

RADIAL PATTERN DIFFUSERS

- UNIQUE DESIGN
- HIGH CAPACITY
- HINGED FACE
- ALUMINUM

Models:

- 92RPD-2** 180° Pattern
92RPD-1 90° Pattern



Model 92RPD-2

The **Model 92RPD Series Aluminum Radial Pattern Diffusers** have been designed to provide low aspiration and high ventilation rates especially for cleanroom applications such as research laboratories, animal labs, food processing, hospital rooms and computer rooms. The unique design of solid baffles in an intrusive perforated face can handle large volumes of air with low initial face velocities.

The **92RPD-2** model introduces air in a semi-cylindrical 180° radial flow pattern, flushing a room with large volumes of clean conditioned air, minimizing entrainment and hence mixing with contaminated air, while still allowing low room air velocities. The **92RPD-1** model introduces air in a 90° radial flow pattern for perimeter applications.

FEATURES:

- Unique curved face design is pleasing to the eye. No unsightly sharp angles.
- Engineered design and performance are the result of extensive laboratory design and testing.

Standard **92RPD-2** model has a true 180° radial air pattern.

Model **92RPD-1** has a 90° radial pattern for perimeter applications.

- Removable face. Face of diffuser is attached to the plenum with a full length hinge and is secured with wing nuts. Opposite side is secured with a push-button latch mechanism.

The diffuser face simply hinges down for easy access to the interior for cleaning and sanitation or may be completely removed.

- Aluminum perforated face has 3/32" (2.4) dia. holes on 1/4" (6) staggered centers (13% free area).
- Extruded aluminum distribution baffles are secured with flush drive screws, preserving the clean appearance of the diffuser.
- Round inlets for simple duct connection.
- Standard unit designed for lay-in T-Bar ceiling systems.

Material: Aluminum face and baffles. Corrosion-resistant steel distribution plenums.

Finish: AW Appliance White baked enamel finish is standard. Other finishes are available.

Options:

- DFA Drywall Frame is supplied for Type S Surface mount applications.
- AB Aluminum backpan.

E

HOSPITAL / CLEANROOM DIFFUSERS

Dimensional Data

Model Series 92RPD • Aluminum Radial Pattern Diffusers

Model 92RPD-2 180° Pattern

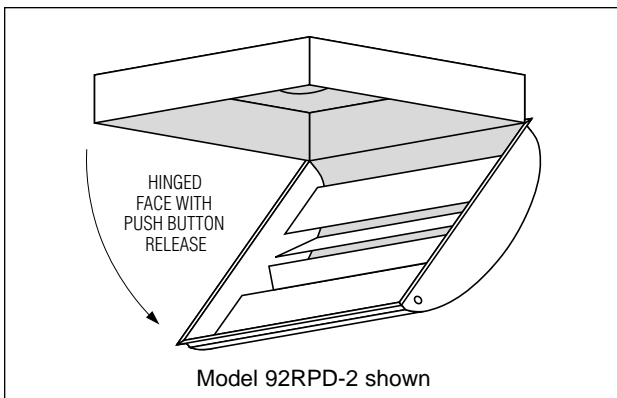
Imperial Modules				Metric Modules	
Imperial Units (inches)		S.I. Units (mm)		S.I. Units (mm)	
D	CM	D	CM	D	CM
8	24 x 24	203	610 x 610	203	600 x 600
12	24 x 48	305	610 x 1219	305	600 x 1200

Type L Lay-in T-Bar

Model 92RPD-1 90° Pattern

Imperial Modules				Metric Modules	
Imperial Units (inches)		S.I. Units (mm)		S.I. Units (mm)	
D	CM	D	CM	D	CM
8	24 x 24	203	610 x 610	203	600 x 600
8	12 x 48	203	305 x 1219	203	300 x 1200
12	24 x 48	305	610 x 1219	305	600 x 1200

Type L Lay-in T-Bar



Type S Surface Mount

Supplied with DFA Drywall Mounting Frame. Permits Ceiling Plenum access. Unit lays in.

