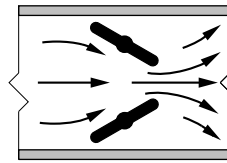


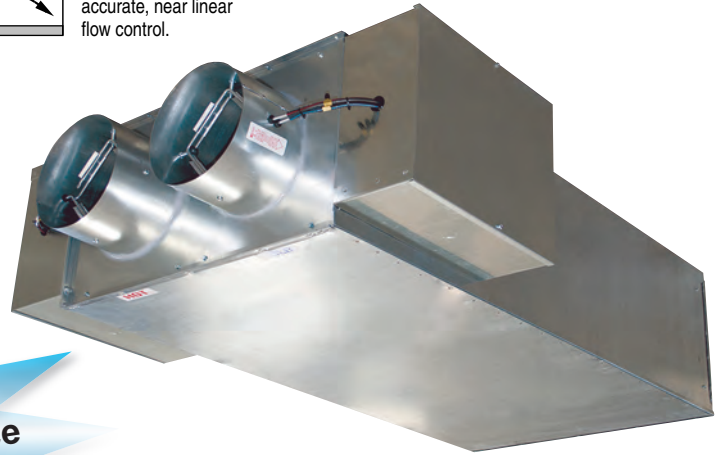
DUAL DUCT VARIABLE OR CONSTANT AIR VOLUME

3200 SERIES

- "BLENDMASTER™"
- 1 : 30 MIXING
- INDUSTRY LEADING PERFORMANCE



Opposed blade valve configuration minimizes noisy turbulence and provides smooth, accurate, near linear flow control.



Model 3240

Model:

**3240 With High Efficiency
Mixing Attenuator**

**Steri-Liner
Performance
Tested**

The model **3240 "BlendMaster™"** is a dual duct terminal unit offering superior performance for the most demanding applications. Maintaining high ventilation rates, humidity control and achieving high comfort levels in the pursuit of improved indoor air quality have regenerated interest in the benefits of a dual duct system design. Applications include hospitals, research laboratories, schools and other institutional facilities where both overhead heating and cooling are required and a dual duct design has been deemed the preferred system.

Equipped with specially designed low leakage opposed blade dampers, the "BlendMaster™" provides accurate airflow control of the hot and cold decks with tight shut-off. An extended integral mixer attenuator section provides superior blending of the hot and cold airflow during mixing at reduced minimum operating pressures compared to other manufacturers designs thus ensuring uniform flow and temperature equalization downstream. Minimum mixing efficiency is an unprecedented 1:30; less than 1°F (0.55°C) temperature variation at the discharge for each 30°F (16.67°C) temperature difference between the hot and cold decks.

Dual duct terminals, being inherently suited to high indoor air quality applications, are frequently specified with an 'IAQ' insulation option. For this reason, the sound data presented for this terminal unit uses the Steri-Liner option, rather than standard fiberglass insulation, thus permitting a more accurate selection than is possible with other manufacturers equipment.

STANDARD 3240 FEATURES:

- Integral mixing attenuator with baffles. 1:30 minimum mixing efficiency.
- 22 ga. (0.86) zinc coated steel casing, mechanically sealed, low leakage construction.
- Low leakage opposed blade damper design with blade and jamb seals (single blade on size 4, 5, 6). Damper leakage is less than 1% of nominal flow at 6" w.g. (1.5 kPa). 90° rotation, CW to close.
- ½" (13) dia. plated steel driveshaft. An indicator mark at the end of the driveshaft shows damper position.
- Designed for pneumatic, analog electronic or digital pressure independent control.

- Multi-point averaging 'Diamond Flow' sensors standard for all applications; ensure accurate flow control.
- Gauge taps provided for field calibration and balancing.
- Downstream total flow sensing available for maximum control accuracy.
- Available in nine unit sizes to handle from 180 – 2740 cfm (85 – 1293 l/s).
- Unequal inlet sizes are available. Casing is governed by the larger inlet.
- ¾" (19), dual density insulation, exposed edges coated to prevent air erosion. Meets the requirements of NFPA 90A and UL 181.
- Full NEMA 1 type controls enclosure for factory mounted controls.
- Rectangular discharge.

Options:

- Available with a bottom access door (Model 0820-1).
- Other 'IAQ' insulations are available.
- Low leakage casing. Less than 1% of rated airflow at 6" w.g. (1.5 kPa).
- Steri-liner.
- Fiber-free liner.
- Solid metal liner.
- 1" (25) liner.



