



# Makkah

## For Air Outlets

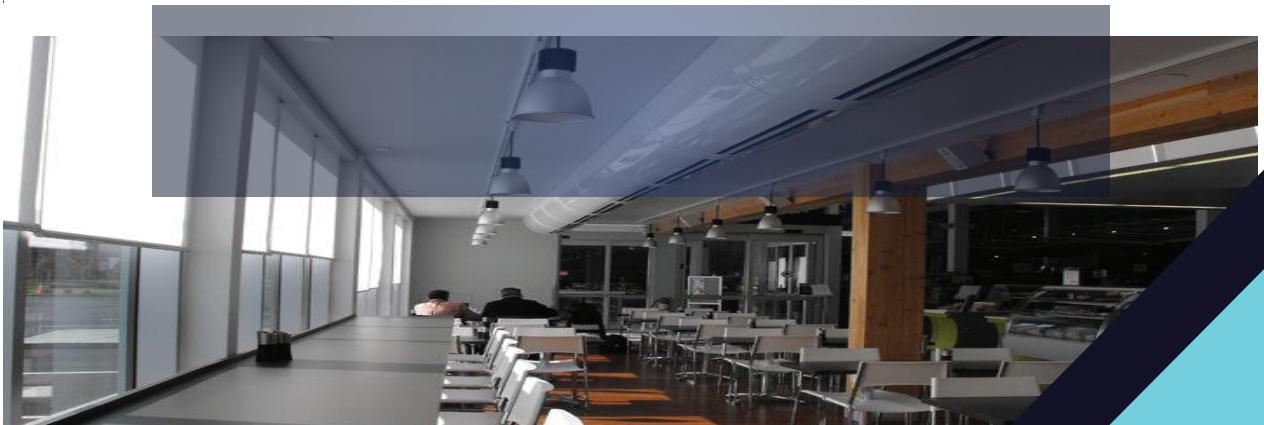


**Linear Slot Diffuser**

## LINEAR SLOT DIFFUSER

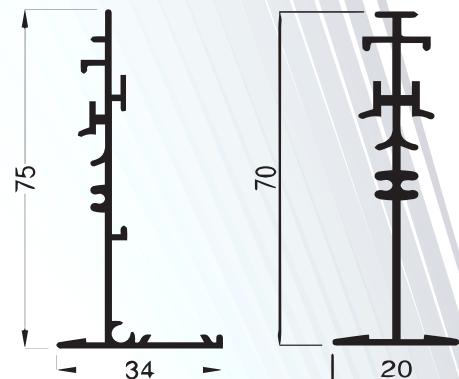
### INTRODUCTION:

LINEAR SLOT DIFFUSERS ARE USED IN LARGE OPEN AREAS WHERE PERIMETER SUPPLY OR RETURN IS REQUIRED, THIS CAN BE ACHIEVED BY AIR DEFLECTING VANES WHICH REQUIRED, THIS CAN BE ACHIEVED BY AIR DEFLECTING VANES WHICH REQUIRED TO ACHIEVE PRECISE CONTROL OF AIR FLOW CONTROL. WITH ITS PLEASANT AESTHETIC APPEARANCE, IT CAN BE USED IN VARIETY OF PRESTIGIOUS LOCATIONS SUCH AS LOBBIES, DINING HALLS, HOTELS, PALACES AND ENTRANCES WHERE AESTHETIC IS ARCHITECTURALLY CRITICAL. WITH ITS STEADY PERFORMANCE AT VARIABLE AIR FLOW RATES, SLOT DIFFUSERS CAN BE EFFECTIVELY USED AS A PART OF VAV SYSTEMS. THEY CAN BE USED AS SUPPLY AIR DIFFUSERS, RETURN AIR DIFFUSERS OR DUMMY CEILING DIFFUSER FOR DECORATIVE PURPOSES



