



Chilled Water Units  
In-Situ Sound Data  
IMD 95Y-550Y (Eco)

Nominal Airflows  
450 l/s - 2340 l/s



# Chilled Water air conditioners

## Contents



### Introduction

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Temperzone is a major manufacturer of chilled water air conditioners to the Australasian market. This document has been produced as a supplement to the main Technical Data pamphlet found at [www.temperzone.biz](http://www.temperzone.biz) and provides In-Situ Sound Level data not already published.

### Acoustics

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'In Situ' sound pressure data is provided to give an indication of the actual sound levels experienced with an installed unit in a typical room. Sound levels will vary depending on the different installation characteristics, eg. duct length, insulation, hard and soft materials, distance to occupants, etc.

'In Situ' data is derived from measured sound power data which follows the British standard BS 848-2.2:2004

Refer Technical Data brochure for air handling curves.

### Nominal Air Flows

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Model	l/s
IMD 95Y	450
IMD 135Y	600
IMD 170Y	750
IMD 210Y	900
IMD 280Y	1250
IMD 420Y	1800
IMD 550Y	2340

# Chilled Water air conditioners

## Performance Data



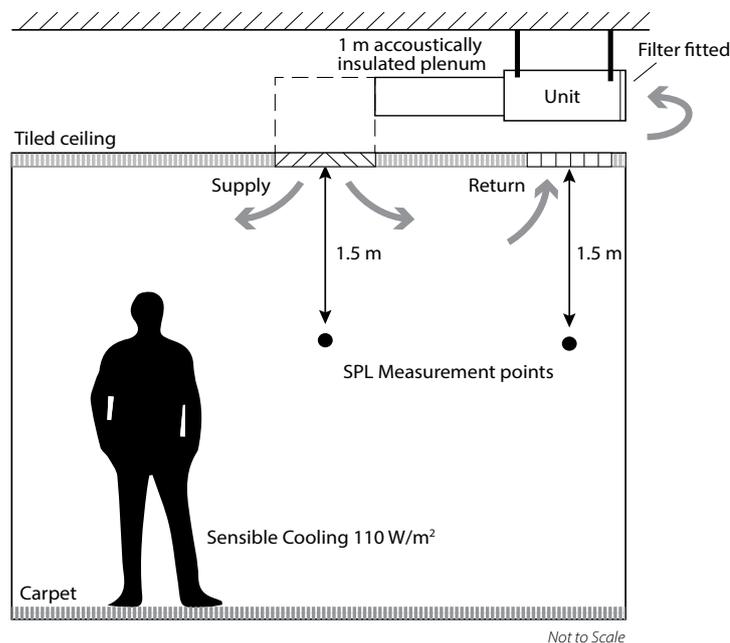
### 'IN SITU' SOUND LEVELS

Temperzone 'in-situ' sound pressure data should be used as a guide and adjusted to fit your project specific application. This 'in-situ' data is derived from measured sound power data following the British standard BS 848 PT2, 1985. (Raw data to this standard is available on request). A model has been applied to this sound data to simulate the actual noise level experienced in a room.

SPL is specified at 1.5m from the supply/return air duct outlet.

These 'in-situ' noise levels are based on the following criteria:

- A ceiling height of 2.7 m.
- A room sized on a sensible cooling of 110 W/m<sup>2</sup>.
- A ceiling with standard fibrous tiles giving a Noise Reduction Coefficient (NRC) of 0.7.
- A floor laid with quality carpet having a NRC of 0.3.
- Walls are less than 50% glass by surface area.
- A reverberant time of 0.6 seconds or less
- Diffuser is located central to the room.
- Units are installed as per our installation guidelines and good practice.
- Nominal air flow is for a unit operating with approx. 50Pa external static pressure; filter fitted.
- Supply air has 1m straight, solid, acoustically insulated (25mm), rectangular ductwork.
- Return air ductwork is not fitted, however insulated ductwork on the return air is suggested for further reducing noise.



