/130***	***136/44/137***	***138/45/141***	-	-	-
	1000	***90/39/80***	***106/55/103***	***113/63/116***	***117/68/125***	***120/71/131***	-	-	-
	1500	80/42/75	***94/63/95***	***101/75/108***	***105/83/117***	***108/87/124***	-	-	-
	2000	-	86/68/90	***93/83/103***	***97/93/112***	***100/99/119***	-	-	-
	2600	-	-	86/90/98	***91/102/108***	***93/110/115***	-	-	-

Table 26: SACV Standard Slanted Reheat Coils – 10x15, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.

Entry Water Temperature (EWT) = 180°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		0.5 GPM	0.75 GPM	1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM
CFM	500	***97/22/86***	***106/28/103***	***113/31/115***	***126/38/140***	-	-	-	-
	1000	-	-	***92/40/97***	***104/53/125***	-	-	-	-
	1500	-	-	82/45/88	***93/62/115***	-	-	-	-
	2000	-	-	76/47/83	86/69/109	-	-	-	-
	2600	-	-	72/49/79	81/74/104	-	-	-	-

Table 27: SACV Standard Slanted Reheat Coils – 10x15, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***125/38/101***	***142/47/131***	***149/51/145***	***152/53/152***	***154/54/157***	-	-	-
	1000	***98/46/84***	***116/66/111***	***124/76/128***	***129/81/138***	***132/85/145***	-	-	-
	1500	85/50/77	***101/76/102***	***110/90/118***	***115/99/129***	***119/105/137***	-	-	-
	2000	78/52/74	***92/82/96***	***101/00/111***	***106/111/123***	***109/119/131***	-	-	-
	2600	73/53/71	85/87/91	***93/108/106***	***98/122/117***	***101/132/125***	-	-	-

Table 28: SACV Standard Slanted Reheat Coils – 10x15, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.

Slanted Hydronic Reheat Coils for 10x21-inch Rectangular SACV

Entry Water Temperature (EWT) = 120°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		0.5 GPM	0.75 GPM	1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM
CFM	500	78/12/69	83/15/77	87/17/84	***95/21/97***	-	-	-	-
	1000	-	-	75/22/74	82/30/89	-	-	-	-
	1500	-	-	70/25/69	76/35/83	-	-	-	-
	2000	-	-	67/26/66	73/39/80	-	-	-	-
	2500	-	-	64/27/65	70/42/77	-	-	-	-
	3000	-	-	63/27/64	68/44/75	-	-	-	-
	3700	-	-	62/28/62	66/46/73	-	-	-	-

Table 29: SACV Standard Slanted Reheat Coils – 10x21, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	4.75 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***93/21/77***	***1103/26/93***	***106/28/100***	***108/29/105***	***109/29/107***	-	-	-
	1000	78/25/67	89/37/82	***94/43/91***	***97/46/96***	***98/47/99***	-	-	-
	1500	71/27/64	81/43/76	86/51/85	89/56/91	***91/59/94***	-	-	-
	2000	68/28/62	76/46/73	81/57/81	84/64/87	86/67/91	-	-	-
	2500	65/29/61	72/48/70	77/61/78	80/69/84	82/74/88	-	-	-
	3000	64/29/60	70/50/69	74/64/76	77/73/82	79/79/86	-	-	-
	3700	62/29/60	67/51/67	71/67/74	74/78/80	75/84/84	-	-	-

Table 30: SACV Standard Slanted Reheat Coils – 10x21, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.

Entry Water Temperature (EWT) = 140°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		0.5 GPM	0.75 GPM	1 GPM	2 GPM	3 GPM	4 GPM	5 GPM	6 GPM
CFM	500	85/16/73	***92/20/84***	***97/23/92***	***107/28/110***	-	-	-	-
	1000	-	-	82/29/79	***91/40/99***	-	-	-	-
	1500	-	-	75/32/73	83/47/92	-	-	-	-
	2000	-	-	70/34/70	78/52/87	-	-	-	-
	2500	-	-	68/35/67	75/55/84	-	-	-	-
	3000	-	-	66/36/66	72/57/81	-	-	-	-
	3700	-	-	64/37/64	70/60/78	-	-	-	-

Table 31: SACV Standard Slanted Reheat Coils – 10x21, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	4.75 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***106/28/83***	***118/34/104***	***123/37/114***	***125/38/120***	***126/38/123***	-	-	-
	1000	86/34/71	***100/49/89***	***107/56/101***	***110/60/109***	***112/78/106***	-	-	-
	1500	-	89/56/56	***96/68/94***	***100/74/102***	***102/78/106***	-	-	-
	2000	-	-	89/75/89	***93/84/97***	***95/89/101***	-	-	-
	2500	-	-	-	88/91/93	***90/97/98***	-	-	-
	3000	-	-	-	84/97/90	86/104/95	-	-	-
	3700	-	-	-	80/103/87	82/111/92	-	-	-

Table 32: SACV Standard Slanted Reheat Coils – 10x21, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.

