STERI-SYSTEM LINEAR SLOT DIFFUSERS

- OPERATING ROOM AIR CURTAIN
- SINGLE SLOT
- REMOVABLE FACE
- STAINLESS STEEL

Model 92LS-SS

Model:

92LS-SS Stainless Steel

• Suffix '-O' adds a stainless steel opposed blade damper

The **Nailor 92LS-SS Series Steri-System Linear Slot Diffusers** are specially designed to provide an air curtain for operating rooms. The **92LS-SS Series** unique slot design creates a continuous curtain of air, angled outwards 5 – 15°, that encloses the operating area and minimizes the possibility of contaminated air entering the surgical area. The single slot design creates a uniform low velocity curtain that minimizes entrainment of contaminated air into the curtain air stream. It also creates a wider velocity profile with less turbulence and hence less induction over similar two slot designs. The face design incorporates longitudinal deflectors that horizontally deflect a small amount of air lengthwise. This effectively joins the airflow through sections and corners forming a truly continuous air curtain, resulting in enhanced isolation of the surgical area.

FEATURES:

• The entire slot assembly including the pressure plate is removable for cleaning and is secured by 1/4 turn stainless steel fasteners.

• Safety cables are included as standard and prevent accidental dropping of the removable face.

• Perforated pressure plate has 3/32" (2.4) dia. holes on 60°, 1/4" (6) staggered centers (13% free area).

• Standard unit designed for both lay-in T-Bar ceiling systems and surface mount applications.

• Integral earthquake hanger tabs are standard.

• Flanged inlets for simple duct connection.

• Plenums have rounded corners for easier cleaning.

• An optional stainless steel, face operated, removable, opposed blade damper is available.

Material: Type 304 Stainless Steel construction.

Finish: #3 Satin Polished finish is standard. Other finishes are available.

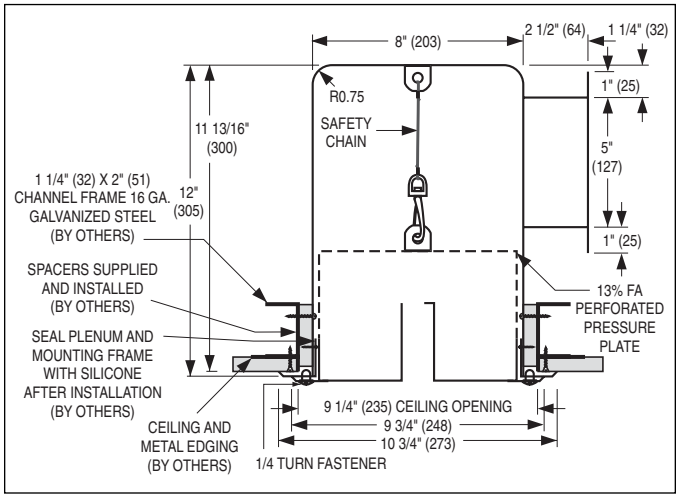
Options:

• 316 Stainless Steel construction.

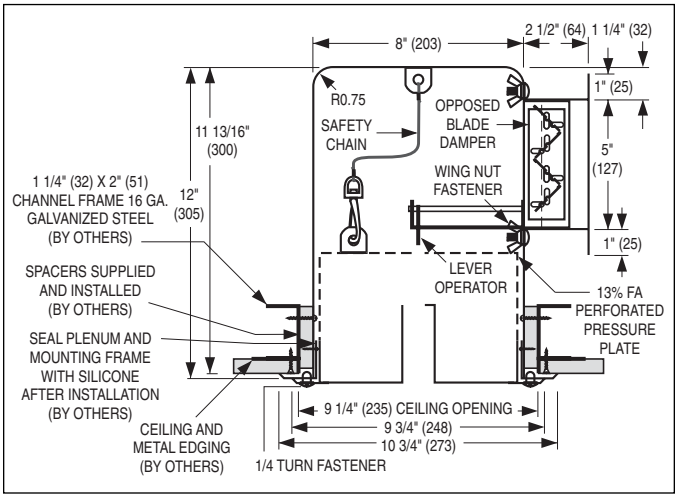
• AW Appliance White finish.

