

# Technical Bulletin: Dual Fuel Heat Pumps & AHRI Database

## Residential New Construction Program



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As part of the Duke RNC Program, raters should accurately model homes and mechanical equipment. This technical bulletin will cover how to model a dual fuel heat pump as well as navigating the AHRI database.

### Dual Fuel Heat Pump

It is important to model HVAC equipment accurately as it affects the energy usage of the home. Raters should gather model numbers, note the HVAC system type, and provide details about the equipment using data collected from the AHRI Certificate. Dual fuel heat pumps are rare and can be tricky to model. The example below shows how to correctly enter the data into Ekotrope for a dual fuel heat pump.

The screenshot shows the Ekotrope form for a Dual Fuel Heat Pump. Annotations with blue arrows point to the following fields:

- Name:** Name of the equipment (Dual Fuel Heat Pump)
- Equipment type:** Air Source Heat Pump
- Distribution type:** Forced Air
- Motor type:** PSC (Single Speed)
- Make sure both Cooling and Heating are checked (Cooling  Heating )
- Enter the Heating and Cooling information from the AHRI Certificate and the HVAC installer (Backup Heating section: AFUE 90, Switchover Temperature 35, Backup Capacity 50)

### AHRI Database

The [AHRI Certification Directory](#) is a great resource to determine mechanical equipment efficiencies and capacities. The main way to find equipment is to select the equipment type and input the model numbers in the “Quick Search Criteria” table on the left side of the web page. An example of this table is on the right.

Air conditioner and Air-source heat pump systems have AHRI certificates associated with a specific furnace or no furnace. If a furnace is present, the home should use the AHRI certificate with the appropriate furnace. If the system does not have a furnace match, use the AHRI certificate that has no furnace associated with it.

Quick Search Criteria	
AHRI Certified Reference Number	
Manufacturer Type	Select Manufacturer Type
Outdoor Unit Brand Name	Select Outdoor Unit Brand Name
Outdoor Unit Model Number (Condenser or Single Package)	xp21-048-230
Indoor Unit Brand Name	Select Indoor Unit Brand Name
Indoor Unit Model Number (Evaporator and/or Air Handler)	c35-49c
Furnace Model Number	sl280uh090v60c

Example of the Quick Search Criteria table

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The table below shows the search result for a dual fuel system with the model numbers and AHRI Certified Rating highlighted in red. At the far left of the search results is a hyperlink to download a PDF of the AHRI Certificate as well. To easily reference AHRI data and certificates, its best copy data from the AHRI directory to a spreadsheet as raters find and match mechanical systems.

AHRI Certified Reference Number	Old AHRI Reference Number	Model Status	Manufacturer Type	AHRI Type	Phase	Series Name	Outdoor Unit		Indoor Unit		Furnace	AHRI Certified Ratings					
							Brand Name	Model Number (Condenser or Single Package)	Brand Name	Model Number (Evaporator and/or Air Handler)	Model Number	Cooling Capacity (A2) - Single or High Stage (95F).btuh	EER (A2) - Single or High Stage (95F)	SEER	Heating Capacity (H12) - Single or High Stage (47F).btuh	HSPF (Region IV)	Heating Capacity (H32) - Single or High Stage (17F).btuh
<a href="#">202087753</a>		Active	Systems	HRCU-A-CB	1	DAVE LENNOX SIGNATURE XP21 SERIES	LENNOX	XP21-048-230.**	C35-49C+TDR+TXV	SL280UH090V60C- **		45000	11.50	16.00	46000	8.50	31800

Example of AHRI results for a dual fuel system