

30X SERIES • EXHAUST

30HQX SERIES • EXHAUST • HOSPITAL GRADE

QUIET TYPE WITH DISSIPATIVE SILENCER

PRODUCT OVERVIEW

Nailor Single Duct Exhaust Terminal Units are used to modulate exhaust flow from an occupied space in either a constant volume or variable air volume (VAV) HVAC system. These single duct terminal units are ideal for use where zone pressure control is required. Whether selecting the 30X basic unit or the hospital grade 30HQX, each exhaust model is designed and manufactured to provide optimum performance.

The 30X unit is designed to minimize system pressure drop while simultaneously offering quiet operation. To reduce pressure drop, an innovative Venturi is used on the inlet. Further design elements include an optional inlet sound attenuator and a choice of liner types ranging from fiberglass to IAQ types. Designed for hospital applications, the 30HQX provides a premium level of construction and exceptional unit performance. The unique, fully insulated dissipative silencer on the 30HQX has been designed to maximize attenuation in the lower 2nd and 3rd octave bands, which usually dictate room NC levels. As each exhaust unit has been tested as an assembly, you can be assured of predictable performance.

Both exhaust models include a multi-point averaging Diamond Flow sensor for accurate air velocity pressure measurements. This feature allows for a wide variety of control options common to exhaust applications. Other standard features include dual density fiberglass insulation (30X only), slip and drive duct connections and low leakage casing. The 30HQX comes standard with Steri-Liner in the VAV section, a dissipative inlet silencer, special liners, and to facilitate regular cleaning of lint from sensors, a removable flow sensor with access door. The dissipative inlet silencer is constructed with a unique blend of internal baffles, fiberglass insulation wrapped in a mylar barrier, an acoustical separator, and Steri-Liner insulation attached to the top and bottom for thermal protection. All of the insulation choices on the 30X and 30HQX eliminate the need for external field applied thermal duct wrap.

Both models are available with field or factory mounted digital controls. Using the supplied flow sensor and a control device, units can compensate for changes in air pressure, providing a unit that is pressure independent for use in a VAV supply/exhaust tracking application.



30X Basic Unit



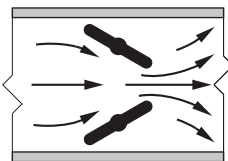
30X with Optional Sound Attenuator



30HQX Hospital Grade Unit with Dissipative Silencer

SINGLE DUCT EXHAUST TERMINAL UNITS

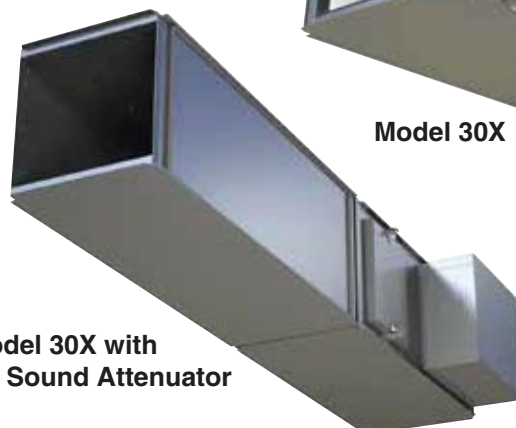
30X SERIES



Inclined opposed blade damper configuration minimizes noisy turbulence and provides smooth, accurate, near linear flow control.



Model 30X



Model 30X with
Optional Sound Attenuator

Models:

30X Basic Unit

30X Basic Unit with Optional Sound Attenuator

The 30X Basic Unit has been designed to provide optimum performance in exhaust applications. By including the Optional Sound Attenuator, this terminal unit offers quiet operation with minimal system pressure loss.

STANDARD FEATURES:

- Venturi valve inlet for reduced pressure drop.
- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- 16 ga. (1.63) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight shut-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (746 Pa).
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.
- Multi-point averaging Diamond Flow Sensor. Aluminum construction. Supplied with balancing tees.
- Rectangular inlet and discharge with slip and drive cleat duct connection.
- Full NEMA 1 type controls enclosure for factory mounted controls.
- 3/4" (19), fiberglass dual density insulation, exposed edges coated to prevent air erosion. Meets the requirements of NFPA 90A and UL 181.
- Right-hand controls location is standard (shown) when looking in direction of airflow. Optional left hand controls mounting is available. Unit is flippable.
- Available in 11 unit sizes to handle from 30 – 8575 cfm (14 – 4047 l/s).

Options and Accessories:

- Side access door.
- Removable insert type Diamond Flow sensor.
- Steri-Liner.

- Fiber-Free liner.
- Perforated metal liner.
- Steri-liner + Perforated metal liner.
- Solid metal liner.
- 24 VAC control transformer.
- Toggle disconnect switch.
- Hanger brackets.
- Controls enclosure for field or factory mounted controls.
- Dust tight enclosure seal.
- 20 ga. (1.00) construction.

Optional Sound Attenuator Section:

- Mounted on VAV section inlet for quiet operation.
- Same liner as terminal unit.
- Slip and drive cleat duct connection on both ends.
- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- Optional 20 ga. (1.00) construction.
- IAQ Liners.
- Seismic Certification.



Intertek

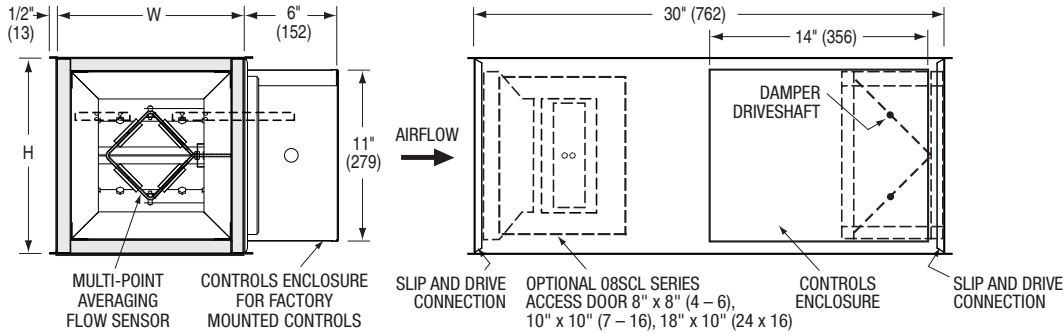


Dimensions

Model 30X • Basic Unit

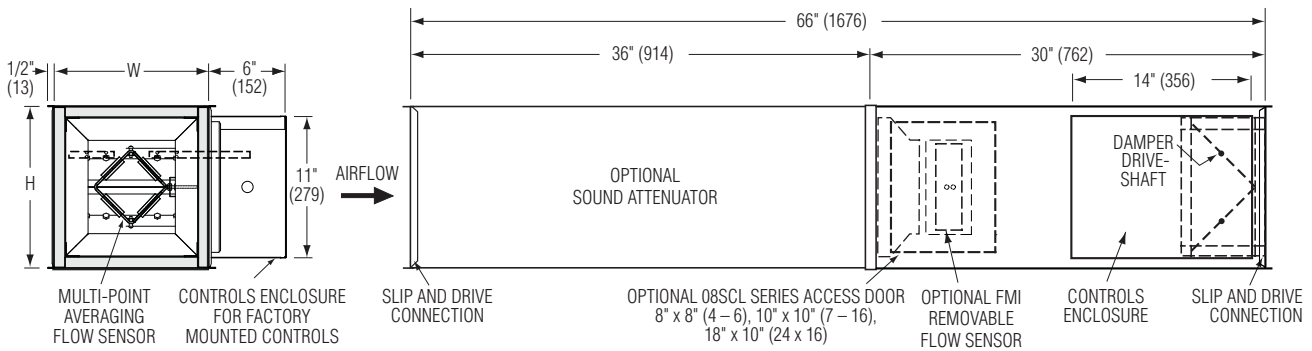
Digital and Analog Electronic Controls

- A full NEMA 1 controls enclosure is provided for factory mounted controls. Optional for field mounted controls.



30X • Basic Unit with Optional Sound Attenuator

- A full NEMA 1 controls enclosure is provided for factory mounted controls. Optional for field mounted controls.



Dimensional Data

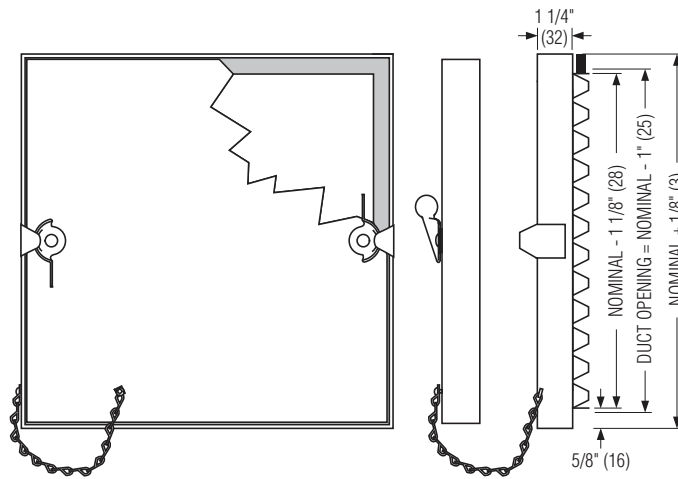
Unit Size	W	H
4	10 (254)	10 (254)
5	10 (254)	10 (254)
6	10 (254)	10 (254)
7	12 (305)	12 1/2 (318)
8	12 (305)	12 1/2 (318)
9	14 (356)	12 1/2 (318)
10	14 (356)	12 1/2 (318)
12	18 (457)	12 1/2 (318)
14	24 (610)	12 1/2 (318)
16	28 (711)	12 1/2 (318)
24 x 16	38 (965)	18 (457)

Options and Accessories

Access Door

Premium quality and performance. Square design with camlock operation for positive seal and easy opening.

- Die-formed 22 ga. (0.86) galv. flanged frame for extra strength.
- Die-formed double skin 22 ga. (0.86) galv. door panel for extra strength.
- 1" (25) insulation.
- Notched knock-over tabs.
- Plated steel camlock fasteners.
- Positive seal polyethylene gasket.
- Safety retaining chain.
- Meets SMACNA construction specifications for systems up to 2" w.g. (500 Pa).
- See 0800-1S submittal for more detailed information.



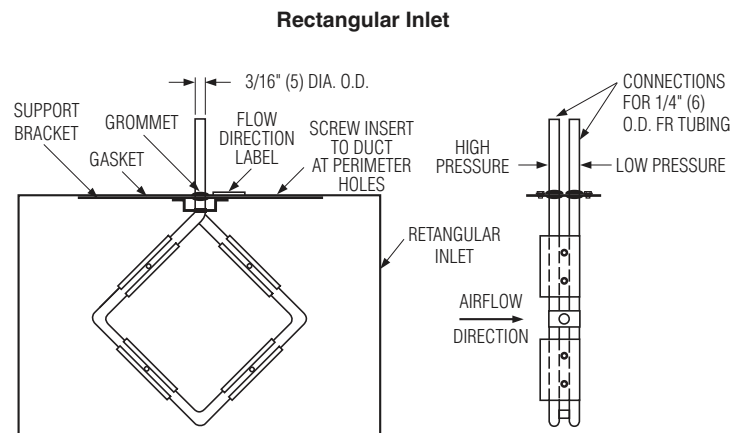
FMI Removable Flow Sensor

The (FMI) Removable Flow Sensor is a multi-point averaging airflow sensor. Designed to provide accurate sensing by sampling air velocities in four quadrants of a duct, the differential pressure

flow sensor provides an averaged reading at an amplification of approximately 2.5 times the velocity pressure, dependent upon nominal size.

FEATURES:

- Removable for cleaning.
- All metal construction - no combustible materials in the air stream.
- Amplifies velocity pressure approximately 2.5 times to give a wide range of useful output signal vs. flow.
- Compact size allows for easy removal in tight spaces.
- Sensor design minimizes pressure drop and regenerated noise.
- Label provided on each unit gives airflow direction.
- Multi-point sensing gives an accurate output signal with a maximum deviation of only $\pm 5\%$ with a hard 90 degree elbow, provided a straight inlet condition with a minimum length of two equivalent duct diameters.



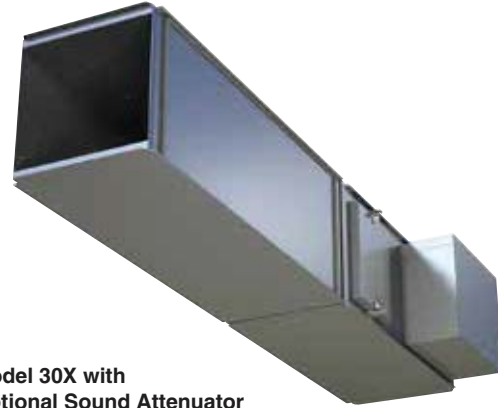
Recommended Airflow Ranges For Model 30X Single Duct Exhaust Terminal Units

The recommended airflow ranges below are for 30X Series exhaust single duct terminal units with pressure independent controls and are presented as ranges for total and controller specific minimum and maximum airflow. Airflow ranges are based upon maintaining reasonable sound levels and controller limits using Nailor's Diamond Flow Sensor as the airflow measuring device. For a given unit size, the minimum, auxiliary minimum (where applicable) and the maximum flow setting must be within the range limits to ensure pressure independent operation, accuracy and repeatability.

Minimum airflow limits are based upon .02" w.g. (5 Pa) differential pressure signal from Diamond Flow Sensor on analog/ digital controls and .03" (7.5) for pneumatic controllers. This is a realistic low limit for many transducers used in the digital controls industry. Check your controls supplier for minimum limits. Setting airflow minimums lower, may cause damper hunting and result in a failure to meet minimum ventilation requirements. Factory settings will therefore not be made outside these ranges; however, a minimum setting of zero (shut-off) is an available option on pneumatic units. Where an auxiliary setting is specified, the value must be greater than the minimum setting.

The high end of the tabulated Total Airflow Range on pneumatic and analog electronic controls represents the Diamond Flow Sensor's differential pressure reading at 1" w.g. (249 Pa). The high end airflow range for digital controls is represented by the indicated transducer differential pressure.

ASHRAE 130 "Performance Rating of Air Terminals" is the method



Model 30X with Optional Sound Attenuator

of test for the certification program. The "standard rating condition" (certification rating point) airflow volumes for each terminal unit size are tabulated below AHRI Standard 880. These air volumes equate to an approximate inlet velocity of 2000 fpm (10.2 m/s).

When digital or other controls are mounted by Nailor, but supplied by others, these values are guidelines only, based upon experience with the majority of controls currently available. Controls supplied by others for factory mounting are configured and calibrated in the field. Airflow settings on pneumatic and analog controls supplied by Nailor are factory preset when provided.

