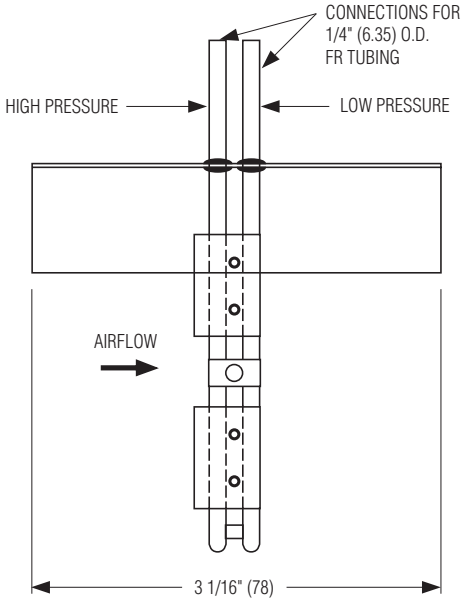
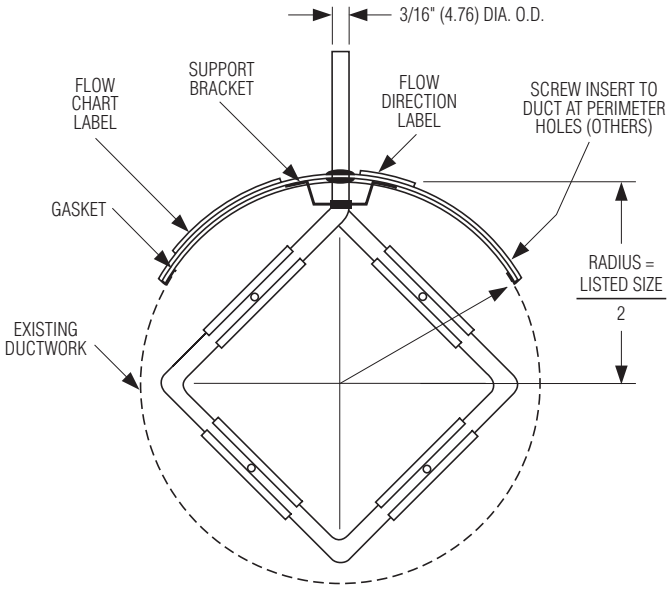
FLOW MEASURING STATION
ROUND DUCT • INSERT TYPE
MODEL: 36FMI





Description:

The Model 36FMI Flow Measuring Station is a multi-point averaging airflow sensor. It has been designed to provide accurate sensing by sampling air velocities in the four quadrants of a round duct. The differential pressure flow sensor provides an averaged reading at an amplification of approximately 2.5 times the velocity pressure, dependent upon nominal size.

Features:

- Available to suit nominal round ductwork sizes from 4" (102) to 18" (457) diameter.
- All metal construction - no combustible materials in the air stream.
- Amplifies velocity pressure approximately 2.5 times to give a wide range of useful output signal vs. flow.
- Compact size allows easy installation in existing ductwork.
- Sensor design minimizes pressure drop and regenerated noise.
- Label provided on each unit gives airflow vs. signal differential pressure for direct reading of airflow.
- Multi-point sensing gives an accurate output signal with a maximum deviation of only ± 5% with a hard 90 degree elbow, provided a straight inlet condition with a minimum length of two equivalent duct diameters is provided.

Specifications:

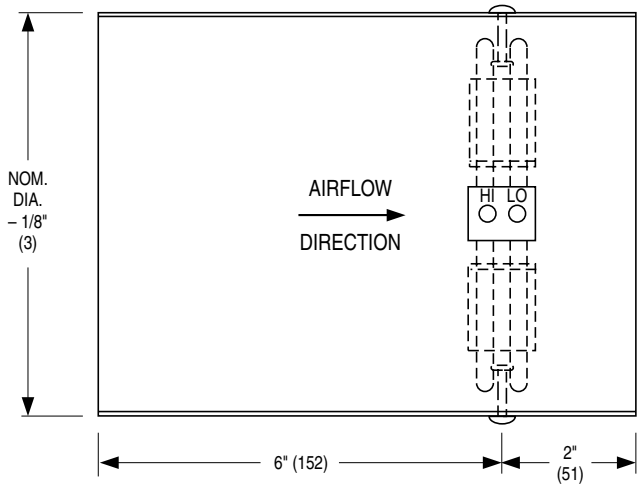
Materials: Sensor – aluminum.
Body – galvanized steel.
Media: Air or other common inert gases.
Standard Tubing: 1/4" (6.35) O.D. x 0.04" (1.0) wall FR tubing (by others).
Recommended Application Range: 300 to 3000 fpm.
Available Sizes: 4", 5", 6", 7", 8", 9", 10", 12", 14", 16", and 18" (102, 127, 152, 178, 203, 229, 254, 305, 356, 406 and 457) (to suit nominal round ductwork).

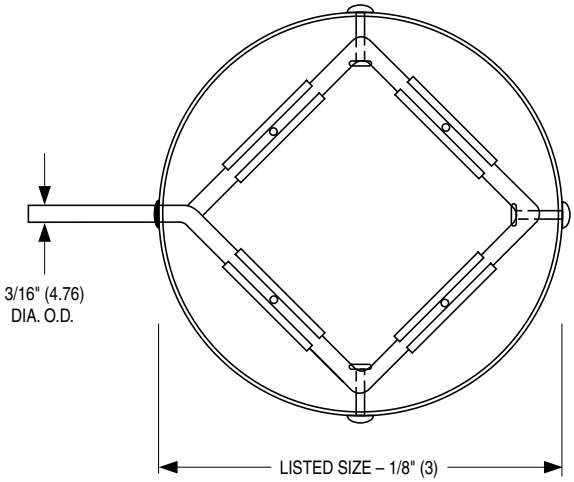
Options:

❑ Special Features.
Specify: _____

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**3 - 30 - 17**	**3600**	**7 - 23 - 03**	**36FMI-1**

FLOW MEASURING STATION
ROUND DUCT • SLEEVE TYPE
MODEL: 36FMS





Description:

The Model 36FMS Flow Measuring Station is a multi-point averaging airflow sensor. It has been designed to provide accurate sensing by sampling air velocities in the four quadrants of a round duct. The differential pressure flow sensor provides an averaged reading at an amplification of approximately 2.5 times the velocity pressure, dependent upon nominal size.

Features:

- Available to suit nominal round ductwork sizes from 4" (102) to 18" (457) diameter.
- All metal construction - no combustible materials in the air stream.
- Amplifies velocity pressure approximately 2.5 times to give a wide range of useful output signal vs. flow.
- Compact size allows easy installation in existing ductwork.
- Sensor design minimizes pressure drop and regenerated noise.
- Label provided on each unit gives airflow vs. signal differential pressure for direct reading of airflow.
- Multi-point sensing gives an accurate output signal with a maximum deviation of only ± 5% with a hard 90 degree elbow, provided a straight inlet condition with a minimum length of two equivalent duct diameters is provided.

Unit Size	Airflow Range cfm (l/s)
4	0 – 225 (0 – 106)
5	0 – 400 (0 – 189)
6	0 – 550 (0 – 260)
7	0 – 800 (0 – 378)
8	0 – 1100 (0 – 519)
9	0 – 1400 (0 – 661)
10	0 – 1840 (0 – 868)
12	0 – 2500 (0 – 1180)
14	0 – 3125 (0 – 1475)
16	0 – 3725 (0 – 1758)
18	0 – 5880 (0 – 2775)

Specifications:

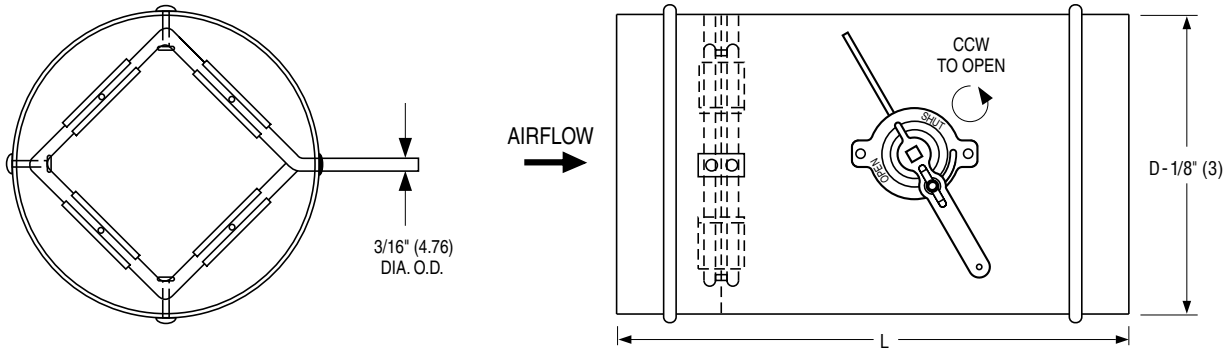
Materials: Sensor – aluminum.
Body – 22 ga. (0.86) galvanized steel.
Media: Air or other common inert gases.
Standard Tubing: 1/4" (6.35) O.D. x 0.04" (1.0) wall FR tubing (by others).

