



Product Catalog

R-454B Scroll Compressor

Model CSHE

7 to 15 Tons

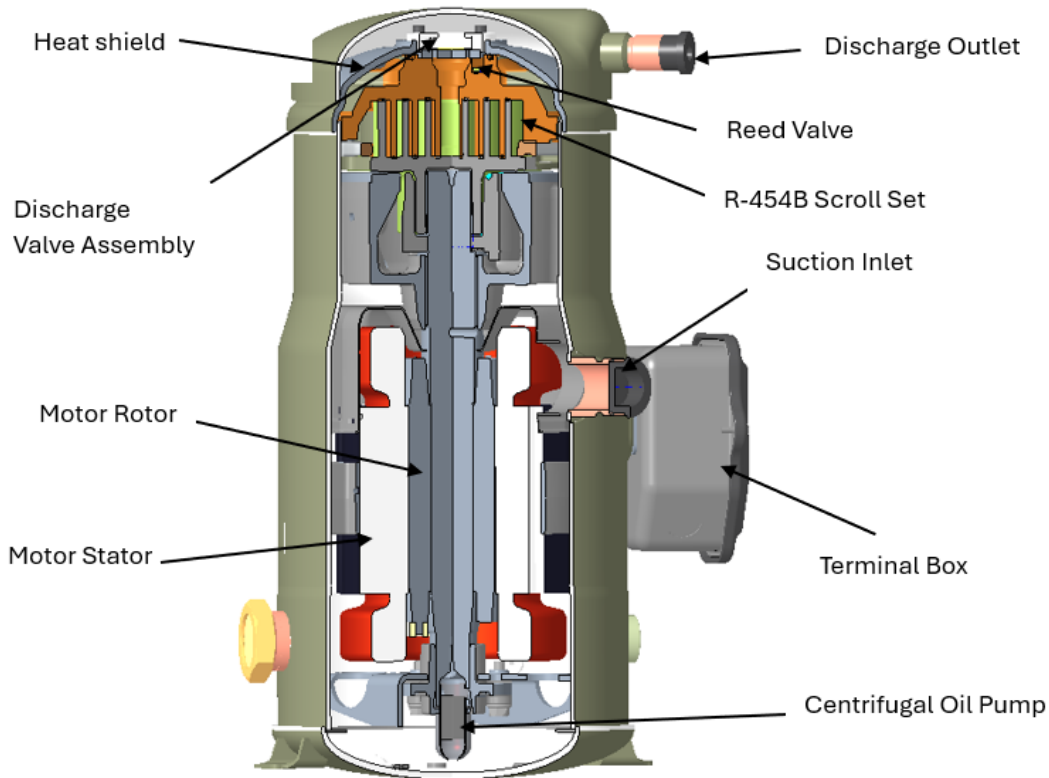


Introduction

In Trane CSHE 3D™ scrolls, compression is performed by the scroll set in the upper part of the compressor. Suction gas enters the compressor at the suction inlet and the gas flow is directed into the motor cap and down around the motor stator and rotor cooling the motor. The gas exits the motor is drawn up between the shell and the motor. Due to the large area the oil drops out of the gas and returns to the oil sump. The suction gas enters the scroll set where it is compressed. Ultimately, the discharge gas leaves the compressor at the discharge connection.

The figure below illustrates the entire compression process.

Figure 1. CSHE compressor



General

A 3-D compressor has two scrolls. The top scroll is fixed and the bottom scroll orbits. Each scroll has walls in a spiral shape that intermesh.

Inlet – First Orbit

As the bottom scroll orbits, two refrigerant gas pockets are formed and enclosed.

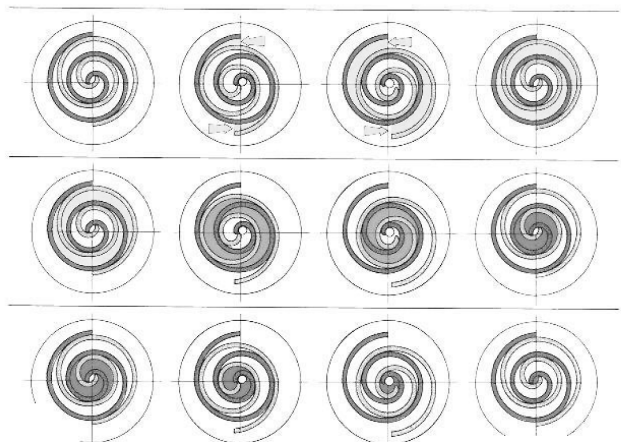
Compression – Second Orbit

The refrigerant gas is compressed as the volume is reduced closer to the center of the scroll.

Discharge – Third Orbit

The gas is compressed further and discharged through a small port in the center of the fixed scroll.

Figure 2. How the scroll compressor works



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Revision History

- Updated CSHE compressor with Low Vi compressor model details throughout the product catalog.
- Updated operating envelope with both Standard and Low Vi in Application Considerations chapter.
- Updated the Model Number Description chapter.
- Updated the Performance Data chapter.
- Updated the Electrical chapter.
- Updated the Dimensional Data chapter.



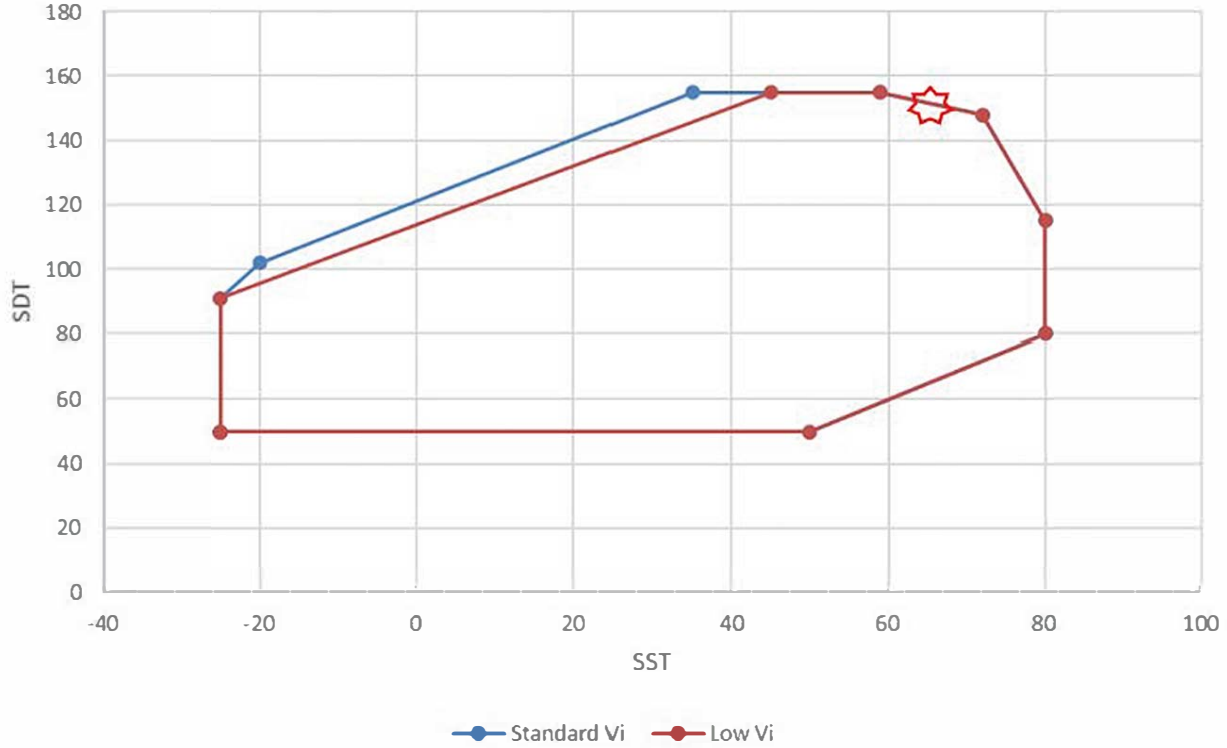
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Application Considerations

Figure 3. R-454B CSHE/CSHP operating envelope



Note: Representative motor protection limit shown in red above. Actual limit may vary, depending on specific compressor size, voltage, and protection device selection.



Model Number Description

Table 1. Model number example

C	H	S	E	1	5	2	K	0	E	0	C	0	0	E	0	0
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

Digit 1, 2, 3, 4 — Model

CSHE

Digit 5, 6, 7 — Nominal Compressor Capacity Btu/Hr

- 071 = 70,906.0
- 088 = 88,635.6
- 097 = 99,220.8
- 104 = 104,791.9
- 113 = 114,168.2
- 117 = 119,729.0
- 127 = 130,815.3
- 132 = 136,111.5
- 145 = 147,471.5
- 152 = 155,906.7
- 177 = 178,662.5

Digit 8 — Compressor Motor Voltage and Frequency

- D = 575/3/60
- F = 230/3/50
- J = 200/230/3/60
- K = 460/3/60 and 380/415/3/50
- X = 380/3/60

Digit 9 — Capacity Modulation

0 = No unloading

Digit 10 — Design Sequence

E = VVI Light Commercial (R-454B)

Digit 11 — Motor Protection/Control Module Voltage

0 = Internal Line Break Protection

Digit 12 — Compressor Connections Variation

C = CSHE (Braze Rotalock)

Digit 13 — Auxiliary Port Options

0 = No injection port

Digit 14 — Motor Options

0 = Standard Efficiency Asynchronous Motor

Digit 15 — Volume Ratio Options

- C = 2.10 to 2.39 - CSHE Low Vi
- E = >2.45 - CSHE Standard Vi

Digit 16 — Oil Options

0 = Standard Oil Charge POE grade 32 w/wear additive

Digit 17 — Reserved for future use

0 = Standard Compressor



General Data

Notes:

- See and “Performance Data,” p. 9 for operating range.
- See “Model Number Description,” p. 6 for complete model number description.
- See “Dimensional Data,” p. 27 for compressor measurements.
- See “Weights,” p. 33 for weights.

Table 2. General data — CSHE071 to CSHE117

	Units	CSHE071	CSHE088	CSHE097	CSHE104	CSHE113	CSHE117
		6.25 tons	7.70 tons	8.75 tons	9.17 tons	10.00 tons	10.42 tons
Compressor data							
Nominal speed - 60 Hz	rpm	3500	3500	3500	3500	3500	3500
Nominal Speed - 50 Hz	rpm	2900	2900	2900	2900	2900	2900
Displacement at nominal speed - 60 Hz	ft ³ /hr	524	652	725	768	838	866
Displacement at nominal speed - 50 Hz	ft ³ /hr	434	540	601	636	694	717
Swept Volume	in ³ /rev	4.31	5.37	5.96	6.32	6.90	7.12
Internal Pressure Relief Valve	psig	None	None	None	None	None	None
Maximum High Pressure Switch Cutout Setting	psia	600	600	600	600	600	600
Minimum Low Pressure Switch Setting	psig	17	17	17	17	17	17
Minimum Pumpdown Low Pressure Switch Setting	psig	27	27	27	27	27	27
Recommended Pumpdown Low Pressure Setting (value below normal operating suction pressure)	psig	19	19	19	19	19	19
Maximum System Test Pressure - (high/low)	psia	666/144	666/144	666/144	666/144	666/144	666/144
Maximum Test Pressure Differential	psia	520	520	520	520	520	520
Mechanical data							
Refrigerant Type		R-454B	R-454B	R-454B	R-454B	R-454B	R-454B
Refrigerant Charge (limit)	lbs	13	13	13	17	17	17
Oil Type		Trane OIL00079 (qt)/OIL00080 (gal)					
Oil Charge	oz	101	101	101	112	112	112
Suction Fitting Connection		Brazed	Brazed	Brazed	Brazed	Brazed	Brazed
Suction Fitting (ODF)	in.	1.125	1.125	1.375	1.375	1.375	1.375
Discharge Fitting Connection		Brazed	Brazed	Brazed	Brazed	Brazed	Brazed
Discharge Fitting (ODF)	in.	0.875	0.875	0.875	0.875	0.875	0.875
Oil Equalizer Connection		Rotalock	Rotalock	Rotalock	Rotalock	Rotalock	Rotalock
Oil Equalizer Fitting	in.	1.75	1.75	1.75	1.75	1.75	1.75
Oil Sight Glass		Threaded	Threaded	Threaded	Threaded	Threaded	Threaded
Oil Charging valve	in.	Yes	Yes	Yes	Yes	Yes	Yes
Drain Valve- Schrader		None	None	None	None	None	None
Maximum Compressor Tilt	°	10°	10°	10°	10°	10°	10°

Notes:

1. Suction and brazing connections are copper plated steel.
2. Recommended brazing material BcuP-3 or BA9-28.

Table 3. General data — CSHE127 to CSHE177

	Units	CSHE127	CSHE132	CSHE145	CSHE152	CSHE177
		11.30 tons	11.80 tons	12.90 tons	13.40 tons	15.70 tons
Compressor data						
Nominal speed - 60 Hz	rpm	3500	3500	3500	3500	3500
Nominal Speed - 50 Hz	rpm	2900	2900	2900	2900	2900
Displacement at nominal speed - 60 Hz	ft ³ /hr	942	980	1072	1120	1302
Displacement at nominal speed - 50 Hz	ft ³ /hr	781	812	888	928	1078
Swept Volume	in ³ /rev	7.75	8.06	8.82	9.22	10.71



General Data

Table 3. General data — CSHE127 to CSHE177 (continued)

	Units	CSHE127	CSHE132	CSHE145	CSHE152	CSHE177
		11.30 tons	11.80 tons	12.90 tons	13.40 tons	15.70 tons
Compressor data						
Internal Pressure Relief Valve	psig	None	None	None	None	None
Maximum High Pressure Switch Cutout Setting	psia	600	600	600	600	600
Minimum Low Pressure Switch Setting	psig	17	17	17	17	17
Minimum Pumpdown Low Pressure Switch Setting	psig	27	27	27	27	27
Recommended Pumpdown Low Pressure Setting (value below normal operating suction pressure)	psig	19	19	19	19	19
Maximum System Test Pressure - (high/low)	psia	666/144	666/144	666/144	666/144	666/144
Maximum Test Pressure Differential	psia	520	520	520	520	520
Mechanical data						
Refrigerant Type		R-454B	R-454B	R-454B	R-454B	R-454B
Refrigerant Charge (limit)	lbs	17	17	17	17	17
Oil Type		Trane OIL00079 (qt)/OIL00080 (gal)				
Oil Charge	oz	112	112	112	112	112
Suction Fitting Connection		Brazed	Brazed	Brazed	Brazed	Brazed
Suction Fitting (ODF)	in.	1.375	1.375	1.375	1.375	1.375
Discharge Fitting Connection		Brazed	Brazed	Brazed	Brazed	Brazed
Discharge Fitting (ODF)	in.	0.875	0.875	0.875	0.875	0.875
Oil Equalizer Connection		Rotalock	Rotalock	Rotalock	Rotalock	Rotalock
Oil Equalizer Fitting	in.	1.75	1.75	1.75	1.75	1.75
Oil Sight Glass		Threaded	Threaded	Threaded	Threaded	Threaded
Oil Charging valve	in.	Yes	Yes	Yes	Yes	Yes
Drain Valve- Schrader		None	None	None	None	None
Maximum Compressor Tilt	°	10°	10°	10°	10°	10°

Notes:

1. Suction and brazing connections are copper plated steel.
2. Recommended brazing material BcuP-3 or BAg-28.



Performance Data

Rated Performance at AHRI Standard

- AHRI Standard: 45°F SST/130°F SDT, 20°F Superheat/15°F Subcooling Low Vi.
- Data only valid for low volume ratio designs (model number digit 15-C).

