

## Model: CFPP

The Holyoake CFPP range of Radial Induction Swirl Diffusers have been designed to provide high quality indoor air diffusion. The CFPP comprises of swirl deflection blades that produce a radial airflow pattern, highly turbulent for rapid temperature equalisation, producing stable room space conditions with even temperature gradients.

The CFPP diffuser is suitable for use with increased temperature differentials and in VAV applications, as the ceiling effect is maintained from minimal, through to very high air flow rates.

The CFPP is able to achieve high room air diffusion quality due to the strong induction swirl pattern it produces. This draws room air up into the supply air flow path, which results in mixing at high level, reducing the chance of draughts and optimising room space conditions.

## Installation

### CFPP Installation

Installation is simple due to the square lay-in type design. The diffuser can be placed into the T-rail system quickly and easily and the supply duct attached, via a circular spigot connection to the specially designed cushion head plenum. Alternatively the diffuser may be conventionally flush mounted, or with the use of a surface mounted installation flange.

### CFPP-R Installation

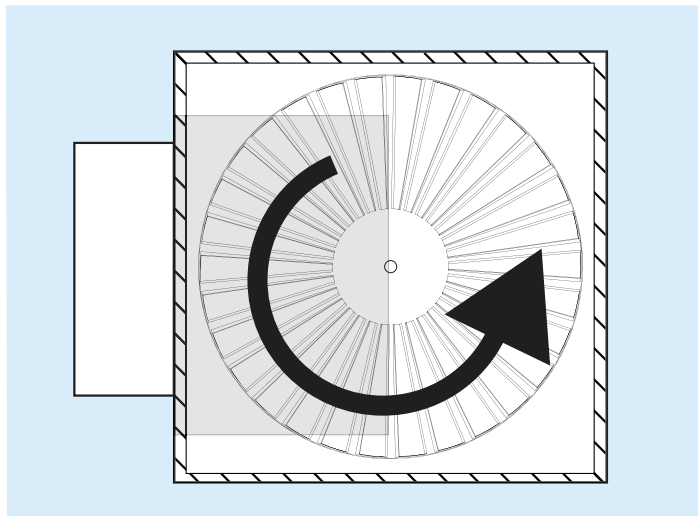
The installation is simple due to the surface mount design. The supply air duct can be attached direct to the circular spigot or fitted with specially designed Holyoake swirl plenum.

## Construction

The CFPP is constructed as a single pressing with the body and air pattern elements mechanically formed steel and finished in a high quality white powder coat finish. The CFPP diffuser is both robust and lightweight, making for easy on-site installation.

## Features

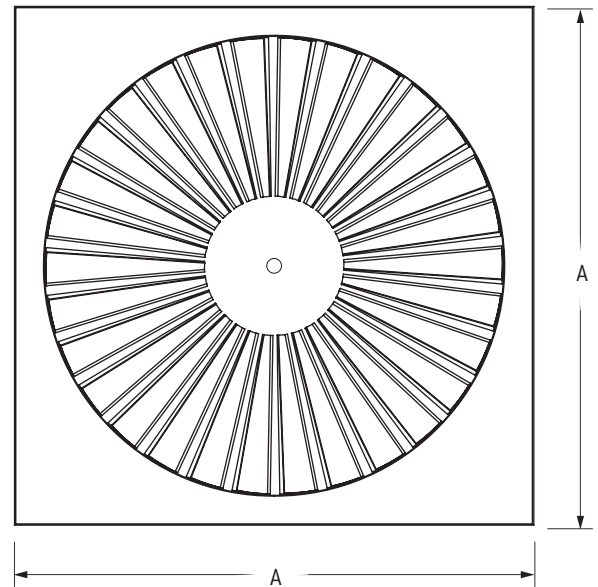
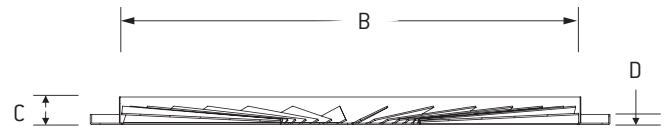
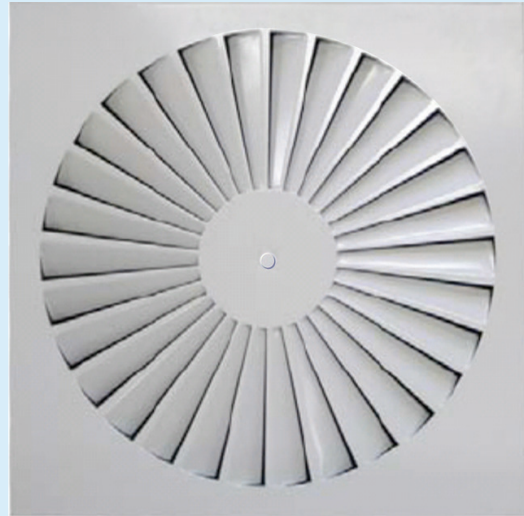
- Strong Ceiling Effect
- Radial Diffusion Pattern
- High Induction Swirl
- Easy Lay-in Installation
- Attractive Appearance



