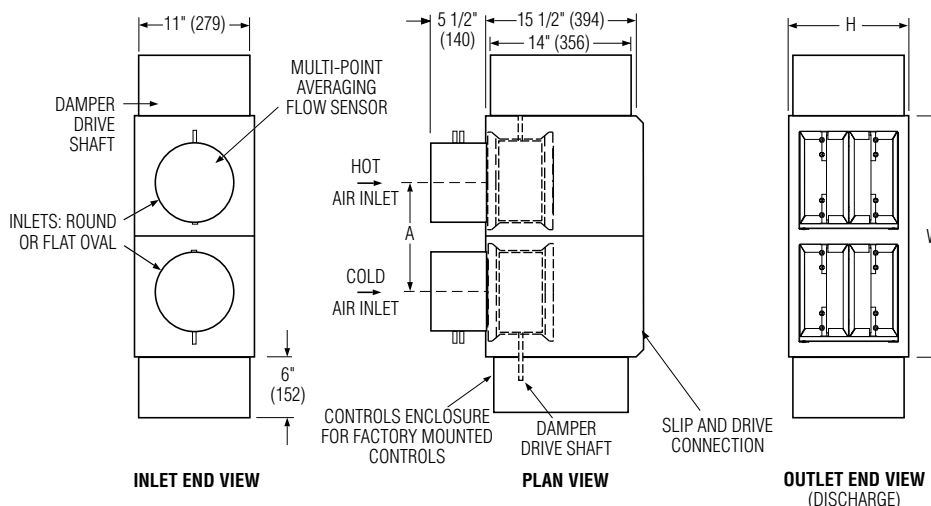




**DUAL DUCT TERMINAL UNIT  
WITHOUT MIXING ATTENUATOR  
DIGITAL ELECTRONIC CONTROL  
MODEL: D3210**



**Dimensional Data**

Unit Size	Airflow Range, cfm (l/s) Digital/Analog Controls	W	H	A	Inlet Size
4	0 – 225/180 (0 – 106/85)	21 (533)	10 (254)	11 (279)	3 7/8 (98) Round
5	0 – 400/325 (0 – 189/153)	21 (533)	10 (254)	11 (279)	4 7/8 (124) Round
6	0 – 550/450 (0 – 260/212)	21 (533)	10 (254)	11 (279)	5 7/8 (149) Round
7	0 – 800/650 (0 – 378/307)	25 (635)	12 1/2 (318)	13 (330)	6 7/8 (175) Round
8	0 – 1100/900 (0 – 519/425)	25 (635)	12 1/2 (318)	13 (330)	7 7/8 (200) Round
9	0 – 1400/1150 (0 – 661/543)	29 (737)	12 1/2 (318)	15 (381)	8 7/8 (225) Round
10	0 – 1840/1500 (0 – 868/708)	29 (737)	12 1/2 (318)	15 (381)	9 7/8 (251) Round
12	0 – 2500/2050 (0 – 1180/967)	37 (940)	12 1/2 (318)	19 (483)	12 15/16 x 9 13/16 (329 x 249) Oval
14	0 – 3125/2550 (0 – 1475/1203)	49 (1245)	12 1/2 (318)	25 (635)	16 1/16 x 9 13/16 (408 x 249) Oval
16	0 – 3725/3040 (0 – 1758/1435)	57 (1448)	12 1/2 (318)	29 (737)	19 3/16 x 9 13/16 (487 x 249) Oval

**Standard Features:**

- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- 16 ga. (1.63) corrosion-resistant steel inclined opposed blade dampers with extruded PVC seals (single blade on size 4, 5, 6). 45° rotation, CW to close. Tight shut-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 Sensors in each inlet. Supplied with balancing tees.
- Rectangular discharge with slip and drive cleat duct connection.
- Full NEMA1 type 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.
- Choice of right or left-hand cold deck location. Unit is flippable. Hand of unit is determined by location of cold deck looking in direction of airflow. Right-hand unit illustrated.

**OPTIONS:**

**Digital Controls:**

- Factory mounted (supplied by others)
- Field mounted (supplied by others)
- Nailor EZvav. See separate submittal.

**Liner:**

- Steri-liner
- Fiber-free
- Perforated metal
- Solid metal
- 1" (25) fiberglass

**Other:**

- Removable flow sensors.
- 24 VAC control transformer.
- 20 ga. (1.00) construction.
- Toggle disconnect switch.
- Controls enclosure for field mounted controls.
- Hanger brackets.
- Dust tight enclosure seal.
- Factory wrapped inlets and outlet.
- Hanger brackets.

**Seismic Certification:**

- Seismic Source International (Standard)
- HCAI (formerly OSHPD, California)
- Special Features: \_\_\_\_\_

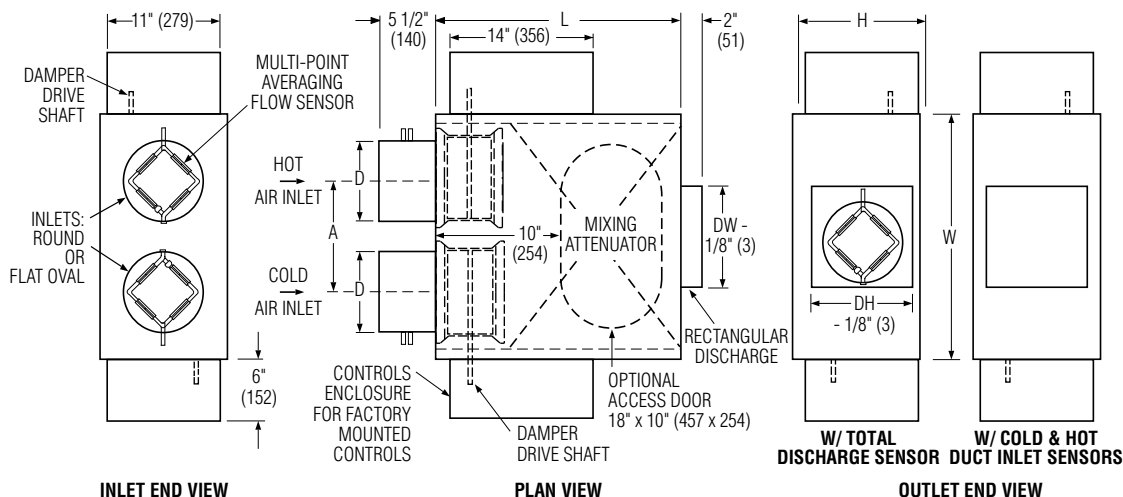
<b>SCHEDULE TYPE:</b>
<b>PROJECT:</b>
<b>ENGINEER:</b>
<b>CONTRACTOR:</b>

Page 1 of 1.  
Dimensions are in inches (mm).

<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
2 - 6 - 23	3200	3 - 9 - 18	D3210



**DUAL DUCT TERMINAL UNIT  
WITH COMPACT MIXING ATTENUATOR  
DIGITAL CONTROL  
MODEL: D3230**



**Dimensional Data**

Unit Size	Airflow Range, cfm (l/s) Digital/Analog Controls	W	H	L	A	Inlet Dia. D	Outlet DW x DH
4	0 - 225/180 (0 - 106/85)	24 (610)	10 (254)	24 (610)	11 (279)	3 7/8 (98)	
5	0 - 400/325 (0 - 189/153)	24 (610)	10 (254)	24 (610)	11 (279)	4 7/8 (124)	8 x 8 (203 x 203)
6	0 - 550/450 (0 - 260/212)	24 (610)	10 (254)	24 (610)	11 (279)	5 7/8 (149)	
7	0 - 800/650 (0 - 378/307)	24 (610)	12 1/2 (318)	24 (610)	11 (279)	6 7/8 (175)	10 x 10 (254 x 254)
8	0 - 1100/900 (0 - 519/425)	24 (610)	12 1/2 (318)	24 (610)	11 (279)	7 7/8 (200)	
9	0 - 1400/1150 (0 - 661/543)	34 (864)	14 (356)	34 (864)	16 1/8 (410)	8 7/8 (225)	14 x 12 (356 x 305)
10	0 - 1840/1500 (0 - 868/708)	34 (864)	14 (356)	34 (864)	16 1/8 (410)	9 7/8 (251)	
12	0 - 2500/2050 (0 - 1180/967)	34 (864)	16 (406)	34 (864)	16 1/8 (410)	11 7/8 (302)	18 x 14 (457 x 356)
14	0 - 3370/2750 (0 - 1590/1298)	42 (1067)	18 (457)	38 (965)	20 1/8 (511)	13 7/8 (353)	22 x 16 (559 x 406)
16	0 - 4525/3700 (0 - 2135/1746)	42 (1067)	18 (457)	38 (965)	20 1/8 (511)	15 7/8 (403)	24 x 18 (610 x 457)

**Standard Features:**

- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- Low leakage opposed blade dampers with blade and jamb seals (single blade on size 4, 5, 6). 90° rotation, CW to close. Damper leakage is less than 1% of the terminal rated airflow at 6" w.g. (1.5 kPa).
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.
- Integral mixing attenuator with baffles. 1:12 minimum mixing efficiency.
- Rectangular discharge.
- Full NEMA1 type 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.
- Two multi-point averaging Diamond Flow Sensors. Aluminum construction. Supplied with balancing tees. Location must be specified based upon control sequence. Choice of location:
  - Cold and hot duct inlet.
  - Hot duct inlet and downstream total discharge.
  - Cold duct inlet and downstream total discharge.
- Choice of right or left-hand cold duct location. Unit is flippable. Hand of unit is

determined by location of cold duct looking in direction of airflow. Right-hand unit illustrated.

