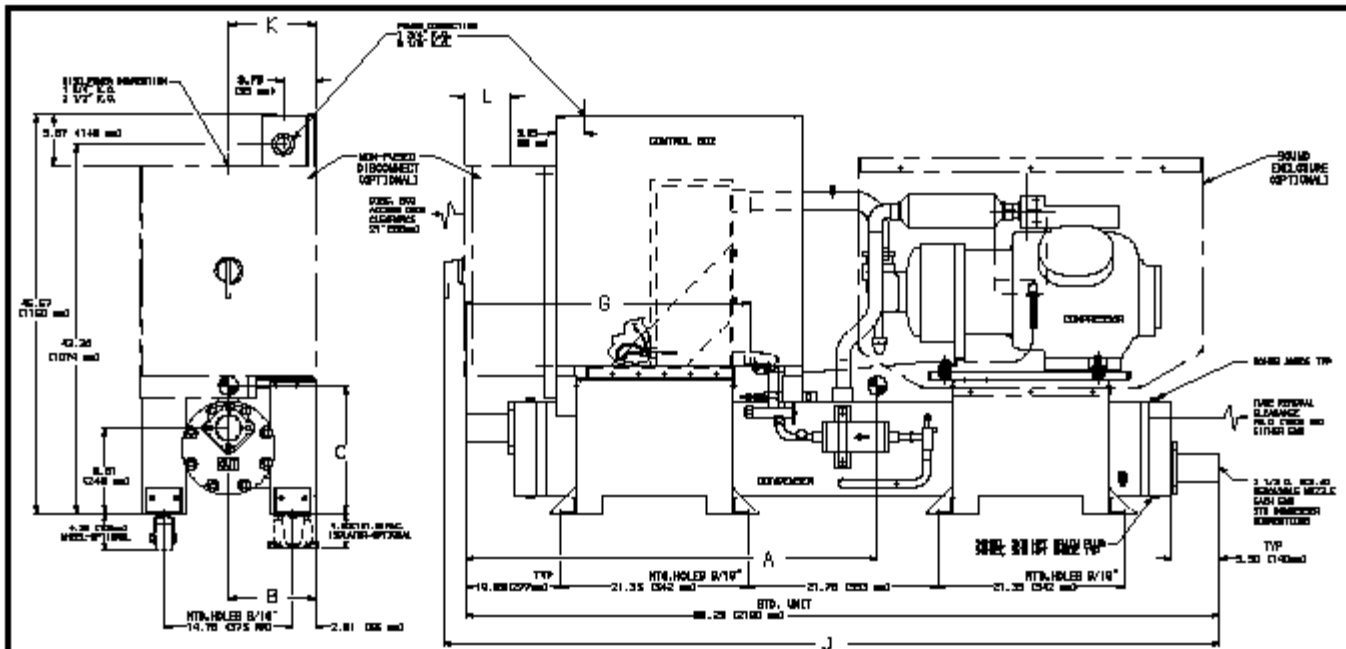


Base unit dimensions — 30HWC,S018-040 (fluid-cooled)



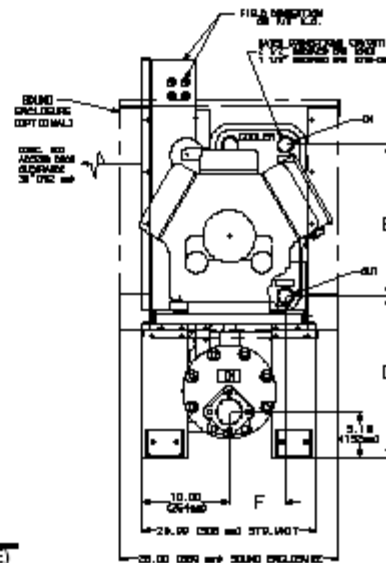
UNIT 30HWC.S	DIMENSIONS — in. (mm)						
	A	B	C	D	E	F	G
018	47.50 (1206)	9.90 (251)	14.00 (356)	18.15 (461)	17.95 (456)	6.69 (170)	34.20 (869)
025	48.30 (1227)	9.90 (251)	15.50 (394)	18.15 (461)	17.95 (456)	6.69 (170)	34.20 (869)
028	48.00 (1219)	10.00 (254)	15.80 (401)	18.15 (461)	17.95 (456)	6.69 (170)	34.20 (869)
035	48.20 (1224)	10.00 (254)	15.90 (404)	18.15 (461)	17.95 (456)	6.69 (170)	34.20 (869)
040	47.80 (1214)	10.00 (254)	15.90 (404)	18.45 (469)	17.35 (441)	6.40 (163)	34.94 (837)

VOLTAGE MODEL NUMBERS

MODEL	VOLT-Hz
100	575-60
200	380-60
500	208/230-60
600	460-60
900	400-50

OPERATING WEIGHT

UNIT 30HWC.S	OPERATING WEIGHT lbs (kg)
018	1231 (554)
025	1358 (611)
028	1484 (668)
035	1508 (679)
040	1702 (766)



DISCONNECT (Amps)	LOCATION — in. (mm)			MODEL 30HWC.S (SEE VOLTAGE MODEL NUMBERS TABLE)				
	J	K	L	018	025	028	035	040
80	83.11 (2111)	4.38 (111)	3.33 (85)	100,200 600,900	100,200 600,900	100,200 600,900	100,200 600,900	100
100	85.11 (2162)	5.00 (127)	4.33 (110)	500	500	500	—	200,600,900
200	89.24 (2267)	10.00 (254)	7.46 (189)	—	—	—	500	500

WEIGHT DISTRIBUTION AT EACH MOUNTING HOLE — lbs (kg)

Unit 30HWC.S	Compr. End (4 Places)	Control Box End (4 Places)
018	171 (77.6)	136 (61.7)
025	196 (88.9)	144 (65.3)
028	211 (95.7)	160 (72.6)
035	216 (98.0)	161 (73.0)
040	240 (108.9)	185 (83.9)

NOTES:

- Operating weight includes weight of water and refrigerant.
- Denotes center of gravity.
- Denotes accessory or factory-installed option.
- Dimensions () are in millimeters and weights () are in kilograms.

Application data



Leveling unit

To ensure proper oil return, be sure that unit is level, particularly in its major lengthwise dimension, as compressor oil return piping runs in that direction.

It should be determined prior to installation if any special treatment is required to ensure a level installation.

Cooler fluid temperature

1. Maximum sustained leaving chilled-fluid temperature (LCWT) is 60 F (16 C). For sustained operation, entering-fluid temperature should not exceed 75 F (24 C). Unit can start and pull down with up to 95 F (35 C) entering-fluid temperature due to MOP (maximum operating pressure) feature of the expansion valve.
2. Minimum LCWT for standard units is 40 F (4 C). Lower LCWT can be used on medium temperature brine applications. Refer to Medium Temperature Brine Applications section below. For applications with ratings below 40 F (4 C) on standard units, contact your local Carrier representative.

Medium Temperature Brine Applications

In all brine duty applications, a suitable brine (or antifreeze and water solution) must be provided to ensure freeze protection. The solution crystallization point of the brine should be below the suction temperature of the cooler, and at least 15° F (8.3° C) below the leaving brine temperature. The brine solution must also be properly inhibited to provide suitable corrosion protection.

NOTE: Medium temperature brine is a special order option on 30HK,HL units.

Condenser (30HWB,C,S and 30HK units) water temperature

1. Maximum leaving condenser-water temperature is 130 F (54 C) for 30HW 50 Hz units, and 104 F (40 C) for 60 Hz units and 30HK 50 Hz units.
2. Minimum entering condenser-water temperature without condenser flow regulation is 70 F (21 C).

Cooler and water-cooled condenser flow range

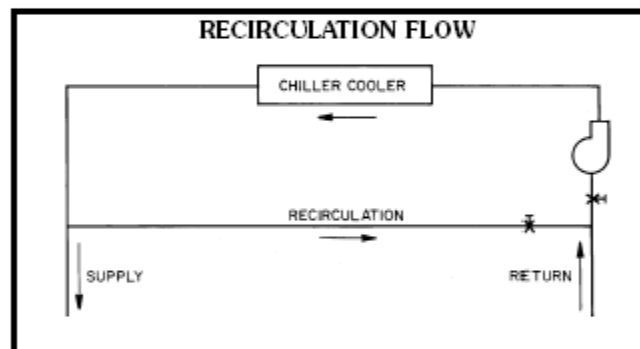
Ratings and performance data in this publication are for a cooling temperature rise of 10° F (5.6° C) and are suitable for a range from 5 to 15° F (2.8 to 8.3° C) temperature rise without adjustment. Units may be operated at a different temperature range, provided flow limits are not

exceeded and corrections to capacity, etc. are made. For minimum flow rates, see Minimum Cooler and Condenser Flow Rates and Minimum Loop Volume table. High flow rate is limited by pressure drop that can be tolerated. If another temperature rise is used, apply LCWT correction as given in Capacity Correction and Selection Procedure sections on pages 18 and 20.

Minimum cooler flow — The minimum cooler flow (maximum cooler temperature rise) for standard units is shown in Minimum Cooler and Condenser Flow Rates and Minimum Loop Volume table below. When gpm (L/s) required is lower (or rise is higher), follow recommendations below:

- a. Multiple smaller chillers may be applied in series, each providing a portion of the design temperature rise.
- b. Chilled fluid may be recirculated to raise flow rate. However, the mixed temperature entering the cooler must be maintained at a minimum of at least 5° F (2.8° C) above the leaving chilled fluid temperature.
- c. On 30HK,HL units, special baffling is required to allow minimum flow rate to be reduced to 12%.