Imperial Units, Cubic Feet per Minute

Unit Size	Inlet Type	Total Airflow Range, cfm	Airflow at 2000 fpm Inlet Velocity (nom.), cfm	Range of Minimum and Maximum Settings, cfm							
				Pneumatic 3000 Controller		Analog Electronic Controls		Digital Controls			
				Transducer Differential Pressure ("w.g.)							
				Min.	Max.	Min.	Max.	Min.	Max.		
				.03	1.0	.02	1.0	.02	1.0	1.25	1.5
4	Rect.	0 – 260	150	35	210	30	210	30	210	235	260
5		0 – 425	250	60	345	50	345	50	345	385	425
6		0 – 710	400	100	580	80	580	80	580	650	710
7		0 – 835	550	120	680	95	680	95	680	760	835
8		0 – 1190	700	170	970	140	970	140	970	1085	1190
9		0 – 1480	900	210	1210	170	1210	170	1210	1350	1480
10		0 – 1885	1100	265	1540	220	1540	220	1540	1720	1885
12		0 – 2780	1600	395	2270	320	2270	320	2270	2540	2780
14		0 – 3085	2100	435	2520	360	2520	360	2520	2820	3085
16		0 – 4385	2800	620	3580	505	3580	505	3580	4000	4385
24 x 16		0 – 8575	5350	1215	7000	990	7000	990	7000	7825	8575

Metric Units, Liters per Second

Unit Size	Inlet Type	Total Airflow Range, l/s	Airflow at 10.2 m/s Inlet Velocity (nom.), l/s	Range of Minimum and Maximum Settings, l/s							
				Pneumatic 3000 Controller		Analog Electronic Controls		Digital Controls			
				Transducer Differential Pressure (Pa)							
				Min.	Max.	Min.	Max.	Min.	Max.		
				7.5	249	5	249	5	249	311	374
4	Rect.	0 – 123	71	17	99	14	99	14	99	111	123
5		0 – 201	118	28	163	24	163	24	163	182	201
6		0 – 335	189	47	274	38	274	38	274	307	335
7		0 – 394	260	57	321	45	321	45	321	359	394
8		0 – 562	330	80	458	66	458	66	458	512	562
9		0 – 698	425	99	571	80	571	80	571	637	698
10		0 – 890	519	125	727	104	727	104	727	812	890
12		0 – 1312	755	186	1071	151	1071	151	1071	1199	1312
14		0 – 1456	991	205	1189	170	1189	170	1189	1331	1456
16		0 – 2069	1321	293	1689	238	1689	238	1689	1888	2069
24 x 16		0 – 4047	2525	573	3303	467	3303	467	3303	3693	4047

Performance Data • NC Level Application Guide

30X Series • Basic Unit

Fiberglass Liner

Inlet Size	Airflow cfm / s		Min. inlet ΔPs "w.g. Pa		NC Levels @ Inlet Pressure (ΔPs) shown											
					DISCHARGE					RADIATED						
					Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)
4	200	94	0.63	157	-	*	-	21	21	23	-	*	-	21	21	20
	150	71	0.37	92	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.17	42	-	-	-	-	-	-	-	-	-	-	-	-
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	-	-	-
	30	14	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
5	300	142	0.55	137	20	*	21	26	28	29	-	*	-	23	25	25
	250	118	0.35	87	-	-	21	24	24	25	-	-	-	20	21	21
	200	94	0.23	57	-	-	-	20	-	21	-	-	-	-	-	-
	125	59	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-
6	450	212	0.38	94	-	-	21	26	28	30	-	-	24	28	29	29
	400	189	0.30	75	-	-	21	25	26	28	-	-	23	25	26	26
	300	142	0.18	45	-	-	23	25	26	26	-	-	-	21	20	20
	200	94	0.08	20	-	-	-	-	-	20	-	-	-	-	-	-
	100	47	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
7	650	307	0.49	122	-	-	21	28	30	34	-	-	21	28	31	34
	550	260	0.35	87	-	-	20	26	29	30	-	-	21	28	30	31
	335	158	0.13	32	-	-	-	20	20	20	-	-	-	20	20	20
	225	106	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-
	110	52	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
8	800	378	0.35	87	-	-	23	29	31	34	-	21	26	30	33	35
	700	330	0.27	67	-	-	21	26	30	31	-	-	25	29	31	33
	600	283	0.20	50	-	-	24	28	30	31	-	-	24	28	29	29
	400	189	0.09	22	-	-	-	21	23	24	-	-	-	20	20	20
	175	83	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
9	1050	495	0.37	92	-	-	21	28	30	34	21	21	26	30	33	35
	900	425	0.27	67	-	-	20	26	28	30	-	-	24	28	30	33
	675	319	0.15	37	-	-	20	24	25	28	-	-	20	24	26	28
	450	212	0.07	17	-	-	-	20	20	20	-	-	-	-	-	20
	225	106	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
10	1350	637	0.38	94	-	-	24	30	34	38	-	-	26	31	35	39
	1100	519	0.25	62	-	-	24	29	30	34	-	-	26	30	33	36
	825	389	0.15	37	-	-	20	24	26	28	-	-	21	26	28	29
	550	260	0.07	17	-	-	-	20	21	23	-	-	-	-	20	24
	275	130	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
12	2000	944	0.37	92	-	-	24	31	35	36	23	23	34	34	36	40
	1600	755	0.24	60	-	-	24	28	30	33	-	-	28	31	34	35
	1200	566	0.14	35	-	-	20	24	26	29	-	-	24	26	28	30
	800	378	0.06	15	-	-	-	20	21	23	-	-	-	20	20	23
	400	189	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
14	2700	1274	0.54	134	21	*	31	35	35	41	29	*	31	34	36	39
	2100	991	0.33	82	-	21	28	34	33	34	21	21	28	31	33	35
	1550	731	0.18	45	-	-	23	25	28	28	-	-	23	25	25	28
	1050	495	0.08	20	-	-	-	-	-	21	-	-	-	-	20	21
	525	248	0.02	5	-	-	-	-	-	20	-	-	-	-	-	-
16	3500	1652	0.48	119	20	21	31	35	35	39	30	30	31	35	38	41
	2800	1321	0.31	77	-	21	26	29	33	35	21	23	29	33	34	36
	2100	991	0.18	45	-	-	23	25	28	30	-	-	23	26	29	31
	1400	661	0.08	20	-	-	-	20	20	23	-	-	-	20	21	23
	700	330	0.02	5	-	-	-	-	-	20	-	-	-	-	-	-
24 x 16	5350	2525	0.45	112	31	33	35	38	41	45	40	40	36	38	40	43
	5000	2360	0.39	97	28	29	31	35	39	41	43	39	35	36	39	41
	4000	1888	0.25	62	21	23	28	33	35	38	30	30	31	34	35	36
	3000	1416	0.14	35	-	-	25	30	31	34	20	21	25	30	31	33
2000	944	0.06	15	-	-	23	26	29	31	-	-	21	24	26	29	

Performance Notes:

1. NC Levels are calculated based on procedures as outlined on page A75.
2. Dash (-) in space indicates a NC less than 20.
3. Asterisk (*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.

A
SINGLE DUCT TERMINAL UNITS

Performance Data • Discharge Sound Power Levels

30X Series • Basic Unit

Fiberglass Liner

Inlet Size	Airflow		Min. inlet ΔPs	Sound Power Octave Bands @ Inlet Pressure (ΔPs) shown																																									
				Minimum ΔPs							0.5" w.g. (125Pa) ΔPs							1.0" w.g. (250Pa) ΔPs							1.5" w.g. (375Pa) ΔPs							2.0" w.g. (500Pa) ΔPs							3.0" w.g. (750Pa) ΔPs						
				"w.g. Pa	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	2	3	4	5	6	7					
4	200	94	0.63	157	59	59	54	50	51	47	*	*	*	*	*	*	62	60	54	51	51	47	65	61	55	53	51	48	65	62	56	54	51	48	65	63	57	57	52	49					
	150	71	0.37	92	55	54	48	43	43	39	55	54	48	44	43	39	61	56	49	47	44	39	60	57	50	50	44	41	60	58	51	52	45	42	60	57	52	54	46	45					
	100	47	0.17	42	-	45	41	33	31	25	-	47	41	37	32	25	-	51	44	43	34	31	-	51	45	46	37	36	-	51	45	47	38	38	-	51	45	48	41	42					
	50	24	0.05	12	-	-	-	-	-	-	-	-	40	29	29	20	21	-	40	32	34	27	26	-	41	33	35	32	33	-	42	33	36	35	36	-	41	33	35	37	40				
	30	14	0.02	5	-	-	-	-	-	-	-	-	-	22	25	-	-	-	-	24	28	25	26	-	-	-	26	28	28	30	-	-	26	29	30	32	-	38	29	31	33	36			
5	300	142	0.55	137	60	61	59	54	52	50	*	*	*	*	*	*	65	62	59	55	52	50	69	64	59	56	53	50	70	66	60	57	53	51	71	67	61	59	54	52					
	250	118	0.35	87	56	58	54	49	45	41	58	58	54	49	45	41	65	59	54	50	46	42	67	62	55	52	47	43	67	63	57	54	47	44	68	63	57	56	49	47					
	200	94	0.23	57	-	54	49	43	39	33	58	55	50	44	40	35	63	57	51	47	40	37	64	59	52	49	42	39	63	60	53	51	43	41	65	60	54	54	46	46					
	125	59	0.10	25	-	44	39	30	23	-	-	48	40	36	26	21	56	52	44	41	32	30	57	54	46	45	37	36	57	54	47	47	39	39	57	54	48	49	44	46					
	100	47	0.06	15	-	40	34	24	-	-	-	46	37	33	23	20	-	50	42	39	31	30	56	51	43	43	36	36	-	51	44	45	39	39	55	51	45	46	43	45					
6	450	212	0.38	94	58	56	55	49	52	45	61	56	55	49	52	45	68	59	56	51	52	47	72	64	57	53	53	48	73	67	59	54	53	49	75	70	62	57	55	52					
	400	189	0.30	75	-	51	47	39	40	30	60	55	53	47	47	41	68	58	53	49	47	43	71	64	56	51	48	45	72	66	58	53	49	47	73	68	61	56	52	50					
	300	142	0.18	45	-	51	47	39	40	30	58	52	47	41	41	32	66	58	49	45	41	37	68	62	53	48	44	41	69	63	56	50	46	44	69	65	58	54	49	48					
	200	94	0.08	20	-	42	38	26	22	-	57	48	41	35	29	24	62	56	46	41	35	34	62	58	50	45	39	40	62	59	52	48	42	43	64	58	53	52	45	47					
	100	47	0.02	5	-	-	-	-	-	-	-	45	34	32	27	22	55	49	41	37	32	34	54	47	41	40	38	37	-	46	41	42	41	41	56	48	43	43	43	46					
7	650	307	0.49	122	64	59	54	54	52	52	63	57	52	50	50	50	68	61	55	54	52	53	73	64	57	56	53	53	75	66	58	57	54	54	78	69	61	59	56	56					
	550	260	0.35	87	61	55	50	49	47	45	62	56	50	48	47	45	67	60	53	51	49	48	72	62	54	54	50	49	74	64	56	55	52	50	75	68	59	57	54	53					
	335	158	0.13	32	59	45	39	36	32	27	59	50	42	40	35	33	65	55	46	44	39	38	67	59	49	47	43	42	67	60	51	49	45	45	67	61	54	53	48	49					
	225	106	0.06	15	51	38	30	23	-	-	57	46	37	34	28	28	60	52	42	40	35	35	63	55	46	44	40	41	61	55	48	46	43	44	62	55	49	49	46	49					
	110	52	0.02	5	-	-	-	-	-	-	-	52	42	31	29	25	24	53	44	37	38	36	34	56	44	38	40	41	41	54	45	38	40	43	44	57	49	41	42	45	48				
8	800	378	0.35	87	61	54	50	49	51	48	66	57	51	50	51	48	71	61	54	52	52	51	76	65	57	54	54	52	78	67	58	55	55	53	80	71	61	57	57	56					
	700	330	0.27	67	56	52	48	46	47	42	67	56	50	48	48	43	70	59	52	50	50	48	74	63	55	52	51	50	77	66	57	54	53	52	78	69	61	56	55	55					
	600	283	0.20	50	55	49	45	42	42	37	64	54	48	46	45	39	70	58	50	49	46	44	73	62	54	52	49	48	75	65	56	53	51	50	76	67	59	55	54	53					
	400	189	0.09	22	-	43	38	32	26	20	61	49	42	40	34	31	66	55	48	46	41	40	68	59	51	48	45	44	69	60	54	51	48	46	70	62	59	54	51	51					
	175	83	0.02	5	-	-	22	-	-	-	57	45	35	31	27	26	58	48	41	39	36	35	57	47	45	45	44	43	57	48	44	46	46	46	58	48	45	50	50	51					
9	1050	495	0.37	92	60	58	56	55	54	52	63	59	56	55	53	52	70	62	57	56	55	53	75	65	59	58	56	54	77	68	60	59	56	55	80	71	63	61	59	58					
	900	425	0.27	67	56	55	53	51	48	45	62	58	54	52	49	46	69	61	55	53	50	47	74	64	57	55	52	49	75	67	59	57	54	52	77	70	62	59	58	56					
	675	319	0.15	37	-	52	50	43	38	33	60	55	50	44	39	35	67	59	52	48	44	41	70	62	55	52	48	46	71	64	56	53	51	49	73	66	59	56	54	53					
	450	212	0.07	17	-	47	42	30	21	-	58	51	44	38	33	32	64	55	47	43	40	38	66	58	50	46	44	43	67	59	52	49	47	46	67	61	54	52	49	50					
	225	106	0.02	5	-	-	-	-	-	-	-	43	33	31	28	26	57	48	40	39	37	36	57	49	42	43	43	42	58	50	43	44	46	45	61	51	45	46	48	50					
10	1350	637	0.38	94	63	54	51	52	56	51	68	60	54	54	56	52	72	64	58	55	57	53	77	67	60	57	57	55	80	70	62	59	58	57	83	73	66	62	61	60					
	1100	519	0.25	62	59	50	47	47	49	41	65	56	50	49	50	44	72	62	55	52	51	48	76	65	58	54	53	51	77	67	61	56	55	54	80	71	64	60	59	58					
	825	389	0.15	37	-	43	40	39	37	29	64	56	49	46	43	40	69	59	52	48	46	44	72	63	56	52	50	48	74	65	58	54	52	50	75	68	61	55	55	54					
	550	260	0.07	17	-	38	31	26	-	-	58	50	43	38	35	35	64	56	48	43	41	39	67	59	51	45	44	43	68	61	54	48	47	46	69	62	57	51	49	51					
	275	130	0.02	5	-	37	22	-	-	-	-	44	35	30	28	27	60	49	42	37	37	35	61	51	45	42	42	42	58	51	46	44	45	46	62	53	48	47	49	50					
12	2000	944	0.37	92	63	56	53	55	58	51	68	59	55	55	59	52	72	64	59	58	59	55	78	68	62	60	59	57	81	70	64	62	61	59	81	73	68	64	63	62					
	1600	755	0.24	60	58	51	49	49	51	42	66	57	52	52	52	45	72	62	57	55	54	51	75	66	60	58	56	54	77	68	62	59	58	56	79	71	65	62	61	59					
	1200	566	0.14	35	-	43	42	41	37	30	63	54	48	46	43	40	69	60	54	52	49	48	72	63	57	54	52	51	74	66	59	56	54	53	76	68	63	59	57	56					
	800	378	0.06	15	-	-	33	28	20	-	60	49	44	41	38	37	66	57	50	47	44	43	69	60	54	49	47	47	70	62	56	52	50	49	71	63	59	55	53	53					
	400	189	0.02	5	-	-	-	-	-	-	-	44	38	34	31	31	59	49	43	41	39	38	63	51	47	45	45	44	61	52	50	47	48	48	64	53	52	51	51	53					
14	2700	1274	0.54	134	70	64	60	60	57	55	*	*	*	*	*	*	78																												

