

# Luxaire Technical Guide: HH8 Series - 18 SEER2 Horizontal Discharge Variable Speed Heat Pump

R-454B Single-Phase 2 nominal ton to 5 nominal ton



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York International Corporation, 5005 York  
Drive, Norman, OK 73069

6523476-LTG-B-0824

Supersedes: 6523476-LTG-A-0724

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# Description

HH8 horizontal discharge variable speed heat pumps are the outdoor section of a high-efficiency heating and cooling system. The outdoor units are designed to be connected to a matching indoor coil with sweat connect lines. Match each HH8 unit with one ducted indoor unit. This unit is not designed for application in a ductless configuration. Sweat connect units are factory charged with refrigerant for a nominal sized matching indoor coil plus 15 ft of field-supplied lines.

Figure 1: Installation certification map

For installation in all US regions and Canada\*



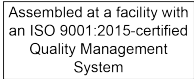
\*Not currently certified for installation in localities requiring hurricane certification. Check local codes for specific requirements.

Due to continuous product improvement, specifications are subject to change without notice.

Visit us on the web at [www.simplygettingthejobdone.com](http://www.simplygettingthejobdone.com) and [www.luxaire.com](http://www.luxaire.com).

Additional rating information can be found at [www.ahridirectory.org](http://www.ahridirectory.org).

# Certification



## Warranty summary

Extended 10-year limited parts warranty.

Extended 10-year limited compressor warranty.

**Extended parts and compressor warranties** require online registration within 90 days of purchase for replacement or closing for new home construction.

The warranty does not apply to R-22 models, R410A models, three-phase models, or internet sales. See the *Limited Warranty* certificate in the *User's Information Manual* for details.

## Features

- **360 DC inverter driven technology:** With 360 DC inverter driven technology, compressor rotation direction and speed is controlled, optimizing energy usage and compressor stability through the range of operating conditions. This guarantees optimal space temperature control while providing quiet operation.
- **Pressure sensor:** This unit contains pressure sensing technology, which detects low pressure in cooling mode and high pressure in heating mode to protect the system from damage. Intelligent control can also be achieved by calculating the indoor coil temperature from system suction pressure.
- **Smaller outdoor form factor for installation flexibility:** This side-discharge outdoor unit saves roughly 35% space over traditional air conditioners. It offers the flexibility of wall, yard, or roof installation.
- **Stable temperature control means optimal comfort:** The DC inverter is able to provide full capacity at startup to cool or warm quickly and adjusts speed to prevent temperature fluctuation and energy loss.
- **Agency listed:** Safety certified by UL 60335-2-40:2022 Ed.4 and CSA C22.2#60335-2-40:2022 Ed.4. Performance certified to ANSI/AHRI Standard 210/240 in accordance with the Unitary Small Equipment certification program.

# Nomenclature

**Table 1: Horizontal discharge AC and HP nomenclature**

Number	Category	Option	Description
1	Configuration	H	Horizontal discharge
2	Product type	C	Air conditioner
		H	Heat pump
3	Efficiency	3	13 SEER2
		4	14 SEER2
		5	15 SEER2
		6	16 SEER2
		7	17 SEER2
		8	18 SEER2
		9	19 SEER2
4, 5	Capacity	12	1 ton
		18	1.5 ton
		24	2 ton
		30	2.5 ton
		34	3 ton
		36	3 ton
		42	3.5 ton
		48	4 ton
6	Refrigerant	D	TBC
		E	R-454B
7	Voltage	2	208/230-1-60
		3	208/230-3-60
		4	460-3-60
		5	575-3-60
8	Control strategy	C	Communicating
		B	Wireless (communicating)
		S	Standard (conventional)
		W	Wireless (conventional)
9	Factory option	1	Standard (no options)
		2	Hard start kit
		3	Coastal condenser coil
		4	Coastal condenser coil with hard start kit
10	Generation	1	First generation
		2	Second generation
11	Style	A	Style A
		B	Style B

**Table 2: Model nomenclature example**

Number	1	2	3	4, 5	6	7	8	9	10	11
Option	H	H	8	24	E	2	S	1	1	A

## Physical and electrical data

**Table 3: Physical and electrical data**

Outdoor unit model	HH824E2S11	HH836E2S11	HH860E2S11
Unit supply voltage	208/230 V, 1 phase, 60 Hz		
Normal voltage range <sup>1</sup> (V)	187 — 252		
Minimum circuit ampacity (A)	24	28	37
Maximum overcurrent device <sup>2</sup> (A)	35	35	45
Compressor type	Twin rotary	Twin rotary	Twin rotary
Compressor rated load	16.8	19.0	27.0
Crankcase heater	Yes	Yes	Yes
Base pan heater	Yes	Yes	Yes
Fan diameter (in.)	21.89	24.4	21.85
Fan motor rated HP	1/7	1/3	1/5
Fan motor rated load (A)	0.80	1.50	1.00
Fan motor nominal RPM	870	850	880
Fan motor nominal CFM	2235	3350	4820
Coil face area (sq. ft.)	7.49	10.76	14.87
Coil rows deep	2	2	2.6
Coil fins per inch	17	18	18
Liquid refrigerant piping outdoor unit (field installed)	3/8	3/8	3/8
Vapor refrigerant piping outdoor unit (field installed) <sup>3,4</sup>	5/8	3/4	7/8
Unit charge (lb-oz)	5-01	7-07	11-00
Charge (oz/ft)	0.54	0.57	0.6
Operating weight (lb)	116.8	185.2	244.7

### Physical and electrical data notes

1. Rated in accordance with AHRI Standard 110-2016, utilization range A.
2. Dual element fuses or HACR circuit breaker. Maximum allowable overcurrent protection.
3. For applications with non-standard vapor line sizes, see [Applications and accessories](#).
4. The unit charge provided is correct for the outdoor unit, smallest matched indoor unit, and 15 ft of refrigerant piping. For refrigerant piping lengths other than 15 ft, add or subtract the amount of refrigerant, using the difference in actual refrigerant piping length (not the equivalent length) multiplied by the per foot value.

