

## Perforated Face Circular Diffusers

### RWI

#### Introduction

The Waterloo high induction Perforated Face Circular Diffuser type RWI has an adjustable radial diffusion pattern and provides excellent induction characteristics. The diffuser and face-plate are manufactured from aluminium with a plenum in zintec steel and have been designed with modern ceiling types in mind. With their perforated face design, these diffusers ensure that the primary air is already mixed inside the diffuser with the room air, which results in a rapid temperature decay and short throw.

#### Product Description

**RWI** Circular supply diffuser with perforated face-plate  
**RWI-R** Circular return diffuser with perforated face-plate  
**UKDV** Supply air plenum  
**UKDVI** Insulated supply air plenum  
**UKRV** Return air plenum  
**UKRVI** Insulated return air plenum

#### Features

- Supply and exhaust applications for heating, cooling and isothermal conditions
- Excellent induction characteristics
- Variety of air patterns
- Suitable for modular ceiling systems

#### Finishes

PPM9010 (RAL 9010 Matt - 20% Gloss White)

Other colours available on request

#### Advantages

- Excellent aerodynamic performance
- No ceiling effect required
- Short throw

#### Selection Criteria

Ceiling Height 2.7m

Temperature Differential -11K

Average room velocity  $V_r$  0.15m/s

Noise level is based on diffuser sound power level less 8dB room absorption.

All selections include the plenum

#### Selection Example RWI-200

Air Volume 111 l/s

Throw 1.2 m

Pressure Drop 37 Pa

Noise Level 31 dBA

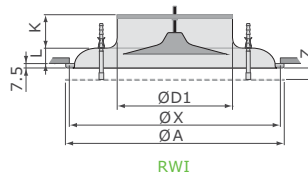
| Nom Size<br>Ø D1 | W x H   | Ø D2 | Ø A overall | Ø X aperture | E   | K  | L    |
|------------------|---------|------|-------------|--------------|-----|----|------|
| 100              | 210x210 | 100  | 190         | 175          | 205 | 55 | 12.5 |
| 125              | 210x210 | 125  | 230         | 215          | 215 | 60 | 20.0 |
| 160              | 310x310 | 160  | 270         | 255          | 295 | 65 | 27.5 |
| 200              | 310x310 | 200  | 370         | 345          | 295 | 70 | 27.5 |
| 250              | 410x410 | 250  | 470         | 440          | 365 | 75 | 35.0 |
| 315              | 510x510 | 315  | 570         | 535          | 435 | 90 | 35.0 |

Note: Z = 19/26.5/34mm (depending on face-plate setting)

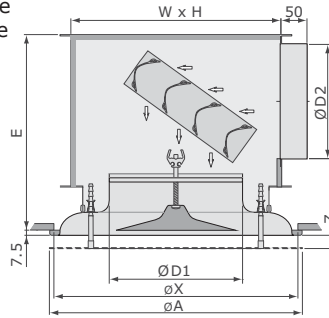
| Face-plate  | Z (mm) | 'T' Throw(m) | Pressure (Pa) | Noise level (dBA) |
|-------------|--------|--------------|---------------|-------------------|
| Height      | 19     | x 1.0        | x 1.0         | 0                 |
| Corrections | 26.5   | x 0.9        | x 0.6         | - 1               |
|             | 34     | x 0.8        | x 0.5         | - 2               |

#### ORDER EXAMPLE

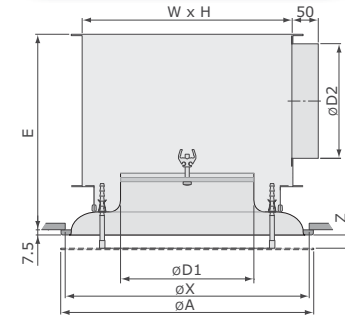
RWI/200/UKDV/160  
 Type \_\_\_\_\_  
 Diameter \_\_\_\_\_  
 Plenum Type \_\_\_\_\_  
 Plenum Spigot Diameter \_\_\_\_\_



