

## Hi-Flo Jet Diffusers

### RWH RWH-P

#### Introduction

The Waterloo RWH diffusers have been designed to handle high air flow rates and provide relatively long throws which make them particularly suitable for conditioning of large spaces such as halls, auditoria, terminal buildings, warehouses and factories.

The diffusers are versatile in application by virtue of the novel "reversible and rotatable" core design which allows the air jet to be adjusted for both pattern and deflection. Units may be mounted individually or in banks, in bulkhead arrangements or directly into stub ducts.

The diffusers are constructed from aluminium spinings supported on a studding and spacer assembly. The core may be rotated through 180° to expose either a straight or diffused core assembly. In addition, the diffuser spigot may be rotated within the mounting plate (if supplied) to enable a full 360° adjustment, by releasing the tension bolts.

#### Product Description

**RWH** Complete diffuser assembly including diffuser core, spigot and mounting plate (wall or ceiling mounting).

**RWH-P** Diffuser core and spigot only (suitable for mounting onto bulkheads or stub ducts thus eliminating the large mounting plate).

#### Features

- Simple and effective air diffusion for large spaces
- Long throw characteristics
- High air handling capacity
- Easy to install and adjust
- Reversible core to produce long throw jet or short throw diffuser patterns
- Core rotatable through 360° for "eyeball" jet direction
- Jet may be deflected off axis by up to 15°
- Available in four sizes
- Multiple outlet arrangements

#### Finishes

PPM9006 (RAL 9006 Matt Silver)

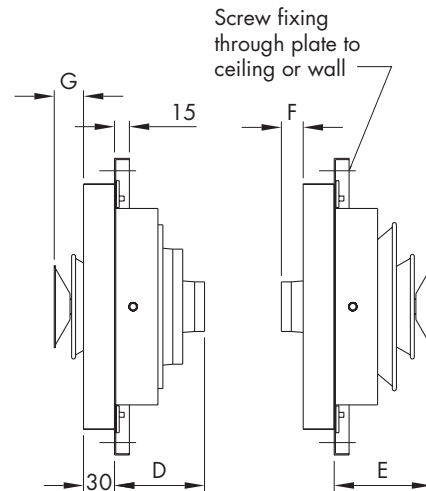
PPM9010 (RAL 9010 20% Gloss White)

PPG9010 (RAL 9010 Gloss White)

Other colours available on request

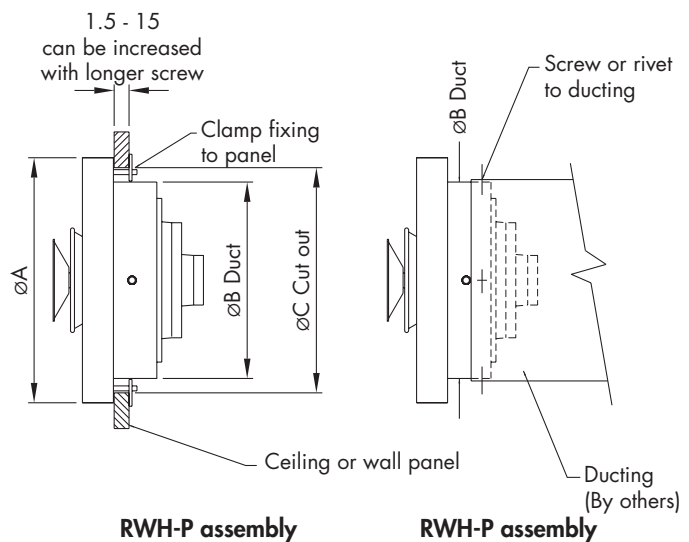
#### Weights

Size	RWH	RWH-P
200	1.6 kg	1.2 kg
250	2.5 kg	1.8 kg
315	4.2 kg	3.1 kg
380	5.3 kg	4.1 kg