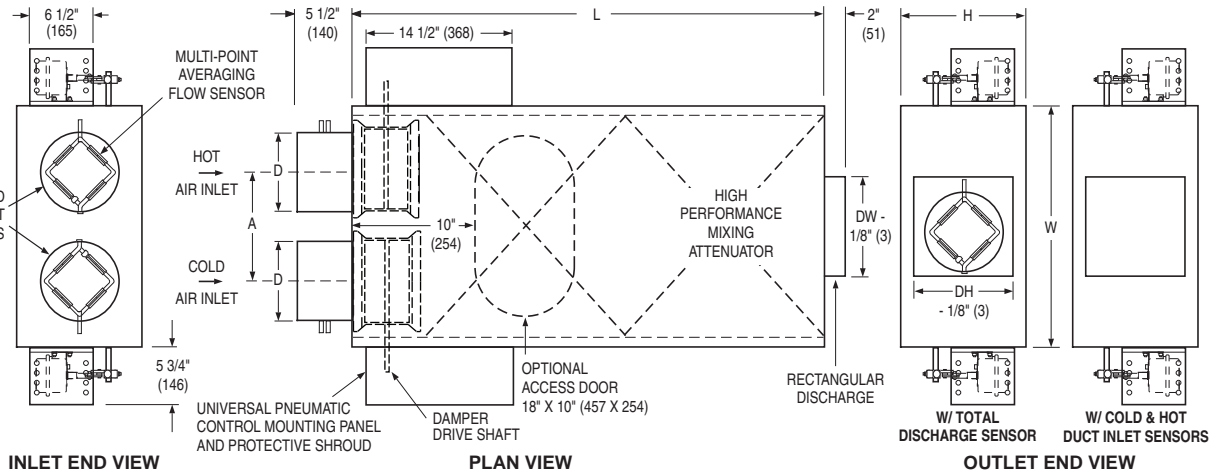
Dimensions

Model 3240 "BlendMaster™" • Mixing Applications

- Variable volume or constant volume operation.
- Rectangular discharge optimally sized for duct run out.
- Integral mixing attenuator construction reduces insulation seams and reduces casing leakage.
- Multi-point 'Diamond Flow' Sensor available in three location configurations to suit exact control sequence requirement.
- Double set of solid mixing baffles are standard.
- Unique low leakage opposed blade dampers control each deck independently. 90° rotation. Right hand CW to close. Left hand CCW to close.
- When unequal sized inlets are used, the casing will be governed by the larger inlet size.
- Choice of right or left hand cold deck location. Hand of unit is determined by location of cold deck looking in direction of airflow. Right hand unit illustrated.

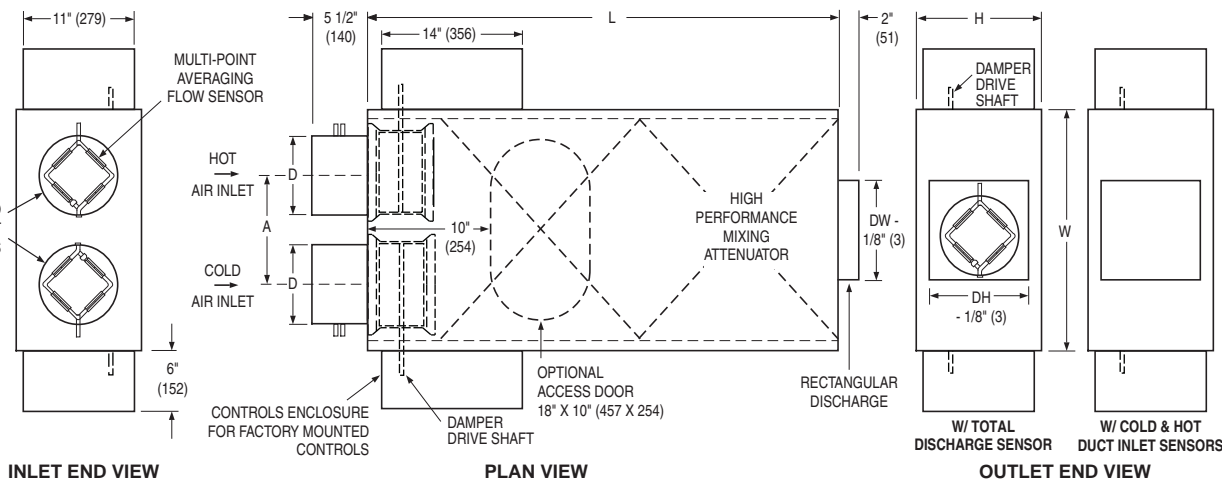
Pneumatic Controls

- Universal pneumatic control mounting panel features double wall stand-off construction for strength and rigidity. Controls mounting screws do not penetrate casing.