• Opposed Blade Dampers.

Model 92LS-SS
Operating Room Plenum Detail

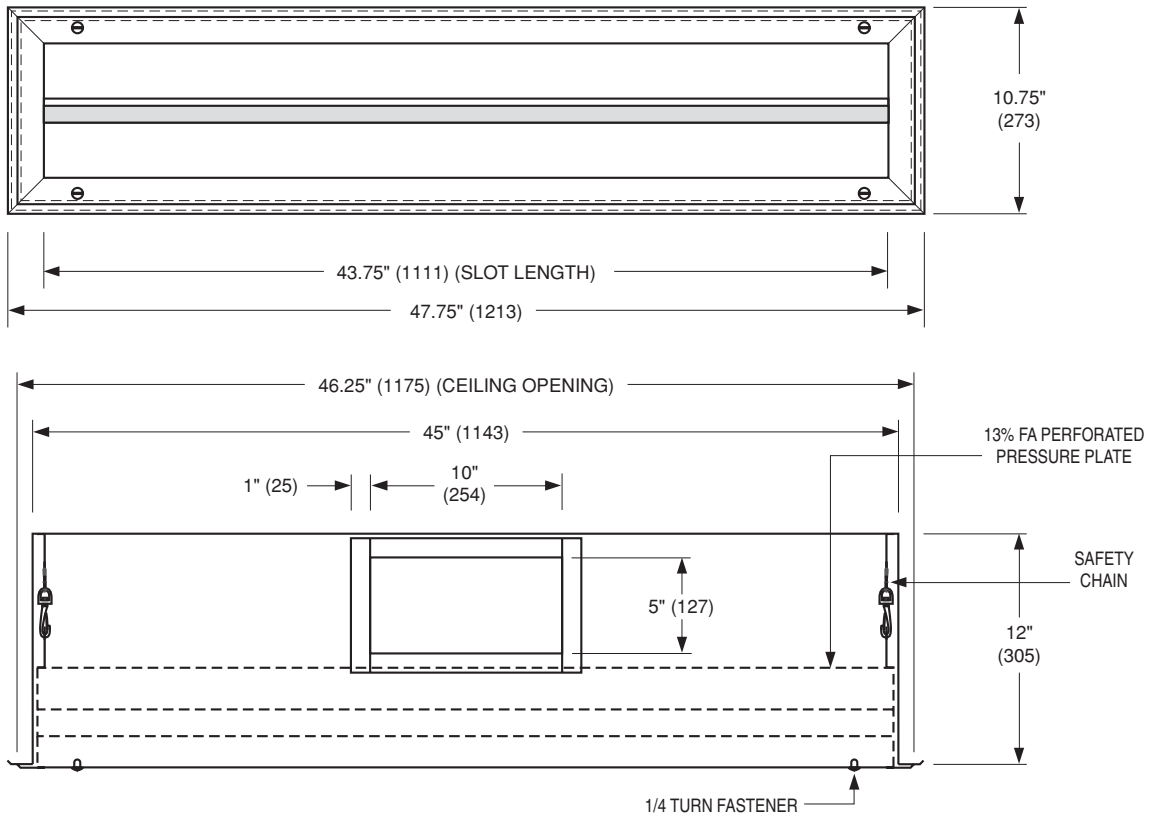


Model 92LS-SS-O (with O.B.D.)
Operating Room Plenum Detail

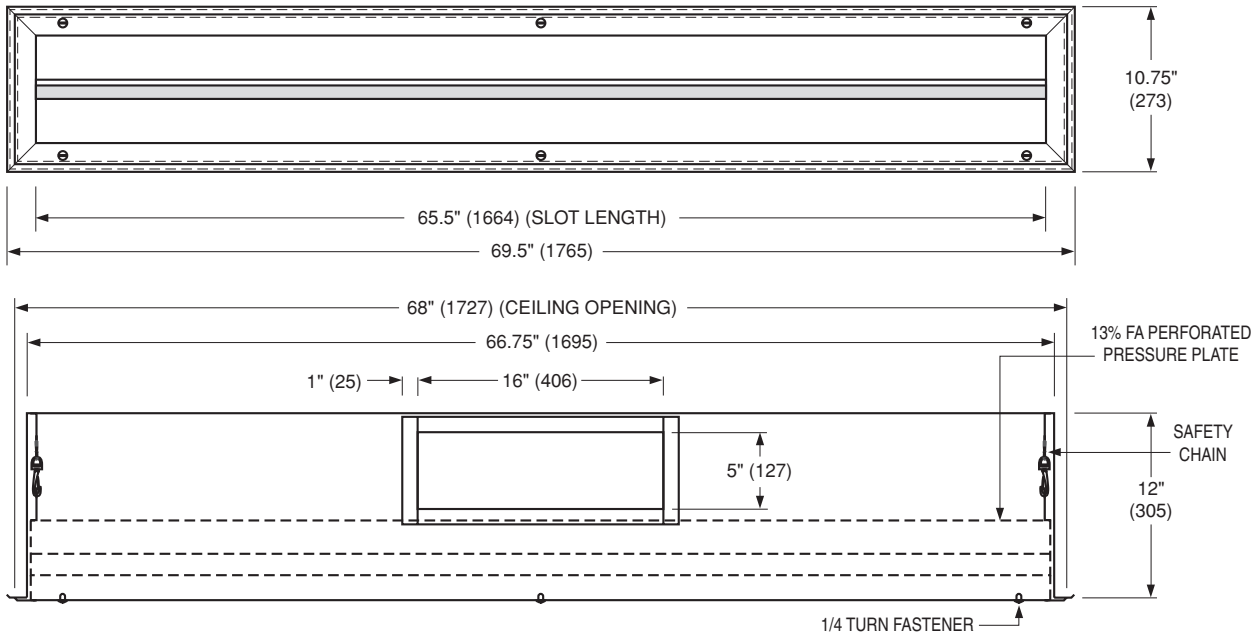


Dimensional Data

Model 92LS-SS (4 ft. (1219) Module)

