Nailor

RETURN AIR PLENUMS FOR 5800, 5700 AND 5600 SERIES

This series of return air plenums are designed to match and complement their supply air counterpart. The plenums are for ductless return and include a light shield. Where required, extruded aluminum center tees will be used. Suffix 'I' adds internal insulation.

Model Series –

5700R(I), 5800R(I), 5600R(I) **Page C46**
5700R(I)-F, 5800R(I)-F **Page C48**
5700R(I)-F2, 5800R(I)-F2 **Page C48**

Models 5675R, 5810R-F and 5775R-F2

Model 59ND

N SERIES
PREMIUM PERFORMANCE
SUPPLY AIR

This supply diffuser has a 3/4" (19) slot that incorporates an extruded aluminum pattern controller for a fixed horizontal discharge pattern. This plenum is also available with a down-blow section that incorporates two hinged pattern controllers to provide a vertical discharge pattern in addition to the horizontal discharge pattern. Suffix 'I' adds internal insulation.

Horizontal Discharge –

Models 59N, 59NI **Page C56**

Horizontal/Vertical Discharge –

Models 59ND, 59NDI **Page C56**

N SERIES
PREMIUM PERFORMANCE
SUPPLY/RETURN AIR

The plenum slot diffusers in this series combines a return air plenum attached to the side of the N Series Horizontal Discharge plenum or the combination Horizontal/Vertical Discharge plenum diffuser offered in the same series. Suffix 'I' adds internal insulation.

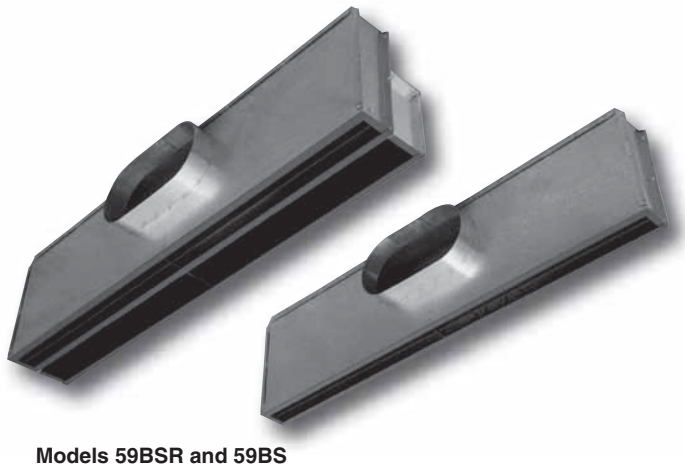
Horizontal Discharge –

Models 59NR, 59NRI **Page C56**

Horizontal/Vertical Discharge –

Models 59NDR, 59NDRI **Page C56**

Model 59NDR



Models 59BSR and 59BS

BS SERIES
PREMIUM PERFORMANCE
ADJUSTABLE VERTICAL DISCHARGE

The plenum slot diffuser in this series provides premium performance in curtain wall applications. Available in both supply and supply/return models. Suffix 'I' adds internal insulation.

Model Series – Supply

59BS(I) **Page C63**

Model Series – Supply/Return

59BSR(I) **Page C63**

59N SERIES

- FOR STANDARD LAY-IN T-BAR
- PREMIUM PERFORMANCE
- SUPPLY AND SUPPLY/RETURN

Supply Models:

59N(I) Horizontal Discharge
59ND(I) Horizontal/Vertical Discharge

Supply/Return Models:

59NR(I) Horizontal Discharge
59NDR(I) Horizontal/Vertical Discharge

• Suffix 'I' adds internal insulation

Models 59ND and 59NDR

The 59N Series Plenum Slot Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, offering an extremely unobtrusive method of air distribution. This series provides premium performance and is available in a supply and a supply/return combination. This series is suitable for variable air volume, heating and cooling applications.

All diffusers include an aerodynamic extruded aluminum pattern controller that provides a fixed horizontal discharge that produces a tight blanket of air into the room, maximizing coanda effect and induction of room air. In addition, Models 59ND and 59NDR include a central down-blow section, which incorporates two pattern controllers (shipped in wide open position), that provide an adjustable vertical discharge along the wall or glass in perimeter applications.

An integral return air section, which returns room air in the ceiling plenum with minimal short-circuiting of supply air is provided on Models 59NR and 59NDR.

STANDARD FEATURES:

- Choice of horizontal or horizontal/vertical discharge with either a supply or a supply/return combination.
- An aerodynamic, extruded aluminum pattern controller provides a fixed horizontal discharge.
- Available in 24", 36", 48" and 60" (600, 900, 1200 and 1500 mm) nominal lengths, to suit both imperial and metric ceiling grids.
- Standard H9 plenum height is 9" (229).
- Standard inlet sizes are 6" (152) round, 8" (203) and 10" (254) flat oval.
- Standard unit size is 9" (229) in height.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum, extruded aluminum pattern controllers.

FINISH OPTIONS:

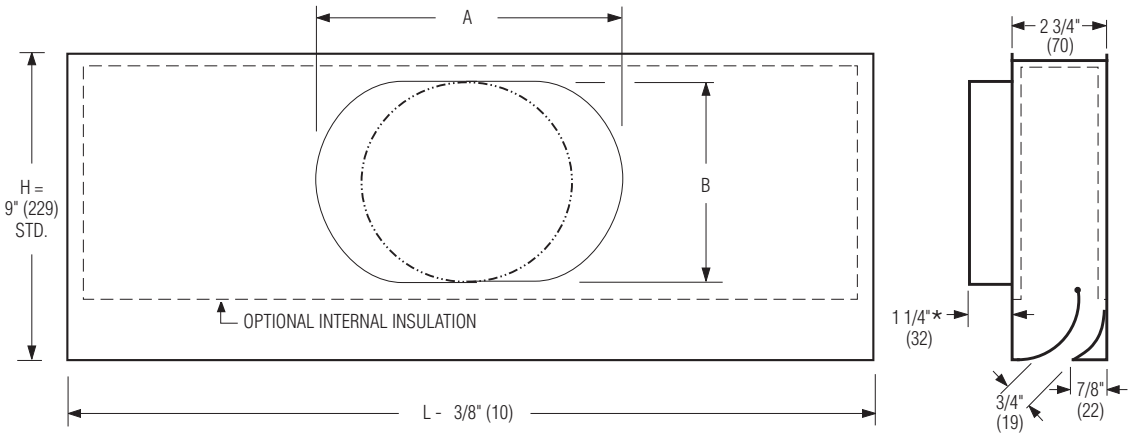
Black on pattern controllers and exposed surfaces.

