Redefine your comfort zone. ™ | www.titus-hvac.com

Titus
Redefine your comfort zone.™

plenum slot

dual-function | smart-logic | light powered | energy solutions

d

Table of Contents

PLENUM SLOT N-SERIES DIFFUSERS

PLENUM SLOT AUTO-CHANGEOVER DIFFUSERS

ACCESSORIES

ICONS

plenum slot adjustable diffusers

PAGES: D8-D42

TBD-10 / TBDI-10

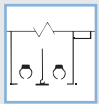
HIGH CAPACITY DIFFUSERS

- Aerodynamically curved blades can be set for left, right or vertical airflow before or after installation
- Available in 1 or 2 slots, 1- or 1½" slot widths

TBD-30 / TBDI-30

MODULINEAR DIFFUSERS

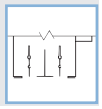
- Premium quality, superior to industry standards
- Utilizes our Modulinear pattern controller for full 180° gradual adjustment of discharge direction and volume control



TBD-80 / TBDI-80

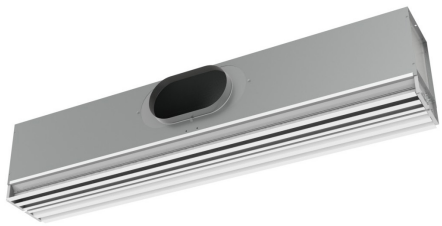
GASKETED BLADE DIFFUSERS

- Extreme flexibility in application
- Seven different combinations of factory installed T-bars
- Available in 1,2,3, or 4 parallel slots
- Gasket edged blades provides effective directional control of discharge air



plenum slot fixed diffusers

PAGES: D43-D47



T-SLOT

FIXED DEFLECTION DIFFUSER

- Attractive diffuser designed to give premium performance with minimum profile in ceiling
- Diffuser face blends with ceiling tees
- Available in 1, 2, 3, or 4 slots

n-slot series diffusers

PAGES: D48-D61

N-1

SINGLE SLOT DIFFUSER

- High induction supply diffuser
- Aerodynamically curved, fixed blade
- Horizontal air pattern is maintained from minimum to maximum flow
- For use in standard lay-in ceilings

N-1-R

SINGLE SLOT DIFFUSER

- High induction supply diffuser with return section
- Aerodynamically curved, fixed blade
- Horizontal air pattern is maintained from minimum to maximum flow
- For use in standard lay-in ceilings

N-1-D

DOWN BLOW SINGLE SLOT DIFFUSER

- High induction supply diffuser divided into horizontal & down blow sections
- Delivers air in two separate discharge patterns
- Aerodynamically curved, fixed blade
- Horizontal air pattern is maintained from minimum to maximum flow
- For use in standard lay-in ceilings

N-1-DR

DOWN BLOW SINGLE SLOT DIFFUSER

- High induction supply diffuser with down blow & return slots
- Delivers air in two separate discharge patterns
- Aerodynamically curved, fixed blade
- Horizontal air pattern is maintained from minimum to maximum flow
- For use in standard lay-in ceilings

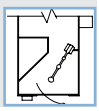
auto-changeover diffusers

PAGES: D62-D66

EOS

HEATING & COOLING APPLICATIONS

- Auto-changeover diffuser with a bi-directional air pattern for cooling & heating
- Utilizes solar-powered, energy-harvesting technology
- Narrow & adjustable band (71° - 78°)



Overview

Titus offers a complete line of plenum slot diffusers to meet any type of design application. All Titus models feature a high performance diffuser with integral distribution plenum that ships as a single unit to reduce installation time and labor in the field. The plenum slot line consists of five different manually adjustable models as well as two auto-changeover models and matching returns units. All diffusers feature heavy gauge steel construction with inlet collars drawn from the plenum wall to eliminate the leakage that can occur with mechanically fastened collars. The standard construction also includes double metal thickness at the diffuser slot face to ensure rigidity and straightness. Plenum slot diffusers are available in multiple lengths and inlet sizes. Options include internal or external insulation (depending on the model), 8" or 11" plenum height, and inlet dampers for balancing airflow.

The Axiom Building Perimeter System from Armstrong Ceilings is a perimeter solution that accommodates the transition between the interior of a building's perimeter and the ceiling plane. This pre-engineered solution includes a diffuser face plate with rectangular slots for the integration of linear diffusers. Diffusers are mounted on top of the face plate and discharge air through the slots. For perimeter applications, a diffuser with bi-directional air flow should be used. The diffuser should discharge the air in a vertical pattern down the perimeter wall for heating applications and in a horizontal pattern along the ceiling plane for cooling applications.

Titus has three bi-directional linear diffusers that can be used in the Armstrong AXIOM perimeter system:

- TBD-30 modulinear, high performance slot diffuser
- TBD-80 single blade, high performance slot diffuser
- EOS ambient light-powered diffuser

The TBD-30 and TBD-80 models in a 2-slot configuration can be used with the AXIOM 2-slot face plate. The EOS should be used with the Axiom 1-slot face plate system. All three linear diffusers provide bi-directional air discharge with excellent performance.

SLOT DIFFUSER SELECTION

There are four basic tools you can use for selecting slot diffusers:

1. Noise Criteria (NC)
2. Throw Data (methods 1, 2, 3 or 4)
3. Air Diffusion Performance Index (ADPI) (methods 5 or 6)
4. Pressure Drop

The method number shown refers to the numbers assigned to the diagrams in the Slot Diffuser Selection Methods figure. The following paragraphs further explain these four tools usage.

1. NC: At the required cfm, select a diffuser to meet the desired NC level. See the section, Engineering Guidelines and the topic 'Acoustical Applications and Factors' in this catalog for NC level information.
2. Throw Data: The distances from the diffuser at which the airstream is traveling at 150, 100 and 50 fpm. These velocities are referred to as terminal velocities. For example: The catalog may list a selection with throw values of 15 - 19 - 27 at 200 cfm, as in Diagram 1. Diagrams 1, 2, 3 and 4 offer some suggested techniques for applying throw data. See the section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for additional throw information.
3. ADPI: The ADPI selection method can be used to obtain the maximum cooling comfort conditions in regard to throw. From tests on human response to room draft temperatures and local air velocities, a relationship between the size of the room and the throw at 50 fpm has been developed to maximize comfort. ADPI states that to maximize comfort:

   $T_{50}/L = 0.5$ to 3.3 for plenum slot diffusers

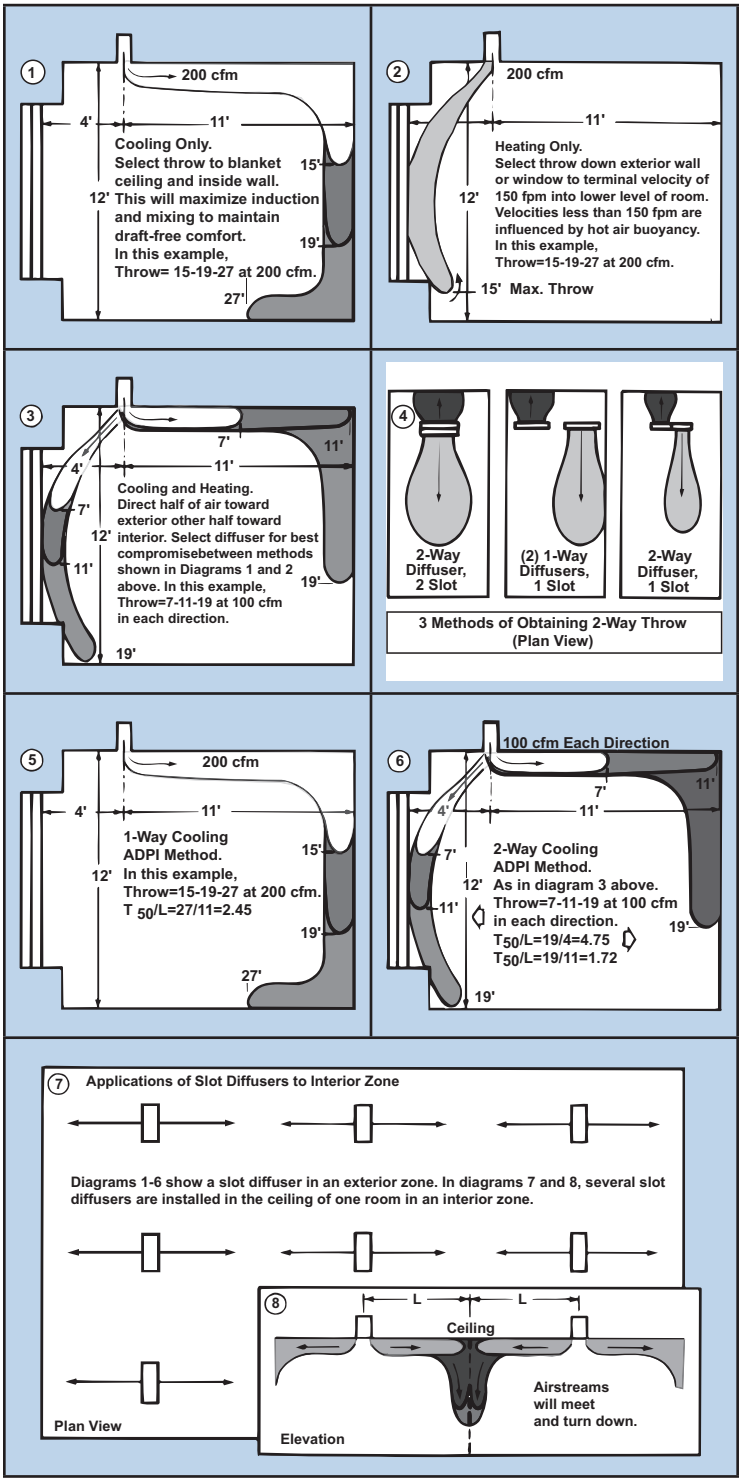
   Where:

   T_{50} = throw at 50 fpm terminal velocity, from catalog data

   and

   L = equivalent length of room or diffuser zone

   Diagram 5 shows a cooling-only ADPI selection. In Diagram 6, a two-way diffuser is used for both heating and cooling. In the cooling mode, the jet blanketing the window has a T_{50}/L somewhat higher than desired. As this example indicates, you must optimize the selection between the throw method and the ADPI. See section, Engineering Guidelines and the topic 'ADPI - Air Diffusion Performance Index' in this catalog for extensive ADPI information.
4. Pressure Drop: The diffuser selection must also be within the pressure drop allowed for it in the overall system design.



Note: The selection methods shown are intended to illustrate possible methods of selection. They are not recommended for any specific project.

Plenum Slot Adjustable Diffusers

TBD-10

- The TBD-10 is 8" high standard, ideal for the restricted ceiling spaces in many modern buildings. It handles a large volume of air at low pressure drop and noise level
- With its aerodynamic pattern controllers, the TBD-10 projects a tight blanket of air across the ceiling, from minimum to maximum flow
- This blanketing effect makes the TBD-10 an excellent choice for variable air volume operation and has the extra advantage of minimizing smudges on the ceiling
- For workmanship and performance at the lowest possible cost, the TBD-10 is highly standardized. It is shipped with the pattern controller loose for easy and quick field installation. (The pattern controllers can also be factory installed at an additional charge).
- Both loose and factory installed pattern controllers can be set for left, right, or vertical airflow after diffuser installation
- Blades can be reversed in the field to change the blow pattern

TBD-10

energy solutions

See website for Specifications

MODELS:

(Blades shipped loose)
TBD-10 / Supply
TBDI-10 / Supply / Insulated

(Blades factory installed)
TBD-10-FB / Supply
TBDI-10-FB / Supply / Insulated

FINISHES:

Standard Finish - #26 White on center T-bars and optional side T-bars
#84 Black on exposed surfaces

OVERVIEW

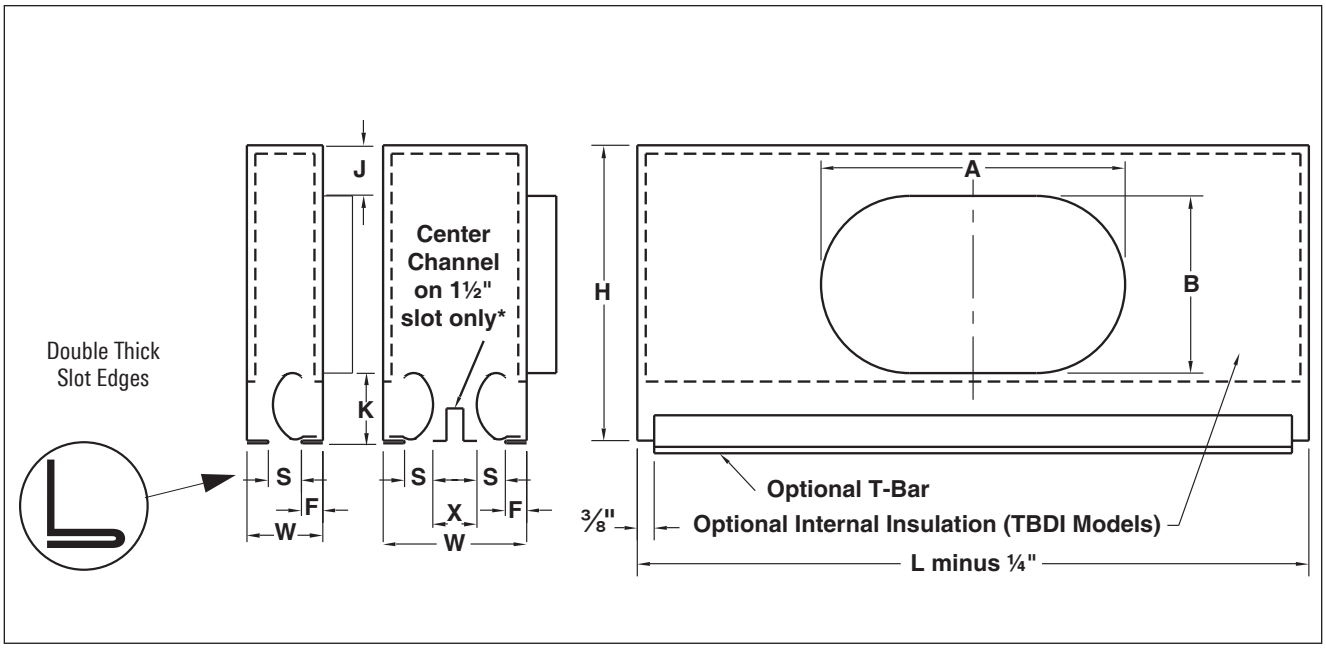
High Capacity / 1" and 1½" Slots

Titus TBD series plenum slot diffusers provide flexibility, great performance and ease of installation. Their adjustability and streamlined appearance make them the industry standard for plenum slot diffusers. The TBD-10 is 8" high and ideal for the restricted ceiling spaces in many modern buildings. It handles a large volume of air with low pressure drop and noise levels. By utilizing its aerodynamic pattern controllers, the TBD-10 projects a tight blanket of air across the ceiling from minimum to maximum flow.

ADVANTAGES

- Inlet collar drawn from the diffuser plenum wall. Eliminates the leakage that can occur at a mechanically fastened collar. Generous 1⅛", or greater, collar depth makes duct connection easy.
- Double metal thickness at slot face for rigidity and straightness
- Choice of 1" or 1½" slot widths; one or two parallel slots
- Available in nominal lengths of 24", 36", 48" or 60"
- 24" length has one blade per slot. Lengths 36", 48" and 60" have two pattern controllers per slot, end-to-end
- Optional internal insulation (end caps are not insulated)
- Optional 11" plenum height
- Material is steel, pattern controller & tees are aluminum

TBD-10 UNIT DIMENSIONS



Number of Slots	Slot Width S	F	W	X
1	1"	½"	2"	-
	1½"	½"	2½"	-
2	1"	½"	4"	1"
	1½"	½"	5¼"	1¼"

Standard Inlet Size	A	B
6 Oval	6¼"	5¼"
8 Oval	9"	5¼"
10 Oval	12½"	5¼"
12 Oval	15"	5¼"
No Inlet	-	-

Nominal Length L	Standard Inlet Sizes
24	6, 8, 10
36	6, 8, 10
48	6, 8, 10, 12
60	6, 8, 10, 12

(in.)	LP	HP
H	8"	11"
J	½"	2"
K	2¼"	3¾"

Note:
1. In TBD-10 2-slot models, the slots must be separated by a center T-bar furnished either by Titus or by others
2. Diffusers with 12" inlets are 11" high instead of 8"

All dimensions are in inches

TBD-10 / HIGH CAPACITY / ADJUSTABLE

6" Inlet 1-Slot	1" Slot Width	2' Long	Airflow, cfm	50	73	95	118	140	163	185
			Total Pressure	0.023	0.048	0.083	0.126	0.179	0.241	0.313
			Static Pressure	0.018	0.039	0.066	0.102	0.144	0.194	0.252
			NC (Noise Criteria)	-	18	25	30	35	38	41
			Throw	5-10-18	9-14-22	12-18-25	15-20-28	17-21-30	19-23-32	20-24-35
		4' Long	Airflow, cfm	80	118	155	193	230	268	305
			Total Pressure	0.033	0.07	0.122	0.188	0.269	0.364	0.473
			Static Pressure	0.021	0.045	0.079	0.122	0.174	0.236	0.307
			NC (Noise Criteria)	-	17	24	29	34	37	41
			Throw	4-9-22	9-16-28	14-21-32	18-25-35	21-27-39	24-29-42	26-31-44
	1.5" Slot Width	2' Long	Airflow, cfm	50	70	90	110	130	150	170
			Total Pressure	0.022	0.043	0.071	0.105	0.147	0.196	0.252
			Static Pressure	0.017	0.034	0.056	0.084	0.117	0.156	0.2
			NC (Noise Criteria)	-	17	24	29	33	37	40
			Throw	2-4-10	3-7-13	6-9-15	7-11-16	9-13-18	10-13-19	11-14-20
		4' Long	Airflow, cfm	75	105	135	165	195	225	255
			Total Pressure	0.021	0.041	0.068	0.102	0.142	0.19	0.243
			Static Pressure	0.011	0.022	0.036	0.053	0.074	0.099	0.127
			NC (Noise Criteria)	-	18	24	30	34	37	41
			Throw	1-3-11	3-6-15	5-9-18	7-12-20	9-14-22	11-16-23	12-18-25
8" Inlet 1-Slot	1" Slot Width	2' Long	Airflow, cfm	50	78	105	133	160	188	215
			Total Pressure	0.018	0.043	0.08	0.127	0.185	0.254	0.334
			Static Pressure	0.016	0.039	0.072	0.115	0.167	0.23	0.302
			NC (Noise Criteria)	-	17	25	31	35	39	42
			Throw	5-10-18	10-15-22	14-18-26	17-21-29	19-23-32	20-25-35	22-26-37
		4' Long	Airflow, cfm	100	140	180	220	260	300	340
			Total Pressure	0.028	0.055	0.091	0.136	0.19	0.252	0.324
			Static Pressure	0.021	0.041	0.069	0.102	0.143	0.19	0.245
			NC (Noise Criteria)	-	19	25	30	34	37	41
			Throw	6-14-25	13-19-30	16-24-34	20-27-38	24-29-41	25-31-44	27-33-47
	1.5" Slot Width	2' Long	Airflow, cfm	60	85	110	135	160	185	210
			Total Pressure	0.034	0.068	0.114	0.171	0.241	0.322	0.415
			Static Pressure	0.031	0.063	0.105	0.159	0.223	0.298	0.384
			NC (Noise Criteria)	-	17	23	28	33	36	40
			Throw	3-6-12	5-8-14	7-11-16	9-13-18	11-14-20	12-15-21	13-16-23
		4' Long	Airflow, cfm	90	128	165	203	240	278	315
			Total Pressure	0.02	0.039	0.066	0.099	0.139	0.186	0.24
			Static Pressure	0.014	0.028	0.047	0.071	0.1	0.133	0.171
			NC (Noise Criteria)	-	17	24	29	33	37	40
			Throw	2-5-13	4-9-18	7-12-20	9-14-22	11-17-24	13-18-26	15-20-28
10" Inlet 1-Slot	1" Slot Width	2' Long	Airflow, cfm	60	85	110	135	160	185	210
			Total Pressure	0.028	0.056	0.094	0.142	0.199	0.266	0.343
			Static Pressure	0.027	0.054	0.09	0.135	0.19	0.254	0.327
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	7-12-20	11-17-23	14-19-27	17-21-30	19-23-32	20-24-35	21-26-37
		4' Long	Airflow, cfm	100	145	190	235	280	325	370
			Total Pressure	0.021	0.044	0.076	0.117	0.166	0.223	0.289
			Static Pressure	0.017	0.037	0.063	0.097	0.137	0.185	0.239
			NC (Noise Criteria)	-	18	25	30	34	38	41
			Throw	6-14-25	13-20-31	17-25-35	22-28-39	25-30-43	26-32-46	28-35-49
	1.5" Slot Width	2' Long	Airflow, cfm	75	93	110	128	145	163	180
			Total Pressure	0.078	0.118	0.168	0.225	0.291	0.366	0.449
			Static Pressure	0.076	0.115	0.163	0.219	0.284	0.356	0.437
			NC (Noise Criteria)	-	15	19	23	26	29	32
			Throw	4-7-13	6-9-15	7-11-16	8-12-18	10-13-19	11-14-20	12-15-21
		4' Long	Airflow, cfm	110	155	200	245	290	335	380
			Total Pressure	0.026	0.051	0.85	0.128	0.179	0.239	0.307
			Static Pressure	0.021	0.042	0.071	0.106	0.148	0.198	0.255
			NC (Noise Criteria)	-	19	25	30	24	38	41
			Throw	3-7-15	6-11-19	9-14-22	11-17-24	14-19-26	16-20-28	18-21-30
12" Inlet 1-Slot	1" Slot Width	4' Long	Airflow, cfm	120	170	220	270	320	370	420
			Total Pressure	0.026	0.052	0.088	0.132	0.185	0.248	0.319
			Static Pressure	0.024	0.048	0.081	0.122	0.171	0.229	0.295
			NC (Noise Criteria)	-	19	25	30	34	38	41
			Throw	9-16-28	16-23-33	20-27-38	24-30-42	26-32-46	28-35-49	30-37-52
	1.5" Slot Width	4' Long	Airflow, cfm	140	190	240	290	340	390	440
			Total Pressure	0.051	0.095	0.151	0.221	0.303	0.399	0.508
			Static Pressure	0.049	0.09	0.143	0.209	0.288	0.378	0.482
			NC (Noise Criteria)	-	18	24	29	33	36	39
			Throw	5-10-18	9-13-21	11-17-24	14-19-26	16-20-29	18-22-31	19-23-33

TBD-10 / HIGH CAPACITY / ADJUSTABLE

6" Inlet 2-Slot	1" Slot Width	2' Long	Airflow, cfm	90	125	160	195	230	265	300
			Total Pressure	0.041	0.079	0.130	0.193	0.269	0.357	0.457
			Static Pressure	0.027	0.052	0.084	0.125	0.174	0.231	0.297
			NC (Noise Criteria)	-	19	25	30	34	37	40
			Throw	5-12-24	10-17-28	15-22-32	18-25-36	21-27-39	24-29-41	25-31-44
		4' Long	Airflow, cfm	150	185	220	255	290	325	360
			Total Pressure	0.085	0.130	0.183	0.246	0.319	0.400	0.491
			Static Pressure	0.045	0.069	0.097	0.130	0.168	0.212	0.260
			NC (Noise Criteria)	-	15	20	23	26	29	32
			Throw	5-11-29	8-17-35	11-21-38	15-25-41	19-28-43	21-32-46	23-34-48
	1.5" Slot Width	2' Long	Airflow, cfm	90	130	170	210	250	290	330
			Total Pressure	0.030	0.063	0.108	0.165	0.234	0.315	0.408
			Static Pressure	0.016	0.033	0.057	0.086	0.122	0.165	0.213
			NC (Noise Criteria)	14	23	30	36	40	44	47
			Throw	2-5-13	4-9-18	7-12-20	10-15-23	12-17-25	14-19-26	15-20-28
		4' Long	Airflow, cfm	150	190	230	270	310	350	390
			Total Pressure	0.055	0.089	0.130	0.179	0.236	0.301	0.373
			Static Pressure	0.015	0.024	0.035	0.049	0.064	0.082	0.102
			NC (Noise Criteria)	18	24	29	33	36	39	42
			Throw	2-4-15	3-7-19	5-11-23	6-13-26	9-15-27	11-17-29	13-19-31
8" Inlet 2-Slot	1" Slot Width	2' Long	Airflow, cfm	90	130	170	210	250	290	330
			Total Pressure	0.023	0.047	0.081	0.124	0.175	0.236	0.306
			Static Pressure	0.021	0.045	0.076	0.116	0.165	0.221	0.287
			NC (Noise Criteria)	-	17	24	29	33	37	40
			Throw	5-12-24	11-18-29	16-23-33	19-26-37	23-28-40	25-31-43	27-33-46
		4' Long	Airflow, cfm	170	230	290	350	410	470	530
			Total Pressure	0.051	0.093	0.147	0.214	0.294	0.386	0.491
			Static Pressure	0.046	0.083	0.133	0.193	0.265	0.348	0.443
			NC (Noise Criteria)	-	18	24	28	32	35	38
			Throw	7-15-33	12-22-39	19-28-43	23-34-48	27-36-52	30-39-55	34-41-59
	1.5" Slot Width	2' Long	Airflow, cfm	120	160	200	240	280	320	360
			Total Pressure	0.035	0.062	0.097	0.139	0.189	0.247	0.313
			Static Pressure	0.025	0.044	0.069	0.100	0.135	0.177	0.224
			NC (Noise Criteria)	16	23	29	33	37	41	44
			Throw	4-8-17	6-11-20	9-14-22	11-17-24	13-18-26	15-20-28	17-21-30
		4' Long	Airflow, cfm	180	250	320	390	460	530	600
			Total Pressure	0.040	0.077	0.125	0.186	0.259	0.344	0.441
			Static Pressure	0.017	0.034	0.055	0.082	0.113	0.151	0.193
			NC (Noise Criteria)	17	25	31	36	41	44	47
			Throw	3-6-18	6-12-25	9-16-28	13-19-31	15-23-33	18-25-36	20-27-38
10" Inlet 2-Slot	1" Slot Width	2' Long	Airflow, cfm	100	145	190	235	280	325	370
			Total Pressure	0.021	0.044	0.076	0.117	0.166	0.223	0.289
			Static Pressure	0.020	0.042	0.073	0.112	0.158	0.213	0.277
			NC (Noise Criteria)	-	18	25	30	34	38	41
			Throw	6-14-25	13-20-31	17-25-35	22-28-39	25-30-43	26-32-46	28-35-49
		4' Long	Airflow, cfm	175	258	340	423	505	588	670
			Total Pressure	0.034	0.073	0.127	0.196	0.281	0.380	0.494
			Static Pressure	0.031	0.067	0.117	0.180	0.257	0.348	0.453
			NC (Noise Criteria)	-	19	26	31	35	39	42
			Throw	7-16-34	15-25-41	22-33-47	27-37-52	33-40-57	36-44-62	38-47-66
	1.5" Slot Width	2' Long	Airflow, cfm	150	200	250	300	350	400	450
			Total Pressure	0.048	0.085	0.133	0.191	0.261	0.340	0.431
			Static Pressure	0.040	0.071	0.110	0.159	0.216	0.282	0.357
			NC (Noise Criteria)	18	25	31	35	39	43	46
			Throw	6-11-19	9-14-22	12-17-25	14-19-27	16-21-29	18-22-31	19-23-33
		4' Long	Airflow, cfm	220	300	380	460	540	620	700
			Total Pressure	0.040	0.075	0.120	0.176	0.243	0.320	0.408
			Static Pressure	0.023	0.042	0.068	0.100	0.137	0.181	0.231
			NC (Noise Criteria)	18	26	32	37	41	44	47
			Throw	4-10-22	8-15-27	13-19-30	15-23-33	18-26-36	20-27-39	23-29-41
12" Inlet 2-Slot	1" Slot Width	4' Long	Airflow, cfm	200	285	370	455	540	625	710
			Total Pressure	0.025	0.050	0.085	0.129	0.181	0.242	0.313
			Static Pressure	0.023	0.048	0.080	0.122	0.171	0.229	0.296
			NC (Noise Criteria)	-	19	25	30	34	38	41
			Throw	9-19-36	18-28-43	24-35-49	29-38-54	34-42-59	37-45-64	39-48-68
	1.5" Slot Width	4' Long	Airflow, cfm	250	350	450	550	650	750	850
			Total Pressure	0.035	0.069	0.114	0.171	0.238	0.318	0.408
			Static Pressure	0.027	0.053	0.087	0.130	0.182	0.242	0.310
			NC (Noise Criteria)	15	24	30	35	40	43	47
			Throw	6-12-25	11-17-29	15-22-33	18-26-36	21-28-40	25-30-43	26-32-45

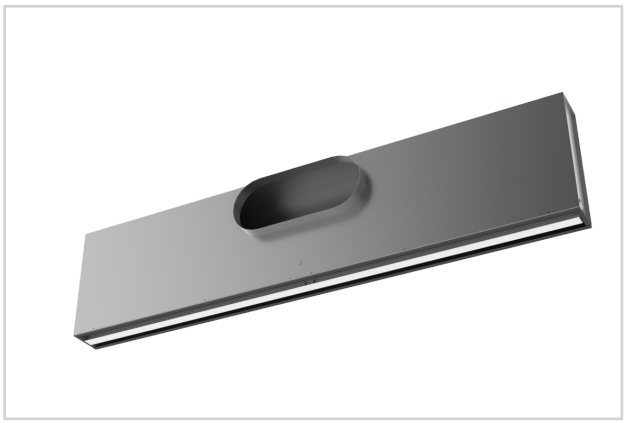
Performance notes appear at end of performance data

PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data was obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

TBD-30

- The TBD-30 is a high performance slot diffuser incorporating the unique Titus Modulinear pattern controller, as used in the Series ML linear diffusers
- The TBD-30 is available to architects and engineers who require design and construction superior to the industry standard. For instance, the Modulinear air pattern controller allows for 180° adjustment of the discharge direction as well as volume control, from the face of the diffuser.
- When set for horizontal, the TBD-30 projects a tight blanket of air across the ceiling from minimum to maximum airflow. This blanketing effect makes the TBD-30 an excellent choice for variable air volume operation, and has the extra advantage of minimizing smudges on the ceiling.



