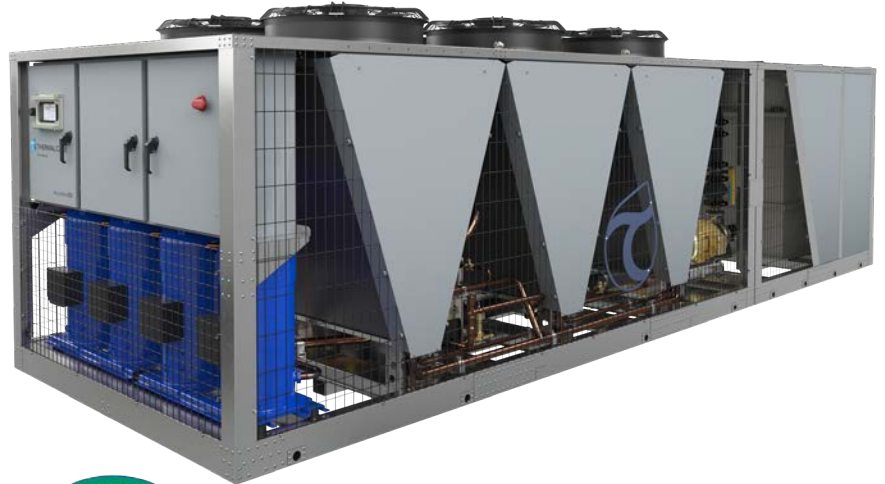


# Accuchiller KSE Series

## Packaged Outdoor Chiller with Integral Tank

### Benefits:

- **Refrigerant Options:** EPA approved low GWP R-454B refrigerant or energy efficient R-410A refrigerant.
- **Direct-Drive Scroll Compressors:** Hermetically sealed scroll compressors with proven performance in industrial cooling for reliable, low maintenance, and efficient operation.
- **Built-In Redundancy:** Dual refrigeration circuits with multiple compressors and lead/lag sequencing as standard. The 80 ton (281 kW) through 120 ton (422 kW) units also incorporate independent process fluid circuits.
- **Integral Tank:** Integrates a chiller with a complete process pumping system and integral reservoir in one package (chiller and tank section ship separately). Provides buffer for temperature stabilization.
- **Stainless Steel Evaporators:** High efficiency stainless steel plates with copper brazing provide maximum performance, long life, and an enhanced level of protection from harsh process conditions.
- **Stainless Steel Pumps:** Selected for peak performance with the utmost in corrosion protection to ensure a long useful life under severe industrial conditions. Each pump uses TEFC motors for maximum protection from the environment.
- **Evaporator Inlet Strainer:** Removes any debris present in the process fluid to prevent costly downtime and repair due to a clogged chiller evaporator.
- **Warranty:** 1 year parts and labor.



Accuchiller KSE Series outdoor chillers with integral tank feature a compact, all-in-one package, designed to minimize installation cost, maximize usable space and lower electric bills. Designed for harsh outdoor environments, KSE Series chillers require no options to operate within the standard -20°F to 125°F (-29°C to 52°C) ambient environment conditions. Standard process fluid temperatures of 20°F to 80°F (-7°C to 27°C) are ideal for industrial applications. The modular design allows up to 12 refrigeration circuits to be combined into a single system for up to 720 tons (2,532 kW) of cooling capacity.

KSE Series chillers with tank integrate a chiller with a

complete process pumping system and integral reservoir in one packaged. Chiller and tank section ship separately for your convenience but are prewired and pre-piped for easy connection. Chillers are available with pumping packages, including high and low pressure pumping with dedicated standby and built-in pressurized tanks.

KSE Series chillers come standard with Dynamic Lift Technology to continuously calculate the lowest allowable refrigerant pressure for any combination of operating conditions to maximize chiller energy savings and to provide stable process fluid temperatures of +/- 2°F (1.1°C).

