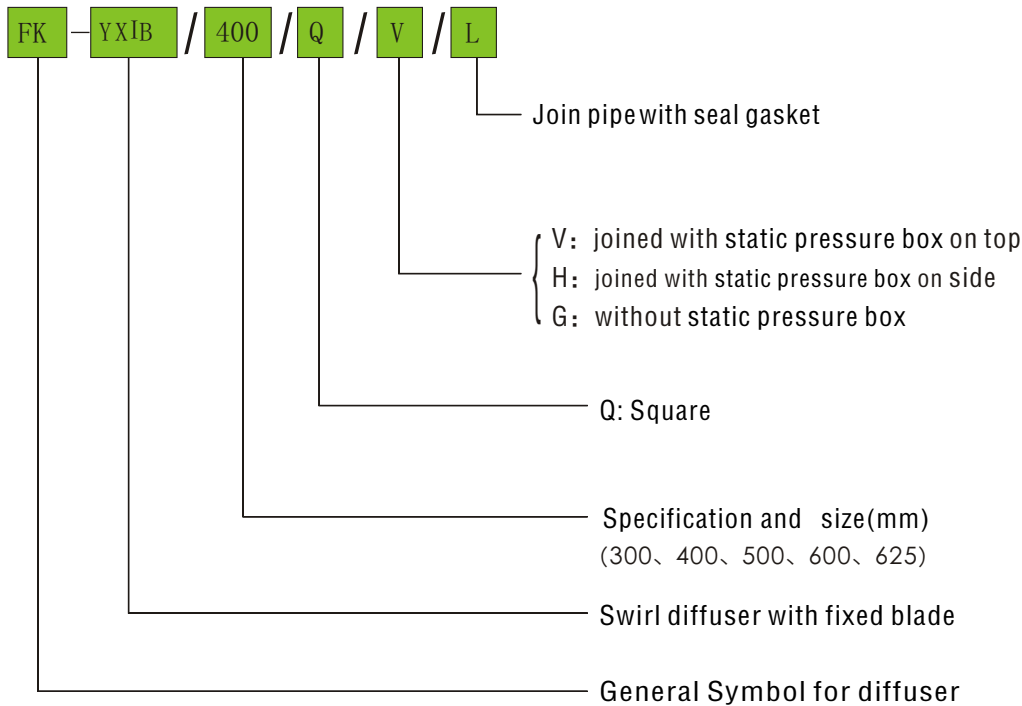


## 1. General Introduction

FK-YX I B serial Swirl diffuser consists of fixed radial aligned diversion blade, and is featured with large air volume and low noise. It blows by means of horizontal swirl, obtains a high inductivity, which enables the air blown to rapidly mixed with the air inside of the room to reduce the temperature as well as the wind speed. In this way a considerable degree of comfort inside of the room could be achieved. The temperature difference may reach as high as  $\pm 10K$ .

## 2 Representation Format for FK-YX I B Model



For example, FK-YXIB-400-Q-Z-V-L stands for swirl diffuser with blast volume of 400m<sup>3</sup>/h, tapped at the top, and seal washer attached to air pipe.