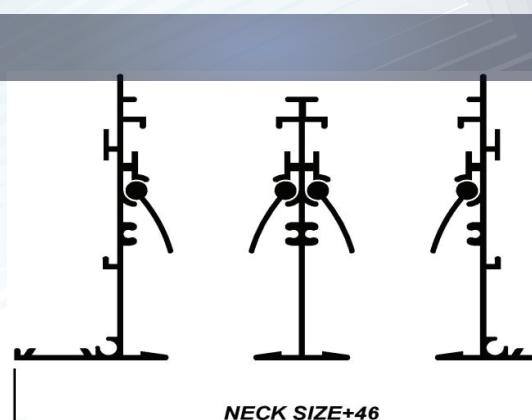
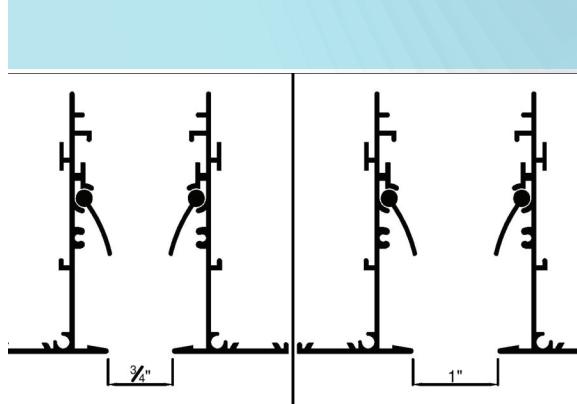
## CONSTRUCTION:

FRAME AND INTERMEDIATE PROFILES ARE MADE OF EXTRUDED ALUMINUM OF ALLOY 6063, THE AIR DIRECTING INNER VANES ARE THE SAME AS THE FRAME. IN ORDER TO CONSTRUCT THE SLOTS WHICH WILL BE AVAILABLE FROM ONE SLOT TO EIGHT SLOTS, WE ARRANGE THE INTERMEDIATE PROFILES WITH THE REQUIRED NUMBERS TO GET THE DESIRED SLOTS.



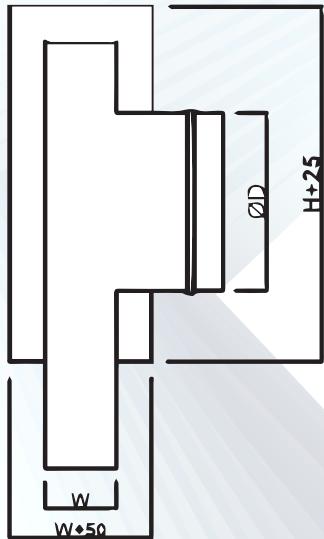
## TYPES OF LINEAR SLOT DIFFUSER:

TWO TYPES OF LINEAR SLOT DIFFUSER ARE AVAILABLE; LINEAR SLOT DIFFUSER WITH  $\frac{3}{4}$ " SLOT WIDTH. LINEAR SLOT DIFFUSER WITH 1" SLOT WIDTH. BOTH ARE MANUFACTURED IN ONE UP TO EIGHT SLOTS WITH A MAXIMUM ONE PIECE LENGTH OF 6 METERS AS A STANDARD.

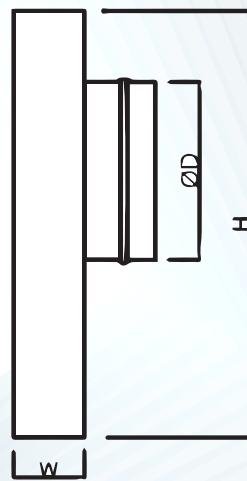


### PLENUM BOX:

IT IS DESIGNED TO ENSURE EVEN AIR DISTRIBUTION ALONG THE ASSOCIATED LINEAR SLOT DIFFUSERS, AND THEREFORE MAINTAINING CORRECT PERFORMANCE CHARACTERISTICS. PLENUM BOXES ARE AVAILABLE WITH OR WITHOUT INTERNAL LINING OF THERMAL AND ACOUSTIC INSULATION AND ARE AVAILABLE FOR SINGLE OR CONTINUOUS INSTALLATIONS.