• Unequal inlet sizes are available. Casing is governed by the larger inlet size.

**OPTIONS:**

**Digital Controls:**

- Factory mounted (supplied by others)
- Field mounted (supplied by others)
- Nailor EZvav. See separate submittal.

**Liner:**

- Steri-liner
- Fiber-free
- Perforated metal
- Solid metal
- 1" (25) fiberglass

**Other:**

- Cross flow sensors.
- Removable flow sensors.
- 24 VAC control transformer.
- 20 ga. (1.00) construction.
- Toggle disconnect switch.
- Bottom access door (Model 0800-M1).
- Controls enclosure for field mounted controls.
- Hanger brackets.
- Dust tight enclosure seal.
- Factory wrapped inlets and outlet.
- Hanger brackets.

**Seismic Certification:**

- Seismic Source International (Standard)
- HCAI (formerly OSHPD, California)
- Special Features: \_\_\_\_\_

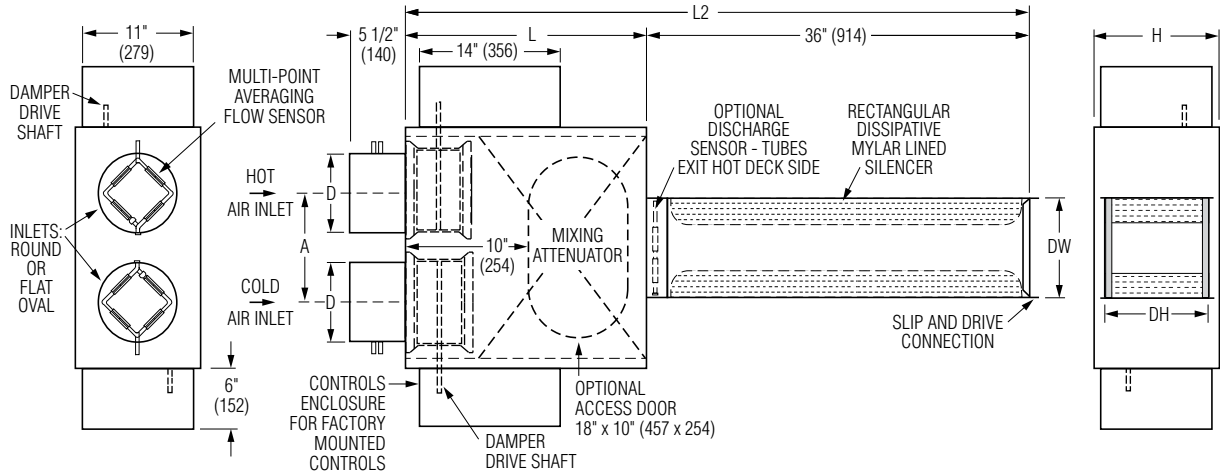
Page 1 of 1.

Dimensions are in inches (mm).

<b>SCHEDULE TYPE:</b>				
<b>PROJECT:</b>				
<b>ENGINEER:</b>	<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
<b>CONTRACTOR:</b>	2 - 6 - 23	3200	3 - 9 - 18	D3230



**DUAL DUCT TERMINAL UNIT WITH COMPACT MIXING ATTENUATOR AND DISSIPATIVE SILENCER**  
**HOSPITAL GRADE • SUPER QUIET**  
**DIGITAL CONTROL**  
**MODEL: D3230HQ**



**Dimensional Data**

Unit Size	Total Airflow Range, CFM (l/s) Digital Controls	W	H	L	L2	A	Inlet Dia. D	Outlet DW x DH
4	0 – 225 (0 – 106)	24 (610)	10 (254)	24 (610)	60 (1524)	11 (279)	3 7/8 (98)	
5	0 – 400 (0 – 189)	24 (610)	10 (254)	24 (610)	60 (1524)	11 (279)	4 7/8 (124)	12 x 8 (305 x 203)
6	0 – 550 (0 – 260)	24 (610)	10 (254)	24 (610)	60 (1524)	11 (279)	5 7/8 (149)	
7	0 – 800 (0 – 378)	24 (610)	12 1/2 (318)	24 (610)	60 (1524)	11 (279)	6 7/8 (175)	14 x 10 (356 x 254)
8	0 – 1100 (0 – 519)	24 (610)	12 1/2 (318)	24 (610)	60 (1524)	11 (279)	7 7/8 (200)	
9	0 – 1400 (0 – 661)	34 (864)	14 (356)	34 (864)	70 (1778)	16 1/8 (410)	8 7/8 (225)	18 x 12 (457 x 305)
10	0 – 1840 (0 – 868)	34 (864)	14 (356)	34 (864)	70 (1778)	16 1/8 (410)	9 7/8 (251)	
12	0 – 2500 (0 – 1180)	34 (864)	16 (406)	34 (864)	70 (1778)	16 1/8 (410)	11 7/8 (302)	22 x 14 (559 x 356)
14	0 – 3370 (0 – 1590)	42 (1067)	18 (457)	38 (965)	71 (1880)	20 1/8 (511)	13 7/8 (353)	26 x 16 (660 x 406)
16	0 – 4525 (0 – 2135)	42 (1067)	18 (457)	38 (965)	71 (1880)	20 1/8 (511)	15 7/8 (403)	30 x 16 (762 x 406)

**Standard Features:**

- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- Low leakage opposed blade dampers with blade and jamb seals (single blade on size 4, 5, 6). 90° rotation, CW to close. Damper leakage is less than 1% of the terminal rated airflow at 6" w.g. (1.5 kPa).
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.
- Integral mixing attenuator with baffles. 1:12 minimum mixing efficiency.
- Rectangular discharge.
- Full NEMA1 type 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.
- Two multi-point averaging Diamond Flow Sensors. Aluminum construction. Supplied with balancing tees. Location must be specified based upon control sequence. Choice of location:
  - Cold and hot duct inlet.
  - Hot duct inlet and downstream total discharge.
  - Cold duct inlet and downstream total discharge.
- Choice of right or left-hand cold duct location. Unit is flippable. Hand of unit is determined by location of cold duct looking in direction of airflow. Right-hand unit illustrated.
- Unequal inlet sizes are available. Casing is governed by the larger inlet size.
- 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.
- Integral Steri-Liner insulation on top and bottom optimize sound reduction and eliminate the need for external field applied duct wrap.
- OPTIONS:**
  - Digital Controls:**
    - Factory mounted (supplied by others)
    - Field mounted (supplied by others)
    - Nailor EZvav. See separate submittal.

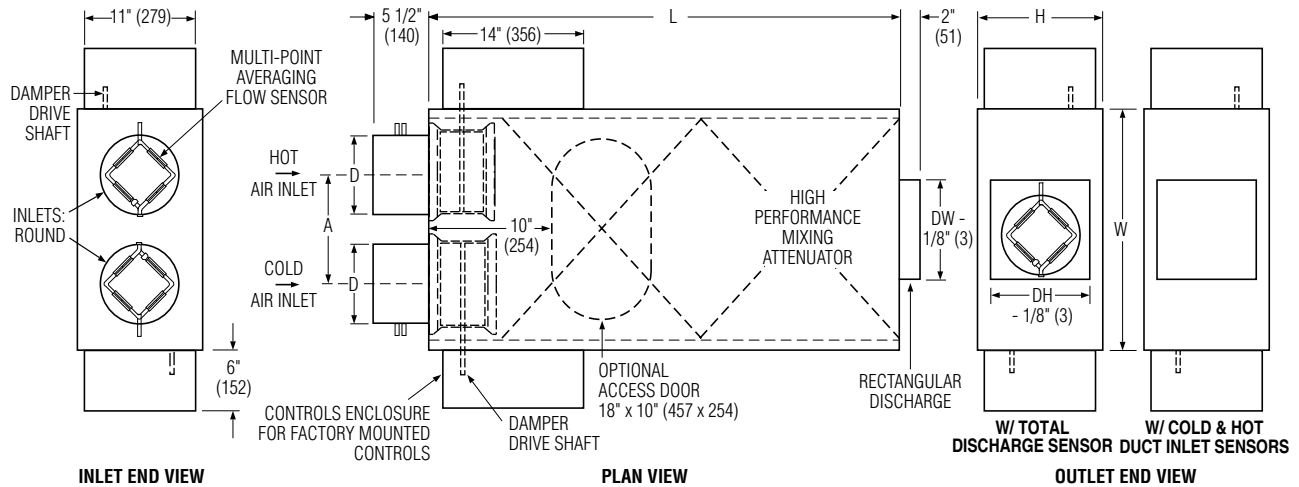
- Liner:**
  - Steri-liner
  - Fiber-free
  - Perforated metal
  - Solid metal
  - 1" (25) fiberglass
- Other:**
  - Cross flow sensors.
  - Removable flow sensors.
  - Three flow sensors (hot, cold, and discharge) for DDC controls contractor flexibility.
  - 24 VAC control transformer.
  - 20 ga. (1.00) construction.
  - Toggle disconnect switch.
  - Bottom access door (Model 0800-M1).
  - Controls enclosure for field mounted controls.
  - Hanger brackets.
  - Dust tight enclosure seal.
  - Factory wrapped inlets and outlet.
  - Hanger brackets.
  - Special Features:

Dimensions are in inches (mm).