# Chilled Water air conditioners

## Sound Levels



### Adjustment Factors used for 'In Situ' Sound Pressure Levels (SPL)

Table for typical sound reduction factors across the SPL spectrum applied in this 'in situ' SPL conversion.

MODEL		OCTAVE BAND FREQUENCY Hz					
		125	250	500	1k	2k	4k
		ADJUSTMENT FACTORS dB					
IMD 95Y	Overall Room Effect	-6	-7	-8	-8	-7	-7
	Duct Attenuation for supply air	0	-2	-7	-11	-14	-13
IMD 135Y	Overall Room Effect	-7	-8	-8	-8	-8	-8
	Duct Attenuation for supply air	0	-1	-6	-9	-12	-11
IMD 170Y	Overall Room Effect	-7	-8	-9	-9	-8	-8
	Duct Attenuation for supply air	0	-1	-5	-8	-10	-10
IMD 210Y	Overall Room Effect	-7	-9	-9	-9	-9	-8
	Duct Attenuation for supply air	0	-1	-5	-7	-9	-9
IMD 280Y	Overall Room Effect	-8	-9	-9	-10	-9	-9
	Duct Attenuation for supply air	0	-1	-4	-7	-9	-9
IMD 420Y	Overall Room Effect	-9	-10	-10	-10	-10	-10
	Duct Attenuation for supply air	0	-1	-4	-6	-7	-7
IMD 550Y	Overall Room Effect	-9	-10	-10	-10	-10	-10
	Duct Attenuation for supply air	0	-1	-3	-5	-6	-6

### Other Potential dB(A) Reductions or Additions under different installation conditions

If your project has any of the environment considerations below, the additions or reductions should be made.

Installation Environment	dB(A) changes
Acoustic art fixtures on the wall	-1
Large number of occupants and/or furniture	-1 ~ -3
Hard floors – wood, tiles, marble or similar	+1~+2
Large glass area on walls	+1
Every extra metre of ductwork fitted	-2
Supply Air plenum with spigots	-2
Flexible ducting - insulated (1m)	-7
Return air ductwork (1m)	-4 ~ -6
Different duct shapes/ sizes	May cause an effect +/-

# Chilled Water air conditioners

## Sound Levels



### IN SITU : SUPPLY AIR OUTLET

In Situ Data: Measured in decibels re 1 picowatt.

Models	FAN SPEED	SPL dB(A)	OCTAVE BAND FREQUENCY Hz					
			125	250	500	1k	2k	4k
			SOUND PRESSURE LEVELS (SPL) dB					
IMD 95Y	9.3	58	66	63	53	49	45	44
	8.3	52	59	57	49	45	39	39
	7.3	48	56	51	45	40	34	33
IMD 135Y	10	58	65	63	54	50	45	45
	9.3	52	59	57	49	43	39	39
	8.3	47	56	52	44	38	34	33
IMD 170Y	10	62	63	65	59	57	50	50
	9.3	59	61	62	57	54	48	48
	8.3	53	55	55	52	45	40	40
IMD 210Y	9.3	60	62	61	57	56	49	48
	8.7	56	59	58	54	51	45	44
	7.3	49	52	50	49	42	37	34
IMD 280Y	9.3	61	63	64	58	56	51	48
	8.3	55	58	58	53	49	44	41
	7.3	50	53	53	49	43	38	35
IMD 420Y	9.3	63	67	64	62	57	54	52
	8.3	56	61	57	55	50	47	44
	7.3	52	56	52	50	46	42	38
IMD 550Y	10	69	70	67	66	63	64	59
	9	66	68	65	64	61	58	56
	8	63	65	62	61	58	55	53
	7	59	62	58	58	54	51	49
	6	56	58	54	54	51	47	45
	5	51	53	49	50	46	42	39



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Note  
Specifications are subject to change without notice due to the manufacturer's ongoing research and development programme.

Available from