TBD-30

open ceiling

See website for Specifications

MODELS:

TBD-30 / Supply
TBDI-30 / Supply / Insulated

FINISHES:

Standard Finish - Black pattern controllers / White on optional outside T-bars

OVERVIEW

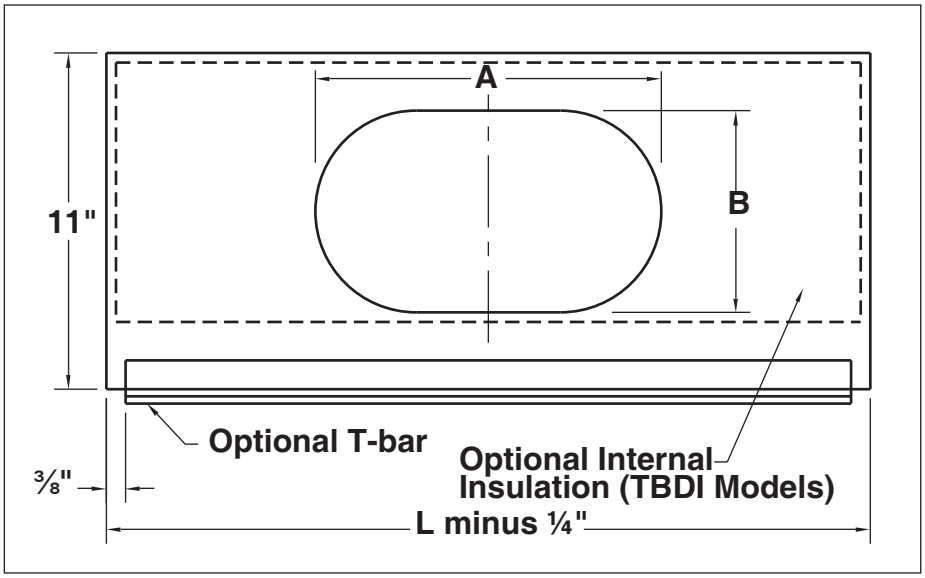
Modulinear / ¾" and 1½" Slots

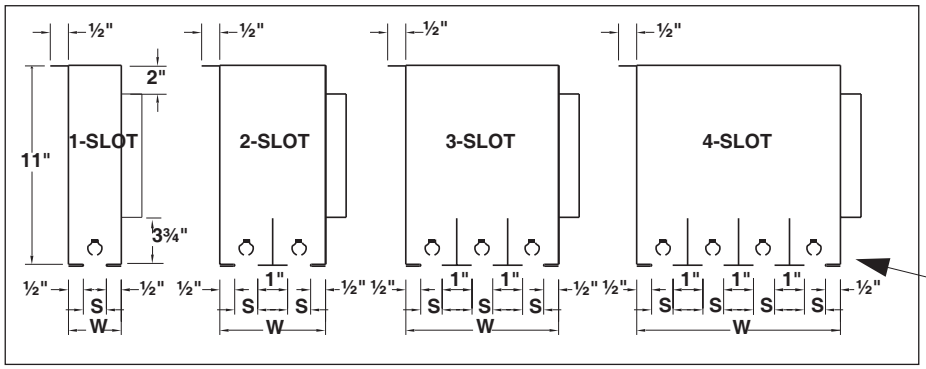
Titus TBD series plenum slot diffusers provide flexibility, great performance and ease of installation. Their adjustability and streamlined appearance make them the industry standard for plenum slot diffusers. The TBD-30 projects a tight blanket of air across the ceiling from minimum to maximum airflow in the horizontal position.

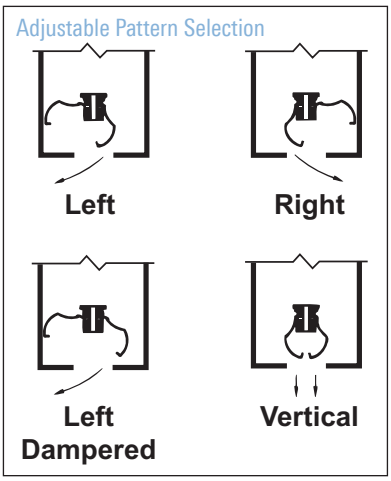
ADVANTAGES

- Same architectural qualities as in the ML Series linear diffusers
- Designed for standard lay-in T-bar ceiling systems. Available with optional factory installed T-bars.
- Choice of ¾" or 1" slot widths
- Choice of one, two, three, or four parallel slots
- Available in nominal lengths of 24", 36", 48" or 60"
- Optional internal insulation (end caps are not insulated)
- Material is steel with miscellaneous aluminum parts

TBD-30 UNIT DIMENSIONS







Double Thick
Slot Edges

Note: Center T-bars shown above are optional

Nominal Length L	Standard Inlet Sizes
24	6, 8, 10
36	6, 8, 10
48	6, 8, 10, 12
60	6, 8, 10, 12

Standard Inlet Size	Dimensions	
	A	B
6 Oval	6¼	5¼
8 Oval	9	5¼
10 Oval	12½	5¼
12 Oval	15	5¼
No Inlet	-	-

Slot Width S	Width W			
	1-Slot	2-Slot	3-Slot	4-Slot
¾	1¾	3½	5¼	7
1	2	4	6	8

All dimensions are in inches

TBD-30 1-SLOT / ADJUSTABLE / MODULINEAR

6" Inlet 1-Slot	¾" Slot Width	2' Long	Airflow, cfm	30	45	60	75	90	105	120
			Total Pressure	0.026	0.058	0.103	0.161	0.232	0.316	0.412
			Static Pressure	0.024	0.054	0.097	0.151	0.217	0.296	0.387
			NC (Noise Criteria)	-	19	25	31	35	39	42
			Throw	3-7-15	7-11-23	10-15-26	13-19-29	15-23-32	18-25-35	20-26-37
		4' Long	Airflow, cfm	50	73	95	118	140	163	185
			Total Pressure	0.022	0.047	0.08	0.123	0.174	0.235	0.305
			Static Pressure	0.018	0.037	0.064	0.098	0.139	0.188	0.243
			NC (Noise Criteria)	-	19	26	31	35	38	42
			Throw	3-6-11	6-9-13	8-11-15	9-12-17	11-13-18	11-14-20	12-15-21
	1" Slot Width	2' Long	Airflow, cfm	30	45	60	75	90	105	120
			Total Pressure	0.014	0.032	0.057	0.09	0.129	0.176	0.23
			Static Pressure	0.013	0.029	0.051	0.08	0.115	0.156	0.204
			NC (Noise Criteria)	-	19	26	31	35	39	42
			Throw	2-5-13	5-10-20	8-13-26	11-16-29	13-20-32	15-23-35	17-26-37
		4' Long	Airflow, cfm	45	68	90	113	135	158	180
			Total Pressure	0.013	0.03	0.054	0.084	0.121	0.165	0.215
			Static Pressure	0.01	0.022	0.039	0.061	0.089	0.121	0.157
			NC (Noise Criteria)	-	18	25	30	35	38	41
			Throw	2-4-9	4-7-13	6-9-15	8-12-17	9-13-18	11-14-20	12-15-21
8" Inlet 1-Slot	¾" Slot Width	2' Long	Airflow, cfm	30	43	55	68	80	93	105
			Total Pressure	0.041	0.083	0.139	0.209	0.294	0.393	0.507
			Static Pressure	0.041	0.082	0.137	0.206	0.29	0.387	0.499
			NC (Noise Criteria)	-	13	19	24	28	32	35
			Throw	3-7-15	6-11-21	9-14-25	11-17-28	13-20-30	16-23-33	18-25-35
		4' Long	Airflow, cfm	55	80	105	130	155	180	205
			Total Pressure	0.021	0.045	0.077	0.118	0.168	0.227	0.294
			Static Pressure	0.019	0.04	0.07	0.107	0.152	0.205	0.265
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	4-7-12	6-9-14	8-11-16	10-13-18	11-14-19	12-15-21	13-16-22
	1" Slot Width	2' Long	Airflow, cfm	30	48	65	83	100	118	135
			Total Pressure	0.016	0.04	0.076	0.122	0.179	0.248	0.327
			Static Pressure	0.016	0.039	0.073	0.117	0.172	0.238	0.314
			NC (Noise Criteria)	-	16	24	29	34	38	41
			Throw	2-5-13	5-10-21	9-14-27	12-18-31	15-22-34	17-26-37	20-28-39
		4' Long	Airflow, cfm	50	75	100	125	150	175	200
			Total Pressure	0.011	0.025	0.044	0.068	0.098	0.134	0.175
			Static Pressure	0.009	0.021	0.037	0.058	0.083	0.113	0.147
			NC (Noise Criteria)	-	17	23	29	33	37	40
			Throw	2-5-10	5-8-13	7-10-16	9-12-17	10-13-19	12-15-21	13-16-22
10" Inlet 1-Slot	¾" Slot Width	2' Long	Airflow, cfm	40	45	50	55	60	65	70
			Total Pressure	0.161	0.204	0.251	0.304	0.362	0.425	0.493
			Static Pressure	0.16	0.203	0.25	0.303	0.361	0.423	0.491
			NC (Noise Criteria)	-	12	14	17	19	21	22
			Throw	6-10-20	7-11-23	8-13-24	9-14-25	10-15-26	11-16-27	12-18-28
		4' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.027	0.061	0.108	0.169	0.243	0.331	0.433
			Static Pressure	0.026	0.058	0.103	0.161	0.232	0.315	0.412
			NC (Noise Criteria)	-	18	25	30	34	38	41
			Throw	5-7-12	7-10-15	9-12-17	11-13-19	12-15-21	13-16-23	14-17-24
	1" Slot Width	2' Long	Airflow, cfm	40	55	70	85	100	115	130
			Total Pressure	0.044	0.083	0.135	0.199	0.275	0.363	0.464
			Static Pressure	0.043	0.082	0.133	0.196	0.271	0.359	0.458
			NC (Noise Criteria)	-	17	23	27	31	35	37
			Throw	4-8-17	7-12-24	10-15-28	12-19-31	15-22-34	17-25-36	19-27-39
		4' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.014	0.032	0.057	0.088	0.127	0.173	0.226
			Static Pressure	0.013	0.029	0.051	0.08	0.116	0.157	0.205
			NC (Noise Criteria)	-	18	25	30	35	38	41
			Throw	3-6-12	6-9-15	8-12-17	10-13-19	12-15-21	13-16-23	14-17-24
12" Inlet 1-Slot	¾" Slot Width	4' Long	Airflow, cfm	80	95	110	125	140	155	170
			Total Pressure	0.094	0.133	0.178	0.23	0.288	0.353	0.425
			Static Pressure	0.093	0.131	0.176	0.227	0.285	0.35	0.421
			NC (Noise Criteria)	-	15	18	21	24	27	29
			Throw	6-9-14	8-11-15	9-12-16	10-12-17	11-13-18	11-14-19	12-14-20
	1" Slot Width	4' Long	Airflow, cfm	70	105	140	175	210	245	280
			Total Pressure	0.025	0.056	0.099	0.155	0.224	0.304	0.398
			Static Pressure	0.024	0.054	0.097	0.151	0.218	0.296	0.387
			NC (Noise Criteria)	-	18	25	30	34	38	41
			Throw	4-7-13	7-11-16	10-13-18	12-15-21	13-16-23	14-17-24	15-18-26

Performance notes appear at end of performance data

1-SLOT PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

PERFORMANCE DATA

TBD-30 2-SLOT / ADJUSTABLE / MODULINEAR

6" Inlet 2-Slot	¾" Slot Width	2' Long	Airflow, cfm	40	65	90	115	140	165	190
			Total Pressure	0.014	0.038	0.072	0.118	0.174	0.242	0.321
			Static Pressure	0.011	0.03	0.058	0.094	0.139	0.194	0.257
			NC (Noise Criteria)	-	17	25	30	35	39	42
			Throw	2-5-14	5-12-23	10-16-23	14-20-36	17-25-40	20-29-44	23-33-47
		4' Long	Airflow, cfm	75	110	145	180	215	250	285
			Total Pressure	0.028	0.06	0.104	0.161	0.229	0.31	0.403
			Static Pressure	0.018	0.038	0.067	0.103	0.147	0.198	0.258
			NC (Noise Criteria)	-	19	25	30	35	38	41
			Throw	3-6-13	5-9-16	5-12-19	10-15-21	12-16-23	14-17-25	15-19-26
	1" Slot Width	2' Long	Airflow, cfm	40	63	85	108	130	153	175
			Total Pressure	0.011	0.026	0.048	0.077	0.112	0.155	0.203
			Static Pressure	0.008	0.019	0.035	0.056	0.082	0.113	0.149
			NC (Noise Criteria)	-	16	24	29	34	37	41
			Throw	1-3-12	3-7-19	6-13-26	10-17-33	13-20-39	16-23-42	18-27-45
		4' Long	Airflow, cfm	70	103	135	168	200	233	265
			Total Pressure	0.021	0.045	0.078	0.12	0.171	0.232	0.301
			Static Pressure	0.012	0.026	0.046	0.07	0.1	0.135	0.176
			NC (Noise Criteria)	-	17	24	29	33	37	40
			Throw	1-3-10	3-7-15	5-10-18	8-12-20	10-15-22	11-17-24	13-18-25
8" Inlet 2-Slot	¾" Slot Width	2' Long	Airflow, cfm	50	75	100	125	150	175	200
			Total Pressure	0.018	0.039	0.07	0.109	0.158	0.214	0.28
			Static Pressure	0.016	0.036	0.063	0.099	0.142	0.193	0.253
			NC (Noise Criteria)	-	16	23	28	33	36	39
			Throw	3-7-18	7-13-27	12-18-34	15-22-38	18-27-42	21-31-45	24-34-48
		4' Long	Airflow, cfm	90	130	170	210	250	290	330
			Total Pressure	0.022	0.046	0.079	0.121	0.171	0.23	0.298
			Static Pressure	0.017	0.035	0.059	0.09	0.128	0.172	0.223
			NC (Noise Criteria)	-	19	25	30	34	38	41
			Throw	4-8-15	7-11-18	9-14-20	12-16-23	14-17-25	15-19-26	16-20-28
	1" Slot Width	2' Long	Airflow, cfm	50	75	100	125	150	175	200
			Total Pressure	0.011	0.025	0.044	0.068	0.098	0.134	0.175
			Static Pressure	0.009	0.021	0.037	0.058	0.083	0.113	0.147
			NC (Noise Criteria)	-	17	23	29	33	37	40
			Throw	2-5-15	5-10-23	8-15-31	13-19-38	15-23-42	18-27-45	21-31-48
		4' Long	Airflow, cfm	90	125	160	195	230	265	300
			Total Pressure	0.018	0.034	0.055	0.082	0.114	0.152	0.194
			Static Pressure	0.012	0.023	0.038	0.056	0.078	0.103	0.132
			NC (Noise Criteria)	-	18	24	29	33	36	39
			Throw	2-5-13	5-9-17	7-12-20	9-14-22	11-17-24	13-18-25	15-19-27

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2006

10" Inlet 2-Slot	¾" Slot Width	2' Long	Airflow, cfm	50	83	115	148	180	213	245
			Total Pressure	0.019	0.051	0.099	0.163	0.243	0.339	0.451
			Static Pressure	0.018	0.049	0.095	0.156	0.232	0.323	0.429
			NC (Noise Criteria)	-	16	24	29	34	38	41
			Throw	3-7-18	9-15-29	14-20-36	17-26-41	21-32-46	25-35-49	29-38-53
		4' Long	Airflow, cfm	80	130	180	230	280	330	380
			Total Pressure	0.013	0.035	0.067	0.109	0.161	0.224	0.297
			Static Pressure	0.011	0.029	0.055	0.089	0.133	0.184	0.244
			NC (Noise Criteria)	-	16	24	29	34	38	41
			Throw	3-6-13	7-11-18	10-15-21	13-17-24	15-18-26	16-20-28	18-21-30
	1" Slot Width	2' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.014	0.032	0.057	0.088	0.127	0.173	0.226
			Static Pressure	0.013	0.029	0.051	0.08	0.116	0.157	0.205
			NC (Noise Criteria)	-	18	25	30	35	38	41
			Throw	3-7-18	7-14-28	12-18-37	15-23-42	18-28-46	22-32-49	25-37-53
		4' Long	Airflow, cfm	100	145	190	235	280	325	370
			Total Pressure	0.015	0.031	0.054	0.082	0.116	0.157	0.203
			Static Pressure	0.011	0.024	0.041	0.062	0.088	0.119	0.154
			NC (Noise Criteria)	-	19	25	30	34	38	41
			Throw	3-7-15	6-11-19	9-14-21	11-17-24	14-18-26	16-20-28	17-21-30
12" Inlet 2-Slot	¾" Slot Width	4' Long	Airflow, cfm	120	175	230	285	340	395	450
			Total Pressure	0.025	0.054	0.093	0.142	0.202	0.273	0.355
			Static Pressure	0.023	0.049	0.086	0.131	0.187	0.252	0.327
			NC (Noise Criteria)	-	19	25	30	35	38	41
			Throw	6-10-17	10-15-21	13-17-24	15-19-26	17-20-29	18-22-31	19-23-33
	1" Slot Width	4' Long	Airflow, cfm	120	170	220	270	320	370	420
			Total Pressure	0.015	0.03	0.05	0.075	0.105	0.141	0.181
			Static Pressure	0.013	0.026	0.043	0.065	0.092	0.122	0.158
			NC (Noise Criteria)	-	19	25	29	33	37	40
			Throw	4-9-17	8-12-20	11-16-23	13-18-26	15-20-28	17-21-30	18-23-32

2-SLOT PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

TBD-30 3-SLOT / ADJUSTABLE / MODULINEAR

6" Inlet 3-Slot	¾" Slot Width	2' Long	Airflow, cfm	60	85	110	135	160	185	210
			Total Pressure	0.022	0.044	0.073	0.11	0.154	0.206	0.266
			Static Pressure	0.015	0.031	0.051	0.077	0.109	0.145	0.187
			NC (Noise Criteria)	-	17	23	28	32	35	38
			Throw	2-6-17	5-11-25	8-16-32	13-20-39	15-23-43	18-27-46	20-30-49
		4' Long	Airflow, cfm	100	145	190	235	280	325	370
			Total Pressure	0.041	0.086	0.147	0.226	0.32	0.431	0.559
			Static Pressure	0.023	0.048	0.083	0.127	0.18	0.243	0.314
			NC (Noise Criteria)	-	19	25	30	35	38	41
			Throw	2-6-14	5-10-19	9-13-21	11-16-24	13-18-26	15-20-28	17-21-30
	1" Slot Width	2' Long	Airflow, cfm	60	85	110	135	160	185	210
			Total Pressure	0.018	0.036	0.06	0.09	0.127	0.17	0.219
			Static Pressure	0.011	0.023	0.038	0.058	0.081	0.109	0.14
			NC (Noise Criteria)	-	17	23	28	32	36	39
			Throw	2-4-15	3-7-21	5-12-28	8-17-34	12-20-40	15-23-46	18-26-49
		4' Long	Airflow, cfm	95	130	165	200	235	270	305
			Total Pressure	0.033	0.063	0.101	0.148	0.205	0.27	0.345
			Static Pressure	0.017	0.032	0.052	0.077	0.106	0.14	0.178
			NC (Noise Criteria)	-	17	22	27	31	34	37
			Throw	1-3-11	3-6-15	4-10-20	6-12-22	9-14-24	11-16-26	12-18-27
8" Inlet 3-Slot	¾" Slot Width	2' Long	Airflow, cfm	75	105	135	165	195	225	255
			Total Pressure	0.021	0.041	0.068	0.102	0.142	0.189	0.243
			Static Pressure	0.017	0.034	0.056	0.083	0.116	0.154	0.198
			NC (Noise Criteria)	-	18	24	29	33	36	39
			Throw	4-9-22	8-15-30	13-20-39	16-24-44	19-28-47	22-33-51	25-37-54
		4' Long	Airflow, cfm	115	165	215	265	315	365	415
			Total Pressure	0.026	0.054	0.092	0.14	0.198	0.266	0.344
			Static Pressure	0.017	0.036	0.06	0.092	0.13	0.174	0.225
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	3-7-16	7-11-20	10-15-23	12-18-25	14-20-28	17-21-30	18-22-32
	1" Slot Width	2' Long	Airflow, cfm	50	90	130	170	210	250	290
			Total Pressure	0.007	0.022	0.046	0.079	0.121	0.171	0.23
			Static Pressure	0.005	0.017	0.035	0.059	0.09	0.128	0.172
			NC (Noise Criteria)	-	15	23	30	35	39	42
			Throw	1-3-10	4-8-23	8-16-33	13-21-43	18-26-49	21-31-54	24-36-58
		4' Long	Airflow, cfm	100	155	210	265	320	375	430
			Total Pressure	0.017	0.041	0.075	0.12	0.175	0.24	0.316
			Static Pressure	0.01	0.024	0.045	0.072	0.104	0.143	0.188
			NC (Noise Criteria)	-	17	24	30	34	38	41
			Throw	2-4-12	4-9-18	7-12-23	10-16-25	13-19-28	15-21-30	17-23-32
10" Inlet 3-Slot	¾" Slot Width	2' Long	Airflow, cfm	80	115	150	185	220	255	290
			Total Pressure	0.02	0.042	0.071	0.108	0.153	0.206	0.266
			Static Pressure	0.018	0.037	0.063	0.096	0.136	0.182	0.236
			NC (Noise Criteria)	-	17	24	29	33	36	39
			Throw	4-10-23	9-17-33	15-22-42	18-27-46	21-32-50	25-37-54	28-41-58
		4' Long	Airflow, cfm	130	185	240	295	350	405	460
			Total Pressure	0.023	0.046	0.077	0.116	0.163	0.219	0.282
			Static Pressure	0.016	0.033	0.056	0.084	0.119	0.159	0.205
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	4-9-18	8-13-21	11-16-24	13-19-27	16-21-29	18-22-31	19-24-33
	1" Slot Width	2' Long	Airflow, cfm	80	115	150	185	220	255	290
			Total Pressure	0.013	0.027	0.046	0.07	0.099	0.134	0.173
			Static Pressure	0.011	0.022	0.038	0.058	0.082	0.11	0.142
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	3-6-20	6-13-29	10-19-38	15-23-46	18-28-50	21-32-54	24-36-58
		4' Long	Airflow, cfm	120	178	235	293	350	408	465
			Total Pressure	0.015	0.034	0.059	0.092	0.132	0.178	0.232
			Static Pressure	0.01	0.022	0.039	0.061	0.087	0.118	0.154
			NC (Noise Criteria)	-	18	24	29	34	37	40
			Throw	2-5-14	5-11-21	9-14-24	12-17-27	14-21-29	16-22-31	18-24-34
12" Inlet 3-Slot	¾" Slot Width	4' Long	Airflow, cfm	160	225	290	355	420	485	550
			Total Pressure	0.022	0.044	0.072	0.109	0.152	0.203	0.261
			Static Pressure	0.019	0.037	0.061	0.092	0.128	0.171	0.22
			NC (Noise Criteria)	-	19	25	29	33	37	40
			Throw	6-11-20	10-15-23	13-19-26	16-21-29	18-23-32	20-24-34	21-26-36
	1" Slot Width	4' Long	Airflow, cfm	150	215	280	345	410	475	540
			Total Pressure	0.014	0.028	0.047	0.072	0.102	0.136	0.176
			Static Pressure	0.011	0.022	0.037	0.056	0.079	0.106	0.137
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	4-8-18	7-13-23	11-17-26	14-20-29	16-22-31	19-24-34	21-26-36

Performance notes appear at end of performance data

3-SLOT PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

PERFORMANCE DATA

TBD-30 4-SLOT / ADJUSTABLE / MODULINEAR

6" Inlet 4-Slot	¾" Slot Width	2' Long	Airflow, cfm	65	100	135	170	205	240	275
			Total Pressure	0.021	0.05	0.09	0.143	0.209	0.286	0.375
			Static Pressure	0.013	0.032	0.058	0.092	0.133	0.183	0.24
			NC (Noise Criteria)	-	16	24	29	33	37	40
			Throw	2-4-16	4-10-25	8-17-34	13-21-43	17-26-49	20-30-53	23-35-56
		4' Long	Airflow, cfm	115	158	200	243	285	328	370
			Total Pressure	0.049	0.092	0.148	0.218	0.301	0.397	0.507
			Static Pressure	0.025	0.048	0.077	0.113	0.156	0.206	0.263
			NC (Noise Criteria)	-	17	22	27	31	34	37
			Throw	2-5-14	4-9-19	6-12-22	9-14-24	11-17-26	13-19-28	15-21-30
	1" Slot Width	2' Long	Airflow, cfm	70	103	135	168	200	233	265
			Total Pressure	0.021	0.045	0.078	0.12	0.171	0.232	0.301
			Static Pressure	0.012	0.026	0.046	0.07	0.1	0.135	0.176
			NC (Noise Criteria)	-	17	24	29	33	37	40
			Throw	1-3-13	3-7-22	5-12-29	8-18-36	12-22-44	16-25-51	19-29-55
		4' Long	Airflow, cfm	115	163	210	258	305	353	400
			Total Pressure	0.046	0.091	0.152	0.228	0.32	0.428	0.551
			Static Pressure	0.022	0.044	0.073	0.11	0.154	0.206	0.265
			NC (Noise Criteria)	-	18	24	29	33	36	39
			Throw	1-3-12	3-6-17	5-10-22	7-13-25	10-16-27	12-18-29	14-21-31
8" Inlet 4-Slot	¾" Slot Width	2' Long	Airflow, cfm	90	130	170	210	250	290	330
			Total Pressure	0.022	0.046	0.079	0.121	0.171	0.23	0.298
			Static Pressure	0.017	0.035	0.059	0.09	0.128	0.172	0.223
			NC (Noise Criteria)	-	19	25	30	34	38	41
			Throw	4-8-23	8-16-33	13-21-43	18-26-49	21-31-54	24-36-58	28-41-62
		4' Long	Airflow, cfm	140	200	260	320	380	440	500
			Total Pressure	0.033	0.068	0.115	0.175	0.247	0.331	0.427
			Static Pressure	0.02	0.041	0.069	0.104	0.147	0.197	0.255
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	3-7-17	6-12-22	10-15-25	13-19-28	15-21-30	17-23-33	20-25-35
	1" Slot Width	2' Long	Airflow, cfm	60	105	150	195	240	285	330
			Total Pressure	0.008	0.024	0.049	0.082	0.124	0.176	0.235
			Static Pressure	0.005	0.016	0.033	0.056	0.085	0.12	0.16
			NC (Noise Criteria)	-	14	22	29	34	38	41
			Throw	1-2-9	3-7-23	7-15-33	11-21-42	17-26-52	21-31-57	24-36-62
		4' Long	Airflow, cfm	140	200	260	320	380	440	500
			Total Pressure	0.03	0.061	0.103	0.156	0.219	0.294	0.38
			Static Pressure	0.016	0.033	0.056	0.085	0.12	0.161	0.207
			NC (Noise Criteria)	-	19	25	30	34	37	40
			Throw	2-5-14	4-9-21	7-13-25	11-16-28	13-20-30	15-23-33	17-25-35

10" Inlet 4-Slot	¾" Slot Width	2' Long	Airflow, cfm	70	125	180	235	290	345	400
			Total Pressure	0.01	0.032	0.067	0.113	0.173	0.244	0.329
			Static Pressure	0.008	0.026	0.055	0.093	0.142	0.201	0.271
			NC (Noise Criteria)	-	15	24	30	35	39	43
			Throw	2-5-18	7-16-31	15-23-45	20-30-52	24-36-58	29-43-63	34-48-68
		4' Long	Airflow, cfm	150	220	290	360	430	500	570
			Total Pressure	0.024	0.052	0.09	0.139	0.199	0.268	0.349
			Static Pressure	0.016	0.034	0.06	0.092	0.131	0.178	0.231
			NC (Noise Criteria)	-	18	24	29	34	37	40
			Throw	4-8-18	8-13-23	11-17-26	14-21-30	17-23-32	20-25-35	21-26-37
	1" Slot Width	2' Long	Airflow, cfm	100	143	185	228	270	313	355
			Total Pressure	0.015	0.03	0.051	0.077	0.108	0.145	0.187
			Static Pressure	0.011	0.023	0.038	0.058	0.082	0.11	0.141
			NC (Noise Criteria)	-	19	25	30	34	37	40
			Throw	3-7-22	6-13-31	10-20-40	15-25-50	20-29-56	23-34-60	26-39-64
		4' Long	Airflow, cfm	160	225	290	355	420	485	550
			Total Pressure	0.023	0.046	0.077	0.115	0.161	0.215	0.276
			Static Pressure	0.014	0.028	0.046	0.069	0.097	0.129	0.166
			NC (Noise Criteria)	-	19	25	30	34	37	40
			Throw	3-6-16	5-12-23	9-15-26	12-18-29	14-22-32	17-24-34	19-26-36
12" Inlet 4-Slot	¾" Slot Width	4' Long	Airflow, cfm	190	270	350	430	510	590	670
			Total Pressure	0.022	0.044	0.074	0.112	0.157	0.21	0.271
			Static Pressure	0.017	0.034	0.058	0.087	0.122	0.164	0.211
			NC (Noise Criteria)	-	18	25	29	34	37	40
			Throw	6-11-21	11-16-26	14-21-29	17-23-32	20-25-35	22-27-38	23-28-40
	1" Slot Width	4' Long	Airflow, cfm	190	265	340	415	490	565	640
			Total Pressure	0.017	0.033	0.054	0.08	0.111	0.148	0.19
			Static Pressure	0.012	0.023	0.038	0.057	0.079	0.105	0.135
			NC (Noise Criteria)	-	18	24	29	33	36	39
			Throw	4-8-20	7-14-25	12-17-29	14-21-32	17-24-34	19-26-37	22-28-39