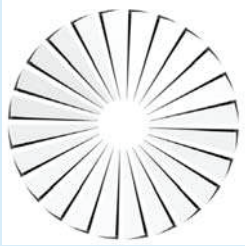
For optimum performance a specifically designed side entry Holyoake Premi-Aire Swirl plenum is recommended.

Due to a policy of continuous development and improvement the right is reserved to supply products which may differ slightly from those illustrated and described in this publication.

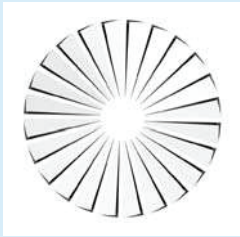
## Ceiling Radial Swirl Diffuser



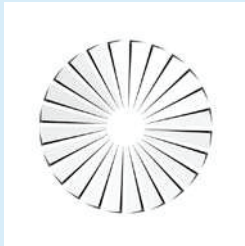
| Dimension    | A   | B   | C  | D  |
|--------------|-----|-----|----|----|
| CFPP 400/24  | 395 | 350 | 30 | 10 |
| CFPP 450/24  | 445 | 350 | 30 | 10 |
| CFPP 600S/24 | 595 | 350 | 30 | 10 |
| CFPP 600/30  | 595 | 530 | 30 | 10 |



CFPP 400/24



CFPP 450/24



CFPP 600S/24



CFPP 600/30



CFPP 600/30  
(rear view)  
CFPP600 - A<sub>eff</sub> 0.0609m<sup>2</sup>



CFPP 600C/30  
(rear view)  
CFPP600C - A<sub>eff</sub> 0.0305m<sup>2</sup>

Model: CFPP Ceiling Radial Swirl Diffuser

400, 450, 600S/24

| Duct Size: | Flow Rate [l/s]      | 25          | 50          | 75          | 100         | 125         | 150         | 175         | 200         |
|------------|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 150        | Static Pressure [Pa] | 3           | 6           | 14          | 25          | 35          | 58          | -           | -           |
|            | Throw [m]            | 0.2-0.3-0.5 | 0.4-0.6-1.0 | 0.6-0.9-1.4 | 0.8-1.1-1.6 | 0.9-1.2-1.9 | 1.1-1.5-2.1 | -           | -           |
|            | NC                   | <10         | 11          | 25          | 32          | 37          | 43          | -           | -           |
| 200        | Static Pressure [Pa] | 2           | 5           | 12          | 21          | 34          | 48          | 63          | -           |
|            | Throw [m]            | 0.2-0.3-0.4 | 0.3-0.5-0.9 | 0.5-0.8-1.3 | 0.9-0.9-1.5 | 0.8-1.1-1.6 | 1.0-1.4-1.8 | 1.2-1.7-2.2 | -           |
|            | NC                   | <10         | <10         | 15          | 23          | 32          | 37          | 42          | -           |
| 250        | Static Pressure [Pa] | 2           | 4           | 11          | 19          | 31          | 45          | 59          | 77          |
|            | Throw [m]            | 0.3-0.4-0.6 | 0.5-0.7-1.3 | 0.9-1.2-2.0 | 1.2-1.6-2.0 | 1.5-1.9-2.6 | 1.9-2.6-3.4 | 2.1-2.9-3.6 | 2.4-3.1-3.7 |
|            | NC                   | <10         | <10         | 11          | 18          | 28          | 32          | 36          | 39          |

