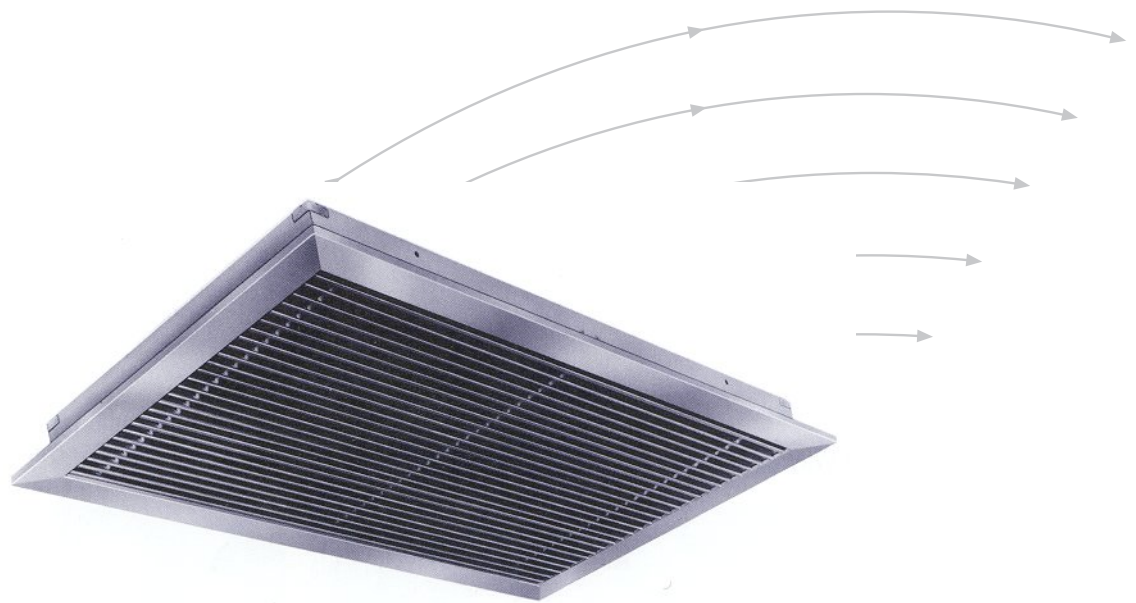


# Ceiling Diffusers

## Type ADM

recommended for room heights  
from 2.60 m to 4.00 m



**TROX**® **TECHNIK**

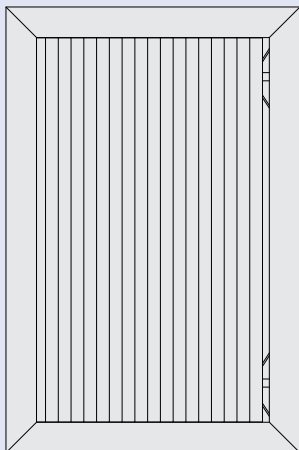
TROX UK Ltd  
Caxton Way  
Thetford  
Norfolk IP24 3SQ

Telephone +44 (0) 1842 754545  
Telefax +44 (0) 1842 763051  
e-mail [trox@troxuk.co.uk](mailto:trox@troxuk.co.uk)  
[www.troxuk.co.uk](http://www.troxuk.co.uk)

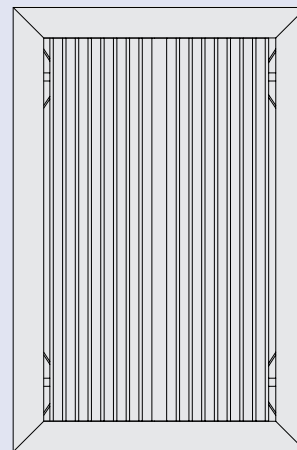
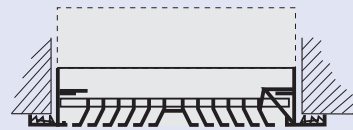
# Contents · Description

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## ADM - 1 WAY



## ADM - 2 WAY



The TROX Linear Diffuser type ADM is a single or two way finite or continuous line aluminium diffuser. Attractively designed and mainly suitable for installation into flat false ceiling systems to provide one or two way horizontal discharge.