<b>SCHEDULE TYPE:</b>				
<b>PROJECT:</b>				
<b>ENGINEER:</b>	<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
<b>CONTRACTOR:</b>	2 - 6 - 23	3200	1 - 26 - 22	D3230HQ



**DUAL DUCT TERMINAL UNIT WITH  
HIGH EFFICIENCY MIXING ATTENUATOR  
DIGITAL CONTROL  
MODEL: D3240 "BLENDMASTER™"**



**Dimensional Data**

Unit Size	Airflow Range, cfm (l/s) Digital/Analog Controls	W	H	L	A	Inlet Dia. D	Outlet DW x DH
4	0 – 225/180 (0 – 106/85)	24 (610)	10 (254)	47 (1194)	11 (279)	3 7/8 (98)	
5	0 – 400/325 (0 – 189/153)	24 (610)	10 (254)	47 (1194)	11 (279)	4 7/8 (124)	8 x 8 (203 x 203)
6	0 – 550/450 (0 – 260/212)	24 (610)	10 (254)	47 (1194)	11 (279)	5 7/8 (149)	
7	0 – 800/650 (0 – 378/307)	24 (610)	12 1/2 (318)	47 (1194)	11 (279)	6 7/8 (175)	10 x 10 (254 x 254)
8	0 – 1100/900 (0 – 519/425)	24 (610)	12 1/2 (318)	47 (1194)	11 (279)	7 7/8 (200)	
9	0 – 1400/1150 (0 – 661/543)	34 (864)	14 (356)	60 (1524)	16 1/8 (410)	8 7/8 (225)	14 x 12 (356 x 305)
10	0 – 1840/1500 (0 – 868/708)	34 (864)	14 (356)	60 (1524)	16 1/8 (410)	9 7/8 (251)	
12	0 – 2500/2050 (0 – 1180/967)	34 (864)	16 (406)	60 (1524)	16 1/8 (410)	11 7/8 (302)	18 x 14 (457 x 356)
14	0 – 3370/2750 (0 – 1590/1298)	42 (1067)	18 (457)	72 (1829)	20 1/8 (511)	13 7/8 (353)	22 x 16 (559 x 406)



**Intertek**

**Standard Features:**

- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- Low leakage opposed blade dampers with blade and jamb seals (single blade on size 4, 5, 6). 90° rotation, CW to close. Damper leakage is less than 1% of the terminal rated airflow at 6" w.g. (1.5 kPa).
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.
- Integral mixing attenuator with baffles. 1:30 minimum mixing efficiency.
- Rectangular discharge.
- Full NEMA1 type 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.
- Two multi-point averaging Diamond Flow Sensors. Aluminum construction. Supplied with balancing tees. Location must be specified based upon control sequence. Choice of location:
  - Cold and hot duct inlet.
  - Hot duct inlet and downstream total discharge.
  - Cold duct inlet and downstream total discharge.
- Choice of right or left-hand cold duct location. Unit is flippable. Hand of unit is determined by location of cold duct looking in direction of airflow. Right-hand unit illustrated.
- Unequal inlet sizes are

available. Casing is governed by the larger inlet size.

**OPTIONS:**

**Digital Controls:**

- Factory mounted (supplied by others)
- Field mounted (supplied by others)
- Nailor EZvav. See separate submittal.

**Liner:**

- Steri-liner
- Fiber-free
- Perforated metal
- Solid metal
- 1" (25) fiberglass

**Other:**

- Cross flow sensors.
- Removable flow sensors.
- 24 VAC control transformer.

- 20 ga. (1.00) construction.
  - Toggle disconnect switch.
  - Bottom access door (Model 0800-M1).
  - Controls enclosure for field mounted controls.
  - Hanger brackets.
  - Dust tight enclosure seal.
  - Factory wrapped inlets and outlet.
  - Hanger brackets.
- Seismic Certification:**
- Seismic Source International (Standard)
  - HCAI (formerly OSHPD, California)
  - Special Features: \_\_\_\_\_



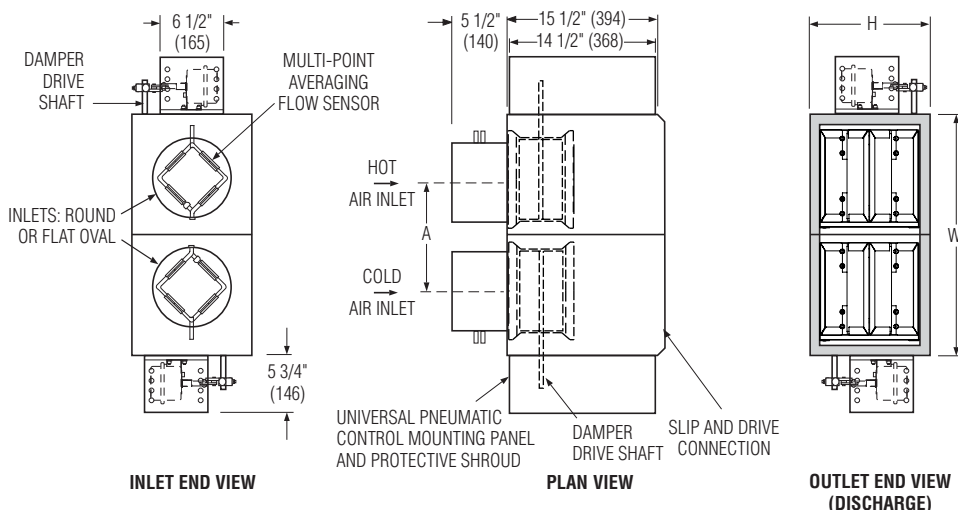
<b>SCHEDULE TYPE:</b>
<b>PROJECT:</b>
<b>ENGINEER:</b>
<b>CONTRACTOR:</b>

Page 1 of 1. Dimensions are in inches (mm)

<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
2 - 6 - 23	3200	3 - 9 - 18	D3240



**DUAL DUCT TERMINAL UNIT  
WITHOUT MIXING ATTENUATOR  
PNEUMATIC CONTROL • PRESSURE INDEPENDENT  
MODEL: P3210**



**Dimensional Data**

Unit Size	Airflow Range cfm (l/s)	W	H	A	Inlet Size
4	0 – 180 (0 – 85)	21 (533)	10 (254)	11 (279)	3 7/8 (98) Round
5	0 – 325 (0 – 153)	21 (533)	10 (254)	11 (279)	4 7/8 (124) Round
6	0 – 450 (0 – 212)	21 (533)	10 (254)	11 (279)	5 7/8 (149) Round
7	0 – 650 (0 – 307)	25 (635)	12 1/2 (318)	13 (330)	6 7/8 (175) Round
8	0 – 900 (0 – 425)	25 (635)	12 1/2 (318)	13 (330)	7 7/8 (200) Round
9	0 – 1150 (0 – 543)	29 (737)	12 1/2 (318)	15 (381)	8 7/8 (225) Round
10	0 – 1500 (0 – 708)	29 (737)	12 1/2 (318)	15 (381)	9 7/8 (251) Round
12	0 – 2050 (0 – 967)	37 (940)	12 1/2 (318)	19 (483)	12 15/16 x 9 13/16 (329 x 249) Oval
14	0 – 2550 (0 – 1203)	49 (1245)	12 1/2 (318)	25 (635)	16 1/16 x 9 13/16 (408 x 249) Oval
16	0 – 3040 (0 – 1435)	57 (1448)	12 1/2 (318)	29 (737)	19 3/16 x 9 13/16 (487 x 249) Oval

**Standard Features:**

- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- 16 ga. (1.63) corrosion-resistant steel inclined opposed blade dampers with extruded PVC seals (single blade on size 4, 5, 6). 45° rotation, CW to close. Tight shut-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 Sensors in each inlet. Aluminum construction. Supplied with balancing tees.

- Rectangular discharge with slip and drive cleat duct connection.
- Universal control mounting panel with double wall stand-off construction.
- 3/4" (19), dual density insulation, exposed edges coated to prevent air erosion. Meets the requirements of NFPA 90A and UL 181.
- Choice of right or left-hand cold deck location. Unit is flippable. Hand of unit is determined by location of cold deck looking in direction of airflow. Right-hand unit illustrated.

**Controls:**

- By Nailor.
- By others.