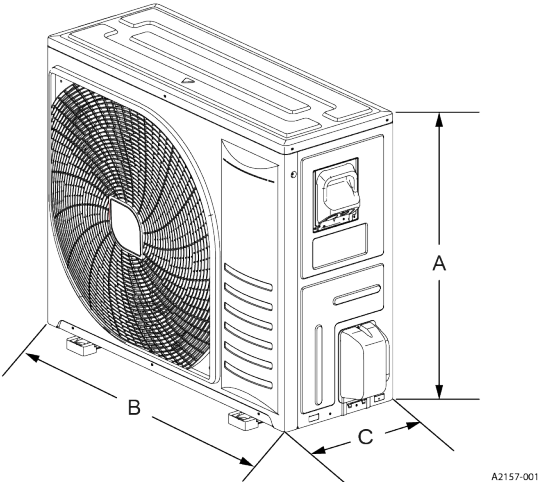


# Dimensions

**Table 4: Dimensions**

Unit model	Dimensions (in.)			Refrigerant connection service valve (in.)	
	A	B	C	Liquid	Vapor
HH824E2S11	29 1/2	35 3/7	13 2/5	3/8	5/8
HH836E2S11	34 4/9	43 1/3	17 5/7		3/4
HH860E2S11	57 1/2	38 2/5	13		7/8

**Figure 2: Dimensions**



## Dimensions notes

- All dimensions are in inches and are subject to change without notice.
- The overall height is from the bottom of the base pan to the top of the fan guard.
- The overall length and width include screw heads.

# System charge table

**Table 5: System charge table**

Outdoor unit model	HH824E2S11	HH836E2S11	HH860E2S11
Required metering device	5A1	5C1	5C1
Indoor coil model	Additional charge (oz)		
JHC24*C	0	—	—
JHC36*D	11.2	0	—
JHC42*F	—	1.6	—
JHC48*G	—	—	-4.8*
JHC60*H	—	—	0**
JHC60*J	—	—	3.04
JHE24*C	0	—	—
JHE30*D	11.2	—	—
JHE36*D	11.2	0	—
JHE42*F	—	1.6	—
JHE48*G	—	—	-4.8*
JHE60*H	—	—	0**
JHE60*J	—	—	3.04
CT(F,M,U)30*C	0	—	—
CT(F,M)30*D	11.2	0	—
CT(F,M,U)36*D	11.2	0	—
CT(F,M,U)48*F	—	1.6	—
CT(F,M,U)60*G	—	—	-4.8*
CT(F,M,U)60*H	—	—	0**
CT(F,M)60*J	—	—	3.04

## System charge notes

- For applications that require a TXV, use S1-1TVM5A1 or S1-1TVM5C1 per this table.
- Use a TXV kit with these indoor units to obtain system performance.
- Systems matched with furnaces or air handlers that are not equipped with blower-off delays may require blower time delay.
- Do not use CTF or CTU coils in horizontal applications.
- The charge adders shown in the table do not indicate that coils are rated for every application. Refer to the performance data tables in the Technical Guide for actual performance for specified system matches. Obtain certified system ratings from [www.ahridirectory.org](http://www.ahridirectory.org).
- All of the combinations shown in the table require advanced main air circulating fan indoor product.



**Note:**

\*This row is a system match if the outdoor unit is configured as a 4 ton model.

\*\*This row is a system match if the outdoor unit is configured as a 4 ton or 5 ton model.

## Charging

1. Check the unit factory charge listed on the unit nameplate to verify the refrigerant charge for the outdoor unit, the smallest matched indoor unit, and 15 ft of interconnecting line tubing.
2. Verify the TXV and additional charge required for the specific matched indoor unit in the system using [Table 5](#).
3. Add additional charge for the amount of interconnecting line tubing greater than 15 ft at the rate specified in [Table 3](#).
4. For indoor matches requiring additional charge, weigh in the refrigerant for the specific matched indoor unit and the actual lineset length.
5. After weighing in the charge adders for the matched indoor unit and lineset, verify the system operation against the temperatures and pressures in the charging chart for the outdoor unit. Locate the charging charts on the outdoor unit and also in the *Service Data Application Guide* at [www.simplygettingthejobdone.com](http://www.simplygettingthejobdone.com). Follow the charging procedure in the *Installation Manual* according to the type of indoor metering device in the system, and allow 10 min after each charge adjustment for the system operation to stabilize. Record the charge adjustment made to match the charging chart.
6. For downflow installations and horizontal right installations, some indoor units require additional charging adjustments to ensure correct equipment operation. Refer to the *Installation Manual* for the outdoor unit.
7. Permanently stamp the unit nameplate with the total system charge, which is defined as follows: total system charge = base charge (as shipped) + charge adder for matched indoor unit + charge adder for actual lineset length + charge adjustments to match the charging chart.