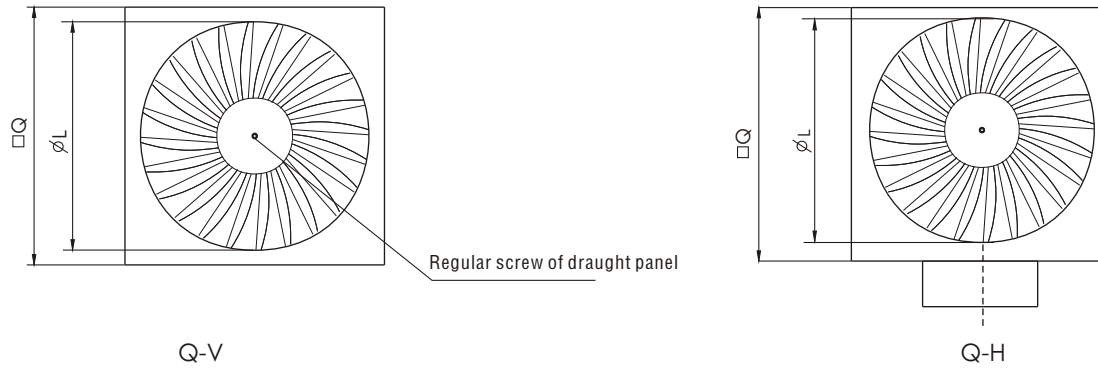
## 3. Features

FK-YX I B  
Type Swirl Diffuser

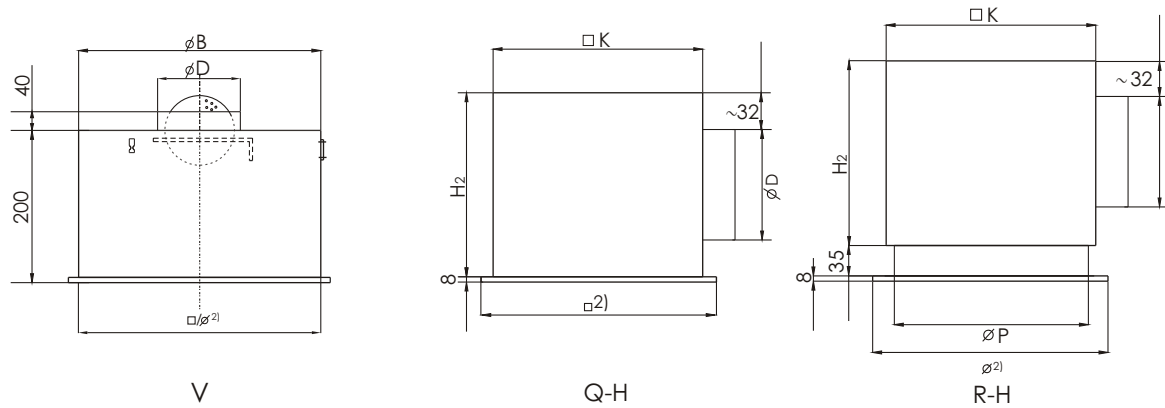


- round and square for option; horizontal swirl blast;  $\pm 10K$  temperature difference;
- Diffuser panel consisting of fixed radial aligned diversion blade
- Two modes for air intake of static pressure box: intake from top and intake horizontally; with windward valve and seal washer as optional;
- Diffuser panel could either be fixed to static pressure box by bolt or disassembled

## 4. Specification



### Static pressure box



Specs	ΦB	ΦD	ΦL	□Q	H <sub>2</sub>	□K	ΦP	Ak serial number <sup>1)</sup>
								Square diffuser panel
300	280	158	254	598	250	290	278	AK001
400	364	198	336	598	295	372	362	AK002
500	462	198	440	598	295	476	460	AK003
600	559	248	530	598	345	567	557	AK004
625	559	248	530	623	345	567	557	AK004

Note: 1) applicable to type R-H  
2) Exterior size for diffuser panel

## 5. Material

The diffuser adopts cold rolling galvanized plate for its panels; the panel is processed, and painted white. The static pressure box adopts cold rolling galvanized steel plate, and seal washer is made from rubber.

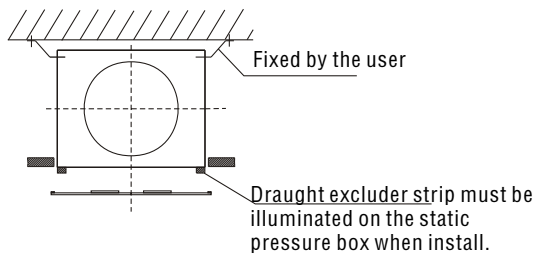
Specs	Diffuser Panel		Side Wise Tapping Static Pressure Box			
	Square	Round	Square		Round	
	Kg	Kg	Ak serial number	Kg	Ak serial number	Kg
300	0.7	0.6	Ak001	-2.8	Ak0013	P3.2
400	1.3	1.0	Ak002	-4.2	Ak0014	P4.8
500	2.0	1.6	Ak003	-6.0	Ak0015	P6.5
600	3.2	2.3	Ak004	-7.5	Ak0016	P8.0
625	3.5	2.5	Ak005	-7.5	Ak0016	P8.0