**Options and Accessories:**

- Steri-liner.
- Fiber-free liner.
- Solid metal liner.
- 1" (25) liner.
- Perforated metal liner.
- Hanger brackets.
- Factory wrapped inlets and outlet.
- Protective controls shroud cover.
- Removable flow sensors.
- Seismic Certification:
  - SSI (Standard)
  - OSHPD
  - Special Features: \_\_\_\_\_

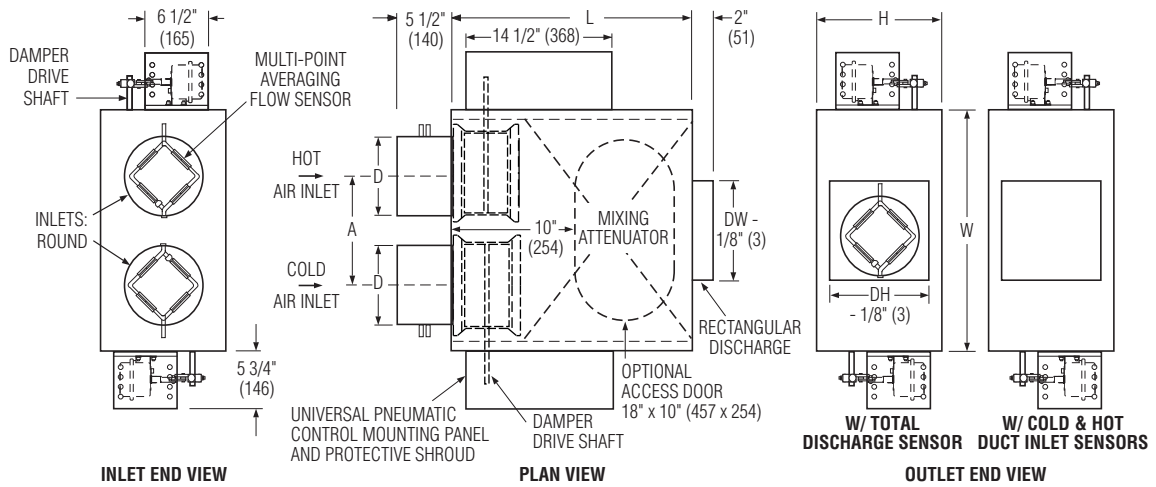
<b>SCHEDULE TYPE:</b>	
<b>PROJECT:</b>	
<b>ENGINEER:</b>	
<b>CONTRACTOR:</b>	

Page 1 of 1.  
Dimensions are in inches (mm).

<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
3 - 9 - 18	3200	3 - 8 - 17	P3210



**DUAL DUCT TERMINAL UNIT  
WITH COMPACT MIXING ATTENUATOR  
PNEUMATIC CONTROL • PRESSURE INDEPENDENT  
MODEL: P3230**



**Dimensional Data**

Unit Size	Airflow Range cfm (l/s)	W	H	L	A	Inlet Size D	Outlet DW x DH
4	0 – 180 (0 – 85)	24 (610)	10 (254)	24 (610)	11 (279)	3 7/8 (98)	
5	0 – 325 (0 – 153)	24 (610)	10 (254)	24 (610)	11 (279)	4 7/8 (124)	8 x 8 (203 x 203)
6	0 – 450 (0 – 212)	24 (610)	10 (254)	24 (610)	11 (279)	5 7/8 (149)	
7	0 – 650 (0 – 307)	24 (610)	12 1/2 (318)	24 (610)	11 (279)	6 7/8 (175)	10 x 10 (254 x 254)
8	0 – 900 (0 – 425)	24 (610)	12 1/2 (318)	24 (610)	11 (279)	7 7/8 (200)	
9	0 – 1150 (0 – 543)	34 (864)	14 (356)	34 (864)	16 1/8 (410)	8 7/8 (225)	14 x 12 (356 x 305)
10	0 – 1500 (0 – 708)	34 (864)	14 (356)	34 (864)	16 1/8 (410)	9 7/8 (251)	
12	0 – 2050 (0 – 967)	34 (864)	16 (406)	34 (864)	16 1/8 (410)	11 7/8 (302)	18 x 14 (457 x 356)
14	0 – 2750 (0 – 1298)	42 (1067)	18 (457)	38 (965)	20 1/8 (511)	13 7/8 (353)	22 x 16 (559 x 406)
16	0 – 3700 (0 – 1746)	42 (1067)	18 (457)	38 (965)	20 1/8 (511)	15 7/8 (403)	24 x 18 (610 x 457)

**Standard Features:**

- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- Low leakage opposed blade dampers with blade and jamb seals (single blade on size 4, 5, 6). 90° rotation, CW to close. Damper leakage is less than 1% of the terminal rated airflow at 6" w.g. (1.5 kPa).
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.
- Integral mixing attenuator with baffles. 1:12 minimum mixing efficiency.
- Rectangular discharge.
- Universal control mounting panel with double wall stand-off construction.
- 3/4" (19), dual density insulation, exposed edges coated to prevent air erosion. Meets the requirements of NFPA 90A and UL 181.

- Two multi-point averaging Diamond Flow Sensors. Aluminum construction. Supplied with balancing tees. Location must be specified based upon control sequence. Choice of location:
  - Cold and hot duct inlet.
  - Hot duct inlet and downstream total discharge.
  - Cold duct inlet and downstream total discharge (Nailor standard).
- Choice of right or left-hand cold duct location. Unit is flippable. Hand of unit is determined by location of cold duct looking in direction of airflow. Right-hand unit illustrated.
- Unequal inlet sizes are available. Casing is governed by the larger inlet size.

**Controls:**

- By Nailor.
- By others.

**Options and Accessories:**

- Steri-liner.
  - Fiber-free liner.
  - Solid metal liner.
  - 1" (25) liner.
  - Perforated metal liner.
  - Bottom access door (Model 0800-M1).
  - Hanger brackets.
  - Factory wrapped inlets and outlet.
  - Protective controls shroud cover.
  - Removable flow sensors.
- Seismic Certification:
- SSI (Standard)
  - OSHPD
  - Special Features: \_\_\_\_\_



**Intertek**

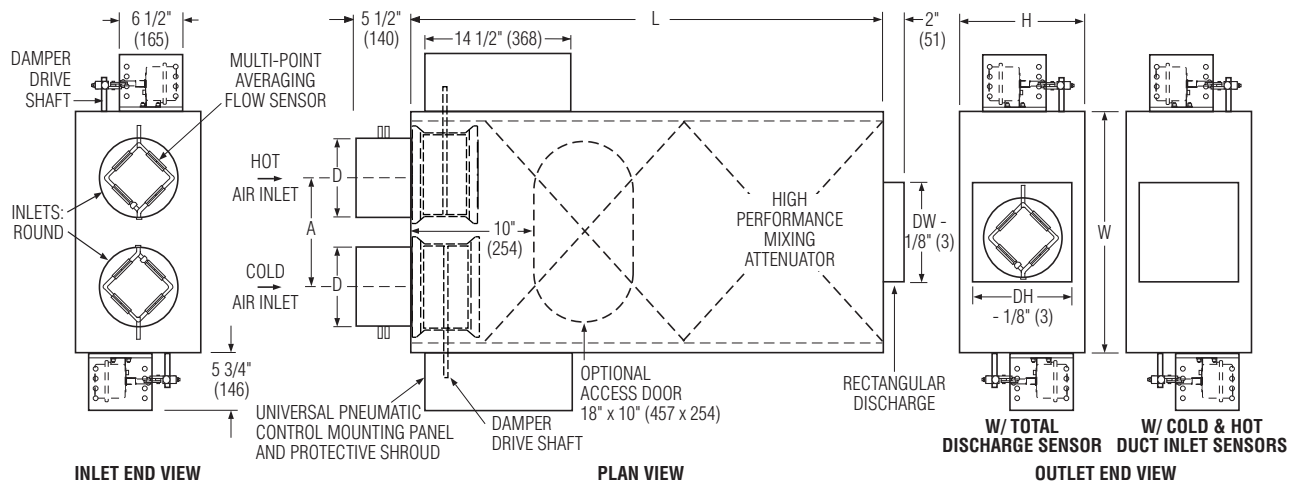


<b>SCHEDULE TYPE:</b>				
<b>PROJECT:</b>				
<b>ENGINEER:</b>	<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
<b>CONTRACTOR:</b>	3 - 9 - 18	3200	3 - 8 - 17	P3230

Page 1 of 1.  
Dimensions are in inches (mm).



**DUAL DUCT TERMINAL UNIT  
WITH HIGH EFFICIENCY MIXING ATTENUATOR  
PNEUMATIC CONTROL • PRESSURE INDEPENDENT  
MODEL: P3240 "BLENDMASTER™"**



**Dimensional Data**

Unit Size	Airflow Range cfm (l/s)	W	H	L	A	Inlet Dia. D	Outlet DW x DH
4	0 – 180 (0 – 85)	24 (610)	10 (254)	47 (1194)	11 (279)	3 7/8 (98)	
5	0 – 325 (0 – 153)	24 (610)	10 (254)	47 (1194)	11 (279)	4 7/8 (124)	8 x 8 (203 x 203)
6	0 – 450 (0 – 212)	24 (610)	10 (254)	47 (1194)	11 (279)	5 7/8 (149)	
7	0 – 650 (0 – 307)	24 (610)	12 1/2 (318)	47 (1194)	11 (279)	6 7/8 (175)	10 x 10 (254 x 254)
8	0 – 900 (0 – 425)	24 (610)	12 1/2 (318)	47 (1194)	11 (279)	7 7/8 (200)	
9	0 – 1150 (0 – 543)	34 (864)	14 (356)	60 (1524)	16 1/8 (410)	8 7/8 (225)	14 x 12 (356 x 305)
10	0 – 1500 (0 – 708)	34 (864)	14 (356)	60 (1524)	16 1/8 (410)	9 7/8 (251)	
12	0 – 2050 (0 – 967)	34 (864)	16 (406)	60 (1524)	16 1/8 (410)	11 7/8 (302)	18 x 14 (457 x 356)
14	0 – 2750 (0 – 1298)	42 (1067)	18 (457)	72 (1829)	20 1/8 (511)	13 7/8 (353)	22 x 16 (559 x 406)

**Standard Features:**

- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- Low leakage opposed blade dampers with blade and jamb seals (single blade on size 4, 5, 6). 90° rotation, CW to close. Damper leakage is less than 1% of the terminal rated airflow at 6" w.g. (1.5 kPa).
- 1/2" (13) dia. plated steel drive shaft. An indicator mark on the end of the shaft shows damper position.
- Integral mixing attenuator with baffles. 1:30 minimum mixing efficiency.
- Rectangular discharge.
- Universal control mounting panel with double wall stand-off construction.
- 3/4" (19), dual density insulation, exposed edges coated to prevent air erosion. Meets the requirements of NFPA 90A and UL 181.