*Plenum with insulation*



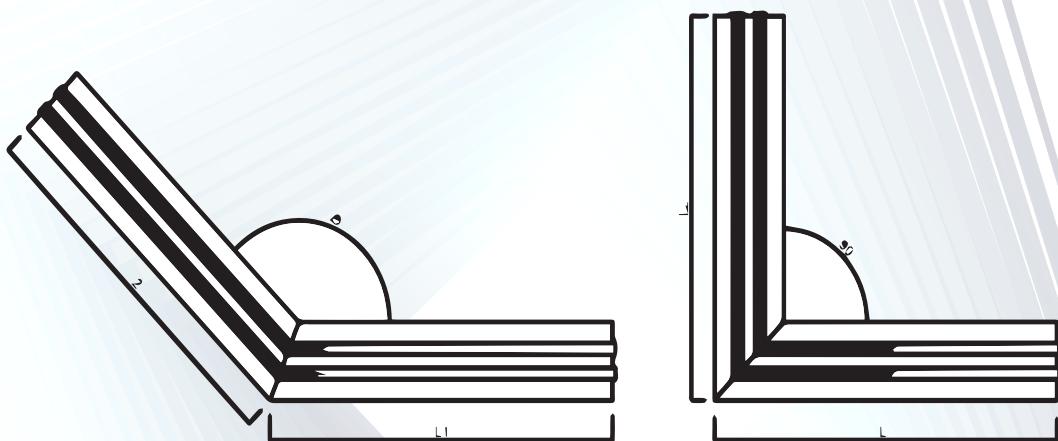
*Plenum without insulation*

#### DIMENSIONS OF PLENUM BOXES (WITH/WITHOUT)INSULATION

NO. OF SLOTS	1	2	3	4	5	6	7	8
H (mm)	300	300	300	300	350	400	400	400
W (mm)	50	85	125	160	195	230	265	300
ØD (mm)	125	150	200	250	300	300	300	300

### MITERED CORNERS:

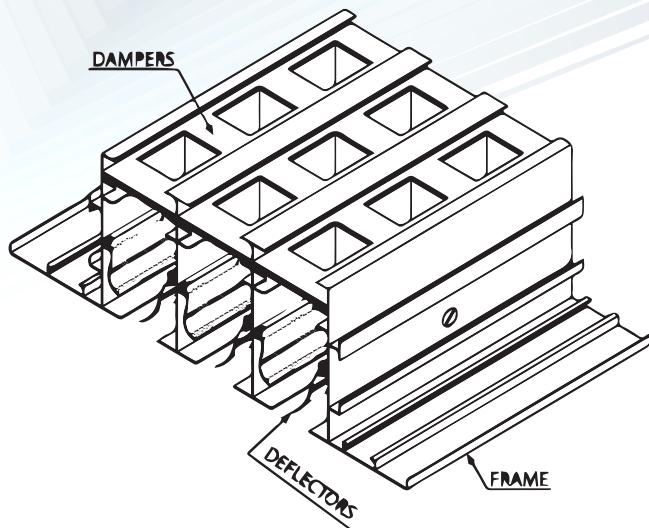
ARE USUALLY USED WHEN SLOT DIFFUSERS ARE DESIGNED TO FORM CLOSED LOOPS. THEY ARE AVAILABLE IN ONE TO EIGHT SLOTS AND CAN HAVE ANY COMBINATION OF LENGTH L1, L2 AND  $\Theta$



**MITERED CORNERS**

### DAMPERS:

Linear slot dampers are made of punched metal or aluminum strips. Two sliding strips to control the required amount of air. They are normally in black or as desired.



## ENGINEERING PERFORMANCE DATA

### A-Supply Linear Slot Diffuser with $\frac{3}{4}$ " Slot Width

#### SUPPLY LINEAR SLOT DIFFUSER - SLOT WIDTH $\frac{3}{4}$ "

	NUMBER OF SLOTS							
	1	2	3	4	5	6	7	8
Ak-v (ft <sup>2</sup> /ft)	0.045	0.09	0.135	0.18	0.225	0.27	0.315	0.36
Ak-h (ft <sup>2</sup> /ft)	0.018	0.037	0.056	0.075	0.093	0.11	0.131	0.15
CFM / ft	10	20	30	40	50	60	70	80
THROW	4 - 8	7 - 12	7 - 14	8 - 16	9 - 18	11 - 20	11 - 22	12 - 33
NC	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
CFM / ft	15	30	45	60	75	90	105	120
THROW	6 - 10	9 - 15	11 - 19	12 - 21	14 - 24	15 - 27	17 - 29	18 - 31
NC	<20	<20	<20	20	22	23	25	27
CFM / ft	20	40	60	80	100	120	140	160
THROW	8 - 12	10 - 19	14 - 24	16 - 27	18 - 30	20 - 33	22 - 36	24 - 38
NC	20	22	24	26	27	27	29	30
CFM / ft	25	50	75	100	125	150	175	200
THROW	10 - 14	13 - 22	17 - 26	20 - 30	22 - 32	25 - 36	28 - 30	30 - 42
NC	25	26	28	30	31	32	33	34
CFM / ft	30	60	90	120	150	180	210	240
THROW	12 - 17	15 - 24	20 - 29	24 - 33	25 - 34	29 - 40	31 - 42	33 - 45
NC	30	32	33	34	35	36	37	38
CFM / ft	35	70	105	140	175	210	245	280

