

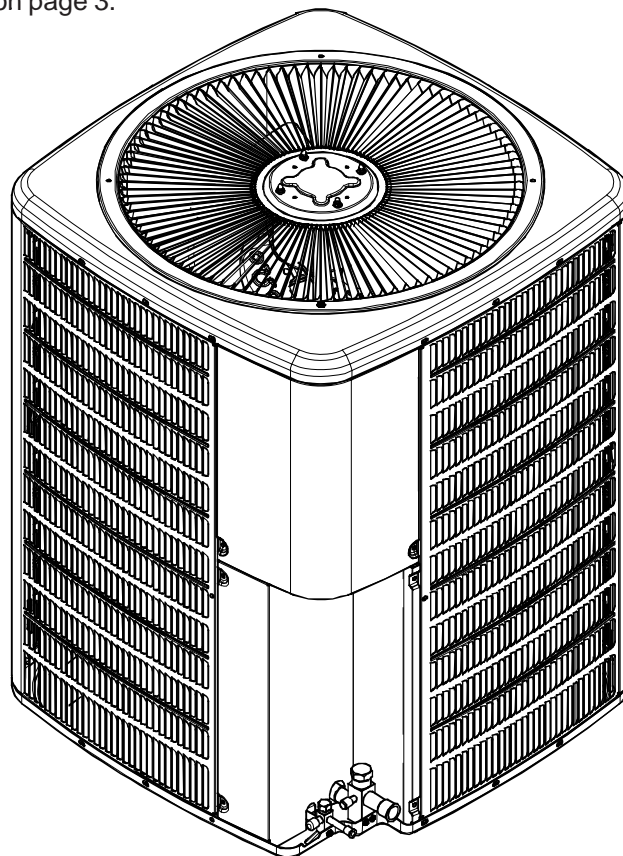


TECHNICAL MANUAL

GSH 13 SEER Split System Heat Pump

(Shipped Without Refrigerant Charge)

- Refer to Service Manual RS6100004 for installation, operation, and troubleshooting information.
- All safety information must be followed as provided in the Service Manual.
- Refer to the appropriate Parts Catalog for part number information.
- Models listed on page 3.



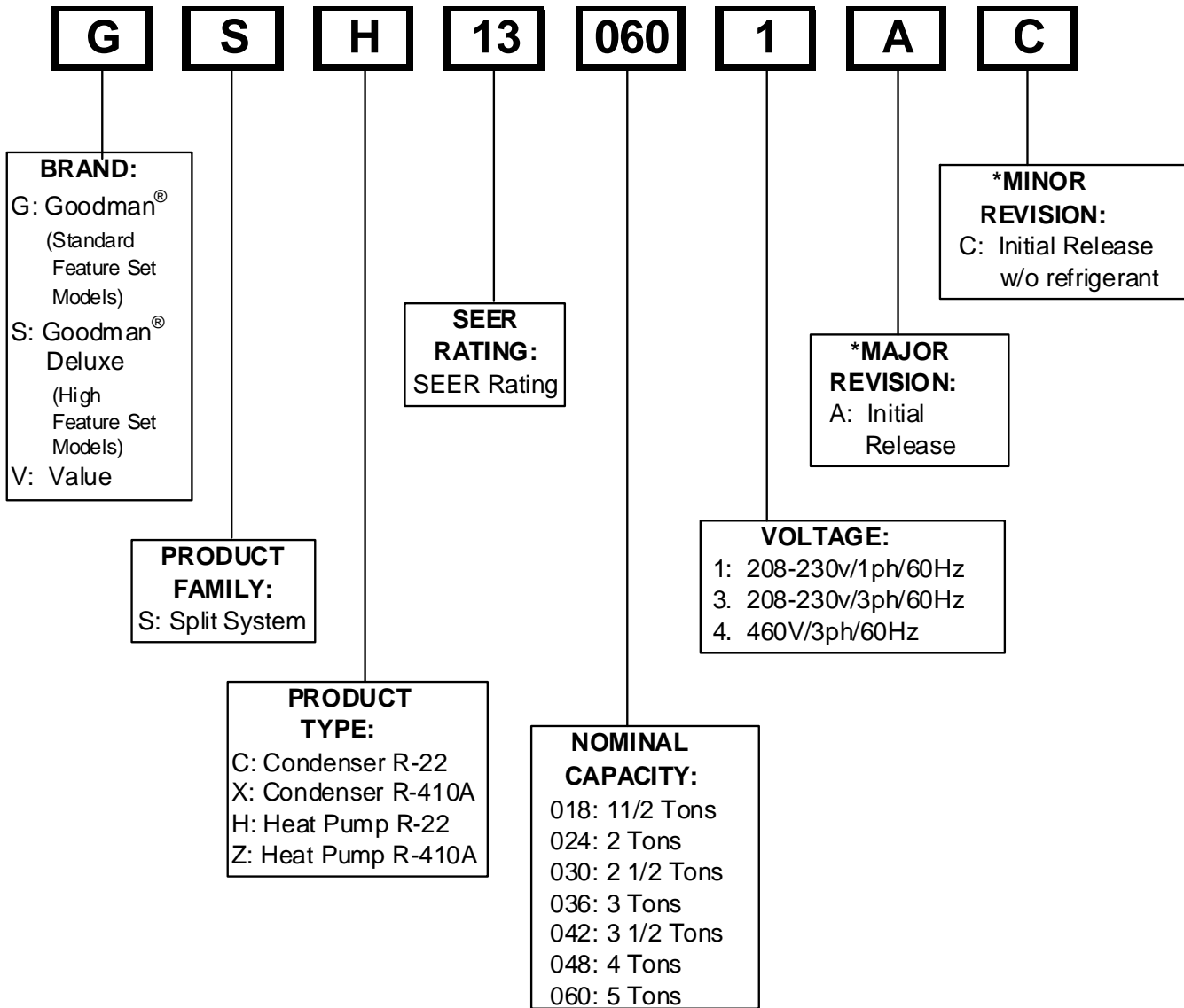
This manual is to be used by qualified, professionally trained HVAC technicians only. Goodman does not assume any responsibility for property damage or personal injury due to improper service procedures or services performed by an unqualified person.

RT6212010r5
April 2014

Copyright © 2011 - 2014 Goodman Manufacturing Company, L.P.

PRODUCT IDENTIFICATION

The model number is used for positive identification of component parts used in manufacturing. Please use this number when requesting service or parts information.



**Specific models without refrigerant charge (with their major & minor revision levels) are listed on the following page.*

WARNING

HIGH VOLTAGE!

Disconnect ALL power before servicing or installing this unit. Multiple power sources may be present. Failure to do so may cause property damage, personal injury or death.

WARNING

Goodman will not be responsible for any injury or property damage arising from improper service or service procedures. If you install or perform service on this unit, you assume responsibility for any personal injury or property damage which may result. Many jurisdictions require a license to install or service heating and air conditioning equipment.

WARNING

Installation and repair of this unit should be performed ONLY by individuals meeting the requirements (at a minimum) of an "entry level technician" as specified by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI). Attempting to install or repair this unit without such background may result in product damage, personal injury or death.

PRODUCT IDENTIFICATION

The model number is used for positive identification of component parts used in manufacturing. Please use this number when requesting service or parts information.

GSH130421AF/AG
GSH130481AE/AF
GSH130601AC/AD

GSH130181BB
GSH130241BB
GSH130301BB
GSH130361BC
GSH130421B*
GSH130481B*

GSH130181C*
GSH130241C*
GSH130301C*
GSH130361C*

** Indicates minor revision & is not used for order entry or inventory management*



The United States Environmental Protection Agency (“EPA”) has issued various regulations regarding the introduction and disposal of refrigerants introduced into this unit. Failure to follow these regulations may harm the environment and can lead to the imposition of substantial fines. These regulations may vary by jurisdiction. Should questions arise, contact your local EPA office.



Do not connect or use any device that is not design certified by Goodman for use with this unit. Serious property damage, personal injury, reduced unit performance and/or hazardous conditions may result from the use of such non-approved devices.



To prevent the risk of property damage, personal injury, or death, do not store combustible materials or use gasoline or other flammable liquids or vapors in the vicinity of this appliance.

PRODUCT DESIGN

These GSH13 SEER heat pump models are shipped with a nitrogen holding charge only and are available in 3 through 5 ton sizes for 208/230 volt single phase applications.

These units are designed for free air discharge. Air is drawn through the outdoor coil by a propeller fan, and is discharged vertically out the top of the unit. No additional restriction (ductwork) shall be applied.

All units come equipped with suction and liquid valves designed for connection to refrigerant-type copper. Non-back seating valves are factory installed to accept the field run copper.

Systems should be properly sized by heat gain and loss calculations made according to methods of the Air Conditioning Contractors Association (ACCA) or equivalent. It is the contractors responsibility to ensure the system has adequate capacity to heat or cool the conditioned space.

GSH13 units use a mix of reciprocating and scroll compressors. There are a number of design characteristics which are different from the scroll compared to the traditional reciprocating compressor.

Due to their design, Scroll compressors are inherently more tolerant of liquid refrigerant.

Note: Even though the compressor section of a Scroll compressor is more tolerant of liquid refrigerant, continued floodback or flooded start conditions may wash oil from the bearing surfaces causing premature bearing failure.

R22 scroll compressors use "POE" or polyolester oil which is NOT compatible with mineral based lubricants like 3GS. "POE" oil must be used if additional oil is required.

GSH13 model heat pumps do not use a reversing relay to energize the reversing valve. The reversing valve is energized in the cooling cycle through the "O" terminal on the room thermostat.

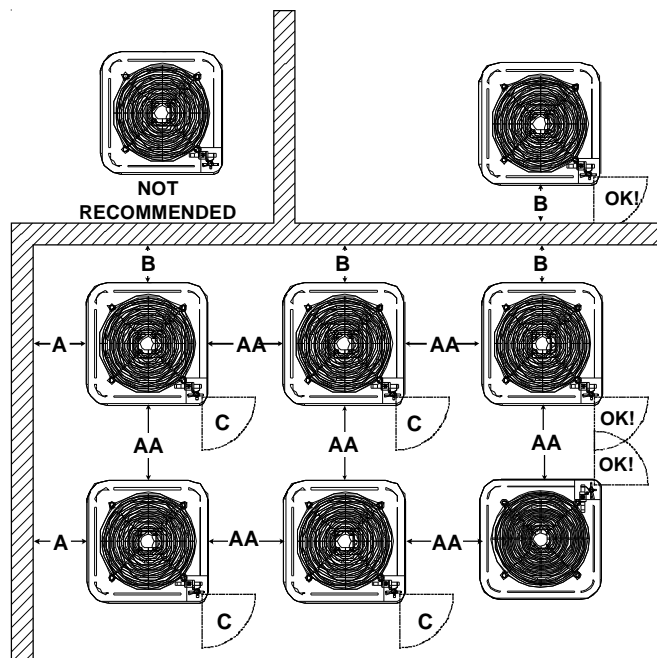
This unit is for outdoor installation only. Refer to minimum figure for clearances from the sides of the unit to full walls and other objects.

NOTE: This unit cannot be completely enclosed. At least one side must be unrestricted.

These clearances will help avoid air recirculation. If installing two or more units at the same location, allow at least 24 inches between units. If only one side is restricted (for example, against the outside wall of a house), the unit may be placed as close as 8" to that one wall.