Options:

❑ Special Features.
Specify: _____

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**3 - 30 - 17**	**3600**	**8 - 20 - 08**	**36FMS-1**

FLOW MEASURING STATION WITH BALANCING DAMPER MODEL: 36FMSD



Description:

The Model 36FMSD Flow Measuring Station is a multi-point averaging airflow sensor combined with integral balancing damper. The 36FMSD allows the field balancer to measure and adjust the airflow to a diffuser or other air terminal device located downstream.

The 36FMSD is an especially useful option for balancing individual displacement ventilation diffusers.

A chart is provided on the unit which gives airflow vs. signal differential pressure for direct reading of airflow.

Features:

- 22 ga. (0.86), corrosion-resistant steel casing with stiffening beads and corrosion-resistant steel blade up to 12" (305) dia., 20 ga. (1.00) over 12" (305) dia.
- Sized to fit nominal round duct sizes.
- Inlet and outlet stiffening beads provide a means for secure flexible duct connection.
- Balancing damper with hand locking quadrant.
- Multi-point averaging Diamond Flow Sensor: Aluminum construction.
- Sensor design minimizes pressure drop and regenerated noise.

Dimensional Data

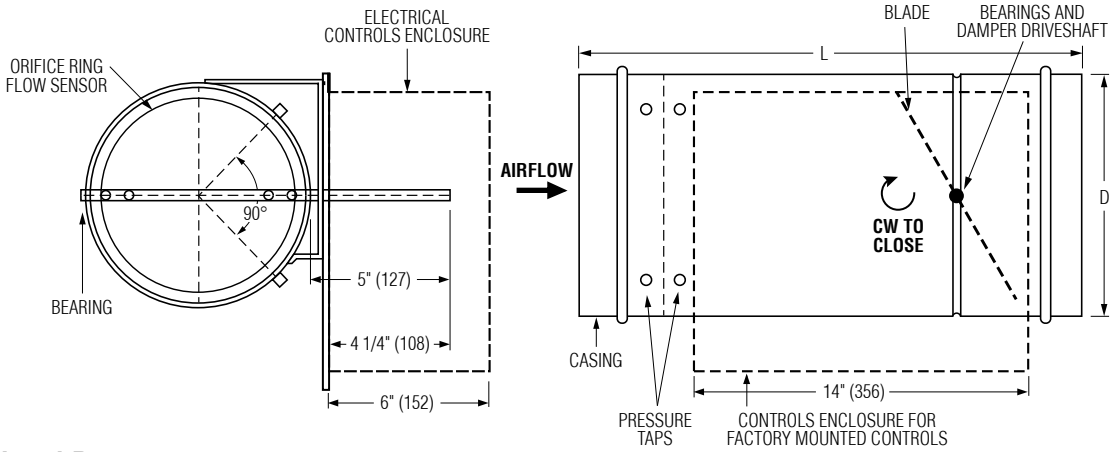
Unit Size	Airflow Range cfm (l/s)	Duct Size D	Length L
4	0 – 225 (0 – 106)	4 (102)	13 (330)
5	0 – 400 (0 – 189)	5 (127)	13 (330)
6	0 – 550 (0 – 260)	6 (152)	13 (330)
7	0 – 800 (0 – 378)	7 (178)	13 (330)
8	0 – 1100 (0 – 519)	8 (203)	13 (330)
9	0 – 1400 (0 – 661)	9 (229)	13 (330)
10	0 – 1840 (0 – 868)	10 (254)	13 (330)
12	0 – 2500 (0 – 1180)	12 (305)	13 (330)
14	0 – 3125 (0 – 1475)	14 (356)	15 (381)
16	0 – 3725 (0 – 1758)	16 (406)	15 (381)
18	0 – 5880 (0 – 2775)	18 (457)	16 (406)

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**3 - 24 - 17**	**3600**	**4 - 10 - 14**	**36FMSD**

ROUND LABORATORY EXHAUST TERMINAL UNIT WITH ORIFICE RING FLOW SENSOR

DIGITAL CONTROL • PRESSURE INDEPENDENT VARIABLE AIR VOLUME

MODEL: D36VRL



Dimensional Data

Unit Size	Airflow Range cfm (l/s)	D	L	Duct Area (Sq. ft.)	K-Factor (cfm)	F-Factor (amp.)
4	35 – 300 (17 – 142)	3 7/8 (98)	18 (457)	0.087	248	1.97
5	65 – 550 (31 – 260)	4 7/8 (124)	18 (457)	0.136	448	1.48
6	70 – 605 (33 – 286)	5 7/8 (149)	18 (457)	0.196	497	2.49
7	120 – 1020 (57 – 481)	6 7/8 (175)	18 (457)	0.267	836	1.64
8	145 – 1240 (68 – 585)	7 7/8 (200)	18 (457)	0.349	1015	1.90
9	170 – 1445 (80 – 682)	8 7/8 (225)	20 (508)	0.442	1182	2.24
10	225 – 1920 (106 – 906)	9 7/8 (251)	20 (508)	0.545	1569	1.94
12	300 – 2580 (142 – 1218)	11 7/8 (302)	20 (508)	0.785	2106	2.23
14	455 – 3930 (215 – 1855)	13 7/8 (352)	22 (559)	1.069	3209	1.78
16	550 – 4755 (260 – 2244)	15 7/8 (403)	22 (559)	1.395	3883	2.07

Maximum airflow is based upon 1.5" w.g. (375 Pa) max. differential pressure signal from flow sensor.

Equations:

$Q = K \times \sqrt{\Delta P}$ $\quad \Delta P = \left(\frac{Q}{K}\right)^2$ $\quad F = \left(\frac{4005 \times A}{K}\right)^2$

Where:

Q = Airflow Rate (cfm)

ΔP = Sensor Differential Pressure ("w.g.)

K = K-Factor Calibration Constant (standard air)

F = Amplification Factor (sensor gain)

A = Nom. Duct Area (sq. ft.)

The K-Factors tabulated in the table are the airflow required to produce a 1.0" w.g. differential pressure at the Flow Sensor.

Standard Construction:

1. Casing: 20 ga. (0.91), Type 316 stainless steel with stiffening beads. Welded casing.
2. Blade: Two layers of 20 ga. (0.91), Type 316 stainless steel laminated together with Teflon peripheral gasket for tight shut-off. 90° rotation, CW to close. Damper leakage is less the 1% of the terminal rated airflow at 3" w.g. (750 pa.) and less than 2% at 6" w.g. (1500 pa.) as tested in accordance with ANSI / ASHRAE Standard 130.
3. Bearings: Teflon.
4. Drive Shaft/Axles: 1/2" (13) diameter Type 316 stainless steel. Indicator mark on the end of the shaft to show damper position.
5. Type 304 stainless steel controls enclosure mounting bracket.
6. Full NEMA 1 type controls enclosure for factory mount controls.
7. Orifice ring flow sensor to measure airflow. The orifice sensor features 2 upstream and 2 downstream averaging pressure taps which minimizes particulate collection in contaminant exhaust applications. UL rated FR 3/16" (4.76) I. D. pneumatic flow sensor tubing (not shown). Supplied with brass balancing/calibration tees.
7. Right-hand control location is standard (as shown) when looking in direction of airflow. Left-hand is optional.

Controls:

❑ Digital (by others).

See separate submittal.

Options and Accessories:

❑ 24 VAC Control transformer.

❑ Toggle disconnect switch.

❑ Controls enclosure 22 ga. (0.85), galvanized steel.

❑ Controls enclosure. 22 ga. (0.76), Type 304 S.S.

❑ Dust tight enclosure seal.

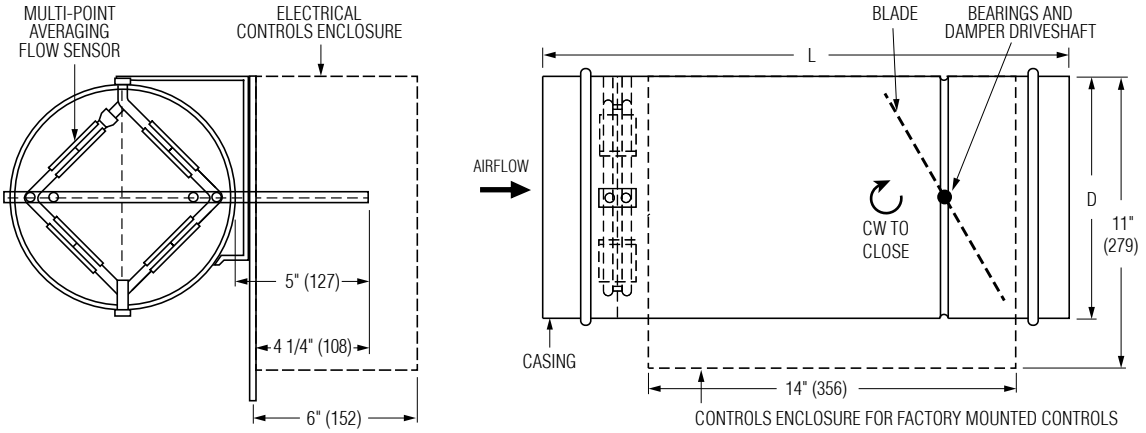
❑ Special features _____.