RWI



RWI + UKDVI



RWI-R + UKRV

#### Performance Table

| RWI  |     | Supply            |         |         |         |         |         | Exhaust |         |         |         |         |         |
|------|-----|-------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| m³/h | l/s | 100 Dia           | 125 Dia | 160 Dia | 200 Dia | 250 Dia | 315 Dia | 100 Dia | 125 Dia | 160 Dia | 200 Dia | 250 Dia | 315 Dia |
| 50   | 14  | T 0.2             |         |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub> 10 |         |         |         |         |         | 7       |         |         |         |         |         |
|      |     | L <sub>w</sub> -  |         |         |         |         |         | -       |         |         |         |         |         |
| 75   | 21  | T 0.3             | 0.2     |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub> 22 | 10      |         |         |         |         | 21      |         |         |         |         |         |
|      |     | L <sub>w</sub> 29 | -       |         |         |         |         | 27      |         |         |         |         |         |
| 100  | 28  | T 0.4             | 0.3     |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub> 35 | 14      |         |         |         |         | 30      | 6       |         |         |         |         |
|      |     | L <sub>w</sub> 33 | 26      |         |         |         |         | 31      | -       |         |         |         |         |
| 125  | 35  | T 0.5             | 0.4     | 0.3     |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub> 56 | 22      | 10      |         |         |         | 46      | 10      |         |         |         |         |
|      |     | L <sub>w</sub> 38 | 33      | -       |         |         |         | 36      | -       |         |         |         |         |
| 150  | 42  | T 0.5             | 0.4     |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    | 29      | 15      |         |         |         | 13      | 5       | 2       |         |         |         |
|      |     | L <sub>w</sub>    | 33      | 25      |         |         |         | -       | -       | -       |         |         |         |
| 200  | 56  | T 0.7             | 0.6     | 0.5     |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    | 45      | 25      | 12      |         |         | 23      | 9       | 4       |         |         |         |
|      |     | L <sub>w</sub>    | 39      | 29      | -       |         |         | 23      | -       | -       |         |         |         |
| 250  | 69  | T 0.7             | 0.6     |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         | 33      | 19      |         |         | 36      | 13      | 5       | 2       |         |         |
|      |     | L <sub>w</sub>    |         | 34      | -       |         |         | 29      | -       | -       | -       |         |         |
| 300  | 83  | T 1.1             | 0.9     | 0.8     |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         | 48      | 23      | 9       |         | 52      | 19      | 8       | 3       |         |         |
|      |     | L <sub>w</sub>    |         | 37      | 26      | -       |         | 34      | -       | -       | -       |         |         |
| 400  | 111 | T 1.2             | 1.0     |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         |         | 37      | 17      |         | 91      | 34      | 14      | 6       | 2       |         |
|      |     | L <sub>w</sub>    |         |         | 31      | 25      |         | 40      | 28      | -       | -       | -       |         |
| 500  | 139 | T 1.5             | 1.3     | 1.1     |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         |         | 50      | 24      | 11      |         | 52      | 21      | 9       | 4       |         |
|      |     | L <sub>w</sub>    |         |         | 35      | 29      | 26      |         | 34      | 20      | -       | -       |         |
| 600  | 167 | T 1.5             | 1.3     |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         |         | 33      | 16      |         |         | 75      | 31      | 13      | 5       |         |
|      |     | L <sub>w</sub>    |         |         | 33      | 29      |         |         | 39      | 27      | -       | -       |         |
| 750  | 208 | T 1.9             | 1.6     |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         |         | 50      | 22      |         |         | 48      | 21      | 9       |         |         |
|      |     | L <sub>w</sub>    |         |         | 39      | 33      |         |         | 33      | -       | -       |         |         |
| 1000 | 278 | T 2.3             |         |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         |         |         | 36      |         |         | 84      | 38      | 15      |         |         |
|      |     | L <sub>w</sub>    |         |         |         | 39      |         |         | 41      | 28      | -       |         |         |
| 1250 | 347 | T 2.9             |         |         |         |         |         |         |         |         |         |         |         |
|      |     | P <sub>s</sub>    |         |         |         | 52      |         |         |         |         | 60      | 24      |         |
|      |     | L <sub>w</sub>    |         |         |         | 43      |         |         |         |         | 34      | 24      |         |