

Single Duct Terminal Units

SPEQ, SDEQ Series

Ultra Quiet Exhaust Single Duct Terminal Units

Product Information

General Information

The Price SPEQ (pneumatic controls), SDEQ (digital duct controls) single duct terminals are meant to control the airflow rate of exhaust air out of an occupied space in response to a control signal. The clean and efficient design of these single duct terminal units result in a system component which has minimal pressure drop reducing fan horsepower requirements. An inlet silencer is included with the unit to enhance quiet operation.

The SPEQ/SEEQ/SDEQ Series is ideally suited for Health Care or Lab exhaust applications where indoor air quality is a concern. VAV silencer is available with either polymer film (PL) or fiberglass cloth (FC) liner to reduce fiberglass erosion.

Standard terminal construction features the Price CRAF liner system for complete coverage of fiberglass insulation.

Control options for this product line are wide and varied with pneumatic, analog electronic and state of the art direct digital control available to suit most any application. Most of the control options utilize the Price SP300 multipoint sensor spaced across the width of the inlet for accurate duct air velocity pressure measurement. This allows the terminals to monitor the desired flow rate, and compensate instantly for any changes in air pressure that might tend to alter the air volume. In other words, the net result is a pressure independent variable air volume system.

Features:

- Built-in inlet silencer for quiet operation.
- Selection of cleanroom terminal liners for fiberglass protection see liners page F101.
- Both inlet and discharge are rectangular and complete with slip and drive connections.
- Capacities ranging from 50 – 4000 cfm in 10 sizes.
- Pressure independent operation.
- Can be used for VAV or constant volume applications.
- Available with pneumatic, electronic or direct digital controls.
- Factory calibrated to job requirements.
- Individually adjustable minimum and maximum air volumes – easily field adjusted.
- SP300 multi-point flow sensor designed to maintain control accuracy independent of field installation conditions.

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- Gauge taps for flow measurement and balancing.
- Conveniently accessible externally mounted controls.
- NEMA1 Protective metal shrouds for electronic and digital controls. Protective metal cover optional for pneumatic controls.
- 22 gauge zinc-coated steel housing.
- Damper blade constructed of two layers of heavy gauge galvanized steel with a sandwiched peripheral gasket of cross linked polyurethane foam to ensure tight seal and no damper deflection.
- Plated damper shaft is mounted in self-lubricating bearings.
- Units with factory mounted high voltage components like transformers or disconnect switches are ETL certified to UL 873.

✓ Product Selection Checklist

- 1] Select Unit Inlet Size based on control and acoustic parameters.
- 2] Select Control type (Pneumatic, Electronic, Digital) based on system design.
- 3] Select Accessories as required.
- 4] Select Control Sequence based on system design.

Single Duct Terminal Units

SPEQ, SDEQ Series

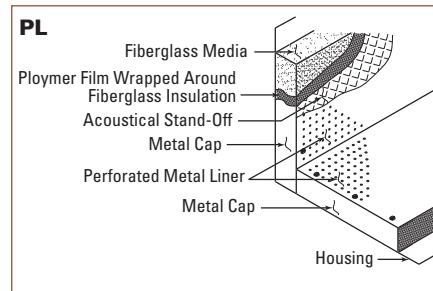
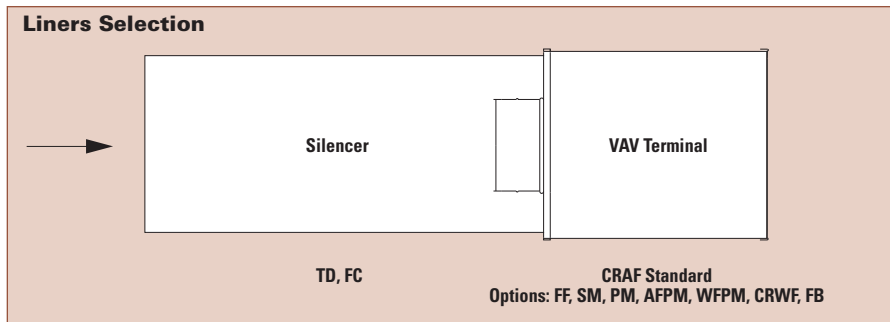
Ultra Quiet Exhaust Single Duct – Controller Type

Silencer Section Liners

Price offers an extensive system of liners available with the SPEQ/SDEQ product line. These liners offer various degrees of fiberglass protection suitable for hospital, pharmaceutical, laboratory, and other types of clean room applications.