4-SLOT PERFORMANCE NOTES

- Throw values are given for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures are given in inches of wg
- Each NC value represents the noise criteria curve which will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' in this catalog for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

TBR–30

- The TBR-30 returns the room air into the ceiling plenum. The unit includes a light shield.
- Outside edge of face has double metal thickness to ensure rigidity and straightness

TBR-30

See website for Specifications

MODEL:

TBR-30 / 1, 2, 3, or 4 Slots

FINISHES:

Standard Finish - #26 White on optional T-bars and optional T-bars #84 Black on exposed surfaces

OVERVIEW

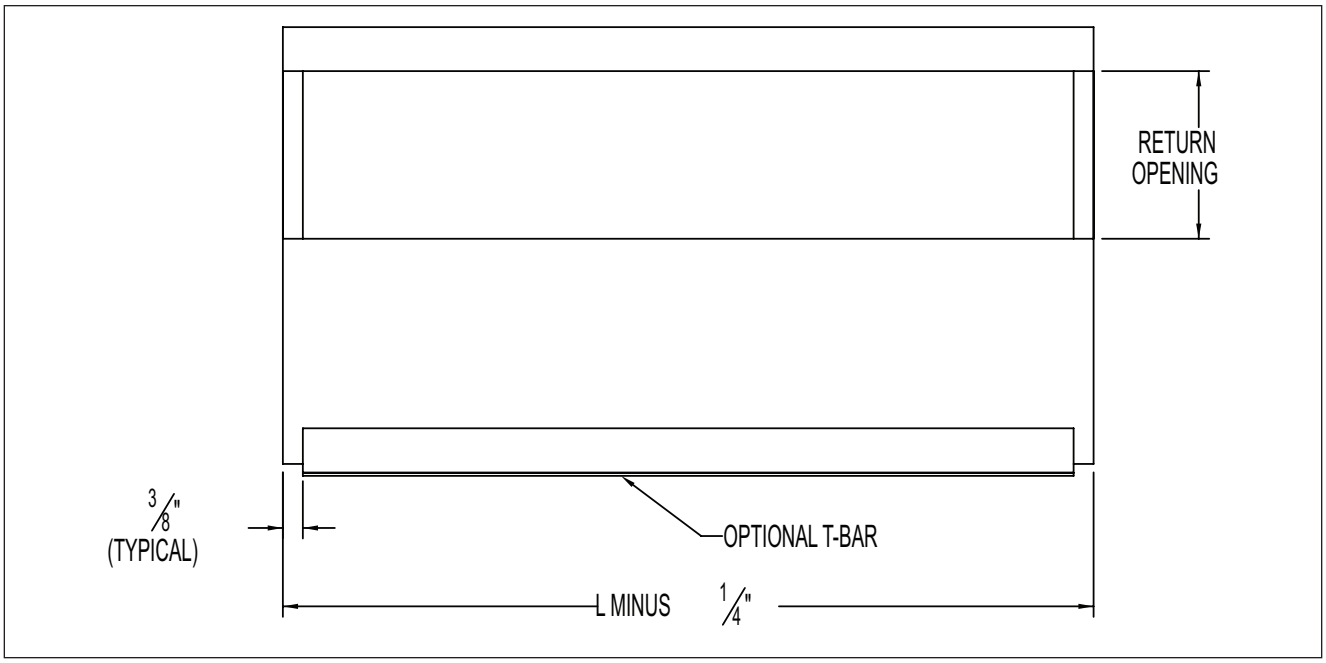
Return with Light Shield

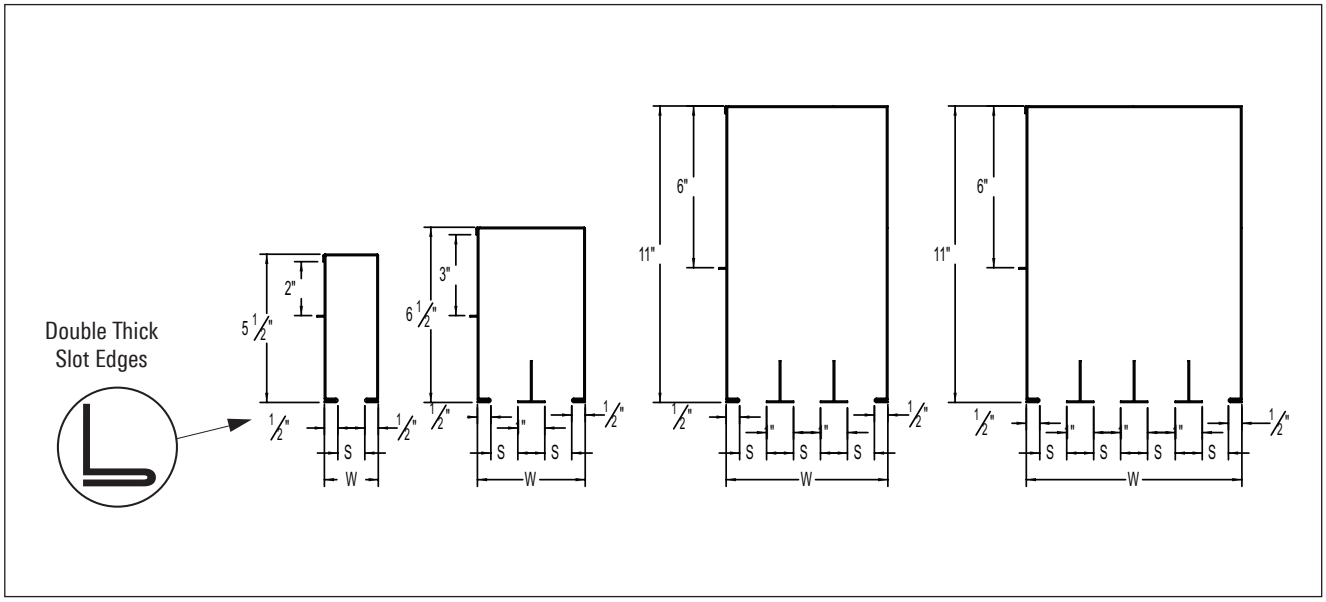
The TBR-30 is a return plenum with light shield. Available in 4 slot widths, the TBR-80's outer edge has double metal thickness to ensure rigidity and straightness.

ADVANTAGES

- Same architectural qualities as in the ML Series linear diffusers.
- Designed for standard lay-in T-bar ceiling systems. Available with optional factory installed T-bars.
- Choice of ¾" or 1" slot widths
- Choice of one, two, three, or four parallel slots
- Available in nominal lengths of 24", 36", 48" or 60"
- Optional internal insulation (end caps are not insulated)
- Material is steel with miscellaneous aluminum parts

TBR-30 UNIT DIMENSIONS





Note: Center T-bars shown above are optional

Slot Width S	Width W			
	1-Slot	2-Slot	3-Slot	4-Slot
¾"	1¾"	3½"	5¼"	7"
1"	2"	4"	6"	8"

All dimensions are in inches

TBR-30 1-SLOT / ADJUSTABLE / MODULINEAR

¾" Slot, 24" Long	1-Slot	Airflow, cfm	30	45	60	75	90	105	120	135	150
		Negative SP, Inches wg	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
		NC (Noise Criteria)	-	-	-	13	19	23	27	30	33
	2-Slot	Airflow, 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 Criteria)	-	-	10	16	22	26	30	33	39
	3-Slot	Airflow, cfm	90	135	180	225	270	315	360	405	450
		Negative SP, Inches wg	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
		NC (Noise Criteria)	-	-	11	17	24	27	31	34	41
	4-Slot	Airflow, 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 Criteria)	-	-	13	19	25	29	33	36	42
¾" Slot, 48" Long	1-Slot	Airflow, 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 Criteria)	-	-	-	13	19	23	27	30	33
	2-Slot	Airflow, 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 Criteria)	-	-	10	16	22	26	30	33	36
	3-Slot	Airflow, cfm	180	270	360	450	540	630	720	810	900
		Negative SP, Inches wg	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
		NC (Noise Criteria)	-	-	11	17	24	27	31	35	37
	4-Slot	Airflow, 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 Criteria)	-	-	13	19	25	29	33	36	39
1" Slot, 24" Long	1-Slot	Airflow, 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 Criteria)	-	-	-	13	19	23	27	30	33
	2-Slot	Airflow, 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 Criteria)	-	-	10	18	22	26	30	33	38
	3-Slot	Airflow, 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 Criteria)	-	-	12	20	24	27	32	35	40
	4-Slot	Airflow, cfm	160	240	360	400	480	560	640	720	800
		Negative SP, Inches wg	0.010	0.022	0.059	0.061	0.088	0.120	0.157	0.198	0.245
		NC (Noise Criteria)	-	-	13	21	25	29	33	36	41
1" Slot, 48" Long	1-Slot	Airflow, 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 Criteria)	-	-	-	13	19	23	27	30	33
	2-Slot	Airflow, 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 Criteria)	-	-	10	16	22	26	30	33	36
	3-Slot	Airflow, 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 Criteria)	-	-	12	18	24	27	32	35	38
	4-Slot	Airflow, cfm	320	480	640	800	960	1020	1280	1420	1600
		Negative SP, Inches wg	0.010	0.022	0.039	0.061	0.088	0.120	0.157	0.198	0.245
		NC (Noise Criteria)	-	-	13	19	25	29	33	36	39

- Data obtained from testing in accordance with ANSI/ASHRAE Standard 70-2006
- NC values were determined from octave band 2 to 7 sound power levels with a 10 dB room absorption
- Dash (-) in space denotes an NC value of less than 10

TBD-80

- The TBD-80 slot diffuser is outstanding for its flexibility in both installation and performance
- The direction of airflow is adjustable through a full 180° from the face of the diffuser. In addition, the TBD-80 is available with 1 to 4 slots and with three different slot widths, for a broad range of capacities.
- The TBD-80 works with many types of ceiling systems—plaster, splined, and regressed, as well as standard lay-in
- When set for a horizontal discharge, the TBD-80 projects a tight blanket of air across the ceiling from minimum to maximum flow. TBD-80 provides excellent VAV performance.
- 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 pattern controller seats against the inside of the diffuser plenum wall or slot divider, assuring pure horizontal flow. The pattern controller can also be set for vertical flow.

TBD-80

open ceiling

See website for Specifications

MODELS:

TBD-80 / Supply
TBDI-80 / Supply / Insulated

FINISHES:

Standard Finish - #26 White on center T-bars and optional side T-bars #84 Black on exposed surfaces

OVERVIEW

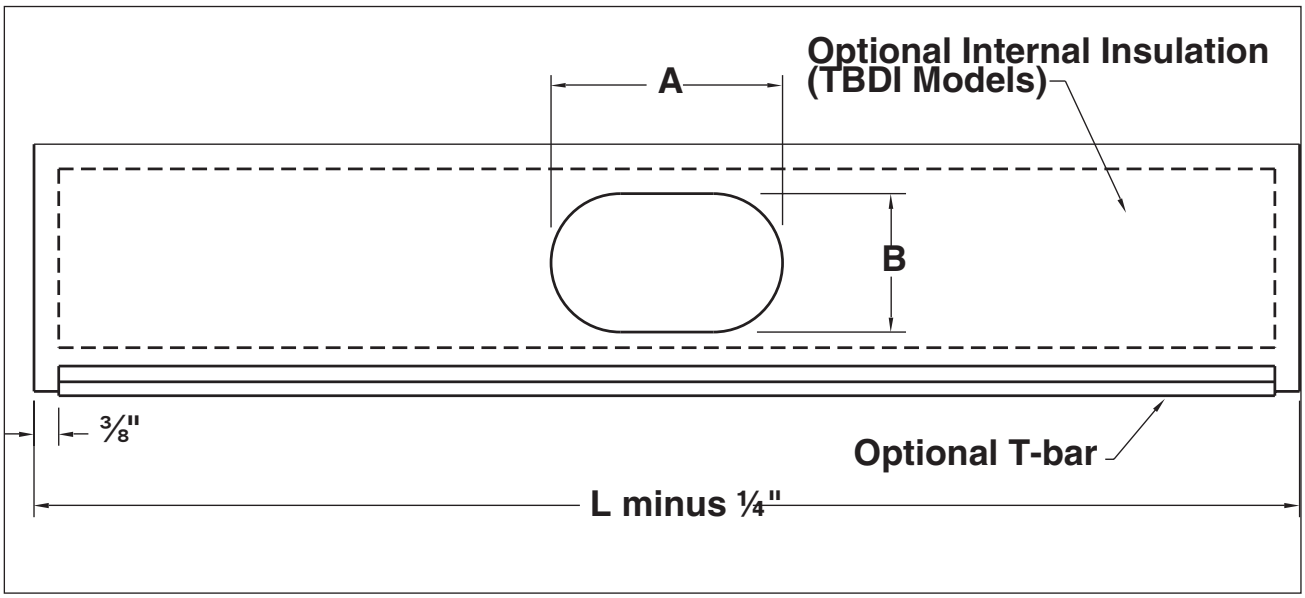
Gasketed Blade / 1 & 2 Slots, 8" / 3 & 4 Slots, 11"

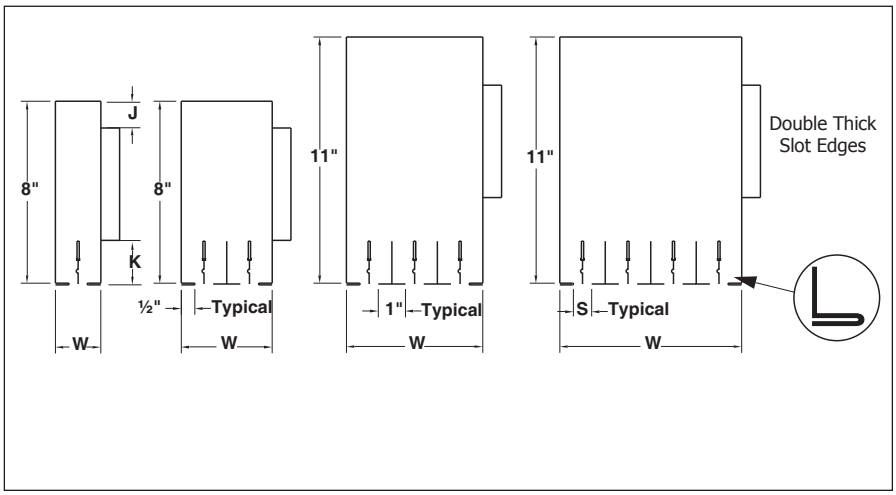
Titus TBD series plenum slot diffusers provide flexibility, great performance and ease of installation. Their adjustability and streamlined appearance make them the industry standard for plenum slot diffusers. The TBD-80 works with many types of ceiling systems - plaster, splined, regressed, and standard lay-in.

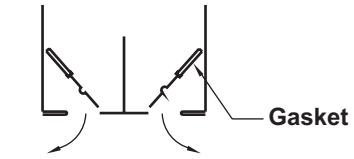
ADVANTAGES

- Standard diffuser heights are 8" for the 1- and 2-slot diffusers; and 11" high for the 3- and 4-slot diffusers
- Double metal thickness at slot face for rigidity and straightness
- Available with seven arrangements of optional factory installed T-bars
- Choice of ¾", 1" or 1½" slot widths
- Choice of one, two, three, or four parallel slots
- Available in nominal lengths of 24", 36", 48" or 60"
- 24" length has one blade per slot. Lengths 36", 48" and 60" have two pattern controllers per slot, end-to-end.
- Optional internal insulation (end caps are not insulated)
- Optional 11" plenum height for 1- and 2-slot units
- Material is steel with miscellaneous aluminum parts

TBD-80 UNIT DIMENSIONS







Horizontal Discharge Blade Setting

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

Standard Inlet Size	A	B
6 Oval	6¼	5¼
8 Oval	9	5¼
10 Oval	12½	5¼
12 Oval	15	5¼
No Inlet	-	-

Nominal Length L	Standard Inlet Sizes
24	6, 8, 10
36	
48	6, 8, 10, 12
60	

(in.)	LP	HP
J	½	2
K	2¼	3¾

Note: Center T-bars shown above are optional

TBD-80 1-SLOT / ADJUSTABLE / GASKETED BLADE

6" Inlet, 1-Slot	¾" Slot Width	2' Long	Airflow, cfm	25	35	45	55	65	75	85
			Total Pressure	0.021	0.041	0.068	0.102	0.142	0.189	0.243
			Static Pressure	0.020	0.039	0.064	0.096	0.134	0.179	0.230
			NC (Noise Criteria)	-	16	23	28	33	37	40
			Throw	3-7-14	6-10-20	9-13-23	10-16-25	14-19-27	14-21-29	16-22-31
		4' Long	Airflow, cfm	30	45	60	75	90	105	120
			Total Pressure	0.014	0.032	0.057	0.090	0.129	0.175	0.229
			Static Pressure	0.013	0.029	0.051	0.079	0.114	0.156	0.203
			NC (Noise Criteria)	-	12	20	26	31	35	39
			Throw	2-5-10	5-8-12	7-10-14	8-11-16	10-12-17	11-13-19	12-14-20
		5' Long	Airflow, cfm	35	55	75	95	115	135	155
			Total Pressure	0.017	0.041	0.077	0.124	0.181	0.250	0.329
			Static Pressure	0.015	0.036	0.067	0.108	0.158	0.217	0.286
			NC (Noise Criteria)	-	14	23	29	34	39	43
			Throw	2-5-9	5-7-12	7-10-13	9-11-15	10-12-17	10-13-18	11-14-19
	1" Slot Width	2' Long	Airflow, cfm	30	45	60	75	90	105	120
			Total Pressure	0.015	0.034	0.060	0.093	0.134	0.182	0.238
			Static Pressure	0.013	0.030	0.053	0.083	0.120	0.163	0.213
			NC (Noise Criteria)	-	11	19	25	30	34	38
			Throw	3-7-15	7-11-22	10-15-26	12-19-29	15-22-32	17-25-35	20-26-37
		4' Long	Airflow, cfm	50	73	95	118	140	163	185
			Total Pressure	0.017	0.036	0.062	0.094	0.134	0.180	0.233
			Static Pressure	0.013	0.026	0.045	0.070	0.099	0.133	0.172
			NC (Noise Criteria)	-	14	21	27	32	36	39
			Throw	4-7-13	7-11-16	9-13-18	11-14-20	13-15-22	14-17-23	14-18-25
		5' Long	Airflow, cfm	70	100	130	160	190	220	250
			Total Pressure	0.028	0.057	0.097	0.146	0.206	0.276	0.357
			Static Pressure	0.019	0.039	0.066	0.101	0.142	0.190	0.245
			NC (Noise Criteria)	-	19	26	32	37	41	44
			Throw	5-8-13	8-11-16	10-13-18	11-14-20	12-15-21	13-16-23	14-17-25
	1½" Slot Width	2' Long	Airflow, cfm	40	58	75	93	110	128	145
			Total Pressure	0.020	0.041	0.070	0.107	0.151	0.203	0.262
			Static Pressure	0.017	0.035	0.060	0.091	0.129	0.174	0.224
			NC (Noise Criteria)	-	17	24	30	35	39	42
			Throw	3-7-16	6-12-23	10-15-29	12-19-33	15-22-36	17-26-38	19-29-41
		4' Long	Airflow, cfm	60	83	105	128	150	173	195
			Total Pressure	0.021	0.040	0.064	0.095	0.131	0.173	0.221
			Static Pressure	0.015	0.027	0.044	0.066	0.091	0.120	0.153
			NC (Noise Criteria)	-	16	23	28	33	36	40
			Throw	3-7-14	6-10-17	8-12-19	10-15-21	12-16-23	14-17-24	15-18-26
		5' Long	Airflow, cfm	80	108	135	163	190	218	245
			Total Pressure	0.032	0.058	0.091	0.132	0.180	0.236	0.300
			Static Pressure	0.021	0.037	0.059	0.085	0.116	0.152	0.193
			NC (Noise Criteria)	12	20	26	31	36	39	43
			Throw	4-8-14	7-10-16	9-13-18	10-14-20	12-15-21	13-16-23	14-17-24
8" Inlet, 1-Slot	¾" Slot Width	2' Long	Airflow, cfm	30	43	55	68	80	93	105
			Total Pressure	0.029	0.058	0.098	0.147	0.207	0.276	0.356
			Static Pressure	0.028	0.057	0.096	0.144	0.202	0.270	0.348
			NC (Noise Criteria)	-	15	22	28	33	37	40
			Throw	5-9-17	8-12-22	10-16-25	13-19-28	15-21-30	18-23-33	20-25-35
		4' Long	Airflow, cfm	45	63	80	98	115	133	150
			Total Pressure	0.020	0.038	0.062	0.092	0.128	0.170	0.218
			Static Pressure	0.018	0.035	0.058	0.086	0.119	0.158	0.202
			NC (Noise Criteria)	-	15	22	27	32	36	39
			Throw	5-8-12	7-10-15	9-12-16	10-13-18	11-14-20	12-15-21	13-16-23
		5' Long	Airflow, cfm	60	83	105	128	150	173	195
			Total Pressure	0.027	0.052	0.084	0.124	0.171	0.227	0.290
			Static Pressure	0.025	0.047	0.076	0.113	0.156	0.206	0.263
			NC (Noise Criteria)	-	19	26	31	36	40	43
			Throw	5-8-12	7-10-14	9-11-16	10-12-18	11-13-19	12-14-20	13-15-22

Performance notes appear at end of performance data

TBD-80 1-SLOT / ADJUSTABLE / GASKETED BLADE

8" Inlet, 1-Slot (continued)	1" Slot Width	2' Long	Airflow, cfm	40	60	80	100	120	140	160
			Total Pressure	0.030	0.068	0.121	0.188	0.271	0.369	0.482
			Static Pressure	0.029	0.065	0.116	0.181	0.261	0.356	0.464
			NC (Noise Criteria)	-	13	21	27	32	37	40
			Throw	5-10-20	10-15-26	13-20-30	16-24-34	20-26-37	23-28-40	25-30-43
		4' Long	Airflow, cfm	55	83	110	138	165	193	220
			Total Pressure	0.014	0.031	0.055	0.085	0.123	0.167	0.219
			Static Pressure	0.012	0.026	0.046	0.072	0.104	0.142	0.185
			NC (Noise Criteria)	-	11	19	25	30	35	38
			Throw	5-8-14	8-12-17	11-14-19	12-15-22	14-17-24	15-18-26	16-19-27
		5' Long	Airflow, cfm	75	110	145	180	215	250	285
			Total Pressure	0.019	0.041	0.071	0.110	0.157	0.212	0.276
			Static Pressure	0.015	0.033	0.057	0.088	0.125	0.169	0.220
			NC (Noise Criteria)	-	16	24	29	34	39	42
			Throw	6-9-13	9-12-16	11-13-19	12-15-21	13-16-23	14-17-25	15-19-26
	1½" Slot Width	2' Long	Airflow, cfm	50	70	90	110	130	150	170
			Total Pressure	0.030	0.060	0.099	0.147	0.206	0.274	0.352
			Static Pressure	0.029	0.056	0.093	0.139	0.194	0.258	0.332
			NC (Noise Criteria)	-	16	23	29	33	37	41
			Throw	5-10-20	9-14-28	12-18-32	15-22-36	17-26-39	20-29-42	23-31-44
		4' Long	Airflow, cfm	75	105	135	165	195	225	255
			Total Pressure	0.020	0.039	0.065	0.097	0.136	0.181	0.232
			Static Pressure	0.016	0.032	0.053	0.078	0.110	0.146	0.187
			NC (Noise Criteria)	-	17	24	29	34	38	41
			Throw	5-9-16	8-12-19	11-15-21	13-17-24	15-18-26	16-20-28	17-21-29
		5' Long	Airflow, cfm	100	140	180	220	260	300	340
			Total Pressure	0.028	0.055	0.091	0.135	0.189	0.252	0.323
			Static Pressure	0.021	0.041	0.068	0.102	0.142	0.190	0.243
			NC (Noise Criteria)	12	21	28	34	38	42	46
			Throw	6-10-16	9-13-18	11-15-21	13-16-23	14-18-25	16-19-27	17-20-29
10" Inlet, 1-Slot	¾" Slot Width	2' Long	Airflow, cfm	30	43	55	68	80	93	105
			Total Pressure	0.038	0.076	0.128	0.193	0.271	0.362	0.466
			Static Pressure	0.038	0.076	0.127	0.191	0.268	0.359	0.462
			NC (Noise Criteria)	-	11	18	24	29	33	36
			Throw	5-9-17	8-12-22	10-16-25	13-19-28	15-21-30	18-23-33	20-25-35
		4' Long	Airflow, cfm	50	73	95	118	140	163	185
			Total Pressure	0.020	0.042	0.073	0.111	0.158	0.212	0.275
			Static Pressure	0.019	0.040	0.069	0.106	0.150	0.203	0.263
			NC (Noise Criteria)	-	15	23	29	33	38	41
			Throw	6-8-13	8-11-16	10-13-18	12-14-20	13-15-22	14-17-23	14-18-25
		5' Long	Airflow, cfm	70	103	135	168	200	233	265
			Total Pressure	0.028	0.061	0.105	0.162	0.231	0.312	0.405
			Static Pressure	0.026	0.057	0.099	0.152	0.216	0.292	0.380
			NC (Noise Criteria)	-	21	29	35	40	44	48
			Throw	6-9-13	9-11-16	10-13-18	12-14-20	13-16-22	14-17-24	15-18-25
	1" Slot Width	2' Long	Airflow, cfm	40	53	65	78	90	103	115
			Total Pressure	0.047	0.081	0.123	0.175	0.237	0.307	0.386
			Static Pressure	0.046	0.080	0.122	0.173	0.234	0.303	0.381
			NC (Noise Criteria)	-	-	11	16	20	24	27
			Throw	5-10-20	9-13-25	11-16-27	13-19-30	15-22-32	17-24-34	19-26-36
		4' Long	Airflow, cfm	60	95	130	165	200	235	270
			Total Pressure	0.015	0.037	0.069	0.111	0.163	0.225	0.298
			Static Pressure	0.013	0.034	0.063	0.101	0.149	0.205	0.271
			NC (Noise Criteria)	-	11	20	27	32	36	40
			Throw	6-9-14	9-13-18	12-15-21	14-17-24	15-18-26	16-20-28	17-21-30
		5' Long	Airflow, cfm	80	135	190	245	300	355	410
			Total Pressure	0.018	0.050	0.099	0.165	0.248	0.347	0.463
			Static Pressure	0.015	0.044	0.086	0.144	0.215	0.301	0.402
			NC (Noise Criteria)	-	18	27	34	40	44	48
			Throw	6-9-14	10-13-18	12-15-21	14-17-24	16-19-27	17-21-29	18-22-31

TBD-80 1-SLOT / ADJUSTABLE / GASKETED BLADE

10" Inlet, 1-Slot (continued)	1½" Slot Width	2' Long	Airflow, cfm	60	80	100	120	140	160	180
			Total Pressure	0.058	0.104	0.162	0.233	0.318	0.415	0.525
			Static Pressure	0.057	0.101	0.158	0.228	0.310	0.406	0.513
			NC (Noise Criteria)	-	16	22	27	32	35	38
			Throw	7-12-24	11-16-30	13-20-34	16-24-37	19-28-40	22-30-43	24-32-46
		4' Long	Airflow, cfm	90	120	150	180	210	240	270
			Total Pressure	0.024	0.043	0.067	0.097	0.132	0.172	0.218
			Static Pressure	0.021	0.038	0.059	0.085	0.116	0.151	0.191
			NC (Noise Criteria)	-	17	23	28	32	36	39
			Throw	7-11-17	10-14-20	12-16-23	14-17-25	15-19-27	16-20-28	17-21-30
		5' Long	Airflow, cfm	120	160	200	240	280	320	360
			Total Pressure	0.031	0.055	0.085	0.123	0.167	0.218	0.276
			Static Pressure	0.025	0.045	0.071	0.102	0.139	0.181	0.229
			NC (Noise Criteria)	13	21	27	32	37	40	44
			Throw	8-11-17	10-14-20	13-16-22	14-17-24	15-18-26	16-20-28	17-21-30
12" Inlet, 1-Slot	¾" Slot Width	4' Long	Airflow, cfm	75	100	125	150	175	200	225
			Total Pressure	0.049	0.087	0.135	0.195	0.265	0.346	0.438
			Static Pressure	0.048	0.085	0.133	0.192	0.261	0.341	0.431
			NC (Noise Criteria)	-	18	24	29	34	37	41
			Throw	8-11-16	11-13-18	12-15-21	13-16-23	14-17-24	15-18-26	16-20-28
		5' Long	Airflow, cfm	100	135	170	205	240	275	310
			Total Pressure	0.050	0.091	0.145	0.211	0.289	0.380	0.482
			Static Pressure	0.049	0.089	0.141	0.205	0.281	0.369	0.469
			NC (Noise Criteria)	15	23	29	35	39	43	46
			Throw	9-11-16	10-13-18	12-14-20	13-16-22	14-17-24	15-18-26	16-19-27
	1" Slot Width	4' Long	Airflow, cfm	90	120	150	180	210	240	270
			Total Pressure	0.043	0.077	0.120	0.173	0.236	0.308	0.390
			Static Pressure	0.042	0.075	0.117	0.169	0.230	0.300	0.380
			NC (Noise Criteria)	-	12	18	23	27	31	34
			Throw	9-12-17	12-14-20	13-16-23	14-17-25	15-19-27	16-20-28	17-21-30
		5' Long	Airflow, cfm	130	180	230	280	330	380	430
			Total Pressure	0.149	0.285	0.466	0.690	0.958	1.271	1.627
			Static Pressure	0.146	0.281	0.458	0.679	0.944	1.251	1.602
			NC (Noise Criteria)	-	19	26	32	36	40	44
			Throw	10-13-18	12-15-21	14-17-24	15-18-26	16-20-28	18-21-30	19-23-32
	1½" Slot Width	4' Long	Airflow, cfm	100	140	180	220	260	300	340
			Total Pressure	0.033	0.064	0.106	0.159	0.222	0.295	0.379
			Static Pressure	0.031	0.062	0.102	0.152	0.213	0.283	0.363
			NC (Noise Criteria)	-	15	22	27	32	36	39
			Throw	8-12-18	11-15-22	14-17-25	16-19-27	17-21-30	18-23-32	20-24-34
		5' Long	Airflow, cfm	150	210	270	330	390	450	510
			Total Pressure	0.042	0.083	0.137	0.205	0.286	0.381	0.490
			Static Pressure	0.039	0.077	0.127	0.190	0.266	0.354	0.455
			NC (Noise Criteria)	13	23	30	35	40	44	47
			Throw	10-13-19	13-16-23	15-18-26	16-20-28	18-22-31	19-23-33	20-25-35

1-SLOT PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.