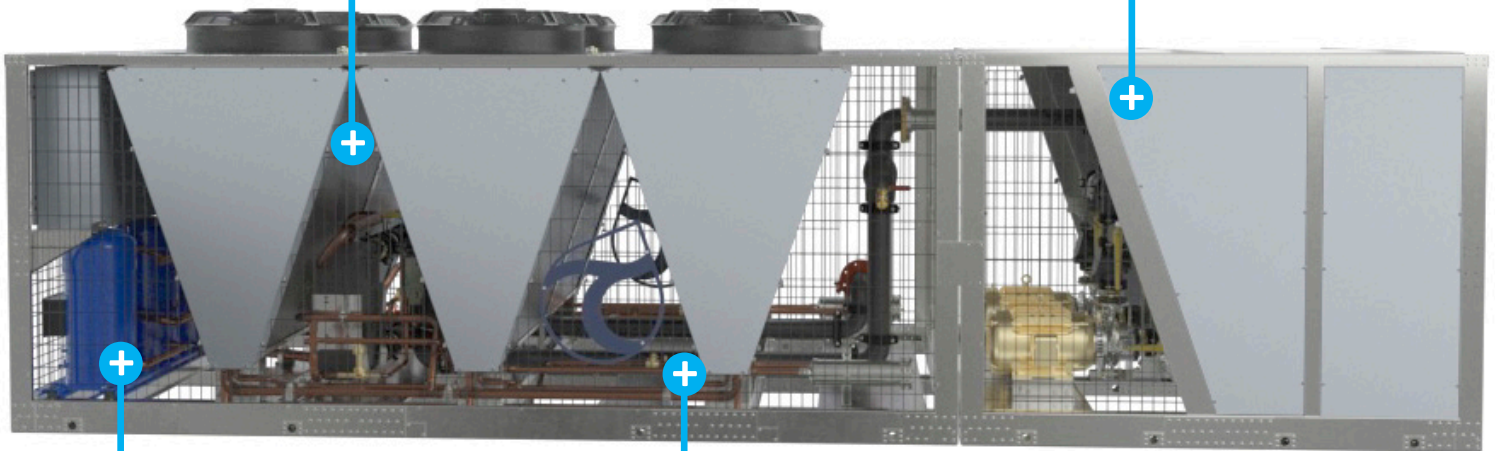
## Benefits of the KSE Series Industrial Chiller with Integral Tank Features:

### HIGH EFFICIENCY STAINLESS STEEL EVAPORATOR PLATES WITH COPPER BRAZING

Provides maximum performance, long life and enhanced protection from harsh process conditions.

### INTEGRAL TANK

Complete process pumping system and reservoir in one package - provides everything you need in one place.



### HERMETICALLY-SEALED DIRECT-DRIVE SCROLL COMPRESSOR

Provide smooth, quiet operation, with high reliability. The sealed housing prevents refrigerant leaks and protects internal components from dust and moisture.

### REDUNDANCY

Dual refrigeration circuits, with built-in redundancy and multiple compressors ensures efficient operation and long life.



**THERMALCARE**

PiovanGroup

847.966.2260 \ [sales@thermalcare.com](mailto:sales@thermalcare.com) \ [www.thermalcare.com](http://www.thermalcare.com)

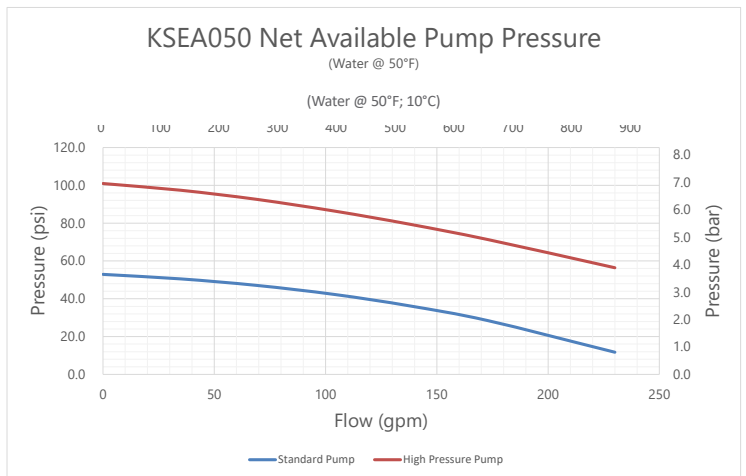
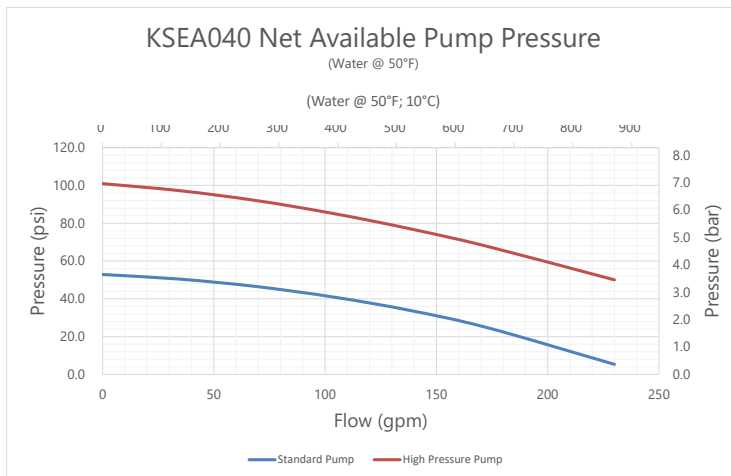
KSE Series with Integral Tank - 2