Specs	Top tapping static pressure box
300	2.0
400	3.0
500	4.0
600	5.5
625	7.0

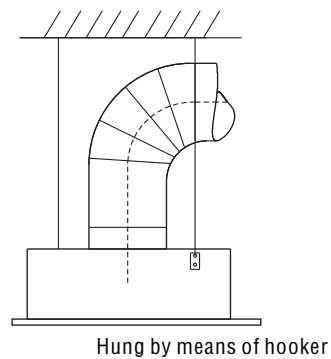
## 6. Installations

Installation flat to the ceiling is applicable to all types. Min. 2.6m from the bottom edge of the installation surface to the floor

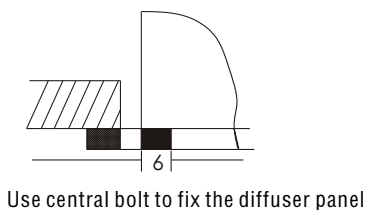
Installation flat to the ceiling



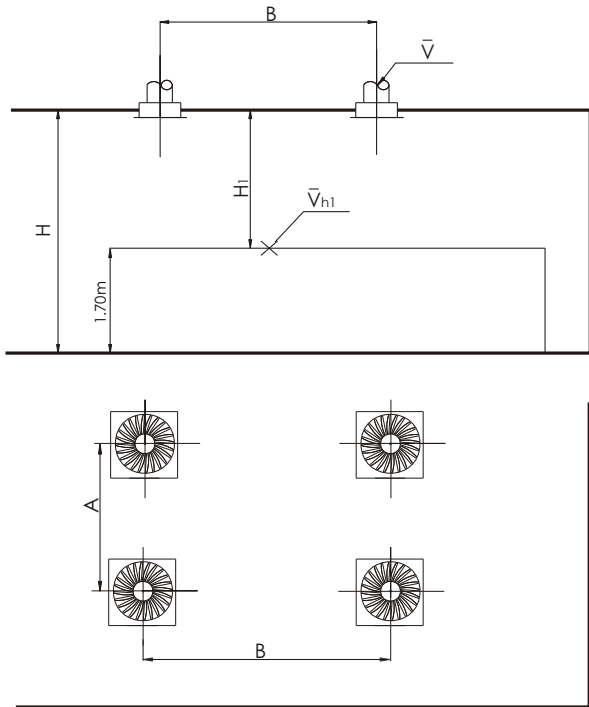
Installation on suspended ceiling



Installation on the carrier plate



## 7. Symbol Definitions



- $\bar{V}$ (m<sup>3</sup>/h)      blast volume of every air port
- A、B (m)      Distance between diffusers
- $\bar{V}_{h1}$ (m/s)      average air velocity between the two air ports at Height H
- H<sub>1</sub>(m)      distance from the ceiling to the activity area
- $\Delta Pt$  (Pa)      total pressure loss (air blowing)
- H(m)      installation height
- L<sub>WA</sub>(dB<A>)      A sound power level noise

## 8 Performance Parameters

Air blow

Specs	Air Volume (m <sup>3</sup> /h)	Pressure loss (Pa)	Noise (db)
<b>300-V</b>	120	9	22
	150	14	28
	200	25	35
	250	38	43
	400	120	60
<b>400-V</b>	200	8	<20
	250	13	25
	300	16	28
	400	30	37
	500	45	43
<b>500-V</b>	260	8	21
	300	12	24
	400	20	33
	500	30	38
	700	55	47
<b>600/625-V</b>	400	12	27
	500	18	33
	600	26	37
	800	45	47
	1000	65	55

