



# PLF

- > Louvre Face Diffuser
- > High Capacity
- > Spread Pattern Options

## APPLICATION

A high capacity louvred face directional diffuser that can supply large volumes of air at relatively low sound levels and pressure drops. Available with a wide variety of core styles and neck sizes, a combination can be selected to suit a specified air pattern and deliver the desired volume of air to suit any particular requirement.

### Frame types:

Flat, bevelled or deep drop face.

## DESIGN

### Construction:

Extruded aluminium.

### Finish:

AW Appliance White polyester powder finish RAL 9010 semi-gloss as standard. *Other finishes available.*

### Options:

- Square, rectangular or round neck
- Square to round adaptor (SQR)
- Opposed blade damper (OA)

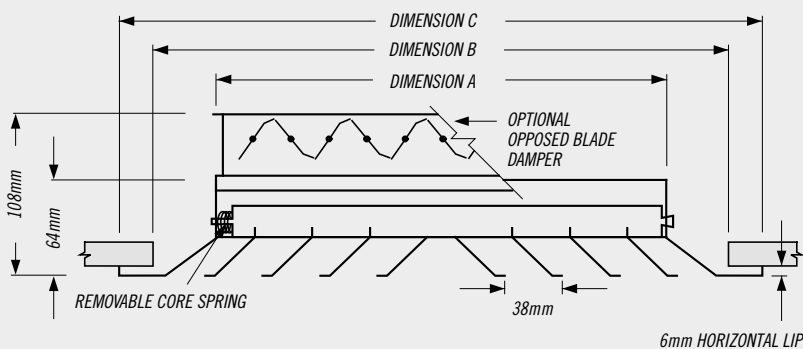
## AVAILABLE TYPES

- PLF:** Fixed Pattern  
**PLFA:** Adjustable Pattern  
**S:** Surface Mount Frame  
**SP:** Spline Frame  
**M:** Metal Pan (21 mm snap-in)

## FEATURES

- A wide variety of frame styles
- Spring loaded removable core
- 1, 2, 3 or 4-way air patterns

### PLF-S – Surface Mount Frame

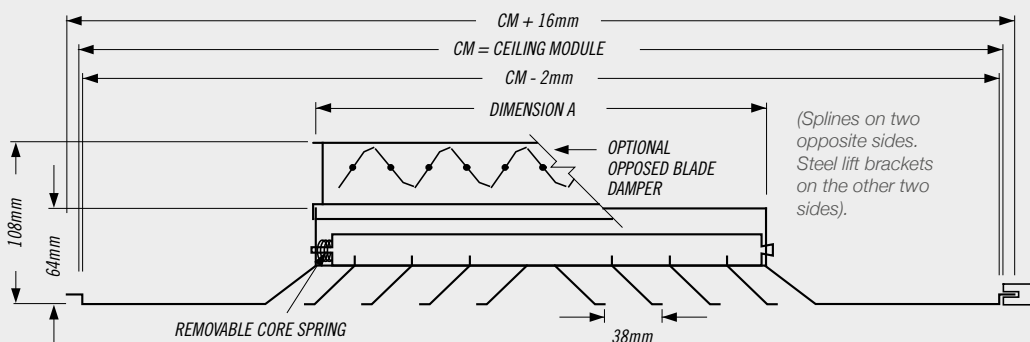


## DIMENSIONAL DATA (mm)

Nominal Unit Size	Actual Neck Dimension 'A'	Minimum Opening Dimension 'B'	Overall Flanges Dimension 'C'
150 x 150	146 x 146	228 x 228	290 x 290
225 x 225	223 x 223	305 x 305	367 x 367
300 x 300	299 x 299	381 x 381	443 x 443
375 x 375	375 x 375	457 x 457	519 x 519
450 x 450	451 x 451	533 x 533	595 x 595

PLF-SP: If the ceiling module is more than 75mm larger than the neck size of the diffuser in either or both dimensions, a module-sized extended panel will be added.

### PLF-SP – Spline Frame



Spline type diffuser for one-directional exposed T-bar lay-in grid or for concealed T-Bar grid.