OPTIONS AND ACCESSORIES:

- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- Low height 7" (178) option when space is a restriction.
- High profile 11" (279) height option.
- Extended 3" (76) inlet collar with bead. The extended collar is also available with a Diamond Flow Sensor.
- For additional options and accessories, see page C68.

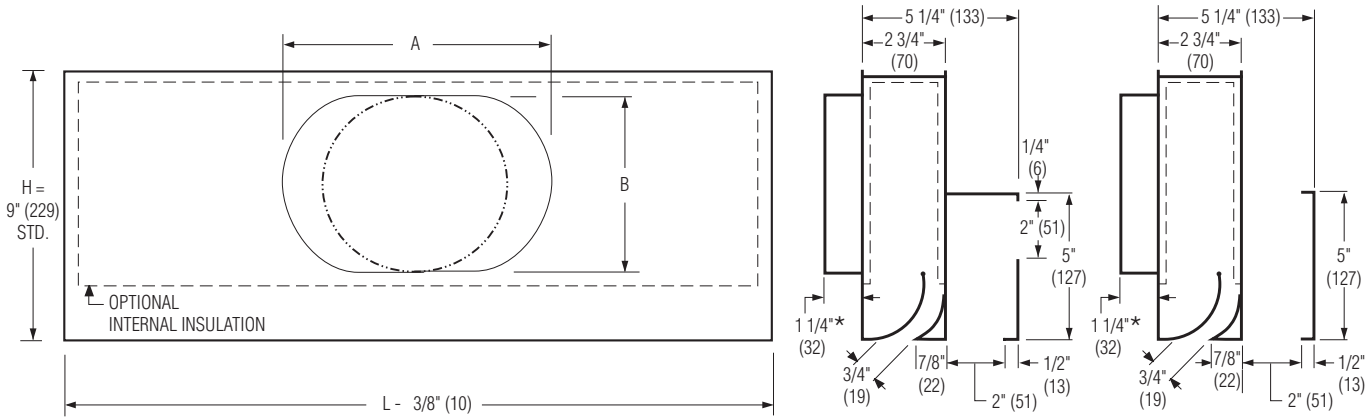
DIMENSIONAL DATA:
MODELS: 59N(I) AND 59NR(I)

Supply • Models 59N(I)



* 4" (102) WITH OPTIONAL ID INLET DAMPER

Supply/Return • Models 59NR(I)



* 4" (102) WITH OPTIONAL ID INLET DAMPER

SR STANDARD SIDE INLET RETURN ILLUSTRATED

TR OPTIONAL TOP INLET RETURN ILLUSTRATED

Nominal Length L		Available Inlet Sizes
Imperial Modules	Metric Modules	
24 (610)	600	6, 8, 10 (152, 203, 254)
36 (914)	900	
48 (1219)	1200	
60 (1524)	1500	

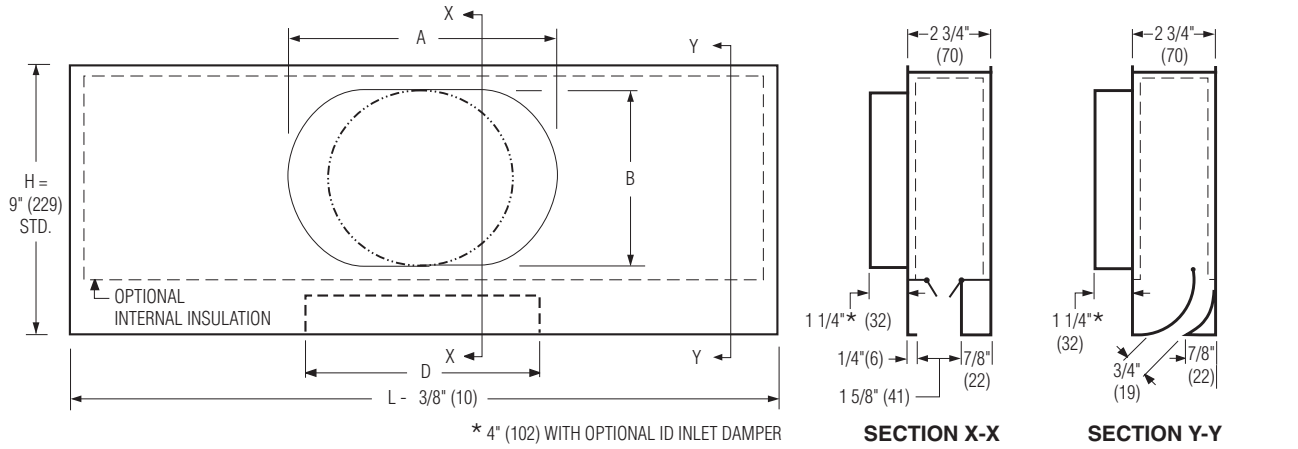
Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	–	5 7/8 (149)	–	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	–	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.