NOTE: Recirculation flow is shown below.



Maximum cooler flow (5 gpm/ton or < 5° F rise [0.09 L/s · kW or < 2.7° C rise]) — The maximum cooler flow results in practical maximum pressure drop through cooler.

The return fluid may bypass the cooler to keep pressure drop through the cooler within acceptable limits. This permits a higher ΔT with lower fluid flow through cooler and mixing after cooler.

NOTE: Bypass flow is shown on page 17.

MINIMUM COOLER AND CONDENSER FLOW RATES AND MINIMUM LOOP VOLUME

UNIT SIZE	COOLER		CONDENSER*		MINIMUM COOLER LOOP VOLUME†	
	Gal./Min	L/s	Gal./Min	L/s	Gal.	L
30HW018	22.5	1.4	22.5	1.4	44	167
30HW025	30.0	1.9	30.0	1.9	59	223
30HW028	37.5	2.4	37.5	2.4	76	288
30HW035	45.0	2.8	45.0	2.8	85	322
30HW040	57.0	3.6	57.0	3.6	113	428
30HK040	56.0	3.5	67.0	4.2	120	454
30HK,HL050	68.0	4.3	76.0	4.8	148	560
30HK,HL060	68.0	4.3	83.0	5.2	174	659

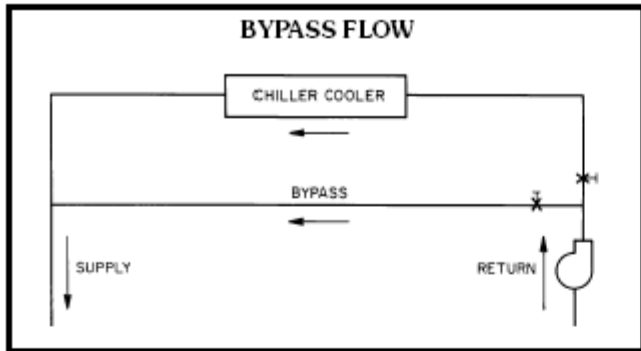
LEGEND

- ARI — Air Conditioning and Refrigeration Institute
- N — Liters per kW
- V — Gallons per ton

*30HWB,C,S, and 30HK only.
†Minimum system fluid volumes.

NOTES:
Gallons = V x ARI capacity in tons.
Liters = N x ARI capacity in kW.

APPLICATION	V	N
Normal Air Conditioning	3	3.25
Process Type Cooling	6 to 10	6.5 to 10.8
Low Ambient Operation	6 to 10	6.5 to 10.8

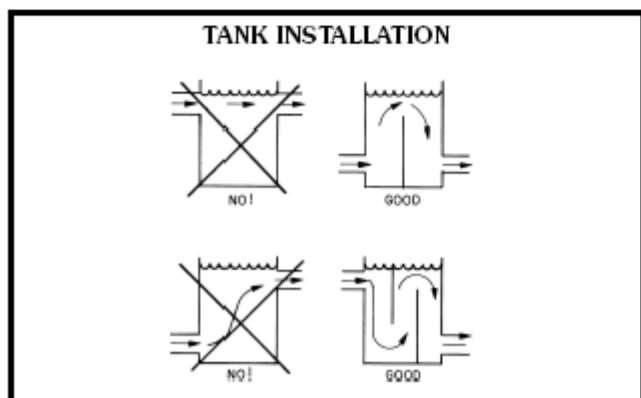


Variable cooler flow rates — These variable rates may be applied to standard chillers. However, the unit will attempt to maintain a constant leaving chilled-fluid temperature. In such cases, minimum fluid loop volume must be in excess of 3 gallons per ton (3.2 L per kW), and flow rate must change in steps of less than 10% per minute. Apply 6 gal per ton (6.5 L per kW) fluid loop volume minimum if flow rate changes more rapidly.

Minimum water-cooled condenser flow — This value (maximum rise) is shown in Minimum Cooler and Condenser Flow Rates and Minimum Loop Volume table on page 16. Condensers may be piped in series. Ensure leaving-water temperature does not exceed 104 F (40 C).

Chilled fluid loop volume — The chilled fluid loop volume in circulation must equal or exceed 3 gal per ton of cooling (3.25 L per kW) for temperature stability and accuracy in normal air conditioning applications. (For example, a 30HW040 would require 113 gal [428 L] in circulation in system loop — see Minimum Cooler and Condenser Flow Rates and Minimum Loop Volume table on page 16.) For process jobs where accuracy is vital or for operation at ambient temperature below 32 F (0° C) with low unit loading conditions, there should be from 6 to 10 gal per ton (6.5 to 10.8 L per kW). To achieve this volume, it is often necessary to install a tank in the loop. Tank should be baffled to ensure there is no stratification, and that water (or brine) entering tank is adequately mixed with liquid in the tank.

NOTE: Tank installation is shown below.



Fouling factor — The factor used to calculate tabulated ratings was 0.00010 ft² • hr • F/Btuh (.000018 m² • k/W). As fouling factor is increased, unit capacity decreases and compressor power increases. To determine selections at other fouling factors, use chiller program in the Electronic Catalog.

30HWA and 30HL remote condenser requirements

1. Ensure each refrigerant circuit has its own head pressure control.
2. Condenser must provide 15° F (8.3° C) subcooling, a maximum of 40° F (22.2° C) difference between saturated condensing temperature and outdoor ambient temperature (to prevent overload at high ambient temperatures), and a minimum of 20° F (11.1° C) difference (to ensure subcooling).
3. Do not manifold independent refrigerant circuits into a single condenser.
4. Condenser should not be located more than 50 ft (15 m) below chiller to maintain subcooling.
5. Design discharge and liquid piping according to Carrier System Design Manual.

Oversizing chillers

Oversizing chillers by more than 15% at design conditions must be avoided as the system operating efficiency will be adversely affected (resulting in greater and/or excessive electrical demand and cycling of compressors). When future expansion of equipment is anticipated, install a single chiller to meet present load requirements and install a second chiller to meet the additional load demand.

It is also recommended that the installation of 2 smaller chillers be considered where operation at minimum load is critical. The operation of a smaller chiller loaded to a greater percent of minimum is preferred to operating a single chiller at or near its minimum recommended value.

Hot gas bypass should not be used as a means to allow oversizing chillers. Hot gas bypass should be given consideration where substantial operating time is anticipated below the minimum unloading step.

Strainers

A strainer with a minimum of 20 mesh must be installed in both the cooler fluid and condenser water inlet lines on 30HWB,C,S and 30HK units, just ahead of and as close as possible to the cooler and condenser. For 30HWA and 30HL units, this requirement applies only to the cooler.

Parallel chillers

Where chiller capacities greater than can be supplied by a single 30H chiller are required, or where stand-by capability is desired, chillers may be installed in parallel. Units may be of the same or different sizes. However, cooler and condenser flow rates must be balanced to ensure proper flow to each chiller. The accessory Chillervisor System Manager III control should be used for proper leaving chilled fluid temperature control and to ensure proper staging sequence of up to 8 chillers. Refer to the accessory Chillervisor System Manager III control installation instructions for further details.

Application data (cont)



Series chillers

Where a large temperature drop (greater than 25 F (13.9 C)) is desired and higher fluid pressure drop across the cooler can be tolerated, chillers may be installed in series. The leaving fluid temperature sensors need not be relocated. However, the cooler minimum entering fluid temperature limitations should be considered for the chillers located downstream of other chillers. Condensers should be piped in parallel to maximize capacity and efficiency. This should also minimize condenser pressure drop and saturated condensing temperatures. However, if condensers are piped in series, ensure that the leaving water temperature does not exceed 104 F (40 C) for 60 Hz units or 130 F (54 C) for 50 Hz units.

Energy management

Demand limiting and load shedding are popular techniques used to reduce peak electric demands typically experienced during hot summer days when air conditioning loads are highest. When utility electricity demands exceed a certain level, electrical loads are turned off to keep the peak demands below a prescribed maximum limit. Compressor unloading will reduce electrical demand while allowing the chiller to operate under part-load capacity and maintain partial chilled fluid cooling. The Energy Management Module can be added to accomplish this.

Electrical demand may be limited by unloading the chiller to a predetermined percentage of the load. One stage of unloading can be initiated by a remote signal to significantly reduce the chiller power consumption. This power reduction applies to the full load power at nominal conditions. The demand limit control should not be cycled less than 10 minutes on and 5 minutes off.

Duty cycling

Duty cycling will cycle an electrical load at regular intervals, regardless of electrical demand. This reduces the electrical demand by “fooling” demand measuring devices. Duty cycling of the entire compressor is **NOT** recommended since motor windings and bearings will be damaged by constant cycling.

Part-wind start (option for 30HW025-040 units, special order for 30HK,HL units)

Part-wind start is not generally required on 30HK,HL chillers due to use of multiple small compressors allowing smaller load increments, but is available if required. Maximum instantaneous current flow should be used in determining need.