- Two multi-point averaging Diamond Flow Sensors. Aluminum construction. Supplied with balancing tees. Location must be specified based upon control sequence. Choice of location:
  - Cold and hot duct inlet.
  - Hot duct inlet and downstream total discharge.
  - Cold duct inlet and downstream total discharge (Nailor standard).
- Choice of right or left-hand cold duct location. Unit is flippable. Hand of unit is determined by location of cold duct looking in direction of airflow. Right-hand unit illustrated.
- Unequal inlet sizes are available. Casing is governed by the larger inlet size.

**Controls:**

- By Nailor.
- By others.

**Options and Accessories:**

- Steri-liner.
  - Fiber-free liner.
  - Solid metal liner.
  - 1" (25) liner.
  - Perforated metal liner.
  - Bottom access door (Model 0800-M1).
  - Hanger brackets.
  - Factory wrapped inlets and outlet.
  - Protective controls shroud cover.
  - Removable flow sensors.
- Seismic Certification:
- SSI (Standard)
  - OSHPD
  - Special Features: \_\_\_\_\_



<b>SCHEDULE TYPE:</b>	
<b>PROJECT:</b>	
<b>ENGINEER:</b>	
<b>CONTRACTOR:</b>	

Page 1 of 1.  
Dimensions are in inches (mm).

DATE	B SERIES	SUPERSEDES	DRAWING NO.
3 - 9 - 18	3200	3 - 8 - 17	P3240



**DUAL DUCT TERMINAL UNITS  
LINER OPTIONS  
TYPE: DUAL DENSITY INSULATION**

**DESCRIPTION**

Nailor tests and catalogs its sound power levels for dual duct terminal units using Steri-liner insulation as this is the most popular liner on dual duct projects. Correction factors for standard 3/4" (19) dual density insulation are shown below.

Tuf-Skin dual-density fiber glass blankets are 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 withstand damage from mechanical abrasion during assembly and from air erosion in service.

**INSULATION CHARACTERISTICS**

- Material: Dual density fiberglass, surface treated to prevent erosion.
- Thickness: 3/4" (19).
- Density: 4.0 lb/cu.ft. (64 kg/m<sup>3</sup>) skin, 1.5 lb/cu.ft. (24 kg/m<sup>3</sup>) core.
- Thermal Conductance: 0.36 BTU / hr-ft<sup>2</sup>-°F @ 75°F (2.04 W / m<sup>2</sup>-°C @ 24°C).
- Thermal Resistance: 2.8 hr-ft<sup>2</sup>-°F / BTU (0.74 m<sup>2</sup>-°C / W).  
(Effective R-Value)
- Flame Spread: 25
- Smoke Density: 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.

**STANDARD AND CODE COMPLIANCE**

- ASTM E84 and UL 723 and CAN/ULC S102-M88 Flame/Smoke (25/50)
- NFPA 90A and 90B

**ACOUSTICAL PERFORMANCE**

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

**Model 3230 • All sizes.**

Octave Band	2	3	4	5	6	7	NC Impact (Average)
Center Frequency (Hz)	125	250	500	1000	2000	4000	
Discharge Sound	-4	-4	-6	-10	-12	-13	-5
Radiated Sound	+1	+2	+2	+3	+3	+3	+1

**Model 3240 "Blendmaster" • All sizes.**

Octave Band	2	3	4	5	6	7	NC Impact (Average)
Center Frequency (Hz)	125	250	500	1000	2000	4000	
Discharge Sound	-4	-4	-6	-10	-12	-13	-5
Radiated Sound	+1	+2	+2	+3	+3	+3	+1

<b>SCHEDULE TYPE</b>				
<b>PROJECT</b>				
<b>ENGINEER</b>	<b>DATE</b>	<b>B SERIES</b>	<b>SUPERSEDES</b>	<b>DRAWING NO.</b>
<b>CONTRACTOR</b>	8 - 19 - 16	VAV.ACC.	8 - 15 - 11	VAV - DDDD





**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/m³) skin, 1.5 lb/cu.ft. (24 kg/m³) core  
 Thermal Conductance: 1/2" (13) - 0.52 BTU / hr-ft²-°F @ 75°F (2.95 W / m²-°C @ 24°C),  
 3/4" (19) - 0.36 BTU / hr-ft²-°F @ 75°F (2.04 W / m²-°C @ 24°C),  
 1" (25) - 0.26 BTU / hr-ft²-°F @ 75°F (1.47 W / m²-°C @ 24°C)  
 Thermal Resistance: 1/2" (13) - 1.9 hr-ft²-°F / BTU (0.34 m²-°C / W),  
 (Effective R-Value) 3/4" (19) - 2.8 hr-ft²-°F / BTU (0.49 m²-°C / W),  
 1" (25) - 3.8 hr-ft²-°F / BTU (0.68 m²-°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

Tuf-Skin® is a registered trademark of Johns Manville.

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



**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<sup>3</sup>).

Thermal Conductivity: 0.27 BTU-in / hr-ft<sup>2</sup>-°F @ 75°F (0.039 W / m-°K @ 24°C).  
(K-Factor)

Thermal Resistance: 1/2" (13): 1.9 hr-ft<sup>2</sup>-°F / BTU (0.33 m<sup>2</sup>-°C / W).  
(R-Value) 3/4" (19): 2.8 hr-ft<sup>2</sup>-°F / BTU (0.49 m<sup>2</sup>-°C / W).  
1" (25): 3.7 hr-ft<sup>2</sup>-°F / BTU (0.65 m<sup>2</sup>-°C / 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

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



**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<sup>3</sup>).

Thermal Conductivity: 0.23 BTU-in / hr-ft<sup>2</sup>-°F @ 75°F (0.033 W / m-°K @ 24°C).  
(K-Factor)

Thermal Resistance: 1/2" (13) - 2.2 hr-ft<sup>2</sup>-°F / BTU (0.48 m<sup>2</sup>-°C / W).  
(R-Value) 13/16" (21) - 3.5 hr-ft<sup>2</sup>-°F / BTU (0.76 m<sup>2</sup>-°C / W).  
1" (25) - 4.3 hr-ft<sup>2</sup>-°F / BTU (0.96 m<sup>2</sup>-°C / 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 (Average)
Center Frequency (Hz)	125	250	500	1000	2000	4000	
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 (Average)
Center Frequency (Hz)	125	250	500	1000	2000	4000	
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 (Average)
Center Frequency (Hz)	125	250	500	1000	2000	4000	
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 (Average)
Center Frequency (Hz)	125	250	500	1000	2000	4000	
Discharge Sound	0	0	0	0	0	0	0
Radiated Sound	-5	-4	-4	0	+3	+5	-4

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



**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<sup>3</sup>) skin.  
 1.5 lb/cu. ft. (24 kg/m<sup>3</sup>) core.  
 Thermal Conductance: 0.36 BTU / hr-ft<sup>2</sup>-°F @ 75°F (2.04 W / m<sup>2</sup>-°C @ 24°C).  
 (C) For 1/2" (13) material: 0.52 BTU / hr-ft<sup>2</sup>-°F @ 75°F (2.95 W / m<sup>2</sup>-°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.

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

## Performance Data Explanation

### Sound Power Levels vs. NC Levels

The **Nailor Models: 3210, 3230 and 3240** dual duct terminal unit performance data is presented in two forms.

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

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

### Explanation of NC Levels

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

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

### Radiated Sound

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

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

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

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

The ceiling/space effect assumes the following conditions:

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

### Discharge Sound

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

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

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

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

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

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

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

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

For a complete explanation of the attenuation factors and the procedures for calculating room NC levels, please refer to the acoustical engineering guidelines in the Nailor Terminal Units Catalog and AHRI Standard 885.