RADIAL PATTERN DIFFUSERS

- UNIQUE DESIGN
- HIGH CAPACITY
- HINGED FACE
- STAINLESS STEEL

Models:

92RPD-2SS 180° Pattern

92RPD-1SS 90° Pattern



Model 92RPD-2SS

The **Model 92RPD Series Stainless Steel Radial Pattern Diffusers** have been designed to provide low aspiration and high ventilation rates especially for cleanroom applications such as research laboratories, bio-technology facilities, animal labs, food processing, semi-conductor manufacturing, hospital rooms and computer rooms. The unique design of solid baffles in an intrusive perforated face can handle large volumes of air with low initial face velocities.

The **92RPD-2SS** model introduces air in a semi-cylindrical 180° radial flow pattern, flushing a room with large volumes of clean conditioned air, minimizing entrainment and hence mixing with contaminated air, while still allowing low room air velocities. The **92RPD-1SS** model introduces air in a 90° radial flow pattern for perimeter applications.

FEATURES:

- Unique curved face design is pleasing to the eye. No unsightly sharp angles.
- Engineered design and performance are the result of extensive laboratory testing.
- Standard **92RPD-2SS** model has a true 180° radial air pattern.
- Model **92RPD-1SS** has a 90° radial pattern for perimeter applications.
- The face of the diffuser is attached to the plenum with two stainless steel hinges. The opposite side is secured with 1/4 turn fasteners.
- The diffuser face simply hinges down for easy access to the interior for cleaning and sanitation.
- Type 304 stainless steel perforated face has 3/32" (2.4) dia. holes on 1/4" (6) staggered centers (13% free area).
- Round inlets for simple duct connection.
- Standard unit designed for both lay-in T-Bar ceiling systems and surface mount applications.
- Integral earthquake hanger tabs are standard.

Material: 304 Stainless Steel face, backpan and baffles.

Finish: #3 Satin Polished finish is standard. Other finishes are available.

Options:

- 316 Stainless Steel construction.
- AW Appliance White finish.

Dimensional Data

Model Series 92RPD • Stainless Steel Radial Pattern Diffusers

Model 92RPD-2SS 180° Pattern

CM = CEILING MODULE
CM - 1/4" (6)
NOMINAL ROUND DUCT DIA. D
NECK SIZE = D - 1/8" (3)
2 1/2" (64)
6" (152)
HINGE
6" (152)
PERFORATED FACE
BAFFLES