\* THROW DATA ARE IN FEET, AND  
BASED ON TERMINAL VELOCITIES OF  
100 & 50 FPM FOR HORIZONTAL DIS-  
CHARGE.

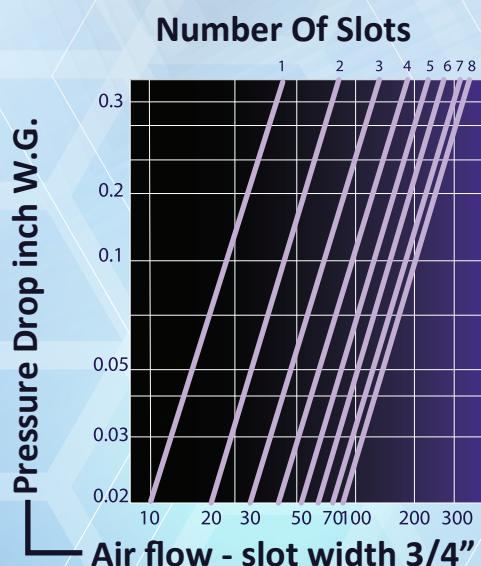
\*NC VALUES ARE FOR HORIZONTAL DISCHARGE,  
FOR VERTICAL DISCHARGE SUBTRACT " 5 " FROM NC  
VALUE. \* NC VALUES ARE FOR 4 FT LONG UNIT AND

ROOM ATTENUATION OF 10 DB. \* AK-V IS THE EFFECTIVE  
AREA FOR VERTICAL FLOW IN (FT /RUNING FT). \* AK-H IS THE  
EFFECTIVE AREA FOR HORIZONTAL FLOW IN (FT<sup>2</sup>/RUNING FT).

- FOR NC < 20
- FOR NC 20-30
- FOR NC 30-40
- FOR NC > 40

#### SUPPLY LINEAR SLOT DIFFUSER - SLOT WIDTH 3/4"

	NUMBER OF SLOTS							
THROW	13 - 18	17 - 26	22 - 33	25 - 36	27 - 38	31 - 44	33 - 47	34 - 49
NC	33	35	37	38	39	40	41	42
CFM /ft	40	80	120	160	200	240	280	320
THROW	14 - 20	19 - 28	24 - 35	26 - 38	29 - 41	33 - 47	35 - 51	36 - 54
NC	36	38	40	42	43	44	45	46
CFM /ft	45	90	135	180	225	270	315	360
THROW	15 - 22	21 - 30	26 - 38	27 - 40	32 - 45	35 - 50	37 - 54	38 - 58
NC	39	42	44	46	47	48	49	50
CFM /ft	50	100	150	200	250	300	350	400
THROW	17 - 24	24- 33	29 - 40	28 - 44	35 - 50	37 - 54	39 - 58	40 - 62
NC	42	44	46	48	50	52	54	56