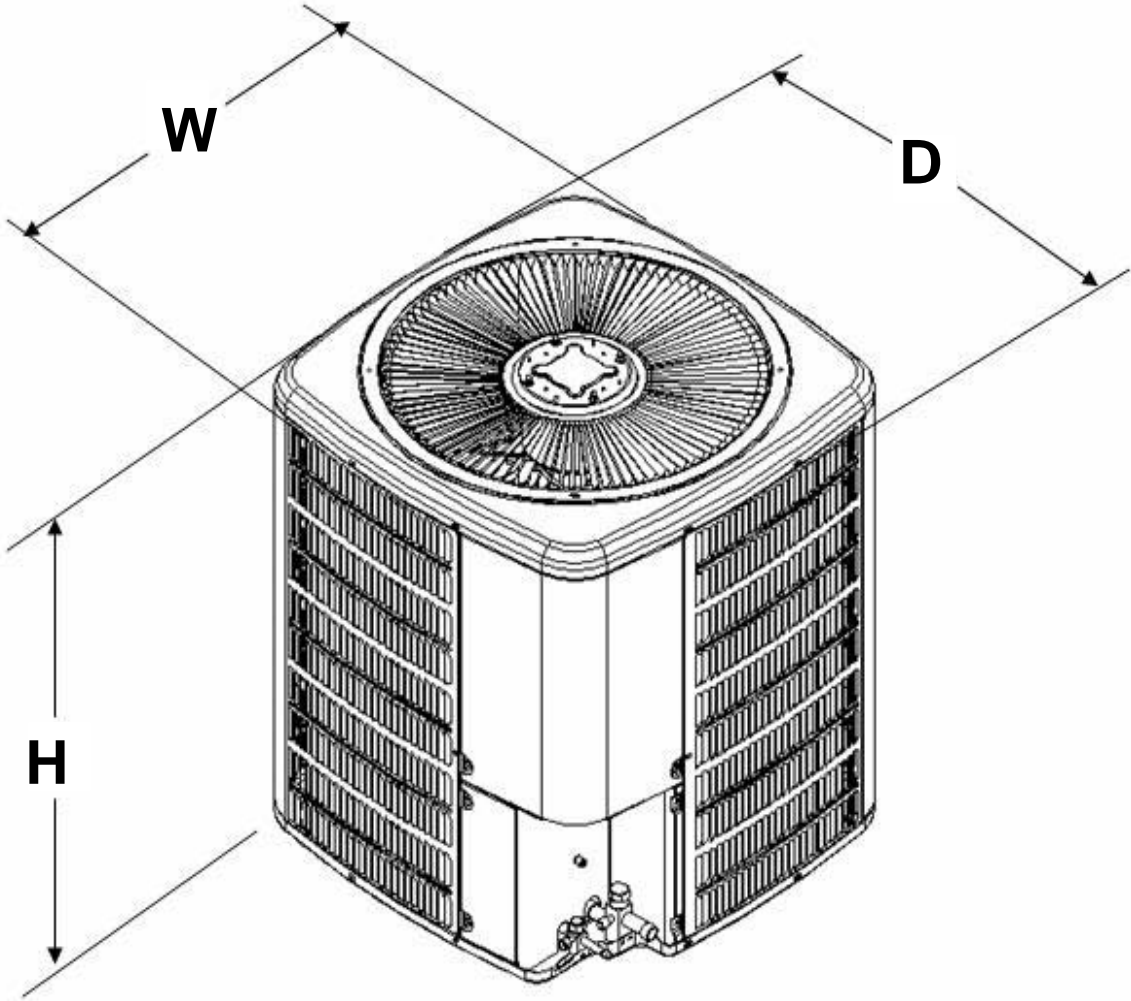
DO NOT locate the unit:

- * Directly under a vent termination for a gas appliance.
- * Within 3 feet of a clothes drier vent
- * Where the refreezing of defrost water would create a hazard
- * Where water may rise into the unit.



Minimum Airflow Clearance				
Model Type	A	B	C	AA
Residential	10"	10"	18"	20"
Light Commercial	12"	12"	18"	24"

PRODUCT DIMENSIONS



Model	Dimensions - W x D x H
GSH130181BB/C*	26 x 26 x 32¼
GSH130241BB/C*	26 x 26 x 32¼
GSH130301BB/C*	26 x 26 x 34¼
GSH130361BC/C*	29 x 29 x 38¼
GSH130421AF/AG/B*	29 x 29 x 32¼
GSH130481AE/AF/B*	29 x 29 x 34¼
GSH130601AC/AD	35½ x 35½ x 34¼

HEAT PUMP SPECIFICATIONS

GSH130[18-60]1A*/B*

	GSH130421AF	GSH130421AG	GSH130481AE GSH130481AF	GSH130601AC GSH130601AD
Cooling Capacity, BTUH	40,000	40,000	45,000	55,500
Compressor				
R.L. Amps	16.5	16.5	17.9	25
L.R. Amps	95	95	104	148
Loss of Charge Pressure Switch Open / Close	7 PSIG/25 PSIG	7 PSIG/25 PSIG	7 PSIG/25 PSIG	7 PSIG/25 PSIG
Condenser Fan Motor				
Horsepower	1/4	1/4	1/4	1/6
F.L. Amps	1.5	1.5	1.5	1.1
Liquid Line, Inches O.D.	3/8"	3/8"	3/8"	3/8"
Suction Line, Inches O.D.	7/8"	7/8"	7/8"	7/8"
Refrigerant Charge	213	213	223	233
Design Subcooling Cooling (°F)	9 ± 3	9 ± 3	9 ± 3	9 ± 3
Power Supply	208/230-60-1	208/230-60-1	208/230-60-1	208/230-60-1
Minimum Circuit Ampacity ⁽¹⁾	22.1	22.1	23.9	32.3
Maximum Overcurrent Device ⁽²⁾	30	35	40	50
Electrical Conduit Size				
Power Supply (Inches)	1/2 or 3/4	1/2 or 3/4	1/2 or 3/4	1/2 or 3/4
Approximate Shipping Weight	219	219	225	298

	GSH130181BB	GSH130241BB	GSH130361BC
Cooling Capacity, BTUH	18,000	23,000	35,000
Compressor			
R.L. Amps	6.2	9.2	12.2
L.R. Amps	60	43	73
Loss of Charge Pressure Switch Open / Close	7 PSIG/25 PSIG	7 PSIG/25 PSIG	7 PSIG/25 PSIG
Condenser Fan Motor			
Horsepower	1/6	1/6	1/4
F.L. Amps	1.1	1.1	1.5
Liquid Line, Inches O.D.	3/8"	3/8"	3/8"
Suction Line, Inches O.D.	3/4"	3/4"	7/8"
Refrigerant Charge	127	122	188
Design Subcooling Cooling (°F)	9 ± 3	9 ± 3	9 ± 3
Power Supply	208/230-60-1	208/230-60-1	208/230-60-1
Minimum Circuit Ampacity ⁽¹⁾	8.9	12.6	17
Maximum Overcurrent Device ⁽²⁾	15	20	25
Electrical Conduit Size			
Power Supply (Inches)	1/2 or 3/4	1/2 or 3/4	1/2 or 3/4
Approximate Shipping Weight	193	210	220

⁽¹⁾ Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

⁽²⁾ Maximum Overcurrent Protection: **Must** use fuses or HACR-type Circuit Breakers of the same size as noted.

NOTES:

* Always check the S&R plate for electrical data on the unit being installed.

* Installer will need to supply 7/8" to 1 1/8" adapters for suction line connections.

* Unit is charged with refrigerant for 15' of 3/8" liquid line. System charge must be adjusted per Installation Instructions Final Charge Procedure.

* Installation of these units that require a TXV Kit to be installed on the indoor coil: **PLEASE NOTE: THE SPECIFIED TXV IS DETERMINED BY THE OUTDOOR UNIT NOT THE INDOOR COIL**

HEAT PUMP SPECIFICATIONS

GSH130[18-36]1C*

	GSH130181CA	GSH130241CA	GSH130301C	GSH130361C
Cooling Capacity, BTUH	18,000	23,000	28,000	33,600
Compressor				
R.L. Amps	8.3	10.8	13.5	14.1
L.R. Amps	40	56	68	75
Loss of Charge Pressure Switch				
Open / Close	7 PSIG/25 PSIG	7 PSIG/25 PSIG	7 PSIG/25 PSIG	7 PSIG/25 PSIG
Condenser Fan Motor				
Horsepower	1/8	1/8	1/8	1/4
F.L. Amps	0.7	0.7	0.7	1.5
Liquid Line, Inches O.D.	3/8"	3/8"	3/8"	3/8"
Suction Line, Inches O.D.	3/4"	3/4"	3/4"	3/4"
Refrigerant Charge	127	122	130	188
Design Subcooling Cooling (°F)	9 ± 3	9 ± 3	9 ± 3	9 ± 3
Power Supply	208/230-60-1	208/230-60-1	208/230-60-1	208/230-60-1
Minimum Circuit Ampacity ⁽¹⁾	11.1	14.2	17.6	19.1
Maximum Overcurrent Device ⁽²⁾	15	25	30	30
Electrical Conduit Size				
Power Supply (Inches)	1/2 or 3/4	1/2 or 3/4	1/2 or 3/4	1/2 or 3/4
Approximate Shipping Weight	151	150	157	188

⁽¹⁾ Wire size should be determined in accordance with National Electrical Codes. Extensive wire runs will require larger wire sizes.

⁽²⁾ Maximum Overcurrent Protection: **Must** use fuses or HACR-type Circuit Breakers of the same size as noted.

NOTES:

* Always check the S&R plate for electrical data on the unit being installed.

* Installer will need to supply 7/8" to 1 1/8" adapters for suction line connections.

* Unit is charged with refrigerant for 15' of 3/8" liquid line. System charge must be adjusted per Installation Instructions Final Charge Procedure.

* Installation of these units that require a TXV Kit to be installed on the indoor coil: **PLEASE NOTE: THE SPECIFIED TXV IS DETERMINED BY THE OUTDOOR UNIT NOT THE INDOOR COIL**

COOLING PERFORMANCE DATA

GSH130421AF/AG

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130421A* / ARUF49-00*-1* / ARUF36421A*

IDB*	Airflow	Outdoor Ambient Temperature																								
		75					85					105					115									
		59	63	67	71	75	59	63	67	71	75	59	63	67	71	75	59	63	67	71	75					
70	1688	MBh	39.2	40.6	44.5	-	38.3	39.7	43.5	-	37.4	38.7	42.4	-	36.5	37.8	41.4	-	34.6	35.9	39.3	-	32.1	33.3	36.4	-
		S/T	0.77	0.64	0.44	-	0.79	0.66	0.46	-	0.81	0.68	0.47	-	0.84	0.70	0.49	-	0.87	0.73	0.50	-	0.88	0.73	0.51	-
		Delta T	16	14	11	-	17	14	11	-	17	14	11	-	17	14	11	-	16	14	11	-	15	13	10	-
		KW	2.84	2.90	2.98	-	3.05	3.11	3.20	-	3.22	3.29	3.39	-	3.38	3.45	3.56	-	3.51	3.59	3.70	-	3.63	3.70	3.82	-
		AMPS	10.6	10.8	11.2	-	11.4	11.7	12.1	-	12.4	12.7	13.1	-	13.2	13.6	14.0	-	14.1	14.4	14.9	-	14.9	15.3	15.8	-
		HIPR	137	148	156	-	154	166	175	-	175	188	199	-	199	215	227	-	224	241	255	-	248	267	282	-
1500	1313	LO PR	60	64	70	-	64	68	74	-	66	70	77	-	70	74	81	-	73	78	85	-	75	80	88	-
		MBh	38.1	39.4	43.2	-	37.2	38.5	42.2	-	36.3	37.6	41.2	-	35.4	36.7	40.2	-	33.6	34.9	38.2	-	31.2	32.3	35.4	-
		S/T	0.73	0.61	0.42	-	0.76	0.63	0.44	-	0.78	0.65	0.45	-	0.80	0.67	0.46	-	0.83	0.69	0.48	-	0.84	0.70	0.49	-
		Delta T	17	15	11	-	17	15	11	-	17	15	11	-	17	15	11	-	17	15	11	-	16	14	11	-
		KW	2.82	2.88	2.96	-	3.02	3.08	3.17	-	3.20	3.26	3.36	-	3.35	3.42	3.53	-	3.49	3.56	3.67	-	3.60	3.68	3.79	-
		AMPS	10.5	10.7	11.1	-	11.3	11.6	11.9	-	12.3	12.6	13.0	-	13.1	13.4	13.9	-	13.9	14.3	14.8	-	14.8	15.1	15.6	-
1313	1313	HIPR	136	146	154	-	152	164	173	-	173	187	197	-	197	212	224	-	222	239	252	-	245	264	279	-
		LO PR	60	63	69	-	63	67	73	-	66	70	76	-	69	73	80	-	72	77	84	-	75	79	87	-
		MBh	35.1	36.4	39.9	-	34.3	35.6	39.0	-	33.5	34.7	38.0	-	32.7	33.9	37.1	-	31.0	32.2	35.2	-	28.8	29.8	32.7	-
		S/T	0.70	0.59	0.41	-	0.73	0.61	0.42	-	0.75	0.63	0.43	-	0.77	0.65	0.45	-	0.80	0.67	0.46	-	0.81	0.68	0.47	-
		Delta T	17	15	11	-	18	15	12	-	18	15	12	-	18	15	12	-	17	15	11	-	16	14	11	-
		KW	2.76	2.82	2.90	-	2.96	3.01	3.10	-	3.13	3.19	3.28	-	3.28	3.34	3.45	-	3.40	3.47	3.58	-	3.51	3.59	3.70	-
75	1688	AMPS	10.2	10.4	10.8	-	11.0	11.3	11.6	-	11.9	12.2	12.6	-	12.7	13.1	13.5	-	13.6	13.9	14.4	-	14.4	14.7	15.2	-
		HIPR	132	142	150	-	148	159	168	-	168	181	191	-	191	206	218	-	215	232	245	-	238	256	270	-
		LO PR	58	62	67	-	61	65	71	-	64	68	74	-	67	71	78	-	70	74	81	-	72	77	84	-
		MBh	39.9	41.0	44.4	47.7	38.9	40.1	43.4	46.6	38.0	39.1	42.4	45.5	37.1	38.2	41.3	44.4	35.2	36.3	39.3	42.1	32.6	33.6	36.4	39.0
		S/T	0.87	0.78	0.59	0.38	0.90	0.81	0.61	0.39	0.93	0.83	0.63	0.40	0.95	0.85	0.65	0.42	0.99	0.89	0.67	0.43	1.00	0.89	0.68	0.44
		Delta T	19	17	14	10	19	18	14	10	19	18	14	10	19	18	14	10	19	18	14	10	18	16	13	9
1500	1313	KW	2.87	2.92	3.01	3.10	3.07	3.13	3.22	3.32	3.25	3.31	3.41	3.52	3.41	3.48	3.58	3.70	3.54	3.62	3.73	3.85	3.66	3.73	3.85	3.97
		AMPS	10.7	10.9	11.3	11.7	11.5	11.8	12.2	12.6	12.5	12.8	13.2	13.7	13.4	13.7	14.1	14.7	14.2	14.6	15.0	15.6	15.1	15.4	15.9	16.5
		HIPR	139	149	157	164	155	167	177	184	177	190	201	210	201	217	229	239	227	244	257	269	250	269	285	297
		LO PR	61	65	71	75	64	68	75	80	67	71	78	83	70	75	82	87	74	78	85	91	76	81	88	94
		MBh	38.7	39.8	43.1	46.3	37.8	38.9	42.1	45.2	36.9	38.0	41.1	44.1	36.0	37.1	40.1	43.1	34.2	35.2	38.1	40.9	31.7	32.6	35.3	37.9
		S/T	0.83	0.74	0.56	0.36	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.91	0.81	0.62	0.40	0.95	0.85	0.64	0.41	0.95	0.85	0.65	0.42
75	1500	Delta T	20	18	15	10	20	18	15	10	20	18	15	10	20	19	15	10	20	18	15	10	19	17	14	10
		KW	2.84	2.90	2.98	3.07	3.05	3.11	3.20	3.30	3.22	3.29	3.39	3.49	3.38	3.45	3.56	3.67	3.51	3.59	3.70	3.82	3.63	3.70	3.82	3.94
		AMPS	10.6	10.8	11.2	11.6	11.4	11.7	12.1	12.5	12.4	12.7	13.1	13.6	13.2	13.6	14.0	14.5	14.1	14.4	14.9	15.5	14.9	15.3	15.8	16.4
		HIPR	137	148	156	163	154	166	175	182	175	188	199	208	199	215	227	236	224	241	255	266	248	267	282	294
		LO PR	60	64	70	75	64	68	74	79	66	70	77	82	70	74	81	86	73	78	85	90	75	80	88	93
		MBh	35.7	36.8	39.8	42.7	34.9	35.9	38.9	41.7	34.1	35.1	38.0	40.7	33.2	34.2	37.0	39.7	31.6	32.5	35.2	37.8	29.2	30.1	32.6	35.0
1313	1313	S/T	0.80	0.72	0.54	0.35	0.83	0.74	0.56	0.36	0.85	0.76	0.58	0.37	0.88	0.79	0.59	0.38	0.91	0.82	0.62	0.40	0.92	0.82	0.62	0.40
		Delta T	20	18	15	10	20	19	15	11	20	19	15	11	20	19	15	11	20	19	15	10	19	17	14	10
		KW	2.78	2.84	2.92	3.00	2.98	3.04	3.13	3.22	3.15	3.21	3.31	3.41	3.30	3.37	3.47	3.58	3.43	3.50	3.61	3.72	3.54	3.62	3.73	3.85
		AMPS	10.3	10.5	10.9	11.3	11.1	11.4	11.7	12.2	12.0	12.3	12.7	13.2	12.9	13.2	13.6	14.1	13.7	14.0	14.5	15.0	14.5	14.9	15.4	15.9
		HIPR	133	143	151	158	149	161	170	177	170	183	193	201	193	208	220	229	218	234	247	258	240	259	273	285
		LO PR	58	62	68	72	62	66	72	76	64	68	75	79	67	72	78	83	71	75	82	87	73	78	85	90