Performance Data • Radiated Sound Power Levels

30X Series • Basic Unit

Fiberglass Liner

Inlet Size	Airflow		Min. inlet ΔPs		Sound Power Octave Bands @ Inlet Pressure (ΔPs) shown																																									
					Minimum ΔPs							0.5" w.g. (125Pa) ΔPs							1.0" w.g. (250Pa) ΔPs							1.5" w.g. (375Pa) ΔPs							2.0" w.g. (500Pa) ΔPs							3.0" w.g. (750Pa) ΔPs						
					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	2	3	4	5	6	7						
4	200	94	0.63	157	52	42	33	27	27	21	*	*	*	*	*	*	55	43	34	28	27	22	59	49	39	33	28	23	59	50	41	36	29	25	58	50	44	39	32	28						
	150	71	0.37	92	48	35	27	-	-	-	49	36	27	-	-	-	54	43	33	27	21	-	54	45	37	31	23	20	54	45	39	33	26	22	52	44	40	36	29	26						
	100	47	0.17	42	-	-	-	-	-	-	47	35	24	-	-	-	47	38	30	24	-	-	49	39	33	28	-	-	49	38	33	29	23	21	48	38	34	32	29	26						
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	23	-	-	-	31	26	25	23	-	47	36	31	30	28	25						
	30	14	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	23	-	-	-	32	26	25	24	-	-	35	31	30	28	26						
5	300	142	0.55	137	51	42	35	27	25	-	*	*	*	*	*	*	55	45	37	31	26	21	60	50	40	35	29	23	62	52	42	37	32	26	62	53	47	41	37	31						
	250	118	0.35	87	-	39	31	23	-	-	-	39	32	26	-	-	55	44	35	30	22	-	58	49	39	34	27	21	59	50	42	36	30	24	59	51	45	40	35	30						
	200	94	0.23	57	-	-	-	-	-	-	-	37	29	21	-	-	53	44	34	29	-	-	55	46	38	33	25	-	54	47	40	35	29	24	53	47	42	38	33	29						
	125	59	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-	-	39	33	27	-	-	-	40	35	30	23	-	-	39	36	31	27	23	-	40	36	34	32	29						
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-	-	36	30	24	-	-	-	36	32	27	23	-	-	35	32	29	27	23	-	37	33	32	32	28						
6	450	212	0.38	94	53	43	35	28	25	-	54	44	35	28	25	-	61	49	39	31	28	22	64	54	42	35	30	24	65	57	46	38	33	27	65	58	51	42	37	31						
	400	189	0.30	75	51	40	33	24	-	-	54	42	33	26	21	-	60	47	36	30	24	-	62	52	41	34	28	22	63	55	44	36	31	25	63	57	49	41	35	30						
	300	142	0.18	45	-	34	25	20	20	-	51	38	29	22	-	-	56	46	35	28	21	-	59	50	40	33	26	-	58	51	42	35	29	22	58	51	46	40	34	28						
	200	94	0.08	20	-	-	-	-	-	-	49	36	27	21	-	-	52	44	34	27	-	-	53	46	39	31	24	-	51	47	40	33	27	22	50	46	42	37	31	26						
	100	47	0.02	5	-	-	-	-	-	-	-	34	23	-	-	-	-	28	23	-	-	-	-	36	30	26	21	-	-	34	32	28	24	21	-	37	33	31	28	26						
7	650	307	0.49	122	56	50	42	33	27	25	56	50	42	33	27	25	59	52	42	35	30	27	64	54	46	41	34	29	67	56	47	44	36	31	69	59	50	47	39	34						
	550	260	0.35	87	53	46	38	28	24	-	54	43	34	26	25	-	59	49	41	35	29	23	64	52	44	40	32	27	66	54	45	42	34	29	67	57	48	45	37	32						
	335	158	0.13	32	-	-	-	-	-	-	-	37	31	26	-	-	55	44	35	31	22	20	58	48	38	34	27	21	58	49	40	35	29	25	58	50	43	38	33	30						
	225	106	0.06	15	-	-	-	-	-	-	-	26	21	-	-	-	51	41	32	26	-	-	51	44	36	30	25	21	52	43	37	32	28	25	50	43	39	36	32	31						
	110	52	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	25	23	-	-	-	-	28	27	25	22	-	30	28	28	25	-	39	34	33	31	30								
8	800	378	0.35	87	57	47	41	32	26	20	59	48	40	31	26	21	63	53	45	37	31	27	66	55	45	38	33	29	68	57	47	39	35	31	70	60	50	42	38	36						
	700	330	0.27	67	53	44	38	29	22	-	57	46	37	28	23	-	62	50	41	34	29	25	65	53	43	36	32	27	67	56	45	38	33	29	68	58	49	41	37	34						
	600	283	0.20	50	50	40	34	26	-	-	54	43	35	27	-	-	61	48	39	32	26	21	64	52	42	35	30	26	65	55	44	37	32	28	65	57	48	40	36	33						
	400	189	0.09	22	51	38	30	22	-	-	50	38	31	25	-	-	56	45	36	30	22	-	58	49	39	33	27	22	58	50	42	35	30	25	58	51	44	38	34	31						
	175	83	0.02	5	-	-	-	-	-	-	50	40	30	25	-	-	-	36	31	27	23	-	-	37	33	30	26	23	-	38	34	31	30	27	49	42	36	34	33	31						
9	1050	495	0.37	92	59	50	44	34	30	28	59	49	43	34	31	28	63	53	45	36	32	28	66	56	49	41	36	32	68	58	52	44	36	32	70	61	56	48	40	35						
	900	425	0.27	67	54	46	40	30	25	21	57	47	39	31	26	21	61	51	44	35	29	22	64	54	48	40	32	26	66	56	51	43	35	29	68	60	54	47	40	34						
	675	319	0.15	37	-	40	33	23	-	-	54	44	36	28	21	-	58	49	42	34	26	-	61	52	47	39	31	24	63	54	49	42	34	28	64	56	52	45	37	32						
	450	212	0.07	17	-	-	-	-	-	-	52	39	33	26	-	-	54	45	41	33	24	-	56	48	43	36	28	22	57	50	44	38	30	25	57	51	46	41	34	30						
	225	106	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	50	38	31	27	-	-	51	39	34	31	25	21	50	40	36	33	28	24	50	42	39	36	31	29						
10	1350	637	0.38	94	56	48	40	34	32	25	56	49	40	33	32	25	63	53	43	37	34	27	67	56	46	39	35	30	70	59	48	41	37	31	73	63	53	45	40	35						
	1100	519	0.25	62	52	43	34	28	23	-	56	46	37	31	25	-	63	50	40	34	29	22	66	55	44	37	32	26	68	57	47	39	35	29	71	61	51	44	39	34						
	825	389	0.15	37	-	39	29	-	-	-	53	42	33	27	-	-	59	48	38	32	25	-	63	53	43	36	30	24	64	55	45	38	33	27	65	58	49	41	36	32						
	550	260	0.07	17	-	-	-	-	-	-	50	39	30	23	-	-	56	46	37	30	23	-	57	49	40	32	27	23	58	51	42	34	29	25	60	55	47	40	35	32						
	275	130	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	20	39	30	23	-	-	54	42	33	27	23	23	49	43	35	30	26	25	54	46	38	33	31	30						
12	2000	944	0.37	92	60	50	44	35	34	29	60	49	44	35	34	29	69	58	50	41	38	34	69	59	52	45	43	40	71	60	51	43	39	36	74	64	55	47	43	40						
	1600	755	0.24	60	54	47	42	37	39	33	57	50	45	41	46	40	64	53	46	41	43	38	67	57	48	41	40	35	69	59	50	42	38	35	70	62	53	45	42	39						
	1200	566	0.14	35	48	37	31	21	-	-	55	45	36	29	27	24	61	50	42	34	30	27	63	54	45	37	33	31	64	56	47	39	35	33	66	59	51	43	40	38						
	800	378	0.06	15	-	-	-	-	-	-	51	41	32	24	-	-	56	47	38	30	25	22	58	50	42	34	31	29	58	52	44	36	33	32	60	54	47	40	38	38						
	400	189	0.02	5	-	-	-	-	-	-	-	35	26	-	-	-	49	39	32	27	26	25	52	41	35	31	32	31	50	42	35	33	34	35	52	44	38	36	38	39						
14	2700	1274	0.54	134	65	57	53	42	35	31	*	*	*	*	*	*	67	58	50	41	35	32	69	60	51	43	37	34	71	62	52	44	39	35	73	65	55	48	42	38						
	2100	991</																																												

Performance Data • NC Level Application Guide

30X Series • Optional Attenuator

Fiberglass Liner

Inlet Size	Airflow cfm /s		Min. inlet ΔPs "w.g. Pa		NC Levels @ Inlet Pressure (ΔPs) shown											
					DISCHARGE w/36" (914) attenuator					RADIATED w/36" (914) attenuator						
					Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)
4	200	94	0.63	159	-	*	-	-	-	-	-	*	-	21	21	20
	150	71	0.37	92	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.17	43	-	-	-	-	-	-	-	-	-	-	-	-
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	-	-	-
	30	14	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
5	300	142	0.55	136	-	*	-	-	-	-	-	*	-	23	25	25
	250	118	0.35	87	-	-	-	-	-	-	-	-	-	20	21	21
	200	94	0.23	57	-	-	-	-	-	-	-	-	-	-	-	-
	125	59	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-
6	450	212	0.38	94	-	-	-	-	20	21	-	-	24	28	29	29
	400	189	0.30	75	-	-	-	-	-	20	-	-	23	25	26	26
	300	142	0.18	44	-	-	-	-	-	-	-	-	-	21	20	20
	200	94	0.08	21	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.02	6	-	-	-	-	-	-	-	-	-	-	-	-
7	650	307	0.50	125	-	-	-	-	23	25	-	-	21	28	31	34
	550	259	0.35	88	-	-	-	-	20	23	-	-	21	28	30	31
	335	158	0.13	34	-	-	-	-	-	-	-	-	20	20	20	20
	225	106	0.06	16	-	-	-	-	-	-	-	-	-	-	-	-
	110	52	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
8	800	377	0.35	87	-	-	-	20	23	25	-	21	26	30	33	35
	700	330	0.27	68	-	-	-	-	20	23	-	-	25	29	31	33
	600	283	0.20	51	-	-	-	-	20	21	-	-	24	28	29	29
	400	189	0.09	24	-	-	-	-	-	-	-	-	-	20	20	20
	175	83	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
9	1050	495	0.39	98	-	-	-	-	21	25	21	21	26	30	33	35
	900	425	0.29	73	-	-	-	-	20	24	-	-	24	28	30	33
	675	318	0.16	40	-	-	-	-	-	20	-	-	20	24	26	28
	450	212	0.07	17	-	-	-	-	-	-	-	-	-	-	-	20
	225	106	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
10	1350	637	0.44	110	-	-	-	23	25	29	-	-	26	31	35	39
	1100	519	0.29	73	-	-	-	20	23	25	-	-	26	30	33	36
	825	389	0.16	40	-	-	-	-	-	20	-	-	21	26	28	29
	550	259	0.07	17	-	-	-	-	-	-	-	-	-	-	20	24
	275	130	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
12	2000	943	0.41	103	-	-	-	24	26	30	23	23	34	34	36	40
	1600	755	0.27	68	-	-	-	20	23	28	-	-	28	31	34	35
	1200	566	0.15	38	-	-	-	-	20	28	-	-	24	26	28	30
	800	377	0.07	17	-	-	-	-	-	-	-	-	-	20	20	23
	400	189	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
14	2700	1274	0.58	145	-	*	23	28	29	33	29	*	31	34	36	39
	2100	991	0.34	85	-	-	21	25	25	28	21	21	28	31	33	35
	1550	731	0.18	46	-	-	-	-	-	21	-	-	23	25	25	28
	1050	495	0.09	22	-	-	-	-	-	-	-	-	-	-	20	21
	525	248	0.02	6	-	-	-	-	-	-	-	-	-	-	-	-
16	3500	1651	0.48	119	-	-	23	26	29	33	30	30	31	35	38	41
	2800	1321	0.31	77	-	-	20	24	26	30	21	23	29	33	34	36
	2100	991	0.18	44	-	-	-	21	21	25	-	-	23	26	29	31
	1400	660	0.08	20	-	-	-	-	-	-	-	-	-	20	21	23
	700	330	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
24	5350	2524	0.47	118	26	26	29	34	35	40	40	40	36	38	40	43
	5000	2358	0.40	100	25	25	28	33	34	39	39	39	35	36	39	41
16	4000	1887	0.26	65	-	20	25	30	34	36	30	30	31	34	35	36
	3000	1415	0.15	38	-	-	23	29	30	33	20	21	25	30	31	33
16	2000	943	0.07	18	-	-	21	24	26	29	-	-	21	24	26	29

Performance Notes:

1. NC Levels are calculated based on procedures as outlined on page A75.
2. Dash (-) in space indicates a NC less than 20.

3. Asterisk (*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.

Performance Data • Discharge Sound Power Levels 30X Series • Optional Attenuator Fiberglass Liner

Inlet Size	Airflow		Min. inlet ΔPs		Sound Power Octave Bands @ Inlet Pressure (ΔPs) shown																																									
					Minimum ΔPs							0.5" w.g. (125Pa) ΔPs							1.0" w.g. (250Pa) ΔPs							1.5" w.g. (375Pa) ΔPs							2.0" w.g. (500Pa) ΔPs							3.0" w.g. (750Pa) ΔPs						
					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	2	3	4	5	6	7						
4	200	94	0.63	157	52	49	45	37	28	23	*	*	*	*	*	*	55	50	45	39	28	24	57	52	46	41	28	24	57	53	47	43	28	25	57	54	48	46	29	27						
	150	71	0.37	92	48	43	40	32	21	-	47	43	39	32	21	-	52	47	41	35	22	-	53	48	42	38	22	-	53	49	43	40	23	21	52	48	43	42	25	25						
	100	47	0.17	42	-	37	33	22	-	-	-	39	33	27	-	-	48	42	36	32	-	-	47	42	37	35	-	-	48	43	37	36	-	20	48	42	37	36	20	24						
	50	24	0.05	12	-	-	-	-	-	-	-	-	23	20	-	-	-	-	25	24	-	-	-	35	27	26	-	-	-	35	27	25	-	20	-	37	27	26	-	22						
	30	14	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	22	21	-	-						
5	300	142	0.55	137	49	52	49	41	26	21	*	*	*	*	*	*	56	53	49	41	26	22	59	56	49	43	27	23	61	57	50	44	27	24	61	58	52	46	29	27						
	250	118	0.35	87	-	48	44	36	20	-	-	48	44	36	-	-	56	51	44	38	20	-	57	53	46	40	22	-	57	54	47	41	23	-	58	55	48	45	26	26						
	200	94	0.23	57	-	43	38	30	-	-	-	44	39	32	-	-	54	49	40	35	-	-	54	50	42	37	-	-	55	51	43	39	20	-	55	51	45	43	24	24						
	125	59	0.10	25	-	-	28	-	-	-	-	39	30	25	-	-	-	42	35	31	-	-	-	43	37	34	-	-	-	44	37	36	-	-	-	44	38	37	23	25						
	100	47	0.06	15	-	-	23	-	-	-	-	-	28	23	-	-	-	39	32	29	-	-	-	40	34	31	-	-	-	40	34	33	-	-	-	40	34	33	20	24						
6	450	212	0.38	94	53	48	41	34	23	22	53	49	42	35	24	22	61	53	44	38	24	24	65	59	47	41	26	26	67	61	50	43	27	27	68	63	55	46	30	30						
	400	189	0.30	75	51	46	39	31	20	-	53	48	40	33	21	-	61	53	43	36	22	21	64	58	46	40	24	24	65	60	50	42	25	25	66	62	54	45	29	28						
	300	142	0.18	45	-	39	33	25	-	-	51	44	36	29	-	-	59	51	40	33	-	-	60	55	45	38	21	-	61	57	48	40	23	21	61	57	51	44	26	25						
	200	94	0.08	20	-	-	-	-	-	-	49	41	31	24	-	-	53	49	38	30	-	-	54	50	43	34	-	-	55	51	45	37	-	-	54	51	46	41	22	23						
	100	47	0.02	5	-	-	-	-	-	-	-	38	27	-	-	-	-	40	33	26	-	-	-	39	34	29	-	-	-	39	36	31	-	20	-	40	36	32	20	26						
7	650	307	0.49	122	57	52	46	43	29	31	*	*	*	*	*	*	60	54	47	42	29	32	65	57	49	46	31	34	69	60	51	47	33	36	71	64	54	50	35	38						
	550	260	0.35	87	54	48	42	38	24	25	56	49	42	36	24	25	60	53	45	40	26	27	65	56	47	44	29	31	67	59	48	46	31	33	69	62	52	48	33	36						
	335	158	0.13	32	-	37	30	24	-	-	53	43	34	30	-	-	59	49	38	35	-	21	60	53	42	38	22	25	60	54	44	40	24	28	60	54	47	44	27	33						
	225	106	0.06	15	-	-	-	-	-	-	51	40	29	25	-	-	53	46	35	30	-	-	53	47	39	34	20	24	53	48	40	37	21	28	53	48	41	38	24	33						
	110	52	0.02	5	-	-	-	-	-	-	-	-	24	22	-	-	-	-	27	28	-	-	-	37	29	29	20	24	47	38	29	29	20	28	47	39	31	30	22	33						
8	800	378	0.35	87	51	49	44	40	27	27	58	52	45	38	27	27	65	56	47	42	29	32	69	60	50	44	31	35	71	63	52	46	33	37	73	66	55	48	35	40						
	700	330	0.27	67	-	46	42	36	25	23	58	51	43	37	25	23	64	55	46	40	28	31	67	58	48	43	29	33	69	61	50	44	31	35	71	65	54	48	34	38						
	600	283	0.20	50	-	43	39	33	21	-	56	49	41	36	23	-	62	53	44	39	25	28	66	58	47	42	28	31	67	60	49	43	30	33	68	63	53	46	33	37						
	400	189	0.09	22	-	37	32	21	-	-	52	44	36	31	-	-	58	51	40	38	20	23	60	54	43	38	23	27	61	56	46	41	27	31	61	57	49	43	30	36						
	175	83	0.02	5	-	-	-	-	-	-	-	40	28	24	-	-	-	44	38	33	21	22	-	44	37	36	24	27	-	43	42	38	26	31	51	44	39	38	29	36						
9	1050	495	0.37	92	54	53	50	44	33	33	56	54	50	45	33	33	63	58	51	46	35	35	68	61	53	48	38	37	70	64	54	50	39	39	73	67	57	52	45	44						
	900	425	0.27	67	51	50	46	40	28	26	58	53	47	41	31	29	63	56	48	43	32	31	67	60	51	47	36	35	69	63	53	48	37	36	71	66	56	50	39	39						
	675	319	0.15	37	49	45	40	31	-	-	53	49	41	35	-	-	60	54	44	40	25	25	64	58	47	43	29	30	65	60	49	45	32	32	67	62	53	48	35	36						
	450	212	0.07	17	-	-	30	20	-	-	51	44	34	30	-	-	56	51	39	35	21	21	59	54	43	38	25	26	60	55	45	41	28	30	59	56	48	43	30	35						
	225	106	0.02	5	-	-	-	-	-	-	-	37	26	23	-	-	-	49	43	33	31	-	-	54	44	35	33	24	25	53	46	36	35	27	30	52	47	38	37	29	36					
10	1350	637	0.38	94	57	51	45	43	34	34	57	52	46	42	35	34	66	59	51	45	36	36	71	63	54	49	37	39	73	65	56	50	39	41	76	69	59	52	42	44						
	1100	519	0.25	62	55	46	41	37	28	25	59	52	44	39	29	26	66	58	48	43	31	32	69	61	52	46	34	36	71	64	54	48	37	39	73	67	58	51	41	43						
	825	389	0.15	37	-	39	35	29	-	-	56	49	40	34	21	20	64	55	45	39	27	29	66	59	49	43	32	33	67	61	51	44	34	36	68	63	54	47	37	40						
	550	260	0.07	17	-	-	26	-	-	-	52	45	36	29	-	-	58	52	41	35	23	24	62	55	45	37	27	29	61	56	47	39	29	32	62	57	50	42	32	37						
	275	130	0.02	5	-	-	-	-	-	-	-	39	28	22	-	-	-	50	44	35	29	20	54	46	38	33	26	28	52	46	39	35	28	32	55	47	40	37	32	38						
12	2000	944	0.37	92	61	54	48	45	39	37	63	56	49	45	39	37	68	62	53	48	40	40	72	65	56	51	42	42	74	67	58	53	43	44	77	70	62	55	45	47						
	1600	755	0.24	60	55	49	43	39	32	27	60	54	46	42	33	30	66	59	50	45	35	35	69	63	54	49	38	39	71	65	56	50	40	41	74	69	61	53	43	45						
	1200	566	0.14	35	51	43	37	31	21	-	60	52	44	40	30	29	63	56	48	43	31	33	66	60	51	45	35	36	68	63	54	47	37	39	73	69	61	52	43	45						
	800	378	0.06	15	48	36	28	20	-	-	58	50	42	37	28	29	60	54	44	38	27	29	63	57	48	41	30	33	63	58	50	43	31	34	65	60	53	46	35	39						
	400	189	0.02	5	-	-	-	-	-	-	51	42	32	26	-	-	-	54	47	37	32	21	23	56	49	41	36	27	30	56	50	43	39	30	33	59	51	46	42	34	40					
14	2700	1274	0.54	134	65	59	53	48	41	40	*	*	*	*	*	*	71	65	56	51	42	42	75	67	59	52	43	44	76	69	60	54	45	45	79	72	63	56	48	47						