TBD-80 2-SLOT / ADJUSTABLE / GASKETED BLADE

6" Inlet, 2-Slot	¾" Slot Width	2' Long	Airflow, cfm	40	55	70	85	100	115	130
			Total Pressure	0.025	0.048	0.078	0.115	0.159	0.210	0.269
			Static Pressure	0.023	0.043	0.069	0.102	0.141	0.187	0.239
			NC (Noise Criteria)	-	17	24	29	34	38	41
			Throw	3-7-16	6-11-22	9-14-28	11-17-31	13-20-34	15-23-36	17-26-39
		4' Long	Airflow, cfm	40	65	90	115	140	165	190
			Total Pressure	0.018	0.046	0.089	0.145	0.215	0.298	0.395
			Static Pressure	0.015	0.039	0.074	0.121	0.180	0.249	0.331
			NC (Noise Criteria)	-	11	20	27	33	37	41
			Throw	1-3-10	4-8-15	7-11-17	9-14-20	11-15-22	13-17-24	15-18-25
		5' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.037	0.082	0.146	0.229	0.329	0.448	0.585
			Static Pressure	0.030	0.068	0.121	0.188	0.271	0.369	0.482
			NC (Noise Criteria)	-	17	25	31	36	40	44
			Throw	2-6-11	6-9-15	8-11-17	10-13-19	11-15-21	13-16-23	16-20-28
	1" Slot Width	2' Long	Airflow, cfm	60	83	105	128	150	173	195
			Total Pressure	0.025	0.046	0.075	0.111	0.153	0.203	0.259
			Static Pressure	0.018	0.034	0.056	0.082	0.113	0.150	0.191
			NC (Noise Criteria)	-	17	24	29	34	38	41
			Throw	4-10-21	8-14-29	12-18-35	15-22-38	17-26-42	20-30-45	23-34-47
		4' Long	Airflow, cfm	75	110	145	180	215	250	285
			Total Pressure	0.025	0.053	0.092	0.142	0.202	0.274	0.356
			Static Pressure	0.015	0.031	0.054	0.084	0.120	0.162	0.211
			NC (Noise Criteria)	-	15	22	28	33	37	41
			Throw	3-7-15	7-11-19	10-15-22	12-17-25	15-19-27	17-21-29	18-22-31
		5' Long	Airflow, cfm	90	138	185	233	280	328	375
			Total Pressure	0.032	0.076	0.137	0.217	0.314	0.430	0.564
			Static Pressure	0.018	0.042	0.076	0.120	0.174	0.238	0.312
			NC (Noise Criteria)	-	17	25	32	37	41	45
			Throw	4-7-15	8-11-18	10-15-21	13-17-24	15-18-26	16-20-28	17-21-30
	1½" Slot Width	2' Long	Airflow, cfm	60	83	105	128	150	173	195
			Total Pressure	0.021	0.040	0.064	0.095	0.131	0.173	0.221
			Static Pressure	0.015	0.027	0.044	0.066	0.091	0.120	0.153
			NC (Noise Criteria)	-	16	23	28	33	36	40
			Throw	2-5-17	4-10-24	7-15-30	11-18-36	14-21-42	16-25-45	19-28-47
		4' Long	Airflow, cfm	70	110	150	190	230	270	310
			Total Pressure	0.019	0.048	0.089	0.144	0.210	0.290	0.382
			Static Pressure	0.011	0.027	0.049	0.079	0.116	0.160	0.210
			NC (Noise Criteria)	-	13	22	28	34	38	42
			Throw	2-3-12	4-9-18	7-13-23	11-16-25	13-19-28	15-21-30	17-23-32
		5' Long	Airflow, cfm	100	157.5	215	272.5	330	387.5	445
			Total Pressure	0.037	0.091	0.170	0.274	0.401	0.553	0.730
			Static Pressure	0.019	0.047	0.088	0.141	0.207	0.285	0.376
			NC (Noise Criteria)	-	20	28	35	40	45	49
			Throw	2-5-14	6-11-20	10-15-23	12-18-26	15-20-28	17-22-31	19-23-33
8" Inlet, 2-Slot	¾" Slot Width	2' Long	Airflow, cfm	30	53	75	98	120	143	165
			Total Pressure	0.009	0.027	0.054	0.092	0.140	0.197	0.264
			Static Pressure	0.008	0.025	0.051	0.086	0.130	0.183	0.245
			NC (Noise Criteria)	-	-	20	27	33	38	42
			Throw	2-4-12	5-11-21	10-15-29	13-20-34	16-24-37	19-29-41	22-31-44
		4' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.019	0.043	0.076	0.119	0.172	0.234	0.306
			Static Pressure	0.017	0.037	0.066	0.104	0.150	0.204	0.266
			NC (Noise Criteria)	-	15	23	29	34	38	42
			Throw	3-7-14	7-11-17	10-14-20	12-16-23	14-17-25	15-19-27	16-20-28
		5' Long	Airflow, cfm	90	128	165	203	240	278	315
			Total Pressure	0.038	0.076	0.128	0.193	0.271	0.362	0.467
			Static Pressure	0.033	0.065	0.109	0.165	0.231	0.309	0.398
			NC (Noise Criteria)	11	21	28	34	38	42	46
			Throw	6-9-15	8-12-18	11-14-20	13-16-22	14-17-24	15-18-26	16-20-28

TBD-80 2-SLOT / ADJUSTABLE / GASKETED BLADE

8" Inlet, 2-Slot (continued)	1" Slot Width	2' Long	Airflow, cfm	75	103	130	158	185	213	240
			Total Pressure	0.025	0.047	0.076	0.112	0.155	0.204	0.260
			Static Pressure	0.022	0.040	0.065	0.095	0.131	0.173	0.221
			NC (Noise Criteria)	-	17	24	29	34	37	41
			Throw	7-13-26	12-18-34	15-23-39	18-28-43	22-32-46	25-35-49	28-37-53
		4' Long	Airflow, cfm	90	133	175	218	260	303	345
			Total Pressure	0.018	0.039	0.068	0.105	0.150	0.203	0.263
			Static Pressure	0.012	0.027	0.047	0.072	0.103	0.139	0.181
			NC (Noise Criteria)	-	14	21	27	32	37	40
			Throw	5-9-17	9-14-21	12-17-24	15-19-27	17-21-30	18-23-32	20-24-34
		5' Long	Airflow, cfm	115	183	250	318	385	453	520
			Total Pressure	0.025	0.064	0.120	0.193	0.284	0.393	0.519
			Static Pressure	0.016	0.041	0.077	0.124	0.182	0.252	0.333
			NC (Noise Criteria)	-	19	28	35	40	44	48
			Throw	6-10-17	10-15-21	14-17-25	16-20-28	18-22-31	19-23-33	20-25-35
	1½" Slot Width	2' Long	Airflow, cfm	75	105	135	165	195	225	255
			Total Pressure	0.020	0.039	0.065	0.097	0.136	0.181	0.232
			Static Pressure	0.016	0.032	0.053	0.078	0.110	0.146	0.187
			NC (Noise Criteria)	-	17	24	29	34	38	41
			Throw	4-8-21	7-15-20	12-19-39	16-24-44	19-28-47	21-32-51	24-36-54
		4' Long	Airflow, cfm	90	135	180	225	270	315	360
			Total Pressure	0.016	0.035	0.063	0.098	0.141	0.192	0.251
			Static Pressure	0.010	0.023	0.040	0.063	0.091	0.124	0.161
			NC (Noise Criteria)	-	13	21	27	32	37	40
			Throw	3-6-15	6-11-21	10-15-25	13-19-28	15-21-30	18-23-33	20-25-35
		5' Long	Airflow, cfm	115	175	235	295	355	415	475
			Total Pressure	0.023	0.052	0.095	0.149	0.216	0.295	0.386
			Static Pressure	0.014	0.031	0.056	0.089	0.129	0.176	0.231
			NC (Noise Criteria)	-	17	25	31	36	41	44
			Throw	3-7-16	7-12-21	11-16-24	13-19-27	16-21-29	18-22-32	20-24-34
10" Inlet, 2-Slot	¾" Slot Width	2' Long	Airflow, cfm	40	65	90	115	140	165	190
			Total Pressure	0.013	0.034	0.065	0.106	0.158	0.219	0.290
			Static Pressure	0.012	0.032	0.062	0.102	0.150	0.209	0.277
			NC (Noise Criteria)	-	12	21	28	33	38	42
			Throw	3-7-16	8-13-26	12-18-32	15-23-36	19-28-40	22-31-44	26-33-47
		4' Long	Airflow, cfm	80	110	140	170	200	230	260
			Total Pressure	0.022	0.042	0.069	0.101	0.140	0.185	0.237
			Static Pressure	0.020	0.038	0.062	0.091	0.126	0.166	0.212
			NC (Noise Criteria)	-	16	23	28	33	37	40
			Throw	6-10-16	9-13-19	11-15-22	13-17-24	15-18-26	16-20-28	17-21-30
		5' Long	Airflow, cfm	120	155	190	225	260	295	330
			Total Pressure	0.043	0.071	0.107	0.150	0.201	0.258	0.323
			Static Pressure	0.038	0.063	0.094	0.132	0.176	0.227	0.284
			NC (Noise Criteria)	15	22	28	33	37	40	43
			Throw	8-11-17	10-14-19	12-15-21	13-17-23	14-18-25	15-19-27	16-20-28
	1" Slot Width	2' Long	Airflow, cfm	90	120	150	180	210	240	270
			Total Pressure	0.033	0.059	0.092	0.132	0.180	0.235	0.298
			Static Pressure	0.030	0.054	0.084	0.121	0.164	0.214	0.271
			NC (Noise Criteria)	-	18	24	29	33	37	40
			Throw	10-16-31	14-21-37	17-26-42	21-31-46	24-35-49	28-37-53	31-39-56
		4' Long	Airflow, cfm	120	170	220	270	320	370	420
			Total Pressure	0.022	0.044	0.074	0.111	0.156	0.209	0.269
			Static Pressure	0.017	0.034	0.056	0.085	0.119	0.159	0.205
			NC (Noise Criteria)	-	17	24	30	34	38	42
			Throw	8-12-20	12-17-24	15-19-27	17-21-30	19-23-33	20-25-35	22-27-38
		5' Long	Airflow, cfm	150	220	290	360	430	500	570
			Total Pressure	0.028	0.061	0.105	0.162	0.232	0.313	0.407
			Static Pressure	0.020	0.043	0.075	0.115	0.165	0.223	0.289
			NC (Noise Criteria)	-	20	28	34	39	43	47
			Throw	8-12-19	12-16-23	15-19-26	17-21-30	19-23-32	20-25-35	21-26-37

Performance notes appear at end of performance data

TBD-80 2-SLOT / ADJUSTABLE / GASKETED BLADE

10" Inlet, 2-Slot (continued)	1½" Slot Width	2' Long	Airflow, cfm	90	125	160	195	230	265	300
			Total Pressure	0.024	0.047	0.077	0.114	0.158	0.210	0.269
			Static Pressure	0.021	0.041	0.067	0.100	0.139	0.184	0.236
			NC (Noise Criteria)	-	18	25	30	35	38	42
			Throw	5-12-26	10-18-36	15-23-43	19-28-47	22-33-51	25-38-55	29-42-59
		4' Long	Airflow, cfm	100	155	210	265	320	375	430
			Total Pressure	0.013	0.031	0.057	0.090	0.131	0.181	0.237
			Static Pressure	0.009	0.022	0.041	0.065	0.094	0.130	0.170
			NC (Noise Criteria)	-	13	21	28	33	37	41
			Throw	3-7-17	8-13-23	12-18-27	15-21-30	18-23-33	21-25-36	22-27-38
		5' Long	Airflow, cfm	150	225	300	375	450	525	600
			Total Pressure	0.024	0.055	0.098	0.152	0.220	0.299	0.390
			Static Pressure	0.016	0.037	0.065	0.102	0.146	0.199	0.260
			NC (Noise Criteria)	-	20	28	34	39	43	47
			Throw	5-10-19	10-15-23	14-19-27	17-21-30	19-23-33	21-25-36	22-27-38
12" Inlet, 2-Slot	¾" Slot Width	4' Long	Airflow, cfm	100	140	180	220	260	300	340
			Total Pressure	0.022	0.043	0.072	0.107	0.150	0.200	0.256
			Static Pressure	0.021	0.041	0.067	0.101	0.141	0.187	0.241
			NC (Noise Criteria)	-	17	24	29	34	38	41
			Throw	8-12-18	11-15-22	14-17-25	16-19-27	17-21-30	18-23-32	20-24-34
		5' Long	Airflow, cfm	150	200	250	300	350	400	450
			Total Pressure	0.038	0.068	0.106	0.152	0.207	0.270	0.342
			Static Pressure	0.035	0.062	0.097	0.140	0.190	0.249	0.315
			NC (Noise Criteria)	15	23	29	34	39	42	46
			Throw	10-13-19	13-16-22	14-17-25	16-19-27	17-21-29	18-22-31	19-23-33
	1" Slot Width	4' Long	Airflow, cfm	120	185	250	315	380	445	510
			Total Pressure	0.015	0.036	0.067	0.106	0.154	0.211	0.277
			Static Pressure	0.013	0.032	0.058	0.092	0.134	0.184	0.242
			NC (Noise Criteria)	-	13	21	28	33	37	41
			Throw	5-12-20	13-18-25	17-21-29	19-23-33	21-25-36	22-27-39	24-29-42
		5' Long	Airflow, cfm	180	285	390	495	600	705	810
			Total Pressure	0.025	0.063	0.117	0.189	0.278	0.383	0.506
			Static Pressure	0.021	0.052	0.097	0.156	0.229	0.316	0.417
			NC (Noise Criteria)	-	22	30	37	42	47	50
			Throw	10-15-21	15-19-26	18-22-31	20-24-35	22-27-38	24-29-41	26-31-44
	1½" Slot Width	4' Long	Airflow, cfm	150	210	270	330	390	450	510
			Total Pressure	0.018	0.036	0.060	0.089	0.125	0.166	0.213
			Static Pressure	0.015	0.030	0.050	0.075	0.104	0.139	0.178
			NC (Noise Criteria)	-	15	22	28	32	36	40
			Throw	7-13-23	12-18-27	15-21-30	18-24-33	21-26-36	23-28-39	24-29-42
		5' Long	Airflow, cfm	200	290	380	470	560	650	740
			Total Pressure	0.033	0.069	0.118	0.181	0.257	0.346	0.449
			Static Pressure	0.027	0.058	0.099	0.151	0.215	0.289	0.375
			NC (Noise Criteria)	-	21	28	34	39	43	47
			Throw	9-14-22	13-19-26	17-21-30	19-24-34	21-26-37	23-28-40	24-30-42

2-SLOT PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

TBD-80 3-SLOT / ADJUSTABLE / GASKETED BLADE

6" Inlet, 3-Slot	¾" Slot Width	2' Long	Airflow, cfm	50	68	85	103	120	138	155
			Total Pressure	0.031	0.057	0.090	0.130	0.179	0.234	0.298
			Static Pressure	0.027	0.048	0.077	0.112	0.153	0.201	0.255
			NC (Noise Criteria)	-	17	23	28	33	37	40
			Throw	3-6-16	5-10-22	7-14-28	11-17-34	13-20-37	15-23-40	17-26-42
		4' Long	Airflow, cfm	70	95	120	145	170	195	220
			Total Pressure	0.047	0.087	0.139	0.203	0.279	0.367	0.468
			Static Pressure	0.039	0.071	0.113	0.166	0.228	0.300	0.381
			NC (Noise Criteria)	-	16	22	27	32	36	39
			Throw	2-5-14	4-9-18	7-12-20	9-14-22	11-16-24	13-18-26	14-19-27
		5' Long	Airflow, cfm	90	123	155	188	220	253	285
			Total Pressure	0.074	0.138	0.221	0.323	0.445	0.586	0.747
			Static Pressure	0.060	0.111	0.178	0.260	0.359	0.472	0.602
			NC (Noise Criteria)	-	19	26	31	35	39	43
			Throw	3-7-14	6-10-17	8-12-19	10-15-21	11-16-23	13-17-25	15-19-26
	1" Slot Width	2' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.018	0.041	0.073	0.114	0.164	0.224	0.292
			Static Pressure	0.012	0.027	0.047	0.074	0.107	0.145	0.189
			NC (Noise Criteria)	-	13	21	27	33	37	40
			Throw	2-5-17	5-12-26	9-17-34	14-21-42	17-26-46	20-30-49	23-34-53
		4' Long	Airflow, cfm	100	143	185	228	270	313	355
			Total Pressure	0.038	0.077	0.129	0.195	0.275	0.369	0.476
			Static Pressure	0.020	0.040	0.068	0.103	0.145	0.194	0.251
			NC (Noise Criteria)	-	15	23	28	33	37	41
			Throw	3-7-17	6-12-22	10-16-25	13-19-28	15-21-30	18-23-33	20-24-35
		5' Long	Airflow, cfm	115	170	225	280	335	390	445
			Total Pressure	0.047	0.103	0.180	0.279	0.400	0.542	0.705
			Static Pressure	0.023	0.051	0.090	0.139	0.199	0.270	0.351
			NC (Noise Criteria)	-	17	25	31	36	40	43
			Throw	3-7-16	7-12-20	10-15-23	13-18-26	15-20-28	18-22-31	19-23-33
	1½" Slot Width	2' Long	Airflow, cfm	75	105	135	165	195	225	255
			Total Pressure	0.025	0.050	0.082	0.123	0.172	0.229	0.294
			Static Pressure	0.015	0.030	0.050	0.074	0.104	0.138	0.177
			NC (Noise Criteria)	-	16	23	29	34	38	41
			Throw	2-5-17	4-9-24	7-15-31	10-19-38	14-23-45	17-26-51	20-30-54
		4' Long	Airflow, cfm	100	145	190	235	280	325	370
			Total Pressure	0.035	0.074	0.126	0.193	0.275	0.370	0.480
			Static Pressure	0.017	0.036	0.062	0.095	0.135	0.181	0.235
			NC (Noise Criteria)	-	15	22	28	33	37	41
			Throw	2-4-14	4-8-20	6-13-25	10-16-28	13-19-31	15-22-33	17-25-35
		5' Long	Airflow, cfm	125	185	245	305	365	425	485
			Total Pressure	0.052	0.114	0.200	0.310	0.444	0.601	0.783
			Static Pressure	0.024	0.053	0.093	0.144	0.206	0.279	0.363
			NC (Noise Criteria)	-	18	26	32	37	41	45
			Throw	2-5-14	5-10-20	8-14-24	11-17-27	13-20-30	16-23-32	18-24-34
8" Inlet, 3-Slot	¾" Slot Width	2' Long	Airflow, cfm	55	80	105	130	155	180	205
			Total Pressure	0.020	0.042	0.072	0.110	0.156	0.210	0.273
			Static Pressure	0.018	0.037	0.064	0.098	0.139	0.188	0.244
			NC (Noise Criteria)	-	16	23	29	34	38	42
			Throw	3-7-18	6-13-26	11-17-35	14-21-39	17-26-42	20-30-46	23-34-49
		4' Long	Airflow, cfm	90	125	160	195	230	265	300
			Total Pressure	0.035	0.068	0.111	0.165	0.230	0.305	0.391
			Static Pressure	0.030	0.057	0.093	0.139	0.193	0.256	0.329
			NC (Noise Criteria)	-	17	24	30	34	38	42
			Throw	4-9-17	8-12-21	10-16-23	13-18-26	15-20-28	17-21-30	18-23-32
		5' Long	Airflow, cfm	125	170	215	260	305	350	395
			Total Pressure	0.063	0.116	0.185	0.271	0.373	0.491	0.625
			Static Pressure	0.052	0.096	0.153	0.224	0.309	0.406	0.517
			NC (Noise Criteria)	14	23	29	34	39	42	46
			Throw	6-10-17	9-13-20	11-16-23	14-18-25	16-19-27	17-21-29	18-22-31

Performance notes appear at end of performance data

TBD-80 3-SLOT / ADJUSTABLE / GASKETED BLADE

8" Inlet, 3-Slot (continued)	1" Slot Width	2' Long	Airflow, cfm	75	115	155	195	235	275	315
			Total Pressure	0.016	0.037	0.067	0.107	0.155	0.212	0.279
			Static Pressure	0.012	0.028	0.051	0.081	0.117	0.160	0.210
			NC (Noise Criteria)	-	14	23	29	34	38	42
			Throw	4-8-21	9-16-33	15-22-42	19-28-47	22-34-52	26-39-56	30-43-60
		4' Long	Airflow, cfm	115	170	225	280	335	390	445
			Total Pressure	0.023	0.050	0.088	0.137	0.196	0.265	0.346
			Static Pressure	0.014	0.031	0.053	0.083	0.118	0.161	0.209
			NC (Noise Criteria)	-	14	22	28	33	37	41
			Throw	4-9-19	9-14-24	13-19-28	16-22-31	19-24-34	21-26-36	22-27-39
		5' Long	Airflow, cfm	145	215	285	355	425	495	565
			Total Pressure	0.033	0.073	0.129	0.200	0.287	0.389	0.507
			Static Pressure	0.019	0.041	0.073	0.113	0.162	0.220	0.286
			NC (Noise Criteria)	-	18	25	31	36	41	44
			Throw	5-10-19	10-15-23	13-19-26	16-21-29	19-23-32	20-24-35	21-26-37
	1½" Slot Width	2' Long	Airflow, cfm	80	120	160	200	240	280	320
			Total Pressure	0.029	0.065	0.116	0.181	0.260	0.354	0.462
			Static Pressure	0.024	0.055	0.098	0.153	0.220	0.300	0.392
			NC (Noise Criteria)	-	14	22	28	33	38	41
			Throw	2-5-19	5-12-28	9-19-37	14-23-47	19-28-53	22-33-57	25-37-61
		4' Long	Airflow, cfm	125	180	235	290	345	400	455
			Total Pressure	0.025	0.051	0.087	0.133	0.188	0.252	0.327
			Static Pressure	0.014	0.029	0.049	0.075	0.106	0.142	0.184
			NC (Noise Criteria)	-	15	22	28	33	37	41
			Throw	3-6-17	6-12-25	10-16-28	13-20-31	16-24-34	18-26-37	21-28-39
		5' Long	Airflow, cfm	170	240	310	380	450	520	590
			Total Pressure	0.042	0.084	0.140	0.210	0.294	0.393	0.506
			Static Pressure	0.022	0.044	0.073	0.110	0.155	0.207	0.266
			NC (Noise Criteria)	-	19	26	32	37	41	44
			Throw	4-9-19	8-13-24	11-17-27	14-21-30	17-23-33	19-25-35	22-27-38
10" Inlet, 3-Slot	¾" Slot Width	2' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.017	0.037	0.067	0.104	0.150	0.204	0.266
			Static Pressure	0.015	0.035	0.061	0.096	0.138	0.188	0.245
			NC (Noise Criteria)	-	15	23	29	34	38	42
			Throw	4-8-20	8-15-30	13-20-37	16-25-42	20-30-46	23-35-49	26-37-53
		4' Long	Airflow, cfm	100	143	185	228	270	313	355
			Total Pressure	0.027	0.054	0.091	0.138	0.194	0.260	0.335
			Static Pressure	0.023	0.047	0.079	0.119	0.167	0.224	0.289
			NC (Noise Criteria)	-	17	24	30	35	39	42
			Throw	5-10-18	9-14-22	12-18-25	15-20-28	17-21-30	19-23-33	20-24-35
		5' Long	Airflow, cfm	140	195	250	305	360	415	470
			Total Pressure	0.047	0.090	0.149	0.221	0.308	0.410	0.526
			Static Pressure	0.040	0.077	0.126	0.188	0.261	0.347	0.446
			NC (Noise Criteria)	13	22	29	35	39	43	47
			Throw	7-11-18	10-15-22	13-17-25	16-19-27	17-21-30	18-22-32	19-24-34
	1" Slot Width	2' Long	Airflow, cfm	100	140	180	220	260	300	340
			Total Pressure	0.021	0.042	0.069	0.103	0.143	0.191	0.245
			Static Pressure	0.018	0.034	0.057	0.085	0.119	0.158	0.203
			NC (Noise Criteria)	-	16	23	28	33	37	40
			Throw	7-14-29	13-20-40	17-26-46	21-31-50	25-37-55	29-42-59	32-44-63
		4' Long	Airflow, cfm	130	190	250	310	370	430	490
			Total Pressure	0.019	0.040	0.069	0.106	0.150	0.203	0.264
			Static Pressure	0.012	0.027	0.046	0.071	0.101	0.136	0.177
			NC (Noise Criteria)	-	14	21	27	32	36	40
			Throw	5-11-21	11-16-25	14-21-29	17-23-32	20-25-35	22-27-38	23-29-41
		5' Long	Airflow, cfm	160	240	320	400	480	560	640
			Total Pressure	0.025	0.056	0.099	0.154	0.222	0.302	0.395
			Static Pressure	0.015	0.035	0.062	0.096	0.139	0.189	0.246
			NC (Noise Criteria)	-	17	25	31	36	40	44
			Throw	6-11-20	11-16-24	14-20-28	18-22-31	20-24-34	21-26-37	23-28-39

Performance notes appear at end of performance data

TBD-80 3-SLOT / ADJUSTABLE / GASKETED BLADE

10" Inlet, 3-Slot (continued)	1½" Slot Width	2' Long	Airflow, cfm	100	145	190	235	280	325	370
			Total Pressure	0.017	0.036	0.061	0.094	0.133	0.180	0.233
			Static Pressure	0.013	0.028	0.048	0.074	0.105	0.141	0.183
			NC (Noise Criteria)	-	16	23	29	34	38	41
			Throw	4-8-23	8-17-34	13-22-44	18-27-52	22-33-57	25-38-61	29-43-65
		4' Long	Airflow, cfm	150	210	270	330	390	450	510
			Total Pressure	0.022	0.043	0.071	0.106	0.147	0.196	0.252
			Static Pressure	0.014	0.027	0.044	0.066	0.092	0.123	0.158
			NC (Noise Criteria)	-	15	22	28	32	36	40
			Throw	4-9-21	8-14-27	12-19-30	15-23-33	18-26-36	21-28-39	23-29-42
		5' Long	Airflow, cfm	200	275	350	425	500	575	650
			Total Pressure	0.035	0.065	0.106	0.156	0.216	0.286	0.366
			Static Pressure	0.020	0.038	0.062	0.091	0.126	0.166	0.213
			NC (Noise Criteria)	-	19	26	31	36	40	43
			Throw	5-11-22	10-15-26	13-19-29	16-23-32	18-25-35	21-26-37	23-28-40
12" Inlet, 3-Slot	¾" Slot Width	4' Long	Airflow, cfm	130	183	235	288	340	393	445
			Total Pressure	0.024	0.047	0.078	0.116	0.163	0.217	0.279
			Static Pressure	0.022	0.042	0.070	0.105	0.147	0.196	0.252
			NC (Noise Criteria)	-	18	25	30	35	39	42
			Throw	8-13-21	12-18-25	15-20-28	18-22-31	20-24-34	21-26-36	22-27-39
		5' Long	Airflow, cfm	180	265	350	435	520	605	690
			Total Pressure	0.038	0.082	0.144	0.222	0.318	0.430	0.559
			Static Pressure	0.034	0.073	0.127	0.197	0.281	0.381	0.495
			NC (Noise Criteria)	14	25	32	38	43	48	51
			Throw	9-14-21	14-18-25	17-21-29	19-23-32	20-25-35	22-27-38	24-29-41
	1" Slot Width	4' Long	Airflow, cfm	160	235	310	385	460	535	610
			Total Pressure	0.016	0.034	0.060	0.092	0.132	0.178	0.231
			Static Pressure	0.012	0.027	0.047	0.072	0.103	0.139	0.181
			NC (Noise Criteria)	-	13	21	27	32	36	40
			Throw	8-13-23	13-20-28	17-23-32	21-26-36	23-28-39	25-30-43	26-32-45
		5' Long	Airflow, cfm	200	325	450	575	700	825	950
			Total Pressure	0.020	0.053	0.102	0.166	0.246	0.341	0.453
			Static Pressure	0.015	0.039	0.074	0.121	0.180	0.250	0.331
			NC (Noise Criteria)	-	19	28	35	40	45	49
			Throw	9-14-22	15-20-28	19-23-33	22-26-37	24-29-41	26-32-45	28-34-48
	1½" Slot Width	4' Long	Airflow, cfm	200	275	350	425	500	575	650
			Total Pressure	0.021	0.039	0.063	0.093	0.129	0.171	0.218
			Static Pressure	0.015	0.029	0.047	0.069	0.095	0.126	0.161
			NC (Noise Criteria)	-	17	23	29	33	37	40
			Throw	7-14-26	13-19-30	16-24-34	19-27-38	23-29-41	25-31-44	27-33-47
		5' Long	Airflow, cfm	300	425	550	675	800	925	1050
			Total Pressure	0.039	0.078	0.130	0.196	0.275	0.367	0.473
			Static Pressure	0.027	0.053	0.089	0.134	0.189	0.252	0.325
			NC (Noise Criteria)	16	25	32	38	43	47	50
			Throw	11-17-27	16-23-32	20-26-36	23-29-40	25-31-44	27-33-47	29-36-50