While specifying liners for SPEQ/SDEQ construction of both the terminal and silencer sections need to be selected:

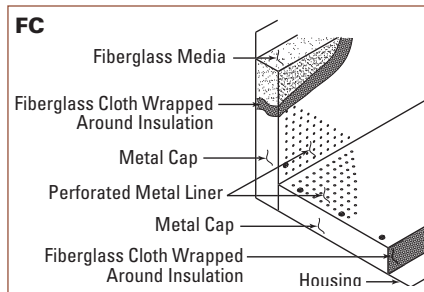
- The terminal unit itself can be built with our typical selection of liners available for Single Ducts and other Price terminals CRAF is provided as standard other typical Price liners are also available – SM, PM, AFPM, WFPM, CRAF, CRWF, FF, and FB. See product SDV liner section for full description of those liners F39-F41.
- The VAV silencer section of SDEQ terminals can be manufactured with two types of "hospital grade" liners – PL (polymer film) and FC (fiberglass cloth).



PL Polymer Film Liner System
Polymer film wrapped around fiberglass media packed inside of the silencer. The polymer film and perforated metal facing the air are separated with an acoustical stand off. This is a typical industry construction for silencers where fiberglass isolation is required. Polymer film is a reflective material so less sound absorption is expected from a silencer lined with it (see performance charts). Note that polymer film and acoustical stand off are both rated below 25/50 for flame and smoke development per ASTM E 84 and as such meets NFPA90A.

PL Liner System complies with the following industry standards and tests:

- UL 181 (Air Erosion)
- UL 181 (Mold Growth & Humidity)
- UL 723 (25/50) (Flame & Smoke)
- ASTM E 84 (25/50) (Flame & Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)



FC Fiberglass Cloth Liner System
Standard construction features of the Price PL features tightly woven fiberglass cloth wrapped around fiberglass media and covered with perforated metal liner which is facing the air stream inside of the silencer. The cloth prevents shedding of fiberglass media but as a porous material it does not compromise the sound absorption. This liner offers optimum sound performance, basically no correction factors have to be taken into an account and performance equal to fiberglass lined silencers is achievable. Note that fiberglass cloth is rated below 25/50 for flame and smoke development per ASTM E 84 and as such meets NFPA90A.

FC Liner System complies with the following industry standards and tests:

- UL 181 (Air Erosion)
- UL 181 (Mold Growth & Humidity)
- UL 723 (25/50) (Flame & Smoke)
- ASTM E 84 (25/50) (Flame & Smoke)
- ASTM C 665 (Fungi Resistance)
- ASTM C 1071 (Physical Properties)

Single Duct Terminal Units

SPEQ, SEEQ, SDEQ Series

Ultra Quiet Exhaust Single Duct – Controller Type

Dimensional Data

SPEQ8000

- Internal insulation - rigid fiberglass ⁵/₈" (16) thick, min. 4 lb density with foil face which meets requirements of NFPA 90A and UL181, and ASTM C-665. Insulation edges covered with metal angles.
- 22 ga. zinc-coated steel housing. Mechanically sealed and gasketed, leak-resistant construction.
- Rectangular discharge/inlet with slip and drive cleat duct connection.
- Pneumatic actuator supplied & mounted by Price.
- 1/2" (13) Dia. plated solid steel shaft with end indicator mark showing damper position.

- Pressure independent
- Gasketed butterfly damper. Leakage rated below 2% of nominal flow at 3" w.g. damper CCW to close.
- Silencer medium pressure style, ga galvanized casing with 22ga perforated liner over fiberglass acoustic media w/ tedlar facing & 1/2" acoustic standoff.

SEEQ8000

- Internal insulation - rigid fiberglass ⁵/₈" (16) thick, min. 4 lb density with foil face which meets requirements of NFPA 90A and UL181, and ASTM C-665. Insulation edges covered with metal angles.
- 22 ga. zinc-coated steel housing. Mechanically sealed and gasketed, leak-resistant construction.
- Rectangular discharge/inlet with slip and drive cleat duct connection.
- 1/2" (13) Dia. plated solid steel shaft with end indicator mark showing damper position.
- Electric controller / actuator factory mounted

- Pressure independent
- Line voltage must not exceed 227V AC.
- Gasketed butterfly damper. Leakage rated below 2% of nominal flow at 3" w.g. damper CCW to close.
- Silencer medium pressure style, ga galvanized casing with 22ga perforated liner over fiberglass acoustic media w/ tedlar facing & 1/2" acoustic standoff.

