AIR ZONE INDUSTRIES, INC.

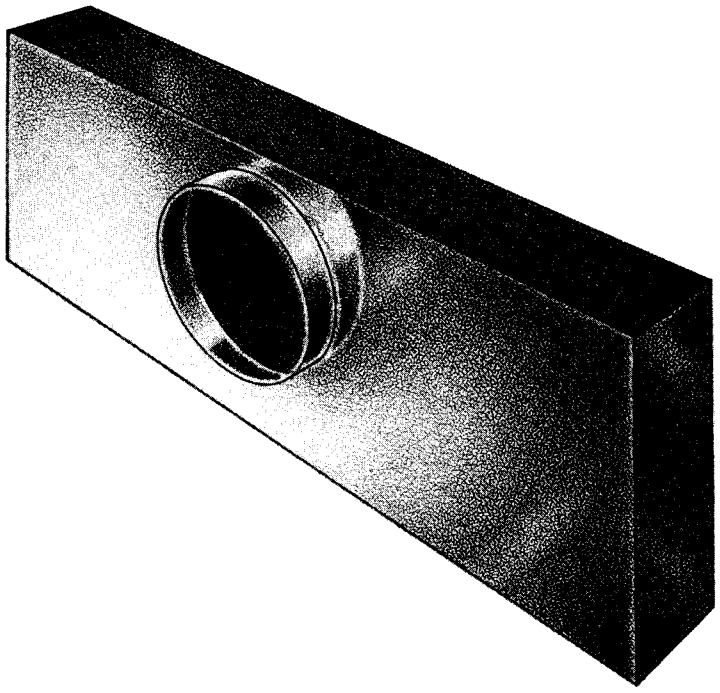
LINEAR SLOT DIFFUSERS

for

SUSPENDED T-BAR

GRID CEILING SYSTEMS

- *One to Four Slot Models*
- *Adjustable Air Pattern*
- *Supply or Return*
- *Available 12" to 60" Length*



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Contents

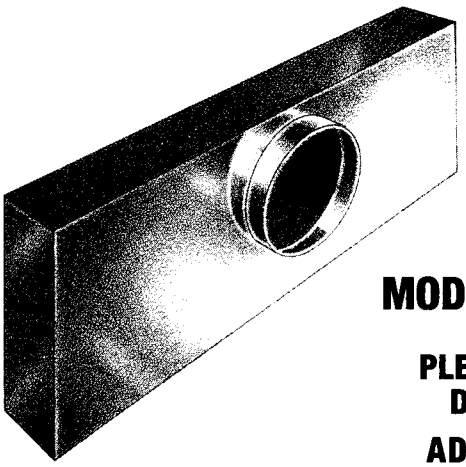
Linear Slot Diffusers for Suspended T-Bar Grid Ceiling Systems

– INTRODUCTION –

Variable air volume HVAC systems design have forced a significant change to the diffuser selection process. The failings in proper air distribution caused by dumping and stuffiness make it obvious that the traditional design criteria used for diffuser selection must be revised and a new set of performance characteristics established as a basis for selection. The following performance characteristics should be considered when selecting a diffuser for VAV system design:

- *Relatively long throws at low supply air CFM.*
- *Strong horizontal air pattern with the ability to establish that pattern at a supply air CFM below the zone minimum CFM.*
- *High discharge velocity.*
- *Thin air flow pattern from ceiling to the bottom of that pattern.*

Few diffuser types meet this criteria; the Air Zone linear slot diffuser does. Our slot diffusers are designed to have a strong horizontal air pattern that can withstand a wide variation in supply air CFM without dumping and with high air mixing effectiveness.



MODEL TSD-80

PLENUM SLOT DIFFUSER

ADJUSTABLE GASKETED BLADE

The TSD-80 slot diffuser is outstanding for its flexibility in both installation and performance.

The direction of air flow is adjustable through a full 180° from the face of the diffuser. In addition, the TSD-80 is available with 1 to 4 slots and with three standard slot widths, for a broad range of capacities.

The TSD-80 works with many types of ceiling systems – plaster, splined, regressed, and the various specialty ceilings, as well as standard lay-in.

An important advantage of this diffuser is in the gasket edged blade. In the horizontal discharge setting, either right or left, the gasket at the top of the blade seats against the inside of the diffuser plenum wall or slot divider, assuring pure horizontal flow. The blade can also be set for vertical flow.

When set for a horizontal discharge, the TSD-80 projects a tight blanket of air across the ceiling, from minimum to maximum flow. Provides excellent VAV performance, plus protection against ceiling smudging.

DIMENSIONS

Slot Width "A"	Overall Width "W"			
	1 Slot	2 Slot	3 Slot	4 Slot
3/4	1 3/4	3 1/2	5 1/4	7
1	2	4	6	8
1 1/2	2 1/2	5	7 1/2	10

Standard Length: 12", 24", 30", 36", 42", 48" & 60"
Standard Inlets: 4" round thru 12" oval.

HEIGHT

Slot Type	Height
1 & 2 Slot	9" High
3 & 4 Slot	11" High

Note: Special dimensions available on request.
Slot opening of 1/2" and 1 1/4" on request.

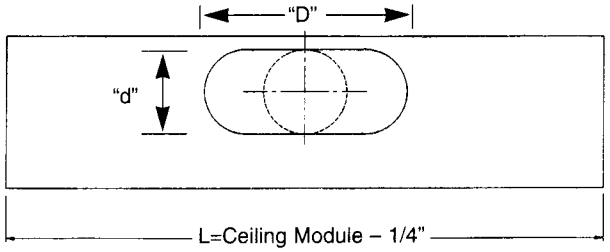
STANDARD INLET

ROUND Size	ROUND "D"	OVAL Size	OVAL "D" x "d"
4"	3 7/8	7"	8 9/16" x 4"
5"	4 7/8	8"	10" x 4"
6"	5 7/8	9	11 1/2" x 4"
		10"	12" x 16"
		12"	15 1/4" x 6"

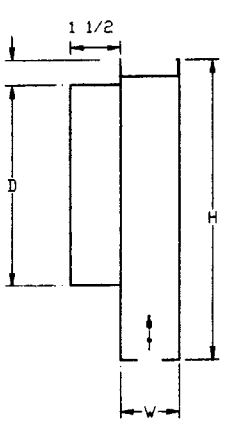
FEATURES

- ***Constructed of minimum 24 gauge paint grip steel with all exposed areas painted matte black.***
- ***Double metal thickness at slot face for rigidity and straightness.***
- ***Available with seven arrangements of optional factory installed T-bars.***
- ***Slots less than 36" in length have a single deflector. 36" or larger as two deflectors per slot.***
- ***Available in nominal lengths from 12" through 60".***
- ***Choice of non-insulated, internally insulated with glass fiber, or externally insulated with glass fiber blanket and aluminum vapor barrier on scrim kraft backing.***
- ***Optional 11" plenum height for 1 and 2 slot units.***
- ***Optional extended collar with bead.***
- ***Optional air flow sensor at inlet.***
- ***Optional inlet damper.***
- ***Optional in cross notching for 24" x 24" ceiling.***
- ***Optional center tee painted white.***

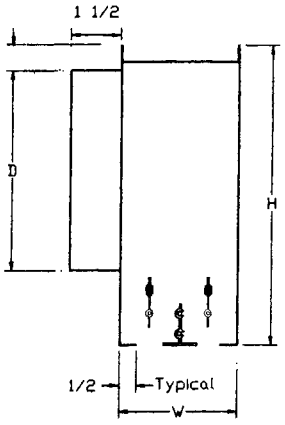
3/4", 1" and 1 1/2" SLOT WIDTH



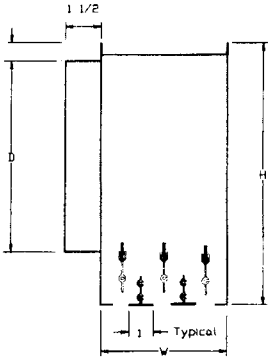
SIDE VIEW



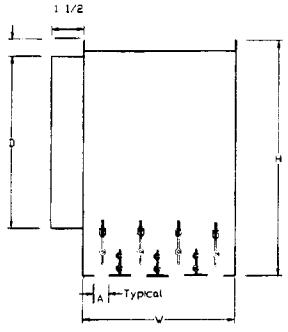
ONE SLOT



TWO SLOT



THREE SLOT



FOUR SLOT

Performance Data

TSD-80 ■ ¾" Slot ■ 1 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**20**	**25**	**35**	**40**	**50**	**65**	**80**
	Total Pressure, Inches WG	0.018	0.028	0.055	0.072	0.112	0.189	0.287
	NC (Noise Criterion)	–	–	16	20	27	35	42
	Throw, Feet	2-4-9	3-5-10	5-7-12	6-9-13	7-10-14	9-12-16	10-13-18
8" Oval Inlet	**Air Flow, CFM**	**20**	**25**	**35**	**40**	**50**	**65**	**80**
	Total Pressure, Inches WG	0.018	0.027	0.054	0.070	0.109	0.185	0.280
	NC (Noise Criterion)	–	–	16	20	27	35	42
	Throw, Feet	2-4-9	3-5-10	5-7-12	6-9-13	7-10-14	9-12-16	10-13-18
10" Oval Inlet	**Air Flow, CFM**	**20**	**25**	**35**	**40**	**50**	**65**	**80**
	Total Pressure, Inches WG	0.017	0.027	0.053	0.070	0.109	0.184	0.278
	NC (Noise Criterion)	–	–	16	20	27	35	42
	Throw, Feet	2-4-9	3-5-10	5-7-12	6-9-13	7-10-14	9-12-16	10-13-18