## Applications and accessories

**Table 6: Minimum and maximum operating limit conditions**

Ambient temperature limits	Outdoor coil °F (°C)	
	DB cool	DB heat
Minimum	35 (2)	-13 (-25)
Maximum	125 (52)	75 (24)

① **Note:** The maximum refrigerant piping equivalent length is 131 ft for HH824E2S11 units, 148 ft for HH836E2S11 units, and 246 ft for HH860E2S11 units.

The following accessories are compatible with H Series heat pumps:

**TXV kits (S1-1TVM\*):** For applications that require a TXV, use S1-1TVM5A1 or S1-1TVM5C1. See [Table 5](#).

**Filter drier:** Use a field-supplied R-454B bi-flow liquid-line filter drier.

## Sound power rating cooling

**Table 7: Sound power data- stage 2- cooling - octave band sound power level (db re. 1-pW)**

Outdoor unit model	Power level 63 (Hz)	Power level 125 (Hz)	Power level 250 (Hz)	Power level 500 (Hz)	Power level 1000 (Hz)	Power level 2000 (Hz)	Power level 4000 (Hz)	Power level 8000 (Hz)	dBA	SQI
HH824E2S11	65	64	63	62	60	56	49	57	65	19.1
HH836E2S11	70	70	70	68	65	59	53	47	70	19.1
HH860E2S11	71	75	71	70	66	60	57	54	71	19.0

## Sound power rating heating

**Table 8: Sound power data- stage 2- heating - octave band sound power level (db re. 1-pW)**

Outdoor unit model	Power level 63 (Hz)	Power level 125 (Hz)	Power level 250 (Hz)	Power level 500 (Hz)	Power level 1000 (Hz)	Power level 2000 (Hz)	Power level 4000 (Hz)	Power level 8000 (Hz)	dBA	SQI
HH824E2S11	71	69	64	64	61	58	52	48	66	19.1
HH836E2S11	71	68	70	67	64	58	54	49	69	19.1
HH860E2S11	73	77	72	71	67	63	64	56	73	19.0

# Mechanical specifications

Take note of the mechanical specifications outlined in the following sections.

## Manufacture and certifications

- Units shall be assembled at a facility with an ISO 9001:2015-certified Quality Management System.
- Units shall be certified by UL 60335-2-40:2022 Ed.4 and CSA C22.2#60335-2-40:2022 Ed.4 and performance certified to ANSI/AHRI Standard 210/240.
- Units shall be sound tested according to ANSI/AHRI Standard 270.
- Certified matched system ratings will be available for download from the AHRI online directory at [www.ahridirectory.org](http://www.ahridirectory.org).

### Unit application

- Units shall be approved for cooling operation between 35°F and 125°F without modification.
- Units shall be approved for heating operation between -13°F and 75°F without modification.
- Units shall be approved for linesets up to an equivalent length of 131 ft for HH824E2S11 units, 148 ft for HH836E2S11 units, and 246 ft for HH860E2S11 units without modification.
- Units shall be approved for installation at a minimum of 8 in. (long side) and 6 in. (short side) of a flat vertical wall without modification, according to the instructions in the technical literature. See [Figure 3](#).
- Units shall be designed to 73 dBA or less to minimize sound pollution.

### Unit access

- Units shall be factory leak checked, run tested, and shipped with a holding charge of R-454B refrigerant.
- Unit cabinet components shall be G90 equivalent steel finished with powder-coat paint rated at a minimum of 1,000 h under ASTM B117 testing.
- Units shall be constructed with a high-pressure switch for system protection.
- Units shall be constructed with all badging and labels applied at the factory.

### Unit components

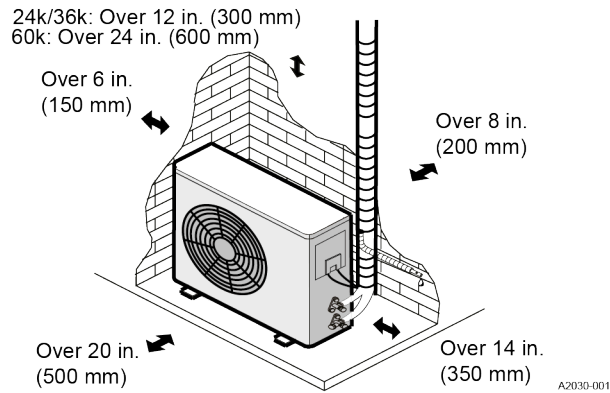
- Compressor shall be hermetic with internal electrical overload protection and internal overpressure protection.
- Compressor shall be mounted on neoprene vibration isolators that do not require the removal of transportation clips or brackets.
- Outdoor fan shall be direct drive with horizontal air discharge for low sound levels.
- Outdoor fan blades shall be swept-wing to minimize sound (applies to select models).
- Outdoor fan motor shall be totally enclosed with permanently lubricated ball bearings motors approved for vertical shaft applications.
- Outdoor fan motor shall be ECM construction with permanently lubricated ball bearing motors approved for vertical shaft applications.

### Unit warranties

- Unit manufacturer shall provide a 5-year compressor warranty without a requirement for unit registration.

