

CEESM Commercial Unitary Air Conditioning and Heat Pumps Specification



Unitary Air Conditioner Specification

Effective January 1, 2024

Equipment Type	Size Category	Heating Section Type	Subcategory	CEE Tier 1	CEE Tier 2	CEE Advanced Tier*	Test Procedure
Air Conditioners, Air Cooled (Cooling Mode)	<65,000 Btu/h**	All	Split System	16 SEER 12.5 EER; Or 15.2 SEER2 12.0 EER2	16.8 SEER 12.5 EER; Or 16.0 SEER2 12.0 EER2	N/A	AHRI 210/240
			Single Package	15.8 SEER 12.0 EER; Or 15.2 SEER2 11.5 EER2	N/A	16.6 SEER 12.5 EER; Or 16.0 SEER2 12 EER2	
	≥65,000 Btu/h and <135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	12.2 EER 16.3 IEER	12.7 EER 18 IEER	12.7 EER 19.2 IEER	AHRI 340/360
		All Other	Split System and Single Package	12 EER 16.1 IEER	12.5 EER 17.8 IEER	12.5 EER 19 IEER	
	≥135,000 Btu/h and	Electric Resistance (or None)	Split System and Single Package	12.2 EER 15.6 IEER	12.2 EER 17 IEER	12.2 EER 18.5 IEER	

	<240,000 Btu/h	All Other	Split System and Single Package	12.0 EER 15.4 IEER	12.0 EER 16.8 IEER	12.0 EER 18.3 IEER	
	≥240,000 Btu/h and <760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	10.5 EER 14.5 IEER	10.8 EER 15.8 IEER	10.8 EER 17.1 IEER	
		All Other	Split System and Single Package	10.3 EER 14.3 IEER	10.6 EER 15.6 IEER	10.6 EER 16.9 IEER	
	≥760,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	9.9 EER 13.8 IEER	10.4 EER 15.1 IEER	N/A	
		All Other	Split System and Single Package	9.7 EER 13.6 IEER	10.2 EER 14.9 IEER	N/A	
Air Conditioners, Water Cooled	<65,000 Btu/h	All	Split System and Single Package	14.0 EER	N/A	N/A	AHRI 340/360
	≥65,000 Btu/h and <135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	14.0 EER 15.3 IEER	N/A	N/A	AHRI 340/360
		All Other	Split System and Single Package	13.8 EER 15.1 IEER	N/A	N/A	
	≥135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	14 EER 14.8 IEER	N/A	N/A	
		All Other	Split System and Single Package	13.8 EER 14.6 IEER	N/A	N/A	
Air Conditioners, Evaporatively Cooled	<65,000 Btu/h	All	Split System and Single Package	14.0 EER	N/A	N/A	AHRI 340/360
	≥65,000 Btu/h and <135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	14.0 EER 15.3 IEER	N/A	N/A	AHRI 340/360
		All Other	Split System and Single Package	13.8 EER 15.1 IEER	N/A	N/A	

	≥135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	13.5 EER 14.3 IEER	N/A	N/A	
		All Other	Split System and Single Package	13.3 EER 14.1 IEER	N/A	N/A	

SEER—Seasonal Energy Efficiency Ratio

SEER2—Seasonal Energy Efficiency Ratio 2

EER—Energy Efficiency Ratio

EER2—Energy Efficiency Ratio 2

IEER—Integrated Energy Efficiency Ratio

*The Advanced Tier should not be considered a level of performance that is currently being met by several manufacturers in all nominal sizes. Instead, the Advanced Tier is an aspirational level that acknowledges and provides recognition for manufacturers who have developed the most efficient systems available in the market today. The tier is intended to identify a top performing product line(s) or a major category within a given product line, and to encourage additional availability in the future. Such products may not yet be broadly available in the market or cost-effective in portions of the country or in some applications.

**Levels for equipment <65,000 Btu/h align with corresponding tiers for central air conditioners in the CEE High Efficiency Residential Central Air Conditioners and Air Source Heat Pumps Specification.



