Frascold®

ATS

Frascold open type screw compressors

for refrigeration, air conditioning, heat pumps

ATS SERIES

Frascold ATS open type screw compressors range has been designed to meet reliability, flexibility and efficiency. The range consists of 16 models , covering not only a wide capacity but also an extremely various range of applications.

Designed to work with ammonia, hydrocarbons, traditional HFC, HCFC and new refrigerants with low GWP.
High cooling capacity, with or without economizer.
Universal application, marine/industrial refrigeration, process cooling, heat pumps and even air conditioning and ATEX zones.
Designed to work in parallel compounds by means of an external oil separator.
According to the working conditions it is possible to identify two main configurations for assuring the highest efficiency:

ATSH: suitable for low compression ratios (medium evaporating temperatures).
ATSL: suitable for high compression ratios (low evaporating temperatures).

All models are characterized by:

High precision
Bearings with a high degree of rigidity and operating precision, resistant to the combination of radial and axial loads, resistant to operation with R717 (NH3). Innovative bearings configuration protects screws from any counter-rotations which could occur during system shut-down.

Easy installation and accessibility
Compact design, with reduced overall dimensions and ease of installation.

High flexibility
Universal application: R717 (NH3) R134a, R404A, R507A, R407A, R407F, R22. Prepared for operation with economizer.

High performances
Asymmetrical screw profiles with optimised dimensions to guarantee higher performances.

Coupling
Direct coupling with the motor.

Noise level
Low noise level and no vibrations.

Maintenance
Mechanics conceived for safe operation with long operative intervals without maintenance.

Long operative life
Bearings designed for this compressor with special cage that reduce noise and grant an higher load resistance and longer operative life.

EXTENT OF DELIVERY

Standard supply

Suction and discharge bush - Check valve on discharge line - Built in safety valve - Capacity control - Holding charge (nitrogen)

Optional accessories

Coupling joint and coupling protective housing for IEC standard motors
Coupling joint and protective coupling, unmachined on motor side
Discharge valve; suction valve; valve for ECO
Air oil cooler; water oil cooler
Oil separator; oil injection kit; oil shut off valve
Oil filter clogging sensor optical or electronic

Optional accessories R717

Coupling joint and coupling protective housing for IEC standard motors
Coupling joint and protective coupling, unmachined on motor side
Discharge valve; suction valve
valve for ECO
Oil separator; oil injection kit
Oil shut off valve

MODEL DESIGNATION

Compressor ATS H 1 120

Family series
Open Screw Compressor

Application range	
H	Medium evaporating temperature
L	Low evaporating temperature

Release
Product Release

Displacement
m^3/h at 2900 rpm

TECHNICAL DATA

Compressor (1)	Displacement (m3/h)		Weight	Connections						Step capacity control	Speed
				Suction		Discharge		Economizer			
	2900 rpm	3500 rpm	kg	ø mm	inches	ø mm	inches	ø mm	inches	%	rpm
ATSH1-120	120	144	155	54	2" ⅛	42	1" ⅝	22	7/8"	100 - 50	1450 <> 4500
ATSL1-120	120	144	155	54	2" ⅛	42	1" ⅝	22	7/8"	100 - 50	
ATSH1-150	150	180	160	54	2" ⅛	42	1" ⅝	22	7/8"	100 - 50	
ATSL1-150	150	180	160	54	2" ⅛	42	1" ⅝	22	7/8"	100 - 50	
ATSH1-186 (*)	186	223	200	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 50	
ATSL1-186 (*)	186	223	200	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 50	
ATSH1-210 (*)	210	252	205	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 50	
ATSL1-210 (*)	210	252	205	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 50	
ATSH1-240	240	288	240	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 75 - 50	
ATSL1-240	240	288	240	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 75 - 50	
ATSH1-270	270	324	250	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 75 - 50	
ATSL1-270	270	324	250	80	3" ⅛	54	2" ⅛	22	7/8"	100 - 75 - 50	
ATSH1-300	300	360	295	80	3" ⅛	67	2" ⅝	22	7/8"	100 - 75 - 50	
ATSL1-300	300	360	295	80	3" ⅛	67	2" ⅝	22	7/8"	100 - 75 - 50	
ATSH1-360	360	432	310	80	3" ⅛	67	2" ⅝	22	7/8"	100 - 75 - 50	
ATSL1-360	360	432	310	80	3" ⅛	67	2" ⅝	22	7/8"	100 - 75 - 50	