A high quality polyester powder coat finish is standard and an opposed blade damper section can be supplied as an optional extra. The ADM has a removable core to facilitate a number of alternative concealed fixing systems.

# Construction · Dimensions · Materials

## Construction

The diffuser face consists of a border frame with removable one or two way discharge. Diffuser can be provided with rear mounted opposed blade damper - adjustable by removal of the diffuser core.

Available as a finite length diffuser or in linear format consisting of intermediate and end sections.

## Materials

The diffuser face and core are of extruded aluminium profiles finished in high quality polyester powdercoat. The rear mounted damper is made from formed sheet steel and aluminium finished in polyester powdercoat black (RAL 9005)

## Variants

Type ADM-1\* ...-2\*-A  
Type ADMR-1\* ...-2\*

One or two way discharge diffuser  
One or two way discharge tile replacement diffuser

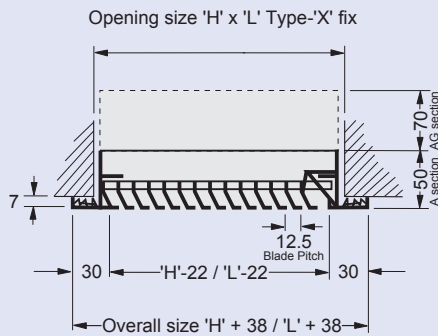
Type ADML-1\* ...-2\*

One or two way discharge tile replacement diffuser

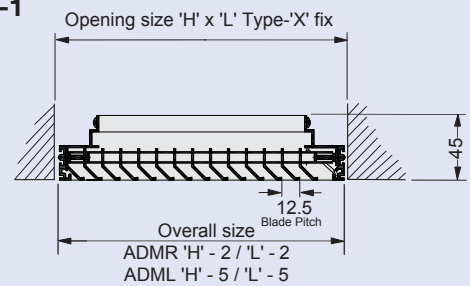
## Installation

The diffusers can be installed directly onto a duct section with optional cross bar fixing (N1) or within builderswork openings using secret fastners (S11). In addition, TROX type ADM can be supplied with cross bar fixing (N2) suitable for use with TROX type AK plenums.  
For horizontal discharge, a flat ceiling is necessary.

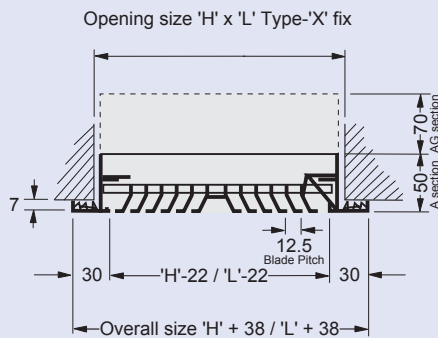
**ADM-1**



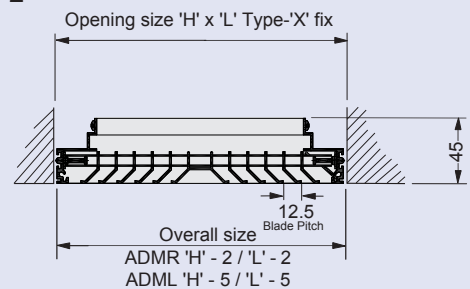
**ADMR / ADML-1**



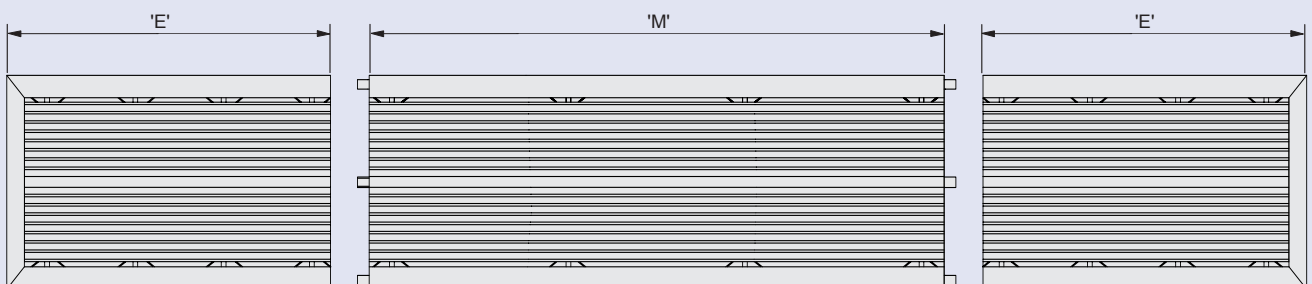
**ADM-2**



**ADMR / ADML-2**



Grille Type	SECTION LENGTHS		
	'L'	'M'	'E'
Finite	300 - 1800mm	-	-
Linear	-	1800mm	900 - 1800mm
Nominal Heights	150mm to 450mm (50mm Increments)		



Opening size with installation subframe (S11 - A30), H + 6 / L + 6 mm.