AMPS=outdoor unit amps (comp.+fan)

IDB: Entering Indoor Dry Bulb Temperature KW= Total system power

Shaded area is ACCA (TV A) conditions

High and low pressures are measured at the liquid and suction service valves.

COOLING PERFORMANCE DATA

GSH130421AF/AG

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130421A* / ARUF49-00*-1* / ARUF36421A*

IDB*	Airflow	Outdoor Ambient Temperature																													
		65					75					85					95					105					115				
		59	63	67	71	75	59	63	67	71	75	59	63	67	71	75	59	63	67	71	75	59	63	67	71	75	59	63	67	71	75
80	1688	MBh	40.6	41.5	44.3	47.3	39.6	40.5	43.3	46.2	38.7	39.5	42.2	45.1	37.7	38.6	41.2	44.0	35.9	36.6	39.1	41.8	33.2	33.9	36.3	38.8					
		S/T	0.95	0.90	0.73	0.54	1.00	0.93	0.76	0.56	1.00	0.95	0.77	0.58	1.00	1.00	0.80	0.60	1.00	1.00	0.83	0.62	1.00	1.00	0.84	0.63					
		Delta T	2.89	2.94	3.03	3.12	3.09	3.15	3.25	3.35	3.27	3.34	3.44	3.55	3.43	3.50	3.61	3.73	3.57	3.64	3.76	3.88	3.69	3.76	3.88	4.01					
		AMPS	10.7	11.0	11.4	11.8	11.6	11.9	12.3	12.7	12.6	12.9	13.3	13.8	13.5	13.8	14.3	14.8	14.3	14.3	14.7	15.2	15.8	15.2	15.6	16.1	16.7				
		HI PR	140	151	159	166	157	169	178	186	179	192	203	212	203	219	231	241	229	246	260	271	253	272	287	300					
	LO PR	62	65	71	76	65	69	75	80	68	72	78	84	71	75	82	88	74	79	86	92	77	82	89	95						
	1500	MBh	39.4	40.2	43.0	46.0	38.5	39.3	42.0	44.9	37.6	38.4	41.0	43.8	36.6	37.4	40.0	42.8	34.8	35.6	38.0	40.6	32.2	32.9	35.2	37.6					
		S/T	0.91	0.85	0.70	0.52	0.94	0.89	0.72	0.54	0.97	0.91	0.74	0.55	1.00	0.94	0.76	0.57	1.00	0.97	0.79	0.59	1.00	0.98	0.80	0.60					
		Delta T	2.21	2.21	1.8	1.5	2.2	2.1	1.9	1.5	2.2	2.1	1.9	1.5	2.2	2.1	1.9	1.5	2.1	2.1	1.8	1.5	2.0	2.0	1.7	1.4					
		KW	2.87	2.92	3.01	3.10	3.07	3.13	3.22	3.32	3.25	3.31	3.42	3.52	3.41	3.48	3.58	3.70	3.54	3.62	3.73	3.85	3.66	3.73	3.85	3.98					
AMPS		10.7	10.9	11.3	11.7	11.5	11.8	12.2	12.6	12.5	12.8	13.2	13.7	13.4	13.7	14.1	14.7	14.2	14.6	15.0	15.6	15.1	15.4	15.9	16.5						
1313	HI PR	139	149	157	164	156	167	177	184	177	190	201	210	201	217	229	239	227	244	258	269	250	269	285	297						
	LO PR	61	65	71	75	64	68	75	80	67	71	78	83	70	75	82	87	74	78	85	91	76	81	88	94						
	MBh	36.4	37.1	39.7	42.4	35.5	36.3	38.8	41.4	34.7	35.4	37.8	40.5	33.8	34.6	36.9	39.5	32.1	32.8	35.1	37.5	29.8	30.4	32.5	34.7						
	S/T	0.88	0.82	0.67	0.50	0.91	0.85	0.69	0.52	0.93	0.88	0.71	0.53	0.96	0.90	0.74	0.55	1.00	0.94	0.76	0.57	1.01	0.95	0.77	0.58						
	Delta T	2.2	2.1	1.9	1.5	2.3	2.2	1.9	1.5	2.3	2.2	1.9	1.5	2.3	2.2	1.9	1.5	2.2	2.2	1.9	1.5	2.1	2.0	1.8	1.4						
85	1688	MBh	41.3	42.1	44.1	47.0	40.3	41.1	43.0	45.9	39.4	40.1	42.0	44.8	38.4	39.1	41.0	43.7	36.5	37.2	38.9	41.5	33.8	34.4	36.1	38.5					
		S/T	1.00	0.97	0.87	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.93	0.75	1.00	1.00	0.96	0.78	1.00	1.00	0.99	0.81	1.00	1.00	0.81	0.81					
		Delta T	2.2	2.2	2.1	1.8	2.2	2.2	2.1	1.8	2.1	2.2	2.1	1.8	2.1	2.1	2.1	1.8	2.0	2.0	2.1	1.8	1.8	1.9	2.0	1.7					
		KW	2.91	2.96	3.05	3.14	3.12	3.18	3.27	3.37	3.30	3.37	3.47	3.58	3.46	3.53	3.64	3.76	3.60	3.67	3.79	3.91	3.72	3.79	3.91	4.04					
		AMPS	10.8	11.1	11.5	11.9	11.7	12.0	12.4	12.9	12.7	13.0	13.5	14.0	13.6	13.9	14.4	14.9	14.5	14.8	15.3	15.9	15.3	15.7	16.2	16.9					
	1500	HI PR	141	152	161	168	159	171	180	188	180	194	205	214	205	221	234	244	231	249	263	274	255	275	290	303					
		LO PR	62	66	72	77	66	70	76	81	68	73	79	84	72	76	83	89	75	80	87	93	78	83	90	96					
		MBh	40.1	40.9	42.8	45.6	39.1	39.9	41.8	44.6	38.2	39.0	40.8	43.5	37.3	38.0	39.8	42.5	35.4	36.1	37.8	40.3	32.8	33.4	35.0	37.4					
		S/T	0.95	0.92	0.83	0.67	0.99	0.95	0.86	0.70	1.00	0.98	0.88	0.72	1.00	1.00	0.91	0.74	1.00	1.00	0.95	0.77	1.00	1.00	0.95	0.77					
		Delta T	2.3	2.3	2.2	1.9	2.4	2.3	2.2	1.9	2.3	2.3	2.2	1.9	2.3	2.3	2.2	1.9	2.2	2.2	2.2	1.9	2.0	2.0	2.0	1.8					
1313	KW	2.89	2.94	3.03	3.12	3.09	3.15	3.25	3.35	3.27	3.34	3.44	3.55	3.43	3.50	3.61	3.73	3.57	3.64	3.76	3.88	3.69	3.76	3.88	4.01						
	AMPS	10.7	11.0	11.4	11.8	11.6	11.9	12.3	12.7	12.6	12.9	13.3	13.8	13.5	13.8	14.3	14.8	14.3	14.7	15.2	15.8	15.2	15.6	16.1	16.7						
	HI PR	140	151	159	166	157	169	178	186	179	192	203	212	203	219	231	241	229	246	260	271	253	272	287	300						
	LO PR	62	65	71	76	65	69	75	80	68	72	78	84	71	75	82	88	74	79	86	92	77	82	89	95						
	MBh	37.0	37.7	39.5	42.1	36.1	36.8	38.6	41.2	35.3	36.0	37.7	40.2	34.4	35.1	36.7	39.2	32.7	33.3	34.9	37.2	30.3	30.9	32.3	34.5						

Shaded area is AHR1 Rating Conditions IDB: Entering Indoor Dry Bulb Temperature KW=Total system power
 High and low pressures are measured at the liquid and suction service valves. AMPS=outdoor unit amps (comp.+fan)

COOLING PERFORMANCE DATA

GSH130481AE/AF

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130481A* / ARUF61-00*-1* / ARUF48601A*