## Recommended Airflow Ranges For Model 3210 Dual Duct Pressure Independent Terminal Units

The recommended airflow ranges below are for dual 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. 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. (250 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"



Model 3210

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

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

### 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	Round	0 – 225	150	30	180	25	180	25	180	200	225	
5		0 – 400	250	55	325	45	325	45	325	360	400	
6		0 – 550	400	80	450	65	450	65	450	500	550	
7	Round	0 – 800	550	115	650	95	650	95	650	725	800	
8		0 – 1100	700	155	900	125	900	125	900	1000	1100	
9		0 – 1400	900	200	1150	165	1150	165	1150	1285	1400	
10		0 – 1840	1100	260	1500	215	1500	215	1500	1675	1840	
12	Flat Oval	0 – 2500	1600	355	2050	290	2050	290	2050	2300	2500	
14		0 – 3125	2100	440	2550	360	2550	360	2550	2850	3125	
16		0 – 3725	2800	525	3040	430	3040	430	3040	3400	3725	

### 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	Round	0 – 106	71	14	85	12	85	12	85	94	106
5		0 – 189	118	26	153	21	153	21	153	170	189
6		0 – 260	189	38	212	31	212	31	212	236	260
7	Round	0 – 378	260	54	307	45	307	45	307	342	378
8		0 – 519	330	73	425	59	425	59	425	472	519
9		0 – 661	425	94	543	78	543	78	543	606	661
10		0 – 868	519	123	708	101	708	101	708	790	868
12	Flat Oval	0 – 1180	755	168	967	137	967	137	967	1085	1180
14		0 – 1475	991	208	1203	170	1203	170	1203	1345	1475
16		0 – 1758	1321	248	1435	203	1435	203	1435	1604	1758

B DUAL DUCT TERMINAL UNITS

Performance Data • AHRI Certification and Performance Notes

Model 3210 • Without Attenuator • Non-Mixing Applications • AHRI Certification Rating Points  
Fiberglass Liner

Inlet Size	Airflow		Min. Inlet ΔPs "w.g. Pa		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	2	3	4	5	6	7	2	3	4	5	6	7		
4	150	71	0.24	61	69	68	62	58	51	48	49	50	47	39	31	30
5	250	118	0.08	20	71	72	63	61	51	48	55	48	45	35	35	30
6	400	189	0.05	12	74	75	66	64	53	50	59	52	47	40	36	33
7	550	260	0.08	21	78	73	68	65	59	55	61	54	49	43	36	33
8	700	330	0.01	3	79	73	68	65	58	54	61	53	50	40	39	35
9	900	425	0.01	2	78	73	68	65	59	56	60	54	49	44	39	36
10	1100	519	0.01	2	77	72	68	66	59	56	60	54	50	45	39	36
12	1600	755	0.01	2	79	74	71	70	63	59	61	58	53	49	42	39
14	2100	991	0.01	2	80	74	73	72	65	60	63	61	55	48	44	43
16	2800	1321	0.05	12	82	75	72	69	63	59	65	63	57	50	44	39



Ratings are certified in accordance with AHRI Standards.

B  
DUAL DUCT TERMINAL UNITS

Performance Notes for Sound Power Levels:

1. Discharge sound power is the noise emitted from the unit discharge into the downstream duct. Discharge Sound Power Levels (SWL) now include duct end reflection energy as part of the standard rating. Including the duct end correction provides sound power levels that would normally be transmitted into an acoustically, non-reflective 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<sup>-12</sup> 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 and AHRI Standard 880.





## Performance Data • NC Level Application Guide

### Model 3210 • Without Attenuator • Non-Mixing Applications

#### Fiberglass Liner

Inlet Size	Airflow cfm l/s		Min. inlet ΔPs "w.g. Pa		NC Levels @ Inlet Pressure (ΔPs) shown											
					DISCHARGE					RADIATED						
					Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)
4	225	106	0.53	133	21	*	30	33	34	36	-	*	-	23	25	29
	200	94	0.43	106	20	25	29	33	34	35	-	-	-	21	24	28
	150	71	0.24	61	-	21	26	29	30	30	-	-	-	21	22	22
	100	47	0.11	28	-	-	21	21	21	21	-	-	-	-	20	23
	75	35	0.06	16	-	-	-	-	-	-	-	-	-	-	-	20
5	400	189	0.19	48	-	25	30	33	35	37	-	-	-	23	26	31
	300	142	0.11	28	-	25	31	33	35	37	-	-	-	21	23	28
	250	118	0.08	20	-	25	30	34	35	36	-	-	-	19	22	25
	200	94	0.05	13	-	23	26	30	31	33	-	-	-	-	20	22
	125	59	0.02	5	-	-	20	21	21	21	-	-	-	-	-	-
6	550	260	0.08	19	-	26	33	36	38	41	-	-	20	25	28	31
	450	212	0.06	14	-	28	33	36	39	41	-	-	19	22	24	29
	400	189	0.05	12	-	28	33	36	39	41	-	-	18	21	25	29
	200	94	0.02	4	-	23	28	30	31	30	-	-	-	-	-	20
	100	47	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
7	800	378	0.17	44	25	29	33	36	39	44	25	-	22	28	33	37
	650	307	0.12	29	23	25	31	35	38	43	20	-	21	24	29	34
	550	260	0.08	21	-	23	30	34	37	39	-	-	19	24	28	32
	335	158	0.03	8	-	-	25	28	29	30	-	-	-	20	22	24
	225	106	0.01	2	-	-	21	23	23	23	-	-	-	-	-	-
8	1100	519	0.03	6	24	29	33	36	38	44	-	20	25	29	31	35
	900	425	0.02	5	20	26	30	34	37	41	-	-	23	26	29	33
	700	330	0.01	2	-	25	30	35	38	41	-	-	21	24	26	31
	600	283	0.01	2	-	21	29	34	36	39	-	-	-	23	25	31
	400	189	0.01	2	-	-	25	29	31	34	-	-	-	20	21	25
9	1400	661	0.01	2	21	29	33	35	38	41	20	20	23	28	34	38
	1250	590	0.01	2	-	28	31	35	37	41	-	20	22	26	33	36
	900	425	0.01	2	-	23	28	33	36	40	-	-	-	23	28	31
	675	319	0.01	2	-	-	28	33	35	37	-	-	-	20	25	26
	450	212	0.01	2	-	-	24	28	29	30	-	-	-	-	20	22
10	1850	873	0.01	2	23	35	37	39	40	43	22	22	26	31	33	37
	1650	779	0.01	2	20	33	35	37	39	43	-	20	25	30	31	36
	1100	519	0.01	2	-	25	28	31	35	38	-	-	21	24	25	31
	825	389	0.01	2	-	-	25	29	33	36	-	-	-	21	23	28
	550	260	0.01	2	-	-	23	26	29	31	-	-	-	-	-	22
12	2500	1180	0.01	2	22	38	39	40	41	44	29	28	31	34	35	40
	2000	944	0.01	2	-	34	34	37	38	41	22	25	29	31	33	37
	1600	755	0.01	2	-	29	31	34	36	39	-	20	25	28	30	35
	1200	566	0.01	2	-	21	25	29	33	36	-	-	20	24	28	31
	800	378	0.01	2	-	-	20	24	26	29	-	-	-	20	21	24
14	3125	1475	0.01	2	23	36	39	41	43	45	29	28	31	36	39	43
	2700	1274	0.01	2	20	33	36	38	40	43	24	25	30	34	37	40
	2100	991	0.01	2	-	29	31	34	36	39	-	21	26	31	34	37
	1550	731	0.01	2	-	20	26	30	34	37	-	-	24	28	30	34
	1050	495	0.01	2	-	-	24	26	29	31	-	-	-	24	26	28
16	3725	1758	0.08	20	26	35	40	41	43	45	30	30	33	37	40	44
	3500	1652	0.07	18	24	34	38	40	41	44	28	30	33	36	39	43
	2800	1321	0.05	12	20	31	35	36	38	40	23	24	29	34	36	40
	2100	991	0.05	12	-	23	28	30	33	36	-	-	26	30	34	36
	1400	661	0.01	2	-	-	21	25	28	30	-	-	21	26	29	31

#### Performance Notes:

1. NC Levels are calculated based on procedures as outlined on page B25.
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.



## Recommended Airflow Ranges For Model 3230 Dual Duct Pressure Independent Terminal Units

The recommended airflow ranges below are for dual 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 hunting and failure to meet minimum ventilation requirements. 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. (250 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).

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.		
4	Round	0 – 225	150	30	180	25	180	25	180	200	225
5		0 – 400	250	55	325	45	325	45	325	360	400
6		0 – 550	400	80	450	65	450	65	450	500	550
7		0 – 800	550	115	650	95	650	95	650	725	800
8		0 – 1100	700	155	900	125	900	125	900	1000	1100
9		0 – 1400	900	200	1150	165	1150	165	1150	1285	1400
10		0 – 1840	1100	260	1500	215	1500	215	1500	1675	1840
12		0 – 2500	1600	355	2050	290	2050	290	2050	2290	2500
14		0 – 3370	2100	475	2740	390	2740	390	2740	3075	3370
16		0 – 4510	2800	640	3680	520	3680	520	3680	4120	4510

### 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.		
4	Round	0 – 106	71	14	85	12	85	12	85	94	106
5		0 – 189	118	26	153	21	153	21	153	170	189
6		0 – 260	189	38	212	31	212	31	212	236	260
7		0 – 378	260	54	307	45	307	45	307	342	378
8		0 – 519	330	73	425	59	425	59	425	472	519
9		0 – 661	425	94	543	78	543	78	543	606	661
10		0 – 868	519	123	708	101	708	101	708	790	868
12		0 – 1180	755	168	967	137	967	137	967	1081	1080
14		0 – 1590	991	224	1298	184	1298	184	1298	1451	1590
16		0 – 2128	1321	302	1746	245	1746	245	1746	1944	2128

## Performance Data • AHRI Certification and Performance Notes

### Model 3230 • With Mixing Attenuator • AHRI Certification Rating Points

#### Steri-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	0.29	71	67	70	58	50	46	44	51	47	38	29	28	30		
5	250	118	0.22	55	71	71	58	51	47	45	54	50	43	34	34	34		
6	400	189	0.36	89	77	76	63	54	49	46	62	58	51	42	40	36		
7	550	260	0.41	101	82	80	71	60	57	56	67	64	54	42	39	35		
8	700	330	0.48	119	85	83	71	59	57	55	70	67	57	45	42	38		
9	900	425	0.25	61	87	84	69	57	56	55	69	66	54	47	42	37		
10	1100	519	0.28	71	88	83	70	58	56	55	70	67	55	48	43	38		
12	1600	755	0.46	114	89	84	70	59	58	56	71	66	54	49	46	42		
14	2100	991	0.39	97	85	78	67	58	57	55	66	61	54	43	41	39		
16	2750	1298	0.63	155	87	80	70	62	59	57	68	62	51	46	43	40		



Ratings are certified in accordance with AHRI Standards.