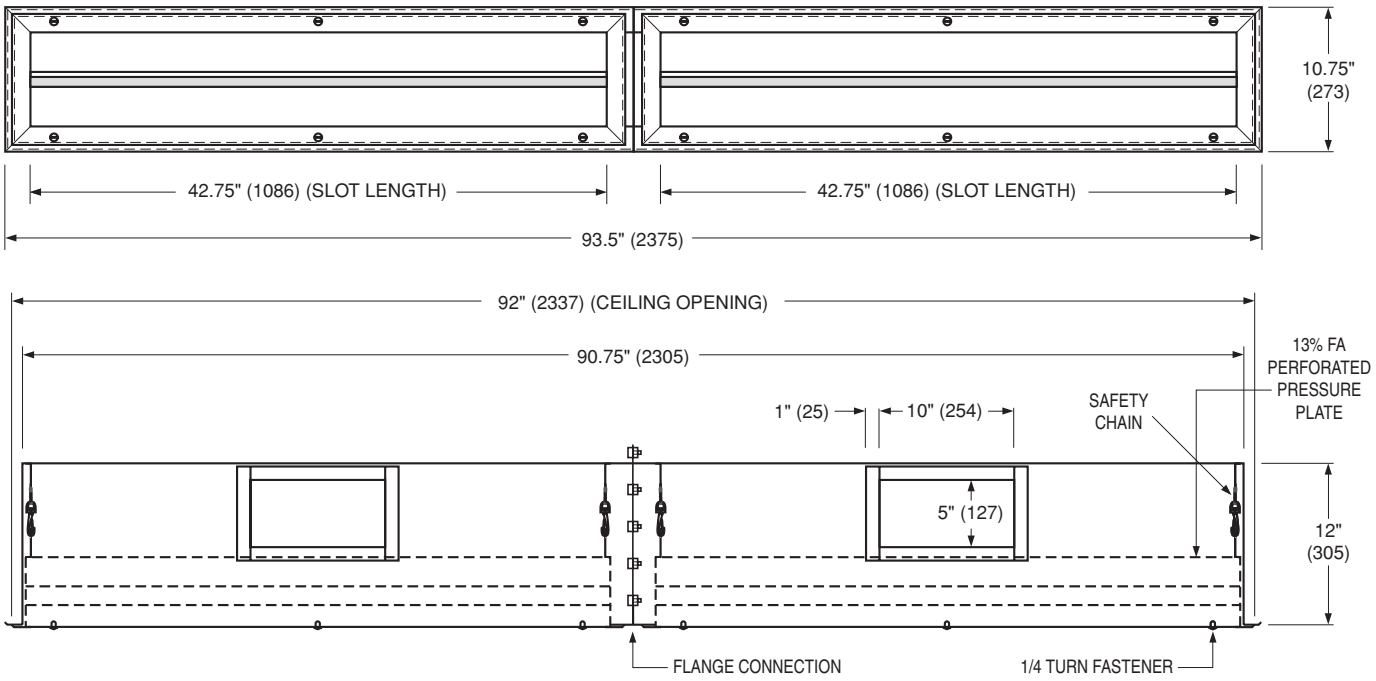


Model 92LS-SS (6 ft. (1829) Module)