(1) Clockwise rotation; **(*)** Availability Q4 2014

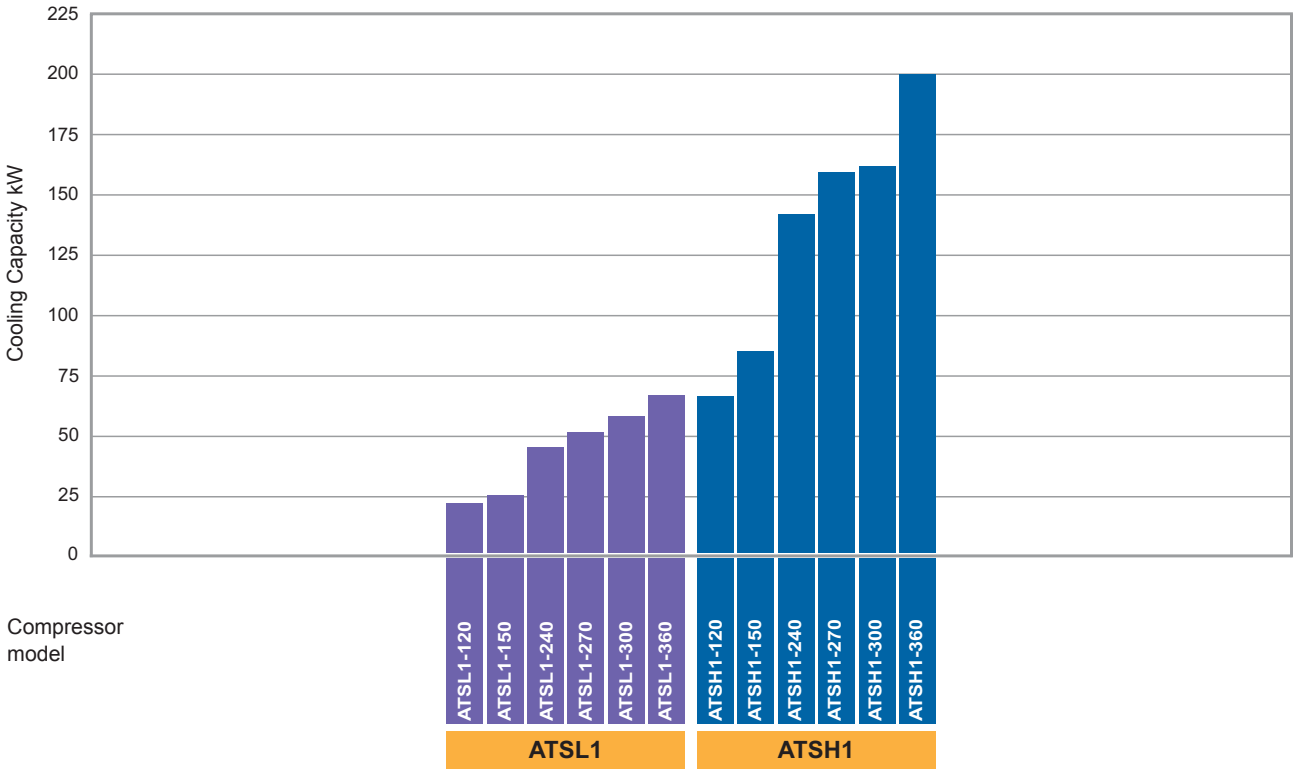
R717

Compressor	Condensing temperature	Qo (kW) / Pe (kW)	Cooling capacity / Power consumption						
		50Hz	Evaporating temperature °C						
	°C		10	5	0	-5	-10	-15	-20
ATSH1 - 120	30	Qo	165.6	138.6	115.0	94.4	76.6	61.4	48.4
		Pe	26.0	24.2	22.5	20.8	19.4	18.1	17.1
	40	Qo	157.0	131.0	108.3	88.5	71.3	56.6	44.1
		Pe	30.7	28.7	26.8	25.0	23.4	21.9	20.8
	50	Qo	146.3	121.6	99.9	81.2	64.9		
		Pe	35.4	33.5	31.6	29.8	28.2		
ATSH1 - 150	30	Qo	224.0	187.5	154.3	124.7	98.8	76.7	58.7
		Pe	29.6	28.5	27.6	26.9	26.3	25.8	25.4
	40	Qo	211.0	174.7	142.1	113.2	88.3	67.4	50.8
		Pe	36.3	35.0	33.9	33.0	32.2	31.5	30.9
	50	Qo	192.1	156.8	125.3	97.9	74.6		
		Pe	45.1	43.5	42.2	40.9	39.8		
ATSH1 - 240	30	Qo	348.5	289.3	238.8	195.8	159.4	128.3	101.6
		Pe	50.8	46.8	43.7	41.1	38.9	36.7	34.4
	40	Qo	324.9	269.1	221.4	180.8	146.1	116.3	90
		Pe	59.8	55.8	52.4	49.5	46.8	44.2	41.26
	50	Qo	300.9	248.2	203.1	164.5	131.4		
		Pe	70.9	66.4	62.5	59.0	55.6		
ATSH1 - 270	30	Qo	395.6	328.5	271.1	222.4	181.1	145.8	115.4
		Pe	57.3	53.3	49.8	46.7	44.0	41.4	39.0
	40	Qo	367.6	304.9	251.2	205.3	166.1	132.1	102.3
		Pe	68.3	63.8	59.8	56.2	53.0	50.1	47.5
	50	Qo	339.7	281.0	230.5	187.1	149.5		
		Pe	81.2	75.9	71.2	67.1	63.4		
ATSH1 - 300	30	Qo	426.7	354.3	291.3	236.9	190.3	150.7	117.2
		Pe	58.4	56.3	54.3	52.4	50.5	48.7	46.9
	40	Qo	393.4	324.9	265.5	214.3	170.5	133.3	101.8
		Pe	71.6	69.1	66.8	64.6	62.5	60.6	58.8
	50	Qo	355.7	291.4	235.9	188.2	147.5		
		Pe	87.1	84.1	81.4	78.8	76.5		
ATSH1 - 360	30	Qo	504.1	421.0	349.1	287.1	233.6	187.2	146.7
		Pe	68.4	66.3	63.8	61.2	58.8	56.7	55.2
	40	Qo	477.2	395.6	325.1	264.5	212.5	167.5	128.4
		Pe	85.8	82.1	78.5	75.1	72.3	70.3	69.4
	50	Qo	444.8	365.0	296.4	237.7	187.4		
		Pe	105.5	100.4	95.8	91.9	89.1		