Table 4. Rated performance at AHRI standard

Compressor Low Vi models	Voltage	Capacity	Power	Current	Flow	EER
		(Btu/hr)	(watts)	(amps)	(lbs/hr)	(Btu/watt-hr)
CSHE071	460/60/3	70906.0	6795.4	11.1	842.8	10.4
CSHE088	460/60/3	88635.6	8209.2	12.8	1053.5	10.8
CSHE097	460/60/3	99220.8	9166.5	14.6	1179.3	10.8
CSHE104	460/60/3	104791.9	9577.6	15.1	1245.5	10.9
CSHE113	460/60/3	114168.2	10359.3	15.9	1357.0	11.0
CSHE117	460/60/3	118065.6	10692.1	16.4	1403.3	11.0
CSHE127	460/60/3	130815.3	11715.6	17.9	1554.8	11.2
CSHE132	460/60/3	136111.5	12047.2	18.3	1617.8	11.3
CSHE145	460/60/3	147471.5	13103.7	19.6	1752.8	11.3
CSHE152	460/60/3	153646.7	13673.8	20.38	1826.2	11.2
CSHE177	460/60/3	178633.2	16035.9	24.09	2123.2	11.1

Nominal Performance Data

Performance data valid only for low volume ratio designs (model number digit 15-C).



Performance Data

Capacity

Table 5. Capacity (btu/hr) — voltage 460/60/3 (Low Vi compressor data)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE071	50	20797.0	32563.1	41864.5	52761.7	65632.4	80859.9	98829.1	108961.6	—	—	—	—
	60	20122.4	31471.9	40371.7	50752.1	62977.5	77417.4	94444.0	104043.1	114427.4	—	—	—
	70	19244.8	30235.7	38778.9	48692.2	60326.0	74036.4	90182.0	99279.9	109120.1	131202.0	—	—
	80	18149.5	28829.4	37054.0	46542.8	57632.0	70663.6	85982.6	94607.5	103932.8	124852.3	149068.3	—
	90	16828.6	27234.6	35171.6	44271.7	54856.2	67252.8	81792.3	89968.8	98804.4	118614.0	141534.9	167863.6
	100	—	25441.0	33114.6	41854.7	51967.7	63766.2	77566.3	85315.7	93683.5	112428.6	134101.8	158986.3
	110	—	23447.1	30874.4	39276.5	48944.2	60174.9	73269.3	80609.5	88528.2	106247.7	126713.9	150196.4
	120	—	—	28449.9	36528.7	45770.5	56456.6	68872.2	75817.9	83302.6	100028.7	119322.0	—
	130	—	—	—	33607.0	42433.5	52589.8	64344.8	70906.0	77967.6	93723.7	111869.0	—
	140	—	—	—	—	38913.2	48541.8	59641.2	65821.5	72463.9	87258.5	104265.2	—
	155	—	—	—	—	—	—	52051.6	57638.0	63629.0	76934.1	—	—
CSHE088	50	28610.8	41349.0	52105.4	65067.6	80578.4	98981.6	120619.0	132755.7	—	—	—	—
	60	27040.0	39645.8	50168.4	62765.5	77767.8	95507.1	116313.2	127967.9	140510.0	—	—	—
	70	25386.2	37830.7	48104.6	60325.3	74810.9	91881.0	111853.3	123025.6	135039.9	161742.7	—	—
	80	23633.1	35883.7	45891.4	57721.6	71679.3	88071.7	107204.2	117892.1	129376.9	154880.0	183987.6	—
	90	21770.3	33790.4	43512.2	54934.9	68350.9	84054.2	102337.8	112537.5	123489.6	147787.4	175494.2	206850.1
	100	—	31543.8	40957.3	51953.6	64811.6	79812.3	97235.6	106942.0	117356.7	140441.3	166740.3	196482.5
	110	—	29144.0	38225.0	48774.1	61056.2	75338.8	91888.7	101096.1	110967.9	132829.7	157712.4	185833.3
	120	—	26597.6	35320.0	45399.0	57085.5	70633.1	86294.8	94996.4	104319.3	124946.9	148403.3	—
	130	—	23915.2	32249.5	41832.5	52900.5	65692.7	80448.1	88635.6	97401.6	116779.8	138795.7	—
	140	—	21106.6	29017.2	38071.5	48490.9	60499.7	74322.1	81982.7	90178.9	108282.6	128832.4	—
	155	—	—	—	—	—	—	64419.8	71240.1	78530.8	94616.4	—	—
CSHE097	50	31522.7	46788.8	59228.4	74019.4	91636.5	112559.2	137267.5	151190.2	—	—	—	—
	60	29671.5	44462.8	56422.0	70581.8	87400.2	107340.2	130865.7	144117.0	158436.6	—	—	—
	70	27890.3	42273.9	53804.4	67390.0	83471.3	102494.5	124907.1	137523.5	151152.9	181665.8	—	—
	80	26063.4	40092.3	51236.7	64295.4	79691.7	97854.4	119214.1	131226.5	144197.8	173223.3	206691.8	—
	90	24094.1	37807.2	48598.2	61168.2	75922.0	93270.8	113627.5	125062.2	137402.1	164995.5	196792.6	233153.2
	100	—	35328.1	45789.4	57899.2	72043.8	88616.0	108010.5	118888.9	130619.5	156826.7	186999.9	221482.5
	110	—	32586.9	42732.5	54401.5	67961.1	83785.0	102249.2	112588.5	123727.5	148585.5	177173.5	209817.9
	120	—	29537.7	39371.5	50609.3	63598.5	78693.1	96249.7	106062.3	116623.0	140159.8	167192.4	—
	130	—	26154.9	35669.2	46474.0	58895.8	73268.4	89928.3	99220.8	109210.4	131442.1	156936.6	—
	140	—	22431.3	31602.4	41955.7	53796.5	67437.1	83193.2	91963.0	101379.0	122301.5	146253.9	—
	155	—	—	—	—	—	—	72008.5	79948.9	88458.5	107320.3	—	—
CSHE104	50	33113.6	49240.7	62272.1	77649.1	95827.6	117268.3	142431.6	156551.9	—	—	—	—
	60	31492.6	47218.8	59873.8	74769.2	92346.1	113049.8	137326.1	150942.0	165615.6	—	—	—
	70	29762.3	45061.6	57324.5	71723.8	88685.0	108638.4	132014.5	145119.4	159238.9	190726.9	—	—
	80	27916.4	42759.7	54612.6	68498.6	84827.5	104014.0	126473.0	139058.3	152615.0	182839.9	217530.0	—
	90	25953.1	40308.3	51731.2	65084.5	80762.0	99162.2	120684.1	132739.4	145722.5	174661.8	207869.0	245684.6
	100	—	37708.4	48679.7	61479.3	76484.2	94076.5	114638.9	126152.6	138550.1	166178.3	197875.0	233964.8
	110	—	34967.1	45463.9	57687.3	71997.2	88758.8	108338.0	119297.5	131096.5	157386.5	187542.8	221874.4
	120	—	32095.9	42094.3	53717.9	67309.2	83215.8	101786.3	112178.5	123365.3	148287.8	176872.1	—
	130	—	29108.0	38581.3	49579.0	62425.1	77449.4	94982.3	104791.9	115350.8	138872.3	165847.7	—
	140	—	26011.5	34927.4	45266.2	57333.4	71439.4	87896.3	97103.0	107012.5	129086.9	154402.5	—
	155	—	—	—	—	—	—	76507.1	84740.5	93603.1	113348.3	—	—

Table 5. Capacity (btu/hr) — voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE113	50	36375.0	53838.8	67996.1	84787.4	104757.9	128458.8	156442.4	172211.5	—	—	—	—
	60	34413.3	51411.4	65090.9	81248.1	100409.2	123106.6	149874.3	164950.2	181241.5	—	—	—
	70	32476.2	49038.4	62266.2	77819.8	96206.0	117938.2	143531.5	157935.9	173496.5	208333.4	—	—
	80	30471.6	46617.1	59411.9	74385.0	92023.4	112820.7	137272.5	151023.0	165871.0	199097.3	237413.9	—
	90	28323.5	44060.4	56433.8	70842.2	87752.1	107637.1	130972.8	144082.7	158231.8	189876.3	226349.9	268067.5
	100	—	41298.9	53255.4	67107.9	83301.8	102290.0	124527.7	137006.8	150467.2	180550.8	215203.1	254820.0
	110	—	38282.2	49819.3	63117.9	78601.9	96702.4	117853.6	129708.4	142487.0	171024.5	203870.6	241401.9
	120	—	34978.3	46086.5	58826.2	73599.0	90814.1	110883.8	122117.5	134217.9	161217.3	192265.8	—
	130	—	31371.1	42031.6	54198.6	68250.5	84573.4	103557.2	114168.2	125589.3	151048.7	180297.7	—
	140	—	27455.8	37636.7	49203.3	62509.8	77918.7	95796.1	105774.5	116506.2	140405.1	167832.5	—
CSHE117	50	38635.6	56688.5	71252.4	88590.0	109361.0	134234.7	163883.7	180708.5	—	—	—	—
	60	36424.0	54018.6	68065.3	84688.1	104523.2	128216.4	156417.6	172411.3	189774.0	—	—	—
	70	34272.4	51458.7	65031.3	80989.9	99946.3	122522.4	149344.8	164543.8	181037.9	218215.8	—	—
	80	32073.5	48887.8	62020.5	77356.0	95481.4	116994.3	142497.0	156932.7	172590.6	207866.3	248896.5	—
	90	29738.2	46202.7	58920.1	73664.6	90997.7	111491.7	135724.4	149423.2	164272.4	197703.6	236567.2	281382.3
	100	—	43319.6	55637.6	69814.2	86384.7	105895.5	128898.8	141882.9	155946.5	187581.7	224330.2	266688.0
	110	—	40176.2	52101.3	65724.4	81553.6	100108.6	121915.4	134202.7	147499.8	177379.8	212056.7	252002.7
	120	—	36730.5	48259.9	61334.7	76435.0	94053.1	114687.5	126292.0	138837.5	166995.0	199635.7	—
	130	—	32958.9	44078.3	56598.8	70971.6	87660.3	107135.6	118065.6	129868.8	156324.9	186953.0	—
	140	—	28851.2	39530.0	51473.8	65103.7	80853.4	99164.4	109418.7	120479.0	145233.9	173850.4	—
CSHE127	50	44241.9	63814.6	79776.6	99160.1	122926.6	152054.8	187532.2	207960.5	—	—	—	—
	60	40798.1	59677.2	74795.9	92987.7	115177.8	142309.3	175335.2	194356.8	215209.1	—	—	—
	70	37938.4	56383.1	70855.3	88070.3	108916.1	134299.2	165136.9	182888.8	202348.6	246844.6	—	—
	80	35275.0	53504.4	67500.7	83928.1	103636.0	127493.2	156380.5	172986.7	191181.5	232772.3	282008.1	—
	90	32474.5	50666.2	64330.4	80132.9	98883.4	121411.7	148560.5	164132.4	181176.7	220100.8	266153.6	320121.1
	100	—	47550.9	60999.3	76312.7	94259.9	115630.4	141227.7	155864.1	171860.2	208331.2	251426.1	301896.6
	110	—	43902.1	57222.4	72155.0	89426.3	109784.3	133991.5	147778.9	162816.7	197024.5	237363.0	284548.2
	120	—	39527.4	52777.2	67408.2	84102.8	103566.1	126518.3	139530.0	153686.7	185795.9	223555.1	—
	130	—	34299.1	47502.8	61878.7	78064.2	96719.4	118520.9	130815.3	144153.0	174298.4	209625.5	—
	140	—	28156.0	41296.8	55424.0	71127.9	89022.2	109737.4	121352.6	133913.1	162187.7	195187.1	—
CSHE132	50	45079.7	66020.1	82763.0	102499.2	125901.6	153652.3	186435.6	204927.4	—	—	—	—
	60	42283.8	62613.9	78817.8	97883.0	120460.7	147210.7	178795.5	196607.1	215873.5	—	—	—
	70	39770.4	59459.4	75105.3	93481.5	115216.6	140948.0	171315.9	188437.9	206956.8	248494.2	—	—
	80	37423.8	56437.2	71503.4	89169.4	110040.7	134731.7	163859.9	180280.2	198039.1	237870.7	283933.4	—
	90	35142.8	53442.5	67904.9	84836.9	104820.2	128445.6	156307.4	172011.8	188996.0	227090.0	271145.5	321683.7
	100	—	50387.2	64219.8	80391.9	99460.8	121993.2	148559.1	163532.0	179725.2	216046.4	258055.7	306251.1
	110	—	47200.5	60376.1	75761.3	93888.3	115298.6	140537.7	154762.8	170147.7	204659.1	244580.8	290387.3
	120	—	43828.0	56318.3	70888.4	88044.5	108302.7	132182.6	145642.6	160201.2	192863.8	230654.8	—
	130	—	40227.7	52001.8	65725.8	81879.2	100951.5	123436.0	136111.5	149823.4	180593.1	216203.9	—
	140	—	36362.6	47382.7	60222.1	75332.4	93175.2	114216.4	126081.5	138919.3	167736.5	201099.8	—
155	—	—	—	—	—	—	99140.7	109703.5	121137.9	146822.2	—	—	



