

TPHX057-1218

ESE Product Data Booklet

ESE Series Scroll Central Chillers



Please keep this Product Data Booklet and all manuals, engineering prints and parts lists together for documentation of your equipment.

Date:

Number: TPHX057-1218

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Standard Features

Direct Drive Scroll Compressors

Direct-drive hermetically sealed scroll compressors with proven performance in industrial cooling for reliable, low maintenance, and efficient operation.

Stainless Steel Evaporator

High-efficiency stainless steel plates with copper brazing provide maximum performance, long life, and an enhanced level of protection from harsh process conditions.

Evaporator Inlet Strainer

The evaporator inlet strainer removes any debris present in the process fluid to prevent costly downtime and repair due to a clogged chiller evaporator.

Fits through Doors

Single circuit chillers up to 80 tons are compact and easily fit through standard 36-inch wide doors for easy maneuvering into tight installation spaces.

Dual Circuit Manifolds

Dual circuit chillers include evaporator manifolds and water-cooled condenser units include condenser water manifolds for quick and easy installation.

Modular Expandable System

Our modular system design provides for system expansion to over 1,000 tons using up to six chillers and twelve refrigeration circuits.

Single or Multiple Circuit Configurations

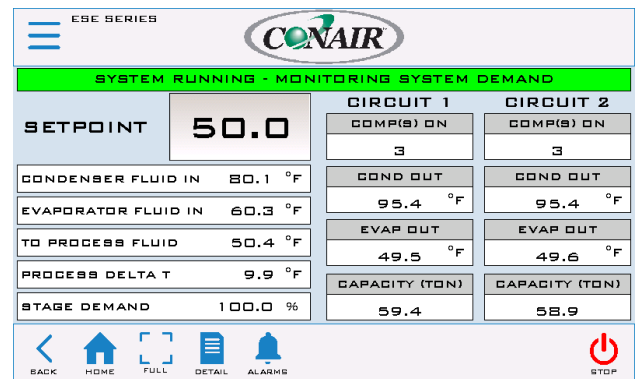
Dual-circuit chillers for redundancy and back up of critical processes or systems and single-circuit chillers for dedicated loads.

UL 508A Industrial Control Panel

Every chiller has a UL label certifying our panel design and components comply with UL 508A standards ensuring the panels are safe and consistent for reliable operation.

Color Touch-Screen Display

A high-resolution, high-speed, 7-inch color touch-screen with English text clearly shows chiller operation for quick and easy monitoring and control of the system.



Standard PLC Home Screen

Warranty

3 year PLC controller parts

1 year entire unit parts

1 year labor

One-day factory authorized start-up supervision

Available Options

Integral Reservoir and Pumping System

An integral stainless steel reservoir and pumping system all piped, insulated, and wired to the chiller control panel for a quick and easy complete chilled water system installation. Available on chillers up to 160 tons.

Rotary Non-Fused Disconnect Switch

Adds a 5 kA SCCR (Short Circuit Current Rating) rotary non-fused disconnect switch to the control panel for safe lockout of main power.

10-inch HMI

Replaces the standard 7-inch screen with a 10-inch, high resolution, color screen for larger presentation of the same menus and functions as the standard screen.

12 inch HMI

Replaces the standard 7-inch screen with a 12-inch, high resolution, color screen with a built-in industrial computer to allow for remote monitoring and control using Teamviewer software installed on any remote Windows based PC or smart phone.

BACnet or Lon Works Communications Port

Adds a ModBUS to BACnet or Lon Works gateway which is wired to a RS-485 connector on the chiller control panel.

Hot Gas Bypass Valve

For applications with sudden batch loads or prolonged periods of extremely low loads, a hot-gas bypass valve is available to provide an added level of unloading and temperature control beyond compressor staging.

Condenser Coil Coating

For applications where a chiller with a remote air-cooled condenser is in an area within 10 miles of a saltwater coast, this option provides an added level of protection for the aluminum condenser coil from possible corrosion from salt air.

Physical Data

Water-Cooled Condenser Single-Circuit Chillers

	ESEW 10S	ESEW 15S	ESEW 20S	ESEW 25S	ESEW 30S	ESEW 40S	ESEW 50S	ESEW 60S	ESEW 80S	ESEW 100S	ESEW 120S
Cooling Capacity (tons) ¹	11	16	22	27	32	42	53	69	86	110	128
Set Point Range (°F)	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80
Compressors (qty)	2	2	2	2	2	2	2	2	2	3	3
Process In/Out (in) – std	1½	1½	2	2	2½	2½	3	3	4	4	4
w/high flow evaporator	2	2½	2½	3	3	4	4	4	n/a	6	6
Condenser In/Out (in)	1½	2	2	2½	2½	3	3	4	4	4	4
Chiller											
Length (in)	68	68	68	68	72	100	100	100	105	123	125
Width (in)	24	24	24	24	24	24	30	30	30	30	30
Height (in)	69	69	69	69	69	69	69	69	69	70	71
Ship Weight (lbs)	950	1,050	1,150	1,150	1,350	1,800	1,850	2,250	2,550	3,230	3,250
Operating Weight (lbs)	965	1,070	1,180	1,183	1,387	1,860	1,920	2,336	2,640	3,330	3,350
Chiller with Standard Flow Reservoir Option											
Reservoir Capacity (gal)	275	275	275	275	275	275	275	450	450	The ESEW100S and ESEW120S are not available with an integral reservoir	
Process / Chiller Pump (hp)	5/1.5	5/1.5	5/1.5	5/1.5	7.5/2	10/2	10/3	10/3	15/3		
Process Connection Size (in)	1½	1½	2	2	2½	2½	3	3	4		
Condenser In/Out (in)	1½	2	2	2½	2½	3	3	4	4		
Length (in)	99	99	99	99	99	99	102	114	114		
Width (in)	68	72	75	75	78	98	102	101	101		
Height (in)	73	73	73	73	73	73	73	73	73		
Ship Weight (lbs)	2,337	2,418	2,496	2,537	2,769	3,238	3,374	4,147	4,370		
Operating Weight (lbs)	4,631	4,712	4,790	4,831	5,063	5,532	5,668	7,901	8,124		
Chiller with High Flow Reservoir Option											
Reservoir Capacity (gal)	400	400	400	400	400	400	400	650	650	The ESEW100S and ESEW120S are not available with an integral reservoir	
Process/Chiller Pump (hp)	5/1.5	7.5/1.5	10/1.5	10/1.5	10/2	15/2	15/3	20/3	25/3		
Process Connection Size (in)	2	2½	2½	3	3	4	4	4	6		
Condenser In/Out (in)	1½	2	2	2½	2½	3	3	4	4		
Length (in)	99	99	99	99	99	99	102	114	114		
Width (in)	68	72	75	75	78	98	102	101	101		
Height (in)	73	73	73	73	73	73	73	73	73		
Ship Weight (lbs)	2,850	2,950	3,100	3,150	3,450	4,000	4,250	4,950	5,750		
Operating Weight (lbs)	6,200	6,300	6,450	6,500	6,800	7,350	7,600	10,400	11,200		

¹Cooling capacity when cooling water with 50°F set point, 60°F return, 85°F condenser water, R410A refrigerant.

Water-Cooled Condenser Dual-Circuit Chillers

	ESEW 20D	ESEW 30D	ESEW 40D	ESEW 50D	ESEW 60D	ESEW 80D	ESEW 100D	ESEW 120D	ESEW 160D	ESEW 200D	ESEW 240D
Cooling Capacity (tons) ¹	22	32	44	54	65	84	106	137	171	220	256
Set Point Range (°F)	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80
Compressors Circuit 1 (qty)	2	2	2	2	2	2	2	2	2	3	3
Compressors Circuit 2 (qty)	2	2	2	2	2	2	2	2	2	3	3
Process In/Out (in) – Std w/high flow evaporator	2 2½	2½ 3	2½ 4	3 4	3 4	4 6	4 6	4 6	6 n/a	3 8	3 8
Condenser In/Out (in)	2	2½	3	3	4	4	4	6	6	6	6
Chiller											
Length (in)	75	75	80	80	85	115	115	118	125	139	141
Width (in)	56	56	56	56	56	56	56	56	56	60	60
Height (in)	69	69	69	69	69	69	69	69	69	70	71
Ship Weight (lbs)	1,650	1,900	2,150	2,200	2,550	3,450	3,600	4,450	5,100	5,760	5,780
Operating Weight (lbs)	1,680	1,940	2,210	2,266	2,624	3,570	3,740	4,622	5,280	5,960	5,980
Chiller with Standard Flow Reservoir Option											
Reservoir Capacity (gal)	275	275	275	275	450	450	700	700	1,000	The ESEW200D and ESEW240D are not available with an integral reservoir	
Process/Chiller Pump (hp)	5/1.5	7.5/2	10/2	10/3	10/3	15/3	15/5	20/7.5	25/10		
Process Connection Size (in)	2	2½	2½	3	3	4	4	4	6		
Condenser In/Out (in)	2	2½	3	3	4	4	4	6	6		
Length (in)	123	123	123	123	135	135	135	135	148		
Width (in)	74	74	77	78	81	98	102	111 ²	111 ²		
Height (in)	73	73	73	75	75	79	79	79	90		
Ship Weight (lbs)	3,486	3,748	3,948	4,068	4,546	5,390	6,067	7,160	8,168		
Operating Weight (lbs)	5,780	6,042	6,229	6,362	8,300	9,144	11,936	12,999	16,510		
Chiller with High Flow Reservoir Option											
Reservoir Capacity (gal)	400	400	400	400	650	650	1,000	1,000	1,000	The ESEW200D and ESEW240D are not available with an integral reservoir	
Process/Chiller Pump (hp)	10/1.5	10/2	15/2	15/3	20/3	25/3	30/5	40/7.5	40/10		
Process Connection Size (in)	2½	3	4	4	4	6	6	6	6		
Condenser In/Out (in)	2	2½	3	3	4	4	4	6	6		
Length (in)	123	123	123	123	135	135	135	135	148		
Width (in)	74	74	77	78	81	98	102	111 ²	111 ²		
Height (in)	73	73	73	75	75	79	79	79	90		
Ship Weight (lbs)	5,950	6,400	6,750	6,950	8,950	10,300	13,050	14,150	18,500		
Operating Weight (lbs)	7,200	7,650	8,000	8,200	10,900	12,250	16,250	17,250	19,500		

¹Cooling capacity when cooling water with 50°F set point, 60°F return, 85°F condenser water, R410A refrigerant.

²To keep shipping dimensions within the 102" width of a standard flatbed, the condenser inlet manifold ships separately.

Remote Air-Cooled Condenser Single-Circuit Chillers

	ESER 10S	ESER 15S	ESER 20S	ESER 25S	ESER 30S	ESER 40S	ESER 50S	ESER 60S	ESER 80S	ESER 100S	ESER 120S
Cooling Capacity (tons) ¹	10	15	20	25	30	39	49	64	79	101	119
Set Point Range (°F)	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80
Compressors (qty)	2	2	2	2	2	2	2	2	2	3	3
Process In/Out (in) – Std	1½	1½	2	2	2½	2½	3	3	4	4	4
w/high flow evaporator	2	2½	2½	3	3	4	4	4	n/a	6	6
Refrigerant Discharge Line (in)	¾	1⅛	1⅛	1¾	1¾	1⅝	1⅝	1⅝	2⅛	2⅛	2⅛
Refrigerant Liquid Line (in)	⅝	¾	¾	1⅛	1⅛	1⅞	1⅞	1⅞	1⅝	2⅛	2⅛
Chiller											
Length (in)	68	68	68	68	72	102	102	102	105	123	125
Width (in)	24	24	24	24	24	24	30	30	30	30	30
Height (in)	69	69	69	69	69	69	69	69	69	64	64
Ship Weight (lbs)	850	1,000	1,050	1,050	1,150	1,550	1,600	1,900	2,200	2,800	2,820
Operating Weight (lbs)	865	1,020	1,080	1,083	1,187	1,610	1,670	1,986	2,290	2,900	2,920
Chiller with Standard Flow Reservoir Option											
Reservoir Capacity (gal)	275	275	275	275	275	275	275	450	450	The ESER100S and ESER120S are not available with an integral reservoir	
Process/Chiller Pump (hp)	5/1.5	5/1.5	5/1.5	5/1.5	7.5/2	10/2	10/3	10/3	15/3		
Process Connection Size (in)	1½	1½	2	2	2½	2½	3	3	4		
Refrigerant Discharge Line (in)	¾	1⅛	1⅛	1¾	1¾	1⅝	1⅝	1⅝	2⅛		
Refrigerant Liquid Line (in)	⅝	¾	¾	1⅛	1⅛	1⅞	1⅞	1⅞	1⅝		
Length (in)	99	99	99	99	99	99	102	114	114		
Width (in)	66	66	67	67	71	98	102	101	101		
Height (in)	73	73	73	73	73	73	73	73	73		
Ship Weight (lbs)	2,267	2,370	2,407	2,423	2,628	3,030	3,158	3,846	4,063		
Operating Weight (lbs)	4,561	4,664	4,701	4,717	4,922	5,324	5,452	7,600	7,817		
Chiller with High Flow Reservoir Option											
Reservoir Capacity (gal)	400	400	400	400	400	400	400	650	650	The ESER100S and ESER120S are not available with an integral reservoir	
Process/Chiller Pump (hp)	5/1.5	7.5/1.5	10/1.5	10/1.5	10/2	15/2	15/3	20/3	25/3		
Process Connection Size (in)	2	2½	2½	3	3	4	4	4	6		
Refrigerant Discharge Line (in)	¾	1⅛	1⅛	1¾	1¾	1⅝	1⅝	1⅝	2⅛		
Refrigerant Liquid Line (in)	⅝	¾	¾	1⅛	1⅛	1⅞	1⅞	1⅞	1⅝		
Length (in)	99	99	99	99	99	99	102	114	114		
Width (in)	66	66	67	67	71	98	102	101	101		
Height (in)	73	73	73	73	73	73	73	73	73		
Ship Weight (lbs)	2,800	2,950	2,950	3,000	3,300	3,750	4,000	4,600	5,350		
Operating Weight (lbs)	6,150	6,300	6,300	6,350	6,650	7,100	7,350	10,050	10,800		

¹Cooling capacity when cooling water with 50°F set point, 60°F return, 95°F condenser air, R410A refrigerant.

Remote Air-Cooled Condenser Dual-Circuit Chillers

	ESER 20D	ESER 30D	ESER 40D	ESER 50D	ESER 60D	ESER 80D	ESER 100D	ESER 120D	ESER 160D	ESER 200D	ESER 240D
Cooling Capacity (tons) ¹	20	30	41	50	60	78	98	127	158	201	237
Set Point Range (°F)	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80	20 to 80
Compressors Circuit 1 (qty)	2	2	2	2	2	2	2	2	2	3	3
Compressors Circuit 2 (qty)	2	2	2	2	2	2	2	2	2	3	3
Process In/Out (in) – Std w/high flow evaporator	2 2½	2½ 3	2½ 4	3 4	3 4	4 6	4 6	4 6	6 n/a	6 8	6 8
Refrigerant Discharge Line/Circuit (in)	¾	1⅛	1⅛	1¾	1¾	1⅝	1⅝	1⅝	2⅛	2⅛	2⅛
Refrigerant Liquid Line/Circuit (in)	⅝	¾	¾	1⅛	1⅛	1⅛	1⅛	1¾	1⅝	2⅛	2⅛
Chiller											
Length (in)	75	75	80	80	85	105	105	110	125	139	141
Width (in)	48	48	48	48	48	48	48	48	52	60	60
Height (in)	69	69	69	69	69	69	69	69	69	65	65
Ship Weight (lbs)	1,550	1,800	1,850	1,900	2,150	2,900	3,000	3,650	4,250	5,350	5,370
Operating Weight (lbs)	1,580	1,840	1,910	1,966	2,224	3,020	3,140	3,822	4,430	5,550	5,570
Chiller with Standard Flow Reservoir Option											
Reservoir Capacity (gal)	275	275	275	275	450	450	700	700	1,000	The ESER200D and ESER240D are not available with an integral reservoir	
Process/Chiller Pump (hp)	5/1.5	7.5/2	10/2	10/3	10/3	15/3	15/5	20/7.5	25/10		
Process Connection Size (in)	2	2½	2½	3	3	4	4	4	6		
Refrigerant Discharge Line/Circuit (in)	¾	1⅛	1⅛	1¾	1¾	1⅝	1⅝	1⅝	2⅛		
Refrigerant Liquid Line/Circuit (in)	⅝	¾	¾	1⅛	1⅛	1⅛	1⅛	1¾	1⅝		
Length (in)	123	123	123	123	135	135	135	135	148		
Width (in)	66	66	67	68	71	99	99	98	101		
Height (in)	72	72	72	75	75	75	78	79	90		
Ship Weight (lbs)	3,335	3,634	3,624	3,814	4,224	5,040	5,628	6,478	7,499		
Operating Weight (lbs)	5,629	5,928	5,918	6,109	7,978	8,794	11,467	12,317	15,841		
Chiller with High Flow Reservoir Option											
Reservoir Capacity (gal)	400	400	400	400	650	650	1,000	1,000	1,000	The ESER200D and ESER240D are not available with an integral reservoir	
Process/Chiller Pump (hp)	10/1.5	10/2	15/2	15/3	20/3	25/3	30/5	40/7.5	40/10		
Process Connection Size (in)	2½	3	4	4	4	6	6	6	6		
Refrigerant Discharge Line/Circuit (in)	¾	1⅛	1⅛	1¾	1¾	1⅝	1⅝	1⅝	2⅛		
Refrigerant Liquid Line/Circuit (in)	⅝	¾	¾	1⅛	1⅛	1⅛	1⅛	1¾	1⅝		
Length (in)	123	123	123	123	135	135	135	135	148		
Width (in)	66	66	67	68	71	99	99	98	101		
Height (in)	72	72	72	75	75	75	78	79	90		
Ship Weight (lbs)	3,850	4,200	4,400	4,550	5,050	6,250	7,300	8,100	10,300		
Operating Weight (lbs)	7,200	7,550	7,750	7,900	10,500	11,700	15,650	16,450	18,650		

¹Cooling capacity when cooling water with 50°F set point, 60°F return, 95°F condenser air, R410A refrigerant.