Analog Electronic and Digital Controls

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



Dimensional Data

Unit Size	W	H	L	A	Inlet Dia. D	Outlet DW x DH
4	24 (610)	10 (254)	47 (1194)	11 (279)	3 7/8 (98)	
5	24 (610)	10 (254)	47 (1194)	11 (279)	4 7/8 (124)	8 x 8 (203 x 203)
6	24 (610)	10 (254)	47 (1194)	11 (279)	5 7/8 (149)	
7	24 (610)	12 1/2 (318)	47 (1194)	11 (279)	6 7/8 (175)	
8	24 (610)	12 1/2 (318)	47 (1194)	11 (279)	7 7/8 (200)	10 x 10 (254 x 254)
9	34 (864)	14 (356)	60 (1524)	16 1/8 (410)	8 7/8 (225)	14 x 12 (356 x 305)
10	34 (864)	14 (356)	60 (1524)	16 1/8 (410)	9 7/8 (251)	
12	34 (864)	16 (406)	60 (1524)	16 1/8 (410)	11 7/8 (302)	18 x 14 (457 x 356)
14	42 (1067)	18 (457)	72 (1829)	20 1/8 (511)	13 7/8 (353)	22 x 16 (559 x 406)

DUAL DUCT TERMINAL UNITS

Recommended Airflow Ranges For Model 3240 Dual Duct Pressure Independent VAV 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. 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.

AHRI Standard 880 "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. 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	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			
			Min.	Max.	Min.	Max.	Transducer Differential Pressure ("w.g.)			
							Min.	Max.		
.02	1.0	1.25	≥1.5							
4	0 – 225	150	30	180	25	180	25	180	200	225
5	0 – 350	250	55	325	45	325	45	325	350	350
6	0 – 500	400	80	450	65	450	65	450	500	500
7	0 – 650	550	115	650	95	650	95	650	650	650
8	0 – 900	700	155	900	125	900	125	900	900	900
9	0 – 1050	900	200	1050	165	1050	165	1050	1050	1050
10	0 – 1350	1100	260	1350	215	1350	215	1350	1350	1350
12	0 – 2050	1600	355	2050	290	2050	290	2050	2050	2050
14	0 – 2740	2100	475	2740	390	2740	390	2740	2740	2740

Metric Units, Liters per Second

Unit Size	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			
			Min.	Max.	Min.	Max.	Transducer Differential Pressure (Pa)			
							Min.	Max.		
5	250	311	≥374							
4	0 – 106	71	14	85	12	85	12	85	94	106
5	0 – 165	118	26	153	21	153	21	153	165	165
6	0 – 236	189	38	212	31	212	31	212	236	236
7	0 – 307	260	54	307	45	307	45	307	307	307
8	0 – 425	330	73	425	59	425	59	425	425	425
9	0 – 495	425	94	495	78	495	78	495	495	495
10	0 – 637	519	123	637	101	637	101	637	637	637
12	0 – 967	755	168	967	137	967	137	967	967	967
14	0 – 1293	991	224	1293	184	1293	184	1293	1293	1293

