



**SF** *Swirl Diffuser*





## Introduction

Prudent Aire Swirl Diffuser can operate over a wide range of varying airflow without effects of dumping. Mainly used in area with high heat loading and high air change requirements, the Swirl Diffuser can also be used for return and exhaust applications.

Air is introduced into an occupied space in a swirl vortex motion, thus achieving high induction, high velocity and temperature decay. This result in the supply air quickly to mix with the room air, creating a uniform and comfortable environment in the shortest time possible. Therefore, with its high induction effects, the Swirl Diffuser is capable of eliminating drafts, stratification, concentrated cold areas.

## CONSTRUCTIONS & MATERIALS

- Standard sizes of:
  - 1) 2' x 2'
  - 2) 595mm x 595mm
- Square and Round swirl diffuser face configurations available
- Highly customizable plenum & inlet spigot
- Available in fixed and removable configurations

### Frame Construction



Galvanized Steel

### Deflector Construction



Galvanized Steel

### Surface Finishing

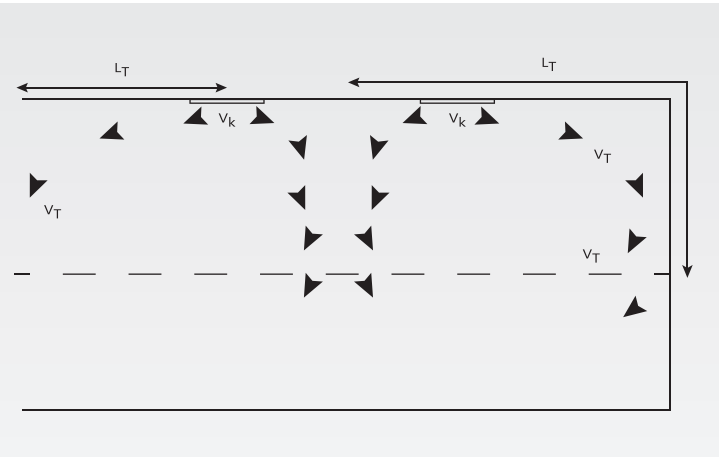
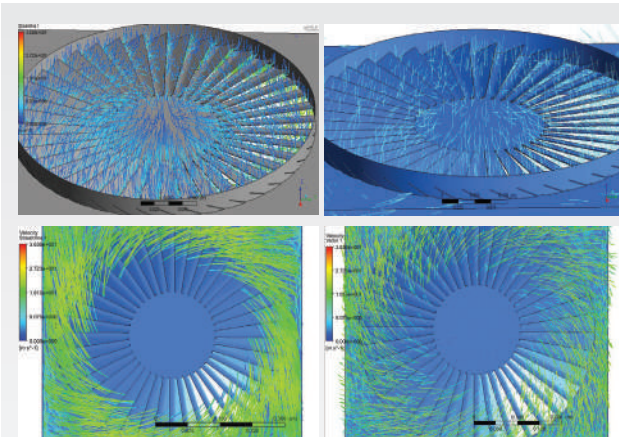
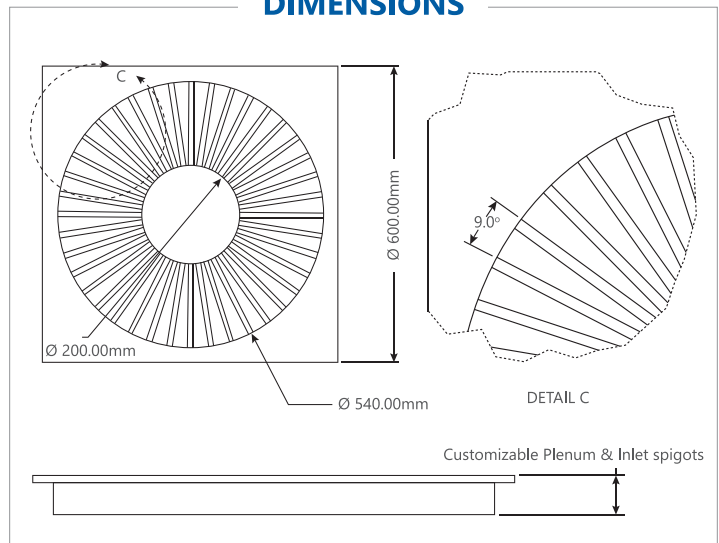


White (Matt)



White (Matt)

## DIMENSIONS



# TECHNICAL PERFORMANCE DATA

## Supply

NR20

NR30

Inlet Dia (mm)	Supply Neck Velocity, m/s	2.0	2.5	3.0	3.5	4.0	4.5	5.0	6.0
200	Volume Flowrate, m <sup>3</sup> /hr	226	283	339	395	452	509	565	679
	Flowrate, 1/s	63	79	94	110	126	141	157	188
	Face Velocity, m/s	1.1	1.4	1.7	2.0	2.2	2.5	2.8	3.4
	Throw Distance-1. (0.5 m/s), m	0.53	0.70	0.87	1.0	1.2	1.4	1.5	1.9
	Throw Distance-2. (0.5 m/s), m	0.42	0.56	0.69	0.8	0.96	1.1	1.2	1.5
	Total Pressure Loss, Pa	<10	<10	<10	<10	11	15.1	19.1	26.0
	Noise Rating (NR)	<20	<20	<20	<20	20	21	23	26
250	Volume Flowrate, m <sup>3</sup> /hr	353	442	530	619	707	795	884	1060
	Flowrate, 1/s	98	123	147	172	196	221	245	295
	Face Velocity, m/s	1.8	2.2	2.6	3.1	3.5	3.9	4.4	5.3
	Throw Distance-1. (0.5 m/s), m	0.63	1.2	1.44	1.71	1.94	2.18	2.45	2.93
	Throw Distance-2. (0.5 m/s), m	0.51	0.96	1.15	1.37	1.55	1.74	1.96	2.34
	Total Pressure Loss, Pa	<10	11	16.6	22.8	26.9	31.5	40.4	55.87
	Noise Rating (NR)	<20	20	22	24	27	31	34	40
300	Volume Flowrate, m <sup>3</sup> /hr	509	636	763	891	1018	1145	1272	1527
	Flowrate, 1/s	141	177	212	247	283	318	353	424
	Face Velocity, m/s	2.5	3.2	3.8	4.4	5.0	5.7	6.3	7.6
	Throw Distance-1. (0.5 m/s), m	1.38	1.76	2.1	2.5	2.81	2.90	3.5	4.2
	Throw Distance-2. (0.5 m/s), m	1.10	1.41	1.68	2.0	2.25	2.32	2.8	3.3
	Total Pressure Loss, Pa	15.1	24.0	29.0	42.0	52.2	55	74.2	96.3
	Noise Rating (NR)	21	25	30	35	39	40	47	>50

