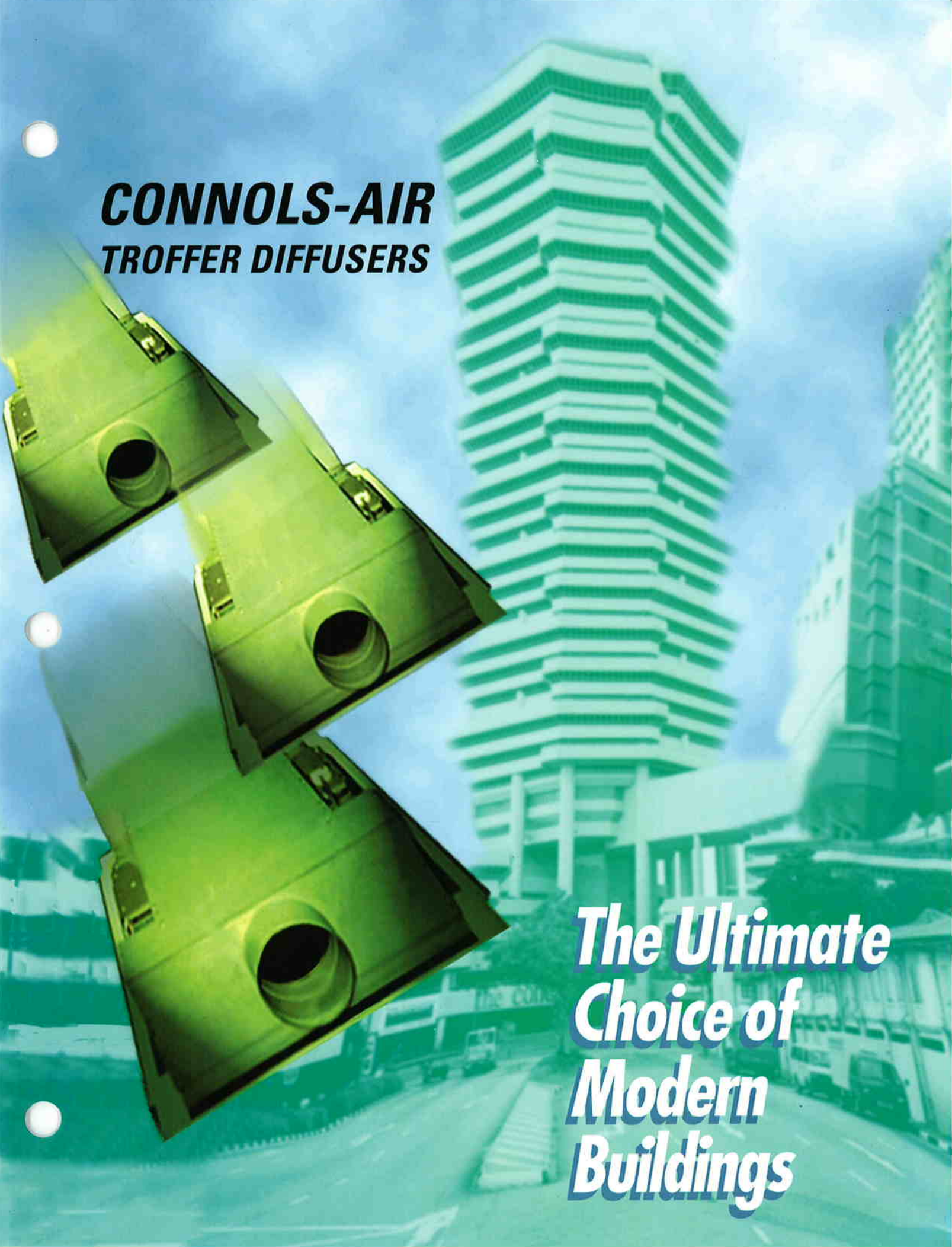
CONNOLS-AIR
TROFFER DIFFUSERS



The Ultimate Choice of Modern Buildings

CONTENTS

Front cover picture : 3000 units of Connols-Air troffer diffusers were installed at Concourse Building (Singapore) – A modern building with 42 storeys of offices and shopping centres.

Models		
	TS	Single-Sided Air Troffer Diffuser with fixed deflector blade
	TD	Double-Sided Air Troffer Diffuser with fixed deflector blades
	TSA	Single-Sided Air Troffer Diffuser with adjustable deflector blade
	TDA	Double-Sided Air Troffer Diffuser with adjustable deflector blades
	TSR	Returned Air Troffer Diffuser

Connols-Air Troffer Diffusers for Modern Buildings

To ensure maximum comfort in air-conditioned interiors of modern buildings, Connols-Air troffer diffusers are designed with the latest environmental engineering techniques to achieve good room air distribution and low operating noise. Connols-Air troffer diffusers are also designed to attenuate noise from the air duct system.

Flexible & Well-designed

The air troffer diffuser slots are painted matt black so that they can blend unobtrusively with the ceiling system. The air troffer diffusers can be installed with or without luminaires. When they are not installed with luminaires, the air troffer diffusers can be mounted individually or in continuous rows.

Single & Double-sided

Connols-Air troffer diffusers are available in single-sided and double-sided versions. They are in standard lengths of 600mm and 1200mm for luminaires with 20W and 40W lamps respectively. Other lengths are also available upon customers' requests.

Side and top inlets are available for double-sided air diffusers while side inlets are available only for single-sided units.

Adjustable Deflector Blades

Models TSA and TDA air troffer diffusers have adjustable deflector blades which provide horizontal or vertical air throw patterns. The deflector blades can also be used for fine balancing of air flow. However, drastic balancing with deflector blades should be avoided (see balancing instruction on page 8) as this will cause regenerated noise.

Model TSR return air troffer diffusers can provide significant attenuation of noise from the ceiling space (see table on page 7) and this is essential when low room noise criteria is required. Deflector blade for TSR is available as an optional item.

Fixed Deflector Blades

Models TS and TD air troffer diffusers have fixed deflector blades which provide horizontal air flow.

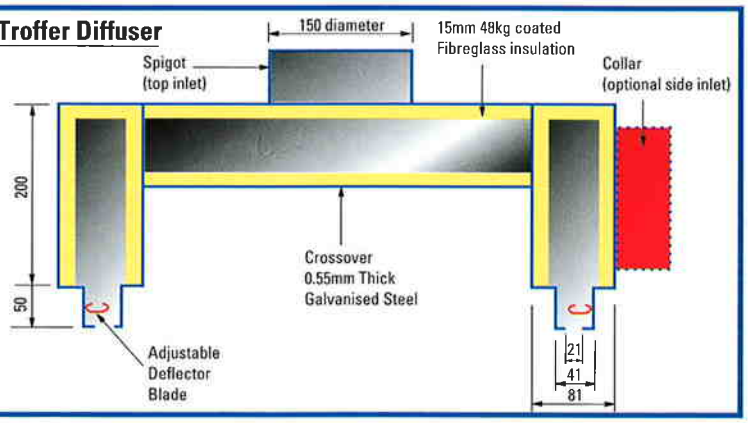
Model TSR return air troffer diffusers can provide significant attenuation of noise from the ceiling space (see table on page 7) and this is essential when low room noise criteria is required. Deflector blade for TSR is available as an optional item.