Model: CFPP Ceiling Radial Swirl Diffuser

600C/30

| Duct Size: | Flow Rate [l/s]      | 25          | 50          | 75          | 100         | 125         | 150         | 175         | 200         |
|------------|----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 150        | Static Pressure [Pa] | 3           | 6           | 14          | 25          | 35          | 58          | -           | -           |
|            | Throw [m]            | 0.2-0.3-0.5 | 0.4-0.6-1.0 | 0.6-0.9-1.4 | 0.8-1.1-1.6 | 0.9-1.2-1.9 | 1.1-1.5-2.1 | -           | -           |
|            | NC                   | <10         | 11          | 25          | 32          | 37          | 43          | -           | -           |
| 200        | Static Pressure [Pa] | 2           | 5           | 12          | 21          | 34          | 48          | 63          | -           |
|            | Throw [m]            | 0.2-0.3-0.4 | 0.3-0.5-0.9 | 0.5-0.8-1.3 | 0.9-0.9-1.5 | 0.8-1.1-1.6 | 1.0-1.4-1.8 | 1.2-1.7-2.2 | -           |
|            | NC                   | <10         | <10         | 15          | 23          | 32          | 37          | 42          | -           |
| 250        | Static Pressure [Pa] | 2           | 4           | 11          | 19          | 31          | 45          | 59          | 77          |
|            | Throw [m]            | 0.3-0.4-0.6 | 0.5-0.7-1.3 | 0.9-1.2-2.0 | 1.2-1.6-2.0 | 1.5-1.9-2.6 | 1.9-2.6-3.4 | 2.1-2.9-3.6 | 2.4-3.1-3.7 |
|            | NC                   | <10         | <10         | 11          | 18          | 28          | 32          | 36          | 39          |

Notes on Performance Data

1. Performance data is based on a specifically designed side entry Premi-Aire cushion head box.

2. Listed throw distances are to a terminal velocity (Vt) of 0.75-0.5-0.25 m/s.

3. Performance data is based upon a Δ t 9°C.
4. The NC values are based on a room absorption of 10dB re 10<sup>12</sup> Watts.

5. NC values less than NC 10 not shown.

6. 600C fitted with velocity enhancer.