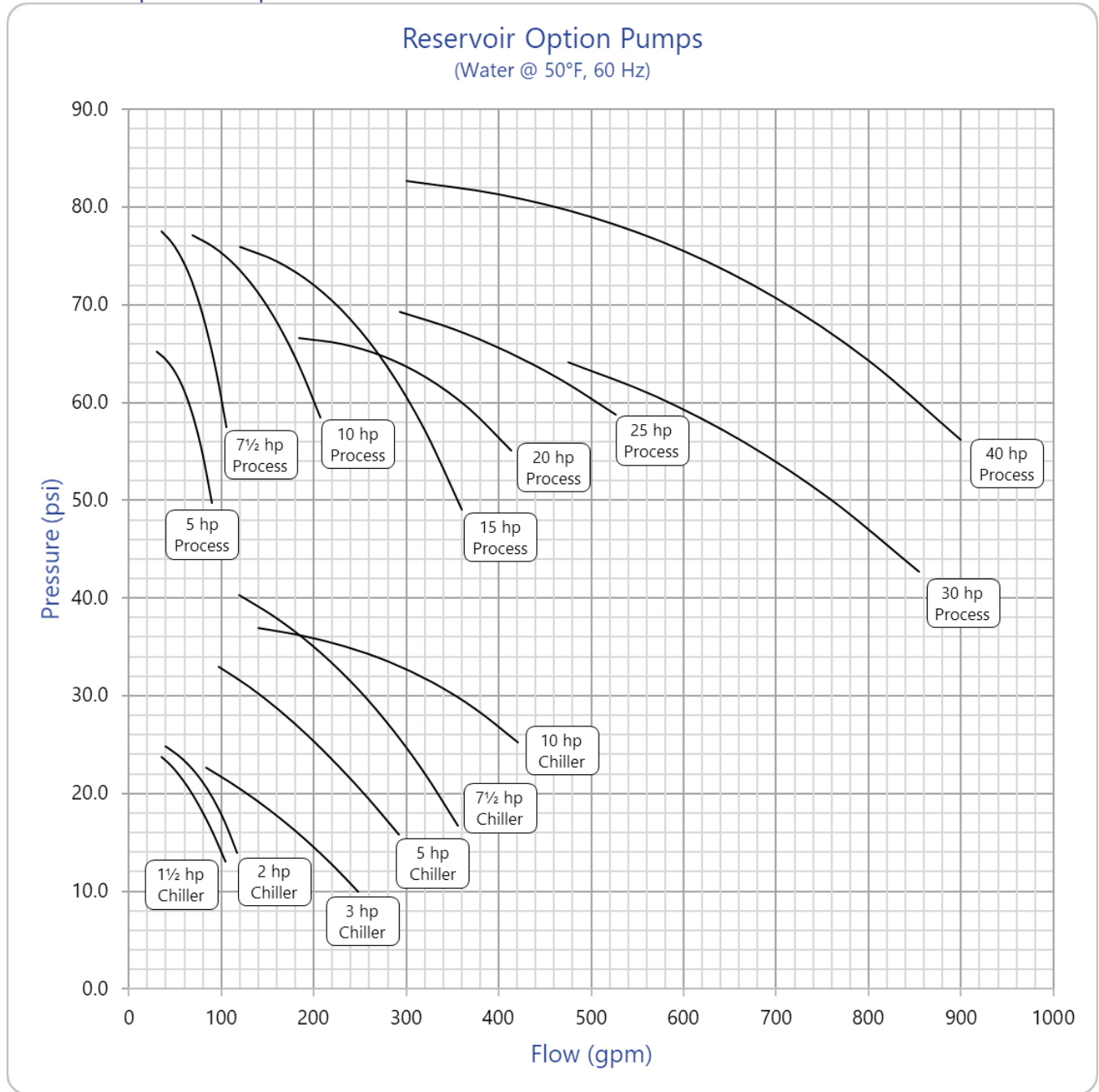
Remote Condensers (single-circuit)

Model	KCM014	KCL023	KCL030	KCL037	KCL045	KCL056	KCL068	KCL095	KCL110	S-GVW 090.1/4- N(2).M	S-GVW 090.1/5- N(2).M
Chiller Used With	ESER10S	ESER15S	ESER20S	ESER25S	ESER30S	ESER40S	ESER50S	ESER60S	ESER80S	ESER100S	ESER120S
Number of Fans	2	2	2	2	3	3	4	5	6	4	5
Refrigerant In (in)	1 $\frac{3}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{5}{8}$	2 $\frac{5}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$
Refrigerant Out (in)	1 $\frac{1}{8}$	1 $\frac{3}{8}$	1 $\frac{5}{8}$	1 $\frac{5}{8}$	1 $\frac{5}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{5}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$
Length (in)	83	113	113	113	168	168	223	278	333	223	271
Width (in)	43	45	45	45	45	45	45	45	45	51	51
Height (in)	48	54	54	54	54	54	54	54	54	69	69
Shipping Weight (lbs)	415	680	720	1,050	1,075	1,450	1,475	1,950	2,300	3,000	3,625
Operating Weight (lbs)	Varies based on system refrigerant charge and operating conditions										

Remote Condensers (dual-circuit)

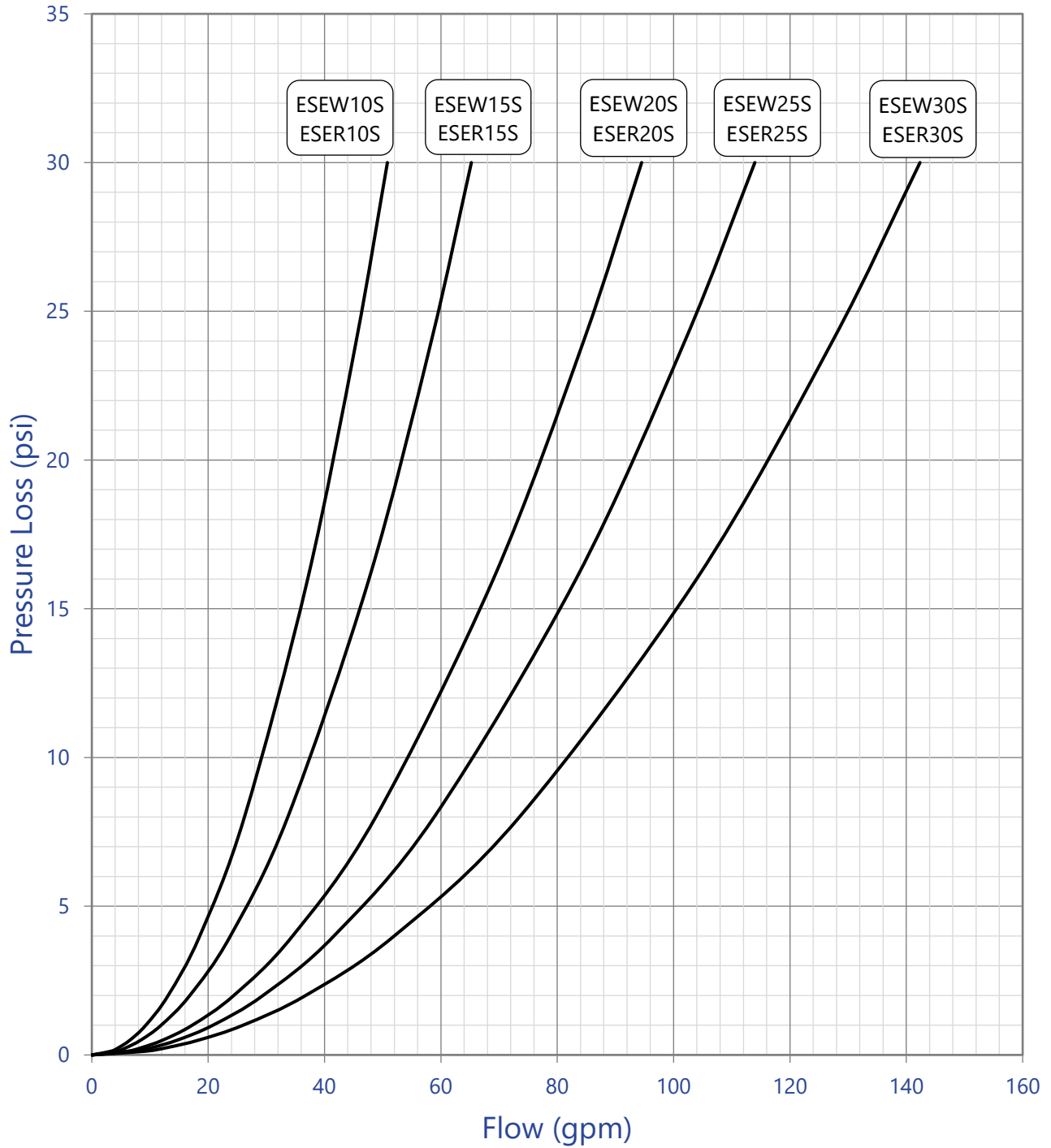
Model	KCM034	KCL047	KCL060	KCL074	KCL090	KCL112	KCL137	KCL190	KCL224	S-GVD 090.1D/2 x4-M2.M	S-GVD 090.1D/2 x5-M2.M
Chiller Used With	ESER20D	ESER30D	ESER40D	ESER50D	ESER60D	ESER80D	ESER100D	ESER120D	ESER160D	ESER200D	ESER240D
Number of Fans	4	4	4	4	6	6	8	10	12	8	10
Refrigerant In (in)	1 $\frac{5}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{5}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$	3 $\frac{1}{8}$ x 2	3 $\frac{5}{8}$ x 2
Refrigerant Out (in)	1 $\frac{1}{8}$	1 $\frac{3}{8}$	1 $\frac{5}{8}$	1 $\frac{5}{8}$	1 $\frac{5}{8}$	2 $\frac{1}{8}$	2 $\frac{1}{8}$	2 $\frac{5}{8}$	2 $\frac{5}{8}$	3 $\frac{1}{8}$ x 2	3 $\frac{5}{8}$ x 2
Length (in)	83	113	113	113	168	168	223	278	333	225	275
Width (in)	83	87	87	87	87	87	87	87	87	95	95
Height (in)	48	54	54	54	54	54	54	54	54	112	112
Shipping Weight (lbs)	830	1,175	1,525	1,525	2,000	2,275	2,800	3,700	4,400	7,800	10,025
Operating Weight (lbs)	Varies based on system refrigerant charge and operating conditions										

Reservoir Option Pump Performance



Standard Single-Circuit Chiller Process Circuit Pressure Loss (10 to 30 Ton)

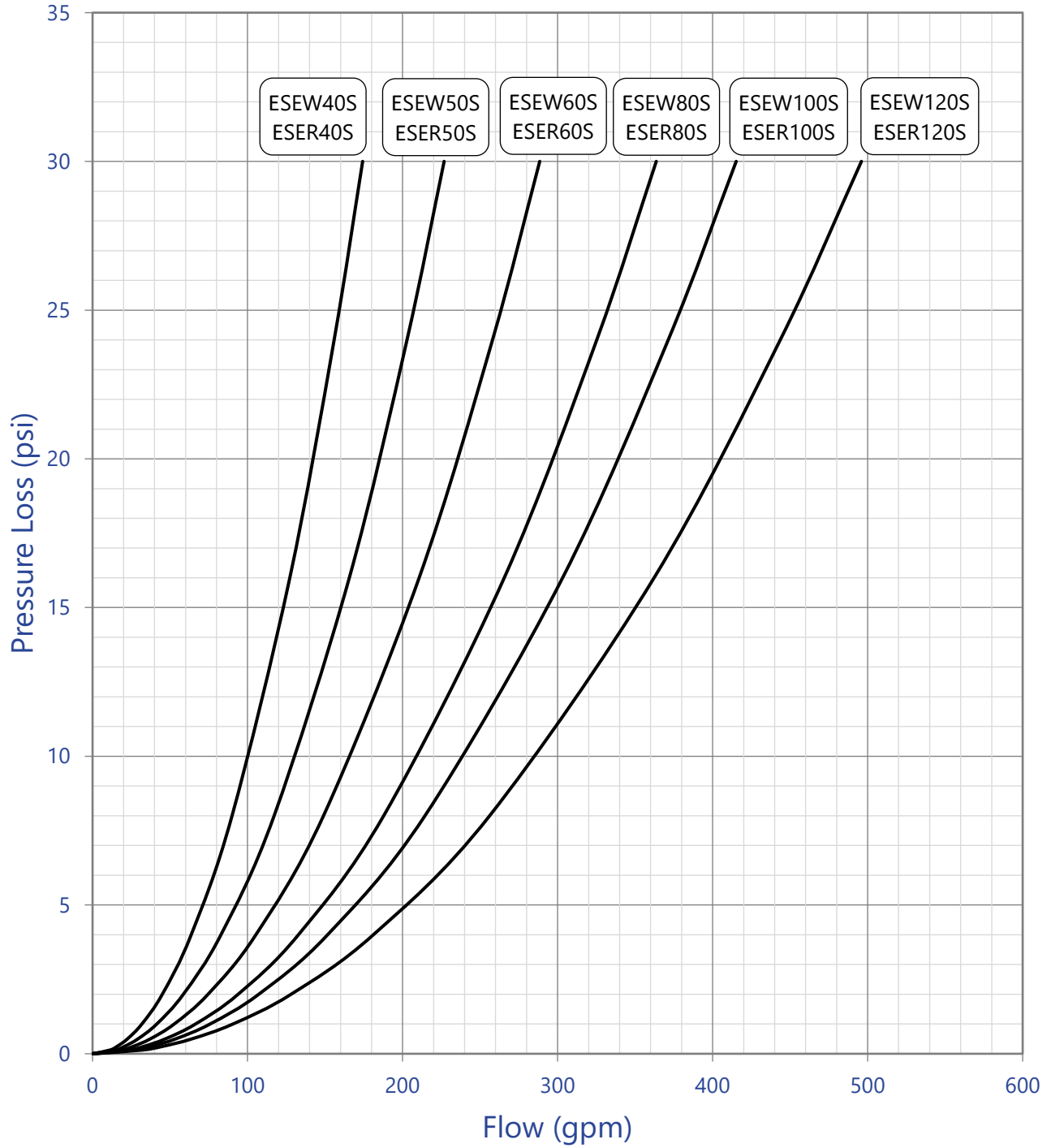
Standard Single-Circuit Chiller Process Circuit Pressure Loss (Water @ 50°F)



Standard Single-Circuit Chiller Process Circuit Pressure Loss (40 to 120 Ton)

Standard Single-Circuit Chiller Process Circuit Pressure Loss

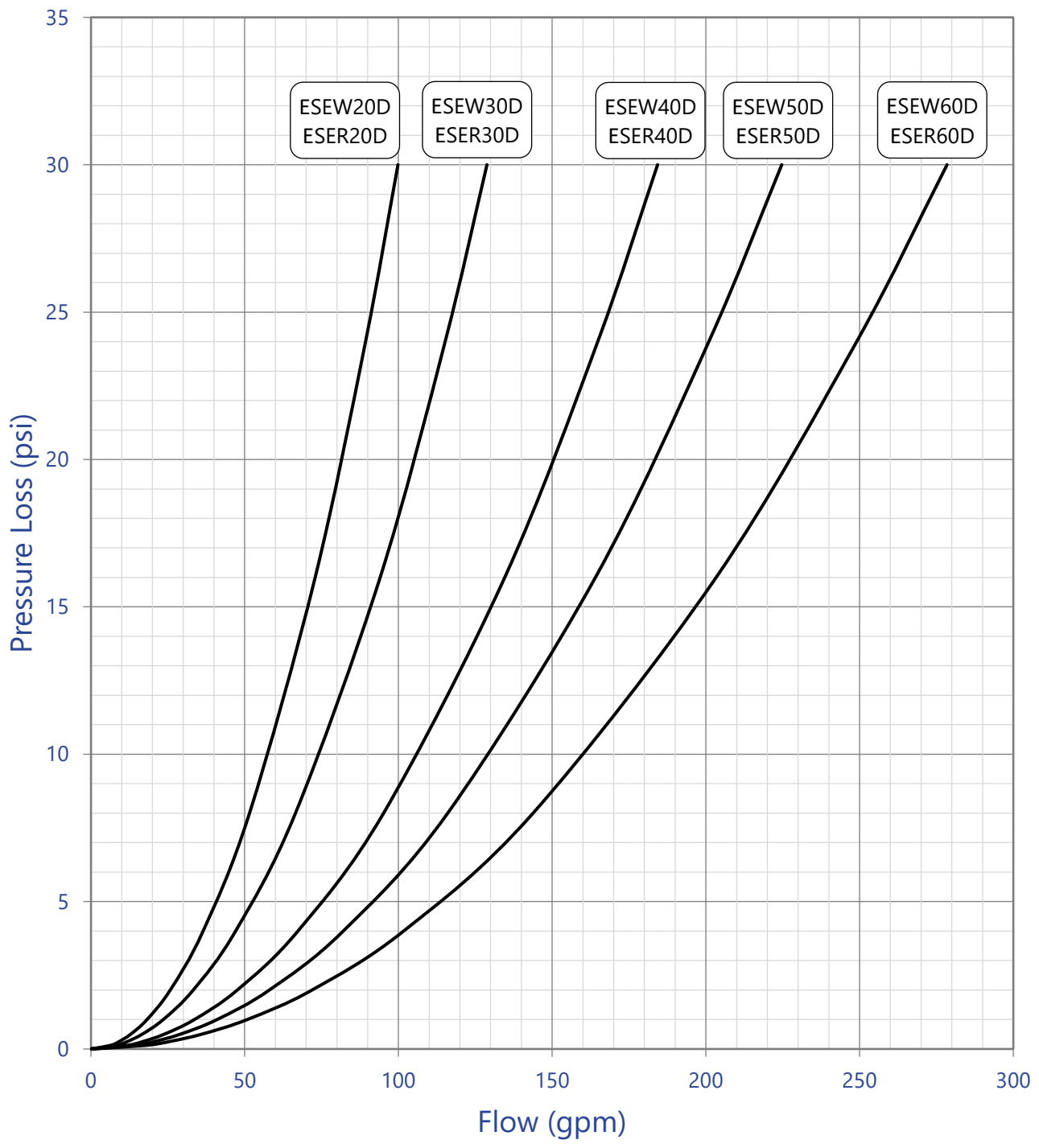
(Water @ 50°F)



Standard Dual-Circuit Chiller Process Circuit Pressure Loss (20 to 60 Ton)

Standard Dual-Circuit Chiller Process Circuit Pressure Loss

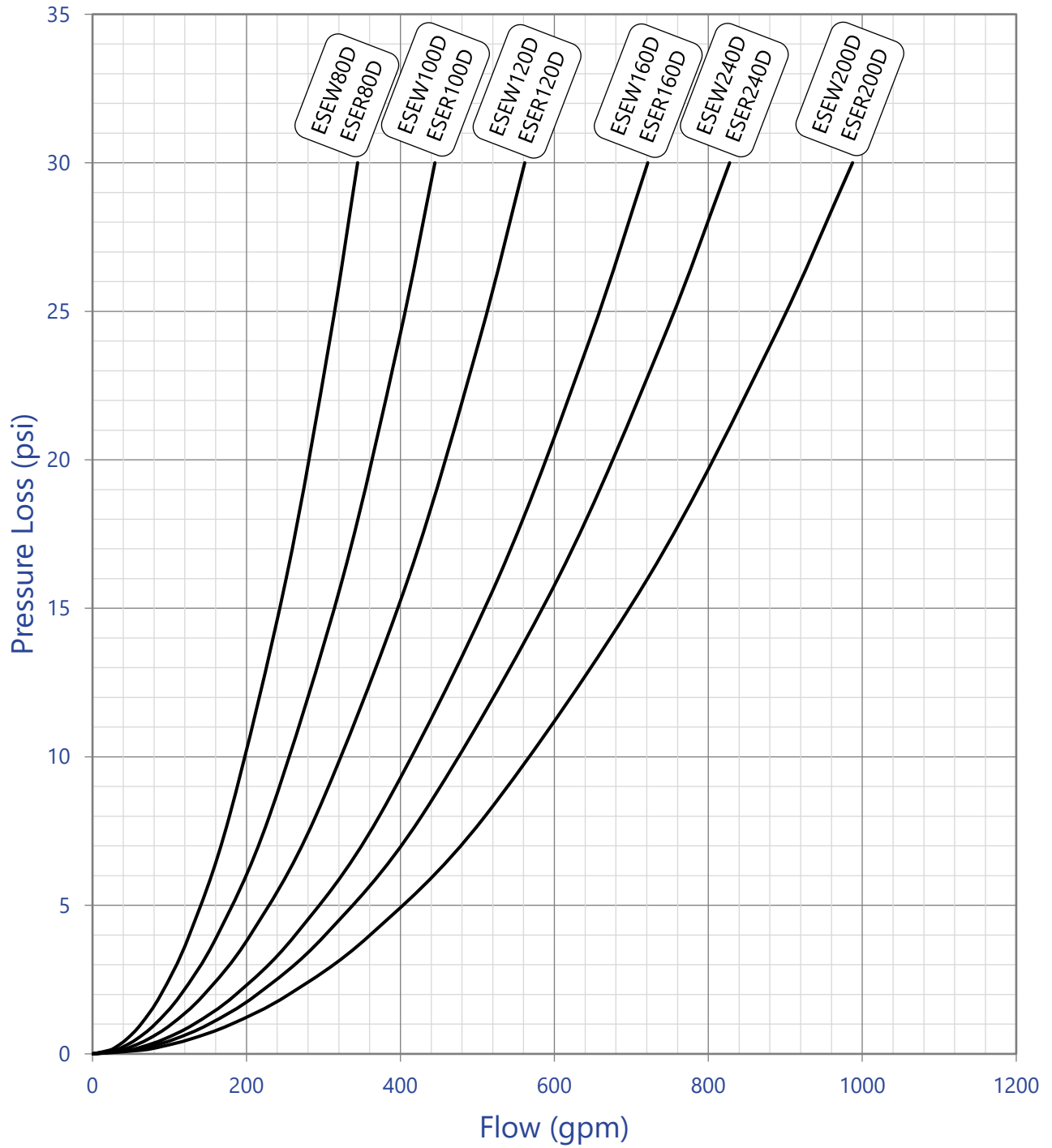
(Water @ 50°F)