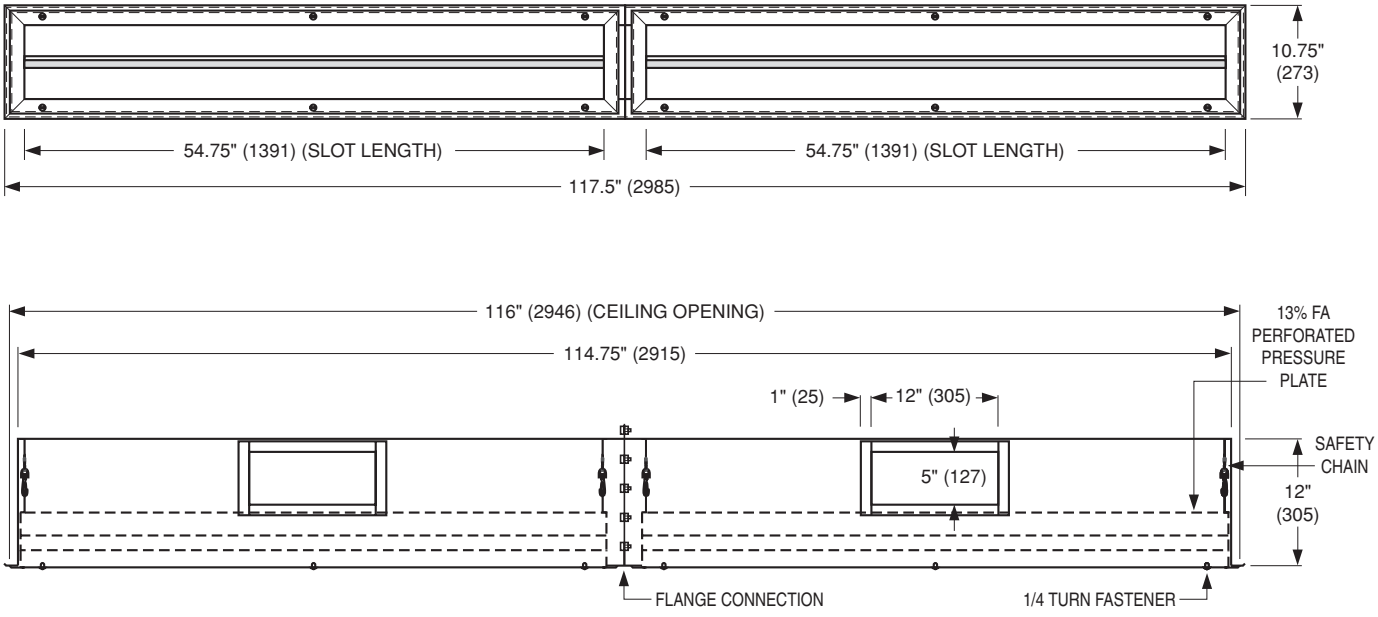


Dimensional Data

Model 92LS-SS (8 ft. (2438) Module)