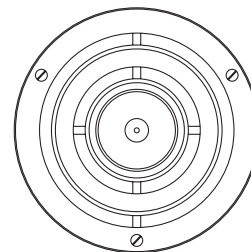
RWH assembly  
Diffuser setting

RWH assembly  
Jet setting



RWH-P assembly

RWH-P assembly



RWH Diffuser setting

#### Order Example

#### RWH-P/380/PPM9010

Type \_\_\_\_\_  
 Duct & Diffuser Size \_\_\_\_\_  
 Finish \_\_\_\_\_

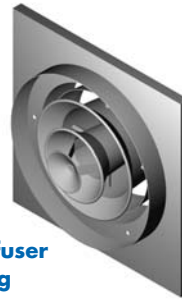
Nom. size	øA	øB	øC	D	E	F	G
200	247	198	235	92	98	22	28
250	312	248	285	104	116	34	34
315	377	313	350	124	154	47	68
380	447	378	415	159	155	80	65



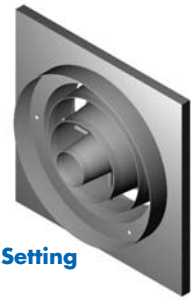
RWH-P Diffuser Setting



RWH-P Jet Setting



RWH Diffuser Setting



RWH Jet Setting

All data is for the diffuser set for 0° deflection and operating under isothermal conditions in either “jet” or “diffuser” pattern. Correction factors for 15° deflection are given below.

When diffusers are mounted on a common plate/plenum the noise level and throw will increase. Correction factors

are given in the table below.

NR level = Peak level on NR curves based on SWL ref 10<sup>12</sup>W less 8dB room absorption.

Throw = Forward distance to the point where the jet velocity has retarded to a terminal velocity of 0.5 m/s.

Ps = Static pressure loss (Pa).

### Performance Table

RWH RWH-P		Air Volume												
		m <sup>3</sup> /h	360	450	540	720	900	1080	1440	1800	2160	2880	3600	4320
		l/s	100	125	150	200	250	300	400	500	600	800	1000	1200
200 Dia	Jet	Throw(m)	5.7	7.0	8.2	11.5	15.0	17.0						
		Lw	-	18	24	32	38	44						
		Ps	18	28	40	65	110	160						
	Diffuser	Throw(m)	2.8	3.5	4.1	5.8	7.5	8.5						
		Lw	-	-	20	31	39	46						
		Ps	18	28	40	65	110	160						
250 Dia	Jet	Throw(m)	4.0	5.1	6.0	7.2	10	12.0	16.5					
		Lw	-	17	22	30	36	41	48					
		Ps	6	10	14	21	31	48	80					
	Diffuser	Throw(m)	2.0	2.6	3.0	3.6	5.0	6.0	8.3					
		Lw	-	-	14	24	32	38	49					
		Ps	6	10	14	21	31	48	80					
315 Dia	Jet	Throw(m)			5.0	6.8	8.5	9.8	13.0	16.0	20.0	26.0		
		Lw			-	-	19	24	33	39	44	53		
		Ps			4	8	13	18	30	45	60	105		
	Diffuser	Throw(m)			2.5	3.4	4.3	4.9	6.5	8.0	10.0	13.0		
		Lw			-	-	-	20	31	39	46	57		
		Ps			4	8	13	18	30	45	60	105		
380 Dia	Jet	Throw(m)				5.4	6.8	8.0	10.5	14.0	16.4	22.0	28.0	35.0
		Lw				-	-	-	21	28	33	41	48	53
		Ps				3	5	7	12	20	30	50	70	100
	Diffuser	Throw(m)				2.7	3.4	4.0	5.3	7.0	8.2	11.0	14.0	17.5
		Lw				-	-	-	14	23	30	41	50	57
		Ps				3	5	7	12	20	30	50	70	100

### SWL Spectrum Correction Data By Octaves

Frequency (Hz)	125	250	500	1K	2K	4K
Diffuser/ 0°	-1	+1	+3	+8	+7	0
Diffuser/ 15°	0	+2	+4	+8	+7	+2
Jet/ 0°	-3	-1	+3	+8	+6	+5
Jet/ 15°	+1	+3	+4	+7	+6	+1

### Terminal Velocity Correction Factors

Vt (m/s)	0.2	0.3	0.4	0.5	1.0	1.5
Factor	2.5	1.7	1.25	1.0	0.5	0.3

### Multiple Unit Correction Factors

No. of units	1	2	3	4
NR addition	0	+3	+5	+6
Throw factor	1.0	1.37	1.86	2.06

### 15° Core Setting Correction Factors

	Jet	Diffuser
NR addition	+11dB	+4dB
Pressure Loss Factor	1.25	1.25

The above data is based on isothermal supply air conditions. To estimate maximum **Vertical** projection under warming conditions multiply “jet” throw data above by the relevant factor below.