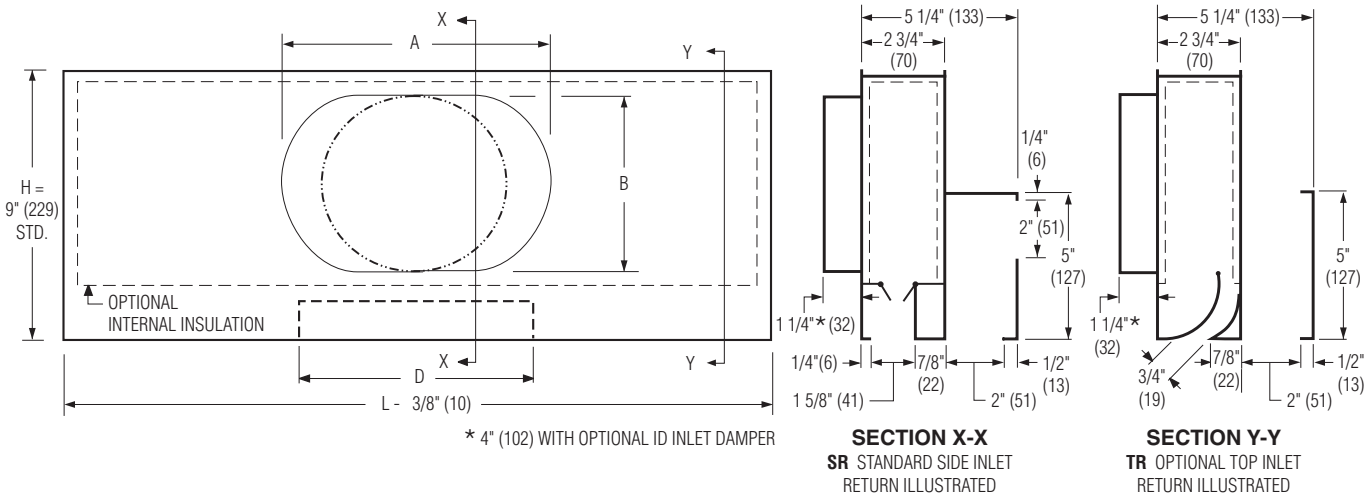
Dimensions are in inches (mm).

DIMENSIONAL DATA:
MODELS: 59ND(I) AND 59NDR(I)

Supply • Models 59ND(I)



Supply/Return • Models 59NDR(I)



Nominal Length L		Available Down-Blow Slot Dim. D	Available Inlet Sizes
Imperial Modules	Metric Modules		
24 (610)	600	8, 12 (203, 305)	6, 8, 10 (152, 203, 254)
36 (914)	900	12, 15 (305, 381)	
48 (1219)	1200	12, 15, 18 (305, 381, 457)	
60 (1524)	1500	15, 18, 21 (381, 457, 533)	

Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	–	5 7/8 (149)	–	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	–	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.

Dimensions are in inches (mm).

PERFORMANCE DATA
MODELS 59N(I) AND 59NR(I) • HORIZONTAL PATTERN • 9" (229) HIGH PLENUM

24" (610) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.039	.070	.110	.158	.215	.281	.355	.439
	Static Pressure	.033	.059	.093	.134	.182	.238	.303	.372
	Noise Criteria	–	16	22	27	31	34	36	39
	Horizontal Throw	3-5-13	5-9-15	6-11-17	8-12-19	10-15-20	11-14-21	12-16-23	13-17-24
8" Oval Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.023	.041	.064	.092	.125	.163	.207	.255
	Static Pressure	.021	.038	.059	.084	.115	.150	.190	.234
	Noise Criteria	–	–	17	23	26	29	31	34
	Horizontal Throw	3-5-13	5-9-15	6-11-17	8-12-19	10-15-20	11-14-21	13-16-23	13-17-24

36" (914) Long

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.057	.101	.157	.227	.309	.403	.511	.630
	Static Pressure	.044	.078	.121	.174	.237	.310	.393	.484
	Noise Criteria	–	20	26	29	32	35	39	43
	Horizontal Throw	4-8-16	7-11-18	8-13-21	11-16-23	12-17-25	13-18-26	15-19-27	16-20-29
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.035	.062	.096	.139	.189	.247	.312	.386
	Static Pressure	.030	.053	.082	.118	.161	.211	.267	.329
	Noise Criteria	–	–	22	25	28	32	35	39
	Horizontal Throw	4-8-16	7-11-18	8-13-21	11-16-23	12-17-25	13-18-26	15-19-27	16-20-29

48" (1219) Long

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.039	.069	.107	.155	.211	.275	.348	.430
	Static Pressure	.030	.053	.083	.119	.162	.211	.268	.330
	Noise Criteria	–	–	20	24	29	33	36	40
	Horizontal Throw	5-9-18	8-13-22	10-15-24	13-18-26	16-20-28	17-21-30	18-22-32	20-24-33
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.028	.050	.079	.113	.154	.201	.255	.315
	Static Pressure	.024	.042	.066	.095	.130	.169	.214	.264
	Noise Criteria	–	–	18	22	27	30	33	37
	Horizontal Throw	5-9-18	8-13-22	10-15-24	13-18-26	16-20-28	17-21-30	18-22-32	20-24-33

60" (1524) Long

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.048	.085	.133	.191	.260	.340	.430	.532
	Static Pressure	.034	.060	.094	.135	.184	.241	.305	.376
	Noise Criteria	–	17	23	27	32	36	39	43
	Horizontal Throw	8-12-20	10-15-24	13-19-26	14-20-29	18-22-31	19-23-33	20-25-35	22-27-36
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.034	.061	.095	.137	.187	.244	.309	.381
	Static Pressure	.027	.048	.075	.108	.148	.193	.244	.301
	Noise Criteria	–	15	20	24	29	32	35	39
	Horizontal Throw	8-12-20	10-15-24	13-19-26	14-20-29	18-22-31	19-23-33	20-25-35	22-27-36

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection.
4. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ ASHRAE Standard 70-2006.