Compressor	Condensing temperature	Qo (kW) / Pe (kW)	Cooling capacity / Power consumption						
		50Hz	Evaporating temperature °C						
	°C		-10	-15	-20	-25	-30	-35	-40
ATSL1 - 120	30	Qo	82.4	66.5	53.1	41.9	32.5	24.7	18.2
		Pe	23.3	21.1	19.0	17.1	15.4	13.8	12.4
	40	Qo	75.9	60.9	48.3	37.7	28.8	21.5	
		Pe	26.8	24.3	22.0	19.8	17.9	16.0	
	50	Qo	68.6	54.6	42.8	32.8	24.6		
		Pe	30.3	27.5	24.9	22.5	20.2		
ATSL1 - 150	30	Qo	106.6	87.0	69.7	54.5	41.4	30.5	21.6
		Pe	30.6	27.8	25.3	23.1	21.2	19.5	18.1
	40	Qo	100.8	80.9	63.4	48.3	35.7	25.4	
		Pe	35.1	32.1	29.4	27.0	24.8	22.9	
	50	Qo	91.7	72.0	55.0	40.7	29.1		
		Pe	40.5	37.2	34.2	31.5	29.1		
ATSL1 - 240	30	Qo	164.8	132.7	105.8	83.5	65.2	50.3	38.2
		Pe	49.1	43.5	38.8	34.8	31.5	28.6	26.0
	40	Qo	153.8	123.2	97.7	76.6	59.3	45.1	
		Pe	54.6	48.9	44.1	39.9	36.4	33.2	
	50	Qo	141.0	112.1	88.0	68.0	51.5		
		Pe	61.4	55.5	50.5	46.1	42.2		
ATSL1 - 270	30	Qo	187.7	150.7	119.9	94.5	73.7	56.8	43.1
		Pe	55.0	48.6	43.3	38,9	35.2	32.0	29.1
	40	Qo	175.1	140.0	110.8	86.7	67.0	50.9	
		Pe	61.2	54.7	49.3	44.7	40.7	37.1	
	50	Qo	160.7	127.4	99.8	77.0	58.3		
		Pe	69.2	62.4	56.7	51.7	47.3		
ATSL1 - 300	30	Qo	206.3	165.7	132.0	104.2	81.5	63.0	47.9
		Pe	61.3	54.1	48.2	43.3	39.2	35.7	32.5
	40	Qo	192.2	154.0	122.2	96.0	74.4	56.6	
		Pe	68.1	61.0	55.0	49.9	45.5	41.5	
	50	Qo	176.3	140.2	110.1	85.0	64.2		
		Pe	76.5	69.3	63.0	57.5	52.5		
ATSL1 - 360	30	Qo	249.4	199.5	158.5	125.0	97.8	75.8	57.6
		Pe	74.4	65.3	57.9	52.0	47.2	43.1	39.2
	40	Qo	230.9	184.6	146.4	115.1	89.5	68.2	
		Pe	82.1	73.2	65.9	59.9	54.7	50.0	
	50	Qo	211.4	168.0	132.1	102.3	77.5		
		Pe	92.3	83.3	75.8	69.3	63.5		

Performance data refereted to 5K suction superheat, 0K liquid subcooling.

R717

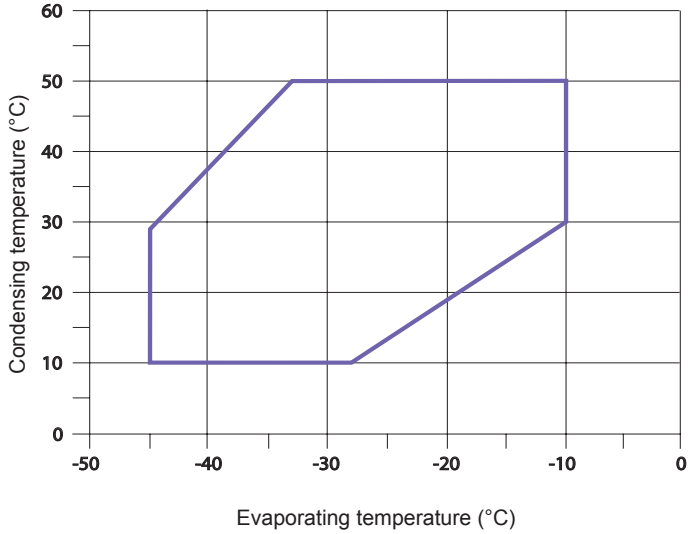


ATSL1: -35°C evaporating temperature; 40°C condensing temperature; 5K superheat; 0K liquid subcooling.

