

# Linear Fan Coil Diffusers

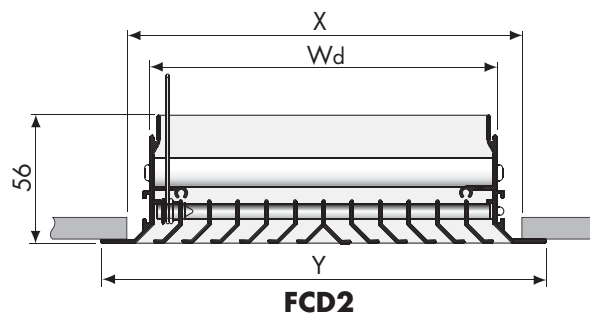
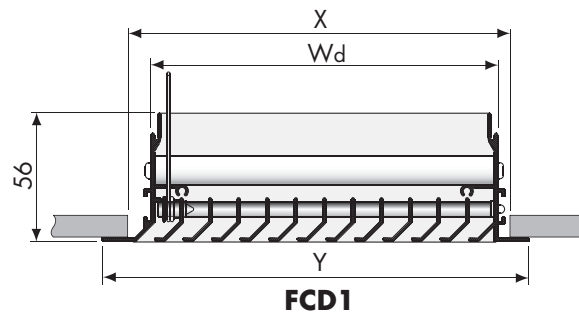
## FCD1 FCD2

### Introduction

The Waterloo linear diffuser series FCD has been developed as an alternative form of continuous air distribution product for fan coil or variable air volume applications.

Available with either one or two way core configurations, the blade profile is specifically designed to produce jet throw characteristics with a high induction rate, so prompting rapid mixing and diffusion within the room air.

The core sections of the diffusers are retained with quick release spring clips and safety cords to allow easy removal during installation and service access.



### Product Description

- FCD1** One way fan coil diffuser
- FCD2** Two way fan coil diffuser
- LH** Left hand end cap for FCD1
- RH** Right hand end cap for FCD1
- Ends** Pair of end caps

### Features

- High induction rate
- Quick release cores
- Wide size range
- Tile replacement units available

### Finishes

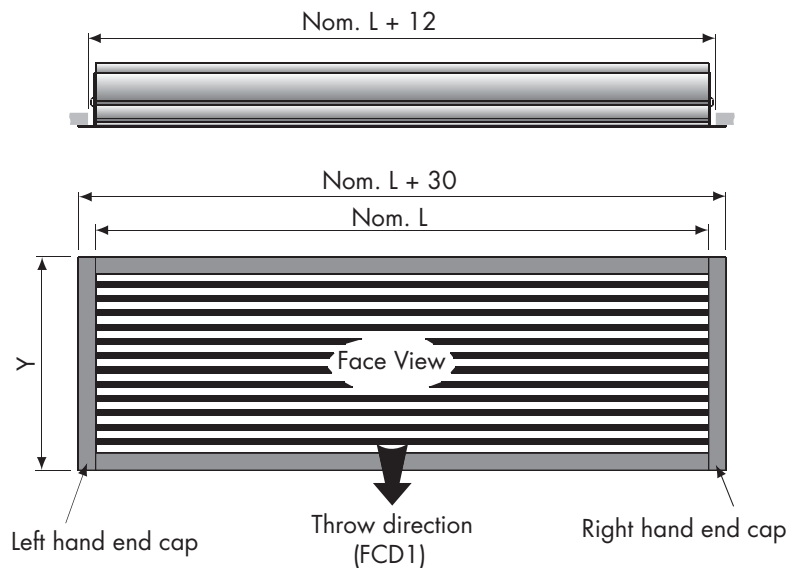
- PPM9006 (RAL 9006 Matt Silver)
- PPM9010 (RAL 9010 20% Gloss White)
- PPG9010 (RAL 9010 Gloss White)
- Other colours available on request

### Weights

See Table

### Sizes

150mm to 400mm wide in 50mm increments  
 Single lengths of 500mm up to 1500mm,  
 continuous applications are supplied in 1200mm  
 lengths with alignments strips.