The instantaneous current flow experienced during chiller start-up is a function of the compressor motor locked rotor amps (LRA). The LRA draw occurs briefly when the compressor is started and can lead to a peak in the electrical demand. Chillers with part-wind compressors have 2 sets of compressor motor windings (per compressor) to allow for reduced instantaneous current flow during compressor start-up.

Vibration isolation

All compressors are spring isolated. External vibration isolation is not generally required, but is available for 30HW units as an accessory if desired.

Cooler and water-cooled condenser freeze protection

If chiller or fluid lines are in an area where ambient conditions fall below 32 F (0° C), it is recommended that an antifreeze solution be added to protect the unit and fluid piping to a temperature 15° F (8.3° C) below the lowest anticipated ambient temperature. In brine duty applications where the leaving cooler fluid temperature is below 40 F (4.4 C), the brine solution (antifreeze) option (30HW; special order on 30HK,HL) should be selected so that the freeze point is at least 15° F (8.3° C) below the cooler leaving fluid temperature and below the suction temperature at the cooler. Corrections to performance as indicated in the Capacity Correction and Selection Procedure sections below and on page 20 must be applied.

Use only antifreeze solutions approved for heat exchanger duty. Use of automotive antifreezes is not recommended because of the fouling that can occur once their relatively short-lived inhibitor breaks down.

If not protected with an antifreeze solution, draining cooler and outdoor piping is recommended if system is not to be used during freezing weather conditions.

Capacity correction (antifreeze)

If unit or fluid lines connected to the unit are in an area where ambient temperature falls below 32 F (0° C), it is strongly recommended that an appropriate antifreeze solution with suitable corrosion inhibitor be used in the chilled fluid circuit. Unit performance data based on inhibited ethylene glycol solution must be corrected as shown in the following example (other antifreeze solutions may be suitable based on specific application requirements).

NOTE: For performance correction factors for systems using propylene glycol solution, see Propylene Glycol Performance Correction Factors and Solution Crystallization Points Graph on page 19.

EXAMPLE — ENGLISH (60 Hz)

I. Determine concentration of inhibited ethylene glycol (EG) solution required to protect the system to 0° F (at zero flow).

From Solution Crystallization Point correction curve on page 19: 35% EG concentration is required for solution crystallization at 0° F.

Consider the 30HWB040 unit selected in the Selection Procedure section on page 20.

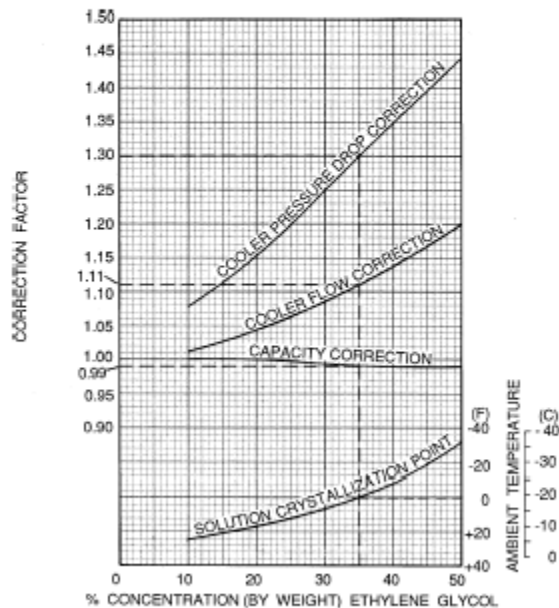
II. Correct unit capacity.

On Capacity Correction curve on page 19, read 0.99 correction factor at 35% concentration.

$$\begin{aligned}\text{Corrected Capacity} &= 0.99 \times \text{Rated Capacity} \\ &= 0.99 \times 35.9 \\ &= 35.5 \text{ Tons}\end{aligned}$$

ETHYLENE GLYCOL PERFORMANCE CORRECTION FACTORS AND SOLUTION CRYSTALLIZATION POINTS

Correction factors apply to published chilled water performance ratings from 40 to 60 F (4.4 to 15.6 C) LCWT.



III. Correct cooler water flow rate (Gpm).

On Cooler Flow Correction curve on this page, read 1.11 correction factor at 35% concentration.

$$\begin{aligned} \text{Cooler Water Flow} &= \frac{\text{Tons} \times 24}{\Delta T} = \frac{35.5 \times 24}{10} \\ (\text{at corrected capacity}) &= 85.3 \text{ Gpm} \end{aligned}$$

$$\text{Cooler Water Flow (35\% EG)} = 1.11 \times 85.3 = 94.7 \text{ Gpm}$$

IV. Correct cooler pressure drop.

On Cooler Pressure Drop Correction curve on this page, read 1.30 correction factor at 35% concentration.

On Cooler Pressure Drop curve, (page 22) for 94.7 gpm of water, Pressure Drop = 7.0 ft of water.

$$\begin{aligned} \text{For 35\% EG solution,} &= 1.30 \times 7.0 \\ \text{Pressure Drop} &= 9.1 \text{ ft of water} \end{aligned}$$

EXAMPLE — SI (50 Hz)

I. Determine concentration of inhibited ethylene glycol (EG) solution required to protect the system to -17.8 C (at zero flow).

From Solution Crystallization Point correction curve at left: 35% EG concentration is required for solution crystallization at -17.8 C.

Consider the 30HWB040 unit selected in the Selection Procedure example.

II. Correct unit capacity.

On Capacity Correction curve on this page, read 0.99 correction factor at 35% concentration.

$$\begin{aligned} \text{Corrected Capacity} &= 0.99 \times \text{Rated Capacity} \\ &= 0.99 \times 112.1 \\ &= 111.0 \text{ kW} \end{aligned}$$

III. Correct cooler water flow rate (L/s).

On Cooler Flow Correction curve on this page, read 1.11 correction factor at 35% concentration.

$$\begin{aligned} \text{Cooler Water Flow} &= \frac{\text{kW} \times 239}{\Delta T} \\ (\text{at corrected capacity}) &= \frac{111.0 \times 239}{5.6} \\ &= 4.7 \text{ L/s} \end{aligned}$$

$$\text{Cooler Water Flow (35\% EG)} = 1.11 \times 4.7 = 5.26 \text{ L/s}$$

IV. Correct cooler pressure drop.

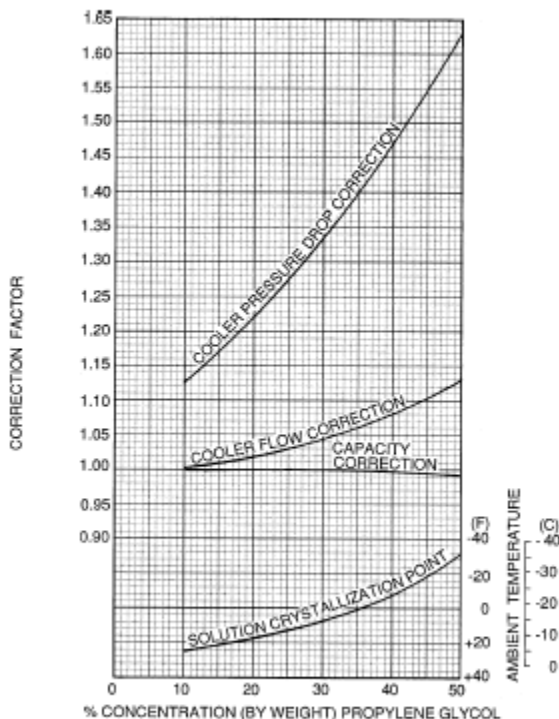
On Cooler Pressure Drop Correction curve on this page, read 1.30 correction factor at 35% concentration.

On Cooler Pressure Drop curve (page 22), for 5.5 L/s of water, Pressure Drop = 20.0 kPa.

$$\begin{aligned} \text{For 35\% EG solution,} &= 1.30 \times 20.0 \\ \text{Pressure Drop} &= 26.0 \text{ kPa} \end{aligned}$$

PROPYLENE GLYCOL PERFORMANCE CORRECTION FACTORS AND SOLUTION CRYSTALLIZATION POINTS

Correction factors apply to published chilled water performance ratings from 40 to 60 F (4.4 to 15.6 C) LCWT.