Performance Data • NC Level Application Guide

30X Series • Optional Attenuator

Steri-Liner

A

SINGLE DUCT TERMINAL UNITS

Inlet Size	Airflow cfm / s		Min. inlet ΔPs "w.g. Pa		NC Levels @ Inlet Pressure (ΔPs) shown											
					DISCHARGE					RADIATED						
					Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)
4	200	94	0.63	159	-	*	-	-	-	-	-	*	-	21	21	20
	150	71	0.37	92	-	-	-	-	-	-	-	-	21	-	-	-
	100	47	0.17	43	-	-	-	-	-	-	-	-	-	-	-	-
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	-	-	-
	30	14	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
5	300	142	0.55	136	-	*	-	-	-	-	-	*	-	23	29	29
	250	118	0.35	87	-	-	-	-	-	-	-	-	-	20	26	26
	200	94	0.23	57	-	-	-	-	-	-	-	-	-	-	20	20
	125	59	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-
6	450	212	0.38	94	-	-	-	-	-	21	-	-	24	28	29	29
	400	189	0.30	75	-	-	-	-	-	-	-	-	23	25	26	26
	300	142	0.18	44	-	-	-	-	-	-	-	-	-	21	20	20
	200	94	0.08	21	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.02	6	-	-	-	-	-	-	-	-	-	-	-	-
7	650	307	0.50	125	-	-	-	-	23	25	-	-	21	28	31	34
	550	259	0.35	88	-	-	-	-	20	23	-	-	21	28	30	31
	335	158	0.13	34	-	-	-	-	-	-	-	-	-	20	20	20
	225	106	0.06	16	-	-	-	-	-	-	-	-	-	-	-	-
	110	52	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
8	800	377	0.35	87	-	-	-	-	21	25	-	21	26	30	33	35
	700	330	0.27	68	-	-	-	-	20	23	-	-	25	29	31	33
	600	283	0.20	51	-	-	-	-	-	21	-	-	24	28	29	29
	400	189	0.09	24	-	-	-	-	-	-	-	-	-	20	20	20
	175	83	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
9	1050	495	0.39	98	-	-	-	20	23	25	21	21	26	30	33	35
	900	425	0.28	70	-	-	-	-	20	23	-	-	24	28	30	33
	675	318	0.16	40	-	-	-	-	-	20	-	-	20	24	26	28
	450	212	0.07	17	-	-	-	-	-	-	-	-	-	-	-	20
	225	106	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
10	1350	637	0.42	105	-	-	-	21	25	30	-	-	26	31	35	39
	1100	519	0.30	75	-	-	-	20	23	25	-	-	26	30	33	36
	825	389	0.15	37	-	-	-	-	-	-	-	-	21	26	28	29
	550	259	0.07	17	-	-	-	-	-	-	-	-	-	-	20	24
	275	130	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
12	2000	943	0.41	103	-	-	-	25	28	30	23	23	34	34	36	40
	1600	755	0.27	68	-	-	-	23	24	28	-	-	28	31	34	35
	1200	566	0.15	38	-	-	-	-	20	23	-	-	24	26	28	30
	800	377	0.07	18	-	-	-	-	-	-	-	-	-	20	20	23
	400	189	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
14	2700	1274	0.58	145	-	*	24	28	30	34	29	*	31	34	36	39
	2100	991	0.34	85	-	-	21	25	28	28	21	21	28	31	33	35
	1550	731	0.18	46	-	-	-	-	-	20	-	-	23	25	25	28
	1050	495	0.09	22	-	-	-	-	-	-	-	-	-	-	20	21
	525	248	0.02	6	-	-	-	-	-	-	-	-	-	-	-	-
16	3500	1651	0.48	119	-	-	23	28	30	33	30	30	31	35	38	41
	2800	1321	0.31	77	-	-	23	25	28	30	21	23	29	33	34	36
	2100	991	0.18	44	-	-	-	21	23	24	-	-	23	26	29	31
	1400	660	0.08	20	-	-	-	-	-	-	-	-	-	20	21	23
	700	330	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
24 x 16	5350	2525	0.47	118	26	26	28	34	34	39	40	40	36	38	40	43
	5000	2360	0.40	100	25	25	26	33	33	38	39	39	35	36	39	41
	4000	1887	0.26	65	-	20	25	30	33	36	30	30	31	34	35	36
	3000	1415	0.15	38	-	-	23	28	29	31	20	21	25	30	31	33
2000	943	0.07	18	-	-	-	21	25	28	-	-	21	24	26	29	

Performance Notes:

1. NC Levels are calculated based on procedures as outlined on page A75.
2. Dash (-) in space indicates a NC less than 20.
3. Asterisk (*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.

Performance Data • Discharge Sound Power Levels

30X Series • Optional Attenuator

Steri-Liner

Inlet Size	Airflow		Min. inlet ΔPs	Sound Power Octave Bands @ Inlet Pressure (ΔPs) shown																																									
				Minimum ΔPs							0.5" w.g. (125Pa) ΔPs							1.0" w.g. (250Pa) ΔPs							1.5" w.g. (375Pa) ΔPs							2.0" w.g. (500Pa) ΔPs							3.0" w.g. (750Pa) ΔPs						
				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	2	3	4	5	6	7						
4	200	94	0.63	157	51	49	45	40	43	41	*	*	*	*	*	*	54	50	45	41	43	42	57	52	46	43	43	42	57	53	47	45	43	42	57	53	48	47	44	44					
	150	71	0.37	92	-	42	39	35	35	33	-	43	39	35	36	33	52	46	40	37	36	33	53	48	42	40	37	35	52	48	43	42	37	37	52	48	44	44	39	40					
	100	47	0.17	42	-	34	32	24	23	-	-	38	33	28	24	-	46	41	35	33	27	26	46	42	37	36	29	31	-	41	37	38	31	34	47	41	37	38	34	38					
	50	24	0.05	12	-	-	-	-	-	-	-	-	20	-	-	-	-	-	23	24	-	22	-	-	25	26	26	28	-	-	25	26	28	32	-	-	25	26	30	35					
	30	14	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	26	-	-	-	21	26	-	-	21	20	23	27	-	-	22	22	28	32	
5	300	142	0.55	137	50	51	50	44	42	42	*	*	*	*	*	*	56	52	50	44	43	42	60	55	51	45	43	43	62	57	51	47	43	44	62	57	53	49	45	46					
	250	118	0.35	87	48	46	44	38	36	34	49	47	44	38	35	34	56	50	45	40	36	35	57	53	46	42	38	37	58	53	47	44	39	39	58	54	49	47	41	43					
	200	94	0.23	57	-	42	40	34	29	26	-	43	39	34	29	26	53	48	41	37	31	30	55	50	43	40	34	34	54	50	44	42	36	37	55	50	46	45	39	41					
	125	59	0.10	25	-	-	29	21	-	-	-	-	39	31	27	-	-	50	43	35	32	25	26	50	43	37	36	30	32	49	44	38	38	33	36	49	43	38	39	37	41				
	100	47	0.06	15	-	-	22	-	-	-	-	-	37	27	25	-	-	40	32	31	25	26	50	40	34	34	30	32	-	41	35	35	33	36	-	-	39	34	35	36	40				
6	450	212	0.38	94	51	47	42	38	43	41	52	49	43	39	43	41	60	53	45	41	44	42	64	58	48	43	44	43	65	61	50	46	45	44	66	63	55	49	47	46					
	400	189	0.30	75	-	44	39	35	38	36	52	47	41	36	38	36	59	52	44	39	39	39	63	58	47	42	40	40	64	60	50	45	41	42	64	61	55	49	44	45					
	300	142	0.18	45	-	-	34	29	28	25	-	42	37	32	31	29	57	51	41	36	32	33	59	55	46	40	35	35	60	57	49	43	38	38	59	57	52	47	41	41					
	200	94	0.08	20	-	-	-	-	-	-	-	-	31	27	22	21	52	48	38	33	27	27	55	50	44	37	31	32	55	51	46	40	33	35	55	52	49	45	39	40					
	100	47	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	33	29	25	26	26	53	40	36	32	31	33	54	41	37	34	34	36	-	-	37	35	37	41					
7	650	307	0.49	122	57	53	47	47	43	46	*	*	*	*	*	*	60	54	48	45	44	47	66	57	50	49	45	48	69	60	52	51	46	49	71	64	55	53	49	51					
	550	260	0.35	87	54	48	42	42	39	39	57	49	42	40	39	40	60	53	45	44	40	41	65	56	48	47	42	44	67	59	49	48	44	45	69	61	53	51	47	49					
	335	158	0.13	32	48	39	30	28	22	-	53	43	35	33	27	27	58	49	39	38	32	34	60	52	42	41	36	38	60	53	45	43	38	41	60	54	48	47	41	45					
	225	106	0.06	15	45	36	20	-	-	-	51	41	30	28	21	23	53	46	35	33	28	32	54	47	40	38	33	37	54	47	41	40	35	40	53	47	42	42	39	44					
	110	52	0.02	5	44	36	-	-	-	-	52	38	25	25	-	20	46	36	29	31	28	28	46	38	31	33	33	36	47	38	31	33	35	39	48	40	33	34	38	44					
8	800	378	0.35	87	52	49	45	43	42	41	59	52	46	41	42	41	65	56	48	44	44	45	68	60	51	46	45	47	70	62	52	48	47	48	73	66	56	51	49	52					
	700	330	0.27	67	48	46	43	40	38	35	58	51	44	40	39	36	63	55	47	43	42	42	67	58	49	45	43	45	69	61	51	46	45	47	70	65	54	49	48	50					
	600	283	0.20	50	48	44	40	36	33	30	56	49	42	39	36	33	62	53	45	41	38	40	65	58	47	44	41	43	66	60	49	45	43	45	68	63	53	48	47	49					
	400	189	0.09	22	-	38	32	24	-	-	-	51	44	36	33	27	26	59	51	41	39	34	35	60	54	44	40	37	38	60	56	47	42	40	42	61	57	50	45	44	46				
	175	83	0.02	5	-	-	-	-	-	-	-	50	42	29	27	20	21	49	42	35	32	30	31	50	43	37	41	36	37	50	43	38	37	40	42	52	43	39	39	43	47				
9	1050	495	0.37	92	55	52	50	47	47	47	57	53	50	47	46	47	64	57	52	48	47	47	69	60	54	51	49	49	71	63	55	53	50	50	73	67	58	55	53	53					
	900	425	0.27	67	52	49	47	43	40	39	59	52	47	44	41	39	63	55	49	46	43	42	68	59	52	49	45	45	69	62	53	51	48	48	71	65	57	53	52	51					
	675	319	0.15	37	47	44	40	35	29	27	53	48	41	38	32	30	61	53	45	43	38	37	64	57	48	46	42	42	65	59	50	47	45	45	67	61	54	50	48	49					
	450	212	0.07	17	-	36	29	21	-	-	52	44	36	33	27	27	58	50	40	38	35	34	59	53	44	41	38	39	60	55	47	44	41	42	60	55	49	46	44	47					
	225	106	0.02	5	-	33	-	-	-	-	48	39	29	26	22	21	51	42	34	34	32	31	52	44	37	36	38	38	51	45	40	38	40	41	52	47	39	40	43	47					
10	1350	637	0.38	94	55	50	46	46	48	45	59	52	47	46	48	45	66	59	52	49	49	47	70	62	55	51	50	50	73	65	57	53	52	52	77	69	60	56	55	55					
	1100	519	0.25	62	54	45	42	41	40	35	58	51	45	43	41	38	65	56	49	45	43	42	69	61	53	49	47	47	71	63	55	50	49	50	73	66	58	53	52	53					
	825	389	0.15	37	47	39	35	32	28	23	56	48	41	37	32	32	62	54	46	41	39	40	65	58	50	45	44	45	66	60	52	47	46	47	67	62	55	50	49	51					
	550	260	0.07	17	-	-	25	20	-	-	53	44	36	32	29	30	58	51	42	38	36	36	60	54	46	40	40	41	61	55	48	42	41	43	61	57	50	45	45	48					
	275	130	0.02	5	-	-	-	-	-	-	48	39	29	25	23	23	51	44	35	32	33	32	53	46	39	36	38	39	52	45	40	38	41	43	54	46	42	40	45	49					
12	2000	944	0.37	92	60	54	49	47	49	45	64	56	50	48	49	45	68	61	54	51	51	49	73	64	57	54	52	52	75	67	59	55	54	54	77	70	62	58	56	57					
	1600	755	0.24	60	55	48	44	41	42	36	61	53	47	44	43	39	67	59	51	48	46	45	71	63	55	52	48	49	72	65	57	53	51	52	75	68	60	55	54	55					
	1200	566	0.14	35	49	42	37	33	30	25	58	50	42	39	36	35	64	56	49	46	42	43	67	60	52	48	46	47	69	62	54	50	48	49	71	65	58	53	51	52					
	800	378	0.06	15	-	-	28	22	-	-	54	46	38	35	31	33	60	53	44	41	38	38	63	57	48	44	41	42	64	58	50	45	43	45	65	60	54	49	47	49					
	400	189	0.02	5	-	-	-	-	-	-	50	41	32	28	24	25	54	46	38	35	33	33	57	50	43	39	38	39	56	49	44	40	41	43	58	50	47	44	45	49					
14	2700	1274	0.54	134	65	59	53	50	48	50	*	*	*	*	*	*	72	65	57	54	50	52	75	67	60	55	51	53	77	69	61	57	5												

Performance Data • AHRI Certification and Performance Notes

30X Series • Basic Unit

Fiberglass Liner

Inlet Size	Airflow		Min. Inlet Δ Ps		Discharge Sound Power Levels @ 1.5" w.g. (375 Pa) Δ Ps							Radiated Sound Power Levels @ 1.5" w.g. (375 Pa) Δ Ps						
					Octave Band							Octave Band						
	cfm	l/s	"w.g.	Pa	2	3	4	5	6	7	2	3	4	5	6	7		
4	150	71	0.37	92	60	57	50	50	44	41	54	45	37	31	23	19		
5	250	118	0.35	87	67	62	55	52	47	43	58	49	39	34	27	21		
6	400	189	0.30	75	71	64	56	51	48	45	62	52	41	34	28	22		
7	550	260	0.35	87	72	62	54	54	50	49	64	52	44	40	32	27		
8	700	330	0.27	67	74	63	55	52	51	50	65	53	43	36	32	27		
9	900	425	0.27	67	74	64	57	55	52	49	64	54	48	40	32	36		
10	1100	519	0.25	62	76	65	58	54	53	51	66	55	44	37	32	26		
12	1600	755	0.24	60	75	66	60	58	56	54	67	57	48	41	40	35		
14	2100	991	0.33	82	80	69	61	59	57	54	67	57	48	40	34	29		
16	2800	1321	0.31	77	76	67	64	60	59	56	68	57	49	41	36	31		
24 x 16	5350	2525	0.45	112	83	74	69	67	66	64	72	64	57	47	44	44		

Performance Notes for Sound Power Levels:

- Discharge sound power is the noise emitted from the unit discharge into the downstream duct. The effect of including the energy correction to the discharge SWL, is higher sound power levels when compared to previous AHRI certified data. For more information on duct end reflection calculations see AHRI Standard 880.
- Radiated sound power is the breakout noise transmitted through the unit casing walls.
- Sound power levels are in decibels, dB re 10^{-12} watts.
- All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation. Dash (-) in space indicates sound power level is less than 20 dB or equal to background.
- Minimum inlet Δ Ps is the minimum operating pressure requirement of the unit (damper full open) and the difference in static pressure from inlet to discharge of the unit.
- Asterisk (*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 130.

