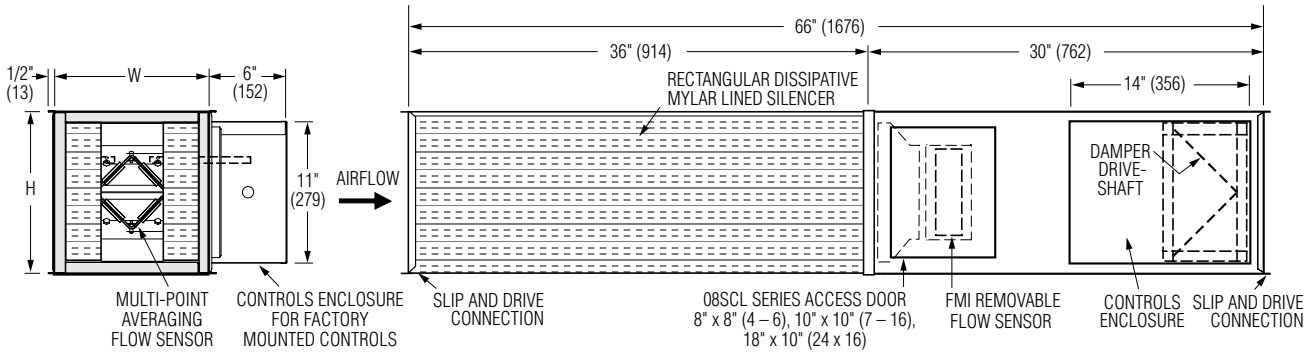
SINGLE DUCT EXHAUST TERMINAL UNIT WITH DISSIPATIVE SILENCER
HOSPITAL GRADE • SUPER QUIET
DIGITAL CONTROLS • VARIABLE OR CONSTANT VOLUME
MODEL: D30HQX



Dimensional Data

Unit Size	Min.– Max. Airflow Range* cfm (l/s)	W	H
4	30 – 210 (14 – 99)	10 (254)	10 (254)
5	50 – 345 (24 – 163)	10 (254)	10 (254)
6	80 – 580 (38 – 274)	10 (254)	10 (254)
7	95 – 680 (45 – 321)	12 (305)	12 1/2 (318)
8	140 – 970 (66 – 458)	12 (305)	12 1/2 (318)
9	170 – 1210 (80 – 571)	14 (356)	12 1/2 (318)
10	220 – 1540 (104 – 727)	14 (356)	12 1/2 (318)
12	320 – 2270 (151 – 1071)	18 (457)	12 1/2 (318)
14	360 – 2520 (170 – 1189)	24 (610)	12 1/2 (318)
16	505 – 3580 (238 – 1689)	28 (711)	12 1/2 (318)
24 x 16	990 – 7000 (467 – 3303)	38 (965)	18 (457)

***** Minimum flows are based upon 0.02" w.g. (5 Pa) differential pressure from flow sensor. The maximum flow rate represents the diamond flow sensor's differential pressure reading at 1" w.g. (250 Pa).

Standard Features:

• Venturi valve inlet for reduced pressure drop.

• 22 ga. (0.86) galvanized 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 close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 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 is lined with 13/16" (21), thick, 4 lb. density Steri-Liner insulation. Fiberglass with a reinforced aluminum FSK facing. Meets the requirements of NFPA 90A, UL 181 and ASTM C655.

"Notch and tuck" fabrication and full seam length steel Z-strip construction.

• Right-hand controls location is standard (shown) when looking in direction of airflow. Optional left hand controls mounting is available.

Silencer Section:

• Designed to mate with VAV section for optimum performance and super quiet operation.

• Optimized internal baffle geometry reduces self-generated noise, minimizes pressure drop and maximizes acoustic attenuation.

• 22 ga. (0.86) 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.

Digital Controls:

❑ Factory mount (by others)

❑ Field mount

See separate submittal.

Options and Accessories:

❑ Bottom Mount Control Enclosure (See page 2).

❑ Solid metal liner (VAV section).

❑ 24 VAC control transformer.

❑ Toggle disconnect switch.

❑ Hanger brackets.

❑ Controls enclosure for field mounted controls.

❑ Dust tight enclosure seal.

❑ 20 ga. (1.00) construction.

Seismic Certification:

❑ Seismic Source International (Standard)

❑ HCAI (formerly OSHPD, California)

❑ Special Features: _____ .

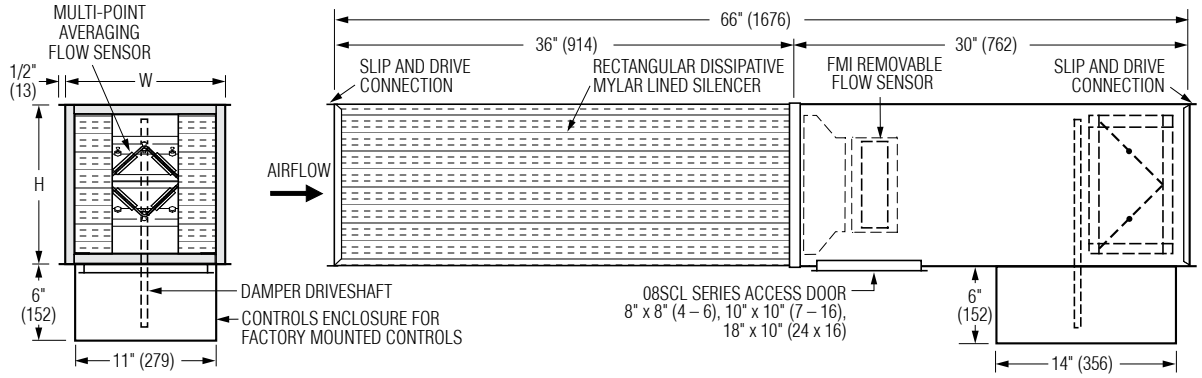
Dimensions are in inches (mm).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**8 - 11 - 22**	**3000**	**5 - 21 - 21**	**D30HQX**

SINGLE DUCT EXHAUST TERMINAL UNIT WITH DISSIPATIVE SILENCER
HOSPITAL GRADE • SUPER QUIET
DIGITAL CONTROLS • VARIABLE OR CONSTANT VOLUME
MODEL: D30HQX

❑ Bottom Mount Control Enclosure (option OB)

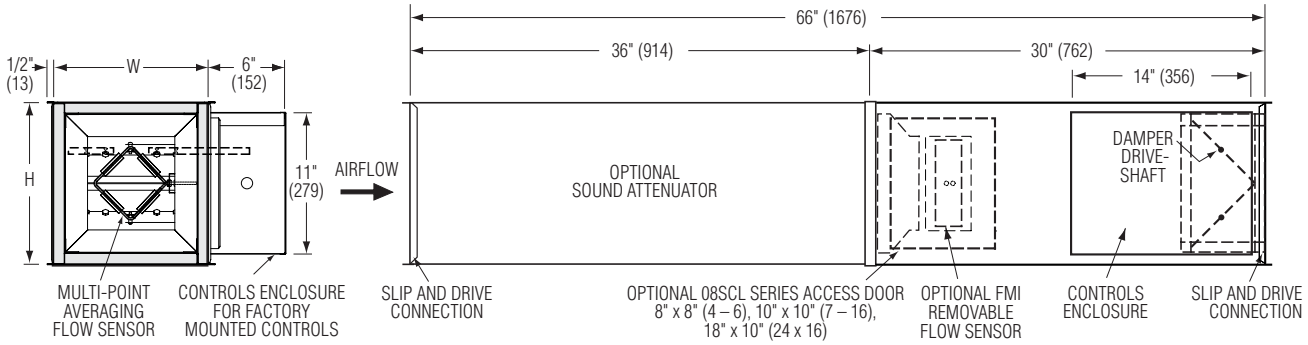
- NEMA 1 type, bottom mount controls location with vertical driveshaft.
- 1/2" (13) dia. plated steel driveshaft.
- Bottom mount access door to allow access to the Flow Sensor.