Performance Data

Table 5. Capacity (btu/hr) — voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE145	50	47473.3	70721.9	89260.1	111076.1	136913.3	167524.6	203665.9	224045.5	—	—	—	—
	60	45306.4	67838.4	85726.9	106726.2	131554.5	160940.1	195614.4	215162.4	236304.3	—	—	—
	70	42945.3	64756.3	81996.7	102184.0	126010.9	154180.2	187398.5	206120.8	226368.0	271777.6	—	—
	80	40397.6	61476.9	78066.4	97441.6	120269.1	147225.9	178992.8	196892.0	216246.8	259652.1	309848.4	—
	90	37675.4	58005.8	73937.3	92495.8	114321.1	140063.7	170378.0	187453.5	205915.2	247313.8	295188.2	350115.5
	100	—	54354.2	69616.7	87350.0	108166.4	132688.9	161545.0	177793.6	195358.9	234742.8	280285.4	332538.0
	110	—	50539.2	65118.5	82015.0	101812.5	125105.7	152494.3	167911.1	184574.9	221932.4	265128.7	314689.0
	120	—	46581.6	60460.1	76504.7	95269.8	117321.2	143229.6	157808.1	173563.2	208878.6	249710.2	—
	130	—	42500.5	55655.4	70827.8	88541.7	109332.6	133741.6	147471.5	162307.2	195557.1	233996.8	—
	140	—	38304.2	50702.6	64971.5	81603.1	101101.8	123977.2	136840.2	150737.2	181879.0	217878.0	—
155	—	—	—	—	—	—	—	108446.2	119930.1	132335.2	160129.6	—	—
CSHE152	50	51210.4	74450.8	93343.5	115832.4	142686.5	174683.9	212604.7	234028.8	—	—	—	—
	60	48352.6	70954.3	89169.4	110747.0	136429.0	166966.7	203113.9	223525.6	245619.3	—	—	—
	70	45616.9	67648.5	85242.3	105972.8	130553.8	159709.4	194166.7	213609.6	234647.9	281860.9	—	—
	80	42823.0	64334.9	81351.5	101286.4	124825.1	152663.5	185501.1	204012.2	224033.0	268940.9	320881.0	—
	90	39819.3	60843.1	77314.3	96493.2	119036.0	145609.4	176884.7	194494.5	213529.2	256197.2	305518.4	362083.7
	100	—	57034.8	72980.4	91430.8	113011.9	138361.0	168119.6	184852.5	202926.5	243407.6	290165.5	343764.3
	110	—	52805.5	68233.1	85970.9	106613.5	130767.4	159044.0	174918.9	192052.1	230388.8	274627.9	325306.2
	120	—	48084.7	62989.4	80018.0	99733.2	122709.5	149527.2	164557.5	180764.3	216987.5	258741.5	—
	130	—	42832.8	57194.7	73502.9	92286.9	114088.4	139455.3	153646.7	168933.6	203059.0	242345.3	—
	140	—	37036.9	50814.6	66369.4	84196.1	104802.5	128702.3	142047.8	156408.5	188423.9	225230.3	—
155	—	—	—	—	—	—	—	110861.9	122868.8	135768.5	164468.3	—	—
CSHE177	50	59213.2	85886.1	107727.4	133652.9	164392.7	200682.4	243255.6	267125.5	—	—	—	—
	60	55428.2	81286.6	102414.0	127461.3	157135.3	192148.5	233211.5	256231.3	281025.3	—	—	—
	70	52204.9	77202.2	97584.7	121722.4	150298.6	184001.8	223519.4	245671.0	269529.1	322689.4	—	—
	80	49342.6	73428.5	93032.3	116225.9	143668.1	176023.5	213955.3	235217.4	258117.5	309145.1	367642.0	—
	90	46663.2	69784.0	88572.8	110784.8	137054.0	168019.9	204321.3	224670.1	246587.6	295429.7	351427.7	415116.0
	100	—	66112.6	84048.5	105239.8	130294.7	159827.1	194450.6	213860.9	234769.5	281369.7	334806.9	395591.2
	110	—	62285.0	79329.7	99460.3	123258.7	151312.8	184209.7	202655.6	222528.1	266828.4	317640.7	375450.6
	120	—	58197.9	74312.2	93341.7	115841.0	142370.8	173491.5	190946.6	209755.2	251695.9	299817.8	—
	130	—	53768.5	68911.2	86796.6	107951.0	132907.2	162197.9	178633.2	196347.6	235863.2	281221.9	—
	140	—	48925.0	63047.6	79737.1	99490.6	122811.9	150204.7	165583.5	182164.9	219171.0	261672.2	—
155	—	—	—	—	—	—	—	130408.9	144085.8	158843.2	191811.1	—	—

Power
Table 6. Power (watts) – voltage 460/60/3 (Low Vi compressor data)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE071	50	2647.9	2727.0	2698.5	2585.4	2371.2	2039.3	1573.0	1284.3	—	—	—	—
	60	2939.1	3041.7	3051.5	2994.9	2855.4	2616.3	2261.0	2034.6	1772.9	—	—	—
	70	3280.2	3382.9	3415.4	3399.8	3319.4	3157.7	2897.8	2726.0	2523.3	2017.5	—	—
	80	3691.7	3771.2	3811.0	3820.8	3784.1	3684.0	3504.1	3379.1	3227.8	2838.2	2318.9	—
	90	4194.5	4227.5	4259.0	4278.7	4270.0	4216.2	4100.7	4014.6	3906.8	3618.0	3217.6	2689.0
	100	—	4772.4	4780.0	4794.1	4797.9	4774.8	4708.1	4653.3	4581.3	4377.7	4080.7	3673.6
	110	—	5426.6	5394.9	5387.7	5388.5	5380.5	5347.2	5315.8	5271.9	5138.0	4928.7	4627.6
	120	—	6210.8	6124.2	6080.3	6062.5	6054.2	6038.6	6023.0	5999.3	5919.4	5782.5	—
	130	—	7145.8	6988.8	6892.6	6840.7	6816.4	6803.1	6795.4	6784.1	6742.9	6662.7	—
	140	—	8252.2	8009.2	7845.2	7743.7	7687.9	7661.3	7653.8	7647.2	7629.0	7590.1	—
	155	—	—	—	—	—	—	—	9169.7	9147.8	9133.8	9121.0	—
CSHE088	50	3103.6	3157.2	3133.3	3049.9	2897.0	2664.4	2342.1	2144.2	—	—	—	—
	60	3443.4	3518.5	3518.1	3465.6	3351.0	3164.1	2894.9	2726.3	2533.4	—	—	—
	70	3841.8	3934.1	3954.5	3930.2	3851.1	3707.2	3488.3	3347.7	3184.5	2785.6	—	—
	80	4304.3	4409.8	4448.1	4449.2	4402.9	4299.1	4127.9	4013.8	3879.0	3542.4	3108.1	—
	90	4836.4	4950.9	5004.5	5028.2	5011.9	4945.5	4819.1	4730.1	4622.4	4345.4	3978.1	3510.3
	100	—	5563.0	5629.1	5672.6	5683.6	5651.9	5567.5	5502.3	5420.2	5200.1	4897.0	4500.8
	110	—	6251.7	6327.4	6388.1	6423.6	6423.8	6378.6	6335.9	6278.1	6112.0	5870.3	5543.0
	120	—	7022.4	7105.2	7180.2	7237.4	7266.7	7258.1	7236.4	7201.4	7086.6	6903.7	—
	130	—	7880.8	7967.7	8054.3	8130.5	8186.2	8211.3	8209.2	8195.8	8129.5	8002.5	—
	140	—	8832.4	8920.7	9016.1	9108.5	9187.8	9243.9	9260.1	9266.7	9246.3	9172.4	—
	155	—	—	—	—	—	—	—	10953.7	10994.7	11028.9	11071.9	—
CSHE097	50	3467.6	3550.6	3520.4	3403.9	3185.8	2850.9	2383.9	2096.1	—	—	—	—
	60	3927.7	4039.9	4048.2	3985.6	3836.8	3586.6	3219.5	2987.5	2720.5	—	—	—
	70	4426.1	4547.0	4580.5	4558.3	4465.3	4286.1	4005.5	3822.4	3608.2	3079.0	—	—
	80	4989.8	5099.3	5144.3	5149.0	5098.2	4976.6	4768.9	4628.0	4459.9	4034.3	3476.8	—
	90	5646.1	5723.9	5766.8	5784.9	5762.8	5685.2	5536.9	5431.5	5302.6	4967.1	4515.0	3931.2
	100	—	6447.8	6475.2	6493.1	6486.2	6439.1	6336.6	6259.9	6163.6	5904.5	5544.4	5067.7
	110	—	7298.2	7296.6	7300.8	7295.5	7265.4	7195.3	7140.4	7069.8	6873.9	6592.0	6209.1
	120	—	8302.4	8258.2	8235.1	8217.9	8191.3	8139.9	8100.3	8048.7	7902.1	7685.1	—
	130	—	9487.3	9387.1	9323.2	9280.6	9243.9	9197.8	9166.5	9127.1	9016.5	8850.8	—
	140	—	10880.3	10710.4	10592.3	10510.7	10450.3	10396.0	10366.3	10332.4	10244.2	10116.3	—
	155	—	—	—	—	—	—	—	12515.8	12475.9	12437.4	12357.5	—
CSHE104	50	3625.4	3745.9	3735.5	3640.2	3449.1	3151.5	2736.7	2482.0	—	—	—	—
	60	4067.7	4212.2	4235.2	4186.9	4056.6	3833.7	3507.3	3302.0	3066.8	—	—	—
	70	4567.3	4718.3	4762.9	4750.0	4668.9	4509.0	4259.4	4097.7	3909.5	3448.6	—	—
	80	5145.7	5285.8	5340.3	5351.2	5307.7	5199.1	5014.7	4890.7	4743.8	4375.6	3899.4	—
	90	5824.8	5936.5	5989.4	6012.3	5994.7	5925.9	5795.0	5702.9	5591.4	5304.3	4923.0	4436.9
	100	—	6692.1	6731.6	6755.1	6751.7	6710.9	6621.9	6556.0	6474.0	6256.3	5958.3	5569.2
	110	—	7574.4	7588.9	7601.2	7600.5	7576.1	7517.3	7471.6	7413.3	7253.5	7027.1	6723.5
	120	—	8605.0	8582.9	8572.3	8562.6	8543.0	8502.8	8471.6	8431.2	8317.6	8151.2	—
	130	—	9805.7	9735.3	9690.3	9659.9	9633.4	9600.1	9577.6	9549.3	9470.2	9352.1	—
	140	—	11198.3	11068.0	10976.9	10914.2	10869.2	10831.1	10811.4	10789.4	10733.2	10651.8	—
	155	—	—	—	—	—	—	—	12975.7	12949.3	12925.7	12882.0	—



Performance Data

Table 6. Power (watts) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE113	50	3844.4	3964.1	3975.9	3916.8	3772.6	3529.0	3171.9	2946.3	—	—	—	—
	60	4342.3	4477.9	4515.1	4493.2	4397.8	4214.9	3930.2	3745.2	3529.5	—	—	—
	70	4892.4	5031.5	5085.8	5092.7	5038.0	4907.4	4686.9	4538.4	4362.0	3918.8	—	—
	80	5515.7	5646.0	5709.1	5736.5	5714.1	5627.7	5463.0	5346.8	5205.8	4841.9	4357.1	—
	90	6233.5	6342.5	6406.1	6445.8	6447.5	6396.9	6279.7	6191.8	6081.9	5789.1	5387.1	4861.9
	100	—	7142.2	7198.0	7241.8	7259.2	7236.1	7158.2	7094.3	7011.4	6781.5	6454.1	6015.2
	110	—	8066.2	8106.0	8145.4	8170.3	8166.5	8119.6	8075.7	8015.6	7840.2	7579.2	7218.3
	120	—	9135.7	9151.1	9178.0	9202.1	9209.2	9185.1	9156.9	9115.6	8986.4	8783.4	—
	130	—	10371.8	10354.6	10360.7	10375.7	10385.5	10375.9	10359.3	10332.5	10241.4	10088.1	—
	140	—	11795.6	11737.6	11714.5	11712.2	11716.4	11712.9	11703.9	11687.5	11626.1	11514.2	—
155	—	—	—	—	—	—	14039.2	14033.6	14025.2	13992.8	—	—	
CSHE117	50	3958.6	4074.4	4068.6	3979.4	3792.6	3493.5	3067.7	2802.7	—	—	—	—
	60	4455.1	4602.8	4636.4	4601.4	4483.2	4267.4	3939.5	3729.0	3485.0	—	—	—
	70	5007.4	5167.2	5227.3	5233.3	5170.7	5025.0	4781.9	4619.2	4426.8	3945.2	—	—
	80	5642.0	5794.4	5867.7	5901.5	5881.4	5792.8	5621.3	5500.0	5352.4	4971.7	4464.7	—
	90	6385.6	6510.8	6584.3	6632.9	6642.1	6597.4	6484.5	6397.8	6288.7	5995.7	5591.0	5060.0
	100	—	7343.1	7403.6	7453.8	7479.2	7465.4	7397.8	7339.4	7262.1	7043.7	6728.2	6301.1
	110	—	8317.8	8352.2	8390.9	8419.4	8423.3	8388.0	8351.2	8299.2	8142.3	7902.9	7566.4
	120	—	9461.4	9456.7	9470.8	9489.3	9497.7	9481.7	9459.9	9426.6	9318.1	9141.6	—
	130	—	10800.7	10743.6	10720.0	10715.4	10715.3	10705.3	10692.1	10670.9	10597.6	10471.0	—
	140	—	12362.1	12239.6	12165.1	12124.3	12102.5	12085.5	12074.2	12058.6	12007.5	11917.6	—
155	—	—	—	—	—	—	14507.5	14486.8	14467.4	14424.9	—	—	
CSHE127	50	4359.6	4408.0	4383.0	4296.2	4134.1	3883.0	3529.4	3309.9	—	—	—	—
	60	4893.2	4965.9	4967.9	4916.9	4799.2	4601.4	4309.7	4124.4	3910.6	—	—	—
	70	5504.4	5591.5	5614.1	5592.4	5512.8	5361.7	5125.5	4971.2	4790.6	4343.3	—	—
	80	6210.6	6302.6	6339.3	6340.4	6292.4	6181.6	5994.4	5867.9	5717.2	5336.5	4838.5	—
	90	7029.7	7116.8	7161.1	7178.6	7155.7	7078.7	6934.0	6832.1	6708.1	6387.4	5958.1	5406.9
	100	—	8051.5	8097.1	8124.5	8120.2	8070.5	7962.0	7881.3	7780.9	7513.6	7146.7	6666.4
	110	—	9124.5	9164.8	9195.6	9203.5	9174.7	9095.8	9033.3	8953.1	8732.9	8421.8	8006.0
	120	—	10353.3	10381.9	10409.7	10423.3	10409.0	10353.2	10305.5	10242.3	10062.8	9800.9	—
	130	—	11755.6	11765.9	11784.3	11797.1	11790.7	11751.6	11715.6	11666.2	11520.8	11301.8	—
	140	—	13348.9	13334.5	13336.9	13342.5	13337.7	13308.8	13281.1	13242.3	13124.6	12942.1	—
155	—	—	—	—	—	—	15980.6	15959.5	15930.5	15842.1	—	—	
CSHE132	50	4536.4	4594.4	4559.9	4449.8	4249.3	3943.9	3518.8	3256.8	—	—	—	—
	60	5088.5	5184.2	5188.2	5127.3	4986.8	4752.1	4408.5	4191.3	3941.3	—	—	—
	70	5702.4	5823.2	5857.4	5837.4	5748.5	5576.2	5305.7	5129.1	4922.5	4411.7	—	—
	80	6399.8	6533.2	6589.2	6601.8	6556.3	6438.0	6232.3	6092.1	5924.6	5500.2	4944.3	—
	90	7202.3	7335.9	7405.4	7442.3	7431.8	7359.2	7210.1	7102.1	6969.6	6623.1	6155.9	5553.5
	100	—	8253.1	8327.9	8380.7	8396.8	8361.7	8260.7	8180.9	8079.1	7802.2	7415.5	6904.1
	110	—	9306.7	9378.3	9438.7	9473.2	9467.2	9406.0	9350.1	9274.9	9059.4	8744.7	8316.2
	120	—	10518.4	10578.5	10638.2	10682.7	10697.4	10667.7	10631.6	10578.9	10416.4	10165.4	—
	130	—	11909.9	11950.2	12000.8	12047.1	12074.2	12067.7	12047.2	12012.8	11894.9	11699.3	—
	140	—	13503.0	13515.2	13548.5	13588.1	13619.4	13627.7	13618.7	13598.4	13516.8	13368.3	—
155	—	—	—	—	—	—	16315.3	16315.6	16308.8	16266.1	—	—	