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**11 - 20 - 23**	**3600**	**11 - 1 - 23**	**36VRL-1**

ROUND RETROFIT TERMINAL UNIT

DIGITAL CONTROLS • PRESSURE INDEPENDENT
VARIABLE AIR VOLUME • EXTERNAL

MODEL: D36VRR



Dimensional Data

Unit Size	Airflow Range cfm (l/s)	D	L
4	0 – 225 (0 – 106)	3 7/8 (98)	18 (457)
5	0 – 400 (0 – 189)	4 7/8 (124)	18 (457)
6	0 – 550 (0 – 260)	5 7/8 (149)	18 (457)
7	0 – 800 (0 – 378)	6 7/8 (175)	18 (457)
8	0 – 1100 (0 – 579)	7 7/8 (200)	18 (457)
9	0 – 1400 (0 – 661)	8 7/8 (225)	20 (508)
10	0 – 1840 (0 – 868)	9 7/8 (251)	20 (508)
12	0 – 2500 (0 – 1081)	11 7/8 (302)	20 (508)
14	0 – 3370 (0 – 1590)	13 7/8 (352)	22 (559)
16	0 – 4525 (0 – 2135)	15 7/8 (403)	22 (559)

Standard Construction:

- Casing: 22 ga. (0.86), corrosion-resistant steel with stiffening beads.
- Blade: Two layers of 20 ga. (1.00), corrosion-resistant steel laminated together with a cross-linked polyethylene peripheral gasket for tight shut-off. 90° rotation, CW to close. Damper leakage is less the 1% of the terminal rated airflow at 3" w.g. (750 pa.) and less than 2% at 6" w.g. (1500 pa.) as tested in accordance with ANSI / ASHRAE Standard 130.
- Bearings: Self-lubricating oilite bronze.
- Drive Shaft/Axles: 1/2" (13) diameter plated steel, double-bolted to blades. Indicator mark on the end of the shaft to show damper position.
- Full NEMA 1 type controls enclosure for factory mount controls.
- Multi-point averaging Diamond Flow Sensor. Supplied with brass balancing tees.
- Right-hand control location is standard (as shown) when looking in direction of airflow. Left-hand is optional.

OPTIONS:

Digital Controls:

❑ Factory mounted (supplied by others)

❑ Field mounted (supplied by others)

See separate submittal.

Other:

❑ Cross flow sensor.

❑ Removable insert type Flow sensor (see submittal 36FMI-1).

❑ 24 VAC Control transformer.

❑ Toggle disconnect switch.

❑ Controls enclosure for field mounted controls.

❑ Dust tight enclosure seal.

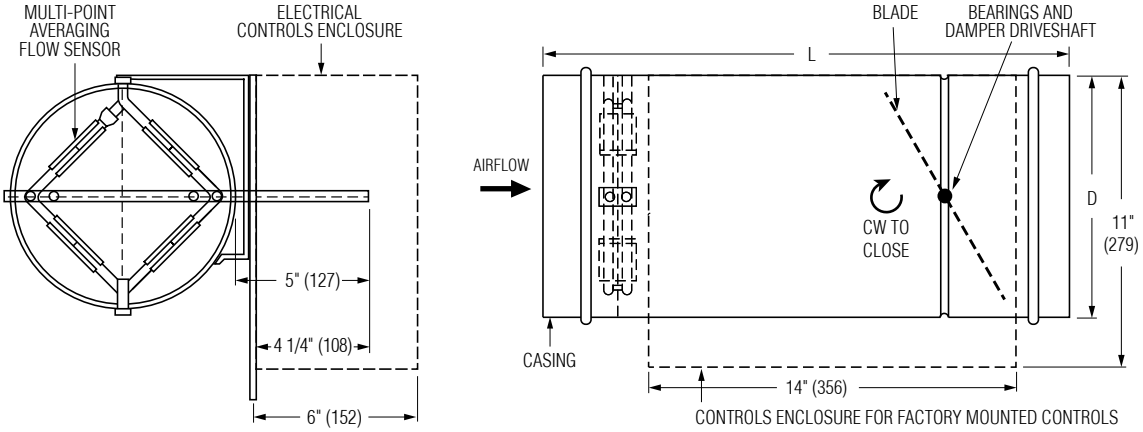
❑ Hanger brackets.

❑ Special features _____.

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**2 - 6 - 23**	**3600**	**7 - 20 - 20**	**36VRR-1**

Nailor® Industries Inc.

ROUND RETROFIT TERMINAL UNIT
DIGITAL CONTROLS • PRESSURE INDEPENDENT
VARIABLE AIR VOLUME • EXTERNAL
TYPE 304 STAINLESS STEEL
MODEL: 36VRR-SS



Dimensional Data

Unit Size	Airflow Range cfm (l/s)	D	L
4	0 – 225 (0 – 106)	3 7/8 (98)	18 (457)
5	0 – 400 (0 – 189)	4 7/8 (124)	18 (457)
6	0 – 550 (0 – 260)	5 7/8 (149)	18 (457)
7	0 – 800 (0 – 378)	6 7/8 (175)	18 (457)
8	0 – 1100 (0 – 579)	7 7/8 (200)	18 (457)
9	0 – 1400 (0 – 661)	8 7/8 (225)	20 (508)
10	0 – 1840 (0 – 868)	9 7/8 (251)	20 (508)
12	0 – 2500 (0 – 1081)	11 7/8 (302)	20 (508)
14	0 – 3370 (0 – 1590)	13 7/8 (352)	22 (559)
16	0 – 4525 (0 – 2135)	15 7/8 (403)	22 (559)

Standard Features:

- Casing: 22 ga. (0.86), type 304 stainless steel with stiffening beads.
- Blade: Two layers of 22 ga. (0.86), type 304 stainless steel laminated together (equivalent to 16 gauge) with a cross-linked polyethylene peripheral gasket for tight shut-off. 90° rotation, CW to close. Damper leakage is less than 2% of nominal CFM @ 6" w.g. as tested in accordance with ANSI/ ASHRAE Standard 130.
- Bearings: Type 304 stainless steel.
- Drive Shaft/Axles: 1/2" (13) diameter type 304 stainless steel, double-bolted to blades. Indicator mark on the end of the shaft to show damper position.
- Controls enclosure: A 20 ga. (1.00) corrosion-resistant steel enclosure to enclose all controls is available and is supplied as standard when controls are factory mounted. Exact size and location may vary dependent upon controls.
- Multi-point averaging Diamond Flow sensor: Type 304 stainless steel. Gauge taps are provided for field balancing when controls are factory mounted.
- Right-hand control location is standard (as shown). Left hand is optional.

OPTIONS:

Digital Controls:

❑ Factory mounted (supplied by others).

❑ Field mounted (supplied by others).

See separate submittal.

Other:

❑ Cross flow sensor.

❑ Removable insert type Flow sensor (see submittal 36FMI-1).

❑ 24 VAC Control transformer.

❑ Toggle disconnect switch.

❑ Controls enclosure for field mounted controls.

❑ Dust tight enclosure seal.

❑ Hanger brackets.

❑ Special features _____.

SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**2 - 6 - 23**	**3600**	**3 - 30 - 17**	**36VRR-2**

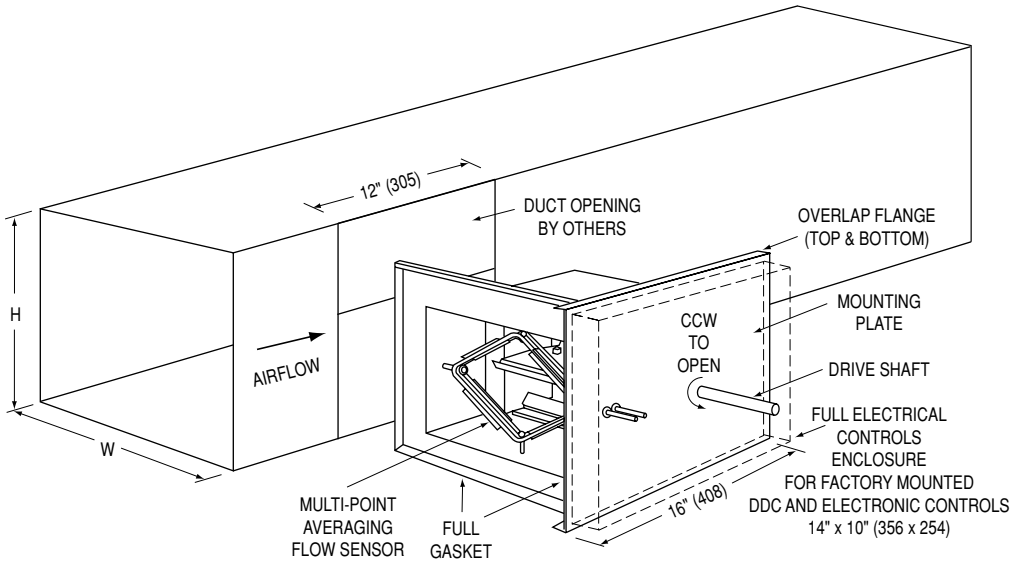
SLIDE-IN RETROFIT TERMINAL UNIT

PRESSURE INDEPENDENT • VARIABLE AIR VOLUME

MODEL: 36VRS

DESCRIPTION:

A slide-in type Retrofit Air Terminal Unit for square or rectangular ductwork. Converts constant volume systems to variable air volume. Available in 15 individual valve sizes to up to 15,000 cfm. Each unit size is available to suit various duct sizes as shown in the table. Simple, low cost installation into existing ductwork. The installer cuts a rectangular hole in the side of the duct, cuts away the insulation (where present), slides the unit into the duct and screws the mounting plate to the side of the duct.