Model **CFPP Ceiling Radial Swirl Diffuser**
**600/30**

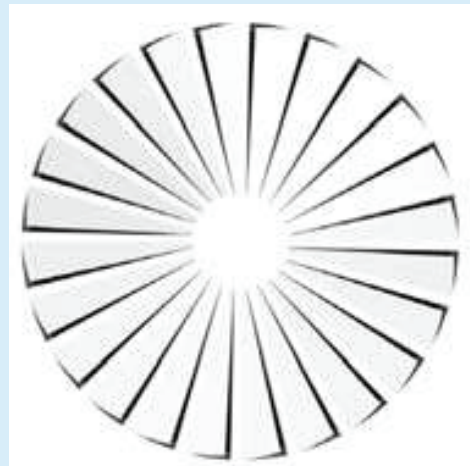
| Duct Size: | Flow Rate [l/s]      | 100          | 125         | 150         | 175         | 200         | 250         | 300         | 350         |
|------------|----------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 150        | Static Pressure [Pa] | 8            | 10          | 13          | 18          | 25          | -           | -           | -           |
|            | Throw [m]            | 1.2-1.9-3.0  | 1.6-2.4-3.4 | 1.8-2.5-3.8 | 1.9-2.7-3.9 | 2.2-2.9-4.2 | -           | -           | -           |
|            | NC                   | 14           | 23          | 33          | 41          | 51          | -           | -           | -           |
| 200        | Static Pressure [Pa] | 6            | 8           | 11          | 15          | 19          | 30          | 42          | -           |
|            | Throw [m]            | 1.2-1.9-3.0  | 1.6-2.2-3.3 | 1.6-2.3-3.6 | 1.9-2.5-3.8 | 2.0-2.7-3.9 | 2.6-3.3-4.7 | 2.9-3.4-5.0 | -           |
|            | NC                   | 13           | 22          | 30          | 38          | 45          | 34          | 51          | -           |
| 250        | Static Pressure [Pa] | 5            | 6           | 9           | 12          | 14          | 21          | 28          | 38          |
|            | Throw [m]            | 0.9-1.2-2.4  | 1.2-1.3-2.7 | 1.3-1.6-2.8 | 1.5-2.0-3.0 | 1.6-2.2-3.5 | 2.1-3.0-3.9 | 2.4-3.3-4.5 | 2.8-3.4-5.1 |
|            | NC                   | <10          | 14          | 17          | 21          | 27          | 34          | 39          | 46          |
| 300        | Static Pressure [Pa] | 4            | 5           | 7           | 10          | 12          | 19          | 26          | 35          |
|            | Throw [m]            | 0.7-1.4-2.1  | 0.9-1.5-2.2 | 1.1-1.7-2.7 | 1.3-1.9-2.9 | 1.4-2.0-3.4 | 1.9-2.6-3.8 | 2.2-2.8-4.5 | 2.6-3.3-4.9 |
|            | NC                   | <10          | <10         | 10          | 18          | 21          | 28          | 35          | 42          |
| 350        | Static Pressure [Pa] | 2            | 3           | 5           | 6           | 8           | 12          | 17          | 28          |
|            | Throw [m]            | 0.6-1.1-2.40 | 0.8-1.3-2.1 | 1.0-1.5-2.5 | 1.3-2.0-2.7 | 1.4-2.1-3.3 | 1.9-2.9-3.6 | 2.2-3.2-4.3 | 2.5-3.4-4.8 |
|            | NC                   | <10          | <10         | <10         | 10          | 19          | 23          | 30          | 36          |

Model: **CFPP Ceiling Radial Swirl Diffuser (square)**
**CFPP 300/18**

| Duct Size:                       | Flow Rate [l/s]      | 25  | 50   | 80   | 100  |
|----------------------------------|----------------------|-----|------|------|------|
| Nominal Duct Size 150mm Diameter | Static Pressure [Pa] | 2   | 8    | 18   | 28   |
|                                  | Throw [m]            | -   | 0.38 | 0.62 | 0.82 |
|                                  |                      | 0.3 | 0.63 | 0.95 | 1.10 |
|                                  |                      | 0.5 | 1.05 | 1.45 | 0.72 |
|                                  | NC                   | <10 | 25   | 38   | 43   |

| Dimension   | A   | B   | C  | D  |
|-------------|-----|-----|----|----|
| CFPP 300/18 | 300 | 200 | 12 | 18 |

Note: Optional plate size (A) of 250 and 350 also available.



**CFPP 300/18 blade profile swirl diffuser (Face View)**

# CFPP – Ceiling Fixed Pattern Pressed Steel Round

Model: **CFPP-R Ceiling Radial Swirl Diffuser**

| Dimension     | A   | B   | C  | D  |
|---------------|-----|-----|----|----|
| CFPP-R 500/24 | 500 | 350 | 30 | 10 |
| CFPP-R 615/30 | 615 | 530 | 30 | 10 |

24 Swirl Blades



**CFPP-R 500/24 - Aeff 0.0305m2**

30 Swirl Blades



**CFPP-R 615/30 - Aeff 0.0609m2**

See pages 134D - 135D for CFPP round performance data

## Notes on Performance Data

1.