## REMARKS

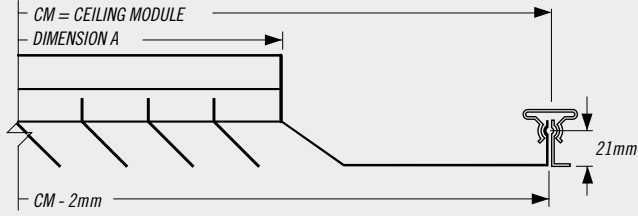
**Available Sizes:**  
 Unit size is determined by duct dimensions. Diffuser necks are under sized to suit ductwork. Duct Sizes are available in 75mm increments.

**Minimum size:**  
 150mm x 150mm square neck. 225mm x 150mm rectangular neck (most core styles).



**Maximum size:**  
 Type S, B and D: 900mm x 900mm.  
 Types SP and M.

# PLF – LOUVRE FACE DIFFUSER



## PLF-M – Metal Pan (Snap-in)







### 1-WAY SIZES (mm)

	CORE	MIN	MAX
	1A	225 x 150	900 x 835
	1B		


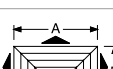

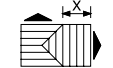
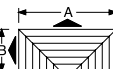
### 2-WAY SIZES (mm)

	CORE	MIN	MAX
	2A	225 x 150	900 x 835
	2B		

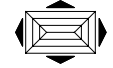
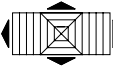

### 2-WAY CORNER SIZES (mm)

	CORE	MIN	MAX
	2C	225 x 150	900 x 835
	2D		
	2E		
	2F		

### 3-WAY SIZES (mm)

	CORE	MIN	MAX
	3A1 A > B	225 x 150	900 x 825
	3A2 B < A B > A/2		
	3B B = A/2	300 x 150	900 x 450
	3C	225 x 150	900 x 825
	3E B < A/2	375 x 150	900 x 375

### 4-WAY SIZES (mm)

	CORE	MIN	MAX
	4B	225 x 150	900 x 825
	4C	300 x 150	900 x 750
	4E	375 x 150	900 x 675

### LINED PLENUMS

MODEL	Middle frequency bands					
	125	250	500	1K	2K	4K
250	5	0	3	10	5	11
300	3	1	6	7	7	9
400	2	2	9	7	7	9
500	2	4	9	7	7	10
550	0	6	7	7	6	9

### GENERAL

- Duct sizes are available in 75mm increments.
- Unless otherwise specified, the "x" dimension on 3C and 4E patterns will be such that catalogued flow division is obtained.
- Patterns are shown in plan view (looking down into inlet).

### RETURN AIR VOLUME

m³/s	m³/h	Size	Ps	Lp
0.015	54	250	1	-
0.020	72	250	3	-
0.025	90	250	4	-
		325	1	-
0.030	108	250	6	-
		325	1	-
0.040	144	250	10	-
		325	2	-
		400	1	-
0.050	180	250	14	12
		325	3	-
		400	2	-
0.060	216	250	22	18
		325	3	-
		400	2	-
		475	1	-
0.080	288	325	6	-
		400	3	-
		475	2	-
		550	2	-
0.100	360	325	9	-
		400	7	-
		475	5	-
		550	4	-
0.125	450	400	12	15
		475	8	10
		550	6	-
0.150	540	400	18	22
		475	12	15
		550	9	10
0.200	720	475	24	23
		550	16	17
0.250	900	550	22	22
0.300	1080	550	35	28
0.400	1440	550	63	35
0.500	1800	550	98	41

### RETURN NOTES

- The pressure drop applies to fully opened damper.
- Static pressure drop Ps in Pa.  
The assumed room absorption is 10 dB.
  - Sound pressure Lp in dB(A). Intermediate values may be interpolated.