TSD-80 ■ ¾" Slot ■ 1 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**40**	**55**	**65**	**80**	**105**	**130**	**160**
	Total Pressure, Inches WG	0.018	0.035	0.048	0.073	0.126	0.194	0.294
	NC (Noise Criterion)	–	–	13	20	28	35	42
	Throw, Feet	2-6-12	5-8-15	6-10-16	8-12-18	11-15-21	13-16-23	15-18-26
10" Oval Inlet	**Air Flow, CFM**	**40**	**55**	**65**	**80**	**105**	**130**	**160**
	Total Pressure, Inches WG	0.018	0.034	0.047	0.071	0.123	0.123	0.285
	NC (Noise Criterion)	–	–	13	20	28	28	42
	Throw, Feet	2-5-12	5-8-15	6-10-16	8-12-18	11-15-23	11-15-21	15-18-26
12" Oval Inlet	**Air Flow, CFM**	**40**	**55**	**65**	**80**	**105**	**130**	**160**
	Total Pressure, Inches WG	0.018	0.033	0.046	0.070	0.121	0.186	0.282
	NC (Noise Criterion)	–	–	13	20	28	35	42
	Throw, Feet	2-5-12	5-8-15	6-10-16	8-12-18	11-15-21	13-16-23	15-18-26

TSD-80 ■ ¾" Slot ■ 2 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**35**	**45**	**55**	**70**	**85**	**115**	**145**
	Total Pressure, Inches WG	0.019	0.032	0.048	0.077	0.114	0.209	0.332
	NC (Noise Criterion)	–	–	14	21	27	35	42
	Throw, Feet	2-4-11	3-7-14	5-8-15	7-11-17	9-13-19	12-15-22	14-17-24
8" Oval Inlet	**Air Flow, CFM**	**40**	**55**	**65**	**80**	**105**	**130**	**160**
	Total Pressure, Inches WG	0.018	0.035	0.048	0.073	0.126	0.194	0.294
	NC (Noise Criterion)	–	–	13	20	28	35	42
	Throw, Feet	2-5-12	5-8-15	6-10-16	8-12-18	11-15-21	13-16-23	15-18-26
10" Oval Inlet	**Air Flow, CFM**	**40**	**55**	**65**	**80**	**105**	**130**	**160**
	Total Pressure, Inches WG	0.018	0.034	0.047	0.071	0.123	0.188	0.285
	NC (Noise Criterion)	–	–	13	20	28	35	42
	Throw, Feet	2-5-12	5-8-15	6-10-16	8-12-18	11-15-21	13-16-23	15-18-26

TSD-80 ■ ¾" Slot ■ 2 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**65**	**85**	**110**	**135**	**170**	**215**	**275**
	Total Pressure, Inches WG	0.022	0.037	0.063	0.094	0.150	0.240	0.392
	NC (Noise Criterion)	–	–	15	21	28	35	42
	Throw, Feet	2-5-4	4-9-18	7-12-21	10-14-24	12-18-26	15-21-30	19-24-34
10" Oval Inlet	**Air Flow, CFM**	**70**	**90**	**115**	**145**	**180**	**230**	**295**
	Total Pressure, Inches WG	0.018	0.030	0.048	0.077	0.119	0.194	0.319
	NC (Noise Criterion)	–	–	15	21	28	35	42
	Throw, Feet	3-6-15	4-10-19	7-12-22	10-15-24	13-19-27	16-22-31	20-25-35
12" Oval Inlet	**Air Flow, CFM**	**85**	**105**	**135**	**165**	**210**	**260**	**325**
	Total Pressure, Inches WG	0.021	0.032	0.053	0.080	0.129	0.198	0.309
	NC (Noise Criterion)	–	–	15	21	28	35	42
	Throw, Feet	4-9-18	6-11-21	10-14-24	12-18-26	15-21-29	18-23-33	21-16-37

► Data were obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741, and ANSI/ASHRAE Standard 70-1991.

► NC values were determined from octave band 2 thru 7 sound power levels with a 10 dB room absorption.

► Dash (—) in space indicates NC less than 10.

► Throw values are listed for terminal velocities of 150, 100, and 50 fpm under isothermal conditions.

► Throws listed are for the 1-way air pattern. For divided air flow, select the air flow in each direction according to the number of slots aimed in that direction, with the total air flow apportioned between slots.

Performance Data

TSD-80 ■ ¾" Slot ■ 3 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**55**	**65**	**85**	**110**	**135**	**170**	**215**
	Total Pressure, Inches WG	0.041	0.058	0.099	0.165	0.249	0.395	0.632
	NC (Noise Criterion)	–	–	14	22	28	35	42
	Throw, Feet	3-7-16	4-9-19	7-12-22	11-16-25	13-20-28	17-22-31	20-25-35
8" Oval Inlet	**Air Flow, CFM**	**65**	**80**	**100**	**125**	**160**	**200**	**255**
	Total Pressure, Inches WG	0.031	0.047	0.073	0.114	0.186	0.291	0.473
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-9-19	7-12-21	10-15-24	12-18-27	16-21-30	19-24-34	22-27-38
10" Oval Inlet	**Air Flow, CFM**	**75**	**95**	**115**	**145**	**180**	**220**	**280**
	Total Pressure, Inches WG	0.037	0.059	0.086	0.137	0.211	0.316	0.511
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	6-11-21	9-14-23	11-17-25	14-20-28	17-22-32	21-26-36	24-29-40

TSD-80 ■ ¾" Slot ■ 3 Slot ■ 48" Long

6" Oval Inlet	**Air Flow, CFM**	**105**	**130**	**165**	**210**	**265**	**330**	**420**
	Total Pressure, Inches WG	0.043	0.066	0.106	0.172	0.273	0.424	0.687
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-9-22	6-13-27	10-17-31	14-22-35	18-27-39	23-31-44	28-35-49
8" Oval Inlet	**Air Flow, CFM**	**115**	**145**	**185**	**230**	**295**	**370**	**470**
	Total Pressure, Inches WG	0.033	0.052	0.085	0.131	0.216	0.339	0.548
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	5-11-24	8-15-29	13-20-33	16-24-37	20-29-41	24-34-46	29-38-51
12" Oval Inlet	**Air Flow, CFM**	**125**	**160**	**200**	**250**	**320**	**400**	**510**
	Total Pressure, Inches WG	0.028	0.047	0.073	0.114	0.186	0.291	0.473
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	5-12-26	9-16-30	13-21-32	17-25-38	22-30-43	27-34-48	32-38-53

TSD-80 ■ ¾" Slot ■ 4 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**65**	**85**	**105**	**135**	**165**	**210**	**265**
	Total Pressure, Inches WG	0.045	0.077	0.117	0.194	0.290	0.470	0.748
	NC (Noise Criterion)	–	–	14	22	28	35	42
	Throw, Feet	3-6-16	5-11-21	7-13-25	11-17-28	14-21-31	18-25-35	22-28-39
8" Oval Inlet	**Air Flow, CFM**	**80**	**100**	**125**	**155**	**195**	**250**	**315**
	Total Pressure, Inches WG	0.036	0.056	0.087	0.134	0.212	0.349	0.554
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-10-20	7-13-24	10-16-27	13-20-30	16-24-33	21-27-38	25-30-43
10" Oval Inlet	**Air Flow, CFM**	**100**	**125**	**155**	**190**	**240**	**300**	**375**
	Total Pressure, Inches WG	0.038	0.059	0.091	0.136	0.217	0.339	0.530
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	7-13-24	10-16-27	13-20-30	16-23-33	20-26-37	24-29-42	27-33-46

TSD-80 ■ ¾" Slot ■ 4 Slot ■ 48" Long

6" Oval Inlet	**Air Flow, CFM**	**130**	**160**	**205**	**255**	**320**	**410**	**520**
	Total Pressure, Inches WG	0.052	0.078	0.128	0.198	0.312	0.512	0.824
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-9-23	6-13-29	10-18-34	15-23-38	19-29-43	24-34-49	31-39-55
8" Oval Inlet	**Air Flow, CFM**	**145**	**180**	**225**	**290**	**360**	**450**	**580**
	Total Pressure, Inches WG	0.040	0.062	0.097	0.161	0.248	0.388	0.645
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	5-11-26	8-16-32	12-20-36	17-26-41	21-32-45	27-36-51	33-41-58
12" Oval Inlet	**Air Flow, CFM**	**155**	**195**	**250**	**315**	**390**	**500**	**630**
	Total Pressure, Inches WG	0.034	0.053	0.087	0.139	0.212	0.349	0.554
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	6-13-28	9-17-33	15-22-38	19-28-43	23-33-47	30-38-54	35-43-60

► Data were obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741, and ANSI/ASHRAE Standard 70-1991.

► NC values were determined from octave band 2 thru 7 sound power levels with a 10 dB room absorption.

► Dash (—) in space indicates NC less than 10.

► Throw values are listed for terminal velocities of 150, 100, and 50 fpm under isothermal conditions.

► Throws listed are for the 1-way air pattern. For divided air flow, select the air flow in each direction according to the number of slots aimed in that direction, with the total air flow apportioned between slots.

