

*SNOWMAN CO., LTD.*

## SP & SB SERIES

Reciprocating Compressors

SPSeries 3-70Hp, 17-222m<sup>3</sup>/h, 50Hz

2-Stage Reciprocating Compressors

SBSeries 12-30Hp, 43-103m<sup>3</sup>/h, 50Hz



**RefComp**

# MODEL DESIGNATION

2

Series SP  
Series SB

COMPRESSOR	S	P	8	H	N	6000
	S	P	4	L	F	080E
	S	B	4			1400

COMPRESSOR TYPE	
	Semi-hermetic

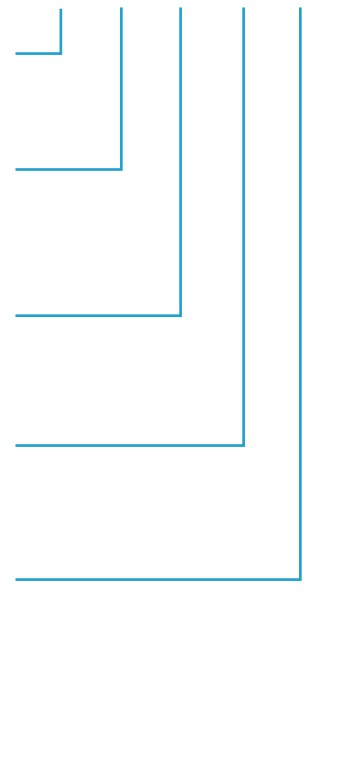
SERIES	
SP	Reciprocating compressor
SB	Reciprocating compressor double stage

N° OF CYLINDERS	
	SP Series: 2 - 4 - 6 - 8
	SB Series: 4 - 6 - 8

MOTOR SIZE (ONLY SP SERIES)	
H	Full size electrical motor
L	Small size electrical motor

LUBRICATION (ONLY SP SERIES )	
F	Pressure lubrication (with oil pump)
N	Splasher lubrication (without oil pumps)

NOMINAL MOTOR POWER Hp X 100	
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(1) Only for 4-cylinder models from 10 to 20 [Hp] (in H version) and from 6 to 12 [Hp] (in L version)

(2) Last digit replaced with "E" letter for compressor with POE oil

# INTRODUCTION

## SP SERIES

The so many applications in which the semi-hermetic reciprocating compressors are involved comprise the commercial / industrial refrigeration field and, although more rarely, also specific air-conditioning projects.

Our SP series compressors fit perfectly most of such a wide variety of applications. Although already known for its high quality and reliable reciprocating compressors, RefComp has continued to invest in research and new technology, so as to improve constantly also this range. Which is now characterized by extremely high efficiency and silentness; can be used in enlarged application envelopes and comprise new smaller and larger sizes. Precisely, nowadays, the SP series consist of 34 models, with 2, 4, 6 or 8 cylinders. Its nominal power and displacement range from 3 to 70 [Hp] and from 17,5 to 222 [m<sup>3</sup>/h] at 50 [Hz], respectively.

## SB SERIES

Two-stage semi-hermetic reciprocating compressors with high efficiency, robustness, compactness, reduced vibrations and minimum dead space. Through the two-stage compressors the final discharge pressure is achieved with two subsequent compression stages. In the first stage the gas is sucked from the evaporator, compressed and sent to an intermediate chamber from which it will be sent to the second compression stage, reaching then the final pressure. This way, the two compression ratios are way lower than that of a hypothetical single stage, granting thus a lower discharge temperature and a higher efficiency in comparison to that solution.

# TECHNICAL DATA

4

Series SP  
Series SB

MODEL SP		H (FULL SIZE MOTOR)					
		SP2H				SP4HF / SP4HN	
		0500	0600	0800	0900	1000	1200
Nominal motor power	[Hp/kW]	5 / 3,7	6 / 4,4	8 / 5,9	9 / 6,6	10 / 7,5	12 / 8,9
Displacement at 50/60 [Hz]	[m <sup>3</sup> /hr]	17,5 / 21	21 / 25,7	24,5 / 29,4	28 / 33,6	35 / 42	42 / 50,4
N° of cylinders		2	2	2	2	4	4
Weight	[Kg]	86	87	87	91	143	146
Oil charge	[dm <sup>3</sup> ]	1,8	1,8	1,8	1,8	2,6	2,6
Crankcase heater		230 [V]-120 [W]-PTC 50/60 [Hz]				230 [V]-220 [W] 50/60[Hz]	
Discharge line, internal Ø	[mm/ inches]	16 / 5/8"	16 / 5/8"	22 / 7/8"	22 / 7/8"	22 / 7/8"	28 / 1"1/8
Suction line, internal Ø	[mm/ inches]	28 / 1"1/8	28 / 1"1/8	28 / 1"1/8	28 / 1"1/8	28 / 1"1/8	35 / 1"3/8
Capacity control steps		-	-	-	-	100, 50%	100, 50%
Standard motor (part winding)		Δ230 [V]/3/50[Hz] Y400 [V]/3/50[Hz]				400 [V] /3/50 [Hz] 460 [V] /3/60 [Hz] <sup>(1)</sup> P W	
Starting current PW/DOL	[A]	-- / 54	-- / 60	-- / 85	-- / 97	71 / 110	75 / 125
Starting current Y/ D	[A]	54 / --	60 / --	85 / --	97 / --	--	--
Max running current	[A]	12	14	16	20	24	27

MODEL SP		L (SMALL SIZE MOTOR)					
		SP2L				SP4LF/SP4LN	
		0300	0400	0500	0600	0600	0800
Nominal motor power	[Hp/kW]	3 / 2	4 / 3	5 / 3,7	6 / 4,4	6 / 4,5	8 / 5,9
Displacement at 50/60 [Hz]	[m <sup>3</sup> /hr]	17,5 / 21	21 / 25,7	24,5 / 29,4	28 / 33,6	35 / 42	42 / 50,4
N° of cylinders		2	2	2	2	4	4
Weight	[Kg]	84	85	85	86	134	139
Oil charge	[dm <sup>3</sup> ]	1,8	1,8	1,8	1,8	2,6	2,6
Crankcase heater		230 [V]-120 [W]-PTC 50/60 [Hz]				230 [V]-220 [W] 50/60[Hz]	
Discharge line, internal Ø	[mm/ inches]	16 / 5/8"	16 / 5/8"	22 / 7/8"	22 / 7/8"	22 / 7/8"	28 1"1/8
Suction line, internal Ø	[mm/ inches]	28 / 1"1/8	28 / 1"1/8	28 / 1"1/8	28 / 1"1/8	28 / 1"1/8	35 1"3/8
Capacity control steps		-	-	-	-	100, 50%	100, 50%
Standard motor (part winding)		Δ230 [V]/3/50[Hz] Y400 [V]/3/50[Hz]				400 [V] /3/50 [Hz] 460 [V] /3/60 [Hz] <sup>(1)</sup> P W	
Starting current PW/DOL	[A]	-- / 35	-- / 49	-- / 54	-- / 60	43 / 70	54 / 88
Starting current Y/ D	[A]	35 / --	49 / --	54 / --	60 / --	--	--
Max running current	[A]	9	10	12	14	16	19

(1) Voltage tolerance ± 10%

H (FULL SIZE MOTOR)										
SP4HF / SP4HN		SP4H				SP6H			SP8H	
1500	2000	2200	2500	3000	3500	3700	4000	5000	6000	7000
150E	200E	220E	250E	300E	350E	370E	400E	500E	600E	700E
15 / 11,2	20 / 14,9	22 / 16,4	25 / 18,7	30 / 22,4	35 / 26,1	37 / 27,6	40 / 29,9	50 / 37,3	60 / 45	70 / 52
49 / 58,8	56 / 67,2	64,7 / 77,6	75 / 90	86,1 / 103,3	102,9 / 123,5	112,5 / 135	129,1 / 154,9	154,4 / 185,3	186 / 224	222 / 268
4	4	4	4	4	4	6	6	6	8	8
152	155	193	206	209	238	241	246	250	345	350
2,6	2,6	3,7	3,7	3,7	3,7	4,2	4,2	4,2	5	5
230 [V] -220 [W] 50/60 [Hz]		230 [V] -150 [W] -50/60 [Hz]							230 [V] -200 [W] -50/60 [Hz]	
28 / 1"1/8	28 / 1"1/8	28 - 1 1/8"	28 - 1 1/8"	28 - 1 1/8"	35 - 1 3/8"	35 - 1 3/8"	35 - 1 3/8"	42 - 1 5/8"	54 / 2"1/8	54 / 2"1/8
42 / 1"5/8	42 / 1"5/8	42 - 1 5/8"	54 - 2 1/8"	54 - 2 1/8"	54 - 2 1/8"	54 - 2 1/8"	54 - 2 1/8"	54 - 2 1/8"	67 / 2" 5/8	67 / 2" 5/8
100, 50%	100, 50%	100,50%	100,50%	100,50%	100,50%	100,66,33%	100,66,33%	100,66,33%	100,75,50%	100,75,50%
400 [V] /3/50 [Hz] 460 [V] /3/60 [Hz] <sup>(1)</sup> P W		400 [V] /3/50 [Hz] - 460 [V] /3/60 [Hz] <sup>(1)</sup> . . . .							400 [V] /3/50 [Hz] 460 [V] /3/60 [Hz] <sup>(1)</sup> P W	
86 / 144	106 / 168	102 / 170	123 / 201	150 / 243	178 / 290	178 / 290	201 / 330	233 / 394	271 / 361	329 / 439
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33	40	37	43	52	56	60	75	93	115	140

L (SMALL SIZE MOTOR)										
SP4LF / SP4LN		SP4L				SP6L			SP8L	
1000	1200	1500	1800	2200	2500	2700	3000	4000	5000	6000
100E	120E	150E	180E	220E	250E	270E	300E	400E	500E	600E
10 / 7,5	12 / 8,9	15 / 11,2	18 / 13,3	22 / 16,4	25 / 18,7	27 / 20,2	30 / 22,4	40 / 29,9	50 / 37	60 / 45
49 / 58,8	56 / 67,2	64,7 / 77,6	75 / 90	86,1 / 103,3	102,9 / 123,5	112,5 / 135	129,1 / 154,9	154,4 / 185,3	186 / 224	222 / 268
4	4	4	4	4	4	6	6	6	8	8
144	146	182	186	195	220	230	236	247	340	345
2,6	2,6	3,7	3,7	3,7	3,7	4,2	4,2	4,2	5	5
230 [V] -220 [W] 50/60 [Hz]		230 [V] -150 [W] -50/60 [Hz]							230 [V] -200 [W] -50/60 [Hz]	
28 1"1/8	28 1"1/8	28 - 1 1/8"	28 - 1 1/8"	28 - 1 1/8"	35 - 1 3/8"	35 - 1 3/8"	35 - 1 3/8"	42 - 1 5/8"	54 / 2"1/8	54 / 2"1/8
35 1"3/8	35 1"3/8	42 - 1 5/8"	42 - 1 5/8"	54 - 2 1/8"	54 - 2 1/8"	54 - 2 1/8"	54 - 2 1/8"	54 - 2 1/8"	67 / 2" 5/8	67 / 2" 5/8
100, 50%	100, 50%	100,50%	100,50%	100,50%	100,50%	100,66,33%	100,66,33%	100,66,33%	100,75,50%	100,75,50%
400 [V] /3/50 [Hz] 460 [V] /3/60 [Hz] <sup>(1)</sup> P W		400 [V] /3/50 [Hz] - 460 [V] /3/60 [Hz] <sup>(1)</sup> . . . .							400 [V] /3/50 [Hz] 460 [V] /3/60 [Hz] <sup>(1)</sup> P W	
71 / 110	75 / 125	88 / 146	102 / 170	102 / 170	123 / 201	123 / 201	150 / 243	201 / 330	237 / 316	271 / 361
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24	27	29	33	39	43	48	54	75	97	115

(1) Voltage tolerance  $\pm 10\%$

# TECHNICAL DATA

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Series SP  
Series SB

MODEL SB		SB4-1200	SB4-1400	SB6-1600	SB6-2000	SB6-2500	SB6-3000
		SB4-120E	SB4-140E	SB6-160E	SB6-200E	SB6-250E	SB6-300E
Nominal motor power	[Hp/kW]	18/8,8	14/10,3	16/11,8	20/14,7	25/18,4	30/22,1
Displacement at 50 [Hz] - LP/HP	[m <sup>3</sup> /hr]	43 / 27,6	51,5 / 27,6	64,7 / 32,4	75 / 37,5	86,1 / 43	102,9 / 51,5
N° of cylinders		4	4	6	6	6	6
Weight	[Kg]	202	206	215	225	235	242
Oil charge	[dm <sup>3</sup> ]	3,7	3,7	4,2	4,2	4,2	4,2
Crankcase heater		230 [V] - 150 [W] - 50/60 [Hz]					
Discharge line, internal Ø	[mm/ inches]	28 1" 1/8	28 1" 1/8	35 1" 3/8	35 1" 3/8	42 1" 5/8	42 1" 5/8
Suction line, internal Ø	[mm]/ ± 10%	35 1" 3/8	35 1" 3/8	42 1" 5/8	42 1" 5/8	42 1" 5/8	42 1" 5/8
Standard motor (part winding)		400 / 3 / 50 [Hz] <sup>(1)</sup>					
Locked rotor amperage LRA (A)	[A]	74/123	88/146	88/146	102/170	123/201	150/243
Max absorbed power (kW)	[kW]	15	20	22	26	29	33
Max running current	[A]	27	34	39	46	50	55

(1) Voltage tolerance ± 10%

# BENEFITS

## FLEXIBILITY FOR A WIDE RANGE OF APPLICATIONS

### SP SERIES

- This series can be used with R22, and with the chlorine-free refrigerants R407C, R134a, R404A and R507 as well without making it necessary any mechanical changes.
- Developed specifically for air-conditioning and refrigeration applications at mid or low evaporating temperatures, this range can work up to 80 [°C] condensing temperature with R134a and down to -40 [°C] evaporating temperature with R22 or R404A or R507.
- It is available either with “full size” (H) electric motors - for air conditioning systems - or with “small size” (L) electric motors - for refrigeration systems.

### SB SERIES

- Two-stage semi-hermetic reciprocating compressors, suitable for R22, R404A-R507 refrigerants.
- To further improve the efficiency of the compressor, it is possible to install a subcooler (as option - already fitted or not). This way the gas contained in the intermediate chamber is cooled down by the injection of liquid refrigerant before the second compression stage occurs.
- The lubrication is assured by an oil pump and a Venturi internal oil recovery system. It is protected by a high efficiency oil filter and can be monitored by means of differential pressure switches.
- Electrical motor provided with an electronic protection device based on temperature control and generously selected to grant the best performances, safety and reliability.
- Suction and discharge plate equipped with reed valves and made of specific materials for low temperature applications.

EFFICIENCY

OPTIMIZED LUBRICATION

RELIABILITY AND OPERATING SAFETY

LOUDNESS AND STABILITY

COMPACTNESS AND INSTALLATION  
SIMPLICITY

EASY MAINTENANCE

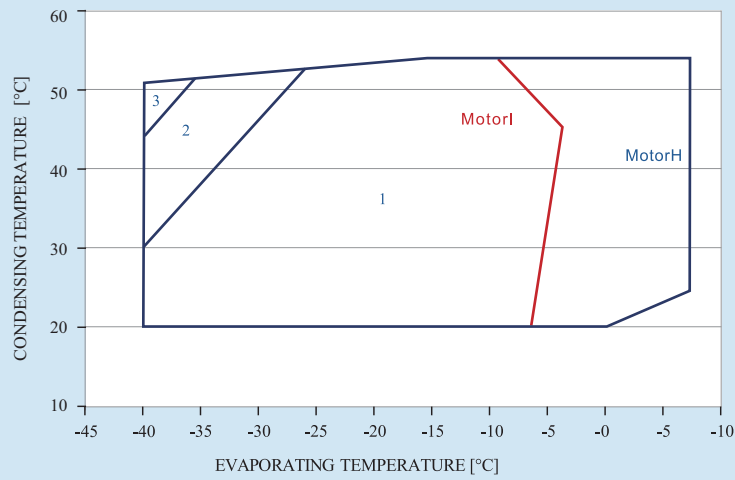
# ENVELOPE

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Series SP  
Series SB

## SP Series

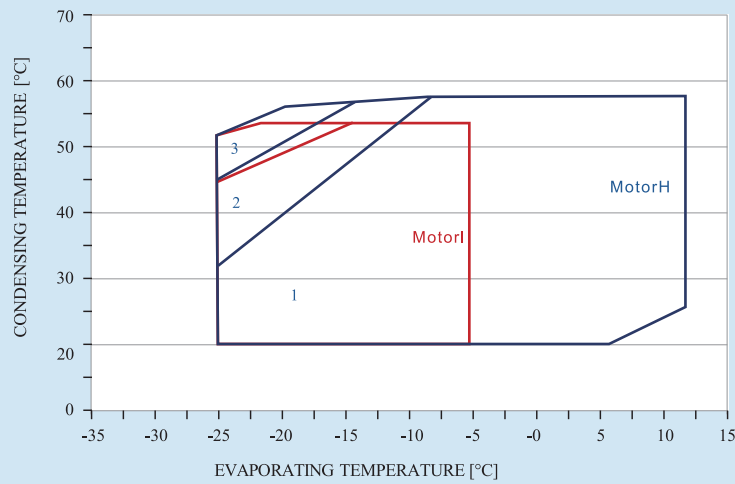
### R404A - R507 APPLICATION LIMITS



Limits refer to full load operation

- 1 = Standard applications (25 [°C] suction gas temperature)
- 2 = Additional cooling
- 3 = Additional cooling + 20 [K] max DT suction gas superheat

### R407C APPLICATION LIMITS



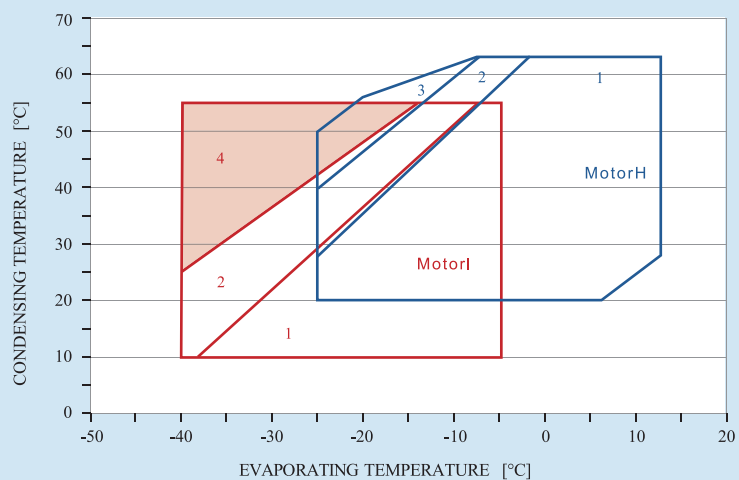
Limits refer to full load operation

- 1 = Standard applications (25 [°C] suction gas temperature)
- 2 = Additional cooling
- 3 = Additional cooling + 20 [K] max DT suction gas superheat



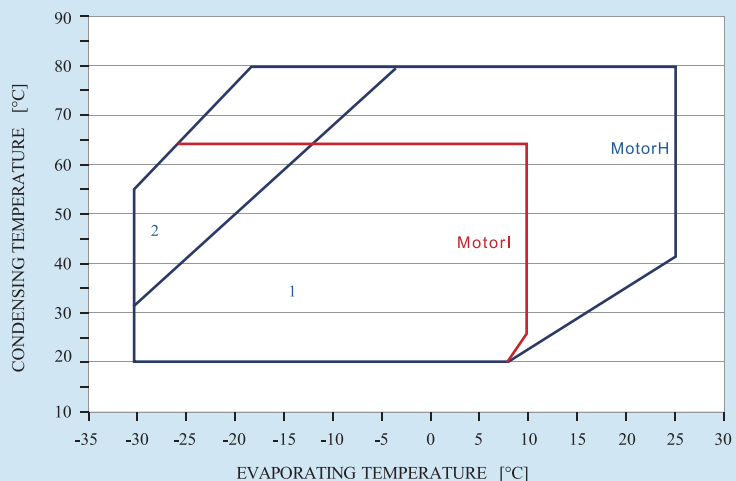
# ENVELOPE

## R22 APPLICATION LIMITS



- Limits refer to full load operation
- 1 = Standard applications (25 [°C] suction gas temperature)
  - 2 = Additional cooling
  - 3 = Additional cooling + 20 [K] max DT suction gas superheat
  - 4 = Additional cooling + liquid injection LCM  
(Not applicable for SP8H...SP8L models)