3-SLOT PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts.
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

TBD-80 4-SLOT / ADJUSTABLE / GASKETED BLADE

6" Inlet, 4-Slot	¾" Slot Width	2' Long	Airflow, cfm	60	80	100	120	140	160	180
			Total Pressure	0.039	0.070	0.109	0.158	0.215	0.280	0.355
			Static Pressure	0.033	0.059	0.092	0.132	0.180	0.235	0.297
			NC (Noise Criteria)	-	17	23	28	33	36	40
			Throw	2-5-17	4-9-23	7-14-29	9-17-34	13-20-40	15-23-43	17-26-46
		4' Long	Airflow, cfm	80	105	130	155	180	205	230
			Total Pressure	0.058	0.100	0.153	0.218	0.294	0.382	0.480
			Static Pressure	0.047	0.080	0.123	0.175	0.236	0.307	0.386
			NC (Noise Criteria)	-	14	20	25	29	33	36
			Throw	2-5-13	3-8-18	5-11-21	8-13-23	10-15-25	11-17-26	13-19-28
		5' Long	Airflow, cfm	100	130	160	190	220	250	280
			Total Pressure	0.087	0.148	0.224	0.316	0.423	0.547	0.686
			Static Pressure	0.070	0.118	0.178	0.251	0.337	0.435	0.546
			NC (Noise Criteria)	-	17	22	27	31	35	38
			Throw	2-5-14	4-9-18	6-11-20	9-13-21	10-15-23	11-17-25	13-18-26
	1" Slot Width	2' Long	Airflow, cfm	65	100	135	170	205	240	275
			Total Pressure	0.019	0.044	0.080	0.127	0.184	0.252	0.331
			Static Pressure	0.011	0.026	0.047	0.075	0.109	0.149	0.196
			NC (Noise Criteria)	-	12	20	27	32	36	40
			Throw	2-4-16	4-10-25	8-17-33	12-21-42	17-25-49	20-30-53	23-34-56
		4' Long	Airflow, cfm	115	158	200	243	285	328	370
			Total Pressure	0.046	0.087	0.140	0.206	0.285	0.376	0.480
			Static Pressure	0.023	0.043	0.069	0.101	0.140	0.185	0.236
			NC (Noise Criteria)	-	14	20	26	30	34	37
			Throw	3-6-17	5-11-23	8-15-26	12-18-29	14-21-31	16-24-33	18-25-35
		5' Long	Airflow, cfm	130	180	230	280	330	380	430
			Total Pressure	0.057	0.109	0.178	0.263	0.365	0.485	0.621
			Static Pressure	0.027	0.051	0.083	0.123	0.171	0.227	0.290
			NC (Noise Criteria)	-	14	21	26	31	35	38
			Throw	3-6-15	5-11-21	8-13-24	11-16-26	13-19-28	15-21-30	17-23-32
	1½" Slot Width	2' Long	Airflow, cfm	70	105	140	175	210	245	280
			Total Pressure	0.019	0.044	0.078	0.122	0.175	0.239	0.312
			Static Pressure	0.011	0.024	0.043	0.067	0.097	0.131	0.172
			NC (Noise Criteria)	-	12	20	26	31	35	39
			Throw	1-3-10	3-6-21	5-10-28	7-16-35	10-21-42	14-25-49	18-28-56
		4' Long	Airflow, cfm	115	160	205	250	295	340	385
			Total Pressure	0.043	0.084	0.138	0.205	0.286	0.380	0.487
			Static Pressure	0.020	0.038	0.063	0.094	0.131	0.174	0.222
			NC (Noise Criteria)	-	13	20	25	30	34	37
			Throw	1-3-13	3-6-19	5-11-24	7-15-29	10-18-32	13-20-34	15-23-36
		5' Long	Airflow, cfm	160	215	270	325	380	435	490
			Total Pressure	0.081	0.146	0.231	0.334	0.457	0.599	0.760
			Static Pressure	0.035	0.064	0.100	0.146	0.199	0.261	0.331
			NC (Noise Criteria)	-	18	24	29	34	37	41
			Throw	2-5-15	4-9-21	6-13-26	9-16-28	12-18-30	14-21-32	16-23-34
8" Inlet, 4-Slot	¾" Slot Width	2' Long	Airflow, cfm	60	90	120	150	180	210	240
			Total Pressure	0.019	0.043	0.076	0.119	0.172	0.234	0.306
			Static Pressure	0.017	0.037	0.066	0.104	0.150	0.204	0.266
			NC (Noise Criteria)	-	15	23	29	34	38	42
			Throw	2-5-17	5-12-26	9-17-34	14-21-42	17-26-46	20-30-49	23-34-53
		4' Long	Airflow, cfm	115	155	195	235	275	315	355
			Total Pressure	0.052	0.094	0.149	0.217	0.297	0.390	0.495
			Static Pressure	0.043	0.078	0.123	0.179	0.245	0.321	0.408
			NC (Noise Criteria)	-	19	25	30	35	39	42
			Throw	4-9-19	8-13-23	11-16-26	13-20-28	15-22-30	18-23-33	20-24-35
		5' Long	Airflow, cfm	170	220	270	320	370	420	470
			Total Pressure	0.107	0.179	0.270	0.379	0.506	0.652	0.817
			Static Pressure	0.087	0.146	0.219	0.308	0.412	0.531	0.664
			NC (Noise Criteria)	18	25	31	36	40	43	46
			Throw	7-12-20	10-15-23	12-18-26	14-20-28	17-21-30	18-23-32	19-24-34

Performance notes appear at end of performance data

TBD-80 4-SLOT / ADJUSTABLE / GASKETED BLADE

8" Inlet, 4-Slot (continued)	1" Slot Width	2' Long	Airflow, cfm	90	135	180	225	270	315	360
			Total Pressure	0.018	0.040	0.072	0.112	0.161	0.220	0.287
			Static Pressure	0.012	0.028	0.049	0.077	0.111	0.151	0.198
			NC (Noise Criteria)	-	14	22	28	33	38	41
			Throw	3-8-22	8-17-33	14-22-44	19-28-51	22-33-56	26-39-60	30-44-64
		4' Long	Airflow, cfm	140	200	260	320	380	440	500
			Total Pressure	0.030	0.062	0.105	0.159	0.224	0.300	0.387
			Static Pressure	0.017	0.034	0.058	0.088	0.124	0.167	0.215
			NC (Noise Criteria)	-	15	22	28	32	36	40
			Throw	4-9-20	8-15-26	13-19-30	16-23-33	18-25-36	21-27-39	24-29-41
		5' Long	Airflow, cfm	180	255	330	405	480	555	630
			Total Pressure	0.047	0.094	0.157	0.237	0.332	0.444	0.573
			Static Pressure	0.024	0.049	0.082	0.124	0.174	0.232	0.299
			NC (Noise Criteria)	-	18	25	31	35	39	43
			Throw	5-11-21	10-15-25	13-19-28	16-22-31	19-24-34	21-26-37	23-28-39
	1½" Slot Width	2' Long	Airflow, cfm	90	133	175	218	260	303	345
			Total Pressure	0.032	0.070	0.122	0.188	0.269	0.364	0.473
			Static Pressure	0.027	0.058	0.101	0.156	0.222	0.301	0.391
			NC (Noise Criteria)	-	13	20	26	31	35	39
			Throw	2-4-17	4-9-27	7-16-35	11-22-44	16-26-52	20-31-59	23-35-63
		4' Long	Airflow, cfm	140	200	260	320	380	440	500
			Total Pressure	0.028	0.057	0.096	0.146	0.206	0.276	0.356
			Static Pressure	0.014	0.029	0.050	0.075	0.106	0.142	0.184
			NC (Noise Criteria)	-	13	21	26	31	35	39
			Throw	2-5-17	4-10-24	8-15-30	11-19-33	15-23-36	17-26-39	20-29-41
		5' Long	Airflow, cfm	190	268	345	423	500	578	655
			Total Pressure	0.048	0.096	0.159	0.239	0.335	0.447	0.575
			Static Pressure	0.023	0.047	0.077	0.116	0.163	0.217	0.279
			NC (Noise Criteria)	-	18	25	31	35	39	43
			Throw	3-7-18	6-13-25	10-17-29	13-20-32	16-24-35	18-26-37	21-28-40
10" Inlet, 4-Slot	¾" Slot Width	2' Long	Airflow, cfm	80	113	145	178	210	243	275
			Total Pressure	0.022	0.044	0.074	0.110	0.155	0.206	0.265
			Static Pressure	0.020	0.040	0.066	0.099	0.139	0.185	0.238
			NC (Noise Criteria)	-	17	24	29	34	38	41
			Throw	4-9-23	8-16-32	14-21-41	17-25-45	20-30-49	23-35-53	26-39-56
		4' Long	Airflow, cfm	120	168	215	263	310	358	405
			Total Pressure	0.033	0.065	0.107	0.160	0.222	0.296	0.380
			Static Pressure	0.028	0.055	0.090	0.135	0.188	0.249	0.320
			NC (Noise Criteria)	-	17	24	30	34	38	42
			Throw	5-10-20	9-14-24	12-18-27	15-21-30	17-23-32	20-25-35	21-26-37
		5' Long	Airflow, cfm	160	213	265	318	370	423	475
			Total Pressure	0.055	0.096	0.150	0.215	0.292	0.380	0.481
			Static Pressure	0.045	0.080	0.124	0.178	0.242	0.316	0.399
			NC (Noise Criteria)	12	19	26	31	36	39	43
			Throw	6-11-20	9-15-23	12-18-25	14-20-28	17-21-30	18-23-32	20-24-34
	1" Slot Width	2' Long	Airflow, cfm	100	150	200	250	300	350	400
			Total Pressure	0.015	0.034	0.061	0.095	0.137	0.187	0.244
			Static Pressure	0.012	0.026	0.047	0.073	0.105	0.142	0.186
			NC (Noise Criteria)	-	13	21	27	32	37	40
			Throw	4-10-25	10-19-37	16-25-48	21-31-54	25-37-59	29-43-63	33-48-68
		4' Long	Airflow, cfm	150	220	290	360	430	500	570
			Total Pressure	0.021	0.045	0.078	0.121	0.172	0.233	0.303
			Static Pressure	0.013	0.028	0.048	0.074	0.105	0.143	0.185
			NC (Noise Criteria)	-	13	21	27	32	36	40
			Throw	5-10-22	10-16-27	14-21-31	17-25-35	21-27-38	24-29-41	25-31-44
		5' Long	Airflow, cfm	190	280	370	460	550	640	730
			Total Pressure	0.031	0.066	0.116	0.179	0.256	0.346	0.451
			Static Pressure	0.017	0.038	0.066	0.102	0.146	0.198	0.257
			NC (Noise Criteria)	-	16	24	30	35	39	43
			Throw	6-11-21	11-16-26	14-21-30	18-24-33	21-26-36	23-28-39	24-30-42

Performance notes appear at end of performance data

TBD-80 4-SLOT / ADJUSTABLE / GASKETED BLADE

10" Inlet, 4-Slot (continued)	1½" Slot Width	2' Long	Airflow, cfm	100	155	210	265	320	375	430
			Total Pressure	0.013	0.031	0.057	0.090	0.131	0.181	0.237
			Static Pressure	0.009	0.022	0.041	0.065	0.094	0.130	0.170
			NC (Noise Criteria)	-	13	21	28	33	37	41
			Throw	2-5-20	6-13-31	10-21-42	16-27-53	22-32-61	25-38-66	29-43-70
		4' Long	Airflow, cfm	160	235	310	385	460	535	610
			Total Pressure	0.022	0.046	0.081	0.125	0.178	0.241	0.313
			Static Pressure	0.012	0.026	0.046	0.071	0.101	0.137	0.178
			NC (Noise Criteria)	-	14	22	28	32	37	40
			Throw	3-6-19	6-14-28	11-18-32	15-23-36	18-27-39	21-30-43	24-32-45
		5' Long	Airflow, cfm	220	315	410	505	600	695	790
			Total Pressure	0.037	0.077	0.130	0.197	0.278	0.374	0.483
			Static Pressure	0.020	0.041	0.069	0.105	0.148	0.198	0.256
			NC (Noise Criteria)	-	19	26	32	36	40	44
			Throw	4-9-21	8-15-28	13-20-31	16-24-35	19-27-38	22-29-41	25-31-44
12" Inlet, 4-Slot	¾" Slot Width	4' Long	Airflow, cfm	150	210	270	330	390	450	510
			Total Pressure	0.025	0.050	0.082	0.122	0.171	0.227	0.292
			Static Pressure	0.022	0.044	0.072	0.108	0.150	0.200	0.257
			NC (Noise Criteria)	-	17	24	30	34	38	42
			Throw	7-13-23	12-18-27	15-21-30	18-24-33	21-26-36	23-28-39	24-29-42
		5' Long	Airflow, cfm	200	300	400	500	600	700	800
			Total Pressure	0.039	0.088	0.157	0.245	0.353	0.480	0.627
			Static Pressure	0.034	0.076	0.135	0.211	0.304	0.414	0.541
			NC (Noise Criteria)	13	24	32	38	43	47	51
			Throw	9-14-22	14-19-27	18-22-31	20-25-35	22-27-38	24-29-41	25-31-44
	1" Slot Width	4' Long	Airflow, cfm	190	290	390	490	590	690	790
			Total Pressure	0.017	0.040	0.072	0.114	0.165	0.226	0.297
			Static Pressure	0.012	0.029	0.052	0.082	0.118	0.162	0.212
			NC (Noise Criteria)	-	15	23	29	34	39	42
			Throw	7-14-25	14-21-31	19-26-36	23-29-41	26-32-45	28-34-48	30-37-52
		5' Long	Airflow, cfm	250	400	550	700	850	1000	1150
			Total Pressure	0.025	0.065	0.122	0.198	0.292	0.404	0.535
			Static Pressure	0.017	0.043	0.082	0.132	0.195	0.270	0.357
			NC (Noise Criteria)	-	20	29	36	41	46	49
			Throw	10-15-25	16-22-31	21-26-36	24-29-41	26-32-45	28-35-49	30-37-53
	1½" Slot Width	4' Long	Airflow, cfm	200	300	400	500	600	700	800
			Total Pressure	0.016	0.037	0.066	0.103	0.148	0.201	0.262
			Static Pressure	0.011	0.025	0.044	0.069	0.099	0.135	0.176
			NC (Noise Criteria)	-	15	23	29	34	38	42
			Throw	4-10-24	10-18-32	16-24-37	20-29-41	24-32-45	28-34-49	30-37-52
		5' Long	Airflow, cfm	300	425	550	675	800	925	1050
			Total Pressure	0.032	0.064	0.108	0.163	0.228	0.305	0.394
			Static Pressure	0.020	0.040	0.067	0.101	0.142	0.190	0.245
			NC (Noise Criteria)	11	21	28	34	38	42	46
			Throw	8-14-27	14-20-32	18-26-36	22-29-40	25-31-44	27-33-47	29-36-50

4-SLOT PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Throws listed are for the one-way air pattern. For divided airflow, select the airflow in each direction according to the number of slots aimed in that direction, with the total airflow apportioned between slots. See section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

TBR-80

- The TBR-80 returns the room air into the ceiling plenum. The unit includes a light shield.
- Outside edge of face has double metal thickness to ensure rigidity and straightness

TBR-80

See website for Specifications

MODEL:

TBR-80 / 1, 2, 3, or 4 Slots

FINISHES:

Standard Finish - #26 White on optional T-bars and optional T-bars. #84 Black on exposed surfaces.

OVERVIEW

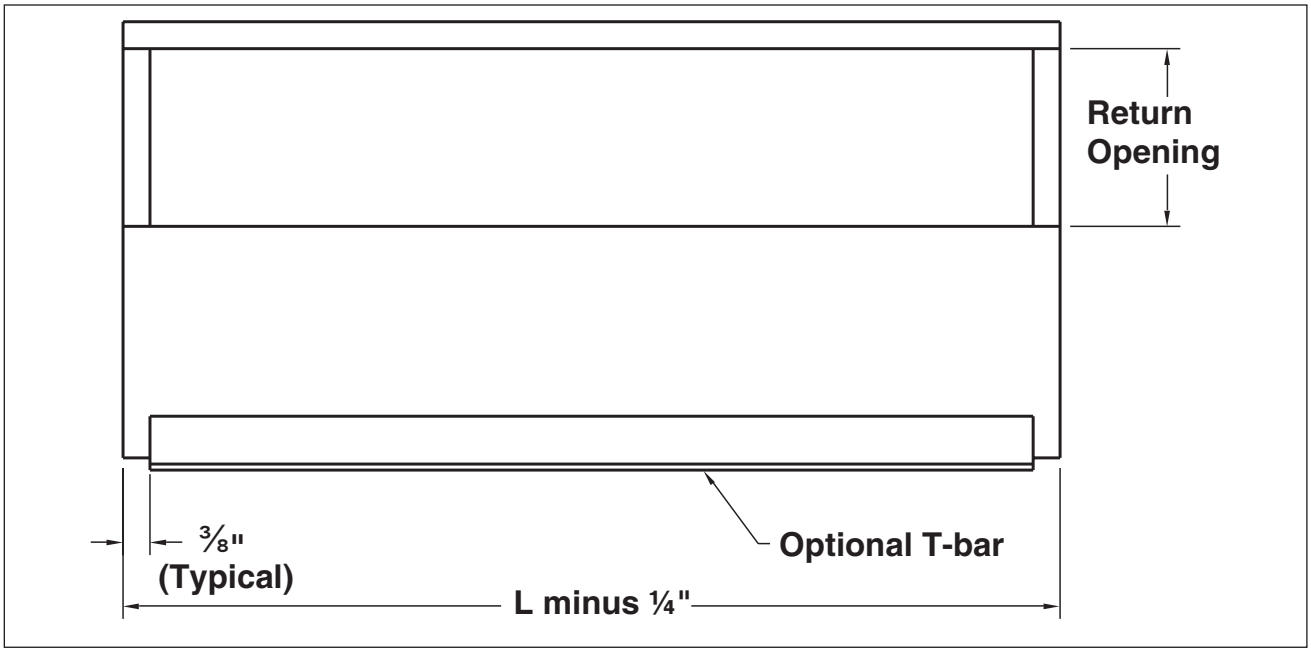
Return with Light Shield

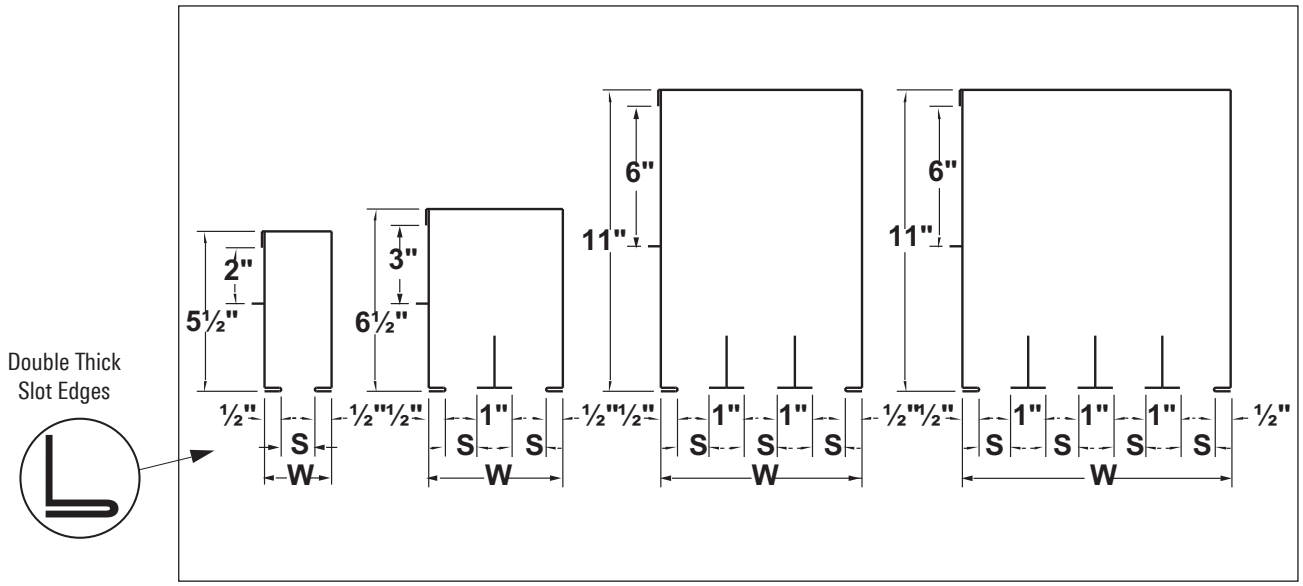
Titus TBD series plenum slot diffusers provide flexibility, great performance and ease of installation. Their adjustability and streamlined appearance make them the industry standard for plenum slot diffusers. The TBR-80 is a return plenum with light shield. Available in 4 slot widths, the TBR-80's outer edge has double metal thickness to ensure rigidity and straightness.

ADVANTAGES

- Appearance matches the TBD-80 supply diffusers which may also be installed in the same room
- Outside edge of the face has double metal thickness to ensure rigidity and straightness
- Light shield blocks light from plenum and also prevents seeing into the duct
- Designed for standard lay-in T-bar ceiling systems. Available with optional factory installed T-bars.
- Choice of ¾", 1" or 1½" slot widths
- Choice of one, two, three, or four parallel slots
- Available in nominal lengths of 24", 36", 48" or 60"
- Material is steel, optional T-bars are extruded aluminum

TBR-80 UNIT DIMENSIONS





Note: Center T-bars shown above are optional

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

All dimensions are in inches

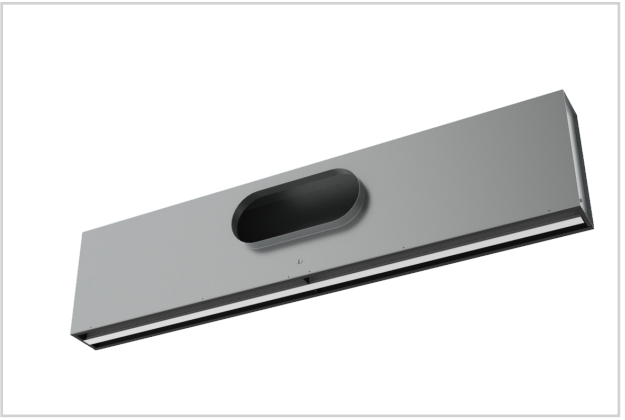
TBR-80 / 1-SLOT AND 2-SLOT

¾" Slot	24" Long	1-Slot	Airflow, cfm	30	45	60	75	90	105	120	135	150
			Negative SP, Inches wg	0.1	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	-	13	19	23	27	30	33
		2-Slot	Airflow, cfm	60	90	120	150	180	210	240	270	300
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	10	16	22	26	30	33	36
	48" Long	1-Slot	Airflow, cfm	60	90	120	150	180	210	240	270	300
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	-	13	19	23	27	30	33
		2-Slot	Airflow, cfm	120	180	240	300	360	420	480	540	600
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	10	16	22	26	30	33	36
1" Slot	24" Long	1-Slot	Airflow, cfm	40	60	80	100	120	140	160	180	200
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	-	13	19	23	27	30	33
		2-Slot	Airflow, cfm	80	120	160	200	240	280	320	360	400
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	10	16	22	26	30	33	36
	48" Long	1-Slot	Airflow, cfm	80	120	160	200	240	280	320	360	400
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	-	13	19	23	27	30	33
		2-Slot	Airflow, cfm	160	240	320	400	480	560	640	720	800
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	10	16	22	26	30	30	36
1½" Slot	24" Long	1-Slot	Airflow, cfm	60	90	120	150	180	210	240	270	300
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	-	13	19	23	27	30	33
		2-Slot	Airflow, cfm	120	180	240	300	360	420	480	540	600
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	10	16	22	26	30	33	36
	48" Long	1-Slot	Airflow, cfm	120	180	240	300	360	420	480	540	600
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	-	13	19	23	27	30	33
		2-Slot	Airflow, cfm	240	360	480	600	720	840	960	1080	1200
			Negative SP, Inches wg	0.01	0.022	0.039	0.061	0.088	0.12	0.157	0.198	0.245
			NC (Noise Criteria)	-	-	10	16	22	26	30	33	36

- Data obtained from testing in accordance with ANSI/ASHRAE Standard 70-2006
- NC values were determined from octave band 2 through 7 sound power levels with a 10 dB room absorption
- Dash (-) in space denotes an NC value of less than 10

TBD–80–NT

- The TBD-80-NT plenum slot diffuser offers full adjustment from vertical to horizontal airflow. This diffuser has proven to be an excellent selection for perimeter applications.
- The TBD-80-NT and TBR-80-NT are available with MTC side mounting clips (when the side tees are by others)
- Outside edge of the face has a double metal thickness to ensure rigidity and straightness



TBD-80-NT

See website for Specifications

MODELS:

TBD-80-NT / Supply
TBDI-80-NT / Supply / Insulated
TBR-80-NT / Return

FINISHES:

Standard Finish - #26 White on center T-bars and optional side T-bars
#84 Black on exposed surfaces

OVERVIEW

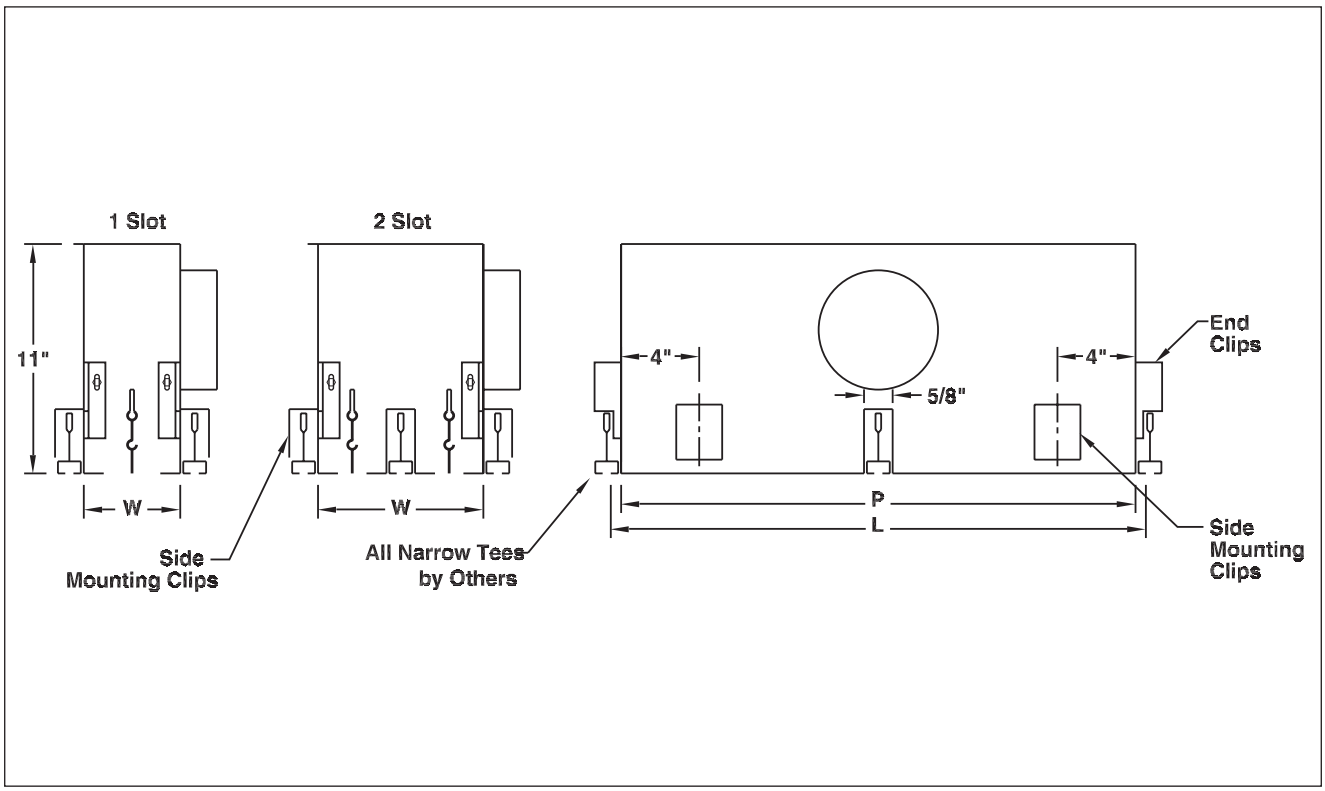
Gasketed Blade

Titus TBD series plenum slot diffusers provide flexibility, great performance and ease of installation. Their adjustability and streamlined appearance make them the industry standard for plenum slot diffusers. The TBD-80 works with many types of ceiling systems - plaster, splined, regressed, and standard lay-in.

ADVANTAGES

- The TBD-80-NT is a highly flexible slot diffuser with a gasket seal on the air pattern controller blade
- Excellent for variable air volume systems. When adjusted for horizontal throw, the gasket tip on the blade provides a seal against the wall of the diffuser to ensure a horizontal pattern from minimum to maximum throw
- Choice of one or two slots, and slot widths of ¾", 1" or 1½"
- Available in 2' lengths without cross notch or 4' lengths with cross notch
- Optional internal insulation (end caps are not insulated)
- Material is steel with miscellaneous aluminum parts

TBD-80-NT UNIT DIMENSIONS



Slot Width	Width W	
	1 Slot	2 Slot
¾	1¾	4
1	2	4½
1½	2½	5½

Nominal Length	Overall Length L	Plenum Length P
24	23¾	23⅜
48	47¾	47⅜

All dimensions are in inches

T–Slot

- The T-Slot is a fixed deflection plenum slot diffuser designed to blend with the symmetry of typical ceiling grid systems. The fixed deflection ensures that the diffuser performance meets the requirements of the application for which it is specified.
- The face of the T-Slot diffuser is constructed of painted aluminum extrusions that ensure a clean and straight appearance
- Offset diffuser end caps allow the face of the diffuser to align flush with the ceiling grid and the edges of the diffuser face are designed so that ceiling tiles can rest on the diffuser with no need for additional ceiling tees
- A cross-notch option allows 48" diffusers to be mounted over a ceiling center tee
- The inlet collars are detachable from the plenum allowing interchangeability among the various inlet sizes
- Also, the plenum is detachable from the diffuser to allow the inlet direction to be changed during installation
- Optional internal insulation (end caps are not insulated)

T-SLOT

- Both the T-Slot and T-Slot-In diffusers handle large volumes of air at low pressure drop and noise level. The fixed deflection of the diffuser creates a tight blanket of air across the ceiling from minimum to maximum flow. This blanketing effect makes the T-Slot an excellent choice for variable air volume operation.