IDB*	Airflow	Outdoor Ambient Temperature																								
		65				75				85				95				105				115				
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	
70	1800	MBh	44.1	45.7	50.1	-	43.1	44.6	48.9	-	42.0	43.6	47.7	-	41.0	42.5	46.6	-	39.0	40.4	44.3	-	36.1	37.4	41.0	-
		S/T	0.76	0.63	0.44	-	0.79	0.66	0.46	-	0.81	0.67	0.47	-	0.83	0.70	0.48	-	0.86	0.72	0.50	-	0.87	0.73	0.50	-
		Delta T	17	15	11	-	17	15	11	-	17	15	11	-	17	15	11	-	17	15	11	-	16	14	11	-
		KW	3.22	3.28	3.37	-	3.44	3.51	3.61	-	3.64	3.71	3.82	-	3.81	3.89	4.01	-	3.96	4.04	4.17	-	4.09	4.17	4.30	-
		AMPS	12.1	12.4	12.8	-	13.0	13.4	13.8	-	14.2	14.5	15.0	-	15.1	15.5	16.0	-	16.1	16.5	17.0	-	17.1	17.5	18.1	-
	1600	HI PR	142	153	161	-	159	172	181	-	181	195	206	-	207	222	235	-	232	250	264	-	257	276	292	-
		LO PR	64	68	74	-	67	72	78	-	70	75	81	-	74	78	86	-	77	82	90	-	80	86	93	-
		MBh	42.8	44.4	48.6	-	41.8	43.3	47.5	-	40.8	42.3	46.4	-	39.8	41.3	45.2	-	37.8	39.2	43.0	-	35.0	36.3	39.8	-
		S/T	0.72	0.60	0.42	-	0.75	0.63	0.43	-	0.77	0.64	0.45	-	0.79	0.66	0.46	-	0.82	0.69	0.48	-	0.83	0.69	0.48	-
		Delta T	18	15	12	-	18	16	12	-	18	16	12	-	18	16	12	-	18	16	12	-	17	14	11	-
1400	KW	3.20	3.26	3.35	-	3.42	3.48	3.58	-	3.61	3.68	3.79	-	3.78	3.86	3.98	-	3.93	4.01	4.13	-	4.06	4.14	4.27	-	
	AMPS	12.0	12.3	12.7	-	12.9	13.2	13.7	-	14.0	14.4	14.8	-	15.0	15.4	15.9	-	16.0	16.3	16.9	-	16.9	17.3	17.9	-	
	HI PR	141	151	160	-	158	170	179	-	180	193	204	-	205	220	232	-	230	248	261	-	254	274	289	-	
	LO PR	63	67	73	-	67	71	78	-	69	74	81	-	73	78	85	-	76	81	89	-	79	84	92	-	
	MBh	39.5	41.0	44.9	-	38.6	40.0	43.8	-	37.7	39.1	42.8	-	36.8	38.1	41.7	-	34.9	36.2	39.7	-	32.3	33.5	36.7	-	

IDB*	Airflow	Outdoor Ambient Temperature																									
		65				75				85				95				105				115					
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71		
75	1800	MBh	44.8	46.2	50.0	53.6	43.8	45.1	48.8	52.4	42.8	44.0	47.7	51.1	41.7	42.9	46.5	49.9	39.6	40.8	44.2	47.4	36.7	37.8	40.9	43.9	
		S/T	0.86	0.77	0.58	0.38	0.89	0.80	0.61	0.39	0.92	0.82	0.62	0.40	0.95	0.85	0.64	0.41	0.98	0.88	0.66	0.43	0.99	0.89	0.67	0.43	
		Delta T	20	18	15	10	20	18	15	10	20	18	15	10	20	19	15	11	11	20	18	15	10	19	17	14	10
		KW	3.24	3.30	3.40	3.50	3.47	3.54	3.64	3.75	3.67	3.74	3.85	3.97	3.84	3.92	4.04	4.16	4.16	3.99	4.07	4.20	4.33	4.12	4.21	4.34	4.47
		AMPS	12.2	12.5	12.9	13.4	13.2	13.5	13.9	14.4	14.3	14.6	15.1	15.7	15.3	15.6	16.2	16.8	16.8	16.2	16.6	17.2	17.9	17.2	17.6	18.2	18.9
	1600	HI PR	144	154	163	170	161	173	183	191	183	197	208	217	209	225	237	247	247	235	253	267	278	259	279	295	307
		LO PR	65	69	75	80	68	73	79	84	71	75	82	88	74	79	86	92	92	78	83	91	96	81	86	94	100
		MBh	43.5	44.8	48.5	52.1	42.5	43.8	47.4	50.9	41.5	42.7	46.3	49.7	40.5	41.7	45.1	48.4	48.4	38.5	39.6	42.9	46.0	35.6	36.7	39.7	42.6
		S/T	0.82	0.74	0.56	0.36	0.85	0.76	0.58	0.37	0.87	0.78	0.59	0.38	0.90	0.81	0.61	0.39	0.94	0.84	0.63	0.41	0.94	0.84	0.64	0.41	
		Delta T	21	19	16	11	21	19	16	11	21	19	16	11	21	19	16	11	11	21	19	16	11	19	18	15	10
1400	KW	3.22	3.28	3.37	3.47	3.44	3.51	3.61	3.72	3.64	3.71	3.82	3.94	3.81	3.89	4.01	4.13	3.96	4.04	4.17	4.30	4.09	4.17	4.30	4.44		
	AMPS	12.1	12.4	12.8	13.2	13.0	13.4	13.8	14.3	14.2	14.5	15.0	15.5	15.1	15.5	16.0	16.6	16.6	16.1	16.5	17.0	17.7	17.1	17.5	18.1	18.7	
	HI PR	142	153	162	168	159	172	181	189	181	195	206	215	207	222	235	245	245	232	250	264	275	257	276	292	304	
	LO PR	64	68	74	79	68	72	78	83	70	75	81	87	74	78	86	91	91	77	82	90	96	80	85	93	99	
	MBh	40.2	41.4	44.8	48.1	39.3	40.4	43.7	46.9	38.3	39.5	42.7	45.8	37.4	38.5	41.7	44.7	44.7	35.5	36.6	39.6	42.5	32.9	33.9	36.7	39.3	

Shaded area is ACCA (TVA) conditions IDB: Entering Indoor Dry Bulb Temperature KW=Total system power
 High and low pressures are measured at the liquid and suction service valves. AMP=Outdoor unit amps (comp.+fan)

COOLING PERFORMANCE DATA

GSH130601AC/AD

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130601A* / ARUF61-00*-1* / ARUF48601A*

		Outdoor Ambient Temperature																			
		65			75			85			95			105			115				
IDB*	Airflow	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
	2025	56.3	57.5	61.5	65.7	55.0	56.2	60.0	64.2	53.7	54.8	58.6	62.6	52.4	53.5	57.2	61.1	49.7	50.8	54.3	58.1
		0.90	0.85	0.69	0.51	0.94	0.88	0.71	0.53	0.96	0.90	0.73	0.55	1.00	0.93	0.76	0.56	1.00	0.96	0.78	0.59
		23	22	19	15	23	22	19	16	23	22	19	16	24	23	20	16	23	22	19	15
	Delta T																				
	KW	3.90	3.98	4.09	4.22	4.18	4.26	4.39	4.53	4.43	4.52	4.66	4.80	4.64	4.74	4.89	5.04	4.83	4.93	5.09	5.25
	AMPS	14.0	14.4	14.8	15.4	15.2	15.5	16.0	16.6	16.5	16.9	17.4	18.1	17.6	18.0	18.6	19.3	18.7	19.2	19.8	20.6
	HI PR	143	154	163	170	161	173	183	190	183	197	208	217	208	224	237	247	234	252	266	278
	LO PR	60	64	70	74	63	67	74	78	66	70	76	81	69	74	80	86	72	77	84	90
	80	54.7	55.8	59.7	63.8	53.4	54.5	58.3	62.3	52.1	53.2	56.9	60.8	50.8	51.9	55.5	59.3	48.3	49.4	52.7	56.4
		0.86	0.81	0.66	0.49	0.89	0.84	0.68	0.51	0.91	0.86	0.70	0.52	0.94	0.89	0.72	0.54	0.98	0.92	0.75	0.56
		24	23	20	16	24	23	20	16	24	23	20	16	25	23	20	16	24	23	20	16
	Delta T																				
	KW	3.87	3.95	4.06	4.19	4.15	4.23	4.36	4.49	4.39	4.48	4.62	4.76	4.61	4.70	4.85	5.00	4.79	4.89	5.04	5.21
	AMPS	13.9	14.2	14.7	15.2	15.0	15.4	15.9	16.5	16.3	16.7	17.3	17.9	17.4	17.9	18.5	19.2	18.6	19.0	19.7	20.4
	HI PR	142	153	161	168	159	171	181	189	181	195	206	214	206	222	234	244	232	250	263	275
	LO PR	59	63	69	73	63	67	73	78	65	69	76	81	68	73	80	85	72	76	83	89
	1575	50.4	51.5	55.1	58.9	49.3	50.3	53.8	57.5	48.1	49.1	52.5	56.1	46.9	47.9	51.2	54.8	44.6	45.6	48.7	52.0
		0.83	0.78	0.63	0.47	0.86	0.81	0.66	0.49	0.88	0.83	0.67	0.50	0.91	0.85	0.69	0.52	0.94	0.89	0.72	0.54
		24	23	20	16	25	24	21	16	25	24	21	16	25	24	21	17	25	24	20	16
	Delta T																				
	KW	3.79	3.86	3.97	4.09	4.05	4.13	4.26	4.39	4.29	4.38	4.51	4.65	4.50	4.59	4.73	4.88	4.68	4.78	4.92	5.08
	AMPS	13.5	13.8	14.3	14.8	14.6	15.0	15.5	16.0	15.9	16.3	16.8	17.4	17.0	17.4	18.0	18.6	18.1	18.5	19.1	19.8
	HI PR	138	148	156	163	154	166	175	183	176	189	199	208	200	215	227	237	225	242	256	267
	LO PR	58	61	67	71	61	65	71	75	63	67	73	78	66	71	77	82	70	74	81	86
	2025	57.3	58.4	61.1	65.2	55.9	57.0	59.7	63.7	54.6	55.7	58.3	62.2	53.3	54.3	56.9	60.7	50.6	51.6	54.0	57.6
		0.95	0.91	0.82	0.67	0.98	0.95	0.85	0.69	1.00	0.97	0.88	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.94	0.76
		25	24	23	20	25	24	23	20	25	25	23	20	24	25	23	20	23	23	23	20
	Delta T																				
	KW	3.93	4.01	4.12	4.25	4.21	4.30	4.43	4.56	4.46	4.55	4.69	4.84	4.68	4.78	4.93	5.08	4.87	4.97	5.13	5.29
	AMPS	14.2	14.5	15.0	15.5	15.3	15.7	16.2	16.8	16.6	17.0	17.6	18.3	17.8	18.2	18.8	19.5	18.9	19.4	20.0	20.8
	HI PR	145	156	164	171	162	175	184	192	185	199	210	219	210	226	239	249	237	255	269	280
	LO PR	61	64	70	75	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	91
	85	55.6	56.7	59.4	63.3	54.3	55.4	58.0	61.9	53.0	54.0	56.6	60.4	51.7	52.7	55.2	58.9	49.1	50.1	52.5	56.0
		0.90	0.87	0.79	0.64	0.94	0.90	0.81	0.66	0.96	0.93	0.84	0.68	0.99	0.96	0.86	0.70	1.00	0.99	0.89	0.73
		26	25	24	21	26	26	24	21	26	26	24	21	26	26	24	21	25	25	24	21
	Delta T																				
	KW	3.90	3.98	4.09	4.22	4.18	4.26	4.39	4.53	4.43	4.52	4.66	4.80	4.64	4.74	4.89	5.04	4.83	4.93	5.09	5.25
	AMPS	14.0	14.4	14.8	15.4	15.2	15.5	16.0	16.6	16.5	16.9	17.4	18.1	17.6	18.0	18.6	19.3	18.7	19.2	19.8	20.6
	HI PR	143	154	163	170	161	173	183	190	183	197	208	217	208	224	237	247	234	252	266	278
	LO PR	60	64	70	74	63	67	74	78	66	70	76	81	69	74	80	86	72	77	84	90
	1575	51.3	52.3	54.8	58.5	50.1	51.1	53.5	57.1	48.9	49.9	52.2	55.7	47.7	48.7	51.0	54.4	45.4	46.2	48.4	51.7
		0.87	0.84	0.76	0.61	0.90	0.87	0.79	0.64	0.92	0.89	0.81	0.65	0.95	0.92	0.83	0.67	0.99	0.96	0.86	0.70
		26	26	24	21	26	26	25	21	26	26	25	21	27	26	25	21	26	26	24	21
	Delta T																				
	KW	3.81	3.89	4.00	4.12	4.08	4.17	4.29	4.42	4.32	4.41	4.55	4.69	4.53	4.63	4.77	4.92	4.71	4.81	4.96	5.12
	AMPS	13.6	14.0	14.4	15.0	14.7	15.1	15.6	16.2	16.0	16.4	17.0	17.6	17.1	17.5	18.1	18.8	18.2	18.7	19.3	20.0
	HI PR	139	149	158	165	156	168	177	185	177	191	201	210	202	217	229	239	227	244	258	269
	LO PR	58	62	68	72	61	65	71	76	64	68	74	79	67	71	78	83	70	75	82	87

Shaded area is AHRI Rating Conditions
High and low pressures are measured at the liquid and suction service valves.