# Directions of Discharge - Fixing Arrangement

## Standard Design

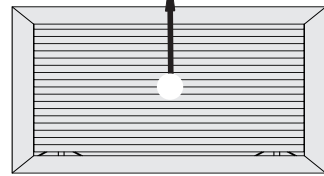
Removable core one or two way, with or without damper. Concealed screw fixing through the inside of face border extrusion ('X' fix). Available as a finite diffuser within the min-max dimensions, or as a continuous diffuser with intermediate and end sections not exceeding 1800mm long.

## Plenum Boxes

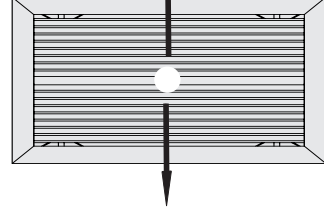
Due to the wide variety of applications for this high capacity diffuser, plenum box design varies significantly, particularly in terms of spigot configuration i.e. multiple circular or high aspect ratio single connections. In consequence plenum box details are not catalogued. Information on requirements should be forwarded to TROX for assessment / design proposals.

## Directions of Discharge

ADM-1

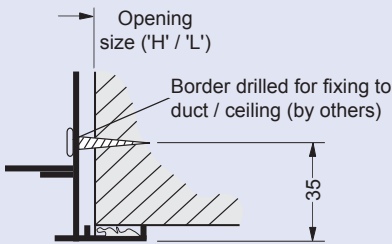


ADM-2

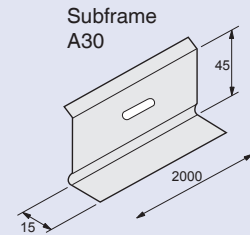
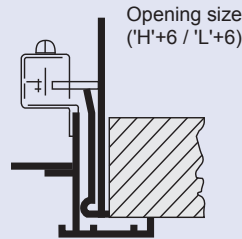


## Fixing Arrangements

### Type X - Standard Supply

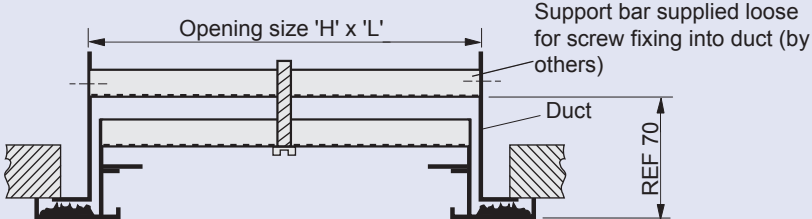


### Type S11 - Secret Fix (In conjunction with L30 subframe)



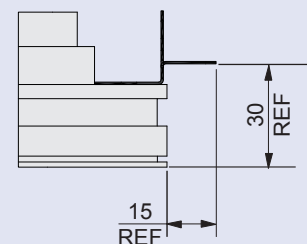
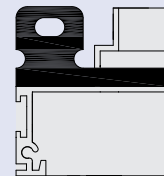
Subframe supplied in 2.0m lengths for site cutting (by others)