See website for Specifications

MODELS:

T-Slot / Supply
T-Slot-In / Supply / Insulated

FINISH:

Standard Finish - #26 White

OVERVIEW

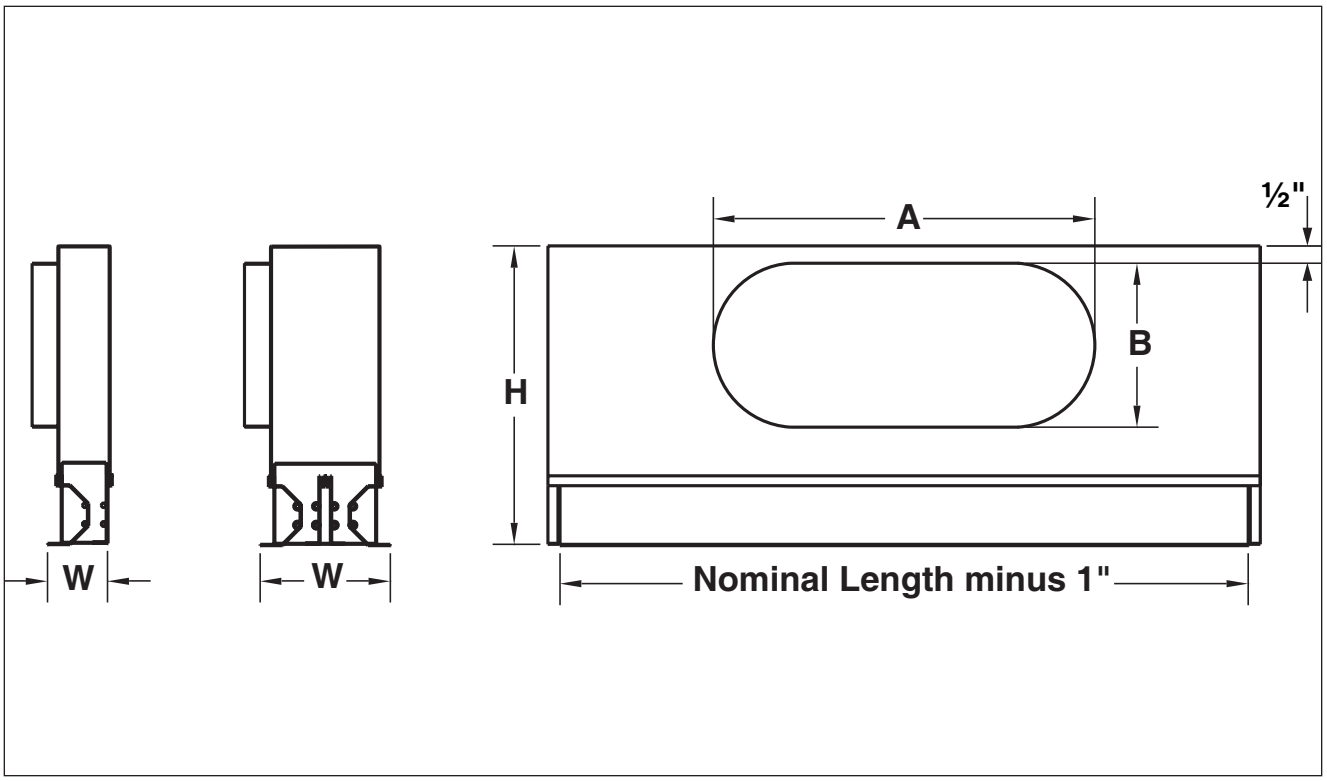
Fixed Deflection Available in 1, 2, 3, and 4 Slots

The T-Slot is a fixed deflection plenum slot diffuser designed to blend with the symmetry of typical ceiling grid systems. Offset diffuser end caps allow the face of the diffuser to align flush with the ceiling grid. In addition the edges of the diffuser face are designed so that ceiling tiles can rest on the diffuser with no need for additional ceiling tees.

ADVANTAGES

- Diffuser is designed to integrate with a standard $^{15}/_{16}$" flat tee bar ceiling system
- Face is constructed of extruded aluminum blades
- Oval inlet sizes available are 6", 8" or 10"
- Available in 1 or 2-way directional blow patterns
- Plenum is detachable from the diffuser face to allow changing from a left to right hand inlet by removing two screws from each end cap
- The top of each plenum end cap has a hole to accommodate attaching wire to the plenum so that the diffuser can be secured to the building structure

T-SLOT DIMENSIONS



Standard Inlet Size	A	B	H
6 Oval	6¼	5¼	10
8 Oval	9	5¼	10
10 Oval	12½	5¼	10

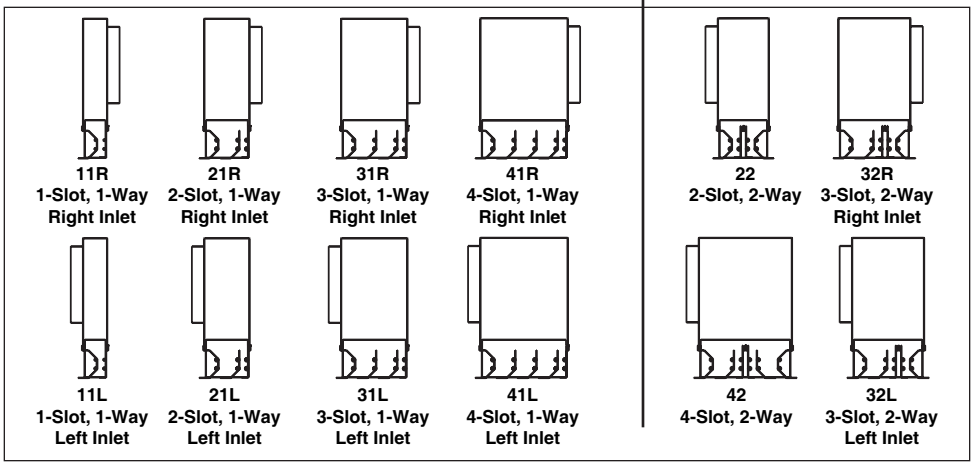
Available Length L	Standard Inlet Sizes
24	6, 8, 10
36	
48	
60	

Pattern	W
11R	2
11L	2
21R	3½
21L	3½
31R	5
31L	5
41R	6½
41L	6½

Pattern	W
22	4
32R	5
32L	5
42	7

Patterns for 1-Way Diffusers

Patterns for 2-Way Diffusers



All dimensions are in inches

T-SLOT / 1-WAY

6" Inlet 1-Slot	¾" Slot Width	2'	Air Flow, cfm	20	38	55	73	90	108	125
			Total Pressure	0.008	0.028	0.060	0.104	0.160	0.228	0.308
			Static Pressure	0.007	0.025	0.054	0.094	0.145	0.207	0.280
			NC (Noise Criteria)	-	17	23	28	32	35	37
			Throw	1-1-5	2-4-10	4-8-13	7-10-14	8-11-16	10-12-18	11-13-19
		4'	Air Flow, cfm	40	65	90	115	140	165	190
			Total Pressure	0.011	0.028	0.054	0.087	0.129	0.180	0.238
			Static Pressure	0.008	0.020	0.039	0.064	0.094	0.131	0.174
			NC (Noise Criteria)	-	17	23	27	30	33	35
			Throw	1-2-7	2-4-13	4-8-16	6-12-18	9-14-20	11-15-22	13-17-23
8" Inlet 1-Slot	¾" Slot Width	2'	Air Flow, cfm	25	38	50	63	75	88	100
			Total Pressure	0.018	0.041	0.072	0.113	0.163	0.221	0.289
			Static Pressure	0.018	0.040	0.071	0.110	0.159	0.216	0.282
			NC (Noise Criteria)	-	15	20	24	27	29	32
			Throw	1-2-7	2-4-10	3-7-12	5-9-13	7-10-15	8-11-16	9-12-17
		4'	Air Flow, cfm	40	70	100	130	160	190	220
			Total Pressure	0.008	0.024	0.050	0.084	0.127	0.179	0.240
			Static Pressure	0.007	0.021	0.043	0.072	0.110	0.154	0.207
			NC (Noise Criteria)	-	17	23	27	31	33	36
			Throw	1-2-7	2-5-14	5-10-17	8-13-19	11-15-21	13-17-23	15-18-25
6" Inlet 2-Slot	¾" Slot Width	2'	Air Flow, cfm	30	55	80	105	130	155	180
			Total Pressure	0.006	0.020	0.042	0.073	0.112	0.159	0.214
			Static Pressure	0.004	0.015	0.031	0.053	0.081	0.116	0.156
			NC (Noise Criteria)	-	14	21	25	29	32	34
			Throw	1-1-5	2-4-11	4-8-14	7-11-16	9-13-18	11-14-19	12-15-21
		4'	Air Flow, cfm	50	90	130	170	210	250	290
			Total Pressure	0.010	0.031	0.065	0.110	0.169	0.239	0.321
			Static Pressure	0.005	0.016	0.034	0.059	0.090	0.127	0.171
			NC (Noise Criteria)	-	14	20	24	28	31	33
			Throw	1-1-5	2-4-13	4-9-18	7-13-20	10-15-23	12-17-25	14-19-26
8" Inlet 2-Slot	¾" Slot Width	2'	Air Flow, cfm	40	70	100	130	160	190	220
			Total Pressure	0.008	0.024	0.050	0.084	0.127	0.179	0.240
			Static Pressure	0.007	0.021	0.043	0.072	0.110	0.154	0.207
			NC (Noise Criteria)	-	17	23	27	31	33	36
			Throw	1-2-8	3-7-13	6-10-16	9-13-18	11-14-20	12-15-21	13-16-23
		4'	Air Flow, cfm	60	105	150	195	240	285	330
			Total Pressure	0.007	0.023	0.046	0.078	0.119	0.167	0.224
			Static Pressure	0.005	0.015	0.031	0.052	0.079	0.111	0.149
			NC (Noise Criteria)	-	14	20	25	28	31	34
			Throw	1-2-7	2-6-15	5-11-19	9-14-22	12-17-24	14-19-26	16-20-28
10" Inlet 2-Slot	¾" Slot Width	2'	Air Flow, cfm	50	83	115	148	180	213	245
			Total Pressure	0.013	0.035	0.067	0.111	0.165	0.230	0.306
			Static Pressure	0.012	0.032	0.063	0.103	0.153	0.214	0.284
			NC (Noise Criteria)	-	18	24	28	31	34	37
			Throw	2-4-10	4-9-14	8-12-17	10-13-19	12-15-21	13-16-23	14-17-24
		4'	Air Flow, cfm	70	120	170	220	270	320	370
			Total Pressure	0.007	0.022	0.044	0.073	0.110	0.155	0.207
			Static Pressure	0.006	0.017	0.033	0.056	0.084	0.118	0.157
			NC (Noise Criteria)	-	15	21	26	29	32	34
			Throw	1-2-10	3-7-17	7-13-20	11-16-23	13-18-26	16-20-28	17-21-30
8" Inlet 3-Slot	¾" Slot Width	2'	Air Flow, cfm	50	90	130	170	210	250	290
			Total Pressure	0.007	0.022	0.047	0.080	0.122	0.173	0.232
			Static Pressure	0.005	0.017	0.035	0.060	0.091	0.130	0.174
			NC (Noise Criteria)	-	16	22	26	30	33	35
			Throw	1-3-9	4-8-13	8-11-16	10-13-18	12-14-20	13-16-22	14-17-24
		4'	Air Flow, cfm	80	140	200	260	320	380	440
			Total Pressure	0.010	0.030	0.061	0.104	0.157	0.222	0.297
			Static Pressure	0.005	0.017	0.034	0.057	0.087	0.122	0.164
			NC (Noise Criteria)	-	14	20	24	28	31	33
			Throw	1-3-10	3-8-17	7-12-20	11-16-23	13-18-25	16-19-28	17-21-30

10" Inlet 3-Slot	¾" Slot Width	2'	Air Flow, cfm	60	105	150	195	240	285	330
			Total Pressure	0.008	0.025	0.051	0.086	0.131	0.184	0.247
			Static Pressure	0.007	0.021	0.043	0.072	0.110	0.155	0.207
			NC (Noise Criteria)	-	17	23	27	31	34	36
			Throw	2-4-11	6-9-14	9-12-17	11-14-20	13-15-22	14-17-24	15-18-26
		4'	Air Flow, cfm	100	165	230	295	360	425	490
			Total Pressure	0.010	0.027	0.053	0.088	0.131	0.182	0.242
			Static Pressure	0.006	0.018	0.034	0.056	0.084	0.117	0.155
			NC (Noise Criteria)	-	16	21	25	29	32	34
			Throw	2-4-12	5-10-18	9-14-21	12-17-24	15-19-27	17-21-29	18-22-31
8" Inlet 4-Slot	¾" Slot Width	2'	Air Flow, cfm	70	115	160	205	250	295	340
			Total Pressure	0.010	0.027	0.053	0.087	0.129	0.179	0.238
			Static Pressure	0.007	0.018	0.035	0.058	0.086	0.119	0.158
			NC (Noise Criteria)	-	16	22	26	29	32	34
			Throw	2-5-11	6-9-14	9-11-16	11-13-18	12-14-20	13-15-22	14-17-23
		4'	Air Flow, cfm	100	170	240	310	380	450	520
			Total Pressure	0.013	0.038	0.076	0.127	0.191	0.268	0.358
			Static Pressure	0.006	0.018	0.037	0.061	0.092	0.129	0.172
			NC (Noise Criteria)	-	14	19	24	27	30	32
			Throw	2-4-11	4-10-17	9-14-20	12-16-22	14-18-25	16-19-27	17-21-29
10" Inlet 4-Slot	¾" Slot Width	2'	Air Flow, cfm	70	125	180	235	290	345	400
			Total Pressure	0.007	0.024	0.049	0.083	0.127	0.180	0.242
			Static Pressure	0.006	0.018	0.037	0.063	0.097	0.137	0.184
			NC (Noise Criteria)	-	16	22	27	30	33	36
			Throw	2-5-11	7-10-14	10-12-17	11-14-20	13-15-22	14-17-24	15-18-25
		4'	Air Flow, cfm	120	200	280	360	440	520	600
			Total Pressure	0.012	0.033	0.065	0.107	0.159	0.223	0.297
			Static Pressure	0.007	0.018	0.036	0.060	0.089	0.125	0.166
			NC (Noise Criteria)	-	15	21	25	28	31	34
			Throw	2-5-14	6-11-18	11-15-21	14-17-24	15-19-27	17-21-29	18-22-31

T-SLOT / 1-WAY PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2nd through 7th, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See the section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- See the section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information
- When neck velocities are less than 800 fpm, throw and sound are not affected by inlet size

T-SLOT / 2-WAY

6" Inlet 2-Slot	2'	Air Flow, cfm	80	105	130	155	180	205	230
		Total Pressure	0.042	0.073	0.112	0.159	0.214	0.278	0.349
		Static Pressure	0.031	0.053	0.081	0.116	0.156	0.203	0.255
		NC (Noise Criteria)	21	25	29	32	34	37	39
		Throw	2-4-8	4	5	6-7-11	7-8-11	7-9-12	7-9-13
	4'	Air Flow, cfm	160	200	240	280	320	360	400
		Total Pressure	0.098	0.153	0.220	0.300	0.391	0.495	0.612
		Static Pressure	0.052	0.081	0.117	0.160	0.208	0.264	0.326
		NC (Noise Criteria)	23	27	30	33	35	37	39
		Throw	3-6-11	4-8-12	6-9-13	7-10-14	8-11-15	9-11-16	10-12-17
8" Inlet 2-Slot	2'	Air Flow, cfm	80	110	140	170	200	230	260
		Total Pressure	0.032	0.060	0.097	0.144	0.199	0.263	0.336
		Static Pressure	0.027	0.052	0.084	0.124	0.171	0.226	0.289
		NC (Noise Criteria)	19	24	28	32	34	37	39
		Throw	2-4-8	4-6-9	5-7-10	6-8-11	7-8-12	7-9-13	8-10-14
	4'	Air Flow, cfm	160	205	250	295	340	385	430
		Total Pressure	0.053	0.087	0.129	0.179	0.238	0.305	0.381
		Static Pressure	0.035	0.058	0.086	0.119	0.158	0.203	0.253
		NC (Noise Criteria)	22	26	29	32	34	36	38
		Throw	3-6-11	4-8-12	7-9-13	8-10-15	9-11-16	10-12-17	10-12-18
10" Inlet 2-Slot	2'	Air Flow, cfm	80	113	145	178	210	243	275
		Total Pressure	0.033	0.064	0.107	0.160	0.225	0.299	0.385
		Static Pressure	0.030	0.060	0.099	0.149	0.209	0.278	0.358
		NC (Noise Criteria)	18	23	28	31	34	36	38
		Throw	2-4-8	4-6-9	5-7-10	7-8-11	7-9-12	8-9-13	8-10-14
	4'	Air Flow, cfm	160	210	260	310	360	410	460
		Total Pressure	0.039	0.067	0.102	0.145	0.196	0.254	0.320
		Static Pressure	0.029	0.051	0.078	0.110	0.149	0.193	0.243
		NC (Noise Criteria)	20	25	29	31	34	36	38
		Throw	3-6-11	5-8-12	7-10-14	8-11-15	9-11-16	10-12-17	11-13-18
8" Inlet 4-Slot	2'	Air Flow, cfm	150	195	240	285	330	375	420
		Total Pressure	0.046	0.078	0.119	0.167	0.224	0.290	0.363
		Static Pressure	0.031	0.052	0.079	0.111	0.149	0.193	0.242
		NC (Noise Criteria)	20	25	28	31	34	36	38
		Throw	3-6-10	5-8-12	7-9-13	8-10-14	9-11-15	9-12-16	10-12-17
	4'	Air Flow, cfm	400	470	540	610	680	750	820
		Total Pressure	0.212	0.293	0.387	0.493	0.613	0.746	0.891
		Static Pressure	0.102	0.141	0.186	0.237	0.294	0.358	0.428
		NC (Noise Criteria)	28	31	33	35	37	39	40
		Throw	8-12-17	9-13-18	11-14-20	12-15-21	13-16-22	13-16-23	14-17-24
10" Inlet 4-Slot	2'	Air Flow, cfm	150	205	260	315	370	425	480
		Total Pressure	0.034	0.064	0.102	0.150	0.207	0.273	0.348
		Static Pressure	0.026	0.048	0.078	0.114	0.157	0.208	0.265
		NC (Noise Criteria)	19	25	29	32	34	37	39
		Throw	3-6-10	6-9-12	7-10-14	9-11-15	9-12-16	10-12-17	11-13-19
	4'	Air Flow, cfm	400	480	560	640	720	800	880
		Total Pressure	0.132	0.190	0.258	0.337	0.427	0.527	0.638
		Static Pressure	0.074	0.106	0.145	0.189	0.239	0.295	0.357
		NC (Noise Criteria)	27	30	32	35	37	38	40
		Throw	8-12-17	10-13-19	11-14-20	12-15-21	13-16-23	14-17-24	15-18-25

T-SLOT / 2-WAY PERFORMANCE NOTES

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and for isothermal conditions
- All pressures given are in inches of wg
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2nd through 7th, with a room absorption of 10 dB, re 10^{-12} watts
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See the section, Engineering Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- See the section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information
- When neck velocities are less than 800 fpm, throw and sound are not affected by inlet size

OVERVIEW

The N series slot plenum diffuser is an excellent choice for perimeter air distribution. Because of the high induction ratio, performance is exceptional, maximizing comfort in perimeter zones.

Tests were run in the Titus Cold Wall Laboratory to re-examine the effects of cold exterior surfaces on local temperatures in a room. These tests showed that features such as furr downs, sills and recessed windows could prevent a diffuser from projecting warm air into direct contact with a window. Cold drafts generated by the glass surface continued unabated. Building features call for adjustability to overcome this problem, we designed the N series slot diffuser with an optional center down-blow section that can vary not only the volume of air but also the direction of airflow through a broad range. This allows the diffuser to adapt to the architecture of the window and effectively blanket the glass with warm air.

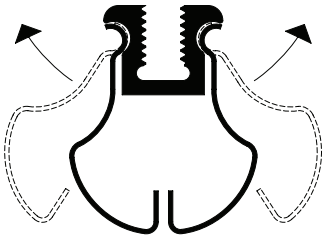
Since window convection currents are caused by the cooling of the room air against the glass, it follows that when this air is replaced with warm air from the diffuser, the downward convection is stopped. A major source of discomfort is eliminated.

The N series diffuser's slot design also utilizes aerodynamically shaped horizontal discharge slots for maximum velocity and induction, with minimum noise and pressure drop. The high rate of induction means lower room temperature gradients and improved comfort.

Also, we have found many projects require low-height diffusers to fit above the ceiling. The N series slot has an overall height of only 7 inches, in all sizes to meet this application requirement.

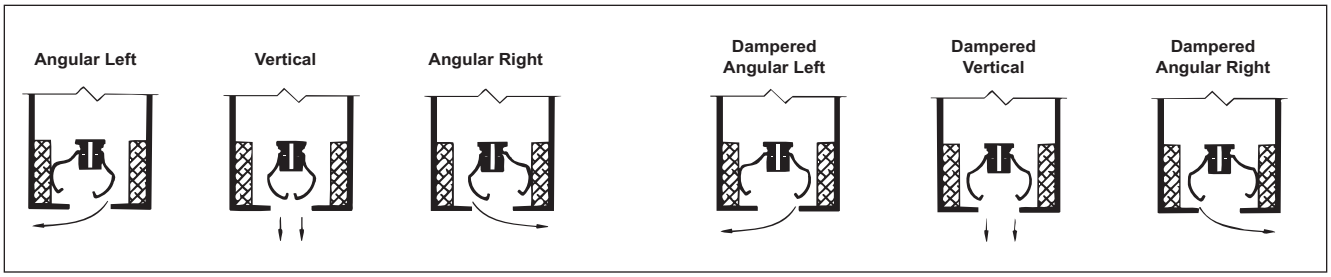
N-R Diffuser, Inlet Side

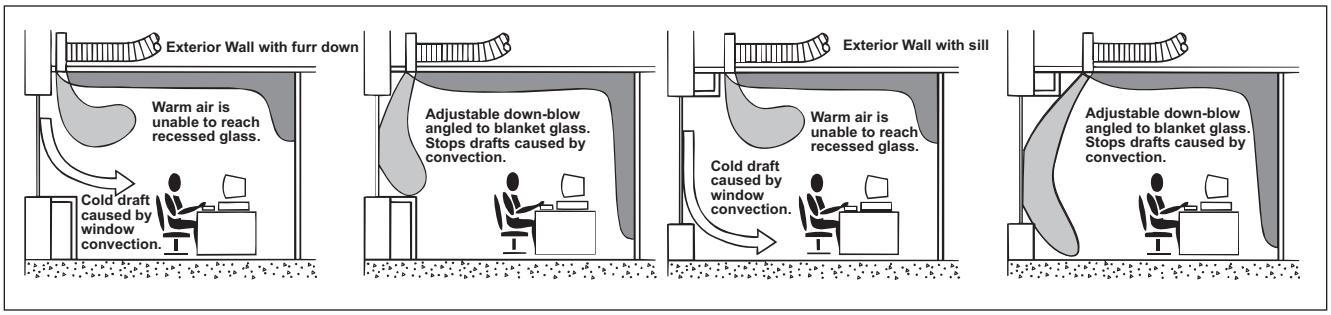
N-R Diffuser, Return Side



Adjustability is the key

ADJUSTABLE DOWN-BLOW SECTION BLANKETS, WALLS AND WINDOWS





CONVENTIONAL SLOT DIFFUSER	TITUS N-SLOT DIFFUSER	CONVENTIONAL SLOT DIFFUSER	TITUS N-SLOT DIFFUSER
Air that should be blanketing the glass is unable to do so because the window is recessed. The resulting cold draft causes serious discomfort. The condition is aggravated by the high sill, which projects the draft at neck height.	Can be adjusted to discharge at an angle from the slot in the center section of the diffuser—effectively blanketing the window with warm air. Downward convection is stopped, the draft is eliminated. Volume is adjusted for required vertical throw.	The difficulty in blanketing the recessed glass is compounded by the furr down over the window. Although there is no sill as in the diagram above, the resulting cold draft causes serious discomfort at ankle height.	With the diffuser placed a short distance away from the furr down, the diffuser discharge can be angled to blanket the window with warm air. Downward convection is stopped, the draft is eliminated. Volume is adjusted for required vertical throw.

FOUR DIFFERENT N-SLOT SERIES AND THEIR APPLICATIONS

N-SLOT
Aerodynamic blades plus the carefully engineered matching of slot and inlet plenum results in an air discharge pattern as diagrammed. With the wide spread and the sustained throw at the outer edges, the air jet adheres to the ceiling over the entire variable volume range. The high rate of induction of room air minimizes temperature gradients and maximizes comfort.

N SERIES
For cooling or heating. The horizontal discharge blankets the ceiling for effective air distribution throughout the room. The N Series is used primarily for cooling or for both heating and cooling in exterior zones, especially in areas with relatively low heating demand.

N-R SERIES
Includes a return section. For cooling or heating. The horizontal discharge blankets the ceiling for effective air distribution throughout the room. The return section offers an efficient and cost-effective method of returning air to the ceiling plenum. With the high induction supply air directed away from the return slot, the amount of "short circuiting" is insignificant.

N-D SERIES
Delivers air in two separate discharge patterns. For heating or cooling. The horizontal discharge (two outer sections) blankets the ceiling for effective air distribution throughout the room. The down-blow (center section) adjusts to any angle from vertical to horizontal to project a uniform sheet of air over a window or exterior wall. Especially useful where windows are recessed outward in deep bays.

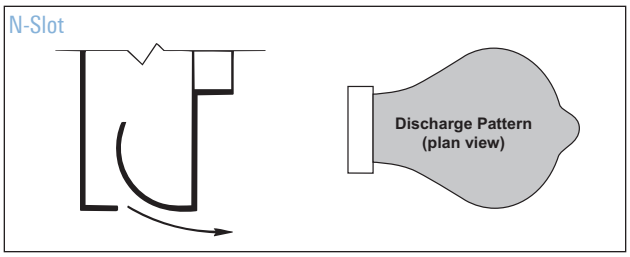
N-D-R SERIES
Also includes a return section. Delivers air in two separate discharge patterns, as in the N-D Series above. For heating or cooling. Especially useful where windows are recessed outward in deep bays. The return section offers an efficient and cost-effective method of returning air to the ceiling plenum. With the high induction supply air directed away from the return slot, the amount of "short circuiting" is insignificant.

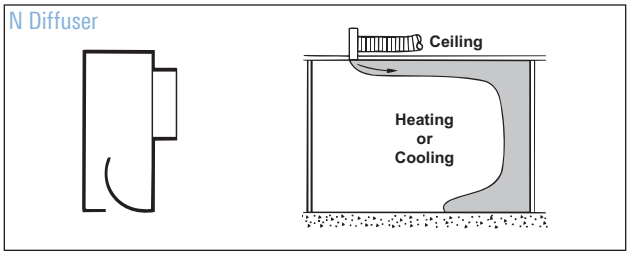
OPTIONAL RETURN SAVES INSTALLATION COST

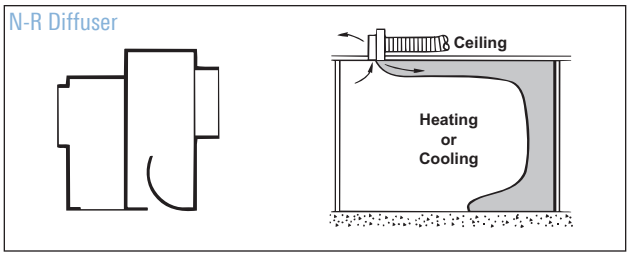
TITUS SERIES N-R AND N-D-R

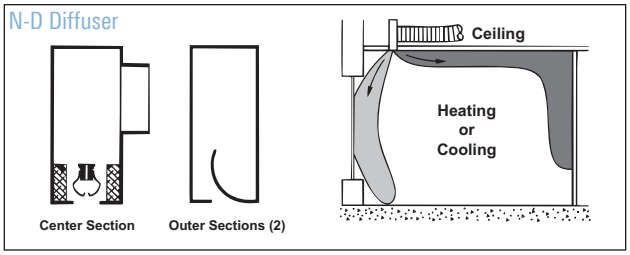
The series N-R and N-D-R diffusers have a built-in return air section. Using these diffusers allow for important cost savings during installation as there are fewer equipment pieces to mount in the ceiling. The single ceiling penetration for both the supply and return allows for an improved overall appearance.

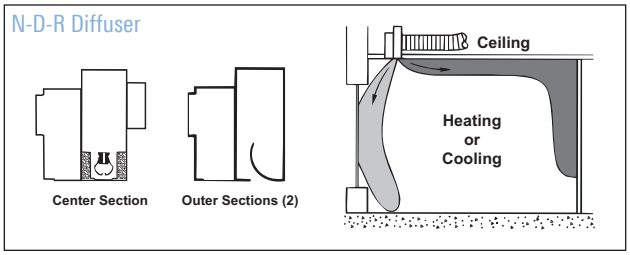
In spite of the closeness of the supply and return to each other, there is negligible short circuiting. The reason is the jet of supply air leaving the diffuser is highly directional and is moving at a velocity many times the velocity of the nondirectional return air.