Performance Data

TSD-80 ■ 1" Slot ■ 1 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**30**	**35**	**45**	**55**	**70**	**90**	**110**
	Total Pressure, Inches WG	0.023	0.032	0.052	0.078	0.127	0.209	0.313
	NC (Noise Criterion)	–	–	15	21	28	36	43
	Throw, Feet	3-6-11	3-6-12	6-8-14	7-10-15	9-12-17	11-14-19	12-15-21
8" Oval Inlet	**Air Flow, CFM**	**30**	**35**	**45**	**55**	**70**	**90**	**110**
	Total Pressure, Inches WG	0.022	0.030	0.050	0.075	0.122	0.201	0.301
	NC (Noise Criterion)	–	–	15	21	28	36	43
	Throw, Feet	3-6-11	3-6-12	6-8-14	7-10-15	9-12-17	11-14-19	12-15-21
10" Oval Inlet	**Air Flow, CFM**	**30**	**35**	**45**	**55**	**70**	**90**	**110**
	Total Pressure, Inches WG	0.022	0.030	0.050	0.074	0.120	0.199	0.297
	NC (Noise Criterion)	–	–	15	21	28	36	43
	Throw, Feet	3-6-11	3-6-12	6-8-14	7-10-15	9-12-17	11-14-19	12-15-21

TSD-80 ■ 1" Slot ■ 1 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**50**	**60**	**80**	**100**	**125**	**155**	**200**
	Total Pressure, Inches WG	0.019	0.027	0.048	0.074	0.116	0.179	0.297
	NC (Noise Criterion)	–	–	15	22	29	35	42
	Throw, Feet	2-6-13	4-8-16	6-10-18	9-13-20	11-16-23	14-18-25	17-20-29
10" Oval	**Air Flow, CFM**	**60**	**70**	**90**	**115**	**140**	**170**	**215**
	Total Pressure, Inches WG	0.023	0.032	0.052	0.085	0.128	0.186	0.298
	NC (Noise Criterion)	–	–	15	22	28	35	42
	Throw, Feet	4-8-16	5-9-17	8-12-19	10-15-22	12-17-24	15-19-26	17-21-30
12" Oval Inlet	**Air Flow, CFM**	**60**	**70**	**90**	**115**	**140**	**170**	**215**
	Total Pressure, Inches WG	0.023	0.031	0.051	0.083	0.124	0.182	.0291
	NC (Noise Criterion)	–	–	15	22	28	35	42
	Throw, Feet	4-8-16	5-9-17	8-12-19	10-15-22	12-17-24	15-19-26	17-21-30

TSD-80 ■ 1" Slot ■ 2 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**45**	**55**	**70**	**90**	**115**	**140**	**180**
	Total Pressure, Inches WG	0.025	0.037	0.060	0.100	0.163	0.241	0.398
	NC (Noise Criterion)	–	–	14	22	29	35	42
	Throw, Feet	2-5-12	3-7-14	5-9-17	8-12-19	10-15-22	12-17-24	16-19-27
8" Oval Inlet	**Air Flow, CFM**	**50**	**60**	**80**	**100**	**125**	**155**	**200**
	Total Pressure, Inches WG	0.019	0.027	0.048	0.074	0.116	0.179	0.297
	NC (Noise Criterion)	–		15	22	29	35	42
	Throw, Feet	2-6-13	4-8-16	6-10-18	9-13-20	11-16-23	14-18-25	17-20-29
10" Oval Inlet	**Air Flow, CFM**	**55**	**70**	**90**	**110**	**140**	**170**	**215**
	Total Pressure, Inches WG	0.019	0.032	0.052	0.078	0.126	0.186	0.298
	NC (Noise Criterion)	–	–	15	21	28	35	42
	Throw, Feet	3-7-14	5-9-17	8-12-19	10-14-21	12-17-24	15-19-26	17-21-30

TSD-80 ■ 1" Slot ■ 2 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**85**	**105**	**135**	**170**	**215**	**275**	**345**
	Total Pressure, Inches WG	0.029	0.045	0.074	0.177	0.188	0.307	0.483
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-6-16	4-9-14	6-12-24	10-16-26	13-20-30	17-24-34	21-27-38
10" Oval Inlet	**Air Flow, CFM**	**90**	**110**	**140**	**180**	**230**	**290**	**370**
	Total Pressure, Inches WG	0.023	0.034	0.056	0.092	0.150	0.239	0.389
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-6-17	4-10-20	7-13-24	11-17-27	14-21-31	18-24-35	23-28-39
12" Oval Inlet	**Air Flow, CFM**	**95**	**120**	**150**	**190**	**240**	**300**	**390**
	Total Pressure, Inches WG	0.020	0.031	0.049	0.079	0.126	0.196	0.332
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-7-18	5-11-22	8-14-25	12-18-28	15-22-31	18-25-35	23-28-40

- ▶ Data were obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741, and ANSI/ASHRAE Standard 70-1991.
- ▶ NC values were determined from octave band 2 thru 7 sound power levels with a 10 dB room absorption.
- ▶ Dash (—) in space indicates NC less than 10.
- ▶ Throw values are listed for terminal velocities of 150, 100, and 50 fpm under isothermal conditions.
- ▶ Throws listed are for the 1-way air pattern. For divided air flow, select the air flow in each direction according to the number of slots aimed in that direction, with the total air flow apportioned between slots.

Performance Data

TSD-80 ■ 1" Slot ■ 1 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**30**	**35**	**45**	**55**	**70**	**90**	**110**
	Total Pressure, Inches WG	0.023	0.032	0.052	0.078	0.127	0.209	0.313
	NC (Noise Criterion)	–	–	15	21	28	36	43
	Throw, Feet	3-6-11	3-6-12	6-8-14	7-10-15	9-12-17	11-14-19	12-15-21
8" Oval Inlet	**Air Flow, CFM**	**30**	**35**	**45**	**55**	**70**	**90**	**110**
	Total Pressure, Inches WG	0.022	0.030	0.050	0.075	0.122	0.201	0.301
	NC (Noise Criterion)	–	–	15	21	28	36	43
	Throw, Feet	3-6-11	3-6-12	6-8-14	7-10-15	9-12-17	11-14-19	12-15-21
10" Oval Inlet	**Air Flow, CFM**	**30**	**35**	**45**	**55**	**70**	**90**	**110**
	Total Pressure, Inches WG	0.022	0.030	0.050	0.074	0.120	0.199	0.297
	NC (Noise Criterion)	–	–	15	21	28	36	43
	Throw, Feet	3-6-11	3-6-12	6-8-14	7-10-15	9-12-17	11-14-19	12-15-21

TSD-80 ■ 1" Slot ■ 1 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**50**	**60**	**80**	**100**	**125**	**155**	**200**
	Total Pressure, Inches WG	0.019	0.027	0.048	0.074	0.116	0.179	0.297
	NC (Noise Criterion)	–	–	15	22	29	35	42
	Throw, Feet	2-6-13	4-8-16	6-10-18	9-13-20	11-16-23	14-18-25	17-20-29
10" Oval	**Air Flow, CFM**	**60**	**70**	**90**	**115**	**140**	**170**	**215**
	Total Pressure, Inches WG	0.023	0.032	0.052	0.085	0.128	0.186	0.298
	NC (Noise Criterion)	–	–	15	22	28	35	42
	Throw, Feet	4-8-16	5-9-17	8-12-19	10-15-22	12-17-24	15-19-26	17-21-30
12" Oval Inlet	**Air Flow, CFM**	**60**	**70**	**90**	**115**	**140**	**170**	**215**
	Total Pressure, Inches WG	0.023	0.031	0.051	0.083	0.124	0.182	.0291
	NC (Noise Criterion)	–	–	15	22	28	35	42
	Throw, Feet	4-8-16	5-9-17	8-12-19	10-15-22	12-17-24	15-19-26	17-21-30

TSD-80 ■ 1" Slot ■ 2 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**45**	**55**	**70**	**90**	**115**	**140**	**180**
	Total Pressure, Inches WG	0.025	0.037	0.060	0.100	0.163	0.241	0.398
	NC (Noise Criterion)	–	–	14	22	29	35	42
	Throw, Feet	2-5-12	3-7-14	5-9-17	8-12-19	10-15-22	12-17-24	16-19-27
8" Oval Inlet	**Air Flow, CFM**	**50**	**60**	**80**	**100**	**125**	**155**	**200**
	Total Pressure, Inches WG	0.019	0.027	0.048	0.074	0.116	0.179	0.297
	NC (Noise Criterion)	–		15	22	29	35	42
	Throw, Feet	2-6-13	4-8-16	6-10-18	9-13-20	11-16-23	14-18-25	17-20-29
10" Oval Inlet	**Air Flow, CFM**	**55**	**70**	**90**	**110**	**140**	**170**	**215**
	Total Pressure, Inches WG	0.019	0.032	0.052	0.078	0.126	0.186	0.298
	NC (Noise Criterion)	–	–	15	21	28	35	42
	Throw, Feet	3-7-14	5-9-17	8-12-19	10-14-21	12-17-24	15-19-26	17-21-30

TSD-80 ■ 1" Slot ■ 2 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**85**	**105**	**135**	**170**	**215**	**275**	**345**
	Total Pressure, Inches WG	0.029	0.045	0.074	0.177	0.188	0.307	0.483
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-6-16	4-9-14	6-12-24	10-16-26	13-20-30	17-24-34	21-27-38
10" Oval Inlet	**Air Flow, CFM**	**90**	**110**	**140**	**180**	**230**	**290**	**370**
	Total Pressure, Inches WG	0.023	0.034	0.056	0.092	0.150	0.239	0.389
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-6-17	4-10-20	7-13-24	11-17-27	14-21-31	18-24-35	23-28-39
12" Oval Inlet	**Air Flow, CFM**	**95**	**120**	**150**	**190**	**240**	**300**	**390**
	Total Pressure, Inches WG	0.020	0.031	0.049	0.079	0.126	0.196	0.332
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-7-18	5-11-22	8-14-25	12-18-28	15-22-31	18-25-35	23-28-40

► Data were obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741, and ANSI/ASHRAE Standard 70-1991.

► NC values were determined from octave band 2 thru 7 sound power levels with a 10 dB room absorption.

► Dash (—) in space indicates NC less than 10.

► Throw values are listed for terminal velocities of 150, 100, and 50 fpm under isothermal conditions.

► Throws listed are for the 1-way air pattern. For divided air flow, select the air flow in each direction according to the number of slots aimed in that direction, with the total air flow apportioned between slots.