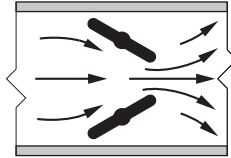
SINGLE DUCT EXHAUST TERMINAL UNITS

30HQX SERIES

- HOSPITAL GRADE
- DISSIPATIVE SILENCER

Model:

30HQX Hospital Grade with Dissipative Silencer



Inclined opposed blade damper configuration minimizes noisy turbulence and provides smooth, accurate, near linear flow control.



Model 30HQX

The 30HQX Hospital Grade exhaust terminal unit has been purposely designed to provide optimum performance, while addressing the needs of hospital and other critical environment applications where Indoor Air Quality (IAQ) is a concern. Standard features, like the access door and removable flow sensor ensures that maintenance is simplified. The standard fully insulated dissipative silencer is designed to minimize undue pressure loss while maximizing attenuation.

STANDARD FEATURES:

- Venturi valve inlet for reduced pressure drop.
- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- 16 ga. (1.63) corrosion-resistant steel inclined opposed blade damper with extruded PVC seals. 45° rotation, CW to close. Tight shut-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (746 Pa).
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.
- Multi-point averaging Diamond Flow Sensor. Aluminum construction, supplied with balancing tees.
- FMI Diamond Flow Sensor is insert type design to permit easy removal for cleaning. Secured with thumb screws.
- Side access door allows quick access to flow sensor.
- Rectangular inlet and discharge with slip and drive cleat duct connection.
- Full NEMA 1 type controls enclosure for factory mounted controls.
- VAV section lined with 13/16" (21) thick, 4 lb. density Steri-Liner insulation. Fiberglass with a reinforced aluminum FSK (Foil-Scrim-Kraft) facing. Meets the requirements of NFPA 90A, UL 181 and ASTM C655.
- Right-hand controls location is standard (shown) when looking in direction of airflow. Optional left hand controls mounting is available. Unit is flippable.
- Available in 11 unit sizes to handle from 30 to 8575 cfm (14-4047 l/s).

Silencer Section:

- Designed to mate with VAV section for optimum performance and quiet operation.
- Optimized internal baffle geometry reduces self-generated noise, minimizes pressure drop and maximizes acoustic attenuation.
- 22 ga. (.86) coated steel perforated baffles encapsulate fiberglass acoustic media. Mylar lining with acoustical spacer isolates material from airstream.
- Internal Steri-Liner insulation on top and bottom optimizes sound reduction and eliminates need for external field applied thermal duct wrap.

Options and Accessories:

- Solid metal liner (VAV section).
- 24 VAC control transformer.
- Toggle Disconnect switch.
- Hanger brackets.
- Controls enclosure for field or factory mounted controls.
- Dust tight enclosure seal.
- 20 ga. (1.00) construction.
- Seismic Certification.



Intertek

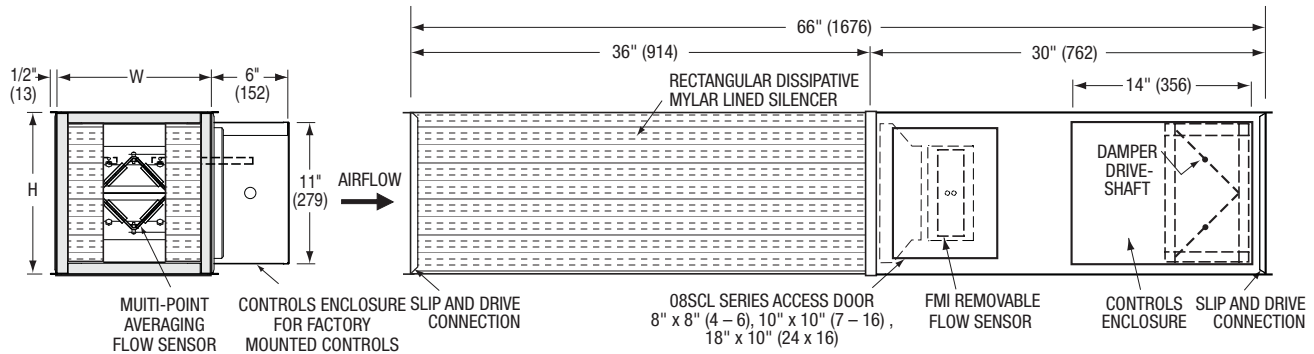


Dimensions

Model 30HQX • Hospital Grade • Dissipative Silencer

Digital and Analog Electronic Controls

- A NEMA 1 control enclosure is included for factory mounted controls. Optional for field mounted controls.



Dimensional Data

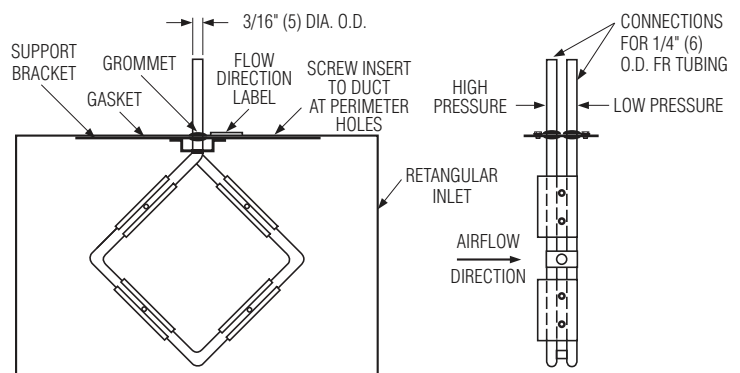
Unit Size	W	H
4	10 (254)	10 (254)
5	10 (254)	10 (254)
6	10 (254)	10 (254)
7	12 (305)	12 1/2 (318)
8	12 (305)	12 1/2 (318)
9	14 (356)	12 1/2 (318)
10	14 (356)	12 1/2 (318)
12	18 (457)	12 1/2 (318)
14	24 (610)	12 1/2 (318)
16	28 (711)	12 1/2 (318)
24 x 16	38 (965)	18 (457)

(FMI) Removable Flow Sensor

The (FMI) Removable Flow Sensor is a multi-point averaging airflow sensor. Designed to provide accurate sensing by sampling air velocities in four quadrants of a duct, the differential pressure flow sensor provides an averaged reading at an amplification of approximately 2.5 times the velocity pressure, dependent upon nominal size.

FEATURES:

- Removable for cleaning.
- All metal construction - no combustible materials in the air stream.
- Amplifies velocity pressure approximately 2.5 times to give a wide range of useful output signal vs. flow.
- Compact size allows for easy removal in tight spaces.
- Sensor design minimizes pressure drop and regenerated noise.
- Label provided on each unit gives airflow direction.
- Multi-point sensing gives an accurate output signal with a maximum deviation of only $\pm 5\%$ with a hard 90 degree elbow, provided a straight inlet condition with a minimum length of two equivalent duct diameters is provided.



Recommended Airflow Ranges For Model 30HQX Single Duct Hospital Grade Exhaust Terminal Units

The recommended airflow ranges below are for 30HQX Series exhaust single duct terminal units with pressure independent controls and are presented as ranges for total and controller specific minimum and maximum airflow. Airflow ranges are based upon maintaining reasonable sound levels and controller limits using Nailor's Diamond Flow Sensor as the airflow measuring device. For a given unit size, the minimum, auxiliary minimum (where applicable) and the maximum flow setting must be within the range limits to ensure pressure independent operation, accuracy and repeatability.

Minimum airflow limits are based upon .02" w.g. (5 Pa) differential pressure signal from Diamond Flow Sensor on analog/ digital controls and .03" (7.5) for pneumatic controllers. This is a realistic low limit for many transducers used in the digital controls industry. Check your controls supplier for minimum limits. Setting airflow minimums lower, may cause damper hunting and result in a failure to meet minimum ventilation requirements. Factory settings will therefore not be made outside these ranges; however, a minimum setting of zero (shut-off) is an available option on pneumatic units. Where an auxiliary setting is specified, the value must be greater than the minimum setting.

The high end of the tabulated Total Airflow Range on pneumatic and analog electronic controls represents the Diamond Flow Sensor's differential pressure reading at 1" w.g. (249 Pa). The high end airflow range for digital controls is represented by the indicated transducer differential pressure.

ASHRAE 130 "Performance Rating of Air Terminals" is the method of test for the certification program. The "standard rating Imperial Units, Cubic Feet per Minute



Model 30HQX

condition" (certification rating point) airflow volumes for each terminal unit size are tabulated below per AHRI Standard 880. These air volumes equate to an approximate inlet velocity of 2000 fpm (10.2 m/s).

When digital or other controls are mounted by Nailor, but supplied by others, these values are guidelines only, based upon experience with the majority of controls currently available. Controls supplied by others for factory mounting are configured and calibrated in the field. Airflow settings on pneumatic and analog controls supplied by Nailor are factory preset when provided.

Unit Size	Inlet Type	Total Airflow Range, cfm	Airflow at 2000 fpm Inlet Velocity (nom.), cfm	Range of Minimum and Maximum Settings, cfm							
				Pneumatic 3000 Controller		Analog Electronic Controls		Digital Controls			
				Transducer Differential Pressure ("w.g.)							
				Min.	Max.	Min.	Max.	Min.	Max.		
				.03	1.0	.02	1.0	.02	1.0	1.25	1.5
4	Rect.	0 – 260	150	35	210	30	210	30	210	235	260
5		0 – 425	250	60	345	50	345	50	345	385	425
6		0 – 710	400	100	580	80	580	80	580	650	710
7		0 – 835	550	120	680	95	680	95	680	760	835
8		0 – 1190	700	170	970	140	970	140	970	1085	1190
9		0 – 1480	900	210	1210	170	1210	170	1210	1350	1480
10		0 – 1885	1100	265	1540	220	1540	220	1540	1720	1885
12		0 – 2780	1600	395	2270	320	2270	320	2270	2540	2780
14		0 – 3085	2100	435	2520	360	2520	360	2520	2820	3085
16		0 – 4385	2800	620	3580	505	3580	505	3580	4000	4385
24 x 16		0 – 8575	5350	1215	7000	990	7000	990	7000	7825	8575

Metric Units, Liters per Second

Unit Size	Inlet Type	Total Airflow Range, l/s	Airflow at 10.2 m/s Inlet Velocity (nom.), l/s	Range of Minimum and Maximum Settings, l/s							
				Pneumatic 3000 Controller		Analog Electronic Controls		Digital Controls			
				Transducer Differential Pressure (Pa)							
				Min.	Max.	Min.	Max.	Min.	Max.		
				7.5	249	5	249	5	249	311	374
4	Rect.	0 – 123	71	17	99	14	99	14	99	111	123
5		0 – 201	118	28	163	24	163	24	163	182	201
6		0 – 335	189	47	274	38	274	38	274	307	335
7		0 – 394	260	57	321	45	321	45	321	359	394
8		0 – 562	330	80	458	66	458	66	458	512	562
9		0 – 698	425	99	571	80	571	80	571	637	698
10		0 – 890	519	125	727	104	727	104	727	812	890
12		0 – 1312	755	186	1071	151	1071	151	1071	1199	1312
14		0 – 1456	991	205	1189	170	1189	170	1189	1331	1456
16		0 – 2069	1321	293	1689	238	1689	238	1689	1888	2069
24 x 16		0 – 4047	2525	573	3303	467	3303	467	3303	3693	4047

A SINGLE DUCT TERMINAL UNITS

Performance Data • NC Level Application Guide

30HQX Series • Hospital Grade • Dissipative Silencer

Terminal: Steri-Liner • Silencer: Mylar, Spacer, Steri-Liner (MSSL) Media

Inlet Size	Airflow cfm l/s		Min. inlet ΔPs "w.g. Pa	NC Levels @ Inlet Pressure (ΔPs) shown												
				DISCHARGE					RADIATED							
				Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	
4	200	94	0.63	157	-	*	-	-	-	-	-	*	-	21	24	28
	150	71	0.37	92	-	-	-	-	-	-	-	-	-	21	22	22
	100	47	0.17	42	-	-	-	-	-	-	-	-	-	-	20	23
	75	35	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	23	25	30
5	300	142	0.60	149	-	*	-	20	23	23	-	*	-	-	22	25
	250	118	0.40	99	-	-	-	-	-	-	-	-	-	-	-	20
	200	94	0.24	60	-	-	-	-	-	-	-	-	-	-	-	-
	125	59	0.10	25	-	-	-	-	-	-	-	-	20	23	26	30
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	21	25	29
6	450	212	0.49	122	-	-	-	-	-	20	-	-	-	20	21	25
	400	189	0.39	97	-	-	-	-	-	-	-	-	-	-	-	20
	300	142	0.22	55	-	-	-	-	-	-	22	-	21	26	30	35
	200	94	0.10	25	-	-	-	-	-	-	-	-	-	24	28	32
	100	47	0.03	7	-	-	-	-	-	-	-	-	-	20	23	26
7	650	307	0.50	124	-	-	-	21	25	28	-	-	-	-	-	20
	550	260	0.36	89	-	-	-	21	23	25	-	20	25	29	31	35
	335	158	0.14	35	-	-	-	-	-	-	-	-	23	26	29	33
	225	106	0.06	15	-	-	-	-	-	-	-	-	21	24	26	31
	110	52	0.02	5	-	-	-	-	-	-	-	-	-	21	23	26
8	800	378	0.36	89	-	-	-	23	25	29	20	20	23	28	34	38
	700	330	0.28	70	-	-	-	21	24	25	-	-	21	25	31	35
	600	283	0.20	50	-	-	-	23	24	25	-	-	-	23	28	31
	400	189	0.09	22	-	-	-	-	-	-	-	-	-	20	23	26
	175	83	0.02	5	-	-	-	-	-	-	-	20	24	28	30	35
9	1050	495	0.43	107	-	-	-	23	25	29	-	-	21	24	25	31
	900	425	0.32	80	-	-	-	20	24	25	-	-	-	-	21	24
	675	319	0.18	45	-	-	-	-	21	21	-	-	-	-	-	-
	450	212	0.08	20	-	-	-	-	-	-	29	28	31	34	35	40
	225	106	0.02	5	-	-	-	-	-	-	22	25	29	31	33	38
10	1350	637	0.49	122	-	-	-	24	26	30	-	20	25	28	30	35
	1100	519	0.32	80	-	-	-	23	24	26	-	-	20	24	26	30
	825	389	0.18	45	-	-	-	-	-	21	24	25	30	34	37	40
	550	260	0.08	20	-	-	-	-	-	-	-	21	26	31	34	37
	275	130	0.02	5	-	-	-	-	-	-	-	-	24	28	30	34
12	2000	944	0.53	132	-	*	20	25	29	31	-	*	-	21	25	26
	1600	755	0.34	85	-	-	-	23	25	28	30	30	33	37	40	44
	1200	566	0.19	47	-	-	-	20	20	23	23	24	29	34	36	40
	800	378	0.08	20	-	-	-	-	-	-	-	-	24	29	31	35
	400	189	0.02	5	-	-	-	-	-	-	-	-	-	-	-	21
14	2700	1274	0.55	137	-	*	25	29	31	34	-	*	-	-	-	-
	2100	991	0.33	82	-	-	20	24	26	26	44	43	48	50	53	56
	1550	731	0.18	45	-	-	-	-	-	-	40	41	47	49	51	55
	1050	495	0.09	22	-	-	-	-	-	-	32	38	44	46	48	51
	525	248	0.02	5	-	-	-	-	-	-	31	37	43	45	47	50
16	3500	1652	0.50	124	-	-	24	29	30	34	24	35	39	43	45	47
	2800	1321	0.31	77	-	-	21	26	29	31	21	23	29	33	34	36
	2100	991	0.18	45	-	-	-	21	23	24	-	-	23	26	29	31
	1400	661	0.08	20	-	-	-	-	-	-	-	-	-	20	21	23
	700	330	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
24 x 16	5350	2525	0.49	122	21	21	24	28	30	33	40	40	36	38	40	43
	5000	2360	0.43	107	20	21	23	28	29	31	39	39	35	36	39	41
	4000	1888	0.27	67	-	-	21	26	28	29	30	30	31	34	35	36
	3000	1416	0.16	40	-	-	-	21	24	25	20	21	25	30	31	33
2000	944	0.07	17	-	-	-	-	-	21	-	-	21	24	26	29	

Performance Notes:

1. NC Levels are calculated based on procedures as outlined on page A75.
2. Dash (-) in space indicates a NC less than 20.
3. Asterisk (*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.