IDB: Entering Indoor Dry Bulb Temperature

KW=Total system power

AMPS=outdoor unit amps (comp. +fan)

COOLING PERFORMANCE DATA

GSH130241BB/C*

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130241B* / AR*F182416**

Design Subcooling 9 ±3 °F @ the liquid service valve, AHRI 95 test conditions

IDB	Airflow	Outdoor Ambient Temperature																								
		65				75				85				95				105				115				
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	
70	966	MBh	22.5	23.4	25.6	-	22.0	22.8	25.0	-	21.5	22.3	24.4	-	21.0	21.7	23.8	-	19.9	20.6	22.6	-	18.4	19.1	21.0	-
		S/T	0.74	0.62	0.43	-	0.77	0.64	0.45	-	0.79	0.66	0.46	-	0.81	0.68	0.47	-	0.85	0.71	0.49	-	0.85	0.71	0.49	-
		Delta T	16	14	11	-	16	14	11	-	16	14	11	-	16	14	11	-	16	14	11	-	15	13	10	-
		KW	1.59	1.63	1.68	-	1.71	1.75	1.80	-	1.81	1.85	1.91	-	1.91	1.95	2.01	-	1.98	2.03	2.09	-	2.05	2.09	2.16	-
		AMPS	5.8	6.0	6.2	-	6.3	6.4	6.7	-	6.8	7.0	7.2	-	7.3	7.5	7.7	-	7.8	8.0	8.2	-	8.2	8.4	8.7	-
	880	HI PR	140	151	159	-	157	169	179	-	179	193	203	-	204	219	232	-	229	247	261	-	253	273	288	-
		LO PR	62	66	72	-	65	69	76	-	68	72	79	-	71	76	83	-	75	79	87	-	77	82	90	-
		MBh	21.9	22.7	24.8	-	21.4	22.2	24.3	-	20.9	21.6	23.7	-	20.4	21.1	23.1	-	19.3	20.0	22.0	-	17.9	18.6	20.3	-
		S/T	0.71	0.59	0.41	-	0.73	0.61	0.42	-	0.75	0.63	0.44	-	0.78	0.65	0.45	-	0.81	0.67	0.47	-	0.81	0.68	0.47	-
		Delta T	17	15	11	-	17	15	11	-	17	15	11	-	17	15	11	-	17	15	11	-	16	14	10	-
744	KW	1.58	1.61	1.66	-	1.70	1.73	1.79	-	1.80	1.84	1.90	-	1.89	1.93	1.99	-	1.97	2.01	2.07	-	2.03	2.08	2.14	-	
	AMPS	5.8	5.9	6.1	-	6.2	6.4	6.6	-	6.8	6.9	7.2	-	7.2	7.4	7.7	-	7.7	7.9	8.1	-	8.2	8.4	8.6	-	
	HI PR	139	149	158	-	156	168	177	-	177	191	201	-	202	217	229	-	227	244	258	-	251	270	285	-	
	LO PR	61	65	71	-	65	69	75	-	67	71	78	-	70	75	82	-	74	79	86	-	76	81	89	-	
	MBh	20.2	20.9	22.9	-	19.7	20.4	22.4	-	19.3	20.0	21.9	-	18.8	19.5	21.3	-	17.8	18.5	20.3	-	16.5	17.1	18.8	-	

IDB	Airflow	Outdoor Ambient Temperature																								
		65				75				85				95				105				115				
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	
75	966	MBh	22.92	23.60	25.54	27.41	22.39	23.05	24.95	26.78	21.85	22.50	24.36	26.14	21.32	21.95	23.76	25.50	20.25	20.85	22.57	24.23	18.76	19.32	20.91	22.44
		S/T	0.84	0.75	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.96	0.86	0.65	0.42	0.97	0.87	0.66	0.42
		Delta T	19	17	14	10	19	17	14	10	19	17	14	10	19	17	14	10	19	17	14	10	17	16	13	9
		KW	1.61	1.64	1.69	1.74	1.72	1.76	1.81	1.87	1.83	1.87	1.93	1.99	1.92	1.96	2.02	2.09	2.00	2.04	2.11	2.18	2.07	2.11	2.18	2.25
		AMPS	5.9	6.0	6.2	6.4	6.3	6.5	6.7	7.0	6.9	7.1	7.3	7.6	7.4	7.5	7.8	8.1	7.8	8.0	8.3	8.6	8.3	8.5	8.8	9.1
	880	HI PR	142	152	161	168	159	171	181	188	181	195	205	214	206	222	234	244	232	249	263	275	256	275	291	303
		LO PR	62	66	72	77	66	70	76	81	68	73	79	85	72	76	83	89	75	80	87	93	78	83	91	96
		MBh	22.3	22.9	24.8	26.6	21.7	22.4	24.2	26.0	21.2	21.8	23.6	25.4	20.7	21.3	23.1	24.8	19.7	20.2	21.9	23.5	18.2	18.8	20.3	21.8
		S/T	0.80	0.72	0.54	0.35	0.83	0.75	0.56	0.36	0.86	0.77	0.58	0.37	0.88	0.79	0.60	0.38	0.92	0.82	0.62	0.40	0.92	0.83	0.63	0.40
		Delta T	19	18	15	10	20	18	15	10	20	18	15	10	20	18	15	10	19	18	15	10	18	17	14	9
744	KW	1.60	1.63	1.68	1.73	1.71	1.75	1.80	1.86	1.81	1.85	1.91	1.97	1.91	1.95	2.01	2.07	1.98	2.03	2.09	2.16	2.05	2.09	2.16	2.23	
	AMPS	5.8	6.0	6.2	6.4	6.3	6.4	6.7	6.9	6.8	7.0	7.2	7.5	7.3	7.5	7.7	8.0	7.8	8.0	8.2	8.5	8.2	8.4	8.7	9.1	
	HI PR	140	151	159	166	157	169	179	187	179	193	203	212	204	219	232	242	229	247	261	272	253	273	288	300	
	LO PR	62	66	72	76	65	69	76	81	68	72	79	84	71	76	83	88	75	79	87	92	77	82	90	95	
	MBh	20.5	21.1	22.9	24.6	20.1	20.7	22.4	24.0	19.6	20.2	21.8	23.4	19.1	19.6	21.3	22.9	18.2	18.7	20.2	21.7	16.8	17.3	18.7	20.1	

Shaded area is ACCA (TVA) conditions
 IDB: Entering Indoor Dry Bulb Temperature
 KW=Total system power
 AMPS=outdoor unit amps (comp. -fan)

COOLING PERFORMANCE DATA

GSH130301BB/C*

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130301 B* / ARUF363616B*

IDB* Airflow		Outdoor Ambient Temperature																			
		75				85				95				105				115			
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71
1500	MBh	27.6	28.6	31.3	-	26.3	27.2	29.9	-	25.6	26.6	29.1	-	24.4	25.3	27.7	-	24.4	25.3	27.7	-
	S/T	0.74	0.82	0.43	-	0.79	0.66	0.46	-	0.82	0.68	0.47	-	0.85	0.71	0.49	-	0.85	0.71	0.49	-
	Delta T	13	11	8	-	13	11	8	-	13	11	8	-	13	11	8	-	13	11	8	-
	KW	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-
	AMPS	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-
	HI PR	149	160	169	-	167	180	190	-	190	205	216	-	217	233	246	-	244	262	277	-
1025	LO PR	62	66	72	-	66	70	76	-	68	73	79	-	72	76	83	-	75	80	87	-
	MBh	26.6	27.6	30.3	-	26.0	27.0	29.5	-	25.4	26.3	28.8	-	24.8	25.7	28.1	-	23.5	24.4	26.7	-
	S/T	0.70	0.58	0.40	-	0.72	0.61	0.42	-	0.74	0.62	0.43	-	0.77	0.64	0.44	-	0.80	0.66	0.46	-
	Delta T	17	14	11	-	17	15	11	-	17	15	11	-	17	15	11	-	17	15	11	-
	KW	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-
	AMPS	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-
2000	HI PR	146	157	166	-	164	176	186	-	186	201	212	-	212	228	241	-	239	257	271	-
	LO PR	61	65	71	-	64	69	75	-	67	71	78	-	70	75	82	-	74	78	86	-
	MBh	27.6	28.6	31.3	-	26.9	27.9	30.6	-	26.3	27.2	29.9	-	25.6	26.6	29.1	-	24.4	25.3	27.7	-
	S/T	0.74	0.82	0.43	-	0.77	0.64	0.45	-	0.79	0.66	0.46	-	0.82	0.68	0.47	-	0.85	0.71	0.49	-
	Delta T	9	8	6	-	10	8	6	-	10	8	6	-	10	8	6	-	9	8	6	-
	KW	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-	2.56	2.56	2.56	-
70	AMPS	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-	10.0	10.0	10.0	-
	HI PR	149	160	169	-	167	180	190	-	190	205	216	-	217	233	246	-	244	262	277	-
	LO PR	62	66	72	-	66	70	76	-	68	73	79	-	72	76	83	-	75	80	87	-
	MBh	28.0	28.9	31.2	33.5	27.4	28.2	30.5	32.8	26.7	27.5	29.8	32.0	26.1	26.9	29.1	31.2	24.8	25.5	27.6	29.6
	S/T	0.84	0.76	0.57	0.37	0.88	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.96	0.86	0.65	0.42
	Delta T	15	13	11	8	15	14	11	8	15	14	11	8	15	14	11	8	15	13	11	8
1500	KW	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
	AMPS	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	HI PR	151	162	171	178	169	182	192	200	192	207	218	228	219	235	249	259	246	265	280	292
	LO PR	63	67	73	78	66	71	77	82	69	73	80	85	73	77	84	90	76	81	88	94
	MBh	27.1	27.9	30.2	32.4	26.5	27.2	29.5	31.6	25.8	26.6	28.8	30.9	25.2	25.9	28.1	30.1	23.9	24.6	26.7	28.6
	S/T	0.79	0.71	0.54	0.35	0.82	0.74	0.56	0.36	0.84	0.76	0.57	0.37	0.87	0.78	0.59	0.38	0.90	0.81	0.61	0.39
1025	Delta T	19	18	15	10	20	18	15	10	20	18	15	10	20	18	15	10	19	18	15	10
	KW	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
	AMPS	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	HI PR	148	159	168	175	166	178	188	196	188	203	214	223	214	231	244	254	241	260	274	286
	LO PR	62	66	72	76	65	69	76	81	68	72	79	84	71	76	83	88	75	79	87	92
	MBh	28.0	28.9	31.2	33.5	27.4	28.2	30.5	32.8	26.7	27.5	29.8	32.0	26.1	26.9	29.1	31.2	24.8	25.5	27.6	29.6
2000	S/T	0.84	0.76	0.57	0.37	0.88	0.78	0.59	0.38	0.90	0.80	0.61	0.39	0.93	0.83	0.63	0.40	0.96	0.86	0.65	0.42
	Delta T	11	10	8	6	11	10	8	6	11	10	8	6	11	10	8	6	11	10	8	6
	KW	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
	AMPS	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	HI PR	151	162	171	178	169	182	192	200	192	207	218	228	219	235	249	259	246	265	280	292
	LO PR	63	67	73	78	66	71	77	82	69	73	80	85	73	77	84	90	76	81	88	94

Shaded area is ACCA (TVA) conditions IDB: Entering Indoor Dry Bulb Temperature KW= Total system power
 High and low pressures are measured at the liquid and suction service valves. AMP= outdoor unit amps (comp.-fhan)

COOLING PERFORMANCE DATA

GSH130361BC/C*

EXPANDED PERFORMANCE DATA

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130361** / ARUF49-00*-1* / ARUF36421A*