Table 6. Power (watts) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE145	50	4793.8	4878.5	4865.8	4781.6	4612.1	4343.6	3962.0	3724.6	—	—	—	—
	60	5400.1	5527.4	5556.7	5525.3	5419.6	5225.7	4929.7	4739.1	4517.9	—	—	—
	70	6064.5	6219.1	6280.2	6291.5	6239.4	6109.9	5889.3	5740.5	5563.7	5119.4	—	—
	80	6816.1	6982.7	7065.4	7109.3	7100.6	7025.4	6870.0	6757.9	6620.5	6263.1	5784.0	—
	90	7683.9	7847.4	7941.6	8007.8	8032.4	8001.3	7900.9	7820.4	7717.3	7436.7	7045.3	6529.3
	100	—	8842.2	8937.7	9016.1	9063.7	9066.7	9011.1	8957.1	8883.2	8669.3	8355.4	7927.7
	110	—	9996.2	10082.9	10163.4	10223.9	10250.6	10229.7	10197.1	10147.4	9989.9	9743.4	9394.0
	120	—	11338.7	11406.3	11478.7	11541.9	11582.3	11585.9	11569.6	11539.0	11427.8	11238.4	—
	130	—	12898.6	12937.0	12991.1	13046.9	13090.7	13108.7	13103.7	13087.0	13011.9	12869.5	—
	140	—	14705.2	14704.2	14729.8	14768.0	14805.1	14827.3	14828.4	14820.7	14771.5	14666.0	—
CSHE152	50	4825.5	4955.3	4979.9	4932.5	4794.0	4544.9	4166.1	3922.0	—	—	—	—
	60	5498.0	5641.7	5694.7	5690.8	5610.9	5435.7	5145.9	4952.0	4722.3	—	—	—
	70	6246.9	6386.9	6456.3	6484.1	6451.0	6337.8	6125.2	5975.6	5793.9	5324.8	—	—
	80	7102.4	7220.9	7295.0	7342.6	7344.5	7281.4	7134.2	7022.9	6883.4	6510.0	5994.5	—
	90	8094.7	8174.0	8240.9	8296.5	8321.6	8296.8	8203.1	8124.3	8021.0	7731.5	7315.0	6752.6
	100	—	9276.4	9324.3	9376.0	9412.4	9414.2	9362.1	9309.9	9236.9	9019.4	8690.2	8230.1
	110	—	10558.3	10575.3	10611.4	10647.3	10663.7	10641.5	10609.8	10561.3	10403.9	10150.1	9780.6
	120	—	12049.9	12024.2	12032.8	12056.3	12075.6	12071.4	12054.4	12024.4	11915.4	11725.1	—
	130	—	13781.4	13701.2	13670.4	13669.7	13680.0	13682.0	13673.8	13656.3	13583.8	13445.2	—
	140	—	15783.0	15636.4	15554.4	15517.8	15507.2	15503.5	15498.2	15487.4	15439.5	15340.8	—
CSHE177	50	5997.0	6070.0	6061.5	6012.7	5928.1	5812.4	5670.0	5590.3	—	—	—	—
	60	6692.0	6809.1	6824.0	6793.8	6723.0	6616.3	6478.1	6398.7	6313.1	—	—	—
	70	7475.4	7641.9	7683.7	7675.6	7622.2	7527.9	7397.5	7320.1	7235.4	7046.2	—	—
	80	8361.7	8582.8	8655.2	8672.7	8640.1	8561.9	8442.6	8369.0	8286.9	8099.4	7884.6	—
	90	9365.5	9646.6	9752.8	9799.5	9791.3	9732.6	9628.1	9560.1	9482.3	9299.9	9085.5	8843.5
	100	—	10847.6	10991.3	11070.7	11090.3	11054.7	10968.4	10907.7	10836.1	10662.4	10451.7	10208.8
	110	—	12200.5	12385.2	12500.7	12551.7	12542.6	12478.2	12426.6	12362.8	12201.2	11998.0	11757.6
	120	—	13719.7	13948.9	14104.2	14190.0	14211.0	14171.9	14131.1	14077.0	13931.1	13738.7	—
	130	—	15419.9	15697.1	15895.6	16019.8	16074.4	16064.0	16035.9	15993.2	15866.5	15688.5	—
	140	—	17315.5	17644.3	17889.4	18055.6	18147.3	18169.3	18155.5	18125.9	18021.9	17861.8	—
155	—	—	—	—	—	—	21758.3	21769.4	21762.8	21699.5	—	—	



Performance Data

Current

Table 7. Current (amps) – voltage 460/60/3 (Low Vi compressor data)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE071	50	7.18	7.35	7.37	7.32	7.18	6.93	6.57	6.34	—	—	—	—
	60	7.38	7.55	7.59	7.58	7.48	7.30	7.01	6.83	6.61	—	—	—
	70	7.64	7.80	7.85	7.86	7.80	7.67	7.45	7.31	7.14	6.71	—	—
	80	7.98	8.11	8.17	8.19	8.16	8.07	7.91	7.80	7.67	7.33	6.89	—
	90	8.42	8.51	8.56	8.58	8.57	8.52	8.41	8.32	8.22	7.96	7.61	7.16
	100	—	9.02	9.05	9.06	9.06	9.03	8.96	8.90	8.83	8.63	8.36	8.00
	110	—	9.65	9.65	9.65	9.65	9.63	9.58	9.54	9.49	9.35	9.15	8.88
	120	—	10.42	10.38	10.36	10.34	10.33	10.30	10.27	10.24	10.15	10.01	—
	130	—	11.36	11.27	11.21	11.17	11.15	11.13	11.11	11.09	11.03	10.94	—
	140	—	12.48	12.33	12.22	12.15	12.11	12.09	12.08	12.06	12.03	11.98	—
CSHE088	50	7.58	7.64	7.64	7.59	7.48	7.30	7.06	6.91	—	—	—	—
	60	7.85	7.93	7.94	7.90	7.81	7.66	7.44	7.31	7.15	—	—	—
	70	8.20	8.29	8.31	8.29	8.22	8.10	7.91	7.79	7.65	7.31	—	—
	80	8.62	8.73	8.76	8.76	8.72	8.62	8.46	8.36	8.24	7.94	7.56	—
	90	9.12	9.25	9.31	9.33	9.31	9.24	9.11	9.03	8.92	8.66	8.32	7.90
	100	—	9.88	9.95	9.99	10.00	9.96	9.87	9.80	9.72	9.50	9.20	8.83
	110	—	10.60	10.70	10.77	10.80	10.79	10.74	10.69	10.63	10.45	10.20	9.88
	120	—	11.44	11.56	11.66	11.72	11.75	11.73	11.70	11.66	11.53	11.33	—
	130	—	12.41	12.55	12.67	12.77	12.83	12.85	12.85	12.83	12.74	12.59	—
	140	—	13.50	13.67	13.82	13.95	14.05	14.12	14.13	14.13	14.10	14.00	—
CSHE097	50	8.93	9.03	9.03	8.96	8.82	8.58	8.25	8.04	—	—	—	—
	60	9.30	9.41	9.43	9.39	9.29	9.10	8.83	8.66	8.45	—	—	—
	70	9.71	9.83	9.87	9.85	9.78	9.64	9.42	9.27	9.10	8.69	—	—
	80	10.21	10.32	10.37	10.37	10.33	10.22	10.04	9.92	9.78	9.43	8.97	—
	90	10.81	10.91	10.96	10.97	10.95	10.87	10.73	10.63	10.52	10.22	9.83	9.33
	100	—	11.62	11.66	11.68	11.67	11.61	11.51	11.43	11.33	11.09	10.75	10.32
	110	—	12.48	12.50	12.52	12.51	12.48	12.39	12.33	12.26	12.05	11.77	11.40
	120	—	13.50	13.51	13.52	13.52	13.49	13.42	13.37	13.31	13.14	12.91	—
	130	—	14.73	14.72	14.71	14.69	14.67	14.61	14.57	14.52	14.39	14.19	—
	140	—	16.18	16.14	16.10	16.08	16.05	16.00	15.96	15.92	15.81	15.64	—
CSHE104	50	9.26	9.37	9.38	9.31	9.16	8.93	8.60	8.40	—	—	—	—
	60	9.57	9.70	9.73	9.69	9.59	9.40	9.14	8.97	8.77	—	—	—
	70	9.96	10.10	10.14	10.13	10.06	9.92	9.71	9.57	9.41	9.02	—	—
	80	10.45	10.59	10.64	10.65	10.61	10.51	10.34	10.23	10.10	9.77	9.35	—
	90	11.07	11.20	11.25	11.28	11.26	11.19	11.06	10.97	10.86	10.60	10.24	9.80
	100	—	11.94	11.99	12.02	12.02	11.97	11.88	11.81	11.73	11.51	11.22	10.84
	110	—	12.83	12.87	12.90	12.91	12.88	12.82	12.77	12.70	12.53	12.29	11.98
	120	—	13.90	13.93	13.95	13.96	13.95	13.90	13.86	13.82	13.68	13.50	—
	130	—	15.17	15.18	15.19	15.19	15.18	15.15	15.12	15.09	14.99	14.84	—
	140	—	16.65	16.63	16.62	16.62	16.61	16.59	16.57	16.54	16.47	16.36	—
155	—	—	—	—	—	—	19.13	19.12	19.10	19.05	—	—	