PERFORMANCE DATA:

MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 9" (229) HIGH PLENUM

24" (610) Long with 8" (203) Down-Blow

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.035	.059	.089	.122	.162	.205	.253	.307
	Static Pressure	.029	.048	.071	.097	.127	.160	.196	.236
	Noise Criteria	–	–	16	21	26	31	34	37
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15
8" Oval Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.024	.041	.061	.085	.111	.142	.175	.213
	Static Pressure	.022	.037	.055	.076	.099	.126	.155	.188
	Noise Criteria	–	–	–	18	21	25	28	31
	Horizontal Throw	4-8-7	7-11-20	9-15-23	12-17-25	14-20-28	16-21-29	18-23-31	19-23-32
	Vertical Throw	1-3-7	2-4-9	3-6-10	4-7-12	5-8-13	6-9-14	7-10-14	8-11-15

36" (914) Long with 12" (305) Down-Blow

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.057	.095	.143	.198	.262	.333	.413	.501
	Static Pressure	.043	.070	.103	.141	.184	.231	.284	.342
	Noise Criteria	18	22	27	31	35	38	42	45
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.032	.054	.082	.115	.155	.198	.248	.302
	Static Pressure	.027	.045	.068	.095	.127	.162	.202	.246
	Noise Criteria	–	–	18	23	27	30	34	37
	Horizontal Throw	2-5-13	4-8-17	6-11-20	8-14-23	10-16-25	12-18-27	14-20-28	15-21-29
	Vertical Throw	2-5-12	4-7-15	6-10-18	8-12-21	9-14-23	10-16-25	12-17-27	13-19-28

48" (1219) Long with 12" (305) Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.044	.077	.118	.167	.224	.290	.364	.446
	Static Pressure	.035	.061	.093	.131	.175	.226	.283	.346
	Noise Criteria	–	19	24	28	32	36	39	42
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.041	.069	.106	.148	.198	.255	.318	.389
	Static Pressure	.036	.061	.093	.130	.173	.222	.277	.338
	Noise Criteria	–	–	16	22	26	30	34	37
	Horizontal Throw	4-8-16	6-11-20	9-14-23	11-17-26	13-19-29	15-21-31	16-23-32	18-24-34
	Vertical Throw	3-6-14	5-8-17	7-11-21	8-13-24	10-16-26	12-18-29	13-20-30	15-22-32

60" (1524) Long with 15" (381) Down-Blow

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.050	.088	.135	.192	.260	.337	.424	.521
	Static Pressure	.036	.063	.096	.136	.184	.237	.298	.365
	Noise Criteria	–	20	26	31	36	40	43	46
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.052	.087	.129	.179	.235	.299	.369	.447
	Static Pressure	.045	.074	.109	.150	.196	.248	.305	.368
	Noise Criteria	–	18	23	27	31	35	39	42
	Horizontal Throw	4-6-13	5-8-17	7-11-21	8-13-24	10-15-26	11-17-28	13-19-30	14-21-31
	Vertical Throw	5-8-17	7-12-21	10-15-25	12-18-28	14-20-30	16-22-32	18-24-34	20-25-35

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C62 for performance data notes.

PERFORMANCE DATA:

MODELS 59ND(I) & 59NDR(I) • HORIZONTAL/VERTICAL PATTERN • 9" (229) HIGH PLENUM

36" (914) Long with 15" (381) Down-Blow

6" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.050	.086	.132	.184	.247	.317	.396	.483
	Static Pressure	.036	.061	.092	.127	.169	.215	.267	.324
	Noise Criteria	15	21	26	30	35	38	42	44
	Horizontal Throw	2-5-13	4-8-17	6-10-21	7-13-24	9-15-27	11-17-29	13-19-31	14-21-33
	Vertical Throw	2-5-13	4-8-16	6-10-18	8-13-20	10-15-22	12-17-23	14-19-23	16-21-23
8" Oval Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.030	.051	.079	.111	.150	.193	.243	.296
	Static Pressure	.025	.042	.065	.091	.122	.157	.197	.240
	Noise Criteria	–	15	20	24	28	32	35	37
	Horizontal Throw	2-5-13	4-8-17	6-10-21	7-13-24	9-15-27	11-17-29	13-19-31	14-21-33
	Vertical Throw	2-5-13	4-8-16	6-10-18	8-13-20	10-15-22	12-17-23	14-19-23	16-21-23

48" (1219) Long with 15" (381) Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.039	.068	.104	.148	.199	.258	.323	.396
	Static Pressure	.030	.052	.079	.112	.150	.194	.242	.296
	Noise Criteria	–	15	21	26	30	34	37	40
	Horizontal Throw	3-6-12	5-8-15	6-9-19	8-11-21	9-13-24	10-15-26	11-17-28	13-19-29
	Vertical Throw	3-6-15	5-9-18	7-12-22	9-15-25	11-17-27	13-19-30	14-21-31	16-23-32
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.037	.063	.095	.133	.179	.230	.286	.350
	Static Pressure	.032	.055	.082	.115	.154	.197	.245	.299
	Noise Criteria	–	–	19	23	27	31	34	38
	Horizontal Throw	3-6-12	5-8-15	6-9-19	8-11-21	9-13-24	10-15-26	11-17-28	13-19-29
	Vertical Throw	3-6-15	5-9-18	7-12-22	9-15-25	11-17-27	13-19-30	14-21-31	16-23-32

48" (1219) Long with 18" (457) Down-Blow

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.038	.066	.102	.145	.194	.251	.315	.387
	Static Pressure	.029	.050	.077	.109	.145	.187	.234	.287
	Noise Criteria	–	16	21	26	30	34	37	40
	Horizontal Throw	4-6-11	5-7-15	6-9-19	7-11-22	9-13-25	10-15-27	11-17-29	12-19-31
	Vertical Throw	2-5-14	5-8-18	7-11-21	8-14-24	10-16-26	12-18-28	14-20-30	15-22-31
10" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.039	.065	.099	.138	.184	.236	.293	.357
	Static Pressure	.034	.057	.086	.120	.159	.203	.252	.306
	Noise Criteria	–	15	20	24	28	32	35	38
	Horizontal Throw	4-6-11	5-7-15	6-9-19	7-11-22	9-13-25	10-15-27	11-17-29	12-19-31
	Vertical Throw	2-5-14	5-8-18	7-11-21	8-14-24	10-16-26	12-18-28	14-20-30	15-22-31

60" (1524) Long with 18" (457) Down-Blow

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.051	.090	.139	.198	.268	.348	.438	.539
	Static Pressure	.037	.065	.100	.142	.192	.248	.312	.383
	Noise Criteria	15	21	26	31	36	40	43	46
	Horizontal Throw	5-8-16	7-11-20	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32	18-23-33
	Vertical Throw	3-6-12	5-8-16	6-10-20	8-12-23	9-14-26	11-16-28	12-18-30	13-20-32
10" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.043	.076	.115	.163	.218	.281	.351	.430
	Static Pressure	.036	.063	.095	.134	.179	.230	.287	.351
	Noise Criteria	–	15	21	27	32	36	39	42
	Horizontal Throw	5-8-16	7-11-20	9-14-23	11-16-26	13-19-28	15-20-30	16-22-32	18-23-33
	Vertical Throw	3-6-12	5-8-16	6-10-20	8-12-23	9-14-26	11-16-28	12-18-30	13-20-32

Return Section

R Models	Airflow, CFM/ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

See page C62 for performance data notes.