Unit Size	L/s Range	CFM Range	S.I. Units (mm)				Imperial Units (inches)			
			Outlet/Inlet Valve Dia. Length				Outlet/Inlet Valve Dia. Length			
			B	C	A	L	B	C	A	L
4	0-106	0-225	305	203	102	394	12	8	4	15 1/2
5	0-165	0-350	305	203	127	394	12	8	5	15 1/2
6	0-212	0-450	305	203	152	394	12	8	6	15 1/2
7	0-307	0-650	305	254	178	394	12	10	7	15 1/2
8	0-378	0-800	305	254	203	394	12	10	8	15 1/2
9	0-496	0-1050	356	318	229	394	14	12 1/2	9	15 1/2
10	0-637	0-1350	356	318	254	394	14	12 1/2	10	15 1/2
12	0-991	0-2100	406	381	305	394	16	15	12	15 1/2
14	0-1510	0-3200	508	445	356	483	20	17 1/2	14	19
16	0-1888	0-4000	610	457	406	483	24	18	16	19

Single Duct Terminal Units

SPEQ, SEEQ, SDEQ Series

Ultra Quiet Exhaust Single Duct – Controller Type



Dimensional Data

SDEQ

- Internal insulation - rigid fiberglass $\frac{5}{8}$ " (16) thick, min. 4 lb density with foil face which meets requirements of NFPA 90A and UL181, and ASTM C-665. Insulation edges covered with metal angles.
- 22 ga. zinc-coated steel housing. Mechanically sealed and gasketed, leak-resistant construction.
- Rectangular discharge/inlet with slip and drive cleat duct connection.
- Digital controls by control contractor (Model SDEQ5000).
- Digital controls by Price (Model SDEQ8000).
- $\frac{1}{2}$ " (13) Dia. plated solid steel shaft with end indicator mark showing damper position.
- Gasketed butterfly damper. Leakage rated below 2% of nominal flow at 3" w.g. damper CCW to close.
- Silencer medium pressure style, ga galvanized casing with 22ga perforated liner over fiberglass acoustic media w/ tedlar facing & $\frac{1}{2}$ " acoustic standoff.

Unit Size	L/s Range	CFM Range	S.I. Units (mm)				Imperial Units (inches)			
			Outlet/Inlet Valve Dia.		Length		Outlet/Inlet Valve Dia.		Length	
			B	C	A	L	B	C	A	L
4	0-106	0-225	305	203	102	394	12	8	4	15 1/2
5	0-165	0-350	305	203	127	394	12	8	5	15 1/2
6	0-212	0-450	305	203	152	394	12	8	6	15 1/2
7	0-307	0-650	305	254	178	394	12	10	7	15 1/2
8	0-378	0-800	305	254	203	394	12	10	8	15 1/2
9	0-496	0-1050	356	318	229	394	14	12 1/2	9	15 1/2
10	0-637	0-1350	356	318	254	394	14	12 1/2	10	15 1/2
12	0-991	0-2100	406	381	305	394	16	15	12	15 1/2
14	0-1510	0-3200	508	445	356	483	20	17 1/2	14	19
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TERMINAL UNITS

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Recommended Air Volume Ranges

CP 101

Unit Size	L/s Min.*	L/s Max.	cfm Min.*	cfm Max.
4	24	106	50	225
5	30	165	63	350
6	31	212	70	450
7	47	307	100	650
8	62	378	130	800
9	108	496	170	1050
10	126	637	262	1350
12	173	991	300	2100
14	226	1225	370	2600
16	315	1649	500	3500

CP 100 & CP 200 Controller

Unit Size	L/s Min.*	L/s Max.	cfm Min.*	cfm Max.
4	34	106	75	225
5	43	165	80	350
6	44	212	100	450
7	66	307	140	650
8	88	378	190	800
9	151	496	240	1050
10	175	637	310	1350
12	242	991	420	2100
14	314	1225	540	2600
16	438	1649	710	3500

Electronic or Digital Controls

Unit Size	L/s Min.*	L/s Max.	cfm Min.*	cfm Max.
4	24	106	50	225
5	30	165	55	350
6	31	212	70	450
7	47	307	100	650
8	62	378	130	800
9	108	496	170	1050
10	126	637	220	1350
12	173	991	300	2100
14	226	1225	390	2600
16	315	1649	500	3500

Notes:

Factory calibrated controls must be selected within the above flow range limits. A minimum value of zero is also available. When an auxiliary flow setting is specified, the value must be greater than the minimum setting and within the range limits.

On controls mounted by Price but supplied by others, the air volume ranges are guidelines only.

*Minimum air flow limit is based on min .02" w.g. differential pressure signal from air flow sensor (.04" w.g. for CP100 and CP200). Selection of air flow limits below the listed values is not recommended. Stability and accuracy may not be acceptable at lower than recommended air flow limits. The actual performance will vary depending on the terminal unit controls supplied.