Table 7. Current (amps) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE113	50	9.33	9.44	9.46	9.42	9.31	9.11	8.81	8.63	—	—	—	—
	60	9.71	9.84	9.88	9.87	9.79	9.63	9.39	9.23	9.04	—	—	—
	70	10.17	10.31	10.36	10.37	10.32	10.20	10.00	9.87	9.71	9.31	—	—
	80	10.72	10.86	10.92	10.95	10.93	10.84	10.69	10.58	10.44	10.10	9.65	—
	90	11.38	11.52	11.59	11.63	11.63	11.58	11.46	11.37	11.26	10.97	10.58	10.07
	100	—	12.31	12.39	12.44	12.46	12.43	12.34	12.28	12.19	11.95	11.62	11.17
	110	—	13.27	13.34	13.40	13.43	13.43	13.37	13.32	13.25	13.06	12.78	12.40
	120	—	14.42	14.48	14.54	14.58	14.60	14.57	14.53	14.48	14.33	14.09	—
	130	—	15.77	15.83	15.89	15.93	15.96	15.95	15.93	15.89	15.78	15.59	—
	140	—	17.36	17.41	17.46	17.51	17.54	17.55	17.54	17.52	17.43	17.28	—
CSHE117	50	9.44	9.55	9.56	9.50	9.36	9.12	8.77	8.54	—	—	—	—
	60	9.85	9.98	10.02	10.00	9.91	9.74	9.46	9.28	9.07	—	—	—
	70	10.33	10.46	10.52	10.54	10.50	10.38	10.17	10.03	9.86	9.42	—	—
	80	10.91	11.04	11.11	11.14	11.14	11.07	10.92	10.81	10.68	10.32	9.84	—
	90	11.63	11.74	11.80	11.86	11.87	11.84	11.74	11.66	11.56	11.27	10.88	10.35
	100	—	12.59	12.65	12.70	12.73	12.72	12.66	12.61	12.53	12.31	11.99	11.55
	110	—	13.63	13.67	13.71	13.75	13.76	13.72	13.68	13.63	13.46	13.21	12.85
	120	—	14.90	14.90	14.93	14.96	14.97	14.95	14.93	14.89	14.77	14.57	—
	130	—	16.41	16.38	16.37	16.38	16.39	16.38	16.37	16.34	16.25	16.09	—
	140	—	18.21	18.13	18.08	18.07	18.06	18.05	18.04	18.02	17.95	17.83	—
CSHE127	50	10.27	10.31	10.31	10.27	10.18	10.03	9.80	9.66	—	—	—	—
	60	10.68	10.73	10.74	10.71	10.64	10.50	10.30	10.17	10.02	—	—	—
	70	11.20	11.26	11.28	11.27	11.21	11.10	10.91	10.79	10.65	10.30	—	—
	80	11.84	11.92	11.95	11.95	11.91	11.82	11.66	11.55	11.42	11.09	10.67	—
	90	12.63	12.73	12.77	12.78	12.76	12.68	12.55	12.45	12.33	12.03	11.64	11.13
	100	—	13.69	13.74	13.78	13.77	13.71	13.60	13.52	13.41	13.14	12.77	12.30
	110	—	14.83	14.90	14.94	14.96	14.92	14.83	14.76	14.67	14.43	14.09	13.65
	120	—	16.16	16.24	16.31	16.34	16.33	16.26	16.20	16.12	15.91	15.61	—
	130	—	17.70	17.80	17.88	17.93	17.94	17.90	17.85	17.79	17.61	17.34	—
	140	—	19.47	19.58	19.68	19.75	19.78	19.76	19.73	19.68	19.53	19.29	—
CSHE132	50	10.45	10.52	10.50	10.41	10.23	9.95	9.56	9.31	—	—	—	—
	60	10.91	11.01	11.02	10.97	10.85	10.63	10.30	10.09	9.85	—	—	—
	70	11.45	11.57	11.61	11.60	11.52	11.35	11.09	10.92	10.71	10.20	—	—
	80	12.11	12.24	12.30	12.31	12.27	12.16	11.95	11.81	11.64	11.21	10.64	—
	90	12.90	13.04	13.11	13.15	13.14	13.07	12.91	12.80	12.67	12.31	11.82	11.19
	100	—	13.99	14.07	14.13	14.15	14.11	14.01	13.92	13.81	13.52	13.10	12.55
	110	—	15.14	15.22	15.29	15.33	15.32	15.25	15.19	15.11	14.87	14.53	14.05
	120	—	16.50	16.57	16.65	16.70	16.72	16.68	16.64	16.58	16.40	16.11	—
	130	—	18.10	18.16	18.23	18.29	18.33	18.32	18.30	18.26	18.12	17.89	—
	140	—	19.97	20.02	20.08	20.14	20.19	20.20	20.19	20.17	20.07	19.89	—
155	—	—	—	—	—	—	23.53	23.53	23.53	23.48	—	—	



Performance Data

Table 7. Current (amps) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE145	50	10.82	10.90	10.89	10.81	10.65	10.41	10.06	9.84	—	—	—	—
	60	11.33	11.45	11.48	11.46	11.36	11.18	10.90	10.72	10.51	—	—	—
	70	11.92	12.08	12.14	12.15	12.10	11.98	11.77	11.62	11.46	11.03	—	—
	80	12.62	12.80	12.89	12.93	12.93	12.85	12.70	12.59	12.45	12.10	11.64	—
	90	13.48	13.67	13.77	13.84	13.87	13.83	13.73	13.65	13.54	13.26	12.87	12.36
	100	—	14.71	14.82	14.91	14.96	14.96	14.90	14.84	14.77	14.54	14.22	13.78
	110	—	15.97	16.09	16.18	16.25	16.28	16.25	16.21	16.16	15.98	15.72	15.35
	120	—	17.49	17.59	17.69	17.77	17.81	17.81	17.79	17.75	17.63	17.41	—
	130	—	19.29	19.38	19.48	19.55	19.61	19.63	19.62	19.60	19.50	19.33	—
CSHE152	50	10.87	11.03	11.08	11.07	10.96	10.75	10.40	10.17	—	—	—	—
	60	11.44	11.61	11.68	11.70	11.64	11.49	11.22	11.03	10.81	—	—	—
	70	12.13	12.28	12.36	12.40	12.39	12.29	12.09	11.94	11.76	11.29	—	—
	80	12.96	13.09	13.17	13.23	13.24	13.18	13.04	12.93	12.79	12.41	11.88	—
	90	13.98	14.07	14.14	14.20	14.24	14.21	14.12	14.04	13.93	13.63	13.19	12.60
	100	—	15.25	15.31	15.37	15.41	15.41	15.36	15.30	15.22	14.99	14.63	14.13
	110	—	16.67	16.70	16.75	16.80	16.82	16.79	16.76	16.70	16.53	16.24	15.83
	120	—	18.37	18.37	18.40	18.43	18.46	18.46	18.44	18.40	18.28	18.06	—
	130	—	20.39	20.34	20.33	20.35	20.38	20.39	20.38	20.36	20.27	20.11	—
CSHE177	50	13.47	13.53	13.53	13.49	13.44	13.37	13.28	13.24	—	—	—	—
	60	14.03	14.13	14.14	14.12	14.07	13.98	13.88	13.83	13.77	—	—	—
	70	14.71	14.87	14.91	14.90	14.85	14.77	14.66	14.60	14.53	14.37	—	—
	80	15.53	15.76	15.83	15.85	15.82	15.74	15.63	15.56	15.49	15.31	15.12	—
	90	16.52	16.83	16.94	16.99	16.99	16.93	16.82	16.75	16.67	16.49	16.27	16.03
	100	—	18.09	18.26	18.35	18.37	18.33	18.24	18.17	18.10	17.91	17.68	17.42
	110	—	19.58	19.80	19.94	20.00	19.99	19.92	19.86	19.79	19.60	19.37	19.09
	120	—	21.30	21.59	21.78	21.89	21.92	21.87	21.83	21.76	21.59	21.36	—
	130	—	23.28	23.64	23.89	24.06	24.13	24.12	24.09	24.04	23.88	23.66	—
140	—	25.54	25.98	26.30	26.53	26.66	26.69	26.68	26.64	26.51	26.31	—	
155	—	—	—	—	—	—	31.18	31.20	31.20	31.13	—	—	

Refrigerant Flow

Table 8. Refrigerant flow (lb/hr) – voltage 460/60/3 (Low Vi compressor data)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE071	50	187.9	289.3	368.1	459.3	566.0	691.3	838.2	920.7	—	—	—	—
	60	188.4	289.6	367.5	457.2	561.9	684.6	828.3	909.0	996.1	—	—	—
	70	187.1	288.8	366.2	454.9	558.0	678.5	819.4	898.5	983.9	1174.8	—	—
	80	183.8	286.5	363.9	452.0	553.9	672.7	811.2	888.9	972.7	1160.2	1376.7	—
	90	177.9	282.3	360.2	448.2	549.3	666.7	803.4	879.9	962.4	1146.8	1359.6	1603.8
	100	—	276.1	354.8	443.0	543.9	660.4	795.5	871.1	952.5	1134.2	1343.8	1584.2
	110	—	267.3	347.3	436.3	537.2	653.2	787.4	862.2	942.7	1122.2	1329.0	1566.0
	120	—	255.8	337.5	427.6	529.1	645.1	778.6	852.9	932.7	1110.4	1314.8	—
	130	—	241.1	324.9	416.6	519.1	635.5	768.8	842.8	922.1	1098.5	1301.0	—
	140	—	223.0	309.4	403.0	506.9	624.1	757.7	831.6	910.7	1086.1	1287.1	—
CSHE088	50	258.5	367.4	458.1	566.4	694.9	846.2	1023.0	1121.8	—	—	—	—
	60	253.2	364.8	456.7	565.5	693.9	844.6	1020.1	1118.0	1223.2	—	—	—
	70	246.9	361.3	454.3	563.6	692.0	842.0	1016.4	1113.4	1217.6	1448.3	—	—
	80	239.3	356.5	450.7	560.6	688.9	838.4	1011.5	1107.7	1210.9	1439.2	1699.1	—
	90	230.2	350.3	445.6	556.1	684.4	833.3	1005.2	1100.6	1202.8	1428.8	1685.8	1976.3
	100	—	342.3	438.8	549.9	678.3	826.5	997.3	1091.9	1193.2	1416.8	1670.8	1957.9
	110	—	332.3	430.0	541.7	670.2	817.9	987.5	1081.3	1181.6	1403.0	1654.1	1937.6
	120	—	320.0	419.0	531.4	659.9	807.0	975.5	1068.6	1168.0	1387.0	1635.3	—
	130	—	305.2	405.5	518.5	647.1	793.8	961.2	1053.5	1152.0	1368.7	1614.1	—
	140	—	287.7	389.2	503.0	631.6	777.8	944.2	1035.7	1133.3	1347.8	1590.3	—
CSHE097	50	284.8	415.7	520.7	644.3	790.3	962.3	1164.2	1277.6	—	—	—	—
	60	277.8	409.1	513.6	635.9	779.9	949.2	1147.8	1259.1	1379.2	—	—	—
	70	271.2	403.7	508.1	629.6	772.1	939.3	1135.0	1244.6	1362.8	1626.7	—	—
	80	263.9	398.4	503.1	624.4	766.0	931.5	1124.8	1233.0	1349.6	1609.7	1908.8	—
	90	254.7	391.9	497.7	619.2	760.3	924.6	1116.1	1223.1	1338.3	1595.2	1890.4	2227.6
	100	—	383.4	490.5	612.8	754.0	917.7	1107.8	1213.9	1328.0	1582.1	1873.9	2207.0
	110	—	371.5	480.7	604.2	745.9	909.6	1098.8	1204.3	1317.5	1569.4	1858.2	2187.7
	120	—	355.4	467.0	592.4	735.1	899.1	1088.1	1193.1	1305.7	1555.9	1842.3	—
	130	—	333.8	448.4	576.1	720.4	885.3	1074.5	1179.3	1291.6	1540.6	1825.1	—
	140	—	305.7	423.9	554.3	700.8	867.0	1056.9	1161.8	1274.0	1522.3	1805.4	—
CSHE104	50	299.2	437.5	547.5	675.9	826.4	1002.6	1208.0	1322.9	—	—	—	—
	60	294.9	434.5	545.0	673.6	824.0	999.7	1204.4	1318.8	1441.7	—	—	—
	70	289.4	430.4	541.3	670.1	820.3	995.6	1199.6	1313.4	1435.8	1707.8	—	—
	80	282.6	424.9	536.3	665.2	815.3	990.1	1193.3	1306.6	1428.4	1699.0	2008.9	—
	90	274.4	417.9	529.7	658.8	808.7	983.0	1185.4	1298.2	1419.4	1688.6	1996.8	2347.4
	100	—	409.2	521.5	650.7	800.4	974.2	1175.8	1288.1	1408.6	1676.5	1982.8	2331.4
	110	—	398.7	511.4	640.7	790.2	963.5	1164.3	1276.0	1396.0	1662.3	1966.9	2313.4
	120	—	386.2	499.3	628.7	778.0	950.8	1150.7	1261.9	1381.2	1646.1	1949.0	—
	130	—	371.5	485.1	614.6	763.6	935.8	1134.8	1245.5	1364.2	1627.7	1928.7	—
	140	—	354.5	468.5	598.0	746.8	918.5	1116.6	1226.7	1344.8	1606.8	1906.0	—
155	—	—	—	—	—	—	1084.5	1193.7	1310.9	1570.5	—	—	



Performance Data

Table 8. Refrigerant flow (lb/hr) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE113	50	328.6	478.3	597.8	738.0	903.4	1098.3	1326.9	1455.2	—	—	—	—
	60	322.2	473.1	592.5	732.0	895.9	1088.7	1314.5	1441.2	1577.7	—	—	—
	70	315.8	468.3	588.0	727.1	889.9	1080.8	1304.2	1429.4	1564.3	1865.5	—	—
	80	308.5	463.2	583.4	722.4	884.5	1073.9	1295.2	1419.0	1552.4	1850.1	2192.5	—
	90	299.4	456.8	577.9	717.1	878.7	1067.1	1286.5	1409.1	1541.2	1835.7	2174.3	2561.2
	100	—	448.2	570.5	710.3	871.8	1059.3	1277.2	1398.9	1529.8	1821.5	2156.5	2539.2
	110	—	436.5	560.4	701.1	862.7	1049.8	1266.5	1387.4	1517.3	1806.4	2138.2	2517.0
	120	—	420.9	546.7	688.5	850.7	1037.6	1253.5	1373.7	1502.7	1789.7	2118.6	—
	130	—	400.4	528.4	671.8	834.9	1021.9	1237.3	1357.0	1485.3	1770.4	2096.7	—
	140	—	374.2	504.8	650.0	814.3	1001.8	1217.0	1336.3	1464.2	1747.6	2071.8	—
155	—	—	—	—	—	—	—	1176.9	1296.0	1423.4	1705.1	—	—
CSHE117	50	349.1	503.6	626.4	771.1	943.1	1147.6	1390.0	1527.0	—	—	—	—
	60	341.1	497.1	619.6	763.0	932.6	1133.8	1371.9	1506.3	1652.0	—	—	—
	70	333.3	491.5	614.1	756.7	924.5	1122.9	1357.0	1489.2	1632.3	1954.0	—	—
	80	324.7	485.8	609.0	751.3	917.7	1113.7	1344.4	1474.5	1615.3	1931.6	2298.6	—
	90	314.4	479.0	603.4	745.7	911.2	1105.3	1333.1	1461.4	1600.1	1911.4	2272.4	2688.4
	100	—	470.1	596.1	738.9	904.0	1096.6	1322.0	1448.7	1585.5	1892.4	2247.9	2657.4
	110	—	458.1	586.1	730.0	895.1	1086.8	1310.2	1435.4	1570.7	1873.5	2224.1	2627.5
	120	—	441.9	572.5	717.9	883.5	1074.6	1296.5	1420.6	1554.5	1853.8	2199.8	—
	130	—	420.7	554.2	701.6	868.2	1059.2	1280.0	1403.3	1535.9	1832.2	2174.1	—
	140	—	393.2	530.2	680.0	848.0	1039.5	1259.8	1382.3	1514.1	1807.7	2146.0	—
155	—	—	—	—	—	—	—	1220.0	1342.0	1472.8	1763.4	—	—
CSHE127	50	399.7	567.0	701.4	863.2	1060.1	1300.0	1590.6	1757.3	—	—	—	—
	60	382.0	549.2	680.8	837.8	1027.7	1258.5	1537.8	1698.1	1873.4	—	—	—
	70	368.9	538.5	669.1	822.8	1007.5	1230.8	1500.5	1655.2	1824.4	2210.3	—	—
	80	357.1	531.6	662.9	815.1	996.1	1213.6	1475.4	1625.4	1789.3	2163.0	2604.4	—
	90	343.3	525.2	658.8	811.2	990.2	1203.6	1459.2	1605.2	1764.7	2127.9	2556.6	3058.6
	100	—	516.0	653.5	807.7	986.5	1197.5	1448.5	1591.4	1747.3	2101.7	2519.4	3008.3
	110	—	500.6	643.7	801.4	981.6	1191.8	1439.9	1580.7	1733.8	2081.0	2489.5	2966.9
	120	—	475.6	626.1	789.0	972.1	1183.3	1430.3	1569.6	1720.7	2062.5	2463.4	—
	130	—	437.8	597.2	767.0	954.9	1168.7	1416.1	1554.8	1704.9	2042.9	2437.8	—
	140	—	383.8	553.9	732.2	926.5	1144.5	1394.1	1533.1	1682.9	2018.8	2409.4	—
155	—	—	—	—	—	—	—	1339.2	1480.2	1631.1	1966.9	—	—
CSHE132	50	407.3	586.5	727.6	892.2	1085.8	1313.6	1581.3	1731.7	—	—	—	—
	60	395.9	576.2	717.4	881.9	1074.9	1301.8	1568.1	1717.7	1879.2	—	—	—
	70	386.8	567.9	709.2	873.4	1065.8	1291.7	1556.7	1705.4	1866.0	2225.1	—	—
	80	378.9	560.8	702.2	866.0	1057.6	1282.5	1546.0	1693.9	1853.5	2210.4	2622.1	—
	90	371.5	554.0	695.4	858.8	1049.6	1273.3	1535.3	1682.3	1840.9	2195.5	2604.6	3073.5
	100	—	546.8	688.0	850.9	1040.9	1263.3	1523.7	1669.7	1827.3	2179.5	2585.9	3051.7
	110	—	538.2	679.2	841.5	1030.5	1251.7	1510.3	1655.4	1811.8	2161.6	2565.2	3027.8
	120	—	527.3	668.1	829.7	1017.7	1237.4	1494.3	1638.3	1793.7	2141.0	2541.6	—
	130	—	513.4	653.8	814.7	1001.6	1219.8	1474.8	1617.8	1771.9	2116.6	2514.3	—
	140	—	495.6	635.5	795.6	981.3	1197.9	1451.0	1592.8	1745.8	2087.8	2482.4	—
155	—	—	—	—	—	—	—	1405.3	1545.4	1696.5	2034.3	—	—