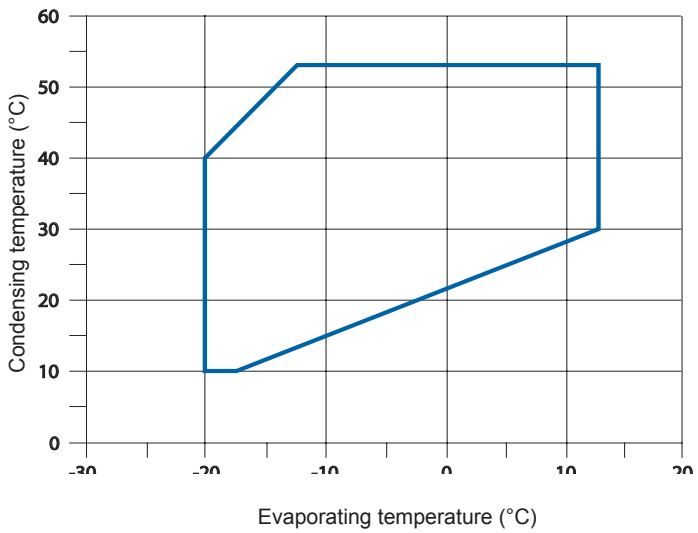
ATSH1: -10°C evaporating temperature; 45°C condensing temperature; 5K superheat; 0K liquid subcooling.

Working limits

ATSL1 R717



ATSH1 R717



Full load operation (100%)

Suction gas superheating 5K - 0K liquid subcooling.

Additional cooling may be required, see selection software.