Performance Data

TSD-80 ■ 1½" Slot ■ 1 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**35**	**45**	**55**	**70**	**90**	**115**	**145**
	Total Pressure, Inches WG	0.019	0.032	0.048	0.077	0.128	0.209	0.332
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	2-4-11	3-7-14	5-9-16	7-11-17	9-14-19	12-55-22	14-17-24
8" Oval Inlet	**Air Flow, CFM**	**45**	**55**	**65**	**85**	**105**	**130**	**160**
	Total Pressure, Inches WG	0.023	0.035	0.048	0.083	0.126	0.194	0.294
	NC (Noise Criterion)	–	–	13	22	28	35	42
	Throw, Feet	3-7-14	5-8-15	6-10-16	9-13-19	11-15-21	13-16-23	15-18-26
10" Oval Inlet	**Air Flow, CFM**	**45**	**55**	**65**	**85**	**105**	**130**	**160**
	Total Pressure, Inches WG	0.023	0.034	0.047	0.081	0.123	0.188	0.285
	NC (Noise Criterion)	–	–	13	22	28	35	42
	Throw, Feet	3-7-14	5-8-15	6-10-16	9-13-19	11-15-21	13-16-23	15-18-26

TSD-80 ■ 1½" Slot ■ 1 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**70**	**85**	**105**	**135**	**170**	**215**	**275**
	Total Pressure, Inches WG	0.025	0.037	0.057	0.094	0.150	0.240	0.392
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-6-15	4-9-16	6-11-21	10-14-24	12-18-25	15-21-30	19-24-34
10" Oval Inlet	**Air Flow, CFM**	**75**	**90**	**115**	**145**	**180**	**230**	**295**
	Total Pressure, Inches WG	0.021	0.030	0.048	0.077	0.119	0.194	0.319
	NC (Noise Criterion)	–	–	15	21	28	35	42
	Throw, Feet	3-7-16	4-10-19	7-12-22	10-15-24	13-19-27	16-22-31	20-25-35
12" Oval Inlet	**Air Flow, CFM**	**85**	**105**	**135**	**165**	**210**	**260**	**325**
	Total Pressure, Inches WG	0.021	0.032	0.053	0.080	0.129	0.198	0.309
	NC (Noise Criterion)	–		15	21	28	35	42
	Throw, Feet	4-9-18	6-11-21	10-14-24	12-18-26	15-21-29	18-23-33	21-26-37

TSD-80 ■ 1½" Slot ■ 2 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**60**	**75**	**95**	**125**	**155**	**200**	**250**
	Total Pressure, Inches WG	0.032	0.049	0.079	0.137	0.210	0.350	0.547
	NC (Noise Criterion)	–	–	14	22	28	35	42
	Throw, Feet	2-4-13	3-7-16	5-10-20	8-13-23	11-17-26	14-20-29	18-23-32
8" Ovalln let	**Air Flow, CFM**	**65**	**85**	**105**	**135**	**170**	**215**	**275**
	Total Pressure, Inches WG	0.022	0.037	0.057	0.094	0.150	0.240	0.392
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	2-5-14	4-9-18	6-11-21	10-14-24	12-18-26	15-21-30	19-24-34
10" Oval Inlet	**Air Flow, CFM**	**75**	**90**	**115**	**145**	**180**	**230**	**295**
	Total Pressure, Inches WG	0.021	0.030	0.048	0.077	0.119	0.194	0.319
	NC (Noise Criterion)	–	–	15	21	28	35	42
	Throw, Feet	3-7-16	4-10-19	7-12-22	10-15-24	13-19-27	16-22-31	20-25-35

TSD-80 ■ 1½" Slot ■ 2 Slot ■ 48" Long

6" Oval Inlet	**Air Flow, CFM**	**115**	**145**	**185**	**235**	**195**	**370**	**480**
	Total Pressure, Inches WG	0.039	0.062	0.101	0.162	0.258	0.402	0.677
	NC (Noise Criterion)	–		14	21	28	35	42
	Throw, Feet	3-6-17	4-9-22	7-14-28	11-18-31	15-22-35	19-28-39	24-31-44
8" Oval Inlet	**Air Flow, CFM**	**125**	**155**	**195**	**245**	**310**	**395**	**510**
	Total Pressure, Inches WG	0.032	0.049	0.077	0.121	0.194	0.315	0.525
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-7-19	5-10-23	7-15-28	11-18-32	16-23-36	20-29-40	26-32-46
12" Oval Inlet	**Air Flow, CFM**	**130**	**160**	**205**	**260**	**325**	**415**	**535**
	Total Pressure, Inches WG	0.026	0.039	0.064	0.104	0.162	0.264	0.439
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-7-20	5-11-24	8-15-29	13-20-33	16-25-37	21-29-41	27-33-47

► Data were obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741, and ANSI/ASHRAE Standard 70-1991

► NC values were determined from octave band 2 thru 7 sound power levels with a 10 dB room absorption.

► Dash (—) in space indicates NC less than 10.

► Throw values are listed for terminal velocities of 150, 100, and 50 fpm under isothermal conditions.

► Throws listed are for the 1-way air pattern. For divided air flow, select the air flow in each direction according to the number of slots aimed in that direction, with the total air flow apportioned between slots.

Performance Data

TSD-80 ▶ 1½" Slot ■ 3 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**90**	**110**	**130**	**160**	**225**	**285**	**360**
	Total Pressure, Inches WG	0.062	0.093	0.150	0.248	0.387	0.621	0.991
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-7-19	4-10-23	7-14-28	12-19-32	15-23-36	20-29-40	25-32-45
8" Oval Inlet	**Air Flow, CFM**	**105**	**130**	**165**	**210**	**265**	**335**	**420**
	Total Pressure, Inches WG	0.043	0.066	0.106	0.172	0.273	0.437	0.687
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-9-22	6-13-27	10-17-31	14-22-35	18-27-39	23-31-44	28-35-49
10" Oval Inlet	**Air Flow, CFM**	**115**	**145**	**185**	**235**	**295**	**375**	**470**
	Total Pressure, Inches WG	0.033	0.052	0.085	0.137	0.216	0.349	0.548
	NC (Noise Criterion)	–		14	21	28	35	42
	Throw, Feet	5-11-24	8-15-29	12-19-33	16-24-37	20-29-41	26-33-46	30-37-52

TSD-80 ▶ 1½" Slot ■ 3 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**170**	**215**	**270**	**340**	**430**	**540**	**680**
	Total Pressure, Inches WG	0.064	0.102	0.161	0.255	0.407	0.642	1.019
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-8-25	6-13-31	9-20-39	15-25-44	21-31-50	26-39-58	33-44-63
10" Oval	**Air Flow, CFM**	**190**	**245**	**305**	**380**	**480**	**620**	**770**
	Total Pressure, Inches WG	0.049	0.081	0.126	0.195	0.312	0.520	0.802
	NC (Noise Criterion)	–		14	21	28	35	42
	Throw, Feet	5-10-28	8-17-36	12-22-42	18-28-47	23-35-53	30-42-60	37-47-67
12" Oval Inlet	**Air Flow, CFM**	**210**	**265**	**330**	**415**	**520**	**670**	**830**
	Total Pressure, Inches WG	0.043	0.068	0.106	0.168	0.263	0.437	0.671
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	6-13-31	9-19-39	14-24-44	20-30-49	25-38-55	33-44-26	40-49-69

TSD-80 ▶ 1½" Slot ■ 4 Slot ■ 24" Long

6" Oval Inlet	**Air Flow, CFM**	**110**	**135**	**175**	**220**	**275**	**350**	**440**
	Total Pressure, Inches WG	0.074	0.112	0.188	0.297	0.464	0.752	1.189
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	3-6-20	4-10-24	7-16-31	11-20-36	16-25-40	21-31-45	26-36-50
8" Oval Inlet	**Air Flow, CFM**	**130**	**160**	**205**	**255**	**320**	**405**	**510**
	Total Pressure, Inches WG	0.052	0.078	0.128	0.198	0.312	0.500	0.793
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-9-23	6-13-29	10-18-34	15-23-38	19-29-43	24-34-48	30-38-54
10" Oval Inlet	**Air Flow, CFM**	**145**	**180**	**230**	**290**	**365**	**460**	**580**
	Total Pressure, Inches WG	0.040	0.062	0.101	0.161	0.255	0.406	0.645
	NC (Noise Criterion)		–	14	21	28	35	42
	Throw, Feet	5-11-26	8-16-32	12-21-36	17-26-41	22-32-46	27-36-51	33-41-58

TSD-80 ▶ 1½" Slot ■ 4 Slot ■ 48" Long

8" Oval Inlet	**Air Flow, CFM**	**210**	**270**	**340**	**420**	**535**	**385**	**835**
	Total Pressure, Inches WG	0.079	0.130	0.206	0.314	0.510	0.787	1.241
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	4-8-27	6-14-34	10-21-43	15-27-49	23-34-55	28-42-62	35-49-69
10" Oval Inlet	**Air Flow, CFM**	**235**	**295**	**370**	**470**	**590**	**740**	**960**
	Total Pressure, Inches WG	0.059	0.093	0.147	0.237	0.373	0.587	0.988
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	5-10-30	7-16-37	11-23-46	18-30-52	25-37-58	31-46-65	40-53-74
12" Oval Inlet	**Air Flow, CFM**	**255**	**320**	**410**	**520**	**650**	**810**	**1040**
	Total Pressure, Inches WG	0.050	0.078	0.128	0.206	0.322	0.500	0.824
	NC (Noise Criterion)	–	–	14	21	28	35	42
	Throw, Feet	5-12-32	8-19-40	14-26-49	22-33-55	27-41-61	34-48-68	44-55-77

▶ Data were obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741, and ANSI/ASHRAE Standard 70-1991.

▶ NC values were determined from octave band 2 thru 7 sound power levels with a 10 dB room absorption.

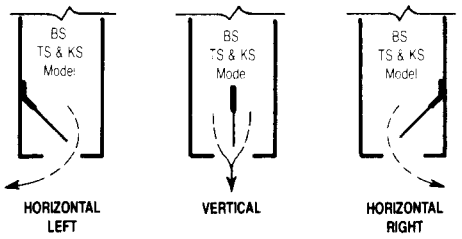
▶ Dash (—) in space indicates NC less than 10.