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Minimum Operating Pressure

Unit Size	Airflow		Minimum ΔP s Across Unit	
	cfm	L/s	In W.G.	Pa
4	75	35	0.11	28
	125	59	0.30	73
	175	83	0.56	139
	225	106	0.90	225
5	125	59	0.19	47
	200	94	0.41	103
	275	130	0.70	174
	350	165	1.04	260
6	150	71	0.11	28
	225	106	0.22	55
	300	142	0.36	90
	375	177	0.53	131
	450	212	0.72	178
7	250	118	0.12	31
	350	165	0.23	57
	450	212	0.37	91
	550	260	0.53	131
	650	307	0.72	178
8	400	189	0.16	40
	500	236	0.25	62
	600	283	0.35	87
	700	330	0.47	116
	800	378	0.60	149
9	450	212	0.13	32
	650	307	0.26	64
	850	401	0.42	105
	1050	496	0.63	157
10	550	260	0.13	32
	750	354	0.22	56
	950	448	0.34	86
	1150	543	0.49	121
	1350	637	0.65	162
12	900	425	0.15	37
	1200	566	0.25	62
	1500	708	0.37	93
	1800	850	0.52	129
	2100	991	0.69	171
14	1000	472	0.08	19
	1500	708	0.18	44
	2000	944	0.32	79
	2500	1180	0.51	126
16	1500	708	0.19	46
	2000	944	0.31	78
	2500	1180	0.47	117
	3000	1416	0.65	162
	3500	1652	0.86	215

TERMINAL UNITS

Performance Notes:

1. Test data obtained in accordance with ARI Standard 880-98 and ASHRAE Standard 130-1996.
2. Air flow given in liters/second (L/s); and cubic feet/minute (CFM).
3. Pressure given in Pascals (Pa) and inches of water gauge (in. w.g.)
4. Data is not certified by ARI.

Single Duct Terminal Units

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Discharge Sound Power Levels