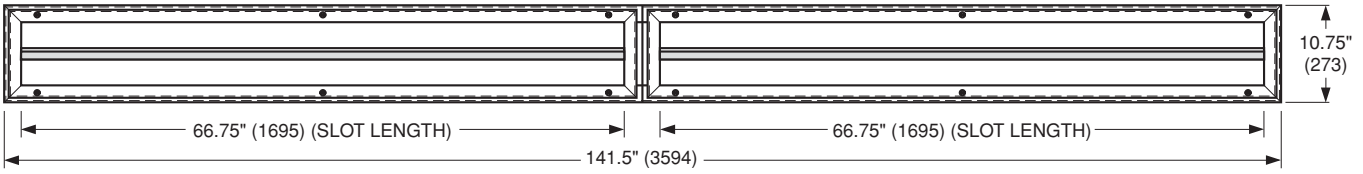


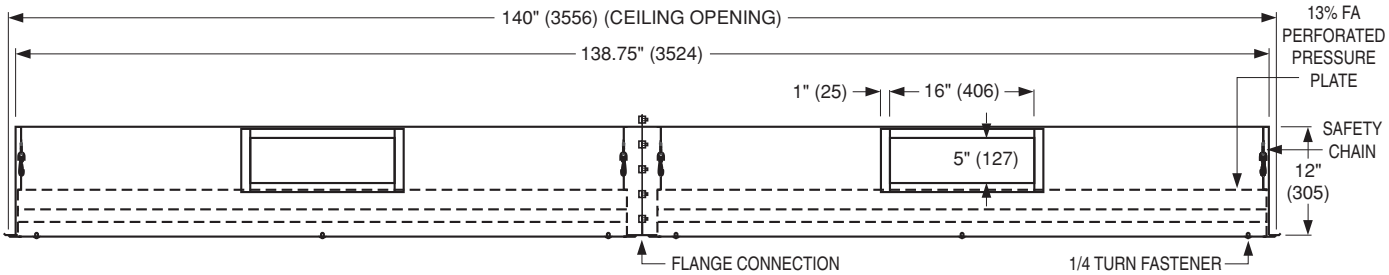
Model 92LS-SS (10 ft. (3048) Module)



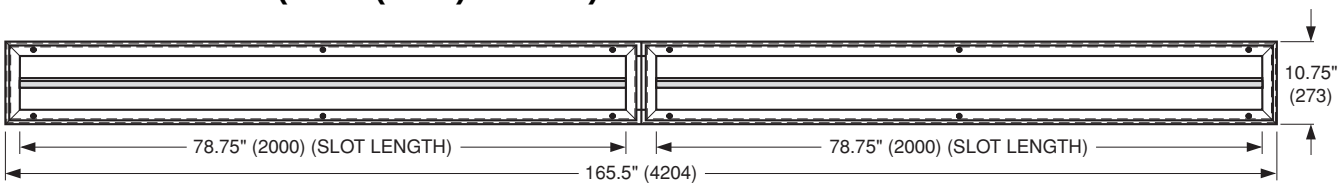
Dimensional Data

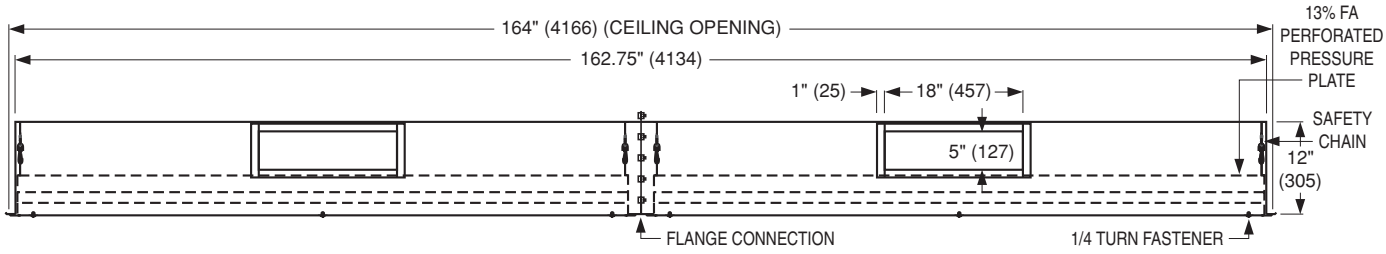
Model 92LS-SS (12 ft. (3658) Module)