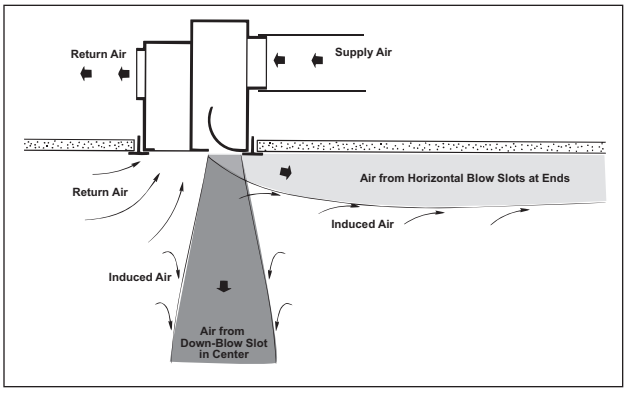












N–1

- The N-Series is a high-induction, single-slot diffuser that incorporates a fixed discharge slot design
- The carefully engineered matching of slot and inlet plenum distributes the air evenly along the slot. The result is a high-induction airstream with a wide spread, which effectively blankets the ceiling, minimizes temperature gradients, and maximizes comfort.

N-1

See website for Specifications

MODEL:

N-1 / ¾" Slot

FINISH:

Standard Finish - #84 Black

OVERVIEW

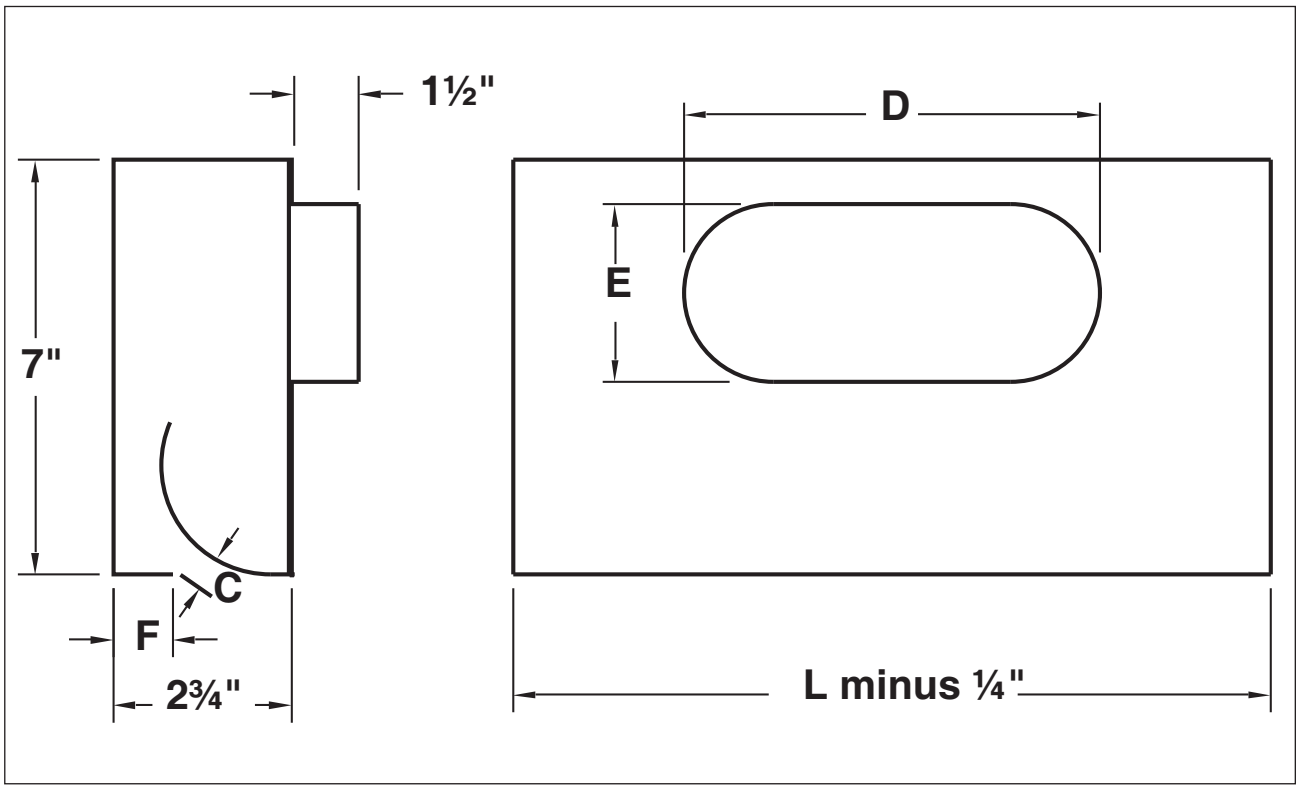
Supply

The N series plenum slot diffuser is an excellent choice for perimeter air distribution. Because of the high induction ratio, performance is exceptional, maximizing comfort in perimeter zones. The N series is available as a supply or a combination supply/return model.

ADVANTAGES

- Horizontal air pattern is maintained from minimum to maximum flow
- Excellent for variable volume
- For use in standard lay-in ceilings
- ¾" slot width
- Available in nominal lengths of 24", 36", 48" or 60"
- Optional plaster frame
- Optional external insulation (foil encapsulated)
- Material is steel with miscellaneous aluminum parts

N-1 DIMENSIONS



Inlet Size	D	E
6	7 9/16	3
8	10 1/16	4
10	13¼	4

Model	Available Inlet Sizes	C	F	Nominal Length L
N-1	6, 8, 10	¾"	¾"	24, 36, 48, 60

Note: 24" length available in 6" and 8" inlets only

All dimensions are in inches

N–1–R

- The N-R Series with return section is a high-induction, single-supply slot diffuser that incorporates a fixed discharge slot design
- The carefully engineered matching of slot and inlet plenum distributes the air evenly along the slot. The result is a high-induction airstream with a wide spread, which effectively blankets the ceiling, minimizes temperature gradients, and maximizes comfort.

N-1-R

See website for Specifications

MODEL:

N-1-R / ¾" Slot / Return

FINISH:

Standard Finish - #84 Black

OVERVIEW

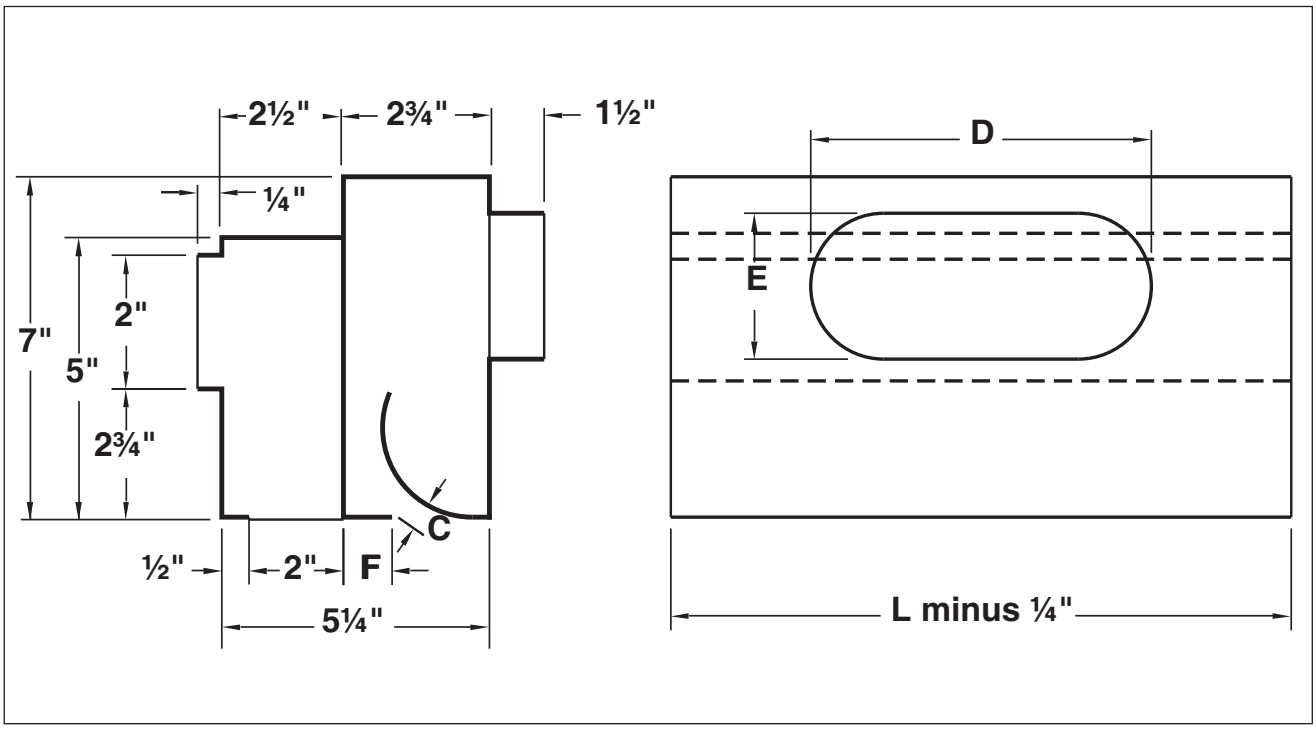
Supply / Return

The N series plenum slot diffuser is an excellent choice for perimeter air distribution. Because of the high induction ratio, performance is exceptional, maximizing comfort in perimeter zones. The N series is available as a supply or a combination supply/return model.

ADVANTAGES

- Return section offers an efficient and cost-effective method of returning air to the ceiling plenum. With the high-induction supply airflow directed horizontally away from the return slot, "short circuiting" is insignificant.
- Horizontal supply air pattern is maintained from minimum to maximum flow
- Excellent for variable volume
- For use in standard lay-in ceilings
- Available in nominal lengths of 24", 36", 48" or 60"
- Optional plaster frame
- Optional external insulation (foil encapsulated)
- Material is steel with miscellaneous aluminum parts

N-1-R DIMENSIONS



Inlet Size	D	E
6	7 9/16	3
8	10 1/16	4
10	13¼	4

Model	Available Inlet Sizes	C	F	Nominal Length L
N-1-R	6, 8, 10	¾"	¾"	24", 36", 48", 60"

Note: 24" length available in 6" and 8" inlets only

All dimensions are in inches

HORIZONTAL PATTERN

6" Inlet	2' Long	Airflow, cfm	44	66	88	109	131	153	175
		Total Pressure	0.027	0.060	0.107	0.168	0.241	0.329	0.429
		Static Pressure	0.021	0.047	0.084	0.132	0.190	0.258	0.337
		NC (Noise Criteria)	-	13	20	26	30	34	37
		Throw	2-5-14	5-10-21	9-14-24	12-17-27	14-21-29	16-22-32	18-24-34
	3' Long	Airflow, cfm	66	98	131	164	197	230	263
		Total Pressure	0.040	0.091	0.161	0.251	0.362	0.493	0.644
		Static Pressure	0.027	0.061	0.109	0.171	0.246	0.335	0.437
		NC (Noise Criteria)	-	16	23	29	33	37	40
		Throw	3-6-17	6-13-25	11-17-29	14-21-33	17-25-36	20-27-39	23-29-41
	4' Long	Airflow, cfm	88	131	175	219	263	306	350
		Total Pressure	0.054	0.121	0.215	0.335	0.483	0.657	0.858
		Static Pressure	0.031	0.069	0.123	0.192	0.276	0.376	0.491
		NC (Noise Criteria)	-	19	26	31	36	39	43
		Throw	3-7-20	7-15-29	12-20-34	16-24-38	20-29-41	23-32-45	26-34-48
	5' Long	Airflow, cfm	109	164	219	273	328	383	438
		Total Pressure	0.067	0.151	0.268	0.419	0.604	0.821	1.073
		Static Pressure	0.031	0.070	0.125	0.195	0.280	0.382	0.499
		NC (Noise Criteria)	-	21	28	33	37	41	44
		Throw	3-8-22	8-16-33	14-22-38	18-27-42	22-33-46	25-35-50	29-38-53
8" Inlet	2' Long	Airflow, cfm	44	66	88	109	131	153	175
		Total Pressure	0.015	0.034	0.060	0.095	0.136	0.185	0.242
		Static Pressure	0.013	0.030	0.053	0.083	0.120	0.163	0.213
		NC (Noise Criteria)	-	-	15	21	25	29	32
		Throw	2-5-14	5-10-21	9-14-24	12-17-27	14-21-29	16-22-32	18-24-34
	3' Long	Airflow, cfm	66	98	131	164	197	230	263
		Total Pressure	0.023	0.051	0.091	0.142	0.204	0.278	0.363
		Static Pressure	0.019	0.042	0.074	0.116	0.167	0.228	0.297
		NC (Noise Criteria)	-	12	19	24	29	32	36
		Throw	3-6-17	6-13-25	11-17-29	14-21-33	17-25-36	20-27-39	23-29-41
	4' Long	Airflow, cfm	88	131	175	219	263	306	350
		Total Pressure	0.030	0.068	0.121	0.189	0.272	0.371	0.484
		Static Pressure	0.023	0.052	0.092	0.143	0.206	0.281	0.367
		NC (Noise Criteria)	-	14	21	26	31	35	38
		Throw	3-7-20	7-15-29	12-20-34	16-24-38	20-29-41	23-32-45	26-34-48
	5' Long	Airflow, cfm	109	164	219	273	328	383	438
		Total Pressure	0.038	0.085	0.151	0.236	0.340	0.463	0.605
		Static Pressure	0.026	0.059	0.106	0.165	0.238	0.323	0.422
		NC (Noise Criteria)	-	16	23	28	33	37	40
		Throw	3-8-22	8-16-33	14-22-38	18-27-42	22-33-46	25-35-50	29-38-53
10" Inlet	3' Long	Airflow, cfm	66	98	131	164	197	230	263
		Total Pressure	0.017	0.038	0.067	0.105	0.152	0.206	0.270
		Static Pressure	0.015	0.033	0.058	0.091	0.131	0.179	0.233
		NC (Noise Criteria)	-	-	16	22	26	30	33
		Throw	3-6-17	6-13-25	11-17-29	14-21-33	17-25-36	20-27-39	23-29-41
	4' Long	Airflow, cfm	88	131	175	219	263	306	350
		Total Pressure	0.022	0.051	0.090	0.140	0.202	0.275	0.359
		Static Pressure	0.018	0.041	0.074	0.115	0.166	0.226	0.295
		NC (Noise Criteria)	-	12	19	24	28	32	35
		Throw	3-7-20	7-15-29	12-20-34	16-24-38	20-29-41	23-32-45	26-34-48
	5' Long	Airflow, cfm	109	164	219	273	328	383	438
		Total Pressure	0.028	0.063	0.112	0.176	0.253	0.344	0.449
		Static Pressure	0.022	0.049	0.087	0.136	0.196	0.267	0.349
		NC (Noise Criteria)	-	13	20	26	30	34	37
		Throw	3-8-22	8-16-33	14-22-38	18-27-42	22-33-46	25-35-50	29-38-53

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and isothermal conditions
- All pressures given are in inches of wg
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See the section, Engineer Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts.
- See the section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information.

N-1-R RETURN PERFORMANCE DATA

R Models	Airflow, cfm/ft.	30	40	50	60	70	80	90	100
	Static Pressure, inches wg	-0.010	-0.018	-0.028	-0.041	-0.056	-0.073	-0.092	-0.114

N–1–D

- The N-D Series with down blow delivers air in two separate discharge patterns
- The horizontal pattern blankets the ceiling for effective distribution throughout the room; the vertical pattern projects a uniform sheet of air downward over the surface of a window or exterior wall
- The N-D Series is a high-induction, single-slot diffuser that incorporates a fixed discharge slot design
- The carefully engineered matching of slot and inlet plenum distributes the air evenly along the slot. The result is a high induction airstream with a wide spread, which minimizes temperature gradients and maximizes comfort.

N-1-D

See website for Specifications

MODEL:

N-1-D / ¾" Slot Supply

FINISH:

Standard Finish - #84 Black

OVERVIEW

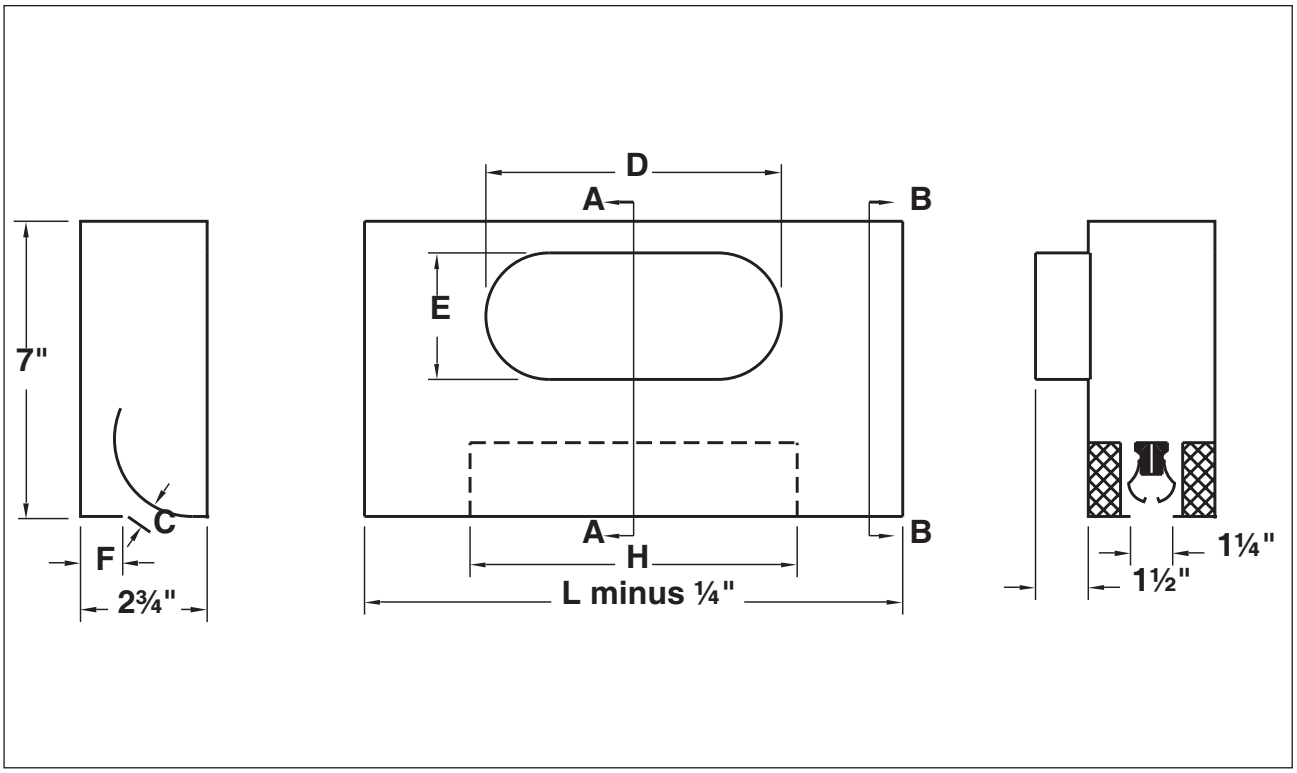
Down Blow Supply / Horizontal and Vertical Discharge Pattern

The N series plenum slot diffuser is an excellent choice for perimeter air distribution. Because of the high induction ratio, performance is exceptional, maximizing comfort in perimeter zones. The N series is available as a supply or a combination supply/return model.

ADVANTAGES

- Horizontal and vertical air patterns are maintained from minimum to maximum flow
- Excellent for variable volume
- For use in standard lay-in ceilings
- ¾" horizontal discharge slot width
- Adjustable down blow pattern controllers
- Available in nominal lengths of 24", 36", 48" or 60"
- Optional plaster frame
- Optional external insulation (foil encapsulated)
- Material is steel with miscellaneous aluminum parts

N-1-D DIMENSIONS



Nominal Length L	Down Blow Slot Dimension H Available
24	8
36	12, 15, 18
48	
60	

Inlet Size	D	E
6	7 9/16	3
8	10 1/16	4
10	13¼	4

Model	Available Inlet Sizes	C	F	Nominal Length L
N-1-D	6, 8, 10	¾"	¾"	24", 36", 48", 60"

Note: 24" length available in 6" and 8" inlets only

All dimensions are in inches

N–1–DR

- The N-DR Series with down blow delivers air in two separate discharge patterns
- The horizontal pattern blankets the ceiling for effective distribution throughout the room; the vertical pattern projects a uniform sheet of air downward over the surface of a window or exterior wall
- The N-DR Series is a high-induction, single-slot diffuser that incorporates a fixed discharge slot design
- The carefully engineered matching of slot and inlet plenum distributes the air evenly along the slot. The result is a high induction airstream with a wide spread, which minimizes temperature gradients and maximizes comfort.

N-1-DR

See website for Specifications

MODEL:

N-1-DR / ¾" Slot Supply

FINISH:

Standard Finish - #84 Black

OVERVIEW

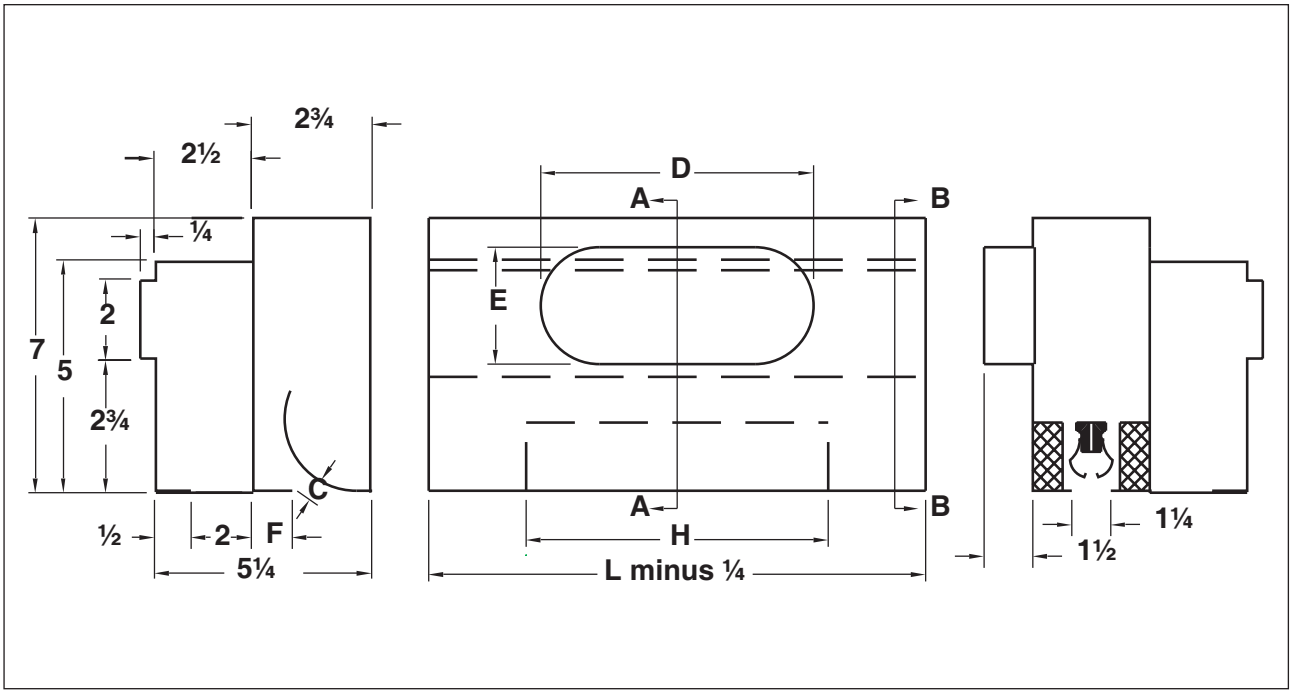
Down Blow Supply / Return / Horizontal and Vertical Discharge Pattern

The N series plenum slot diffuser is an excellent choice for perimeter air distribution. Because of the high induction ratio, performance is exceptional, maximizing comfort in perimeter zones. The N series is available as a supply or a combination supply/return model.

ADVANTAGES

- Return section offers an efficient and cost-effective method of returning air to the ceiling plenum. With the high-induction supply airflow directed horizontally away from the return slot, "short circuiting" is insignificant.
- Horizontal supply air pattern is maintained from minimum to maximum flow
- Excellent for variable volume
- For use in standard lay-in ceilings
- ¾" horizontal discharge supply slot widths, 2" return slot width
- Adjustable down blow pattern controllers
- Available in nominal lengths of 24", 36", 48" or 60"
- Optional plaster frame
- Optional external insulation (foil encapsulated)
- Material is steel with miscellaneous aluminum parts

N-1-DR DIMENSIONS



Nominal Length L	Down Blow Slot Dimension H Available
24	8
26	12, 15, 18
48	
60	

Inlet Size	D	E
6	$7^{9}/_{16}$	3
8	$10^{1}/_{16}$	4
10	13¼	4

Model	Available Inlet Sizes	C	F	Nominal Length L
N-1-DR	6, 8, 10	¾"	¾"	24", 36", 48", 60"

Note: 24" length available in 6" and 8" inlets only

All dimensions are in inches

HORIZONTAL / VERTICAL PATTERN

8" Down-Blow Slot	6" Inlet	2' Long	Airflow, cfm	38	56	75	94	113	131	150
			Total Pressure	0.018	0.041	0.073	0.114	0.164	0.223	0.291
			Static Pressure	0.016	0.035	0.063	0.098	0.141	0.192	0.251
			NC (Noise Criteria)	-	12	19	25	29	33	36
			Horizontal Throw	1-3-10	3-7-15	5-10-18	8-12-20	10-15-22	11-17-24	13-18-25
			Vertical Throw	1-1-3	1-2-4	2-3-5	2-3-7	3-4-7	3-5-8	4-5-9
	8" Inlet	2' Long	Airflow, cfm	38	56	75	94	113	131	150
			Total Pressure	0.011	0.025	0.045	0.071	0.102	0.138	0.181
			Static Pressure	0.010	0.023	0.041	0.065	0.093	0.127	0.165
			NC (Noise Criteria)	-	-	15	21	25	29	32
			Horizontal Throw	1-3-10	3-7-15	5-10-18	8-12-20	10-15-22	11-17-24	13-18-25
			Vertical Throw	1-1-3	1-2-4	2-3-5	2-3-7	3-4-7	3-5-8	4-5-9
	10" Inlet	2' Long	Airflow, cfm	38	56	75	94	113	131	150
			Total Pressure	0.008	0.018	0.033	0.051	0.074	0.100	0.131
			Static Pressure	0.008	0.017	0.031	0.048	0.069	0.094	0.123
			NC (Noise Criteria)	-	-	13	18	23	26	30
			Horizontal Throw	1-3-10	3-7-15	5-10-18	8-12-20	10-15-22	11-17-24	13-18-25
			Vertical Throw	1-1-3	1-2-4	2-3-5	2-3-7	3-4-7	3-5-8	4-5-9
12" Down-Blow Slot	6" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.027	0.061	0.109	0.171	0.246	0.334	0.437
			Static Pressure	0.022	0.049	0.087	0.135	0.195	0.265	0.346
			NC (Noise Criteria)	-	16	23	28	33	36	40
			Horizontal Throw	2-4-12	4-8-18	6-12-22	10-15-25	12-18-27	14-21-29	16-22-31
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.032	0.073	0.129	0.202	0.291	0.396	0.517
			Static Pressure	0.022	0.050	0.089	0.139	0.201	0.273	0.357
			NC (Noise Criteria)	-	19	26	31	36	40	43
			Horizontal Throw	2-4-15	4-10-22	8-15-27	12-18-30	15-22-33	17-25-36	19-27-38
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.038	0.085	0.152	0.237	0.341	0.464	0.606
			Static Pressure	0.022	0.050	0.089	0.139	0.200	0.272	0.355
			NC (Noise Criteria)	11	21	28	34	38	42	45
			Horizontal Throw	2-5-17	5-11-25	9-17-31	14-21-35	17-25-38	20-29-41	22-31-44
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
	8" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.017	0.038	0.068	0.106	0.153	0.208	0.271
			Static Pressure	0.015	0.033	0.059	0.092	0.133	0.181	0.236
			NC (Noise Criteria)	-	12	19	24	29	32	36
			Horizontal Throw	2-4-12	4-8-18	6-12-22	10-15-25	12-18-27	14-21-29	16-22-31
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.020	0.045	0.080	0.126	0.181	0.246	0.321
			Static Pressure	0.016	0.036	0.065	0.101	0.146	0.199	0.259
			NC (Noise Criteria)	-	15	22	28	32	36	39
			Horizontal Throw	2-4-15	4-10-22	8-15-27	12-18-30	15-22-33	17-25-36	19-27-38
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.024	0.053	0.094	0.147	0.212	0.288	0.377
			Static Pressure	0.017	0.039	0.070	0.109	0.157	0.214	0.280
			NC (Noise Criteria)	-	17	24	30	34	38	41
			Horizontal Throw	2-5-17	5-11-25	9-17-31	14-21-35	17-25-38	20-29-41	22-31-44
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
	10" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.012	0.028	0.049	0.077	0.111	0.151	0.197
			Static Pressure	0.011	0.025	0.045	0.070	0.100	0.137	0.178
			NC (Noise Criteria)	-	-	16	22	26	30	33
			Horizontal Throw	2-4-12	4-8-18	6-12-22	10-15-25	12-18-27	14-21-29	16-22-31
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.015	0.033	0.058	0.091	0.131	0.178	0.233
			Static Pressure	0.013	0.028	0.050	0.078	0.113	0.153	0.200
			NC (Noise Criteria)	-	12	19	25	29	33	36
			Horizontal Throw	2-4-15	4-10-22	8-15-27	12-18-30	15-22-33	17-25-36	19-27-38
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.017	0.038	0.068	0.107	0.154	0.209	0.273
			Static Pressure	0.014	0.031	0.056	0.087	0.125	0.170	0.222
			NC (Noise Criteria)	-	15	22	27	32	35	39
			Horizontal Throw	2-5-17	5-11-25	9-17-31	14-21-35	17-25-38	20-29-41	22-31-44
			Vertical Throw	1-2-3	2-2-5	2-3-7	3-4-8	3-5-9	4-6-10	4-7-10