Sound Power Levels, Lw dB, re 10⁻¹² Watts

Unit Size	Air Flow		125 Pa (0.5" W.G.)							250 Pa (1.0" W.G.)							500 Pa (2.0" W.G.)							750 Pa (3.0" W.G.)								
			Octave Band							Octave Band							Octave Band							Octave Band								
	L/s	cfm	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
4	35	75	52	41	30	27	—	21	59	49	33	30	—	22	66	57	36	34	—	23	71	63	38	36	—	23	71	63	45	43	—	33
	59	125	51	42	37	33	—	30	58	50	40	37	—	31	66	58	43	40	—	32	71	64	50	47	22	39	71	64	50	47	22	39
	83	175	*	*	*	*	*	*	58	50	44	41	—	37	66	59	48	45	21	38	71	64	50	47	22	39	71	64	50	47	22	39
	106	225	*	*	*	*	*	*	58	51	48	44	24	42	66	59	51	48	26	43	70	64	53	50	27	43	70	64	53	50	27	43
5	59	125	50	43	36	33	—	25	54	48	41	38	—	29	59	54	46	43	22	33	61	57	49	47	24	35	61	57	49	47	24	35
	94	200	54	46	41	37	—	32	58	52	45	42	22	35	62	57	50	47	26	39	65	61	53	50	28	42	65	61	53	50	28	42
	130	275	*	*	*	*	*	*	61	54	49	45	24	40	65	60	54	50	28	44	68	63	56	53	30	46	68	63	56	53	30	46
	165	350	*	*	*	*	*	*	63	56	51	47	26	43	67	61	56	52	30	47	70	65	59	55	32	50	70	65	59	55	32	50
6	71	150	47	40	35	31	—	22	50	45	40	35	—	28	54	50	46	40	—	35	56	53	49	43	20	39	56	53	49	43	20	39
	106	225	51	44	39	35	—	25	54	49	44	39	22	31	58	54	49	44	25	38	60	57	53	46	27	42	60	57	53	46	27	42
	142	300	54	47	41	37	24	27	57	52	46	42	27	33	61	57	52	46	30	40	63	60	55	49	31	44	63	60	55	49	31	44
	177	375	*	*	*	*	*	*	59	54	49	44	30	34	63	59	54	48	33	41	65	62	58	51	35	45	65	62	58	51	35	45
212	450	*	*	*	*	*	*	61	56	50	45	33	36	65	61	56	50	36	43	67	64	59	53	38	47	67	64	59	53	38	47	
7	118	250	50	42	35	32	—	21	55	48	40	36	—	29	60	54	46	41	—	38	63	58	49	43	—	43	63	58	49	43	—	43
	165	350	52	45	38	35	25	24	57	50	43	39	26	32	62	57	49	44	27	40	65	61	52	46	27	45	65	61	52	46	27	45
	212	450	54	46	40	38	31	26	59	52	45	42	32	34	64	59	51	46	33	43	67	63	55	49	34	48	67	63	55	49	34	48
	260	550	*	*	*	*	*	*	60	54	47	43	37	36	66	60	53	48	38	44	69	64	56	50	39	49	69	64	56	50	39	49
307	650	*	*	*	*	*	*	62	55	49	45	41	37	67	62	55	49	42	46	70	65	58	52	43	51	70	65	58	52	43	51	
8	189	400	51	44	38	35	25	27	55	49	43	39	26	32	59	55	47	42	26	37	62	58	50	44	26	40	62	58	50	44	26	40
	236	500	54	46	41	38	34	31	57	51	45	41	34	36	61	57	50	45	34	41	64	61	52	47	34	44	64	61	52	47	34	44
	283	600	55	48	43	40	40	34	59	53	47	43	40	38	63	59	52	47	41	44	65	62	54	49	41	47	65	62	54	49	41	47
	330	700	57	49	45	42	46	36	60	55	49	45	46	41	64	60	53	48	46	46	67	64	56	50	46	50	67	64	56	50	46	50
378	800	*	*	*	*	*	*	62	56	51	46	51	43	66	62	55	50	51	49	68	65	57	52	51	52	68	65	57	52	51	52	
9	212	450	50	44	38	32	20	26	54	50	43	36	21	32	60	56	48	39	22	38	63	60	51	41	22	41	63	60	51	41	22	41
	307	650	53	47	41	37	32	30	58	53	46	40	33	36	63	59	51	43	33	42	66	62	54	45	34	45	66	62	54	45	34	45
	401	850	55	49	43	40	41	33	60	55	48	43	41	39	65	61	53	46	42	45	68	65	56	48	42	48	68	65	56	48	42	48
	496	1050	*	*	*	*	*	*	62	56	49	45	48	41	67	62	54	49	49	47	70	66	57	51	49	50	70	66	57	51	49	50
10	260	550	49	45	39	33	23	26	54	50	43	36	24	30	59	56	48	39	24	35	62	60	51	41	25	38	62	60	51	41	25	38
	354	750	52	47	42	37	34	32	57	53	46	40	35	36	62	59	51	43	35	41	65	62	54	45	36	44	65	62	54	45	36	44
	448	950	55	49	44	40	42	36	59	55	48	43	43	41	64	61	53	46	44	46	67	64	56	48	44	49	67	64	56	48	44	49
	543	1150	56	51	45	42	49	40	61	56	50	45	50	45	66	62	55	48	50	50	69	66	57	50	51	53	69	66	57	50	51	53
637	1350	*	*	*	*	*	*	62	58	51	47	55	48	68	64	56	50	56	53	70	67	59	52	56	56	70	67	59	52	56	56	
12	425	900	54	50	42	36	30	33	59	56	47	39	32	38	64	62	52	43	34	44	68	66	55	45	35	48	68	66	55	45	35	48
	566	1200	56	52	45	40	37	36	61	58	50	43	39	41	66	64	55	46	41	47	70	68	58	48	42	51	70	68	58	48	42	51
	708	1500	57	54	47	43	42	38	62	60	52	46	44	44	68	66	57	49	47	50	71	70	60	51	48	53	71	70	60	51	48	53
	850	1800	*	*	*	*	*	*	63	61	53	48	49	46	69	67	58	51	51	52	72	71	61	53	52	55	72	71	61	53	52	55
991	2100	*	*	*	*	*	*	64	62	55	50	53	48	70	69	60	53	55	54	73	72	63	55	56	57	73	72	63	55	56	57	
14	472	1000	50	47	38	31	26	30	55	53	42	34	28	36	61	59	46	37	30	41	65	63	48	38	31	45	65	63	48	38	31	45
	708	1500	53	49	42	37	34	33	58	55	46	40	36	39	64	62	50	43	39	45	67	66	52	44	40	48	67	66	52	44	40	48
	944	2000	55	51	45	41	41	36	60	57	49	44	43	41	66	64	53	47	45	47	69	68	55	48	46	50	69	68	55	48	46	50
	1180	2500	*	*	*	*	*	*	61	58	51	47	47	43	67	65	55	50	49	49	71	69	58	52	51	52	71	69	58	52	51	52
16	708	1500	53	49	41	34	22	28	59	55	44	36	22	32	66	62	47	38	23	36	70	66	48	39	23	38	70	66	48	39	23	38
	944	2000	54	50	46	39	33	33	61	57	48	41	34	37	67	63	51	43	34	40	71	67	53	45	35	43	71	67	53	45	35	43
	1180	2500	56	52	49	43	42	37	62	58	52	45	43	40	69	65	55	47	43	44	73	69	56	49	44	46	73	69	56	49	44	46
	1416	3000	*	*	*	*	*	*	63	59	55	48	50	43	70	66	58	51	50	47	74	70	59	52	51	49	74	70				

