

CEESM Residential Heating and Cooling Systems Initiative Electric Equipment Specifications

Effective October 18, 2023

Scope: Input Rating ≤65,000 BTU/h

SEER2, EER2, HSPF2, 5°F, 17°F, and 47°F values shall be measured per the US Department of Energy test procedure at Title 10 of the Code of Federal Regulations, Part 430, Subpart B, Appendix M1¹



CENTRAL AIR CONDITIONERS

CEE Split CAC Specification			
Level	SEER2	EER2	Connectivity
CEE Tier 1	≥ 15.2	≥ 12.0	N/A
CEE Tier 2	≥ 16.0	≥ 12.0	N/A
CEE Advanced Tier	≥ 16.0	≥ 12.0	CEE Demand Response Criteria Level 2

CEE Packaged CAC Specification			
Level	SEER2	EER2	Connectivity
CEE Tier 1	≥15.2	≥ 11.5	N/A
CEE Advanced Tier	≥16.0	≥ 12.0	CEE Demand Response Criteria Level 2



AIR SOURCE HEAT PUMPS – North and Canada

CEE Split Ducted ASHP Specifications – North and Canada						
Level	SEER2	EER2	HSPF2	COP at 5°F*	Capacity Ratio [^]	Connectivity
CEE Tier 1	≥ 15.2	≥ 10.0	≥ 8.1	≥ 1.75	≥ 58% at 17°F/47°F	N/A
CEE Advanced Tier**	≥ 17.0	N/A	≥ 8.1	≥ 1.75	≥ 70% at 5°F/47°F	CEE Demand Response Criteria Level 2

¹ <https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-B/appendix-Appendix%20M1%20to%20Subpart%20B%20of%20Part%20430>

CEE Non-Ducted ASHP Specification – North and Canada						
Level	SEER2	EER2	HSPF2	COP at 5°F*	Capacity Ratio^	Connectivity
CEE Tier 1	≥ 15.2	≥ 9.0	≥ 8.5	≥ 1.75	≥ 58% at 17°F/47°F	N/A
CEE Tier 2	≥ 16.0	≥ 9.0	≥ 9.5	≥ 1.75	or ≥ 70% at 5°F/47°F	N/A
CEE Advanced Tier**	≥ 17.0	N/A	≥ 10.0	≥ 1.75		CEE Demand Response Criteria Level 2

CEE Packaged ASHP Specification – North and Canada						
Level	SEER2	EER2	HSPF2	COP at 5°F*	Capacity Ratio^	Connectivity
CEE Tier 1	≥ 15.2	≥ 10.0	≥ 8.1	≥ 1.75	≥ 58% at 17°F/47°F	N/A
CEE Advanced Tier**	≥ 16.0	N/A	≥ 9.0	≥ 1.75	or ≥ 70% at 5°F/47°F	CEE Demand Response Criteria Level 2

^ 5°F, 17°F and 47°F are rated capacity data points as determined per the Appendix M1 tests.

* For the duration of the 2023 calendar year, COP at 5°F ≥ 1.75 may be met using Appendix M1 test method OR via DOE sanctioned calculation methodology based on COP at 17°F and COP at 47°F. On January 1, 2024 any new product introduced for sale must report heat pump performance of COP at 5°F using the Appendix M1 test method. Any product using R-410A and introduced for sale prior to January 1, 2024 may continue to report COP at 5°F using Appendix M1 test method OR via DOE sanctioned calculation methodology based on COP at 17°F and COP at 47°F until new refrigerant rules banning R410-A take effect.

** For the Advanced Tier, must perform the ENERGY STAR Cold Climate Heat Pump Controls Verification Procedure (CVP) to confirm that the above performance metrics measured at the Appendix M1 low ambient test point at 5° F are achieved by the native controls operating as they would in a customer’s home.