## B-Supply Linear Slot Diffuser with 1" Slot Width

### SUPPLY LINEAR SLOT DIFFUSER - SLOT WIDTH 1"

#### NUMBER OF SLOTS

	1	2	3	4	5	6	7	8
Ak-v (ft <sup>2</sup> /ft)	0.033	0.063	0.09	0.127	0.138	0.168	0.2	0.226
Ak-h (ft <sup>2</sup> /ft)	0.022	0.045	0.068	0.09	0.174	0.132	0.163	0.187
CFM / ft	10	20	30	40	50	60	70	80
THROW	4 - 7	7 - 11	7 - 13	8 - 15	9 - 17	11 - 19	11 - 21	12 - 22
NC	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
CFM / ft	15	30	45	60	75	90	105	120
THROW	5 - 9	8 - 14	10 - 18	11 - 20	13 - 23	14 - 26	16 - 27	17 - 30
NC	<20	<20	<20	<20	21	22	24	26
CFM / ft	20	40	60	80	100	120	140	160
THROW	8 - 12	9 - 19	13 - 23	15 - 26	17 - 29	19 - 32	21 - 34	23 - 36
NC	<20	21	23	25	26	27	28	30
CFM / ft	25	50	75	100	125	150	175	200
THROW	9 - 14	12 - 21	16 - 25	20 - 30	21- 31	24 - 36	27 - 38	29 - 40
NC	24	25	26	28	30	31	32	33
CFM / ft	30	60	90	120	150	180	210	240
THROW	11 - 17	14 - 23	18 - 28	23 - 32	24 - 34	27 - 39	30 - 40	32 - 44
NC	27	29	30	32	34	35	36	37
CFM / ft	35	70	105	140	175	210	245	280



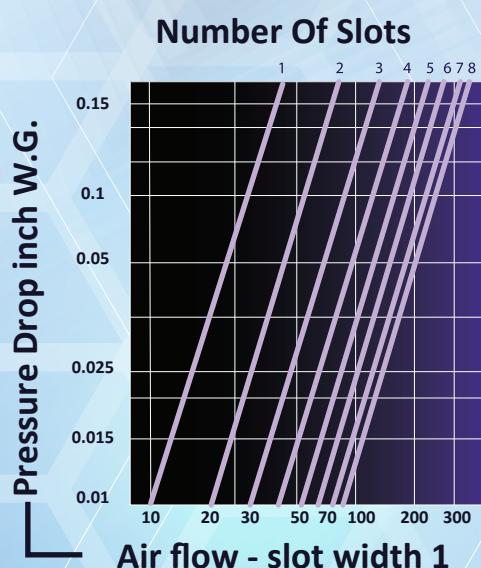
\* THROW DATA ARE IN FEET, AND BASED ON TERMINAL VELOCITIES OF 100 & 50 FPM FOR HORIZONTAL DISCHARGE. \* NC VALUES ARE FOR HORIZONTAL DISCHARGE, FOR VERTICAL DISCHARGE SUBTRACT " 5 " FROM NC VALUE. \* NC VALUES ARE FOR 4 FT LONG UNIT AND ROOM ATTENUATION OF 10 DB. \* AK-V IS THE EFFECTIVE AREA FOR VERTICAL FLOW IN (FT<sup>2</sup>/RUNING FT). \* AK-H IS THE EFFECTIVE AREA FOR HORIZONTAL FLOW IN (FT<sup>2</sup>/RUNING FT).

- FOR NC < 20
- FOR NC 20-30
- FOR NC 30-40
- FOR NC > 40

### SUPPLY LINEAR SLOT DIFFUSER - SLOT WIDTH 1

#### NUMBER OF SLOTS

THROW	12 - 18	16 - 25	21 - 32	24 - 36	26 - 38	30 - 43	32 - 46	33 - 48
NC	30	32	34	36	38	39	40	41
CFM / ft	40	80	120	160	200	240	280	320
THROW	14 - 20	18 - 28	23 - 34	25 - 38	28 - 42	31 - 46	34 - 50	36 - 52
NC	33	35	37	39	40	41	43	45
CFM / ft	45	90	135	180	225	270	315	360
THROW	15 - 22	20 - 30	25 - 38	26 - 40	30 - 44	34 - 49	36 - 52	37 - 56
NC	35	38	40	43	45	46	47	49
CFM / ft	50	100	150	200	250	300	350	400
THROW	16 - 24	24 - 32	27 - 39	29 - 43	34 - 49	36 - 53	38 - 56	39 - 60
NC	39	41	44	46	48	50	52	54