A

SINGLE DUCT TERMINAL UNITS

Performance Data • Discharge Sound Power Levels

30HQX Series • Hospital Grade • Dissipative Silencer

Terminal: Steri-Liner • Silencer: Mylar, Spacer, Steri-Liner (MSSL) Media

Inlet Size	Airflow		Min. inlet ΔPs		Sound Power Octave Bands @ Inlet Pressure (ΔPs) shown																																					
					Minimum ΔPs			0.5" w.g. (125Pa) ΔPs			1.0" w.g. (250Pa) ΔPs			1.5" w.g. (375Pa) ΔPs			2.0" w.g. (500Pa) ΔPs			3.0" w.g. (750Pa) ΔPs																						
					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	200	94	0.63	157	57	53	40	30	-	-	*	*	*	*	*	*	59	53	40	31	-	-	61	54	40	32	20	26	61	55	41	34	-	26	62	55	42	37	-	28		
	150	71	0.37	92	-	47	34	24	-	-	-	48	35	24	-	-	57	49	35	26	-	-	57	51	36	29	20	20	56	51	37	31	-	21	58	51	38	33	-	25		
	100	47	0.17	42	-	41	27	16	-	-	-	41	27	-	-	-	-	44	30	24	-	-	-	44	32	27	-	-	-	44	33	28	-	22	-	45	33	29	-	25		
	75	35	0.10	25	-	41	26	-	-	-	-	39	25	-	-	-	-	41	28	22	-	-	-	40	28	23	-	-	-	40	28	24	-	-	-	40	27	24	-	24		
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	21	-	-	-	-	-	22	-	-	23		
5	300	142	0.60	149	58	54	43	35	26	25	*	*	*	*	*	*	61	55	44	36	27	26	64	57	44	36	27	26	66	59	45	37	27	27	66	60	46	38	28	30		
	250	118	0.40	99	-	50	39	29	-	-	56	51	39	30	-	-	60	53	40	30	-	-	62	55	41	32	20	20	62	56	42	33	-	21	63	56	43	36	20	26		
	200	94	0.24	60	-	47	35	23	-	-	-	47	35	25	-	-	59	51	36	27	-	-	59	52	38	29	-	-	58	52	38	30	-	20	60	53	39	34	-	25		
	125	59	0.10	25	-	39	26	-	-	-	-	42	27	-	-	-	-	55	45	30	23	-	-	-	45	31	25	-	-	-	45	32	26	-	-	-	55	46	34	30	-	27
	100	47	0.06	15	-	-	-	-	-	-	-	39	23	-	-	-	-	42	27	20	-	-	-	43	28	23	-	-	-	42	28	24	-	20	-	46	29	25	-	25		
6	450	212	0.49	122	-	49	43	43	39	33	-	49	43	43	39	33	61	51	43	43	39	33	64	54	44	43	39	33	66	57	45	43	39	33	67	59	48	43	40	34		
	400	189	0.39	97	-	47	41	40	34	29	-	47	41	39	33	27	61	50	41	40	34	28	63	53	43	40	35	29	65	56	44	40	35	29	66	57	47	41	35	31		
	300	142	0.22	55	-	42	35	30	20	-	-	44	36	30	24	-	59	48	36	29	-	-	59	52	39	31	21	-	61	53	41	32	22	22	62	54	44	34	22	25		
	200	94	0.10	25	-	-	-	-	-	-	-	42	27	-	-	-	-	45	32	-	-	-	-	47	36	22	-	-	-	48	37	25	-	20	-	48	38	28	-	24		
	100	47	0.03	7	-	-	-	-	-	-	-	-	-	-	-	-	-	39	26	-	-	-	-	40	27	-	-	-	-	-	27	-	-	-	-	41	29	22	-	25		
7	650	307	0.50	124	61	56	44	39	29	34	61	56	44	39	29	34	64	57	45	38	29	35	68	59	45	39	29	36	71	60	46	41	29	37	73	64	48	42	30	39		
	550	260	0.36	89	57	52	40	33	21	28	59	52	40	32	22	28	63	54	41	35	22	30	68	57	42	37	22	32	69	59	44	38	23	34	71	62	46	40	24	37		
	335	158	0.14	35	-	40	27	-	-	-	53	44	30	22	-	-	60	49	33	28	-	22	62	52	36	30	-	27	62	53	38	32	-	30	63	54	40	36	-	34		
	225	106	0.06	15	-	-	-	-	-	-	53	40	24	-	-	-	54	46	29	23	-	20	55	48	32	27	-	26	54	48	33	29	-	29	55	48	35	31	-	34		
	110	52	0.02	5	-	-	-	-	-	-	-	35	-	-	-	-	-	36	21	20	-	-	-	-	23	22	-	23	-	39	24	22	-	28	-	38	26	23	-	34		
8	800	378	0.36	89	59	52	42	40	34	30	62	53	42	40	35	31	68	57	43	40	35	34	71	60	45	41	35	36	73	62	46	41	35	38	76	66	49	42	34	40		
	700	330	0.28	70	-	49	40	36	29	25	61	52	40	36	29	25	67	55	41	37	29	31	70	58	43	38	30	34	72	62	44	39	30	35	73	64	48	40	30	39		
	600	283	0.20	50	-	46	38	33	25	21	59	49	38	33	24	21	65	54	40	34	24	29	69	57	42	36	25	32	70	60	43	36	24	34	71	63	46	39	26	37		
	400	189	0.09	22	-	39	28	-	-	-	55	44	31	25	-	-	61	51	34	29	-	24	63	54	37	31	-	28	64	55	40	34	-	31	63	57	43	39	20	35		
	175	83	0.02	5	-	-	-	-	-	-	-	39	23	-	-	-	-	43	32	26	-	22	-	44	37	33	-	27	-	43	36	33	-	31	-	43	33	34	-	36		
9	1050	495	0.43	107	61	55	45	43	38	36	60	55	45	43	38	35	66	58	45	42	37	37	71	61	47	43	38	38	73	63	47	43	38	40	76	67	49	44	39	43		
	900	425	0.32	80	57	52	42	38	32	29	61	54	42	38	31	29	65	56	43	39	32	32	69	59	44	39	32	35	72	62	45	40	32	37	73	65	47	41	33	40		
	675	319	0.18	45	-	46	37	29	-	-	56	48	36	29	-	-	64	54	38	31	20	27	66	57	40	32	22	31	68	59	41	34	24	34	68	61	44	37	27	38		
	450	212	0.08	20	-	-	-	-	-	-	57	44	27	-	-	-	59	50	31	23	-	23	61	53	35	27	-	28	62	54	37	29	-	31	62	55	38	32	-	36		
	225	106	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	42	23	-	-	-	-	54	43	26	20	-	26	-	44	27	22	-	31	-	56	46	29	26	37	
10	1350	637	0.49	122	60	54	45	46	45	40	60	55	46	46	46	41	68	59	46	46	45	41	72	63	48	46	45	43	74	65	49	46	45	44	77	68	51	47	45	46		
	1100	519	0.32	80	-	48	42	42	37	32	60	53	42	42	37	32	66	57	43	42	37	34	71	61	45	42	38	38	72	63	47	43	37	40	74	66	49	43	38	44		
	825	389	0.18	45	-	41	36	34	25	-	56	48	37	34	26	22	64	54	39	34	26	31	67	58	42	35	27	34	68	60	44	36	27	37	70	62	47	38	29	41		
	550	260	0.08	20	-	-	27	-	-	-	-	44	30	20	-	20	59	51	34	24	-	26	62	54	38	27	-	31	61	55	39	27	-	33	62	56	41	31	22	38		
	275	130	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	43	27	-	-	21	55	45	31	21	-	28	-	44	30	22	-	33	-	56	46	32	24	33	40	
12	2000	944	0.53	132	62	55	47	47	48	44	*	*	*	*	*	*	69	61	49	48	49	46	73	64	50	48	49	47	76	66	51	48	48	48	78	69	54	48	49	50		
	1600	755	0.34	85	59	52	45	45	43	38	62	54	44	44	41	36	68	58	45	44	41	39	71	61	47	44	41	42	73	64	48	44	42	44	75	67	51	45	44	47		
	1200	566	0.19	47	53	45	39	37	30	24	60	50	40	38	31	28	65	55	41	38	32	35	69	59	44	39	34	39	69	61	45	39	36	41	71	64	49	41	39	46		
	800	378	0.08	20	-	37	31	23	-	-	56	45	32	25	-	23	61	52	36	27	24	31	64	55	39	30	28	35	64	56	41	31	30	37	65	57	43	34	34	41		
	400	189	0.02	5	-	-	-	-	-	-	-	40	22	-	-	-	52	44	28	20	21	26	56	46	32	24	26	31	54	46	32	27	29	35	57	47	35	30	33	42		
14	2700	1274	0.55	137	64	55	48	49	52	48	*	*	*	*	*	*	73	62	49	50	52	49	76	64	51	51	52	49	78	66	53	51	52	50	80	69	55	53	53	52		
	2100	991	0.33	82	57	49	43	44	43	37	65	54	43																													

Performance Data • Radiated Sound Power Levels

30HQX Series • Hospital Grade • Dissipative Silencer

Terminal: Steri-Liner • Silencer: Mylar, Spacer, Steri-Liner (MSSL) Media

Inlet Size	Airflow		Min. inlet ΔPs		Sound Power Octave Bands @ Inlet Pressure (ΔPs) shown																																									
					Minimum ΔPs							0.5" w.g. (125Pa) ΔPs							1.0" w.g. (250Pa) ΔPs							1.5" w.g. (375Pa) ΔPs							2.0" w.g. (500Pa) ΔPs							3.0" w.g. (750Pa) ΔPs						
					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	2	3	4	5	6	7						
4	200	94	0.63	157	52	42	33	27	27	21	*	*	*	*	*	*	55	43	34	28	27	22	59	49	39	33	28	23	59	50	41	36	29	25	58	50	44	39	32	28						
	150	71	0.37	92	48	35	27	-	-	-	49	36	27	-	-	-	54	43	33	27	21	-	54	45	37	31	23	19	54	45	39	33	26	22	52	44	40	36	29	26						
	100	47	0.17	42	-	-	-	-	-	-	47	35	24	-	-	-	47	38	30	24	-	-	49	39	33	28	-	-	49	38	33	29	23	21	48	38	34	32	29	26						
	75	35	0.10	25	-	-	-	-	-	-	-	31	23	-	-	-	-	32	27	21	-	-	-	33	27	25	-	-	-	32	28	26	23	21	47	36	32	31	29	26						
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	23	-	-	-	-	31	26	25	23	-	47	36	31	30	28	25					
5	300	142	0.60	149	51	42	35	27	25	20	*	*	*	*	*	*	55	45	37	31	26	21	60	50	40	35	29	23	62	52	42	37	32	26	62	53	47	41	37	31						
	250	118	0.40	99	-	39	31	23	-	-	-	39	32	26	-	-	55	44	35	30	22	-	58	49	39	34	27	21	59	50	42	36	30	24	59	51	45	40	35	30						
	200	94	0.24	60	-	-	-	-	-	-	-	37	29	21	-	-	53	44	34	29	-	-	55	46	38	33	25	-	54	47	40	35	29	24	53	47	42	38	33	29						
	125	59	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-	-	39	33	27	-	-	-	40	35	30	23	-	-	39	36	31	27	23	-	40	36	34	32	29	26					
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36	30	24	-	-	-	36	32	27	23	-	-	35	32	29	27	23	-	37	33	32	32	28	25				
6	450	212	0.49	122	53	43	35	28	25	-	54	44	35	28	25	-	61	49	39	31	28	22	64	54	42	35	30	24	65	57	46	38	33	27	65	58	51	42	37	31						
	400	189	0.39	97	51	40	33	24	-	-	54	42	33	26	21	-	60	47	36	30	24	-	62	52	41	34	28	22	63	55	44	36	31	25	63	57	49	41	35	30						
	300	142	0.22	55	-	34	25	-	-	-	51	38	29	22	-	-	56	46	35	28	21	-	59	50	40	33	26	-	58	51	42	35	29	22	58	51	46	40	34	28						
	200	94	0.10	25	-	-	-	-	-	-	49	36	27	21	-	-	52	44	34	27	-	-	53	46	39	31	24	-	51	47	40	33	27	22	50	46	42	37	31	26						
	100	47	0.03	7	-	-	-	-	-	-	-	34	23	-	-	-	-	28	23	-	-	-	-	36	30	26	21	-	-	34	32	28	24	21	-	37	33	31	28	26						
7	650	307	0.50	124	56	50	42	33	27	25	56	50	42	33	27	25	59	52	42	35	30	27	64	54	46	41	34	29	67	56	47	44	36	31	69	59	50	47	39	34						
	550	260	0.36	89	53	46	38	28	24	-	54	43	34	26	25	-	59	49	41	35	29	23	64	52	44	40	32	27	66	54	45	42	34	29	67	57	48	45	37	32						
	335	158	0.14	35	-	-	-	-	-	-	-	37	31	26	-	-	55	44	35	31	22	-	58	48	38	34	27	21	58	49	40	35	29	25	58	50	43	38	33	30						
	225	106	0.06	15	-	-	-	-	-	-	-	-	26	21	-	-	51	41	32	26	-	-	51	44	36	30	25	21	52	43	37	32	28	25	50	43	39	36	32	31						
	110	52	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	25	23	-	-	-	-	-	28	27	25	22	-	-	30	28	28	25	-	39	34	33	31	30						
8	800	378	0.36	89	57	47	41	32	26	20	59	48	40	31	26	21	63	53	45	37	31	27	66	55	45	38	33	29	68	57	47	39	35	31	70	60	50	42	38	36						
	700	330	0.28	70	53	44	38	29	22	-	57	46	37	28	23	-	62	50	41	34	29	25	65	53	43	36	32	27	67	56	45	38	33	29	68	58	49	41	37	34						
	600	283	0.20	50	40	34	26	-	-	-	54	43	35	27	-	-	61	48	39	32	26	21	64	52	42	35	30	26	65	55	44	37	32	28	65	57	48	40	36	33						
	400	189	0.09	22	51	38	30	22	-	-	50	38	31	25	-	-	56	45	36	30	22	-	58	49	39	33	27	22	58	50	42	35	30	25	58	51	44	38	34	31						
	175	83	0.02	5	-	-	-	-	-	-	-	50	40	30	25	-	-	-	36	31	27	23	-	-	37	33	30	26	23	-	38	34	31	30	27	49	42	36	34	33	31					
9	1050	495	0.43	107	59	50	44	34	30	28	59	49	43	34	31	28	63	53	45	36	32	28	66	56	49	41	36	32	68	58	52	44	36	32	70	61	56	48	40	35						
	900	425	0.32	80	54	46	40	30	25	21	57	47	39	31	26	21	61	51	44	35	29	22	64	54	48	40	32	26	66	56	51	43	35	29	68	60	54	47	40	34						
	675	319	0.18	45	-	40	33	23	-	-	54	44	36	28	21	-	58	49	42	34	26	-	61	52	47	39	31	24	63	54	49	42	34	28	64	56	52	45	37	32						
	450	212	0.08	20	-	-	-	-	-	-	52	39	33	26	-	-	54	45	41	33	24	-	56	48	43	36	28	22	57	50	44	38	30	25	57	51	46	41	34	30						
	225	106	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	50	38	31	27	-	-	51	39	34	31	25	21	50	40	36	33	28	24	50	42	39	36	31	29						
10	1350	637	0.49	122	56	48	40	34	32	25	56	49	40	33	32	25	63	53	43	37	34	27	67	56	46	39	35	30	70	59	48	41	37	31	73	63	53	45	40	35						
	1100	519	0.32	80	52	43	34	28	23	-	56	46	37	31	25	-	63	50	40	34	29	22	66	55	44	37	32	26	68	57	47	39	35	29	71	61	51	44	39	34						
	825	389	0.18	45	-	39	29	-	-	-	53	42	33	27	-	-	59	48	38	32	25	-	63	53	43	36	30	24	64	55	45	38	33	27	65	58	49	41	36	32						
	550	260	0.08	20	-	-	-	-	-	-	50	39	30	23	-	-	56	46	37	30	23	-	57	49	40	32	27	23	58	51	42	34	29	25	60	55	47	40	35	32						
	275	130	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	39	30	23	-	-	-	42	33	27	23	23	49	43	35	30	26	25	54	46	38	33	31	30						
12	2000	944	0.53	132	60	50	44	35	34	29	*	*	*	*	*	*	69	58	50	41	38	34	69	59	52	45	43	40	71	60	51	43	39	36	74	64	55	47	43	40						
	1600	755	0.34	85	54	47	42	37	39	33	57	50	45	41	46	40	64	53	46	41	43	38	67	57	48	41	40	35	69	59	50	42	38	35	70	62	53	45	42	39						
	1200	566	0.19	47	48	37	31	21	-	-	55	45	36	29	27	24	61	50	42	34	30	27	63	54	45	37	33	31	64	56	47	39	35	33	66	59	51	43	40	38						
	800	378	0.08	20	-	-	-	-	-	-	51	41	32	24	-	-	56	47	38	30	25	22	58	50	42	34	31	29	58	52	44	36	33	32	60	54	47	40	38	38						
	400	189	0.02	5	-	-	-	-	-	-	-	35	26	-	-	-	49	39	32	27	26	25	52	41	35	31	32	31	50	42	35	33	34	35	52	44	38	36	38	39						
14	2700	1274	0.55	137	65	57	53	42	35	31	*	*	*	*	*	*	67	58	50	41	35	32	69	60	51	43	37	34	71	62	52	44	39	35	73	65	55	48	42	38						
	2100	991	0.33	82	59	50	46	35	29	22	59	50	46	35	29	22	64	54	44	36	31	25	67	57	48	40	34	29	68	58	49	42	36	31	70	62	53	46	42	37						
	1550	731	0.18	45	54	42	32	22	-	-	55																																			