## R134a APPLICATION LIMITS



- Limits refer to full load operation
- 1 = Standard applications (25 [°C] suction gas temperature)
  - 2 = Additional cooling

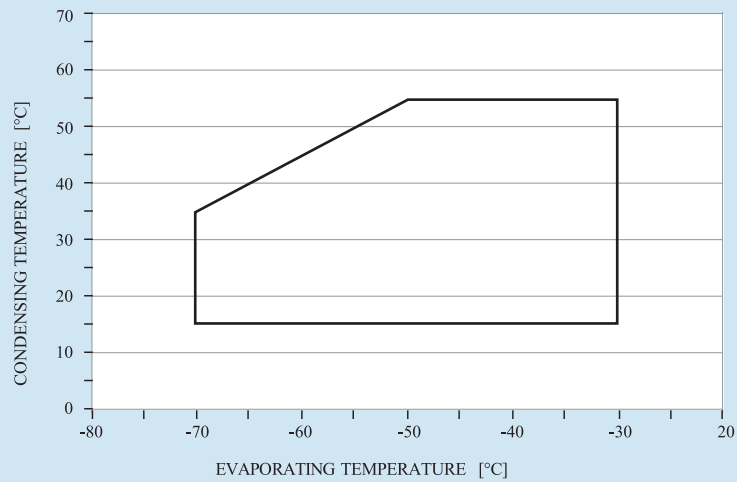
# ENVELOPE

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Series SP  
Series SB

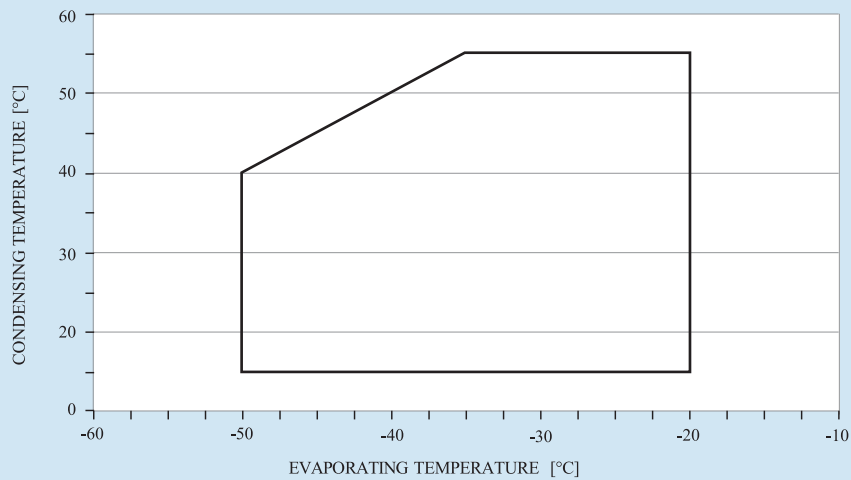
## SB Series

### R404A - R507 APPLICATION LIMITS



Limits refer to full load operation  
Suction gas superheat = 20 [°C]

### R22 APPLICATION LIMITS



Limits refer to full load operation  
Suction gas superheat = 20 [°C]

# INTRODUCTION

## SP-H, Refrigerant R22

SP2-H-0500								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	5.1	2.4	4.4	2.5	3.7	2.5	-	-
-20	6.8	2.7	5.8	2.9	4.9	3.0	-	-
-15	8.7	3.0	7.6	3.3	6.4	3.5	-	-
-10	10.9	3.3	9.6	3.6	8.2	3.9	6.8	4.2
-5	13.4	3.5	11.8	3.9	10.3	4.3	8.7	4.7
0	16.2	3.6	14.4	4.2	12.6	4.7	10.8	5.2
5	19.3	3.7	17.3	4.4	15.3	5.0	13.3	5.6
10	22.8	3.8	20.6	4.6	18.3	5.3	16.1	6.0

SP2-H-0600								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	6.1	2.8	5.3	2.9	4.4	3.0	-	-
-20	8.1	3.2	7.0	3.4	5.9	3.6	-	-
-15	10.4	3.6	9.1	3.9	7.7	4.2	-	-
-10	13.1	3.9	11.5	4.3	9.8	4.7	6.2	5.0
-5	16.1	4.2	14.2	4.7	12.3	5.2	10.4	5.6
0	19.4	4.3	17.3	5.0	15.2	5.6	13.0	6.2
5	23.2	4.5	20.8	5.2	18.4	6.0	16.0	6.7
10	27.3	4.5	24.7	5.4	22.0	6.3	19.3	7.2

SP2-H-0800								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	7.1	3.3	6.1	3.4	5.1	3.4	-	-
-20	9.5	3.8	8.2	4.0	6.9	4.2	-	-
-15	12.2	4.2	10.6	4.5	9.0	4.8	-	-
-10	15.3	4.5	13.4	5.0	11.5	5.4	9.5	5.8
-5	18.8	4.8	16.6	5.4	14.4	6.0	12.1	6.5
0	22.7	5.0	20.2	5.8	17.7	6.5	15.1	7.2
5	27.0	5.2	24.3	6.1	21.4	7.0	18.6	7.8
10	31.9	5.2	28.8	6.3	25.7	7.3	22.5	8.4

SP2-H-0900								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	8.1	3.7	7.0	3.9	5.9	3.9	-	-
-20	10.8	4.3	9.3	4.6	7.8	4.7	-	-
-15	13.9	4.8	12.1	5.2	10.3	5.5	-	-
-10	17.5	5.2	15.3	5.7	13.1	6.2	10.9	6.6
-5	21.5	5.5	19.0	6.2	16.4	6.8	13.9	7.4
0	25.9	5.7	23.1	6.6	20.2	7.4	17.3	8.2
5	30.9	5.9	27.7	6.9	24.5	7.9	21.3	8.9
10	36.4	6.0	32.9	7.2	29.3	8.4	25.8	9.5

SP4-HF-1000/SP4-HN-1000								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	10.2	4.1	8.8	4.2	7.3	4.3	-	-
-20	13.5	4.7	11.7	5.0	9.8	5.2	-	-
-15	17.4	5.2	15.1	5.7	12.8	6.0	-	-
-10	21.8	5.7	19.1	6.3	16.4	6.8	13.6	7.2
-5	26.8	6.0	23.7	6.8	20.5	7.5	17.3	8.1
0	32.4	6.3	28.9	7.2	25.3	8.1	21.6	8.9
5	38.6	6.4	34.7	7.6	30.6	8.6	26.6	9.7
10	45.5	6.5	41.1	7.8	36.7	9.1	32.2	10.4

SP4-HF-1200/SP4-HN-1200								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	12.2	4.9	10.5	5.1	8.8	5.1	-	-
-20	16.2	5.6	14.0	6.0	11.8	6.2	-	-
-15	20.9	6.3	18.2	6.8	15.4	7.2	-	-
-10	26.2	6.8	22.9	7.5	19.6	8.1	16.4	8.6
-5	32.2	7.2	28.4	8.1	24.6	9.0	20.8	9.7
0	38.9	7.5	34.6	8.6	30.3	9.7	26.0	10.7
5	46.4	7.7	41.6	9.1	36.8	10.4	31.9	11.6
10	54.6	7.8	49.4	9.4	44.0	11.0	38.6	12.5

SP4-HF-1500/SP4-HN-1500								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	14.2	5.7	12.3	5.9	10.3	6.0	-	-
-20	18.9	6.5	16.4	7.0	13.7	7.2	-	-
-15	24.4	7.3	21.2	7.9	17.9	8.4	-	-
-10	30.5	7.9	26.8	8.8	22.9	9.5	19.1	10.1
-5	37.5	8.4	33.2	9.5	28.7	10.5	24.3	11.3
0	45.4	8.8	40.4	10.1	35.4	11.3	30.3	12.5
5	54.1	9.0	48.5	10.6	42.9	12.1	37.2	13.6
10	63.7	9.1	57.6	11.0	51.3	12.8	45.1	14.6

SP4-HF-2000/SP4-HN-2000								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	16.3	6.5	14.0	6.8	11.7	6.8	-	-
-20	21.6	7.5	18.7	8.0	15.7	8.3	-	-
-15	27.8	8.3	24.2	9.0	20.5	9.6	-	-
-10	34.9	9.0	30.6	10.0	26.2	10.8	21.8	11.5
-5	42.9	9.6	37.9	10.8	32.8	11.9	27.7	13.0
0	51.9	10.0	46.2	11.5	40.4	12.9	34.6	14.3
5	61.8	10.3	55.5	12.1	49.0	13.8	42.5	15.5
10	72.8	10.4	65.8	12.5	58.7	14.6	51.5	16.4

SP4-H-2200								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	18.7	7.8	16.4	8.8	14.2	9.6	-	-
-20	23.9	8.9	21.0	10.1	18.2	11.1	-	-
-15	30.3	9.8	26.8	11.2	23.4	12.4	-	-
-10	38.0	10.6	33.8	12.2	29.8	13.7	25.9	15.2
-5	47.1	11.3	42.1	13.0	37.3	14.9	32.7	16.8
0	57.4	11.9	51.7	13.8	46.1	15.9	40.7	18.3
5	69.1	12.3	62.4	14.5	56.0	16.9	49.7	19.6
10	82.2	12.6	74.5	15.0	67.1	17.8	59.9	21.0

SP4-H-2500								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	21.7	9.0	19.0	10.3	16.4	11.1	-	-
-20	27.7	10.3	24.3	11.7	21.1	12.8	-	-
-15	35.1	11.4	31.1	13.0	27.2	14.4	-	-
-10	44.1	12.3	39.2	14.1	34.6	15.9	30.1	17.7
-5	54.6	13.1	48.8	15.1	43.3	17.2	38.0	19.5
0	66.6	13.8	59.9	16.0	53.4	18.5	47.2	21.2
5	80.2	14.3	72.4	16.8	64.9	19.6	57.6	22.8
10	95.3	14.7	86.4	17.4	77.8	20.7	69.4	24.3

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Series SP  
Series SB

SP4-H-3000								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	24.9	10.4	21.8	11.8	18.8	12.7	-	-
-20	31.7	11.8	27.9	13.4	24.2	14.7	-	-
-15	40.3	13.1	35.6	14.9	31.2	16.5	-	-
-10	50.6	14.1	45.0	16.2	39.6	18.2	34.5	20.3
-5	62.6	15.0	56.0	17.3	49.7	19.8	43.5	22.3
0	76.4	15.8	68.7	18.4	61.3	21.2	54.1	24.3
5	92.0	16.4	83.1	19.2	74.4	22.5	66.1	26.1
10	109.3	16.8	99.1	20.0	89.2	23.7	79.6	27.9

SP4-H-3500								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	29.8	12.4	26.1	14.1	22.5	15.2	-	-
-20	37.9	14.1	33.4	16.0	29.0	17.6	-	-
-15	48.2	15.6	42.6	17.8	37.3	19.8	-	-
-10	60.5	16.9	53.8	19.3	47.4	21.8	41.2	24.2
-5	74.8	18.0	67.0	20.7	59.4	23.6	52.0	26.7
0	91.3	18.9	82.1	22.0	73.2	25.3	64.6	29.0
5	109.9	19.6	99.3	23.0	89.0	26.9	79.0	31.2
10	130.7	20.1	118.5	23.9	106.6	28.3	95.2	33.3

SP6-H-3700								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	32.6	13.6	28.5	15.4	24.6	16.7	-	-
-20	41.5	15.4	36.5	17.5	31.7	19.3	-	-
-15	52.7	17.1	46.6	19.5	40.8	21.6	-	-
-10	66.2	18.5	58.9	21.2	51.9	23.9	45.1	26.5
-5	81.9	19.7	73.3	22.7	65.0	25.9	57.0	29.2
0	99.9	20.6	89.9	24.0	80.1	27.7	70.7	31.8
5	120.3	21.4	108.7	25.2	97.4	29.4	86.5	34.2
10	143.0	22.0	129.6	26.2	116.7	31.0	104.1	36.5

SP6-H-4000								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	37.5	15.6	32.8	17.7	28.3	19.2	-	-
-20	47.7	17.7	42.0	20.2	36.4	22.1	-	-
-15	60.6	19.6	53.6	22.4	46.9	24.9	-	-
-10	76.1	21.2	67.7	24.3	59.6	27.4	54.8	30.5
-5	94.1	22.6	84.2	26.1	74.7	29.7	65.5	33.6
0	114.9	23.7	103.3	27.6	92.1	31.9	81.3	36.5
5	138.3	24.6	124.9	28.9	111.9	33.8	99.4	39.3
10	164.4	25.3	149.0	30.1	134.1	35.6	119.7	41.9

SP6-H-5000								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	44.8	18.6	39.2	21.1	38.8	22.9	-	-
-20	57.0	21.2	50.2	24.1	43.5	26.5	-	-
-15	72.4	23.5	64.0	26.7	56.0	29.7	-	-
-10	90.9	25.4	80.9	29.1	71.2	32.8	61.9	36.4
-5	112.5	27.0	100.7	31.2	89.2	35.5	78.2	40.1
0	137.3	28.4	123.4	33.0	110.1	38.1	97.2	43.6
5	165.3	29.4	149.2	34.6	133.7	40.4	118.8	47.0
10	196.4	30.2	178.1	35.9	160.3	42.6	143.1	50.1

SP8-H-6000								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	59.8	23.3	47.6	24.9	40.3	26.0	-	-
-20	74.6	25.9	61.7	28.2	53.5	30.0	-	-
-15	91.9	28.2	78.1	31.3	68.6	33.9	-	-
-10	112.2	30.3	97.2	34.2	86.1	37.6	73.9	40.4
-5	135.8	32.1	119.3	36.8	106.3	41.0	91.9	44.8
0	163.1	33.6	144.8	39.2	129.7	44.3	112.7	49.0
5	194.5	34.8	174.1	41.3	156.5	47.3	136.6	53.0
10	230.3	35.7	207.5	43.1	187.1	50.1	164.1	56.8

SP8-H-7000								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	71.4	27.8	56.8	29.8	48.1	31.0	-	-
-20	89.0	30.9	73.7	33.7	63.8	35.8	-	-
-15	109.7	33.7	93.3	37.4	81.9	40.4	-	-
-10	133.9	36.2	116.0	40.8	102.8	44.8	88.2	48.3
-5	162.1	38.3	142.4	44.0	126.9	49.0	109.7	53.5
0	194.7	40.1	172.9	46.8	154.8	52.9	134.5	58.5
5	232.1	41.6	207.8	49.3	186.7	56.5	163.1	63.3
10	274.9	42.7	247.6	51.5	223.3	59.8	195.8	67.8

KEY

Pf = cooling capacity (kW)  
 Pa = input power (kW)  
 Te = evaporating temperature (°C)  
 Tc = condensing temperature (°C)  
 50Hz = frequency  
 Liquid subcooling 5K  
 Suction gas superheat 10K

Identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program

# INTRODUCTION

## SP-L, Refrigerant R22

SP2-L-0300								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	1.5	1.7	1.5	1.5	1.3	1.5	1.0	1.5
-35	2.5	1.9	2.3	1.9	1.9	1.9	1.6	2.0
-30	3.6	2.1	3.3	2.2	2.8	2.4	2.4	2.5
-25	5.1	2.4	4.5	2.5	3.8	2.8	3.5	2.9
-20	6.7	2.6	5.9	2.9	5.1	3.2	4.7	3.4
-15	8.6	2.8	7.6	3.2	6.6	3.6	6.1	3.8
-10	10.7	3.0	9.5	3.5	8.4	4.0	7.8	4.2
-5	13.0	3.3	11.6	3.8	10.3	4.4	9.7	4.7

SP2-L-0400								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	1.8	2.0	1.8	1.8	1.5	1.8	1.2	1.8
-35	3.0	2.3	2.8	2.2	2.3	2.3	2.0	2.4
-30	4.4	2.5	4.0	2.6	3.3	2.8	2.9	3.0
-25	6.1	2.8	5.4	3.0	4.6	3.3	4.2	3.5
-20	8.0	3.1	7.1	3.4	6.2	3.8	5.6	4.0
-15	10.3	3.4	9.1	3.8	8.0	4.3	7.4	4.6
-10	12.8	3.6	11.4	4.2	10.0	4.8	9.4	5.1
-5	15.6	3.9	13.9	4.6	12.4	5.2	11.6	5.6

SP2-L-0500								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	2.1	2.4	2.1	2.1	1.8	2.1	1.4	2.1
-35	3.4	2.7	3.2	2.6	2.7	2.7	2.3	2.8
-30	5.1	3.0	4.6	3.1	3.9	3.3	3.4	3.4
-25	7.1	3.3	6.3	3.5	5.4	3.9	4.9	4.1
-20	9.4	3.6	8.3	4.0	7.2	4.4	6.6	4.7
-15	12.0	3.9	10.6	4.4	9.3	5.0	8.6	5.3
-10	15.0	4.2	13.3	4.9	11.7	5.5	10.9	5.9
-5	18.2	4.5	16.3	5.3	14.4	6.1	13.6	6.5

SP2-L-0600								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	2.4	2.7	2.4	2.4	2.0	2.4	1.6	2.4
-35	3.9	3.0	3.7	2.9	3.1	3.0	2.6	3.2
-30	5.8	3.4	5.3	3.5	4.4	3.7	3.9	3.9
-25	8.1	3.7	7.2	4.0	6.2	4.4	5.6	4.6
-20	10.7	4.1	9.5	4.5	8.2	5.0	7.5	5.3
-15	13.7	4.4	12.2	5.0	10.6	5.7	9.8	6.0
-10	17.1	4.8	15.2	5.5	13.4	6.3	12.5	6.7
-5	20.9	5.1	18.6	6.1	16.5	6.9	15.5	7.3

SP4-LF-0600/SP4-LN-0600								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	3.0	3.2	3.0	2.8	2.5	2.8	2.0	2.9
-35	4.9	3.5	4.6	3.5	3.8	3.6	3.3	3.7
-30	7.3	4.0	6.6	4.1	5.6	4.4	4.9	4.6
-25	10.1	4.4	9.0	4.7	7.7	5.2	6.9	5.4
-20	13.4	4.8	11.9	5.3	10.3	5.9	9.4	6.3
-15	17.1	5.2	15.2	5.9	13.2	6.7	12.3	7.1
-10	21.4	5.6	19.0	6.5	16.7	7.4	15.6	7.9
-5	26.1	6.1	23.2	7.1	20.6	8.4	19.4	8.6

SP4-LF-0800/SP4-LN-0800								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	3.6	3.8	3.6	3.4	3.0	3.3	2.4	3.4
-35	5.9	4.3	5.5	4.2	4.6	4.3	3.9	4.5
-30	8.8	4.7	7.9	4.9	6.7	5.3	5.9	5.5
-25	12.1	5.2	10.8	5.6	9.2	6.2	8.3	6.5
-20	16.1	5.7	14.3	6.4	12.3	7.1	11.3	7.5
-15	20.6	6.2	18.3	7.1	15.9	8.0	14.7	8.5
-10	25.6	6.8	22.8	7.8	20.1	8.9	18.7	9.4
-5	31.3	7.3	27.9	8.6	24.7	9.8	23.2	10.4

SP4-LF-1000/SP4-LN-1000								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	4.2	4.4	4.2	4.0	3.5	3.9	2.9	4.0
-35	6.9	5.0	6.4	4.8	5.4	5.0	4.6	5.2
-30	10.2	5.5	9.2	5.7	7.8	6.1	6.9	6.4
-25	14.2	6.1	12.6	6.6	10.8	7.2	9.7	7.6
-20	18.8	6.7	16.6	7.4	14.4	8.3	13.2	8.8
-15	24.0	7.3	21.3	8.3	18.6	9.4	17.2	9.9
-10	29.9	7.9	26.6	9.1	23.4	10.4	21.8	11.0
-5	36.5	8.5	32.5	10.0	28.8	11.4	27.1	12.1