Standard Dual-Circuit Chiller Process Circuit Pressure Loss (80 to 240 Ton)

Standard Dual-Circuit Chiller Process Circuit Pressure Loss

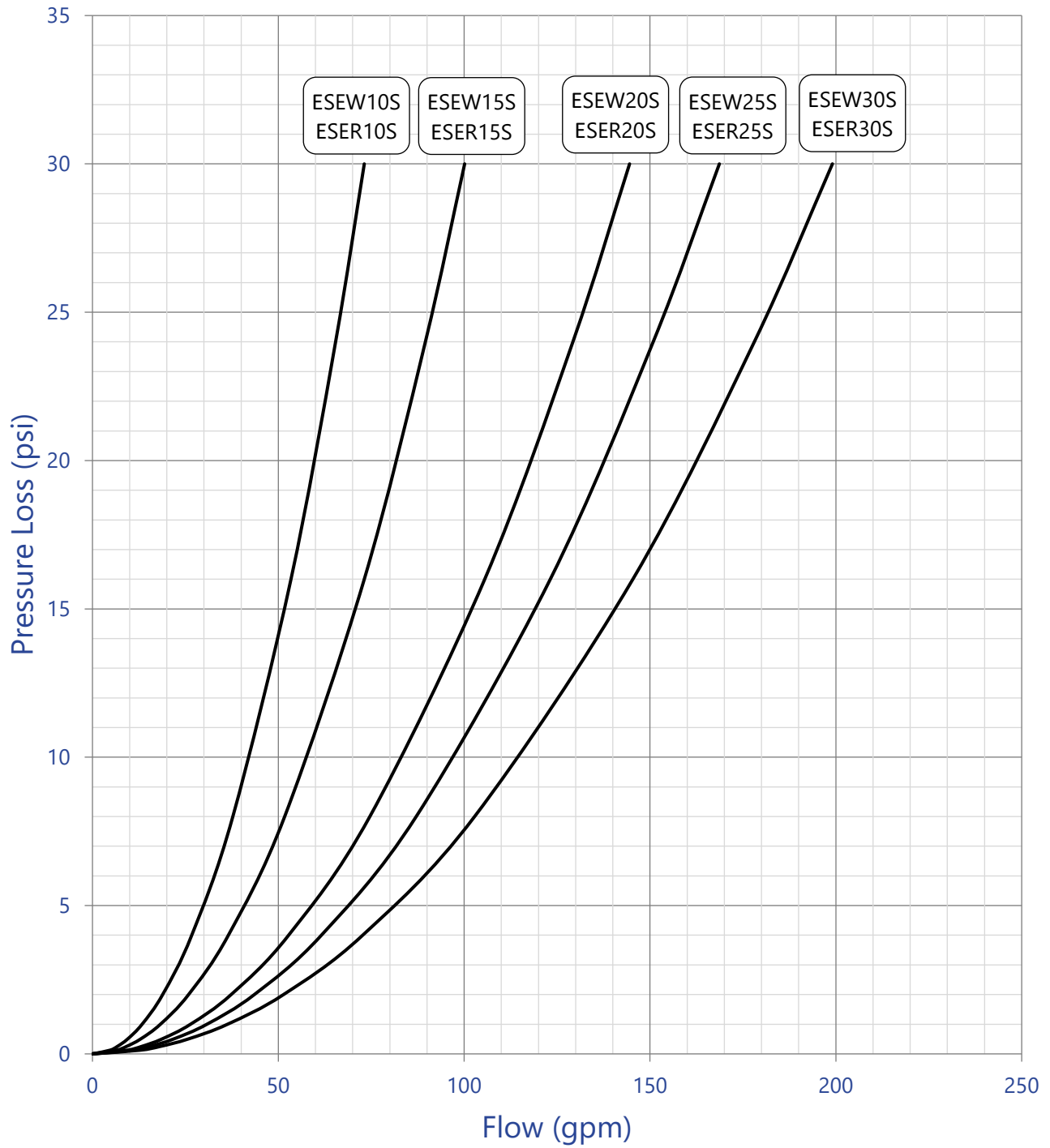
(Water @ 50°F)



Single-Circuit Chiller with High Flow Evaporator Process Circuit Pressure Loss (10 to 30 Ton)

Single-Circuit Chiller with High Flow Evaporator Option Process Circuit Pressure Loss

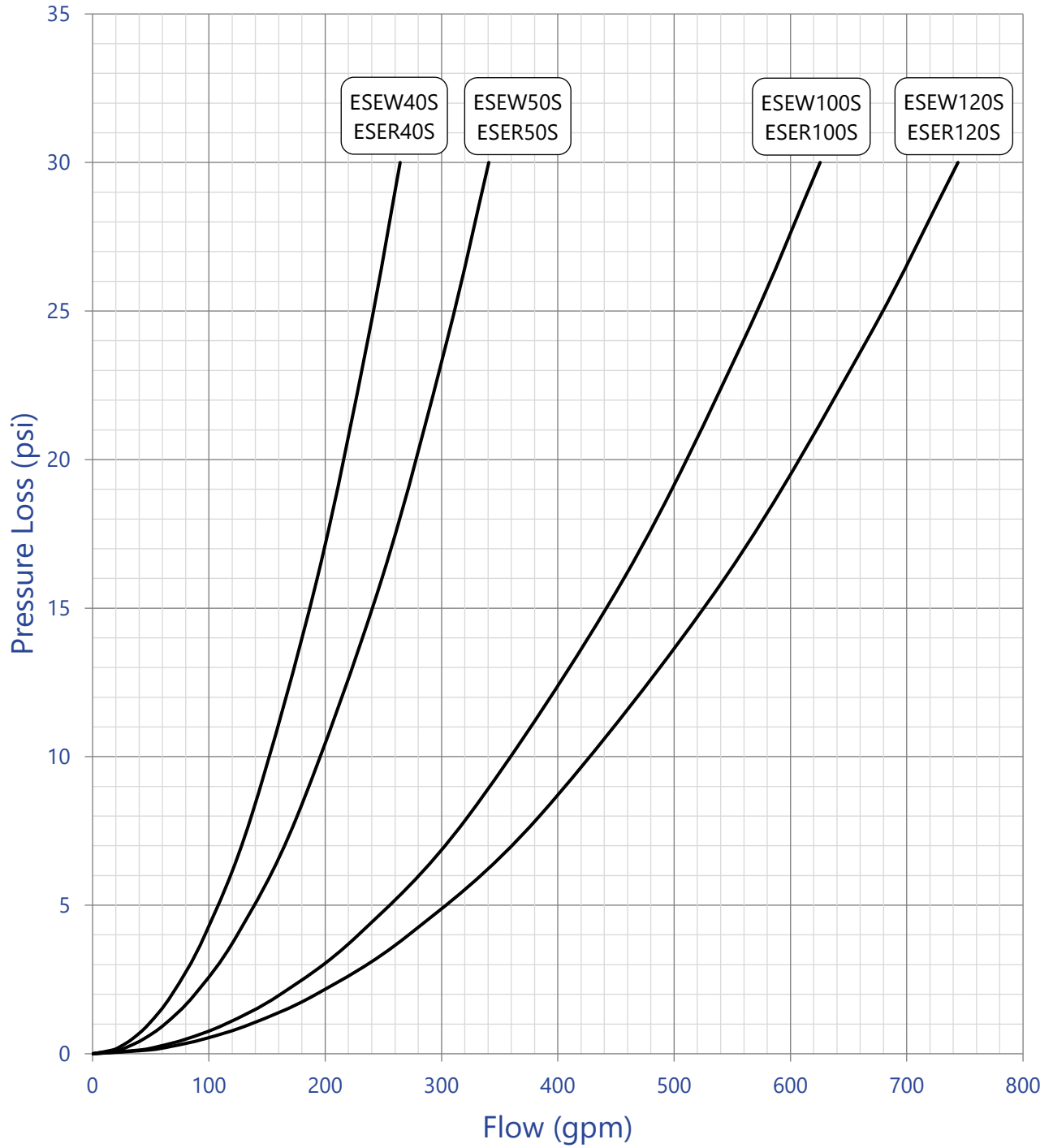
(Water at 50°F)



Single-Circuit Chiller with High Flow Evaporator Process Circuit Pressure Loss (40 to 120 Ton)

Single-Circuit Chiller with High Flow Evaporator Option Process Circuit Pressure Drop

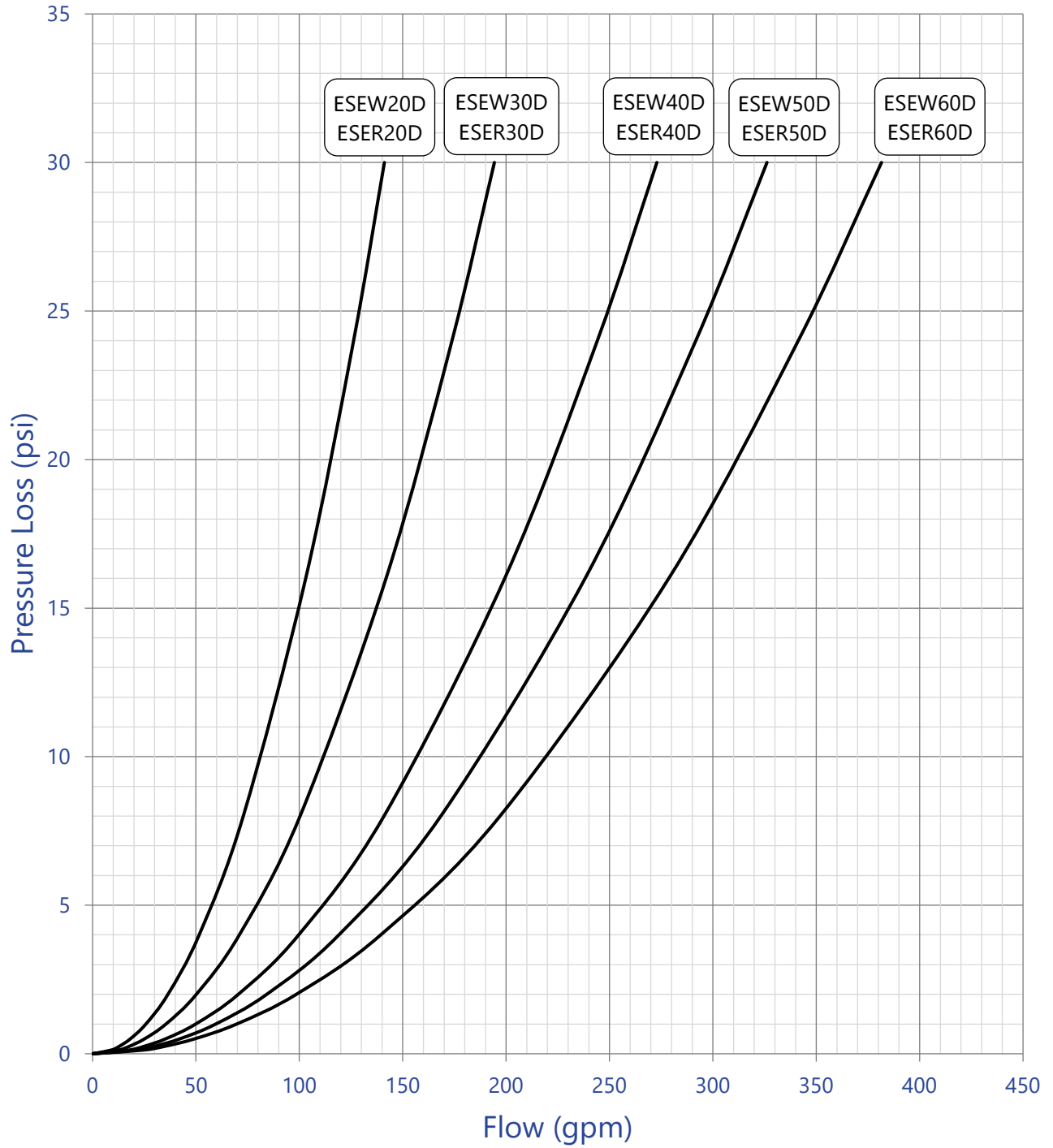
(Water at 50°F)



Dual-Circuit Chiller with High Flow Evaporator Process Circuit Pressure Loss (20 to 60 Ton)

Dual-Circuit Chiller with High Flow Evaporator Option Process Circuit Pressure Loss

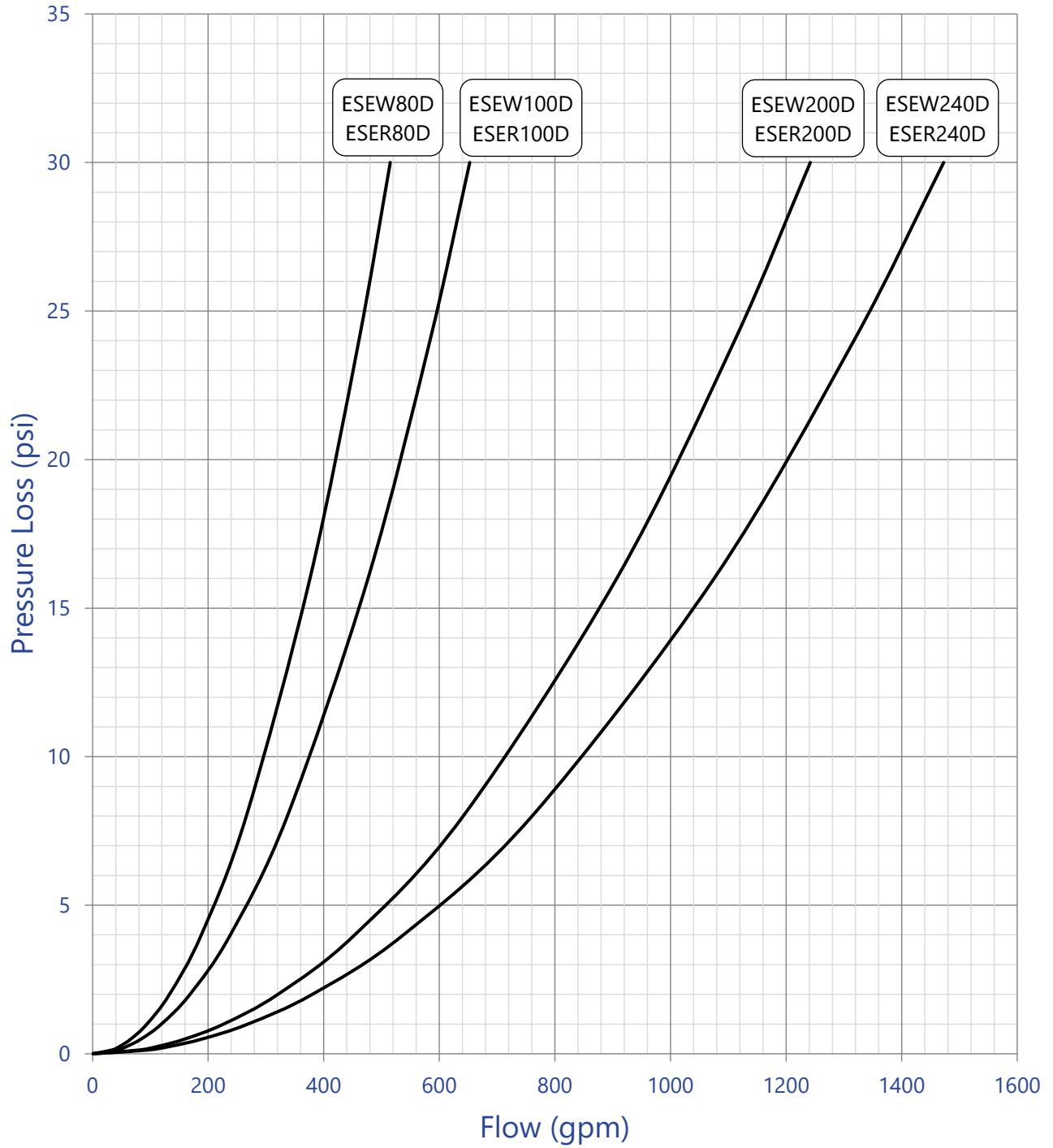
(Water at 50°F)



Dual-Circuit Chiller with High Flow Evaporator Process Circuit Pressure Loss (80 to 240 Ton)

Dual-Circuit Chiller with High Flow Evaporator Option Process Circuit Pressure Drop

(Water at 50°F)



Electrical Data

Chiller Electrical Data (60 Hz)

Rated Voltage	Single-Circuit Chillers							Dual-Circuit Chillers						
	Model	Chiller		Chiller with Standard Flow Pumps		Chiller with High Flow Pumps		Model	Chiller		Chiller with Standard Flow Pumps		Chiller with High Flow Pumps	
		MCA ²	MOP ³	MCA ²	MOP ³	MCA ²	MOP ³		MCA ²	MOP ³	MCA ²	MOP ³	MCA ²	MOP ³
208	ESEW10S & ESER10S	44	60	67	80	68	80	ESEW20D & ESER20D	83	100	106	110	123	150
230		44	60	65	80	66	80		83	100	104	110	119	125
460		23	30	33	40	33	40		42	50	53	60	61	70
575		18	20	26	30	26	30		33	40	41	45	47	50
208	ESEW15S & ESER15S	68	90	88	110	99	125	ESEW30D & ESER30D	127	150	159	175	166	175
230		68	90	86	110	96	125		127	150	156	175	162	175
460		34	45	43	50	48	60		64	70	78	90	81	90
575		28	40	35	45	40	50		53	60	65	70	67	70
208	ESEW20S & ESER20S	77	100	96	125	114	125	ESEW40D & ESER40D	143	175	182	200	200	225
230		77	100	93	125	111	125		143	175	178	200	194	225
460		41	50	49	60	58	70		77	90	95	110	102	110
575		30	40	37	50	43	50		56	60	69	80	76	90
208	ESEW25S & ESER25S	117	150	132	175	155	200	ESEW50D & ESER50D	220	250	261	300	277	300
230		117	150	129	175	151	200		220	250	257	300	271	300
460		53	70	60	80	70	90		99	110	118	125	125	125
575		46	60	51	70	59	70		86	100	101	110	107	125
208	ESEW30S & ESER30S	127	175	151	200	166	200	ESEW60D & ESER60D	239	250	280	300	310	350
230		127	175	148	200	162	200		239	250	277	300	303	350
460		61	80	72	100	79	100		116	125	134	150	147	150
575		54	70	62	80	68	90		102	125	117	125	128	150
208	ESEW40S & ESER40S	165	225	192	250	218	250	ESEW80D & ESER80D	309	350	366	400	395	450
230		165	225	188	250	213	250		309	350	361	400	387	450
460		70	100	83	110	95	125		132	150	158	175	172	200
575		57	80	67	90	77	100		107	125	128	150	139	150
208	ESEW50S & ESER50S	194	250	221	300	250	300	ESEW100D & ESER100D	364	400	427	500	470	500
230		194	250	217	300	245	300		364	400	422	500	460	500
460		86	110	99	125	112	125		162	175	190	225	210	250
575		79	110	88	125	100	125		148	175	171	200	186	200
208	ESEW60S & ESER60S	248	350	270	350	318	400	ESEW120D & ESER120D	468	500	544	600	599	600
230		248	350	265	350	312	400		468	500	537	600	587	600
460		124	175	132	175	155	200		233	250	267	300	292	300
575		112	150	117	175	138	175		211	250	239	250	258	300
208	ESEW80S & ESER80S	n/a	n/a	n/a	n/a	n/a	n/a	ESEW160D & ESER160D	n/a	n/a	n/a	n/a	n/a	n/a
230		n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a
460		165	225	178	250	204	250		311	350	359	400	377	450
575		118	150	130	175	149	200		222	250	260	300	274	300
208	ESEW100S & ESER100S	n/a	n/a	n/a	n/a	n/a	n/a	ESEW200D & ESER200D	n/a	n/a	n/a	n/a	n/a	n/a
230		n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a
460		205	250	n/a	n/a	n/a	n/a		391	450	n/a	n/a	n/a	n/a
575		163	200	n/a	n/a	n/a	n/a		313	350	n/a	n/a	n/a	n/a
208	ESEW120S & ESER120S	n/a	n/a	n/a	n/a	n/a	n/a	ESEW240D & ESER240D	n/a	n/a	n/a	n/a	n/a	n/a
230		n/a	n/a	n/a	n/a	n/a	n/a		n/a	n/a	n/a	n/a	n/a	n/a
460		238	300	n/a	n/a	n/a	n/a		457	500	n/a	n/a	n/a	n/a
575		166	200	n/a	n/a	n/a	n/a		318	350	n/a	n/a	n/a	n/a

¹Allowable voltage is $\pm 10\%$ from rated voltage.