Specs	Air Volume (m <sup>3</sup> /h)	Pressure loss (Pa)	Noise (db)
<b>300-H</b>	100	6.5	<20
	150	13	24
	250	35	37
	400	90	53
	500	140	65
<b>400-H</b>	150	4.5	<20
	200	9	<20
	300	18	28
	400	36	38
	500	50	44
<b>500-H</b>	180	4.5	<20
	250	8	<20
	350	15	27
	550	38	42
	700	60	47
<b>600/625-H</b>	300	6	<20
	400	10	22
	600	20	32
	800	38	42
	1200	85	55

## Air Return

Specs	Air Volume (m <sup>3</sup> /h)	Pressure loss (Pa)	Noise (db)
300-V	150	18	26
	200	35	33
	300	80	42
	400	145	55
400/500-V	200	8	22
	300	16	33
	400	30	42
	500	45	46
	700	80	55
600/625-V	200	5.5	<20
	300	13	20
	400	22	27
	500	35	35
	700	60	43

Specs	Air Volume (m <sup>3</sup> /h)	Pressure loss (Pa)	Noise (db)
300-H	150	16	20
	250	40	35
	350	80	44
400/500-H	250	8	<20
	350	16	27
	500	36	40
	700	70	50
	900	120	55
600/625-H	350	8.5	<20
	500	22	26
	700	38	35
	900	65	43

Revised parameter corresponding to the above indicated diagrams; the position of air valve

## Air blow

Specs	The Angel of Air Valve	0°	45°	90°
300-V	ΔPt	x0	x1.1	x2.6
	Lwa	+0	+1	+2
400-V	Pt	x0	x1.4	x3.1
	Lwa	+0	+1	+3
500-V	Pt	x0	x1.4	x4.1
	Lwa	+0	+3	+6
600/625-V	Pt	x0	x1.4	x3.2
	Lwa	+0	+2	+7
300-H	Pt	x0	x1.2	x2.0
	Lwa	+0	+1.5	+3
400-H	Pt	x0	x1.3	x2.5
	Lwa	+0	+1.5	+3
500-H	Pt	x0	x1.5	x2.5
	Lwa	+0	+5	+8
600/625-H	Pt	x0	x1.5	x3.8
	Lwa	+0	+5	+8

## Air return

Specs	The Angel of Air Valve	0°	45°	90°
300-V	ΔPt	x0	x1.1	X2.2
	Lwa	+0	+0	+6.0
400-V	Pt	x0	x1.2	x2.0
	Lwa	+0	+1.0	+7.0
500-V	Pt	x0	x1.3	x2.8
	Lwa	+0	+2.0	+9.0
600/625-V	Pt	x0	x1.3	x2.3
	Lwa	+0	+1.0	+7.0
300-H	Pt	x0	x1.2	x2.0
	Lwa	+0	+2.0	+4.0
400-H	Pt	x0	x1.2	x2.0
	Lwa	+0	+1.0	+7.0
500-H	Pt	x0	x1.3	x2.8
	Lwa	+0	+2.0	+9.0
600/625-H	Pt	x0	x1.3	x2.3
	Lwa	+0	+1.0	+7.0

### Model Options:

Revision: When the diffuser hangs freely outside of the suspended ceiling,  $V_m$  times 0.71. Stand for  $A < 1.2$  m or  $A > 6.5$  m.

Diffuser Alignment: 300 type

Single line or multiple lines B4.0m

Air volume(m <sup>3</sup> /h)		110	145	180	215	250	325
		Distance between diffusers A (m)					
Height H <sub>1</sub> (m)	Wind speed V <sub>H1</sub> (m/s)						
	0.9	0.1	—	4.0	4.5	5.3	5.7
0.15		—	—	3.7	4.4	5.0	5.6
0.2		—	—	—	—	4.2	5.0
0.25		—	—	—	—	—	4.5
1.2	0.1	—	—	3.8	4.6	5.3	5.7
	0.15	—	—	—	—	4.1	4.9
	0.2	—	—	—	—	—	4.0
1.6	0.1	—	—	—	3.0	4.4	5.2
	0.15	—	—	—	—	—	4.0
2.0	0.1	—	—	—	—	3.0	4.6