PERFORMANCE DATA NOTES:

Model Series 5700
Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Cataloged throws are for a one-way horizontal air pattern. For divided airflow, deduce the airflow in each direction according to the number of slots, with the total airflow apportioned between the slots. Look up throw for the airflow in each direction according to the number of slots in that direction.
4. Noise Criteria [NC] values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 2006.

Models 59ND(I),59NDR(I)
Performance Data Notes:

1. Throws are given at 150, 100 and 50 fpm terminal velocities under isothermal conditions.
2. All pressures are in inches w.g..
3. Tested with one-way fixed horizontal discharge in the direction of the inlet and center down-blow deflector full open. Straight flexible duct connection.
4. Noise Criteria [NC] values are based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
5. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

59BS SERIES

- FOR STANDARD LAY-IN T-BAR
- PREMIUM PERFORMANCE
- ADJUSTABLE VERTICAL DISCHARGE

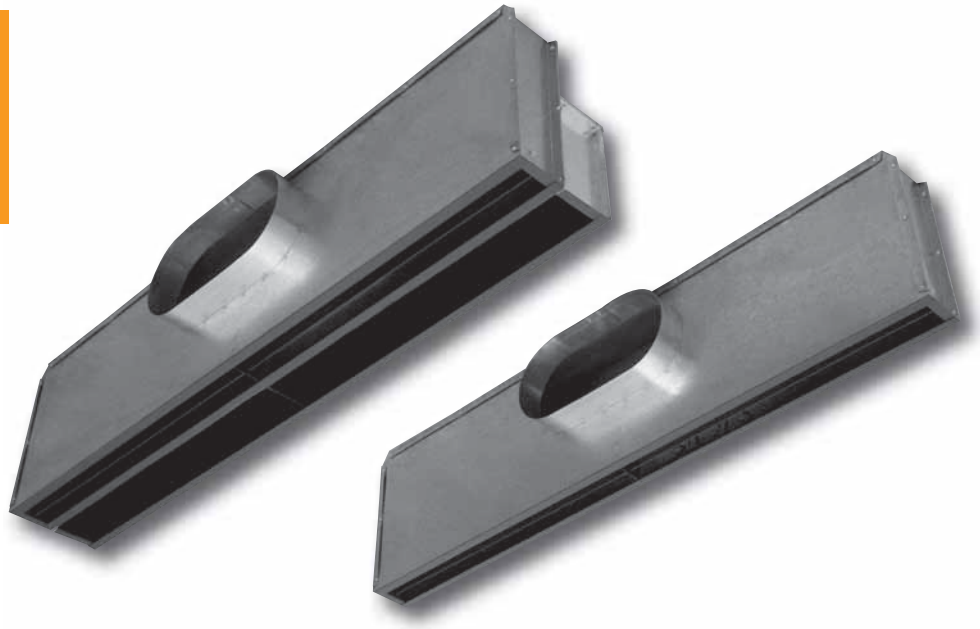
Supply Model:

59BS(I)

Supply/Return Model:

59BSR(I)

- **Suffix 'I' adds internal insulation**



Models 59BSR and 59BS

Model Series 59BS Plenum Slot Diffusers have been designed for standard Lay-in T-Bar ceiling grid applications. They integrate and blend with the suspended grid, offering an extremely unobtrusive method of air distribution. This series provides premium performance in perimeter curtain wall applications and is available in a supply and a supply/return combination. This series is suitable for variable air volume, heating and cooling applications.

All diffusers include extruded aluminum pattern controllers that provide an adjustable vertical discharge along the wall or glass in perimeter applications.

An integral return air section, which returns room air in the ceiling plenum with minimal short-circuiting of supply air is provided on Models 59BSR and 59BSRI.

STANDARD FEATURES:

- Adjustable pattern controller that provides a vertical discharge.
- Choice of either a supply or a supply/return combination.
- Available in 24", 36", 48" and 60" (600, 900, 1200 and 1500 mm) nominal lengths, to suit both imperial and metric ceiling grids.
- Standard H9 plenum height is 9" (229).
- Standard inlet sizes are 6" (152) round, 8" (203) and 10" (254) flat oval.

CONSTRUCTION MATERIAL:

Corrosion-resistant steel plenum, extruded aluminum pattern controllers.

FINISH OPTIONS:

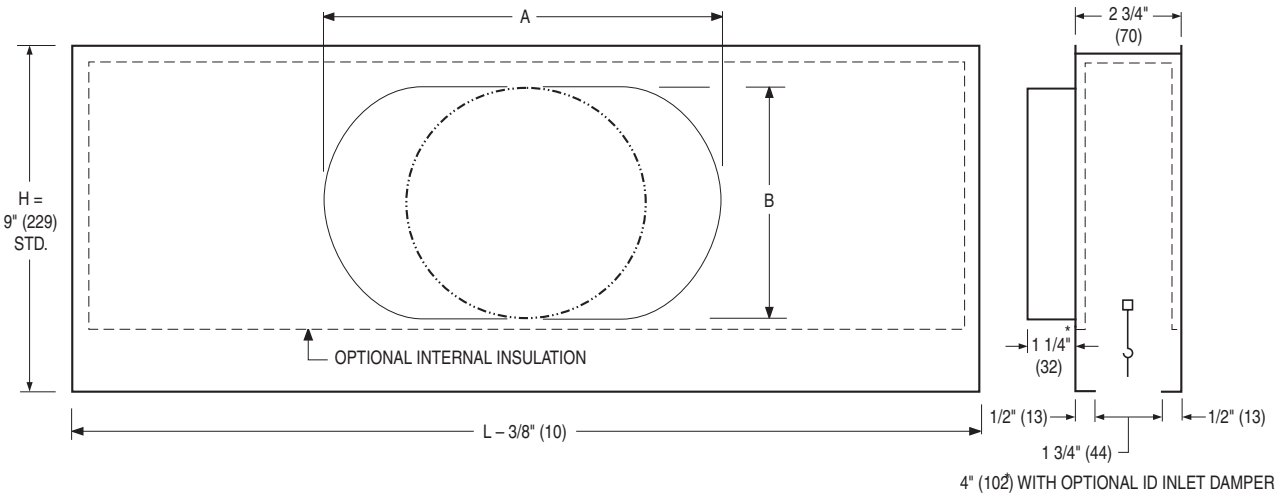
Black on pattern controllers and exposed surfaces.