SCHEDULE TYPE:	Page 2 of 2.			
PROJECT:	Dimensions are in inches (mm).			
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**8 - 11 - 22**	**3000**	**5 - 21 - 21**	**D30HQX**

SINGLE DUCT EXHAUST TERMINAL UNIT WITH OPTIONAL SOUND ATTENUATOR

DIGITAL CONTROLS
VARIABLE OR CONSTANT VOLUME
MODEL: D30X



Dimensional Data

Unit Size	Min.– Max. Airflow Range* cfm (l/s)	W	H
4	30 – 210 (14 – 99)	10 (254)	10 (254)
5	50 – 345 (24 – 163)	10 (254)	10 (254)
6	80 – 580 (38 – 274)	10 (254)	10 (254)
7	95 – 680 (45 – 321)	12 (305)	12 1/2 (318)
8	140 – 970 (66 – 458)	12 (305)	12 1/2 (318)
9	170 – 1210 (80 – 571)	14 (356)	12 1/2 (318)
10	220 – 1540 (104 – 727)	14 (356)	12 1/2 (318)
12	320 – 2270 (151 – 1071)	18 (457)	12 1/2 (318)
14	360 – 2520 (170 – 1189)	24 (610)	12 1/2 (318)
16	505 – 3580 (238 – 1689)	28 (711)	12 1/2 (318)
24 x 16	990 – 7000 (467 – 3303)	38 (965)	18 (457)

* Minimum flows are based upon 0.02" w.g. (5 Pa) differential pressure from flow sensor. The maximum flow rate represents the diamond flow sensor's differential pressure reading at 1" w.g. (250 Pa).

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 close-off. Damper leakage is less than 2% of the terminal rated airflow at 3" w.g. (750 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) 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.

Optional Sound Attenuator Section:

• Mounted on VAV section inlet for quiet operation.

• Same liner as terminal unit.

Digital Controls (by others):

❑ Factory mount.
(See separate submittal)

❑ Field mount.

Options and Accessories:

❑ Bottom Mount Control Enclosure (See page 2)

❑ Side access door.

❑ FMI Removable insert type Diamond Flow Sensor.

❑ Steri-Liner.

❑ Fiber-Free liner.

❑ Solid metal liner.

❑ Perforated metal liner.

❑ Steri-liner + Perforated metal liner.

❑ Factory wrapped inlets and outlets.

❑ 24 VAC control transformer.

❑ Toggle disconnect switch.

❑ Hanger brackets.

❑ Controls enclosure for field mounted controls.

❑ Dust tight enclosure seal.

Seismic Certification:

❑ SSI (Standard)

❑ OSHPD

❑ Special Features: _____ .

Dimensions are in inches (mm).

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	DATE	B SERIES	SUPERSEDES	DRAWING NO.
CONTRACTOR:	3 - 12 - 18	3000	4 - 10 - 16	D30X

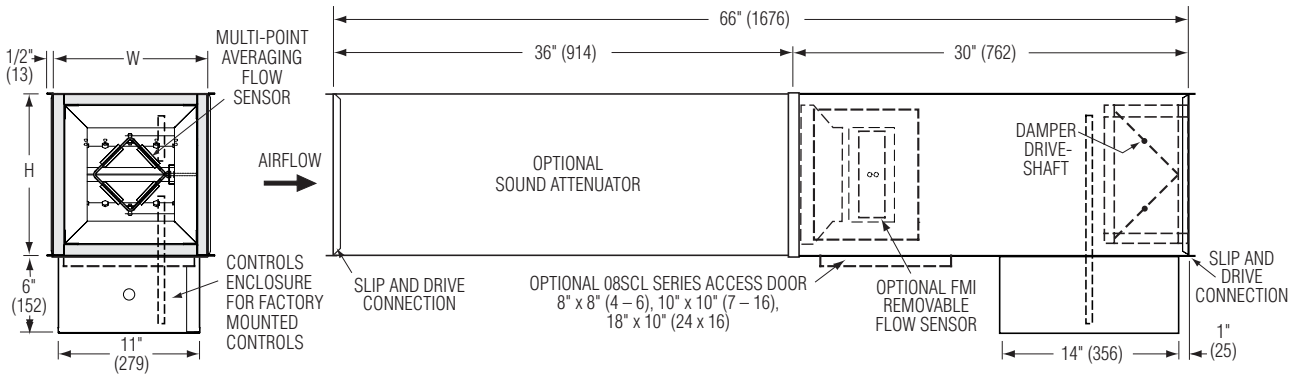
SINGLE DUCT EXHAUST TERMINAL UNIT WITH OPTIONAL SOUND ATTENUATOR
DIGITAL CONTROLS
VARIABLE OR CONSTANT VOLUME
MODEL: D30X

❑ Bottom Mount Control Enclosure (option OB)

- NEMA 1 type, bottom mount controls location with vertical drive shaft.
- 1/2" (13) dia. plated steel drive shaft.

❑ Bottom Mount Access Door.

Note: Optional Access Door will be bottom mounted to allow access to the Diamond Flow Sensor.



SCHEDULE TYPE:	Page 2 of 2. Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**3 - 12 - 18**	**3000**	**4 - 10 - 16**	**D30X**

Nailor® Industries Inc.

TERMINAL UNITS
LINER OPTIONS
TYPE: FIBERGLASS DUAL DENSITY INSULATION

DESCRIPTION

Tuf-Skin® dual-density fiberglass insulation is the most widely-used insulation for HVAC equipment applications. The combination of high-density skin and low-density core provides high acoustical values in the high and low frequency ranges normally encountered in HVAC equipment.

Application. Tuf-Skin® provides effective thermal and acoustical control in air conditioning and heating equipment.

Advantage. The porosity and inherent structure of the flame-attenuated glass fiber blankets are highly effective in reducing thermal transfer.

Tuf-Skin® readily withstands damage from mechanical abrasion during assembly and from air erosion in service.

INSULATION CHARACTERISTICS

Material:	Dual density fiberglass, surface treated to prevent erosion (Tuf-Skin® II)
Available Thicknesses:	1/2" (13), 3/4" (19), 1" (25) (Consult individual model submittal for thickness used).
Density:	4.0 lb/cu.ft. (64 kg/m^3) skin, 1.5 lb/cu.ft. (24 kg/m^3) core
Thermal Conductance:	1/2" (13) - 0.52 BTU / hr-ft^2-°F @ 75°F (2.95 W / m^2-°C @ 24°C), 3/4" (19) - 0.36 BTU / hr-ft^2-°F @ 75°F (2.04 W / m^2-°C @ 24°C), 1" (25) - 0.26 BTU / hr-ft^2-°F @ 75°F (1.47 W / m^2-°C @ 24°C)
Thermal Resistance: (Effective R-Value)	1/2" (13) - 1.9 hr-ft^2-°F / BTU (0.34 m^2-°C / W), 3/4" (19) - 2.8 hr-ft^2-°F / BTU (0.49 m^2-°C / W), 1" (25) - 3.8 hr-ft^2-°F / BTU (0.68 m^2-°C / W)
Flame Spread Index:	25
Smoke Developed Index:	50

MAXIMUM AIR VELOCITY

3,600 FPM (1,097 mpm). Tested at two and one-half times (9,000 fpm) (2,743 mpm) the maximum recommended service velocity. Meets the erosion requirements of UL 181.