Table 8. Refrigerant flow (lb/hr) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE145	50	428.9	628.3	784.7	966.9	1180.7	1432.2	1727.4	1893.2	—	—	—	—
	60	424.2	624.3	780.3	961.5	1173.8	1423.2	1715.6	1879.9	2057.1	—	—	—
	70	417.6	618.5	774.3	954.7	1165.6	1413.0	1702.8	1865.5	2041.0	2433.6	—	—
	80	409.0	610.8	766.6	946.3	1156.0	1401.4	1688.8	1850.0	2023.9	2412.8	2861.5	—
	90	398.3	601.3	757.1	936.3	1144.8	1388.5	1673.5	1833.3	2005.7	2391.0	2835.5	3345.1
	100	—	589.8	745.8	924.5	1132.0	1374.1	1656.9	1815.3	1986.2	2368.2	2808.6	3313.6
	110	—	576.2	732.5	911.0	1117.5	1358.1	1638.8	1796.0	1965.4	2344.1	2780.7	3281.2
	120	—	560.5	717.2	895.5	1101.2	1340.5	1619.2	1775.2	1943.3	2318.7	2751.6	—
	130	—	542.4	699.7	877.9	1083.1	1321.1	1597.9	1752.8	1919.6	2292.0	2721.2	—
	140	—	522.1	680.0	858.3	1063.0	1299.9	1575.0	1728.8	1894.3	2263.9	2689.5	—
CSHE152	50	462.7	661.5	820.6	1008.3	1230.5	1493.5	1803.2	1977.6	—	—	—	—
	60	452.8	652.9	811.7	997.8	1217.3	1476.5	1781.4	1952.9	2138.2	—	—	—
	70	443.6	646.1	805.0	990.1	1207.6	1463.7	1764.3	1933.3	2115.7	2523.9	—	—
	80	433.6	639.2	798.9	983.7	1199.7	1453.2	1750.2	1916.9	2096.8	2499.1	2963.4	—
	90	421.0	630.7	791.7	976.8	1192.0	1443.5	1737.4	1902.2	2079.8	2476.9	2934.8	3459.5
	100	—	618.9	781.8	967.7	1182.7	1432.8	1724.3	1887.4	2063.2	2455.6	2907.6	3425.5
	110	—	602.1	767.6	954.9	1170.2	1419.6	1709.2	1870.9	2045.1	2433.4	2880.3	3391.9
	120	—	578.6	747.2	936.6	1152.8	1402.0	1690.4	1851.1	2023.9	2408.8	2851.1	—
	130	—	546.7	719.1	911.1	1128.9	1378.5	1666.2	1826.2	1998.0	2380.0	2818.3	—
	140	—	504.8	681.5	876.8	1096.7	1347.4	1635.0	1794.6	1965.6	2345.3	2780.3	—
CSHE177	50	535.0	763.0	947.1	1163.4	1417.7	1715.7	2063.2	2257.2	—	—	—	—
	60	519.0	748.0	932.2	1148.3	1402.1	1699.2	2045.4	2238.7	2446.4	—	—	—
	70	507.7	737.3	921.5	1137.3	1390.3	1686.3	2031.0	2223.4	2430.2	2889.5	—	—
	80	499.6	729.6	913.6	1128.8	1380.9	1675.6	2018.6	2210.1	2415.8	2872.7	3395.2	—
	90	493.3	723.4	907.0	1121.4	1372.4	1665.7	2006.9	2197.3	2401.8	2856.2	3375.8	3966.2
	100	—	717.4	900.4	1113.9	1363.6	1655.1	1994.4	2183.6	2386.9	2838.5	3355.0	3941.9
	110	—	710.2	892.4	1104.7	1352.9	1642.6	1979.6	2167.6	2369.6	2818.3	3331.4	3914.7
	120	—	700.2	881.5	1092.5	1339.0	1626.7	1961.3	2147.9	2348.5	2794.1	3303.7	—
	130	—	686.3	866.4	1075.9	1320.5	1605.9	1937.9	2123.2	2322.2	2764.4	3270.4	—
	140	—	666.8	845.6	1053.4	1296.0	1579.0	1908.2	2091.9	2289.3	2728.0	3230.1	—
155	—	—	—	—	—	—	1848.5	2029.7	2224.5	2657.7	—	—	



Performance Data

EER

Table 9. EER (btu/watt-hr) – voltage 460/60/3 (Low Vi compressor data)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE071	50	7.85	11.94	15.51	20.41	27.68	39.65	62.83	84.84	—	—	—	—
	60	6.85	10.35	13.23	16.95	22.06	29.59	41.77	51.14	64.54	—	—	—
	70	5.87	8.94	11.35	14.32	18.17	23.45	31.12	36.42	43.24	65.03	—	—
	80	4.92	7.64	9.72	12.18	15.23	19.18	24.54	28.00	32.20	43.99	64.28	—
	90	4.01	6.44	8.26	10.35	12.85	15.95	19.95	22.41	25.29	32.78	43.99	62.43
	100	—	5.33	6.93	8.73	10.83	13.35	16.47	18.33	20.45	25.68	32.86	43.28
	110	—	4.32	5.72	7.29	9.08	11.18	13.70	15.16	16.79	20.68	25.71	32.46
	120	—	3.42	4.65	6.01	7.55	9.33	11.41	12.59	13.89	16.90	20.63	—
	130	—	2.64	3.70	4.88	6.20	7.72	9.46	10.43	11.49	13.90	16.79	—
	140	—	1.98	2.88	3.89	5.03	6.31	7.78	8.60	9.48	11.44	13.74	—
CSHE088	50	9.22	13.10	16.63	21.33	27.81	37.15	51.50	61.91	—	—	—	—
	60	7.85	11.27	14.26	18.11	23.21	30.18	40.18	46.94	55.46	—	—	—
	70	6.61	9.62	12.16	15.35	19.43	24.78	32.06	36.75	42.41	58.06	—	—
	80	5.49	8.14	10.32	12.97	16.28	20.49	25.97	29.37	33.35	43.72	59.20	—
	90	4.50	6.83	8.69	10.93	13.64	17.00	21.24	23.79	26.72	34.01	44.12	58.93
	100	—	5.67	7.28	9.16	11.40	14.12	17.46	19.44	21.65	27.01	34.05	43.65
	110	—	4.66	6.04	7.64	9.51	11.73	14.41	15.96	17.68	21.73	26.87	33.53
	120	—	3.79	4.97	6.32	7.89	9.72	11.89	13.13	14.49	17.63	21.50	—
	130	—	3.03	4.05	5.19	6.51	8.02	9.80	10.80	11.88	14.36	17.34	—
	140	—	2.39	3.25	4.22	5.32	6.58	8.04	8.85	9.73	11.71	14.05	—
CSHE097	50	9.09	13.18	16.82	21.75	28.76	39.48	57.58	72.13	—	—	—	—
	60	7.55	11.01	13.94	17.71	22.78	29.93	40.65	48.24	58.24	—	—	—
	70	6.30	9.30	11.75	14.78	18.69	23.91	31.18	35.98	41.89	59.00	—	—
	80	5.22	7.86	9.96	12.49	15.63	19.66	25.00	28.35	32.33	42.94	59.45	—
	90	4.27	6.61	8.43	10.57	13.17	16.41	20.52	23.03	25.91	33.22	43.59	59.31
	100	—	5.48	7.07	8.92	11.11	13.76	17.05	18.99	21.19	26.56	33.73	43.70
	110	—	4.47	5.86	7.45	9.32	11.53	14.21	15.77	17.50	21.62	26.88	33.79
	120	—	3.56	4.77	6.15	7.74	9.61	11.82	13.09	14.49	17.74	21.76	—
	130	—	2.76	3.80	4.98	6.35	7.93	9.78	10.82	11.97	14.58	17.73	—
	140	—	2.06	2.95	3.96	5.12	6.45	8.00	8.87	9.81	11.94	14.46	—
CSHE104	50	9.13	13.15	16.67	21.33	27.78	37.21	52.05	63.08	—	—	—	—
	60	7.74	11.21	14.14	17.86	22.76	29.49	39.15	45.71	54.00	—	—	—
	70	6.52	9.55	12.04	15.10	18.99	24.09	30.99	35.42	40.73	55.31	—	—
	80	5.43	8.09	10.23	12.80	15.98	20.01	25.22	28.43	32.17	41.79	55.78	—
	90	4.46	6.79	8.64	10.83	13.47	16.73	20.83	23.28	26.06	32.93	42.22	55.37
	100	—	5.63	7.23	9.10	11.33	14.02	17.31	19.24	21.40	26.56	33.21	42.01
	110	—	4.62	5.99	7.59	9.47	11.72	14.41	15.97	17.68	21.70	26.69	33.00
	120	—	3.73	4.90	6.27	7.86	9.74	11.97	13.24	14.63	17.83	21.70	—
	130	—	2.97	3.96	5.12	6.46	8.04	9.89	10.94	12.08	14.66	17.73	—
	140	—	2.32	3.16	4.12	5.25	6.57	8.12	8.98	9.92	12.03	14.50	—
155	—	—	—	—	—	—	5.90	6.54	7.24	8.80	—	—	

Table 9. EER (btu/watt-hr) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE113	50	9.46	13.58	17.10	21.65	27.77	36.40	49.32	58.45	—	—	—	—
	60	7.93	11.48	14.42	18.08	22.83	29.21	38.13	44.04	51.35	—	—	—
	70	6.64	9.75	12.24	15.28	19.10	24.03	30.62	34.80	39.77	53.16	—	—
	80	5.52	8.26	10.41	12.97	16.10	20.05	25.13	28.25	31.86	41.12	54.49	—
	90	4.54	6.95	8.81	10.99	13.61	16.83	20.86	23.27	26.02	32.80	42.02	55.14
	100	—	5.78	7.40	9.27	11.48	14.14	17.40	19.31	21.46	26.62	33.34	42.36
	110	—	4.75	6.15	7.75	9.62	11.84	14.51	16.06	17.78	21.81	26.90	33.44
	120	—	3.83	5.04	6.41	8.00	9.86	12.07	13.34	14.72	17.94	21.89	—
	130	—	3.02	4.06	5.23	6.58	8.14	9.98	11.02	12.15	14.75	17.87	—
CSHE117	50	9.76	13.91	17.51	22.26	28.84	38.42	53.42	64.48	—	—	—	—
	60	8.18	11.74	14.68	18.40	23.31	30.05	39.70	46.24	54.45	—	—	—
	70	6.84	9.96	12.44	15.48	19.33	24.38	31.23	35.62	40.90	55.31	—	—
	80	5.68	8.44	10.57	13.11	16.23	20.20	25.35	28.53	32.25	41.81	55.75	—
	90	4.66	7.10	8.95	11.11	13.70	16.90	20.93	23.36	26.12	32.97	42.31	55.61
	100	—	5.90	7.51	9.37	11.55	14.18	17.42	19.33	21.47	26.63	33.34	42.32
	110	—	4.83	6.24	7.83	9.69	11.88	14.53	16.07	17.77	21.78	26.83	33.31
	120	—	3.88	5.10	6.48	8.05	9.90	12.10	13.35	14.73	17.92	21.84	—
	130	—	3.05	4.10	5.28	6.62	8.18	10.01	11.04	12.17	14.75	17.85	—
CSHE127	50	10.15	14.48	18.20	23.08	29.73	39.16	53.13	62.83	—	—	—	—
	60	8.34	12.02	15.06	18.91	24.00	30.93	40.68	47.12	55.03	—	—	—
	70	6.89	10.08	12.62	15.75	19.76	25.05	32.22	36.79	42.24	56.83	—	—
	80	5.68	8.49	10.65	13.24	16.47	20.62	26.09	29.48	33.44	43.62	58.28	—
	90	4.62	7.12	8.98	11.16	13.82	17.15	21.42	24.02	27.01	34.46	44.67	59.21
	100	—	5.91	7.53	9.39	11.61	14.33	17.74	19.78	22.09	27.73	35.18	45.29
	110	—	4.81	6.24	7.85	9.72	11.97	14.73	16.36	18.19	22.56	28.18	35.54
	120	—	3.82	5.08	6.48	8.07	9.95	12.22	13.54	15.01	18.46	22.81	—
	130	—	2.92	4.04	5.25	6.62	8.20	10.09	11.17	12.36	15.13	18.55	—
CSHE132	50	9.94	14.37	18.15	23.03	29.63	38.96	52.98	62.92	—	—	—	—
	60	8.31	12.08	15.19	19.09	24.16	30.98	40.56	46.91	54.77	—	—	—
	70	6.97	10.21	12.82	16.01	20.04	25.28	32.29	36.74	42.04	56.33	—	—
	80	5.85	8.64	10.85	13.51	16.78	20.93	26.29	29.59	33.43	43.25	57.43	—
	90	4.88	7.29	9.17	11.40	14.10	17.45	21.68	24.22	27.12	34.29	44.05	57.92
	100	—	6.11	7.71	9.59	11.85	14.59	17.98	19.99	22.25	27.69	34.80	44.36
	110	—	5.07	6.44	8.03	9.91	12.18	14.94	16.55	18.34	22.59	27.97	34.92
	120	—	4.17	5.32	6.66	8.24	10.12	12.39	13.70	15.14	18.52	22.69	—
	130	—	3.38	4.35	5.48	6.80	8.36	10.23	11.30	12.47	15.18	18.48	—
140	—	2.69	3.51	4.44	5.54	6.84	8.38	9.26	10.22	12.41	15.04	—	
155	—	—	—	—	—	—	6.08	6.72	7.43	9.03	—	—	