Single Duct Terminal Units

SPEQ, SEEQ, SDEQ Series

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Radiated Sound Power Levels

Sound Power Levels, Lw dB, re 10⁻¹² Watts

Unit Size	Air Flow		125 Pa (0.5" W.G.)							250 Pa (1.0" W.G.)							500 Pa (2.0" W.G.)							750 Pa (3.0" W.G.)								
			Octave Band							Octave Band							Octave Band							Octave Band								
	L/s	cfm	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
4	35	75	42	34	28	24	—	20	42	37	32	30	26	27	43	41	37	35	34	34	43	43	40	38	38	38	43	43	40	38	38	38
	59	125	52	42	33	28	21	22	53	45	38	33	28	29	53	48	43	39	36	36	54	50	46	42	40	40	54	50	46	42	40	40
	83	175	*	*	*	*	*	*	60	50	42	36	30	30	61	53	47	41	37	37	61	55	50	44	42	42	61	55	50	44	42	42
	106	225	*	*	*	*	*	*	65	53	45	37	31	31	66	57	50	43	39	38	66	59	53	46	43	43	66	59	53	46	43	43
5	59	125	46	36	33	24	—	—	49	41	38	30	27	25	52	47	43	37	35	34	54	51	47	40	40	39	54	51	47	40	40	39
	94	200	52	41	37	27	21	—	56	46	42	33	28	27	59	52	48	40	37	36	61	56	51	44	42	41	61	56	51	44	42	41
	130	275	*	*	*	*	*	*	60	50	45	36	30	29	63	55	51	42	38	37	65	59	54	46	43	42	65	59	54	46	43	42
	165	350	*	*	*	*	*	*	63	52	48	37	30	30	67	58	53	44	39	38	69	61	57	48	43	43	69	61	57	48	43	43
6	71	150	45	36	32	23	20	—	49	42	38	30	28	25	53	49	45	38	36	35	55	53	49	42	41	41	55	53	49	42	41	41
	106	225	49	40	35	26	21	—	53	46	42	33	29	26	57	52	48	40	37	36	59	56	52	44	42	42	59	56	52	44	42	42
	142	300	52	42	38	27	22	—	56	48	44	34	30	26	60	55	51	42	38	36	62	59	55	46	43	42	62	59	55	46	43	42
	177	375	*	*	*	*	*	*	58	50	46	35	31	26	62	57	53	43	39	37	64	61	57	47	44	43	64	61	57	47	44	43
	212	450	*	*	*	*	*	*	60	52	48	37	31	27	64	59	55	44	39	37	66	62	59	48	44	43	66	62	59	48	44	43
7	118	250	49	38	33	26	26	21	53	44	39	30	30	27	58	51	45	35	34	34	61	55	49	38	37	38	61	55	49	38	37	38
	165	350	52	41	36	28	25	20	56	47	42	33	29	27	61	54	48	38	34	34	64	58	52	40	37	38	64	58	52	40	37	38
	212	450	54	43	39	30	25	—	58	49	44	35	29	26	63	56	50	40	34	33	66	60	54	42	36	37	66	60	54	42	36	37
	260	550	*	*	*	*	*	*	60	51	46	36	29	26	65	58	52	41	34	33	68	62	56	44	36	37	68	62	56	44	36	37
	307	650	*	*	*	*	*	*	62	52	48	38	29	25	67	59	54	42	33	32	69	63	57	45	36	36	69	63	57	45	36	36
8	189	400	50	40	35	27	—	—	55	47	41	32	27	27	60	54	46	37	35	37	63	58	50	40	39	43	63	58	50	40	39	43
	236	500	52	42	38	29	21	—	57	48	43	34	28	27	62	56	49	39	36	38	65	60	52	43	41	44	65	60	52	43	41	44
	283	600	54	43	39	31	22	—	58	50	45	36	29	28	63	57	51	41	37	38	66	62	54	45	42	44	66	62	54	45	42	44
	330	700	55	45	41	32	22	—	60	51	47	37	30	28	65	59	52	43	38	38	68	63	56	46	43	44	68	63	56	46	43	44
	378	800	*	*	*	*	*	*	61	53	48	39	31	28	66	60	54	44	39	39	69	64	57	48	43	45	69	64	57	48	43	45
9	212	450	46	41	37	26	—	—	51	48	44	32	25	22	57	57	50	40	33	32	60	62	55	44	37	38	60	62	55	44	37	38
	307	650	49	42	39	28	20	—	55	50	46	35	27	24	60	58	52	42	35	34	64	63	56	46	39	40	64	63	56	46	39	40
	401	850	52	43	41	30	22	—	57	51	47	36	29	25	63	59	54	44	36	35	66	64	58	48	41	41	66	64	58	48	41	41
	496	1050	*	*	*	*	*	*	59	51	48	38	30	26	65	60	55	45	37	36	68	65	59	49	42	42	68	65	59	49	42	42
10	260	550	49	44	41	32	23	—	54	51	46	38	30	25	60	57	52	44	38	33	63	61	56	48	42	38	63	61	56	48	42	38
	354	750	52	45	43	34	25	—	57	52	48	39	32	26	62	58	54	46	39	34	65	62	57	49	44	39	65	62	57	49	44	39
	448	950	54	46	44	35	26	—	59	52	49	41	33	26	64	59	55	47	41	35	67	63	59	51	45	39	67	63	59	51	45	39
	543	1150	55	47	45	36	27	—	60	53	51	42	34	27	66	59	56	48	42	35	69	63	60	52	46	40	69	63	60	52	46	40
	637	1350	*	*	*	*	*	*	61	53	52	42	35	28	67	60	57	49	43	36	70	64	61	53	47	40	70	64	61	53	47	40
12	425	900	49	42	40	29	24	21	55	48	45	34	30	30	61	56	51	40	37	38	65	60	54	43	41	44	65	60	54	43	41	44
	566	1200	51	44	43	31	26	22	57	51	48	36	32	30	63	58	54	42	39	39	67	62	57	46	43	45	67	62	57	46	43	45
	708	1500	53	46	45	33	28	23	59	52	50	38	34	31	65	59	56	44	41	40	68	64	59	48	45	45	68	64	59	48	45	45
	850	1800	*	*	*	*	*	*	60	53	52	40	35	32	66	61	58	46	42	40	70	65	61	49	46	46	70	65	61	49	46	46
	991	2100	*	*	*	*	*	*	61	55	54	41	36	32	67	62	59	47	43	41	71	66	63	51	47	46	71	66	63	51	47	46
14	472	1000	47	43	38	30	25	21	54	49	44	36	31	27	61	57	51	43	36	33	65	61	55	46	40	37	65	61	55	46	40	37
	708	1500	49	45	41	32	27	22	56	51	47	38	32	28	63	59	53	44	38	34	67	63	57	48	41	38	67	63	57	48	41	38
	944	2000	51	46	42	33	28	22	57	53	48	39	33	28	64	60	55	45	39	35	68	64	58	49	42	39	68	64	58	49	42	39
	1180	2500	*	*	*	*	*	*	58	54	49	39	34	29	65	61	56	46	40	35	69	65	60	49	43	39	69	65	60	49	43	39
16	708	1500	52	45	39	32	28	21	58	51	45	38	35	30	64	58	50	44	42	40	67	62	54	48	46	46	67	62	54	48	46	46
	944	2000	54	48	42	34	30	22	60	54	48	40	36	31	66	60	53	46	43	41	70	64	57	50	47	46	70	64	57	50	47	46
	1180	2500	56	50	45	36	30	22	62	56	50	41	37	31	68	62	56	47	44	41	71	66	59	51	48	47	71	66	59	51	48	47
	1416	3000	*	*	*	*	*	*	63	58	52	42	38	32	69	64	58	49	45	41	73	68	61	52	49							