TEMPERATURE LIMIT

250°F (121°C).

STANDARD AND CODE COMPLIANCE

- ASTM E84, UL 723 and CAN/ULC S102 Flame/Smoke (25/50)
- NFPA 90A and 90B
- ASTM C 1071

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**5 - 12 - 22**	**VAV.ACC.**	**3 - 30 - 22**	**VAV-FDD**

Nailor® Industries Inc.

TERMINAL UNITS
LINER OPTIONS
SOUND POWER LEVEL CORRECTION FACTORS
TYPE: FIBER-FREE

INSULATION CHARACTERISTICS

Material:	Engineered Polymer Foam Insulation (EPFI). Closed cell. Zero permeability and water absorption.
Available Thicknesses:	1/2" (13), 3/4" (19), 1" (25) (Consult individual model submittal for thickness used).
Density:	1.5 lb/cu.ft. (24 kg/m^3).
Thermal Conductivity: (K-Factor)	0.27 BTU-in / hr-ft^2-^oF @ 75^oF (0.039 W / m-^oK @ 24^oC).
Thermal Resistance: (R-Value)	1/2" (13): 1.9 hr-ft^2-^oF / BTU (0.33 m^2-^oC / W). 3/4" (19): 2.8 hr-ft^2-^oF / BTU (0.49 m^2-^oC / W). 1" (25): 3.7 hr-ft^2-^oF / BTU (0.65 m^2-^oC / W).
Flame Spread Index:	25
Smoke Developed Index:	50
Mold Growth:	None
Erosion:	None

STANDARD AND CODE COMPLIANCE

- UL 181 Class I
- ASTM E84 and UL 723 Flame/Smoke (25/50)
- NFPA 90A (Heating and Cooling Equipment)
- ASTM C 209
- ASTM C 665

ACOUSTICAL PERFORMANCE

Correction factors to cataloged sound power level data (standard liner) are shown below.

Single Duct Terminal Units • 3000 Series Basic Unit • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	-1	-2	-2	-3	-3	-3	-2

Single Duct Terminal Units with Integral Attenuator • 3000 Series • All Sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	+1	+1	+3	+4	+7	+8	+3
Radiated Sound	-1	-2	-2	-3	-3	-3	-2

Fan Powered Terminal Units • 33SZ, 35N, 35S, 37N and 37S Series • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	+2	+2	+4	+2	+2	+2	+3

Fan Powered Terminal Units • 35SST and 37SST "Stealth" Series • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	+2	+2	+4	+2	+2	+2	+3

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**5 - 12 - 22**	**VAV.ACC.**	**4 - 17 - 20**	**VAV-FF**

Nailor® Industries Inc.

TERMINAL UNITS
LINER OPTIONS
SOUND POWER LEVEL CORRECTION FACTORS
TYPE: STERI-LINER

INSULATION CHARACTERISTICS

Material:	Rigid board form fiberglass with a thermosetting resin. Fire resistant reinforced aluminum foil-scrim-kraft (FSK) facing.
Available Thicknesses:	1/2" (13), 13/16" (21), 1" (25) (Consult individual model submittal for thickness used).
Density:	4.1 lb/cu.ft. (66 kg/m^3).
Thermal Conductivity: (K-Factor)	0.23 BTU-in / hr-ft^2-^oF @ 75^oF (0.033 W / m-^oK @ 24^oC).
Thermal Resistance: (R-Value)	1/2" (13) - 2.2 hr-ft^2-^oF / BTU (0.48 m^2-^oC / W). 13/16" (21) - 3.5 hr-ft^2-^oF / BTU (0.76 m^2-^oC / W). 1" (25) - 4.3 hr-ft^2-^oF / BTU (0.96 m^2-^oC / W).
Flame Spread Index:	25
Smoke Developed Index:	50
Mold Growth:	None

STANDARD AND CODE COMPLIANCE

- UL 181 Class I
- ASTM E84 and UL 723 Flame/Smoke (25/50)
- NFPA 90A and 90B
- ASTM C 1071 Air Velocity (2000 fpm max.)
- ASTM C 665
- ASTM C 1338, G21 and G22 Fungi and Bacteria Resistance

ACOUSTICAL PERFORMANCE

Correction factors to cataloged sound power level data (standard liner) are shown below.

Single Duct Terminal Units • 3000 Series Basic Unit • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	-1	-2	-2	-3	-3	-3	-2

Single Duct Terminal Units with Integral Attenuator • 3000 Series • All Sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	+1	+1	+3	+4	+7	+8	+3
Radiated Sound	-1	-2	-2	-3	-3	-3	-2

Fan Powered Terminal Units • 33SZ, 35N, 35S, 37N and 37S Series • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	+2	+3	+6	+11	+10	+3	+3

Fan Powered Terminal Units • 35SST and 37SST "Stealth" Series • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	-5	-4	-4	0	+3	+5	-4

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**5 - 17 - 22**	**VAV.ACC.**	**1 - 12 - 21**	**VAV-SL**

Nailor® Industries Inc.

VAV TERMINAL UNITS
LINER OPTIONS
TYPE: SOLID METAL LINER (DOUBLE WALL CONSTRUCTION)

A Solid metal liner completely isolates the standard insulation and its raw edges from the airstream within the terminal. The solid metal liner option, also referred to as double wall construction, offers excellent protection against exposure of fiberglass particles to the airstream. This option is ideal for applications where Indoor Air Quality (IAQ) is a concern and where terminals will be wiped down and cleaned on a regular basis. This option is also resistant to moisture.

ISOLATED INSULATION

Material:	Dual Density flame attenuated glass fiber.
Thickness:	3/4" (19). (37N, 37S, 37SST and 33SZ Size 30 Low Profile Fan Powered Terminal Units use 1/2" (13) material).
Density:	4.0 lb/cu. ft. (64 kg/m^3) skin.
	1.5 lb/cu. ft. (24 kg/m^3) core.
Thermal Conductance: (C)	0.36 BTU / hr-ft^2-°F @ 75°F (2.04 W / m^2-°C @ 24°C). For 1/2" (13) material: 0.52 BTU / hr-ft^2-°F @ 75°F (2.95 W / m^2-°C @ 24°C).

STANDARD AND CODE COMPLIANCE

- UL 181 Class I
- ASTM E84 and UL 723 Flame/Smoke (25/50)
- NFPA 90A and 90B
- ASTM C 1071 Air Velocity (2000 fpm max.)
- ASTM C 665

ACOUSTICAL PERFORMANCE

Correction factors to cataloged sound power level data (standard dual density insulation) are shown below.

Single Duct Terminal Units • 3000 Series Basic Unit • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	-1	-2	-2	-3	-3	-3	-2

Fan Powered Terminal Units • 33SZ, 35N, 35S, 37N and 37S Series • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	+2	+1	+2	+6	+13	+14	+3

Fan Powered Terminal Units • 35SST and 37SST "Stealth" Series • All sizes.