Performance data (cont)



ARI RATINGS (60 Hz only)

UNIT 30	CAPACITY		INPUT POWER (kW)	COOLER FLOW		COOLER PRESSURE DROP		CONDENSER FLOW		CONDENSER PRESSURE DROP		EER	IPLV
	Tons	kW		Gpm	L/s	Ft of Water	Kpa	Gpm	L/s	Ft of Water	kPa		
HWB018	14.8	52.0	13.4	35.5	2.2	6.2	18.5	44.3	2.8	17.1	51.2	13.2	18.3
HWB025	19.6	69.1	17.0	47.2	3.0	7.0	21.0	58.9	3.7	18.6	55.4	13.8	19.0
HWB028	25.4	89.2	23.2	60.9	3.8	8.8	26.1	76.0	4.8	19.7	58.7	13.1	17.6
HWB035	28.5	100.3	25.8	68.5	4.3	11.0	32.8	85.6	5.4	20.5	61.2	13.3	17.3
HWB040	35.9	126.3	35.2	86.2	5.4	6.6	19.6	107.7	6.8	8.6	25.8	12.2	15.0
HWC018	15.8	55.7	13.2	38.0	2.4	7.1	21.1	47.5	3.0	8.1	24.3	14.4	19.8
HWC025	19.9	69.8	16.2	47.7	3.0	7.2	21.4	59.6	3.8	13.4	40.0	14.7	20.1
HWC028	25.4	89.3	21.8	60.9	3.8	8.8	26.1	76.2	4.8	11.7	35.0	14.0	18.2
HWC035	28.1	98.9	25.4	67.5	4.3	10.7	31.9	84.4	5.3	14.5	43.3	13.3	16.7
HWC040	37.7	132.7	34.6	90.6	5.7	7.2	21.5	113.2	7.1	9.4	28.0	13.1	16.1
HK040	41.2	144.9	34.2	98.7	6.2	13.4	40.0	123.6	7.8	6.1	18.2	14.4	20.2
HK050	50.5	177.6	43.6	121.0	7.6	11.5	34.2	151.5	9.6	7.3	21.8	13.9	18.1
HK060	58.8	206.7	52.8	140.9	8.9	15.4	45.8	176.1	11.1	8.1	24.0	13.4	18.0

LEGEND

ARI — Air Conditioning and Refrigeration Institute (U.S.A.)
 EER — Energy Efficiency Ratio (Capacity [Btuh] ÷ Input Power [W])
 IPLV — Integrated Part-Load Value

NOTES:

- Rated (60 Hz only) in accordance with ARI Standard 550/590-98 at standard rating conditions.
- Standard rating conditions are as follows:
 Cooler Conditions:
 Leaving water temperature: 44 F (6.7 C)
 Flow: 2.4 gpm (.15 L/s)
 Condenser Conditions:
 Entering water temperature: 85 F (29.4 C)
 Flow: 3 gpm per ton (0.054 L/s per kW)
 Fouling Factor (Cooler and Condenser):
 0.00010 hr x sq ft x F per Btuh
 (0.000018 m² x k per W)

- IPLV is a single number part-load efficiency value calculated from the system full-load efficiency values and corrected for a typical building air-conditioning application.
- All data in this table is rated (60 Hz only) in accordance with ARI Standard 550/590-98 as represented in the Reciprocating Chiller Selection Program (E-Cat) version 2.11.



60 Hz Only

Rated in accordance with
 ARI Standard 550/590-98.

Performance data, 30HWC, HK water-cooled — English



COOLING CAPACITIES — 60 Hz

LCWT (F)	UNIT 30	UNIT SIZE	CONDENSER ENTERING WATER TEMPERATURE (F)															
			75				80				85				90			
			Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)	Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)	Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)	Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)
40	HWC	018	14.5	12.0	34.8	42.5	14.1	12.5	33.8	41.9	13.8	13.1	32.9	41.4	13.4	13.6	32.0	40.8
		025	19.3	15.3	46.3	56.2	18.7	16.0	44.9	55.2	18.2	16.6	43.5	54.2	17.6	17.2	42.0	53.2
		028	25.0	20.8	60.0	73.4	24.3	21.7	58.1	72.1	23.5	22.6	56.3	70.9	22.8	23.4	54.6	69.8
		035	28.0	23.2	66.9	81.9	27.2	24.1	65.1	80.7	26.4	25.0	63.3	79.5	25.7	25.9	61.4	78.3
	040	35.0	31.8	83.8	104.2	34.1	32.9	81.6	102.8	33.2	34.0	79.5	101.4	32.3	35.0	77.3	100.0	
	HK	040	40.3	30.7	96.5	116.3	39.1	32.2	93.5	114.4	37.8	33.6	90.5	112.4	36.5	35.0	87.4	110.2
		050	49.3	39.1	118.1	143.3	47.9	40.9	114.6	141.1	46.4	42.7	111.0	138.7	44.9	44.3	107.4	136.3
		060	57.4	47.4	137.4	168.0	55.8	49.5	133.6	165.6	54.2	51.5	129.7	163.1	52.5	53.5	125.7	160.5
018		15.1	12.1	36.1	43.8	14.7	12.7	35.1	43.3	14.3	13.2	34.2	42.7	13.9	13.8	33.2	42.2	
42	HWC	025	20.1	15.4	48.1	58.1	19.5	16.2	46.7	57.1	18.9	16.8	45.2	56.1	18.3	17.5	43.8	55.1
		028	26.0	21.1	62.2	75.8	25.2	22.0	60.4	74.6	24.4	22.9	58.5	73.3	23.7	23.7	56.7	72.1
		035	29.0	23.5	69.6	84.7	28.3	24.5	67.7	83.5	27.5	25.4	65.8	82.3	26.7	26.3	63.9	81.0
		040	36.4	32.3	87.2	107.9	35.5	33.5	84.9	106.5	34.5	34.6	82.7	105.1	33.6	35.7	80.5	103.6
	HK	040	42.0	30.9	100.6	120.6	40.7	32.5	97.6	118.6	39.5	34.0	94.5	116.6	38.1	35.5	91.4	114.4
		050	51.4	39.4	123.2	148.6	49.9	41.3	119.6	146.3	48.4	43.2	115.9	143.9	46.9	44.9	112.3	141.4
		060	59.8	47.9	143.2	174.0	58.1	50.1	139.2	171.5	56.4	52.2	135.2	169.0	54.8	54.2	131.2	166.3
		018	15.6	12.2	37.4	45.2	15.2	12.8	36.4	44.6	14.8	13.4	35.4	44.1	14.4	14.0	34.4	43.5
44	HWC	025	20.9	15.6	50.0	60.1	20.2	16.3	48.5	59.0	19.6	17.0	47.0	58.1	19.0	17.7	45.5	57.0