▶ Throw values are listed for terminal velocities of 150, 100, and 50 fpm under isothermal conditions.

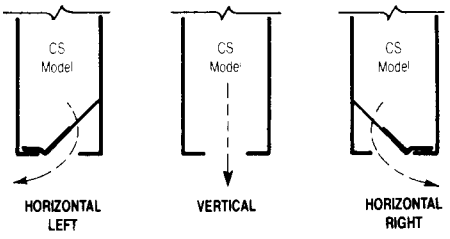
▶ Throws listed are for the 1-way air pattern. For divided air flow, select the air flow in each direction according to the number of slots aimed in that direction, with the total air flow apportioned between slots.

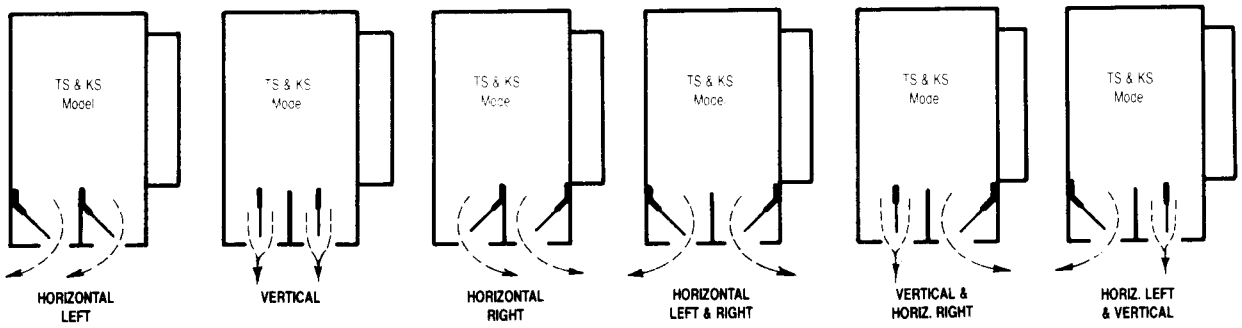
AIR PATTERN CONTROLLER ADJUSTMENT

FOR AIR FLOW THROUGH A FULL 180 DEGREES

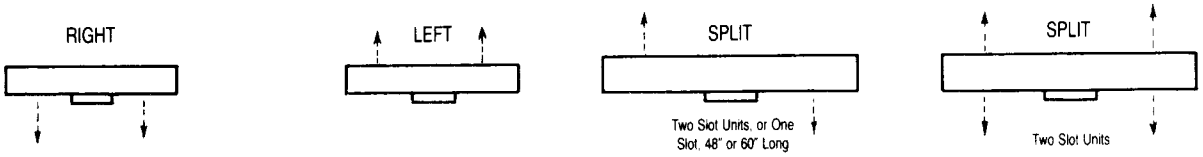


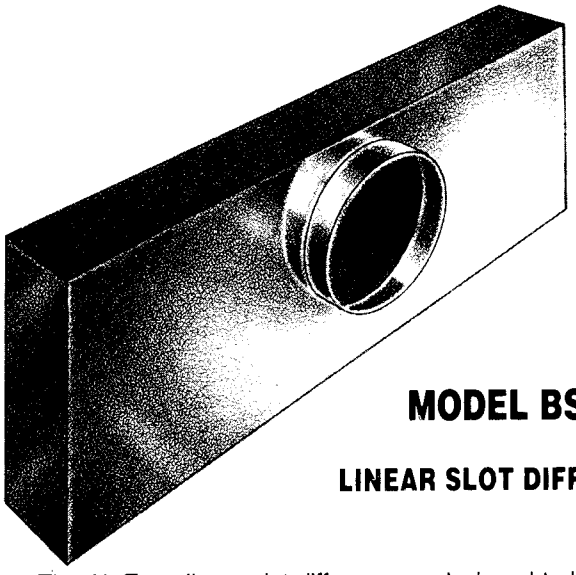
Each unit fully adjustable from vertical to horizontal projection. No need to specify right hand or left hand inlet connection.





HORIZONTAL AIR PATTERNS – PLAN VIEW





MODEL BS

LINEAR SLOT DIFFUSER

The Air Zone linear slot diffusers are designed to be used in suspended T-Bar grid ceiling systems for ducted air distribution.

Modular in length, slot diffusers are installed by fitting them from above into open parallel T-Bars in the ceiling grid system and connecting the flext duct, thus leaving the exposed appearance of the integrated ceiling virtually unchanged.

This air device can handle more supply air CFM per square foot in a contemporary variable air volume system without dumping than conventional perforated or louvered face diffusers.

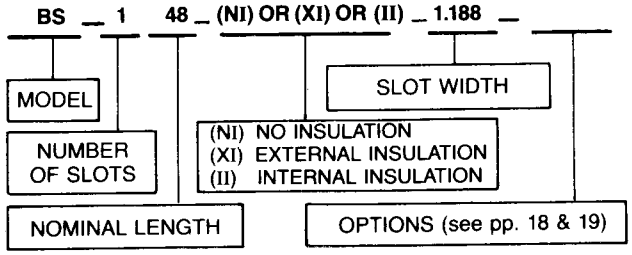
Air pattern controller can be adjusted from face of unit to direct the air flow through a full 180 degrees, from vertical to horizontal left hand or horizontal right hand air flow. On 48" and 60" long units, each air pattern controller is divided into equal lengths for maximum flexibility of air flow adjustment along length of the slot.

DIMENSIONS

Model BS-1			1.188" Wide Single Slot		
MODEL	**V**	**W**	**X ***	**Y**	**Z**
BS-124	2 13/16"	8"	12"	23 3/4"	1 3/16"
BS-136	2 13/16"	10"	11"	35 3/4"	1 3/16"
BS-148	2 13/16"	8"	12"	47 3/4"	1 3/16"
BS-160	2 13/16"	10"	11"	59 3/4"	1 3/16"

*maximum

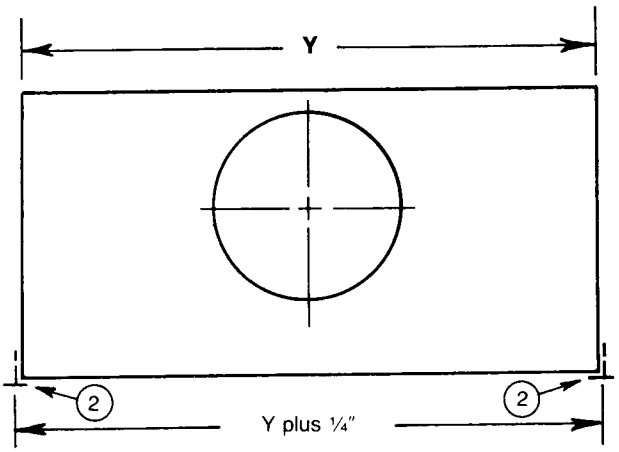
UNIT DESIGNATION

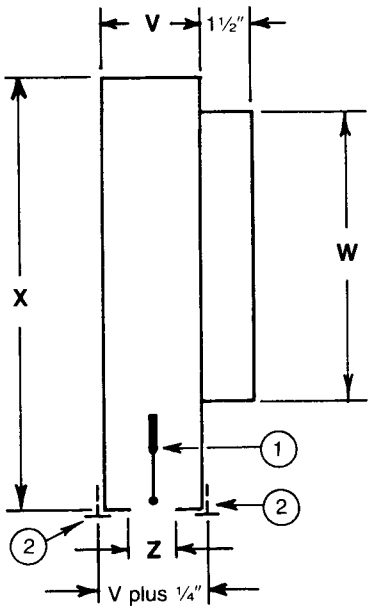


FEATURES

- *Available in one to four slot models*
- *Air pattern adjustable from horizontal left or right to vertical from face of unit.*
- *Heavy felt gasket mechanically locked on air pattern controller to form a positive seal in horizontal projection setting to prohibit bypass of air and resultant dumping effect.*
- *Choice of non-insulated, internally insulated with coated glass fiber, or externally insulated with glass fiber blanket and aluminum vapor barrier on scrim kraft backing.*
- *Constructed of minimum 24 gauge paint grip steel with all exposed areas painted matte black.*
- *For selection of options, see pages 18 and 19.*

SPECIFICATION DRAWING





OPTIONS

(1) AIR PATTERN CONTROLLER
(2) T-BAR (furnished by others)

ENGINEERING PERFORMANCE DATA FOR MODEL BS

NOMINAL LENGTH	NOMINAL INLET	MODEL BS-1 1.188″ WIDE SINGLE SLOT T-BAR DIFFUSER								
24″	8″	**CFM**	**40**	**50**	**60**	**70**	**80**	**100**	**120**	**140**
		TOTAL PRESSURE	.012	.012	.013	.033	.053	.081	.122	.161
		THROW	0-1-3	0-1-3	0-1-4	1-3-6	1-5-10	2-8-16	3-10-18	4-11-21
		NC	8	9	10	13	15	19	25	31
36″	8″	**CFM**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**
		TOTAL PRESSURE	.014	.032	.060	.091	.121	.160	.210	.270
		THROW	1-2-4	1-4-6	1-6-12	2-8-16	2-9-18	4-10-21	6-11-22	9-15-23
		NC	10	14	16	20	26	32	37	44
48″	8″	**CFM**	**160**	**180**	**200**	**220**	**240**	**260**	**280**	**320**
		TOTAL PRESSURE	.051	.062	.079	.102	.120	.135	.159	.203
		THROW	1-4-10	2-6-12	2-8-15	3-8-16	3-9-17	4-9-18	4-10-20	6-11-22
		NC	15	16	18	21	24	28	30	38
60″	10″	**CFM**	**200**	**250**	**300**	**325**	**350**	**375**	**400**	**450**
		TOTAL PRESSURE	.052	.081	.118	.141	.160	.181	.190	.250
		THROW	1-3-10	2-4-11	2-5-12	3-6-14	4-8-16	6-10-18	7-12-20	8-14-22
		NC	16	20	24	28	30	32	36	43

TOTAL PRESSURE DATA

Total pressure is the sum of velocity pressure and static pressure and is given in inches H_2O.