Octave Band	2	3	4	5	6	7	NC Impact
Center Frequency (Hz)	125	250	500	1000	2000	4000	(Average)
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	-5	-4	-4	0	+3	+5	-4

Dual Duct Terminal Units • 3230 and 3240 "Blendmaster" Series • All sizes.

Nailor has independently tested and cataloged their dual duct sound data based upon the use of Steri-Liner (high density foil back insulation) rather than standard dual density fiberglass insulation as used in the above terminal units. This is because it is the most popular specification for dual duct terminals, where IAQ is frequently a concern. Solid metal liner is acoustically reflective in a manner similar to Steri-Liner. The cataloged data may therefore be used without correction when a solid metal liner is required.

SCHEDULE TYPE				
PROJECT				
ENGINEER	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR	**8 - 19 - 16**	**VAV.ACC.**	**11 - 19 - 12**	**VAV - SML**

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 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).

Model 30HQX

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 • 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.

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					
	cfm	l/s	"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
	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
4	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
	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
5	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	-	42	29	25	-	25
	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
6	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
	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
7	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
	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
8	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
	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
9	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	22	36
	225	106	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-	-	42	23	-	-	-	54	43	26	20	-	26	-	44	27	22	-	31	56	46	29	26	21	37
	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
10	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	23	40
	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
12	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
	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	45	44	38	69	58	45	46	44	40	72	61	48	47	44	43	74	63	50	47	45	45	74	65	52	49	47	48
14	1550	731	0.18	45	-	42	38	36	30	22	59	48	39	37	32	29	64	53	42	39	34	36	67	57	44	41	37	40	68	58	46	42	39	43	68	60	49	44	42	46
	1050	495	0.09	22	-	-	26	20	-	-	53	42	32	27	23	26	59	49	36	32	29	33	60	52	40	35	34	38	61	53	42	37	36	41	61	54	44	40	39	45
	525	248	0.02	5	-	-	-	-	-	-	-	-	24	-	-	-	-	-	29	28	27	30	-	42	33	31	34	37	-	42	33	33	37	42	54	43	34	35	41	47
	3500	1652	0.50	124	64	56	52	53	56	53	65	56	51	53	56	53	72	62	53	53	56	53	76	65	55	53	56	54	77	66	56	53	56	54	80	69	59	54	57	56
	2800	1321	0.31	77	60	52	49	49	49	44	65	55	50	50	50	44	70	59	51	50	50	46	74	62	53	51	50	48	76	65	55	51	51	50	78	68	57	52	52	53
16	2100	991	0.18	45	54	47	43	43	38	32	62	51	44	43	39	34	66	55	46	44	41	40	70	59	49	45	43	44	71	61	51	46	45	47	72	63	54	48	47	50
	1400	661	0.08	20	53	42	36	30	-	-	58	45	37	32	27	28	61	51	41	35	34	37	64	54	44	37	37	41	64	55	46	39	40	44	65	56	49	42	44	48
	700	330	0.02	5	-	-	-	-	-	-	53	39	28	23	23	24	54	44	35	30	32	35	56	46	41	36	37	39	55	45	39	36	40	43	57	47	41	38	44	49
	5350	2525	0.49	122	70	57	50	51	49	44	70	58	51	52	49	45	72	65	56	55	54	56	75	69	59	57	56	56	77	70	61	59	57	60	79	73	63	63	62	64
24	5000	2360	0.43	107	69	56	49	51	48	43	70	57	50	51	48	44	71	64	55	54	53	55	75	68	58	56	55	56	76	69	60	58	56	59	78	72	62	62	61	63
x	4000	1888	0.27	67	68	50	45	45	39	33	67	55	48	48	44	42	70	61	52	51	51	51	74	65	55	54	53	55	75	67	57	56	55	58	76	70	61	60	59	62
16	3000	1416	0.16	40	58	44	39	37	28	21	61	53	45	44	41	39	68	59	50	48	47	48	70	62	53	51	51	55	72	64	55	53	54	57	73	66	58	57	57	59
	2000	944	0.07	17	56	38	29	-	-	-	58	50	40	38	40	41	64	57	47	45	45	47	66	59	50	48	48	50	67	60	52	50	50	52	69	63	55	54	55	57

For full performance table notes, see page A74.

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	Airflow l/s	Min. inlet ΔPs "w.g.	Min. inlet ΔPs 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)
	200	94	0.63	157	-	*	-	-	-	-	-	*	-	21	24	28
	150	71	0.37	92	-	-	-	-	-	-	-	-	-	21	22	22
4	100	47	0.17	42	-	-	-	-	-	-	-	-	-	-	20	23
	75	35	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	23	25	30
	300	142	0.60	149	-	*	-	20	23	23	-	*	-	-	22	25
	250	118	0.40	99	-	-	-	-	-	-	-	-	-	-	-	20
5	200	94	0.24	60	-	-	-	-	-	-	-	-	-	-	-	-
	125	59	0.10	25	-	-	-	-	-	-	-	-	20	23	26	30
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	21	25	29
	450	212	0.49	122	-	-	-	-	-	20	-	-	-	20	21	25
	400	189	0.39	97	-	-	-	-	-	-	-	-	-	-	-	20
6	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
	650	307	0.50	124	-	-	-	21	25	28	-	-	-	-	-	20
	550	260	0.36	89	-	-	-	21	23	25	-	20	25	29	31	35
7	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
	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
8	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
	1050	495	0.43	107	-	-	-	23	25	29	-	-	21	24	25	31
	900	425	0.32	80	-	-	-	20	24	25	-	-	-	-	21	24
9	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
	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
10	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
	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
12	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
	2700	1274	0.55	137		*	25	29	31	34	-	*	-	-	-	-
	2100	991	0.33	82		-	20	24	26	26	44	43	48	50	53	56
14	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
	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
16	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	-	-	-	-	-	-	-	-	-	-	-	-
	5350	2525	0.49	122	21	21	24	28	30	33	40	40	36	38	40	43
24	5000	2360	0.43	107	20	21	23	28	29	31	39	39	35	36	39	41
x	4000	1888	0.27	67	-	-	21	26	28	29	30	30	31	34	35	36
16	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.