Suitable For use with Variable Air Volume Box System

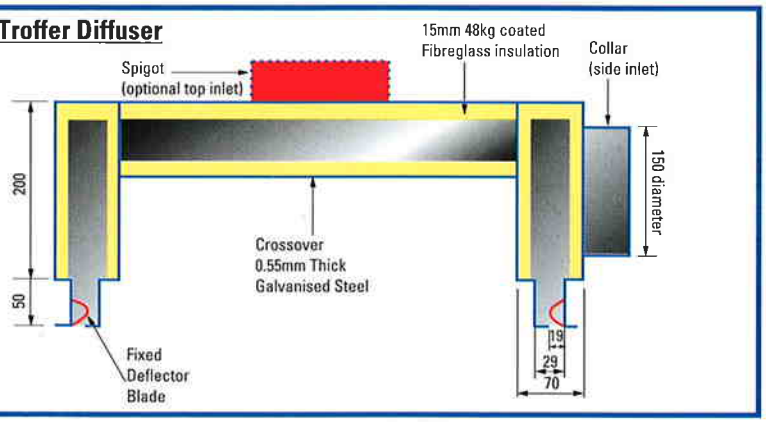
All Connols-Air troffer diffusers – models TS, TD, TSA, TSA and TSR, are suitable for use with Variable Air Volume (VAV) system. Tests have shown that the diffuser can perform efficiently when airflow is reduced. Coanda effect (hence no damping) can be achieved when airflow through the air troffer diffuser is throttled to 35% of the maximum designed airflow (see pictures 1 and 2 on pages 4 and 5).

Building picture: 6000 units of Connols-Air troffer diffusers were installed at Ngee Ann City (Singapore) – A twin tower building with 56 storeys of offices and shopping centres.

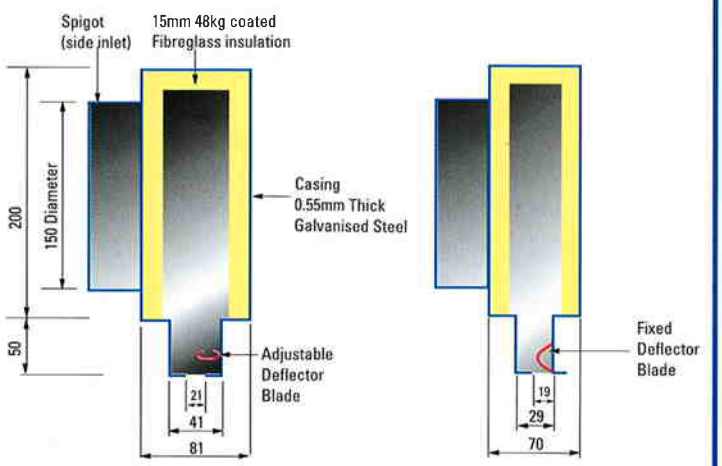
TDA Supply Air Troffer Diffuser



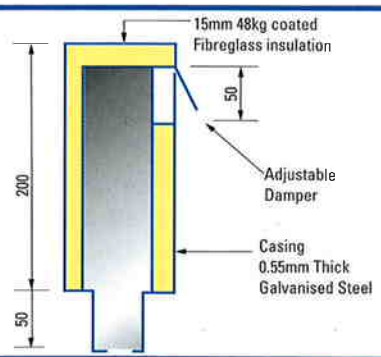
TD Supply Air Troffer Diffuser



TSA & TS Supply Air Troffer Diffuser



TSR Return Air Troffer Diffuser



Features

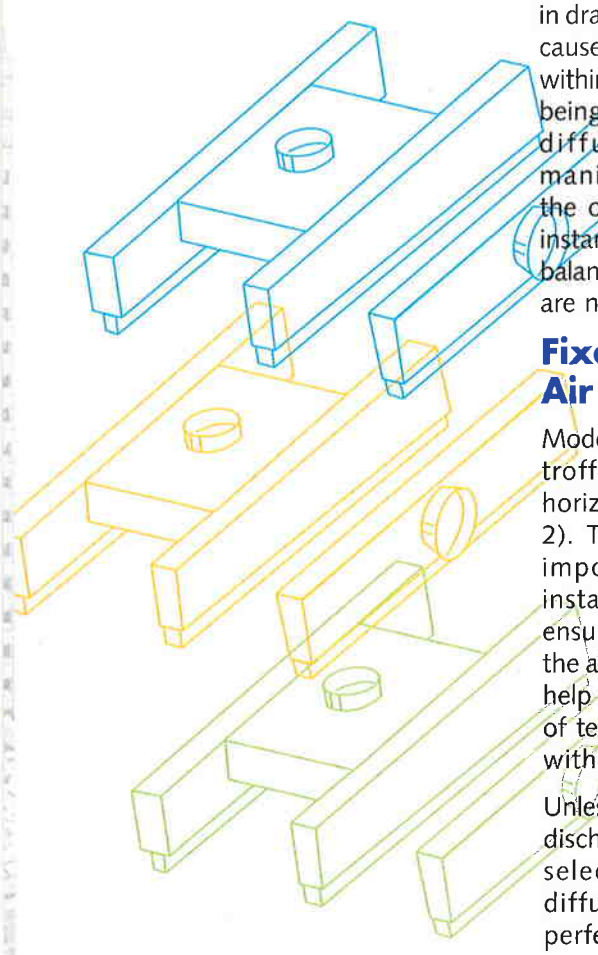
- The Connols-Air troffer diffusers are constructed out of 0.5mm good quality galvanised steel with air slots painted matt black.
- The air troffer diffusers can be easily and rapidly attached to or detached from luminaires on site. This allows for easy relocation of the air troffer diffusers when required.
- Air is evenly distributed across the length of the air troffer diffuser slots.
- All Connols-Air troffer diffusers are acoustically treated. This can effectively attenuate ductborne noise and improve the overall acoustics performance of the system.
- For TSA and TDA models, the control blades can be easily adjusted from the faces of the air diffusers.
- Accurate and easy balancing can be achieved with the use of handheld micromanometer connected to the air diffuser via a measuring tap.
- Reliable performance data are available for design and selection. All performance data are obtained from our acoustic testing laboratory.
- All the Connols-Air troffer diffuser models are suitable for use with VAV system.

Note

1. All dimensions are in millimetres (mm).
2. The length of the crossover will be fabricated to suit luminaire dimensions.
3. Standard inlet size is 150mm; other sizes may be used.

•For more information, technical advise & consultation, please contact our Connols-Air factory or your nearest Connols-Air representative.

Adjustable Deflector vs Fixed Deflector Air Troffer Diffusers



Adjustable Deflector Air Troffer Diffusers

Connols-Air troffer diffuser models TSA and TDA are adjustable deflector air troffer diffusers. They have deflector blades on each of the air slots which can be adjusted to discharge air flow patterns horizontally or vertically. They can also be used for adjusting air volume and fine air balancing.

