Ace Resources™

Central Air Conditioners, Heat Pumps, and Furnaces
Equipment Minimum Efficiencies

Tables 1, 2, and 3 apply to single-phase central air conditioner, heat pump, and gas-fired furnace equipment with cooling capacities under 65,000 Btuh and minimum efficiencies per the Code of Federal Regulations Title 10, Chapter II, Subchapter D, Part 430.

Table 1: Single-phase Heat Pumps *(Manufactured on or after January 1, 2023)*

Adapted from the Code of Federal Regulations, per 10 CFR 430.32(c)5

Configuration	HSPF2	Convert HSPF2 to HSPF[1]	SEER2	Convert SEER2 to SEER[1]
Split systems (including ductless)	7.5	HSPF2 x 1.173	14.3	SEER2 x 1.049
Single package	6.7	HSPF2 x 1.176	13.4	SEER2 x 1.045
Space-constrained[2]	6.3	HSPF2 x 1.175	11.9	SEER2 x 1.008
Small-duct high-velocity (SDHV)	6.1	HSPF2 x 1.180	12.0	SEER2 x 1.000

HSPF/HSPF2 = Heating Seasonal Performance Factor; **SEER/SEER2** = Seasonal Energy Efficiency Ratio

Table 2: Single-phase Air Conditioners

Adapted from the Code of Federal Regulations, per 10 CFR 430.32(c)6

Configuration	Rated Cooling Capacity (Btuh)	SEER2	Convert SEER2 to SEER[1]	EER2	Convert EER2 to EER[1]
Split systems (including ductless) Installed on or after January 1, 2023	< 45,000	14.3	SEER2 x 1.049	SEER2 < 15.2 = 11.7 SEER2 ≥ 15.2 = 9.8	EER2 x 1.043
	≥ 45,000	13.8	SEER2 x 1.051	SEER2 < 15.2 = 11.7 SEER2 ≥ 15.2 = 9.8	EER2 x 1.045
Single package Installed on or after January 1, 2023	< 65,000	13.4	SEER2 x 1.045	10.6	EER2 x 1.038
Space-constrained[2] Manufactured on or after January 1, 2023	< 30,000	11.7	SEER2 x 1.026	no minimum	no minimum
Small-duct high-velocity (SDHV) Manufactured on or after January 1, 2023	< 65,000	12.0	SEER2 x 1.000	no minimum	no minimum

SEER/SEER2 = Seasonal Energy Efficiency Ratio; **EER/EER2** = Energy Efficiency Ratio

Example

Question: The Certificate of Compliance indicated a 2 ton (24,000 Btuh) split heat pump with a SEER of 14, and the equipment installed supports a SEER2 13.4 rating. Is a SEER2 13.4 equal to, or better than, a SEER 14?

Answer: Since 13.4 SEER2 x 1.049 = 14.1 SEER, the installed equipment is equal or better than supported in the Certificate of Compliance

Table 3: Single-phase or DC Gas-fired Central Furnaces

Adapted from the Code of Federal Regulations 10 CFR 430.32(e)1ii

Appliance	Rated Heating Capacity (Btuh)	AFUE
Weatherized gas central furnace	< 225,000	81%
Non-weatherized gas central furnace	< 225,000	80%

AFUE = Annual Fuel Utilization Efficiency

Tables 4 and 5 apply to three-phase commercial packaged and variable refrigerant flow (VRF) multi-split air conditioner and heating equipment with cooling capacities under 65,000 Btuh and minimum efficiencies per the Code of Federal Regulations Title 10, Chapter II, Subchapter D, Part 431.97.

Table 4: Three-phase Commercial Packaged Air Conditioning and Heating Equipment *(Manufactured on or after January 1, 2025)*

Adapted from the Code of Federal Regulations, per 10 CFR 431.97(i) Table 19

Configuration	Rated Cooling Capacity (Btuh)	HSPF2	SEER2
Split system: Air conditioning	< 65,000	N/A	13.4
Single package: Air conditioning	< 65,000	N/A	13.4
Split system: Air conditioning and heating	< 65,000	7.5	14.3
Single package: Air conditioning and heating	< 65,000	6.7	13.4
Space-constrained[2] split system: Air conditioning	≤ 30,000	N/A	12.7
Space-constrained[2] single-package system: Air conditioning	≤ 30,000	N/A	13.9
Space-constrained[2] split system: Air conditioning and heating	≤ 30,000	7.0	13.9
Space-constrained[2] single-package system: Air conditioning and heating	≤ 30,000	6.7	13.9
Small-duct high-velocity split system: Air conditioning	< 65,000	N/A	13.0
Small-duct high-velocity split system: Air conditioning and heating	< 65,000	6.9	14.0

HSPF2 = Heating Seasonal Performance Factor; **SEER2** = Seasonal Energy Efficiency Ratio

[1]Use the applicable equation to convert the SEER2/HSPF2 to a SEER/HSPF or an EER2 to an EER to support equipment installation (See Blueprint #140 for more information).

[2]A space-constrained product means a central air conditioner or heat pump that has a rated cooling capacity of ≤ 30,000 Btuh. This product type was available for purchase in the United States as of December 1, 2000. It includes an outdoor or indoor unit with at least two exterior dimensions—or an overall displacement—that are substantially smaller than those of other units typically installed in site-built single-family homes and that offer similar cooling, and, if a heat pump, heating capacity. Increasing its size would either considerably raise the usual cost of installation or significantly reduce the utility of the product to the consumer.

Table 5: Three-phase Small VRF Multi-Split Air Conditioning and Heating Equipment
(Manufactured on or after January 1, 2025)

Adapted from the Code of Federal Regulations, per 10 CFR 431.97(i) Table 19

Appliance	Rated Cooling Capacity (Btuh)	HSPF2	SEER2
VRF air conditioners	< 65,000	N/A	13.4
VRF heat pumps	< 65,000	7.5	13.4

HSPF2 = Heating Seasonal Performance Factor; **SEER2** = Seasonal Energy Efficiency Ratio; **VRF** = Variable Refrigerant Flow

What's Going On with Refrigerants?

In 2023, the California Air Resources Board (CARB) Refrigerant Management Program began prohibiting the use of certain hydrofluorocarbons (HFCs) in new air conditioning equipment. Affected systems are now required to be factory-charged with low-global warming potential (GWP) refrigerant. Other programs within California—such as the South Coast Air Quality Management District (AQMD) Rule 1415.1—may have additional requirements for stationary refrigeration systems.

Table 6: Supporting Systems Required to be Charged with Low-GWP Refrigerant

End Use (New Equipment)	Prohibited Refrigerants	Effective Date
"Other" air conditioning equipment (residential and nonresidential)	≥ 750 GWP	January 1, 2025
VRF System	≥ 750 GWP	January 1, 2026

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