²MCA is Minimum Circuit Amps, used for minimum wire size requirement.

³MOP is Maximum Overcurrent Protection, used for sizing main power protection device.

Remote Condenser Electrical Data

Rated Voltage	Single-Circuit Remote Condensers			Dual-Circuit Remote Condensers		
	Model	MCA ²	MOP ³	Model	MCA ²	MOP ³
208	KCM014	5.2	15	KCM034	9.8	15
230		5.2	15		9.8	15
460		2.6	15		4.9	15
575		2	15		3.8	15
208	KCL023	16	20	KCL047	31	35
230		16	20		31	35
460		7	15		16	20
575		5.6	15		10.6	15
208	KCL030	16	20	KCL060	31	35
230		16	20		31	35
460		7	15		16	20
575		5.6	15		10.6	15
208	KCL037	16	20	KCL074	31	35
230		16	20		31	35
460		7	15		16	20
575		5.6	15		10.6	15
208	KCL045	21.5	25	KCL090	46	50
230		21.5	25		46	50
460		10.1	15		21	25
575		8.1	15		16	20
208	KCL056	21.5	25	KCL112	46	50
230		21.5	25		46	50
460		10.1	15		21	25
575		8.1	15		16	20
208	KCL068	31	35	KCL137	61	70
230		31	35		61	70
460		16	20		31	35
575		10.6	15		21	25
208	KCL095	41	45	KCL190	81	90
230		41	45		81	90
460		16	20		36	40
575		16	20		31	35
208	KCL110	46	50	KCL224	91	100
230		46	50		91	100
460		21	25		46	50
575		16	20		36	40
208	S-GVW 090.1/4-N(2).M	-	-	S-GVD 090.1D/2x4-M2.M	-	-
230		-	-		-	-
460		24.2	25		31	35
575		-	-		-	-
208	S-GVW 090.1/5-N(2).M	-	-	S-GVD 090.1D/2x5-M2.M	-	-
230		-	-		-	-
460		30	35		38	40
575		-	-		-	-

¹Allowable voltage is $\pm 10\%$ from rated voltage.

²MCA is Minimum Circuit Amps as provided by the remote condenser manufacturer, used for minimum wire size requirement.

³MOP is Maximum Overcurrent Protection as provided by the remote condenser manufacturer, used for sizing main power protection device.

Performance Data

ESEW Series Water Cooled Condenser Chiller Cooling Capacities - 60 Hz

Leaving Coolant Temp	Model	Entering Condenser Water Temperature											
		80°F			85°F			90°F			95°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
20°F	ESEW10S	5.7	8.8	16.0	5.7	8.8	16.0	5.5	9.2	15.5	5.3	9.9	14.7
	ESEW15S	8.8	12.3	24.6	8.8	12.3	24.6	8.7	12.8	24.1	8.4	13.6	23.3
	ESEW20S	11.9	16.0	33.3	11.9	16.0	33.3	11.7	16.7	32.5	11.1	17.9	31.1
	ESEW25S	15.1	20.3	42.1	15.1	20.3	42.1	14.8	20.9	41.4	14.3	22.2	40.0
	ESEW30S	17.9	23.8	49.8	17.9	23.8	49.8	17.6	24.4	49.0	17.0	26.0	47.4
	ESEW40S	23.3	31.8	65.0	23.3	31.8	65.0	22.9	32.7	64.0	22.2	34.7	61.9
	ESEW50S	28.9	39.7	80.8	28.9	39.7	80.7	28.5	41.1	79.4	27.4	43.6	76.6
	ESEW60S	37.6	50.6	104.8	37.6	50.6	104.8	36.9	52.4	102.8	35.6	55.6	99.2
	ESEW80S	47.1	63.1	131.3	47.1	63.1	131.3	46.3	64.7	129.1	44.6	68.3	124.5
	ESEW100S	60.8	82.3	169.6	60.8	82.3	169.5	60.0	84.0	167.5	58.0	88.8	161.9
	ESEW120S	70.9	96.0	197.7	70.9	96.0	197.7	70.3	97.2	196.1	68.0	102.6	189.8
	ESEW20D	11.5	18.0	32.0	11.5	18.0	32.0	11.1	18.8	30.9	10.5	19.9	29.4
	ESEW30D	17.6	24.8	49.1	17.6	24.8	49.1	17.3	25.6	48.3	16.7	27.2	46.7
	ESEW40D	23.9	32.4	66.6	23.9	32.4	66.6	23.3	33.5	65.1	22.3	36.2	62.2
	ESEW50D	30.2	40.8	84.2	30.2	40.8	84.2	29.6	42.0	82.7	28.7	44.8	80.0
	ESEW60D	35.7	47.6	99.7	35.7	47.6	99.7	35.2	49.1	98.1	34.0	52.1	94.7
	ESEW80D	46.6	63.8	129.9	46.6	63.8	129.9	45.9	65.7	128.0	44.4	69.6	123.8
	ESEW100D	57.9	79.7	161.5	57.9	79.7	161.5	56.9	82.1	158.8	54.9	87.7	153.1
	ESEW120D	75.1	101.2	209.6	75.1	101.2	209.6	73.7	104.7	205.6	71.1	111.2	198.4
	ESEW160D	94.1	126.3	262.6	94.1	126.3	262.5	92.6	129.6	258.2	89.3	136.9	249.1
ESEW200D	121.6	164.8	339.1	121.6	164.8	339.1	120.1	168.2	335.0	116.1	177.9	323.8	
ESEW240D	141.7	192.0	395.4	141.7	192.0	395.4	140.6	194.7	392.3	136.0	205.4	379.5	
25°F	ESEW10S	6.5	8.9	17.5	6.5	8.9	17.5	6.3	9.3	17.0	6.0	9.9	16.2
	ESEW15S	9.8	12.4	26.5	9.8	12.4	26.5	9.6	12.8	26.0	9.3	13.6	25.2
	ESEW20S	13.4	16.1	36.2	13.4	16.1	36.2	13.1	16.8	35.4	12.5	17.9	33.9
	ESEW25S	16.8	20.5	45.4	16.8	20.5	45.4	16.5	21.2	44.6	15.9	22.4	43.1
	ESEW30S	19.9	23.9	53.9	19.9	23.9	53.9	19.6	24.7	53.0	18.9	26.1	51.2
	ESEW40S	25.9	32.0	70.1	25.9	32.0	70.1	25.4	32.9	69.0	24.6	34.9	66.8
	ESEW50S	32.3	39.8	87.6	32.3	39.8	87.5	31.7	41.1	86.0	30.6	43.7	83.1
	ESEW60S	41.9	50.9	113.6	41.9	50.9	113.5	41.0	52.7	111.3	39.7	56.0	107.5
	ESEW80S	52.3	64.0	141.7	52.3	64.0	141.7	51.3	65.8	139.1	49.5	69.4	134.3
	ESEW100S	67.5	82.9	183.1	67.5	82.9	183.1	66.6	84.9	180.6	64.4	89.6	174.7
	ESEW120S	78.7	96.8	213.3	78.7	96.8	213.3	77.9	98.3	211.4	75.5	103.8	204.6
	ESEW20D	12.9	17.8	35.1	12.9	17.8	35.1	12.5	18.6	34.0	12.0	19.9	32.4
	ESEW30D	19.6	24.9	53.0	19.6	24.9	53.0	19.2	25.7	52.1	18.6	27.4	50.4
	ESEW40D	26.7	32.3	72.5	26.7	32.3	72.5	26.1	33.5	70.8	25.0	36.0	67.8
	ESEW50D	33.5	41.0	90.9	33.5	41.0	90.9	32.9	42.5	89.2	31.8	45.0	86.3
	ESEW60D	39.8	47.9	107.9	39.8	47.9	107.8	39.1	49.4	106.0	37.8	52.4	102.4
	ESEW80D	51.7	63.9	140.3	51.7	63.9	140.2	50.9	66.0	138.0	49.3	70.1	133.6
	ESEW100D	64.6	79.7	175.1	64.6	79.7	175.1	63.5	82.5	172.1	61.3	87.8	166.2
	ESEW120D	83.8	101.9	227.1	83.7	101.8	227.1	82.1	105.6	222.6	79.3	112.0	215.1
	ESEW160D	104.5	128.1	283.4	104.5	128.1	283.4	102.6	131.8	278.3	99.1	139.1	268.6
ESEW200D	135.0	166.0	366.2	135.0	166.0	366.1	133.2	169.9	361.2	128.8	179.4	349.4	
ESEW240D	157.4	193.7	426.7	157.4	193.7	426.7	155.9	196.8	422.7	150.9	207.7	409.2	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, condenser fouling factor of 0.00025 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, and R410A refrigerant.

²kW = Total compressor input power at rated voltage.

ESEW Series Water Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Water Temperature											
		80°F			85°F			90°F			95°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
30°F	ESEW10S	7.2	8.7	19.1	7.2	8.7	19.1	7.0	9.2	18.5	6.7	9.7	17.8
	ESEW15S	10.8	12.4	28.6	10.8	12.4	28.6	10.6	12.8	28.0	10.3	13.7	27.2
	ESEW20S	14.9	16.1	39.3	14.9	16.1	39.3	14.6	16.8	38.4	14.0	18.0	36.9
	ESEW25S	18.6	20.6	49.0	18.5	20.5	49.0	18.2	21.4	48.0	17.6	22.6	46.5
	ESEW30S	22.1	24.1	58.2	22.1	24.1	58.2	21.7	24.9	57.2	20.9	26.2	55.3
	ESEW40S	28.6	32.0	75.6	28.6	32.0	75.6	28.1	33.1	74.3	27.3	35.2	72.0
	ESEW50S	35.9	39.9	94.7	35.9	39.9	94.7	35.2	41.3	93.0	34.1	44.0	89.9
	ESEW60S	46.5	51.2	122.8	46.5	51.2	122.8	45.5	53.2	120.2	44.0	56.3	116.2
	ESEW80S	57.9	64.8	152.9	57.9	64.8	152.8	56.8	66.9	149.8	54.8	70.4	144.7
	ESEW100S	74.8	83.6	197.4	74.8	83.6	197.4	73.7	85.8	194.5	71.3	90.6	188.2
	ESEW120S	87.1	97.5	230.0	87.1	97.5	230.0	86.2	99.4	227.5	83.5	104.9	220.3
	ESEW20D	14.5	17.8	38.2	14.5	17.8	38.2	14.0	18.5	37.1	13.5	19.8	35.5
	ESEW30D	21.7	25.0	57.2	21.7	25.0	57.2	21.2	25.8	56.1	20.6	27.5	54.3
	ESEW40D	29.8	32.4	78.7	29.8	32.4	78.6	29.1	33.7	76.8	27.9	36.0	73.8
	ESEW50D	37.1	41.2	97.9	37.1	41.2	97.9	36.4	42.9	96.0	35.2	45.4	93.0
	ESEW60D	44.1	48.1	116.5	44.1	48.1	116.5	43.3	49.8	114.4	41.9	52.8	110.6
	ESEW80D	57.3	64.2	151.2	57.3	64.2	151.1	56.3	66.5	148.5	54.5	70.4	144.0
	ESEW100D	71.8	79.9	189.4	71.8	79.9	189.4	70.5	82.8	186.0	68.1	88.0	179.8
	ESEW120D	93.0	102.5	245.5	93.0	102.5	245.5	91.1	106.6	240.3	88.1	113.0	232.5
	ESEW160D	115.8	129.6	305.7	115.8	129.6	305.7	113.5	133.8	299.7	109.7	141.1	289.5
ESEW200D	149.6	167.3	394.9	149.6	167.3	394.9	147.4	171.8	389.0	142.6	181.4	376.4	
ESEW240D	174.3	195.2	460.0	174.3	195.2	460.0	172.4	199.0	455.0	166.9	209.9	440.6	
35°F	ESEW10S	8.1	8.8	20.7	8.1	8.8	20.7	7.8	9.1	20.1	7.5	9.7	19.3
	ESEW15S	12.0	12.5	30.8	12.0	12.5	30.8	11.7	12.9	30.2	11.4	13.8	29.2
	ESEW20S	16.5	16.1	42.5	16.5	16.1	42.5	16.1	16.8	41.5	15.5	17.9	40.0
	ESEW25S	20.5	20.7	52.7	20.5	20.7	52.7	20.0	21.5	51.6	19.4	22.8	50.0
	ESEW30S	24.4	24.2	62.8	24.4	24.2	62.8	23.9	25.0	61.5	23.2	26.6	59.6
	ESEW40S	31.6	32.1	81.3	31.6	32.1	81.3	31.0	33.3	79.8	30.1	35.4	77.4
	ESEW50S	39.7	39.9	102.2	39.7	39.9	102.2	39.0	41.6	100.3	37.7	44.1	97.1
	ESEW60S	51.5	51.6	132.4	51.5	51.6	132.4	50.3	53.7	129.4	48.7	56.9	125.3
	ESEW80S	64.1	65.5	164.8	64.1	65.5	164.8	62.7	67.8	161.2	60.6	71.4	155.9
	ESEW100S	82.7	84.2	212.7	82.7	84.2	212.7	81.3	86.7	209.1	78.7	91.6	202.4
	ESEW120S	96.3	98.2	247.7	96.3	98.2	247.7	95.1	100.5	244.6	92.1	106.0	236.9
	ESEW20D	16.1	17.5	41.5	16.1	17.5	41.5	15.6	18.4	40.3	15.0	19.5	38.7
	ESEW30D	23.9	24.9	61.6	23.9	24.9	61.6	23.4	26.0	60.3	22.7	27.6	58.4
	ESEW40D	33.1	32.5	85.1	33.1	32.5	85.1	32.3	33.8	83.1	31.1	36.2	79.9
	ESEW50D	41.0	41.5	105.4	41.0	41.5	105.4	40.1	43.3	103.2	38.9	45.9	100.0
	ESEW60D	48.8	48.5	125.5	48.8	48.5	125.5	47.8	50.2	123.1	46.3	53.2	119.1
	ESEW80D	63.2	64.4	162.7	63.2	64.4	162.7	62.0	66.8	159.6	60.2	70.9	154.8
	ESEW100D	79.5	80.1	204.5	79.5	80.1	204.5	77.9	83.1	200.5	75.5	88.4	194.1
	ESEW120D	102.9	103.1	264.9	102.9	103.1	264.9	100.6	107.6	258.9	97.4	114.0	250.6
	ESEW160D	128.1	131.1	329.6	128.1	131.1	329.6	125.3	135.6	322.5	121.2	143.0	311.7
ESEW200D	165.3	168.5	425.3	165.3	168.5	425.3	162.6	173.6	418.2	157.4	183.3	404.9	
ESEW240D	192.5	196.5	495.3	192.5	196.5	495.3	190.1	200.9	489.1	184.2	212.2	473.8	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, condenser fouling factor of 0.00025 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, and R410A refrigerant.

²kW = Total compressor input power at rated voltage.