# Typical installation

**Figure 3: Minimum clearances when selecting a location**



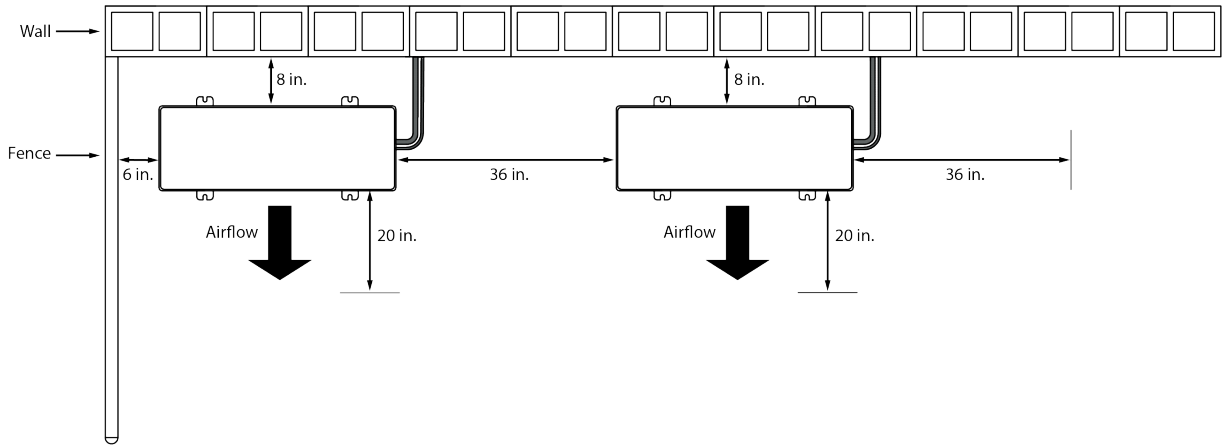
## CAUTION

### Caution

Take care to prevent ice from damaging the unit. Damage may occur from ice falling onto unit from a sloped roof or from a vertical drip line due to a partial overhang.

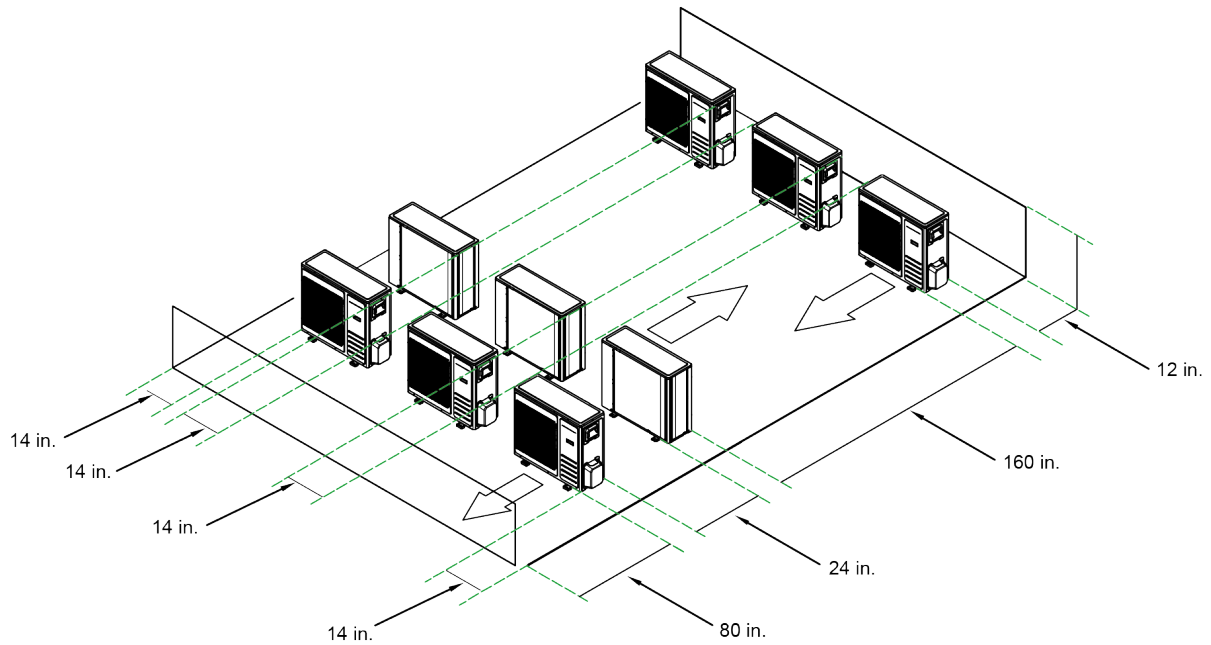
# Alternative installation clearances

**Figure 4: Alternative installation clearances**



A2167-001

**Figure 5: Alternative installation clearances for multiple units**



A2163-001

## Performance data - 2 ton

See the following tables for cooling and heating performance data for the HH824E2S11 unit.