		028	26.9	21.3	64.6	78.2	26.1	22.3	62.7	77.0	25.4	23.2	60.8	75.8	24.6	24.1	58.9	74.4
		035	30.1	23.8	72.2	87.5	29.3	24.8	70.3	86.3	28.5	25.8	68.4	85.1	27.7	26.7	66.5	83.8
		040	37.8	32.8	90.6	111.6	36.9	34.0	88.4	110.2	35.9	35.2	86.1	108.7	35.0	36.3	83.8	107.3
	HK	040	43.7	31.2	104.8	124.9	42.4	32.8	101.7	122.9	41.1	34.3	98.6	120.8	39.8	35.9	95.4	118.7
		050	53.5	39.8	128.3	153.9	52.0	41.7	124.7	151.6	50.5	43.6	121.0	149.2	48.9	45.5	117.2	146.7
		060	62.2	48.3	149.0	180.0	60.5	50.6	145.0	177.5	58.8	52.8	140.9	175.0	57.0	55.0	136.7	172.3
		018	15.9	12.3	38.1	45.9	15.5	12.9	37.1	45.3	15.0	13.5	36.1	44.8	14.6	14.1	35.1	44.2
45	HWC	025	21.3	15.7	51.0	61.0	20.6	16.4	49.4	60.0	20.0	17.1	48.0	59.0	19.4	17.8	46.5	58.0
		028	27.4	21.4	65.7	79.5	26.6	22.4	63.8	78.2	25.8	23.3	61.9	77.0	25.0	24.2	60.0	75.6
		035	30.7	23.9	73.6	88.9	29.9	25.0	71.7	87.7	29.1	26.0	69.7	86.5	28.3	26.9	67.8	85.2
		040	38.5	33.1	92.4	113.5	37.6	34.3	90.1	112.1	36.6	35.5	87.8	110.6	35.6	36.6	85.5	109.1
	HK	040	44.6	31.3	107.0	127.1	43.3	32.9	103.8	125.1	42.0	34.5	100.7	123.0	40.6	36.1	97.5	120.9
		050	54.6	39.9	130.9	156.6	53.1	41.9	127.2	154.3	51.5	43.9	123.5	151.9	49.9	45.8	119.7	149.4
		060	63.4	48.5	152.0	183.1	61.7	50.9	147.9	180.6	59.9	53.1	143.8	178.0	58.2	55.3	139.6	175.4
		018	16.2	12.3	38.8	46.6	15.7	12.9	37.7	46.0	15.3	13.6	36.7	45.5	14.9	14.2	35.7	44.9
46	HWC	025	21.6	15.8	51.9	62.0	21.0	16.5	50.4	61.1	20.4	17.2	48.9	60.0	19.7	18.0	47.4	59.0
		028	27.9	21.6	66.9	80.7	27.1	22.6	65.0	79.5	26.3	23.5	63.1	78.2	25.5	24.1	61.2	76.9
		035	31.2	24.1	75.0	90.4	30.4	25.1	73.0	89.2	29.6	26.1	71.1	87.9	28.8	27.1	69.1	86.6
		040	39.3	33.3	94.2	115.5	38.3	34.6	91.8	114.0	37.3	35.8	89.5	112.5	36.3	37.0	87.2	111.0
	HK	040	45.5	31.4	109.1	129.3	44.2	33.0	106.0	127.2	42.8	34.7	102.8	125.2	41.5	36.3	99.5	123.0
		050	55.7	40.1	133.6	159.3	54.1	42.1	129.9	157.0	52.6	44.1	126.1	154.5	51.0	46.0	122.3	152.0
		060	64.6	48.7	155.0	186.2	62.9	51.1	150.8	183.7	61.1	53.4	146.7	181.1	59.4	55.7	142.4	178.4
		018	16.7	12.4	40.2	48.1	16.3	13.1	39.1	47.5	15.9	13.7	38.1	46.9	15.4	14.3	37.0	46.3
48	HWC	025	22.4	15.9	53.8	64.0	21.8	16.7	52.3	63.1	21.2	17.5	50.8	62.1	20.5	18.2	49.3	61.0
		028	28.9	21.8	69.3	83.2	28.1	22.8	67.3	82.0	27.2	23.8	65.4	80.7	26.4	24.8	63.4	79.4
		035	32.4	24.4	77.8	93.4	31.6	25.5	75.8	92.2	30.7	26.5	73.8	90.8	29.9	27.5	71.8	89.5
		040	40.8	33.8	97.8	119.4	39.8	35.1	95.4	117.9	38.8	36.4	93.0	116.3	37.8	37.6	90.6	114.8
	HK	040	47.3	31.6	113.5	133.7	46.0	33.3	110.3	131.7	44.6	35.0	107.0	129.6	43.2	36.6	103.7	127.4
		050	57.9	40.4	139.0	164.8	56.3	42.5	135.2	162.5	54.7	44.6	131.3	160.0	53.1	46.6	127.4	157.5
		060	67.1	49.1	161.1	192.5	65.4	51.6	158.8	189.9	63.6	54.0	152.6	187.3	61.8	56.3	148.2	184.6
		018	17.3	12.5	41.6	49.6	16.9	13.2	40.5	49.0	16.4	13.8	39.4	48.3	16.0	14.5	38.4	47.7
50	HWC	025	23.2	16.1	55.8	66.1	22.6	16.9	54.3	65.1	21.9	17.7	52.7	64.1	21.3	18.4	51.1	63.0
		028	29.9	22.1	71.8	85.8	29.0	23.1	69.7	84.5	28.2	24.1	67.7	83.2	27.4	25.1	65.7	81.9
		035	33.6	24.6	80.7	96.4	32.8	25.8	78.7	95.1	31.9	26.9	76.6	93.9	31.0	27.9	74.5	92.5
		040	42.3	34.3	101.6	123.5	41.3	35.6	99.2	121.9	40.2	36.9	96.6	120.3	39.2	38.2	94.1	118.7
	HK	040	49.1	31.8	118.0	138.3	47.8	33.5	114.7	136.2	46.4	35.3	111.4	134.1	45.0	37.0	108.0	131.9
		050	60.2	40.7	144.6	170.6	58.6	42.9	140.7	168.2	56.9	45.0	136.6	165.6	55.2	47.1	132.6	163.0
		060	69.7	49.5	167.3	198.9	67.9	52.1	163.0	196.3	66.1	54.6	158.6	193.7	64.2	57.0	154.2	190.9
		018	18.9	12.7	45.3	53.4	18.4	13.4	44.2	52.7	17.9	14.1	43.0	52.1	17.4	14.8	41.9	51.4
55	HWC	025	25.3	16.5	60.8	71.4	24.7	17.4	59.3	70.3	24.0	18.2	57.6	69.3	23.3	19.0	56.0	68.2
		028	32.5	22.7	78.1	92.5	31.6	23.8	76.0	91.2	30.7	24.9	73.8	89.8	29.8	26.0	71.7	88.4
		035	36.6	25.3	88.1	104.1	35.8	26.5	85.9	102.8	34.9	27.7	83.8	101.5	34.0	28.8	81.6	100.2
		040	46.3	35.4	111.3	133.8	45.2	36.9	108.7	132.2	44.1	38.4	106.0	130.6	43.0	39.7	103.4	128.9
	HK	040	53.9	32.2	129.5	150.1	52.5	34.1	126.1	147.9	51.0	36.0	122.6	145.8	49.5	37.9	119.0	143.4
		050	66.1	41.3	158.9	185.2	64.4	43.7	154.8	182.7	62.7	46.0	150.6	180.1	60.9	48.3	146.4	177.5
		060	76.4	50.2	183.7	215.6	74.5	53.1	179.0	212.9	72.6	55.8	174.4	210.2	70.6	58.5	169.7	207.3
		018	20.5	12.8	49.3	57.4	20.0	13.6	48.0	56.7	19.5	14.4	46.8	56.0	19.0	15.1	45.6	55.3