## C-Return Linear Slot Diffuser with $\frac{3}{4}$ " Slot Width

### RETURN LINEAR SLOT DIFFUSER - SLOT WIDTH $\frac{3}{4}$ "

	NUMBER OF SLOTS							
	1	2	3	4	5	6	7	8
Static Pressure Drop" inch W.G."	0.007	0.03	0.062	0.117	0.173	0.236	0.335	0.452
Ak ( $\text{ft}^2/\text{ft}$ )	0.046	0.092	0.138	0.184	0.23	0.276	0.322	0.368
CFM / ft	10	20	30	40	50	60	70	80
NC	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
CFM / ft	15	30	45	60	75	90	105	120
NC	<20	<20	20	21	23	24	26	27
CFM / ft	20	40	60	80	100	120	140	160
NC	21	22	24	26	28	29	30	31
CFM / ft	25	50	75	100	125	150	175	200
NC	25	27	29	31	32	33	34	35
CFM / ft	30	60	90	120	150	180	210	240
NC	31	33	34	35	36	37	38	39
CFM / ft	35	70	105	140	175	210	245	280
NC	34	36	38	39	40	41	42	43
CFM / ft	40	80	120	160	200	240	280	320
NC	37	39	41	43	44	45	46	47
CFM / ft	45	90	135	180	225	270	315	360
NC	40	43	45	47	48	49	50	51
CFM / ft	50	100	150	200	250	300	350	400
NC	43	45	47	49	51	53	55	57

\* PERFORMANCE DATA ARE FOR RETURN LINEAR SLOT DIFFUSERS WITH DEFLECTION BLADES. \* NC VALUES ARE FOR 4 FT LONG UNIT AND ROOM ATTENUATION OF 10 DB. \* AK IS THE EFFECTIVE AREA IN ( $\text{ft}^2/\text{RUNING FT}$ )

● FOR NC < 20   ● FOR NC 20-30   ● FOR NC 30-40   ● FOR NC > 40



**GETTING YOU COMFORTABLE IS OUR CONCERN**

## D-Return Linear Slot Diffuser with 1" slot width

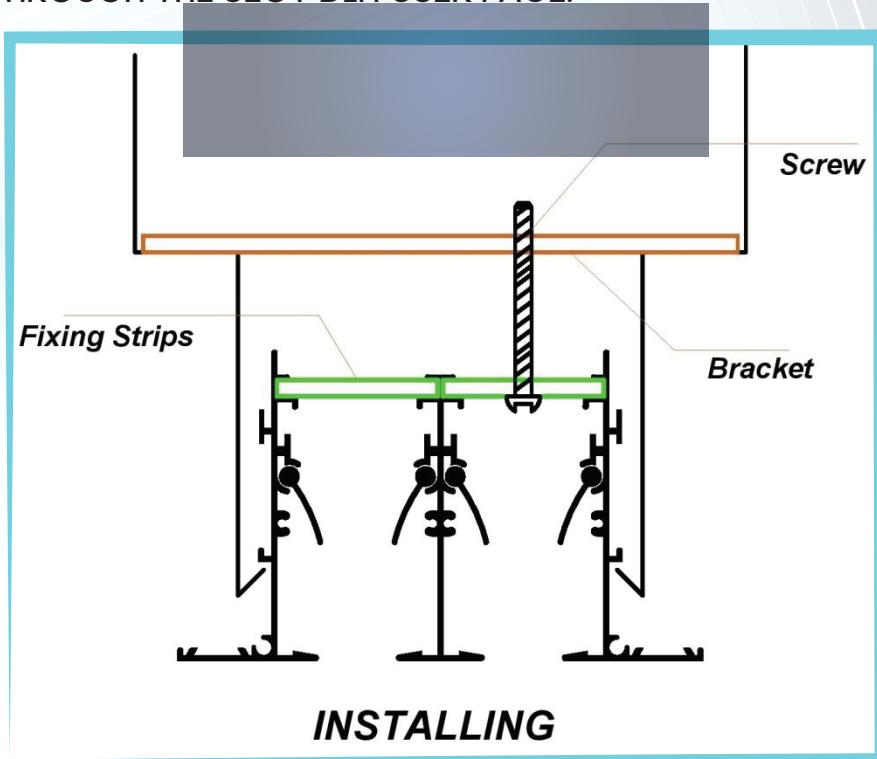
### RETURN LINEAR SLOT DIFFUSER - SLOT WIDTH 1"