IDB*	Airflow	Outdoor Ambient Temperature																								
		65				75				85				105				115								
		Entering Indoor Wet Bulb Temperature																								
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71					
70	1425	MBh	33.8	35.0	38.4	-	33.0	34.2	37.5	-	32.2	33.4	36.6	-	31.4	32.6	35.7	-	29.9	31.0	33.9	-	27.7	28.7	31.4	-
		S/T	0.76	0.63	0.44	-	0.79	0.66	0.45	-	0.80	0.67	0.47	-	0.83	0.69	0.48	-	0.86	0.72	0.50	-	0.87	0.73	0.50	-
	Delta T	17	14	11	-	17	14	11	-	17	14	11	-	17	15	11	-	17	14	11	-	16	13	10	-	
	KW	2.47	2.52	2.60	-	2.65	2.70	2.79	-	2.81	2.86	2.95	-	2.95	3.01	3.10	-	3.06	3.13	3.23	-	3.16	3.23	3.33	-	
	AMPS	9.2	9.4	9.7	-	9.9	10.1	10.5	-	10.7	11.0	11.3	-	11.5	11.7	12.1	-	12.2	12.5	12.9	-	12.9	13.2	13.6	-	
	HI PR	143	154	163	-	161	173	183	-	183	197	208	-	208	224	236	-	234	252	266	-	259	278	294	-	
	LO PR	65	69	76	-	69	73	80	-	72	76	83	-	75	80	87	-	79	84	91	-	81	87	95	-	
	MBh	33.3	34.5	37.8	-	32.5	33.7	36.9	-	31.7	32.9	36.1	-	31.0	32.1	35.2	-	29.4	30.5	33.4	-	27.3	28.3	31.0	-	
	S/T	0.73	0.61	0.42	-	0.75	0.63	0.43	-	0.77	0.64	0.45	-	0.80	0.66	0.46	-	0.83	0.69	0.48	-	0.83	0.70	0.48	-	
	Delta T	17	15	11	-	18	15	12	-	18	15	12	-	18	15	12	-	18	15	12	-	16	14	11	-	
	KW	2.46	2.51	2.58	-	2.64	2.69	2.77	-	2.79	2.85	2.94	-	2.93	2.99	3.08	-	3.05	3.11	3.21	-	3.15	3.21	3.32	-	
	AMPS	9.1	9.3	9.6	-	9.8	10.1	10.4	-	10.7	10.9	11.3	-	11.4	11.7	12.0	-	12.1	12.4	12.8	-	12.8	13.1	13.6	-	
HI PR	142	153	162	-	159	172	181	-	181	195	206	-	207	222	235	-	232	250	264	-	257	276	292	-		
LO PR	65	69	75	-	68	73	79	-	71	76	82	-	75	79	87	-	78	83	91	-	81	86	94	-		
75	1425	MBh	34.4	35.4	38.3	41.1	33.6	34.6	37.4	40.2	32.8	33.7	36.5	39.2	32.0	32.9	35.6	38.2	30.4	31.3	33.8	36.3	28.1	29.0	31.4	33.7
		S/T	0.86	0.77	0.58	0.37	0.89	0.80	0.60	0.39	0.91	0.82	0.62	0.40	0.94	0.84	0.64	0.41	0.98	0.88	0.66	0.43	0.99	0.88	0.67	0.43
	Delta T	19	18	14	10	19	18	15	10	19	18	15	10	19	18	15	10	19	18	14	10	18	17	14	9	
	KW	2.49	2.54	2.62	2.69	2.67	2.72	2.81	2.89	2.83	2.89	2.98	3.07	2.97	3.03	3.13	3.23	3.09	3.15	3.25	3.36	3.19	3.26	3.36	3.47	
	AMPS	9.3	9.5	9.8	10.1	10.0	10.2	10.5	10.9	10.8	11.1	11.4	11.9	11.6	11.8	12.2	12.7	12.3	12.6	13.0	13.5	13.0	13.3	13.8	14.3	
	HI PR	145	156	164	171	162	175	184	192	185	199	210	219	210	226	239	249	236	254	269	280	261	281	297	310	
	LO PR	66	70	76	81	70	74	81	86	72	77	84	89	76	81	88	94	80	85	92	98	82	88	96	102	
	MBh	33.9	34.9	37.7	40.5	33.1	34.1	36.9	39.6	32.3	33.2	36.0	38.6	31.5	32.4	35.1	37.7	29.9	30.8	33.3	35.8	27.7	28.5	30.9	33.2	
	S/T	0.82	0.74	0.56	0.36	0.85	0.76	0.58	0.37	0.88	0.78	0.59	0.38	0.90	0.81	0.61	0.39	0.94	0.84	0.64	0.41	0.95	0.85	0.64	0.41	
	Delta T	20	19	15	10	20	19	15	11	20	19	15	11	21	19	15	11	21	19	15	11	19	17	14	10	
	KW	2.48	2.53	2.60	2.68	2.66	2.71	2.79	2.88	2.81	2.87	2.96	3.05	2.95	3.01	3.11	3.21	3.07	3.14	3.23	3.34	3.17	3.24	3.34	3.45	
	AMPS	9.2	9.4	9.7	10.1	9.9	10.2	10.5	10.9	10.8	11.0	11.4	11.8	11.5	11.8	12.1	12.6	12.2	12.5	12.9	13.4	12.9	13.2	13.7	14.2	
HI PR	144	155	163	170	161	173	183	191	183	197	208	217	209	225	237	247	235	253	267	278	259	279	295	307		
LO PR	65	70	76	81	69	73	80	85	72	76	83	89	75	80	88	93	79	84	92	98	82	87	95	101		
MBh	32.2	33.1	35.9	38.5	31.4	32.4	35.0	37.6	30.7	31.6	34.2	36.7	29.9	30.8	33.3	35.8	28.4	29.3	31.7	34.0	26.3	27.1	29.3	31.5		
S/T	0.79	0.71	0.53	0.34	0.82	0.73	0.55	0.36	0.84	0.75	0.57	0.37	0.87	0.77	0.59	0.38	0.90	0.80	0.61	0.39	0.91	0.81	0.61	0.39		
Delta T	21	19	16	11	21	19	16	11	21	19	16	11	21	20	16	11	21	19	16	11	20	18	15	10		
KW	2.44	2.49	2.56	2.64	2.62	2.67	2.75	2.83	2.77	2.83	2.91	3.00	2.91	2.97	3.06	3.16	3.02	3.09	3.18	3.28	3.12	3.19	3.29	3.39		
AMPS	9.0	9.2	9.5	9.9	9.7	10.0	10.3	10.7	10.6	10.8	11.2	11.6	11.3	11.5	11.9	12.4	12.0	12.3	12.7	13.2	12.7	13.0	13.4	13.9		
HI PR	141	151	160	167	158	170	179	187	180	193	204	213	205	220	232	242	230	248	261	273	254	274	289	301		
LO PR	64	68	74	79	68	72	79	84	70	75	82	87	74	79	86	91	77	82	90	96	80	85	93	99		

Shaded area is ACCA (TVA) conditions
 IDB: Entering Indoor Dry Bulb Temperature
 KW=Total system power
 High and low pressures are measured at the liquid and suction service valves.
 AMPMS=outdoor unit amps (comp.+fan)

COOLING PERFORMANCE DATA

GSH130361BC/C*

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130361** / ARUF49-00*-1* / ARUF36421A*

Table with columns for IDB*, Airflow, and performance metrics (MBh, S/T, Delta T, KW, AMPS, HI PR, LO PR) at various temperatures (65, 75, 85, 95, 105, 115) for models 80, 1425, and 1125.

Table with columns for IDB*, Airflow, and performance metrics (MBh, S/T, Delta T, KW, AMPS, HI PR, LO PR) at various temperatures (85, 95, 105, 115) for models 1425, 1275, and 1125.

Shaded area is AHRI Rating Conditions. High and low pressures are measured at the liquid and suction service valves.

KW=Total system power

IDB: Entering Indoor Dry Bulb Temperature

AMPS=Outdoor unit amps (comp.+fan)

COOLING PERFORMANCE DATA

GSH130481B*

EXPANDED PERFORMANCE DATA

COOLING OPERATION

MODEL: GSH130481B* / AR*F4860*6**

IDB*	Airflow	Outdoor Ambient Temperature																									
		65			75			85			95			105			115										
		59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71	59	63	67	71						
80	1400	MBh	45.1	46.1	49.2	52.6	44.0	45.0	48.1	51.4	43.0	43.9	46.9	50.2	41.9	42.8	45.8	48.9	39.8	40.7	43.5	46.5	36.9	37.7	40.3	43.1	
		S/T	0.86	0.80	0.65	0.49	0.89	0.83	0.68	0.51	0.91	0.85	0.69	0.52	0.94	0.88	0.72	0.54	0.97	0.97	0.91	0.74	0.56	0.98	0.92	0.75	0.56
		Delta T	25	24	21	17	26	25	21	17	26	25	21	17	26	25	22	17	25	24	21	17	24	23	20	16	
		KW	2.65	2.72	2.82	2.93	2.89	2.97	3.08	3.20	3.11	3.19	3.31	3.44	3.30	3.38	3.51	3.65	3.46	3.46	3.55	3.68	3.83	3.60	3.69	3.83	3.98
		AMPS	9.8	10.0	10.4	10.7	10.6	10.8	11.1	11.5	11.4	11.7	12.1	12.5	12.2	12.5	12.9	13.3	12.9	12.9	13.2	13.6	14.1	13.6	14.0	14.4	14.9
	1600	HI PR	120	129	136	142	134	144	152	159	153	164	173	181	174	187	197	206	196	210	222	232	216	232	245	256	
		LO PR	60	64	70	75	64	68	74	79	66	71	77	82	70	74	81	86	73	78	85	90	76	80	88	94	
		MBh	48.8	49.9	53.3	57.0	47.7	48.7	52.1	55.7	46.6	47.6	50.8	54.3	45.4	46.4	49.6	53.0	43.2	44.1	47.1	50.4	40.0	40.8	43.6	46.7	
		S/T	0.89	0.83	0.68	0.51	0.92	0.86	0.70	0.52	0.94	0.88	0.72	0.54	0.97	0.91	0.74	0.56	1.00	0.95	0.77	0.58	1.00	0.96	0.78	0.58	
		Delta T	25	24	21	17	25	24	21	17	25	24	21	17	25	24	21	17	25	24	21	17	23	22	19	16	
1800	KW	2.73	2.80	2.90	3.01	2.98	3.06	3.17	3.29	3.20	3.28	3.41	3.54	3.40	3.48	3.62	3.76	3.56	3.65	3.79	3.94	3.71	3.80	3.95	4.10		
	AMPS	10.1	10.3	10.6	11.0	10.8	11.1	11.4	11.8	11.7	12.0	12.4	12.8	12.5	12.8	13.2	13.7	13.3	13.6	14.0	14.5	14.0	14.4	14.8	15.4		
	HI PR	123	133	140	146	138	149	157	164	157	169	179	186	179	193	204	212	202	217	229	239	223	240	253	264		
	LO PR	62	66	72	77	66	70	76	81	68	73	79	85	72	76	84	89	75	80	88	93	78	83	91	96		
	MBh	50.3	51.4	54.9	58.7	49.1	50.2	53.6	57.3	48.0	49.0	52.4	56.0	46.8	47.8	51.1	54.6	44.4	45.4	48.5	51.9	41.2	42.1	44.9	48.1		
85	1400	S/T	0.93	0.87	0.71	0.53	0.96	0.90	0.74	0.55	1.00	0.93	0.75	0.56	1.00	0.96	0.78	0.58	1.00	1.00	0.81	0.60	1.00	1.00	0.82	0.61	
		Delta T	24	23	20	16	24	23	20	16	24	23	20	16	24	23	20	16	23	23	20	16	21	21	19	15	
		KW	2.76	2.82	2.93	3.04	3.01	3.09	3.20	3.32	3.23	3.31	3.44	3.57	3.43	3.52	3.65	3.79	3.60	3.69	3.83	3.98	3.74	3.84	3.98	4.14	
		AMPS	10.2	10.4	10.7	11.1	10.9	11.2	11.5	11.9	11.8	12.1	12.5	12.9	12.6	12.9	13.3	13.8	13.4	13.7	14.1	14.7	14.1	14.5	15.0	15.5	
		HI PR	121	130	137	143	136	146	154	161	154	166	175	183	176	189	199	208	197	213	224	234	218	235	248	259	
	1600	LO PR	61	65	71	76	65	69	75	80	67	71	78	83	70	75	82	87	74	79	86	91	76	81	89	94	
		MBh	49.7	50.6	53.0	56.6	48.5	49.5	51.8	55.3	47.4	48.3	50.6	54.0	46.2	47.1	49.3	52.6	43.9	44.8	46.9	50.0	40.7	41.5	43.4	46.3	
		S/T	0.93	0.90	0.81	0.66	0.96	0.93	0.84	0.68	0.99	0.95	0.86	0.70	1.00	0.98	0.89	0.72	1.00	1.00	0.92	0.75	1.00	1.00	0.93	0.75	
		Delta T	27	26	25	21	27	26	25	22	27	26	25	22	27	27	25	22	25	26	25	22	23	24	23	20	
		KW	2.76	2.82	2.93	3.04	3.01	3.09	3.20	3.32	3.23	3.31	3.44	3.57	3.43	3.52	3.65	3.79	3.60	3.69	3.83	3.98	3.74	3.84	3.98	4.14	
1800	AMPS	10.2	10.4	10.7	11.1	10.9	11.2	11.5	11.9	11.8	12.1	12.5	12.9	12.6	12.9	13.3	13.8	13.4	13.7	14.1	14.7	14.1	14.5	15.0	15.5		
	HI PR	125	134	141	148	140	150	159	166	159	171	181	188	181	195	206	214	204	219	231	241	225	242	256	267		
	LO PR	63	67	73	78	67	71	77	82	69	74	80	86	73	77	84	90	76	81	88	94	79	84	91	97		
	MBh	51.2	52.2	54.6	58.3	50.0	51.0	53.4	56.9	48.8	49.7	52.1	55.6	47.6	48.5	50.8	54.2	45.2	46.1	48.3	51.5	41.9	42.7	44.7	47.7		
	S/T	0.98	0.94	0.85	0.69	1.00	0.98	0.88	0.71	1.00	1.00	0.90	0.73	1.00	1.00	0.93	0.76	1.00	1.00	0.97	0.78	1.00	1.00	0.98	0.79		
1800	Delta T	25	25	24	21	26	25	24	21	25	25	24	21	24	25	24	21	23	24	24	21	21	22	22	19		
	KW	2.78	2.85	2.96	3.07	3.04	3.11	3.23	3.36	3.26	3.35	3.47	3.61	3.46	3.55	3.69	3.83	3.63	3.73	3.87	4.02	3.78	3.88	4.02	4.18		
	AMPS	10.3	10.5	10.8	11.2	11.0	11.3	11.6	12.1	11.9	12.2	12.6	13.1	12.7	13.0	13.4	13.9	13.5	13.8	14.3	14.8	14.3	14.6	15.1	15.6		
	HI PR	126	135	143	149	141	152	160	167	160	173	182	190	183	197	208	217	206	221	234	244	227	244	258	269		
	LO PR	64	68	74	79	67	71	78	83	70	74	81	86	73	78	85	91	77	82	89	95	79	85	92	98		