Performance data, 30HWC, HK water-cooled — English



COOLING CAPACITIES — 50 Hz

LCWT (F)	UNIT 30	UNIT SIZE	CONDENSER ENTERING WATER TEMPERATURE (F)															
			75				80				85				90			
			Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)	Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)	Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)	Cap	Input kW	Cooler Flow Rate (Gpm)	Cond Flow Rate (Gpm)
40	HWC	018	13.6	9.6	32.6	38.9	13.3	10.2	31.8	38.4	12.9	10.8	30.9	38.0	12.6	11.4	30.1	37.6
		025	17.1	12.1	41.0	48.9	16.6	12.7	39.8	48.1	16.1	13.3	38.5	47.2	15.6	13.9	37.2	46.3
		028	21.6	16.1	51.6	62.0	20.8	16.8	49.8	60.7	20.1	17.5	48.0	59.4	19.3	18.1	46.3	58.1
		035	23.7	19.0	56.7	68.9	23.0	19.8	55.0	67.8	22.2	20.6	53.2	66.6	21.5	21.3	51.5	65.3
	040	32.3	26.4	77.4	94.4	31.5	27.4	75.4	93.1	30.6	28.5	73.3	91.8	29.8	29.4	71.3	90.5	
	HK	040	41.2	33.5	98.6	120.2	40.0	35.1	95.7	118.4	38.8	36.6	92.8	116.5	37.6	38.1	89.9	114.6
		050	48.8	39.4	116.7	142.2	47.4	41.2	113.4	140.1	46.0	43.0	110.1	137.9	44.6	44.7	106.7	135.7
		060	62.1	59.4	148.6	185.7	60.4	61.6	144.6	184.2	58.7	63.7	140.5	181.6	57.0	65.8	136.4	179.0
42	HWC	018	14.1	9.7	33.8	40.0	13.8	10.3	33.0	39.6	13.4	10.9	32.1	39.2	13.0	11.5	31.2	38.8
		025	17.8	12.2	42.6	50.6	17.3	12.9	41.4	49.7	16.7	13.5	40.1	48.9	16.2	14.1	38.8	48.0
		028	22.6	16.3	54.1	64.7	21.8	17.0	52.3	63.3	21.0	17.7	50.4	61.9	20.3	18.4	48.6	60.6
		035	24.7	19.2	59.3	71.6	24.0	20.0	57.5	70.5	23.3	20.9	55.7	69.2	22.5	21.6	54.0	68.0
	040	33.7	26.7	80.7	97.9	32.8	27.8	78.5	96.4	31.9	28.9	76.4	95.1	31.0	29.9	74.4	93.7	
	HK	040	42.9	33.8	102.7	124.4	41.6	35.4	99.8	122.6	40.4	37.0	96.8	120.8	39.2	38.6	93.8	118.8
		050	50.8	39.7	121.7	147.3	49.4	41.6	118.3	145.2	48.0	43.5	114.9	143.0	46.5	45.3	111.4	140.7
		060	64.6	60.1	154.8	193.3	62.8	62.5	150.6	190.7	61.1	64.7	146.4	188.0	59.3	66.9	142.2	185.4
44	HWC	018	14.6	9.7	35.0	41.3	14.2	10.4	34.2	40.9	13.9	11.0	33.3	40.4	13.5	11.6	32.4	40.0
		025	18.5	12.3	44.3	52.2	18.0	13.0	43.0	51.4	17.4	13.6	41.8	50.6	16.9	14.2	40.4	49.6
		028	23.7	16.5	56.7	67.4	22.9	17.3	54.8	66.0	22.1	18.0	52.9	64.6	21.3	18.7	51.0	63.2
		035	25.8	19.4	62.0	74.4	25.1	20.3	60.2	73.2	24.3	21.1	58.3	72.0	23.6	21.9	56.5	70.7
	040	35.0	27.0	83.9	101.3	34.1	28.2	81.8	99.9	33.2	29.3	79.7	98.6	32.3	30.3	77.4	97.1	
	HK	040	44.6	34.1	106.9	128.8	43.3	35.8	103.9	126.9	42.1	37.4	100.9	125.1	40.8	39.1	97.8	123.1
		050	52.9	40.0	126.8	152.5	51.4	42.0	123.3	150.4	50.0	44.0	119.8	148.2	48.5	45.8	116.2	145.9
		060	67.2	60.9	161.0	200.0	65.4	63.4	156.7	197.3	63.6	65.7	152.4	194.6	61.8	68.0	148.1	191.9
45	HWC	018	14.9	9.7	35.6	41.9	14.5	10.4	34.8	41.5	14.1	11.0	33.9	41.0	13.8	11.7	33.0	40.6
		025	18.8	12.4	45.2	53.1	18.3	13.0	43.9	52.3	17.8	13.7	42.6	51.4	17.2	14.3	41.2	50.5
		028	24.2	16.6	58.0	68.7	23.4	17.4	56.1	67.3	22.6	18.1	54.2	65.9	21.8	18.8	52.2	64.5
		035	26.4	19.4	63.3	75.8	25.6	20.4	61.5	74.6	24.9	21.3	59.7	73.4	24.1	22.1	57.8	72.1
	040	35.7	27.2	85.6	103.0	34.8	28.3	83.4	101.7	33.9	29.5	81.3	100.3	33.0	30.5	79.0	98.8	
	HK	040	45.5	34.2	109.0	131.0	44.2	35.9	106.0	129.1	42.9	37.6	102.9	127.2	41.6	39.3	99.8	125.3
		050	53.9	40.2	129.4	155.1	52.5	42.2	125.8	153.0	51.0	44.2	122.3	150.8	49.5	46.1	118.6	148.5
		060	68.5	61.3	164.2	203.4	66.7	63.8	159.8	200.7	64.8	66.2	155.4	198.0	63.0	68.5	151.1	195.2
46	HWC	018	15.1	9.7	36.3	42.5	14.7	10.4	35.4	42.1	14.4	11.1	34.5	41.7	14.0	11.7	33.6	41.2
		025	19.2	12.4	46.0	54.0	18.6	13.1	44.7	53.1	18.1	13.7	43.4	52.3	17.5	14.4	42.1	51.4
		028	24.8	16.7	59.4	70.1	23.9	17.5	57.4	68.7	23.1	18.3	55.4	67.3	22.3	19.0	53.5	65.8
		035	27.0	19.5	64.7	77.2	26.2	20.5	62.9	76.0	25.4	21.4	61.0	74.8	24.6	22.2	59.1	73.5
	040	36.4	27.3	87.2	104.8	35.5	28.5	85.1	103.4	34.5	29.7	82.9	102.0	33.6	30.8	80.6	100.5	
	HK	040	46.4	34.3	111.2	133.2	45.1	36.1	108.1	131.3	43.8	37.8	105.0	129.4	42.5	39.5	101.9	127.5
		050	55.0	40.3	132.0	157.8	53.5	42.4	128.4	155.7	52.0	44.4	124.8	153.5	50.5	46.3	121.2	151.2
		060	69.8	61.6	167.5	206.8	68.0	64.2	163.0	204.1	66.1	66.7	158.5	201.3	64.2	69.0	154.1	198.5
48	HWC	018	15.6	9.7	37.5	43.8	15.3	10.4	36.6	43.3	14.9	11.1	35.7	42.9	14.5	11.8	34.8	42.5
		025	19.9	12.5	47.8	55.8	19.4	13.2	46.4	54.9	18.8	13.9	45.0	54.0	18.2	14.5	43.7	53.2
		028	25.9	16.9	62.1	73.0	25.0	17.7	60.1	71.5	24.2	18.5	58.1	70.0	23.4	19.3	56.0	68.5
		035	28.1	19.7	67.5	80.1	27.4	20.7	65.6	78.9	26.6	21.6	63.7	77.7	25.7	22.5	61.8	76.4
	040	37.8	27.6	90.7	108.3	36.8	28.8	88.4	106.9	35.9	30.0	86.2	105.5	35.0	31.2	83.9	104.1	
	HK	040	48.2	34.6	115.6	137.7	46.9	36.4	112.5	135.8	45.5	38.2	109.3	133.9	44.2	40.0	106.1	131.9
		050	57.2	40.6	137.3	163.2	55.7	42.7	133.6	161.1	54.2	44.8	130.0	159.8	52.6	46.8	126.2	156.5
		060	72.6	62.4	174.1	213.8	70.6	65.0	169.5	211.1	68.7	67.6	164.9	208.2	66.8	70.1	160.3	205.3
50	HWC	018	16.2	9.8	38.8	45.1	15.8	10.5	37.9	44.6	15.4	11.2	37.0	44.2	15.0	11.9	36.0	43.7
		025	20.6	12.6	49.5	57.6	20.1	13.3	48.2	56.7	19.5	14.0	46.8	55.9	18.9	14.7	45.4	54.9
		028	27.1	17.1	65.0	75.9	26.2	17.9	62.8	74.4	25.3	18.8	60.7	72.8	24.4	19.6	58.7	71.3
		035	29.3	19.8	70.4	83.1	28.5	20.9	68.5	81.9	27.7	21.9	66.5	80.6	26.9	22.8	64.5	79.3
	040	39.2	27.9	94.1	111.9	38.3	29.2	91.8	110.5	37.3	30.4	89.5	109.1	36.3	31.6	87.3	107.6	
	HK	040	50.0	34.8	120.1	142.3	48.7	36.7	116.9	140.4	47.3	38.6	113.7	138.4	46.0	40.4	110.4	136.4
		050	59.4	40.8	142.7	168.7	57.9	43.0	139.0	166.6	56.3	45.2	135.2	164.3	54.7	47.3	131.4	162.0
		060	75.3	63.0	180.9	221.0	73.4	65.8	176.1	218.1	71.4	68.5	171.4	215.3	69.4	71.1	166.7	212.4
55	HWC	018	17.5	9.8	42.1	48.4	17.1	10.6	41.1	47.9	16.7	11.3	40.2	47.4	16.3	12.1	39.2	47.0
		025	22.5	12.7	54.1	62.2	21.9	13.5	52.7	61.4	21.3	14.2	51.3	60.5	20.7	15.0	49.9	59.5
		028	30.1	17.5	72.4	83.5	29.2	18.4	70.1	81.9	28.2	19.3	67.8	80.3	27.3	20.2	65.6	78.6
		035	32.5	20.2	78.0	90.9	31.6	21.3	75.9	89.6	30.7	22.4	73.9	88.2	29.8	23.5	71.7	86.8
	040	42.9	28.5	103.2	121.3	41.9	29.9	100.7	119.8	40.9	31.3	98.3	118.3	39.9	32.6	95.9	116.8	
	HK	040	54.8	35.2	131.8	154.2	53.4	37.3	128.4	152.2	52.0							