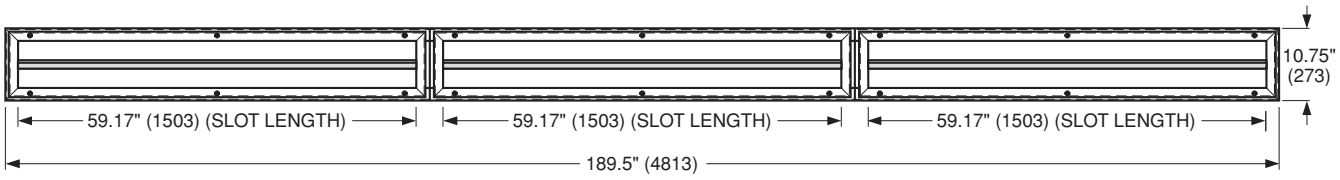


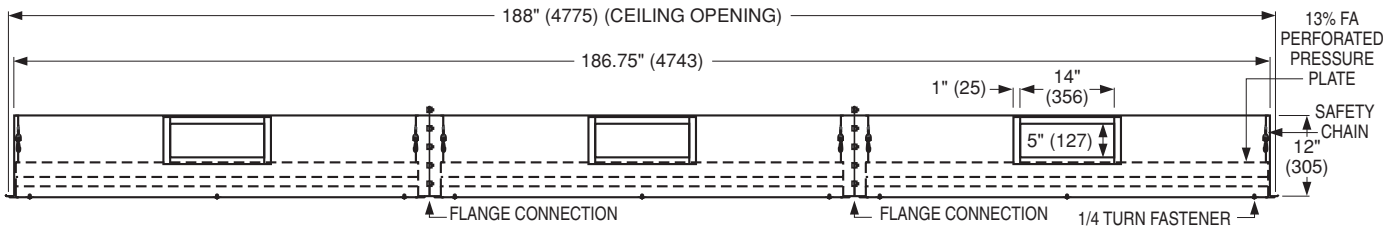
Model 92LS-SS (14 ft. (4267) Module)





Model 92LS-SS (16 ft. (4677) Module)





HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Steri-System Linear Slot Diffuser – Model Series 92LS-SS

92LS-SS - 12 x 5 - 10 - S - #3 - —

MODEL

- 304 Stainless Steel 92LS-SS
- 304 Stainless Steel w/O.B.D. 92LS-SS-O

INLET(S) SIZE (inches) (mm)

- 10 x 5 (254 x 127) - 1 Inlet 4 ft. (1219) Module
- 16 x 5 (406 x 127) - 1 Inlet 6 ft. (1829) Module
- 10 x 5 (254 x 127) - 2 Inlets 8 ft. (2438) Module
- 12 x 5 (305 x 127) - 2 Inlets 10 ft. (3048) Module
- 16 x 5 (406 x 127) - 2 Inlets 12 ft. (3658) Module
- 18 x 5 (457 x 127) - 2 Inlets 14 ft. (4267) Module
- 14 x 5 (356 x 127) - 3 Inlets 16 ft. (4677) Module

CEILING MODULE LENGTH (ft.) (mm)

- 4 ft. (1219)
- 6 ft. (1829)
- 8 ft. (2438)
- 10 ft. (3048)
- 12 ft. (3658)
- 14 ft. (4267)
- 16 ft. (4677)