Model 36VRS Square or Rectangular

Unit Size	Nom. Valve Size	Min. - Max. Airflow Range				Available Duct Size Width x Height	
		Pneumatic		Digital/Analog			
		cfm	l/s	cfm	l/s	inches	mm
7	5 x 5	70 - 200	33 - 94	60 - 200	28 - 94	5 x 5 to 12 x 8	127 x 127 to 305 x 203
8	6 x 6	110 - 300	52 - 142	85 - 300	40 - 142	6 x 6 to 14 x 10	152 x 152 to 356 x 254
9	8 x 6	140 - 400	66 - 189	110 - 400	52 - 189	8 x 6 to 16 x 10	203 x 152 to 406 x 254
10	10 x 8	240 - 700	113 - 330	180 - 700	85 - 330	10 x 8 to 18 x 12	254 x 203 to 457 x 305
11	14 x 8	320 - 1000	151 - 472	260 - 1000	123 - 472	14 x 8 to 24 x 12	356 x 203 to 610 x 305
11A	18 x 6	310 - 1000	146 - 472	250 - 1000	118 - 472	18 x 6 to 26 x 10	457 x 152 to 660 x 254
12	12 x 10	350 - 1100	165 - 519	280 - 1100	132 - 519	12 x 10 to 22 x 14	305 x 254 to 559 x 356
13	18 x 10	500 - 1900	236 - 897	435 - 1900	205 - 897	18 x 10 to 30 x 14	457 x 254 to 762 x 356
14	18 x 12	650 - 2400	307 - 1133	540 - 2400	255 - 1133	18 x 12 to 28 x 16	457 x 305 to 711 x 406
15	20 x 14	850 - 3800	401 - 1794	700 - 3800	330 - 1794	20 x 14 to 30 x 18	508 x 356 to 762 x 457
15A	30 x 12	1020 - 5400	481 - 2549	870 - 5400	411 - 2549	30 x 12 to 36 x 16	762 x 305 to 914 x 406
16	22 x 16	1000 - 5400	472 - 2549	850 - 5400	401 - 2549	22 x 16 to 36 x 20	559 x 406 to 914 x 508
17	24 x 18	1250 - 6700	590 - 3162	1100 - 6700	519 - 3162	24 x 18 to 36 x 26	610 x 457 to 914 x 660
18	30 x 20	1750 - 10000	826 - 4720	1500 - 10000	708 - 4720	30 x 20 to 46 x 26	762 x 508 to 1168 x 660
19	40 x 20	2300 - 15000	1085 - 7080	1900 - 15000	897 - 7080	40 x 20 to 52 x 26	1016 x 508 to 1321 x 660

STANDARD CONSTRUCTION:

1. Damper: 16 ga. (1.6) galvanized steel construction with extruded PVC blade seals and metallic side jamb seals. Leakage is less than 2% of nominal CFM @ 3.0" w.g. as tested in accordance with ASHRAE Standard 130.
2. Bearings: Celcon®.
3. Drive Shaft: 1/2" (13) dia. plated steel, double-bolted to blade. Indicator mark on the end of the shaft to show damper position.
4. Controls enclosure: A 20 ga. (0.91) galvanized steel enclosure to enclose all controls is available and is supplied as standard when controls are factory mounted. Exact size and location may vary dependent upon controls.
5. Multi-point averaging flow sensor: Aluminum. Gauge taps are provided for field balancing when controls are factory mounted.
6. Gasket under the mounting plate and around periphery of terminal insert seal the unit to the sides of the duct.

CONTROLS:

See separate submittal.

OPTIONS:

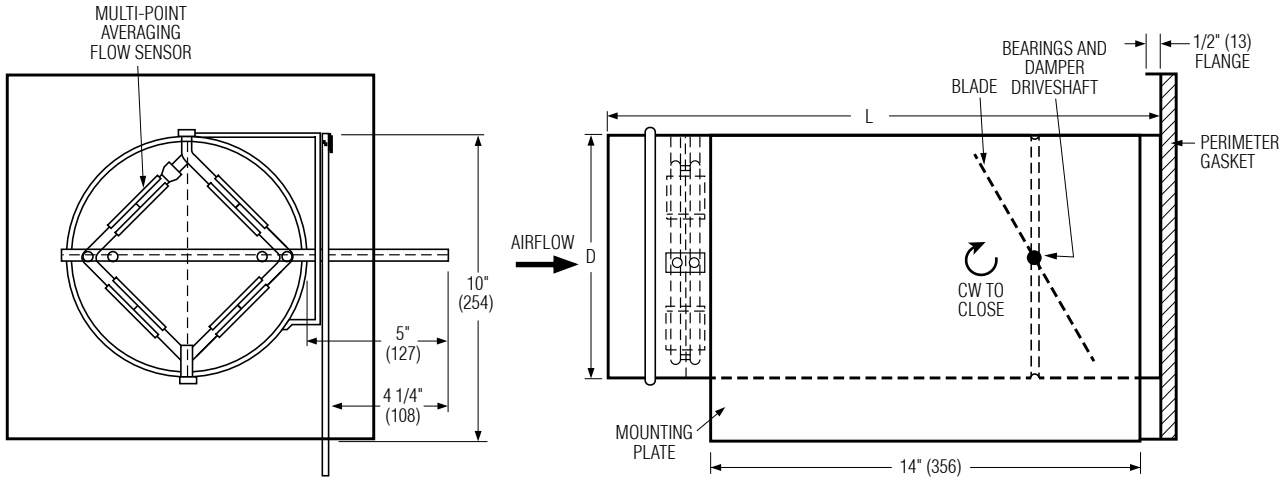
- ❑ 24 volt control transformer
- ❑ Toggle disconnect switch
- ❑ Dust tight enclosure seal
- ❑ Other: _____

SCHEDULE TYPE:	Dimensions are in inches (mm).			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**2 - 13 - 06**	**3600**	**10 - 3 - 03**	**36VRS-1**

TRANE® ROUND RETROFIT TERMINAL UNIT

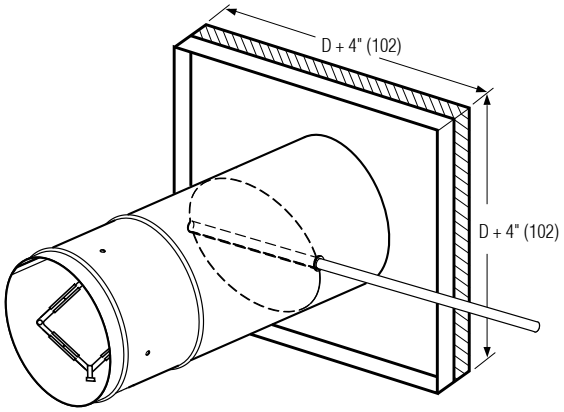
DIGITAL CONTROLS • PRESSURE INDEPENDENT
VARIABLE AIR VOLUME • EXTERNAL

MODEL: D36VRTR



Dimensional Data

Unit Size	Airflow Range cfm (l/s)	D	L
4	0 – 225 (0 – 106)	3 7/8 (98)	18 (457)
5	0 – 400 (0 – 189)	4 7/8 (124)	18 (457)
6	0 – 550 (0 – 260)	5 7/8 (149)	18 (457)
7	0 – 800 (0 – 378)	6 7/8 (175)	18 (457)
8	0 – 1100 (0 – 579)	7 7/8 (200)	18 (457)
9	0 – 1400 (0 – 661)	8 7/8 (225)	20 (508)
10	0 – 1840 (0 – 868)	9 7/8 (251	20 (508)
12	0 – 2500 (0 – 1081)	11 7/8 (302)	20 (508)
14	0 – 3370 (0 – 1590)	13 7/8 (352)	22 (559)
16	0 – 4525 (0 – 2135)	15 7/8 (403)	22 (559)



Standard Construction:

- Casing: 22 ga. (0.86), corrosion-resistant steel with stiffening beads.
- Blade: Two layers of 20 ga. (1.00), corrosion-resistant steel laminated together with a cross-linked polyethylene peripheral gasket for tight shut-off. 90° rotation, CW to close. Damper leakage is less the 1% of the terminal rated airflow at 3" w.g. (750 pa.) and less than 2% at 6" w.g. (1500 pa.) as tested in accordance with ANSI / ASHRAE Standard 130.
- Bearings: Self-lubricating oilite bronze.
- Drive Shaft/Axles: 1/2" (13) diameter plated steel, double-bolted to blades. Indicator mark on the end of the shaft to show damper position.
- Mounting plate for field or factory mount controls.
- Multi-point averaging Diamond Flow sensor: Supplied with brass balancing tees.
- Right-hand control location is standard (as shown) when looking in direction of airflow. Left-hand is optional.