Performance data, 30HWC, HK water-cooled — SI



COOLING CAPACITIES — 60 Hz

LCWT (C)	UNIT 30	UNIT SIZE	CONDENSER ENTERING WATER TEMPERATURE (C)											
			25				30				35			
			Cap	Input kW	Cooler Flow Rate (L/s)	Cond Flow Rate (L/s)	Cap	Input kW	Cooler Flow Rate (L/s)	Cond Flow Rate (L/s)	Cap	Input kW	Cooler Flow Rate (L/s)	Cond Flow Rate (L/s)
4	HWC	018	53.4	12.0	2.3	2.8	50.8	13.1	2.2	2.7	48.3	14.1	2.1	2.7
		025	66.8	14.7	2.9	3.5	63.0	15.9	2.7	3.4	59.2	17.0	2.5	3.2
		028	84.5	19.7	3.6	4.4	79.2	21.1	3.4	4.3	74.0	22.3	3.2	4.1
		035	93.4	23.1	4.0	5.0	88.3	24.7	3.8	4.8	83.0	26.1	3.6	4.6
	040	125.9	31.6	5.4	6.7	120.0	33.6	5.2	6.5	114.1	35.5	4.9	6.4	
	HK	040	137.7	31.1	5.9	7.2	129.8	33.7	5.6	7.0	121.8	38.1	5.2	6.7
		050	168.6	39.7	7.2	8.9	159.3	42.8	6.8	8.6	149.8	45.6	6.4	8.3
		060	196.4	48.1	8.4	10.4	186.2	51.7	8.0	10.1	175.9	54.9	7.6	9.8
5		HWC	018	55.1	12.1	2.4	2.9	52.5	13.2	2.3	2.8	49.9	14.3	2.1
	025		69.1	14.8	3.0	3.6	65.4	16.1	2.8	3.5	61.5	17.2	2.6	3.3
	028		88.1	20.0	3.8	4.6	82.7	21.4	3.6	4.4	77.3	22.7	3.3	4.3
	035		97.2	23.3	4.2	5.1	91.9	25.0	3.9	5.0	86.5	26.5	3.7	4.8
	040	130.5	32.0	5.6	6.9	124.5	34.1	5.3	6.7	118.3	36.1	5.1	6.6	
	HK	040	143.0	31.4	6.1	7.4	135.0	34.1	5.8	7.2	126.8	36.6	5.4	7.0
		050	175.0	40.0	7.5	9.2	165.6	43.3	7.1	8.9	155.9	46.3	6.7	8.6
		060	203.7	48.5	8.8	10.7	193.3	52.3	8.3	10.4	182.8	55.7	7.9	10.1
6		HWC	018	56.8	12.1	2.4	2.9	54.2	13.3	2.3	2.9	51.5	14.4	2.2
	025		71.5	15.0	3.1	3.7	67.7	16.2	2.9	3.6	63.7	17.4	2.7	3.5
	028		91.8	20.3	3.9	4.8	86.2	21.7	3.7	4.6	80.7	23.1	3.5	4.4
	035		101.1	23.6	4.3	5.3	95.7	25.3	4.1	5.1	90.2	26.9	3.9	5.0
	040	135.1	32.4	5.8	7.1	129.0	34.6	5.5	7.0	122.6	36.6	5.3	6.8	
	HK	040	148.3	31.6	6.4	7.7	140.2	34.4	6.0	7.4	131.9	37.0	5.7	7.2
		050	181.7	40.4	7.8	9.4	172.0	43.7	7.4	9.2	162.2	46.9	7.0	8.9
		060	211.2	49.0	9.1	11.1	200.6	52.9	8.6	10.8	189.8	56.5	8.2	10.5
7		HWC	018	58.6	12.2	2.5	3.0	55.9	13.4	2.4	3.0	53.2	14.5	2.3
	025		74.0	15.1	3.2	3.8	70.1	16.4	3.0	3.7	66.1	17.6	2.8	3.6
	028		95.6	20.5	4.1	4.9	89.9	22.1	3.9	4.8	84.2	23.5	3.6	4.6
	035		105.1	23.9	4.5	5.5	99.6	25.7	4.3	5.3	93.9	27.4	4.0	5.2
	040	139.8	32.8	6.0	7.3	133.5	35.0	5.7	7.2	127.1	37.2	5.5	7.0	
	HK	040	153.8	31.9	6.6	7.9	145.5	34.8	6.3	7.7	137.0	37.5	5.9	7.4
		050	188.4	40.7	8.1	9.8	178.6	44.2	7.7	9.5	168.5	47.4	7.2	9.2
		060	218.8	49.4	9.4	11.4	207.9	53.5	8.9	11.1	197.0	57.2	8.5	10.8
8		HWC	018	60.4	12.3	2.6	3.1	57.7	13.5	2.5	3.0	54.9	14.6	2.4
	025		76.5	15.2	3.3	3.9	72.5	16.6	3.1	3.8	68.5	17.8	2.9	3.7
	028		99.5	20.8	4.3	5.1	93.6	22.4	4.0	4.9	87.8	23.9	3.8	4.8
	035		109.2	24.1	4.7	5.7	103.5	26.0	4.5	5.5	97.8	27.7	4.2	5.3
	040	144.6	33.1	6.2	7.6	138.2	35.5	5.9	7.4	131.7	37.7	5.7	7.2	
	HK	040	159.4	32.1	6.9	8.2	151.0	35.1	6.5	7.9	142.3	37.9	6.1	7.7
		050	195.2	41.0	8.4	10.1	185.2	44.6	8.0	9.8	175.0	48.0	7.5	9.5
		060	226.5	49.8	9.7	11.8	215.5	54.0	9.3	11.5	204.3	57.9	8.8	11.2
9		HWC	018	62.3	12.3	2.7	3.2	59.5	13.6	2.6	3.1	56.6	14.8	2.4
	025		79.0	15.3	3.4	4.0	75.0	16.7	3.2	3.9	70.9	18.0	3.1	3.8
	028		103.6	21.0	4.5	5.3	97.5	22.7	4.2	5.1	91.5	24.2	3.9	4.9
	035		113.4	24.3	4.9	5.9	107.6	26.3	4.6	5.7	101.7	28.1	4.4	5.5
	040	149.5	33.5	6.4	7.8	142.9	35.9	6.2	7.6	136.3	38.2	5.9	7.4	
	HK	040	165.1	32.3	7.1	8.4	156.5	35.4	6.7	8.2	147.7	38.3	6.4	7.9
		050	202.2	41.3	8.7	10.4	192.0	45.0	8.3	10.1	181.6	48.6	7.8	9.8
		060	234.5	50.2	10.1	12.1	223.2	54.5	9.6	11.8	211.7	58.6	9.1	11.5
10		HWC	018	64.2	12.4	2.8	3.3	61.3	13.7	2.6	3.2	58.4	14.9	2.5
	025		81.6	15.4	3.5	4.1	77.5	16.8	3.3	4.0	73.4	18.2	3.2	3.9
	028		107.7	21.3	4.6	5.5	101.4	23.0	4.4	5.3	95.3	24.6	4.1	5.1
	035		117.7	24.5	5.1	6.1	111.8	26.6	4.8	5.9	105.7	28.5	4.6	5.7
	040	154.4	33.8	6.7	8.0	147.8	36.3	6.4	7.8	141.0	38.7	6.1	7.7	
	HK	040	170.9	32.5	7.4	8.7	162.1	35.6	7.0	8.4	153.2	38.7	6.6	8.2
		050	209.5	41.6	9.0	10.7	198.9	45.4	8.6	10.4	188.4	49.1	8.1	10.1
		060	242.5	50.5	10.4	12.5	231.0	55.1	10.0	12.2	219.3	59.3	9.4	11.9
13		HWC	018	70.0	12.5	3.0	3.5	67.0	13.9	2.9	3.4	63.9	15.2	2.8
	025		89.6	15.7	3.9	4.5	85.3	17.2	3.7	4.4	80.9	18.8	3.5	4.3
	028		120.7	22.0	5.2	6.1	113.9	23.9	4.9	5.9	107.2	25.7	4.6	5.7
	035		131.2	25.1	5.7	6.7	124.9	27.4	5.4	6.5	118.4	29.6	5.1	6.3
	040	169.9	34.9	7.3	8.7	162.9	37.6	7.0	8.5	155.7	40.2	6.7	8.4	
	HK	040	188.9	33.0	8.1	9.5	179.7	36.4	7.8	9.2	170.3	39.7	7.3	9.0
		050	231.8	42.3	10.0	11.7	220.8	46.5	9.5	11.4	209.4	50.6	9.0	11.1
		060	268.0	51.4	11.6	13.6	255.7	56.4	11.0	13.3	243.2	61.2	10.5	13.0
16		HWC	018	76.2	12.6	3.3	3.8	72.9	14.1	3.1	3.7	69.7	15.5	3.0
	025		98.1	15.8	4.2	4.9	93.7	17.5	4.0	4.8	89.1	19.2	3.8	4.6
	028		134.8	22.7	5.8	6.7	127.3	24.8	5.5	6.5	120.1	26.7	5.2	6.3
	035		145.7	25.5	6.3	7.3	138.9	28.1	6.0	7.1	132.0	30.5	5.7	6.9
	040	186.1	35.8	8.0	9.5	178.7	38.8	7.7	9.3	171.1	41.7	7.4	9.1	
	HK	040	203.4	33.3	8.8	10.1	192.4	36.9	8.3	9.8	181.3	40.3	7.8	9.5
		050	250.5	42.7	10.8	12.5	237.5	47.2	10.2	12.2	224.3	51.5	9.7	11.8
		060	292.2	52.1	12.6	14.7	278.4	57.5	12.0	14.3	264.5	62.5	11.4	14.0

(See Legend on page 34.)