OPTIONS AND ACCESSORIES:

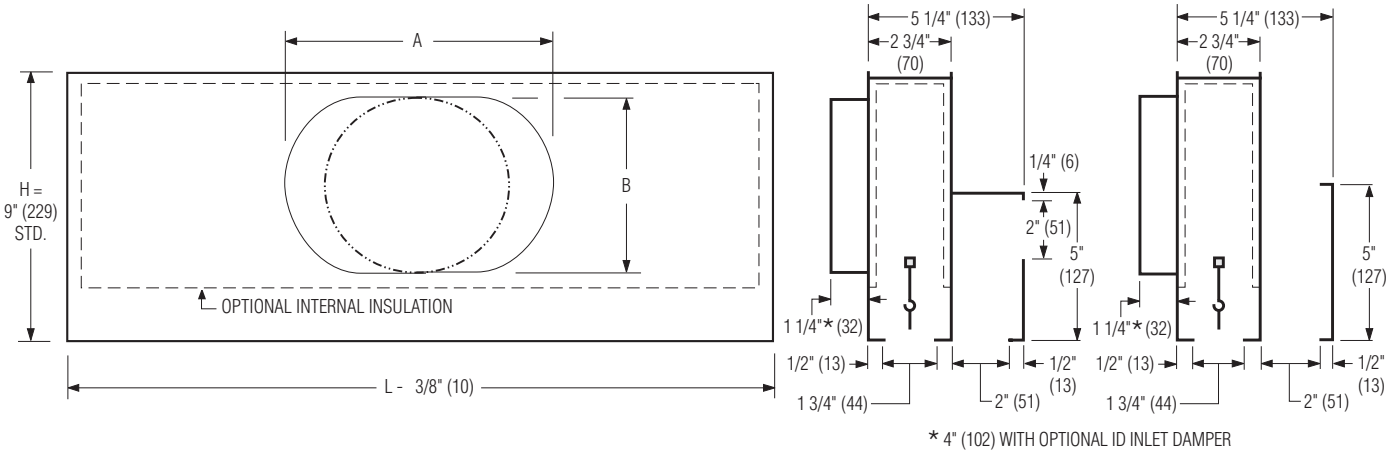
- Internal insulation (add suffix 'I' to model number).
- EQT Earthquake Tabs.
- Low height 7" (178) option when space is a restriction.
- High profile 11" (279) height option.
- Extended 3" (76) inlet collar with bead. The extended collar is also available with a Diamond Flow Sensor.
- For additional options and accessories, see page C68.

DIMENSIONAL DATA:
MODELS: 59BS(I) AND 59BSR(I)

Supply • Models 59BS(I)



Supply/Return • Models 59BSR(I)



SR STANDARD SIDE INLET RETURN ILLUSTRATED

TR OPTIONAL TOP INLET RETURN ILLUSTRATED

Nominal Length L		Available Inlet Sizes
Imperial Modules	Metric Modules	
24 (610)	600	6, 8, 10 (152, 203, 254)
36 (914)	900	
48 (1219)	1200	
60 (1524)	1500	

Nominal Inlet Size	Std. Dimension H = 9		Opt. Dimension H = 11		Opt. Dimension H = 7	
	A	B	A	B	A	B
6 (152)	–	5 7/8 (149)	–	5 7/8 (149)	7 (178)	4 (102)
8 (203)	9 (229)	5 7/8 (149)	–	7 7/8 (200)	10 1/8 (257)	4 (102)
10 (254)	12 1/8 (308)	5 7/8 (149)	11 (279)	7 7/8 (200)	13 1/4 (337)	4 (102)

Inlets are round or oval as dimensioned.

PERFORMANCE DATA:

MODELS: 59BS(I) and 59BSR(I) • VERTICAL PATTERN

24" (610) Long

6" Round Inlet	Airflow, CFM	60	80	100	120	140	160	180	200
	Total Pressure	.018	.033	.051	.073	.100	.130	.165	.204
	Static Pressure	.012	.022	.035	.050	.068	.088	.112	.138
	Noise Criteria	–	–	–	–	–	20	25	29
	Vertical Throw	5	6	7	8	9	9	10	11

36" (914) Long

8" Round Inlet	Airflow, CFM	90	120	150	180	210	240	270	300
	Total Pressure	.016	.028	.043	.062	.085	.111	.140	.173
	Static Pressure	.011	.020	.032	.046	.062	.081	.103	.127
	Noise Criteria	–	–	–	–	–	20	23	27
	Vertical Throw	6	7	8	9	10	11	12	13

48" (1219) Long

8" Oval Inlet	Airflow, CFM	120	160	200	240	280	320	360	400
	Total Pressure	.024	.042	.066	.094	.129	.168	.212	.262
	Static Pressure	.016	.029	.045	.065	.088	.115	.146	.180
	Noise Criteria	–	–	–	–	20	24	26	31
	Vertical Throw	7	9	10	11	12	13	14	15

60" (1524) Long

8" Oval Inlet	Airflow, CFM	150	200	250	300	350	400	450	500
	Total Pressure	.029	.051	.080	.115	.157	.205	.259	.320
	Static Pressure	.017	.031	.048	.069	.094	.123	.156	.192
	Noise Criteria	–	–	–	–	22	27	32	37
	Vertical Throw	8	10	11	12	13	14	15	17

Return Section

R Models	Airflow, CFM/Ft.	30	40	50	60	70	80	90	100
	Negative Static Pressure	-.010	-.018	-.027	-.038	-.050	-.063	-.079	-.098

Performance Notes:

1. Vertical throws are given at 50 fpm terminal velocities for a free jet under isothermal conditions.
2. Throw correction factors for different ΔT's.
   20°F cooling x 1.40
   10°F heating x 0.85
   15°F heating x 0.72
   20°F heating x 0.60
3. All pressures are in inches w.g..
4. Tested with pattern controller set fully open for vertical discharge. Straight flexible duct connection.
5. Noise Criteria [NC] values based on a room absorption of 10 dB, re 10^{-12} watts. Dash (–) in space denotes an Noise Criteria level less than 15.
6. Data derived from independent tests conducted in accordance with ANSI/ASHRAE Standard 70-2006.