Though flexible, the adjustable air diffusers must be adjusted according to instructions. Improper handling will result in drastic throttling of air flow which can cause significant increase in noise level within the occupied area where they are being installed. Adjustable air troffer diffusers are also subjected to manipulation of the deflector blades by the occupant of the building. In some instances, this can cause disruption of the balanced system if the air troffer diffusers are not properly adjusted.

Fixed Deflector Air Troffer Diffusers

Models TS and TD are fixed deflector air troffer diffusers that can discharge horizontal air flow (see pictures 1 & 2). The horizontal air flow pattern is important in modern buildings as installation of such air troffer diffusers ensures uniform air distribution within the air-conditioned area. This can in turn help to maintain a uniform distribution of temperature and residual air velocity within the occupied zone.

Unless there is a need for vertical air flow discharge, it is more advantageous to select and install fixed air troffer diffusers as they will always ensure perfect air flow pattern.

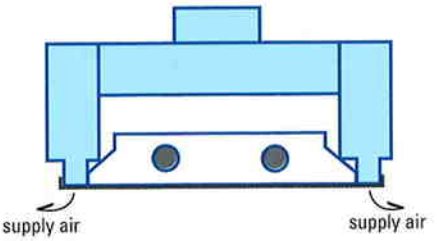


Figure 1
Double-sided supply air troffer diffuser with top inlet.

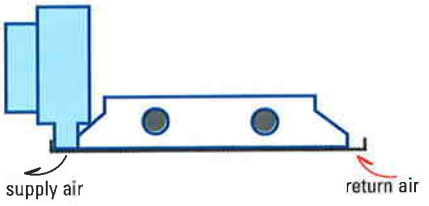


Figure 2
Single-sided supply air troffer diffuser with ceiling return.

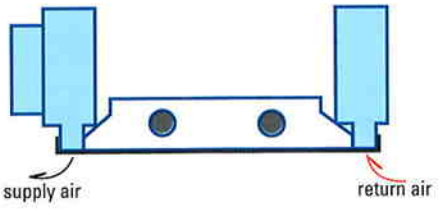


Figure 3
Single-sided supply air troffer diffuser with returned air troffer diffuser.

Picture 1
Horizontal two-way throw at 77 CMH

Application

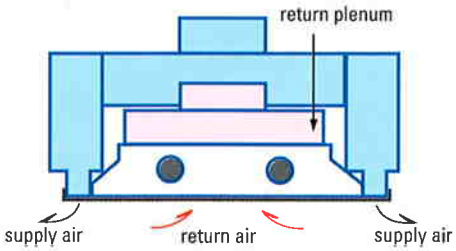


Figure 4
Double-sided supply air troffer diffuser with return-air-handling luminaire.

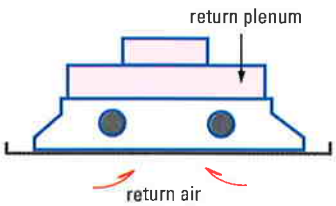


Figure 5
Returned-air-handling luminaire.

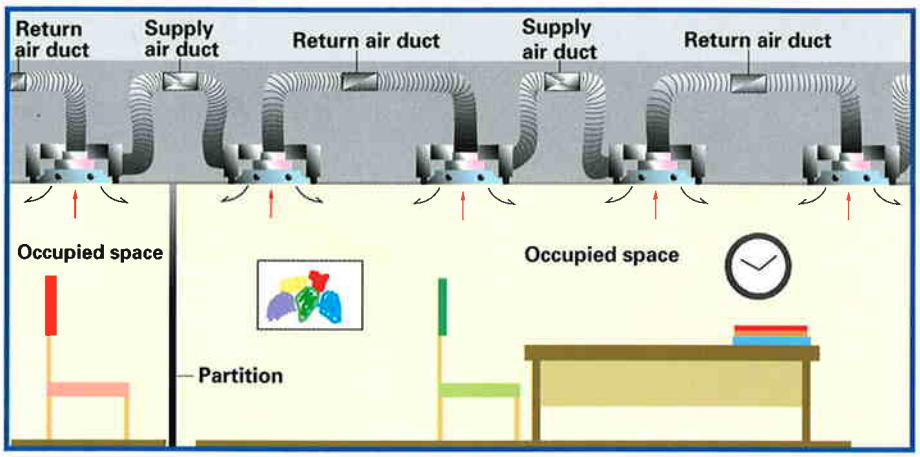


Figure 6
Air-conditioned system to partitioned and opened-plan offices with double-sided supply air troffer diffusers combined with return-air-handling luminaires.

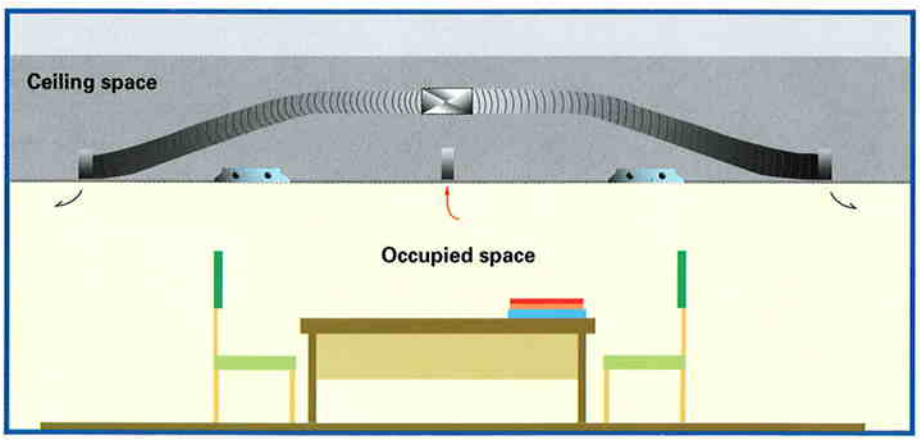


Figure 7
Air-conditioned system to opened-plan office with air troffer diffusers installed on continuous suspension profile.

Picture 2
Horizontal two-way throw at 204 CMH

When used with luminaires

Connols-Air troffer diffusers can be used with or without luminaires. When used with luminaires, different air diffuser arrangements are possible without altering the pattern of the ceiling (see figures 1 to 5).

Figure 6 shows a two-duct system, formed by single-ducted return air-handling luminaires that are combined with a double-sided air troffer diffuser. This application is especially useful in rooms where movable partitions are erected, as it provides the possibility of air-conditioning individual rooms.

When used without luminaires

Figure 7 shows how Connols-Air troffer diffusers can be installed separately from luminaires. With suspension profiles, this arrangement allows the designer to choose the position and arrangement of the air diffusers at a later stage to meet the tenant's requirement. The air diffusers can also be arranged and mounted in continuous rows.