### Cooling performance data - 2 ton

**Table 9: Cooling performance data - 2 ton**

Air temperature entering outdoor unit (°F)	Indoor CFM	600					800					1000				
	Indoor dry bulb (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	Indoor wet bulb (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
55	Total capacity	22.4	25.6	25.9	28.5	31.6	25.1	26.8	26.9	29.5	32.5	27.9	28.0	28.1	30.5	33.4
	Sensible capacity	22.4	22.3	19.1	19.1	15.9	25.1	25.0	20.8	20.7	16.5	27.9	27.8	22.6	22.4	17.1
	kW	0.95	1.11	1.11	1.09	1.07	1.12	1.20	1.21	1.19	1.17	1.27	1.27	1.28	1.26	1.24
65	Total capacity	22.3	24.9	25.1	27.6	30.4	24.6	26.0	26.0	28.5	31.3	27.0	27.2	27.0	29.5	32.2
	Sensible capacity	22.3	21.8	18.4	18.7	14.9	24.6	24.4	20.3	20.5	15.8	27.0	27.1	22.3	22.3	16.8
	kW	1.16	1.27	1.28	1.28	1.26	1.31	1.37	1.38	1.38	1.36	1.44	1.45	1.46	1.45	1.44
75	Total capacity	22.2	24.3	24.4	26.6	29.3	24.1	25.3	25.1	27.6	30.1	26.1	26.4	25.9	28.5	31.1
	Sensible capacity	22.2	21.4	17.7	18.3	13.8	24.1	23.8	19.9	20.2	15.1	26.1	26.3	22.1	22.2	16.5
	kW	1.37	1.44	1.44	1.46	1.45	1.50	1.54	1.55	1.57	1.56	1.61	1.62	1.65	1.65	1.64
85	Total capacity	21.5	23.3	23.1	25.6	28.2	23.3	24.3	24.0	26.4	28.9	25.2	25.3	24.9	27.3	29.8
	Sensible capacity	21.5	20.8	17.3	17.7	13.8	23.3	23.3	19.3	19.6	14.9	25.2	25.3	21.4	21.5	16.1
	kW	1.59	1.63	1.64	1.66	1.66	1.71	1.74	1.75	1.77	1.77	1.82	1.83	1.84	1.85	1.86
95	Total capacity	20.8	22.4	21.9	24.6	27.1	22.5	23.2	22.9	25.3	27.8	24.3	24.2	23.9	26.1	28.4
	Sensible capacity	20.8	20.2	16.9	17.1	13.7	22.5	22.7	18.7	18.9	14.6	24.3	24.2	20.7	20.8	15.6
	kW	1.81	1.83	1.83	1.85	1.88	1.93	1.94	1.94	1.97	1.99	2.04	2.04	2.03	2.06	2.07
105	Total capacity	19.3	20.4	20.1	23.3	24.8	20.6	21.2	21.1	23.6	25.5	22.2	22.1	22.2	24.1	26.1
	Sensible capacity	19.3	18.2	15.5	16.0	12.5	20.6	20.2	17.1	17.6	13.3	22.2	22.1	18.7	19.3	14.3
	kW	2.01	2.02	2.02	2.18	2.09	2.17	2.17	2.17	2.34	2.20	2.27	2.27	2.27	2.43	2.29
115	Total capacity	17.7	18.3	18.3	21.9	22.5	18.7	19.1	19.3	21.9	23.1	20.0	19.9	20.5	22.0	23.8
	Sensible capacity	17.6	16.2	14.0	14.9	11.2	18.4	17.6	15.4	16.3	12.0	19.3	19.1	16.7	17.8	13.0
	kW	2.20	2.20	2.20	2.50	2.30	2.40	2.40	2.40	2.70	2.40	2.50	2.50	2.50	2.80	2.50
125	Total capacity	12.2	12.3	12.5	15.8	15.3	12.9	12.8	13.4	15.5	15.8	13.6	13.5	14.4	15.2	16.3
	Sensible capacity	12.2	12.3	12.0	13.1	9.3	12.9	12.8	13.0	14.2	10.1	13.6	13.5	14.0	15.2	11.1
	kW	1.54	1.54	1.54	1.83	1.55	1.65	1.65	1.64	1.94	1.66	1.74	1.73	1.73	2.02	1.74

### Cooling performance data notes

- All capacities include indoor fan heat. kW values are for the system (outdoor + indoor).
- Drive output is limited in the shaded area. Performance may vary and interpolation is not permissible.



## Heating performance data - 2 ton

**Table 10: Heating performance data - 2 ton**

Heating performance	Outdoor ambient temperature									
	60	47	35	30	17	10	5	0	-5	-10
<b>MBH</b>	26.6	24.0	21.8	20.8	18.4	17.6	17.0	16.7	13.8	12.9
<b>kW</b>	1.8	1.95	1.96	1.96	1.96	2.20	2.37	2.51	2.16	2.35
<b>COP</b>	4.36	3.60	3.26	3.12	2.75	2.34	2.10	1.95	1.88	1.61

### Heating performance data notes

- Calculations are based on a nominal CFM and an indoor dry bulb temperature of 70°F.
- kW indicates total system power.
- The shaded area represents the AHRI rating conditions at an outdoor ambient temperature of 47°F.
- The performance data provided is only for reference and is derived from AHRI nominal data. In certain applications, actual performance may deviate from these values.

## Performance data - 3 ton

See the following tables for cooling and heating performance data for the HH836E2S11 unit.