Digital Controls:

❑ Factory mounted (supplied by others)
❑ Field mounted (supplied by others)
See separate submittal.

Options and Accessories:

❑ Cross flow sensor.
❑ Removable Flow sensor (see submittal 36FMI-1).
❑ 24 VAC Control transformer.
❑ Toggle disconnect switch.
❑ Dust tight enclosure seal.
❑ Special features _____.

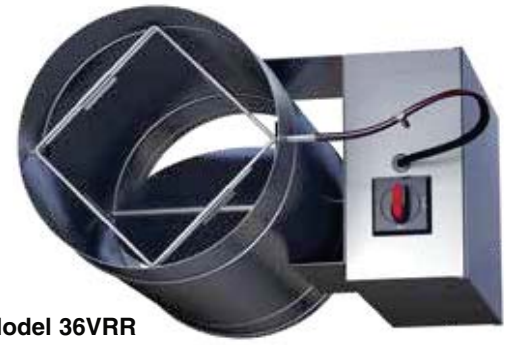
SCHEDULE TYPE:	Dimensions are in inches (mm)			
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**2 - 6 - 23**	**3600**	**3 - 24 - 17**	**36VRTR**

Recommended Airflow Ranges For Model 36VRR Round Retrofit Terminal Units

The recommended airflow ranges below are for Round Duct Retrofit 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 with your controls supplier for minimum limits. Setting airflow minimums lower, may cause hunting and failure to meet minimum ventilation requirements. Factory settings will therefore not be made outside these ranges. A minimum setting of zero (shut-off) is also available. 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.



Model 36VRR

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 primary valve 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	350	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	2750	390	2750	390	2750	3075	3370
16		0 – 4525	2800	640	3700	520	3700	520	3700	4140	4525

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	170	165	189
6		0 – 260	189	38	212	31	212	31	212	236	260
7		0 – 378	260	54	307	45	307	45	342	307	378
8		0 – 579	330	73	425	59	425	59	472	425	579
9		0 – 661	425	94	543	78	543	78	606	495	661
10		0 – 868	519	123	708	101	708	101	790	637	868
12		0 – 1081	755	165	967	137	967	137	1081	1015	1081
14		0 – 1590	991	224	1298	184	1298	184	1451	1444	1590
16		0 – 2135	1321	302	1746	245	1746	245	1954	1911	2135

Performance Data • Discharge Sound Power Levels

Model 36VRR

Unit Size	Airflow		Min. inlet ΔPs		Sound Power Octave Bands Center @ Inlet Pressure ΔPs shown																							
					0.5" w.g. (125 Pa) ΔPs						1.0" w.g. (375 Pa) ΔPs						1.5" w.g. (375 Pa) ΔPs						3.0" w.g. (750 Pa) ΔPs					
	cfm	l/s	"w.g.	Pa	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
4	225	106	0.25	62	72	61	56	53	47	45	76	67	65	58	53	51	79	68	65	60	55	56	83	72	71	64	60	62
	200	94	0.20	50	70	60	55	51	46	44	75	65	60	56	52	50	78	67	63	58	54	54	82	71	67	63	59	60
	150	71	0.10	25	66	56	51	47	43	43	71	60	56	52	48	45	74	63	59	54	51	50	78	67	63	57	55	55
	100	47	0.05	12	61	50	47	37	38	38	66	54	51	46	42	40	69	57	54	49	45	46	73	61	59	52	45	48
5	350	165	0.32	80	72	60	55	53	49	50	77	65	60	56	54	56	78	69	64	59	57	60	84	74	69	64	62	66
	300	142	0.23	57	70	63	54	51	48	49	75	63	58	54	52	54	78	62	61	57	55	58	82	72	67	62	60	62
	200	94	0.11	27	64	53	49	46	42	44	70	58	54	50	47	49	72	61	57	52	50	53	78	67	62	57	55	58
	100	47	0.03	7	58	44	41	37	33	35	62	49	46	41	39	43	65	52	49	44	42	46	70	58	55	48	46	48
6	450	212	0.22	55	72	60	56	53	52	46	76	65	61	59	57	51	79	68	64	61	59	54	83	73	68	64	63	56
	400	189	0.18	45	70	58	54	53	51	44	75	63	59	58	56	49	77	72	62	59	57	52	81	71	66	63	61	55
	300	142	0.10	25	67	54	51	50	46	42	71	59	55	53	51	45	74	62	58	55	53	48	78	66	63	59	57	52
	200	94	0.04	10	62	48	46	45	42	40	66	53	50	43	46	41	69	56	53	50	48	44	73	61	58	53	53	49
7	650	307	0.21	52	61	57	57	58	56	49	66	62	61	61	59	53	69	65	64	63	62	58	74	70	68	66	66	62
	550	260	0.14	35	59	54	54	56	53	47	64	60	60	58	57	51	67	62	63	62	60	56	71	68	66	63	63	60
	450	212	0.10	25	57	52	52	53	51	45	61	57	56	51	54	48	64	60	59	58	57	54	69	64	64	61	60	56
	350	165	0.06	15	54	58	49	49	47	40	59	53	53	52	51	45	61	56	56	55	53	50	66	61	60	57	57	54
8	800	378	0.17	42	71	60	57	57	55	53	75	66	62	61	59	58	78	68	64	63	61	60	83	73	68	66	65	62
	700	330	0.13	32	69	59	56	56	54	51	74	64	60	59	58	56	76	67	63	62	60	58	81	71	67	65	64	60
	600	283	0.10	25	68	57	55	53	52	49	72	62	58	57	56	54	75	64	61	59	58	56	79	69	66	64	61	58
	400	189	0.04	10	65	52	49	48	46	42	68	58	54	53	52	47	71	60	57	54	52	50	75	65	61	58	56	55
9	1050	496	0.17	42	72	62	61	58	57	52	76	67	65	62	61	57	79	69	68	65	63	62	84	75	72	68	65	65
	850	401	0.11	27	69	59	59	56	53	50	71	64	63	60	58	54	76	67	65	62	61	59	82	71	69	66	65	62
	650	307	0.07	17	66	56	55	53	50	46	71	61	59	56	55	51	74	64	62	59	58	55	79	69	66	62	62	60
	450	212	0.03	7	62	52	51	48	46	41	66	56	55	52	51	44	70	59	58	54	53	50	74	64	62	59	58	57
10	1350	637	0.16	40	72	62	60	57	57	53	77	67	64	61	61	57	80	71	67	64	64	62	85	76	72	69	68	65
	1150	543	0.12	30	70	60	58	56	55	51	75	65	62	60	59	55	78	69	66	62	62	61	81	73	69	66	66	63
	950	448	0.09	22	68	57	56	53	52	49	73	63	60	58	57	54	76	66	64	60	59	60	81	71	67	64	64	62
	750	354	0.05	12	65	54	53	50	50	47	70	59	57	54	54	51	72	63	60	51	56	54	78	68	64	62	60	61
12	2100	991	0.19	47	73	65	63	61	60	55	79	70	67	66	64	59	82	73	70	67	67	64	87	76	74	72	72	69
	1700	802	0.12	30	71	62	60	58	57	53	76	67	65	62	61	58	79	70	67	64	64	62	84	75	72	69	68	67
	1300	614	0.07	17	67	58	57	54	53	50	73	64	61	58	58	55	76	67	64	61	60	60	81	71	68	65	64	64
	900	425	0.03	7	63	54	52	50	49	47	68	59	57	53	52	52	71	62	59	56	55	57	77	67	63	60	59	60
14	3200	1510	0.25	62	75	68	66	64	63	65	81	73	71	67	66	69	84	76	73	70	69	71	89	81	77	74	73	73
	2700	1274	0.19	47	73	65	64	61	61	63	78	70	68	65	65	67	81	73	71	68	67	69	86	78	75	71	71	72
	2200	1038	0.12	30	70	62	61	58	58	59	75	67	66	63	63	64	78	70	68	65	64	67	83	75	72	70	68	69
	1700	802	0.06	15	67	58	58	55	55	53	72	63	62	59	59	57	75	66	65	61	61	59	80	71	69	66	64	62
16	4000	1888	0.21	52	74	66	66	63	62	61	79	72	71	67	67	66	82	75	73	70	70	72	88	80	78	74	73	75
	3500	1652	0.15	37	73	65	64	62	61	60	78	70	69	66	65	62	81	74	72	68	67	68	86	79	76	72	71	72
	3000	1416	0.11	27	71	62	63	60	59	58	76	67	67	63	63	59	78	71	70	66	66	67	83	76	74	70	68	70
	2000	944	0.04	10	66	56	57	54	53	53	70	61	61	58	58	59	73	65	64	61	60	65	78	71	68	65	65	68

Performance Notes:

1. Discharge sound power is the noise emitted from the unit discharge into the downstream duct.

2. Sound power levels are in decibels, dB re 10^{-12} watts.

3. All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation.

4. Min. inlet ΔPs is the minimum operating pressure requirement (damper full open).

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 130 and AHRI Standard 880.