SP4-LF-1200/SP4-LN-1200								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	4.8	5.1	4.8	4.6	4.0	4.5	3.3	4.6
-35	7.9	5.7	7.4	5.5	6.1	5.7	5.2	6.0
-30	11.7	6.3	10.6	6.5	8.9	7.0	7.8	7.3
-25	16.2	7.0	14.4	7.5	12.3	8.2	11.1	8.7
-20	21.4	7.6	19.0	8.5	16.4	9.5	15.0	10.0
-15	27.4	8.3	24.3	9.5	21.2	10.7	19.7	11.3
-10	34.2	9.0	30.4	10.4	26.7	11.9	25.0	12.6
-5	41.7	9.7	37.2	11.4	33.0	13.0	31.0	13.8

SP4-L-1500								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	6.9	4.7	5.8	4.9	4.8	4.9	4.5	4.8
-35	9.7	5.7	8.2	6.0	7.0	6.4	6.5	6.4
-30	13.2	6.6	11.3	7.3	9.7	7.9	9.0	8.1
-25	17.5	7.6	15.1	8.5	13.1	9.4	12.2	9.8
-20	22.7	8.6	19.8	9.8	17.4	10.9	16.3	11.5
-15	29.1	9.6	25.6	11.0	22.7	12.5	21.4	13.1
-10	36.8	10.6	32.7	12.2	29.2	14.0	27.7	14.8
-5	45.9	11.5	41.1	13.4	37.1	15.5	35.4	16.4

SP4-L-1800								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	8.0	5.5	6.7	5.6	5.6	5.7	5.2	5.6
-35	11.3	6.6	9.5	7.0	8.1	7.4	7.5	7.5
-30	15.3	7.7	13.1	8.4	11.2	9.1	10.4	9.4
-25	20.3	8.9	17.5	9.9	15.2	10.9	14.2	11.3
-20	26.4	10.0	23.0	11.3	20.1	12.7	18.9	13.3
-15	33.8	11.2	29.7	12.8	26.3	14.5	24.9	15.2
-10	42.7	12.3	37.9	14.2	33.9	16.2	32.2	17.2
-5	53.2	13.3	47.7	15.6	43.0	17.9	41.0	19.1

# INTRODUCTION

SP4-L-2200								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	9.2	6.3	7.7	6.5	6.4	6.5	5.9	6.4
-35	13.0	7.5	10.9	8.0	9.3	8.5	8.6	8.6
-30	17.6	8.8	15.0	9.7	12.8	10.5	12.0	10.8
-25	23.3	10.2	20.0	11.3	17.4	12.5	16.3	13.0
-20	30.3	11.5	26.3	13.0	23.1	14.6	21.7	15.2
-15	38.7	12.8	34.1	14.7	30.2	16.6	28.5	17.5
-10	48.9	14.1	43.5	16.3	38.9	18.6	36.9	19.7
-5	61.0	15.3	54.7	17.8	49.3	20.6	47.0	21.9

SP4-L-2500								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	11.0	7.5	9.2	7.7	7.7	7.8	7.1	7.7
-35	15.5	9.0	13.1	9.6	11.1	10.1	10.3	10.2
-30	21.0	10.6	17.9	11.6	15.3	12.5	14.3	12.9
-25	27.8	12.2	24.0	13.5	20.8	15.0	19.4	15.5
-20	36.2	13.7	31.5	15.5	27.6	17.4	26.0	18.2
-15	46.3	15.3	40.7	17.5	36.1	19.8	34.1	20.9
-10	58.5	16.8	52.0	19.5	46.5	22.2	44.1	23.6
-5	73.0	18.3	65.4	21.3	59.0	24.6	56.2	26.1

SP6-L-2700								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	12.1	8.3	10.1	8.5	8.4	8.6	7.8	8.4
-35	17.0	9.9	14.3	10.5	12.1	11.1	11.2	11.2
-30	23.0	11.6	19.6	12.6	16.8	13.7	15.6	14.1
-25	30.4	13.3	26.2	14.8	22.7	16.4	21.3	17.0
-20	39.6	15.0	34.5	17.0	30.2	19.1	28.4	19.9
-15	50.7	16.8	44.6	19.2	39.5	21.7	37.3	22.9
-10	64.0	18.4	56.9	21.3	50.8	24.3	48.3	25.8
-5	79.8	20.0	71.6	23.3	64.6	26.9	61.5	28.6

SP6-L-3000								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	13.9	9.5	11.6	9.7	9.7	9.8	8.9	9.7
-35	19.5	11.3	16.4	12.1	13.9	12.7	12.9	12.9
-30	26.4	13.3	22.5	14.5	19.3	15.7	18.0	16.2
-25	35.0	15.3	30.1	17.0	26.1	18.8	24.5	19.5
-20	45.5	17.3	39.6	19.6	34.7	21.9	32.7	22.9
-15	58.2	19.3	51.3	22.1	45.4	25.0	42.9	26.3
-10	73.6	21.2	65.4	24.5	58.4	28.0	55.5	29.6
-5	91.8	23.0	82.3	26.8	74.2	30.9	70.7	32.9

SP6-L-4000								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	16.6	11.3	13.8	11.6	11.6	11.8	10.7	11.6
-35	23.3	13.6	19.6	14.4	16.6	15.2	15.4	15.4
-30	31.6	15.9	26.9	17.4	23.1	18.8	21.5	19.3
-25	41.8	18.3	36.0	20.4	31.2	22.5	29.2	23.3
-20	54.4	20.7	47.3	23.4	41.5	26.2	39.0	27.4
-15	69.6	23.0	61.2	26.4	54.2	29.8	51.3	31.4
-10	87.9	25.3	78.1	29.3	69.8	33.4	66.3	35.4
-5	109.7	27.5	98.3	32.1	88.7	36.9	84.5	39.3

SP8-L-5000								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	-	-	-	-	-	-	-	-
-35	36.2	17.4	24.7	17.7	-	-	-	-
-30	47.0	20.1	35.2	21.3	-	-	-	-
-25	59.6	22.9	47.4	24.8	40.0	26.0	-	-
-20	74.3	25.6	61.4	28.4	53.0	30.4	-	-
-15	91.6	28.2	77.8	31.7	68.1	34.7	63.3	35.4
-10	111.7	30.4	96.7	34.8	85.5	38.7	79.9	39.9
-5	135.0	32.3	118.7	37.5	105.7	42.3	99.0	44.1

SP8-L-6000								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	-	-	-	-	-	-	-	-
-35	43.6	20.7	29.4	21.2	-	-	-	-
-30	56.1	24.0	42.0	25.4	-	-	-	-
-25	71.1	27.4	56.5	29.7	47.8	31.0	-	-
-20	88.7	30.6	73.3	33.9	63.3	36.3	-	-
-15	109.3	33.6	92.8	37.9	81.3	41.4	75.6	42.2
-10	133.3	36.3	115.5	41.6	102.1	46.2	95.3	47.6
-5	161.2	38.5	141.7	44.8	126.2	50.5	118.2	52.6

KEY

Pf = cooling capacity (kW)  
 Pa = input power (kW)  
 Te = evaporating temperature ( °C)  
 Tc = condensing temperature (°C)  
 50Hz = frequency  
 Liquid subcooling 5K  
 Suction gas superheat 10K

identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program

# INTRODUCTION

## SP-H, Refrigerant R407C

SP2-H-050E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	4.3	1.8	3.4	1.9	2.8	1.9	-	-
-20	5.7	2.2	4.6	2.3	3.7	2.4	-	-
-15	7.5	2.5	6.2	2.7	5.1	2.9	-	-
-10	9.6	2.8	8.2	3.1	6.8	3.3	-	-
-5	12.2	3.0	10.6	6.4	8.9	3.7	7.6	3.9
0	15.3	3.1	13.3	3.6	11.4	4.0	9.8	4.4
5	18.7	3.2	16.5	3.8	14.2	4.4	12.3	4.8
10	22.5	3.3	20.1	4.0	17.5	4.7	15.3	5.1

SP2-H-060E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	5.2	2.2	4.1	2.3	3.4	2.3	-	-
-20	6.8	2.6	5.5	2.8	4.5	2.9	-	-
-15	6.9	3.0	7.4	3.3	6.4	3.4	-	-
-10	11.6	3.3	9.8	3.7	8.2	3.9	-	-
-5	14.7	3.5	12.7	4.0	10.7	4.4	9.1	4.7
0	18.3	3.7	16.0	4.3	13.7	4.8	11.7	5.2
5	22.4	3.9	19.8	4.6	17.1	5.2	14.8	5.7
10	27.0	3.9	24.1	4.8	21.0	5.5	18.3	6.1

SP2-H-050E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	6.0	2.5	4.7	2.6	3.9	2.6	-	-
-20	7.9	3.0	6.4	3.2	5.2	3.3	-	-
-15	10.4	3.5	8.6	3.8	7.1	4.0	-	-
-10	13.5	3.8	11.4	4.2	9.5	4.6	-	-
-5	17.1	4.1	14.8	4.7	12.4	5.1	10.6	5.4
0	21.4	4.3	18.7	5.0	15.9	5.6	13.7	6.0
5	26.2	4.5	23.1	5.3	19.9	6.0	17.3	6.6
10	31.5	4.6	28.2	5.6	24.5	6.4	21.4	7.1

SP2-H-090E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	6.9	2.9	5.4	3.0	4.5	3.0	-	-
-20	9.1	3.5	7.3	3.7	6.0	3.8	-	-
-15	11.9	3.9	9.9	4.3	8.1	4.5	-	-
-10	15.4	4.4	13.1	4.8	10.9	5.2	-	-
-5	19.6	4.7	16.9	5.3	14.2	5.8	12.1	6.2
0	24.4	4.9	21.4	5.7	18.2	6.4	15.6	6.9
5	29.9	5.1	26.5	6.0	22.8	6.9	19.7	7.5
10	36.0	5.2	32.2	6.3	28.0	7.3	24.4	8.1

SP4-HF-100E/SP4-HN-100E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	8.6	3.6	6.8	3.7	5.6	3.8	-	-
-20	11.4	4.3	9.2	4.6	7.5	4.8	-	-
-15	14.9	4.9	12.4	5.4	10.2	5.7	-	-
-10	19.3	5.4	16.3	6.0	13.6	6.5	-	-
-5	24.5	5.8	21.1	6.6	17.8	7.3	15.2	7.7
0	30.5	6.2	26.7	7.1	22.8	7.9	19.5	8.6
5	37.4	6.4	33.1	7.5	28.5	8.6	24.7	9.4
10	45.0	6.5	40.2	7.9	35.0	9.2	30.5	10.1

SP4-HF-120E/SP4-HN-120E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	10.3	4.3	8.1	4.5	6.7	4.5	-	-
-20	13.6	5.2	11.0	5.5	9.0	5.7	-	-
-15	17.9	5.9	14.8	6.4	12.2	6.8	-	-
-10	23.1	6.5	19.6	7.2	16.3	7.8	-	-
-5	29.4	7.0	25.3	7.9	21.3	8.7	18.2	9.3
0	36.6	7.4	32.0	8.5	27.3	9.5	23.4	10.3
5	44.8	7.6	39.7	9.0	34.2	10.3	29.6	11.2
10	54.1	7.8	48.3	9.5	42.0	11.0	36.7	12.2

SP4-HF-150E/SP4-HN-150E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	12.1	5.0	9.5	5.2	7.8	5.3	-	-
-20	15.9	6.0	12.9	6.4	10.5	6.7	-	-
-15	20.9	6.9	17.3	7.5	14.2	7.9	-	-
-10	27.0	7.6	22.9	8.4	19.0	9.1	-	-
-5	34.3	8.2	29.6	9.3	24.9	10.2	21.2	10.8
0	42.7	8.6	37.4	9.9	31.9	11.1	27.3	12.0
5	52.3	8.9	46.3	10.5	39.9	12.0	34.5	13.1
10	63.1	9.1	56.3	11.0	49.0	12.8	42.8	14.2

SP4-HF-200E/SP4-HN-200E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	13.8	5.7	10.9	6.0	9.0	6.0	-	-
-20	18.2	6.9	14.7	7.4	12.0	7.6	-	-
-15	23.9	7.9	19.8	8.6	16.3	9.1	-	-
-10	30.9	8.7	26.2	9.6	21.7	10.4	-	-
-5	39.2	9.3	33.8	10.6	28.5	11.6	24.2	12.4
0	48.8	9.8	42.7	11.4	36.4	12.7	31.3	13.7
5	59.8	10.2	52.9	12.0	45.6	13.7	39.5	15.0
10	72.1	10.4	64.4	12.6	56.0	14.7	48.9	16.2

SP4-H-220E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	15.9	7.2	12.5	8.2	10.3	9.0	-	-
-20	21.0	8.1	17.0	9.4	13.9	10.4	-	-
-15	27.6	9.0	22.9	10.4	18.8	11.8	-	-
-10	35.7	9.7	30.2	11.4	25.1	13.0	-	-
-5	45.3	10.3	39.0	12.2	32.9	14.2	28.0	15.9
0	56.4	10.9	49.3	13.0	42.1	15.3	36.1	17.2
5	69.1	11.3	61.1	13.6	52.7	16.2	45.6	18.5
10	83.3	11.6	74.4	14.1	64.7	17.0	56.5	19.7

SP4-H-250E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	18.5	8.4	14.6	9.5	12.0	10.4	-	-
-20	24.3	9.4	19.7	10.9	16.1	12.1	-	-
-15	32.0	10.4	26.5	12.1	21.8	13.7	-	-
-10	41.4	11.3	35.0	13.2	29.1	15.1	-	-
-5	52.5	12.0	45.3	14.2	38.1	16.5	32.5	18.4
0	65.4	12.6	57.2	15.0	48.8	17.7	41.9	20.0
5	80.1	13.1	70.9	15.8	61.1	18.8	52.9	21.4
10	96.6	13.5	86.3	16.4	75.1	19.8	65.5	22.8



# INTRODUCTION

SP4-H-300E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	21.2	9.6	16.7	10.9	13.8	6.5	-	-
-20	27.9	10.8	22.6	12.5	18.4	8.5	-	-
-15	36.7	11.9	30.4	13.9	25.0	10.5	-	-
-10	47.4	12.9	40.2	15.1	33.4	12.5	-	-
-5	60.2	13.8	51.9	16.2	43.7	14.6	37.3	21.1
0	75.0	14.5	65.6	17.2	55.9	16.6	48.0	22.9
5	91.9	15.0	81.3	18.1	70.1	18.6	60.6	24.6
10	110.7	15.4	98.9	18.8	86.1	20.6	75.1	26.1

SP4-H-300E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	25.3	11.4	20.0	13.1	16.5	14.3	-	-
-20	33.4	12.9	27.0	14.9	22.0	16.6	-	-
-15	43.8	14.3	36.3	16.6	29.9	18.7	-	-
-10	56.7	15.5	48.0	18.1	39.9	20.7	-	-
-5	72.0	16.5	62.1	19.4	52.3	22.6	44.5	25.2
0	89.7	17.3	78.4	20.6	66.9	24.3	57.4	27.4
5	109.8	17.9	97.2	21.6	83.8	25.8	72.5	29.4
10	132.4	18.4	118.3	22.5	102.9	27.1	89.8	31.3

SP6-H-370E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	27.7	12.5	21.8	14.3	18.0	15.6	-	-
-20	36.5	14.2	29.5	16.3	24.1	18.2	-	-
-15	48.0	15.6	39.8	18.1	32.7	20.5	-	-
-10	62.0	16.9	52.6	19.8	43.7	22.7	-	-
-5	78.8	18.0	67.9	21.3	57.2	24.7	48.7	27.6
0	98.1	18.9	85.8	22.5	73.2	26.5	62.8	30.0
5	120.2	19.6	106.3	23.7	91.7	28.2	79.3	32.2
10	144.9	20.2	129.4	24.6	112.6	29.7	98.3	34.2

SP6-H-400E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	31.9	14.4	26.1	16.4	20.7	17.9	-	-
-20	42.1	16.3	33.9	18.7	27.7	20.9	-	-
-15	55.1	18.0	45.7	20.8	37.5	23.6	-	-
-10	71.3	19.4	60.4	22.7	50.2	26.1	-	-
-5	90.5	20.7	78.1	24.4	65.8	28.4	56.0	31.7
0	112.8	21.7	98.7	25.9	84.1	30.5	72.2	34.4
5	138.1	22.6	122.2	27.2	105.4	32.4	94.2	37.0
10	166.5	23.2	148.8	28.2	129.4	34.1	112.9	39.3

SP6-H-500E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	38.1	17.2	30.0	19.6	24.7	21.4	-	-
-20	50.2	19.5	40.6	22.4	33.1	24.9	-	-
-15	65.9	21.5	54.6	24.9	44.9	28.2	-	-
-10	85.2	23.2	72.2	27.2	60.0	31.2	-	-
-5	108.2	24.7	93.3	29.2	78.6	33.9	67.0	37.9
0	134.8	26.0	117.9	31.0	100.5	36.5	86.3	41.2
5	165.1	27.0	146.1	32.5	125.9	38.7	109.0	44.2
10	199.0	27.7	177.8	33.8	154.7	40.7	135.0	47.0

SP8-H-600E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	46.7	20.3	41.5	21.5	33.0	21.8	-	-
-20	62.6	23.4	55.7	25.2	45.9	26.2	-	-
-15	81.1	26.1	72.3	28.6	60.7	30.4	-	-
-10	102.7	28.5	91.6	31.8	77.9	34.4	-	-
-5	127.9	30.6	114.1	34.7	98.2	38.2	85.0	40.6
0	157.1	32.3	140.5	37.3	121.9	41.9	106.8	45.1
5	191.0	33.7	171.2	39.7	149.6	45.4	132.3	49.5
10	230.0	34.7	206.6	41.9	181.8	48.6	162.1	53.8

SP8-H-700E								
Tc	30		40		50		58	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	55.7	24.2	49.5	25.6	39.4	26.0	-	-
-20	74.7	27.9	66.5	30.0	54.7	31.3	-	-
-15	96.8	31.2	86.3	34.1	72.4	36.3	-	-
-10	122.6	34.1	109.3	37.9	93.0	41.1	-	-
-5	152.6	36.5	136.2	41.4	117.2	45.7	101.5	48.5
0	187.5	38.6	167.7	44.6	145.5	50.0	127.5	53.9
5	228.0	40.2	204.3	47.4	178.6	54.1	157.9	59.1
10	274.5	41.4	246.7	50.0	217.0	58.1	193.5	64.2

KEY

- Pf = cooling capacity (kW)
- Pa = input power (kW)
- Te = evaporating temperature (°C)
- Tc = condensing temperature (°C)
- 50Hz = frequency
- Liquid subcooling 5K
- Suction gas superheat 10K
- identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program



# INTRODUCTION

## SP-L, Refrigerant R407C

SP2-L-030E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	4.3	1.7	3.4	1.8	2.8	1.8	-	-
-20	5.7	2.1	4.6	2.2	3.7	2.3	3.5	2.3
-15	7.5	2.4	6.2	2.6	5.1	2.7	4.7	2.8
-10	9.6	2.6	8.2	2.9	6.8	3.1	6.3	3.2
-5	12.2	2.8	10.6	3.2	6.9	3.5	8.2	3.6

SP2-L-040E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	5.2	2.0	4.1	2.1	3.4	2.1	-	-
-20	6.8	2.5	5.5	2.6	4.5	2.7	4.2	2.7
-15	8.9	2.8	7.4	3.1	6.1	3.2	5.6	3.3
-10	11.6	3.1	9.8	3.4	8.2	3.7	7.5	3.8
-5	14.7	3.3	12.7	3.8	10.7	4.1	9.9	4.3

SP2-L-050E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	6.0	2.4	4.7	2.5	3.9	2.5	-	-
-20	7.9	2.9	6.4	3.0	5.2	3.1	4.9	3.2
-15	10.4	3.3	8.6	3.5	7.1	3.8	6.5	3.8
-10	13.5	3.6	11.4	4.0	9.5	4.3	8.8	4.4
-5	17.1	3.9	14.8	4.4	12.4	4.8	11.5	5.0