Performance Data

Table 9. EER (btu/watt-hr) – voltage 460/60/3 (Low Vi compressor data) (continued)

Compressor	Cond Temp Deg °F	Evaporator Temp Deg °F											
		-25	-10	0	10	20	30	40	45	50	60	70	80
CSHE145	50	9.90	14.50	18.34	23.23	29.69	38.57	51.40	60.15	—	—	—	—
	60	8.39	12.27	15.43	19.32	24.27	30.80	39.68	45.40	52.30	—	—	—
	70	7.08	10.41	13.06	16.24	20.20	25.23	31.82	35.91	40.69	53.09	—	—
	80	5.93	8.80	11.05	13.71	16.94	20.96	26.05	29.14	32.66	41.46	53.57	—
	90	4.90	7.39	9.31	11.55	14.23	17.51	21.56	23.97	26.68	33.26	41.90	53.62
	100	—	6.15	7.79	9.69	11.93	14.63	17.93	19.85	21.99	27.08	33.55	41.95
	110	—	5.06	6.46	8.07	9.96	12.20	14.91	16.47	18.19	22.22	27.21	33.50
	120	—	4.11	5.30	6.66	8.25	10.13	12.36	13.64	15.04	18.28	22.22	—
	130	—	3.29	4.30	5.45	6.79	8.35	10.20	11.25	12.40	15.03	18.18	—
140	—	2.60	3.45	4.41	5.53	6.83	8.36	9.23	10.17	12.31	14.86	—	
155	—	—	—	—	—	—	6.08	6.72	7.42	8.99	—	—	
CSHE152	50	10.61	15.02	18.74	23.48	29.76	38.44	51.03	59.67	—	—	—	—
	60	8.79	12.58	15.66	19.46	24.32	30.72	39.47	45.14	52.01	—	—	—
	70	7.30	10.59	13.20	16.34	20.24	25.20	31.70	35.75	40.50	52.93	—	—
	80	6.03	8.91	11.15	13.79	17.00	20.97	26.00	29.05	32.55	41.31	53.53	—
	90	4.92	7.44	9.38	11.63	14.30	17.55	21.56	23.94	26.62	33.14	41.77	53.62
	100	—	6.15	7.83	9.75	12.01	14.70	17.96	19.86	21.97	26.99	33.39	41.77
	110	—	5.00	6.45	8.10	10.01	12.26	14.95	16.49	18.18	22.14	27.06	33.26
	120	—	3.99	5.24	6.65	8.27	10.16	12.39	13.65	15.03	18.21	22.07	—
	130	—	3.11	4.17	5.38	6.75	8.34	10.19	11.24	12.37	14.95	18.02	—
140	—	2.35	3.25	4.27	5.43	6.76	8.30	9.17	10.10	12.20	14.68	—	
155	—	—	—	—	—	—	5.93	6.58	7.27	8.82	—	—	
CSHE177	50	9.87	14.15	17.77	22.23	27.73	34.53	42.90	47.78	—	—	—	—
	60	8.28	11.94	15.01	18.76	23.37	29.04	36.00	40.04	44.51	—	—	—
	70	6.98	10.10	12.70	15.86	19.72	24.44	30.22	33.56	37.25	45.80	—	—
	80	5.90	8.56	10.75	13.40	16.63	20.56	25.34	28.11	31.15	38.17	46.63	—
	90	4.98	7.23	9.08	11.31	14.00	17.26	21.22	23.50	26.00	31.77	38.68	46.94
	100	—	6.09	7.65	9.51	11.75	14.46	17.73	19.61	21.67	26.39	32.03	38.75
	110	—	5.11	6.41	7.96	9.82	12.06	14.76	16.31	18.00	21.87	26.47	31.93
	120	—	4.24	5.33	6.62	8.16	10.02	12.24	13.51	14.90	18.07	21.82	—
	130	—	3.49	4.39	5.46	6.74	8.27	10.10	11.14	12.28	14.87	17.93	—
140	—	2.83	3.57	4.46	5.51	6.77	8.27	9.12	10.05	12.16	14.65	—	
155	—	—	—	—	—	—	5.99	6.62	7.30	8.84	—	—	

AHRI 10 Coefficients

- Superheat: 20°F
- Subcooling: 15°F
- Equations are of the form:

$$\text{VALUE} = C1 + C2 * T_e + C3 * T_c + C4 * T_e^2 + C5 * T_e * T_c + C6 * T_c^2 + C7 * T_e^3 + C8 * T_e^2 * T_c + C9 * T_e * T_c^2 + C10 * T_c^3$$

Where:

- T_c = Saturated condensing temperature (°F) and
- T_e = Saturated evaporating temperature (°F)

Table 10. CSHE Standard and Low Vi ARI10 UP2 performance map numbers

Compressor Model		Model Numbers	UP2 ID
CSHE071	Low Vi Models	CSHE071K0**C00C00	3407
CSHE088		CSHE088K0**C00C00	3404
CSHE097		CSHE097K0**C00C00	3406
CSHE104		CSHE104K0**C00C00	3405
CSHE113		CSHE113K0**C00C00	3393
CSHE117		CSHE117K0**C00C00	3394
CSHE127		CSHE127K0**C00C00	3401
CSHE132		CSHE132K0**C00C00	3392
CSHE145		CSHE145K0**C00C00	3391
CSHE152		CSHE152K0**C00C00	3402
CSHE177		CSHE177K0**C00C00	3400
CSHE117		Standard Vi Models	CSHE117K0**C00E00
CSHE152	CSHE152K0**C00E00		3361
CSHE177	CSHE177K0**C00E00		3363

Note: Please refer to above UP2 IDs for AHRI coefficients and remaining voltage data (under non-standard voltage option).



Electrical

General Electrical

All compressors include:

- Motor Protection: Internal overload protection
- UL Recognized: File #SA2356
- Crankcase Heater:
 - Required
 - Bellyband 90W line voltage
 - UL file #SA11872
 - UL recognized (SEOT2, SEOT8 - heaters, crankcase and defrost, refrigeration component) to U.S. and Canadian standards.
 - Installation torque: 20-in. lbs minimum, 30-in. lbs maximum

Electrical Data

Table 11. Electrical data

Compressor CSHExXX	Primary/ Secondary Voltage ^(a)	LRA	MCC ^(b)	RLA ^(c)	IMAX ^(d)
CSHE071	460/60/3	98	22	16	14
CSHE088	460/60/3	98	22	16	18
CSHE097	460/60/3	142	23	16	22
CSHE104	460/60/3	142	27	19	21
CSHE113	460/60/3	142	29	21	23
CSHE117	460/60/3	142	29	21	22
CSHE127	460/60/3	147	30	21	27
CSHE132	460/60/3	147	33	24	28
CSHE145	460/60/3	158	33	24	30
CSHE152	460/60/3	158	33	23	28
CSHE177	460/60/3	155	39	28	33

^(a) Voltage utilization ranges:
 200/230/60/3: 180-253V
 460/60/3 380-415/50/3: 414-506/342-457
 575/60/3 500/50/3: 518-632
 380/50/3: 342-418

^(b) MCC = Maximum Continuous Current (maximum current at which the compressor will operate).

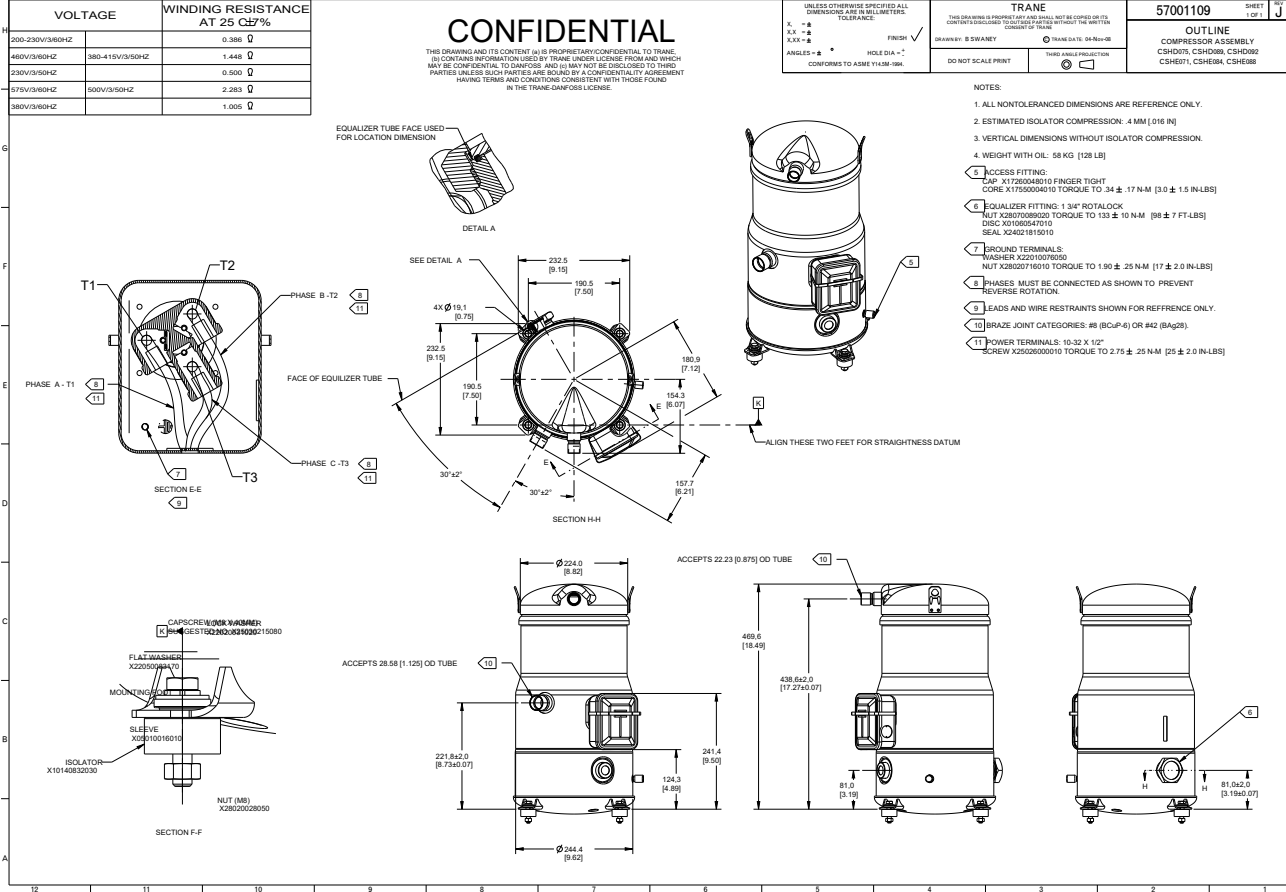
^(c) RLA = Rated Load Amperage (MCC/140). Unit compressor RLA cannot be less than the compressor RLA.

^(d) IMAX = Max current @ 59°F SST/155°F SCT/20°F SH/15°F SC, 115°F ambient and 10% undervoltage.