Ceiling Module Sizes

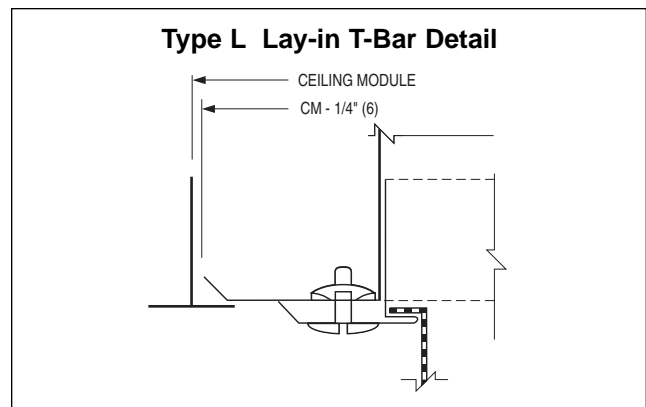
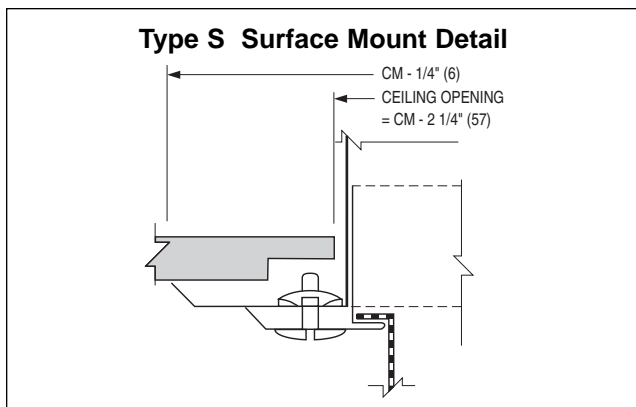
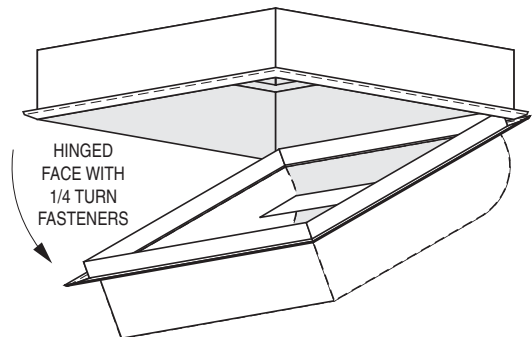
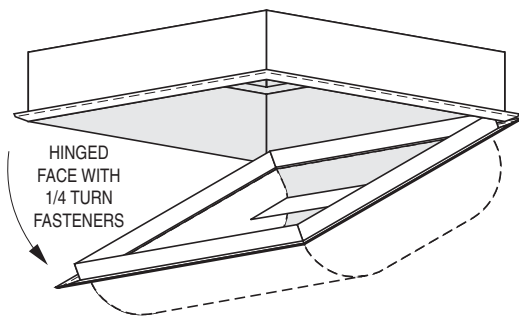
Imperial Modules				Metric Modules	
Imperial Units (inches)		S.I. Units (mm)		S.I. Units (mm)	
D	CM	D	CM	D	CM
8	24 x 24	203	610 x 610	203	600 x 600
12	48 x 24	305	1219 x 610	305	1200 x 600

Model 92RPD-1SS 90° Pattern

CM = CEILING MODULE
CM - 1/4" (6)
NOMINAL ROUND DUCT DIA. D
NECK SIZE = D - 1/8" (3)
2 1/2" (64)
6" (152)
HINGE
6" (152)
PERFORATED FACE
BAFFLES

Ceiling Module Sizes

Imperial Modules				Metric Modules	
Imperial Units (inches)		S.I. Units (mm)		S.I. Units (mm)	
D	CM	D	CM	D	CM
8	48 x 12	203	1219 x 305	203	1200 x 300
8	24 x 24	203	610 x 610	203	600 x 600
12	48 x 24	305	1219 x 610	305	1200 x 600



HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Aluminum Radial Pattern Diffusers – Model Series 92RPD

92RPD-2 - 08 - 24 x 24 - L - AW - —

MODEL

- 180° Pattern 92RPD-2
- 90° Pattern 92RPD-1

ROUND INLET SIZE

(inches)	(mm)
08	(203)
12	(305)

CEILING MODULE SIZE

Imperial Modules

- | (inches) | (mm) | |
|----------|--------------|----------------------|
| 48 x 12 | (1219 x 305) | (Model 92RPD-1 only) |
| 24 x 24 | (610 x 610) | |
| 48 x 24 | (1219 x 610) | |

Metric Modules (mm)

- 1200 x 300 (Model 92RPD-1 only)
- 600 x 600
- 1200 x 600

OPTIONS

- None (default) —
- Aluminum Backpan AB

FINISH

- Appliance White (default) AW
- Aluminum AL
- Special Custom Color SP
- Acrylic Appliance White AAW
- Acrylic Custom Color ASP

FRAME TYPE

- Lay-in T-Bar L
- Surface Mount S

E

HOSPITAL / CLEANROOM DIFFUSERS

Note:

1. Consult dimensional data as to limitations of model, module and neck size combinations.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **92RPD-2** (180° pattern) or **92RPD-1** (90° pattern) **Aluminum Radial Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall have an aluminum perforated face that has 13% free area with 3/32" (2.4) dia. holes on 1/4" (6) staggered centers. The face shall have rounded corners and aluminum integral distribution baffles to provide a low velocity, non-aspirating radial air pattern. The diffuser shall have a corrosion-resistant steel distribution plenum (aluminum is optional). The face shall be attached to the plenum with a full length hinge on one side and a push button latch mechanism on the opposite side to allow for access to the interior for cleaning. The hinge shall be secured with wingnuts to allow for complete removal of the face. The finish shall be AW Appliance White baked enamel (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.

HOW TO SPECIFY OR TO ORDER

(Show complete Model Number and Size, unless "Default" is desired).

Stainless Steel Radial Pattern Diffusers – Model Series 92RPD

92RPD-2SS - 08 - 24 x 24 - L - #3 - —

MODEL

- 180° Pattern 92RPD-2SS
- 90° Pattern 92RPD-1SS

ROUND INLET SIZE

(inches)	(mm)
08	(203)
12	(305)

CEILING MODULE SIZE

Imperial Modules

(inches)	(mm)
- 48 x 12	(1219 x 305) (Model 92RPD-1SS only)
- 24 x 24	(610 x 610)
- 48 x 24	(1219 x 610)

Metric Modules (mm)

- 1200 x 300 (Model 92RPD-1SS only)
- 600 x 600
- 1200 x 600

OPTIONS

- None (default) —
- 316 Stainless Steel Construction 316

FINISH

- #3 Satin Polished (default) #3
- Appliance White AW
- Special Custom Color SP

FRAME TYPE

- Lay-in T-Bar L
- Surface Mount S

Note:

1. Consult dimensional data as to limitations of model, module and neck size combinations.

SUGGESTED SPECIFICATION:

Furnish and install **Nailor Model** (select one) **92RPD-2SS** (180° pattern) or **92RPD-1SS** (90° pattern) **Stainless Steel Radial Pattern Ceiling Diffusers** of the sizes and capacities as shown on the plans and air distribution schedules. The diffusers shall be constructed entirely from 304 stainless steel (316 optional), minimum 24 gauge. The perforated face of the diffuser shall have 13% free area with 3/32" (2.4) dia. holes on 1/4" (6) staggered centers. The face shall have rounded corners and integral distribution baffles to provide a low velocity, non-aspirating radial air pattern. The face shall have 1/4 turn fasteners on one side and hinges on the other to allow for access to the interior for cleaning. Integral earthquake hanger tabs shall be included with all units. All exposed surfaces shall have a #3 satin polished finish (optional finishes are available).

The manufacturer shall provide published performance data for the diffuser, which shall be tested in accordance with ANSI/ASHRAE Standard 70 – 1991.



Performance Data

Models 92RPD-2, 92RPD-2SS • 180° Pattern

Imperial Units

24" x 24" or 600 mm x 600 mm Module Size • 8" (203 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow CFM	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				100 FPM	75 FPM	50 FPM	100 FPM	75 FPM	50 FPM
300	.101	.055	21	1.0	1.5	2.0	2.5	3.0	4.0
400	.179	.097	30	1.5	2.0	2.5	3.0	4.0	5.0
500	.280	.152	38	2.0	2.5	3.0	3.5	4.5	5.5

48" x 24" or 1200 mm x 600 mm Module Size • 12" (305 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow CFM	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				100 FPM	75 FPM	50 FPM	100 FPM	75 FPM	50 FPM
600	.072	.036	22	1.0	1.5	2.0	1.5	2.0	2.5
800	.129	.064	32	1.5	2.0	2.5	2.0	2.5	3.5
1000	.201	.100	41	2.0	2.5	3.5	2.5	3.0	4.5

CFM - cubic feet per minute

FPM - feet per minute velocity

Pt - total pressure - inches w.g.

Ps - static pressure - inches w.g.