SP2-L-060E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	6.9	2.7	5.4	2.8	4.5	2.8	-	-
-20	9.1	3.2	7.3	3.5	6.0	3.6	5.5	3.6
-15	11.9	3.7	9.9	4.0	8.1	4.3	7.5	4.3
-10	15.4	4.1	13.1	4.5	10.9	4.9	10.0	5.0
-5	19.6	4.4	16.9	5.0	14.2	5.5	13.2	5.6

SP4-LF-060E/SP4-LN-060E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	8.6	3.9	6.8	4.4	5.6	4.9	-	-
-20	11.4	4.4	9.2	5.1	7.5	5.6	7.0	5.8
-15	14.9	4.9	12.4	5.6	10.2	6.4	9.4	6.7
-10	19.3	5.3	16.3	6.2	13.6	7.1	12.5	7.4
-5	24.5	5.6	21.1	6.6	17.8	7.7	16.5	8.1

SP4-LF-080E/SP4-LN-080E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	10.3	4.7	8.1	5.3	6.7	5.8	-	-
-20	13.6	5.3	11.0	6.1	9.0	6.8	8.4	7.0
-15	17.9	5.8	14.8	6.8	12.2	7.7	11.2	8.0
-10	23.1	6.3	19.6	7.4	16.3	8.5	15.0	8.9
-5	29.4	6.7	25.3	7.9	21.3	9.2	19.8	9.7

SP4-LF-100E/SP4-LN-100E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	12.1	5.5	9.5	6.2	7.8	6.8	7.4	7.0
-20	15.9	6.2	12.9	7.1	10.5	7.9	9.7	8.2
-15	20.9	6.8	17.3	7.9	14.2	8.9	13.1	9.3
-10	27.0	7.4	22.9	8.6	19.0	9.9	17.6	10.4
-5	34.3	7.8	29.6	9.3	24.9	10.8	23.1	11.4

SP4-LF-120E/SP4-LN-120E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	13.8	6.2	10.9	7.1	9.0	7.8	-	-
-20	18.2	7.0	14.7	8.1	12.0	9.0	11.1	9.4
-15	23.9	7.8	19.8	9.0	16.3	10.2	15.0	10.7
-10	30.9	8.4	26.2	9.8	21.7	11.3	20.1	11.9
-5	39.2	9.0	33.8	10.6	28.5	12.3	26.3	13.0

SP4-L-150E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	15.9	7.2	12.5	8.2	10.3	9.0	-	-
-20	21.0	8.1	17.0	9.4	13.9	10.4	12.9	10.8
-15	27.6	9.0	22.9	10.4	18.8	11.8	17.3	12.3
-10	35.7	9.7	30.2	11.4	25.1	13.0	23.2	13.7
-5	45.3	10.3	39.0	12.2	32.9	14.2	30.4	15.0

SP4-L-180E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	18.5	8.4	14.6	9.5	12.0	10.4	-	-
-20	24.3	9.4	19.7	10.9	16.1	12.1	14.9	12.5
-15	32.0	10.4	26.5	12.1	21.8	13.7	20.1	14.3
-10	41.4	11.3	35.0	13.2	29.1	15.1	26.9	15.9
-5	52.5	12.0	45.3	14.2	38.1	16.5	35.3	17.4

# INTRODUCTION

SP4-L-220E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	21.2	9.6	16.7	10.9	13.8	11.9	-	-
-20	27.9	10.8	22.6	12.5	18.4	13.9	16.8	14.5
-15	36.7	11.9	30.4	13.9	25.0	15.7	22.6	16.5
-10	47.4	12.9	40.2	15.1	33.4	17.4	30.2	18.5
-5	60.2	13.8	51.9	16.2	43.7	18.9	39.7	20.3

SP4-L-250E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	25.5	11.5	20.1	13.2	16.6	14.4	-	-
-20	33.6	13.0	27.2	15.0	22.2	16.7	20.6	17.3
-15	44.1	14.4	36.6	16.7	30.0	18.9	27.7	19.7
-10	57.1	15.5	48.3	18.2	40.2	20.9	37.1	21.9
-5	72.4	16.6	62.5	19.5	52.6	22.7	48.7	24.0

SP6-L-270E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	27.7	12.5	21.8	14.3	18.0	15.6	-	-
-20	36.5	14.2	29.5	16.3	24.1	18.2	22.4	18.8
-15	48.0	15.6	39.8	18.1	32.7	20.5	30.1	21.4
-10	62.0	16.9	52.6	19.8	43.7	22.7	40.3	23.9
-5	78.8	18.0	67.9	21.3	57.2	24.7	53.0	26.1

SP6-L-300E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	31.9	14.4	25.1	16.4	20.7	17.9	-	-
-20	42.0	16.3	33.9	18.7	27.7	20.9	25.7	21.6
-15	55.1	18.0	45.7	20.8	37.5	23.6	34.6	24.6
-10	71.3	19.4	60.4	22.7	50.2	26.1	46.4	27.4
-5	90.5	20.7	78.1	24.4	65.8	28.4	60.9	30.0

SP6-L-400E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	38.2	17.3	30.1	19.7	24.8	21.5	-	-
-20	50.4	19.5	40.7	22.5	33.2	25.0	30.9	25.9
-15	66.2	21.6	54.9	25.0	45.1	28.3	41.6	29.5
-10	85.6	23.3	72.5	27.3	60.3	31.3	55.6	32.9
-5	108.6	24.8	93.7	29.3	78.9	34.1	73.0	36.0

SP8-L-500E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	46.7	20.3	41.5	21.5	33.0	21.8	-	-
-20	62.6	23.4	55.7	25.2	45.9	26.2	41.5	26.4
-15	81.1	26.1	72.3	28.6	60.7	30.4	55.7	30.9
-10	102.7	28.5	91.6	31.8	77.9	34.4	72.2	35.3
-5	127.9	30.6	114.1	34.7	98.2	38.2	91.6	39.5

SP8-L-600E								
Tc	30		40		50		54	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	55.7	24.2	49.5	25.6	39.4	26.0	-	-
-20	74.7	27.9	66.5	30.0	54.7	31.3	49.5	31.5
-15	96.8	31.2	86.3	34.1	72.4	36.3	66.4	36.9
-10	122.6	34.1	109.3	37.9	93.0	41.1	86.2	42.1
-5	152.6	36.5	136.2	41.4	117.2	45.7	109.3	47.1

KEY

- Pf = cooling capacity (kW)
- Pa = input power (kW)
- Te = evaporating temperature (°C)
- Tc = condensing temperature (°C)
- 50Hz = frequency
- Liquid subcooling 5K
- Suction gas superheat 10K
- identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program

# INTRODUCTION

## SP-H, Refrigerant R134A

SP2-H-050E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	3.2	1.7	2.5	1.8	1.8	1.8	1.3	1.8
-15	4.2	2.0	3.4	1.0	2.6	2.1	2.0	2.1
-10	5.5	2.2	4.6	2.3	3.7	2.4	2.9	2.5
-5	7.1	2.4	6.0	2.6	5.0	2.8	4.1	2.9
0	9.0	2.7	7.7	2.9	6.5	3.1	5.5	3.3
5	11.1	2.9	9.7	3.2	8.3	3.5	7.1	3.7
10	13.4	3.2	11.8	3.5	10.2	3.9	8.8	4.1
15	16.0	3.4	14.1	3.9	12.3	4.3	10.8	4.6

SP2-H-050E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	3.8	2.0	3.0	2.1	2.2	2.1	1.6	2.1
-15	5.0	2.3	4.1	2.4	3.1	2.5	2.4	2.5
-10	6.6	2.6	5.5	2.8	4.4	2.9	3.5	3.0
-5	8.6	2.9	7.2	3.1	6.0	3.3	4.9	3.4
0	10.8	3.2	9.3	3.5	7.8	3.7	6.6	3.9
5	13.3	3.5	11.6	3.9	9.9	4.2	8.5	4.4
10	16.1	3.8	14.2	4.2	12.3	4.6	10.6	4.9
15	19.2	4.1	17.0	4.6	14.8	5.1	12.9	5.5

SP2-H-080E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	4.4	2.4	3.5	2.4	2.5	2.5	1.8	2.5
-15	5.9	2.7	4.7	2.8	3.6	2.9	2.8	2.9
-10	7.7	3.0	6.4	3.2	5.1	3.4	4.1	3.4
-5	10.0	3.4	8.4	3.6	7.0	3.8	5.7	4.0
0	12.6	3.7	10.8	4.0	9.1	4.3	7.7	4.5
5	15.5	4.0	13.5	4.5	11.6	4.8	9.9	5.1
10	18.8	4.4	16.5	4.9	14.3	5.4	12.4	5.7
15	22.4	4.7	19.8	5.4	17.3	5.9	15.1	6.4

SP2-H-090E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	5.0	2.7	4.0	2.8	2.9	2.8	2.1	2.8
-15	6.7	3.1	5.4	3.2	4.2	3.3	3.2	3.3
-10	8.8	3.4	7.3	3.7	5.9	3.8	4.7	3.9
-5	11.4	3.8	9.7	4.1	8.0	4.3	6.6	4.5
0	14.4	4.2	12.4	4.6	10.4	4.9	8.8	5.1
5	17.8	4.6	15.5	5.1	13.2	5.5	11.3	5.8
10	21.5	5.0	18.9	5.6	16.3	6.1	14.1	6.5
15	25.6	5.4	22.6	6.1	19.8	6.7	17.2	7.2

SP4-HF-100E/SP4-HN-100E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	6.3	2.9	4.9	3.0	3.6	3.1	2.6	3.0
-15	8.4	3.4	6.8	3.5	5.2	3.6	4.0	3.6
-10	11.0	3.8	9.1	4.0	7.3	4.2	5.9	4.3
-5	14.3	4.2	12.1	4.5	9.9	4.8	8.2	4.9
0	18.0	4.6	15.5	5.5	13.0	5.4	10.9	5.6
5	22.2	5.0	19.3	5.6	16.5	6.0	14.1	6.3
10	26.9	5.4	23.6	6.1	20.4	6.7	17.6	7.1
15	32.0	5.9	28.3	6.7	24.7	7.3	21.5	7.9

SP4-HF-120E/SP4-HN-120E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	7.6	3.5	5.9	3.6	4.4	3.7	3.2	3.7
-15	10.1	4.0	8.1	4.2	6.3	4.3	4.8	4.4
-10	13.2	4.5	11.0	4.8	8.8	5.0	7.0	5.1
-5	17.1	5.0	14.5	5.4	11.9	5.7	9.8	5.9
0	21.6	5.5	18.6	6.0	15.6	6.4	13.2	6.7
5	26.6	6.0	23.2	6.7	19.8	7.2	17.0	7.6
10	32.2	6.5	28.3	7.3	24.5	8.0	21.2	8.5
15	38.4	7.0	33.9	8.0	29.6	8.8	25.8	9.5

SP4-HF-150E/SP4-HN-150E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	8.8	4.1	6.9	4.2	5.1	4.3	3.7	4.3
-15	11.7	4.7	9.5	4.9	7.3	5.0	5.6	5.1
-10	15.5	5.3	12.8	5.6	10.3	5.8	8.2	6.0
-5	20.0	5.9	16.9	6.3	13.9	6.7	11.5	6.9
0	25.2	6.4	21.6	7.0	18.2	7.5	15.3	7.9
5	31.1	7.0	27.0	7.8	23.1	8.4	19.8	8.9
10	37.6	7.6	33.0	8.6	28.6	9.3	24.7	10.0
15	44.7	8.2	39.6	9.3	34.6	10.3	30.1	11.1

SP4-HF-200E/SP4-HN-200E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	10.1	4.7	7.9	4.8	5.8	4.9	4.2	4.9
-15	13.4	5.4	10.8	5.6	8.3	5.8	6.4	5.8
-10	17.7	6.0	14.6	6.4	11.7	6.7	9.4	6.8
-5	22.8	6.7	19.3	7.2	15.9	7.6	13.1	7.9
0	28.8	7.4	24.7	8.1	20.8	8.6	17.5	9.0
5	35.5	8.0	30.9	8.9	26.5	9.6	22.6	10.2
10	43.0	8.7	37.8	9.8	32.7	10.7	28.3	11.4
15	51.1	9.4	45.2	10.7	39.5	11.8	34.4	12.7

SP4-H-220E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	11.7	5.6	10.0	5.7	8.4	5.8	6.9	5.7
-15	15.7	6.3	13.4	6.6	11.3	6.8	9.3	6.9
-10	20.7	7.1	17.8	7.6	15.1	7.9	12.5	8.0
-5	26.6	7.9	23.1	8.5	19.7	9.0	16.5	9.3
0	33.7	8.7	29.4	9.5	25.3	10.1	21.4	10.6
5	41.7	9.5	36.6	10.5	31.7	11.3	27.1	12.0
10	50.8	10.3	44.9	11.5	39.1	12.6	33.6	13.4
15	61.0	11.1	54.1	12.6	47.4	13.9	40.9	14.9

SP4-H-250E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	13.6	6.5	11.6	6.6	9.7	6.7	8.0	6.7
-15	18.2	7.3	15.6	7.7	13.1	7.9	10.8	8.0
-10	24.0	8.3	20.6	8.8	17.5	9.1	14.5	9.3
-5	30.9	9.2	26.8	9.9	22.9	10.4	19.2	10.8
0	39.0	10.1	34.1	11.0	29.3	11.7	24.8	12.3
5	48.4	11.0	42.5	12.2	36.8	13.1	31.4	13.9
10	59.0	11.9	52.0	13.4	45.4	14.6	38.9	15.6
15	70.8	12.8	62.7	14.6	55.0	16.1	47.5	17.3

# INTRODUCTION

SP4-H-300E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	15.6	7.4	13.3	7.6	11.1	7.7	9.2	7.6
-15	20.9	8.4	17.8	8.8	15.0	9.0	12.4	9.1
-10	27.5	9.5	23.7	10.0	20.0	10.5	16.6	10.7
-5	35.4	10.5	30.7	11.3	26.3	11.9	22.0	12.4
0	44.8	11.6	39.1	12.6	33.6	13.5	28.4	14.1
5	55.5	12.6	48.7	14.0	42.2	15.1	36.0	15.9
10	67.6	13.7	59.7	15.3	52.0	16.7	44.7	17.8
15	81.1	14.7	71.9	16.7	63.1	18.4	54.5	19.8

SP4-H-350E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	18.7	8.8	15.9	9.1	13.3	9.2	10.9	9.1
-15	25.0	10.1	21.3	10.5	18.0	10.8	14.8	10.9
-10	32.8	11.3	28.3	12.0	24.0	12.5	19.9	12.8
-5	42.4	12.6	36.7	13.5	31.4	14.3	26.3	14.8
0	53.5	13.8	46.7	15.1	40.2	16.1	34.0	16.9
5	66.3	15.1	58.2	16.7	50.5	18.0	43.0	19.0
10	80.8	16.3	71.3	18.3	62.2	20.0	53.4	21.3
15	97.0	17.6	86.0	20.0	75.4	22.0	65.1	23.7

SP6-H-370E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	20.4	9.7	17.4	9.9	14.6	10.0	12.0	10.0
-15	27.3	11.0	23.3	11.5	19.6	11.8	16.2	11.9
-10	35.9	12.4	30.9	13.1	26.2	13.7	21.8	14.0
-5	46.4	13.7	40.2	14.8	34.3	15.6	28.8	16.2
0	58.6	15.1	51.1	16.5	44.0	17.6	37.2	18.4
5	72.6	16.5	63.7	18.3	55.2	19.7	47.1	20.8
10	88.5	17.9	78.1	20.1	68.1	21.9	58.4	23.3
15	106.2	19.3	94.1	21.9	82.5	24.1	71.3	26.0

SP6-H-400E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	23.5	11.1	20.0	11.4	16.8	11.5	13.8	11.5
-15	31.4	12.7	26.8	13.2	22.6	13.6	18.6	13.7
-10	41.3	14.2	35.6	15.1	30.1	15.7	25.0	16.1
-5	53.3	15.8	46.2	17.0	39.5	17.9	33.1	18.6
0	67.3	17.4	58.8	19.0	50.6	20.3	42.8	21.2
5	83.4	19.0	73.3	21.0	63.5	22.7	54.1	24.0
10	101.7	20.6	89.7	23.1	78.2	25.1	67.2	26.8
15	122.0	22.1	108.2	25.2	94.8	27.7	81.9	29.8

SP6-H-500E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	28.1	13.3	23.9	13.6	20.0	13.8	16.5	13.7
-15	37.5	15.1	32.1	15.8	27.0	16.2	22.2	16.4
-10	49.4	17.0	42.5	18.0	36.0	18.8	29.9	19.2
-5	63.7	18.9	55.2	20.3	47.2	21.4	39.5	22.2
0	80.5	20.8	70.2	22.7	60.5	24.2	51.1	25.3
5	99.7	22.7	87.6	25.1	75.9	27.1	64.7	28.6
10	121.5	24.6	107.2	27.5	93.5	30.0	80.3	32.1
15	145.8	26.5	129.3	30.1	113.3	33.1	97.9	35.6

SP8-H-600E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	34.9	16.4	29.0	17.0	22.4	17.3	15.0	18.0
-15	45.2	18.7	38.5	19.6	31.0	20.4	22.9	21.5
-10	58.0	21.0	50.1	22.4	41.4	23.5	32.2	25.1
-5	73.6	23.2	64.0	25.1	53.9	26.8	43.3	28.9
0	92.1	25.2	80.6	27.7	68.7	30.1	56.3	32.9
5	113.9	27.1	100.2	30.3	86.0	33.3	71.5	36.8
10	139.3	28.7	122.9	32.6	106.2	36.5	89.3	40.7
15	168.4	30.0	149.1	34.8	129.5	39.5	109.8	44.6

SP6-H-500E								
Tc	40		50		60		70	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-20	41.6	19.6	34.7	20.3	26.7	20.7	17.9	21.5
-15	54.0	22.3	45.9	23.4	37.0	24.3	27.3	25.6
-10	69.3	25.1	59.8	26.7	49.5	28.1	38.5	30.0
-5	87.8	27.7	76.4	29.9	64.3	32.0	51.7	34.5
0	110.0	30.1	96.2	33.1	82.0	35.9	67.2	39.2
5	136.0	32.3	119.6	36.1	102.7	39.8	85.4	43.9
10	166.2	34.2	146.7	38.9	126.8	43.5	106.5	48.6
15	201.0	35.8	177.9	41.5	154.6	47.1	131.0	53.2

KEY

- Pf = cooling capacity (kW)
- Pa = input power (kW)
- Te = evaporating temperature (°C)
- Tc = condensing temperature (°C)
- 50Hz = frequency
- Liquid subcooling 5K
- Suction gas superheat 10K
- Identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program

# INTRODUCTION

## SP-L, Refrigerant R134A

SP2-L-030E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	2.8	1.4	2.4	1.4	2.0	1.4	1.7	1.4
-20	3.7	1.6	3.2	1.6	2.7	1.7	2.3	1.7
-15	4.9	1.7	4.2	1.9	3.6	1.9	3.1	2.0
-10	6.4	1.9	5.6	2.1	4.8	2.2	4.1	2.3
-5	8.2	2.1	7.2	2.3	6.2	2.5	5.3	2.6
0	10.3	2.3	9.1	2.5	7.9	2.8	6.8	3.0
5	12.7	2.4	11.3	2.8	9.9	3.1	8.6	3.3
10	15.4	2.6	13.7	3.0	12.1	3.4	10.6	3.7

SP2-L-040E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	3.3	1.6	2.9	1.7	2.4	1.7	2.1	1.7
-20	4.4	1.9	3.8	1.9	3.2	2.0	2.7	2.0
-15	5.9	2.1	5.1	2.2	4.4	2.3	3.7	2.4
-10	7.7	2.3	6.7	2.5	5.8	2.6	4.9	2.7
-5	9.9	2.5	8.6	2.8	7.5	3.0	6.4	3.1
0	12.4	2.7	10.9	3.0	9.5	3.3	8.2	3.5
5	15.3	2.9	13.5	3.3	11.9	3.7	10.3	3.9
10	18.5	3.1	16.5	3.6	14.6	4.0	12.7	4.4