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					
	cfm	l/s	"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
	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
4	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
	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
5	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
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-	-	36	30	24	-	-	-	36	32	27	23	-	-	35	32	29	27	23	-	37	33	32	32	28
	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
6	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
	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
7	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
	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
8	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
	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
9	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
	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
10	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	-	-	54	42	33	27	23	23	49	43	35	30	26	25	54	46	38	33	31	30
	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
12	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
	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
14	1550	731	0.18	45	54	42	32	22	-	-	55	45	34	26	-	-	60	50	41	34	27	22	62	54	45	39	33	32	62	56	47	41	37	38	63	58	50	44	40	42
	1050	495	0.09	22	49	34	21	-	-	-	51	42	32	25	-	-	55	49	40	33	26	22	56	51	43	38	32	33	56	52	44	39	36	38	57	53	46	41	40	42
	525	248	0.02	5	-	-	-	-	-	-	-	39	30	23	-	-	48	41	34	30	25	24	51	44	37	34	33	34	49	45	38	35	37	36	52	47	40	39	42	42
	3500	1652	0.50	124	66	55	49	42	35	30	66	55	49	42	35	30	67	56	49	43	37	32	70	60	51	44	39	35	72	62	53	46	41	37	75	64	57	49	45	40
	2800	1321	0.31	77	59	49	43	35	29	-	60	49	43	35	29	-	65	54	45	38	33	27	68	57	49	41	36	31	69	59	51	43	38	34	71	62	54	47	43	39
16	2100	991	0.18	45	52	42	34	26	-	-	55	45	36	29	22	-	60	50	41	34	29	23	63	54	46	39	33	30	65	56	48	41	36	32	67	60	52	45	41	38
	1400	661	0.08	20	-	-	22	-	-	-	51	41	32	24	-	-	55	46	37	31	26	21	58	50	41	35	31	28	59	52	44	37	34	31	60	54	47	41	38	37
	700	330	0.02	5	-	-	-	-	-	-	-	-	26	21	-	-	-	39	32	28	24	-	50	42	36	32	31	29	51	43	37	34	33	32	52	45	39	37	37	38
	5350	2525	0.49	122	74	57	52	48	42	38	74	58	52	48	44	37	71	61	56	48	44	42	72	64	57	47	44	44	74	66	59	49	45	45	76	68	62	51	48	49
24	5000	2360	0.43	107	73	56	51	47	41	37	73	57	51	47	43	36	70	60	55	47	43	41	71	63	56	47	43	42	73	65	58	48	44	44	75	67	61	50	47	48
x	4000	1888	0.27	67	66	50	44	40	35	28	66	51	44	40	36	29	67	56	49	42	38	34	69	59	52	44	40	37	70	62	55	46	42	41	71	65	59	49	46	47
16	3000	1416	0.16	40	58	44	36	32	26	17	59	48	40	34	29	21	62	53	46	37	33	30	66	58	50	41	38	36	67	60	53	43	41	41	68	62	56	47	45	46
	2000	944	0.07	17	51	37	25	-	-	-	53	44	36	27	21	-	59	52	44	37	34	32	61	55	47	40	37	35	62	57	50	42	39	39	64	59	54	45	43	45

For full performance table notes, see page A74.

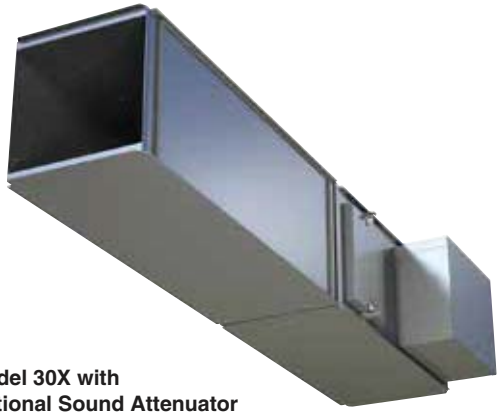
Recommended Airflow Ranges For Model 30X Single Duct Exhaust Terminal Units

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 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).



Model 30X with Optional Sound Attenuator

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 • AHRI Certification and Performance Notes

30X Series • Basic Unit

Fiberglass Liner

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	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:

1. 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.
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.

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					
	cfm	l/s	"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
	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
4	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
	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
5	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
	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
6	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
	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
7	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
	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
8	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
	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
9	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	61	49	42	43	43	42	58	50	43	44	46	45	61	51	45	46	48	50
	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
10	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
	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	82	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
12	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
	2700	1274	0.54	134	70	64	60	60	57	55	*	*	*	*	*	*	78	69	62	61	59	57	81	72	65	62	60	59	81	73	65	63	61	60	86	76	69	66	64	63
	2100	991	0.33	82	64	57	53	53	52	45	70	61	55	53	52	45	75	65	58	56	54	50	80	69	61	59	57	54	79	70	62	60	58	56	80	73	65	63	62	60
14	1550	731	0.18	45	60	50	46	44	43	32	65	57	49	47	46	40	71	61	54	52	51	48	73	65	57	56	54	52	75	66	59	57	56	54	75	67	62	60	59	58
	1050	495	0.08	20	-	41	37	33	25	-	63	51	44	42	39	37	66	57	49	47	46	44	68	59	53	51	50	49	68	60	55	53	52	52	70	62	57	56	56	57
	525	248	0.02	5	-	-	-	-	-	-	58	45	38	35	34	32	59	50	44	43	43	41	62	51	47	47	48	48	61	51	47	48	51	51	64	51	48	51	54	56
	3500	1652	0.48	119	68	62	59	59	57	56	70	63	60	59	57	57	78	68	64	61	60	59	81	71	67	64	62	61	81	73	69	65	63	62	84	75	72	68	66	64
	2800	1321	0.31	77	65	57	53	53	53	46	70	60	56	55	54	47	74	65	61	58	57	53	76	67	64	60	59	56	79	70	67	62	61	58	81	73	70	66	65	62
16	2100	991	0.18	45	58	51	46	45	45	35	66	56	52	49	48	42	71	61	57	54	52	49	73	65	61	57	55	53	75	67	63	59	57	55	77	69	67	62	61	59
	1400	661	0.08	20	54	38	35	33	26	-	62	51	47	44	41	37	66	57	53	50	47	45	69	60	57	53	51	49	69	62	59	55	53	52	71	64	62	58	57	56
	700	330	0.02	5	-	-	-	-	-	-	58	44	41	37	34	32	60	51	47	44	43	41	63	52	50	48	48	47	63	54	52	50	51	51	66	55	54	54	55	56
	5350	2525	0.45	112	78	65	59	55	53	47	79	66	61	58	56	51	81	71	67	65	64	63	83	74	69	67	66	64	86	80	74	71	70	69	89	82	79	74	73	72
24	5000	2360	0.39	97	75	63	58	54	52	46	76	65	61	57	55	50	78	70	66	64	63	62	81	74	69	67	66	64	83	79	73	70	69	68	86	81	78	73	72	71
x	4000	1888	0.25	62	70	58	52	47	45	38	71	63	59	57	54	50	75	68	64	62	62	61	79	72	68	65	65	63	81	75	71	68	67	66	83	78	75	71	70	70
16	3000	1416	0.14	35	64	51	43	39	31	24	67	60	58	56	53	48	73	67	63	61	59	57	75	71	67	63	62	63	77	72	69	66	65	65	79	74	73	69	68	67
	2000	944	0.06	15	56	48	33	24	-	-	64	58	59	51	49	50	69	65	60	58	56	56	72	68	64	60	59	58	73	70	66	63	62	61	76	72	70	67	66	65

For full performance table notes, see page A67.