### Heating Differential

Size	5°C	10°C	20°C
RWH-200	1.30	0.90	0.65
RWH-250	1.20	0.85	0.60
RWH-315	1.10	0.75	0.55
RWH-380	1.00	0.65	0.45

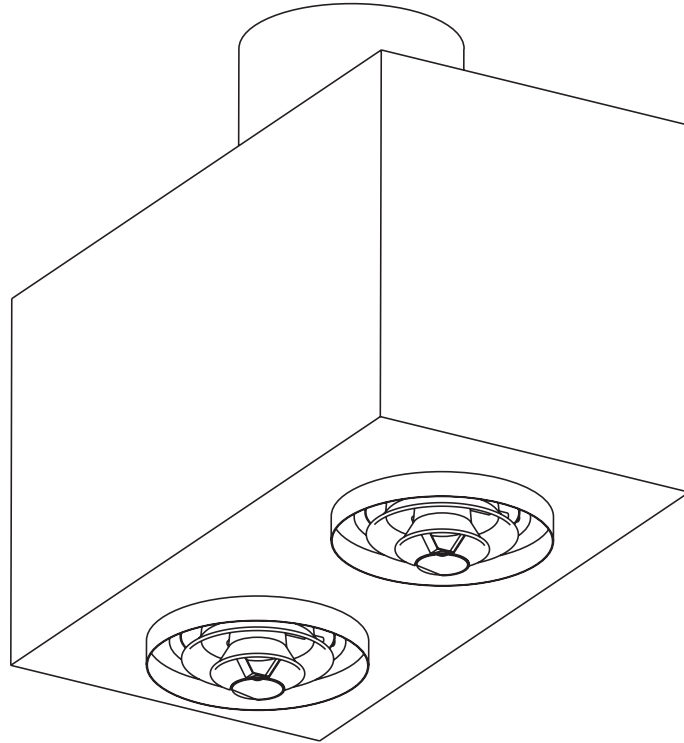
To estimate vertical projection under cooling conditions multiply throw (to relevant terminal velocity) by factors as follows:-

10°C cooling x 1.15      5°C cooling x 1.10

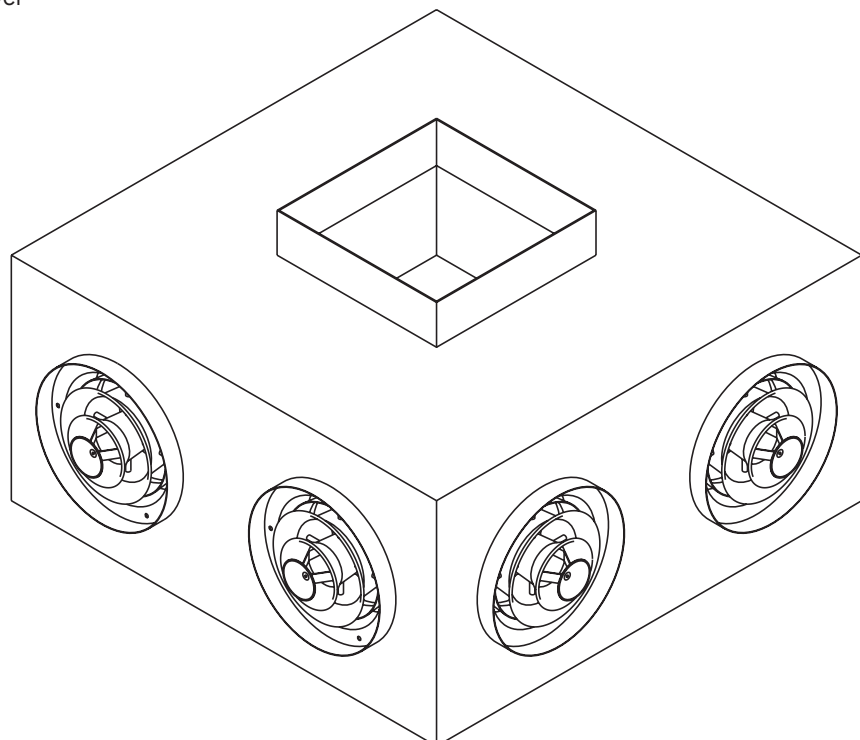
### Plenums

Full details of standard plenums are available from Head Office.