Multiple lines B=3.0m

Air volume(m <sup>3</sup> /h)		110	145	180	215	250	325
Height H <sub>1</sub> (m)	Wind speed $\bar{v}_h$ (m/s)	Distance between diffusers A (m)					
	0.9	0.1	3.4	4.0	4.3	4.9	5.4
0.15		—	3.3	3.7	4.4	4.7	5.5
0.2		—	—	3.2	3.8	4.3	4.9
0.25		—	—	—	3.4	3.8	4.5
0.3		—	—	—	—	3.4	4.2
1.2	0.1	—	3.5	3.9	4.6	4.9	5.6
	0.15	—	—	3.2	3.8	4.3	4.9
	0.2	—	—	—	—	3.6	4.4
	0.25	—	—	—	—	—	3.8
	0.3	—	—	—	—	4.4	3.3
1.6	0.1	—	—	3.4	4.0	3.7	5.2
	0.15	—	—	—	3.0	—	4.3
	0.2	—	—	3.0	—	—	3.7
2.0	0.1	—	—	—	3.7	4.3	4.8
	0.15	—	—	—	—	3.0	3.9
	0.2	—	—	—	—	—	3.0

Quadrangle Alignment A=B

Air volume(m <sup>3</sup> /h)		110	145	180	215	250	325
Height H <sub>1</sub> (m)	Wind speed $\bar{v}_h$ (m/s)	Distance between diffusers A (m)					
	0.9	0.15	2.5	3.4	3.9	4.4	4.7
0.2		2.0	2.8	3.4	3.8	4.2	4.9
0.25		1.65	2.2	2.8	3.3	3.6	4.2
0.3		1.3	1.7	2.4	2.8	3.2	3.6
0.4		1.1	1.4	1.7	2.2	2.6	3.2
0.5		0.95	1.2	1.5	1.8	2.2	2.8
1.2	0.15	2.0	2.8	3.3	3.7	4.1	4.8
	0.2	1.5	2.1	2.7	3.1	3.5	4.0
	0.25	1.25	1.75	2.2	2.6	3.0	3.6
	0.3	1.05	1.40	1.8	2.2	2.4	3.0
	0.4	0.85	1.1	1.4	1.6	2.0	2.7
	0.5	—	0.95	1.15	1.3	1.7	2.2
1.6	0.15	1.5	2.05	2.7	3.0	3.4	4.0
	0.2	1.2	1.57	2.2	2.5	2.7	3.5
	0.25	1.0	1.35	1.75	1.95	2.5	3.1
	0.3	0.8	1.15	1.45	1.70	2.0	2.6
	0.4	—	0.95	1.1	1.35	1.55	2.0
	0.5	—	—	0.8	1.0	1.15	1.35
2.0	0.15	1.2	1.7	2.1	2.5	2.9	3.5
	0.2	1.0	1.25	1.75	2.0	2.4	3.0
	0.25	0.8	1.1	1.45	1.75	2.0	2.6
	0.3	—	0.95	1.15	1.3	1.7	2.0
	0.4	—	—	0.95	1.05	1.35	1.65
	0.5	—	—	0.8	0.95	1.1	1.35