#### Performance Notes for Sound Power Levels:

- Discharge sound power is the noise emitted from the unit discharge into the downstream duct. Discharge Sound Power Levels (SWL) now include duct end reflection energy as part of the standard rating. Including the duct end correction provides sound power levels that would normally be transmitted into an acoustically, non-reflective duct. The effect of including the energy correction to the discharge SWL, is higher sound power levels when compared to previous AHRI certified data. For more information on duct end reflection calculations see AHRI Standard 880.
- Radiated sound power is the breakout noise transmitted through the unit casing walls.
- Sound power levels are in decibels, dB re 10<sup>-12</sup> watts.
- All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation. Dash (-) in space indicates sound power level is less than 20 dB or equal to background.
- Minimum inlet 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.
- Asterisk (\*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 130 and AHRI Standard 880.



## Performance Data • AHRI Certification and Performance Notes

Model 3230HQ • With Mixing Attenuator • Hospital Grade • Dissipative Silencer

AHRI Certification Points

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	0.29	71	60	60	50	40	24	33	51	47	38	29	28	30
5	250	118	0.22	55	66	63	48	39	26	35	54	50	43	34	34	34
6	400	189	0.36	88	71	67	54	46	35	36	62	58	51	42	40	36
7	550	260	0.41	100	76	73	62	49	40	46	67	64	54	42	39	35
8	700	330	0.48	119	81	79	62	45	36	46	70	67	57	45	42	38
9	900	425	0.25	61	83	80	60	41	39	48	69	66	54	47	42	37
10	1100	519	0.28	71	85	79	60	42	44	51	70	67	55	48	43	38
12	1600	755	0.46	114	86	80	57	42	50	53	71	66	54	49	46	42
14	2100	991	0.46	114	82	74	57	44	50	52	66	61	54	43	41	39
16	2750	1298	0.70	172	84	77	63	50	54	58	68	62	51	46	43	40

### Performance Notes for Sound Power Levels:

- Discharge sound power is the noise emitted from the unit discharge into the downstream duct. Discharge Sound Power Levels (SWL) now include duct end reflection energy as part of the standard rating. Including the duct end correction provides sound power levels that would normally be transmitted into an acoustically, non-reflective duct. The effect of including the energy correction to the discharge SWL, is higher sound power levels when compared to previous AHRI certified data. For more information on duct end reflection calculations see AHRI Standard 880.
- Radiated sound power is the breakout noise transmitted through the unit casing walls.
- Sound power levels are in decibels, dB re 10<sup>-12</sup> watts.
- All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation. Dash (-) in space indicates sound power level is less than 20 dB or equal to background.
- Minimum inlet 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.
- Asterisk (\*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 130 and AHRI Standard 880.



## Performance Data • NC Level Application Guide

Model 3230HQ • With Mixing Attenuator • Hospital Grade • Dissipative Silencer

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

Inlet Size	Airflow cfm / s		Min. inlet ΔPs "w.g. Pa		NC Levels @ Inlet Pressure (ΔPs) shown											
					DISCHARGE					RADIATED						
					Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)
4	200	94	0.51	125	-	*	-	22	21	25	-	*	-	-	-	21
	150	71	0.29	71	-	-	-	-	-	20	27	-	-	-	-	-
	100	47	0.13	32	-	-	-	-	-	-	-	-	-	-	-	20
	25	12	0.01	2	21	-	-	-	22	25	-	-	-	-	-	20
5	350	165	0.42	104	-	-	23	27	28	31	-	-	21	26	26	30
	250	118	0.22	55	-	-	-	22	24	28	-	-	-	-	20	23
	150	71	0.08	21	-	-	-	-	-	-	-	-	-	-	-	20
	50	24	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
6	550	260	0.67	165	-	*	25	31	33	37	21	*	27	31	33	36
	400	189	0.36	88	-	-	21	26	30	34	-	-	23	27	27	31
	250	118	0.14	35	-	-	-	23	26	30	-	-	-	20	22	24
	75	35	0.02	5	*	-	-	-	-	23	-	-	-	-	-	-
7	750	354	0.66	165	26	*	36	42	43	44	-	*	32	39	44	50
	550	260	0.41	100	-	26	32	33	39	44	-	-	28	34	39	45
	350	165	0.20	49	-	-	26	31	30	28	-	-	27	32	36	39
	100	47	0.03	7	-	-	-	-	-	-	-	-	20	20	21	23
8	950	448	0.87	217	37	*	39	43	47	51	25	*	34	42	46	52
	700	330	0.48	119	27	26	36	40	40	45	20	23	32	38	43	49
	450	212	0.20	50	-	-	24	29	31	30	22	-	30	34	38	43
	125	59	0.02	4	35	-	-	-	-	-	-	-	23	21	24	24
9	1200	566	0.43	107	25	30	38	43	47	53	21	34	34	39	44	49
	900	425	0.25	61	-	26	35	40	42	45	-	21	32	37	40	46
	600	283	0.11	28	-	23	29	31	31	27	-	-	25	28	32	34
	175	83	0.01	2	24	-	-	-	-	-	-	-	-	-	-	-
10	1600	755	0.58	145	33	*	35	42	45	53	30	*	37	43	46	51
	1100	519	0.28	71	-	20	33	41	42	47	-	23	33	38	42	47
	600	283	0.09	22	-	20	28	30	28	26	-	-	25	28	31	33
	225	106	0.01	3	27	-	-	-	-	-	-	-	-	-	-	-
12	2200	1038	0.87	215	44	*	38	44	48	52	32	*	34	40	44	51
	1600	755	0.46	114	38	29	36	42	44	48	21	23	31	37	40	46
	1000	472	0.18	44	-	-	27	32	32	31	-	-	27	31	34	39
	300	142	0.02	4	-	-	-	-	-	-	-	-	-	-	20	21
14	2900	1369	0.83	206	35	*	38	42	43	45	30	*	30	34	38	43
	2100	991	0.46	114	26	28	32	36	39	43	20	21	26	31	34	38
	1300	613	0.21	53	-	-	25	30	32	36	-	-	21	28	30	33
	400	189	0.08	20	-	-	25	30	33	36	-	-	-	20	-	25
16	4350	2053	1.61	400	52	*	*	*	51	53	43	*	*	*	42	47
	3550	1675	1.10	274	45	*	*	45	46	49	34	*	*	36	38	44
	2750	1298	0.70	172	33	*	36	39	42	45	25	*	28	33	36	42
	1950	920	0.39	96	-	24	31	35	38	43	-	-	25	28	31	36
1150	543	0.18	45	-	-	23	28	31	36	-	-	-	23	24	27	

### Performance Notes:

1. NC Levels are calculated based on procedures as documented on page B31.
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.

**B**  
DUAL DUCT TERMINAL UNITS





**Performance Data • NC Level Application Guide**  
**Model 3230 • With Mixing Attenuator**  
**Steri-Liner**

**B**  
**DUAL DUCT TERMINAL UNITS**

Inlet Size	Airflow cfm /s		Min. inlet ΔPs "w.g. Pa		NC Levels @ Inlet Pressure (ΔPs) shown											
					DISCHARGE					RADIATED						
					Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)
4	200	94	0.51	126	21	*	29	33	34	36	-	-	-	-	-	21
	150	71	0.29	71	-	-	25	31	30	31	27	-	-	-	-	-
	100	47	0.13	32	-	-	23	20	23	21	-	-	-	-	-	20
	25	12	0.01	2	-	-	-	-	-	-	-	-	-	-	-	20
5	350	165	0.42	104	24	25	30	34	36	38	-	-	21	26	26	30
	250	118	0.22	55	-	23	28	33	34	37	-	-	-	-	20	23
	150	71	0.08	21	-	-	24	25	28	29	-	-	-	-	-	20
	50	24	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
6	550	260	0.67	165	31	*	35	39	41	46	21	-	27	31	33	36
	400	189	0.36	89	21	25	31	37	39	43	-	-	23	27	27	31
	250	118	0.14	35	-	21	26	33	35	38	-	-	-	20	22	24
	75	35	0.02	4	-	-	-	-	21	24	-	-	-	-	-	-
7	750	354	0.66	165	35	*	41	48	49	51	-	-	32	39	44	50
	550	260	0.41	101	25	33	39	41	45	50	-	-	28	34	39	45
	350	165	0.20	49	-	26	34	38	38	36	-	-	27	32	36	39
	100	47	0.03	7	-	-	-	-	-	-	-	-	20	20	21	23
8	950	448	0.87	217	40	*	43	48	51	55	25	-	34	42	46	52
	700	330	0.48	119	31	31	40	45	45	50	20	23	32	38	43	49
	450	212	0.20	50	-	23	29	34	36	34	22	-	30	34	38	43
	125	59	0.02	4	-	-	-	-	-	20	-	-	23	21	24	24
9	1200	566	0.43	107	29	34	41	48	51	56	21	34	34	39	44	49
	900	425	0.25	61	-	31	39	45	46	50	-	21	32	37	40	46
	600	283	0.11	28	-	29	36	37	37	34	-	-	25	28	32	34
	175	83	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
10	1600	755	0.58	145	36	*	39	45	49	56	30	-	37	43	46	51
	1100	519	0.28	71	21	26	38	44	46	53	-	23	33	38	42	47
	600	283	0.09	22	-	24	33	35	34	31	-	-	25	28	31	33
	225	106	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
12	2200	1038	0.87	215	43	*	43	48	52	56	32	-	34	40	44	51
	1600	755	0.46	114	34	33	40	45	49	54	21	23	31	37	40	46
	1000	472	0.18	44	-	21	33	38	38	38	-	-	27	31	34	39
	300	142	0.02	4	-	-	-	-	-	-	-	-	-	-	20	21
14	2900	1369	0.76	189	41	*	44	46	48	50	30	-	30	34	38	43
	2100	991	0.39	97	30	33	36	40	43	46	20	21	26	31	34	38
	1300	613	0.14	36	-	24	30	35	38	41	-	-	21	28	30	33
	400	189	0.01	2	-	-	-	20	21	25	-	-	-	20	-	25
16	4350	2053	1.54	384	53	*	-	-	53	56	43	-	-	-	42	47
	3550	1675	1.03	257	45	*	-	48	49	52	34	-	-	36	38	44
	2750	1298	0.63	155	35	*	40	43	45	48	25	-	28	33	36	42
	1950	920	0.32	79	24	28	34	38	40	44	-	-	25	28	31	36
1150	543	0.11	28	-	24	30	35	38	43	-	-	-	23	24	27	