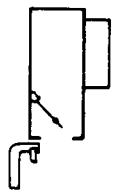
THROW DATA

Throw values are shown in feet and are based on isothermal air. Feet shown in chart are horizontal projection distances to terminal velocities of 150 FPM, 100 FPM and 50 FPM.

NC SOUND DATA

Ratings are based on a room absorption of 10 decibels (re: 10^{-12} watts).

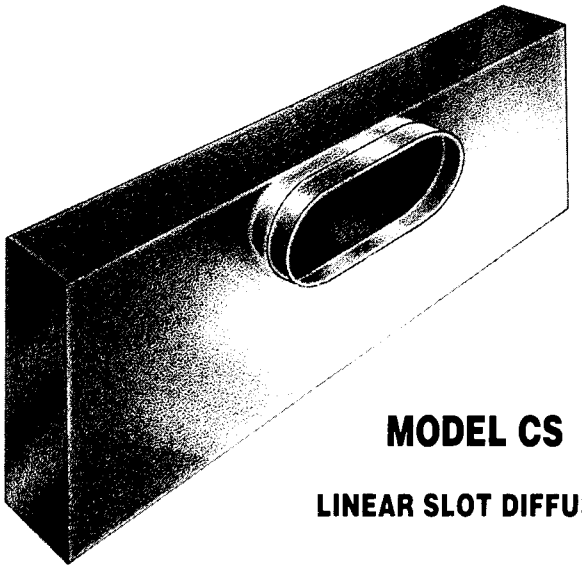
AREA FACTORS A_K			
MODEL	NOMINAL INLET	NOMINAL LENGTH	HORIZ. AIR PATTERN A_K FACTOR
BS-124	8″	24″	.108
BS-136	8″	36″	.162
BS-148	8″	48″	.216
BS-160	10″	60″	.270



ALNOR VELOMETER TIP 2220-A OR 2220

BALANCING DATA

- Locate probe in slot, as shown in sketch, and take four equispaced velocity readings.
- Record and average the velocity readings (total of four readings).
- Flow Rate in CFM = Average Velocity X Area Factor.



MODEL CS

LINEAR SLOT DIFFUSER

The Air Zone linear slot diffusers are designed to be used in suspended T-Bar grid ceiling systems for ducted air distribution.

Modular in length, slot diffusers are installed by fitting them from above into open parallel T-Bars in the ceiling grid system and connecting the flext duct, thus leaving the exposed appearance of the integrated ceiling virtually unchanged.

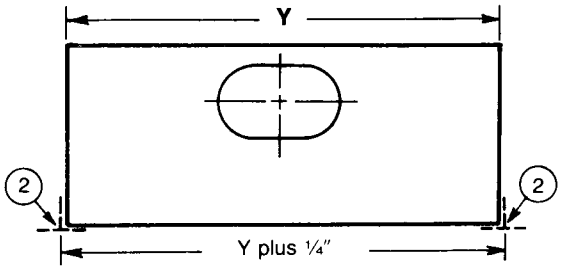
This air device can handle more supply air CFM per square foot in a contemporary variable air volume system without dumping than conventional perforated or louvered face diffusers.

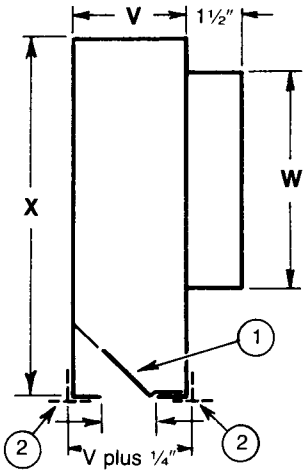
Air pattern controller can be adjusted from face of unit to direct the air flow through a full 180 degrees, from vertical to horizontal left hand or horizontal right hand air flow. On 48" and 60" long units, each air pattern controller is divided into equal lengths for maximum flexibility of air flow adjustment along length of the slot.

FEATURES

- ***Available in one slot model.***
- ***Air pattern adjustable from horizontal left or right to vertical from face of unit.***
- ***Air pattern controller is formed steel. To change air pattern from horizontal left to right, merely remove controller through slot, reverse, and replace controller. For vertical air pattern or ducted return application, remove air pattern controller.***
- ***Choice of non-insulated, internally insulated with coated glass fiber, or externally insulated with glass fiber blanket and aluminum vapor barrier on scrim kraft backing.***
- ***Construction of diffuser is galvanealed steel with exposed surfaces and air pattern controller painted flat black.***
- ***For selection of options, see pages 18 and 19.***

SPECIFICATION DRAWING



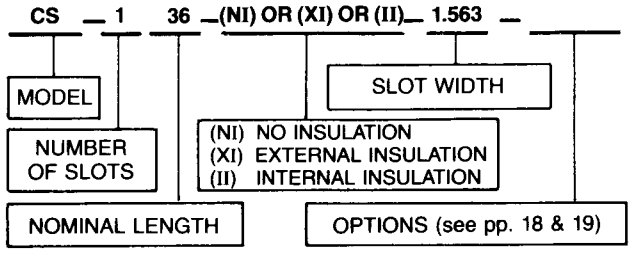


DIMENSIONS

Model CS-1			1.563" Wide Single Slot		
MODEL	V	W (OVAL)	X*	Y	Z
CS-124	3 1/16"	6"	11"	23 3/4"	1 9/16"
CS-130	3 1/16"	6"	11"	29 3/4"	1 9/16"
CS-136	3 1/16"	8"	11"	35 3/4"	1 9/16"
CS-148	3 1/16"	8"	11"	47 3/4"	1 9/16"

*maximum

UNIT DESIGNATION



OPTIONS

(1) AIR PATTERN CONTROLLER
(2) T-BAR (furnished by others)

ENGINEERING PERFORMANCE DATA FOR MODEL CS

NOMINAL LENGTH	NOMINAL INLET	MODEL CS-1	1.563" WIDE SINGLE SLOT T-BAR DIFFUSER							
24"	6"	**CFM**	**80**	**100**	**120**	**140**	**160**	**180**	**200**	**220**
		TOTAL PRESSURE	.04	.05	.08	.11	.14	.20	.26	.29
		THROW	3-4-8	3-5-9	4-7-11	5-8-12	6-9-13	6-10-14	8-12-18	10-14-20
		NC	16	18	20	25	27	31	35	38
30"	6"	**CFM**	**130**	**150**	**170**	**190**	**210**	**230**	**250**	**270**
		TOTAL PRESSURE	.05	.06	.08	.10	.13	.16	.19	.24
		THROW	3-6-10	4-7-11	4-8-12	5-10-14	6-11-15	7-12-18	8-14-20	10-16-22
		NC	16	17	19	21	26	28	31	35
36"	8"	**CFM**	**180**	**200**	**220**	**240**	**260**	**280**	**300**	**320**
		TOTAL PRESSURE	.06	.08	.09	.14	.18	.22	.26	.30
		THROW	4-6-12	5-7-13	6-9-17	7-10-18	8-12-20	9-13-21	10-14-22	12-16-26
		NC	17	19	21	27	30	34	36	39
48"	8"	**CFM**	**175**	**200**	**250**	**275**	**300**	**350**	**380**	**400**
		TOTAL PRESSURE	.04	.05	.09	.11	.14	.19	.23	.26
		THROW	3-5-12	4-6-13	5-8-16	6-9-18	6-10-20	7-12-23	8-13-25	9-13-26
		NC	17	18	21	24	26	32	34	35

TOTAL PRESSURE DATA
Total pressure is the sum of velocity pressure and static pressure and is given in inches H_2O.

THROW DATA
Throw values are shown in feet and are based on isothermal air. Feet shown in chart are horizontal projection distances to terminal velocities of 150 FPM, 100 FPM and 50 FPM.

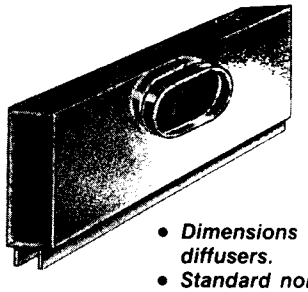
NC SOUND DATA
Ratings are based on a room absorption of 10 decibels (re: 10^{-12} watts).

AREA FACTORS A_K			
MODEL	NOMINAL INLET (OVALS)	NOMINAL LENGTH	HORIZ. AIR PATTERN A_K FACTOR
CS-124	6"	24"	.118
CS-130	6"	30"	.142
CS-136	8"	36"	.180
CS-148	8"	48"	.241

ALNOR VELOMETER TIP 6070-P JET

BALANCING DATA

Locate probe in slot, as shown in sketch, and take four equispaced velocity readings.
Record and average the velocity readings (total of four readings).
Flow Rate in CFM = Average Velocity X Area Factor.