Diffuser Alignment: 400 type

Single line or multiple lines B4.0m

Height H <sub>1</sub> (m)	Wind speed $\bar{V}_{h1}$ (m/s)	Air volume(m <sup>3</sup> /h)				
		215	290	360	450	540
		Distance between diffusers A (m)				
0.9	0.1	5.4	6.0	—	—	—
	0.15	—	5.2	5.8	—	—
	0.2	—	4.3	5.0	5.7	6.0
	0.25	—	—	4.2	5.0	5.7
	0.3	4.4	—	3.0	4.6	5.3
1.2	0.1	—	5.2	5.8	—	—
	0.15	—	4.4	5.0	5.7	6.0
	0.2	—	—	4.5	5.1	5.6
	0.25	—	—	—	4.3	5.0
	0.3	—	—	—	—	4.2
1.6	0.1	—	4.6	5.5	5.7	—
	0.15	—	—	4.4	5.1	5.7
	0.2	—	—	—	5.0	5.7
	0.25	—	—	—	—	4.0
2.0	0.1	—	3.8	4.7	5.5	6.0
	0.15	—	—	—	4.5	4.2
	0.2	—	—	—	—	4.0

Multiple lines B=3.0m

Height H <sub>1</sub> (m)	Wind speed $\bar{V}_{h1}$ (m/s)	Air volume(m <sup>3</sup> /h)				
		215	290	360	450	540
		Distance between diffusers A (m)				
0.9	0.1	4.2	4.5	5.0	5.5	—
	0.15	3.5	4.0	4.7	5.2	5.6
	0.2	—	3.7	4.2	4.8	5.2
	0.25	—	3.4	3.8	4.4	4.8
	0.3	—	—	3.5	4.0	4.5
1.2	0.1	3.7	4.1	4.7	5.2	5.8
	0.15	—	3.7	4.2	4.8	5.2
	0.2	—	—	3.7	4.0	4.5
	0.25	—	—	5.5	3.9	4.4
	0.3	—	—	—	3.5	4.0
1.6	0.1	3.3	3.8	4.5	4.8	5.5
	0.15	—	3.0	3.8	4.3	4.7
	0.2	—	—	3.0	3.8	4.4
	0.25	—	—	—	3.2	3.8
	0.3	—	—	—	—	3.0
2.0	0.1	—	3.6	4.1	4.6	5.0
	0.15	—	—	3.5	3.9	4.4
	0.2	—	—	—	3.4	3.8
	0.25	—	—	—	—	3.5

Quadrangle Alignment A=B

Height H <sub>1</sub> (m)	Wind speed V <sub>h1</sub> (m/s)	Air volume(m <sup>3</sup> /h)				
		215	290	360	450	540
		Distance between diffusers A (m)				
0.9	0.15	3.6	4.1	4.5	4.9	5.5
	0.2	3.0	3.7	4.0	4.5	5.0
	0.25	2.4	3.2	3.6	4.0	4.7
	0.3	2.0	2.8	3.3	3.8	4.2
	0.4	1.6	2.2	2.7	3.4	3.7
	0.5	1.35	1.8	2.3	2.7	3.3
1.2	0.15	3.0	3.7	4.0	4.5	5.0
	0.2	2.2	3.1	3.5	4.0	4.5
	0.25	1.8	2.7	3.2	3.8	4.0
	0.3	1.5	2.2	2.6	3.4	3.6
	0.4	1.25	1.75	2.1	2.6	3.2
	0.5	1.1	1.4	1.75	2.2	2.8
1.6	0.15	2.2	3.1	3.5	4.0	4.5
	0.2	1.75	2.5	3.0	3.6	4.0
	0.25	1.5	2	2.5	3.1	3.5
	0.3	1.25	1.7	2.2	2.6	3.2
	0.4	0.9	1.35	1.7	2.0	2.6
	0.5	0.8	1.2	1.35	1.75	2.0
2.0	0.15	1.85	2.75	3.1	3.7	4.0
	0.2	1.5	2.0	2.5	3.1	3.5
	0.25	1.25	1.65	2.0	2.6	3.2
	0.3	—	1.40	1.75	2.1	2.5
	0.4	—	1.2	1.4	1.75	2.0
	0.5	—	0.95	1.35	1.40	1.75

