



Chilled Water Units
In-Situ Sound Data
IMD 95-550

Nominal Airflows
450 l/s - 2340 l/s

Chilled Water air conditioners

Contents



Introduction

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 and provides In-Situ Sound Level data not already published.

Acoustics

'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

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

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Performance Data



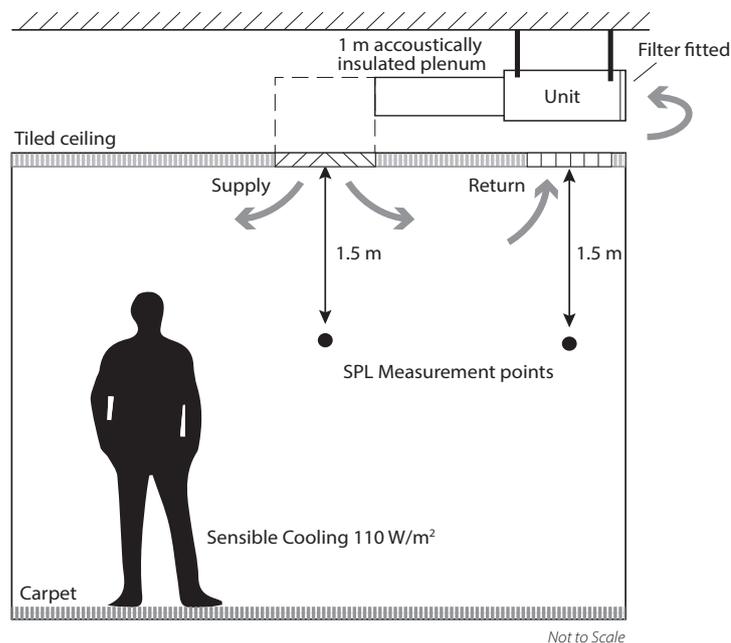
'IN SITU' SOUND LEVELS

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/m².
- 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.



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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 95	Overall Room Effect	-6	-7	-8	-8	-7	-7
	Duct Attenuation for supply air	0	-2	-7	-11	-14	-13
IMD 135	Overall Room Effect	-7	-8	-8	-8	-8	-8
	Duct Attenuation for supply air	0	-1	-6	-9	-12	-11
IMD 170	Overall Room Effect	-7	-8	-9	-9	-8	-8
	Duct Attenuation for supply air	0	-1	-5	-8	-10	-10
IMD 210	Overall Room Effect	-7	-9	-9	-9	-9	-8
	Duct Attenuation for supply air	0	-1	-5	-7	-9	-9
IMD 280	Overall Room Effect	-8	-9	-9	-9	-9	-9
	Duct Attenuation for supply air	0	-1	-4	-7	-9	-9
IMD 420	Overall Room Effect	-9	-10	-10	-10	-10	-10
	Duct Attenuation for supply air	0	-1	-4	-6	-7	-7
IMD 550	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 +/-

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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 95	HIGH	60	68	67	55	48	42	41
	MED HI	58	66	65	54	47	39	39
	MED LO	55	61	61	51	44	36	36
	LOW	50	58	55	47	39	31	30
IMD 135	HIGH	60	67	67	56	49	42	42
	MED	54	61	61	51	42	36	36
	LOW	50	58	56	46	37	31	30
IMD 170	HIGH	63	65	69	61	56	47	47
	MED	61	63	66	59	53	45	45
	LOW	54	57	59	54	44	37	37
IMD 210	HIGH	61	64	65	59	55	46	45
	MED	57	61	62	56	50	42	41
	LOW	51	54	54	51	41	34	31
IMD 280	HIGH	63	65	68	60	55	48	47
	MED	57	60	62	55	48	41	38
	LOW	52	55	57	51	42	35	32
IMD 420	HIGH	65	69	68	64	56	51	49
	MED	58	63	61	57	49	44	41
	LOW	53	58	56	52	45	39	35
IMD 550	HIGH	66	69	70	66	58	51	49
	MED	61	65	65	61	53	46	44
	LOW	57	61	61	57	49	41	39

www.temperzone.biz

AUCKLAND

Head Office

38 Tidal Rd, Mangere, N.Z.
Private Bag 93303, Otahuhu,
NEW ZEALAND.

Email sales@temperzone.co.nz

Phone (09) 279 5250

Fax (09) 275 5637

SYDNEY

Head Office

14 Carnegie Place, Blacktown,
NSW 2148
PO Box 8064, Seven Hills West,
NSW 2147, AUSTRALIA.

Email sales@temperzone.com.au

Phone (02) 8822 - 5700

Fax (02) 8822 - 5711

NEWCASTLE

Phone (02) 4962 - 1155

Fax (02) 4961 - 5101

LAUNCESTON

Phone (03) 6331 - 4209

Fax (03) 6333 - 0224

WELLINGTON

Phone (04) 569 3262

Fax (04) 566 6249

ADELAIDE

Phone (08) 8115 - 2111

Fax (08) 8115 - 2118

JAKARTA

Phone +62 (21) 2963 4983

Fax +62 (21) 2963 4984

CHRISTCHURCH

Phone (03) 379 3216

Fax (03) 379 5956

MELBOURNE

Phone (03) 8769 - 7600

Fax (03) 8769 - 7601

SINGAPORE

Phone +65 6733 4292

Fax +65 6235 7180

BRISBANE

Phone (07) 3308 - 8333 or
1800 - 897 - 253

Fax (07) 3308 - 8330

SHANGHAI

Phone +86 (21) 5648 2078

PERTH

Phone (08) 6399 - 5900

Fax (08) 6399 - 5932



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

Available from