Performance notes appear at end of performance data

15" Down-Blow Slot	6" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.027	0.061	0.109	0.171	0.246	0.334	0.437
			Static Pressure	0.022	0.049	0.087	0.135	0.195	0.265	0.346
			NC (Noise Criteria)	-	16	23	28	33	36	40
			Horizontal Throw	1-3-11	3-7-17	6-11-21	9-14-23	11-17-25	13-19-27	15-21-29
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.035	0.079	0.141	0.221	0.318	0.432	0.565
			Static Pressure	0.025	0.057	0.101	0.158	0.227	0.309	0.404
			NC (Noise Criteria)	-	18	25	31	35	39	42
			Horizontal Throw	2-4-14	4-9-21	7-14-26	12-17-29	14-21-32	16-24-34	19-26-37
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.040	0.091	0.162	0.253	0.364	0.495	0.647
			Static Pressure	0.025	0.056	0.099	0.155	0.223	0.303	0.396
			NC (Noise Criteria)	-	21	28	33	38	41	45
			Horizontal Throw	2-5-16	5-11-24	9-16-30	13-20-34	16-24-37	19-28-40	22-30-43
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
	8" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.019	0.044	0.077	0.121	0.174	0.237	0.310
			Static Pressure	0.017	0.039	0.069	0.107	0.155	0.211	0.275
			NC (Noise Criteria)	-	-	18	23	28	31	35
			Horizontal Throw	1-3-11	3-7-17	6-11-21	9-14-23	11-17-25	13-19-27	15-21-29
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.022	0.049	0.088	0.137	0.197	0.268	0.351
			Static Pressure	0.018	0.041	0.072	0.113	0.162	0.221	0.289
			NC (Noise Criteria)	-	14	21	27	31	35	38
			Horizontal Throw	2-4-14	4-9-21	7-14-26	12-17-29	14-21-32	16-24-34	19-26-37
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.025	0.057	0.100	0.157	0.226	0.308	0.402
			Static Pressure	0.019	0.043	0.076	0.119	0.171	0.233	0.305
			NC (Noise Criteria)	-	17	24	29	34	38	41
			Horizontal Throw	2-5-16	5-11-24	9-16-30	13-20-34	16-24-37	19-28-40	22-30-43
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
	10" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.014	0.032	0.056	0.088	0.126	0.172	0.225
			Static Pressure	0.013	0.029	0.052	0.081	0.116	0.158	0.206
			NC (Noise Criteria)	-	-	15	20	25	29	32
			Horizontal Throw	1-3-11	3-7-17	6-11-21	9-14-23	11-17-25	13-19-27	15-21-29
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.016	0.036	0.064	0.099	0.143	0.195	0.254
			Static Pressure	0.014	0.031	0.055	0.087	0.125	0.170	0.222
			NC (Noise Criteria)	-	12	19	24	29	32	36
			Horizontal Throw	2-4-14	4-9-21	7-14-26	12-17-29	14-21-32	16-24-34	19-26-37
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.018	0.041	0.073	0.114	0.164	0.223	0.291
			Static Pressure	0.015	0.034	0.060	0.094	0.135	0.184	0.240
			NC (Noise Criteria)	-	14	21	27	31	35	38
			Horizontal Throw	2-5-16	5-11-24	9-16-30	13-20-34	16-24-37	19-28-40	22-30-43
			Vertical Throw	1-2-4	2-3-6	2-4-7	3-5-9	4-6-10	4-6-11	5-7-12

Performance notes appear at end of performance data

18" Down-Blow Slot	6" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.036	0.082	0.146	0.227	0.327	0.446	0.582
			Static Pressure	0.031	0.069	0.123	0.192	0.277	0.376	0.492
			NC (Noise Criteria)	-	13	20	26	30	34	37
			Horizontal Throw	1-3-10	3-7-15	5-10-19	9-13-21	10-15-23	12-18-25	14-19-27
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.039	0.087	0.155	0.243	0.349	0.475	0.621
			Static Pressure	0.029	0.065	0.115	0.180	0.259	0.352	0.460
			NC (Noise Criteria)	-	17	24	30	34	38	41
			Horizontal Throw	2-4-13	4-9-20	7-13-25	11-17-28	13-20-30	15-23-33	18-25-35
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.043	0.097	0.173	0.271	0.390	0.531	0.693
			Static Pressure	0.028	0.062	0.110	0.173	0.249	0.338	0.442
			NC (Noise Criteria)	-	20	27	33	37	41	44
			Horizontal Throw	2-5-16	5-11-24	8-16-29	13-20-33	16-24-36	18-27-39	21-29-41
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
	8" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.023	0.051	0.090	0.141	0.203	0.277	0.362
			Static Pressure	0.020	0.046	0.082	0.128	0.184	0.250	0.327
			NC (Noise Criteria)	-	-	16	22	26	30	33
			Horizontal Throw	1-3-10	3-7-15	5-10-19	9-13-21	10-15-23	12-18-25	14-19-27
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.024	0.054	0.096	0.151	0.217	0.295	0.386
			Static Pressure	0.020	0.046	0.081	0.126	0.182	0.248	0.324
			NC (Noise Criteria)	-	14	21	26	30	34	37
			Horizontal Throw	2-4-13	4-9-20	7-13-25	11-17-28	13-20-30	15-23-33	18-25-35
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.027	0.061	0.108	0.168	0.242	0.330	0.430
			Static Pressure	0.021	0.047	0.083	0.130	0.188	0.255	0.334
			NC (Noise Criteria)	-	16	23	29	33	37	40
			Horizontal Throw	2-5-16	5-11-24	8-16-29	13-20-33	16-24-36	18-27-39	21-29-41
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
	10" Inlet	3' Long	Airflow, cfm	56	84	113	141	169	197	225
			Total Pressure	0.016	0.037	0.066	0.102	0.148	0.201	0.262
			Static Pressure	0.015	0.034	0.061	0.095	0.137	0.187	0.244
			NC (Noise Criteria)	-	-	14	19	24	27	31
			Horizontal Throw	1-3-10	3-7-15	5-10-19	9-13-21	10-15-23	12-18-25	14-19-27
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
		4' Long	Airflow, cfm	75	113	150	188	225	263	300
			Total Pressure	0.017	0.039	0.070	0.109	0.157	0.214	0.280
			Static Pressure	0.015	0.035	0.062	0.097	0.139	0.189	0.247
			NC (Noise Criteria)	-	-	18	23	28	32	35
			Horizontal Throw	2-4-13	4-9-20	7-13-25	11-17-28	13-20-30	15-23-33	18-25-35
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13
		5' Long	Airflow, cfm	94	141	188	234	281	328	375
			Total Pressure	0.020	0.044	0.078	0.122	0.176	0.239	0.312
			Static Pressure	0.016	0.037	0.065	0.102	0.147	0.200	0.261
			NC (Noise Criteria)	-	14	21	26	31	34	38
			Horizontal Throw	2-5-16	5-11-24	8-16-29	13-20-33	16-24-36	18-27-39	21-29-41
			Vertical Throw	1-2-4	2-3-6	3-4-8	3-5-10	4-6-11	5-7-12	5-8-13

- Throw values given are for terminal velocities of 150, 100 and 50 fpm and isothermal conditions
- All pressures given are in inches of wg
- Dash (-) in space denotes an NC value of less than 10
- Data obtained from tests conducted in accordance with ANSI/ ASHRAE Standard 70-2006. Actual performance, with flexible duct inlet, may vary in the field. See the section, Engineer Guidelines and the topic 'Other Grille and Diffuser Application Factors' for additional information.
- Each NC value represents the noise criteria curve that will not be exceeded by the sound pressure in any of the octave bands, 2 through 7, with a room absorption of 10 dB, re 10^{-12} watts
- See the section, Engineering Guidelines and the topic 'Procedure to Obtain Catalog Throw Data' in this catalog for throw information

PERCENT OF SUPPLY AIR THROUGH DOWN-BLOW SECTION

Plenum Length	2'	3'	3'	3'	4'	4'	4'	5'	5'	5'
Down-Blow Length	8"	12"	15"	18"	12"	15"	18"	12"	15"	18"
% cfm Through Down-Blow	33%	33%	42%	50%	25%	31%	38%	20%	25%	30%

N-1-DR RETURN PERFORMANCE DATA

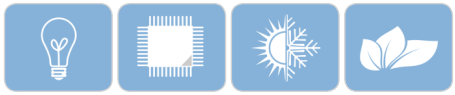
R Models	Airflow, cfm/ft.	30	40	50	60	70	80	90	100
	Static Pressure, inches wg	-0.010	-0.018	-0.028	-0.041	-0.056	-0.073	-0.092	-0.114

EOS / EOS-NT

- The EOS is an auto-changeover diffuser with a bi-directional air pattern for cooling and heating applications
- Available in two styles: Standard (ST) & Secondary (DR). The standard unit can function as a stand-alone unit or a primary unit in a primary-secondary setup. The Secondary comes with a 12' attached cable for connection to the primary.
- The EOS-NT is designed for Narrow Tee ceiling grid systems. The EOS-NT and EOSI-NT come standard with MTC mounting clips (narrow tee by others).
- The EOS (ST) & (DR) features energy-harvesting technology from solar and ambient room light to power an internal actuator. Internal temperature sensors monitor supply air temperature and automatically adjusts the air pattern for horizontal airflow (cooling) or vertical airflow (heating).
- Operates on a narrow temperature band (71°F to 78°F). Each temperature setpoint is adjustable in one increment of 2 degrees up or down for maximum flexibility.
- Smart logic programming on internal P.C. board checks supply air temperature in 10 minute intervals to ensure proper airflow direction is maintained for cooling and heating applications

EOS

- Standard configuration includes 10" plenum height, 2" slot width and Earthquake tabs (2 per unit)



light powered | smart logic | dual-function | energy solutions

See website for Specifications

MODELS:

EOS / EOS-NT
EOSI / EOSI-NT

FINISH:

Standard Finish - Black pattern controllers and exposed surfaces / White on optional T-bars

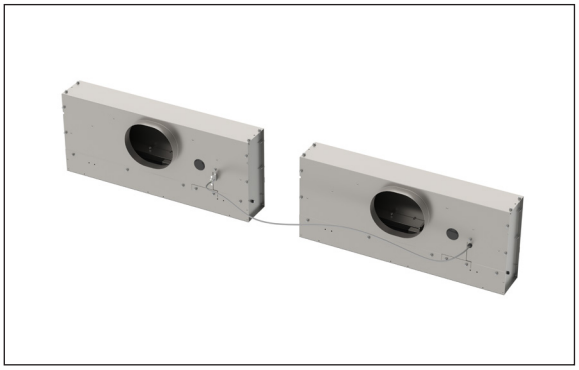
OVERVIEW

Solar / Ambient Light Powered

The Titus EOS linear diffuser, is the world's only ambient light-powered, auto-adjusting linear diffuser. The EOS is designed with a smart-logic mechanism that quickly adjusts the angle of air diffusion in response to the narrowest temperature band between heating and cooling – as small as 3° - reducing the time and energy for optimal thermal comfort. Ultimately, the combination of wireless installation, light power, and quick air changeover results in significant energy savings. This product saves energy and can contribute toward LEED certification.

ADVANTAGES

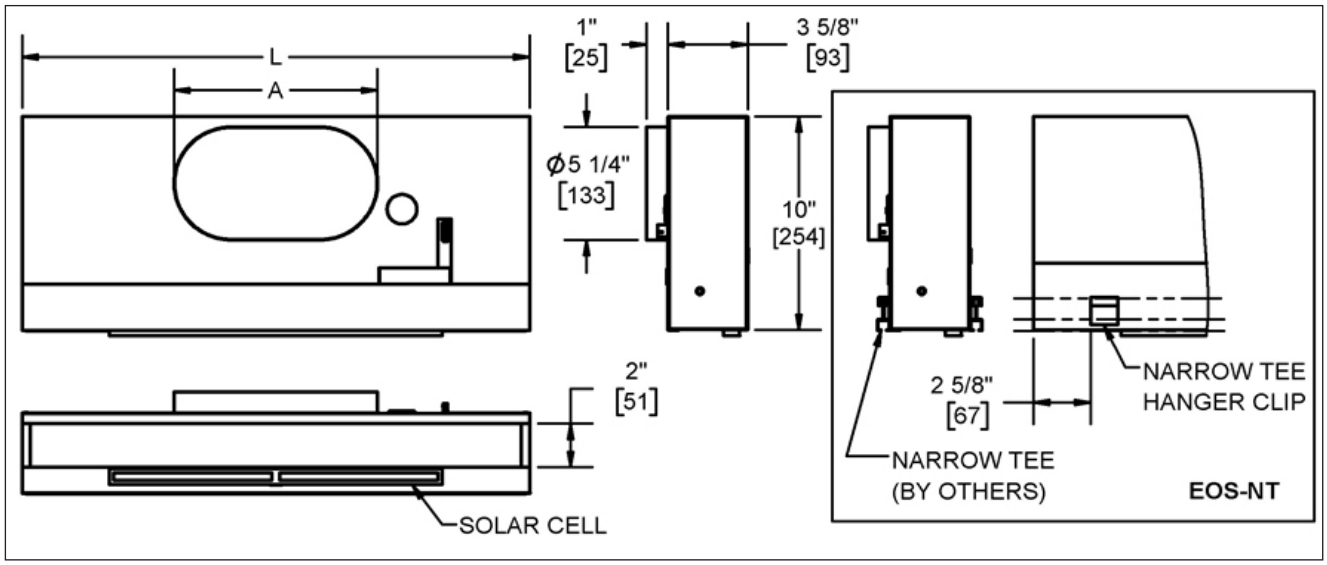
- Each setpoint is adjustable in one increment of 2 degrees up or down for maximum flexibility
- Solar cell mounted on face collects light energy and stores on internal capacitor
- Choice of three arrangements of optional factory installed T-bars
- Optional plaster frame for surface mount applications
- Optional external insulation (foil encapsulated)
- Material is steel with miscellaneous aluminum parts



Above: Back view of EOS Primary-Secondary (DR) configuration setup showing cable & dip switch

Below: EOS Primary-Secondary (DR) configuration installed in an office environment along the perimeter

EOS DIMENSIONS

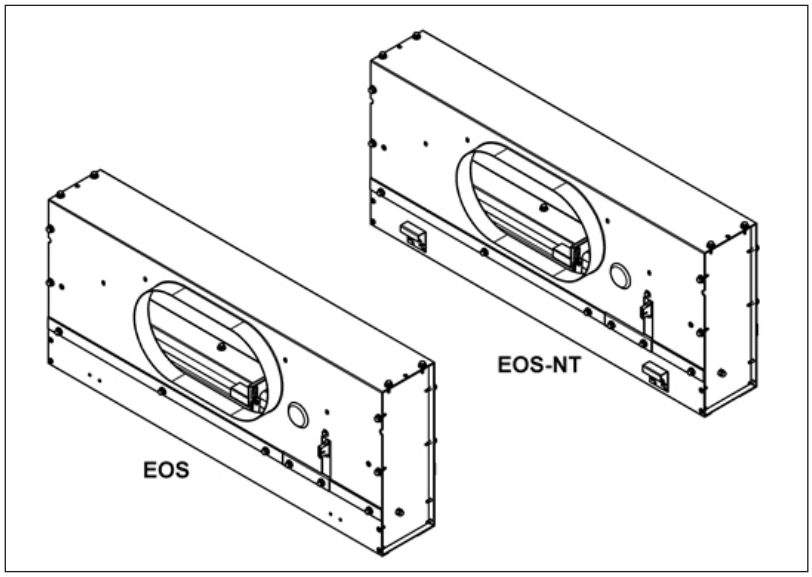


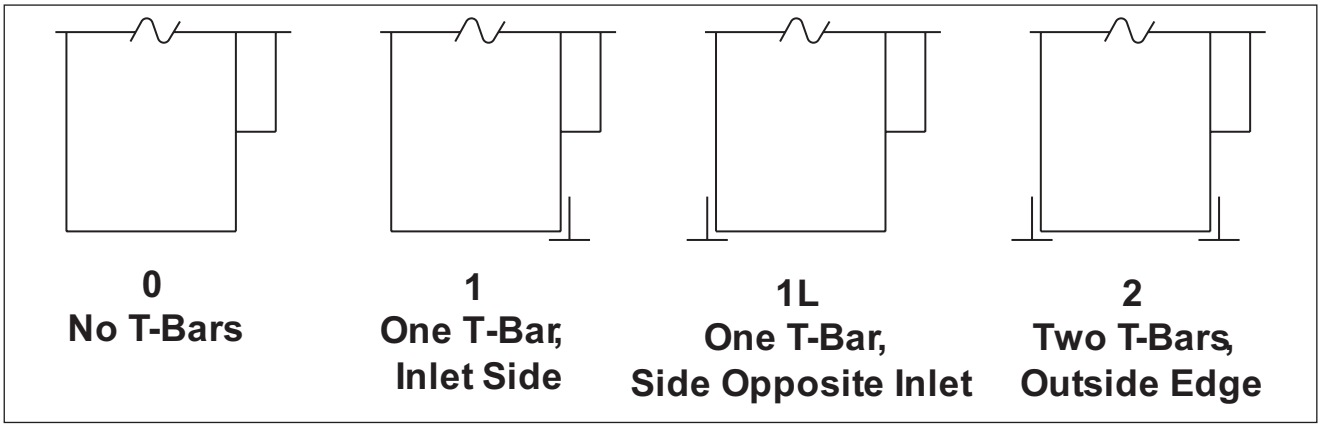
AVAILABLE MODEL LENGTHS

Model	Nominal Length	L
EOS	24 [610] 48 [1219]	23.75 [603] 47.75 [1213]
EOS-NT	24 [610] 48 [1219]	23.375 [594] 47.375 [1203]

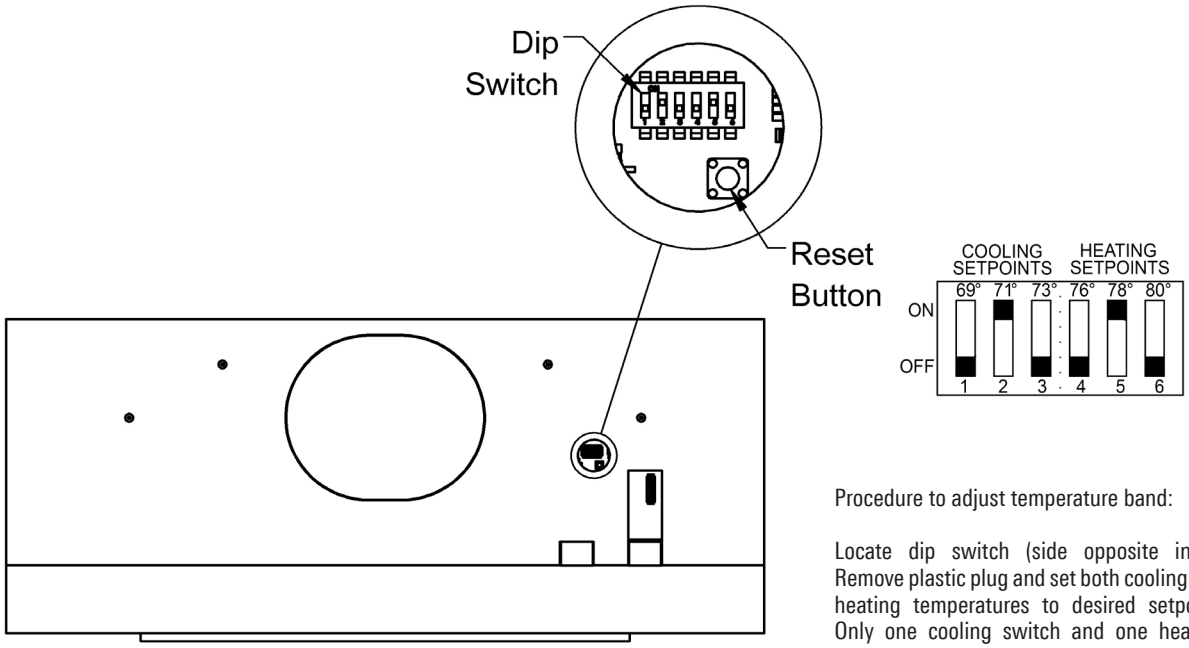
AVAILABLE INLET LENGTHS

Nominal Length	Nominal Length	A
24 [610]	6 [152] 8 [203]	6¼ [159] 9⅜ [238]
48 [1219]	10 [254] 12 [305]	12½ [318] 15 9/16 [395]





All dimensions are in inches



Procedure to adjust temperature band:

Locate dip switch (side opposite inlet). Remove plastic plug and set both cooling and heating temperatures to desired setpoint. Only one cooling switch and one heating switch should be in the "ON" position. The remaining switches should be in the "OFF" position. After selecting setpoints, press "RESET" button.

Note: Diffusers will ship from factory with the standard default temperature setpoints of 71°F and 78°F (shown in diagram above)

INTIAL STARTUP:

The EOS, EOS-NT utilizes solar energy harvesting to power the internal actuactor and provide the auto-changeover action between cooling and heating blade positions. This is accomplished by exposing the diffuser to room or ambient light to charge the energy accumulator. In most cases, the solar cell will charge the energy storage device in the first few hours of operation. Refer to IOM for more information.

EOS / EOS-NT / SECONDARY / SECONDARY-NT PERFORMANCE DATA
HORIZONTAL & VERTICAL PATTERN - HEATING & COOLING CONDITIONS

	Air Pattern	Neck Velocity FPM	300	400	500	600	700	800	900	1000
		Velocity Pressure VP	0.006	0.010	0.015	0.023	0.030	0.040	0.052	0.062
24" Length Single Slot 6" Oval Inlet	Cooling Mode -20°ΔT	Flow Rate (cfm)	56	75	94	112	131	150	168	187
		Total Pressure	0.024	0.042	0.065	0.094	0.130	0.170	0.210	0.260
		NC	-	-	16	22	26	30	34	37
		Throw (feet)	4-7-13	7-10-15	6-12-16	10-13-19	12-14-20	12-15-22	13-16-23	14-17-24
	Heating Mode +15°ΔT	Flow Rate (cfm)	56	75	94	112	131	150	168	187
		Total Pressure	0.022	0.039	0.062	0.088	0.120	0.156	0.200	0.240
		NC	-	-	12	17	22	26	30	33
		Throw (feet)	1-3-9	3-6-12	4-8-14	6-9-16	7-11-17	8-12-18	9-14-18	10-15-19
24" Length Single Slot 8" Oval Inlet	Cooling Mode -20°ΔT	Flow Rate (cfm)	90	120	151	181	211	241	271	302
		Total Pressure	0.044	0.078	0.120	0.175	0.240	0.310	0.390	0.480
		NC	13	22	29	34	39	42	47	50
		Throw (feet)	9-13-23	12-18-26	15-21-29	18-23-32	20-25-35	22-26-37	23-28-39	24-30-40
	Heating Mode +15°ΔT	Flow Rate (cfm)	90	120	151	181	211	241	271	302
		Total Pressure	0.044	0.078	0.120	0.175	0.240	0.310	0.390	0.480
		NC	10	19	25	30	35	39	43	47
		Throw (feet)	3-7-14	6-9-16	8-11-18	9-14-20	11-15-21	12-16-23	14-17-24	15-19-26
48" Length Single Slot 10" Oval Inlet	Cooling Mode -20°ΔT	Flow Rate (cfm)	125	166	208	249	291	332	374	415
		Total Pressure	0.026	0.047	0.073	0.105	0.142	0.185	0.230	0.290
		NC	-	13	20	26	31	35	39	42
		Throw (feet)	3-6-11	5-7-15	6-9-19	7-11-22	9-13-26	10-15-30	11-17-31	12-20-35
	Heating Mode +15°ΔT	Flow Rate (cfm)	125	166	208	249	291	332	374	415
		Total Pressure	0.025	0.046	0.071	0.103	0.140	0.184	0.230	0.290
		NC	-	-	13	19	24	29	32	45
		Throw (feet)	1-3-11	3-6-14	4-9-16	6-11-18	8-13-19	10-14-20	11-15-22	12-16-24
48" Length Single Slot 12" Oval Inlet	Cooling Mode -20°ΔT	Flow Rate (cfm)	158	210	263	316	368	412	473	527
		Total Pressure	0.032	0.060	0.087	0.126	0.172	0.224	0.285	0.350
		NC	-	13	19	25	30	34	38	41
		Throw (feet)	4-9-22	7-16-25	11-20-28	16-22-31	19-23-33	20-25-35	22-27-38	24-31-44
	Heating Mode +15°ΔT	Flow Rate (cfm)	158	210	263	316	368	412	473	527
		Total Pressure	0.030	0.055	0.085	0.122	0.168	0.218	0.276	0.340
		NC	-	13	19	25	30	34	38	41
		Throw (feet)	3-8-14	5-9-17	7-12-19	9-14-21	11-16-22	12-17-24	14-18-25	15-20-28

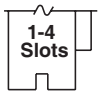
* Horizontal Pattern

** Vertical Pattern, Installed 18" from Wall

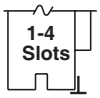
- Notes:
- Dash (-) in space denotes NC value less than 10
- Vertical Pattern installed 18" from wall and air flow flows back to wall at floor
- Throw values are given for 150, 100, and 50 fpm for cooling and heating conditions
- Vertical throw tested with a 9ft. high ceiling
- All pressures are in inches of W.G.
- Data obtained per ASHRAE Standard 70-2006. Actual performance with flexible duct inlet may vary in the field.
- Throws are for a 1-way pattern
- NC values represent data obtained for 2nd to 7th octive bands with a 10dB room absortion re 10^{-12} watts

MODELS: TBD-10, TBD / TBR-30, TBD / TBR-80 / T-SLOT / N-SLOT

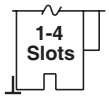
OPTIONAL FACTORY-FURNISHED T-BARS



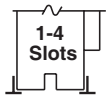
0
No T-Bars



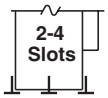
1
One T-Bar, Inlet Side



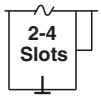
1L
One T-Bar, Side Opposite Inlet



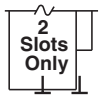
2
Two T-Bars, Outside Edge



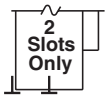
3
All T-Bars



4
All Center T-Bars, No Outside T-Bars



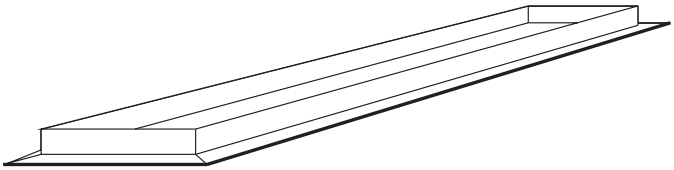
5
Two T-Bars, Center & Inlet Side



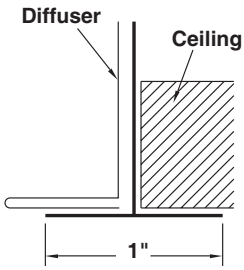
5L
Two T-Bars, Center & Side Opposite Inlet

Note: Factory supplied center or outside T-bars are 1" wide. Center channels are provided on 2- to 4-slot units when T-bars are by others. Only applies to TBD series.

TBD-10 available with 1- or 2-slots only



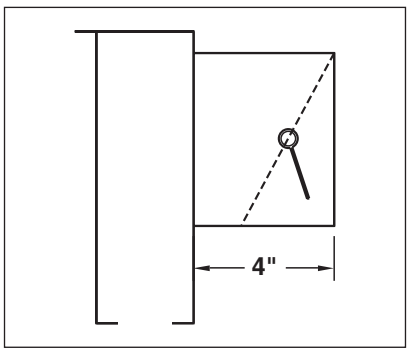
Opening in ceiling should be:
Length = Module plus ½"
Width = Plenum width plus ¾"



The model PF slot diffuser mounting frames can be used in a sheetrock or plaster ceiling. The frame is mounted in the ceiling by others. The Titus diffuser is mounted on the inside lip of the frame.The frame is 1¼" high.

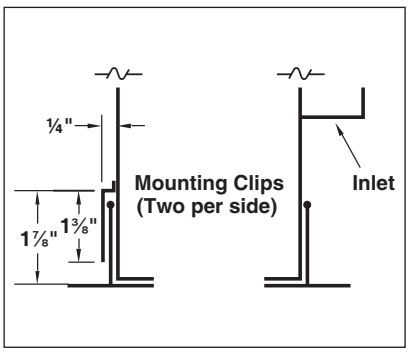
OPTIONAL INLET DAMPER

(Supply models only)
Damper ships separately



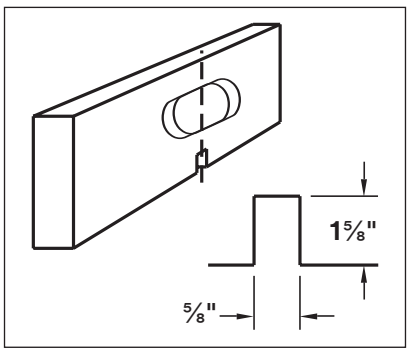
OPTIONAL MOUNTING CLIPS

MTC-1 (One side)
MTC-2 (Both sides)



OPTIONAL CROSS NOTCH

Available on both supply and return models. Not available on TBD-10 or N Series.



Notes

Icons

contributes toward energy savings by reducing operating costs of air distribution devices

energy solutions

supplies both heating and cooling from one air device

dual-function

unit contains smart logic mechanism enabling it to adjust the temperature band between heating & cooling

smart logic

energy-harvesting & savings feature of an HVAC device powered by ambient light

light-powered