OPTIONS

- None (default) —
- 316 Stainless Steel Construction 316

FINISH

- #3 Satin Polished (default) #3
- Appliance White AW
- Special Custom Color SP

FRAME TYPE

- Lay-in T-Bar L
- Surface Mount S

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model 92LS-SS Steri-System Linear Slot Diffusers** of the size and type shown on the plans and air distribution schedules. The diffusers shall be constructed entirely from 304 stainless steel (316 optional), minimum 24 gauge. The diffuser shall incorporate a non-adjustable single slot designed to create a vertical air curtain angled outwards 5 – 15°. The diffuser shall incorporate a pressure plate behind the slot to ensure uniform slot velocity. The pressure plate shall be 13% free area with 3/32" (2.4) dia. holes on 1/4" (6) staggered centers. The slot and pressure plate shall be attached with 1/4 turn fasteners to allow for complete removal and access to the interior for cleaning. The plenum shall incorporate radiused corners lengthwise to facilitate cleaning. Flanged plenum inlets are to be maximum 5" (127) in height to allow duct clearance over standard light fixtures. Plenums over 7 ft. (2134) in length shall be supplied in multiple sections with flange connections and stainless steel fasteners for field assembly. All diffusers are to include safety cables to prevent accidental dropping of the removable face. Integral earthquake hanger tabs shall be included with all units. All exposed surfaces shall have a #3 satin polished finish (optional finishes are available).

(Optional) An opposed blade damper, adjustable from the face of the diffuser, shall be provided with all units. Dampers shall be held in place with wing nut fasteners and be removable from the face of the diffuser.

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

Performance Data

Models 92LS-SS

Imperial Units

Nominal Module Length (ft)	Slot Length (ft)	Airflow (cfm/ft)	25	30	35	40	45
		Airflow (cfm)	**91**	**109**	**128**	**146**	**164**
		NC	–	–	–	–	–
4	3.646	**TP**	0.029	0.042	0.057	0.074	0.094
		VP	0.004	0.006	0.008	0.011	0.014
		T	1-1-3	1-1-4	1-2-4	1-2-5	1-2-5
		Airflow (cfm)	**136**	**164**	**191**	**218**	**246**
		NC	–	–	–	–	15
6	5.458	**TP**	0.025	0.037	0.050	0.065	0.082
		VP	0.004	0.005	0.007	0.010	0.012
		T	1-1-4	1-2-4	1-2-5	1-2-5	1-2-5
		Airflow (cfm)	**178**	**214**	**249**	**285**	**321**
		NC	–	–	–	–	16
8	7.125	**TP**	0.028	0.040	0.054	0.071	0.090
		VP	0.004	0.006	0.008	0.011	0.013
		T	1-1-4	1-2-5	1-2-6	1-2-6	1-3-6
		Airflow (cfm)	**228**	**274**	**319**	**365**	**411**
		NC	–	–	–	–	17
10	9.125	**TP**	0.031	0.045	0.062	0.081	0.102
		VP	0.005	0.007	0.009	0.012	0.015
		T	1-1-5	1-2-5	1-2-6	1-3-6	1-3-7
		Airflow (cfm)	**278**	**334**	**389**	**445**	**501**
		NC	–	–	–	15	18
12	11.125	**TP**	0.026	0.038	0.052	0.067	0.085
		VP	0.004	0.006	0.008	0.010	0.013
		T	1-2-5	1-2-6	1-3-7	1-3-7	2-3-7
		Airflow (cfm)	**328**	**394**	**459**	**525**	**591**
		NC	–	–	–	16	19
14	13.125	**TP**	0.029	0.042	0.057	0.074	0.094
		VP	0.004	0.006	0.008	0.011	0.014
		T	1-2-5	1-2-6	1-3-7	1-3-7	2-3-7
		Airflow (cfm)	**370**	**444**	**518**	**592**	**666**
		NC	–	–	–	17	19
16	14.792	**TP**	0.027	0.039	0.053	0.069	0.088
		VP	0.004	0.006	0.008	0.010	0.013
		T	1-2-5	1-2-6	1-3-7	1-3-7	2-3-7

CFM - cubic feet per minute

TP - total pressure - inches w.g.

VP - velocity pressure - inches w.g.

T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.

Performance Notes:

1. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

2. Noise Criteria (NC) values based on 10 dB room absorption re 10^{-12} watts with dampers fully open.

3. Dash (–) in space indicates an NC level of less than 15.

4. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.

Airflow Measurements

1. Take velocity readings at a number of locations along the length of the slot.

2. Total the various readings and divide by the number of readings taken to arrive at an average slot discharge velocity (Vk in FPM).

3. Calculate the airflow (CFM/ft) by multiplying the average velocity by the Ak factor per foot which is 0.078.

Airflow (CFM/ft) = Average Slot Velocity (Vk) x Ak.