Dimensional Data

Figure 4. Dimensions — CSHE071 and CSHE088

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Dimensional Data

Figure 5. Dimensions — CSHE97 and CSHE104

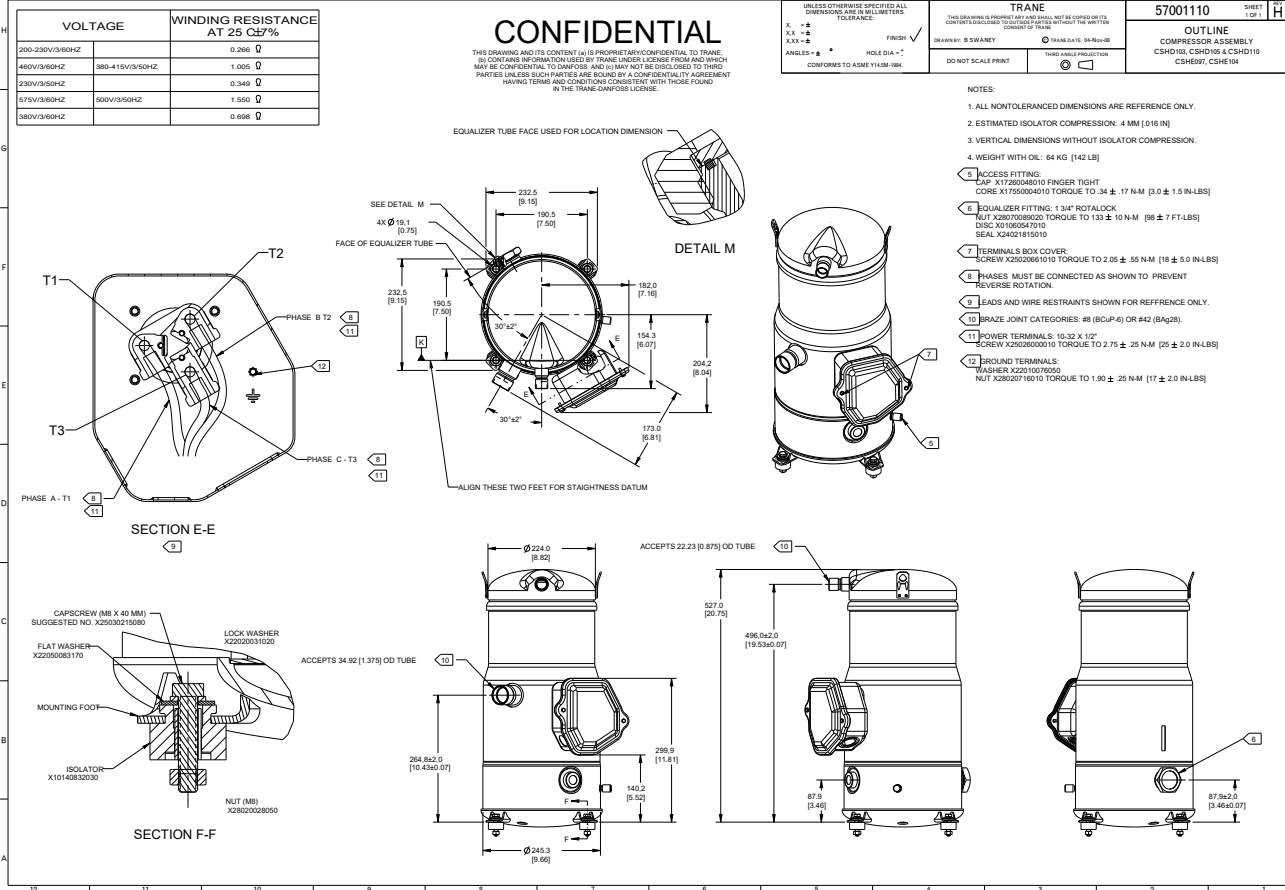
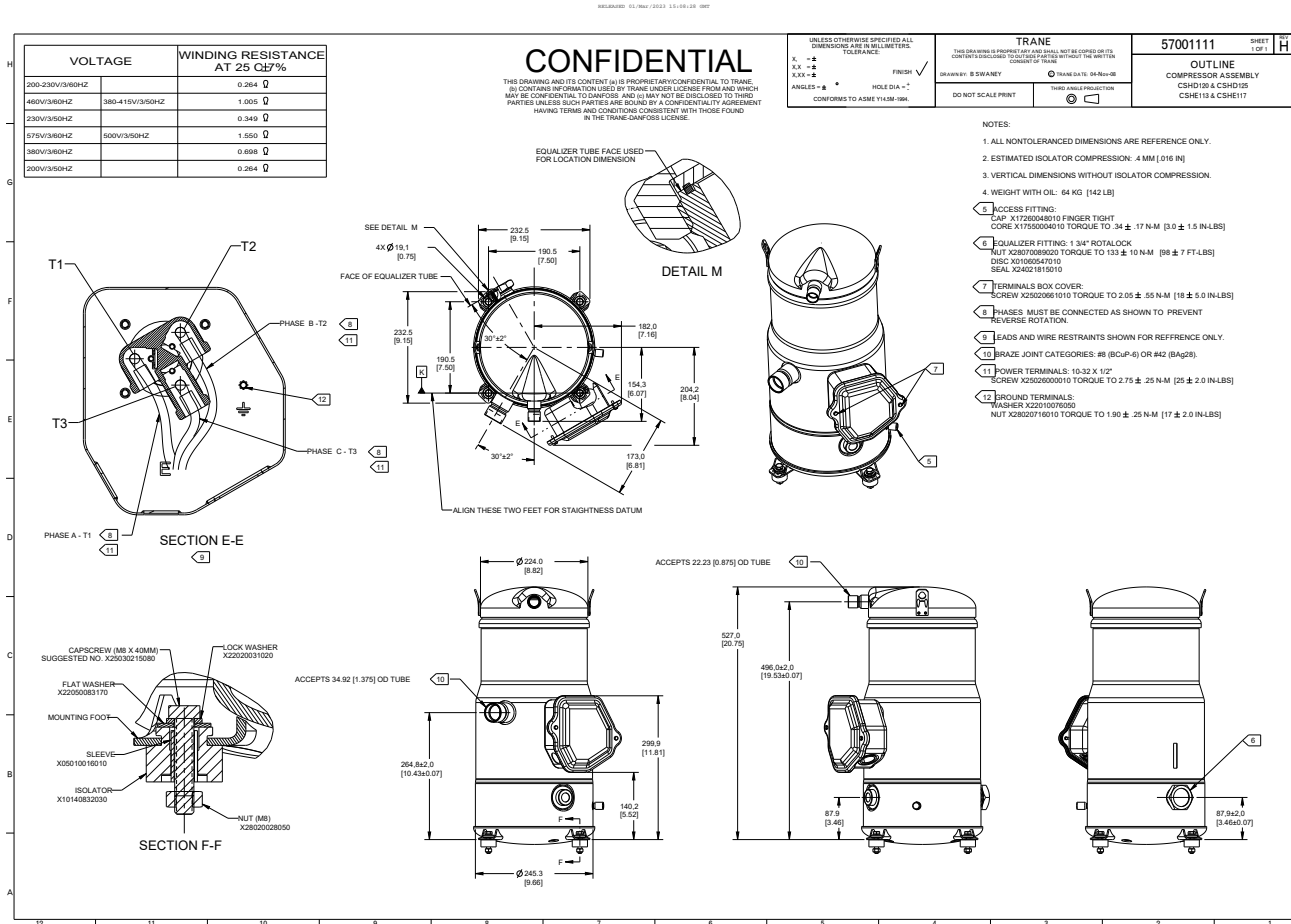


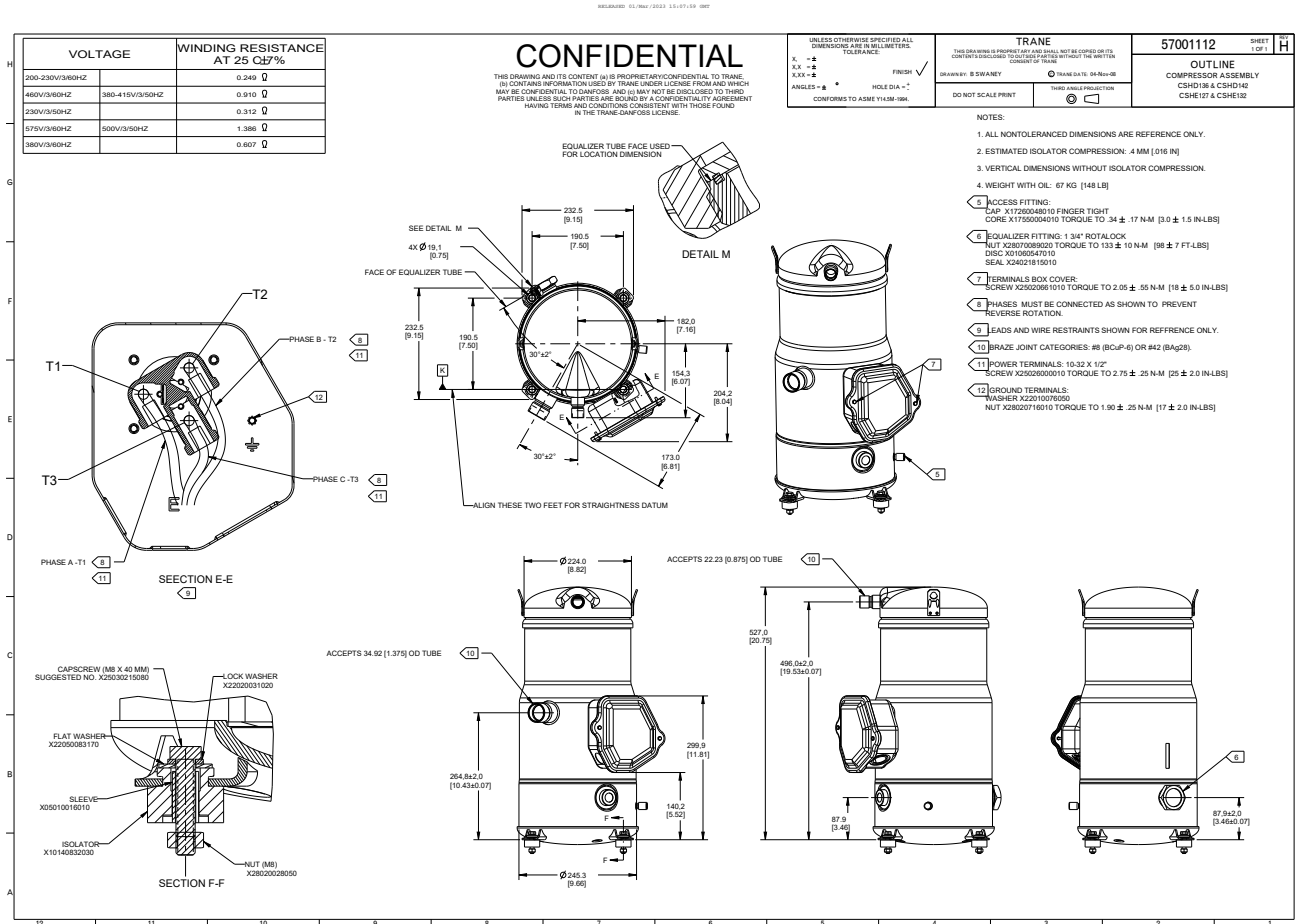
Figure 6. Dimensions — CSHE113 and CSHE117





Dimensional Data

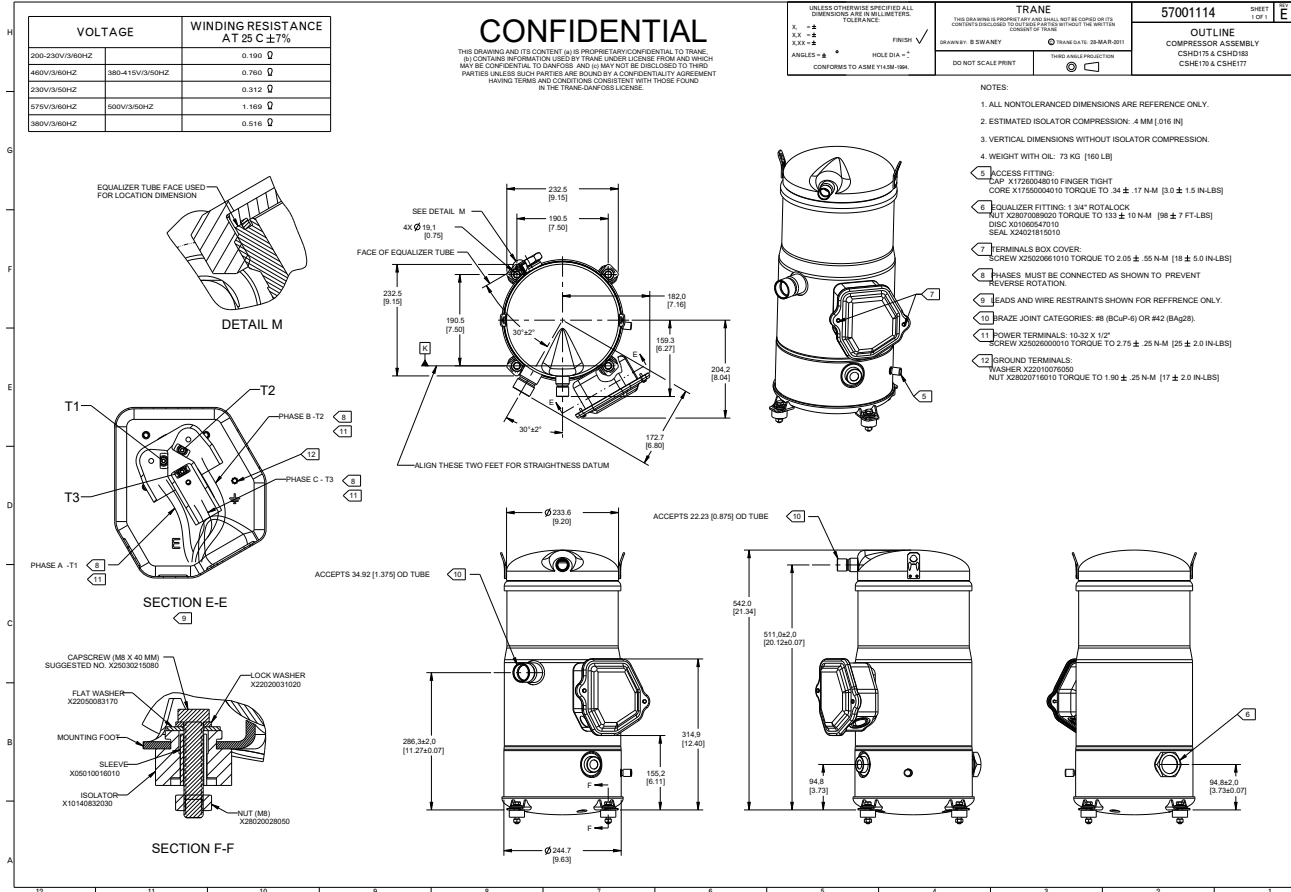
Figure 7. Dimensions — CSHE127 and CSHE132





Dimensional Data

Figure 9. Dimensions — CSHE177





Weights

Table 12. Weights

Compressor	Weight with oil	
	lb	kg
CSHE071	128	58
CSHE088	128	58
CSHE097	142	64
CSHE104	142	64
CSHE113	142	64
CSHE117	142	64
CSHE127	148	67
CSHE132	148	67
CSHE145	152	69
CSHE152	152	69
CSHE177	160	73

Note: Weights include oil charge.



Notes

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