Unitary Heat Pump Specification

Effective January 1, 2024

Equipment Type	Size Category	Heating Section Type	Subcategory	CEE Tier 0	CEE Tier 1	CEE Tier 2	Advanced Tier*	Test Procedure
Air Cooled (Cooling Mode)	<65,000 Btu/h**	All	Split System (ducted)	N/A	16.0 SEER 12.2 EER; Or 15.2 SEER2 11.7 EER2	N/A	17.9 SEER 12.5 EER; Or 17.0 SEER2 12.0 EER2	AHRI 210/240
			Single Package	N/A	16.0 SEER 11.0 EER; Or 15.2 SEER2 10.6 EER2	N/A	16.6 SEER 11.4 EER; Or 16.0 SEER2 11 EER2	
	≥65,000 and <135,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	11.0 EER 14.8 IEER	11.8 EER 15.3 IEER	N/A	11.8 EER 17.6 IEER	AHRI 340/360
		All Other	Split System and Single Package	10.8 EER 14.6 IEER	11.6 EER 15.1 IEER	N/A	11.6 EER 17.4 IEER	

	≥135,000 and <240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	10.6 EER 14.0 IEER	11.1 EER 14.5 IEER	N/A	11.1 EER 16.8 IEER	
		All Other	Split System and Single Package	10.4 EER 13.8 IEER	10.9 EER 14.3 IEER	N/A	10.9 EER 16.6 IEER	
	≥240,000 Btu/h	Electric Resistance (or None)	Split System and Single Package	9.5 EER 13 IEER	10.3 EER 13.5 IEER	N/A	10.3 EER 15.6 IEER	
		All Other	Split System and Single Package	9.3 EER 12.8 IEER	10.1 EER 13.3 IEER	N/A	10.1 EER 15.4 IEER	
Air Cooled (Heating Mode)	<65,000 Btu/h	-	Split System (ducted)	N/A	9.2 HSPF; Or 7.8 HSPF2	N/A	9.4 HSPF; Or 8.0 HSPF2	AHRI 210/240
		-	Single Package	N/A	8.5 HSPF; Or 7.2 HSPF2	N/A	9.4 HSPF; Or 8.0 HSPF2	
	≥65,000 and <135,000 Btu/h	-	47°F db/43°F wb Outdoor Air	3.5 COP	3.5 COP	N/A	3.6 COP	AHRI 340/360
		-	17°F db/15°F wb Outdoor Air	2.25 COP	2.4 COP	N/A	2.5 COP	
	≥135,000 Btu/h	-	47°F db/43°F wb Outdoor Air	3.4 COP	3.4 COP	N/A	3.5 COP	
		-	17°F db/15°F wb Outdoor Air	2.05 COP	2.1 COP	N/A	2.2 COP	
	≥240,000 Btu/h	-	47°F db/43°F wb Outdoor Air	3.3 COP	3.3 COP	N/A	3.4 COP	
		-	17°F db/15°F wb Outdoor Air	2.05 COP	2.1 COP	N/A	2.2 COP	
Water Source (Cooling Mode)	<135,000 Btu/h	All	86° Entering Water	N/A	14.0 EER	N/A	N/A	ISO-13256-1
Water Source (Heating Mode)	<135,000 Btu/h	-	68° Entering Water	N/A	4.6 COP	N/A	N/A	ISO-13256-1

EER—Seasonal Energy Efficiency Ratio
EER—Energy Efficiency Ratio
HSPF— Heating Seasonal Performance Factor

IEER—Integrated Energy Efficiency Ratio
COP—Coefficient of Performance
db—Dry Bulb

wb—Wet Bulb

*The Advanced Tier should not be considered a level of performance that is currently being met by several manufacturers in all nominal sizes. Instead, the Advanced Tier is an aspirational level that acknowledges and provides recognition for manufacturers who have developed the most efficient systems available in the market today. The tier is intended to identify a top performing product line(s) or a major category within a given product line, and to encourage additional availability in the future. Such products may not yet be broadly available in the market or cost-effective in portions of the country or in some applications.

**Levels for equipment <65,000 Btu/h align with corresponding tiers for ducted heat pumps in the CEE High Efficiency Residential Central Air Conditioners and Air Source Heat Pumps Specification.