* Entering Indoor Dry Bulb Temperature
 High and low pressures are measured at the liquid and suction service valves.
 NOTE: Shaded area is AHRI Rating Conditions

HEATING PERFORMANCE DATA

EXPANDED PERFORMANCE DATA

MODEL: GSH130181** / AR*F182416**

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	21.1	20.0	18.8	17.6	16.8	16.3	15.1	13.9	10.8	10.0	9.2	8.7	8.4	7.5	6.7	5.8	5.0	4.1
Delta T	30.1	28.5	26.8	25.1	23.9	23.2	21.5	19.9	15.4	14.3	13.1	12.4	11.9	10.7	9.5	8.3	7.1	5.8
KW	1.55	1.53	1.50	1.47	1.45	1.44	1.41	1.38	1.36	1.33	1.30	1.28	1.27	1.24	1.21	1.18	1.15	1.12
AMPS	7.2	6.7	6.3	5.9	5.7	5.6	5.3	5.0	4.8	4.6	4.4	4.3	4.2	4.0	3.7	3.5	3.3	3.0
COP	3.98	3.84	3.68	3.51	3.39	3.31	3.14	2.96	2.34	2.21	2.08	1.99	1.93	1.78	1.61	1.44	1.26	1.06
EER	13.6	13.1	12.6	12.0	11.6	11.3	10.7	10.1	8.0	7.5	7.1	6.8	6.6	6.1	5.5	4.9	4.3	3.6
HI PR	252	242	232	222	217	213	205	196	188	180	173	168	165	159	153	147	141	136
LO PR	82	76	72	66	62	60	55	49	44	39	35	32	31	26	23	19	17	13

EXPANDED PERFORMANCE DATA

MODEL: GSH130241** / AR*F182416**

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	27.7	26.2	24.6	23.0	22.0	21.3	19.8	18.3	15.0	13.8	12.7	12.0	11.6	10.4	9.2	8.0	6.8	5.6
Delta T	30.1	28.5	26.8	25.1	24.0	23.2	21.6	19.9	16.3	15.0	13.8	13.1	12.6	11.3	10.0	8.7	7.5	6.1
KW	1.99	1.95	1.91	1.87	1.85	1.84	1.80	1.76	1.70	1.66	1.62	1.60	1.59	1.55	1.51	1.48	1.44	1.40
AMPS	9.0	8.3	7.8	7.3	7.1	6.9	6.5	6.2	5.9	5.7	5.4	5.3	5.2	4.9	4.6	4.3	4.0	3.6
COP	4.07	3.93	3.77	3.60	3.47	3.40	3.22	3.03	2.58	2.44	2.29	2.19	2.13	1.96	1.78	1.59	1.39	1.17
EER	13.9	13.4	12.9	12.3	11.9	11.6	11.0	10.4	8.8	8.3	7.8	7.5	7.3	6.7	6.1	5.4	4.8	4.0
HI PR	238	228	220	210	205	201	193	186	178	170	163	159	156	150	145	139	134	129
LO PR	80	74	69	63	60	58	53	47	43	38	33	31	30	25	22	18	16	13

EXPANDED PERFORMANCE DATA

MODEL: GSH130301** - ARUF363616B*

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	32.2	30.5	28.7	26.8	25.6	24.8	23.0	21.2	19.1	17.6	16.2	15.3	14.7	13.2	11.7	10.2	8.7	7.1
Delta T	29.1	27.5	25.9	24.2	23.1	22.4	20.8	19.2	17.2	15.9	14.6	13.8	13.3	11.9	10.6	9.2	7.9	6.5
KW	2.17	2.18	2.19	2.19	2.20	2.20	2.21	2.22	1.85	1.87	1.89	1.90	1.91	1.93	1.95	1.97	1.99	2.01
AMPS	8.1	8.2	8.3	8.4	8.5	8.5	8.6	8.7	8.8	8.8	8.9	8.9	8.9	9.0	9.1	9.1	9.2	9.3
COP	4.35	4.10	3.84	3.57	3.41	3.29	3.05	2.80	3.02	2.76	2.51	2.36	2.26	2.01	1.76	1.52	1.28	1.04
EER	14.9	14.0	13.1	12.2	11.6	11.3	10.4	9.6	10.3	9.4	8.6	8.1	7.7	6.9	6.0	5.2	4.4	3.6
HI PR	232	223	214	205	200	196	189	181	173	166	159	155	152	147	141	135	130	126
LO PR	76	71	66	61	58	55	51	45	41	37	32	30	29	24	21	18	15	12

EXPANDED PERFORMANCE DATA

MODEL: GSH130361BC/C[A-B] / ARUF49-00*-1* / ARUF36421A*

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	40.2	38.1	35.8	33.5	32.0	31.0	28.8	26.6	19.9	18.4	16.9	16.0	15.4	13.8	12.3	10.7	9.1	7.5
Delta T	29.2	27.7	26.0	24.3	23.2	22.5	20.9	19.3	14.5	13.4	12.3	11.6	11.2	10.0	8.9	7.8	6.6	5.4
KW	2.90	2.84	2.79	2.73	2.70	2.68	2.63	2.58	2.42	2.37	2.32	2.29	2.27	2.22	2.17	2.12	2.07	2.02
AMPS	13.0	12.1	11.3	10.7	10.3	10.1	9.5	9.1	8.7	8.3	7.9	7.7	7.6	7.3	6.8	6.4	5.9	5.4
COP	4.07	3.92	3.76	3.59	3.46	3.39	3.21	3.02	2.41	2.27	2.14	2.05	1.99	1.82	1.65	1.48	1.29	1.08
EER	13.9	13.4	12.9	12.3	11.8	11.6	11.0	10.3	8.2	7.8	7.3	7.0	6.8	6.2	5.7	5.0	4.4	3.7
HI PR	230	221	212	203	198	194	187	179	172	164	158	154	151	145	140	134	129	125
LO PR	80	74	70	64	60	58	54	48	43	38	34	31	30	26	22	19	16	13

High pressure is measured at the suction service valve (the larger valve).

AMPS = Outdoor unit amps (comp.+fan)

Low pressure is measured at the gauge port connection.

KW = Total system power

Calculations are based on nominal CFM and 70 °F indoor dry bulb.

*Note: Shaded area is AHRI Rating Conditions at 47° outdoor ambient temperature

HEATING PERFORMANCE DATA

EXPANDED PERFORMANCE DATA

MODEL: GSH13042-1A* / ARUF49-00*-1* / ARUF36421A*

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	49.0	46.4	43.7	40.8	39.0	37.8	35.1	32.4	28.7	26.5	24.4	23.0	22.1	19.9	17.6	15.4	13.1	10.7
Delta T	30.3	28.6	27.0	25.2	24.1	23.3	21.7	20.0	17.7	16.3	15.0	14.2	13.7	12.3	10.9	9.5	8.1	6.6
KW	3.59	3.52	3.46	3.39	3.35	3.32	3.26	3.19	3.08	3.01	2.95	2.91	2.88	2.82	2.75	2.69	2.62	2.56
AMPS	16.7	15.5	14.5	13.6	13.1	12.9	12.1	11.5	11.0	10.5	10.0	9.8	9.7	9.2	8.6	8.1	7.4	6.7
COP	4.00	3.86	3.70	3.53	3.41	3.33	3.15	2.97	2.72	2.57	2.42	2.31	2.25	2.06	1.87	1.67	1.46	1.23
EER	13.7	13.2	12.6	12.1	11.6	11.4	10.8	10.1	9.3	8.8	8.3	7.9	7.7	7.1	6.4	5.7	5.0	4.2
HI PR	237	227	218	209	204	200	192	184	177	169	162	158	155	149	144	138	133	128
LO PR	75	70	65	60	57	54	50	45	40	36	32	29	28	24	21	17	15	12

EXPANDED PERFORMANCE DATA

MODEL: GSH13048-1A* / ARUF61-00*-1* / ARUF48601A*

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	54.1	51.2	48.2	45.0	43.0	41.7	38.7	35.7	33.6	31.1	28.6	27.0	26.0	23.3	20.7	18.0	15.4	12.6
Delta T	31.3	29.6	27.9	26.1	24.9	24.1	22.4	20.7	19.5	18.0	16.5	15.6	15.0	13.5	12.0	10.4	8.9	7.3
KW	3.84	3.77	3.70	3.63	3.59	3.56	3.49	3.42	3.34	3.27	3.20	3.16	3.13	3.06	3.00	2.93	2.86	2.79
AMPS	18.1	16.8	15.7	14.8	14.3	14.0	13.2	12.5	12.0	11.5	10.9	10.7	10.5	10.0	9.3	8.8	8.1	7.3
COP	4.12	3.98	3.81	3.63	3.51	3.43	3.24	3.05	2.95	2.78	2.62	2.50	2.43	2.23	2.02	1.80	1.58	1.32
EER	14.1	13.6	13.0	12.4	12.0	11.7	11.1	10.4	10.1	9.5	8.9	8.5	8.3	7.6	6.9	6.2	5.4	4.5
HI PR	224	215	207	198	193	189	182	175	167	160	154	150	147	142	136	131	126	121
LO PR	74	69	64	59	56	54	49	44	40	35	31	29	28	24	20	17	15	12

EXPANDED PERFORMANCE DATA

MODEL: GSH13060-1A* / ARUF61-00*-1* / ARUF48601A*

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	69.8	66.0	62.2	58.1	55.5	53.8	50.0	46.1	43.6	40.3	37.1	35.0	33.7	30.2	26.8	23.4	20.0	16.3
Delta T	35.9	34.0	32.0	29.9	28.5	27.7	25.7	23.7	22.4	20.7	19.1	18.0	17.3	15.6	13.8	12.0	10.3	8.4
KW	5.04	4.95	4.85	4.75	4.70	4.66	4.57	4.47	4.30	4.21	4.11	4.06	4.02	3.93	3.84	3.75	3.65	3.56
AMPS	22.7	21.0	19.6	18.4	17.8	17.4	16.4	15.6	14.9	14.2	13.5	13.2	13.0	12.4	11.5	10.8	10.0	9.0
COP	4.05	3.91	3.75	3.58	3.46	3.38	3.20	3.02	2.97	2.80	2.64	2.52	2.45	2.25	2.05	1.83	1.60	1.34
EER	13.8	13.4	12.8	12.2	11.8	11.5	10.9	10.3	10.1	9.6	9.0	8.6	8.4	7.7	7.0	6.2	5.5	4.6
HI PR	255	244	235	225	219	215	207	198	190	182	174	170	167	161	155	148	143	138
LO PR	75	70	65	60	57	54	50	45	40	36	32	29	28	24	21	17	15	12

High pressure is measured at the suction service valve (the larger valve).

Low pressure is measured at the gauge port connection.

Calculations are based on nominal CFM and 70 °F indoor dry bulb.