SP2-L-050E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	3.9	1.9	3.3	1.9	2.8	2.0	2.4	1.9
-20	5.2	2.2	4.4	2.3	3.8	2.3	3.2	2.3
-15	6.9	2.4	5.9	2.6	5.1	2.7	4.3	2.7
-10	9.0	2.7	7.8	2.9	6.7	3.1	5.7	3.2
-5	11.5	2.9	10.1	3.2	8.7	3.4	7.5	3.6
0	14.4	3.1	12.7	3.5	11.1	3.8	9.6	4.1
5	17.8	3.4	15.8	3.8	13.9	4.2	12.0	4.6
10	21.6	3.6	19.2	4.2	17.0	4.7	14.8	5.1

SP2-L-060E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	4.4	2.2	3.8	2.2	3.2	2.2	2.7	2.2
-20	5.9	2.5	5.1	2.6	4.3	2.6	3.6	2.7
-15	7.8	2.7	6.8	2.9	5.8	3.0	4.9	3.1
-10	10.3	3.0	8.9	3.3	7.7	3.5	6.5	3.6
-5	13.1	3.3	11.5	3.6	10.0	3.9	8.5	4.1
0	16.5	3.6	14.6	4.0	12.7	4.4	10.9	4.7
5	20.4	3.8	18.1	4.4	15.9	4.8	13.7	5.2
10	24.7	4.1	22.0	4.7	19.4	5.3	16.9	5.8

SP4-LF-060E/SP4-LN-060E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	5.5	2.5	4.8	2.6	4.1	2.6	3.4	2.6
-20	7.4	2.9	6.4	3.0	5.4	3.1	4.5	3.1
-15	9.8	3.2	8.5	3.4	7.3	3.6	6.1	3.7
-10	12.8	3.5	11.2	3.9	9.6	4.1	8.2	4.3
-5	16.4	3.9	14.4	4.3	12.5	4.6	10.7	4.9
0	20.6	4.2	18.2	4.7	15.9	5.1	13.7	5.5
5	25.4	4.5	22.6	5.1	19.8	5.7	17.2	6.1
10	30.9	4.8	27.5	5.6	24.3	6.2	21.2	6.8

SP4-LF-080E/SP4-LN-080E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	6.6	3.0	5.7	3.1	4.9	3.1	4.1	3.1
-20	8.8	3.5	7.6	3.6	6.5	3.7	5.4	3.7
-15	11.8	3.9	10.2	4.1	8.7	4.3	7.3	4.4
-10	15.4	4.3	13.4	4.6	11.5	4.9	9.8	5.1
-5	19.7	4.6	17.3	5.1	15.0	5.5	12.8	5.8
0	24.8	5.0	21.9	5.6	19.1	6.2	16.4	6.6
5	30.5	5.4	27.1	6.2	23.8	6.8	20.6	7.4
10	37.0	5.7	33.0	6.7	29.1	7.5	25.4	8.2

SP4-LF-100E/SP4-LN-100E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	7.7	3.6	6.7	3.6	5.7	3.7	4.8	3.6
-20	10.3	4.0	8.9	4.2	7.6	4.3	6.3	4.4
-15	13.7	4.5	11.9	4.8	10.2	5.0	8.6	5.1
-10	18.0	5.0	15.6	5.4	13.5	5.7	11.4	6.0
-5	23.0	5.4	20.2	6.0	17.5	6.4	14.9	6.8
0	28.9	5.8	25.5	6.6	22.3	7.2	19.2	7.7
5	35.6	6.3	31.6	7.2	27.7	8.0	24.0	8.6
10	43.2	6.7	38.5	7.8	34.0	8.7	29.6	9.5

SP4-LF-120E/SP4-LN-120E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	8.8	4.1	7.6	4.1	6.5	4.2	5.5	4.1
-20	11.8	4.6	10.2	4.8	8.7	4.9	7.3	5.0
-15	15.7	5.2	13.6	5.5	11.6	5.7	9.8	5.9
-10	20.5	5.7	17.9	6.2	15.4	6.5	13.0	6.8
-5	26.3	6.2	23.1	6.8	20.0	7.4	17.1	7.8
0	33.0	6.7	29.1	7.5	25.4	8.2	21.9	8.8
5	40.7	7.2	36.1	8.2	31.7	9.1	27.5	9.8
10	49.4	7.6	44.0	8.9	38.8	10.0	33.9	10.9

SP4-L-150E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	10.2	4.7	8.8	4.8	7.5	4.8	6.3	4.8
-20	13.6	5.3	11.7	5.6	10.0	5.7	8.4	5.8
-15	18.1	6.0	15.7	6.3	13.4	6.6	11.3	6.8
-10	23.7	6.6	20.7	7.1	17.8	7.6	15.1	7.9
-5	30.4	7.1	26.6	7.9	23.1	8.5	19.7	9.0
0	38.1	7.7	33.7	8.7	29.4	9.5	25.3	10.1
5	47.0	8.3	41.7	9.5	36.6	10.5	31.7	11.3
10	57.0	8.8	50.8	10.3	44.9	11.5	39.1	12.6

SP4-L-180E								
Tc	30		40		50		60	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	11.8	5.4	10.2	5.6	8.7	5.6	7.3	5.6
-20	15.8	6.2	13.6	6.5	11.6	6.6	9.7	6.7
-15	21.0	6.9	18.2	7.3	15.6	7.7	13.1	7.9
-10	27.5	7.6	24.0	8.3	20.6	8.8	17.5	9.1
-5	35.2	8.3	30.9	9.2	26.8	9.9	22.9	10.4
0	44.2	9.0	39.0	10.1	34.1	11.0	29.3	11.7
5	54.5	9.6	48.4	11.0	42.5	12.2	36.8	13.1
10	66.1	10.2	59.0	11.9	52.0	13.4	45.4	14.6

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SP4-L-220E									
Tc	30		40		50		60		
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	
-25	13.6	6.2	11.7	6.4	10.0	6.4	8.4	6.4	
-20	18.1	7.1	15.6	7.4	13.3	7.6	11.1	7.7	
-15	24.1	7.9	20.9	8.4	17.8	8.8	15.0	9.0	
-10	31.5	8.7	27.5	9.5	23.7	10.0	20.0	10.5	
-5	40.4	9.5	35.4	10.5	30.7	11.3	26.3	11.9	
0	50.7	10.3	44.8	11.6	39.1	12.6	33.6	13.5	
5	62.6	11.0	55.5	12.6	48.7	14.0	42.2	15.1	
10	75.9	11.7	67.6	13.7	59.7	15.3	52.0	16.7	

SP4-L-250E									
Tc	30		40		50		60		
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	
-25	16.3	7.5	14.1	7.7	12.0	7.7	10.1	7.7	
-20	21.8	8.5	18.8	8.9	16.0	9.1	13.4	9.2	
-15	29.0	9.5	25.1	10.1	21.5	10.6	18.1	10.9	
-10	37.9	10.5	33.1	11.4	28.5	12.1	24.1	12.6	
-5	48.6	11.4	42.6	12.6	37.0	13.6	31.6	14.4	
0	61.0	12.4	53.9	13.9	47.0	15.2	40.5	16.2	
5	75.3	13.2	66.8	15.2	58.6	16.8	50.8	18.1	
10	91.3	14.1	81.3	16.4	71.8	18.4	62.6	20.1	

SP6-L-270E									
Tc	30		40		50		60		
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	
-25	17.8	8.2	15.3	8.3	13.0	8.4	11.0	8.3	
-20	23.7	9.3	20.4	9.7	17.4	9.9	14.6	10.0	
-15	31.5	10.4	27.3	11.0	23.3	11.5	19.6	11.8	
-10	41.2	11.4	35.9	12.4	30.9	13.1	26.2	13.7	
-5	52.9	12.4	46.4	13.7	40.2	14.8	34.3	15.6	
0	66.4	13.4	58.6	15.1	51.1	16.5	44.0	17.6	
5	81.8	14.4	72.6	16.5	63.7	18.3	55.2	19.7	
10	99.2	15.4	88.5	17.9	78.1	20.1	68.1	21.9	

SP6-L-300E									
Tc	30		40		50		60		
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	
-25	20.4	9.4	17.6	9.6	15.0	9.7	12.7	9.6	
-20	27.3	10.7	23.5	11.1	20.0	11.4	16.8	11.5	
-15	36.3	11.9	31.4	12.7	26.8	13.2	22.6	13.6	
-10	47.4	13.1	41.3	14.2	35.6	15.1	30.1	15.7	
-5	60.8	14.3	53.3	15.8	46.2	17.0	39.5	17.9	
0	76.3	15.4	67.3	17.4	58.8	19.0	50.6	20.3	
5	94.1	16.6	83.4	19.0	73.3	21.0	63.5	22.7	
10	114.1	17.6	101.7	20.6	89.7	23.1	78.2	25.1	

SP6-L-400E									
Tc	30		40		50		60		
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	
-25	24.5	11.3	21.1	11.5	18.0	11.6	15.2	11.5	
-20	32.7	12.8	28.2	13.4	24.0	13.7	20.1	13.8	
-15	43.5	14.3	37.7	15.2	32.2	15.9	27.1	16.3	
-10	56.9	15.7	49.6	17.1	42.7	18.1	36.2	18.9	
-5	72.9	17.2	63.9	19.0	55.4	20.4	47.4	21.5	
0	91.6	18.5	80.8	20.9	70.5	22.8	60.7	24.3	
5	112.9	19.9	100.1	22.8	87.9	25.2	76.2	27.2	
10	136.9	21.2	122.0	24.7	107.7	27.7	93.9	30.2	

SP8-L-500E									
Tc	30		40		50		60		
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	
-25	31.0	13.2	26.7	14.2	21.4	14.4	15.3	14.5	
-20	39.8	15.1	34.9	16.4	29.0	17.0	22.4	17.3	
-15	51.1	17.1	45.2	18.7	38.5	19.6	31.0	20.4	
-10	65.2	18.9	58.0	21.0	50.1	22.4	41.4	23.5	
-5	82.5	20.5	73.6	23.2	64.0	25.1	53.9	26.8	
0	103.0	22.0	92.1	25.2	80.6	27.7	68.7	30.1	
5	127.2	23.2	113.9	27.1	100.2	30.3	86.0	33.3	
10	155.3	24.0	139.3	28.7	122.9	32.6	106.2	36.5	

SP8-L-600E									
Tc	30		40		50		60		
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	
-25	37.0	15.7	31.9	16.9	25.6	17.2	18.2	17.2	
-20	47.5	18.1	41.6	19.6	34.7	20.3	26.7	20.7	
-15	61.0	20.4	54.0	22.3	45.9	23.4	37.0	24.3	
-10	77.9	22.5	69.3	25.0	59.8	26.7	49.5	28.1	
-5	98.4	24.5	87.8	27.7	76.4	29.9	64.3	32.0	
0	123.0	26.2	110.0	30.1	96.2	33.1	82.0	35.9	
5	151.9	27.7	136.0	32.3	119.6	36.1	102.7	39.8	
10	185.3	28.7	166.2	34.2	146.7	38.9	126.8	43.5	

KEY

- Pf = cooling capacity (kW)
- Pa = input power (kW)
- Te = evaporating temperature (°C)
- Tc = condensing temperature (°C)
- 50Hz = frequency
- Liquid subcooling 5K
- Suction gas superheat 10K
- identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program

# INTRODUCTION

## SP-H, Refrigerant R404A-R507

SP2-H-050E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	6.1	2.9	4.9	2.8	3.7	2.8	-	-
-20	8.1	3.3	6.6	3.3	5.0	3.4	-	-
-15	10.4	3.6	8.6	3.8	6.6	3.9	5.6	4.0
-10	13.0	3.9	10.9	4.2	8.6	4.4	7.4	4.5
-5	16.0	4.1	13.5	4.5	10.8	4.9	9.4	5.0
0	19.3	4.3	16.5	4.8	13.4	5.3	11.8	5.5
5	22.9	4.4	19.9	5.1	16.4	5.7	14.5	5.9

SP2-H-060E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	7.3	3.5	5.9	3.4	4.4	3.4	-	-
-20	9.7	3.9	7.9	4.0	6.0	4.1	-	-
-15	12.5	4.3	10.3	4.5	8.0	4.7	6.8	4.8
-10	15.6	4.6	13.1	5.0	10.3	5.3	8.8	5.4
-5	19.1	4.9	16.2	5.4	13.0	5.8	11.3	6.0
0	23.1	5.1	19.8	5.8	16.1	6.3	14.2	6.6
5	27.5	5.2	23.8	6.1	19.7	6.8	17.5	7.1

SP2-H-080E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	8.5	4.0	6.9	3.9	5.2	3.9	-	-
-20	11.3	4.5	9.2	4.6	7.0	4.7	-	-
-15	14.5	5.0	12.0	5.2	9.3	5.5	7.9	5.6
-10	18.2	5.4	15.3	5.8	12.0	6.1	10.3	6.3
-5	22.3	5.7	19.0	6.3	15.2	6.8	13.2	7.0
0	27.0	5.9	23.1	6.7	18.8	7.4	16.5	7.6
5	32.1	6.1	27.8	7.1	23.0	7.9	20.4	8.2

SP2-H-090E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	9.7	4.6	7.8	4.5	5.9	4.5	-	-
-20	12.9	5.2	10.6	5.3	8.0	5.4	-	-
-15	16.6	5.7	13.7	6.0	10.6	6.3	9.0	6.4
-10	20.8	6.2	17.4	6.7	13.7	7.1	11.8	7.3
-5	25.5	6.5	21.7	7.2	17.4	7.8	15.1	8.1
0	30.8	6.8	26.4	7.7	21.5	8.5	18.9	8.8
5	36.7	7.0	31.8	8.2	26.2	9.1	23.3	9.5

SP4-HF-100E/SP4-HN-100E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	11.0	5.1	8.8	5.0	6.6	5.0	-	-
-20	14.6	5.8	11.9	5.9	9.0	6.0	-	-
-15	18.7	6.4	15.5	6.7	12.0	7.0	10.2	7.1
-10	23.4	6.8	19.6	7.4	15.5	7.8	13.3	8.1
-5	28.8	7.2	24.4	8.0	19.5	8.7	17.0	8.9
0	34.7	7.6	29.8	8.6	24.2	9.4	21.3	9.8
5	41.3	7.8	35.8	9.0	29.6	10.1	26.2	10.2

SP4-HF-120E/SP4-HN-120E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	13.2	6.2	10.6	6.0	8.0	6.0	-	-
-20	17.5	7.0	14.3	7.1	10.9	7.2	-	-
-15	22.4	7.6	18.6	8.0	14.4	8.4	12.2	8.5
-10	28.1	8.2	23.6	8.8	18.6	9.4	15.9	9.7
-5	34.5	8.7	29.3	9.6	23.5	10.4	20.4	10.7
0	41.7	9.1	35.7	10.3	29.1	11.3	25.5	11.7
5	49.6	9.3	43.0	10.8	35.5	12.1	31.5	12.6

SP4-HF-150E/SP4-HN-150E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	15.4	7.2	12.4	7.0	9.3	7.0	-	-
-20	20.4	8.1	16.6	8.2	12.7	8.4	-	-
-15	26.2	8.9	21.7	9.3	16.8	9.8	14.2	10.0
-10	32.8	9.6	27.5	10.3	21.7	11.0	18.6	11.3
-5	40.3	10.1	34.2	11.2	27.4	12.1	23.8	12.5
0	48.6	10.6	41.7	12.0	33.9	13.2	29.8	13.7
5	57.9	10.9	50.1	12.7	41.4	14.1	36.7	14.7

SP4-HF-200E/SP4-HN-200E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	17.6	8.2	14.1	8.0	10.6	8.0	-	-
-20	23.3	9.3	19.0	9.4	14.5	9.6	-	-
-15	29.9	10.2	24.8	10.7	19.2	11.1	16.3	11.4
-10	37.5	11.0	31.4	11.8	24.8	12.5	21.2	12.9
-5	46.0	11.6	39.0	12.8	31.3	13.9	27.2	14.3
0	55.6	12.1	47.7	13.7	38.8	15.0	34.1	15.6
5	66.1	12.4	57.3	14.5	47.3	16.1	41.9	16.8

SP4-H-220E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	20.7	9.3	16.9	10.0	13.1	10.7	-	-
-20	26.3	10.4	21.8	11.3	17.2	12.2	-	-
-15	33.4	11.4	28.1	12.5	22.5	13.7	19.6	14.3
-10	41.9	12.3	35.7	13.7	29.0	15.1	25.4	15.8
-5	51.8	13.0	44.6	14.7	36.6	16.4	32.4	17.2
0	63.2	13.6	54.8	15.6	45.4	17.6	40.4	18.6
5	76.1	14.2	66.3	16.5	55.4	18.8	49.6	19.9

SP4-H-250E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	24.0	10.8	19.6	11.6	15.2	12.4	-	-
-20	30.5	12.1	25.3	13.1	20.0	14.2	-	-
-15	38.7	13.2	32.6	14.5	26.1	15.9	22.7	16.6
-10	48.6	14.2	41.4	15.8	33.6	17.5	29.5	18.3
-5	60.1	15.1	51.7	17.0	42.5	19.0	37.5	20.0
0	73.3	15.8	63.5	18.1	52.7	20.4	46.9	21.6
5	88.2	16.4	76.9	19.1	64.3	21.8	57.5	23.1



# INTRODUCTION

SP4-H-300E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	27.6	12.4	22.4	13.3	17.4	14.2	-	-
-20	35.0	13.9	29.0	15.0	22.9	16.3	-	-
-15	44.4	15.2	37.4	16.7	29.9	18.2	26.1	19.0
-10	55.7	16.3	47.5	18.2	38.5	20.1	33.8	21.0
-5	68.9	17.3	59.3	19.5	48.7	21.8	43.1	22.9
0	84.1	18.1	72.9	20.8	60.4	23.7	53.8	24.7
5	101.2	18.8	88.2	21.9	73.7	24.9	65.9	26.5

SP4-H-350E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	33.0	14.8	26.8	15.8	20.8	17.0	-	-
-20	41.9	16.6	34.7	18.0	27.4	19.4	-	-
-15	53.1	18.1	44.7	19.9	35.8	21.8	31.2	22.7
-10	66.6	19.5	56.7	21.7	46.1	24.0	40.4	25.1
-5	82.4	20.7	70.9	23.4	58.2	26.0	51.5	27.4
0	100.5	21.7	87.1	24.8	72.2	28.0	64.3	29.6
5	120.9	22.5	105.4	26.2	88.1	29.8	78.8	31.6

SP6-H-370E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	36.1	16.2	29.3	17.3	22.8	18.6	-	-
-20	45.8	18.1	38.0	19.7	30.0	21.3	-	-
-15	58.1	19.8	48.9	21.8	39.2	23.8	34.1	24.9
-10	72.9	21.3	62.1	23.8	50.4	26.2	44.3	27.5
-5	90.2	22.6	77.6	25.6	63.7	28.5	56.3	30.0
0	110.0	23.7	95.3	27.2	79.0	30.6	70.6	32.4
5	132.4	24.6	115.3	28.6	96.4	32.6	86.2	34.6

SP6-H-400E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	41.5	18.7	33.7	19.9	26.2	21.3	-	-
-20	52.7	20.9	43.6	22.6	34.4	24.4	-	-
-15	66.8	22.8	56.2	25.1	45.0	27.4	39.2	28.6
-10	83.8	24.5	71.4	27.3	58.0	30.2	50.9	31.6
-5	103.7	26.0	89.1	29.4	73.2	32.8	64.7	34.5
0	126.5	27.3	109.6	31.2	90.9	35.2	80.8	37.2
5	152.1	28.3	132.6	32.9	110.8	37.5	99.1	39.8

SP6-H-500E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	49.5	22.3	40.3	23.8	31.3	25.5	-	-
-20	62.9	24.9	52.2	27.0	41.2	29.2	-	-
-15	79.8	27.3	67.1	29.9	53.8	32.7	46.9	34.1
-10	100.1	29.3	85.3	32.6	69.3	36.0	60.8	37.8
-5	123.9	31.1	106.5	35.1	87.5	39.2	77.4	41.2
0	151.1	32.6	130.9	37.3	108.6	42.1	96.6	44.5
5	181.8	33.8	158.4	39.3	132.4	44.8	118.5	47.6