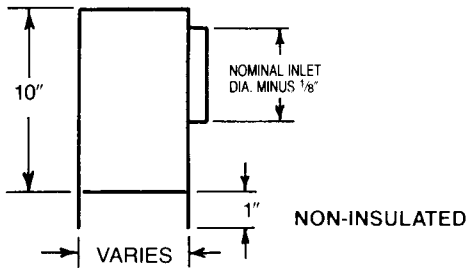
MODEL PL (NON-INSULATED) & PLI (INSULATED)

PLENUMS (ONLY) FOR LINEAR DIFFUSERS BY OTHERS

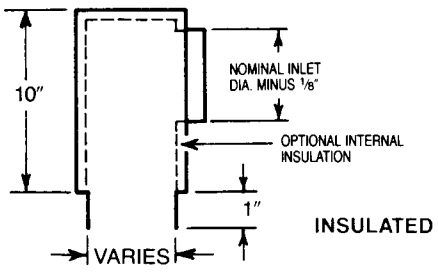
FEATURES

- ***Dimensions to fit other manufacturers' linear diffusers.***
- ***Standard nominal lengths of 24", 36", 48" and 60".***
- ***Inlet sizes of 4", 5", 6", 7" and 8" round, and 10" and 12" oval.***
- ***Construction is 24 gauge galvanealed steel with mill finish.***

SPECIFICATION DRAWING

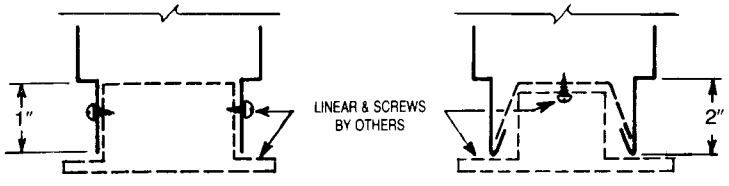


NON-INSULATED



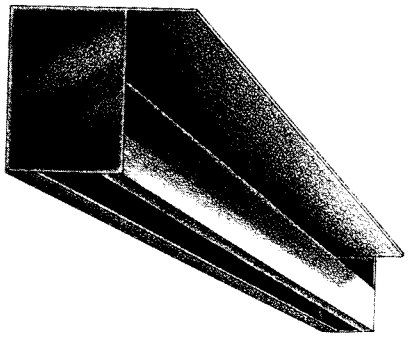
INSULATED

FASTENING METHOD DETAILS



SCREW FASTENING

CONCEALED FASTENING



FEATURES

- ***Constructed of minimum 24 gauge paint grip steel with all exposed areas painted matte black.***
- ***Double metal thickness at slot face for rigidity and straightness.***
- ***Available with seven arrangements of optional factory installed T-bars.***
- ***Lightproof design assures no straight line of sight into ceiling plenum.***
- ***Nominal lengths of 12" and 60".***
- ***Choice of non-insulated, internally insulated with glass fiber, or externally insulated with glass fiber blanket and aluminum vapor barrier or scrim kraft backing.***
- ***Optional 9" and 11" plenum height to match supply slots.***
- ***Optional in cross notching for 24" to 24" ceiling.***
- ***Optional center tee painted white.***

TSR, BSR AND CSR MODELS

NON-DUCTED RETURNS

TSR, BSR and CSR Model Return Air Slots are designed for non-ducted applications when utilizing the space above a suspended ceiling for the return air plenum.

Matching returns for supply units are available in all nominal lengths.

DIMENSIONS

Slot Width	Length L			
S	1 Slot	2 Slot	3 Slot	4 Slot
¾	1¾	3½	5¼	7
1	2	4	6	8
1½	2½	5	7½	10

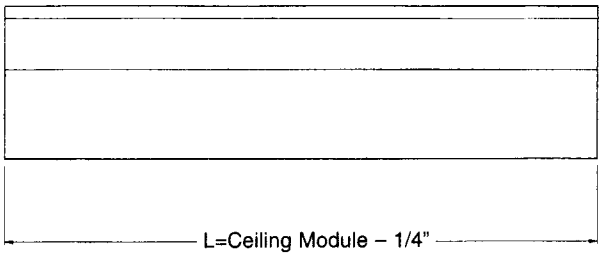
Standard Length: 12", 24", 30", 36", 42", 48" & 60"

HEIGHT

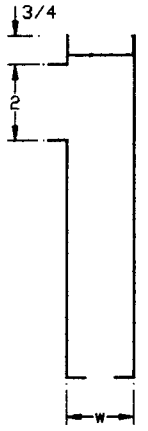
Slot Type	Low Profile	High Profile
1 & 2 Slot	☐ 5" High	☐ 9" High
3 & 4 Slot	☐ 8" High	☐ 11" High

Special dimensions available on request
• Optional 9" and 11" plenum to match supply slots

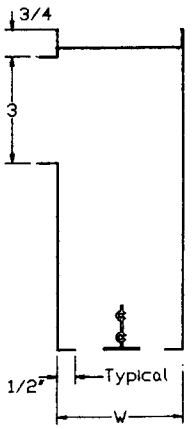
3/4", 1" and 1 1/2" SLOT WIDTH



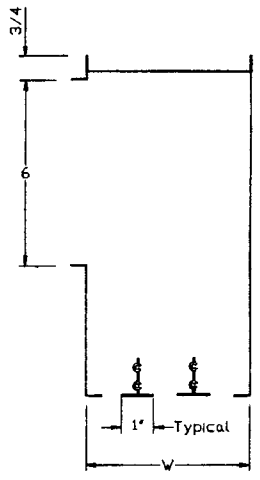
SIDE VIEW



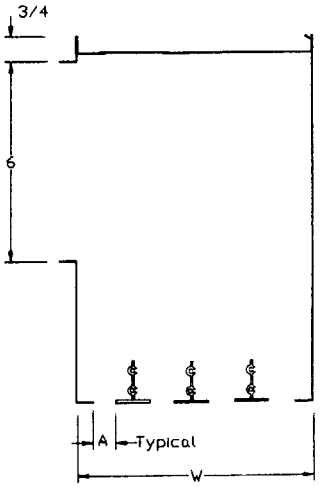
ONE SLOT



TWO SLOT



THREE SLOT



FOUR SLOT

Performance Data

TSR-80 ■ ¾" Slot ■ 24" Long

1 Slot	**Air Flow, CFM**	**30**	**45**	**60**	**75**	**90**	**105**	**120**	**135**	**150**
	Negative SP, Inches WG	0.10	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	–	13	19	23	27	30	33
2 Slot	**Air Flow, CFM**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	10	16	22	26	30	33	36

TSR-80 ■ ¾" Slot ■ 48" Long

1 Slot	**Air Flow, CFM**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	–	13	19	23	27	30	33
2 Slot	**Air Flow, CFM**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	10	16	22	26	30	33	36

TSR-80 ■ 1" Slot ■ 24" Long

1 Slot	**Air Flow, CFM**	**40**	**60**	**80**	**100**	**120**	**140**	**160**	**180**	**200**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	–	13	19	23	27	30	33
2 Slot	**Air Flow, CFM**	**80**	**120**	**160**	**200**	**240**	**280**	**320**	**360**	**400**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	10	16	22	26	30	33	36

TSR-80 ■ 1" Slot ■ 48" Long

1 Slot	**Air Flow, CFM**	**80**	**120**	**160**	**200**	**240**	**280**	**320**	**360**	**400**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	–	13	19	23	27	30	33
2 Slot	**Air Flow, CFM**	**160**	**240**	**320**	**400**	**480**	**560**	**640**	**720**	**800**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	10	16	22	26	30	30	36

TSR-80 ■ 1½" Slot ■ 24" Long

1 Slot	**Air Flow, CFM**	**60**	**90**	**120**	**150**	**180**	**210**	**240**	**270**	**300**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	–	13	19	23	27	30	33
2 Slot	**Air Flow, CFM**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	10	16	22	26	30	33	36

TSR-80 ■ 1½" Slot ■ 48" Long

1 Slot	**Air Flow, CFM**	**120**	**180**	**240**	**300**	**360**	**420**	**480**	**540**	**600**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	–	13	19	23	27	30	33
2 Slot	**Air Flow, CFM**	**240**	**360**	**480**	**600**	**720**	**840**	**960**	**1080**	**1200**
	Negative SP, Inches WG	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
	NC (Noise Criterion)	–	–	10	16	22	26	30	33	36

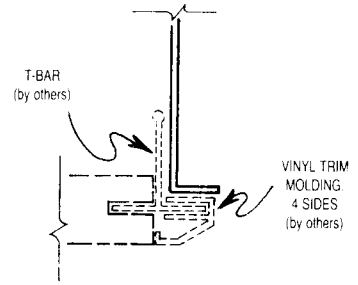
► Data were obtained from tests conducted in accordance with ISO Standard 5219, ISO Standard 3741, and ANSI/ASHRAE Standard 70-1991.

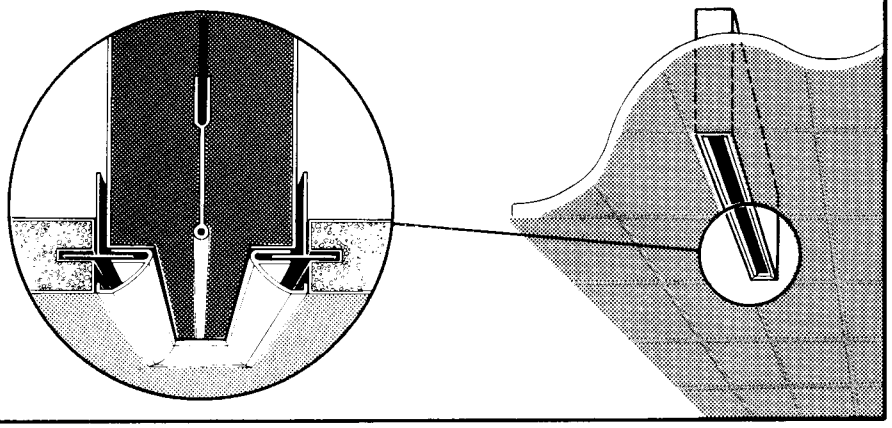
► NC values were determined from octave band 2 thru 7 sound power levels with a 10 dB room absorption.

► Dash (—) in space indicates NC less than 10.