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

Inlet Size	Airflow		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	0.46	114	-	-	-	-	-	-	-	-	-	-	-	
	150	71	0.26	65	-	-	-	-	-	-	-	-	-	-	-	
	100	47	0.12	29	-	-	-	-	-	-	-	-	-	-	-	
	75	35	0.07	17	-	-	-	-	-	-	-	-	-	-	-	
	50	24	0.03	7	-	-	-	-	-	-	-	-	-	-	-	
5	300	142	0.23	56	-	-	-	-	-	-	-	-	23	27	-	
	250	118	0.16	41	-	-	-	-	-	-	-	-	-	-	20	
	200	94	0.11	27	-	-	-	-	-	-	-	-	-	-	-	
	125	59	0.05	11	-	-	-	-	-	-	-	-	-	-	-	
	75	35	0.02	4	-	-	-	-	-	-	-	-	-	-	-	
6	500	236	0.52	128	-	*	-	-	-	23	-	*	22	25	26	30
	400	189	0.32	80	-	-	-	-	-	20	-	-	-	21	25	28
	300	142	0.17	43	-	-	-	-	-	-	-	-	-	20	22	-
	200	94	0.07	18	-	-	-	-	-	-	-	-	-	-	-	20
	100	47	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
7	650	307	0.62	155	-	*	-	27	30	35	-	*	27	33	38	42
	550	260	0.44	109	-	-	-	23	27	32	-	-	23	29	34	39
	335	158	0.16	39	-	-	-	-	-	-	-	-	24	25	20	23
	225	106	0.07	17	-	-	-	-	-	-	-	-	-	-	-	-
	110	52	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
8	850	401	0.75	187	-	*	-	24	26	35	20	*	26	33	36	41
	700	330	0.50	125	-	-	-	25	29	35	-	-	25	33	36	40
	500	236	0.24	61	-	-	-	24	25	23	-	-	25	32	35	35
	350	165	0.12	29	-	-	-	-	-	-	-	-	23	25	20	22
	200	94	0.04	9	-	-	-	-	-	-	-	-	-	-	-	-
9	1050	495	0.33	82	-	-	-	25	29	35	-	-	27	34	38	42
	900	425	0.25	61	-	-	-	24	28	34	-	-	25	33	37	40
	675	319	0.14	35	-	-	-	-	-	-	-	-	22	25	28	28
	450	212	0.06	16	-	-	-	-	-	-	-	-	-	-	22	22
	225	106	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
10	1350	637	0.54	134	-	*	-	25	29	35	22	*	27	33	38	43
	1100	519	0.36	89	-	-	-	25	29	35	-	-	25	33	36	40
	800	378	0.19	46	-	-	-	22	23	20	-	-	25	29	30	30
	550	260	0.09	22	-	-	-	-	-	-	-	-	-	21	24	25
	250	118	0.02	4	-	-	-	-	-	-	-	-	-	-	-	-
12	1950	920	0.79	195	27	*	26	32	35	42	30	*	32	36	41	48
	1600	755	0.54	133	-	*	25	31	35	40	21	*	30	37	41	46
	1200	566	0.31	76	-	-	23	30	32	34	-	-	30	35	37	37
	800	378	0.14	34	-	-	-	21	21	20	-	-	23	25	25	30
	400	189	0.04	9	-	-	-	-	-	-	-	-	-	-	-	20
14	2700	1274	0.76	190	25	*	26	29	30	35	30	*	32	37	40	48
	2100	991	0.46	115	-	-	20	24	27	31	21	21	31	37	40	46
	1600	755	0.27	67	-	20	-	20	25	30	-	-	30	35	37	37
	1050	496	0.12	29	-	-	-	-	20	23	-	-	23	25	25	31
	550	260	0.03	8	-	-	-	-	-	-	-	-	-	-	-	20

Performance Notes:

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



DUAL DUCT TERMINAL UNITS

Performance Data • AHRI Certification and Performance Notes

Model Series 3240 • With Mixing Attenuator • BlendMaster™ • AHRI Certification Rating Points
VAV: 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	.29	72	65	64	51	41	38	37	50	46	34	31	31	28		
5	250	118	.21	51	68	67	51	40	36	37	53	49	39	36	37	32		
6	400	189	.37	91	74	69	54	44	37	37	58	53	44	41	41	36		
7	550	260	.01	2	80	76	62	45	43	44	61	59	47	41	37	35		
8	700	330	.54	134	79	76	60	47	45	44	64	62	50	44	40	38		
9	900	425	.01	2	81	73	56	44	43	44	66	62	49	43	39	43		
10	1100	519	.37	93	83	74	57	46	44	45	67	63	50	44	40	44		
12	1600	755	.58	144	82	75	61	51	49	48	69	67	54	49	46	39		
14	2100	991	.49	121	80	73	59	50	48	48	69	67	54	49	46	39		



Ratings are certified in accordance with AHRI Standards.

DUAL DUCT TERMINAL UNITS

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 880.
- Radiated sound power is the breakout noise transmitted through the unit casing walls.
- Sound power levels are in decibels, dB re 10⁻¹² watts.
- All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation. Dash (-) in space indicates sound power level is less than 20 dB or equal to background.
- Minimum inlet 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.