Performance Data • NC Level Application Guide

Model 36VRR

Inlet Size	Airflow		Min. inlet ΔPs		NC Levels @ Inlet Pressure (ΔPs) shown							
					DISCHARGE				RADIATED			
	cfm	l/s	"w.g.	Pa	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	3.0" w.g. (750 Pa)	0.5" w.g. (125 Pa)	1.0" w.g. (250 Pa)	1.5" w.g. (375 Pa)	3.0" w.g. (750 Pa)
4	225	106	0.25	62	30	35	39	44	-	21	24	30
	200	94	0.20	50	28	34	38	43	-	-	-	22
	150	71	0.10	25	23	29	33	38	-	-	-	-
	100	47	0.05	12	-	23	26	31	-	-	-	-
5	350	165	0.32	80	26	33	34	41	-	26	26	33
	300	142	0.23	57	24	30	34	39	-	21	23	30
	200	94	0.11	27	20	28	30	38	-	-	-	20
	100	47	0.03	7	-	-	21	28	-	-	-	-
6	450	212	0.22	55	26	31	35	40	20	24	28	32
	400	189	0.18	45	24	30	33	38	-	22	24	30
	300	142	0.10	25	20	25	29	34	-	-	-	23
	200	94	0.04	10	-	23	26	31	-	-	-	-
7	650	307	0.21	52	-	20	24	30	-	26	28	33
	550	260	0.14	35	-	-	20	28	-	22	24	28
	450	212	0.10	25	-	-	-	23	-	-	-	25
	350	165	0.06	15	-	-	-	-	-	-	-	-
8	800	378	0.17	42	23	28	31	38	-	26	26	33
	700	330	0.13	32	23	29	31	38	-	24	24	28
	600	283	0.10	25	21	26	30	35	-	-	21	26
	400	189	0.04	10	-	21	25	30	-	-	-	-
9	1050	496	0.17	42	24	29	33	39	-	25	29	35
	850	401	0.11	27	20	23	29	36	-	21	24	32
	650	307	0.07	17	-	25	29	35	-	-	-	26
	450	212	0.03	7	-	-	24	29	-	-	-	21
10	1350	637	0.16	40	24	30	34	40	21	28	31	36
	1150	543	0.12	30	21	28	31	35	-	24	28	33
	950	448	0.09	22	-	25	29	35	-	20	23	30
	750	354	0.05	12	-	21	24	31	-	-	-	24
12	2100	991	0.19	47	25	33	36	43	29	33	36	40
	1700	802	0.12	30	23	29	33	39	23	29	31	35
	1300	614	0.07	17	-	25	29	35	-	22	25	30
	900	425	0.03	7	-	-	23	30	-	-	-	21
14	3200	1510	0.25	62	28	35	39	45	30	35	38	43
	2700	1274	0.19	47	27	31	35	41	26	31	33	38
	2200	1038	0.12	30	23	28	31	38	21	26	29	34
	1700	802	0.06	15	-	24	28	34	-	21	23	28
16	4000	1888	0.21	52	26	33	36	44	31	36	39	45
	3500	1652	0.15	37	25	31	35	41	29	33	35	41
	3000	1416	0.11	27	23	29	31	38	24	30	32	37
	2000	944	0.04	10	-	23	28	31	-	-	23	28

Performance Notes:

1. NC levels are calculated from the published raw data and based on procedures outlined in AHRI Standard 885, Appendix E.
2. Discharge sound attenuation deductions are based on environmental effect, duct lining, branch power division, insulated flex duct, end reflection and space effect and are as follows:

Discharge attenuation	Octave Band 2	3	4	5	6	7
< 300 cfm	24	28	39	53	59	40
300 – 700 cfm	27	29	40	51	53	39
> 700 cfm	29	30	41	51	52	39

3. Radiated sound attenuation deductions are based on a mineral tile ceiling and environmental effect and are as follows:

Radiation attenuation	Octave Band 2	3	4	5	6	7
Total dB reduction	18	19	20	26	31	36

4. Min. inlet ΔPs is the minimum static pressure required to achieve rated airflow (damper full open).
5. Dash (–) in space denotes an NC level of less than 20.

Performance Data • Radiated Sound Power Levels

Model 36VRR

Unit Size	Airflow		Min. inlet ΔPs		Sound Power Octave Bands Center @ Inlet Pressure ΔPs shown																							
					0.5" w.g. (125 Pa) ΔPs						1.0" w.g. (375 Pa) ΔPs						1.5" w.g. (375 Pa) ΔPs						3.0" w.g. (750 Pa) ΔPs					
	cfm	l/s	"w.g.	Pa	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7	2	3	4	5	6	7
4	225	106	0.25	62	50	42	42	44	47	40	53	44	45	49	51	44	55	48	48	50	54	49	60	54	55	55	58	52
	200	94	0.20	50	49	37	38	40	44	38	48	40	42	45	47	40	50	43	45	46	49	41	53	45	47	49	52	45
	150	71	0.10	25	24	26	27	33	35	27	40	31	35	38	39	33	46	35	37	40	45	38	49	43	43	45	48	40
	100	47	0.05	12	-	-	-	24	28	-	-	-	26	29	34	26	-	21	26	30	37	31	42	33	34	36	40	34
5	350	165	0.32	80	54	45	45	46	47	41	55	51	52	52	54	46	60	52	52	53	55	50	65	57	58	58	60	55
	300	142	0.23	57	49	41	41	42	46	37	50	47	47	48	50	43	58	49	49	51	52	46	60	53	55	57	59	52
	200	94	0.11	27	43	26	35	38	40	27	42	38	39	41	44	33	48	40	41	43	45	36	53	45	46	46	48	42
	100	47	0.03	7	-	-	21	23	25	-	-	-	21	29	32	-	-	-	22	33	36	21	41	31	35	36	40	26
6	450	212	0.22	55	53	45	44	48	49	42	57	50	49	52	53	48	59	51	51	55	55	51	63	57	57	59	59	56
	400	189	0.18	45	51	42	42	46	41	39	55	47	47	50	51	45	57	50	50	52	53	48	61	52	54	57	58	53
	300	142	0.10	25	46	37	37	40	41	32	50	42	42	44	46	37	52	44	44	47	48	41	56	49	48	51	52	46
	200	94	0.04	10	30	25	28	32	34	22	43	23	34	37	39	27	45	36	37	39	41	30	49	41	41	44	45	36
7	650	307	0.21	52	53	44	44	42	48	45	59	52	52	53	54	51	61	52	53	52	54	54	64	58	58	57	59	64
	550	260	0.14	35	49	42	42	43	46	41	56	49	48	49	52	47	58	50	50	51	52	50	59	54	53	54	56	60
	450	212	0.10	25	45	38	37	39	43	36	51	43	43	44	46	42	52	44	45	45	47	45	55	50	51	52	54	53
	350	165	0.06	15	40	34	34	32	36	30	44	35	36	38	41	35	50	41	42	43	44	39	52	44	45	45	47	49
8	800	378	0.17	42	54	45	45	44	47	44	58	51	52	50	52	50	62	53	52	53	54	54	65	58	58	57	60	59
	700	330	0.13	32	52	43	43	41	45	41	57	50	50	51	51	46	59	50	50	49	53	51	60	54	53	54	57	56
	600	283	0.10	25	48	39	38	37	43	37	53	44	44	46	49	42	55	46	47	48	49	47	58	51	52	52	55	52
	400	189	0.04	10	44	32	30	29	35	27	43	34	35	35	40	32	49	40	42	43	44	37	51	43	44	43	46	42
9	1050	496	0.17	42	56	47	45	45	48	47	60	52	51	51	52	53	63	55	54	54	55	56	67	61	60	59	62	62
	850	401	0.11	27	53	43	43	43	44	42	56	47	47	46	49	47	59	51	50	48	53	51	63	56	57	56	58	56
	650	307	0.07	17	46	36	35	34	42	35	51	42	41	41	43	41	54	45	44	45	47	44	59	53	52	52	54	50
	450	212	0.03	7	42	29	27	26	30	26	47	34	33	32	37	32	49	35	36	35	45	35	51	46	47	45	49	41
10	1350	637	0.16	40	58	49	47	47	49	48	62	54	53	52	53	53	64	57	56	56	57	60	69	63	61	61	63	62
	1150	543	0.12	30	56	46	45	44	46	45	59	51	50	49	52	50	61	54	53	53	55	53	65	59	58	58	60	58
	950	448	0.09	22	52	42	41	41	43	41	56	48	46	46	48	45	58	51	49	49	51	48	62	55	55	54	56	55
	750	354	0.05	12	48	38	37	36	38	35	53	43	42	41	44	40	54	47	45	44	47	44	58	52	50	49	52	49
12	2100	991	0.19	47	63	55	54	53	53	52	66	59	58	57	58	58	68	62	61	59	62	61	72	66	65	64	65	66
	1700	802	0.12	30	57	51	49	48	49	48	61	55	54	51	54	53	64	57	56	55	57	57	68	61	60	59	61	61
	1300	614	0.07	17	52	45	44	43	44	41	56	48	48	47	48	47	58	51	51	50	52	50	62	54	55	51	56	55
	900	425	0.03	7	45	37	36	36	37	32	48	40	40	39	42	38	51	42	42	42	44	41	55	46	47	46	49	47
14	3200	1510	0.25	62	66	57	55	53	55	59	70	62	58	57	59	63	72	67	63	61	62	65	75	68	67	65	66	70
	2700	1274	0.19	47	63	54	52	50	52	51	66	58	56	54	56	57	68	61	58	56	58	61	72	65	63	61	63	67
	2200	1038	0.12	30	58	50	47	46	47	46	62	53	52	50	52	52	64	56	54	53	55	56	67	60	59	58	60	62
	1700	802	0.06	15	53	44	42	41	43	41	56	48	47	45	47	46	58	50	49	48	46	50	62	55	53	52	55	55
16	4000	1888	0.21	52	67	58	56	53	56	57	71	62	60	59	61	62	73	64	64	61	63	66	76	70	69	66	68	71
	3500	1652	0.15	37	65	55	52	51	54	54	68	60	58	56	58	59	70	62	60	58	59	61	73	67	66	64	65	67
	3000	1416	0.11	27	61	51	49	47	50	50	65	56	55	53	54	55	67	58	57	55	58	58	70	63	62	60	62	63
	2000	944	0.04	10	52	42	40	39	42	40	56	47	45	44	47	45	58	49	49	46	49	48	62	53	53	52	54	53