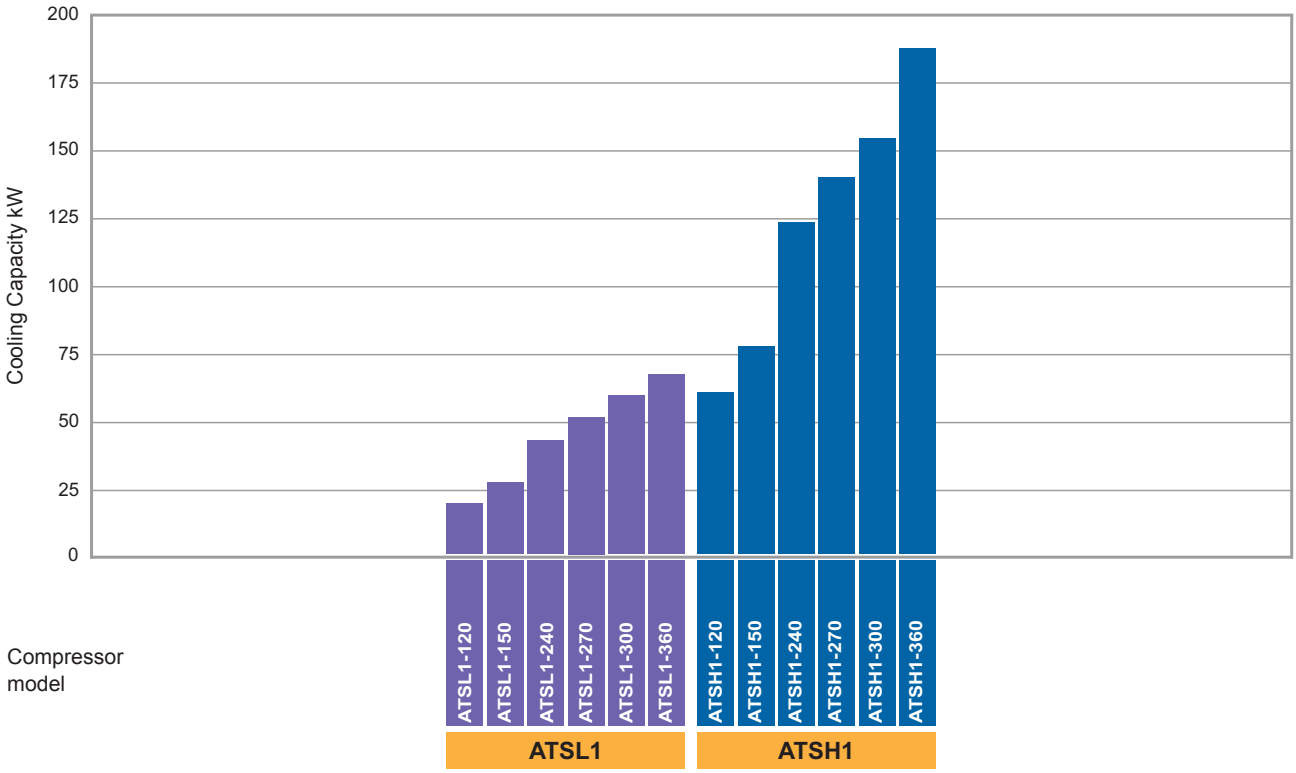
R404

Compressor	Condensing temperature	Qo (kW) / Pe (kW)	Cooling capacity / Power consumption						
		50Hz	Evaporating temperature °C						
	°C		7.5	5	0	-5	-10	-15	-20
ATSH1 - 120	30	Qo	147.6	135.2	112.6	92.8	75.8	61.4	49.6
		Pe	23.6	23.0	22.2	21.6	21.1	20.7	20.1
	40	Qo	125.2	114.8	95.7	78.9	64.4	52.0	41.6
		Pe	27.1	26.8	26.5	26.2	25.9	25.4	24.6
	50	Qo	102.6	94.1	78.4	64.5	52.3	41.7	32.7
		Pe	32.6	32.6	32.5	32.3	31.9	31.2	29.9
ATSH1 - 150	30	Qo	197.9	180.0	148.6	122.4	100.4	81.8	65.6
		Pe	29.5	29.2	28.4	27.8	27.4	27.3	27.6
	40	Qo	170.5	154.8	127.2	104.4	85.4	69.2	55.0
		Pe	36.0	35.7	35.1	34.5	34.1	34.0	34.2
	50	Qo	141.9	128.2	104.6	85.2	69.1	55.5	43.3
		Pe	44.6	44.3	43.7	43.1	42.6	42.3	42.4
ATSH1 - 240	30	Qo	312.8	284.4	234.8	193.5	159.2	130.5	106.3
		Pe	50.1	48.1	45.1	43.1	41.9	41.1	40.3
	40	Qo	266.9	242.7	200.4	165.2	135.8	110.9	89.2
		Pe	56.4	54.7	52.1	50.5	49.5	48.8	48.1