HOW TO ORDER OR TO SPECIFY

MODEL SERIES: 59N 'N-SLOT' AND 59BS 'BS-SLOT' PLENUM SLOT DIFFUSERS

EXAMPLE: 59NDR - 48 - 08 - H9 - D15 - SR - –

1. **Model Series**

59N(I)	Supply
59NR(I)	Supply/Return
59ND(I)	Supply with Down Blow
59NDR(I)	Supply/Return with Down Blow
59NDR-SPL	Supply/Return with Down Blow
59BS(I)	Supply
59BSR(I)	Supply/Return

(Add suffix "I" for optional internal insulation)

2. **Nominal Length**

Imperial Sizes
inches (mm's)
24, 36, 48, 60
(610, 914, 1219, 1524)

Metric Sizes
(mm's)
(600, 900, 1200, 1500)

3. **Inlet Size**

06	6" (152)	Round
08	8" (203)	Round
10	10" (254)	Oval

4. **Height**

H9	9" (229) (default)
H7	7" (178)
H11	11" (279)

5. **Down Blow (Length) Selection**

(Models 59ND(I) and 59NDR(I) only)

D8, D12	24" (600)
D12, D15	36" (900)
D12, D15, D18	48" (1200)
D15, D18, D21	60" (1500)

6. **Return Inlet Selection**

(Models 59NR(I), 59NDR(I), 59BSR(I) only)

SR	Side Return (default)
TR	Top Return

7. **Options and Accessories**

–	None (default)
ID	Inlet Damper
PF	Plaster Frame

Supplementary T-Bars

T1	One (inlet side)
T0	One (opposite inlet side)
T2	Two (both sides)
M1	T-Bar Mounting Clips (2)
M2	T-Bar Mounting Clips (4)
EX	External Foil Back Insulation
EQT	Earthquake Tabs
EC	Extended Inlet Collar with Bead 3" (76)
FS	Diamond Flow Sensor with Extended Inlet Collar and Bead*
RBK	Return section painted black internally

Internal Insulation
("I" models only)

FGI	1/4" (6.35) Coated fiberglass (default)
FFI	3/8" (9.53) Fiber-free foam

Fineline T-Bar**
(Only available on 24" & 48" lengths)

FNLA	1 3/4" (44) High
FNLC	1 5/8" (41) High
FNLD	1 25/32" (45) High

Notes:

1. **Model 59NDR-SPL** is a special application design. 13 1/2" (343) high with insulated cross-talk return. No height options on this model. No return inlet option.

2. *FS Diamond Flow Sensor is only available with 6" (152) and 8" (203) round inlet sizes. Requires H11 11" (279) high plenum option. FS option is not available on internally insulated (I) models. Not available when ID Inlet Damper is selected.

3. Standard internal insulation ("I" suffix models) is 1/4" (6.35) coated fiberglass.

4. **Fineline® T-Bar options are not available with supplementary T-Bars T1, T0, T2 or mounting clips M1 or M2.

MODELS 59BS(I) AND 59BSR(I) • 'BS SLOT' PLENUM DIFFUSERS

SUGGESTED SPECIFICATION:

Vertical Discharge, Supply

Furnish and install **Nailor Model** (select one) **59BS** or **59BSI Adjustable Vertical Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening. The plenum diffuser shall be supplied in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59BSI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

Vertical Discharge, Supply/Return

Furnish and install **Nailor Model** (select one) **59BSR** or **59BSRI Vertical Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and return air section. The supply plenum shall have an extruded aluminum adjustable pattern controller within a 1 3/4" (44) opening and a side inlet for connection to the supply air duct. The return air plenum shall have a rectangular return opening on the side that also functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controllers and all exposed edges shall have a BK Black finish. Model 59BSRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

HOW TO SPECIFY

MODELS 59N(I), 59NR(I), 59ND(I) AND 59NDR(I) • 'N SLOT' PLENUM DIFFUSERS

SUGGESTED SPECIFICATION:

Horizontal Discharge, Supply

Furnish and install **Nailor Model** (select one) **59N** or **59NI Horizontal Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot. The plenum diffuser shall be supplied in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

Horizontal Discharge, Supply/Return

Furnish and install **Nailor Model** (select one) **59NR** or **59NRI Horizontal Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and return air section. The supply plenum shall have an extruded aluminum fixed pattern controller within a 3/4" (19) slot and a side inlet for connection to the supply air duct. The return air section shall have a rectangular return opening on the side that functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

Horizontal/Vertical Discharge, Supply

Furnish and install **Nailor Model** (select one) **59ND** or **59NDI Horizontal/Vertical Discharge Plenum Slot Supply Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and include a side inlet for connection to the duct. The plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot. The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controller and all exposed edges shall have a BK Black finish. Model 59NDI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

Horizontal/Vertical Discharge, Supply/Return

Furnish and install **Nailor Model** (select one) **59NDR** or **59NDRI Horizontal/Vertical Discharge Plenum Slot Supply/Return Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The plenum shall be manufactured from corrosion-resistant steel and incorporate a supply air and integral return air section. The supply plenum shall have a central vertical down-blow section that has two hinged pattern controllers within a 1 5/8" (41) slot opening, the end sections shall incorporate an extruded aluminum fixed horizontal pattern controller within a 3/4" (19) slot. The supply plenum shall include a side inlet for connection to the duct. The return air plenum shall have a rectangular return opening on the side that also functions as a light shield (top return opening is optional). The plenum diffuser shall be available in nominal standard lengths of 24", 36", 48" and 60" (600, 900, 1200 and 1500) to suit a standard Lay-in T-Bar ceiling grid. The pattern controllers and all exposed edges shall have a BK Black finish. Model 59NDRI shall be lined internally with insulation.