AIR SOURCE HEAT PUMPS – South

CEE Split Ducted ASHP Specifications – South				
Level	SEER2	EER2	HSPF2	Connectivity
CEE Tier 1	≥ 15.2	≥ 11.7	≥ 7.8	N/A
CEE Advanced Tier	≥ 17.0	≥ 12.0	≥ 8.0	CEE Demand Response Criteria Level 2

CEE Non-Ducted ASHP Specification – South				
Level	SEER2	EER2	HSPF2	Connectivity
CEE Tier 1	≥ 15.2	≥ 11.7	≥ 7.8	N/A
CEE Tier 2	≥ 16.0	≥ 12.0	≥ 9.0	N/A
CEE Advanced Tier	≥ 17.0	≥ 13.0	≥ 9.0	CEE Demand Response Criteria Level 2

CEE Packaged ASHP Specification – South				
Level	SEER2	EER2	HSPF2	Connectivity
CEE Tier 1	≥ 15.2	≥ 10.6	≥ 7.2	N/A
CEE Advanced Tier	≥ 16.0	≥ 11.0	≥ 8.0	CEE Demand Response Criteria Level 2

ENERGY MANAGEMENT CRITERIA

Scope: Electric and Gas, Any System

Energy Management Capability Requirements	
A	The ability to report operational status of the product or system upon request.
B	The ability for remote operation [^] of the product or system by a customer-authorized third party.
C	The ability for the customer to override ^{^^} remote changes of load states.
D	The ability for firmware updates to the product or connected control for a system, to ensure that reliability and cybersecurity remain current with little to no consumer interaction.

[^] The ability to manage functions by receiving signals from a control system external to the native system via a secure connection from a remote communication interface. This can be for the consumer (e.g., via a smartphone app or website), or a customer authorized third party such as the utility, manufacturer, or home energy management operator.

^{^^} The ability for a consumer to cancel a grid request sent to the equipment via a secure connection for no more than a set certain timeline (e.g., 72 hours).

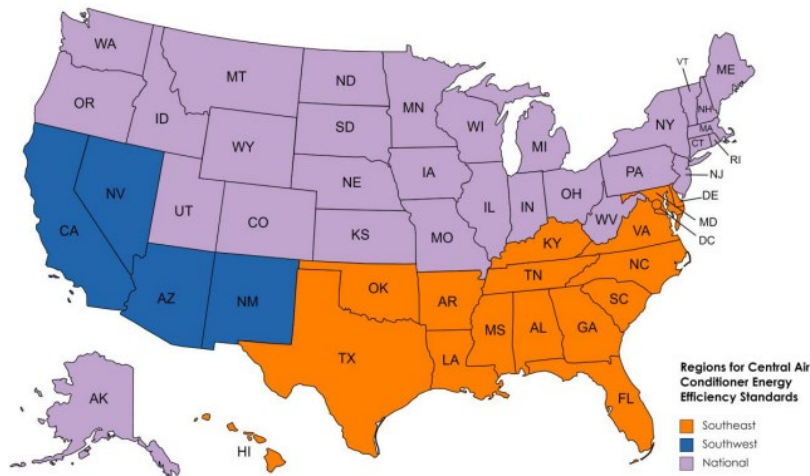
DEMAND RESPONSE CRITERIA

Scope: Electric Variable Capacity HVAC Systems, as defined in [AHRI Standard 1380](#)

Level	Requirements
CEE Level 1	AHRI Standard 1380 as is: Either ANSI/CTA-2045-A OR OpenADR 2.0 communication interfaces.
CEE Level 2	Both ANSI/CTA-2045-A AND OpenADR 2.0 communication interfaces; An open modular physical interface of ANSI/CTA-2045-A; and a secondary communication interface to facilitate customer interactions.

CEE REGION DEFINITIONS

CEE utilizes the US DOE regional standards² to provide guidance for cooling and heating dominated regions. The use of regional standards will be at the discretion of CEE members.



² <https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-430/subpart-C/section-430.32#page-top>

North and Canada Region

The North specifications include the National DOE region and also include all Canadian provinces, as they are heating dominated. The North and Canada Region includes the following states: Alaska, Colorado, Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

South Region

The South specifications include both the Southeast and Southwest DOE regions. The South Region includes the following states: Alabama, Arizona, Arkansas, California, Delaware, the District of Columbia, Florida, Georgia, Hawaii, Kentucky, Louisiana, Maryland, Mississippi, Nevada, New Mexico, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia.

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