Suggested Specification Single Duct Terminal Units



Single Duct – Controller Type

Single Duct Quiet (SxVQ)

Furnish and install Price single duct Q, variable volume air terminal and silencer assemblies (SPVQ/SEVQ/SDVQ 8000) of the sizes and capacities as shown on the plans.

The assemblies shall be pressure independent and shall reset to any air flow between zero and the maximum cataloged air volume.

At an inlet velocity of 2000 fpm, the differential static pressure for any unit shall not exceed X.XX w.g.

The assemblies shall consist of a Price absorptive rectangular silencer that matches the terminal discharge area configuration and performance, as described on the plans and/or air distribution schedules. The silencers have slip and drive connections for easy installation.

Performance characteristics including pressure drop and sound data for the terminal/silencer assembly shall have been attained through lab testing in accordance to ASHRAE 130 -1996 and ARI 880-98. Sound ratings of air distribution assemblies shall not exceed ___NC at ___ static pressure drop across the unit, and the downstream static pressure of ___, use attenuation values found in appendix E of ARI Standard 885-98 "A procedure for estimating occupied space sound levels in the application of air terminals and air outlets".

Performance of the complete VAV terminal and silencer assembly shall be ARI certified.

The air flow sensor shall be of a cross configuration located at the inlet of the assembly. The sensor shall have twelve total pressure sensing ports and a center averaging chamber designed to accurately average the flow across the inlet of the assembly. Sensor shall provide accuracy within 5% with 90° sheet metal elbow directly at the inlet of the assembly. The air flow sensor shall amplify the sensed air flow signal.

The primary air valve damper shall be heavy gauge metal, with peripheral gasket and solid steel shaft, pivoted in self-lubricating bearings. In the full closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalog rating at 3 inches of w.g. inlet static pressure, when tested in accordance to ASHRAE 130.