Typical Installation Procedure

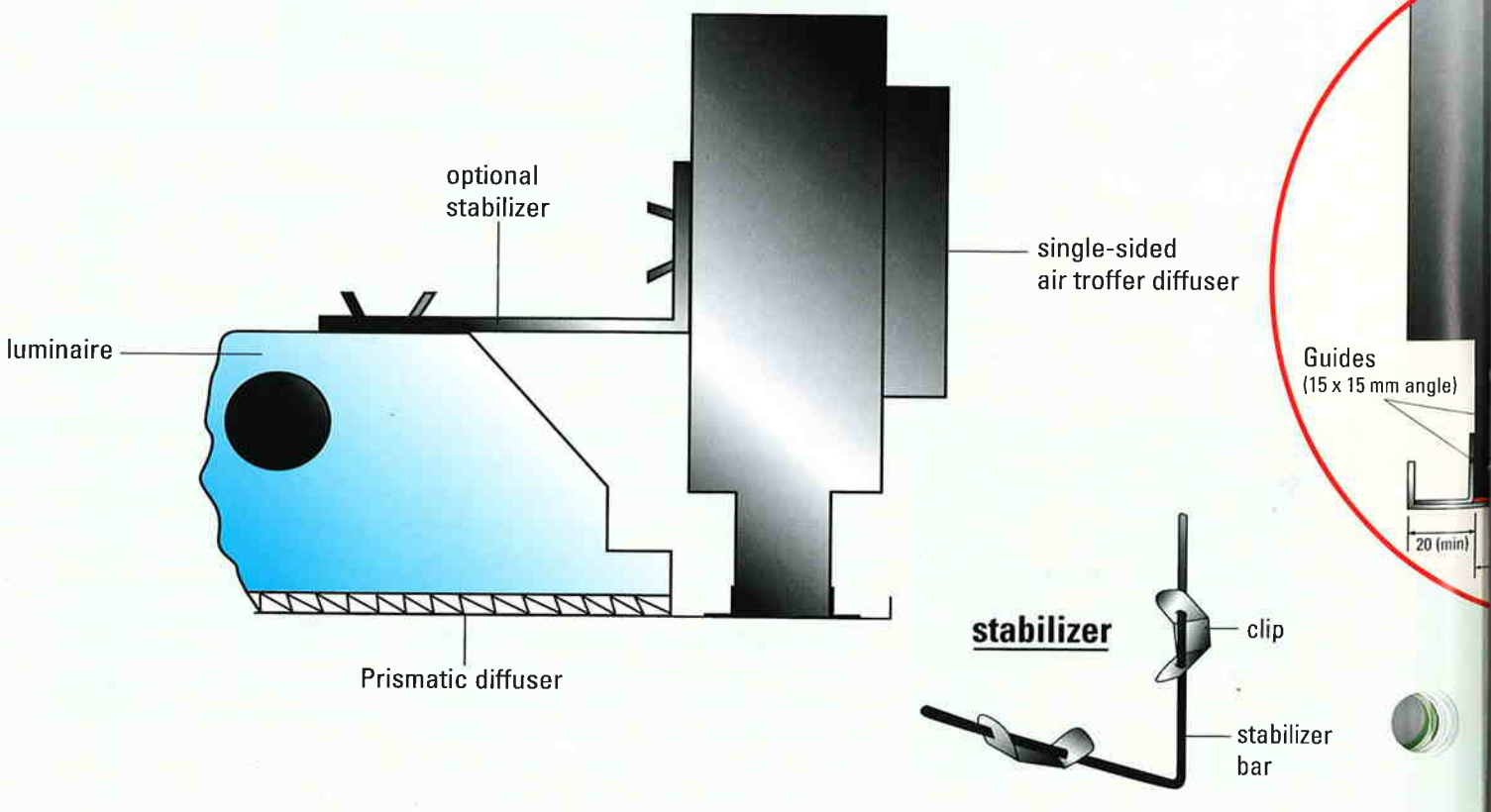
Single-Sided Air Troffer Diffuser (see diagram 1)

- **1** Attach clip to the air troffer diffuser and luminaire with sheetmetal screw.
- **2** Insert the stabilizer bar into the clip on the luminaire.
- **3** Place the air troffer diffuser over the luminaire slot and insert the stabilizer bar into the clip on the air troffer diffuser at the same time.
- **4** Connect the flexible duct to the air troffer diffuser.

Double-Sided Air Troffer Diffuser (see diagram 2)

- **1** Attach plenums to the crossover (if your order for the air troffer diffuser is unassembled).
- **2** After assembling the air troffer diffuser, place it over the luminaire slot as shown in diagram 2.
- **3** Connect the flexible duct to the air troffer diffuser inlet.
- **4** Air troffer diffuser and luminaire are to be suspended separately. Air slot on luminaire must be perforated according to detail A.

Diagram 1



Noise Attenuation Property

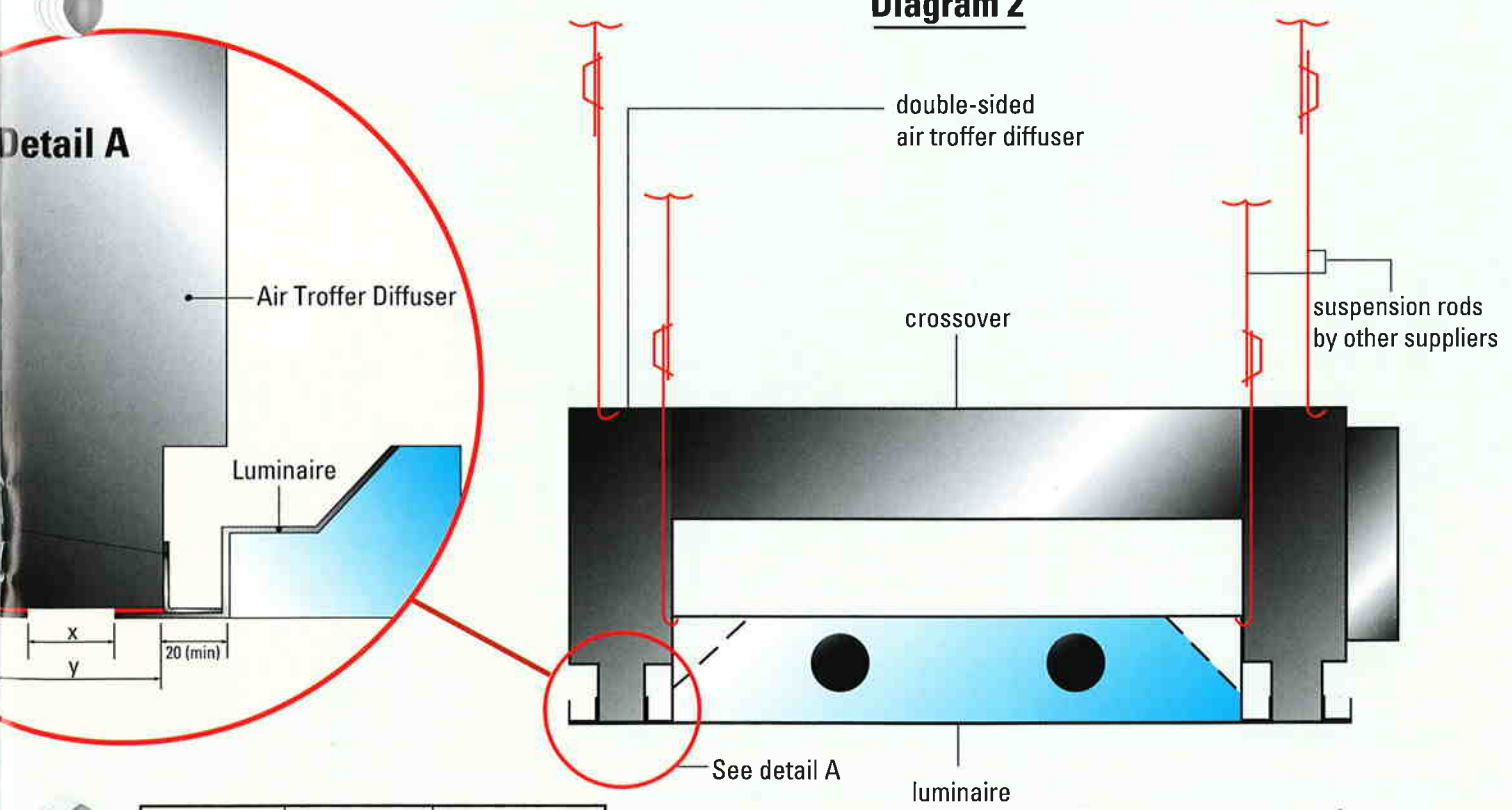
Due to the design and internal acoustic linings, both fixed and adjustable Connols-Air troffer diffusers show excellent attenuation of the ductborne noise. As for Model TSR return air troffer diffuser , it is able to provide attenuation of ceiling plenum noise. The static insertion loss of the air troffer diffusers is shown in the following table:

Static Insertion Loss (dB)

	Octave Band Centre Frequencies, Hz					
Model	250	500	1K	2K	4K	8K
TD-120 and TDA-120	3	11	20	17	17	16
TS-120 and TSA-120	2	9	14	11	16	15
TSR	2	9	14	11	16	15

Note : Data for TD-120 and TDA-120 are based on 150mm diameter top inlet.

Diagram 2



Models	TS/TD	TSA/TDA
x	19	21
y	40	42

Balancing

No deflector blade adjustment is required for TS and TD models air troffer diffuser. For adjustable deflector blade models, set the blades to position as shown in diagram 3 (below) for horizontal air discharge. For vertical air discharge, set the blades to position as shown in diagram 4. Alternatively, follow the Flow Pattern Logic below to adjust the flow pattern.

For proper room air distribution, the discharge pattern from the air troffer diffuser should be horizontal, away from the luminaire. If single-sided supply air troffer diffusers are installed at the perimeter of the building, set the blade to blow the air away from the perimeter wall or windows. Use the "J" hook provided for adjusting the deflector blade.

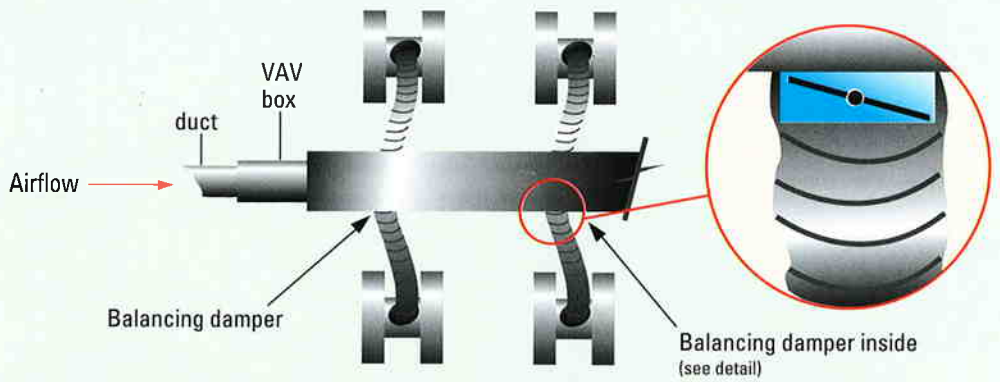
Flow Pattern Logic

- For right horizontal throw – set blade to the right side
- For left horizontal throw – set blade to the left side
- For Vertical throw – set blade to centre of the slot

Blade Setting

- To achieve the desired air flow direction according to the flow pattern logic, push the blade with your fingers as far back as it can go (for maximum airflow) and to the position according to the Flow Pattern Logic.
- To throttle the air volume, use the "J" hook provided to pull the blade vertically down gently at each end of the blade as shown in diagram 5.

Figure 8 : Location of balancing damper to achieve good room NC



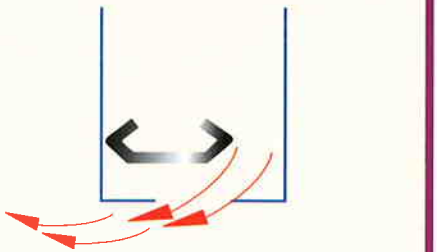


Diagram 3 : Horizontal Flow Pattern

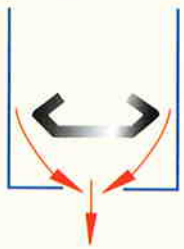


Diagram 4 : Vertical Flow Pattern

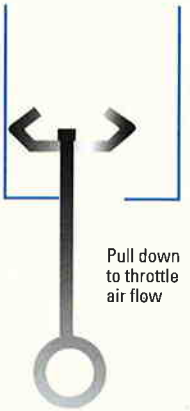


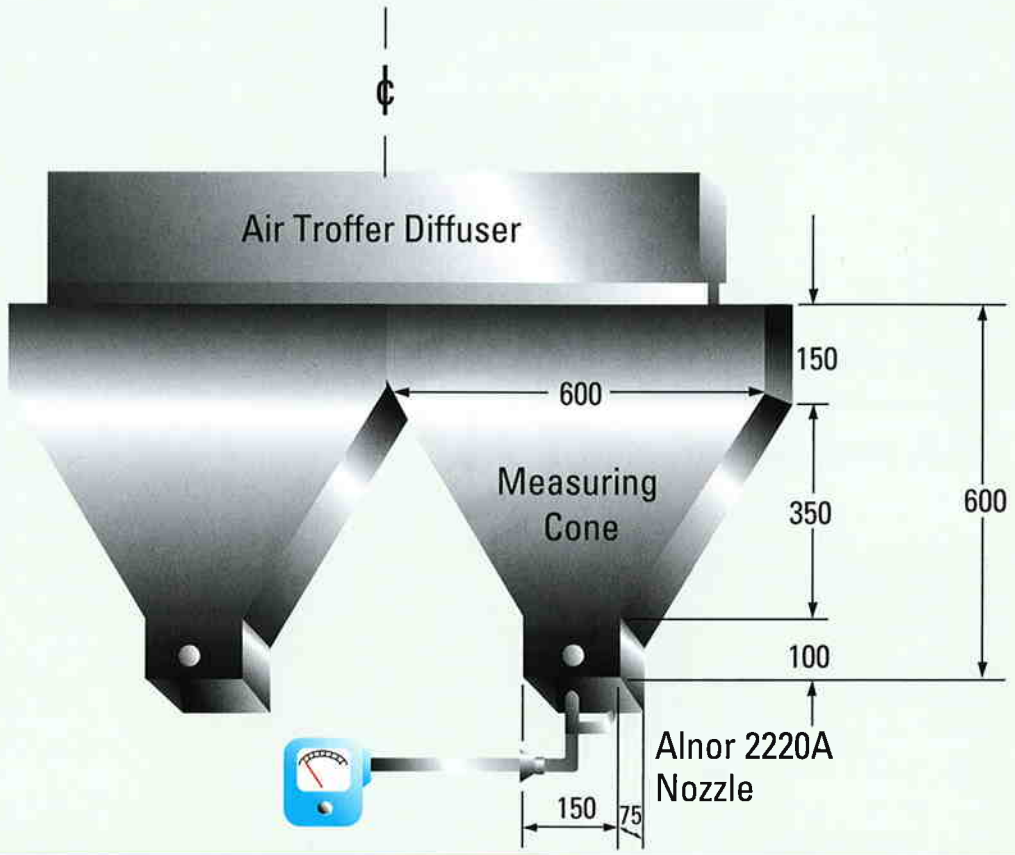
Diagram 5 : "J" Hook for adjusting Deflector Blade