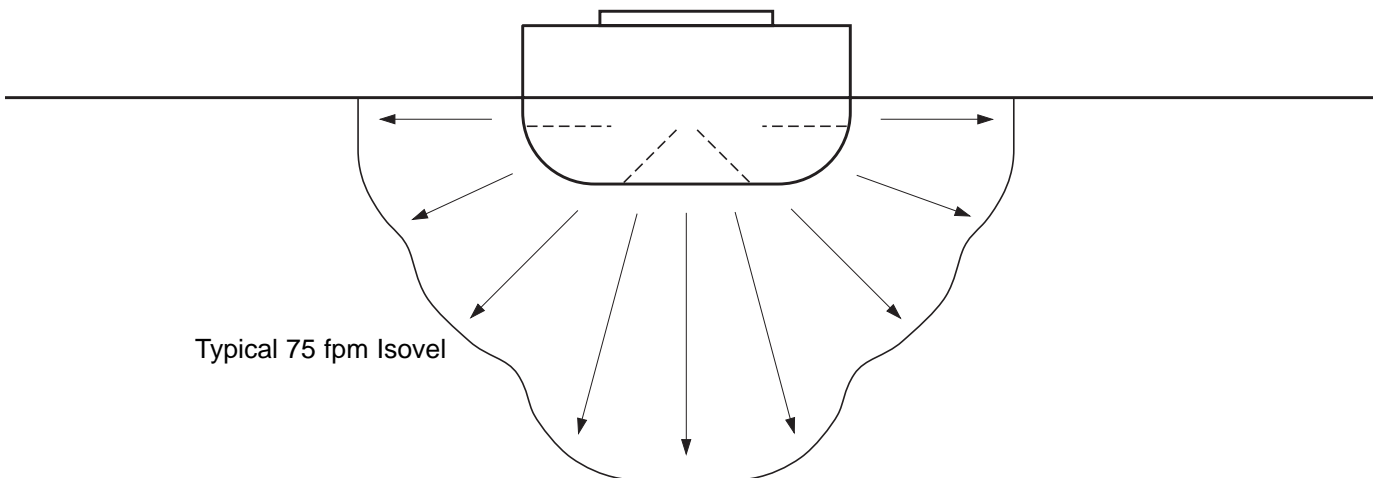
T - throw in feet

NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.

Performance Notes:

1. The radial flow pattern of the **92RPD-2** and **92RPD-2SS** is unlike conventional air distribution devices. The data presented above describes isovels by average terminal velocity in both horizontal and vertical directions.
2. ΔT is the temperature difference between supply and room air. Testing is based on 10°F (5.5°C) cooling.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.



Performance Data

Models 92RPD-2, 92RPD-2SS • 180° Pattern

Metric Units

610 mm x 610 mm or 600 mm x 600 mm Module Size • 8" (203 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow L/S	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				0.51 M/S	0.38 M/S	0.25 M/S	0.51 M/S	0.38 M/S	0.25 M/S
142	25	14	21	0.3	0.5	0.6	0.8	0.9	1.2
189	44	24	30	0.5	0.6	0.8	0.9	1.2	1.5
236	70	38	38	0.6	0.8	0.9	1.1	1.4	1.7

1219 mm x 610 mm or 1200 mm x 600 mm Module Size • 12" (305 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow L/S	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				0.51 M/S	0.38 M/S	0.25 M/S	0.51 M/S	0.38 M/S	0.25 M/S
283	18	9	22	0.3	0.5	0.6	0.5	0.6	0.8
378	32	16	32	0.5	0.6	0.8	0.6	0.8	1.1
472	50	25	41	0.6	0.8	1.1	0.8	0.9	1.4

