



Heat Pump MEPS for Australasia

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MEPS for air conditioners

In October 2004 a mandatory MEPS will apply to the cooling performance of single phase air conditioners

In 2007 this MEPS will be raised to world's best regulatory practice

Air conditioners also carry a mandatory performance label which shows cooling performance and, for reverse cycle units, heating performance



New Zealand view

In New Zealand, split heat pump sales are doubling every 3 years

Heat pumps are a good alternative to resistance heating and polluting wood burners and may be the dominant heating method in 10 year's time

Consequently we see it as desirable for there to be a MEPS for the heating performance of reverse cycle units



Heat output measurements

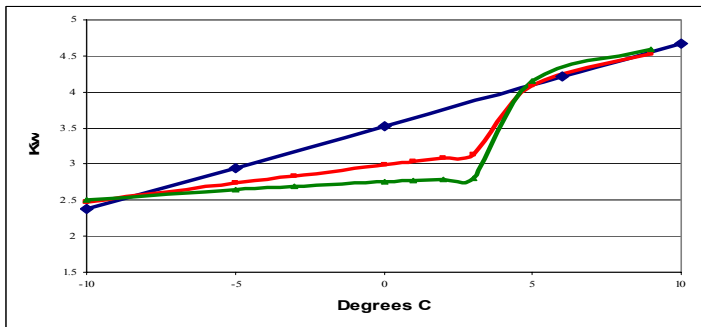
Heat output is currently measured under H1 conditions, 7°C db 6°C wb

At temperatures below 7°C db icing of the evaporator causes a step reduction in COP and output, of up to 36%

Consumers don't know the performance of heat pumps under these conditions



Typical performance curves



Australia	New Zealand	Summer cooling design temp per AIRAH handbook
Perth		37
Adelaide		37
Canberra		36
Melbourne		34
Brisbane		31
Sydney		31
	Christchurch	28
	Auckland	27
Hobart		27
	Wellington	24
	Dunedin	24



Australia	New Zealand	Winter heating design temp per AIRAH handbook	Frost days/yr (Temp below 2°C)
Brisbane		9.2	2
Perth		7.4	2
Sydney		7.2	2
Adelaide		4.9	2
	Auckland	4.1	10
Melbourne		3.5	10
	Wellington	3.2	10
Hobart		1.5	15
	Dunedin	-2.8	58
	Christchurch	-0.8	70
Canberra		-2.2	90



Design temperatures

The AIRAH design temperatures refer to temperatures at 8am

Lower temperatures will not occur on more than 10 days a year

This criterion assumes that the heat source output is not temperature dependent so at temperatures below the design temperature a drop of 1°C will result in a drop of 1 degree in the controlled space.

However



Design temperatures

Because of the nature of the heat pump curve below 7°C output could drop by 36% for a drop of 1°C. This could result in a short fall in temperature of the order of 5°C in the controlled space

Further, for houses and offices heated only during the day the lowest temperature at 8am coincides with the need for extra capacity to raise the inside temperature to operating temperature



H1 or H2?

This could mean that H2 output could be relevant even in marginal Australian cities such as Sydney and Perth

All people needing heating have temperatures below 7°C on some days and consumers know this!

How can use of H1 testing be justified?



Is a heating MEPS desirable?

A MEPS will ensure customer confidence in heat pumps

A MEPS will eliminate unfair competition by ensuring a level playing field

A MEPS will allow give the air conditioner industry a defense to claims that they are contributing to carbon dioxide emissions, power shortages and blackouts



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