SP8-H-600E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	68.0	29.0	49.5	29.5	37.4	29.2	-	-
-20	83.6	31.8	64.1	33.3	50.1	33.9	-	-
-15	102.2	34.5	81.3	37.0	64.9	38.7	56.9	38.9
-10	124.2	36.8	101.5	40.6	82.4	43.4	72.6	44.2
-5	150.1	38.9	125.0	43.9	102.7	48.0	91.1	49.5
0	180.1	40.4	152.3	46.9	126.4	52.4	112.6	54.7
5	214.7	41.5	183.7	49.5	153.8	56.7	137.7	59.7

SP8-H-700E								
Tc	30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-25	81.1	34.6	59.1	35.3	44.6	34.8	-	-
-20	99.7	38.0	76.5	39.8	59.8	40.5	-	-
-15	122.0	41.2	97.0	44.2	77.5	46.1	67.9	46.5
-10	148.3	44.0	121.1	48.4	98.3	51.8	86.7	52.8
-5	179.1	46.4	149.2	52.4	122.6	57.3	108.7	59.1
0	215.0	48.3	181.8	56.0	150.9	62.6	134.4	65.3
5	256.3	49.6	219.3	59.1	183.6	67.6	164.4	71.3

KEY

- Pf = cooling capacity (kW)
- Pa = input power (kW)
- Te = evaporating temperature ( °C)
- Tc = condensing temperature ( °C)
- 50Hz = frequency
- Liquid subcooling 5K
- Suction gas superheat 10K

identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program



# INTRODUCTION

## SP-L, Refrigerant R404A-R507

SP2-L-030E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	2.6	1.6	2.0	1.6	1.4	1.6	-	-
-35	3.5	1.9	2.7	2.0	1.9	2.0	-	-
-30	4.6	2.2	3.6	2.3	2.7	2.4	2.5	2.5
-25	5.9	2.5	4.8	2.7	3.7	2.9	3.5	2.9
-20	7.6	2.8	6.3	3.0	5.0	3.3	4.7	3.3
-15	9.4	3.0	7.9	3.3	6.5	3.7	6.1	3.7
-10	11.5	3.3	9.9	3.7	8.2	4.1	7.9	4.1
-6	13.4	3.5	11.6	3.9	9.8	4.4	9.4	4.5

SP2-L-040E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	3.1	1.9	2.4	1.9	1.6	1.9	-	-
-35	4.2	2.3	3.2	2.3	2.3	2.4	-	-
-30	5.5	2.6	4.4	2.8	3.2	2.9	3.0	2.9
-25	7.1	3.0	5.8	3.2	4.4	3.4	4.1	3.4
-20	9.1	3.3	7.5	3.6	5.9	3.9	5.6	4.0
-15	11.3	3.6	9.5	4.0	7.7	4.4	7.4	4.5
-10	13.8	3.9	11.9	4.4	9.8	4.8	9.4	4.9
-6	16.1	4.2	13.9	4.7	11.7	5.2	11.3	5.3

SP2-L-050E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	3.6	2.2	2.8	2.2	1.9	2.2	-	-
-35	4.8	2.7	3.8	2.7	2.7	2.8	-	-
-30	6.4	3.1	5.1	3.2	3.7	3.4	3.5	3.4
-25	8.3	3.5	6.8	3.7	5.2	4.0	4.8	4.0
-20	10.6	3.9	8.8	4.2	6.9	4.5	6.6	4.6
-15	13.2	4.2	11.1	4.6	9.0	5.1	8.6	5.2
-10	16.1	4.6	13.8	5.1	11.5	5.6	11.0	5.7
-6	18.8	4.9	16.2	5.4	13.7	6.1	13.1	6.2

SP2-L-060E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	4.2	2.5	3.2	2.5	2.2	2.5	-	-
-35	5.5	3.0	4.3	3.1	3.0	3.2	-	-
-30	7.3	3.5	5.8	3.7	4.3	3.8	4.0	3.9
-25	9.5	3.9	7.7	4.2	5.9	4.5	5.5	4.6
-20	12.1	4.4	10.0	4.8	7.9	5.1	7.5	5.2
-15	15.1	4.8	12.7	5.3	10.3	5.8	9.8	5.9
-10	18.4	5.2	15.8	5.8	13.1	6.4	12.6	6.5
-6	21.4	5.5	18.6	6.2	15.6	6.9	15.0	7.0

SP4-LF-060E/SP4-LN-060E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	5.2	3.4	4.0	3.4	2.7	3.3	-	-
-35	6.9	4.0	5.4	4.4	3.8	4.2	-	-
-30	9.2	4.6	7.3	4.9	5.3	5.1	5.0	5.1
-25	11.9	5.2	9.7	5.6	7.4	6.0	6.9	6.1
-20	15.1	5.8	12.5	6.3	9.9	6.8	9.4	6.9
-15	18.8	6.4	15.9	7.0	12.9	7.7	12.3	7.8
-10	23.0	6.9	19.8	7.7	16.4	8.5	15.7	8.7
-6	26.8	7.3	23.2	8.2	19.5	9.1	18.8	9.3

SP4-LF-080E/SP4-LN-080E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	6.2	4.1	4.8	4.0	3.3	4.0	-	-
-35	8.3	4.8	6.5	4.9	4.6	5.1	-	-
-30	11.0	5.6	8.7	5.8	6.4	6.1	5.9	6.2
-25	14.3	6.3	11.6	6.7	8.9	7.2	8.3	7.3
-20	18.1	7.0	15.0	7.6	11.9	8.2	11.2	8.3
-15	22.6	7.7	19.1	8.4	15.5	9.2	14.8	9.4
-10	27.7	8.3	23.7	9.2	19.7	10.2	18.8	10.4
-6	32.1	8.8	27.8	9.9	23.4	11.0	22.5	11.2

SP4-LF-100E/SP4-LN-100E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	7.3	4.7	5.6	4.7	3.8	4.6	3.5	4.6
-35	9.7	5.6	7.5	5.8	5.3	5.9	4.9	5.9
-30	12.8	6.5	10.2	6.8	7.5	7.1	6.9	7.2
-25	16.6	7.3	13.5	7.8	10.3	8.4	9.7	8.5
-20	21.1	8.1	17.5	8.8	13.9	9.6	13.1	9.7
-15	26.4	8.9	22.3	9.8	18.1	10.7	17.2	10.9
-10	32.3	9.7	27.7	10.8	22.9	11.9	22.0	12.1
-6	37.5	10.3	32.5	11.5	27.3	12.8	26.3	13.1

SP4-LF-120E/SP4-LN-120E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	8.3	5.4	6.4	5.4	4.4	5.3	-	-
-35	11.1	6.4	8.6	6.6	6.4	6.7	-	-
-30	14.6	7.4	11.6	7.8	8.6	8.2	7.9	8.2
-25	19.0	8.4	15.5	9.0	11.8	9.6	11.1	9.7
-20	24.2	9.3	20.1	10.1	15.8	10.9	15.0	11.1
-15	30.1	10.2	25.4	11.2	20.6	12.3	19.7	12.5
-10	36.9	11.1	31.6	12.3	26.2	13.6	25.1	13.9
-6	42.9	11.7	37.1	13.2	31.2	14.6	30.1	14.9

SP4-L-150E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	9.6	6.2	7.4	6.2	5.0	6.1	-	-
-35	12.8	7.4	10.0	7.6	7.0	7.8	-	-
-30	16.9	8.6	13.5	9.0	9.9	9.4	9.2	9.5
-25	22.0	9.7	17.9	10.4	13.6	11.0	12.8	11.2
-20	27.9	10.8	23.2	11.7	18.3	12.6	17.3	12.8
-15	34.8	11.8	29.4	13.0	23.9	14.2	22.7	14.4
-10	42.6	12.8	36.5	14.2	32.3	15.7	29.0	16.0
-6	49.5	13.6	42.9	15.2	36.1	16.9	34.7	17.3

SP4-L-180E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	11.1	7.2	8.6	7.2	5.8	7.1	-	-
-35	14.8	8.6	11.6	8.8	8.1	9.0	-	-
-30	19.6	9.9	15.6	10.4	11.5	10.9	10.6	11.0
-25	25.5	11.2	20.7	12.0	15.8	12.8	14.8	13.0
-20	32.4	12.5	26.9	13.5	21.2	14.7	20.1	14.9
-15	40.4	13.7	34.1	15.0	27.7	16.5	26.4	16.7
-10	49.4	14.8	42.4	16.5	35.1	18.2	33.7	18.6
-6	57.4	15.7	49.7	17.6	41.9	19.6	40.3	20.0

# INTRODUCTION

SP4-L-220E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	12.8	8.3	9.8	8.2	6.7	8.1	-	-
-35	17.0	9.9	13.3	10.1	9.3	10.4	-	-
-30	22.5	11.4	17.9	12.0	13.1	12.5	12.2	12.7
-25	29.2	12.9	23.8	13.8	18.1	14.7	17.0	14.9
-20	37.1	14.3	30.8	15.5	24.3	16.8	23.0	17.1
-15	46.3	15.7	39.1	17.2	31.7	18.9	30.2	19.2
-10	56.7	17.0	48.6	18.9	40.3	20.9	38.6	21.3
-6	65.9	18.0	57.0	20.2	48.0	22.5	46.2	23.0

SP4-L-250E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	15.4	10.0	11.8	9.9	8.1	9.8	-	-
-35	20.5	11.9	15.9	12.2	11.2	12.5	-	-
-30	27.1	13.7	21.5	14.4	15.8	15.1	14.6	15.2
-25	35.1	15.5	28.6	16.6	21.8	17.7	20.5	17.9
-20	44.7	17.2	37.1	18.7	29.3	20.2	27.7	20.5
-15	55.7	18.9	47.0	20.7	38.2	22.7	36.4	23.1
-10	68.2	20.5	58.4	22.8	48.5	25.1	46.5	25.6
-6	79.2	21.7	68.6	24.3	57.8	27.1	55.6	27.6

SP6-L-270E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	16.7	10.9	12.8	10.8	8.8	10.6	-	-
-35	22.3	12.9	17.3	13.3	12.2	13.5	-	-
-30	29.4	14.9	23.4	15.7	17.2	16.4	15.9	16.6
-25	38.2	16.9	31.1	18.0	23.7	19.2	22.3	19.5
-20	48.6	18.7	40.3	20.3	31.8	22.0	30.1	22.3
-15	60.6	20.5	51.1	22.6	41.5	24.7	39.5	25.1
-10	74.1	22.3	63.5	24.7	52.7	27.3	50.5	27.9
-6	86.2	23.6	74.6	26.4	62.8	29.4	60.4	30.0

SP6-L-300E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	19.2	12.5	14.8	12.4	10.1	12.2	-	-
-35	25.6	14.9	19.9	15.2	14.0	15.6	-	-
-30	33.8	17.2	26.9	18.0	19.8	18.9	18.3	19.0
-25	43.9	19.4	35.7	20.7	27.3	22.1	25.6	22.4
-20	55.8	21.5	46.3	23.4	36.6	25.3	34.6	25.7
-15	69.6	23.6	58.8	25.9	47.7	28.4	45.5	28.9
-10	85.2	25.6	73.0	28.4	60.6	31.4	58.1	32.0
-6	99.0	27.1	85.8	30.4	72.2	33.8	69.4	34.5

SP6-L-400E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	23.1	15.0	17.7	14.9	12.1	14.7	-	-
-35	30.7	17.8	23.9	18.3	16.8	18.7	-	-
-30	40.6	20.6	32.3	21.6	23.7	22.6	22.0	22.8
-25	52.7	23.2	42.9	24.9	32.8	26.5	30.7	26.9
-20	67.0	25.8	55.6	28.0	43.9	30.3	41.6	30.8
-15	83.5	28.3	70.5	31.1	57.2	34.1	54.6	34.7
-10	102.3	30.7	87.7	34.1	72.7	37.7	69.7	38.4
-6	118.8	32.5	102.9	36.5	86.6	40.6	83.3	41.4

SP8-L-500E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	34.8	20.6	17.6	18.5	9.2	15.8	-	-
-35	43.8	22.8	26.6	21.6	17.3	19.7	-	-
-30	54.7	25.5	37.1	25.2	26.5	24.2	24.8	23.6
-25	67.8	28.4	49.4	29.1	37.2	29.1	35.0	28.8
-20	83.4	31.4	63.9	33.2	49.7	34.3	47.1	34.2
-15	101.9	34.2	81.0	37.3	64.5	39.6	61.3	39.7
-10	123.7	36.8	101.0	41.2	81.8	44.8	78.0	45.1
-6	143.8	38.5	119.4	44.0	-	-	-	-

SP8-L-600E								
Tc	30		40		50		52	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-40	41.6	24.5	21.1	22.1	11.0	18.9	-	-
-35	52.3	27.2	31.8	25.8	20.7	23.5	-	-
-30	65.3	30.4	44.3	30.0	31.6	28.9	29.6	28.2
-25	80.9	33.9	59.0	34.7	44.4	34.8	41.8	34.4
-20	99.5	37.4	76.3	39.6	59.3	41.0	56.2	40.8
-15	121.6	40.9	96.7	44.5	76.9	47.3	73.1	47.4
-10	147.7	43.9	120.6	49.1	97.7	53.4	93.1	53.9
-6	171.7	46.0	142.6	52.5	-	-	-	-

KEY

- Pf = cooling capacity (kW)
- Pa = input power (kW)
- Te = evaporating temperature (°C)
- Tc = condensing temperature (°C)
- 50Hz = frequency
- Liquid subcooling 5K
- Suction gas superheat 10K
- identifies additional cooling required (see application limits)

Limits refer to full load 50 Hz operation

For data at different working conditions please refer to RefComp LEONARDO selection program

# INTRODUCTION

## SB, Refrigerant R22

SB-4-1200										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-50	5.9	4.2	5.5	4.7	-	-	-	-	-	-
-45	7.7	4.8	7.4	5.4	7.2	6	-	-	-	-
-40	9.9	5.5	9.6	6.2	9.3	6.9	-	-	-	-
-35	12.5	6.1	12.2	6.9	11.8	7.8	11.5	8.7	-	-
-30	15.5	6.7	15	7.7	14.6	8.7	14.2	9.7	14.1	10.2
-25	18.8	7.3	18.1	8.4	17.6	9.6	17.2	10.7	17	11.3
-20	22.6	7.9	21.6	9.2	20.9	10.5	20.5	11.7	20.3	12.4

SB-4-1400										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-50	7	5	6.6	5.6	-	-	-	-	-	-
-45	9.1	5.8	8.8	6.5	8.5	7.2	-	-	-	-
-40	11.7	6.5	11.4	7.4	11.1	8.2	-	-	-	-
-35	18.4	7.9	17.8	9.1	17.3	10.3	16.9	11.5	16.7	12.1
-30	14.8	7.2	14.4	8.3	14	9.3	13.7	10.3	-	-
-25	22.3	8.7	21.5	10.0	20.9	11.4	20.4	12.7	20.2	13.4
-20	26.8	9.4	25.7	10.9	24.8	12.4	24.3	13.9	24.1	14.7

SB-6-1600										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-50	8.6	6.2	8.1	6.9	-	-	-	-	-	-
-45	11.3	7.1	10.9	8	10.5	8.8	-	-	-	-
-40	14.5	8.0	14.1	9.1	13.7	10.1	-	-	-	-
-35	18.3	8.9	17.8	10.2	17.3	11.4	16.8	12.7	-	-
-30	22.6	9.8	21.9	11.3	21.3	12.7	20.8	14.2	20.6	14.9
-25	27.5	10.7	26.5	12.4	25.8	14.0	25.2	15.7	24.9	16.5
-20	33.0	11.6	31.6	13.4	30.9	15.3	29.9	17.2	29.7	18.1

SB-6-2000										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-50	10	7.2	9.4	8	-	-	-	-	-	-
-45	13.1	8.2	12.6	9.2	12.1	10.3	-	-	-	-
-40	16.8	9.3	16.3	10.5	15.9	11.8	-	-	-	-
-35	21.2	10.3	20.6	11.8	20.1	13.3	19.5	14.7	-	-
-30	26.2	11.3	25.4	13.1	24.7	14.7	24.1	16.4	23.8	17.3
-25	31.9	12.4	30.8	14.3	29.9	16.2	29.2	18.2	28.9	19.1
-20	38.3	13.4	36.7	15.6	35.6	17.8	34.7	19.9	34.4	21.0

SB-6-2600										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-50	11.5	8.2	10.8	9.1	-	-	-	-	-	-
-45	15.0	9.4	14.5	10.6	13.9	11.8	-	-	-	-
-40	19.3	10.6	18.7	12.1	18.2	13.5	-	-	-	-
-35	24.3	11.8	23.7	13.5	23	15.2	22.4	16.9	-	-
-30	30.1	13.0	29.2	15	28.4	16.9	27.7	18.8	27.4	19.8
-25	36.6	14.2	35.3	16.4	34.3	18.6	33.5	20.8	33.2	21.9
-20	43.9	15.4	42.1	17.9	40.7	20.4	39.8	22.9	39.5	24.1

SB-6-2000										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-50	13.7	9.9	12.9	10.9	-	-	-	-	-	-
-45	17.9	11.3	17.3	12.7	16.6	14.1	-	-	-	-
-40	23.0	12.7	22.4	14.4	21.8	16.1	-	-	-	-
-35	29.1	14.1	28.3	16.2	27.5	18.2	26.8	20.2	-	-
-30	36.0	15.6	34.9	17.9	33.9	20.2	33.1	22.5	32.7	21.7
-25	43.8	17.0	42.2	19.7	41.0	22.3	40.0	24.9	39.7	26.2
-20	52.5	18.5	50.3	21.4	48.7	24.4	47.6	27.3	47.3	28.8

### KEY

- Pf = cooling capacity (kW)
- Pa = input power (kW)
- Te = evaporating temperature (°C)
- Tc = condensing temperature (°C)
- Subcooling by means of subcooler only
- Suction gas superheat 20°C
- Frequency power supply 50Hz (1450 rpm)

# INTRODUCTION

28

Series SP  
Series SB

## SB,refrigerant R404A-R507

SB-4-120E										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-70	2.5	3	2.3	3.2	-	-	-	-	-	-
-65	3.5	3.5	3.2	3.9	3	4.2	-	-	-	-
-60	4.7	4.0	4.4	4.5	4.1	5	-	-	-	-
-55	6.2	4.6	5.7	5.2	5.3	5.7	5.0	6.8	-	-
-50	7.8	5.2	7.3	5.9	6.8	6.6	6.4	7.2	6.1	7.6
-45	9.7	5.9	9.1	6.6	8.6	7.4	8.0	8.2	7.7	8.6
-40	11.7	6.5	11.2	7.4	10.5	8.3	9.8	9.2	9.5	9.6
-35	14.0	7.2	13.4	8.2	12.8	9.1	12.0	10.2	11.5	10.7
-30	16.5	8.0	15.9	9.0	15.2	10.1	14.3	11.2	13.8	10.8

SB-4-140E										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-70	2.9	3.5	2.8	3.8	-	-	-	-	-	-
-65	4.2	4.1	3.8	4.6	3.6	5	-	-	-	-
-60	5.6	4.8	5.2	5.3	4.8	5.9	-	-	-	-
-55	7.3	5.5	6.8	6.1	6.3	6.8	5.9	7.5	-	-
-50	9.3	6.2	8.7	7.0	8.1	7.8	7.5	8.6	7.3	9
-45	11.5	7.0	10.8	7.9	10.2	8.8	9.5	9.7	9.1	10.2
-40	13.9	7.8	13.2	8.8	12.5	9.8	11.7	10.9	11.3	11.4
-35	16.6	8.6	15.9	9.7	15.1	10.9	14.2	12.1	13.7	12.7
-30	19.5	9.4	18.9	10.7	18.1	12.0	17.0	13.3	16.3	14.0