### Additional Benefits:

- **Industry Best Ambient Temperature Range:** Outdoor air-cooled chillers operate in -20°F up to 125°F (-29°C to 52°C) ambient temperatures allowing installations in many climates.
- **Flexible Set Point Ranges:** From 20°F to 80°F (-7°C to 27°C). Powerful and innovate PLC control maintains stable +/- 2°F (1.1°C) accuracy.
- **Heavy Gauge Security and Hail Guard Grates:** Industrial grade security screens are provided as a standard option to protect exposed components while still allowing access for easy operation.
- **Compressor Protection Technology:** Uses start-to-start anti-recycle control logic to limit cycling under low-load operating conditions to extend compressor life.
- **Compressor and Pump Run Hour Displays:** Track usage for maintenance scheduling.
- **Micro-Channel, Aluminum Condensers:** Energy efficient, compact design uses less refrigerant and withstands high pressure spray for easy cleaning.
- **Power Monitor:** Protects the compressor and pump from extensive damage due to loss of phase or phase reversal in the main supply.
- **Variable Speed Fan Motors:** EC fan motors ensure energy efficient operation and lowest possible noise levels. Coupled with electronic expansion valves, our Dynamic Lift Technology uses the fans to maximize energy efficiency for all ambient conditions.
- **Temperature Deviation Warnings and Alarms:** Alerts notify the operator of potential temperature fluctuations before a fault occurs and if the condition gets worse, stops the chiller to prevent damage.
- **Adjustable Deviation Alarm Time Delays:** Delays alarms on start-up to allow the process loop to stabilize before activating the alarms.
- **24 VDC Power Supply:** Ensures dependable control circuit power and isolates the control circuit from static interference for stable and precise operation.
- **UL-508A Industrial Control Panel:** Meet rigorous UL 508A standards for safe, reliable operation.
- **7-Inch Color Touch Screen:** Controls, monitors and maintains stable and reliable chiller operation.

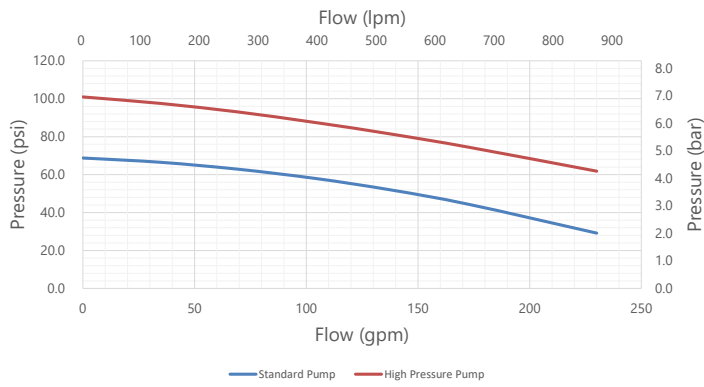
### Available Options:

- High or low pressure pump packages
- Alarm horn
- Alarm relay
- Rotary non-fused or fused disconnect switch
- Air-cooled condenser coating for coastal regions
- Emergency stop button
- Remote HMI with operator interface
- Special color paint



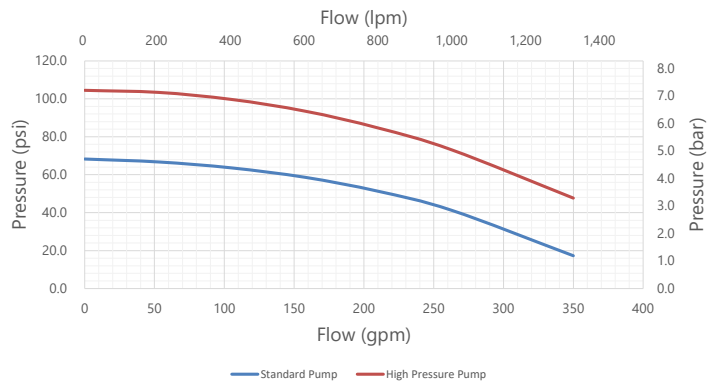
### KSEA060 Net Available Pump Pressure

(Water @ 50°F; 10°C)



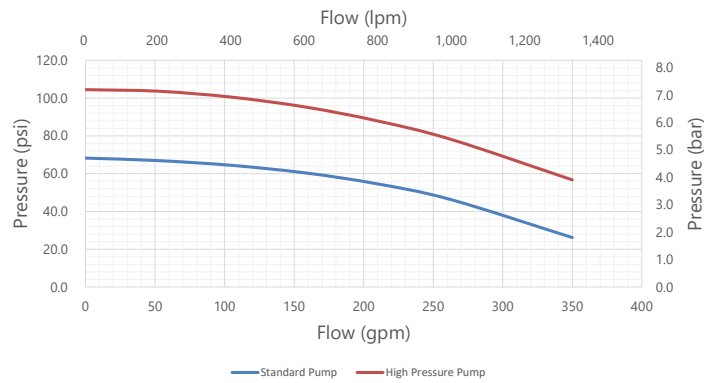
### KSEA080 Net Available Pump Pressure

(Water @ 50°F; 10°C)