### Cooling performance data - 3 ton

**Table 11: Cooling performance data - 3 ton**

Air temperature entering outdoor unit (°F)	Indoor CFM	850					1125					1400				
	Indoor dry bulb (°F)	80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	Indoor wet bulb (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
55	Total capacity	28.7	35.9	37.2	39.2	43.8	33.5	37.8	39.4	41.4	46.4	38.6	39.9	41.8	43.8	49.1
	Sensible capacity	28.7	29.8	26.3	25.9	20.8	33.5	34.0	29.8	29.0	22.8	38.6	38.5	33.4	32.2	25.1
	kW	1.21	1.62	1.63	1.59	1.56	1.53	1.73	1.74	1.70	1.66	1.79	1.78	1.79	1.75	1.71
65	Total capacity	30.1	35.0	35.6	38.6	42.4	33.8	37.2	37.7	40.8	44.5	37.6	39.6	40.0	43.1	46.7
	Sensible capacity	30.1	29.7	25.7	25.6	20.4	33.8	33.9	29.0	28.7	22.3	37.6	38.3	32.5	32.1	24.3
	kW	1.59	1.87	1.87	1.85	1.82	1.85	1.98	1.98	1.96	1.94	2.04	2.04	2.05	2.02	1.99
75	Total capacity	31.6	34.0	34.0	38.1	41.0	34.0	36.5	36.0	40.1	42.6	36.7	39.2	38.2	42.3	44.3
	Sensible capacity	31.3	29.5	25.0	25.3	20.0	34.0	33.7	28.2	28.5	21.7	36.7	38.1	31.6	31.9	23.6
	kW	1.97	2.11	2.10	2.10	2.09	2.16	2.23	2.23	2.23	2.21	2.29	2.30	2.30	2.29	2.27
85	Total capacity	29.2	32.4	32.9	35.7	38.9	32.2	34.3	34.3	37.2	40.8	35.5	36.5	36.0	39.0	43.0
	Sensible capacity	29.2	28.9	24.3	24.2	19.2	32.2	32.6	27.6	27.2	20.9	35.5	36.5	31.1	30.3	22.9
	kW	2.29	2.39	2.38	2.40	2.39	2.47	2.52	2.51	2.52	2.52	2.59	2.59	2.58	2.59	2.59
95	Total capacity	26.9	30.8	31.7	33.2	36.8	30.5	32.2	32.7	34.3	39.1	34.3	33.8	33.9	35.6	41.6
	Sensible capacity	26.9	28.2	23.6	23.1	18.3	30.5	31.4	27.0	25.8	20.2	34.3	33.8	30.7	28.8	22.2
	kW	2.61	2.67	2.66	2.69	2.70	2.77	2.80	2.79	2.82	2.83	2.89	2.88	2.87	2.90	2.90
105	Total capacity	26.3	29.4	27.1	30.6	35.0	29.1	30.3	28.9	31.8	37.2	32.1	31.4	31.1	33.4	39.5
	Sensible capacity	26.3	26.6	20.9	22.2	17.9	29.1	28.8	24.4	24.5	19.8	31.6	31.2	28.2	27.0	22.0
	kW	3.11	3.19	2.83	3.05	3.25	3.29	3.30	3.15	3.26	3.42	3.45	3.34	3.44	3.35	3.50
115	Total capacity	25.7	28.0	22.4	27.9	33.2	27.7	28.4	25.1	29.3	35.2	29.9	29.0	28.2	31.1	37.4
	Sensible capacity	25.1	25.0	18.1	21.2	17.4	26.7	26.1	21.7	23.2	19.4	28.5	27.5	25.6	25.2	21.8
	kW	3.60	3.70	3.00	3.40	3.80	3.80	3.80	3.50	3.70	4.00	4.00	3.80	4.00	3.80	4.10
125	Total capacity	16.3	17.1	10.2	15.7	20.1	16.9	16.8	12.9	16.9	21.3	17.6	16.7	15.8	18.3	22.7
	Sensible capacity	16.3	17.0	10.2	15.0	12.5	16.9	16.8	12.9	15.9	14.1	17.6	16.7	15.8	17.0	16.0
	kW	1.93	1.99	1.40	1.71	2.05	2.06	2.02	1.79	1.89	2.18	2.13	2.01	2.13	2.01	2.25

### Cooling performance data notes

- All capacities include indoor fan heat. kW values are for the system (outdoor + indoor).
- Drive output is limited in the shaded area. Performance may vary and interpolation is not permissible.

## Heating performance data - 3 ton

**Table 12: Heating performance data - 3 ton**

Heating performance	Outdoor ambient temperature									
	60	47	35	30	17	10	5	0	-5	-10
<b>MBH</b>	36.0	32.4	30.1	29.1	26.6	25.8	25.2	24.0	22.7	19.3
<b>kW</b>	2.6	2.71	2.85	2.91	3.06	3.33	3.52	3.70	3.89	3.58
<b>COP</b>	4.05	3.50	3.09	2.93	2.54	2.27	2.10	1.90	1.71	1.58

### Heating performance data notes

- Calculations are based on a nominal CFM and an indoor dry bulb temperature of 70°F.
- kW indicates total system power.
- The shaded area represents the AHRI rating conditions at an outdoor ambient temperature of 47°F.
- The performance data provided is only for reference and is derived from AHRI nominal data. In certain applications, actual performance may deviate from these values.

## Performance data - 4 ton

You can configure the HH860E2S11 unit as a 4 ton model by adjusting the DIP switch settings. See the following tables for cooling and heating performance data for the HH860E2S11 unit configured as a 4 ton model.