SB-6-160E										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-70	3.6	4.3	3.4	4.7	-	-	-	-	-	-
-65	5.1	5.1	4.7	5.6	4.4	6.2	-	-	-	-
-60	6.9	5.9	6.4	6.6	5.9	7.3	-	-	-	-
-55	9.0	6.7	8.4	7.6	7.8	8.4	7.3	9.2	-	-
-50	11.4	7.6	10.7	8.6	10.0	9.6	9.3	10.6	9	11.1
-45	14.1	8.6	13.3	9.7	12.5	10.8	11.7	12.0	11.3	12.6
-40	17.1	9.6	16.3	10.8	15.4	12.1	14.4	13.4	13.9	14.1
-35	20.5	10.6	19.6	12.0	18.7	13.4	17.5	14.9	16.8	15.6
-30	24.1	11.6	23.3	13.2	22.3	14.7	20.9	16.4	20.1	17.2

SB-6-200E										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-70	4.2	5	4	5.5	-	-	-	-	-	-
-65	5.9	5.9	5.5	6.5	5.2	7.1	-	-	-	-
-60	8.0	6.8	7.4	7.6	6.9	8.4	-	-	-	-
-55	10.5	7.8	9.7	8.8	9.0	9.7	8.4	10.7	-	-
-50	13.2	8.9	12.4	10.0	11.6	11.1	10.8	12.3	10.4	12.9
-45	16.4	9.9	15.5	11.2	14.5	12.5	13.5	13.9	13.0	14.6
-40	19.9	11.1	18.9	12.5	17.9	14.0	16.7	15.5	16.1	16.3
-35	23.7	12.3	22.8	13.9	21.6	15.5	20.3	17.2	19.5	18.1
-30	27.9	13.5	27.0	15.3	25.8	17.1	24.2	19.0	23.3	20.0

SB-6-250E										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-70	4.8	5.8	4.6	6.3	-	-	-	-	-	-
-65	6.8	6.8	6.3	7.5	5.9	8.2	-	-	-	-
-60	9.2	7.8	8.5	8.8	7.9	9.7	-	-	-	-
-55	12.0	9.0	11.1	10.1	10.4	11.2	9.7	12.3	-	-
-50	15.2	10.2	14.2	11.4	13.3	12.8	12.4	14.1	11.9	14.8
-45	18.8	11.4	17.7	12.9	16.7	14.4	15.5	15.9	15.0	16.7
-40	22.8	12.7	21.4	14.4	20.5	16.1	19.2	17.8	18.5	18.7
-35	27.2	14.1	26.1	15.9	24.8	17.8	23.3	19.8	22.4	20.8
-30	32.0	15.5	31.0	17.5	29.6	19.6	27.8	21.8	26.8	22.9

SB-6-300E										
Tc	20		30		40		50		55	
Te	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa	Pf	Pa
-70	5.8	6.9	5.5	7.5	-	-	-	-	-	-
-65	8.2	8.1	7.5	9	7.1	9.8	-	-	-	-
-60	11.0	9.4	10.2	10.5	9.5	11.6	-	-	-	-
-55	14.3	10.7	13.3	12.0	12.4	13.4	11.6	14.7	-	-
-50	18.2	12.2	17.0	13.7	15.9	15.3	14.8	16.8	14.3	17.6
-45	22.5	13.6	21.2	15.4	19.9	17.2	18.6	19.0	17.9	20.0
-40	27.3	15.2	26.0	17.2	24.5	19.2	22.9	21.3	22.1	22.4
-35	32.6	16.8	31.3	19.0	29.7	21.3	27.8	23.3	26.8	24.9
-30	38.3	18.5	37.1	20.9	35.4	23.4	33.3	26.1	32.0	27.4

### KEY

Pf = cooling capacity (kW)

Pa = input power (kW)

Te = evaporating temperature (°C)

Tc = condensing temperature (°C)

Subcooling by means of subcooler only /

Suction gas superheat 20 °C

Frequency power supply 50Hz (1450 rpm)

# DELIVERY

## COMPONENT

### SP SERIES

Star (400 [V]) or Delta (230 [V]) motor for SP2 models, part-winding start-up motor for all the other models (400 [V] /3/50 [Hz] - 460/3/60 [Hz]); suction shut-off valve; discharge shut-off valve; integrated safety relief valve; oil sight glass; oil filter<sup>(1)</sup>; oil charge; PTC sensors embedded in the electrical motor; crankcase heater electronic protection devices (230 [V] /1/50-60 [Hz]) INT 69 for SP2 and INT 69 VS for the rest of the models; IP54-class electrical box; nitrogen protective charge, spring vibration dampers<sup>(2)</sup>, bridges for D.O.L. start.

(1) Except for SP2 and SP4\_N models (with splasher lubrication).

(2) Except for 2- and 8-cylinder models, supplied as standard with rubber vibration dampers.

### SB SERIES

Suction and discharge shut-off valves, 4 spring vibration dampers, PTC embedded in the electrical motor and electronic motor protection device Kriwan INT 69 VS, IP54 enclosure class terminal box, internal safety relief valve, intermediate pressure line with manometer joint, oil sight glass, thermostatic valve with its own kit consisting of a solenoid valve, a liquid sight glass and a drier, all disassembled, oil charge for R22 refrigerant, nitrogen protective charge, crankcase heater, bridges for D.O.L. start.

All electric devices, either standard or optional, are meant for 230-1-50/60 [Hz] supply.

# ACCESSORI

## SP SERIES

The compressors, save for the SP2, can be equipped with an integrated capacity control system. The user can choose to have it already installed in the factory or to buy the suitable kit for a later installation. The capacity control system is achieved by the installation of one or two<sup>(3)</sup> special heads equipped with a solenoid valve.

When energized this solenoid valve stops the suction gas from entering the compression chamber, turning the compression stroke of the underlying pistons into an idle stroke. Together with the cooling capacity reduction, which is proportional to the number of the non-effective cylinders, the power consumption also reduces, keeping energy efficiency at very high levels. Specifically, the following are the available capacity steps.

(3) Two special heads only for 6- or 8-cylinder models.

Compressor type Tipo	N° of capacity control steps	Capacity control	N° of capacity control steps	Capacity control
2 Cyl.	--	--	--	--
4 Cyl.	1	50%	--	--
6 Cyl.	1	66%	2	66%-33%
8 Cyl.	1	75%	2	75%-50%

The following accessories are also available upon request: special voltage motors, start unloader device<sup>(4)</sup> (SU), liquid injection control module LCM and related accessories<sup>(5)</sup>, fan for additional cooling<sup>(6)</sup>, spring vibration dampers<sup>(5)</sup>, discharge gas temperature monitoring sensor, oil differential pressure safety switch MP54<sup>(7)</sup>, electronic oil differential pressure switch<sup>(7)</sup>, opto-electronic oil sensor<sup>(8)</sup>, oil charging service valve, connections for compressor parallel operation and special packaging. The standard and/or optional electrical accessories such as the motor protection device, the crankcase heater and the solenoid valves, are suitable for 230 [V] AC 50/60 [Hz] power supply. However special voltages are also available upon request.

(4) Except for 2- and 8-cylinder models.

(5) Not valid for 2-cylinder models.

(6) Except for 8-cylinder models.

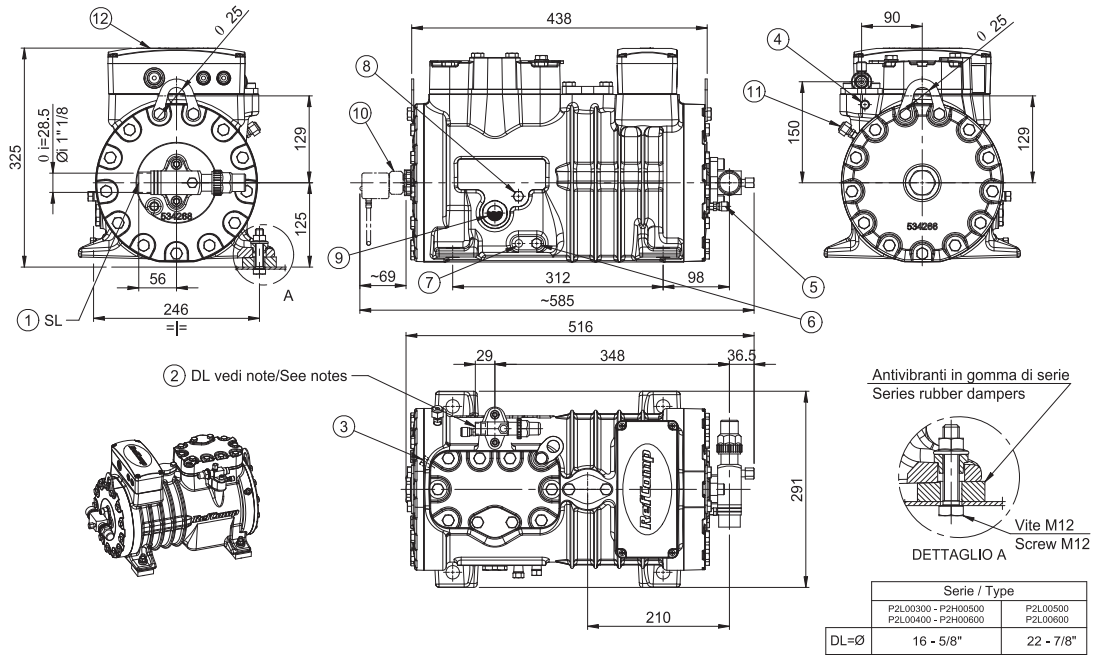
(7) Except for 4-cylinder models with splasher lubrication SP4\_N.

(8) Valid for 2 and 4 cylinder models with splasher lubrication SP4\_N.

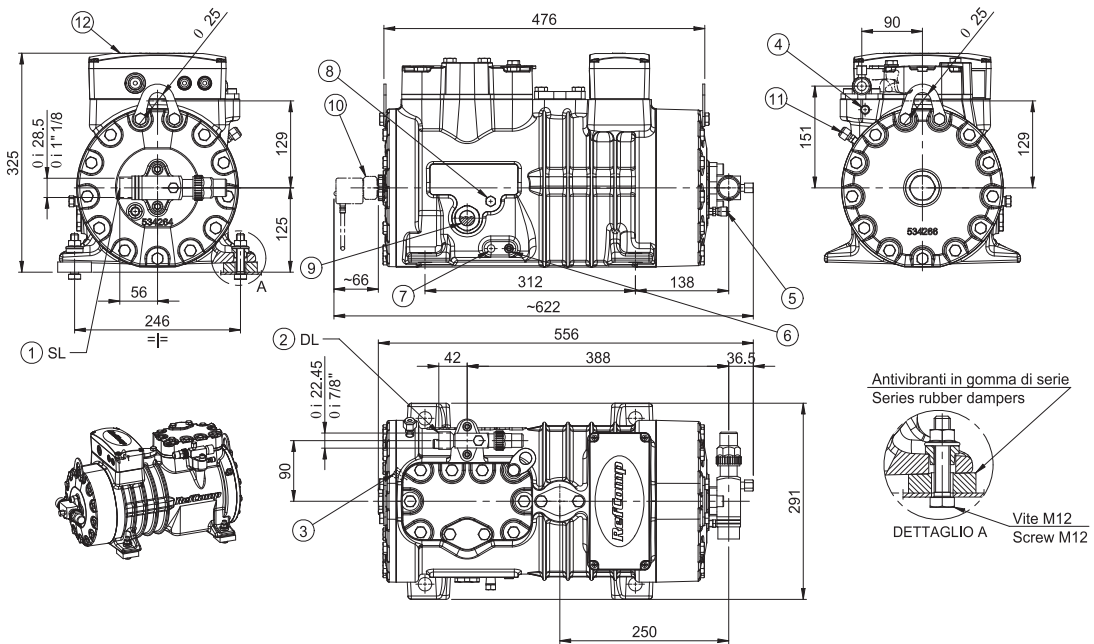
## SB SERIES

Special electric motors; polyol-ester oil for HFC refrigerants; MP54 electromechanical oil pressure switch; electronic oil pressure switch; oil electric oil charge service valve; control module (LCM) for liquid injection (as an alternative to the thermostatic valve) together with its own kit consisting of a solenoid valve, a liquid sight glass and a drier, all disassembled; liquid subcooler (fitted or not, as requested); discharge temperature control sensor; kit rubber anti-vibration dampers.

SP2L0300 - SP2L030E - SP2L0400 - SP2L040E - SP2L0500 - SP2L050E  
 SP2L0600 - SP2L060E - SP2H0500- SP2H050E - SP2H0600 - SP2H060E



SP2H0800 - SP2H080E  
 SP2H0900 - SP2H090E



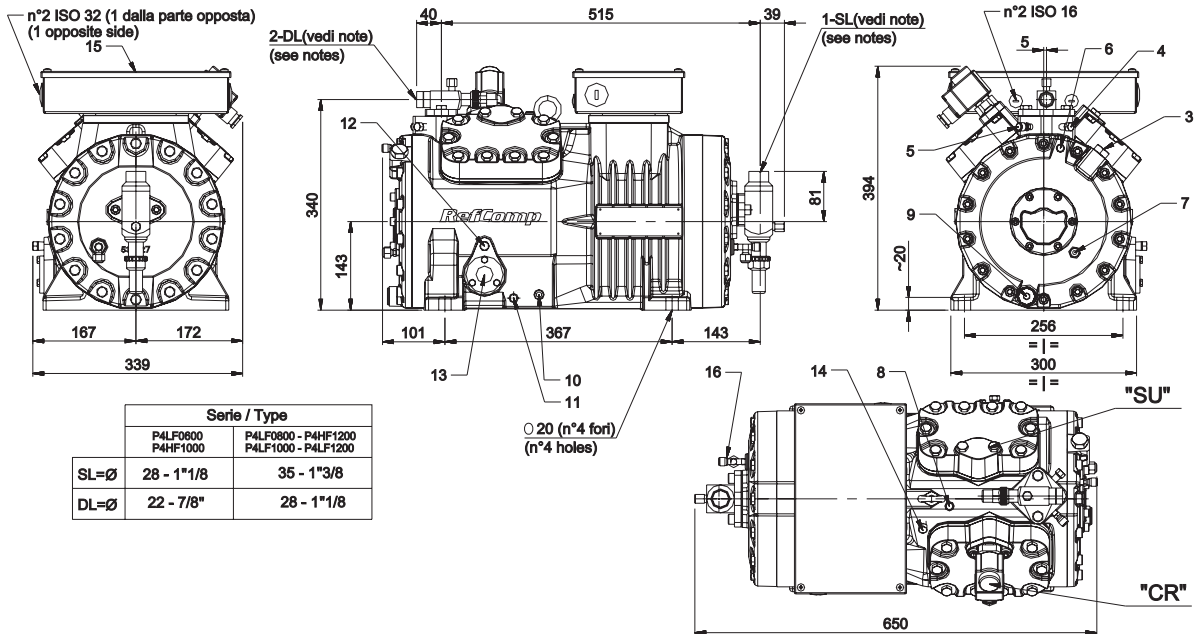
Key

- 1) Suction shut-off valve SL
- 2) Discharge shut-off valve DL
- 3) Discharge temperature sensor 1/8"NPT (optional)
- 4) High pressure 1/4" SAE-FLARE
- 5) Low pressure 1/4" SAE-FLARE
- 6) Oil drain 1/4"NPT
- 7) Crankcase heater
- 8) Oil charging shut-off valve 1/4"NPT (optional)
- 9) Oil level sight glass
- 10) Oil level sensor (optional)



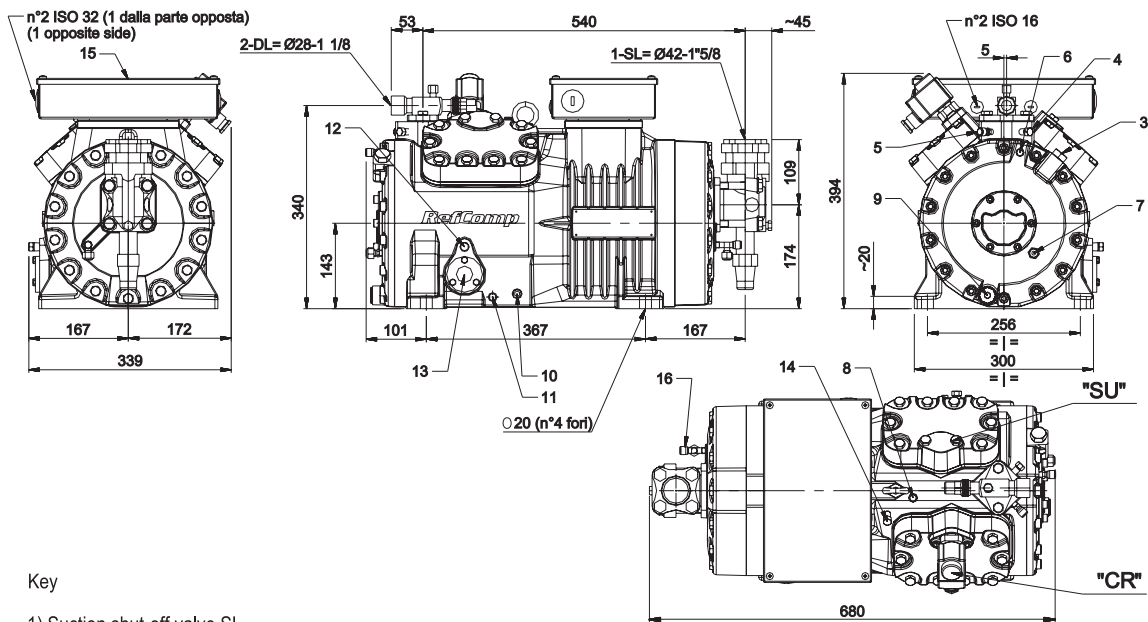
SP4LF0600 - SP4LF060E - SP4LF0800 - SP4LF080E

SP4HF/LF1000 - SP4HF/LF100E - SP4HF/LF1200 - SP4HF/LF120E



SP4HF1500 - SP4HF150E

SP4HF2000 - SP4HF200E



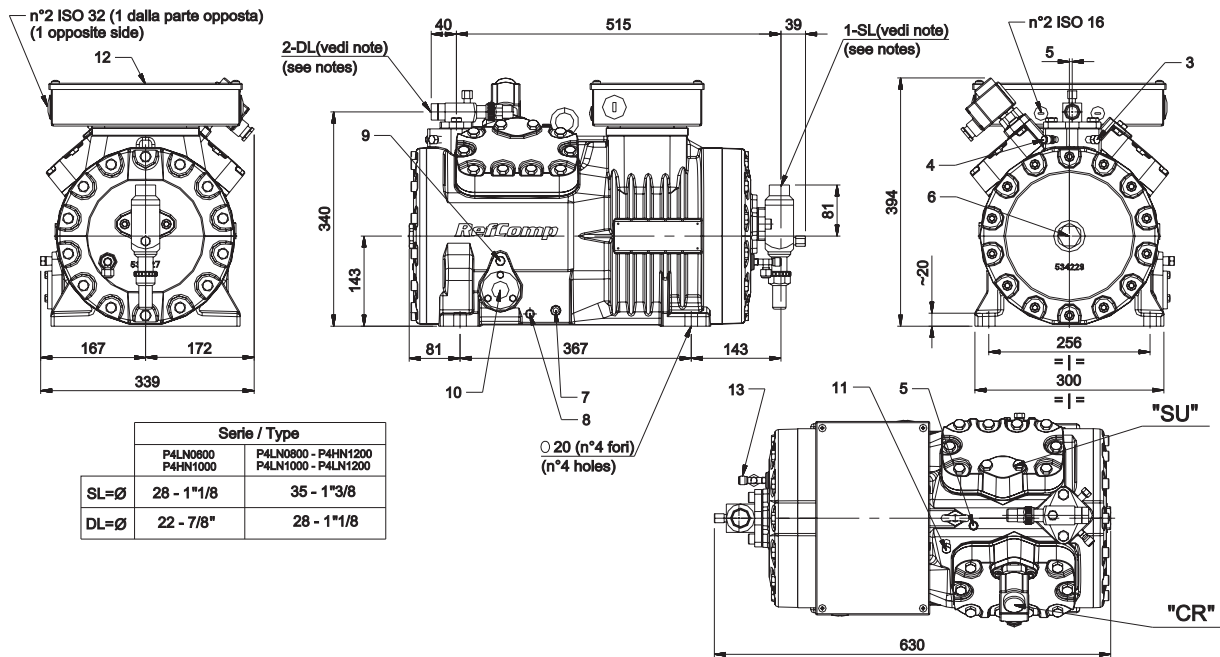
Key

- 1) Suction shut-off valve SL
  - 2) Discharge shut-off valve DL
  - 3) Electronic oil pressure switch connection
  - 4) Discharge temperature sensor 1/8"NPT
  - 5) High pressure 1/8"NPT
  - 6) Oil high pressure 1/4" SAE-FLARE
  - 7) Oil low pressure 1/4" SAE-FLARE
  - 8) Low pressure 1/8"NPT
  - 9) Oil strainer plug M22x1.5
  - 10) Oil drain 3/8"NPT
  - 11) Crankcase heater
  - 12) Oil charging 1/4"NPT
  - 13) Oil level sight glass
  - 14) LCM injection connection 1/8"NPT
  - 15) Electric box
  - 16) Low pressure 1/4" SAE-FLARE
- "CR" Capacity regulator  
 "SU" Start unloader