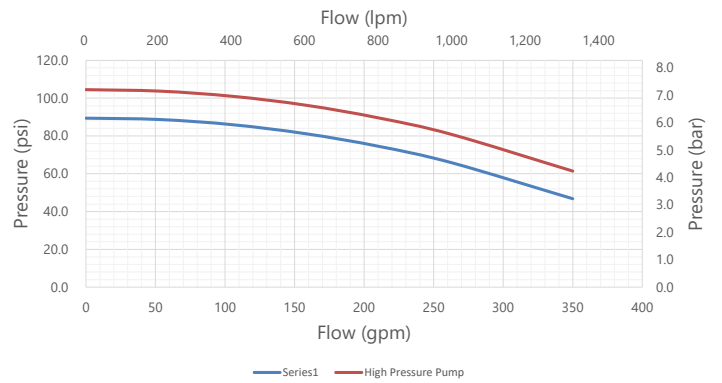
### KSEA100 Net Available Pump Pressure

(Water @ 50°F; 10°C)

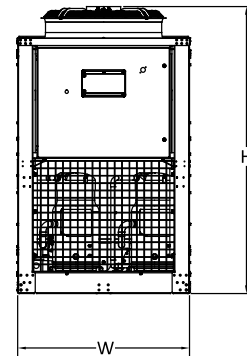
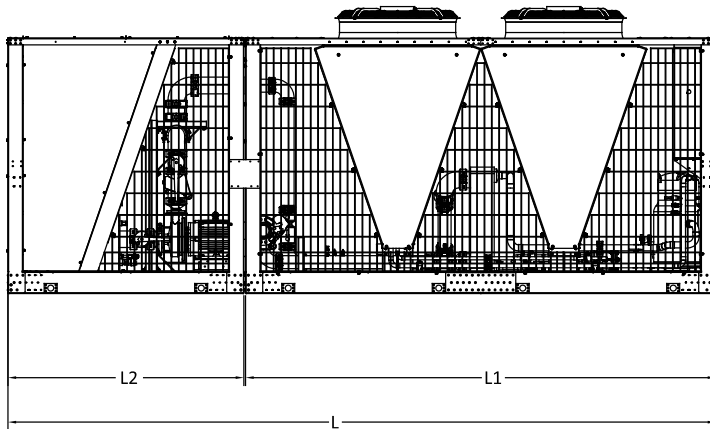
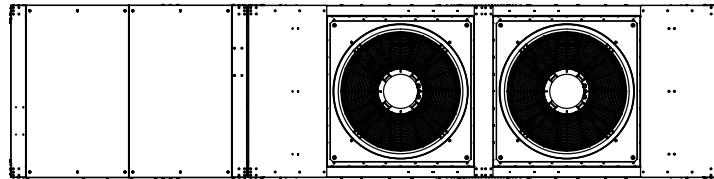


### KSEA120 Net Available Pump Pressure

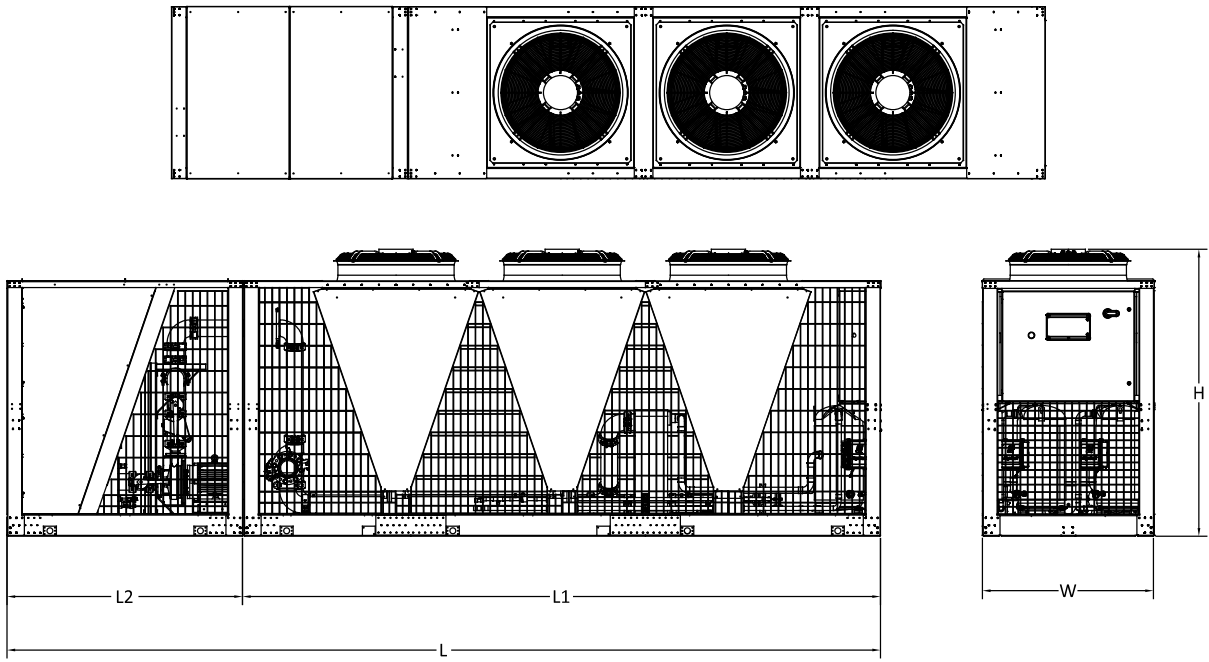
(Water @ 50°F; 10°C)