4. Calculate the total airflow (CFM) by multiplying by the actual slot length (ft) shown above.
Airflow (CFM) = Airflow (CFM/ft) x Slot Length (ft).

Performance Data

Models 92LS-SS

Metric Units

Nominal Module Length (mm)	Slot Length (m)	Airflow (l/s per m)	38.7	46.4	54.2	61.9	69.7
		Airflow (l/s)	**43**	**51**	**60**	**69**	**77**
		NC	–	–	–	–	–
1219	1.11	**TP**	7	10	14	18	23
		VP	1.0	1.5	2.0	2.7	3.5
		T	0.3-0.3-0.9	0.3-0.3-1.2	0.3-0.6-1.2	0.3-0.6-1.5	0.3-0.6-1.5
		Airflow (l/s)	**64**	**77**	**90**	**103**	**116**
		NC	–	–	–	–	15
1829	1.66	**TP**	6	9	12	16	20
		VP	1.0	1.2	1.7	2.5	3.0
		T	0.3-0.3-1.2	0.3-0.6-1.2	0.3-0.6-1.5	0.3-0.6-1.5	0.3-0.6-1.5
		Airflow (l/s)	**84**	**101**	**118**	**134**	**151**
		NC	–	–	–	–	16
2438	2.17	**TP**	7	10	13	18	22
		VP	1.0	1.5	2.0	2.7	3.2
		T	0.3-0.3-1.2	0.3-0.6-1.5	0.3-0.6-1.8	0.3-0.6-1.8	0.3-0.9-1.8
		Airflow (l/s)	**108**	**129**	**151**	**172**	**194**
		NC	–	–	–	–	17
3048	2.78	**TP**	8	11	15	20	25
		VP	1.2	1.7	2.2	3.0	3.7
		T	0.3-0.3-1.5	0.3-0.6-1.5	0.3-0.6-1.8	0.3-0.9-1.8	0.3-0.9-2.1
		Airflow (l/s)	**131**	**158**	**184**	**210**	**236**
		NC	–	–	–	15	18
3658	3.39	**TP**	6	9	13	17	21
		VP	1.0	1.5	2.0	2.5	3.2
		T	0.3-0.6-1.5	0.3-0.6-1.8	0.3-0.9-2.1	0.3-0.9-2.1	0.6-0.9-2.1
		Airflow (l/s)	**155**	**186**	**217**	**248**	**279**
		NC	–	–	–	16	19
4267	4.00	**TP**	7	10	14	18	23
		VP	1.0	1.5	2.0	2.7	3.5
		T	0.3-0.6-1.5	0.3-0.6-1.8	0.3-0.9-2.1	0.3-0.9-2.1	0.6-0.9-2.1
		Airflow (l/s)	**175**	**209**	**244**	**279**	**314**
		NC	–	–	–	17	19
4677	4.51	**TP**	7	10	13	17	22
		VP	1.0	1.5	2.0	2.5	3.2
		T	0.3-0.6-1.5	0.3-0.6-1.8	0.3-0.9-2.1	0.3-0.9-2.1	0.6-0.9-2.1

L/S - litres per second

TP - total pressure - Pa

VP - velocity pressure - Pa

T - throw in meters

NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.

Performance Notes:

1. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.
2. Noise Criteria (NC) values based on 10 dB room absorption re 10^{-12} watts with dampers fully open.
3. Dash (–) in space indicates an NC level of less than 15.
4. Throws are given at 0.76, 0.51 and 0.25 m/s terminal velocities under isothermal conditions.

Airflow Measurements

1. Take velocity readings at a number of locations along the length of the slot.
2. Total the various readings and divide by the number of readings taken to arrive at an average slot discharge velocity (Vk in m/s).
3. Calculate the airflow (l/s per m) by multiplying the average velocity by the Ak factor per meter which is 23.8.

Airflow (l/s per m) = Average Slot Velocity (Vk) x Ak.

4. Calculate the total airflow (l/s) by multiplying by the actual slot length (m) shown above.

Airflow (l/s) = Airflow (l/s per m) x Slot Length (m).