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					
	cfm	l/s	"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
	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
4	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	-	-
	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
5	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
	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
6	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
	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
7	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
	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
8	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
	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
9	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
	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
10	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	20	54	46	38	33	26	28	52	46	39	35	28	32	55	47	40	37	32	38
	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
12	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
	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
	2100	991	0.33	82	59	52	46	40	35	29	65	57	48	43	35	30	70	61	51	45	37	34	73	64	55	49	40	39	73	66	57	50	42	41	75	68	60	53	46	45
14	1550	731	0.18	45	54	42	37	30	23	-	61	52	42	37	28	23	65	57	48	42	33	32	68	60	51	45	37	37	68	62	53	47	39	40	69	64	57	50	42	44
	1050	495	0.08	20	-	-	27	-	-	-	56	47	39	33	23	22	60	53	44	37	29	30	63	56	47	40	33	35	62	57	49	42	36	38	63	57	51	45	39	43
	525	248	0.02	5	-	-	-	-	-	-	51	42	33	27	-	-	55	45	38	33	28	27	57	46	40	37	33	35	53	47	41	39	37	40	56	48	43	41	39	44
	3500	1652	0.48	119	66	57	52	50	42	41	67	57	52	50	42	42	71	64	58	53	45	44	74	67	62	55	46	46	76	69	64	56	48	47	79	72	67	59	52	51
	2800	1321	0.31	77	59	51	46	44	37	32	65	56	50	46	37	32	69	61	55	49	41	39	72	65	59	52	44	43	74	67	61	54	46	45	77	70	64	56	50	49
16	2100	991	0.18	45	53	46	40	36	29	21	61	53	46	41	33	27	67	59	53	46	38	37	70	63	57	49	42	42	70	64	58	50	43	43	72	67	62	53	47	47
	1400	661	0.08	20	54	37	30	23	-	-	58	49	42	35	27	24	63	55	49	41	34	35	65	59	52	44	38	39	65	60	54	45	40	41	67	61	57	49	43	45
	700	330	0.02	5	-	-	-	-	-	-	52	43	36	28	21	-	56	48	42	36	31	32	59	52	50	44	37	36	58	51	48	44	39	40	59	52	48	45	45	45
	5350	2525	0.45	112	74	62	56	50	45	41	74	63	57	52	45	41	75	70	64	59	56	55	77	74	67	62	58	57	80	75	70	64	59	59	84	80	74	68	63	64
24	5000	2360	0.39	97	73	61	55	49	44	40	73	62	56	51	44	40	74	69	63	58	55	54	76	73	66	61	57	56	79	74	69	63	58	58	83	79	73	67	62	63
x	4000	1888	0.25	62	67	55	49	42	36	31	69	60	54	49	43	40	73	67	61	55	53	52	76	71	64	58	55	54	78	74	67	61	57	56	80	76	71	65	60	61
16	3000	1416	0.14	35	62	52	45	35	29	25	66	59	53	48	43	40	71	65	59	53	49	47	75	70	63	56	52	52	75	71	65	58	55	58	76	73	68	62	59	59
	2000	944	0.06	15	56	44	27	-	-	-	63	57	50	43	38	35	68	64	58	51	49	47	70	66	60	53	50	50	70	68	63	55	52	52	73	70	66	59	56	57

For full performance table notes, see page A67.

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					
	cfm	l/s	"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
	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
4	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	-	-	-	-	21	26	-	-	21	20	23	27	-	-	22	22	28	32
	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
5	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
	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
6	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	53	40	36	32	31	33	54	41	37	34	34	36	-	-	37	35	37	41
	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
7	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
	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
8	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
	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
9	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
	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
10	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
	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
12	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
	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	53	55	80	72	64	59	57	58
	2100	991	0.33	82	58	51	46	42	41	37	65	56	48	46	44	39	70	61	53	49	46	45	73	64	56	52	49	49	75	66	58	53	51	52	75	69	61	56	55	56
14	1550	731	0.18	45	-	42	38	33	32	25	61	52	43	39	36	33	65	57	49	45	42	42	67	60	52	47	46	47	68	62	54	49	48	49	69	63	57	52	51	54
	1050	495	0.08	20	-	-	27	21	-	-	55	46	39	34	31	32	61	53	44	40	38	40	63	55	48	43	43	45	63	56	50	45	45	46	63	57	52	48	48	52
	525	248	0.02	5	-	-	-	-	-	-	-	41	33	29	27	28	54	44	38	36	36	36	56	45	41	39	42	44	54	46	42	41	46	45	56	46	43	43	49	53
	3500	1652	0.48	119	67	56	53	52	50	51	67	56	53	52	50	50	71	64	59	55	53	53	75	67	62	57	55	56	77	69	65	59	56	57	79	72	68	61	60	60
	2800	1321	0.31	77	62	53	50	48	47	42	66	56	52	49	47	42	71	62	57	52	50	50	73	65	60	54	52	52	75	67	62	56	54	54	77	69	66	59	58	59
16	2100	991	0.18	45	52	46	41	38	34	28	61	53	47	43	40	37	67	59	54	48	46	47	70	62	57	51	50	51	71	64	59	52	52	53	72	66	63	56	56	57
	1400	661	0.08	20	51	38	31	25	-	-	57	49	43	37	35	34	63	55	50	43	43	44	65	59	53	46	46	48	65	59	55	48	48	50	67	61	58	51	52	54
	700	330	0.02	5	-	-	-	-	-	-	52	42	37	31	31	30	55	47	43	38	39	41	57	50	50	46	46	46	58	51	49	46	48	49	59	52	50	47	54	54
	5350	2525	0.45	112	74	61	56	52	48	45	74	63	58	54	49	46	75	69	64	61	61	60	77	74	68	64	63	63	80	74	70	66	64	65	84	79	74	70	68	70
24	5000	2360	0.39	97	73	60	55	51	47	44	73	62	57	53	48	45	74	68	63	60	60	59	76	73	67	63	62	62	79	73	69	65	63	64	83	78	73	69	67	69
x	4000	1888	0.25	62	68	55	49	44	40	35	69	60	55	52	48	46	73	67	62	57	58	58	77	71	65	60	60	61	79	72	67	63	61	62	81	76	71	67	65	67
16	3000	1416	0.14	35	62	48	41	35	28	22	66	58	53	51	48	45	71	65	60	55	54	54	74	69	63	58	57	57	75	70	64	60	60	66	77	72	69	64	64	67
	2000	944	0.06	15	56	44	27	20	-	-	61	56	49	44	42	42	68	62	56	52	52	54	69	64	60	54	54	55	71	67	62	57	57	58	73	69	66	61	61	62

For performance table notes, see page A67.

Performance Data • NC Level Application Guide

30X Series • Basic Unit

Fiberglass Liner

Inlet Size	Airflow cfm	Airflow l/s	Min. inlet ΔPs "w.g.	Min. inlet ΔPs Pa	NC Levels @ Inlet Pressure (ΔPs) shown: DISCHARGE Min. ΔPs	DISCHARGE 0.5" w.g. (125 Pa)	DISCHARGE 1.0" w.g. (250 Pa)	DISCHARGE 1.5" w.g. (375 Pa)	DISCHARGE 2.0" w.g. (500 Pa)	DISCHARGE 3.0" w.g. (750 Pa)	RADIATED Min. ΔPs	RADIATED 0.5" w.g. (125 Pa)	RADIATED 1.0" w.g. (250 Pa)	RADIATED 1.5" w.g. (375 Pa)	RADIATED 2.0" w.g. (500 Pa)	RADIATED 3.0" w.g. (750 Pa)
	200	94	0.63	157	-	*	-	21	21	23	-	*	-	21	21	20
	150	71	0.37	92	-	-	-	-	-	-	-	-	-	-	-	-
4	100	47	0.17	42	-	-	-	-	-	-	-	-	-	-	-	-
	50	24	0.05	12	-	-	-	-	-	-	-	-	-	-	-	-
	30	14	0.02	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
5	200	94	0.23	57	-	-	-	20	-	21	-	-	-	-	-	-
	125	59	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-
	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
6	300	142	0.18	45	-	-	23	25	26	26	-	-	-	21	20	20
	200	94	0.08	20	-	-	-	-	-	20	-	-	-	-	-	-
	100	47	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
	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
7	335	158	0.13	32	-	-	-	20	20	20	-	-	-	20	20	20
	225	106	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-
	110	52	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
	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
8	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	-	-	-	-	-	-	-	-	-	-	-	-
	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
9	675	319	0.15	37	-	-	20	24	25	28	-	-	20	24	26	28
	450	212	0.07	17	-	-	-	-	20	20	-	-	-	-	-	20
	225	106	0.02	5	-	-	-	-	-	-	-	-	-	-	-	-
	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
10	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	-	-	-	-	-	-	-	-	-	-	-	-
	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
12	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	-	-	-	-	-	-	-	-	-	-	-	-
	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
14	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	-	-	-	-	-	-
	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
16	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	-	-	-	-	-	-
	5350	2525	0.45	112	31	33	35	38	41	45	40	40	36	38	40	43
24	5000	2360	0.39	97	28	29	31	35	39	41	43	39	35	36	39	41
x	4000	1888	0.25	62	21	23	28	33	35	38	30	30	31	34	35	36
16	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.