Diffuser Alignment: 500 type

Single line or multiple lines B4.0m

Height H <sub>1</sub> (m)	Wind speed V <sub>h1</sub> (m/s)	Air volume(m <sup>3</sup> /h)				
		250	325	450	540	650
		Distance between diffusers A (m)				
0.9	0.1	4.2	4.8	5.3	5.7	—
	0.15	—	4.0	5.0	5.5	5.7
	0.2	—	—	4.5	5.0	5.5
	0.25	—	—	—	4.4	5.0
	0.3	—	—	—	—	4.5
1.2	0.1	—	4.4	5.0	5.7	5.8
	0.15	—	—	4.5	5.0	5.5
	0.2	—	—	—	4.1	4.9
	0.25	—	—	—	—	4.1
1.6	0.1	—	—	4.8	5.1	5.7
	0.15	—	—	—	4.1	4.7
2.0	0.1	—	—	4.1	4.7	5.3
	0.15	—	—	—	—	4.1

Multiple lines B=3.0m

Height H <sub>1</sub> (m)	Wind speed Vh1(m/s)	Air volume(m <sup>3</sup> /h)				
		250	325	450	540	650
		Distance between diffusers A (m)				
0.9	0.1	4.2	4.6	5.3	5.7	—
	0.15	3.6	4.3	4.6	5.2	5.7
	0.2	—	3.6	4.4	4.7	5.3
	0.25	—	—	3.9	4.5	4.7
	0.1	3.7	4.5	4.7	5.3	5.7
1.2	0.15	—	3.6	4.3	4.8	5.3
	0.2	—	—	—	4.4	4.7
	0.25	—	—	3.8	3.8	4.4
	0.3	—	—	3.5	3.5	4.0
1.6	0.1	3.3	3.9	—	4.9	5.5
	0.15	—	—	4.5	4.3	4.8
	0.2	—	—	3.8	3.8	4.3
	0.25	—	—	3.2	3.0	3.8
	0.3	—	—	—	—	3.3
2.0	0.1	—	3.5	4.2	5.7	6.1
	0.15	—	—	3.4	3.8	4.5
	0.2	—	—	—	3.0	3.7
	0.25	—	—	—	—	3.0

Quadrangle Alignment A=B

Height H <sub>1</sub> (m)	Wind speed Vh1(m/s)	Air volume(m <sup>3</sup> /h)				
		250	325	450	540	650
		Distance between diffusers A (m)				
0.9	0.15	3.6	4.0	4.6	4.9	5.5
	0.2	2.8	3.4	4.0	4.5	5.0
	0.25	2.4	3.0	3.7	4.0	4.6
	0.3	1.9	2.5	3.3	3.7	4.2
	0.4	1.6	2.0	2.8	3.4	3.7
1.2	0.5	1.35	1.7	2.4	2.7	3.3
	0.15	2.8	3.4	4.0	4.5	5.0
	0.2	2.4	2.8	3.6	4.0	4.5
	0.25	1.8	2.4	3.3	3.8	4.2
	0.3	1.6	2.0	2.8	3.4	3.7
1.6	0.4	1.25	1.6	2.1	2.6	3.1
	0.5	1.0	1.25	1.75	2.2	2.7
	0.15	2.4	2.8	3.6	4.0	4.5
	0.2	1.75	2.2	3.0	3.6	3.9
	0.25	1.45	1.75	2.6	3.1	3.5
2.0	0.3	1.2	1.6	2.1	2.7	3.1
	0.4	1.0	1.3	1.75	2.2	2.8
	0.5	—	1.0	1.4	1.75	2.0
	0.15	1.8	2.4	3.2	3.7	4.0
	0.2	1.45	1.75	2.6	3.1	3.5
2.0	0.25	1.25	1.6	2.1	2.5	3.1
	0.3	1.0	1.3	1.75	2.2	2.6
	0.4	0.8	1.2	1.4	1.75	2.0
	0.5	—	1.1	1.3	1.4	1.75