The entire valve/damper assembly shall be tested to 1.25 million cycles without failure.

The VAV terminal casing shall be constructed of 22 gauge zinc-coated steel, internally lined with 1 inch thick, fiberglass insulation which complies with UL-181, ASTM C1071, and NFPA-90A. Any cut edges of fiberglass exposed to the air stream shall be coated with NFPA-90A approved sealant.

Silencer section shall consist of 22ga solid metal casing, 22ga perforated liners, and absorptive acoustic fiberglass liner.

Acceptable methods of silencer construction shall be button lock, Pittsburgh lock, and welds. In situations where these methods are not feasible, rivet can be used. Screws or other mechanical fasteners on the silencer will not be acceptable.

The silencer noses and perforated liners shall be rigidly fastened to the casing of the silencer on both the top and bottom.

The silencer section acoustic media shall be shot free inorganic glass fiber with long, resilient fibers, bonded with thermosetting resin, and contain 50% recycled media. Glass fiber shall be packed with a minimum 10% compression to eliminate voids and settling; density shall be consistent with that used to generate catalog test data. Combustion ratings for acoustical media shall be equal to or less than the combustion ratings noted below when tested in accordance with ASTM E84, UL713, and NFPA 255:

Flame Spread Classification: 25

Smoke Development Rating: 50

Performance

The terminal unit shall not exceed the discharge sound power levels stated in the specified manufacturer's catalog or as follows based on 1 inch inlet static pressure.

Air Flow CFM	Discharge Sound Power Levels					
	2	3	4	5	6	7
450	57	49	38	31	31	30
700	60	51	40	35	37	35
1150	63	52	43	39	44	43
1800	65	54	48	44	49	49
2500	67	56	51	47	52	51
3500	71	59	53	51	55	53

Single Duct Ultra Quiet Exhaust (SxEQ)

Furnish and install Price single duct, variable volume air distribution assemblies (SPEQ/SEEQ/SDEQ) of the sizes and capacities as shown on the plans.

The assemblies shall be pressure independent and shall reset to any air flow between zero and the maximum cataloged air volume.

The air flow sensor shall be of a cross configuration located at the inlet of the assembly. The sensor shall have twelve total pressure sensing ports and a center averaging chamber designed to accurately average the flow across the inlet of the assembly. Sensor shall provide accuracy within 5% with a 90° sheet metal elbow directly at the inlet of the assembly. The air flow sensor shall amplify the sensed air flow signal.

The assembly casing shall be constructed of 22 gauge zinc-coated steel, internally lined

with 5/8 inch thick 4lb density fiberglass insulation foil faced which complies with UL-181, ASTM C 1071 and NFPA-90A. Any cut edges of fiberglass exposed to the airstream shall be covered with metal angles and end caps so there is no exposed fiberglass in the air stream.

The primary air valve damper shall be heavy gauge metal, with peripheral gasket and solid steel shaft, pivoted in self-lubricating bearings. In the full closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalog rating at 3"w.g. inlet static pressure, when tested in accordance with ASHRAE 130.

* The entire valve/damper assembly shall be tested to 1.25 million cycles without failure.

The inlet shall include silencer section. The Silencer section shall consist of 22ga solid metal casing, 22ga perforated liners, and absorptive acoustic fiberglass liner isolated from the air with Tedlar film or lightly woven fiberglass cloth flame and smoke rated below 25/50 per ASTM E84 and as suck meeting NFPA-90A.

Acceptable methods of silencer construction shall be button lock, Pittsburgh lock, and welds. In situations where these methods are not feasible, rivet can be used. Screws or other mechanical fasteners on the silencer will not be acceptable.

The silencer noses and perforated liners shall be rigidly fastened to the casing of the silencer on both the top and bottom.

The silencer section acoustic media shall be shot free inorganic glass fiber with long, resilient fibers, bonded with thermosetting resin, and contain 50% recycled media. Glass fiber shall be packed with a minimum 10% compression to eliminate voids and settling; density shall be consistent with that used to generate catalog test data. Combustion ratings for acoustical media shall be equal to or less than the combustion ratings noted below when tested in accordance with ASTM E84, UL713, and NFPA 255:

Flame Spread Classification: 25

Smoke Development Rating: 50

Performance

The terminal unit shall not exceed the discharge sound power levels stated in the specified manufacturer's catalog or as follows based on 1 inch inlet static pressure.

Air Flow CFM	Discharge Sound Power Levels					
	2	3	4	5	6	7
450	59	52	45	42	32	34
700	60	55	49	45	46	41
1150	61	56	50	45	50	45
1800	63	61	53	48	49	46
2500	61	58	51	47	47	43
3500	64	60	57	51	56	46