Performance data is based on a specifically designed side entry Premi-Aire cushion head box.
2.

Listed throw distances are to a terminal velocity (Vt) of 0.75-0.5-0.25 m/s.
3.

Performance data is based upon a  $\Delta t$  9°C.
4.

The NC values are based on a room absorption of 10dB re 10<sup>12</sup> Watts.
5.

NC values less than NC 10 not shown.

|          | Product Weights In Kg |         |
|----------|-----------------------|---------|
|          | CFPP                  | CFPP/-C |
| Diffuser | 3.35                  | 6.4     |
| Galv Box | 6.5                   | 6.5     |
| Prem Box | 2.6                   | 2.6     |

# CFP, CFPP, CRS, & CSS

## Product Ordering Key and Suggested Specifications

|                       |   |                       |   |                  |   |                 |   |                                     |   |                                 |   |                             |
|-----------------------|---|-----------------------|---|------------------|---|-----------------|---|-------------------------------------|---|---------------------------------|---|-----------------------------|
| CFP                   | - | 450<br>600<br>615     | - | 12<br>20<br>24   | - | R               | - | SE<br>TE                            | - | 150<br>200<br>250<br>300<br>350 | - | FINISH                      |
| Ceiling Fixed Pattern |   | Diffuser Nominal Size |   | Number of Slots* |   | Circular Option |   | Side, or Top Entry Cushion Head Box |   | Duct Size                       |   | Holyoake White, Powder Coat |

\* Size & Slot Options - See Page 133D.

Ceiling Radial Induction Swirl Diffusers shall be Holyoake Model CFP. These diffusers shall be designed for use in Variable Air Volume (VAV) systems with radial, high induction, air flow patterns.

CFP shall maintain a COANDA effect at reduced volume and provide uniform temperature gradients throughout the occupied space.

CFP Diffusers shall be finished in powder coat and be supplied with a suitable side, or top entry box and be fitted with accessories and dampers where indicated.

All shall be as manufactured by Holyoake.

|                                     |   |                 |   |                       |   |                            |   |                                     |   |                          |   |                             |
|-------------------------------------|---|-----------------|---|-----------------------|---|----------------------------|---|-------------------------------------|---|--------------------------|---|-----------------------------|
| CFPP                                | - | R               | - | 600                   | - | C                          | - | SE<br>TE                            | - | 150<br>200<br>250<br>300 | - | FINISH                      |
| Ceiling Fixed Pattern Pressed Steel |   | Circular Option |   | Diffuser Nominal Size |   | Optional Velocity Enhancer |   | Side, or Top Entry Cushion Head Box |   | Duct Size                |   | Holyoake White, Powder Coat |

Ceiling Radial Swirl Diffusers shall be Holyoake Model CFPP 600 series. These diffusers shall be designed for use in Variable Air Volume (VAV) systems with radial, high induction, air flow patterns.

CFPP shall maintain a COANDA effect at reduced volume and provide uniform temperature gradients throughout the occupied space.

CFPP Diffusers shall be finished in powder coat and be supplied with a suitable side, or top entry box and be fitted with accessories and dampers where indicated.

All shall be as manufactured by Holyoake.

|                      |   |                                |   |                   |   |                        |   |                                    |   |                         |   |                             |
|----------------------|---|--------------------------------|---|-------------------|---|------------------------|---|------------------------------------|---|-------------------------|---|-----------------------------|
| CRS                  | - | P                              | - | 300<br>450        | - | SE                     | - | 150*<br>200*<br>250*<br>300<br>350 | - | T                       | - | FINISH                      |
| Ceiling Radial Swirl |   | Optional Perforated Face Plate |   | Nominal Neck Size |   | Special Side Entry Box |   | Duct Size                          |   | Optional 'T' Rail Frame |   | Holyoake White, Powder Coat |

\* Note: Only these diameters are available on CRS 300

Ceiling Swirl Diffusers shall be Holyoake Model CRS. These shall be designed with a radial, high induction, air flow pattern. They shall maintain a COANDA effect at reduced volume and provide uniform temperature gradients throughout the occupied space.