**Performance Notes:**

1. NC Levels are calculated based on procedures as documented on page B31.
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.

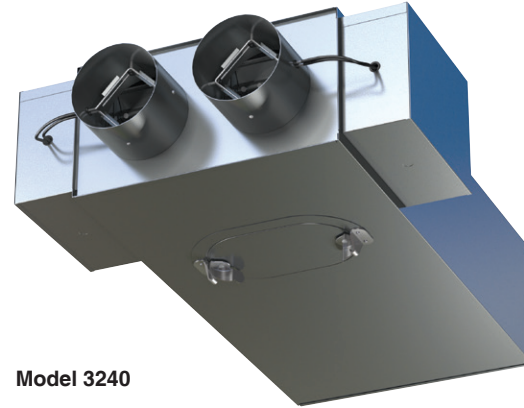


## Recommended Airflow Ranges For Model 3240 Dual Duct Pressure Independent Terminal Units

The recommended airflow ranges below are for dual 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 hunting and failure to meet minimum ventilation requirements. 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. (250 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



Model 3240

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).

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	Round	0 – 225	150	30	180	25	180	25	180	200	225
5		0 – 400	250	55	325	45	325	45	325	360	400
6		0 – 550	400	80	450	65	450	65	450	500	550
7		0 – 800	550	115	650	95	650	95	650	725	800
8		0 – 1100	700	155	900	125	900	125	900	1000	1100
9		0 – 1400	900	200	1150	165	1150	165	1150	1285	1400
10		0 – 1840	1100	260	1500	215	1500	215	1500	1675	1840
12		0 – 2500	1600	350	2050	290	2050	290	2050	2290	2500
14		0 – 3370	2100	475	2740	390	2740	390	2740	3075	3370

### 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	Round	0 – 106	71	14	85	12	85	12	85	94	106
5		0 – 189	118	26	153	21	153	21	153	170	189
6		0 – 260	189	38	212	31	212	31	212	236	260
7		0 – 378	260	54	307	45	307	45	307	342	378
8		0 – 519	330	73	425	59	425	59	425	472	519
9		0 – 661	425	94	543	78	543	78	543	606	661
10		0 – 868	519	123	708	101	708	101	708	790	868
12		0 – 1180	755	165	967	137	967	137	967	1081	1080
14		0 – 1590	991	224	1298	184	1298	184	1298	1451	1590

B DUAL DUCT TERMINAL UNITS

## Performance Data • AHRI Certification and Performance Notes

### Model 3240 • With Mixing Attenuator • "BlendMaster™" • AHRI Certification Rating Points Steri-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						
	cfm	l/s	"w.g. Pa		Octave Band							Octave Band						
					2	3	4	5	6	7	2	3	4	5	6	7		
4	150	71	0.29	72	65	64	51	41	38	37	50	46	34	31	31	28		
5	250	118	0.21	51	68	67	51	40	36	37	53	49	39	36	37	32		
6	400	189	0.37	91	74	69	54	44	37	37	58	53	44	41	41	36		
7	550	260	0.45	111	80	76	62	45	43	44	61	59	47	41	37	35		
8	700	330	0.54	134	79	76	60	47	45	44	64	62	50	44	40	38		
9	900	425	0.31	77	81	73	56	44	43	44	66	62	49	43	39	43		
10	1100	519	0.37	93	83	74	57	46	44	45	67	63	50	44	40	44		
12	1600	755	0.58	144	82	75	61	51	49	48	69	67	54	49	46	39		
14	2100	991	0.49	121	80	73	59	50	48	48	69	67	54	49	46	39		



Ratings are certified in accordance with AHRI Standards.

#### Performance Notes for Sound Power Levels:

- Discharge sound power is the noise emitted from the unit discharge into the downstream duct. Discharge Sound Power Levels (SWL) now include duct end reflection energy as part of the standard rating. Including the duct end correction provides sound power levels that would normally be transmitted into an acoustically, non-reflective duct. The effect of including the energy correction to the discharge SWL, is higher sound power levels when compared to previous AHRI certified data. For more information on duct end reflection calculations see AHRI Standard 880.
- Radiated sound power is the breakout noise transmitted through the unit casing walls.
- Sound power levels are in decibels, dB re 10<sup>-12</sup> watts.
- All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation. Dash (-) in space indicates sound power level is less than 20 dB or equal to background.
- Minimum inlet 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.
- Asterisk (\*) in space indicates that the minimum inlet static pressure requirement is greater than 0.5" w.g. (125 Pa) at rated airflow.
- Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 130 and AHRI Standard 880.

B  
DUAL DUCT TERMINAL UNITS



## Performance Data • NC Level Application Guide Model 3240 "BlendMaster™" • With Mixing Attenuator Steri-Liner

Inlet Size	Airflow cfm l/s		Min. inlet ΔPs "w.g. Pa		NC Levels @ Inlet Pressure (ΔPs) shown											
					DISCHARGE					RADIATED						
					Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)	Min. ΔPs	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	2.0" w.g. (500 Pa)	3.0" w.g. (750 Pa)
4	200	94	0.49	123	-	-	24	26	28	29	-	-	-	-	-	-
	150	71	0.29	72	-	-	20	24	23	21	-	-	-	-	-	-
	100	47	0.14	34	-	-	-	-	-	-	-	-	-	-	-	-
	25	12	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
5	350	165	0.43	106	-	20	26	31	31	34	-	-	-	20	24	26
	250	118	0.21	51	-	20	24	28	29	31	-	-	-	-	-	20
	150	71	0.07	17	-	-	-	21	20	21	-	-	-	-	-	-
	50	24	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
6	550	260	0.66	165	26	*	29	33	33	38	-	*	21	26	29	33
	400	189	0.37	91	-	-	24	29	30	33	-	-	-	21	25	29
	250	118	0.15	38	-	-	23	25	25	28	-	-	-	-	-	21
	75	35	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
7	800	378	0.91	226	-	*	35	40	44	49	23	*	30	35	38	43
	750	354	0.81	200	-	*	33	37	40	46	20	*	29	35	37	41
	550	260	0.45	111	-	21	33	37	40	44	-	-	23	29	34	38
	100	47	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
8	950	448	0.97	241	31	*	31	37	40	45	23	*	31	38	41	46
	700	330	0.54	134	23	*	30	37	39	45	-	*	26	33	37	41
	450	212	0.23	57	-	-	29	35	35	36	-	-	21	26	28	31
	125	59	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
9	1200	566	0.54	134	25	*	31	38	41	45	-	*	29	35	38	41
	900	425	0.31	77	-	20	28	35	38	40	-	-	25	33	36	40
	600	283	0.14	35	-	21	28	30	31	33	-	-	20	25	28	31
	175	83	0.01	2	-	-	-	-	-	-	-	-	-	-	-	-
10	1600	755	0.77	191	30	*	31	39	43	48	28	*	31	37	40	45
	1100	519	0.37	93	20	21	30	38	39	44	-	-	26	34	37	41
	600	283	0.12	29	-	-	28	31	30	33	-	-	20	24	28	30
	225	106	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
12	2200	1038	1.09	271	35	*	-	39	43	46	34	*	-	41	46	50
	1600	755	0.58	144	25	*	31	36	39	43	21	*	31	38	41	46
	1000	472	0.23	58	-	-	28	33	34	37	-	-	25	29	33	36
	300	142	0.02	4	-	-	-	-	-	-	-	-	-	-	-	21
14	2900	1369	0.91	226	34	*	35	39	40	44	33	*	36	41	45	50
	2100	991	0.49	121	25	25	30	34	36	39	21	21	31	38	41	46
	1300	613	0.19	48	-	-	25	29	31	35	-	-	24	29	31	35
	400	189	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-

### Performance Notes:

1. NC Levels are calculated based on procedures as documented on page B31.
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.