Performance Data • NC Level Application Guide

30X Series • Optional Attenuator

Fiberglass Liner

Inlet Size	Airflow cfm	Airflow l/s	Min. inlet ΔPs "w.g.	Min. inlet ΔPs 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
	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 x 16	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
	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
	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 • NC Level Application Guide

30X Series • Optional Attenuator

Steri-Liner

Inlet Size	Airflow cfm	Airflow l/s	Min. inlet ΔPs "w.g.	Min. inlet ΔPs 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 • 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					
	cfm	l/s	"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
	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
4	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
	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
5	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
	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
6	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
	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
7	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
	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
8	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
	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
9	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
	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
10	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
	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
12	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
	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	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
14	1550	731	0.18	45	54	42	32	22	-	-	55	45	34	26	-	-	60	50	41	34	27	22	62	54	45	39	33	32	62	56	47	41	37	38	63	58	50	44	40	42
	1050	495	0.08	20	49	34	21	-	-	-	51	42	32	25	-	-	55	49	40	33	26	22	56	51	43	38	32	33	56	52	44	39	36	38	57	53	46	41	40	42
	525	248	0.02	5	-	-	-	-	-	-	20	39	30	23	-	-	48	41	34	30	25	24	51	44	37	34	33	34	49	45	38	35	37	36	52	47	40	39	42	42
	3500	1652	0.48	119	66	55	49	42	35	30	66	55	49	42	35	30	67	56	49	43	37	32	70	60	51	44	39	35	72	62	53	46	41	37	75	64	57	49	45	40
	2800	1321	0.31	77	59	49	43	35	29	-	60	49	43	35	29	-	65	54	45	38	33	27	68	57	49	41	36	31	69	59	51	43	38	34	71	62	54	47	43	39
16	2100	991	0.18	45	52	42	34	26	-	-	55	45	36	29	22	-	60	50	41	34	29	23	63	54	46	39	33	30	65	56	48	41	36	32	67	60	52	45	41	38
	1400	661	0.08	20	-	-	22	-	-	-	51	41	32	24	-	-	55	46	37	31	26	21	58	50	41	35	31	28	59	52	44	37	34	31	60	54	47	41	38	37
	700	330	0.02	5	-	-	-	-	-	-	-	-	26	21	-	-	-	39	32	28	24	-	50	42	36	32	31	29	51	43	37	34	33	32	52	45	39	37	37	38
	5350	2525	0.45	112	74	57	52	48	42	38	74	58	52	48	44	36	71	61	56	48	44	42	72	64	57	47	44	44	74	66	59	49	45	45	76	68	62	51	48	49
24	5000	2360	0.39	97	76	56	51	47	41	37	73	57	51	47	43	36	70	60	55	47	43	41	71	63	56	47	43	42	73	65	58	48	44	44	75	67	61	50	47	48
x	4000	1888	0.25	62	66	50	44	40	35	28	66	51	44	40	36	29	67	56	49	42	38	34	69	59	52	44	40	37	70	62	55	46	42	41	71	65	59	49	46	47
16	3000	1416	0.14	35	58	44	36	32	26	17	59	48	40	34	29	21	62	53	46	37	33	30	66	58	50	41	38	36	67	60	53	43	41	41	68	62	56	47	45	46
	2000	944	0.06	15	51	37	25	-	-	-	53	44	36	27	21	-	59	52	44	37	34	32	61	55	47	40	37	35	62	57	50	42	39	39	64	59	54	45	43	45

For full performance table notes, see page A67.

Performance Data • Radiated 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					
	cfm	l/s	"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
	200	94	0.63	159	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	-	54	45	39	33	26	22	52	44	40	26	29	26
4	100	47	0.17	43	-	-	-	-	-	-	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
	300	142	0.55	136	51	42	35	27	25	-	*	*	*	*	*	*	55	45	37	31	26	21	60	50	40	35	29	23	62	53	42	37	32	26	62	53	47	41	37	31
	250	118	0.35	87	-	39	31	23	-	-	-	39	32	23	-	-	55	44	35	30	22	-	58	49	39	34	27	21	59	50	42	36	30	24	59	51	45	40	35	30
5	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
	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
6	300	142	0.18	44	-	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	0.08	21	-	-	-	-	-	-	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	6	-	-	-	-	-	-	-	34	23	-	-	-	-	-	28	23	-	-	-	36	30	26	21	-	-	34	32	28	24	21	-	37	33	31	28	26
	650	307	0.50	125	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	259	0.35	88	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
7	335	158	0.13	34	-	-	-	-	-	-	-	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	16	-	-	-	-	-	-	-	-	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	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	23	-	-	-	-	28	27	25	22	-	-	30	28	28	25	-	39	34	33	31	30
	800	377	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	68	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
8	600	283	0.20	51	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	24	51	38	30	22	-	-	50	38	31	25	-	-	56	45	36	30	22	-	58	49	39	33	37	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
	1050	495	0.39	98	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	0.29	73	54	46	40	30	25	21	57	47	39	31	26	21	61	51	44	35	29	-	64	54	48	40	32	26	66	56	51	43	35	29	68	60	54	47	40	34
9	675	318	0.16	40	-	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	4	-	-	-	-	-	-	-	-	-	-	-	-	50	38	31	27	-	-	51	39	34	31	25	21	50	40	36	33	28	24	50	42	39	36	31	29
	1350	637	0.44	110	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	0.29	73	52	43	34	28	23	-	56	46	37	31	35	-	63	50	40	34	29	22	66	55	44	37	32	26	68	57	47	39	35	29	71	61	51	44	39	34
10	825	389	0.16	40	-	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	259	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	4	-	-	-	-	-	-	-	-	-	-	-	-	-	39	30	23	-	-	54	42	33	27	23	23	49	43	35	30	26	25	54	46	38	33	31	30
	2000	943	0.41	103	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	0.27	68	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
12	1200	566	0.15	38	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	377	0.07	17	-	-	-	-	-	-	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	4	-	-	-	-	-	-	-	35	26	-	-	-	49	39	32	27	26	25	52	41	35	31	32	31	50	42	35	33	34	32	52	44	38	36	38	39
	2700	1274	0.58	145	65	57	53	42	35	31	*	*	*	*	*	*	67	58	50	41	38	34	69	60	51	43	37	34	71	62	52	44	39	35	73	65	55	48	42	38
	2100	991	0.34	85	59	50	46	35	29	22	59	50	46	35	29	22	64	54	44	36	43	38	67	57	48	40	34	29	68	58	49	42	36	31	70	62	53	46	42	37
14	1550	731	0.18	46	54	42	32	22	-	-	55	45	34	26	-	-	60	50	41	34	30	27	62	54	45	39	33	32	62	56	47	41	37	38	63	58	50	44	40	42
	1050	495	0.09	22	49	34	21	-	-	-	51	42	32	25	-	-	55	49	40	33	25	22	56	51	43	38	32	33	56	52	44	39	36	38	57	53	46	41	40	42
	525	248	0.02	6	-	-	-	-	-	-	-	39	30	23	-	-	48	41	34	30	26	25	51	44	37	34	33	34	49	45	38	35	37	36	52	47	40	39	42	42
	3500	1651	0.48	119	66	55	49	42	35	30	66	55	49	42	35	30	67	56	49	43	37	32	70	60	51	44	39	35	72	62	53	46	41	37	75	64	57	49	45	40
	2800	1321	0.31	77	59	49	43	35	29	-	60	49	43	35	29	-	65	54	45	38	33	27	68	57	49	41	36	31	69	59	51	43	38	34	71	62	54	47	43	39
16	2100	991	0.18	44	52	42	34	26	-	-	55	45	36	29	22	-	60	50	41	34	29	23	63	54	46	39	33	30	65	56	48	41	36	32	67	60	52	45	41	38
	1400	660	0.08	20	-	-	22	-	-	-	51	41	32	24	-	-	55	46	37	31	26	21	58	50	41	35	31	28	59	52	44	37	34	31	60	54	41	41	38	37
	700	330	0.02	5	-	-	-	-	-	-	-	-	26	21	-	-	-	39	32	28	24	-	50	42	36	32	31	29	51	43	37	34	33	32	52	45	39	37	37	38
	5350	2524	0.47	118	74	57	52	48	42	38	74	58	52	48	44	37	71	61	56	48	44	42	72	64	57	48	44	43	74	66	59	49	45	45	76	68	62	51	48	49
24	5000	2358	0.40	100	73	56	51	47	41	37	73	57	51	47	43	36	70	60	55	47	43	41	71	63	56	47	43	42	73	65	58	48	44	44	75	67	61	50	47	48
x	4000	1887	0.26	65	66	50	44	40	35	28	66	51	44	40	36	29	67	56	49	42	38	34	69	59	52	44	40	37	70	62	55	46	42	41	71	65	59	49	60	47
16	3000	1415	0.15	38	58	44	36	32	26	17	59	48	40	34	29	21	62	53	46	37	33	30	66	58	50	41	38	36	67	60	53	43	41	41	68	62	56	47	59	46
	2000	943	0.07	18	51	37	25	-	-	-	53	44	36	27	21	-	59	52	44	37	34	32	61	55	47	40	37	35	62	57	50	42	39	39	64	59	54	45	56	45