AMPS = Outdoor unit amps (comp.+fan)

KW = Total system power

HEATING PERFORMANCE DATA

EXPANDED PERFORMANCE DATA

MODEL: GSH130421B* / AR*F374316B*

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	51.0	48.3	45.5	42.5	40.6	39.3	36.5	33.7	29.2	26.9	24.8	23.4	22.6	20.2	17.9	15.6	13.4	10.9
Delta T	37.5	35.5	33.4	31.2	29.8	28.9	26.8	24.8	21.4	19.8	18.2	17.2	16.6	14.9	13.2	11.5	9.8	8.0
KW	3.61	3.53	3.45	3.36	3.32	3.28	3.20	3.12	3.07	2.99	2.91	2.86	2.83	2.74	2.66	2.58	2.49	2.41
AMPS	17.9	16.6	15.5	14.6	14.1	13.8	13.1	12.4	11.9	11.4	10.9	10.6	10.5	10.0	9.3	8.8	8.2	7.4
COP	4.13	4.00	3.86	3.70	3.58	3.51	3.34	3.16	2.78	2.64	2.50	2.40	2.34	2.16	1.97	1.78	1.57	1.33
EER	14.1	13.7	13.2	12.6	12.2	12.0	11.4	10.8	9.5	9.0	8.5	8.2	8.0	7.4	6.7	6.1	5.4	4.5
HIPR	246	235	226	216	211	207	199	191	183	175	168	164	161	155	149	143	138	133
LO PR	75	70	65	60	57	54	50	45	40	36	32	29	28	24	21	17	15	12

EXPANDED PERFORMANCE DATA

MODEL: GSH130481B* / AR*F4860*6**

HEATING OPERATION

	Outdoor Ambient Temperature																	
	65	60	55	50	47	45	40	35	30	25	20	17	15	10	5	0	-5	-10
MBh	57.9	54.8	51.6	48.2	46.0	44.6	41.4	38.2	34.8	32.2	29.6	28.0	26.9	24.2	21.4	18.7	15.9	13.1
Delta T	33.5	31.7	29.8	27.9	26.6	25.8	24.0	22.1	20.2	18.6	17.1	16.2	15.6	14.0	12.4	10.8	9.2	7.6
KW	4.35	4.25	4.15	4.05	3.99	3.95	3.85	3.75	3.49	3.40	3.30	3.25	3.21	3.11	3.02	2.93	2.83	2.74
AMPS	18.8	17.4	16.3	15.3	14.8	14.5	13.7	13.0	12.5	11.9	11.4	11.1	11.0	10.4	9.8	9.2	8.5	7.7
COP	3.89	3.77	3.64	3.48	3.37	3.30	3.15	2.98	2.92	2.77	2.63	2.52	2.46	2.27	2.08	1.87	1.65	1.40
EER	13.3	12.9	12.4	11.9	11.5	11.3	10.7	10.2	10.0	9.5	9.0	8.6	8.4	7.8	7.1	6.4	5.6	4.8
HIPR	257	246	237	226	221	217	208	200	192	183	176	171	168	162	156	149	144	139
LO PR	75	69	65	60	56	54	50	44	40	36	31	29	28	24	21	17	15	12

High pressure is measured at the suction service valve (the larger valve).

Low pressure is measured at the gauge port connection.

Calculations are based on nominal CFM and 70 °F indoor dry bulb.

AMPS = Outdoor unit amps (comp.+fan)

KW = Total system power

PERFORMANCE TEST

All data based upon listed indoor dry bulb temperature. .00 inches external static pressure on coil of outdoor section. Indoor air cubic feet per minute (CFM) as listed in the Performance Data Sheets:

If conditions vary from this, results will change as follows:

1. As indoor dry bulb temperatures increase, a slight increase will occur in indoor air temperature drop (Delta T). Low and high side pressures and power will not change.
2. As indoor CFM decreases, a slight increase will occur in indoor temperature drop (Delta T). A slight decrease will occur in low and high side pressures and power.

A properly operating unit should be within plus or minus **2 degrees** of the subcooling value shown in the Heat Pump Specifications.

A properly operating unit should be within plus or minus **3 degrees** of the typical (Delta T) value shown.

A properly operating unit should be within plus or minus **7 PSIG** of the **HI PR** shown.

A properly operating unit should be within plus or minus **3 PSIG** of the **LO PR** shown.

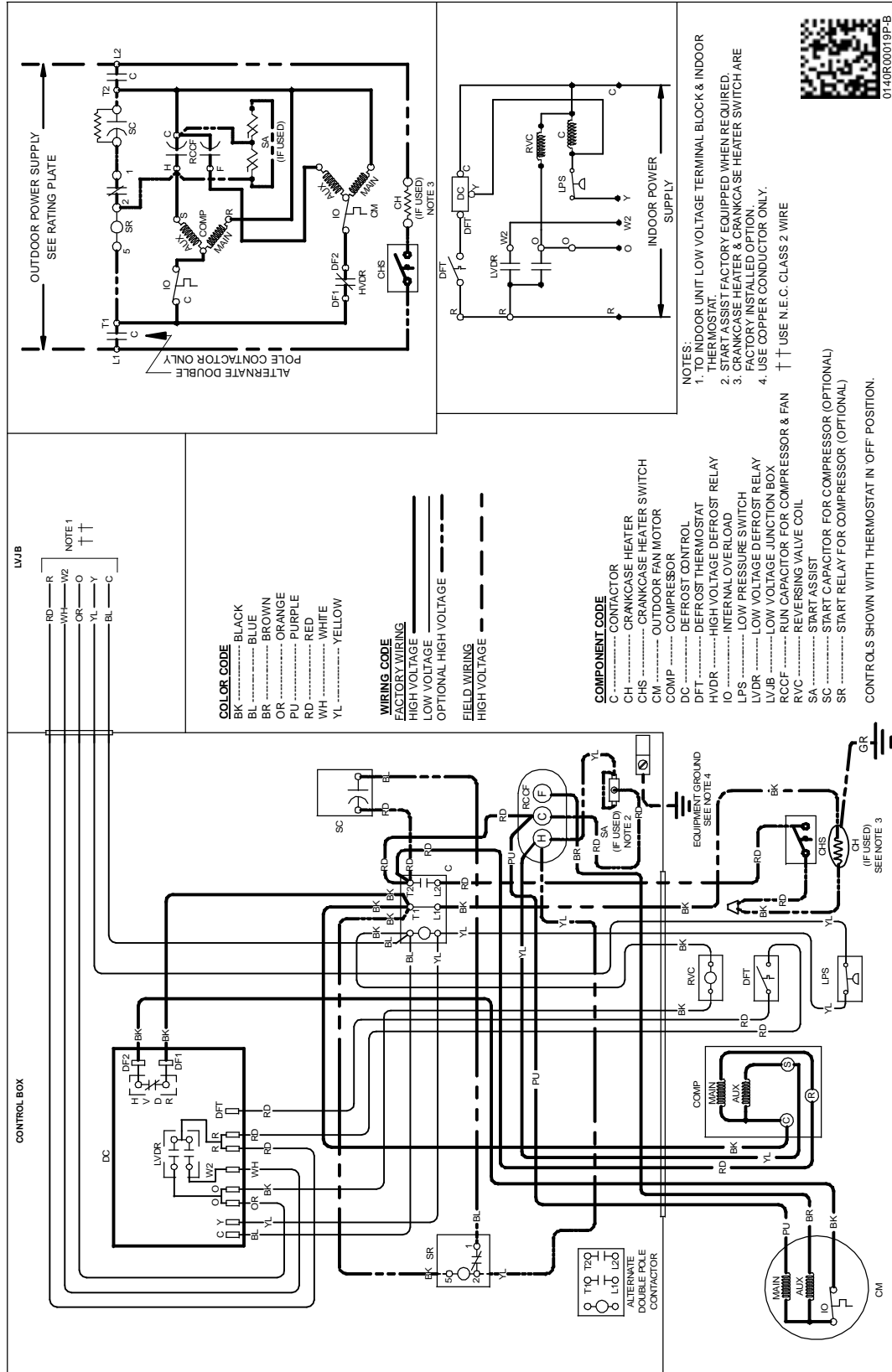
A properly operating unit should be within plus or minus **3 Amps** of the typical value shown.

WIRING DIAGRAMS

GSH130[42AF/AG/B*, 48AE/AF, 60AC] GSH130[18/24/36]1B*/C*

WARNING

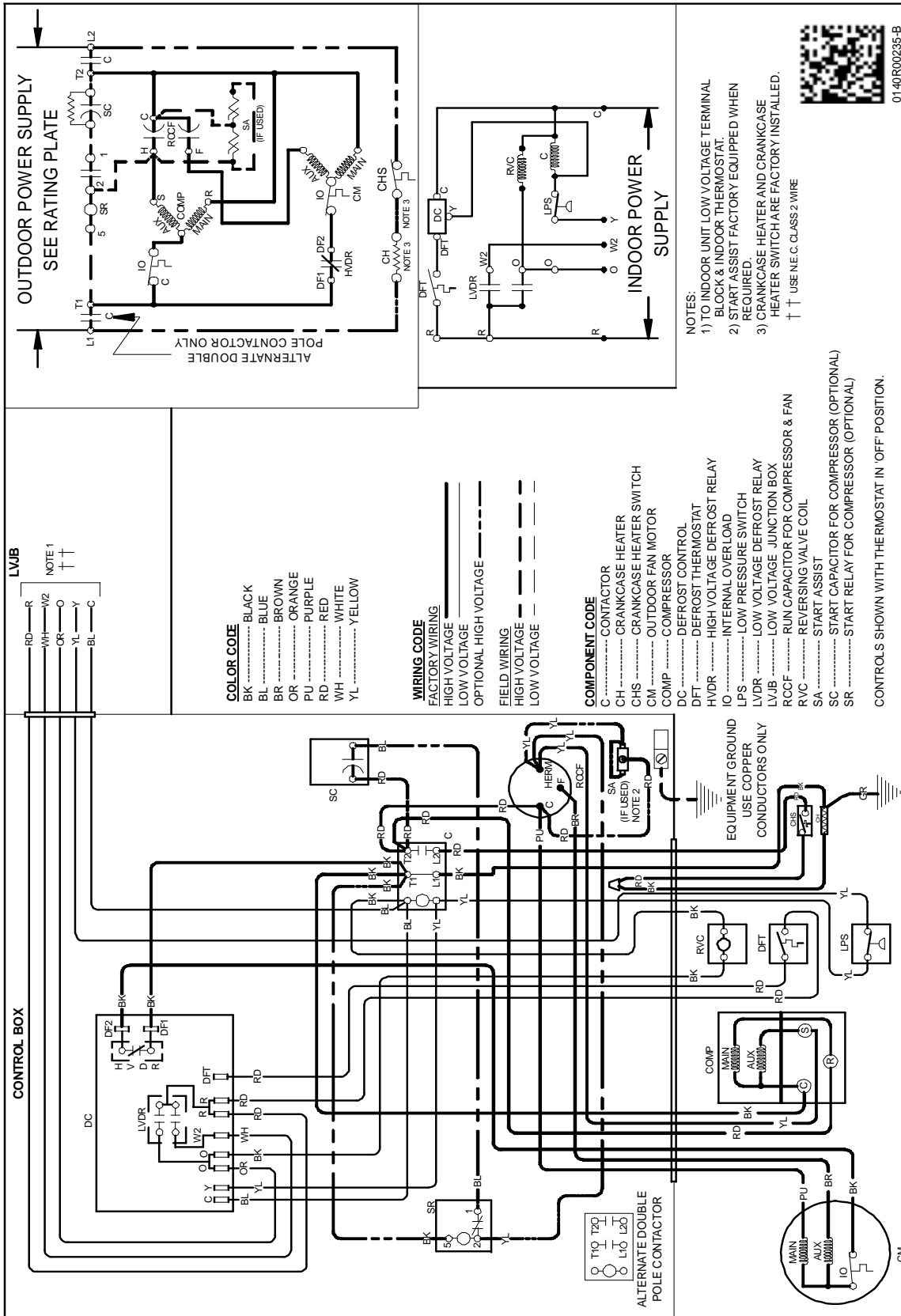
HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.

WARNING

HIGH VOLTAGE!
DISCONNECT ALL POWER BEFORE SERVICING OR INSTALLING THIS UNIT. MULTIPLE POWER SOURCES MAY BE PRESENT. FAILURE TO DO SO MAY CAUSE PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.



OUTDOOR POWER SUPPLY
SEE RATING PLATE

ALTERNATE DOUBLE
POLE CONTACTOR ONLY

LV1B

RD R
WH V2
OR O
YL Y
BL C

NOTE 1
↑↑

COLOR CODE
BK BLACK
BL BLUE
BR BROWN
OR ORANGE
PU PURPLE
RD RED
WH WHITE
YL YELLOW

WIRING CODE
HIGH VOLTAGE
LOW VOLTAGE
OPTIONAL HIGH VOLTAGE
FIELD WIRING
HIGH VOLTAGE
LOW VOLTAGE

COMPONENT CODE
C CONTACTOR
CH CRANKCASE HEATER
CHS CRANKCASE HEATER SWITCH
CM OUTDOOR FAN MOTOR
COMP COMPRESSOR
DC DEFROST CONTROL
DFT DEFROST THERMOSTAT
HVD HIGH VOLTAGE DEFROST RELAY
IO INTERNAL OVERLOAD
LVD LOW PRESSURE SWITCH
LVDR LOW VOLTAGE DEFROST RELAY
LVJB LOW VOLTAGE JUNCTION BOX
RCCF RUN CAPACITOR FOR COMPRESSOR & FAN
RVC REVERSING VALVE COIL
SA START ASSIST
SC START CAPACITOR FOR COMPRESSOR (OPTIONAL)
SR START RELAY FOR COMPRESSOR (OPTIONAL)

CONTROLS SHOWN WITH THERMOSTAT IN 'OFF' POSITION.

NOTES:
1) TO INDOOR UNIT LOW VOLTAGE TERMINAL BLOCK & INDOOR THERMOSTAT.
2) START ASSIST FACTORY EQUIPPED WHEN REQUIRED.
3) CRANKCASE HEATER AND CRANKCASE HEATER SWITCH ARE FACTORY INSTALLED.
↑↑ USE N.E.C. CLASS 2 WIRE



0140R00235-B

Wiring is subject to change. Always refer to the wiring diagram on the unit for the most up-to-date wiring.