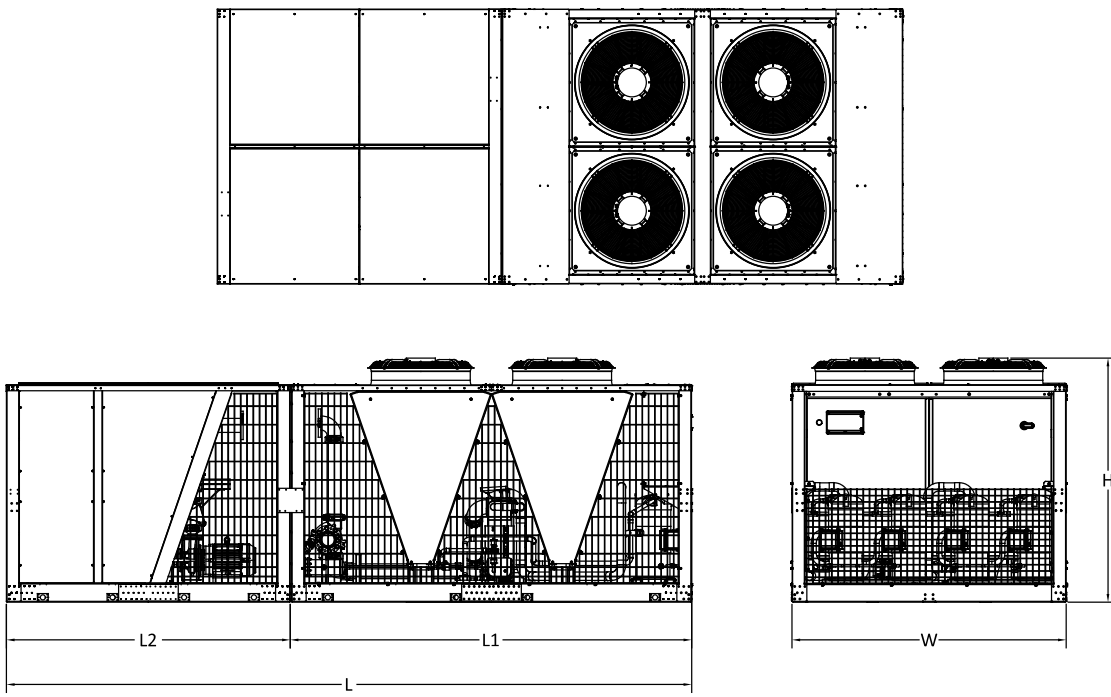
## KSEA040



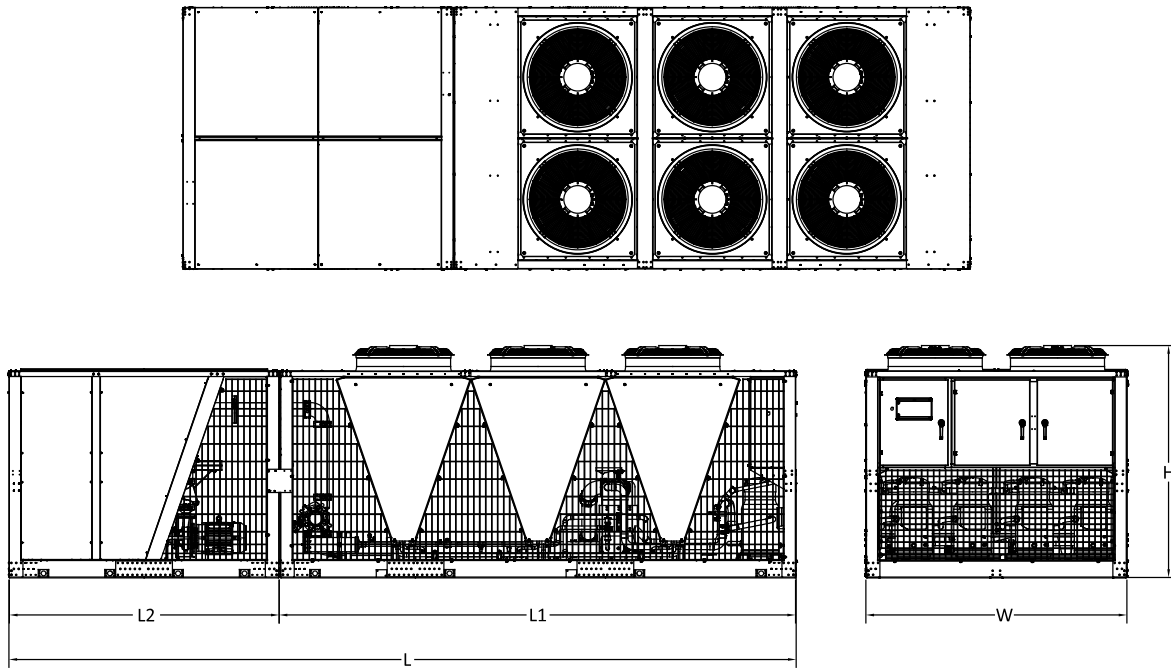
*KSEA50 and KSEA60*



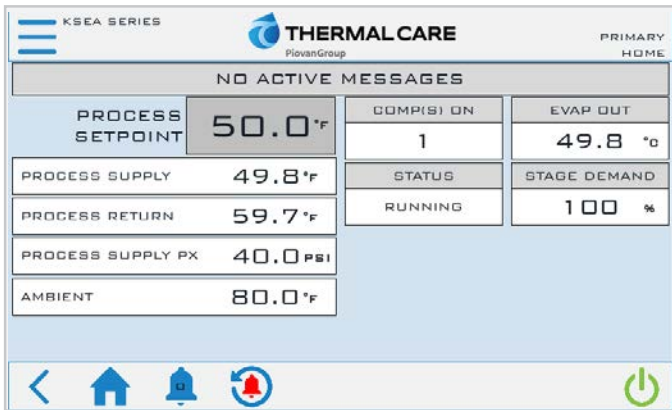
*KSEA80*



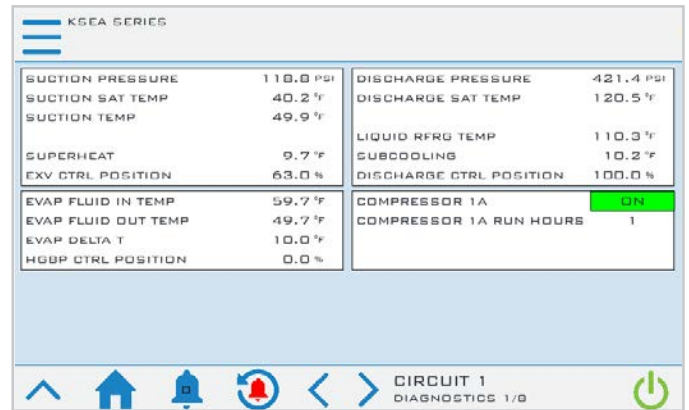
# KSEA100 and KSEA120



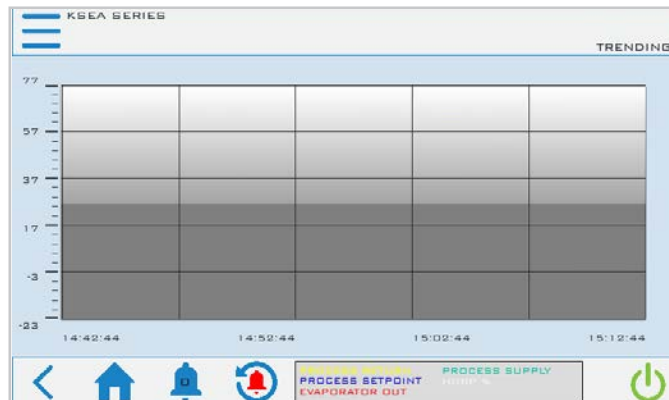
## 7-Inch Color Touch Screen



Home Screen



Diagnostics Screen



Trending Data Screen

## Specifications

Description of Functions	Control Features
Process Fluid Supply and Return Temperatures	●
Evaporator Fluid Leaving Temperature	●
Process Fluid Supply Pressure	●
Refrigerant Suction Pressure	●
Refrigerant Suction Temperature and Superheat	●
Refrigerant Liquid Temperature and Subcooling	●
Refrigerant Discharge Pressure	●
Refrigerant Discharge Temperature	●
High Process Fluid Temperature	●
Low Process Fluid Temperature	●
Evaporator Fluid Freeze	●
Evaporator Fluid Flow Switch	●
Refrigerant High Pressure	●
Ambient Temperature Tracking	●