For performance table notes, see page A67.

Performance Data • Radiated 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					
	cfm	l/s	"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
	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	38	32	28
	150	71	0.37	92	48	35	27	-	-	-	49	36	27	-	-	-	54	53	33	27	21	-	54	45	37	31	23	19	54	45	39	33	26	22	52	44	40	36	29	26
4	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	29	26	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
	300	142	0.55	137	51	42	35	27	25	-	*	*	*	*	*	*	55	45	37	31	26	21	60	50	40	35	30	24	65	57	46	38	33	27	65	58	51	42	37	31
	250	118	0.35	87	-	39	31	23	-	-	-	39	32	26	-	-	55	44	35	30	22	-	58	49	39	34	28	22	63	55	44	36	31	25	63	57	49	41	35	30
5	200	94	0.23	57	-	-	-	-	-	-	-	37	29	21	-	-	53	44	34	29	-	-	55	46	38	33	26	-	58	51	42	35	29	22	58	51	46	40	34	28
	125	59	0.10	25	-	-	-	-	-	-	-	-	-	-	-	-	-	39	33	27	-	-	-	40	35	31	24	-	51	47	40	33	27	22	50	46	42	37	31	26
	100	47	0.06	15	-	-	-	-	-	-	-	-	-	-	-	-	-	36	30	24	-	-	-	36	32	26	21	-	-	34	32	28	24	21	-	37	33	31	28	26
	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
6	300	142	0.18	45	-	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	0.08	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
	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
7	335	158	0.13	32	-	-	-	-	-	-	-	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
	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
8	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
	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
9	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
	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
10	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	-	-	-	-	-	-	-	-	-	-	-	-	-	39	30	23	-	-	54	42	33	27	23	23	49	43	35	30	26	25	54	46	38	33	31	30
	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
12	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
	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	0.33	82	59	50	46	35	29	22	59	50	46	35	-	-	64	54	44	36	31	25	67	57	48	40	34	29	68	58	49	42	36	31	70	62	53	46	42	37
14	1550	731	0.18	45	54	42	32	22	-	-	55	45	34	26	-	-	60	50	41	34	27	22	62	54	45	39	33	32	62	56	47	41	37	38	63	58	50	44	40	42
	1050	495	0.08	20	49	34	21	-	-	-	51	42	32	25	-	-	55	49	40	33	26	22	56	51	43	38	32	33	56	52	44	39	36	38	57	53	46	41	40	42
	525	248	0.02	5	-	-	-	-	-	-	-	39	30	23	-	-	48	41	34	30	25	24	51	44	37	34	33	34	49	45	38	35	37	36	52	47	40	39	42	42
	3500	1652	0.48	119	66	55	49	42	35	30	66	55	49	42	35	30	67	56	49	43	37	32	70	60	51	44	39	35	72	62	53	46	41	37	75	64	57	49	45	40
	2800	1321	0.31	77	59	49	43	35	29	-	60	49	43	35	29	-	65	54	45	38	33	27	68	57	49	41	36	31	69	59	51	43	38	34	71	62	54	47	43	39
16	2100	991	0.18	45	52	42	34	26	-	-	55	45	36	29	22	-	60	50	41	34	29	23	63	54	46	39	33	30	65	56	48	41	36	32	67	60	52	45	41	38
	1400	661	0.08	20	-	-	22	-	-	-	51	41	32	24	-	-	55	46	37	31	26	21	58	50	41	35	31	28	59	52	44	37	34	31	60	54	47	41	38	37
	700	330	0.02	5	-	-	-	-	-	-	-	-	26	21	-	-	-	39	32	28	24	-	50	42	36	32	31	29	51	43	37	34	33	32	52	45	39	37	37	38
	5350	2525	0.45	112	74	57	52	48	42	38	74	58	52	48	44	37	71	61	56	48	44	42	72	64	57	48	44	43	74	66	59	49	45	45	76	68	62	51	48	49
24	5000	2360	0.39	97	73	56	51	47	41	37	73	57	51	47	43	36	70	60	55	47	43	41	71	63	56	47	43	42	73	65	58	48	44	44	75	67	61	50	47	48
x	4000	1888	0.25	62	66	50	44	40	35	28	66	51	44	40	36	29	67	56	49	42	38	34	69	59	52	44	40	37	70	62	55	46	42	41	71	65	59	49	46	47
16	3000	1416	0.14	35	58	44	36	32	26	17	59	48	40	34	29	21	62	53	46	37	33	30	66	58	50	41	38	36	67	60	53	43	41	41	68	62	56	47	45	46
	2000	944	0.06	15	51	37	25	-	-	-	53	44	36	27	21	-	59	52	44	37	34	32	61	55	47	40	37	35	62	57	50	42	39	39	64	59	54	45	43	45

For full performance table notes, see page A67.