	NUMBER OF SLOTS							
Static Pressure Drop" inch W.G."	1	2	3	4	5	6	7	8
Ak (ft <sup>-2</sup> /ft)	0.005	0.02	0.044	0.078	0.115	0.164	0.231	0.31
CFM / ft	0.034	0.065	0.093	0.131	0.143	0.174	0.207	0.234
NC	< 20	< 20	< 20	< 20	< 20	< 20	< 20	20
CFM / ft	10	20	30	40	50	60	70	80
NC	15	30	45	60	75	90	105	120
CFM / ft	<20	<20	<20	20	22	23	25	26
NC	20	40	60	80	100	120	140	160
CFM / ft	<20	22	24	26	27	28	29	30
NC	25	50	75	100	125	150	175	200
CFM / ft	24	26	27	29	31	32	33	34
NC	30	60	90	120	150	180	210	240
CFM / ft	28	29	31	33	35	36	37	38
NC	35	70	105	140	175	210	245	280
CFM / ft	31	33	35	37	39	40	41	42
NC	40	80	120	160	200	240	280	320
CFM / ft	34	36	38	40	41	42	44	46
NC	45	90	135	180	225	270	315	360
CFM / ft	36	39	41	44	46	47	49	50
NC	50	100	150	200	250	300	350	400
CFM / ft	40	42	45	47	49	51	52	55
NC	40	42	45	47	49	51	52	55

\* PERFORMANCE DATA ARE FOR RETURN LINEAR SLOT DIFFUSERS WITH DEFLECTION BLADES. . \* NC VALUES ARE FOR 4 FT LONG UNIT AND ROOM ATTENUATION OF 10 DB. \* AK IS THE EFFECTIVE AREA IN (FT<sup>2</sup>/RUNING FT). ● FOR NC < 20 ● FOR NC 20-30 ● FOR NC 30-40 ● FOR NC > 40

### INSTALLING:

IN ORDER TO INSTALL A LINEAR SLOT DIFFUSER A FIXING STRIPS IS GOING TO BE FIXED WITH THE MOUNTING BRACKET LYING ON THE PLENUM BOX. THE FIXING STRIPS ARE SCREWED TO THE BRACKET. THE SCREW IS REACHED THROUGH THE SLOT DIFFUSER FACE.

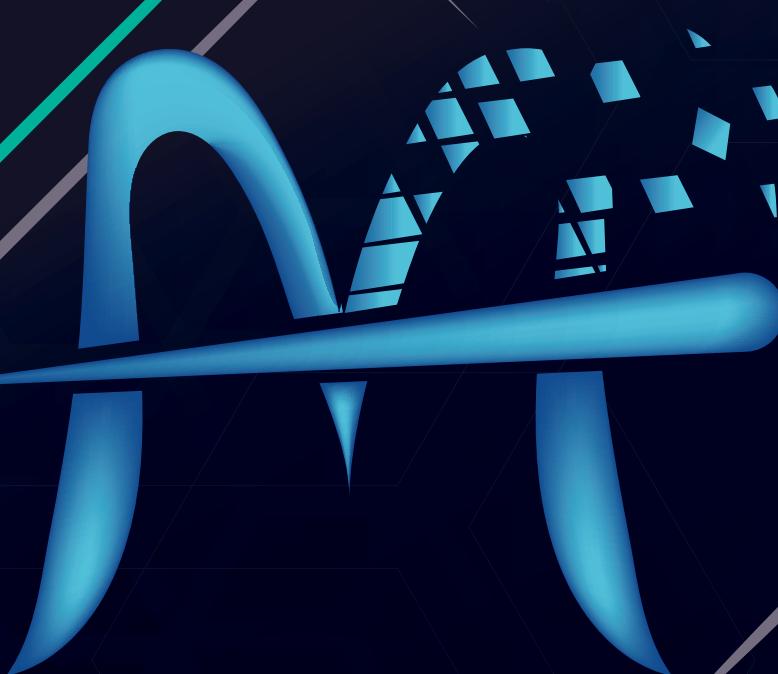


### INSTALLING

### FINISH:

LINEAR SLOT DIFFUSERS DELIVERED IN WHITE ELECTRO STATIC RAL COLOR AS A STANDARD OR ANY REQUIRED COLOR UPON REQUEST.





# makkah For Air Outlets



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