# PLF – PERFORMANCE DATA

SUPPLY AIR VOLUME																		
Air Volume		Size	4-way			3-way				2-way opposite			2-way corner			1-way		
m <sup>3</sup> /s	m <sup>3</sup> /h		T	Ps	Lp	T(A)	T(B)	Ps	Lp	T	Ps	Lp	T	Ps	Lp	T	Ps	Lp
0.025	90	250	1.2	4	-	1.3	1.2	4	-	1.5	5	-	1.5	5	-	2.4	6	-
0.030	108	250	1.3	6	-	1.4	1.2	6	-	1.7	7	-	1.7	6	-	2.6	8	-
0.040	144	250	1.5	10	23	1.7	1.4	10	25	1.9	12	25	1.9	12	26	3.1	15	28
		325	1.2	2	-	1.3	1.2	3	-	1.6	3	-	1.6	3	-	2.4	4	-
0.050	180	250	1.6	15	26	1.9	1.6	16	26	2.2	16	26	2.2	16	26	3.4	20	28
		325	1.3	4	12	1.5	1.2	5	16	1.7	5	14	1.7	5	16	2.6	6	18
0.060	216	250	1.9	24	32	2.2	1.9	24	30	2.5	30	32	2.5	27	31	3.7	35	32
		325	1.4	6	17	1.6	1.3	7	20	1.8	7	19	1.8	7	20	2.9	8	23
0.080	288	250	2.3	33	38	2.6	2.3	33	39	3.0	38	38	3.0	35	40	4.8	42	41
		325	1.7	10	20	2.0	1.7	10	22	2.3	12	20	2.3	12	22	3.6	14	24
		400	1.5	2	-	1.7	1.5	2	-	2.0	3	-	2.1	3	-	3.2	4	-
0.100	360	250	2.9	55	45	3.3	2.8	56	46	3.8	64	46	3.8	58	46	6.0	73	47
		325	2.1	14	26	2.4	2.1	16	28	2.8	17	27	2.8	18	27	4.5	21	29
		400	1.9	3	-	2.0	1.9	4	17	2.6	5	15	2.6	4	15	4.0	5	17
0.125	450	325	2.7	21	32	3.0	2.6	25	33	3.5	27	32	3.5	28	33	5.6	32	34
		400	2.5	5	19	2.7	2.4	6	20	3.3	8	20	3.3	6	20	5.0	8	22
		475	2.2	4	-	2.5	2.2	4	15	2.9	4	15	2.9	4	12	4.5	5	16
0.150	540	325	3.2	32	37	3.7	3.2	37	38	4.2	38	37	4.2	40	38	6.7	46	39
		400	2.9	8	24	3.2	2.8	10	27	3.8	12	25	3.8	9	24	5.8	12	26
		475	2.6	5	18	2.8	2.5	6	19	3.4	7	20	3.4	6	18	5.2	7	21
0.200	720	325	4.3	55	45	4.9	4.2	65	46	5.6	68	46	5.6	70	47	8.9	85	48
		400	3.6	14	31	4.0	3.6	17	34	4.8	21	32	4.8	16	32	7.3	21	34
		475	3.2	10	25	3.6	3.2	11	26	4.3	12	26	4.3	12	25	6.5	14	28
		550	2.6	6	20	3.0	2.6	6	19	3.4	7	20	3.4	6	20	5.4	8	22
0.250	900	400	4.3	21	37	4.8	4.3	26	40	5.7	32	37	5.7	24	38	8.7	32	39
		475	3.8	14	30	4.3	3.8	16	31	6.2	17	32	5.1	17	32	7.8	19	32
		550	3.3	8	23	3.7	3.2	9	24	4.3	10	24	4.3	10	24	6.8	12	27
0.300	1080	400	5.0	31	42	5.5	4.9	37	45	6.6	46	42	6.6	35	43	10.1	46	44
		475	4.5	21	35	4.9	4.4	23	36	5.9	25	36	5.9	24	35	9.0	27	38
		550	3.9	12	28	4.4	3.9	13	28	5.1	14	30	5.1	14	29	8.1	17	32
0.400	1440	475	5.6	35	43	6.2	5.6	38	44	7.5	41	45	7.5	40	44	11.4	45	46
		550	5.2	24	37	5.9	5.2	26	37	6.8	28	38	6.8	30	38	10.8	32	34

## SUPPLY NOTES

The throw applies to flush mounted in a horizontal dropped ceiling.

- Throw T in metres.  
The pressure drop applies to a fully opened damper.
- Static pressure drop Ps in Pa. The assumed room absorption is 10 dB.
- Sound pressure Lp in dB(A). Intermediate values may be interpolated. For LTV type diffusers counts:  
NC is dB(A) minus 7 dB NR is dB(A) minus 4 dB  
Without plenum box and optimal connection, the Lp values may be reduced by 3 dB.

## REMARKS

NC is dB(A) minus 7 dB.  
NR is dB(A) minus 4 dB.  
Without plenum box and optimal connection the Lp values may be reduced by 3 dB.

## THROW CORRECTION FACTOR

V <sub>end</sub> m/s	Throw factor
0.15	1.67
0.20	1.25
0.25	1.00
0.35	0.71
0.50	0.50

Throw figures are based on 0.25 m/s end velocity. In case other end velocities are required correct according to table.