Phase Monitor	●
Compressor Overload	●
Condenser Fan Overload	●
Remote Setpoint (0-10 VDC)	●
Remote Start / Stop	●
Alarm Horn	●
Alarm Contact	●
CONNEX4.0 Ready	●
Modbus RTU	●
Modbus TCP / IP	●
BACnet MS / TP	○
BACnet / IP	○
Tank Level	●

**Legend:** Standard = ●      Optional = ○

## Technical Data

Air-Cooled Condenser Chillers	KSEA040	KSEA050	KSEA060	KSEA080	KSEA100	KSEA120
<b>General</b>						
Cooling Capacity <sup>1</sup>	40 tons 141 kW	50 tons 176 kW	60 tons 211 kW	80 tons 281 kW	100 tons 352 kW	120 tons 422 kW
Set Point Range	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C	20 to 80°F -7° to 27°C
Number of Compressors	2	2	2	4	4	4
Process In / Out (in) – Standard	3	3	4	4	4	4
Process In / Out (in) – High Flow	4	4	4	4	6	6
Minimum Unloaded Capacity	20 ton 70 kW	25 ton 88 kW	30 ton 106 kW	20 ton 70 kW	25 ton 88 kW	30 ton 106 kW
with HGBP Option	10 ton 35 kW	13 ton 46 kW	15 ton 53 kW	10 ton 35 kW	13 ton 46 kW	15 ton 53 kW