### Type N1 - Support bar for duct mounting

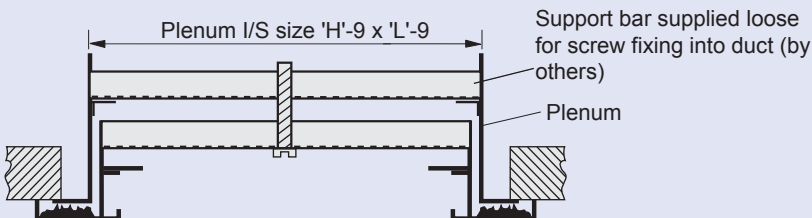


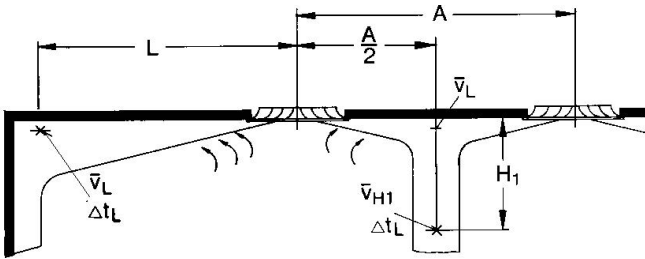
### Type ...-Q, ...-QN2 (ADMR only)

Optional alignment & support angle (...-Q) for ADMR diffuser to provide alignment with SAS type ceiling systems. 8 x 5 slot provided at each end of 'Q' support bracket for wire supports (by others)



### Type N2 - Support bar for plenum mounting





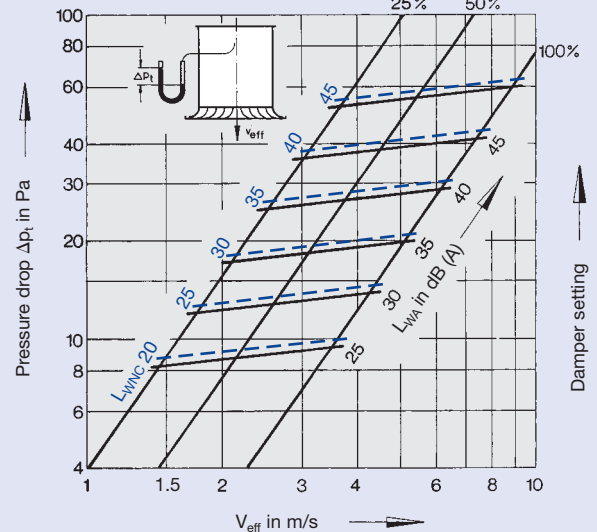
Correction Values for  $H_{eff}$

$H_{eff}$ in m	Linear Length (mm)			
	2000	2500	3000	4000
0.03	-2	-1	0	+1
0.04	0	+1	+2	+3
0.075	+1	+2	+3	+4
0.10	+3	+4	+5	+6
0.15	+5	+6	+7	+8
0.20	+6	+7	+8	+9
0.25	+7	+8	+9	+10

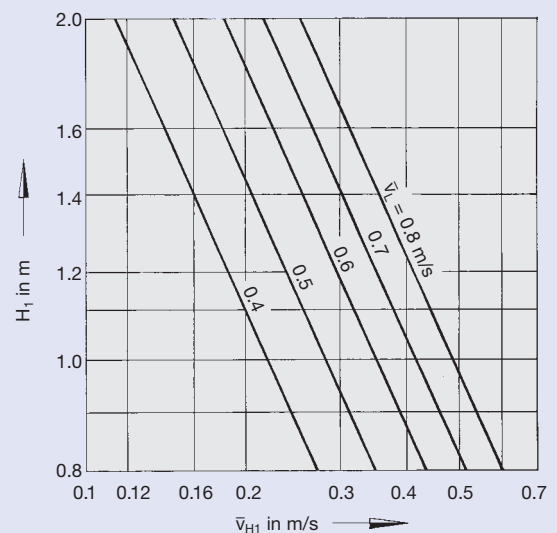
## Nomenclature

- $\dot{V}_t$  in l/s: Total volume flow per diffuser
- $\dot{V}$  in l/s: Total volume flow per metre length of diffuser
- $A$  in m: Spacing between two diffusers (distance to collision point ' $L$ ' =  $A/2$ )
- $L$  in m: Distance from the outlet where the maximum time average velocity  $\bar{v}_L$  is 0.75m/s and 0.5m/s respectively
- $H_1$  in m: Distance between ceiling and occupied zone
- $H_{eff}$  in m: Effective outlet height
- $H$  in m: Actual outlet height
- $v_{eff}$  in m/s: Effective discharge velocity
- $\bar{v}_{H1}$  in m/s: Time average air velocity between two diffusers at distance  $H_1$  from the ceiling.
- $\bar{v}_L$  in m/s: Time average air velocity at the wall
- $\Delta p_t$  in Pa: Total pressure drop
- $L_{WA}$  in dB(A): A-weighted sound power level
- $L_{WNC}$  : NC rating of sound power level
- $L_{WNR}$  :  $L_{WNR} = L_{WNC} + 2$
- $L_{pA}, L_{pNC}$  : A-weighting and NC rating of room sound pressure level
  - $L_{pA} \approx L_{WA} - 8 \text{ dB}$
  - $L_{pNC} \approx L_{WNC} - 8 \text{ dB}$