	50	Qo	220.3	200.1	164.8	135.5	110.7	89.1	69.6
		Pe	65.5	64.0	61.7	60.3	59.4	58.7	57.9
ATSH1 - 270	30	Qo	353.0	320.4	264.0	217.6	179.5	147.9	120.9
		Pe	56.9	54.3	50.6	48.5	47.4	46.8	46.4
	40	Qo	301.4	273.5	225.3	185.8	153.2	125.7	101.4
		Pe	63.8	61.6	58.5	56.8	56.0	55.7	55.3
	50	Qo	249.1	225.7	185.4	152.4	124.9	101.1	79.1
		Pe	74.0	72.1	69.3	67.9	67.3	67.0	66.5
ATSH1 - 300	30	Qo	393.3	356.9	293.9	242.0	199.2	163.8	133.5
		Pe	62.2	61.0	58.6	56.5	54.7	53.2	52.0
	40	Qo	335.3	304.0	249.9	205.6	169.0	138.2	111.2
		Pe	71.6	70.5	68.5	66.6	65.0	63.6	62.6
	50	Qo	279.0	252.3	206.3	168.7	137.3	110.3	85.7
		Pe	84.7	83.9	82.3	80.9	79.8	78.8	78.2
ATSH1 - 360	30	Qo	470.7	427.4	352.2	290.5	239.7	197.6	161.6
		Pe	76.0	74.3	71.2	68.4	66.0	64.0	62.5
	40	Qo	402.3	364.9	300.3	247.4	203.9	167.2	135.1
		Pe	86.9	85.5	82.7	80.2	78.1	76.3	75.0
	50	Qo	334.3	302.5	247.8	203.2	166.2	134.4	105.4
		Pe	102.4	101.2	99.1	97.2	95.6	94.3	93.4