Note:

When drastic balancing is required, balancing dampers should preferably be installed at the duct take-off to each air troffer diffuser. This is to allow for the noise that is generated by the damper to be attenuated by the insulated flexible duct and the air troffer diffuser. Damper may be installed at the inlet to the air troffer diffuser but this forfeits the benefit of duct attenuation.

Balancing
with Measuring Cone

Figure 9 : Air balancing with measuring cone



Air balancing

When the damper is installed at the inlet to the air troffer diffusers, air balancing can be achieved by using the measuring cone as shown in figure 9. Measuring cone should preferably be constructed out of aluminium.

Balancing procedures

- (1) To measure the air flow, mark the centerline of the air slot.(for 1200mm length air troffer diffuser).
- (2) Place the hood up against one-half of the air slot as shown in figure 9.
- (3) Obtain an air velocity reading in m/s. Do the same for the other half of the air slot – be careful not to overlap the centerline.
- (4) If it is a double-sided air troffer diffuser unit, repeat the procedures (1) to (3) for the second side of the unit.

To find the CMH, the basic formula is: *CMH = 0.0125 x velocity (m/s) x 3600* (velocity is as measured in procedure 3).

Example 1

If the two velocity readings for a 1200 mm length single sided air troffer diffuser are 1 m/s and 1.1 m/s :
Airflow = (0.0125 x 1 + 0.0125 x 1.1) x 3600 = 94.5 CMH

Proprietary-made measuring devices may also be used for measuring airflow from the air troffer diffuser.

Balancing

with Measuring Tap at the air troffer diffuser

When using Connols-Air troffer diffuser without damper at the inlet (as balancing damper may be located at the duct take-off), a measuring tap can be provided upon request, for connection to a micromanometer as shown in figures 10.1 to 10.3. This is a convenient method of accurate air balancing without using the measuring cone.

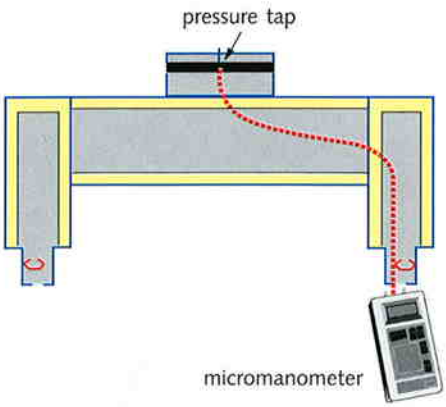


Figure 10.1
TDA Supply Air Troffer Diffuser with top Inlet

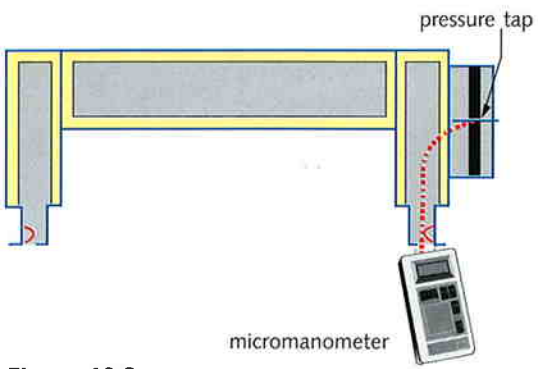


Figure 10.2
TD Supply Air Troffer Diffuser with side Inlet

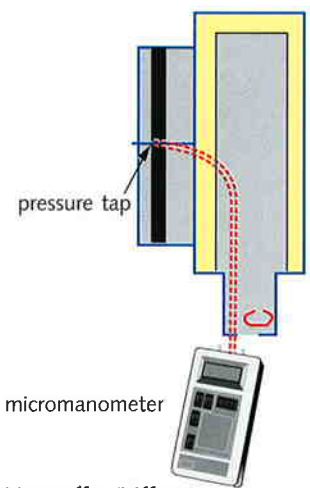
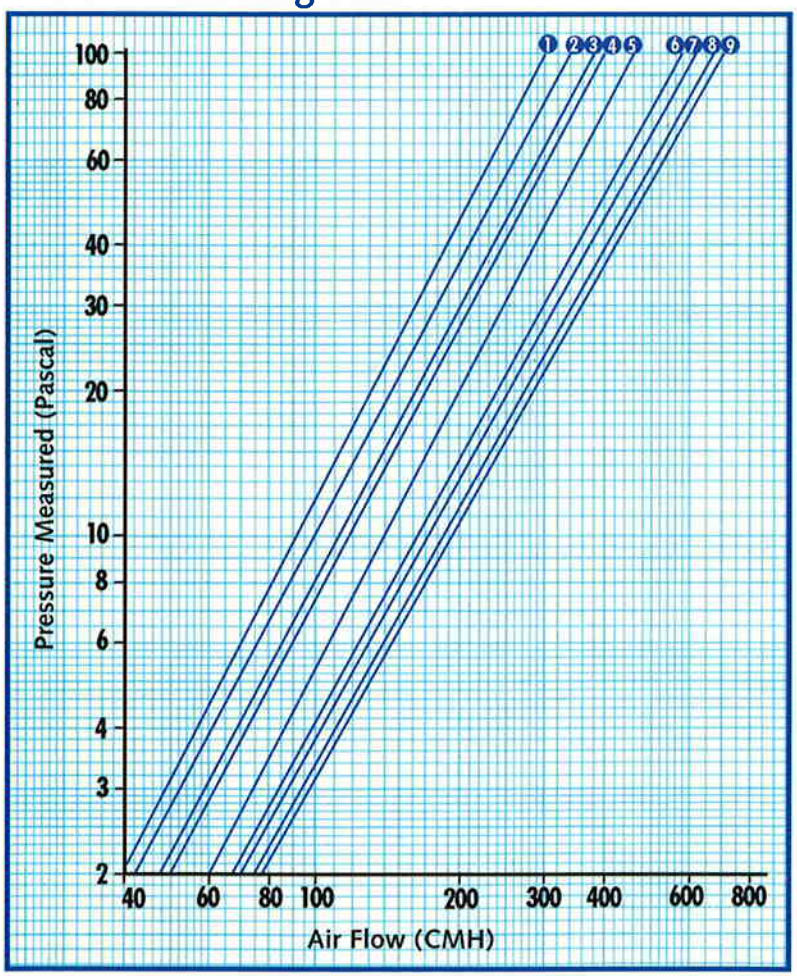


Figure 10.3
TSA Supply Air Troffer Diffuser

Chart 1 : Balancing Data



For Connols-Air TDA and TSA troffer diffuser models, the balancing curves 2,4,5,7 and 8 are based on the deflector blade set at the maximum open position (see blade setting on page 8) with horizontal air discharge pattern.

