Proposed amendment to the minimum energy efficiency requirements for Non-ducted Air Conditioners

Type		Cooling Capacity (kW)	EER (W/W)	
			Effective Date	
			Medium-term (2011.1.1)	Long-term (2016.1.1)
Air Cooled	Single-Package Type	<2.2	3.15	3.40
		≥2.2 ≤4.0	3.20	3.45
		>4.0 ≤7.1	3.00	3.25
		>7.1 ≤10.0	2.95	3.15
	Split Type	≤4.0	3.45	3.85
		>4.0 ≤7.1	3.20	3.55
		>7.1*	3.15	3.40
Water Cooled or Evaporatively Cooled		All Types*	4.25	4.80

* The energy efficiency is limit to examine the cooling capacity not higher than 70kW at the present stage.

Note: The testing method of EER value is based on CNS14464 "Non-ducted air conditioner and heat pumps -- testing and rating for performance," which is the total cooling capacity (W) divided by the effective power input (W) at T1 standard test condition. The tested value shall be ≥ standard value and ≥ 95% of marking value.

Proposed amendment to the minimum energy efficiency requirements for refrigerators and refrigerator-freezers (R/F)

Type	Energy Factor (E.F.) (1/kWh/month)	Effective Date
Indirect Cooling R/F (V< 400 1)	$E.F. = \dfrac{V}{0.037V + 24.3}$	
Indirect Cooling R/F (V ≥ 400 1)	$E.F. = \dfrac{V}{0.031V + 21.0}$	
Direct Cooling R/F (V < 400 1)	$E.F. = \dfrac{V}{0.033V + 19.7}$	2011.1.1
Direct Cooling R/F (V ≥ 400 1)	$E.F. = \dfrac{V}{0.029V + 17.0}$	
Refrigerator	$E.F. = \dfrac{V}{0.033V + 15.8}$	

Note:
1. V(1) is the adjusted volume.
2. The definitions of refrigerator-freezer and refrigerator follows those specified in CNS2062 "Electric Refrigerators and Freezers."
3. Adjusted volume V (1) = V_R + K × V_F
   V_R (1): effective volume of refrigerator compartment.
   V_F (1): effective volume of freezer compartment
   K value: 1.56 for two stars; 1.67 for super two stars; 1.78 for three and four stars.
4. Adjusted volume and EF value are rounded off to one decimal place.
5. The EF value is calculated according to CNS2062. The calculated value shall be ≥ standard value and ≥ 95% of marking value.

Proposed amendment to the minimum energy efficiency requirements for ballasts of fluorescent lamps

Type of ballast	Applied lamp classification	Type	Preheated type								Non-preheated type				Effective date
			Linear type					Circular type			20	40	60	100	
			10	15	20	30	40	20, 22	30, 32	40					
		Rated lamp power	10	11~15	16~20	21~30	31~40	18~20, 19~22	28~30, 30~32	38~40	16~20	31~40	51~60	100~110	
BEF		1 lamp	6.260	4.510	4.780	2.900	2.290	4.405	2.900	2.290	4.780	2.290	1.059	0.629	2009.1.1
		2 lamps	3.000	2.307	2.450	1.460	1.170	2.202	1.460	1.170	2.450	1.170	0.536	0.390	
		3 lamps	2.000	1.552	1.675	0.970	0.750	1.450	0.970	0.750	1.675	0.750	0.357	0.211	
		4 lamps	1.500	1.169	1.200	0.730	0.600	1.200	0.730	0.600	1.200	0.600	0.269	0.159	

Notes:
1. Ballasts cover magnetic and electronic ballasts.
2. The applied lamp classification is based on CNS 691 "fluorescent lamp for general service."
3. "BEF" is defined as the ballast factor in percent divided by the ballast-lamp system input power in Watts and the value is rounded off to three decimal places. The ballast factor (BF) for a specific ballast is the ratio of the light output of a lamp tested on the specific ballast to the light output of the same lamp tested on a "reference" ballast under identical environmental conditions. The test method for BF shall be done in accordance with CNS 13755 and the value of BEF shall not be less than the number in the above table and greater than the 95% of the marked valued in the product.
4. The ballasts shall not be covered in the standard when the reference ballasts and reference lamps could not be adopted from the CNS 13755 appendix 1 and 2 for BEF testing.