SUGGESTED SPLINE CEILING APPLICATION

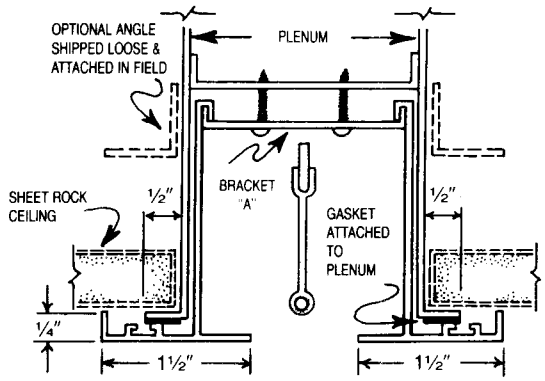
(APPLICABLE TO ALL MODELS)





SURFACE MOUNTED LINEAR SLOT DIFFUSER

(AVAILABLE ON KS MODELS ONLY)

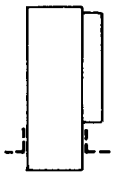


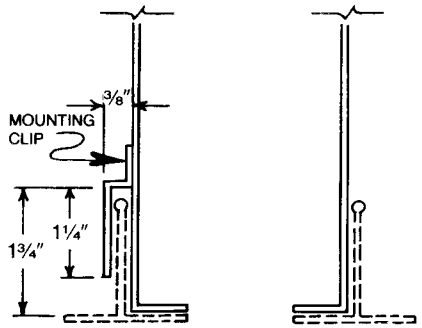
INSTALLATION INSTRUCTIONS

Install plenum by hanger wire or angles extending to rest on ceiling support system secured to side of plenum in field. As an option. AZI will furnish angles 12" longer than plenum for field attachment. Attach flex duct to plenum. After ceiling is completed, finish installing the air pattern controller frame sub-assembly. Two brackets "A" are shipped loose with clearance holes pre-punched . . . insert bracket "A" into frame and align with pre-punched holes in cross bracket in plenum. Insert sub-assembly and secure with sheet metal screws.

Option Designation

Shipped with angles included	Option SX
Shipped with angles excluded	Option SO



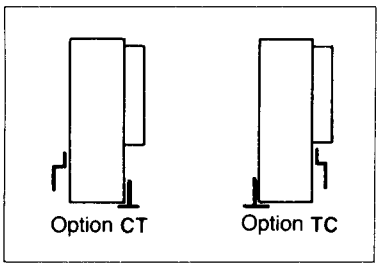


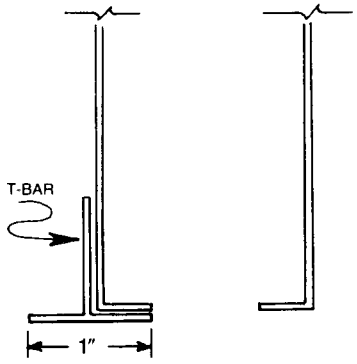
MOUNTING CLIP
(TWO PER SIDE)

MOUNTING CLIP & T-BAR COMBINATIONS

(AVAILABLE ON ALL MODELS)

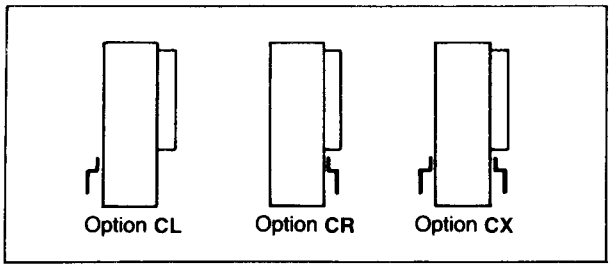
Option Designation



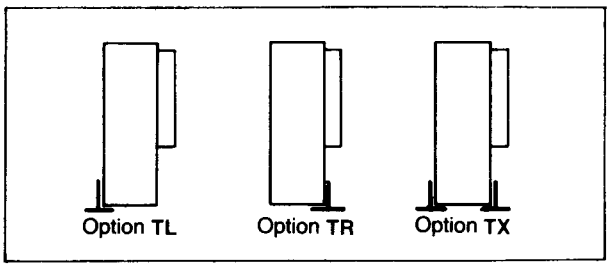


OUTSIDE MOUNTING T-BAR

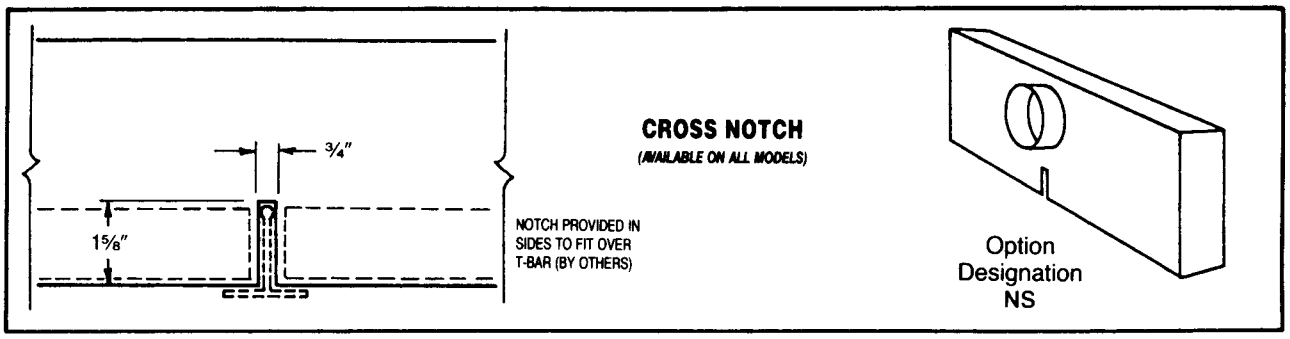
Option Designation

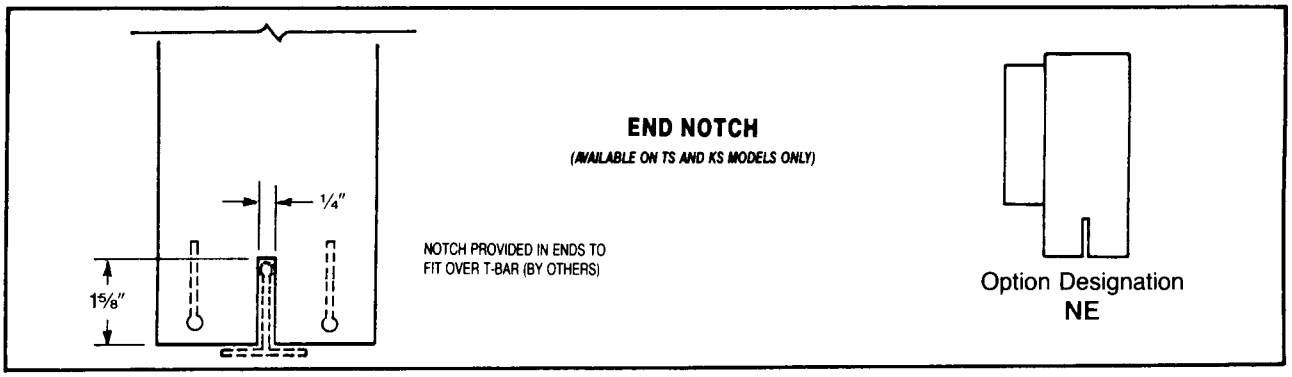


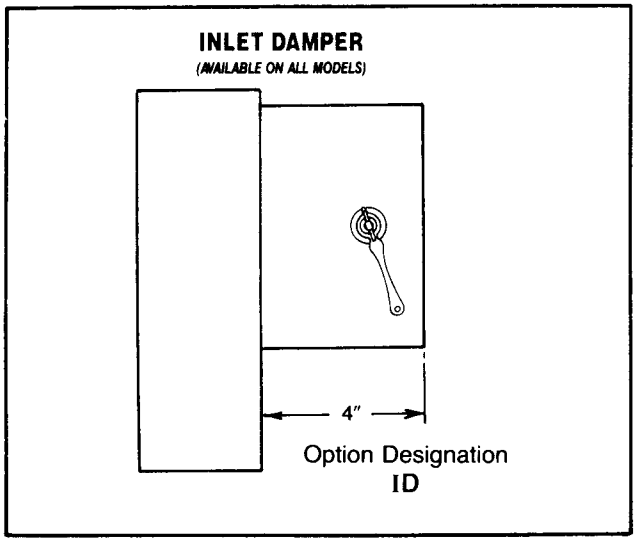
Option Designation

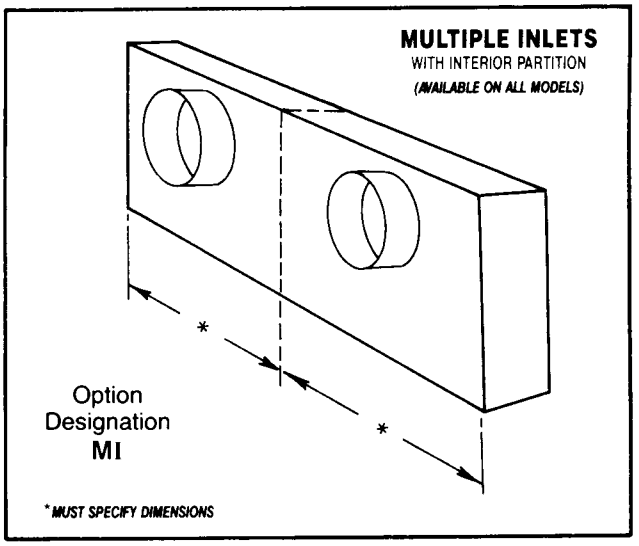


OPTIONS









OPTION DESIGNATION	FINISHES
SF	ALL EXPOSED SURFACES FLAT BLACK STANDARD
1F	ALL EXPOSED SURFACES FLAT BLACK STANDARD WITH CENTER T BAR FACE WHITE
2F	SURFACE MOUNTED FRAME WHITE STANDARD
3F	SPECIAL FINISH TO OWNER'S REQUIREMENTS

GUARANTEE

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