1 Sound power level and pressure drop



2 Air velocity between two diffusers



# Aerodynamic Data

## Example

Data given:

Type ADM-2 (2 way discharge)

Diffuser Length 3m

Distance from diffuser L = 6m

Total volume flow  $V_t = 1350$  l/s

**Required :** Diffuser H in mm for VL = 0.75m/s

Diffuser noise level  $L_{WNC}$

$$V = \frac{1350}{3} = 450 \text{ l/s/m}$$

**Table 3:**  $V_{\text{eff}} = \frac{450}{(0.09 \times 1000)} = 5.0\text{m/s}$

H = 300mm  
 $H_{\text{eff}} = 0.09\text{m}$

**Table 1:**

$$H_{\text{eff}} = +5\text{dB}$$

**Graph 1:**

$$\Delta p_t = 20 \text{ Pa}$$

$$L_{WA} = 35 \text{ dB}$$

$$L_{WNC} = 30 \text{ dB}$$

**NOTE;**

If length of ADM-1 is less than 8 x Heff or ADM-2 is less than 4 x Heff, Values of 'L' in tables 2 & 3 should be divided by two.

**Table 2: Supply Aerodynamic Data ADM-1**

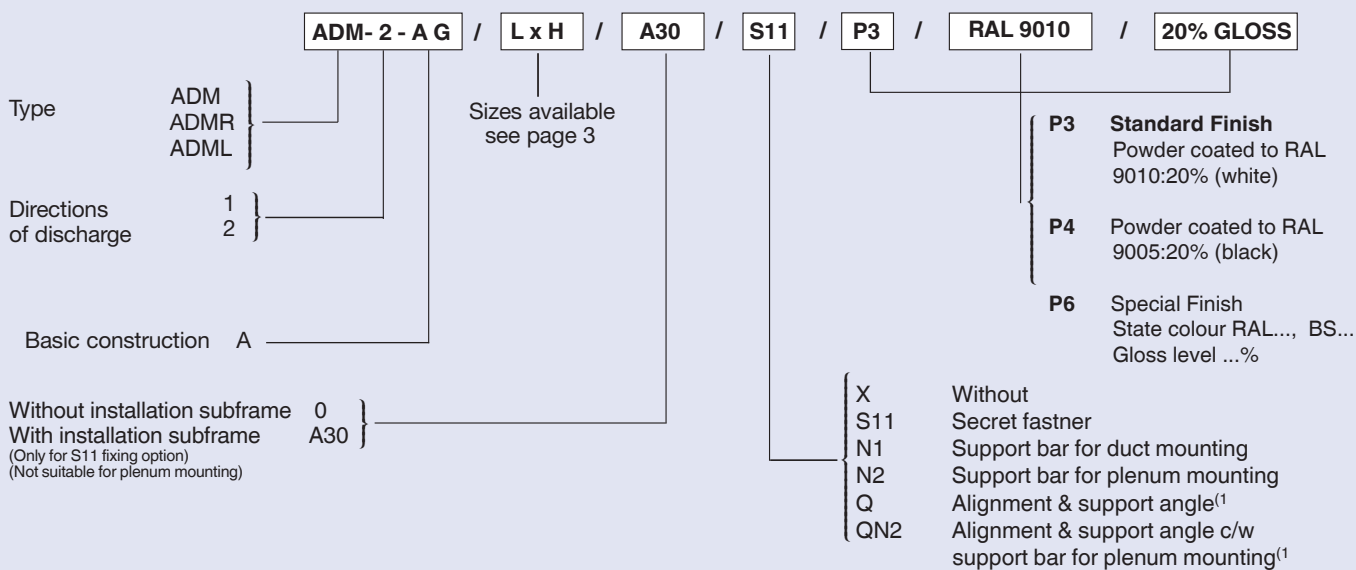
ADM-1									
H in mm	$H_{\text{eff}}$ in m		$V_{\text{eff}}$ in m/s						
			2	3	4	5	6	7	8
150	0.04	V in l/s/m	80	120	160	200	240	280	320
		L in m	2.2 - 3.3	3.3 - 5.0	4.4 - 6.7	5.6 - 8.4	6.7 - 10.0	7.8 - 11.7	8.9 - 13.4
200	0.06	V in l/s/m	120	180	240	300	360	420	
		L in m	2.7 - 4.1	4.1 - 6.1	5.4 - 6.2	6.8 - 10.2	8.2 - 12.3	9.6 - 14.4	
250	0.08	V in l/s/m	160	240	320	400	480		
		L in m	3.1 - 4.7	4.7 - 7.1	6.3 - 9.5	7.9 - 11.8	9.5 - 14.2		
300	0.10	V in l/s/m	200	300	400	500			
		L in m	3.5 - 5.3	5.3 - 7.9	7.0 - 10.6	8.8 - 13.2			
350	0.12	V in l/s/m	240	360	480	600			
		L in m	3.8 - 5.8	5.8 - 8.7	7.7 - 11.6	9.6 - 14.5			
400	0.14	V in l/s/m	280	420	560				
		L in m	4.1 - 6.2	6.2 - 9.4	8.3 - 12.5				
450	0.16	V in l/s/m	320	480	640				
		L in m	4.4 - 6.7	6.7 - 10.0	8.9 - 13.4				