L/S - litres per second

M/S - meters per second velocity

Pt - total pressure - Pa

Ps - static pressure - Pa

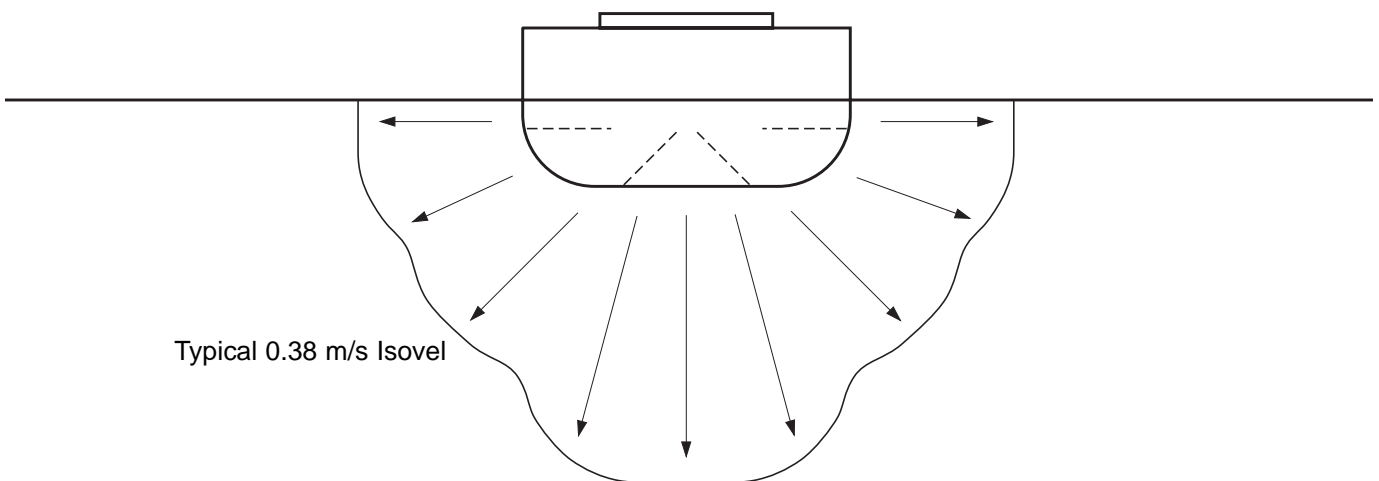
T - throw in meters

NC - Noise Criteria (values) based on 10 dB room absorption, re 10^{-12} watts.

Performance Notes:

1. The radial flow pattern of the **92RPD-2** and **92RPD-2SS** is unlike conventional air distribution devices. The data presented above describes isovels by average terminal velocity in both horizontal and vertical directions.
2. ΔT is the temperature difference between supply and room air. Testing is based on 10°F (5.5°C) cooling.

3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.



Performance Data

Models 92RPD-1, 92RPD-1SS • 90° Pattern

Imperial Units

24" x 24" or 600 mm x 600 mm Module Size • 8" (203 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow CFM	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				100 FPM	75 FPM	50 FPM	100 FPM	75 FPM	50 FPM
300	.114	.068	21	2.0	2.5	3.5	3.5	4.0	5.0
400	.203	.121	29	2.5	3.5	4.0	4.0	4.5	6.0
500	.317	.189	36	3.0	3.5	4.5	4.5	5.0	7.0

48" x 24" or 1200 mm x 600 mm Module Size • 12" (305 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow CFM	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				100 FPM	75 FPM	50 FPM	100 FPM	75 FPM	50 FPM
600	.082	.046	21	1.5	2.5	3.5	3.0	4.0	6.0
800	.146	.081	30	2.0	3.0	4.0	3.5	5.0	7.5
1000	.228	.127	38	2.5	3.0	4.5	4.5	6.0	8.5

48" x 12" or 1200 mm x 300 mm Module Size • 8" (203 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow CFM	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				100 FPM	75 FPM	50 FPM	100 FPM	75 FPM	50 FPM
300	.125	.079	22	1.5	2.0	3.0	1.0	1.5	2.0
400	.221	.139	30	2.0	2.5	3.5	2.0	2.5	3.5
500	.346	.218	37	2.5	3.5	4.5	2.5	3.0	4.0

CFM - cubic feet per minute

FPM - feet per minute velocity

Pt - total pressure - inches w.g.