Performance Data • AHRI Certification and Performance Notes

30HQX Series • Hospital Grade • Dissipative Silencer

Terminal: Steri-Liner • Silencer: Mylar, Spacer, Steri-Liner (MSSL) Media

Inlet Size	Airflow		Min. Inlet ΔPs		Discharge Sound Power Levels @ 1.5" w.g. (375 Pa) ΔPs							Radiated Sound Power Levels @ 1.5" w.g. (375 Pa) ΔPs						
					Octave Band							Octave Band						
	cfm	l/s	"w.g.	Pa	2	3	4	5	6	7	2	3	4	5	6	7		
4	150	71	0.37	92	57	51	36	29	20	20	54	45	37	31	23	19		
5	250	118	0.40	99	62	55	41	32	20	20	58	49	39	34	27	21		
6	400	189	0.39	97	63	53	43	40	35	29	62	52	41	34	28	22		
7	550	260	0.36	89	68	57	42	37	22	32	64	52	44	40	32	27		
8	700	330	0.28	70	70	58	43	38	30	34	65	53	43	36	32	27		
9	900	425	0.32	80	69	59	44	39	32	35	64	54	48	40	32	36		
10	1100	519	0.32	80	71	61	45	42	38	38	66	55	44	37	32	26		
12	1600	755	0.34	85	71	61	47	44	41	42	67	57	48	41	40	35		
14	2100	991	0.33	82	72	61	48	47	44	43	67	57	48	40	34	29		
16	2800	1321	0.31	77	74	62	53	51	50	48	68	57	49	41	36	31		
24 x 16	5350	2525	0.49	122	75	69	59	57	56	56	72	64	57	47	44	44		

Performance Notes for Sound Power Levels:

1. Discharge sound power is the noise emitted from the unit discharge into the downstream duct.
2. Radiated sound power is the breakout noise transmitted through the unit casing walls.
3. Sound power levels are in decibels, dB re 10⁻¹² watts.
4. All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation. Dash (-) in space indicates sound power level is less than 20 dB or equal to background.
5. Minimum inlet ΔPs is the minimum operating pressure requirement of the unit (damper full open) and the difference in static pressure from inlet to discharge of the unit.
6. Asterisk (*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.
7. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 130.

A

SINGLE DUCT TERMINAL UNITS

Performance Data Explanation

Sound Power Levels vs. NC Levels

The **Nailor 3000, 3000Q, 30HQ, 30X and 30HQX Series** single duct terminal unit performance data is presented in two forms (where applicable).

The laboratory obtained discharge and radiated sound power levels in octave bands 2 through 7 (125 through 4000 Hz) center frequency for each unit size at various flow rates and inlet static pressures is presented. This data is derived in accordance with ANSI/ASHRAE Standard 130 and AHRI Standard 880. This data is raw with no attenuation deductions and includes AHRI Certification standard rating points.

Nailor also provides an NC Level table as an application aid in terminal selection, which includes attenuation allowances as explained below. The suggested attenuation allowances are not representative of specific job site conditions. It is recommended that the sound power level data be used and a detailed NC calculation be performed using the procedures outlined in AHRI Standard 885, Appendix E for accurate space sound levels.

Explanation of NC Levels

Tabulated NC levels are based on attenuation values as outlined in AHRI Standard 885 "Procedure for Estimating Occupied Space Sound Levels in the Application of Air Terminals and Air Outlets". AHRI Standard 885, Appendix E provides typical sound attenuation values for air terminal discharge sound and air terminal radiated sound.

As stated in AHRI Standard 885, Appendix E, "These values can be used as a quick method of estimating space sound levels when a detailed evaluation is not available. The attenuation values are required for use by manufacturers to catalog application sound levels. In product catalogs, the end user environments are not known and the following factors are provided as typical attenuation values. Use of these values will allow better comparison between manufacturers and give the end user a value which will be expected to be applicable for many types of space."

Radiated Sound

Table E1 of Appendix E provides radiated sound attenuation values for three types of ceiling: Type 1 – Glass Fiber; Type 2 – Mineral Fiber; Type 3 – Solid Gypsum Board.

Since Mineral Fiber tile ceilings are the most common construction used in commercial buildings, these values have been used to tabulate Radiated NC levels.

The following table provides the calculation method for the radiated sound total attenuation values based on AHRI Standard 885.

	Octave Band					
	2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
Ceiling/Space Effect	16	18	20	26	31	36
Total Attenuation Deduction	18	19	20	26	31	36

The ceiling/space effect assumes the following conditions:

1. 5/8" (16) tile, 20 lb/ft³ (320 kg/m³) density.
2. The plenum is at least 3 feet (914) deep.
3. The plenum space is either wide [over 30 feet (9 m)] or lined with insulation.
4. The ceiling has no significant penetration directly under the unit.

Discharge Sound

Table E1 of Appendix E provides typical discharge sound attenuation values for three sizes of terminal unit.

1. Small box: Less than 300 cfm (142 l/s)
[Discharge Duct 8" x 8" (203 x 203)].
2. Medium box: 300 – 700 cfm (142 - 330 l/s)
[Discharge Duct 12" x 12" (305 x 305)].
3. Large box: Greater than 700 cfm (330 l/s)
[Discharge Duct 15" x 15" (381 x 381)].

These attenuation values have been used to tabulate Discharge NC levels applied against the terminal airflow volume and not terminal unit size.

The following tables provide the calculation method for the discharge sound total attenuation values based on AHRI Standard 885.

Small Box <300 cfm	Octave Band					
	2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
5 ft. (1.5 m) 1" (25) Duct Lining	2	6	12	25	29	18
Branch Power Division (1 outlet)	0	0	0	0	0	0
5 ft. (1.5 m), 8 in. dia. (203) Flex Duct	5	10	18	19	21	12
End Reflection	10	5	2	1	0	0
Space Effect	5	6	7	8	9	10
Total Attenuation Deduction	24	28	39	53	59	40

Medium Box 300 – 700 cfm	Octave Band					
	2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
5 ft. (1.5 m) 1" (25) Duct Lining	2	4	10	20	20	14
Branch Power Division (2 outlets)	3	3	3	3	3	3
5 ft. (1.5 m), 8 in. dia. (203) Flex Duct	5	10	18	19	21	12
End Reflection	10	5	2	1	0	0
Space Effect	5	6	7	8	9	10
Total Attenuation Deduction	27	29	40	51	53	39

Large Box >700 cfm	Octave Band					
	2	3	4	5	6	7
Environmental Effect	2	1	0	0	0	0
5 ft. (1.5 m) 1" (25) Duct Lining	2	3	9	18	17	12
Branch Power Division (3 outlets)	5	5	5	5	5	5
5 ft. (1.5 m), 8 in. dia. (203) Flex Duct	5	10	18	19	21	12
End Reflection	10	5	2	1	0	0
Space Effect	5	6	7	8	9	10
Total Attenuation Deduction	29	30	41	51	52	39

1. Flexible duct is non-metallic with 1" (25) insulation.
2. Space effect (room size and receiver location) 2500 ft.³ (69 m³) and 5 ft. (1.5 m) distance from source.

For a complete explanation of the attenuation factors and the procedures for calculating room NC levels, please refer to the acoustical engineering guidelines at the back of this catalog and AHRI Standard 885.

Liner and Acoustic Media Options

Nailor offers several liner choices for Single Duct Terminal Units applications. Whether the application requires industry standard fiberglass or a high IAQ (Indoor Air Quality) type, each liner provides acoustical attenuation of discharge and radiated sound as well as addresses concerns with fiberglass erosion, microbial growth and isolation of insulation from the airstream.

As the Single Duct Terminals are used in various applications, not all liner choices are available for each series. The following chart summarizes availability of liners per series:

TERMINAL UNITS	LINERS							SILENCER			
	DD Fiber-glass	1" DD Fiber-glass	Steri-Liner	Fiber Free (Close-Cell Foam)	Perforated Metal Liner	Perforated Metal + Steri-Liner	Solid Metal Liner	FAM (Fiberglass Acoustic Media)	FCL (Fiberglass Cloth Liner)	MSL (Mylar/Spacer Liner)	MSSL (Mylar/Spacer/Steri-Liner)
Series:											
3000	Std.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	N/A	N/A	N/A	N/A
3000Q	Std.	N/A	Opt.	Opt.	Opt.	Opt.	Opt.	Std.	Opt.	Opt.	N/A
30HQ	N/A	N/A	Std.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Std.
30X	Std.	N/A	Opt.	Opt.	Opt.	Opt.	Opt.	N/A	N/A	N/A	N/A
30HQX	N/A	N/A	Std.	N/A	N/A	N/A	Opt.	N/A	N/A	N/A	Std.

General Notes on Liner types and offerings by Series:

3000 Series

Liner inside optional attenuator will match VAV terminal liner unless otherwise stated.

3000Q Series

There are two components to the 3000Q Series terminal units, the VAV terminal and the dissipative silencer. Liner selection determines the liner type installed into the terminal portion only. Each dissipative silencer is lined top and bottom with fiberglass as standard. When the FCL or MSL acoustic media is selected, a foil faced fiberglass is used. As the entire silencer is internally insulated, there is no need for field applied duct wrap.

There are three acoustic media options available within the side pods of the dissipative silencer. From the standard FAM (Fiberglass Acoustic Media) to IAQ sensitive options, each version provides superior attenuation characteristics.

30HQ Series

Model 30HQ Hospital Grade terminal units include, as standard, Steri-Liner in the VAV section. The top and bottom of the dissipative silencer is lined with Steri-Liner while the side pods include fiberglass acoustic media encapsulated within a Mylar bag, and then covered with perforated metal baffles. Like the 3000Q series, the 30HQ Series does not require field applied thermal duct wrap.

30X Series

Liner inside optional attenuator will match VAV terminal liner unless otherwise stated.

30HQX Series

Model 30HQX Hospital Grade exhaust units include, as standard, Steri-Liner in the VAV section, with a solid metal liner as an option. The top and bottom of the dissipative inlet silencer is lined with Steri-Liner while the sides are lined with fiberglass acoustic media encapsulated in a Mylar bag and then covered with perforated metal baffles. The 30HQX also does not require field applied thermal duct wrap.

Liners

Dual Density Fiberglass

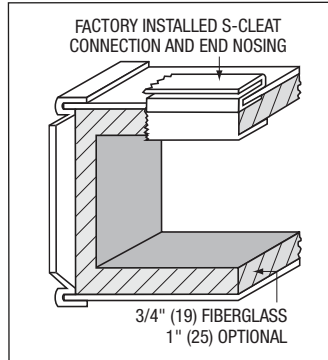
Nailor uses dual density blanket-type fiber glass insulation with a high density skin, on the exposed side and a low density core. The 4 lb. high density skin aids in resisting abrasion and erosion from airflow. Furthermore, Nailor coats all exposed edges with NFPA 90A approved sealant to reduce erosion and the entrainment of fibers into the airstream.

Fiberglass liner contributes to indoor comfort by lowering heat loss or gain through duct walls. Additionally, fiberglass liner enhances indoor environmental quality by absorbing sound within duct. The thermal and acoustical absorption of fiberglass is generally classified as excellent.

- 3/4" (19) thick dual density insulation, 4 lb./cu. ft. (64 kg/m³) skin and 1.5 lb./cu. ft. (24 kg/m³) core, with exposed edges coated to reduce air erosion.
- 1" (25) thick dual density insulation optional.

Meets requirements:

- UL 181 & 723
- NFPA 90A & 90B
- ASTM E 84 & C 1071
- CAN/ULC S102-M88



Steri-Liner

Steri-Liner is an internal insulation designed to reduce the risk of microbial growth within the terminal. A smooth non-porous facing provides a vapor barrier to moisture and reduces the risk of microorganisms becoming trapped. This facing also facilitates cleaning and prevents insulating material erosion. Damage to the liner will expose fiberglass particles to the airstream.

Acoustic absorption of aluminum foil lined insulation is reduced for discharge sound levels and essentially unchanged for radiated sound levels when compared to standard fiberglass insulation.

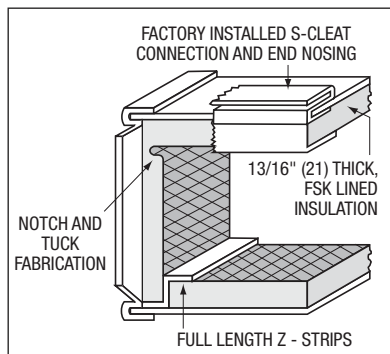
- 13/16" (21) thick, 4 lb./cu. ft. (64 kg/m³) density rigid fiberglass with a fire resistant reinforced aluminum FSK (foil-scrim-kraft) facing.
- 1" (25) thick steri-liner insulation optional.

- No exposed edges. Steri-Liner features notch and tuck fabrication and full seam length steel Z-strip construction providing both superior edge protection and an extremely rigid terminal.

- Metal nosing at unit discharge captures and seals insulation ends.
- End nosing is provided and sealed in place to eliminate the risk of liner damage and aid installation.

Meets requirements:

- UL 181 & 723
- NFPA 90A & 90B
- ASTM E 84, C 665, C 1071, C 1338, G21 & G22



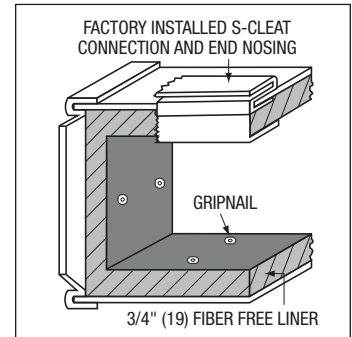
Fiber Free Liner

Nailor's Fiber-Free liner is a closed cell elastomeric foam. This liner has excellent insulating characteristics and provides acoustical attenuation roughly equivalent to Steri-Liner. The construction of fiber free insulation prevents the insulation from absorbing water, helping to reduce the likelihood of mold or bacterial growth.

- 3/4" (19) thick closed cell elastomeric foam.
- Smooth washable surface helps to prevent dirt and debris from accumulating.