Performance Notes:

1. Radiated sound power is the breakout noise transmitted through the unit casing walls.

2. Sound power levels are in decibels, dB re 10^{-12} watts.

3. All sound data listed by octave bands is raw data without any corrections for room absorption or duct attenuation.

4. Min. inlet ΔPs is the minimum operating pressure requirement (damper full open).

5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 130 and AHRI Standard 880.

Recommended Airflow Ranges For Model 36VRS Slide-in Retrofit Terminal Units

The recommended airflow ranges below are for terminal units with pressure independent controls and are based upon controller sensitivity limits as shown for each control type and acoustical consideration for duct velocity. For a given unit size, the minimum, auxiliary minimum (where applicable) and the maximum flow settings must be within the range limits to ensure pressure independent operation, accuracy and repeatability. For these reasons, factory settings will not be made outside these ranges. A minimum setting of zero (shut-off) is also available. Where an auxiliary setting is specified, the value must be greater than the minimum setting.

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.

Model 36VRS

Model 36VRS Square or Rectangular

Unit Size	Nom. Valve Size	Min. – Max. Airflow Range				Available Duct Size Width x Height	
		Pneumatic		Digital/Analog			
		cfm	l/s	cfm	l/s	inches	mm
7	5 x 5	70 – 200	33 – 94	60 – 200	28 – 94	5 x 5 to 12 x 8	127 x 127 to 305 x 203
8	6 x 6	110 – 300	52 – 142	85 – 300	40 – 142	6 x 6 to 14 x 10	152 x 152 to 356 x 254
9	8 x 6	140 – 400	66 – 189	110 – 400	52 – 189	8 x 6 to 16 x 10	203 x 152 to 406 x 254
10	10 x 8	240 – 700	113 – 330	180 – 700	85 – 330	10 x 8 to 18 x 12	254 x 203 to 457 x 305
11	14 x 8	320 – 1000	151 – 472	260 – 1000	123 – 472	14 x 8 to 24 x 12	356 x 203 to 610 x 305
11A	18 x 6	310 – 1000	146 – 472	250 – 1000	118 – 472	18 x 6 to 26 x 10	457 x 152 to 660 x 254
12	12 x 10	350 – 1100	165 – 519	280 – 1100	132 – 519	12 x 10 to 22 x 14	305 x 254 to 559 x 356
13	18 x 10	500 – 1900	236 – 897	435 – 1900	205 – 897	18 x 10 to 30 x 14	457 x 254 to 762 x 356
14	18 x 12	650 – 2400	307 – 1133	540 – 2400	255 – 1133	18 x 12 to 28 x 16	457 x 305 to 711 x 406
15	20 x 14	850 – 3800	401 – 1794	700 – 3800	330 – 1794	20 x 14 to 30 x 18	508 x 356 to 762 x 457
15A	30 x 12	1020 – 5400	481 – 2549	870 – 5400	411 – 2549	30 x 12 to 36 x 16	762 x 305 to 914 x 406
16	22 x 16	1000 – 5400	472 – 2549	850 – 5400	401 – 2549	22 x 16 to 36 x 20	559 x 406 to 914 x 508
17	24 x 18	1250 – 6700	590 – 3162	1100 – 6700	519 – 3162	24 x 18 to 36 x 26	610 x 457 to 914 x 660
18	30 x 20	1750 – 10000	826 – 4720	1500 – 10000	708 – 4720	30 x 20 to 46 x 26	762 x 508 to 1168 x 660
19	40 x 20	2300 – 15000	1085 – 7080	1900 – 15000	897 – 7080	40 x 20 to 52 x 26	1016 x 508 to 1321 x 660

