

Rinnai Hydronic Furnace Impact on SEER Rating

HOW DOES THE RINNAI HYDRONIC FURNACE IMPACT SEER RATING IN COOLING APPLICATIONS:

As with all hydronic air-handlers which do not incorporate an evaporator or chilled water coil, the Rinnai Hydronic Furnace does not have COP or SEER numbers because it DOES NOT incorporate the cooling and/or heating engine. However, based on the following AHRI statement we can show how the Rinnai Hydronic Furnace affects the system efficiency.

AHRI Standard 210/240, Appendix M to subpart B (Uniform test method for measuring the energy consumption of central air conditioners) section 5.1 - Calculations for seasonal energy efficiency ratio (SEER) in air source units, states:

"Units which do not have indoor air circulating fans furnished as part of the model shall have their measured total cooling capacities adjusted by subtracting 1,250 Btu/hr per 1,000 CFM of measured indoor air flow and adding to the total steady-state electrical power input 365 watts per 1,000 CFM of measured indoor air flow."

All split systems (evaporator/condensing unit match set) on the market are rated in accordance with the above statement. As long as a Rinnai Hydronic Furnace model consumes no more than 365 watts for each 1,000 CFM delivered at the stated rating point of 0.5" external static pressure (ESP) then the stated SEER number will NOT be impacted negatively. If a unit consumes less than 365 watts per 1,000 CFM delivered then the stated SEER number will be impacted positively, that is the system will deliver higher than rated SEER (refer to Table 1).

Table 1: Power Comparison AHRI/RINNAI [®]			
Rinnai Models	AHRI benchmark Watts/CFM	Rinnai Watts/CFM at rating point [w/ECM]	Impact on SEER
37AHB045	0.365	0.294	Positive
37AHB060		0.356	Positive
37AHB075		0.298	Positive
37AHB090		0.375	Very Slight Negative (Statistically no effect)

THIS LIST DOES NOT INFER AHRI CERTIFICATION CREDENTIALS.

DISCLAIMER:

The information contained herein is accurate and complete to the best of our knowledge and belief at the time of publication. This information was provided to assist you in understanding the system SEER or COP ratings. Rinnai Corporation, or any of its subsidiaries, assumes no liability whatsoever for the accuracy or completeness of the information contained herein.

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HOW TO ACCESS THE AHRI DIRECTORY TO OBTAIN AND PRINT A CERTIFICATE OF PRODUCT RATING:

- STEP 1: Go to www.ahridirectory.org or http://www.ahridirectory.org/ahridirectory/pages/home.aspx
 Both URLs will take you to the Directory of Certified Product Performance page on the Air-Conditioning, Heating and Refrigeration Institute's (AHRI) website.
- STEP 2: Under the tab marked "Residential" click once on the sub-tab marked "Air Conditioners and Air Conditioner Coils." For more information about the Search fields, click the question mark (?) next to the search field. For search tips, refer to FAQs.
- STEP 3: Refer to Table 3 in this document and identify the selected coil model for your project; for example, let us look at an 'A-coil' from the Goodman/Amana line. The identified coil model is: CAPF1824A6.

Practical Note: Use coil model numbers exactly as indicated in the table: to be precise, for Goodman/Amana coil CAPF1824A6; use coil model number only, less cabinet descriptor, i.e. use "1824A6" in lieu of "CAPF1824A6."

STEP 4: On AHRI's AC Search page (fig. 1.0), look in the right column and locate indoor unit entry tab (titled "Indoor Unit Model Number"); enter "1824A6," before clicking the search button, enter the required code into the appropriate section (titled "to search, enter the code in the picture above") then click the "Search" button located at the bottom right hand section of page.

Practical Note: Required picture code is not case sensitive.

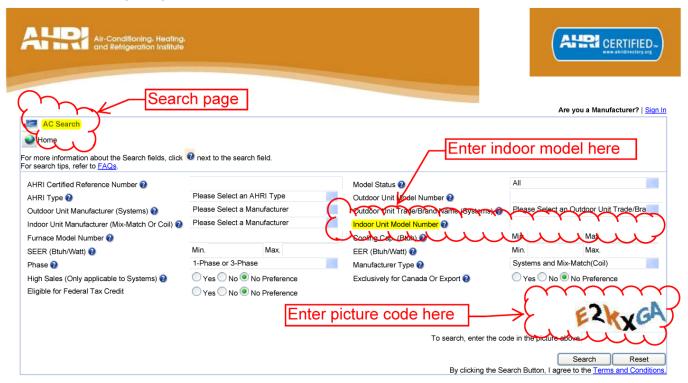


FIGURE 1.0: Image of AHRI's AC Search page

Practical Note: Rinnai Technical Bulletin 86 lists all rated combinations of condensing unit with the selected A-Coil. Additional facts listed in TB-86: AHRI certification number, manufacturer's name, Model Status, Btu/h rating, SEER etc.

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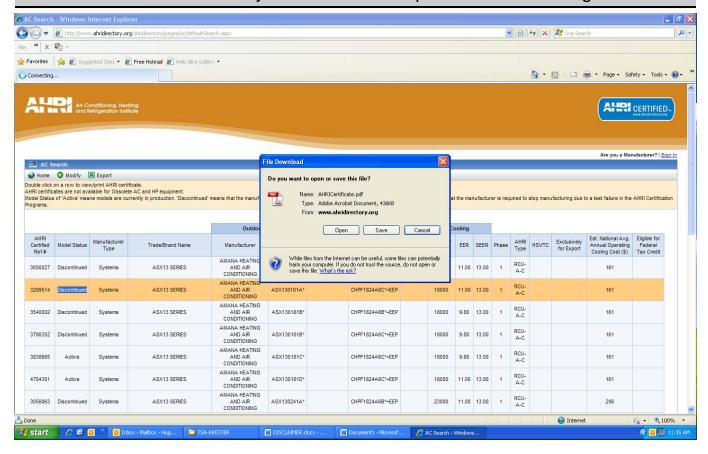


FIGURE 2.0: Image of AHRI's System page

Practical Note: Refer to notes on upper left of webpage for additional information and/or description of table annotation.

- STEP 5: Double click on a row to view/print AHRI certificate.
- STEP 6: A file download dialog box will appear, click "Open" to view certificate or "Save" to save the PDF certificate at a designated location on your desktop.



FIGURE 3.0: Image of AHRI's Certificate