1. Model TD-60 (150mm top inlet)
2. Model TDA-60 (150mm top inlet)
3. Model TD-60 (150mm side inlet)
4. Model TDA-60 (150mm side inlet)
5. Model TS/TSA-120 (150mm side inlet)
6. Model TD-120 (150mm top inlet)
7. Model TDA-10 (150mm top inlet)
8. Model TDA-120 (150mm side inlet)
9. Model TD-120 (150mm side inlet)

Air flow is obtained from chart 1 with the pressure difference measured from the measurement tap using the micromanometer.

Performance Data

MODEL TS-120 (150mm Dia Side Inlet)

Table 1

Single-Sided Air Troffer Diffuser With Fixed Deflector Blade For 300 X 1200 or 600 X 1200mm Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
75	3	0.70	49	39	35	28	21	29	–
100	4	0.95	49	39	35	28	21	24	–
125	6	1.10	50	40	36	29	23	25	20
150	8	1.30	50	40	36	29	23	25	20
175	10	1.47	52	42	37	30	25	26	21
200	12	1.70	52	42	37	30	25	26	21
225	16	2.00	53	43	38	31	26	27	22
250	19	2.20	53	43	38	31	26	27	22
275	23	2.40	53	44	39	32	27	27	23
300	27	2.60	54	44	39	33	28	28	23
325	31	2.94	54	45	40	34	29	28	24
350	34	3.20	54	45	40	34	29	28	24

MODEL TSA-120 (150mm Dia Side Inlet)

Table 2

Single-Sided Air Troffer Diffuser With Adjustable Deflector Blade For 300 X 1200 or 600 X 1200mm Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
75	3	0.60	43	37	31	26	–	–	–
100	4	0.80	45	38	34	39	–	–	–
125	6	0.95	47	39	35	30	–	–	–
150	8	1.10	49	41	36	31	25	26	–
175	10	1.25	51	41	37	31	26	26	20
200	12	1.45	52	42	38	32	27	27	22
225	16	1.70	52	44	40	34	28	28	24
250	19	1.90	53	46	41	35	29	28	25
275	23	2.05	54	48	43	36	31	29	26
300	27	2.20	54	50	45	38	33	31	28
325	31	2.50	55	51	46	40	35	33	30
350	34	2.75	55	52	47	41	36	34	31

Note:

- Throw values are based on 0.25 m/s terminal velocity with temperature differential of 6°C between discharged and room air.
- Above data are based on horizontal air pattern.
- NC values are based on 10 dB room absorption in all octave band.
- '–' represents noise level below 20 dB.
- The above tabulated data are based on tests carried out generally in accordance to the following standards :

ISO 5219
Air distribution and air diffusion – laboratory aerodynamic testing and rating of air terminal devices.

ISO 5135
Acoustics – Determination of sound power levels of noise from air terminal devices, high/low velocity, pressure assemblies, dampers and valves by measurement in a reverberation room.

ASHRAE Standard 70-72
Method of testing for rating the air flow performance of outlets and inlets.

MODEL TD-120
(150mm Dia Top Inlet)

Table 3
Double-Sided Air Troffer Diffuser With Fixed Deflector Blades For 300 X 1200 or 600 X 1200mm Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
150	5	1.30	49	40	36	25	24	–	20
200	8	1.70	50	41	37	26	25	20	21
250	12	2.20	51	42	37	28	26	21	22
300	16	2.60	51	43	37	29	27	23	22
350	20	3.00	52	43	38	30	28	24	23
400	26	3.40	53	44	38	31	28	25	23
450	31	3.80	53	44	39	33	30	27	24
500	37	4.20	54	45	39	34	30	27	24
550	35	4.60	54	46	40	35	32	28	26
600	50	4.90	55	48	41	37	34	29	28
650	56	5.10	55	50	41	37	36	30	29
700	64	5.30	56	50	43	38	38	31	30

MODEL TD-120
(150mm Dia Side Inlet)

Table 4
Double-Sided Air Troffer Diffuser With Fixed Deflector Blades For 300 X 1200 or 600 X 1200mm Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
150	3	1.30	50	40	36	29	24	27	20
200	5	1.70	51	41	37	29	25	27	21
250	6	2.20	51	41	38	30	26	27	22
300	8	2.60	52	42	38	30	26	27	22
350	9	3.00	53	42	38	31	27	28	23
400	11	3.40	53	43	39	22	27	28	23
450	13	3.80	54	44	40	33	28	28	24
500	15	4.20	54	45	40	34	29	28	24
550	17	4.60	55	47	42	37	32	30	26
600	19	4.90	56	49	43	39	34	31	28
650	21	5.10	57	50	44	40	36	32	29
700	23	5.30	58	51	45	41	37	32	30

Note:

- Throw values are based on 0.25 m/s terminal velocity with temperature differential of 6°C between discharged and room air.
- Above data are based on horizontal air pattern.
- NC values are based on 10 dB room absorption in all octave band.
- '–' represents noise level below 20 dB.
- The above tabulated data are based on tests carried out generally in accordance to the following standards :

ISO 5219
Air distribution and air diffusion – laboratory aerodynamic testing and rating of air terminal devices.

ISO 5135
Acoustics – Determination of sound power levels of noise from air terminal devices, high/low velocity, pressure assemblies, dampers and valves by measurement in a reverberation room.

ASHRAE Standard 70-72
Method of testing for rating the air flow performance of outlets and inlets.