Air-Cooled Condenser Chillers (continued)	KSEA040	KSEA050	KSEA060	KSEA080	KSEA100	KSEA120
<b>Chiller (L1) Dimensions L x W x H in (mm)</b>	128 x 47 x 79 (3,251 x 1,194 x 2,007)	173 x 47 x 79 (4,394 x 1,194 x 2,007)	173 x 47 x 79 (4,394 x 1,194 x 2,007)	128 x 88 x 79 (3,251 x 2,235 x 2,007)	173 x 88 x 79 (4,394 x 2,235 x 2,007)	173 x 88 x 79 (4,394 x 2,235 x 2,007)
<b>Chiller Shipping Weight</b>	2,876 lbs 1,305 kg	3,976 lbs 1,803 kg	3,976 lbs 1,803 kg	4,654 lbs 2,111 kg	5,954 lbs 2,701 kg	5,954 lbs 2,701 kg
<b>Tank (L2) Dimensions L x W x H in (mm)</b>	64 x 47 x 79 (163 x 1,194 x 2,007)	64 x 47 x 79 (163 x 1,194 x 2,007)	64 x 47 x 79 (163 x 1,194 x 2,007)	91 x 88 x 79 (231 x 2,235 x 2,007)	91 x 88 x 79 (231 x 2,235 x 2,007)	91 x 88 x 79 (231 x 2,235 x 2,007)
<b>Chiller &amp; Tank (L) Dimensions L x W x H in (mm)</b>	192 x 47 x 79 (3,414 x 1,194 x 2,007)	237 x 47 x 79 (4,557 x 1,194 x 2,007)	237 x 47 x 79 (4,557 x 1,194 x 2,007)	219 x 88 x 79 (3,482 x 2,235 x 2,007)	264 x 88 x 79 (4,625 x 2,235 x 2,007)	264 x 88 x 79 (4,625 x 2,235 x 2,007)
<b>Tank with Standard Pressure Pump</b>						
<b>Process Pump / Chiller Pump</b>	7.5 hp 5.6 kW	7.5 hp 5.6 kW	10 hp 7.5 kW	15 hp 11.2 kW	15 hp 11.2 kW	20 hp 14.9 kW
<b>Nominal Flow Rate</b>	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
<b>Nominal Discharge Pressure</b>	41 psi 2.8 bar	39 psi 2.7 bar	50 psi 3.4 bar	54 psi 3.7 bar	50 psi 3.4 bar	62 psi 4.3 bar
<b>Tank with Pumps Shipping Weight</b>	1,677 lbs 761 kg	1,677 lbs 761 kg	1,905 lbs 864 kg	2,845 lbs 1,290 kg	2,845 lbs 1,290 kg	2,920 lbs 1,324 kg
<b>Chiller &amp; Tank Operating Weight</b>	6,323 lbs 2,868 kg	7,598 lbs 3,446 kg	7,826 lbs 3,550 kg	11,769 lbs 5,338 kg	13,179 lbs 5,978 kg	13,319 lbs 6,041 kg
<b>Tank with Standard Pressure Pump with Dedicated Standby Pump</b>						
<b>Process Pump / Chiller Pump</b>	7.5 hp 5.6 kW	7.5 hp 5.6 kW	10 hp 7.5 kW	15 hp 11.2 kW	15 hp 11.2 kW	20 hp 14.9 kW
<b>Nominal Flow Rate</b>	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
<b>Nominal Discharge Pressure</b>	41 psi 2.8 bar	39 psi 2.7 bar	50 psi 3.4 bar	54 psi 3.7 bar	50 psi 3.4 bar	62 psi 4.3 bar
<b>Tank with Pumps Shipping Weight</b>	1,830 lbs 830 kg	1,830 lbs 830 kg	2,135 lbs 968 kg	3,079 lbs 1,379 kg	3,079 lbs 1,379 kg	3,229 lbs 1,465 kg
<b>Chiller &amp; Tank Operating Weight</b>	6,476 lbs 2,938 kg	7,751 lbs 3,516 kg	8,056 lbs 3,654 kg	12,003 lbs 5,445 kg	13,413 lbs 6,084 kg	13,628 lbs 6,182 kg
<b>Tank with High Pressure Pump</b>						
<b>Process Pump / Chiller Pump</b>	15 hp 11.2 kW	15 hp 11.2 kW	15 hp 11.2 kW	25 hp 18.6 kW	25 hp 18.6 kW	25 hp 18.6 kW
<b>Nominal Flow Rate</b>	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
<b>Nominal Discharge Pressure</b>	86 psi 5.9 bar	82 psi 5.7 bar	80 psi 5.5 bar	90 psi 6.2 bar	82 psi 5.7 bar	76 psi 5.2 bar
<b>Tank with Pumps Shipping Weight</b>	1,768 lbs 802 kg	1,768 lbs 802 kg	1,919 lbs 870 kg	2,854 lbs 1,295 kg	2,982 lbs 1,352 kg	2,982 lbs 1,352 kg
<b>Chiller &amp; Tank Operating Weight</b>	6,414 lbs 2,909 kg	7,689 lbs 3,488 kg	7,840 lbs 3,556 kg	11,778 lbs 5,342 kg	13,316 lbs 6,040 kg	13,381 lbs 6,070 kg