Typical standard plenum arrangement with optional circular or rectangular connections



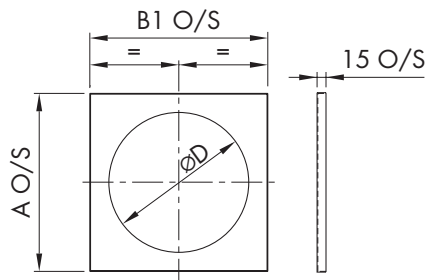
Special designs are available to suit non standard applications, for example, rooftop air handling units and high level ducting.



### Mounting Plates

#### 1 Element

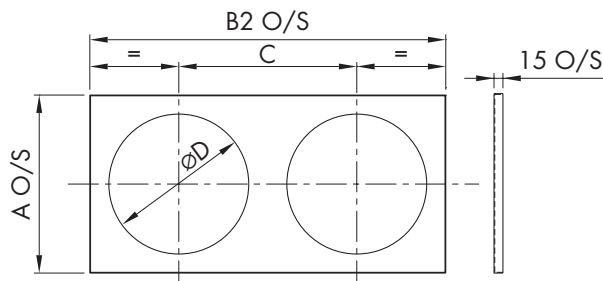
Size	A	B1	∅D
∅200	299	299	∅235
∅250	349	349	∅285
∅315	399	399	∅350
∅380	499	499	∅415



1 Element

#### 2 Element

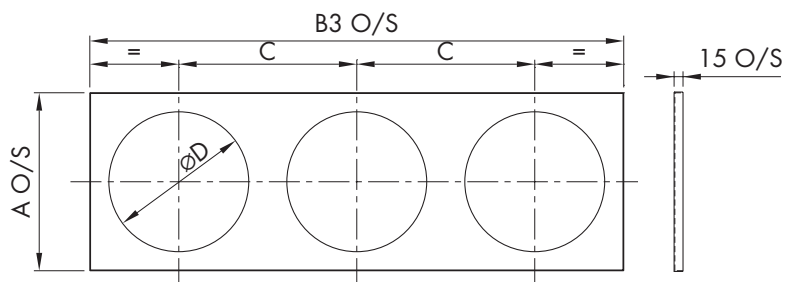
Size	A	B2	C	∅D
∅200	299	598	299	∅235
∅250	349	698	349	∅285
∅315	399	798	399	∅350
∅380	499	998	499	∅415



2 Element

#### 3 Element

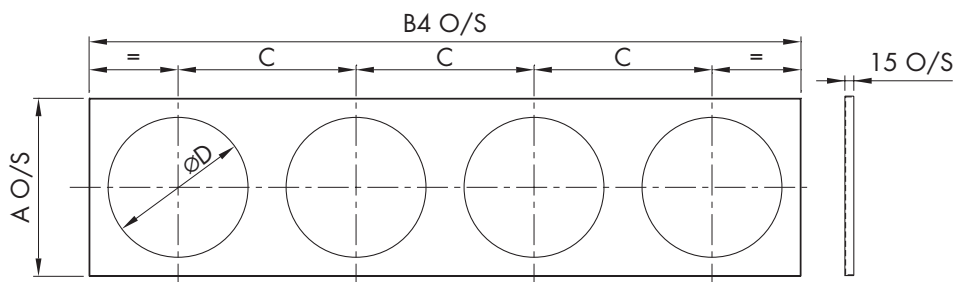
Size	A	B3	C	∅D
∅200	299	897	299	∅235
∅250	349	1047	349	∅285
∅315	399	1197	399	∅350
∅380	499	1497	499	∅415



3 Element

#### 4 Element

Size	A	B4	C	∅D
∅200	299	1196	299	∅235
∅250	349	1396	349	∅285
∅315	399	1596	399	∅350
∅380	499	1996	499	∅415



4 Element