

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

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

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

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

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



**Model 30X with
Optional Sound Attenuator**

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

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

Imperial Units, Cubic Feet per Minute

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

Metric Units, Liters per Second

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