The manufacturer shall provide published performance data for the plenum slot diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70–2006.

Options and Accessories

MODEL SERIES: 59N AND 59BS

PF SLOT DIFFUSER PLASTER FRAME

Slot diffuser mounting frames allow plenum slot diffusers to be installed in drywall or plaster ceilings. Installation of the frame in the ceiling is by others.

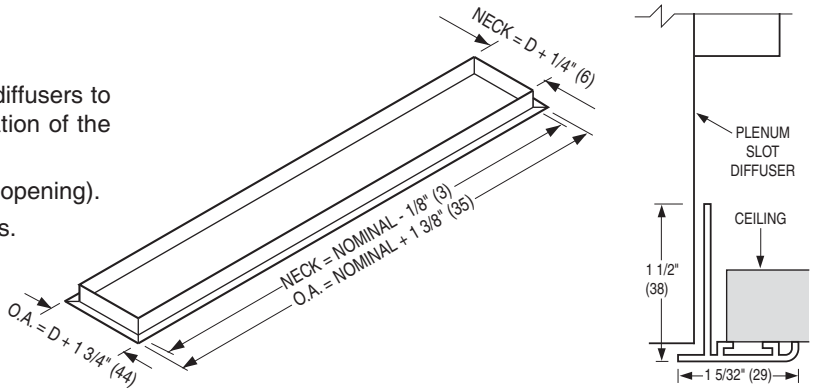
(**Note:** Diffuser will not fit through a plaster frame opening).

Material: Extruded aluminum with mitered corners.

Recommended Ceiling Opening dimensions:

Width = Diffuser Width (D) + 1/2" (13)

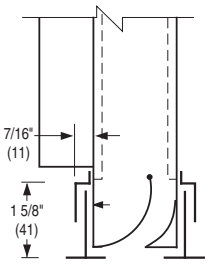
Length = Nominal Diffuser Length + 1/4" (6)



MOUNTING CLIPS

M1 One Side (2 opposite inlet side)

M2 Both sides (4)



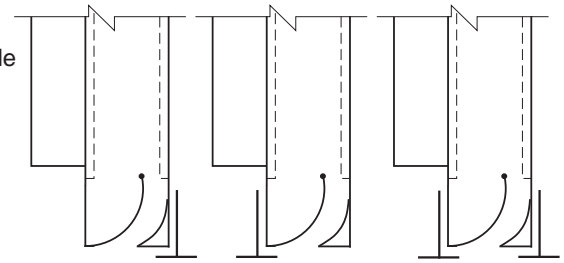
SUPPLEMENTARY T-BARS

T1 One on inlet side

T0 One opposite inlet side

T2 Two on both sides

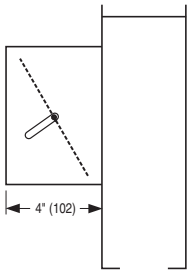
Note: Center T-Bars are supplied by Nailor as standard.



ID INLET DAMPER

(Supply models only)

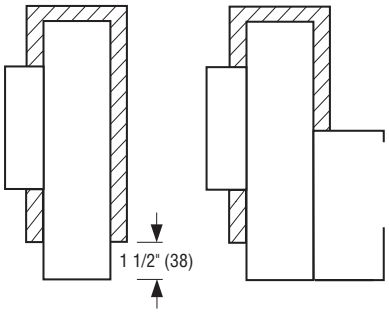
The single blade damper is an economical factory installed option that permits air balancing of the device at the plenum inlet. Ceiling access is required.



EXTERNAL FOIL BACK INSULATION

EX 1/2" (13) thick

1/2" (13) thick fiberglass blanket with a reinforced aluminum foil scrim-craft (FSK) facing, providing a vapor barrier.



FINELINE/BOLT-SLOT T-BAR CEILING CONSTRUCTION

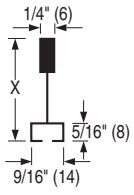
(24" [610] and 48" [1219] Nominal length only)

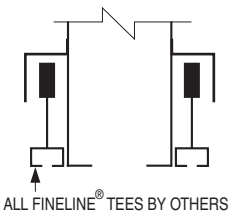
Plenum length = Nominal - 5/8" (16)

FNLA Armstrong Silhouette

FNLC Chicago Metallic Ultraline

FNLD Donn Fineline





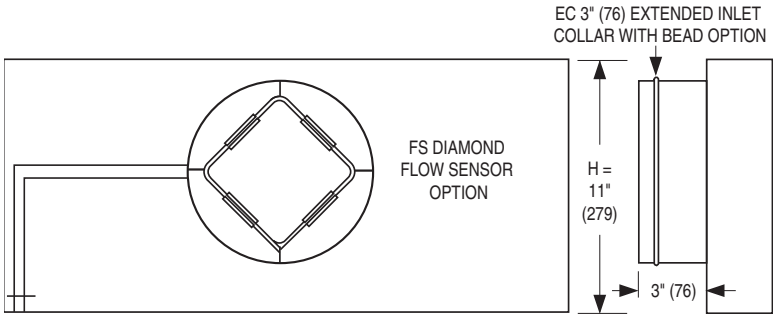
T-Bar Type (Manufacturer)		X
FNLA	Armstrong Silhouette	1 3/4" (44)
FNLC	Chicago Metallic Ultraline	1 5/8" (41)
FNLD	Donn Fineline	1 25/32" (45)

EC EXTENDED INLET COLLAR WITH BEAD

FS DIAMOND FLOW SENSOR WITH EXTENDED INLET COLLAR AND BEAD

Optional multi-point Diamond Flow sensor provides accurate field balancing. Gauge taps are conveniently located flush in the slot face eliminating the need for ceiling access. Includes 3" (76) extended inlet collar. 6" (152) and 8" (203) round inlet sizes only.

Units with FS option are 11" (279) high.



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