Ps - static pressure - inches w.g.

T - throw in feet

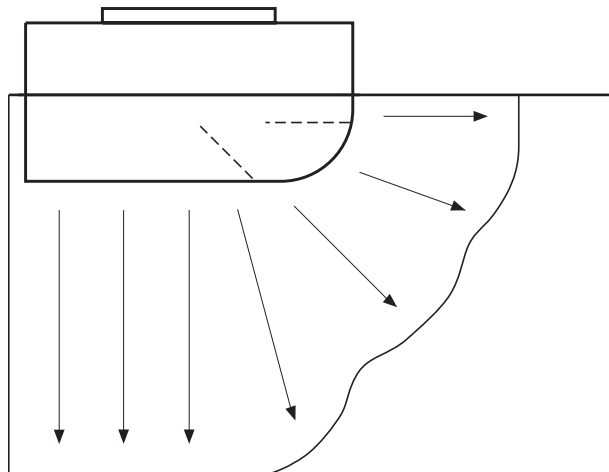
NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. The radial flow pattern of the **92RPD-1** and **92RPD-1SS** is unlike conventional air distribution devices. The data presented above describes isovels by average terminal velocity in both horizontal and vertical directions.

2. ΔT is the temperature difference between supply and room air. Testing is based on 10°F (5.5°C) cooling.
3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Typical 75 fpm Isovel



Performance Data

Models 92RPD-1, 92RPD-1SS • 90° Pattern

Metric Units

610 mm x 610 mm or 600 mm x 600 mm Module Size • 8" (203 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow L/S	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				0.51 M/S	0.38 M/S	0.25 M/S	0.51 M/S	0.38 M/S	0.25 M/S
142	28	17	21	0.6	0.8	1.1	1.1	1.2	1.5
189	50	30	29	0.8	1.1	1.2	1.2	1.4	1.8
236	79	47	36	0.9	1.1	1.4	1.4	1.5	2.1

1219 mm x 610 mm or 1200 mm x 600 mm Module Size • 12" (305 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow L/S	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				0.51 M/S	0.38 M/S	0.25 M/S	0.51 M/S	0.38 M/S	0.25 M/S
283	20	11	21	0.5	0.8	1.1	0.9	1.2	1.8
378	36	20	30	0.6	0.9	1.2	1.1	1.5	2.3
472	57	32	38	0.8	0.9	1.4	1.4	1.8	2.6

1219 mm x 305 mm or 1200 mm x 300 mm Module Size • 8" (203 mm) dia. Inlet • ΔT - 10°F (5.5°C)

Airflow L/S	Pt	Ps	NC	T Horizontal Throw @			T Vertical Throw @		
				0.51 M/S	0.38 M/S	0.25 M/S	0.51 M/S	0.38 M/S	0.25 M/S
142	31	20	22	0.5	0.6	0.9	0.3	0.5	0.6
189	55	35	30	0.6	0.8	1.1	0.6	0.8	1.1
236	86	54	37	0.8	1.1	1.4	0.8	0.9	1.2

L/S - litres per second

M/S - meters per second velocity

Pt - total pressure - Pa

Ps - static pressure - Pa

T - throw in meters

NC - Noise Criteria (values) based on 10 dB room absorption, re 10⁻¹² watts.

Performance Notes:

1. The radial flow pattern of the **92RPD-1** and **92RPD-1SS** is unlike conventional air distribution devices. The data presented above describes isovels by average terminal velocity in both horizontal and vertical directions.

2. ΔT is the temperature difference between supply and room air. Testing is based on 10°F (5.5°C) cooling.
3. Data derived from tests conducted in accordance with ANSI/ASHRAE Standard 70 – 1991.

Typical 0.38 m/s Isovel