Performance Data • NC Level Application Guide

Model 36VRS

Inlet Size	Valve Size	Duct W x H	Airflow cfm	Airflow l/s	Min. inlet ΔPs "w.g.	Min. inlet ΔPs Pa	NC Levels @ Inlet Pressure (ΔPs) shown: DISCHARGE 0.5" w.g. (125 Pa)	DISCHARGE 1.0" w.g. (250 Pa)	DISCHARGE 2.0" w.g. (500 Pa)	DISCHARGE 3.0" w.g. (750 Pa)	RADIATED 0.5" w.g. (125 Pa)	RADIATED 1.0" w.g. (250 Pa)	RADIATED 2.0" w.g. (500 Pa)	RADIATED 3.0" w.g. (750 Pa)
7	5 x 5	5 x 5	70	33	0.004	1	-	23	31	36	22	30	36	40
			140	66	0.016	4	-	24	33	38	23	31	37	41
			200	94	0.033	8	-	25	34	39	24	32	38	42
		8 x 8	70	33	0.024	6	-	-	22	27	-	21	28	32
			140	66	0.094	23	-	-	24	29	-	23	29	33
			200	94	0.191	47	-	-	25	30	-	24	30	34
		12 x 8	70	33	0.043	11	-	-	-	22	-	-	23	27
			140	66	0.172	43	-	-	-	24	-	-	25	28
			200	94	0.350	87	-	-	20	25	-	20	26	29
8	6 x 6	6 x 6	110	52	0.004	1	-	24	33	38	25	31	38	42
			200	94	0.013	3	-	24	32	37	24	31	37	41
			300	142	0.030	7	-	25	34	39	25	32	38	42
		10 x 8	110	52	0.019	5	-	-	25	30	-	25	31	35
			200	94	0.064	16	-	-	25	30	-	24	30	34
			300	142	0.145	36	-	-	26	31	-	25	31	35
		14 x 10	110	52	0.039	10	-	-	20	25	-	20	26	30
			200	94	0.128	32	-	-	20	24	-	-	25	29
			300	142	0.288	72	-	-	20	26	-	20	26	30
9	8 x 6	8 x 6	140	66	0.004	1	-	23	31	36	23	30	36	40
			270	127	0.014	3	-	23	32	37	24	30	36	40
			400	189	0.031	8	-	24	32	37	24	31	37	41
		12 x 8	140	66	0.019	5	-	-	24	29	-	23	29	33
			270	127	0.070	17	-	-	25	30	-	24	30	34
			400	189	0.153	38	-	-	26	31	-	25	31	35
		16 x 10	140	66	0.031	8	-	-	20	25	-	-	26	29
			270	127	0.114	28	-	-	20	25	-	20	26	30
			400	189	0.251	62	-	-	21	26	-	20	27	30
10	10 x 8	10 x 8	240	113	0.007	2	-	23	32	37	24	30	36	40
			480	227	0.027	7	-	25	33	38	25	32	38	42
			700	330	0.057	14	-	26	34	39	26	32	39	43
		14 x 10	240	113	0.023	6	-	-	26	31	-	25	32	35
			480	227	0.091	23	-	-	28	33	20	27	33	37
			700	330	0.193	48	-	20	29	34	21	28	34	38
		18 x 12	240	113	0.050	12	-	-	21	26	-	20	26	30
			480	227	0.200	50	-	-	23	28	-	23	29	33
			700	330	0.426	106	-	-	24	29	-	24	30	34
11	14 x 8	14 x 8	320	151	0.006	1	-	-	28	33	20	26	33	36
			650	307	0.024	6	-	24	33	38	24	31	37	41
			1000	472	0.057	14	-	25	34	39	25	32	38	42
		18 x 10	320	151	0.017	4	-	-	23	28	-	22	29	32
			650	307	0.072	18	-	-	28	33	20	27	33	37
			1000	472	0.170	42	-	20	29	34	21	28	34	38
		24 x 14	320	151	0.042	10	-	-	-	33	-	-	23	27
			650	307	0.172	43	-	-	22	27	-	21	28	31
			1000	472	0.406	101	-	-	23	28	-	22	29	32
11A	18 x 6	18 x 6	310	146	0.007	2	-	-	28	33	20	26	33	36
			650	307	0.030	7	-	23	32	37	24	30	36	40
			1000	472	0.070	17	17	26	34	39	26	32	39	43
		22 x 8	310	146	0.025	6	-	-	22	27	-	21	27	31
			650	307	0.109	27	-	-	26	31	-	25	31	35
			1000	472	0.258	64	-	20	29	34	21	27	34	37
		26 x 10	310	146	0.037	9	-	-	20	25	-		25	29
			650	307	0.161	40	-	-	23	28	-	22	29	33
			1000	472	0.380	94	-	-	26	31	-	25	31	35
12	12 x 10	12 x 10	350	165	0.006	1	-	20	28	33	20	27	33	37
			725	342	0.025	6	-	24	33	38	25	31	37	41
			1100	519	0.057	14	-	26	34	39	26	32	39	43
		18 x 12	350	165	0.026	6	-	-	22	27	-	21	28	31
			725	342	0.110	27	-	-	26	31	-	25	31	35
			1100	519	0.253	63	-	-	27	32	20	26	32	36
		24 x 14	350	165	0.044	11	-	-	-	23	-	-	24	28
			725	342	0.188	47	-	-	23	28	-	22	28	32
			1100	519	0.433	108	-	-	24	29	-	23	30	34
13	18 x 10	18 x 10	500	236	0.006	1	-	21	30	35	22	28	35	38
			1200	566	0.034	8	-	25	34	39	26	32	38	42
			1900	897	0.084	21	-	25	34	39	25	32	38	42
		24 x 12	500	236	0.017	4	-	-	25	31	-	24	31	34
			1200	566	0.098	24	-	21	29	34	21	28	34	38
			1900	897	0.246	61	-	21	29	34	21	28	34	38
		30 x 14	500	236	0.030	7	-	-	22	27	-	21	27	31
			1200	566	0.173	43	-	-	26	31	-	25	31	35
			1900	897	0.434	108	-	-	26	31	-	25	31	35

For full performance table notes, see page D7.

Performance Data • NC Level Application Guide

Model 36VRS

Inlet Size	Valve Size	Duct W x H	Airflow cfm	Airflow l/s	Min. inlet ΔPs "w.g.	Min. inlet ΔPs Pa	NC Levels @ Inlet Pressure (ΔPs) shown: DISCHARGE 0.5" w.g. (125 Pa)	DISCHARGE 1.0" w.g. (250 Pa)	DISCHARGE 2.0" w.g. (500 Pa)	DISCHARGE 3.0" w.g. (750 Pa)	RADIATED 0.5" w.g. (125 Pa)	RADIATED 1.0" w.g. (250 Pa)	RADIATED 2.0" w.g. (500 Pa)	RADIATED 3.0" w.g. (750 Pa)
14	18 x 12	18 x 12	650	307	0.003	1	-	21	29	34	21	28	34	38
			1525	720	0.019	5	-	22	31	36	23	29	36	39
			2400	1133	0.048	12	-	24	33	38	25	31	37	41
		24 x 14	650	307	0.010	2	-	-	25	30	-	24	30	34
			1525	720	0.054	13	-	-	27	32	-	25	32	36
			2400	1133	0.134	33	-	20	29	34	21	27	34	37
		28 x 16	650	307	0.015	4	-	-	22	27	-	21	28	31
			1525	720	0.085	21	-	-	24	29	-	23	29	33
			2400	1133	0.210	52	-	-	26	31	-	25	31	35
15	20 x 14	20 x 14	850	401	0.004	1	-	20	29	34	21	27	33	37
			2325	1097	0.027	7	-	24	32	37	24	30	37	41
			3800	1793	0.073	18	-	25	34	39	26	32	39	42
		26 x 16	850	401	0.009	2	-	-	25	30	-	24	30	34
			2325	1097	0.071	18	-	20	29	34	21	27	33	37
			3800	1793	0.190	47	-	22	30	35	22	29	35	39
		30 x 18	850	401	0.041	10	-	-	23	28	-	21	28	32
			2325	1097	0.109	27	-	-	26	31	-	25	31	35
			3800	1793	0.290	72	-	-	28	33	20	26	33	37
15A	30 x 12	30 x 12	1020	481	0.003	1	-	21	29	34	21	27	34	37
			3200	1510	0.034	8	-	24	33	38	24	31	37	41
			5400	2548	0.098	24	-	26	34	39	26	32	39	43
		34 x 14	1020	481	0.007	2	-	-	27	32	-	25	31	35
			3200	1510	0.072	18	-	21	30	35	22	28	35	38
			5400	2548	0.204	51	-	23	32	37	24	30	36	40
		36 x 16	1020	481	0.010	2	-	-	25	30	-	23	30	33
			3200	1510	0.102	25	-	20	28	33	20	27	33	37
			5400	2548	0.290	72	-	21	30	35	22	28	35	38
16	22 x 16	22 x 16	1000	472	0.003	1	-	21	29	38	21	27	34	37
			3200	1510	0.026	6	-	24	33	38	24	31	37	41
			5400	2548	0.074	18	-	28	36	41	28	34	41	44
		28 x 18	1000	472	0.006	1	-	-	26	35	-	24	31	34
			3200	1510	0.063	16	-	20	29	34	21	28	34	38
			5400	2548	0.179	44	-	24	33	38	25	31	38	41
		36 x 20	1000	472	0.011	3	-	-	22	31	-	21	28	31
			3200	1510	0.112	28	-	-	26	31	-	24	31	35
			5400	2548	0.320	80	-	21	29	35	22	28	35	38
17	24 x 18	24 x 18	1250	590	0.003	1	-	21	29	34	21	27	34	37
			4000	1888	0.033	8	-	25	34	39	25	32	38	42
			6700	3162	0.092	23	-	28	36	41	28	34	41	44
		30 x 24	1250	590	0.010	2	-	-	24	29	-	23	29	33
			4000	1888	0.103	26	-	20	29	34	21	27	34	37
			6700	3162	0.290	72	-	23	31	36	23	30	36	40
		36 x 26	1250	590	0.015	4	-	-	22	27	-	21	27	31
			4000	1888	0.153	38	-	-	26	31	-	25	31	35
			6700	3162	0.430	107	-	20	29	34	21	28	34	38
18	30 x 20	30 x 20	1750	826	0.003	1	-	20	29	34	21	27	33	37
			5875	2773	0.030	7	-	28	36	41	28	34	41	45
			10000	4719	0.086	21	-	28	36	41	28	34	41	44
		38 x 24	1750	826	0.007	2	-	-	25	30	-	23	30	33
			5875	2773	0.080	20	-	24	32	37	24	31	37	41
			10000	4719	0.233	58	-	24	32	37	24	31	37	41
		46 x 26	1750	826	0.011	3	-	-	22	27	-	21	27	31
			5875	2773	0.124	31	-	21	30	35	22	28	35	39
			10000	4719	0.360	89	-	21	30	35	22	28	35	39
19	40 x 20	40 x 20	2300	1085	0.003	1	-	20	28	33	20	26	33	37
			8650	4082	0.038	9	-	26	35	40	26	33	39	43
			15000	7079	0.115	29	20	29	38	43	29	36	42	46
		46 x 24	2300	1085	0.006	1	-	-	25	35	-	24	30	34
			8650	4082	0.086	21	-	26	35	36	26	33	39	43
			15000	7079	0.258	64	-	26	34	37	26	33	39	43
		52 x 26	2300	1085	0.009	2	-	-	23	33	-	22	28	32
			8650	4082	0.123	31	-	26	35	34	26	33	39	43
			15000	7079	0.370	92	-	24	33	35	25	31	37	41

For full performance table notes, see page D7.