Air-Cooled Condenser Chillers (continued)	KSEA040	KSEA050	KSEA060	KSEA080	KSEA100	KSEA120
<b>Tank with High Pressure Pump with Dedicated Standby Pump</b>						
<b>Process Pump / Chiller Pump</b>	15 hp 11.2 kW	15 hp 11.2 kW	15 hp 11.2 kW	25 hp 18.6 kW	25 hp 18.6 kW	25 hp 18.6 kW
<b>Nominal Flow Rate</b>	96 gpm 363 lpm	120 gpm 454 lpm	144 gpm 545 lpm	192 gpm 727 lpm	240 gpm 909 lpm	288 gpm 1,090 lpm
<b>Nominal Discharge Pressure</b>	86 psi 5.9 bar	82 psi 5.7 bar	80 psi 5.5 bar	90 psi 6.2 bar	82 psi 5.7 bar	76 psi 5.2 bar
<b>Tank with Pumps Shipping Weight</b>	2,011 lbs 912 kg	2,011 lbs 912 kg	2,162 lbs 981 kg	3,098 lbs 1,405 kg	3,353 lbs 1,521 kg	3,353 lbs 1,521 kg
<b>Chiller &amp; Tank Operating Weight</b>	6,657 lbs 3,020 kg	7,932 lbs 3,598 kg	8,083 lbs 3,666 kg	12,022 lbs 5,453 kg	13,687 lbs 6,208 kg	13,752 lbs 6,238 kg

<sup>1</sup>Cooling tons based on 12,000 BTU/Hr/ton with 50°F (10°C) leaving coolant and 95°F (32°C) ambient air, R410A or R454B refrigerant.

### Electrical Data (60 Hz)

Chiller Only	Rated Voltage <sup>1</sup> FLA @ 208		Rated Voltage <sup>1</sup> FLA @ 230		Rated Voltage <sup>1</sup> FLA @ 460		Rated Voltage <sup>1</sup> FLA @ 575	
	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>
KSEA040	186	300	186	300	89	125	69	100
KSEA050	220	350	220	350	111	175	79	110
KSEA060	272	400	272	400	124	175	99	150
KSEA080	351	450	351	450	169	225	131	175
KSEA100	417	600	417	600	210	300	150	200
KSEA120	515	700	515	700	236	300	188	250

Chiller with Standard Pressure Pump(s)	Rated Voltage <sup>1</sup> FLA @ 208		Rated Voltage <sup>1</sup> FLA @ 230		Rated Voltage <sup>1</sup> FLA @ 460		Rated Voltage <sup>1</sup> FLA @ 575	
	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>
KSEA040	211	300	209	300	101	150	79	110
KSEA050	246	350	244	350	123	175	89	125
KSEA060	304	450	301	450	139	200	111	175
KSEA080	398	500	394	500	190	250	149	200
KSEA100	465	600	460	600	232	300	168	200
KSEA120	576	700	570	700	264	350	211	300

Chiller with High Pressure Pump(s)	Rated Voltage <sup>1</sup> FLA @ 208		Rated Voltage <sup>1</sup> FLA @ 230		Rated Voltage <sup>1</sup> FLA @ 460		Rated Voltage <sup>1</sup> FLA @ 575	
	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>	MCA <sup>2</sup>	MOP <sup>3</sup>
KSEA040	233	350	229	350	111	150	87	125
KSEA050	268	400	264	400	133	200	97	150
KSEA060	320	450	315	450	146	200	117	175
KSEA080	427	600	420	500	203	250	159	200
KSEA100	<b>493</b>	<b>600</b>	<b>486</b>	<b>600</b>	<b>245</b>	<b>300</b>	<b>178</b>	<b>225</b>
KSEA120	<b>591</b>	<b>800</b>	<b>584</b>	<b>700</b>	<b>271</b>	<b>350</b>	<b>216</b>	<b>300</b>

<sup>1</sup>Allowable voltage range is ± 10% from rated voltage.

<sup>2</sup>MCA is Minimum Circuit Amps, used for minimum wire size requirement.

<sup>3</sup>MOP is Maximum Overcurrent Protection, used for sizing main power protection device.



**Thermal Care is ISO 9001 Certified**  
 Manufacturer reserves the right to change specification  
 or design without notification or obligation.