### Cooling performance data - 4 ton

**Table 13: Cooling performance data - 4 ton - adjust DIP switch setting on 60k to configure 48k**

Air temperature entering outdoor unit (°F)	Indoor CFM	1200					1600					2000				
		Indoor dry bulb (°F)		Indoor wet bulb (°F)			Indoor dry bulb (°F)		Indoor wet bulb (°F)			Indoor dry bulb (°F)		Indoor wet bulb (°F)		
		80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
55	Total capacity	36.0	43.9	42.0	49.5	51.0	41.1	49.2	47.8	56.9	53.9	45.9	54.2	53.3	64.0	56.5
	Sensible capacity	35.4	36.3	30.4	31.3	24.8	40.5	42.2	34.7	35.7	25.9	45.2	47.9	38.9	39.8	26.8
	kW	1.80	2.12	2.10	2.24	2.20	2.19	2.38	2.37	2.43	2.39	2.67	2.73	2.73	2.70	2.67
65	Total capacity	36.6	43.2	42.5	47.1	50.7	41.1	47.1	47.0	52.8	53.6	45.3	50.7	51.2	58.2	56.3
	Sensible capacity	35.7	35.7	29.6	30.1	23.6	40.2	40.7	33.6	34.0	25.4	44.4	45.5	37.3	37.7	26.8
	kW	2.19	2.50	2.49	2.56	2.53	2.56	2.73	2.73	2.75	2.73	3.02	3.05	3.05	3.03	3.01
75	Total capacity	37.1	42.5	43.1	44.6	50.4	41.0	45.0	46.2	48.6	53.4	44.7	47.3	49.1	52.3	56.1
	Sensible capacity	36.0	35.0	28.9	28.8	22.5	39.9	39.2	32.5	32.4	24.8	43.5	43.2	35.8	35.7	26.9
	kW	2.58	2.88	2.88	2.89	2.87	2.93	3.08	3.08	3.08	3.06	3.36	3.37	3.37	3.36	3.35
85	Total capacity	35.9	41.2	40.5	43.1	48.4	39.8	44.8	44.3	47.9	53.9	43.3	48.1	47.8	52.4	59.2
	Sensible capacity	34.8	34.8	28.7	29.0	22.0	38.6	39.5	32.5	33.3	24.6	42.1	44.0	36.0	37.3	27.0
	kW	2.89	3.21	3.21	3.23	3.14	3.27	3.42	3.42	3.44	3.40	3.73	3.72	3.72	3.74	3.74
95	Total capacity	34.8	39.9	38.0	41.6	46.4	38.5	44.6	42.4	47.1	54.5	41.9	49.0	46.5	52.4	62.3
	Sensible capacity	33.7	34.6	28.5	29.2	21.6	37.3	39.8	32.5	34.2	24.5	40.7	44.7	36.2	38.9	27.1
	kW	3.21	3.54	3.55	3.57	3.42	3.60	3.76	3.77	3.80	3.74	4.09	4.08	4.07	4.12	4.13
105	Total capacity	32.1	35.9	34.7	39.4	46.4	36.3	40.2	39.0	44.8	52.6	40.0	44.2	42.8	49.9	58.5
	Sensible capacity	30.7	31.3	26.3	27.8	21.6	34.7	35.6	30.0	32.8	23.7	38.4	39.7	33.3	37.4	25.5
	kW	3.41	3.67	3.68	3.89	4.21	4.00	3.98	4.04	4.30	4.52	4.65	4.39	4.49	4.76	4.92
115	Total capacity	29.4	31.8	31.4	37.2	46.3	34.0	35.8	35.5	42.5	50.7	38.1	39.4	39.1	47.4	54.6
	Sensible capacity	27.6	28.0	24.1	26.3	21.5	32.0	31.4	27.4	31.3	22.9	36.1	34.6	30.3	35.8	23.9
	kW	3.60	3.80	3.80	4.20	5.00	4.40	4.20	4.30	4.80	5.30	5.20	4.70	4.90	5.40	5.70
125	Total capacity	16.7	17.0	17.5	22.3	30.4	20.1	19.2	20.0	25.7	31.4	23.3	21.2	22.2	28.9	32.2
	Sensible capacity	16.3	16.3	14.6	16.8	14.9	19.6	17.8	16.5	20.2	15.1	22.7	19.0	18.2	23.4	15.0
	kW	2.21	2.21	2.21	2.65	3.56	2.74	2.50	2.59	3.08	3.68	3.36	2.88	3.05	3.61	3.88

### Cooling performance data notes

- All capacities include indoor fan heat. kW values are for the system (outdoor + indoor).
- Drive output is limited in the shaded area. Performance may vary and interpolation is not permissible.

## Heating performance data - 4 ton

**Table 14: Heating performance data - 4 ton - adjust DIP switch setting on 60k to configure 48k**

Heating performance	Outdoor ambient temperature									
	60	47	35	30	17	10	5	0	-5	-10
<b>MBH</b>	51.2	46.0	41.8	40.1	35.5	34.6	34.0	31.0	28.0	25.0
<b>kW</b>	3.9	3.85	3.90	3.92	3.97	4.42	4.75	4.53	4.32	4.11
<b>COP</b>	3.83	3.50	3.14	3.00	2.62	2.30	2.10	2.00	1.90	1.78

### Heating performance data notes

- Calculations are based on a nominal CFM and an indoor dry bulb temperature of 70°F.
- kW indicates total system power.
- The shaded area represents the AHRI rating conditions at an outdoor ambient temperature of 47°F.
- The performance data provided is only for reference and is derived from AHRI nominal data. In certain applications, actual performance may deviate from these values.

## Performance data - 5 ton

See the following tables for cooling and heating performance data for the HH860E2S11 unit.