ESEW Series Water Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Water Temperature											
		80°F			85°F			90°F			95°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
40°F	ESEW10S	8.9	8.6	22.4	8.9	8.6	22.4	8.7	9.1	21.8	8.4	9.7	21.0
	ESEW15S	13.2	12.5	33.1	13.2	12.5	33.1	12.9	13.0	32.4	12.5	13.8	31.4
	ESEW20S	18.3	16.2	45.9	18.3	16.2	45.9	17.8	16.9	44.8	17.2	18.1	43.2
	ESEW25S	22.6	20.9	56.6	22.6	20.9	56.6	22.0	21.7	55.4	21.4	23.1	53.7
	ESEW30S	26.9	24.4	67.5	26.9	24.4	67.5	26.3	25.3	66.1	25.5	26.8	64.0
	ESEW40S	34.8	32.3	87.4	34.8	32.3	87.4	34.1	33.6	85.7	33.1	35.6	83.1
	ESEW50S	43.9	40.2	110.1	43.9	40.2	110.1	43.0	41.9	107.9	41.6	44.3	104.5
	ESEW60S	56.8	52.0	142.6	56.8	52.0	142.6	55.4	54.3	139.1	53.7	57.5	134.8
	ESEW80S	70.7	66.1	177.6	70.7	66.1	177.6	69.1	68.7	173.4	66.8	72.3	167.7
	ESEW100S	91.1	84.7	228.8	91.1	84.7	228.8	89.4	87.6	224.6	86.6	92.5	217.5
	ESEW120S	106.1	98.7	266.4	106.1	98.7	266.4	104.6	101.3	262.6	101.3	107.0	254.5
	ESEW20D	17.9	17.5	44.9	17.9	17.5	44.9	17.3	18.3	43.5	16.7	19.4	42.0
	ESEW30D	26.4	25.1	66.3	26.4	25.1	66.3	25.8	26.2	64.8	25.0	27.7	62.8
	ESEW40D	36.5	32.5	91.8	36.5	32.5	91.8	35.6	33.9	89.5	34.4	36.3	86.3
	ESEW50D	45.1	41.8	113.3	45.1	41.8	113.3	44.1	43.7	110.7	42.7	46.2	107.3
	ESEW60D	53.8	48.8	135.1	53.8	48.8	135.0	52.6	50.7	132.2	51.0	53.7	128.1
	ESEW80D	69.6	64.6	174.9	69.6	64.6	174.8	68.2	67.3	171.3	66.2	71.3	166.3
	ESEW100D	87.7	80.4	220.3	87.7	80.4	220.3	85.9	83.7	215.7	83.3	88.9	209.1
	ESEW120D	113.6	104.0	285.2	113.6	104.0	285.2	110.8	108.8	278.3	107.3	115.1	269.6
	ESEW160D	141.4	132.4	355.2	141.4	132.4	355.1	138.1	137.4	346.8	133.6	144.7	335.5
ESEW200D	182.2	169.5	457.6	182.2	169.5	457.6	178.9	175.3	449.1	173.2	185.1	435.0	
ESEW240D	212.2	197.5	532.8	212.2	197.5	532.8	209.2	202.8	525.2	202.7	214.2	508.9	
45°F	ESEW10S	9.9	8.6	23.7	9.9	8.6	23.7	9.6	9.1	23.0	9.3	9.6	22.2
	ESEW15S	14.6	12.6	34.9	14.6	12.6	34.9	14.2	13.1	34.1	13.8	13.9	33.0
	ESEW20S	20.1	16.2	48.3	20.1	16.2	48.3	19.6	17.0	47.1	19.0	18.2	45.5
	ESEW25S	24.8	20.9	59.6	24.8	20.9	59.6	24.2	22.0	58.1	23.5	23.3	56.4
	ESEW30S	29.6	24.6	71.0	29.6	24.6	71.0	28.9	25.6	69.4	28.0	27.0	67.3
	ESEW40S	38.3	32.4	91.9	38.3	32.4	91.9	37.5	33.9	89.9	36.4	35.9	87.3
	ESEW50S	48.3	40.4	116.0	48.3	40.4	115.9	47.3	42.3	113.4	45.9	44.7	110.0
	ESEW60S	62.6	52.5	150.1	62.6	52.5	150.1	60.9	55.0	146.1	59.0	58.1	141.6
	ESEW80S	78.1	66.8	187.3	78.1	66.8	187.3	76.1	69.5	182.5	73.6	73.1	176.6
	ESEW100S	100.4	85.1	240.7	100.3	85.0	240.7	98.3	88.4	235.8	95.2	93.4	228.5
	ESEW120S	116.8	98.9	280.3	116.8	98.9	280.3	115.0	102.1	275.8	111.4	107.9	267.3
	ESEW20D	19.8	17.3	47.4	19.8	17.3	47.4	19.2	18.2	46.0	18.5	19.3	44.4
	ESEW30D	29.1	25.1	69.8	29.1	25.1	69.8	28.4	26.3	68.1	27.5	27.9	66.1
	ESEW40D	40.3	32.6	96.7	40.3	32.6	96.7	39.3	34.2	94.2	38.0	36.5	91.1
	ESEW50D	49.7	42.1	119.2	49.7	42.1	119.2	48.5	44.2	116.2	47.0	46.7	112.7
	ESEW60D	59.2	49.3	142.0	59.2	49.3	142.0	57.9	51.4	138.8	56.1	54.3	134.6
	ESEW80D	76.6	64.9	183.9	76.6	64.9	183.8	75.0	67.9	179.8	72.8	71.8	174.6
	ESEW100D	96.7	81.0	231.9	96.7	81.0	231.9	94.5	84.5	226.8	91.7	89.5	220.0
	ESEW120D	125.1	105.0	300.1	125.1	105.0	300.1	121.8	110.1	292.3	118.1	116.5	283.2
	ESEW160D	156.1	133.7	374.5	156.1	133.7	374.5	152.1	139.1	364.9	147.2	146.2	353.2
ESEW200D	200.7	170.2	481.5	200.7	170.2	481.5	196.6	176.8	471.7	190.5	187.0	456.9	
ESEW240D	233.7	198.0	560.6	233.7	198.0	560.6	229.9	204.2	551.6	222.9	216.1	534.6	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, condenser fouling factor of 0.00025 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, and R410A refrigerant.

²kW = Total compressor input power at rated voltage.

ESEW Series Water Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Water Temperature											
		80°F			85°F			90°F			95°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
50°F	ESEW10S	10.9	8.5	26.1	10.9	8.5	26.1	10.5	9.0	25.3	10.2	9.5	24.5
	ESEW15S	16.0	12.6	38.3	16.0	12.6	38.3	15.5	13.2	37.3	15.1	14.0	36.2
	ESEW20S	22.1	16.4	52.9	22.1	16.4	52.9	21.5	17.2	51.6	20.8	18.3	49.9
	ESEW25S	27.2	21.1	65.3	27.2	21.1	65.3	26.5	22.3	63.6	25.7	23.6	61.6
	ESEW30S	32.4	24.9	77.7	32.4	24.9	77.7	31.6	26.0	75.8	30.6	27.4	73.6
	ESEW40S	41.9	32.6	100.7	41.9	32.6	100.7	41.0	34.2	98.3	39.8	36.2	95.5
	ESEW50S	52.9	40.8	127.0	52.9	40.8	127.0	51.7	42.7	124.0	50.2	45.2	120.4
	ESEW60S	68.5	53.0	164.4	68.5	53.0	164.4	66.6	55.8	159.7	64.5	58.8	154.9
	ESEW80S	85.7	67.4	205.7	85.7	67.4	205.7	83.4	70.3	200.1	80.7	73.8	193.7
	ESEW100S	110.0	85.3	263.9	110.0	85.3	263.9	107.5	89.0	258.0	104.2	94.2	250.0
	ESEW120S	128.0	98.9	307.2	128.0	98.9	307.2	125.7	102.6	301.7	121.9	108.7	292.6
	ESEW20D	21.7	17.0	52.1	21.7	17.1	52.1	21.1	18.1	50.6	20.4	19.2	48.9
	ESEW30D	31.9	25.2	76.6	31.9	25.2	76.6	31.1	26.5	74.6	30.2	28.1	72.4
	ESEW40D	44.1	32.7	105.9	44.1	32.7	105.9	43.0	34.5	103.1	41.6	36.6	99.8
	ESEW50D	54.4	42.4	130.6	54.4	42.4	130.6	53.0	44.6	127.1	51.4	47.2	123.3
	ESEW60D	64.8	49.9	155.4	64.8	49.9	155.4	63.2	52.1	151.6	61.3	54.9	147.1
	ESEW80D	83.9	65.4	201.3	83.9	65.4	201.3	81.9	68.5	196.6	79.6	72.4	191.0
	ESEW100D	105.8	81.7	254.0	105.8	81.7	254.0	103.3	85.5	248.0	100.3	90.3	240.8
	ESEW120D	137.0	106.1	328.7	137.0	106.1	328.8	133.1	111.6	319.5	129.1	117.9	309.7
	ESEW160D	171.4	134.8	411.4	171.4	134.8	411.5	166.7	140.7	400.1	161.4	147.7	387.5
ESEW200D	219.9	170.6	527.8	219.9	170.6	527.8	215.0	178.1	516.0	208.4	188.6	500.1	
ESEW240D	256.0	198.0	614.5	256.0	198.0	614.5	251.4	205.2	603.5	243.8	217.5	585.1	
55°F	ESEW10S	11.9	8.4	28.6	11.9	8.4	28.5	11.5	8.9	27.7	11.2	9.5	26.8
	ESEW15S	17.5	12.6	42.0	17.5	12.6	42.0	17.0	13.3	40.8	16.5	14.1	39.6
	ESEW20S	24.1	16.4	57.8	24.1	16.4	57.8	23.4	17.3	56.2	22.7	18.4	54.5
	ESEW25S	29.8	21.4	71.5	29.8	21.4	71.4	28.9	22.5	69.4	28.0	23.8	67.3
	ESEW30S	35.3	25.2	84.8	35.3	25.2	84.8	34.4	26.4	82.6	33.4	27.8	80.2
	ESEW40S	45.8	32.9	110.0	45.8	32.9	110.0	44.7	34.6	107.2	43.4	36.5	104.2
	ESEW50S	57.8	41.3	138.7	57.8	41.3	138.7	56.3	43.3	135.2	54.7	45.7	131.4
	ESEW60S	74.8	53.6	179.6	74.7	53.8	179.3	72.5	56.6	174.1	70.3	59.7	168.8
	ESEW80S	94.0	68.0	225.6	94.0	68.0	225.6	91.2	71.1	218.9	88.3	74.5	212.1
	ESEW100S	120.2	85.1	288.6	120.2	85.1	288.6	117.3	89.5	281.7	113.7	94.8	273.0
	ESEW120S	140.0	98.7	336.1	140.0	98.7	336.1	137.2	102.8	329.4	133.1	109.2	319.5
	ESEW20D	23.8	16.8	57.2	23.8	17.0	57.0	23.1	18.0	55.4	22.4	19.1	53.7
	ESEW30D	35.0	25.3	84.0	35.0	25.3	84.0	34.0	26.7	81.6	33.0	28.2	79.2
	ESEW40D	48.1	32.8	115.5	48.1	32.8	115.6	46.9	34.7	112.5	45.4	36.8	109.1
	ESEW50D	59.5	42.7	142.9	59.5	42.8	142.9	57.8	45.2	138.7	56.0	47.6	134.6
	ESEW60D	70.6	50.5	169.6	70.6	50.5	169.6	68.8	52.9	165.2	66.8	55.7	160.4
	ESEW80D	91.6	65.8	220.0	91.6	65.8	220.0	89.3	69.2	214.4	86.8	73.1	208.4
	ESEW100D	115.5	82.7	277.4	115.6	82.8	277.5	112.6	86.7	270.5	109.5	91.5	262.8
	ESEW120D	149.6	107.3	359.1	149.3	107.6	358.5	145.0	113.3	348.2	140.6	119.4	337.7
	ESEW160D	187.9	136.0	451.2	188.0	136.0	451.3	182.4	142.3	437.8	176.7	149.2	424.2
ESEW200D	240.4	170.4	577.3	240.4	170.4	577.3	234.6	179.0	563.3	227.4	189.8	546.1	
ESEW240D	279.9	197.4	672.1	279.9	197.4	672.1	274.4	205.8	658.8	266.1	218.5	638.9	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, condenser fouling factor of 0.00025 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, and R410A refrigerant.

²kW = Total compressor input power at rated voltage.

ESEW Series Water Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Water Temperature											
		80°F			85°F			90°F			95°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
60°F	ESEW10S	13.0	8.3	31.3	13.0	8.4	31.2	12.6	8.8	30.3	12.2	9.3	29.4
	ESEW15S	19.1	12.6	45.9	19.1	12.7	45.9	18.5	13.3	44.5	18.0	14.1	43.2
	ESEW20S	26.2	16.4	62.9	26.2	16.5	62.8	25.5	17.5	61.2	24.7	18.5	59.4
	ESEW25S	32.5	21.6	78.1	32.4	21.7	77.8	31.5	22.8	75.6	30.5	24.1	73.3
	ESEW30S	38.4	25.6	92.3	38.4	25.7	92.2	37.4	27.0	89.7	36.3	28.3	87.2
	ESEW40S	49.9	33.2	119.9	49.9	33.2	119.9	48.6	35.0	116.7	47.2	36.8	113.4
	ESEW50S	62.9	42.0	151.1	62.9	42.1	151.0	61.2	44.1	147.0	59.5	46.4	143.0
	ESEW60S	81.5	54.4	195.7	81.1	54.7	194.8	78.8	57.6	189.3	76.4	60.6	183.6
	ESEW80S	102.8	68.5	246.9	102.6	68.7	246.5	99.6	71.9	239.1	96.5	75.3	231.8
	ESEW100S	131.2	84.8	315.0	131.2	84.8	315.1	127.8	89.7	306.8	123.9	95.3	297.5
	ESEW120S	152.6	97.9	366.4	152.6	97.9	366.4	149.3	102.7	358.5	145.0	109.5	348.1
	ESEW20D	26.1	16.7	62.6	25.9	16.8	62.3	25.2	17.8	60.6	24.5	18.9	58.8
	ESEW30D	38.2	25.3	91.9	38.2	25.4	91.7	37.1	26.8	89.0	36.0	28.4	86.4
	ESEW40D	52.3	32.9	125.7	52.3	33.0	125.6	50.9	34.9	122.3	49.5	37.1	118.8
	ESEW50D	65.0	43.2	156.1	64.8	43.4	155.6	62.9	45.7	151.2	61.0	48.2	146.6
	ESEW60D	76.9	51.4	184.6	76.8	51.5	184.4	74.7	53.9	179.5	72.6	56.7	174.3
	ESEW80D	99.9	66.5	239.9	99.8	66.5	239.8	97.2	70.0	233.4	94.5	73.9	226.8
	ESEW100D	125.8	84.0	302.1	125.7	84.2	302.0	122.4	88.2	294.1	119.1	92.9	286.0
	ESEW120D	162.9	108.8	391.3	162.2	109.6	389.6	157.6	115.2	378.5	152.9	121.4	367.1
	ESEW160D	205.6	137.1	493.8	205.2	137.5	492.9	199.1	143.8	478.2	193.0	150.6	463.6
ESEW200D	262.3	169.6	630.1	262.4	169.7	630.1	255.5	179.5	613.7	247.7	190.7	595.0	
ESEW240D	305.1	195.8	732.8	305.1	195.8	732.8	298.6	205.5	717.1	289.9	219.0	696.3	
65°F	ESEW10S	14.2	8.2	34.2	14.1	8.3	34.0	13.8	8.8	33.0	13.4	9.3	32.1
	ESEW15S	19.3	11.5	46.3	19.3	11.6	46.4	20.0	13.3	48.1	19.6	14.2	47.1
	ESEW20S	28.4	16.5	68.2	28.3	16.6	68.0	27.6	17.6	66.3	26.8	18.6	64.5
	ESEW25S	35.4	21.8	85.1	35.2	22.0	84.6	34.2	23.1	82.1	33.2	24.4	79.7
	ESEW30S	41.7	26.2	100.2	41.6	26.3	99.9	40.5	27.6	97.2	39.3	28.8	94.5
	ESEW40S	54.3	33.6	130.5	54.2	33.8	130.2	52.8	35.5	126.7	51.3	37.3	123.2
	ESEW50S	68.3	42.8	164.1	68.1	43.0	163.6	66.4	45.0	159.4	64.6	47.3	155.1
	ESEW60S	88.5	55.2	212.7	87.9	55.8	211.2	85.4	58.6	205.2	82.9	61.7	199.1
	ESEW80S	112.2	69.0	269.5	111.6	69.4	268.2	108.4	72.6	260.3	105.2	76.0	252.8
	ESEW100S	142.8	84.1	343.0	142.8	84.1	343.1	138.8	89.7	333.5	134.7	95.6	323.5
	ESEW120S	161.8	93.9	388.7	161.8	93.9	388.7	162.6	102.6	390.5	157.4	109.2	378.2
	ESEW20D	28.5	16.5	68.4	28.3	16.7	67.9	27.5	17.6	66.1	26.7	18.7	64.2
	ESEW30D	38.5	23.0	92.5	38.6	23.2	92.8	40.1	26.7	96.3	39.3	28.6	94.3
	ESEW40D	56.8	33.0	136.4	56.6	33.2	136.0	55.2	35.2	132.6	53.7	37.4	129.0
	ESEW50D	70.8	43.6	170.2	70.4	44.1	169.2	68.3	46.3	164.2	66.4	48.9	159.4
	ESEW60D	83.4	52.4	200.4	83.1	52.7	199.7	81.0	55.2	194.5	78.7	57.9	189.0
	ESEW80D	108.7	67.3	261.1	108.4	67.7	260.3	105.5	71.0	253.5	102.6	74.7	246.4
	ESEW100D	136.6	85.7	328.2	136.2	86.2	327.2	132.7	90.1	318.9	129.2	94.6	310.3
	ESEW120D	177.1	110.5	425.3	175.8	111.7	422.4	170.8	117.3	410.4	165.7	123.4	398.1
	ESEW160D	224.3	138.1	538.9	223.2	139.0	536.3	216.7	145.1	520.6	210.4	152.0	505.5
ESEW200D	285.6	168.2	686.0	285.6	168.2	686.1	277.7	179.5	667.1	269.3	191.2	647.0	
ESEW240D	323.6	187.8	777.5	323.6	187.8	777.5	325.1	205.2	781.0	314.8	218.5	756.3	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, condenser fouling factor of 0.00025 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, and R410A refrigerant.

²kW = Total compressor input power at rated voltage.

ESEW Series Water Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Water Temperature											
		80°F			85°F			90°F			95°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
70°F	ESEW10S	15.5	8.1	37.3	15.4	8.2	36.9	15.0	8.7	36.0	14.6	9.3	35.0
	ESEW15S	18.5	9.9	44.4	18.5	9.9	44.5	19.4	11.5	46.5	20.1	13.2	48.2
	ESEW20S	30.7	16.5	73.7	30.5	16.7	73.4	29.8	17.7	71.7	29.1	18.8	69.8
	ESEW25S	36.2	20.6	86.9	36.6	21.2	87.8	37.2	23.6	89.4	36.0	24.7	86.5
	ESEW30S	45.2	26.8	108.5	44.9	27.1	107.9	43.7	28.2	105.1	42.5	29.5	102.2
	ESEW40S	59.0	34.1	141.7	58.6	34.3	140.9	57.1	36.0	137.2	55.6	37.8	133.6
	ESEW50S	74.0	43.8	177.8	73.6	44.2	176.8	71.8	46.1	172.4	69.9	48.3	167.9
	ESEW60S	96.0	56.2	230.6	95.1	57.1	228.4	92.4	59.8	221.9	89.6	62.8	215.3
	ESEW80S	117.4	66.5	282.0	118.5	68.3	284.8	118.1	73.5	283.7	114.4	76.6	274.8
	ESEW100S	155.4	83.1	373.4	155.2	83.5	373.0	150.5	89.3	361.6	146.0	95.5	350.8
	ESEW120S	155.1	79.9	372.6	155.1	79.9	372.6	160.8	90.8	386.3	167.2	106.0	401.7
	ESEW20D	31.0	16.2	74.5	30.7	16.5	73.9	30.0	17.5	72.0	29.1	18.5	69.9
	ESEW30D	36.9	19.8	88.8	37.0	19.9	88.9	38.7	23.1	93.0	40.1	26.5	96.4
	ESEW40D	61.4	33.1	147.5	61.1	33.5	146.8	59.7	35.5	143.4	58.1	37.7	139.6
	ESEW50D	72.3	41.1	173.7	73.1	42.5	175.7	74.4	47.2	178.8	72.0	49.5	173.0
	ESEW60D	90.3	53.6	217.0	89.8	54.2	215.8	87.5	56.6	210.2	85.1	59.2	204.4
	ESEW80D	117.9	68.2	283.3	117.3	68.8	281.8	114.2	72.1	274.4	111.2	75.8	267.2
	ESEW100D	148.0	87.7	355.5	147.2	88.5	353.6	143.5	92.3	344.8	139.7	96.6	335.7
	ESEW120D	192.0	112.4	461.2	190.1	114.2	456.8	184.7	119.7	443.9	179.2	125.7	430.6
	ESEW160D	234.7	133.0	564.0	237.1	136.8	569.6	236.1	147.0	567.3	228.7	153.2	549.6
ESEW200D	310.8	166.3	746.7	310.5	167.1	745.9	301.0	178.7	723.2	292.0	191.0	701.5	
ESEW240D	310.2	159.9	745.3	310.2	159.9	745.3	321.6	181.6	772.7	334.4	212.1	803.4	
75°F	ESEW10S	16.9	8.0	40.6	16.7	8.1	40.1	16.3	8.6	39.1	15.8	9.1	38.0
	ESEW15S	17.6	8.5	42.2	17.6	8.5	42.2	18.5	9.9	44.5	19.3	11.4	46.5
	ESEW20S	33.1	16.6	79.5	32.9	16.8	79.0	32.2	17.9	77.3	31.4	19.0	75.4
	ESEW25S	34.4	17.9	82.7	34.8	18.5	83.6	36.6	21.3	87.9	38.1	24.4	91.5
	ESEW30S	48.8	27.5	117.2	48.4	27.9	116.3	47.2	29.1	113.3	45.9	30.4	110.2
	ESEW40S	62.6	33.9	150.3	63.4	35.1	152.4	61.8	36.7	148.6	60.1	38.4	144.5
	ESEW50S	79.9	45.0	192.1	79.3	45.5	190.6	77.4	47.4	185.9	75.3	49.4	181.1
	ESEW60S	103.8	57.3	249.6	102.6	58.5	246.5	99.6	61.1	239.5	96.7	64.2	232.3
	ESEW80S	111.6	57.7	268.2	112.7	59.1	270.8	118.7	67.7	285.2	123.6	76.8	296.9
	ESEW100S	148.3	70.4	356.3	148.3	70.4	356.4	156.7	84.4	376.6	158.2	95.2	380.2
	ESEW120S	147.2	66.9	353.8	147.2	66.9	353.8	153.3	76.4	368.4	160.8	90.7	386.4
	ESEW20D	33.8	16.0	81.1	33.4	16.4	80.2	32.5	17.3	78.2	31.6	18.3	76.0
	ESEW30D	35.1	17.0	84.4	35.1	17.0	84.4	37.0	19.8	89.0	38.7	22.9	93.0
	ESEW40D	66.2	33.2	159.0	65.8	33.7	158.0	64.3	35.7	154.5	62.7	37.9	150.7
	ESEW50D	68.8	35.9	165.4	69.6	37.0	167.3	73.2	42.7	175.9	76.2	48.9	183.1
	ESEW60D	97.6	55.2	234.5	96.8	55.9	232.6	94.3	58.2	226.6	91.7	60.7	220.4
	ESEW80D	125.1	67.8	300.6	126.8	70.3	304.8	123.7	73.5	297.2	120.2	76.9	288.9
	ESEW100D	159.8	90.1	384.1	158.6	91.2	381.1	154.7	94.8	371.8	150.7	99.0	362.1
	ESEW120D	207.7	114.7	499.1	205.1	116.9	492.9	199.3	122.4	478.9	193.3	128.3	464.5
	ESEW160D	223.2	115.4	536.3	225.4	118.2	541.7	237.4	135.4	570.4	247.1	153.7	593.8
ESEW200D	296.5	140.9	712.6	296.6	140.9	712.7	313.4	168.9	753.1	316.4	190.5	760.4	
ESEW240D	294.5	133.9	707.7	294.5	133.9	707.7	306.6	152.8	736.8	321.6	181.5	772.8	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, condenser fouling factor of 0.00025 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, and R410A refrigerant.