## Diffuser Alignment: 600 /625 type

Single line or multiple lines B4.0m

Height H <sub>1</sub> (m)	Wind speed V <sub>h1</sub> (m/s)	Air volume(m <sup>3</sup> /h)	360	450	540	720	900
		Distance between diffusers A (m)					
0.9	0.1		4.5	4.9	5.5	5.8	—
	0.15		3.5	4.4	5.0	5.7	5.8
	0.2		—	3.5	4.4	5.2	5.6
	0.25		—	—	—	4.7	5.2
	0.3		—	—	—	4.2	5.0
1.2	0.1		3.8	4.5	5.1	5.8	6.0
	0.15		—	—	4.3	5.2	5.6
	0.2		—	—	—	4.7	5.2
	0.25		—	—	—	3.6	4.7
	0.3		—	—	—	—	3.8
1.6	0.1		—	4.0	4.5	5.4	5.7
	0.15		—	—	—	4.6	5.2
	0.2		—	—	—	—	4.7
2.0	0.1		—	—	4.1	5.1	5.5
	0.15		—	—	—	4.0	4.9
	0.2		—	—	—	—	3.5

Multiple lines B=3.0m

Height H <sub>1</sub> (m)	Wind speed V <sub>h1</sub> (m/s)	Air volume(m <sup>3</sup> /h)	360	450	540	720	900
		Distance between diffusers A (m)					
0.9	0.1		4.4	4.9	5.3	5.8	—
	0.15		4.0	4.5	4.8	5.3	5.8
	0.2		3.7	4.0	4.3	4.9	5.5
	0.25		—	3.7	4.0	4.5	5.1
	0.3		—	—	3.6	4.3	4.8
1.2	0.1		4.2	4.6	4.9	5.5	6.0
	0.15		3.6	4.0	4.4	4.9	5.5
	0.2		—	3.5	3.8	4.4	5.0
	0.25		—	—	3.5	4.1	4.7
	0.3		—	—	—	3.7	4.2
1.6	0.1		3.8	4.3	4.5	5.0	5.7
	0.15		—	3.5	3.8	4.4	5.0
	0.2		—	—	3.7	4.0	4.6
	0.25		—	—	—	3.7	4.2
	0.3		—	—	—	—	3.8
2.0	0.1		3.3	3.9	4.2	4.7	5.3
	0.15		—	—	3.5	4.1	4.7
	0.2		—	—	—	3.7	4.2
	0.25		—	—	—	—	3.6
	0.3		—	—	—	—	3.2

Quadrangle Alignment A=B

Air volume(m <sup>3</sup> /h)		360	450	540	720	900
		Distance between diffusers A (m)				
Height H <sub>1</sub> (m)	Wind speed $\bar{V}_h$ (m/s)					
	0.9	0.15	4.0	4.8	5.0	5.5
0.2		3.7	4.0	4.4	5.2	5.8
0.25		3.4	3.5	3.8	4.6	5.0
0.3		2.4	3.0	3.5	4.4	4.8
0.4		1.6	2.4	2.8	3.6	4.2
0.5		1.5	1.8	2.4	3.2	3.8
1.2	0.15	3.4	4.0	4.4	5.0	5.6
	0.2	2.6	3.4	3.8	4.6	5.0
	0.25	2.2	2.8	3.4	4.0	4.6
	0.3	1.8	2.4	2.8	3.6	4.2
	0.4	1.48	1.8	2.4	3.2	3.6
	0.5	1.4	1.5	1.6	2.5	3.0
1.6	0.15	2.6	3.4	3.8	4.6	5.0
	0.2	2.0	2.6	3.2	3.8	4.5
	0.25	1.75	2.2	2.6	3.5	4.0
	0.3	1.5	1.8	2.2	3.2	3.5
	0.4	1.25	1.4	1.75	2.5	3.0
	0.5	0.95	1.25	1.35	1.8	2.4
2.0	0.15	2.2	2.8	3.3	4.0	4.5
	0.2	1.7	2.1	2.5	3.5	4.0
	0.25	1.4	1.75	2.1	2.8	3.5
	0.3	1.3	1.5	1.7	2.4	2.9
	0.4	0.95	1.25	1.4	1.85	2.4
	0.5	0.8	1.0	1.2	1.65	1.9