MODEL TDA-120
(150mm Dia Top Inlet)

Table 5
Double-Sided Air Troffer Diffuser With Adjustable Deflector Blades For 300 X 1200 or 600 X 1200mm Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
100	3	0.80	50	41	35	26	21	21	20
150	4	1.10	51	41	36	28	23	23	21
200	7	1.45	52	42	37	29	23	25	22
250	10	1.90	53	42	38	30	25	26	23
300	13	2.20	54	42	38	31	25	27	24
350	17	2.75	55	43	38	31	26	27	25
400	22	3.00	56	45	40	33	28	28	27
450	26	3.30	57	47	42	36	31	29	28
500	30	3.60	57	49	44	38	33	30	29
550	36	4.00	58	50	45	40	35	33	30
600	41	4.30	58	52	47	42	37	36	32
650	48	4.60	59	53	49	44	39	38	33
700	51	4.90	60	55	50	45	41	40	35

MODEL TDA-120
(150mm Dia Side Inlet)

Table 6
Double-Sided Air Troffer Diffuser With Adjustable Deflector Blades For 300 X 1200 or 600 X 1200mm Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
100	2	0.80	49	37	36	26	23	24	20
150	4	1.10	51	39	36	28	23	25	21
200	5	1.45	52	40	37	29	25	26	22
250	7	1.90	54	42	37	31	26	26	23
300	9	2.20	54	43	38	32	27	27	24
350	11	2.75	55	44	39	32	28	28	26
400	14	3.00	56	46	41	34	30	29	27
450	16	3.30	57	49	43	37	32	31	28
500	19	3.60	58	52	45	40	35	32	30
550	22	4.00	60	54	47	42	37	35	33
600	24	4.30	61	56	49	49	39	38	35
650	27	4.60	62	59	51	46	42	41	37
700	30	4.90	63	59	53	48	44	43	38

Note:

- Throw values are based on 0.25 m/s terminal velocity with temperature differential of 6°C between discharged and room air.
- Above data are based on horizontal air pattern.
- NC values are based on 10 dB room absorption in all octave band.
- '–' represents noise level below 20 dB.
- The above tabulated data are based on tests carried out generally in accordance to the following standards :

ISO 5219
Air distribution and air diffusion – laboratory aerodynamic testing and rating of air terminal devices.

ISO 5135
Acoustics – Determination of sound power levels of noise from air terminal devices, high/low velocity, pressure assemblies, dampers and valves by measurement in a reverberation room.

ASHRAE Standard 70-72
Method of testing for rating the air flow performance of outlets and inlets.

MODEL TDA-60
(150mm Dia Top Inlet)

Table 7
Double-Sided Air Troffer Diffuser With Adjustable Deflector Blades For 600 X 600 Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
100	9	2.00	41	35	26	–	–	–	–
125	14	2.40	43	37	27	21	–	–	–
150	20	2.50	44	39	31	26	–	–	–
175	25	2.70	45	42	36	31	23	22	20
200	30	2.80	46	45	40	35	30	26	24
225	39	2.90	48	47	43	38	33	29	27
250	47	3.00	51	50	46	41	36	33	30
275	56	3.30	54	53	49	44	39	36	34
300	64	3.60	56	55	51	46	41	38	36

MODEL TDA-60
(150mm Dia Side Inlet)

Table 8
Double-Sided Air Troffer Diffuser With Adjustable Deflector Blades For 600 X 600 Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
100	6	2.00	42	37	26	–	–	–	–
125	10	2.40	44	39	28	22	–	–	–
150	14	2.50	44	41	31	26	–	–	–
175	18	2.70	45	43	35	31	23	21	–
200	22	2.80	46	45	39	35	29	25	23
225	29	2.90	48	47	41	37	32	28	25
250	35	3.00	51	49	44	39	35	32	29
275	42	3.30	54	51	47	41	38	35	31
300	48	3.60	56	53	49	43	40	37	34

Note:

- Throw values are based on 0.25 m/s terminal velocity with temperature differential of 6°C between discharged and room air.
- Above data are based on horizontal air pattern.
- NC values are based on 10 dB room absorption in all octave band.
- '–' represents noise level below 20 dB.
- The above tabulated data are based on tests carried out generally in accordance to the following standards :

ISO 5219
Air distribution and air diffusion – laboratory aerodynamic testing and rating of air terminal devices.

ISO 5135
Acoustics – Determination of sound power levels of noise from air terminal devices, high/low velocity, pressure assemblies, dampers and valves by measurement in a reverberation room.

ASHRAE Standard 70-72
Method of testing for rating the air flow performance of outlets and inlets.

MODEL TD-60
(150mm Dia Top Inlet)

Table 9

Double-Sided Air Troffer Diffuser With Fixed Deflector Blades For 600 X 600 Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
100	10	2.10	40	34	25	20	–	–	–
125	17	2.45	41	36	28	22	–	–	–
150	24	2.65	42	38	31	25	20	–	–
175	30	3.00	44	41	35	30	25	–	–
200	37	3.20	45	44	39	34	29	26	23
225	48	3.60	49	47	42	37	33	30	25
250	58	3.90	52	49	44	40	36	33	28
275	69	4.10	54	52	47	43	39	36	32
300	79	4.40	57	54	49	46	42	39	35

MODEL TD-60
(150mm Dia Side Inlet)

Table 10

Double-Sided Air Troffer Diffuser With Fixed Deflector Blades For 600 X 600 Luminaire

Air Flow (CMH)	Pressure Drop (Pa)	Throw (m)	Sound Power Level Lw, dB re 10^{-12} Watts Octave Band, Hz						NC
			125	250	500	1K	2K	4K	
100	7	2.10	39	35	25	20	–	–	–
125	12	2.45	42	37	27	21	–	–	–
150	16	2.65	42	38	31	26	20	–	–
175	21	3.00	44	41	35	30	25	–	–
200	25	3.20	45	43	38	33	29	25	22
225	32	3.60	48	46	41	37	32	28	25
250	39	3.90	51	49	43	40	35	31	27
275	46	4.10	53	51	45	43	38	34	31
300	53	4.40	55	53	47	45	41	36	34

Note: refer to footnotes of tables 3 & 4

How to Order

To order, the following information must be submitted based on the specifications given:

- **Type of Connols-Air troffer diffuser (please indicate the model)**
  - **Model TS** : Single-Sided Air Troffer Diffuser with fixed deflector blade
  - **Model TD** : Double-Sided Air Troffer Diffuser with fixed deflector blades
  - **Model TSA** : Single-Sided Air Troffer Diffuser with adjustable deflector blade
  - **Model TDA** : Double-Sided Air Troffer Diffuser with adjustable deflector blades
  - **Model TSR** : Return Air Troffer Diffuser
- **Length of Connols-Air troffer diffuser**
  - **60** : 600mm
  - **120** : 1200mm
  - **150** : 1500mm
- **Width of Connols-Air troffer diffuser**
  - **30** : 300mm
  - **60** : 600mm

Note : Model TSR Return Air Troffer Diffuser will be supplied without deflector blade as standard. Please specify matching deflector blade and measuring tap in your order if they are required.

- **Inlet size**
  - **6** : 150mm diameter
  - **8** : 200mm diameter
  - **10** : 250mm diameter
- **Inlet position**
  - **T** : Top inlet
  - **S** : Side inlet
- **Damper**
  - **0** : No Damper required
  - **1** : Damper Required

Example

TSA-120-60-6-S-0

The order refers to Connols-Air troffer diffuser with adjustable control blade and 150mm diameter side inlet for installation with 1200 X 600 nominal sized luminaire ; no damper required at the inlet.

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Designed & Produced by Propac Design Consultants