²kW = Total compressor input power at rated voltage.

ESEW Series Water Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Water Temperature											
		80°F			85°F			90°F			95°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
80°F	ESEW10S	17.4	7.6	41.8	17.6	7.8	42.3	17.6	8.5	42.3	17.2	9.0	41.2
	ESEW15S	17.4	8.2	41.8	16.9	7.6	40.6	17.8	8.8	42.9	18.7	10.1	45.0
	ESEW20S	33.7	16.0	81.0	33.7	16.0	81.0	34.6	18.0	83.1	33.8	19.1	81.1
	ESEW25S	33.7	17.1	81.0	33.1	16.3	79.5	35.0	18.8	84.1	36.6	21.5	87.9
	ESEW30S	51.1	28.1	122.9	52.0	28.9	125.0	50.7	30.0	121.9	49.4	31.3	118.7
	ESEW40S	60.3	31.1	144.9	61.2	32.2	147.1	64.4	36.7	154.8	63.6	39.0	152.9
	ESEW50S	84.7	46.1	203.5	83.7	46.7	201.3	81.5	48.5	195.8	79.1	50.4	190.1
	ESEW60S	109.4	58.1	263.0	107.7	59.4	258.8	104.2	62.0	250.5	100.7	64.9	242.1
	ESEW80S	109.4	54.9	263.0	110.5	56.1	265.5	116.3	63.7	279.6	121.3	72.0	291.6
	ESEW100S	143.2	63.2	344.1	143.2	63.2	344.1	151.4	75.2	363.9	158.7	88.7	381.5
	ESEW120S	143.2	61.2	344.1	143.2	61.2	344.1	149.0	69.3	358.1	156.7	82.4	376.5
	ESEW20D	34.8	15.3	83.5	35.2	15.6	84.5	35.2	17.1	84.7	34.3	18.1	82.5
	ESEW30D	34.8	16.5	83.5	33.8	15.2	81.2	35.7	17.6	85.8	37.4	20.3	89.9
	ESEW40D	67.4	32.0	162.0	67.4	32.0	161.9	69.1	36.0	166.1	67.5	38.2	162.3
	ESEW50D	67.4	34.2	162.0	66.2	32.8	159.1	70.0	37.7	168.2	73.2	43.0	175.9
	ESEW60D	102.2	56.2	245.7	104.0	57.8	250.0	101.5	60.1	243.8	98.8	62.6	237.4
	ESEW80D	120.6	62.3	289.8	122.4	64.4	294.3	128.8	73.4	309.6	127.3	78.1	305.9
	ESEW100D	169.3	92.2	406.9	167.5	93.5	402.5	162.9	96.9	391.6	158.2	100.8	380.3
	ESEW120D	218.9	116.4	526.1	215.4	119.0	517.6	208.5	124.2	501.0	201.5	130.0	484.2
	ESEW160D	218.9	109.8	526.1	220.9	112.1	530.9	232.7	127.5	559.2	242.6	144.1	583.1
ESEW200D	286.4	126.4	688.3	286.4	126.4	688.3	302.8	150.4	727.7	317.5	177.4	763.0	
ESEW240D	286.4	122.4	688.3	286.4	122.4	688.3	298.0	138.6	716.2	313.3	164.7	753.0	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, condenser fouling factor of 0.00025 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, and R410A refrigerant.

²kW = Total compressor input power at rated voltage.

ESER Series Remote Air Cooled Condenser Chiller Cooling Capacities - 60 Hz

Leaving Coolant Temp	Model	Entering Condenser Air Temperature											
		85°F			90°F			95°F			100°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
20°F	ESER10S	5.7	8.8	16.0	5.8	9.1	16.0	5.5	9.5	15.2	5.5	10.1	15.3
	ESER15S	8.8	12.3	24.5	8.8	12.3	24.6	8.6	13.0	23.9	8.8	13.8	24.5
	ESER20S	11.9	16.0	33.3	12.0	16.2	33.4	11.4	17.1	31.9	11.6	18.6	32.3
	ESER25S	15.1	20.3	42.1	15.1	20.4	42.2	14.6	21.5	40.7	15.0	23.1	41.8
	ESER30S	17.9	23.8	49.8	17.9	23.8	50.0	17.3	25.0	48.3	17.6	26.8	49.0
	ESER40S	23.3	31.8	65.0	23.3	32.0	64.9	22.6	34.8	62.9	21.8	35.8	60.8
	ESER50S	29.0	39.8	80.8	28.9	40.3	80.5	27.9	42.7	77.8	26.9	45.5	75.0
	ESER60S	37.6	50.6	104.8	37.6	50.6	104.9	36.5	53.4	101.7	35.2	56.5	98.3
	ESER80S	47.1	63.1	131.3	47.0	63.4	131.2	45.4	66.7	126.7	43.8	70.3	122.3
	ESER100S	60.8	82.3	169.6	60.5	83.4	168.7	58.5	87.8	163.1	56.6	92.9	157.8
	ESER120S	70.9	96.0	197.7	71.0	96.1	198.0	68.7	101.1	191.6	66.5	106.6	185.6
	ESER20D	11.5	18.0	32.0	11.5	18.0	32.1	11.2	18.7	31.1	11.3	19.8	31.5
	ESER30D	17.6	24.8	49.1	17.6	24.8	49.2	17.1	26.0	47.8	17.6	27.9	49.1
	ESER40D	23.9	32.4	66.6	24.0	33.6	66.8	22.9	34.7	63.8	23.2	37.4	64.6
	ESER50D	30.2	40.8	84.2	30.3	42.0	84.4	29.2	43.1	81.5	30.0	46.2	83.7
	ESER60D	35.7	47.6	99.7	35.8	47.7	99.9	34.6	50.2	96.6	35.2	53.7	98.1
	ESER80D	46.6	63.8	129.9	46.6	65.9	129.9	45.1	69.6	125.8	43.6	71.8	121.6
	ESER100D	57.9	79.7	161.5	57.7	80.5	161.1	55.8	88.0	155.6	53.7	91.0	149.9
ESER120D	75.1	101.2	209.5	75.2	101.3	209.8	72.9	106.8	203.5	70.5	116.1	196.7	
ESER160D	94.1	126.3	262.6	94.1	127.1	262.5	90.8	136.4	253.4	87.7	143.8	244.6	
ESER200D	121.6	164.8	339.2	121.0	167.0	337.5	117.0	175.9	326.3	113.1	185.9	315.6	
ESER240D	141.7	192.0	395.4	141.9	192.3	395.9	137.4	202.3	383.2	133.1	218.0	371.2	
25°F	ESER10S	6.5	8.9	17.5	6.4	9.0	17.4	6.1	9.5	16.6	5.8	9.9	15.9
	ESER15S	9.8	12.4	26.5	9.8	12.4	26.5	9.5	13.2	25.7	9.2	14.0	24.8
	ESER20S	13.4	16.1	36.2	13.3	16.4	36.0	12.8	17.6	34.6	12.2	18.7	33.1
	ESER25S	16.8	20.5	45.4	16.6	20.7	45.1	16.1	21.9	43.8	15.6	23.3	42.2
	ESER30S	19.9	23.9	53.9	19.8	24.1	53.7	19.2	25.5	52.0	18.5	26.9	50.2
	ESER40S	25.9	32.0	70.2	25.7	32.6	69.6	24.8	34.3	67.4	24.1	36.5	65.3
	ESER50S	32.3	39.8	87.6	32.0	40.8	86.6	30.9	43.3	83.7	29.8	46.0	80.9
	ESER60S	41.9	50.9	113.5	41.7	51.3	113.2	40.4	54.3	109.5	39.0	57.4	105.8
	ESER80S	52.3	64.0	141.8	51.8	65.1	140.5	50.0	68.4	135.6	48.3	72.1	131.0
	ESER100S	67.6	83.0	183.2	66.7	85.1	180.8	64.5	89.5	174.8	62.3	94.4	169.1
	ESER120S	78.7	96.8	213.4	78.3	98.1	212.2	75.7	103.0	205.4	73.3	108.6	198.7
	ESER20D	12.9	17.8	35.0	13.0	18.0	35.1	12.5	18.7	34.0	12.0	19.9	32.4
	ESER30D	19.6	24.9	53.0	19.6	25.0	53.0	19.0	26.5	51.4	18.3	27.9	49.7
	ESER40D	26.7	32.3	72.5	26.6	32.9	72.0	25.5	35.1	69.2	24.4	37.5	66.1
	ESER50D	33.5	41.0	90.9	33.3	41.5	90.4	32.3	44.0	87.7	31.2	46.6	84.6
	ESER60D	39.8	47.9	107.9	39.6	48.4	107.5	38.4	51.3	104.0	37.0	54.1	100.4
	ESER80D	51.7	63.9	140.3	51.3	65.2	139.2	49.7	68.9	134.8	48.2	73.1	130.6
	ESER100D	64.6	79.7	175.2	63.9	81.7	173.3	61.7	86.6	167.3	59.6	92.2	161.7
ESER120D	83.7	101.8	227.0	83.5	102.9	226.3	80.7	108.6	218.9	78.0	115.0	211.6	
ESER160D	104.6	128.2	283.5	103.6	130.4	281.0	100.0	136.9	271.2	96.6	144.3	262.1	
ESER200D	135.1	166.1	366.3	133.3	170.1	361.6	128.9	179.0	349.6	124.7	189.2	338.1	
ESER240D	157.4	193.7	426.7	156.5	196.2	424.5	151.5	206.3	410.7	146.6	217.4	397.5	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, R410A refrigerant, and operating at sea level.

²kW = Total compressor input power at rated voltage.

ESER Series Remote Air Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Air Temperature											
		85°F			90°F			95°F			100°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
30°F	ESER10S	7.2	8.7	19.1	7.1	9.1	18.7	6.8	9.5	18.0	6.5	10.1	17.3
	ESER15S	10.8	12.4	28.6	10.8	12.7	28.4	10.4	13.3	27.5	10.1	14.1	26.7
	ESER20S	14.9	16.1	39.3	14.7	16.6	38.7	14.1	17.7	37.2	13.6	19.0	35.8
	ESER25S	18.6	20.6	49.0	18.3	21.2	48.3	17.7	22.3	46.8	17.2	23.8	45.3
	ESER30S	22.1	24.1	58.2	21.8	24.5	57.6	21.1	25.9	55.7	20.4	27.4	53.9
	ESER40S	28.7	32.1	75.6	28.2	33.1	74.5	27.3	34.9	72.2	26.5	37.0	69.9
	ESER50S	35.9	39.9	94.8	35.2	41.3	93.0	34.1	43.9	89.9	32.9	46.6	86.9
	ESER60S	46.5	51.2	122.8	46.0	52.3	121.4	44.5	55.2	117.6	43.1	58.5	113.7
	ESER80S	58.0	64.9	153.0	56.9	66.7	150.3	55.0	70.1	145.2	53.1	73.7	140.3
	ESER100S	74.9	83.7	197.6	73.3	86.8	193.4	70.9	91.4	187.1	68.5	96.3	180.9
	ESER120S	87.2	97.6	230.1	86.0	100.0	227.0	83.3	105.2	219.8	80.6	110.8	212.7
	ESER20D	14.5	17.8	38.2	14.5	17.8	38.2	13.9	18.8	36.7	13.4	20.0	35.3
	ESER30D	21.7	25.0	57.2	21.5	25.3	56.8	20.8	26.7	55.0	20.2	28.4	53.4
	ESER40D	29.8	32.4	78.7	29.3	33.3	77.4	28.2	35.5	74.4	27.1	38.0	71.6
	ESER50D	37.1	41.2	98.0	36.6	42.3	96.7	35.5	44.8	93.7	34.4	47.6	90.8
	ESER60D	44.1	48.1	116.5	43.6	49.2	115.2	42.2	52.0	111.4	40.9	55.2	107.9
	ESER80D	57.3	64.2	151.2	56.4	66.3	148.9	54.7	70.1	144.3	53.0	74.3	139.8
	ESER100D	71.8	79.9	189.6	70.5	83.0	186.0	68.1	87.8	179.9	65.8	93.3	173.7
	ESER120D	93.0	102.5	245.5	92.0	104.8	242.8	89.1	110.7	235.1	86.1	117.0	227.4
	ESER160D	115.9	129.8	305.9	113.9	133.6	300.5	110.0	140.3	290.3	106.3	147.8	280.5
ESER200D	149.7	167.4	395.2	146.5	173.7	386.8	141.8	182.9	374.2	137.1	192.9	361.7	
ESER240D	174.3	195.2	460.1	172.0	200.1	454.1	166.6	210.5	439.6	161.2	221.7	425.4	
35°F	ESER10S	8.1	8.8	20.8	7.8	9.1	20.2	7.5	9.6	19.4	7.2	10.1	18.6
	ESER15S	12.0	12.5	30.8	11.8	12.8	30.4	11.4	13.4	29.4	11.1	14.3	28.5
	ESER20S	16.5	16.1	42.6	16.1	16.8	41.5	15.5	17.9	40.0	14.9	19.0	38.5
	ESER25S	20.5	20.7	52.7	20.0	21.5	51.6	19.4	22.8	50.0	18.8	24.1	48.4
	ESER30S	24.4	24.2	62.8	23.9	25.0	61.6	23.2	26.4	59.7	22.4	27.9	57.7
	ESER40S	31.6	32.1	81.4	30.9	33.6	79.5	30.0	35.6	77.1	29.1	37.7	74.7
	ESER50S	39.8	40.0	102.4	38.7	42.1	99.6	37.5	44.6	96.4	36.2	47.2	93.2
	ESER60S	51.5	51.6	132.5	50.5	53.4	130.0	49.0	56.4	126.0	47.4	59.6	121.9
	ESER80S	64.1	65.5	165.0	62.4	68.3	160.6	60.4	71.8	155.3	58.4	75.6	150.1
	ESER100S	82.8	84.4	212.9	80.3	88.7	206.5	77.7	93.3	200.0	75.1	98.3	193.3
	ESER120S	96.3	98.2	247.8	94.3	102.0	242.5	91.3	107.3	235.0	88.4	113.1	227.3
	ESER20D	16.1	17.5	41.5	16.0	17.9	41.1	15.4	18.8	39.7	14.8	19.9	38.1
	ESER30D	23.9	24.9	61.6	23.6	25.7	60.7	22.9	27.2	58.9	22.2	28.9	57.0
	ESER40D	33.1	32.5	85.1	32.3	33.9	83.0	31.1	36.0	80.0	29.9	38.5	76.9
	ESER50D	41.0	41.5	105.4	40.1	43.2	103.2	38.9	45.7	100.1	37.7	48.4	96.9
	ESER60D	48.8	48.5	125.6	47.9	50.3	123.2	46.4	53.0	119.3	44.8	55.9	115.4
	ESER80D	63.3	64.5	162.8	61.8	67.4	159.1	60.0	71.3	154.3	58.1	75.5	149.5
	ESER100D	79.6	80.2	204.7	77.4	84.3	199.2	75.0	89.4	192.9	72.5	94.8	186.5
	ESER120D	103.0	103.3	264.9	101.0	106.9	259.9	97.9	112.9	251.9	94.7	119.3	243.7
	ESER160D	128.3	131.3	330.0	124.8	136.7	321.2	120.7	143.6	310.6	116.7	151.1	300.3
ESER200D	165.5	168.7	425.8	160.6	177.5	413.1	155.4	186.8	399.9	150.3	197.0	386.6	
ESER240D	192.6	196.6	495.6	188.5	204.1	485.1	182.6	214.8	469.9	176.7	226.2	454.7	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, R410A refrigerant, and operating at sea level.

²kW = Total compressor input power at rated voltage.