Performance data, 30HWC, HK water-cooled — SI



COOLING CAPACITIES — 50 Hz

LCWT (C)	UNIT 30	UNIT SIZE	CONDENSER ENTERING WATER TEMPERATURE (C)													
			25				30				35					
			Cap	Input kW	Cooler Flow Rate (L/s)	Cond Flow Rate (L/s)	Cap	Input kW	Cooler Flow Rate (L/s)	Cond Flow Rate (L/s)	Cap	Input kW	Cooler Flow Rate (L/s)	Cond Flow Rate (L/s)		
4	HWC	018	46.7	9.8	2.0	2.4	44.6	10.9	1.9	2.4	42.4	12.0	1.8	2.3		
		025	58.6	12.3	2.5	3.0	55.3	13.4	2.4	2.9	51.9	14.4	2.2	2.8		
		028	73.3	16.3	3.1	3.8	68.7	17.5	2.9	3.7	64.2	18.5	2.8	3.5		
		035	80.8	19.2	3.5	4.3	76.3	20.6	3.3	4.1	71.7	21.9	3.1	4.0		
		040	110.7	26.7	4.8	5.8	105.4	28.5	4.5	5.7	100.2	30.1	4.3	5.5		
	HK	040	140.8	34.0	6.0	7.4	133.3	36.7	6.7	7.2	125.5	39.2	6.4	7.0		
		050	166.8	40.0	7.2	8.8	158.0	43.1	8.0	8.6	149.1	46.0	7.6	8.3		
		060	212.5	59.9	9.1	11.6	201.9	63.8	9.7	11.3	191.3	67.3	9.2	11.0		
		5	HWC	018	48.3	9.9	2.1	2.5	46.0	11.0	2.0	2.4	43.8	12.1	1.9	2.4
				025	60.7	12.4	2.6	3.1	57.3	13.5	2.5	3.0	53.9	14.5	2.3	2.9
028	76.5			16.5	3.3	4.0	71.8	17.7	3.1	3.8	67.1	18.9	2.9	3.7		
035	84.1			19.4	3.6	4.4	79.5	20.9	3.4	4.3	74.8	22.2	3.2	4.1		
040	114.8			27.0	4.9	6.0	109.4	28.9	4.7	5.9	104.0	30.6	4.5	5.7		
HK	040		146.1	34.3	6.3	7.7	138.3	37.1	5.9	7.5	130.5	39.7	5.6	7.2		
	050		173.1	40.3	7.4	9.1	164.1	43.6	7.1	8.8	155.1	46.6	6.7	8.6		
	060		220.3	60.7	9.5	11.9	209.4	64.7	9.0	11.6	198.5	68.4	8.5	11.3		
	6		HWC	018	49.8	9.9	2.1	2.5	47.5	11.1	2.0	2.5	45.3	12.2	1.9	2.4
				025	62.8	12.5	2.7	3.2	59.5	13.6	2.6	3.1	55.9	14.7	2.4	3.0
028		79.8		16.7	3.4	4.1	74.9	18.0	3.2	4.0	70.1	19.2	3.0	3.8		
035		87.5		19.6	3.8	4.6	82.8	21.1	3.6	4.4	78.0	22.5	3.4	4.3		
040		119.0		27.3	5.1	6.2	113.4	29.2	4.9	6.1	107.8	31.0	4.6	5.9		
HK		040	151.4	34.6	6.5	7.9	143.6	37.5	6.2	7.7	135.6	40.2	5.8	7.5		
		050	179.6	40.6	7.7	9.4	170.5	44.0	7.3	9.1	161.1	47.2	6.9	8.9		
		060	228.3	61.4	9.8	12.3	217.1	65.6	9.3	12.0	205.9	69.4	8.9	11.7		
		7	HWC	018	51.4	10.0	2.2	2.6	49.1	11.2	2.1	2.6	46.7	12.3	2.0	2.5
				025	64.9	12.6	2.8	3.3	61.6	13.8	2.6	3.2	58.0	14.9	2.5	3.1
028	83.2			16.9	3.6	4.3	78.1	18.2	3.4	4.1	73.1	19.5	3.1	3.9		
035	91.0			19.8	3.9	4.7	86.2	21.4	3.7	4.6	81.3	22.8	3.5	4.4		
040	123.3			27.6	5.3	6.4	117.6	29.6	5.1	6.3	111.8	31.5	4.8	6.1		
HK	040		156.9	34.8	6.7	8.2	148.9	37.9	6.4	7.9	140.8	40.7	6.1	7.7		
	050		186.2	40.9	8.0	9.7	176.9	44.5	7.6	9.4	167.4	47.7	7.2	9.2		
	060		236.4	62.1	10.2	12.7	224.9	66.5	9.7	12.4	213.4	70.5	9.2	12.1		
	8		HWC	018	53.0	10.0	2.3	2.7	50.7	11.2	2.2	2.6	48.3	12.4	2.1	2.6
				025	67.2	12.7	2.9	3.4	63.8	13.9	2.7	3.3	60.1	15.0	2.6	3.2
028		86.7		17.1	3.7	4.4	81.5	18.5	3.5	4.3	76.3	19.8	3.3	4.1		
035		94.6		20.0	4.1	4.9	89.6	21.6	3.9	4.7	84.6	23.1	3.6	4.6		
040		127.6		27.9	5.5	6.6	121.8	30.0	5.2	6.5	115.9	31.9	5.0	6.3		
HK		040	162.5	35.1	7.0	8.4	154.3	38.3	6.6	8.2	146.1	41.2	6.3	8.0		
		050	192.9	41.2	8.3	10.0	183.4	44.9	7.9	9.7	173.7	48.3	7.5	9.5		
		060	244.8	62.8	10.5	13.1	233.0	67.3	10.0	12.8	221.2	71.5	9.5	12.4		
		9	HWC	018	54.6	10.0	2.4	2.8	52.2	11.3	2.2	2.7	49.8	12.5	2.1	2.7
				025	69.5	12.8	3.0	3.5	65.9	14.0	2.8	3.4	62.3	15.2	2.7	3.3
028	90.3			17.3	3.9	4.6	84.9	18.7	3.7	4.4	79.6	20.0	3.4	4.2		
035	98.3			20.1	4.2	5.0	93.2	21.8	4.0	4.9	88.1	23.4	3.8	4.8		
040	132.0			28.1	5.7	6.8	126.1	30.3	5.4	6.7	120.0	32.3	5.2	6.5		
HK	040		168.2	35.3	7.2	8.7	159.9	38.6	6.9	8.5	151.5	41.7	6.5	8.2		
	050		199.8	41.5	8.6	10.3	190.1	45.3	8.2	10.0	180.2	48.8	7.8	9.8		
	060		253.4	63.5	10.9	13.5	241.2	68.2	10.4	13.1	229.1	72.6	9.9	12.8		
	10		HWC	018	56.3	10.0	2.4	2.8	53.9	11.3	2.3	2.8	51.4	12.6	2.2	2.7
				025	71.8	12.8	3.1	3.6	68.2	14.1	2.9	3.5	64.5	15.3	2.8	3.4
028		93.9		17.4	4.0	4.8	88.4	18.9	3.8	4.6	82.9	20.3	3.6	4.4		
035		102.0		20.3	4.4	5.2	96.9	22.1	4.2	5.1	91.6	23.7	3.9	4.9		
040		136.5		28.4	5.9	7.0	130.5	30.6	5.6	6.9	124.3	32.8	5.4	6.7		
HK		040	174.0	35.5	7.5	8.9	165.5	38.9	7.1	8.7	157.0	42.1	6.8	8.5		
		050	206.8	41.7	8.9	10.6	197.0	45.6	8.5	10.3	186.8	49.3	8.0	10.1		
		060	262.1	64.2	11.3	13.9	249.7	69.0	10.8	13.5	237.2	73.5	10.2	13.2		
		13	HWC	018	61.5	10.1	2.7	3.1	58.9	11.5	2.5	3.0	56.3	12.8	2.4	2.9
				025	78.9	13.0	3.4	3.9	75.2	14.4	3.2	3.8	71.3	15.7	3.1	3.7
028	105.4			17.9	4.5	5.3	99.4	19.6	4.3	5.1	93.5	21.1	4.0	4.9		
035	113.9			20.6	4.9	5.7	108.3	22.6	4.7	5.6	102.7	24.5	4.4	5.4		
040	150.6			29.1	6.5	7.7	144.1	31.6	6.2	7.5	137.7	33.9	5.9	7.3		
HK	040		192.3	36.1	8.3	9.7	183.3	39.8	7.9	9.5	174.2	43.3	7.5	9.3		
	050		228.7	42.3	9.9	11.6	218.2	46.6	9.4	11.3	207.6	50.7	9.0	11.0		
	060		289.4	66.0	12.5	15.1	276.1	71.4	11.9	14.8	262.7	76.4	11.3	14.4		
	16		HWC	018	66.9	10.1	2.9	3.3	64.1	11.6	2.8	3.2	61.4	13.0	2.7	3.2
				025	86.5	13.2	3.7	4.3	82.5	14.7	3.6	4.2	78.5	16.1	3.4	4.0
028		117.9		18.3	5.1	5.8	111.4	20.2	4.8	5.6	105.0	21.9	4.5	5.4		
035		126.6		20.9	5.5	6.3	120.6	23.1	5.2	6.1	114.7	25.2	4.9	6.0		
040		165.5		29.7	7.1	8.3	158.6	32.5	6.8	8.2	151.7	35.1	6.5	8.0		
HK		040	207.6	36.4	9.0	10.4	196.8	40.3	8.5	10.1	185.8	44.0	8.0	9.8		
		050	247.6	42.6	10.7	12.4	235.1	47.2	10.1	12.1	222.5	51.6	9.6	11.7		
		060	317.4	67.6	13.7	16.4	302.1	73.4	13.0	16.0	286.8	78.9	12.4	15.6		

(See Legend on page 38.)

Electrical data — 30HWB,HWC,HWS,HK fluid-cooled units



UNIT SIZE 30-	UNIT									COMPRESSOR (ea)		
	Volts		Voltage*		MCA	ICF		MOCP	Rec Fuse	RLA	LRA	
	Nameplate (3 ph)	Hz	Min	Max		PW	XL				PW	XL
HWB,C,S018	208/230	60	187	253	62	—	266	110	80	49	—	266
	380	60	342	418	35	—	145	60	45	28	—	145
	460	60	414	508	28	—	120	50	35	23	—	120
	575	60	518	632	24	—	96	40	30	19	—	96
	380/415	50	342	440	34	—	115	60	45	27	—	115
HWB,C,S025	208/230	60	187	253	72	170	283	125	90	57	170	283
	380	60	342	418	43	85	142	70	60	34	85	142
	460	60	414	508	34	85	142	60	45	27	85	142
	575	60	518	632	28	59	98	45	35	22	59	98
	380/415	50	342	440	38	104	173	60	45	30	104	173
HWB,C,S028	208/230	60	187	253	89	268	446	150	110	71	268	446
	380	60	342	418	54	134	223	90	70	43	134	223
	460	60	414	508	44	134	223	70	60	35	134	223
	575	60	518	632	35	98	164	60	45	28	98	164
	380/415	50	342	440	54	134	223	90	70	43	134	223
HWB,C,S035	208/230	60	187	253	102	268	446	175	125	81	268	446
	380	60	342	418	59	134	223	100	80	47	134	223
	460	60	414	508	48	134	223	80	60	38	134	223
	575	60	518	632	39	98	164	60	50	31	98	164
	380/415	50	342	440	54	152	253	90	70	43	152	253
HWB,C,S040	208/230	60	187	253	145	414	690	250	175	116	414	690
	380	60	342	418	84	207	345	150	110	67	207	345
	460	60	414	508	69	207	345	110	90	55	207	345
	575	60	518	632	55	165	276	90	70	44	165	276
	380/415	50	342	440	78	207	345	125	100	62	207	345
HK040	208/230	60	187	253	129	+	340	175	150	57	+	283
	460	60	414	518	59	+	168	80	70	26	+	142
	575	60	518	632	54	+	122	70	60	24	+	98
	400	50	342	440	71	+	249	100	90	36/26**	+	223/142**
HK050	208/230	60	187	253	161	+	503	225	200	83/57**	+	446/283**
	460	60	414	518	75	+	249	110	90	39/26**	+	223/142**
	575	60	518	632	73	+	188	110	90	39/24**	+	164/ 98**
	400	50	342	440	81	+	259	110	100	36	+	223
HK060	208/230	60	187	253	187	+	529	250	225	83	+	446
	460	60	414	518	88	+	262	125	100	39	+	223
	575	60	518	632	88	+	203	125	100	39	+	164
	400	50	342	440	131	+	403	175	150	58	+	345

(See Legend and Notes on page 43.)