Unitary Heat Pumps: Cold Climate - Heating Dominated Applications

Equipment Type	Size Category	Heating Section Type	Subcategory	CEE Tier 1	CEE Tier 2	Advanced Tier*	Test Procedure
Air Cooled (Cooling Mode)	<65,000 Btu/h**	All	Split System (ducted)	16 SEER 10.4 EER; Or 15.2 SEER2 10 EER2		17.9 SEER OR 17 SEER2 (EER N/A**)	AHRI 210/240
			Single Package	15.8 SEER, 10.4 EER: Or 15.2 SEER2, 10 EER2:		16.6 SEER OR 16 SEER2 (EER N/A**)	
Air Cooled (Heating Mode)	<65,000 Btu/h**	All	Split System (ducted)	9.5 HSPF Or 8.1 HSPF2: And COP at 5°F 1.75^ and one Capacity ratio option^^	N/A	9.5 HSPF Or 8.1 HSPF2: And COP at 5°F 1.75^ and one Capacity ratio option^^	

			Single Package	9.5 HSPF Or 8.1 HSPF2: And COP at 5°F 1.75 [^] and one Capacity ratio option ^{^^}	N/A	10.6 HSPF Or 9.0 HSPF2: And COP at 5°F 1.75 [^] and one Capacity ratio option ^{^^}	
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**Levels for equipment <65,000 Btu/h align with corresponding tiers for ducted heat pumps in the CEE High Efficiency Residential Central Air Conditioners and Air Source Heat Pumps Specification. 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 the field.

[^] COP at 5°F ≥ 1.75 must met using Appendix M1 test method.

^{^^} The required capacity ratio is the percent Heating Capacity at 17°F ≥58% of that at 47°F, or Heating Capacity at 5°F ≥70% of that at 47°F. 5°F, 17°F and 47°F are rated capacity data points as determined per the US Department of Energy test procedure at Title 10 of the Code of Federal Regulations, Part 430, Subpart B, Appendix M1 tests



Variable Refrigerant Flow Multisplit Air Conditioner Specification Effective January 1, 2024 -December 31, 2024

Equipment Type	Size Category	Heating Section Type	Subcategory	CEE Tier 1	CEE Tier 2	Test Procedure
VRF Air Cooled (Cooling Mode)	<65,000 Btu/h**	All	Multisplit System	15.2 SEER 12.0 EER; or 15.2 SEER2 12.0 EER2	16.0 SEER 12.0 EER 16.0 SEER2 12.0 EER2	AHRI 210/240
	≥65,000 and <135,000 Btu/h	Electric Resistance (or None)	Multisplit System	11.7 EER 17.0 IEER	11.7 EER 18.6 IEER	AHRI 1230
	≥135,000 and <240,000 Btu/h	Electric Resistance (or None)	Multisplit System	11.7 EER 16.4 IEER	11.7 EER 17.9 IEER	
	≥240,000 Btu/h	Electric Resistance (or None)	Multisplit System	10.5 EER 15.3 IEER	10.5 EER 16.7 IEER	

SEER—Seasonal Energy Efficiency Ratio

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HSPF— Heating Seasonal Performance Factor

IEER—Integrated Energy Efficiency Ratio

COP—Coefficient of Performance

**Levels for equipment <65,000 Btu/h align with corresponding tiers for central air conditioners in the proposed CEE High Efficiency Residential Central Air Conditioners and Air Source Heat Pumps Specification.



Variable Refrigerant Flow Multisplit Heat Pump Specification

Equipment Type	Size Category	Heating Section Type	Subcategory	CEE Tier 1	CEE Tier 2	Advanced Tier*	Test Procedure
VRF Air Cooled (Cooling Mode)	<65,000** Btu/h	All	Multisplit System	15.2 SEER 11.7 EER; Or 15.2 SEER2 11.7 EER2	16 SEER 12 EER; Or 16 SEER2 12 EER2	17 SEER 13 EER; Or 17 SEER2 13 EER2	AHRI 210/240
	≥65,000 and		Multisplit System	11.3 EER 16 IEER	11.3 EER 17.5 IEER	N/A	