ESER Series Remote Air Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Air Temperature											
		85°F			90°F			95°F			100°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
40°F	ESER10S	8.9	8.7	22.4	8.6	9.2	21.6	8.3	9.7	20.9	8.0	10.3	20.1
	ESER15S	13.2	12.5	33.1	12.9	13.0	32.4	12.5	13.7	31.5	12.1	14.5	30.5
	ESER20S	18.3	16.2	45.9	17.7	17.2	44.4	17.1	18.3	42.9	16.4	19.4	41.3
	ESER25S	22.6	20.9	56.7	21.9	22.0	55.0	21.2	23.2	53.3	20.6	24.7	51.6
	ESER30S	26.9	24.4	67.6	26.2	25.6	65.7	25.4	27.0	63.7	24.6	28.5	61.7
	ESER40S	34.8	32.5	87.4	33.8	34.3	84.8	32.8	36.2	82.3	31.8	38.3	79.8
	ESER50S	43.7	40.6	109.7	42.4	42.9	106.4	41.1	45.4	103.2	39.8	48.2	99.8
	ESER60S	56.8	52.0	142.7	55.3	54.6	138.8	53.6	57.6	134.6	51.9	60.8	130.3
	ESER80S	70.6	66.8	177.2	68.3	69.9	171.5	66.1	73.4	166.0	63.9	77.1	160.5
	ESER100S	90.5	86.1	227.3	87.7	90.6	220.2	84.9	95.4	213.3	82.1	100.5	206.2
	ESER120S	106.2	98.8	266.7	103.0	104.0	258.7	99.9	109.7	250.8	96.6	115.4	242.7
	ESER20D	17.9	17.5	44.9	17.6	17.9	44.2	17.0	19.0	42.7	16.4	20.1	41.1
	ESER30D	26.4	25.1	66.3	25.8	26.1	64.8	25.1	27.7	62.9	24.3	29.3	61.0
	ESER40D	36.6	32.6	91.9	35.4	34.5	88.8	34.2	36.7	85.8	32.9	39.1	82.6
	ESER50D	45.2	41.9	113.4	43.9	44.2	110.1	42.5	46.6	106.8	41.2	49.3	103.4
	ESER60D	53.8	48.8	135.2	52.4	51.3	131.5	50.8	54.1	127.5	49.1	57.1	123.3
	ESER80D	69.6	65.1	174.7	67.6	68.7	169.7	65.6	72.6	164.7	63.6	76.9	159.6
	ESER100D	87.4	81.4	219.5	84.8	85.9	212.9	82.2	91.0	206.3	79.5	96.4	199.6
	ESER120D	113.6	104.0	285.4	110.5	109.1	277.6	107.2	115.3	269.3	103.8	121.8	260.6
	ESER160D	141.2	133.7	354.4	136.6	139.9	342.9	132.2	146.9	332.0	127.9	154.5	321.1
ESER200D	181.0	172.3	454.5	175.4	181.3	440.4	169.9	191.1	426.6	164.3	201.4	412.5	
ESER240D	212.4	197.7	533.3	206.1	208.3	517.4	199.7	219.3	501.5	193.3	231.2	485.3	
45°F	ESER10S	9.8	8.8	23.4	9.5	9.3	22.7	9.1	9.7	21.9	8.8	10.3	21.1
	ESER15S	14.6	12.6	34.9	14.1	13.2	33.9	13.7	14.0	32.9	13.3	14.8	31.9
	ESER20S	20.0	16.5	48.0	19.3	17.4	46.4	18.7	18.6	44.9	18.0	19.7	43.3
	ESER25S	24.6	21.3	59.1	23.9	22.5	57.3	23.2	23.8	55.6	22.4	25.1	53.8
	ESER30S	29.4	24.8	70.6	28.6	26.2	68.6	27.7	27.5	66.5	26.8	29.0	64.4
	ESER40S	38.0	33.2	91.1	36.9	35.0	88.5	35.8	36.9	85.9	34.7	39.0	83.3
	ESER50S	47.7	41.5	114.5	46.3	43.8	111.1	44.9	46.3	107.8	43.5	49.0	104.4
	ESER60S	62.2	53.0	149.3	60.4	55.8	144.8	58.6	58.9	140.5	56.7	62.2	136.0
	ESER80S	77.1	68.3	184.9	74.6	71.4	179.1	72.3	75.0	173.5	70.0	78.9	167.8
	ESER100S	98.7	87.9	236.7	95.7	92.6	229.5	92.7	97.6	222.4	89.6	102.9	215.0
	ESER120S	116.0	100.7	278.2	112.5	106.2	269.8	109.0	111.9	261.6	105.5	117.9	253.1
	ESER20D	19.8	17.3	47.4	19.3	18.0	46.3	18.7	19.0	44.8	18.0	20.1	43.3
	ESER30D	29.1	25.2	69.8	28.2	26.5	67.7	27.4	28.1	65.8	26.6	29.8	63.8
	ESER40D	40.0	33.2	95.9	38.7	35.1	92.8	37.4	37.3	89.8	36.1	39.7	86.6
	ESER50D	49.3	42.7	118.3	47.9	45.1	114.8	46.5	47.7	111.4	45.0	50.4	107.9
	ESER60D	58.9	49.9	141.3	57.2	52.5	137.1	55.5	55.3	133.0	53.7	58.4	128.7
	ESER80D	75.9	66.4	182.1	73.7	69.9	176.9	71.6	74.0	171.8	69.4	78.2	166.6
	ESER100D	95.4	83.2	228.9	92.6	87.7	222.2	89.9	92.8	215.6	87.0	98.3	208.8
	ESER120D	124.4	106.2	298.5	120.7	111.7	289.6	117.2	118.0	281.1	113.4	124.5	272.1
	ESER160D	154.2	136.7	369.8	149.3	143.1	358.1	144.6	150.2	347.0	139.9	157.8	335.7
ESER200D	197.4	175.9	473.5	191.3	185.3	459.0	185.4	195.4	444.8	179.3	206.0	430.0	
ESER240D	232.0	201.5	556.5	224.9	212.3	539.6	218.1	224.0	523.2	211.0	236.0	506.3	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, R410A refrigerant, and operating at sea level.

²kW = Total compressor input power at rated voltage.

ESER Series Remote Air Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Air Temperature											
		85°F			90°F			95°F			100°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
50°F	ESER10S	10.6	8.8	25.5	10.3	9.3	24.8	10.0	9.9	24.0	9.6	10.3	23.1
	ESER15S	15.8	12.7	38.0	15.4	13.5	36.9	14.9	14.2	35.8	14.5	15.1	34.7
	ESER20S	21.7	16.9	52.1	21.0	17.8	50.5	20.4	19.0	48.9	19.7	20.2	47.2
	ESER25S	26.7	21.8	64.1	25.9	23.0	62.2	25.2	24.4	60.4	24.4	25.7	58.5
	ESER30S	31.9	25.5	76.6	31.0	26.8	74.4	30.1	28.2	72.3	29.1	29.7	69.9
	ESER40S	41.2	33.9	98.8	40.0	35.6	96.1	38.9	37.7	93.3	37.7	39.8	90.5
	ESER50S	51.8	42.6	124.3	50.3	44.8	120.7	48.9	47.4	117.3	47.3	50.1	113.6
	ESER60S	67.5	54.4	162.0	65.5	57.1	157.2	63.6	60.3	152.7	61.6	63.6	147.8
	ESER80S	83.8	69.8	201.0	81.2	73.1	194.8	78.7	76.6	188.9	76.2	80.5	182.9
	ESER100S	107.1	89.7	256.9	103.8	94.5	249.2	100.6	99.8	241.5	97.3	105.2	233.5
	ESER120S	125.9	102.4	302.1	122.1	108.1	293.1	118.5	114.3	284.3	114.6	120.4	275.1
	ESER20D	21.7	17.1	52.2	21.1	18.1	50.6	20.4	19.0	49.0	19.8	20.3	47.4
	ESER30D	31.6	25.6	76.0	30.7	27.0	73.7	29.8	28.6	71.6	28.9	30.2	69.4
	ESER40D	43.4	33.8	104.1	42.1	35.8	100.9	40.7	38.0	97.8	39.3	40.4	94.4
	ESER50D	53.5	43.7	128.5	52.0	46.1	124.7	50.4	48.6	121.1	48.8	51.3	117.2
	ESER60D	63.9	51.2	153.3	62.0	53.7	148.8	60.2	56.6	144.5	58.3	59.6	139.9
	ESER80D	82.4	67.8	197.7	80.0	71.4	192.1	77.8	75.5	186.7	75.4	79.8	181.0
	ESER100D	103.5	85.2	248.5	100.6	89.7	241.5	97.7	94.9	234.5	94.6	100.3	227.1
	ESER120D	135.0	108.9	324.0	131.0	114.4	314.5	127.2	120.7	305.3	123.2	127.4	295.6
	ESER160D	167.5	139.7	402.1	162.4	146.2	389.7	157.5	153.6	377.9	152.4	161.2	365.7
ESER200D	214.1	179.4	513.9	207.7	189.3	498.4	201.3	199.9	483.1	194.6	210.6	467.1	
ESER240D	251.8	204.9	604.3	244.2	216.3	586.1	236.9	228.6	568.6	229.2	240.9	550.2	
55°F	ESER10S	11.6	8.9	27.8	11.2	9.3	26.9	10.9	9.9	26.1	10.5	10.5	25.2
	ESER15S	17.2	13.0	41.2	16.7	13.7	40.0	16.2	14.5	38.9	15.7	15.3	37.7
	ESER20S	23.5	17.2	56.4	22.8	18.2	54.7	22.1	19.3	53.1	21.4	20.6	51.3
	ESER25S	28.9	22.4	69.5	28.1	23.6	67.5	27.3	24.9	65.5	26.4	26.3	63.4
	ESER30S	34.5	26.2	82.9	33.6	27.6	80.6	32.6	29.0	78.2	31.6	30.5	75.8
	ESER40S	44.6	34.6	107.0	43.3	36.4	104.1	42.1	38.4	101.2	40.9	40.7	98.1
	ESER50S	56.0	43.7	134.5	54.5	46.0	130.8	52.9	48.5	127.1	51.3	51.3	123.2
	ESER60S	73.0	55.8	175.3	70.9	58.6	170.2	68.9	61.9	165.3	66.7	65.2	160.0
	ESER80S	90.8	71.3	218.1	88.1	74.6	211.6	85.5	78.3	205.3	82.8	82.2	198.8
	ESER100S	115.9	91.5	278.2	112.4	96.6	269.9	109.0	102.1	261.6	105.4	107.7	253.0
	ESER120S	136.3	104.0	327.3	132.3	110.1	317.6	128.4	116.5	308.2	124.2	122.9	298.2
	ESER20D	23.6	17.1	56.7	22.9	18.1	55.1	22.3	19.2	53.4	21.5	20.2	51.7
	ESER30D	34.3	26.1	82.4	33.3	27.5	80.1	32.4	29.1	77.8	31.4	30.8	75.5
	ESER40D	46.9	34.4	112.7	45.6	36.5	109.4	44.2	38.8	106.1	42.7	41.2	102.6
	ESER50D	58.0	44.8	139.2	56.3	47.2	135.1	54.7	49.9	131.2	52.9	52.5	127.0
	ESER60D	69.1	52.6	165.8	67.1	55.1	161.1	65.2	58.1	156.5	63.1	61.1	151.5
	ESER80D	89.1	69.3	214.0	86.7	73.0	208.1	84.3	77.2	202.3	81.7	81.4	196.2
	ESER100D	112.0	87.5	269.0	108.9	92.0	261.6	105.9	97.3	254.2	102.6	102.7	246.3
	ESER120D	146.1	111.8	350.7	141.8	117.4	340.5	137.7	123.8	330.6	133.3	130.4	320.1
	ESER160D	181.7	142.8	436.2	176.3	149.4	423.2	171.0	156.7	410.6	165.6	164.5	397.5
ESER200D	231.7	182.9	556.4	224.8	193.3	539.7	217.9	204.2	523.3	210.7	215.4	505.9	
ESER240D	272.7	208.3	654.7	264.6	220.3	635.2	256.7	233.0	616.3	248.4	245.9	596.4	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, R410A refrigerant, and operating at sea level.

²kW = Total compressor input power at rated voltage.

ESER Series Remote Air Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Air Temperature											
		85°F			90°F			95°F			100°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
60°F	ESER10S	12.5	8.9	30.1	12.2	9.5	29.2	11.8	10.0	28.4	11.4	10.5	27.4
	ESER15S	18.6	13.2	44.6	18.1	14.0	43.4	17.5	14.7	42.0	17.0	15.6	40.8
	ESER20S	25.3	17.5	60.8	24.6	18.6	59.1	23.9	19.7	57.4	23.1	20.9	55.5
	ESER25S	31.3	23.0	75.1	30.4	24.2	72.9	29.5	25.6	70.8	28.5	26.9	68.5
	ESER30S	37.2	27.0	89.4	36.2	28.3	86.9	35.2	29.8	84.5	34.1	31.3	81.8
	ESER40S	48.1	35.4	115.6	46.8	37.3	112.5	45.5	39.3	109.4	44.2	41.6	106.0
	ESER50S	60.4	45.0	145.1	58.8	47.3	141.2	57.2	49.9	137.3	55.4	52.6	133.1
	ESER60S	78.8	57.4	189.2	76.5	60.3	183.7	74.3	63.5	178.4	71.9	66.8	172.7
	ESER80S	98.3	72.9	236.1	95.4	76.2	229.2	92.7	80.1	222.5	89.7	83.8	215.5
	ESER100S	125.1	93.2	300.5	121.4	98.6	291.5	117.7	104.3	282.7	113.8	110.1	273.3
	ESER120S	147.0	105.3	353.0	142.6	111.5	342.6	138.5	118.4	332.5	134.2	125.3	322.4
	ESER20D	25.6	17.2	61.6	24.9	18.2	59.8	24.2	19.2	58.1	23.4	20.3	56.3
	ESER30D	37.2	26.6	89.3	36.1	28.0	86.7	35.0	29.5	84.0	34.0	31.3	81.6
	ESER40D	50.7	35.3	121.7	49.2	37.3	118.3	47.8	39.6	114.8	46.2	42.0	111.1
	ESER50D	62.6	45.9	150.4	60.8	48.3	146.1	59.1	51.1	141.9	57.2	53.8	137.3
	ESER60D	74.5	54.2	178.8	72.4	56.8	173.9	70.3	59.6	168.9	68.1	62.7	163.6
	ESER80D	96.3	71.1	231.2	93.6	74.7	224.9	91.1	79.0	218.7	88.3	83.3	212.1
	ESER100D	120.9	90.2	290.3	117.6	94.7	282.5	114.3	99.8	274.6	110.8	105.3	266.2
	ESER120D	157.6	115.0	378.4	153.0	120.7	367.5	148.6	127.2	356.9	143.9	133.9	345.5
	ESER160D	196.7	146.0	472.3	190.9	152.7	458.5	185.3	160.1	445.1	179.5	167.8	431.0
ESER200D	250.2	186.5	600.9	242.8	197.4	583.1	235.4	208.8	565.3	227.6	220.4	546.6	
ESER240D	294.0	210.7	706.0	285.3	223.3	685.2	276.9	236.7	665.1	268.5	250.9	644.8	
65°F	ESER10S	13.6	9.0	32.6	13.2	9.5	31.7	12.8	10.1	30.7	12.4	10.7	29.7
	ESER15S	20.0	13.4	48.1	19.7	14.4	47.2	18.9	14.9	45.5	18.3	15.7	44.1
	ESER20S	27.3	18.0	65.5	26.5	19.0	63.7	25.8	20.2	61.9	24.9	21.4	59.9
	ESER25S	33.6	23.5	80.8	32.6	24.7	78.4	31.6	26.0	75.9	30.7	27.5	73.7
	ESER30S	40.0	27.9	96.2	38.9	29.2	93.6	37.8	30.6	90.9	36.7	32.3	88.1
	ESER40S	51.9	36.5	124.6	50.5	38.3	121.2	49.1	40.4	117.9	47.6	42.6	114.3
	ESER50S	65.0	46.5	156.2	63.3	48.8	152.1	61.6	51.4	147.9	59.7	54.1	143.4
	ESER60S	84.8	59.2	203.6	82.3	62.1	197.8	79.9	65.3	192.0	77.4	68.8	185.8
	ESER80S	106.0	74.4	254.6	102.8	77.5	246.9	99.8	81.2	239.8	97.0	85.5	233.0
	ESER100S	134.6	94.7	323.5	130.6	100.4	313.8	126.7	106.4	304.4	122.6	112.6	294.5
	ESER120S	159.4	107.8	382.9	153.9	113.5	369.8	148.8	119.8	357.5	144.1	126.9	346.2
	ESER20D	27.8	17.3	66.7	27.0	18.2	64.9	26.2	19.3	63.0	25.4	20.4	61.1
	ESER30D	40.0	26.8	96.2	39.3	28.8	94.5	37.9	30.1	91.0	36.7	31.7	88.1
	ESER40D	54.5	36.0	131.0	53.1	38.2	127.5	51.5	40.5	123.8	49.9	43.0	119.8
	ESER50D	67.4	47.0	162.0	65.4	49.4	157.2	63.3	51.8	152.1	61.5	54.9	147.7
	ESER60D	80.1	56.0	192.4	77.9	58.6	187.1	75.7	61.5	181.8	73.3	64.5	176.1
	ESER80D	103.7	72.9	249.2	100.9	76.7	242.5	98.2	80.9	235.8	95.2	85.3	228.7
	ESER100D	130.1	93.1	312.4	126.6	97.7	304.2	123.1	102.8	295.8	119.4	108.3	286.8
	ESER120D	169.5	118.5	407.2	164.6	124.3	395.5	159.8	130.8	384.0	154.7	137.5	371.7
	ESER160D	212.0	148.8	509.3	205.6	155.2	493.8	199.6	162.5	479.6	194.0	171.1	466.1
ESER200D	269.3	189.6	646.9	261.3	201.0	627.6	253.4	213.0	608.8	245.2	225.3	589.0	
ESER240D	318.8	215.7	765.8	307.9	227.3	739.6	297.7	239.9	715.1	288.2	253.9	692.4	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, R410A refrigerant, and operating at sea level.

²kW = Total compressor input power at rated voltage.

ESER Series Remote Air Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Air Temperature											
		85°F			90°F			95°F			100°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
70°F	ESER10S	14.6	9.0	35.2	14.2	9.5	34.2	13.8	10.1	33.2	13.4	10.7	32.1
	ESER15S	19.3	11.4	46.4	20.1	13.4	48.3	20.7	15.5	49.6	19.9	16.2	47.8
	ESER20S	29.3	18.4	70.3	28.5	19.5	68.4	27.7	20.7	66.5	26.8	21.9	64.5
	ESER25S	36.5	24.6	87.7	35.2	25.5	84.6	34.0	26.7	81.7	32.9	28.1	79.0
	ESER30S	43.0	29.0	103.2	41.8	30.3	100.4	40.6	31.7	97.6	39.3	33.2	94.5
	ESER40S	55.6	37.3	133.7	54.1	39.2	129.9	52.6	41.2	126.3	51.2	43.7	122.9
	ESER50S	69.8	48.2	167.7	68.0	50.5	163.3	66.1	53.0	158.8	64.1	55.7	154.1
	ESER60S	91.0	61.2	218.6	88.3	64.1	212.3	85.7	67.3	206.0	83.0	70.8	199.3
	ESER80S	114.8	76.6	275.9	110.9	79.3	266.5	107.4	82.6	258.1	104.1	86.5	250.0
	ESER100S	144.8	96.5	347.9	140.2	102.1	336.9	135.5	107.8	325.6	131.4	114.5	315.6
	ESER120S	165.5	103.1	397.7	167.0	116.9	401.3	160.6	122.5	386.0	154.9	129.1	372.3
	ESER20D	30.0	17.3	72.1	29.2	18.3	70.1	28.4	19.4	68.1	27.5	20.5	66.1
	ESER30D	38.6	23.0	92.8	40.2	27.0	96.6	41.3	31.1	99.3	39.8	32.5	95.7
	ESER40D	58.5	36.8	140.7	57.0	39.1	136.9	55.4	41.5	133.0	53.7	44.0	129.0
	ESER50D	73.2	49.1	175.8	70.6	51.0	169.7	68.1	53.2	163.7	65.9	56.0	158.3
	ESER60D	85.9	58.0	206.5	83.6	60.7	200.8	81.2	63.6	195.1	78.7	66.7	189.0
	ESER80D	111.3	74.9	267.4	108.1	78.3	259.8	105.2	82.6	252.7	102.3	87.3	245.9
	ESER100D	139.6	96.5	335.4	135.9	101.0	326.6	132.2	106.2	317.6	128.2	111.6	308.1
	ESER120D	181.9	122.4	437.1	176.7	128.4	424.5	171.4	134.8	411.9	165.9	141.6	398.7
	ESER160D	229.7	153.5	551.9	221.9	158.8	533.1	214.8	165.4	516.2	208.1	173.0	500.1
ESER200D	289.6	193.2	695.8	280.4	204.4	673.8	271.1	215.9	651.3	262.7	229.1	631.3	
ESER240D	331.0	206.3	795.4	334.0	233.9	802.5	321.3	245.3	771.9	309.9	258.4	744.6	
75°F	ESER10S	15.8	9.1	37.9	15.3	9.6	36.8	14.8	10.1	35.7	14.4	10.7	34.6
	ESER15S	18.3	9.6	44.1	19.3	11.4	46.5	20.2	13.5	48.4	20.7	15.6	49.7
	ESER20S	31.4	18.9	75.4	30.5	19.9	73.3	29.6	21.1	71.2	28.7	22.4	69.0
	ESER25S	37.7	23.8	90.7	38.2	26.8	91.7	36.7	27.7	88.2	35.3	28.8	84.9
	ESER30S	46.0	30.2	110.5	44.7	31.4	107.4	43.4	32.8	104.3	42.0	34.3	101.0
	ESER40S	59.9	38.7	144.0	58.1	40.4	139.6	56.3	42.3	135.4	54.7	44.6	131.5
	ESER50S	74.6	50.0	179.4	72.7	52.3	174.6	70.7	54.8	169.8	68.5	57.4	164.7
	ESER60S	97.3	63.3	233.9	94.5	66.3	227.1	91.6	69.4	220.2	88.6	72.8	213.0
	ESER80S	123.7	78.6	297.2	120.2	82.0	288.8	116.1	85.0	278.9	112.1	88.3	269.4
	ESER100S	156.1	99.1	375.1	150.9	104.7	362.5	145.5	110.2	349.6	140.6	116.6	337.8
	ESER120S	158.2	85.8	380.1	166.2	104.6	399.4	171.8	123.8	412.8	167.5	133.0	402.4
	ESER20D	32.4	17.4	77.8	31.5	18.4	75.7	30.6	19.4	73.5	29.7	20.6	71.3
	ESER30D	36.7	19.3	88.1	38.7	23.0	92.9	40.3	27.1	96.9	41.4	31.3	99.4
	ESER40D	62.7	37.7	150.7	61.0	39.9	146.7	59.2	42.3	142.3	57.5	45.0	138.1
	ESER50D	75.2	47.2	180.8	76.6	53.4	184.0	73.6	55.3	176.9	70.9	57.7	170.3
	ESER60D	91.9	60.3	220.9	89.4	62.9	214.8	86.8	65.8	208.6	84.1	68.8	202.0
	ESER80D	119.8	77.6	288.0	116.2	80.9	279.1	112.7	84.8	270.7	109.5	91.5	263.1
	ESER100D	149.3	100.1	358.7	145.3	104.6	349.2	141.3	109.7	339.6	137.1	115.1	329.4
	ESER120D	194.7	126.7	467.9	189.0	132.6	454.2	183.2	141.6	440.3	177.3	145.9	426.1
	ESER160D	247.3	157.3	594.3	240.3	164.0	577.6	232.1	170.0	557.8	224.3	181.2	538.9
ESER200D	312.1	198.1	750.1	301.7	209.4	725.0	291.0	220.6	699.2	281.1	233.2	675.6	
ESER240D	316.3	171.7	760.1	332.4	209.3	798.7	343.6	247.7	825.7	334.9	266.0	804.9	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, R410A refrigerant, and operating at sea level.