xxx (1) Throw Distance With Ceiling Effect  
 xxx (2) Throw Distance Without Ceiling Effect

## SWIRL DIFFUSER TECHNICAL SPECIFICATION

### Frame Construction

1. Frame to be in galvanizes steel. Frame thickness should be in minimum 0.7mm thick, unless otherwise stated.
2. The margin to be in 12mm from the neck height to the edge.

### Swirl Construction

1. Diffusers core to be radially fixed a stamped galvanizes steel sheet face plated.
2. The blade arrangement should be in 540mm diameter and supported by 200mm diameter plate.
3. Blade should be arranged in 9° to generate a swirl vortex motion.

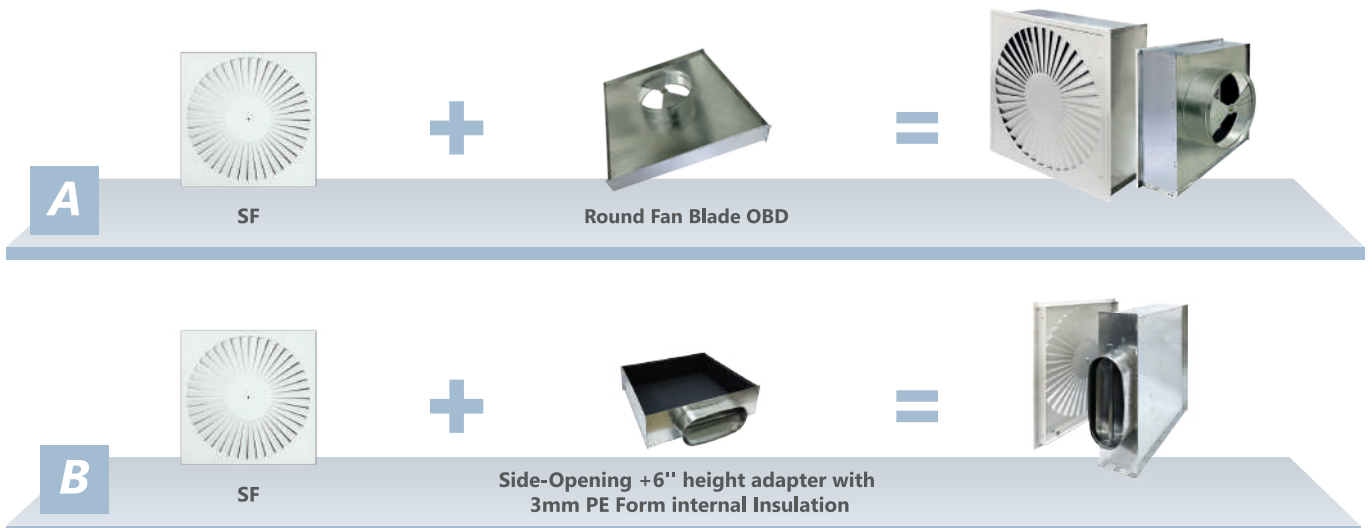
### Finishing

1. Finishing should be white powder coated, oven baked as standard RAL 9010 SG or HY-1001/A127. Others available upon request.

### Performance

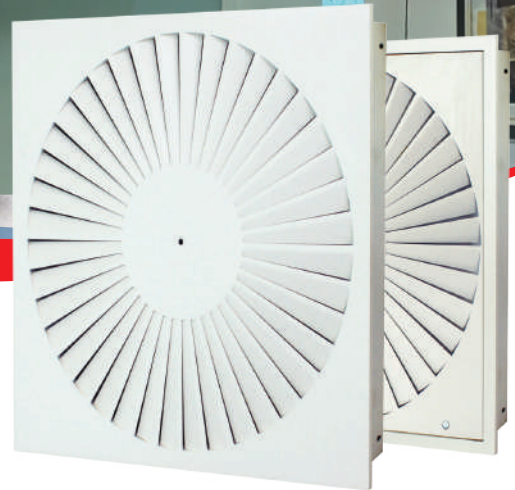
1. Air change rated of up to 30 air changes per hours with temperature differentials of 10°C.
2. Swirl Diffuser are designed to be ceiling mounted, round duct connection with damper should to be installed at the neck of the diffuser for volume control purpose, unless otherwise stated.
3. Free area of swirl diffuser is 39%.

## DIFFUSER + ACCESSORIES COMBINATION





# SF | Swirl Diffuser



## Products Range

- Grilles 
- Diffusers  ◀
- Dampers 
- Fire & Smoke Protection 
- VAV 
- Others 
- Accessories 



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