**Table 3: Supply Aerodynamic Data ADM-2**

ADM-2									
H in mm	$H_{\text{eff}}$ in m		$V_{\text{eff}}$ in m/s						
			2	3	4	5	6	7	8
150	0.03	V in l/s/m	60	90	120	150	180	210	240
		L in m	1.3 - 2.0	2.0 - 3.0	2.7 - 4.1	3.4 - 5.1	4.1 - 6.1	4.8 - 7.2	5.4 - 8.2
200	0.05	V in l/s/m	100	150	200	250	300	350	400
		L in m	1.7 - 2.6	2.6 - 3.9	3.5 - 5.3	4.4 - 6.6	5.3 - 7.9	6.1 - 9.2	7.0 - 10.6
250	0.07	V in l/s/m	140	210	280	350	420	490	560
		L in m	2.0 - 3.1	3.1 - 4.7	4.1 - 6.2	5.2 - 7.8	6.2 - 9.4	7.3 - 11.0	8.3 - 12.5
300	0.09	V in l/s/m	180	270	360	450	540	630	720
		L in m	2.3 - 3.5	3.5 - 5.3	4.7 - 7.1	5.9 - 8.9	7.1 - 10.6	8.3 - 12.5	9.4 - 14.1
350	0.11	V in l/s/m	220	330	440	550	660	770	
		L in m	2.6 - 3.9	3.9 - 5.9	5.2 - 7.8	6.5 - 9.8	7.8 - 11.8	9.1 - 13.7	
400	0.13	V in l/s/m	260	390	520	650	780	910	
		L in m	2.8 - 4.2	4.2 - 6.4	5.7 - 8.5	7.1 - 10.7	8.5 - 12.8	9.9 - 14.9	
450	0.15	V in l/s/m	300	450	600	750	900		
		L in m	3.0 - 4.6	4.6 - 6.9	6.1 - 9.2	7.6 - 11.5	9.2 - 13.8		

**NOTE :** For ADMR / ADML diffusers, 'H' = Nominal diffuser height - 50mm

## Order Code



<sup>(1)</sup> Q, QN2 fixing options only available for type ADMR.

## Specification Text

Rectangular construction ceiling diffuser with border frame and removable one or two way discharge core suitable for horizontal supply air discharge. Fixed pattern air deflection blades. Optional rear mounted opposed blade volume control damper adjustable by removal of diffuser core.

Diffuser available in finite length or in linear format consisting intermediate and end sections.

## Materials

The diffuser face and core are of extruded aluminium profiles finished in high quality polyester powdercoat. The rear mounted damper is made from formed sheet steel and aluminium finished in polyester powdercoat black (RAL 9005)

## Order Example

Make: TROX  
Type: ADM-2-A / 1500 x 300 / A30 / S11 / P3