²kW = Total compressor input power at rated voltage.

ESER Series Remote Air Cooled Condenser Chiller Cooling Capacities - 60 Hz (continued)

Leaving Coolant Temp	Model	Entering Condenser Air Temperature											
		85°F			90°F			95°F			100°F		
		Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)	Cap ¹	Input kW ²	Evap Flow (gpm)
80°F	ESER10S	16.9	9.1	40.6	16.5	9.7	39.6	16.0	10.2	38.5	15.5	10.8	37.3
	ESER15S	17.6	8.4	42.2	18.6	10.0	44.7	19.5	11.8	46.9	20.2	13.7	48.5
	ESER20S	33.4	19.2	80.4	32.7	20.5	78.5	31.8	21.8	76.4	30.8	23.1	74.1
	ESER25S	36.1	20.6	86.8	37.9	24.4	91.2	39.1	28.3	94.0	38.1	30.1	91.5
	ESER30S	49.1	31.5	118.1	47.8	32.8	114.9	46.3	34.2	111.3	44.7	35.6	107.4
	ESER40S	62.9	39.7	151.1	60.9	41.4	146.3	58.9	43.3	141.5	56.9	45.4	136.7
	ESER50S	77.9	51.4	187.2	75.6	53.6	181.7	73.3	56.0	176.1	70.7	58.4	170.0
	ESER60S	101.1	64.7	242.9	97.8	67.6	235.0	94.5	70.7	227.0	91.1	74.0	218.9
	ESER80S	122.2	73.9	293.7	124.7	83.0	299.6	120.1	85.9	288.6	115.6	89.2	277.9
	ESER100S	162.9	98.7	391.5	158.4	106.0	380.7	152.7	112.2	367.0	147.0	118.5	353.3
	ESER120S	153.2	76.4	368.2	161.8	93.6	388.9	168.6	112.1	405.1	173.2	131.2	416.2
	ESER20D	34.7	17.4	83.3	33.9	18.4	81.4	33.0	19.5	79.3	32.0	20.7	77.0
	ESER30D	35.1	16.8	84.4	37.2	20.0	89.5	39.0	23.6	93.8	40.3	27.4	96.9
	ESER40D	66.9	38.6	160.8	65.3	41.1	157.0	63.5	43.6	152.7	61.7	46.4	148.2
	ESER50D	71.9	40.9	172.9	75.6	48.3	181.8	78.1	56.1	187.7	76.3	59.9	183.5
	ESER60D	98.3	63.1	236.2	95.6	65.7	229.8	92.6	68.4	222.6	89.4	71.3	214.9
	ESER80D	125.7	79.4	302.2	121.7	82.8	292.6	117.8	86.7	283.1	113.8	90.9	273.4
	ESER100D	155.8	103.0	374.3	151.2	107.3	363.4	146.5	112.1	352.2	141.5	117.1	339.9
	ESER120D	202.1	129.5	485.7	195.6	135.3	470.0	188.9	141.4	454.0	182.2	148.0	437.9
	ESER160D	244.4	147.8	587.4	249.4	166.0	599.3	240.2	171.9	577.3	231.3	178.7	555.8
ESER200D	325.8	197.5	782.9	316.8	212.1	761.5	305.4	224.5	734.0	294.0	237.2	706.6	
ESER240D	306.4	152.8	736.5	323.7	187.4	777.8	337.2	224.3	810.3	346.3	262.4	832.3	

¹Cap = Capacity in tons of refrigeration based on a coolant temperature rise of 10°F, a cooler fouling factor of 0.0001 ft² • hr • °F/Btu, the use of an appropriate ethylene glycol solution where needed, R410A refrigerant, and operating at sea level.

²kW = Total compressor input power at rated voltage.

Application Considerations

When designing a chilled water system it is important all aspects of the system are considered to ensure stable and reliable operation. The following provides some general guidelines for designing a system.

Foundation

Install the unit on a rigid, non-warping mounting pad, concrete foundation, or level floor suitable to support the full operating weight of the equipment. When installed the equipment must be level within ¼ inch over its length and width.

Chiller Unit Location

Proper ventilation is an important consideration when locating the condenser. In general, locate the unit in an area that will not rise above 110°F.

To ensure proper airflow and clearance space for proper operation and maintenance allow a minimum of 36 inches of clearance between the sides of the equipment and any walls or obstructions. Avoid locating piping or conduit over the unit to ensure easy access with an overhead crane or lift to lift out heavier components during replacement or service. In addition, ensure the condenser and evaporator refrigerant pressure relief valves can vent in accordance with all local and national codes.

Air-cooled chillers use the surrounding air for cooling the condenser and require free passage of air in and out of the chiller and provision for removal of the warm air from the area.

Remote Air-Cooled Condenser Location

The remote air-cooled condenser is for outdoor use. Locate the remote condenser in an accessible area. The vertical air discharge must be unobstructed. Allow a minimum of 48 inches of clearance between the sides and ends of the condenser and any walls or obstructions. For installations with multiple condensers, allow a minimum of 96 inches between condensers placed side-by-side or 48 inches for condensers placed end-to-end.

When locating the condenser it is important to consider accessibility to the components to allow for proper maintenance and servicing of the unit. Avoid

locating piping or conduit over the unit to ensure easy access with an overhead crane or lift to lift out heavier components during replacement or service.

Avoid areas that can create a "micro-climate" such as an alcove with east, north, and west walls that can be significantly warmer than surrounding areas. The condenser needs to have unrestricted airways so it can easily move cool air in and heated air away. Consider locating the condenser where fan noise and vibration transmission into nearby workspaces is unlikely.

Process Fluid Piping

Proper insulation of chilled process fluid piping is crucial to prevent condensation. The formation of condensation adds a substantial heat load to the chiller.

The importance of properly sized piping cannot be overemphasized. See the ASHRAE Handbook or other suitable design guide for proper pipe sizing. In general, run full size piping out to the process and reduce pipe size at connections as needed. One of the most common causes of unsatisfactory chiller performance is poor piping system design. Avoid long lengths of hoses, quick disconnect fittings, and manifolds wherever possible as they offer high resistance to water flow. When manifolds are required, install them as close to the use point as possible. Provide flow-balancing valves at each machine to assure adequate water distribution in the entire system.

Process Fluid Temperature

The chiller can operate with a variety of different supply and return temperatures. The chiller is able to start and pull down with short-term entering fluid temperatures up to 20°F warmer than the maximum set point of the chiller. This allows the chiller to pull down the temperature of a reservoir or process fluid loop on start-up. Under normal operation, the entering water temperature should not exceed 10°F warmer than the maximum set point temperature of the chiller.

Process Fluid Flow Rate

The nominal performance of the chiller is for a temperature rise of 10°F through the process. The chiller is capable of operating with different

operating temperature differentials; however, careful consideration of flow limitations, correction to capacity, pressure drops, and other operating parameters is required when selecting the proper unit for the application. The minimum flow rate to prevent fouling and to ensure the chiller stays within normal refrigerant operating conditions is approximately 1.2 gpm per nominal ton of cooling capacity. The fouling factor used to calculate the ratings of the vessels are $0.00010 \text{ Ft}^2 \cdot \text{Hr} \cdot ^\circ\text{F}/\text{Btu}$.

If the process flow requirement is less than 1.2 gpm per nominal ton of cooling capacity use a primary pumping loop for the lower flow at a higher temperature rise and a secondary pumping loop for a higher flow and lower temperature drop through the chiller. If a secondary pumping loop is used, the mixed temperature of coolant entering the evaporator must be a minimum of 5°F above the design set point of the chiller.

The maximum flow limitation is determined based upon a 5°F drop through the chiller at the maximum capacity of the chiller; however, the flows often times result in impractical pressure drops through the chiller and are therefore not likely for system design. If the process flow requirement is higher than the maximum flow limitation use a bypass around the chiller or a primary pumping loop designed for the high flow at a lower temperature rise and a secondary pumping loop for a lower flow and high temperature drop through the chiller. If a secondary pumping loop is used, the mixed temperature of coolant entering the chiller must be a minimum 5°F above the design set point of the chiller.

The use of varying chiller flows is sometimes necessary; however, a dedicated evaporator circulation pump provides increased system stability. If the flow through the chiller is varied, the minimum fluid loop volume must be in excess of 3 gallons of coolant per ton of cooling and the flow rate must change at a rate of no greater than 10% per minute in order to maintain an acceptable level of temperature control. If the chiller sees a net rate of change greater than 10% per minute it may result in temporary supply temperature fluctuations greater than 1°F .

Condenser Water Temperature and Flow

All water-cooled condenser chillers include a factory mounted condenser water-regulating valve to regulate the flow of condenser water to maintain the proper refrigerant pressures. The minimum flow rate is approximately 0.5 gpm per nominal cooling ton to prevent fouling and to ensure the chiller stays within normal refrigerant operating conditions. The fouling factor used to calculate the ratings of the vessels are $0.00025 \text{ Ft}^2 \cdot \text{Hr} \cdot ^\circ\text{F}/\text{Btu}$.

The chiller will start and operate with an inlet water temperature between 55°F and 95°F . The actual flow requirements will vary. Lowering the condenser water supply temperature below 85°F is an effective way to reduce the overall cooling system input power requirements.

Condenser Air Temperature

All remote air-cooled condenser chillers come with a factory selected remote air-cooled condenser to meet the needs of the chiller module to which it is connected. The chiller can start and operate with an inlet air temperature between -20°F and 100°F . The minimum ambient air temperature at which the chiller will start is -20°F based on still air.

System Fluid Chemistry Requirements

The properties of water make it ideal for heat transfer applications. It is safe, non-flammable, non-poisonous, easy to handle, widely available, and inexpensive in most industrialized areas.

When using water as a heat transfer fluid it is important to keep it within certain chemistry limits to avoid unwanted side effects. Water is a "universal solvent" because it can dissolve many solid substances and absorb gases. As a result, water can cause the corrosion of metals used in a cooling system. Often water is in an open system (exposed to air) and when the water evaporates, the dissolved minerals remain in the process fluid. When the concentration exceeds the solubility of some minerals, scale forms. The life giving properties of water can also encourage biological growth that can foul heat transfer surfaces.

To avoid the unwanted side effects associated with water cooling, proper chemical treatment and preventive maintenance is required for continuous plant productivity.

Unwanted Side Effects of Improper Water Quality

- Corrosion
- Scale
- Fouling
- Biological Contamination

Cooling Water Chemistry Properties

- Electrical Conductivity
- pH
- Alkalinity
- Total Hardness
- Dissolved gases

Chillers at their simplest have two main heat exchangers: one that absorbs the heat from the process (evaporator) and one that removes the heat from the chiller (condenser). All our chillers use stainless steel brazed plate evaporators. Our air-cooled chillers use air to remove heat from the chiller; however, our water-cooled chillers use either a tube-in-tube or shell-in-tube condenser which has copper refrigerant tubes and a steel shell. These, as are all heat exchangers, are susceptible to fouling of heat transfer surfaces due to scale or debris. Fouling of these surfaces reduces the heat-transfer surface area while increasing the fluid velocities and pressure drop through the heat exchanger. All of these effects reduce the heat transfer and affect the efficiency of the chiller.

The complex nature of water chemistry requires a specialist to evaluate and implement appropriate sensing, measurement and treatment needed for satisfactory performance and life. The recommendations of the specialist may include filtration, monitoring, treatment and control devices. With the ever-changing regulations on water usage and treatment chemicals, the information is usually up-to-date when a specialist in the industry is involved.

Fill Water Chemistry Requirements

Water Characteristic	Quality Limitation
Alkalinity (HCO ₃ ⁻)	70-300 ppm
Aluminum (Al)	Less than 0.2 ppm
Ammonium (NH ₃)	Less than 2 ppm
Chlorides (Cl ⁻)	Less than 300 ppm
Electrical Conductivity	10-500µS/cm
Free (aggressive) Carbon Dioxide (CO ₂)†	Less than 5 ppm
Free Chlorine(Cl ₂)	Less than 1 PPM
HCO ₃ ⁻ /SO ₄ ²⁻	Greater than 1.0
Hydrogen Sulfide (H ₂ S)	Less than 0.05 ppm
Iron (Fe)	Less than 0.2 ppm
Manganese (Mn)	Less than 0.1 ppm
Nitrate (NO ₃)	Less than 100 ppm
pH	7.5-9.0
Sulfate (SO ₄ ²⁻)	Less than 70 ppm
Total Hardness (dH)k	4.0-8.5

† Dissolved carbon dioxide calculation is from the pH and total alkalinity values shown below or measured on the site using a test kit. Dissolved Carbon Dioxide, PPM = TA x 2^[(6.3-pH)/0.3] where TA = Total Alkalinity, PPM as CaCO₃

Recommended Glycol Solutions

Chilled Water Temperature	Percent Glycol By Volume
50°F (10°C)	Not required
45°F (7.2°C)	5 %
40°F (4.4°C)	10 %
35°F (1.7°C)	15 %
30°F (-1.1°C)	20 %
25°F (-3.9°C)	25 %
20°F (-6.7°C)	30 %



CAUTION: When your application requires the use of glycol, use industrial grade glycol specifically designed for heat transfer systems and equipment. Never use glycol designed for automotive applications. Automotive glycols typically have additives engineered to benefit the materials and conditions found in an automotive engine; however, these additives can gel and foul heat exchange surfaces and result in loss of performance or even failure of the chiller. In addition, these additives can react with the materials of the pump shaft seals resulting in leaks or premature pump failures.



WARNING: Ethylene Glycol is flammable at higher temperatures in a vapor state. Carefully handle this material and keep away from open flames or other possible ignition sources.

Over-Sizing Chillers

Over-sizing chillers for future growth is sometimes necessary. While this practice may be necessary, it is highly recommended that chillers be no more than 15% larger than design conditions to avoid unwanted reductions in system efficiency and excessive electrical power use and/or compressor cycling due to reduced chiller loading. If the system design requires prolonged operation at reduced loads considering using two smaller chillers as operating smaller chillers at higher loads is preferred to operating one larger chiller at or near its minimum load capacity.

Strainers

Each evaporator is provided with a 20 mesh inlet strainer to protect the evaporator. All water-cooled condensers require filtering with a minimum of a 20 mesh filtering system to protect the condenser from contamination.

Remote Condenser Selection

Chillers using remote air-cooled condensers include a properly sized and selected remote condenser so there is no need for a separate remote condenser selection. For installation and line size guidelines please refer to the Installation and Operation manual of the chiller.

Notes

Notes


We're Here to Help

Conair has made the largest investment in customer support in the plastics industry. Our service experts are available to help with any problem you might have installing and operating your equipment. Your Conair sales representative also can help analyze the nature of your problem, assuring that it did not result from misapplication or improper use.

How to Contact Customer Service

To contact Customer Service personnel, call:



 **NOTE:** Normal operating hours are 8:00 am - 5:00 pm (EST). After hours emergency service is available at the same phone number.

From outside the United States, call: 814-437-6861

You can commission Conair service personnel to provide on-site service by contacting the Customer Service Department. Standard rates include an on-site hourly rate, with a one-day minimum plus expenses.

Before You Call...

If you do have a problem, please complete the following checklist before calling Conair:

- Make sure you have all model, control type from the serial tag, and parts list numbers for your particular equipment. Service personnel will need this information to assist you.
- Make sure power is supplied to the equipment.
- Make sure that all connectors and wires within and between control systems and related components have been installed correctly.
- Check the troubleshooting guide of this manual for a solution.
- Thoroughly examine the instruction manual(s) for associated equipment, especially controls. Each manual may have its own troubleshooting guide to help you.
- Check that the equipment has been operated as described in this manual.
- Check accompanying schematic drawings for information on special considerations.

Equipment Guarantee

Conair guarantees the machinery and equipment on this order, for a period as defined in the quotation from date of shipment, against defects in material and workmanship under the normal use and service for which it was recommended (except for parts that are typically replaced after normal usage, such as filters, liner plates, etc.). Conair's guarantee is limited to replacing, at our option, the part or parts determined by us to be defective after examination. The customer assumes the cost of transportation of the part or parts to and from the factory.

Performance Warranty

Conair warrants that this equipment will perform at or above the ratings stated in specific quotations covering the equipment or as detailed in engineering specifications, provided the equipment is applied, installed, operated and maintained in the recommended manner as outlined in our quotation or specifications.

Should performance not meet warranted levels, Conair at its discretion will exercise one of the following options:

- Inspect the equipment and perform alterations or adjustments to satisfy performance claims. (Charges for such inspections and corrections will be waived unless failure to meet warranty is due to misapplication, improper installation, poor maintenance practices or improper operation.)
- Replace the original equipment with other Conair equipment that will meet original performance claims at no extra cost to the customer.
- Refund the invoiced cost to the customer. Credit is subject to prior notice by the customer at which time a Return Goods Authorization Number (RGA) will be issued by Conair's Service Department. Returned equipment must be well crated and in proper operating condition, including all parts. Returns must be prepaid.

Purchaser must notify Conair in writing of any claim and provide a customer receipt and other evidence that a claim is being made.

Warranty Limitations

Except for the Equipment Guarantee and Performance Warranty stated above, Conair disclaims all other warranties with respect to the equipment, express or implied, arising by operation of law, course of dealing, usage of trade or otherwise, including but not limited to the implied warranties of merchantability and fitness for a particular purpose.