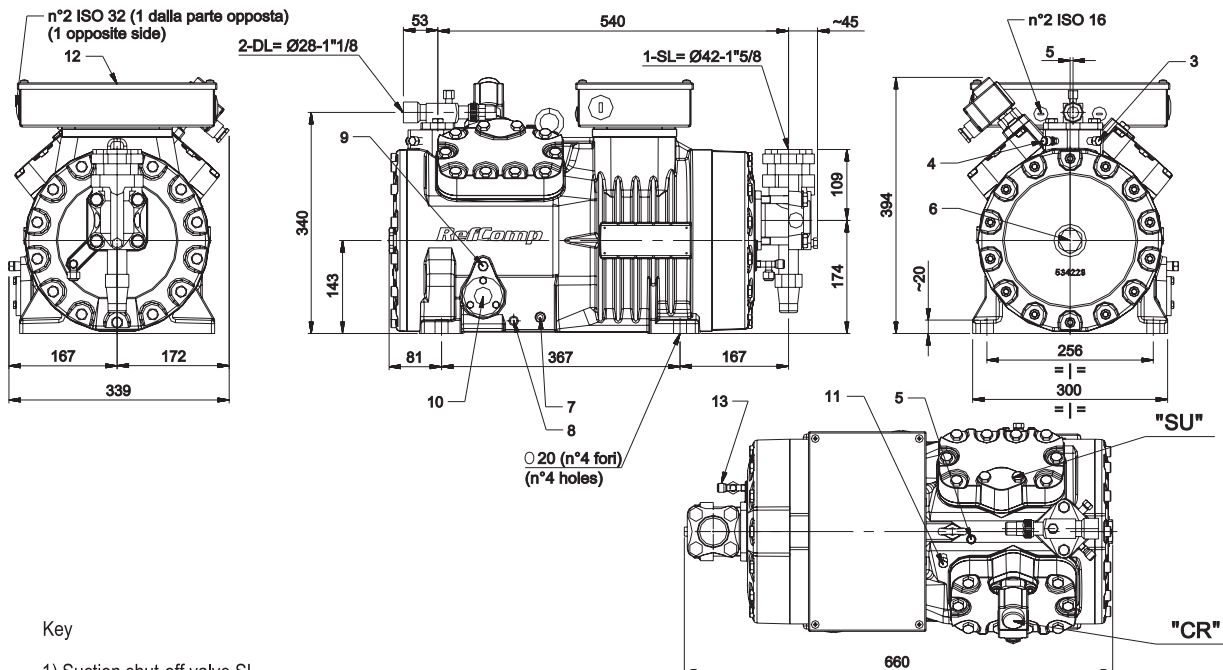
SP4LN0600 - SP4LN060E - SP4LN0800 - SP4LN080E

SP4HN/LN1000 - SP4HN/LN100E - SP4HN/LN1200 - SP4HN/LN120E



SP4HN1500 - SP4HN150E

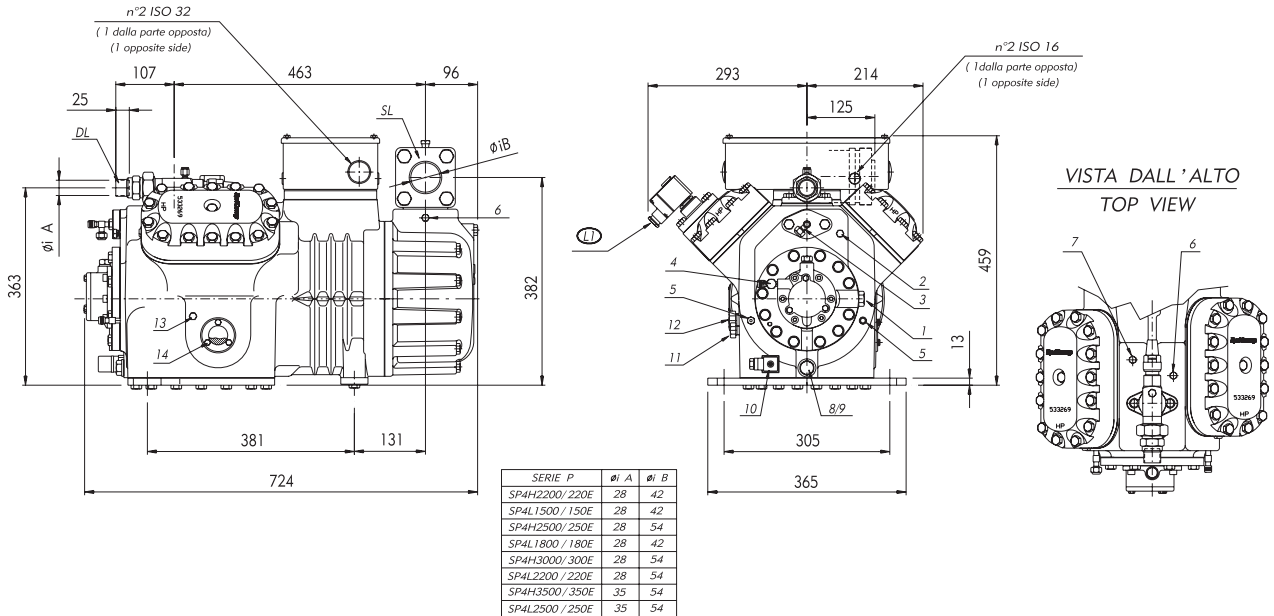
SP4HN2000 - SP4HN200E



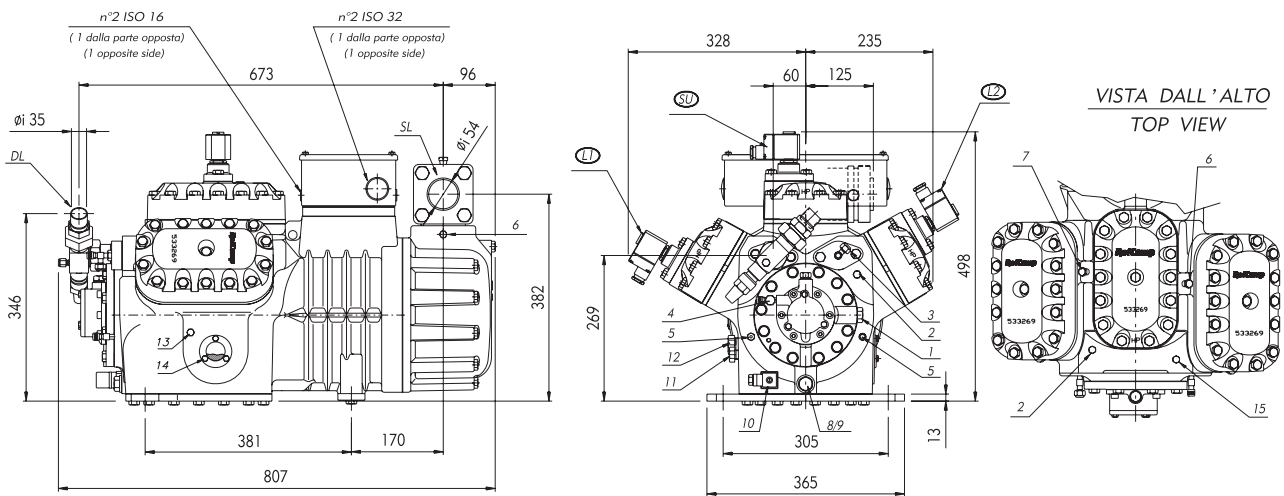
Key

- 1) Suction shut-off valve SL
  - 2) Discharge shut-off valve DL
  - 3) Discharge temperature sensor 1/8"NPT
  - 4) High pressure 1/8"NPT
  - 5) Low pressure 1/8"NPT
  - 6) Oil plug for optical sensor 1"1/8-18UNEF
  - 7) Oil drain 3/8"NPT
  - 8) Crankcase heater
  - 9) Oil charging 1/4"NPT
  - 10) Oil level sight glass
  - 11) LCM injection connection 1/8"NPT
  - 12) Electric box
  - 13) Low pressure 1/4" SAE-FLARE
- "CR" Capacity regulator  
 "SU" Start unloader

SP4L1500...SP4L2500 - SP4L150E...SP4H250E  
 SP4H2200...SP4H3500 - SP4H220E...SP4H350E



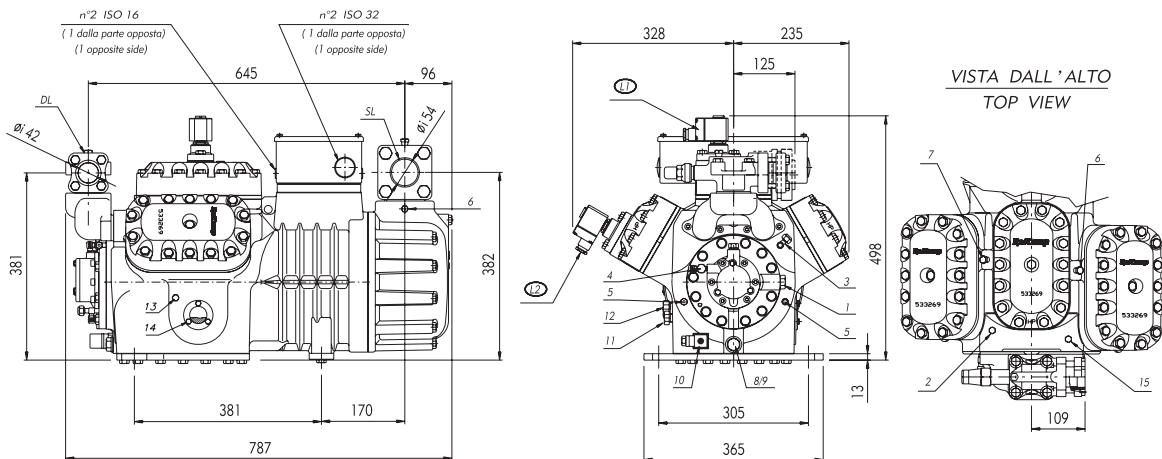
SP6L2700 - SP6L270E - SP6L3000 - SP6L300E  
 SP6H3700 - SP6H370E - SP6H4000 - SP6H400E



Key

- 1) Electronic oil pressure switch connection
- 2) Discharge temperature sensor
- 3) High pressure 1/4" SAE-FLARE
- 4) Oil high pressure 1/4"SAE-FLARE
- 5) Oil low pressure 1/4"SAE-FLARE
- 6) Low pressure 1/8"NPT
- 7) Low pressure 1/8"NPT (liquid injection)
- 8) Oil strainer plug
- 9) Oil drain
- 10) Crankcase heater
- 11) Oil equalization(parallel operation)
- 12) Gas equalization(parallel operation)
- 13) Oil charging 1/4"NPT
- 14) Oil level sight glass
- 15) High pressure 1/4"NPT
- DL) Discharge shut off valve
- SL) Suction shut off valve
- L1) Solenoid valve 1<sup>st</sup> step
- L2) Solenoid valve 2<sup>nd</sup> step
- SU) Solenoid valve unloading start

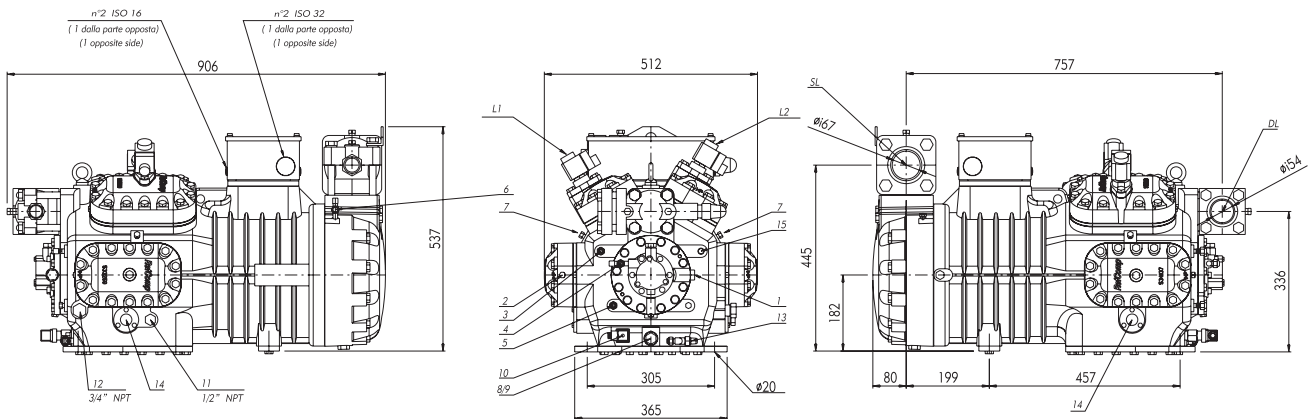
SP6L4000 - SP6L400E  
SP6H5000 - SP6H500E



Key

- |  |  |
|--|--|
| 1) Electronic oil pressure switch connection | 11) Oil equalization(parallel operation) |
| 2) Discharge temperature sensor              | 12) Gas equalization(parallel operation) |
| 3) High pressure 1/4" SAE..FLARE             | 13) Oil charging 1/4"NPT                 |
| 4) Oil high pressure 1/4" SAE-FLARE          | 14) Oil level sight glass                |
| 5) Oil low pressure 1/4" SAE-FLARE           | 15) High pressure 1/4"NPT                |
| 6) Low pressure 1/8"NPT                      | DL) Discharge shut off valve             |
| 7) Low pressure 1/8"NPT (liquid injection)   | SL) Suction shut off valve               |
| 8) Oil strainer plug                         | L1) Solenoid valve 1 <sup>st</sup> stage |
| 9) Oil drain                                 | L2) Solenoid valve 2 <sup>nd</sup> stage |
| 10) Crankcase heater                         |  |

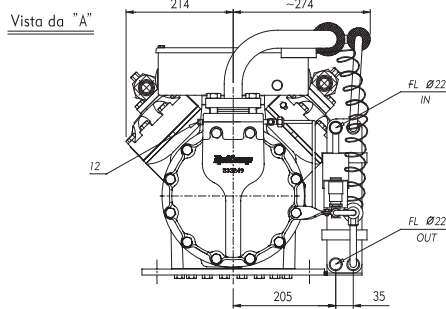
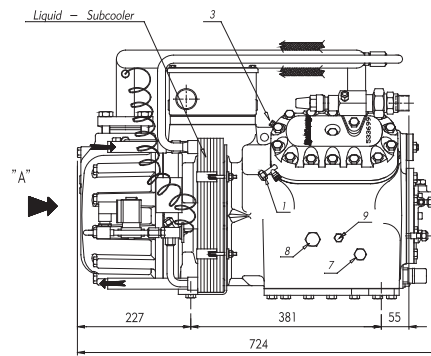
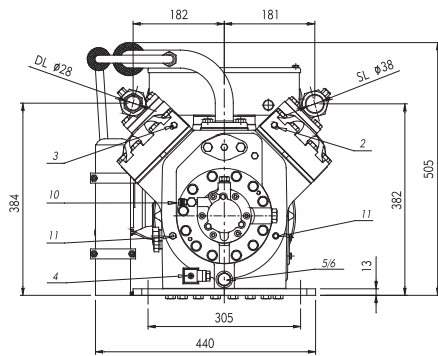
SP8H6000 - SP8H600E - SP8H7000- SP8H700E  
SP8L5000 - SP8L500E - SP8L6000 - SP8L600E



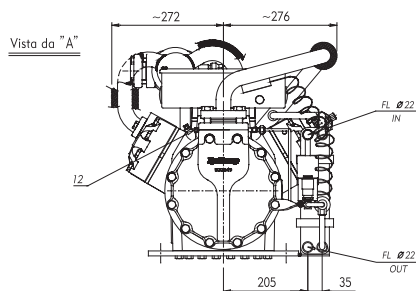
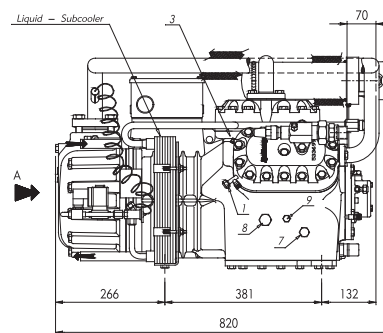
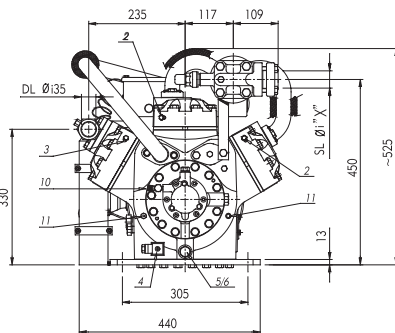
Key

- |  |
|--|
| 1) Electronic oil pressure switch connection     |
| 2) Discharge temperature sensor 1/8" NPT         |
| 3) High pressure H.P. 1/4" SAE                   |
| 4) Oil high pressure 1/4" SAE                    |
| 5) Oil low pressure 1/4" SAE                     |
| 6) Low pressure L. P. 1/4" SAE                   |
| 7) Low pressure L.P. 1/8" NPT (liquid injection) |
| 8) Oil strainer plug                             |
| 9) Oil drain                                     |
| 10) Crankcase heater                             |
| 11) Oil equalization(parallel operation)         |
| 12) Gas equalization(parallel operation)         |
| 13) Oil charging 1/4"SAE (on request)            |
| 14) Oil level sight glass                        |
| 15) High pressure H.P. Schrader-connection       |
| DL) Discharge shut off valve                     |
| SL) Suction shut off valve                       |
| L1) Solenoid valve 1 <sup>st</sup> step          |
| L2) Solenoid valve 2 <sup>nd</sup> step          |

SB4 1200 - SB4 120E  
SB4 1400 - SB4 140E



SB6 1600 - SB6 160E - SB6 2000 - SB6 200E  
SB6 2500 - SB6 250E - SB6 3000 - SB6 300E



KEY

- |   |   |
|---|---|
| 1) Intermediate pressure 1/4" S.A.E. - FLARE      | 9) Oil charging 1/4" NPT  |
| 2) Low pressure 1/8" NPT                          | 10) Oil high pressure 1/4" S.A.E. - FLARE   |
| 3) High pressure 1/4" S.A.E. - FLARE              | 11) Oil low pressure 1/4" S.A.E. - FLARE  |
| 4) Crankcase heater                               | 12) Oil return from separator 1/8" NPT  |
| 5) Oil strainer plug                              | 13) Suction shut-off valve  |
| 6) Oil drain 1/4" NPT                             | 14) Discharge shut-off valve  |
| 7) Oil equalization (parallel operation) 1/2" NPT | 15) Oil sight glass   |
| 8) Gas equalization (parallel operation) 3/4" NPT | 16) Plate heat exchanger (optional) controlled on liquid injection module LCM or thermostatic valve |









FUJIAN SNOWMAN CO.,LTD.

Add: Dongshan Road, Minjiangkou Industrial District, Fuzhou, Fujian, China.

Tel: +86 591 28701111 Fax: +86 591 28709222

Http://www.snowkey.com E-mail:info@snowkey.com

FUJIAN SNOWMAN CO.,LTD.SHANGHAI BRANCH

Add: Room806,No.47.Zhengyi Road,Yangpu District, Shanghai.

Tel: +86 21 55087153

Fax: +86 21 55087153-818