Room Air Conditioner CEER Standard Level Calculation for all Product Classes

The following table illustrates the calculation of DOE's new CEER Standard Levels for room air conditioners. DOE first selected an EER standard level for each product class (extrapolating efficency levels from the analyzed product class cost-efficiency curves from the DFR engineering analysis). DOE then used the representative capacity (identified during the engineering analysis) to calculate the representative active power level from the EER standard level. Finally, DOE selected a standby power level of either 1.4 W or 0.7 W for each product class, consistent with both the identified standby energy levels in the TSD's engineering analysis section. Selection of the standby energy levels were consistent with the cost-efficiency curves in the engineering analysis. The representative capacity, active power level, and standby power level were used to calculate the CEER standard level for each product class. The formula for CEER is found below the table.

Additional details on the values used in these calculations and on the CEER metric are available in Chapter 5 of the AHAM-2 DFR Technical Support Document: http://www1.eere.energy.gov/buildings/appliance_standards/residential/pdfs/aham2_dfr_ch05_engineering_2011-04-13.pdf

Product Class	Product Class Description	Representative Capacity (Btu/h)	EER Standard Level (Btu/Wh)	Representative Active Power Level (W)	Standby Power Level (W)	CEER Standard Level (Btu/Wh)[1]
1	With Louvers, Without Reverse Cycle, < 6,000 Btu/h	5000	11.2	446	1.4	11.0
2	With Louvers, Without Reverse Cycle, 6,000 to 7,999 Btu/h	6000	11.2	536	1.4	11.0
3	With Louvers, Without Reverse Cycle, 8,000 to 13,999 Btu/h	10000	11.0	909	1.4	10.9
4	With Louvers, Without Reverse Cycle, 14,000 to 19,999 Btu/h	18000	10.8	1667	1.4	10.7
5a	With Louvers, Without Reverse Cycle, 20,000 to 27,999 Btu/h	24000	9.4	2553	1.4	9.4
5b	With Louvers, Without Reverse Cycle, > 28,000 Btu/h	28000	9.0	3111	1.4	9.0
6	Without Louvers, Without Reverse Cycle, < 6,000 Btu/h	5000	10.2	490	1.4	10.0
7	Without Louvers, Without Reverse Cycle, 6,000 to 7,999 Btu/h	6000	10.2	588	1.4	10.0
8a	Without Louvers, Without Reverse Cycle, 8,000 to 10,999 Btu/h	8000	9.7	825	1.4	9.6
8b	Without Louvers, Without Reverse Cycle, 11,000 to 13,999 Btu/h	12000	9.6	1250	1.4	9.5
9	Without Louvers, Without Reverse Cycle, 14,000 to 20,000 Btu/h	14000	9.4	1489	1.4	9.3
10	Without Louvers, Without Reverse Cycle, > 20,000 Btu/h	20000	9.4	2128	1.4	9.4

11	With Louvers, With Reverse Cycle, < 20,000 Btu/h	12000	9.9	1212	1.4	9.8
12	Without Louvers, With Reverse Cycle, < 14,000 Btu/h	10000	9.4	1064	1.4	9.3
13	With Louvers, With Reverse Cycle, > 20,000 Btu/h	14000	9.4	1489	1.4	9.3
14	Without Louvers, With Reverse Cycle, > 14,000 Btu/h	14000	8.8	1591	1.4	8.7
15	Casement-only	10000	9.6	1042	1.4	9.5
16	Casement-slider	10000	10.5	952	1.4	10.4

[1]: CEER = (Capacity × Active_Mode_Hours) / (Active_Power × Active_Mode_Hours + Standby_Mode_Hours × Standby_Power)

NOTE: Active_Mode_Hours = 750 Hours, Standby_Mode_Hours = 5115 Hours