

MEPS: Close Control Air Conditioners

Presentation by

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For

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AGENDA

- Introduction
- International Activities
- Industry meeting outcomes
 - Market Characteristics
 - Proposed MEPS
 - Testing standard
 - Compliance path
- Schedule

Introduction

- 2006 five meetings held with suppliers representing over 95% of the market
- Agreement reached on:
 - Market size and mix
 - Wt avg Minimum ERR and avg EER today
 - Proposed Minimum EER
 - Adopting draft ASHRAE 127 – 2001R
 - Rate only the indoor unit
 - Rate units above 70 kW_r
 - Use Supplier software for registration
- Established a working committee under EL 15-16

International Activities

- Californian Energy Commission (CEC) regulates the efficiency of CCU but CCUs not included USA building code
- ASHRAE test Standard 127-2001 has been revised to align with ASHRAE Thermal Guidelines for Data Processing Environments
- Eurovent – Certification Programme
 - Used by very few Australian suppliers
 - Rating points are not the same as ASHRAE

International Activities

- China rates Air Cooled units to ASHRAE 127- 2001
- Up to 14 kW_r 2.50
- 14-28 kW_r 2.45
- 28-50 kW_r 2.40
- Above 50 kW_r 2.30

Market Characteristics

- Currently over 1000 units sold per annum in Australia
- 60% A/C and 40% Water Cooled
- Average size is approximately 50kW
- No suppliers from the USA
- One local manufacturer and 4 importers from Europe

Market Characteristics

- Units operate at close to full load for 24 hours/day, all year
- Air cooled split systems many times have non standard condensers
- Current Estimated Weighted Average EER at design conditions 2.60
- Estimate Weighted average Minimum EER at design conditions 2.02

Market Size

Unit Size kW _r	Quantity		
	A/C	W/C	Total
<19.05	50	0	50
≥19.05 <39.5	175	120	295
≥39.5 <70.0	315	150	465
> 70.0	100	125	225
Total	640	395	1035

Proposed MEPS

- No Labelling (except voluntary under existing 3 phase requirements)
- MEPS levels will be based on new revised ASHRAE Standard 127-2001R rating points
- Will rate only the indoor unit
 - Frees up selection of A/C condenser to accommodate specific jobsite requirements e.g.
 - Low Sound Levels
 - Varying Ambient Selection Conditions
 - Fixed condensing temperature for both Water and A/C.
 - Levels the playing field between A/C and Water Cooled Units
 - All units will be rated at 50 Pa external static pressure

Proposed MEPS

- Will include units above 70 KwR
- Using old ASHRAE Standard for systems the weighted average EER will go from approx. 2.60 to 2.90
 - An increase of 11.5%
- Using old ASHRAE Standard for systems the weighted average minimum EER will go from approx. 2.02 to 2.50
 - An increase of 24%
- Will take out approx 25% of the units now in the market

Current Minimum & Proposed MEPS Levels for CCU

Unit Size kW	ASHRAE 127 - 2001 Standards		ASHRAE 127 2001-R & Rating Only Indoor Unit		
	Today's Min EER	Recommended MEPS EER	Today's Min EER	Recommended MEPS EER	% Improve
<19.05	2.15	2.50	2.26	2.62	16.1%
≥19.05 <39.5	2.07	2.50	2.17	2.62	20.5%
≥39.5 <70.0	2.00	2.50	2.10	2.62	24.8%
≥70.0	2.00	2.50	2.37	2.62	10.4%
Wt Average	2.02	2.50	2.12	2.62	<u>23.6%</u>

Testing Standards

- USA & North America – Use ASHRAE 127-2001
 - Old standard
 - outdoor 35°C dry bulb and indoor air at 22 °C dry bulb 50% RH
 - Used Net **Total** Cooling Capacity to calculate EER
 - New standard
 - outdoor 35°C dry bulb and indoor air at 23.9°C dry bulb and 45% RH
 - Uses Net **Sensible** Cooling Capacity
- Europe – Eurovent uses CEN: prEN 14511-2
 - Air conditioners, Liquid Chilling Packages and Heat Pumps with Electrically Driven Compressors for Space Heating and Cooling. Part 2: Test Conditions
 - outdoor 35°C dry bulb and 24°C wet bulb and indoor air at 24 °C dry bulb and 17°C wet bulb
- China uses ASHRAE 127-2001

Test Standard

- The testing conditions for close control air conditioners be inserted into AS 3823 as an amendment, and based on the conditions in ASHRAE Standard 127-2001R
- Committee under ME-015-16-01 now established

Compliance and Testing Programme

- Suppliers computer simulation software will be use for registration as is currently done by CEC
- HP 40 not suitable – does not work with R 407C
- An independent reviewer will be established in Australia
- Check testing will be done
- Units must be registered to comply with MEPS on Implementation date.

Schedule

- Product Profile and Industry Comments – November 2006
- Standards committee Established – Nov 2006
- Briefing document for general circulation – December 2006
- RIS – January/February 2006
- New Standard – September 2007
- Implementation – October 2008

THANK YOU