	<135,000 Btu/h	Electric Resistance (or None)	Multisplit System with Heat Recovery	11.1 EER 15.8 IEER	11.1 EER 17.3 IEER	N/A	AHRI 1230
	≥135,000 and <240,000 Btu/h	Electric Resistance (or None)	Multisplit System	10.9 EER 15.3 IEER	10.9 EER 16.7 IEER	N/A	
			Multisplit System with Heat Recovery	10.7 EER 15.1 IEER	10.7 EER 16.5 IEER	N/A	
	≥240,000 Btu/h	Electric Resistance (or None)	Multisplit System	10.3 EER 14 IEER	10.3 EER 15.2 IEER	N/A	
			Multisplit System with Heat Recovery	10.1 EER 13.8 IEER	10.1 EER 15.1 IEER	N/A	
VRF Air Cooled, (Heating Mode)	<65,000 Btu/h	-	Multisplit System	8.7 HSPF; Or 7.8 HSPF2	10 HSPF; Or 9 HSPF2	**10 HSPF; Or 9 HSPF2	AHRI 210/240
	≥65,000 and <135,000 Btu/h	-	47°F db/43°F wb Outdoor Air	3.5 COP	3.8 COP		AHRI 1230
		-	17°F db/15°F wb Outdoor Air	2.3 COP	2.3 COP		
	≥135,000 and <240,000 Btu/h	-	47°F db/43°F wb Outdoor Air	3.4 COP	3.6 COP		
		-	17°F db/15°F wb Outdoor Air	2.1 COP	2.1 COP		
	≥240,000 Btu/h	-	47°F db/43°F wb Outdoor Air	3.3 COP	3.5 COP		
		-	17°F db/15°F wb Outdoor Air	2.1 COP	2.1 COP		
VRF Water Source	<135,000 Btu/h	All	Multisplit System 86° Entering Water	14 EER			AHRI 1230

(Cooling Mode)			Multisplit System with Heat Recovery 86° Entering Water	13.8 EER			
VRF Water Source (Heating Mode)	<135,000 Btu/h		68° Entering Water	4.6 COP			AHRI 1230

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**Levels for equipment <65,000 Btu/h align with corresponding tiers for non-ducted heat pumps in the CEE High Efficiency Residential Central Air Conditioners and Air Source Heat Pumps Specification.



Variable Refrigerant Flow Multisplit Heat Pumps: Cold Climate - Heating Dominated Applications

Equipment Type	Size Category	Heating Section Type	Subcategory	CEE Tier 1	CEE Tier 2	Advanced Tier*	Test Procedure
Air Cooled (Cooling Mode)	<65,000 Btu/h**	All	Multisplit System	15.2 SEER 9.0 EER; Or 15.2 SEER2 9.0 EER2	16.0 SEER 9.0 EER; Or 16.0 SEER2 9.0 EER2	17.0 SEER OR 17.0 SEER2 (EER N/A**)	AHRI 210/240

Air Cooled (Heating Mode)			Multisplit System	9.5 HSPF Or 8.5 HSPF2: And COP at 5°F 1.75 [^] and one Capacity ratio option ^{^^}	10.6 HSPF Or 9.5 HSPF2: And COP at 5°F 1.75 [^] and one Capacity ratio option ^{^^}	11.2 HSPF Or 10.0 HSPF2: And COP at 5°F 1.75 [^] and one Capacity ratio option ^{^^}	AHRI 210/240
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[^] COP at 5°F ≥ 1.75 must be met using the Appendix M1 test method.

^{^^} The required capacity ratio is the percent Heating Capacity at 17°F ≥58% of that at 47°F, or Heating Capacity at 5°F ≥70% of that at 47°F. 5°F, 17°F and 47°F are rated capacity data points as determined per the US Department of Energy test procedure at Title 10 of the Code of Federal Regulations, Part 430, Subpart B, Appendix M1 tests

OPTIONAL ENERGY MANAGEMENT CRITERIA

Scope: Commercial Unitary Air Conditioning or Heat Pump Systems < 65,000 Btu/h in cooling capacity

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).

OPTIONAL DEMAND RESPONSE CRITERIA

Scope: Electric Variable Capacity HVAC Systems < 65,000 Btu/h, 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.

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