### Cooling performance data - 5 ton

**Table 15: Cooling performance data - 5 ton**

Air temperature entering outdoor unit (°F)	Indoor CFM	1200					1600					2000				
		Indoor dry bulb (°F)					Indoor dry bulb (°F)					Indoor dry bulb (°F)				
		80	80	75	80	80	80	80	75	80	80	80	80	75	80	80
	Indoor wet bulb (°F)	57	62	62	67	72	57	62	62	67	72	57	62	62	67	72
55	Total capacity	40.0	54.8	55.5	60.1	62.3	47.8	57.8	58.3	64.2	64.6	55.5	60.6	60.9	68.1	66.8
	Sensible capacity	40.0	47.5	39.9	41.0	31.3	47.8	51.7	42.5	43.8	32.40	55.5	55.8	44.9	46.5	33.2
	kW	1.70	2.91	2.91	2.91	2.82	2.35	3.09	3.08	3.08	3.03	3.04	3.31	3.30	3.28	3.28
65	Total capacity	41.2	53.0	54.5	58.2	62.8	48.2	56.0	57.8	61.9	65.2	55.1	58.8	61.0	65.5	67.5
	Sensible capacity	41.2	45.3	39.6	39.7	31.7	48.2	50.2	42.8	42.7	33.0	55.1	55.0	45.8	45.6	34.1
	kW	2.23	3.20	3.27	3.29	3.26	2.85	3.41	3.45	3.46	3.45	3.52	3.66	3.66	3.68	3.68
75	Total capacity	42.5	51.2	53.6	56.4	63.3	48.7	54.2	57.4	59.7	65.8	54.8	57.1	61.0	62.9	68.2
	Sensible capacity	42.5	43.1	39.2	38.4	32.1	48.7	48.7	43.0	41.6	33.6	54.8	54.3	46.7	44.7	34.9
	kW	2.76	3.49	3.63	3.66	3.70	3.36	3.73	3.81	3.85	3.87	4.00	4.01	4.03	4.07	4.08
85	Total capacity	42.6	48.7	50.2	54.5	60.4	47.6	52.2	53.7	57.6	63.0	52.5	55.5	57.2	60.6	65.5
	Sensible capacity	42.6	41.5	36.6	36.4	30.0	47.6	47.3	40.8	40.2	31.8	52.5	52.9	44.9	43.9	33.4
	kW	3.36	3.76	3.91	4.00	4.05	3.86	4.06	4.14	4.21	4.25	4.39	4.41	4.42	4.46	4.50
95	Total capacity	42.6	46.3	46.8	52.6	57.4	46.5	50.2	50.1	55.5	60.2	50.2	53.9	53.4	58.2	62.7
	Sensible capacity	42.6	40.0	33.9	34.3	27.9	46.5	45.8	38.5	38.8	30.0	50.2	51.6	43.0	43.1	31.9
	kW	3.97	4.03	4.19	4.34	4.39	4.36	4.40	4.48	4.58	4.63	4.78	4.81	4.81	4.85	4.91
105	Total capacity	38.2	41.2	39.8	48.5	53.4	42.9	45.9	44.2	52.1	56.1	47.4	50.4	48.6	55.5	58.6
	Sensible capacity	38.2	35.6	29.4	32.1	25.1	42.9	41.4	34.1	37.0	27.5	47.4	47.2	38.8	41.6	29.7
	kW	4.09	4.17	4.05	4.67	4.80	4.73	4.75	4.54	5.14	5.07	5.34	5.41	5.11	5.63	5.41
115	Total capacity	33.7	36.0	32.7	44.3	49.3	39.3	41.5	38.3	48.6	51.9	44.5	46.9	43.7	52.8	54.5
	Sensible capacity	32.9	31.2	24.8	29.9	22.2	38.0	37.0	29.7	35.1	24.9	42.9	42.7	34.5	40.1	27.5
	kW	4.20	4.30	3.90	5.00	5.20	5.10	5.10	4.60	5.70	5.50	5.90	6.00	5.40	6.40	5.90
125	Total capacity	22.2	23.3	18.9	30.8	34.8	27.3	28.5	24.4	34.9	37.0	32.3	33.5	29.7	38.9	39.0
	Sensible capacity	22.2	23.3	18.1	25.0	17.4	27.3	28.5	22.6	30.1	20.1	32.3	33.5	27.1	35.0	22.7
	kW	2.82	2.82	2.31	3.52	3.68	3.55	3.57	2.98	4.13	3.93	4.33	4.35	3.69	4.77	4.21

### Cooling performance data notes

- All capacities include indoor fan heat. kW values are for the system (outdoor + indoor).
- Drive output is limited in the shaded area. Performance may vary and interpolation is not permissible.

## Heating performance data - 5 ton

**Table 16: Heating performance data - 5 ton**

Heating performance	Outdoor ambient temperature									
	60	47	35	30	17	10	5	0	-5	-10
<b>MBH</b>	57.6	54.0	47.3	44.5	37.2	38.0	38.5	35.6	32.4	29.3
<b>kW</b>	4.7	4.65	4.45	4.36	4.13	5.01	5.64	4.99	4.69	4.41
<b>COP</b>	3.56	3.40	3.12	2.99	2.64	2.22	2.00	2.09	2.03	1.95

### Heating performance data notes

- Calculations are based on a nominal CFM and an indoor dry bulb temperature of 70°F.
- kW indicates total system power.
- The shaded area represents the AHRI rating conditions at an outdoor ambient temperature of 47°F.
- The performance data provided is only for reference and is derived from AHRI nominal data. In certain applications, actual performance may deviate from these values.

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