### Order Example

**FCD1/3000x250/PPM9010/ENDS**

Type \_\_\_\_\_  
 Length \_\_\_\_\_  
 Width \_\_\_\_\_  
 Finish \_\_\_\_\_  
 End caps \_\_\_\_\_

Nom. Width	Wd	X		Y		Weight (Kg/m)
		FCD1	FCD2	FCD1	FCD2	
150	151	160	164	186	194	2.3
200	201	210	214	236	244	2.8
250	251	260	264	286	294	3.3
300	301	310	314	336	344	3.8
350	351	360	364	386	394	4.3
400	401	410	414	436	444	4.8



## Selection Criteria

The following tabulated data is based on tests with a 1.2m diffuser. Correction factors should be applied to the acoustic and throw data for continuous lengths.

Noise data is valid for one or two way throw configurations and is expressed in terms of NR level with a room absorption factor of 8dB.

Throws are based on a terminal velocity of 0.5 m/s, corresponding to an average

room air velocity ( $V_r$ ) of 0.25 m/s with a cooling differential of 10°C. For isothermal or 10°C heating conditions apply a factor of 1.15 to the throws.

To avoid draughts in the occupied zone, the selection of diffuser sizes and the resulting throws should be related to the ceiling height.

The following table provides a general recommendation for maximum throw selections at various ceiling heights.

### Length Corrections

Active Length (m)	0.5	1.0	2.0	2.5	3.0
NR Correction	-4	-1	+2	+3	+5
Throw Multiplier	0.7	0.8	1.1	1.25	1.5

### Throw Recommendations

Ceiling Height (m)	2.5	2.7	3.0	3.5	4.0
Max Throw (m)	4.0	5.5	6.5	9.5	12.0

## Performance Tables

FCD	Supply Air Volume per metre										
	Nom. H	150					200				
m <sup>3</sup> /h/m	l/s/m	1 Way Throw	2 Way Throw	P <sub>s</sub> Supply	P <sub>s</sub> Extract	L <sub>p</sub> (NR)	1 Way Throw	2 Way Throw	P <sub>s</sub> Supply	P <sub>s</sub> Extract	L <sub>p</sub> (NR)
270	75	3.0	2.1	2	4	-					
360	100	4.2	3.1	4	7	-	3.3	2.4	-	-	-
450	125	5.3	4.3	6	11	20	4.4	3.2	3	6	-
540	150	6.5	5.5	8	15	25	5.3	4.1	4	8	20
630	175	7.9	6.8	11	20	30	6.4	5.0	6	11	24
720	200	9.2	7.6	14	27	33	7.4	6.1	8	15	28
810	225										
900	250										
990	275										

FCD	Supply Air Volume per metre										
	Nom. H	250					300				
m <sup>3</sup> /h/m	l/s/m	1 Way Throw	2 Way Throw	P <sub>s</sub> Supply	P <sub>s</sub> Extract	L <sub>p</sub> (NR)	1 Way Throw	2 Way Throw	P <sub>s</sub> Supply	P <sub>s</sub> Extract	L <sub>p</sub> (NR)
432	120	3.4	2.5	2	3	-					
504	140	4.1	2.9	3	4	-					
576	160	4.8	3.5	3	5	20	4.2	2.9	2	4	-
648	180	5.6	4.1	4	6	23	4.8	3.4	3	5	20
720	200	6.2	4.7	5	8	25	5.4	3.9	3	6	23
810	225	7.2	5.5	6	10	28	6.2	4.6	4	8	26
900	250	7.9	6.4	7	12	31	7.1	5.4	5	10	29
990	275	9.1	7.2	9	15	33	7.8	6.2	6	12	31
1080	300	10.0	8.5	11	18	35	8.7	7.0	7	14	33

FCD	Supply Air Volume per metre										
	Nom. H	350					400				
m <sup>3</sup> /h/m	l/s/m	1 Way Throw	2 Way Throw	P <sub>s</sub> Supply	P <sub>s</sub> Extract	L <sub>p</sub> (NR)	1 Way Throw	2 Way Throw	P <sub>s</sub> Supply	P <sub>s</sub> Extract	L <sub>p</sub> (NR)
792	220	5.5	3.9	3	6	22					
864	240	6.0	4.4	3	7	25					
936	260	6.5	4.8	4	8	27	6.0	4.3	3	6	24
1008	280	7.0	5.5	4	9	29	6.5	4.8	3	7	26
1080	300	7.8	5.9	5	11	30	7.0	5.2	4	8	28
1170	325	8.5	6.8	6	13	32	7.6	6.0	4	10	30
1260	350	9.0	7.3	7	14	34	8.7	6.5	5	11	32
1350	375	10.0	8.3	8	16	36	9.2	7.3	6	13	33
1440	400						9.8	7.9	6	15	35