Meets requirements:

- UL 181 & 723
- ASTM E 84, C 209 & C 665
- CAN/ULC S102-M88



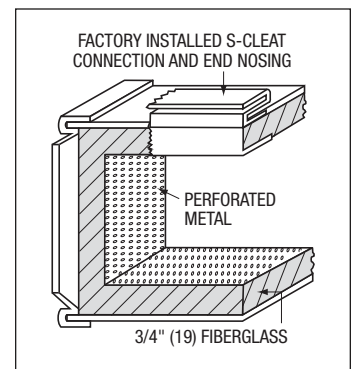
Perforated Metal Liner

Standard dual density fiberglass insulation covered with a 50% free area perforated metal sheet, constructed of steel, as a duct liner. The perforated metal sheet provides additional protection against erosion by airflow, but does not prevent moisture from contacting the insulation. Small fiberglass particles may escape through the metal perforations should the skin of the insulation be compromised.

- 22 ga. (.86) perforated steel liner.
- 3/4" (19) dual density fiberglass insulation, 4 lb./cu. ft. (64 kg/m³) skin.

Meets requirements:

- UL 181 & 723
- ASTM E 84, C 665 & C 1071



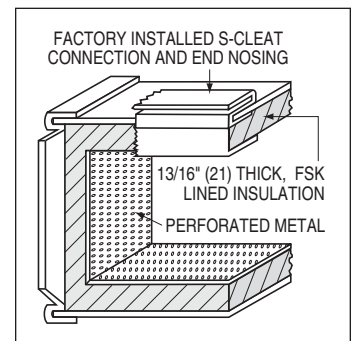
Steri-Liner + Perforated Metal Liner

This liner includes a 50% free area perforated metal sheet that covers the Steri-Liner insulation. By covering the Steri-Liner, the perforated metal helps to protect the FSK (foil-scrim-kraft) facing from punctures.

- 22 ga. (.86) perforated steel liner.
- 13/16" (21) thick, 4 lb./cu. ft. (64 kg/m³) density rigid fiberglass with FSK facing.
- Metal nosing at unit discharge captures and seals insulation ends.
- Z-strip construction providing both superior edge protection and an extremely rigid terminal.

Meets requirements:

- UL 181, 723
- ASTM E 84, C 665 & C 1071



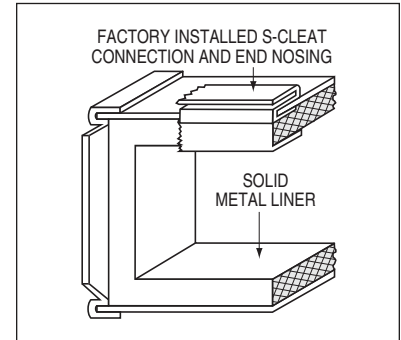
Solid Metal Liner

Nailor offers a solid inner metal liner that completely isolates the standard fiberglass liner from the airstream. Solid metal liners offer the ultimate protection against exposure of fiberglass particles to the airstream, all but eliminating the possibility of punctures that expose fiberglass. This option is also resistant to moisture. The encased insulation still provides thermal resistance and radiated sound attenuation, but acoustic absorption of discharge sound is eliminated. Solid Metal fabrication is a box within a box and uses metal end nosing to encapsulate exposed edges of the insulation.

- Solid inner liner is 22 ga. (.86) steel.
- 3/4" (19) dual density fiberglass insulation, 4 lb./ cu. ft. (64 kg/m³) skin and 1.5 lb./cu. ft. (24 kg/m³) core.

Meets requirements:

- UL 181 & 723
- ASTM E 84, C 655 & C 1071
- NFPA 90A & 90B



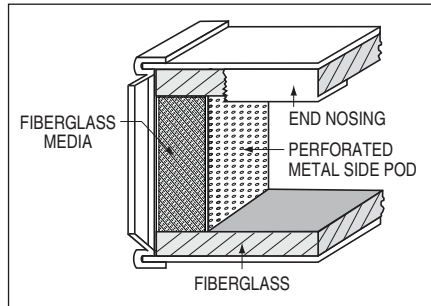
Dissipative Silencer

Acoustic Media

A Dissipative Silencer is standard on all 3000Q, 30HQ and 30HQP Series terminal units. There are three acoustic media options available on the 3000Q Series silencers; FAM, FCL and MSL. All 30HQ and 30HQP Hospital Grade units include a MSSL acoustic media option as standard. From the standard fiberglass media to the IAQ sensitive options, each version provides superior attenuation characteristics.

Fiberglass Acoustic Media (FAM)

The Standard FAM choice is the simplest of the types offered and provides the best attenuation of discharge sound. Fiberglass insulation is packed between the silencer casing and the side pod metal silencer baffles. There is minimal exposure of the fiberglass through the perforations of the metal side baffles.

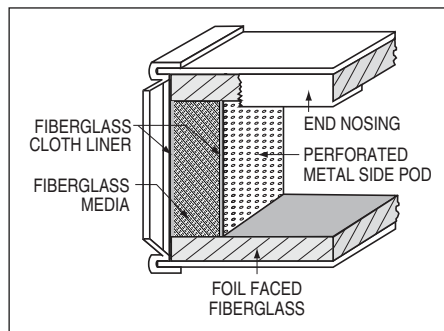


Meets requirements:

- UL 181
- NFPA 90A & 90B
- ASTM E 84, C 1071 & C 655

Fiberglass Cloth (FCL)

A tightly woven fiberglass cloth encapsulates the fiberglass media packed between the silencer casing and the side pod silencer baffles. The cloth eliminates the erosion of the fiberglass media and prevents entrainment of fibers into the airstream. Since the cloth is porous, it absorbs sound. Performance of the cloth liner is similar to the fiberglass lined silencer and offers the best balance between fiberglass erosion and sound attenuation.



Meets requirements:

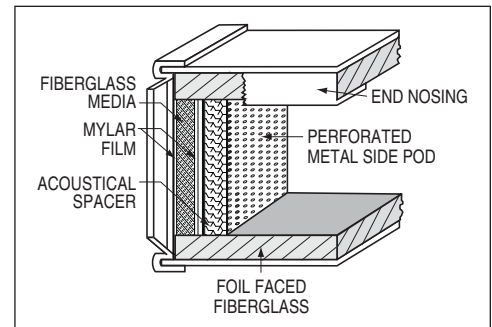
- UL 181 & 723
- ASTM E 84, C 655 & C 1071
- NFPA 90A

Mylar/Spacer (MSL)

Similar to the fiberglass cloth liner, the fiberglass media is wrapped. Using Mylar to create an impregnable barrier around the acoustic media, this option is recommended where isolating fiberglass material is a critical concern. This option is an excellent choice for IAQ sensitive applications.

Meets requirements:

- NFPA 90A & 90B
- UL 181 & 723
- UL 94 (mylar)
- ASTM E 84, C 665, C 1338 & C 1071

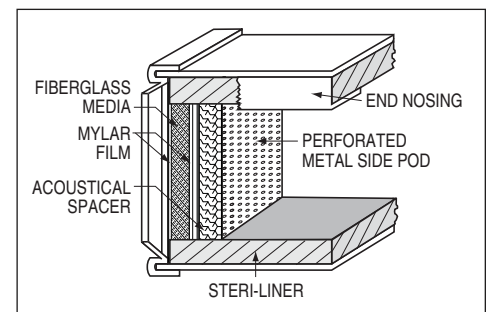


Mylar/Spacer Steri-Liner (MSSL)

Standard on all hospital grade series, this acoustic media version is similar to the MSL option but substitutes Steri-Liner in place of the foil faced fiberglass. Using Mylar to create an impregnable barrier around the fiberglass acoustic media. This option is an excellent choice for IAQ sensitive applications.

Meets requirements:

- NFPA 90A & 90B
- UL 181, 723
- UL 94 (mylar)
- ASTM E 84, C 665, C 1338 & C 1071



Single Duct Terminal Units

Model 30HQ • Hospital Grade Unit

OPTIONS (continued)

H. The controller shall have a Dedicated Room Sensor port for direct interface to a Digital Display Room Sensor or Discrete Room Sensor. The controller shall have the ability of detecting if a sensor has been connected to the port and identify its type, either digital display or discrete. Sensors shall be hot-swappable without powering down the controller. Sensor information via the ports shall not consume any of the devices terminated input capacity.

I. The controller shall have screw terminal blocks that can accommodate wire sizes 14-22 AWG. Terminals shall be color coded: black terminals for power, green terminals for input and outputs, and grey terminals for twisted-shielded-pair communication.

J. The power supply for the controller shall be 24 volts AC (-15%, +20%) power. Voltage below the operating range of the system shall be considered an outage.

1.2 DIGITAL ROOM SENSOR

A. The Digital Display Room Sensor (thermostat) shall provide space condition measurements and indications, including temperature and local motion/occupancy (optional), and user setpoint adjustments.

B. The Digital Room Sensor shall connect directly to the controller and shall not utilize any of the hardware I/O points of the controller. The Digital Display Room Sensor shall be able to be located up to 75' from the controller.

C. The Digital Display Room Sensor shall provide a Temporary Network Interface jack, field accessible without uninstalling the sensor, for connection to the BACnet MS/TP communication trunk to which the devices connected. The Digital Display Room Sensor, the connected controller, and all other devices on the BACnet network shall be accessible through the temporary communication jack. Microprocessor based sensors whose port only allows communication with the controller to which it is connected shall not be acceptable.

D. The Digital Display Room Sensor shall have an integrated sensor for temperature measurement as standard and a second integrated sensor for motion/occupancy (optional).

E. User/Occupant setpoints may be adjusted via the Digital Display Room Sensor.

F. The Digital Display Room Sensor shall have pre-configured menus for all control sequences allowing access to communication and application parameters.

G. The Digital Display Room Sensor shall have two levels of password protection: One level to protect user setpoint adjustment, and one level to protect configuration menu parameters. Passwords shall be at least 4 digits in length.

Model 30X • Exhaust • Basic Unit

1. Furnish and install **Nailor 30X Series Single Duct Variable Volume Exhaust Terminal Units** of the sizes and capabilities as indicated on the drawings. Units shall be pressure independent with DDC, analog electronic or pneumatic or controls. Units shall reset to any flow between minimum and the maximum cataloged airflow as allowed by the specific controller.

2. The entire exhaust terminal unit shall be designed and built as a single unit. The units shall be provided with a variable air volume damper that controls the air quantity in response to a control signal. The units shall also include all options such as attenuators and access doors. Exhaust units shall feature a venturi valve inlet with integrated flow sensor for optimized airflow performance and reduced pressure drop. The space limitations shall be reviewed carefully to insure that all units will fit into the space allowed.

3. Unit casing shall be 22 ga. (.86) galvanized steel with rectangular inlet and outlet connections, configured for slip and drive connections. Basic valve assembly shall not exceed 30" (762) in length. Casing leakage downstream of the damper shall not exceed 1% @ 1" w.g. (250 Pa). High side leakage shall not exceed 2% @ 3" w.g. (746 Pa).

4. Damper assemblies of 16 ga. (1.6) galvanized steel shall be multiple opposed blade construction arranged to close at 45 degrees from full open to minimize air turbulence and provide near linear operation. Damper blades shall be fitted with flexible seals for tight closure and minimized sound generation. Damper blades shall be screwed through the shaft to insure that no slippage occurs. Blade shafts shall pivot on corrosion free Celcon® bearings. In the fully closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalog rating at 3" w.g. (746 Pa) inlet static pressure as rated by ASHRAE Standard 130.

5. The terminal unit shall be capable of operation as described herein with a minimum inlet static pressure that shall not exceed 0.37" w.g. (92 Pa) at 2000 fpm (10.2 m/s) inlet velocity for unit sizes 4 through 16. (The sequence of operations should be described here, if not part of the temperature controls specifications.) Gauge tap ports shall be supplied in the piping between the flow pick up and the controller.

6. Each unit shall be constructed with single point electrical connections. All electrical components shall be ETL or UL listed or recognized and installed in accordance with the National Electrical Code. All electrical components shall be installed in a control box. The entire assembly shall be ETL listed and so labeled.

7. Each unit shall be internally lined with ¾" (19) dual density fiberglass insulation. Edges shall be sealed against airflow erosion. Units shall meet NFPA 90A and UL 181 standards.

8. All sound data shall be compiled in an independent laboratory and in accordance with the latest version of AHRI Standard 880 and ANSI/ASHRAE Standard 130. All units shall be AHRI certified and bear the AHRI certification label.

9. The unit shall be capable of being changed from Right Hand to Left Hand configuration by flipping the unit over. No controls, field adjustments, nor field re-assembly shall be required to accomplish this. The unit shall be listed by UL or ETL under UL 1995 to operate in either orientation.

OPTIONS

Attenuator:

(Add the following paragraph to 30X Series:)

10. Attenuator section shall be 36" (914) long and constructed of 22 ga. (.86) galvanized steel. Inlet and discharge shall be rectangular and configured for slip and drive connections. Each attenuator section shall be internally lined with ¾" (19) dual density fiberglass insulation. Edges shall be sealed against airflow erosion. Units shall meet NFPA 90A and UL 181 standards.

Single Duct Terminal Units

Model 30HQX • Hospital Grade • Dissipative Silencer

1. Furnish and install **Nailor Model 30HQX Single Duct Variable Volume Exhaust Terminal Units** of the sizes and capabilities as indicated on the drawings. Units shall be pressure independent with DDC controls. Units shall reset to any flow between minimum and the maximum cataloged airflow as allowed by the specific controller.
2. The entire terminal unit shall be designed and built as a single unit. The units shall be provided with a variable air volume damper that controls the air quantity in response to a control signal. The units shall also include dissipative silencers and access doors. Exhaust units shall feature a venturi valve inlet with integrated flow sensor for optimized airflow performance and reduced pressure drop. The space limitations shall be reviewed carefully to insure that all units will fit into the space allowed.
3. Unit casing shall be 22 ga. (0.86) galvanized steel with rectangular inlet and outlet connections, configured for slip and drive connections. Casing leakage downstream of the damper shall not exceed 1% @ 1" w.g. (250 Pa). High side leakage shall not exceed 2% @ 3" w.g. (746 Pa).
4. Damper assemblies of 16 ga. (1.61) galvanized steel shall be multiple opposed blade construction arranged to close at 45 degrees from full open to minimize air turbulence and provide near linear operation. Damper blades shall be fitted with flexible seals for tight closure and minimized sound generation. Damper blades shall be screwed through the shaft to insure that no slippage occurs. Blade shafts shall pivot on corrosion free Celcon® bearings. In the fully closed position, air leakage past the closed damper shall not exceed 2% of the nominal catalog rating at 3" w.g. (746 Pa) inlet static pressure as rated by ASHRAE Standard 130.
5. The terminal unit shall be capable of operation as described herein with a minimum inlet static pressure that shall not exceed 0.40" w.g. (100 Pa) at 2000 fpm (10.2 m/s) inlet velocity for unit sizes 4 through 16. (The sequence of operations should be described here, if not part of the temperature controls specifications.) Gauge tap ports shall be supplied in the piping between the flow pick up and the controller.
6. Each unit shall be constructed with single point electrical connections. All electrical components shall be ETL or UL listed or recognized and installed in accordance with the National Electrical Code. All electrical components shall be installed in a control box. The entire assembly shall be ETL listed and so labeled.
7. Each section shall be internally lined with 13/16" (21) thick, 4 lb. density fiberglass insulation with a reinforced aluminum FSK facing. Units shall meet NFPA 90A and UL 181 standards.
8. All sound data shall be compiled in an independent laboratory and in accordance with the latest version of AHRI Standard 880 and ANSI/ASHRAE Standard 130. All units shall be AHRI certified and bear the AHRI certification label.
9. The unit shall be capable of being changed from Right Hand to Left Hand configuration by flipping the unit over. No controls, field adjustments, nor field re-assembly shall be required to accomplish this. The unit shall be listed by UL or ETL under UL 1995 to operate in either orientation.

10. Silencer sections shall contain a unit casing constructed of 22 ga. (.86) galvanized steel. Inlet and discharge shall be rectangular and configured for slip and drive connections. Each silencer section shall be internally lined with 13/16" (21) thick, 4 lb./cu. ft. (64 kg/m³) density fiberglass insulation with a reinforced aluminum FSK facing, placed inside the top and bottom sides of the silencer, thereby eliminating the requirement for field wrapping with thermal insulation. The silencer baffles shall be filled with fiberglass absorption media and encapsulated by 22 ga. (.86) perforated coated steel baffles. A mylar liner shall separate the fiberglass from the perforated baffle with an acoustical spacer and isolate the fiberglass from the airstream. The perforated metal baffles shall be rigidly fastened to the casing of the silencer. Units shall meet NFPA 90A and UL 181 standards.