Entry Water Temperature (EWT) = 160°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	4.75 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***92/20/76***	***102/25/90***	***108/28/101***	***120/35/123***	-	-	-	-
	1000	-	-	89/37/84	***100/49/109***	-	-	-	-
	1500	-	-	79/40/77	***90/58/100***	-	-	-	-
	2000	-	-	74/42/73	84/64/94	-	-	-	-
	2500	-	-	71/44/70	80/68/90	-	-	-	-
	3000	-	-	68/45/68	76/71/87	-	-	-	-
	3700	-	-	66/46/66	73/75/83	-	-	-	-

Table 33: SACV Standard Slanted Reheat Coils – 10x21, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	4.75 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***118/34/89***	***134/43/116***	***139/46/128***	***142/47/135***	***143/48/139***	-	-	-
	1000	***93/42/74***	***111/61/97***	***119/70/112***	***124/75/121***	***126/77/126***	-	-	-
	1500	82/45/68	***98/70/88***	***106/84/102***	***111/93/112***	***114/97/118***	-	-	-
	2000	76/46/66	89/76/82	***98/93/96***	***103/105/106***	***105/111/112***	-	-	-
	2500	72/47/64	84/79/79	***91/100/92***	***96/114/102***	***99/121/108***	-	-	-
	3000	69/47/63	80/82/76	87/105/88	***91/121/98***	***94/129/104***	-	-	-
	3700	66/48/62	76/84/74	82/110/85	86/128/94	89/138/100	-	-	-

Table 34: SACV Standard Slanted Reheat Coils – 10x21, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.

Entry Water Temperature (EWT) = 180°F

Assumptions/Comments:

- Standard Fin properties: 12 Fins Per Inch, 0.0045" Aluminum, Sine Fin Surface.
- Tube material: Copper; Connection material: Copper.
- All coils are selected using Entry Air Temperature (EAT) = 55°F and Leaving Air Temperature (LAT) > 90°F (or as per custom schedule).
- Performance data shown are for water velocity less than 6 fps and water pressure drop less than 7 ft.WC.

Values in ***BOLD*** are acceptable GPM selections for a particular coil configuration.

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	4.75 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***99/24/80***	***111/30/96***	***118/34/109***	***133/42/136***	-	-	-	-
	1000	-	-	95/44/89	***109/59/119***	-	-	-	-
	1500	-	-	84/48/81	97/70/108	-	-	-	-
	2000	-	-	78/51/76	90/77/101	-	-	-	-
	2500	-	-	74/52/72	85/82/96	-	-	-	-
	3000	-	-	71/53/70	81/85/92	-	-	-	-
	3700	-	-	68/55/68	77/89/88	-	-	-	-

Table 35: SACV Standard Slanted Reheat Coils – 10x21, 1 Row 1 Circuit

		LAT(°F)/ CAPACITY (MBH)/LWT (°F)							
		1 GPM	2 GPM	3 GPM	4 GPM	4.75 GPM	6 GPM	7 GPM	8 GPM
CFM	500	***131/41/95***	***149/51/127***	***156/55/142***	***159/56/150***	***160/57/155***	-	-	-
	1000	***101/50/77***	***122/73/104***	***132/84/122***	***137/90/133***	***140/93/139***	-	-	-
	1500	87/53/70	***106/84/93***	***116/101/111***	***123/111/123***	***126/116/129***	-	-	-
	2000	80/55/67	***96/91/87***	***106/112/103***	***112/125/115***	***115/133/122***	-	-	-
	2500	75/56/65	***90/95/83***	***99/120/98***	***105/136/110***	***108/145/117***	-	-	-
	3000	72/57/64	85/98/80	***93/126/94***	***99/144/106***	***102/155/113***	-	-	-
	3700	69/57/63	80/101/77	87/132/90	***93/153/101***	***96/16/108***	-	-	-

Table 36: SACV Standard Slanted Reheat Coils – 10x21, 2 Rows 2 Circuits

NOTE: Refer to the SACV Selection Tool for additional coil performance data in imperial and metric units.