CRS Diffusers shall be finished in powder coat and be supplied complete with a specifically designed swirl inducing side entry box and be fitted with accessories and dampers where indicated.

All shall be as manufactured by Holyoake.

|                    |   |                 |   |                           |   |               |   |                        |   |            |   |                             |
|--------------------|---|-----------------|---|---------------------------|---|---------------|---|------------------------|---|------------|---|-----------------------------|
| CSS                | - | R               | - | 8<br>16<br>21<br>24<br>48 | - | 450T<br>600T  | - | SE<br>TE               | - | 200<br>250 | - | FINISH                      |
| Ceiling Slot Swirl |   | Circular Option |   | Number of Slots           |   | 'T-Rail' Size |   | Side, or Top Entry Box |   | Duct Size  |   | Holyoake White, Powder Coat |

Ceiling Slot Swirl Diffusers shall be Holyoake Model CSS. These shall be designed with a radial, high induction, air flow pattern.

CSS diffusers shall maintain a COANDA effect at reduced volume and provide uniform temperature gradients throughout the occupied space. They shall have pattern blades which can be adjusted from the diffuser face to allow the air to be directed horizontally, or vertically.

CSS Diffusers shall be finished in powder coat and be supplied with a suitable side, or top entry box and be fitted with accessories and dampers where indicated.

All shall be as manufactured by Holyoake.

### Note

All ceiling diffusers, seismic restraints are required, but not supplied.



Product Ordering Key and Suggested Specifications

CSS – VAV

–

24  
48

–

FINISH

Ceiling Slot Swirl VAV Diffuser

Number of Slots

Holyoake White, Powder Coat

Ceiling Slot Swirl VAV Diffusers shall be Holyoake Model CSS – VAV.

These shall be designed with a radial, high induction, air flow pattern, providing strong ceiling effect (COANDA) and be capable of handling a wide range of air flows.

Designed to control the temperature in an occupied space, by an externally controlled, pressure dependant damper.

Controlled by a room thermostat and building management system (supplied by others), the CSS – VAV has a specifically designed, curved edge, single blade control damper, positioned by a 24 VAC variable actuator, via a 0 – 10 V DC control signal.

CSS – VAV Diffusers shall be finished in Powder Coat and are complete with a 'Premi-aire™' Pre-Insulated box, with a 250 mm diameter inlet spigot.

All shall be as manufactured by Holyoake.

| Series CSS Product Weights |               |
|----------------------------|---------------|
| Sizes Available            | Weights in Kg |
| CSS8                       | 1.3           |
| CSS16                      | 2.4           |
| CSS21                      | 2.5           |
| CSS24                      | 2.5           |
| CSS48                      | 2.6           |
| CSSR500 8                  | 2.81          |
| CSSR500 16                 | 3.01          |
| CSSR500 21                 | 3.03          |
| CSSR615 8                  | 3.05          |
| CSSR615 16                 | 3.25          |

| Series CSS Product Weights |               |
|----------------------------|---------------|
| Sizes Available            | Weights in Kg |
| CSSR615 21                 | 3.35          |
| CSSR615 24                 | 3.35          |
| CSSR615 48                 | 3.45          |
| 450 GALV BOX               | 6.5           |
| 600 GALV BOX               | 6.5           |
| 450 PREM BOX               | 2.1           |
| 600 PREM BOX               | 2.7           |
| 500 DIA GALV PLENUM        | 2.94          |
| 615 DIA GALV PLENUM        | 3.14          |

Note: All ceiling diffusers, seismic restraints are required, but not supplied.