Compressor	Condensing temperature	Qo (kW) / Pe (kW)	Cooling capacity / Power consumption							
		50Hz	Evaporating temperature °C							
	°C		-15	-20	-25	-30	-35	-40	-45	-50
ATSL1 - 120	30	Qo	63.3	51.3	41.1	32.6	25.6	19.7	14.8	10.5
		Pe	22.9	21.3	19.9	18.8	17.9	17.0	16.1	15.1
	40	Qo	54.0	43.4	34.5	27.2	21.2	16.1	11.9	8.1
		Pe	25.6	24.1	22.9	21.8	20.9	19.9	18.9	17.8
	50	Qo	44.1	35.0	27.5	21.3	16.3	12.1		
		Pe	29.2	27.9	26.7	25.6	24.6	23.5		
ATSL1 - 150	30	Qo	81.6	66.1	53.0	42.1	33.0	25.4	19.0	13.5
		Pe	28.1	26.1	24.5	23.1	21.9	20.8	19.7	18.6
	40	Qo	69.5	55.9	44.5	35.1	27.3	20.8	15.3	10.4
		Pe	31.4	29.6	28.1	26.8	25.6	24.4	23.2	21.8
	50	Qo	56.6	45.0	35.3	27.5	21.0	15.6		
		Pe	35.7	34.1	32.7	31.4	30.1	28.8		
ATSL1 - 240	30	Qo	132.6	107.5	86.3	68.6	53.7	41.4	31.1	22.30
		Pe	45.9	42.6	39.3	36.2	33.6	31.3	29.7	28.81
	40	Qo	113.4	91.5	73.2	57.9	45.2	34.6	25.8	18.08
		Pe	52.1	48.3	44.7	41.5	38.8	36.7	35.4	34.92
	50	Qo	92.5	73.9	58.4	45.7	35.2	26.5		
		Pe	60.1	55.8	52.0	48.7	46.1	44.3		
ATSL1 - 270	30	Qo	147.9	120.1	96.8	77.3	61.0	47.4	35.9	25.70
		Pe	51.6	47.2	43.4	40.1	37.3	35.2	33.5	32.44
	40	Qo	125.2	101.3	81.5	65.0	51.3	39.8	29.8	20.77
		Pe	57.9	53.1	49.1	45.7	43.1	41.1	39.9	39.37
	50	Qo	102.2	82.1	65.5	51.8	40.3	30.6		
		Pe	66.3	61.3	57.2	53.9	51.4	49.9		
ATSL1 - 300	30	Qo	162.3	132.3	107.0	85.7	67.9	52.8	39.8	28.3
		Pe	57.0	52.3	48.2	44.8	41.9	39.5	37.6	36.1
	40	Qo	136.4	111.0	89.7	72.0	57.1	44.3	33.1	22.8
		Pe	63.8	58.8	54.7	51.2	48.5	46.3	44.7	43.6
	50	Qo	111.7	90.3	72.5	57.7	45.1	34.2		
		Pe	73.3	68.2	64.0	60.6	58.0	56.2		
ATSL1 - 360	30	Qo	196.7	159.9	129.0	103.3	81.8	63.6	47.8	33.6
		Pe	68.3	62.8	58.0	53.9	50.4	47.4	44.8	42.5
	40	Qo	165.8	134.4	108.4	86.8	68.8	53.4	39.8	27.1
		Pe	76.7	70.9	66.0	61.8	58.3	55.5	53.2	51.4
	50	Qo	136.1	109.6	87.7	69.7	54.4	41.2		
		Pe	88.0	82.2	77.3	73.3	70.1	67.7		

Performance data refereted to 10K suction superheat, 0K liquid subcooling.

R404

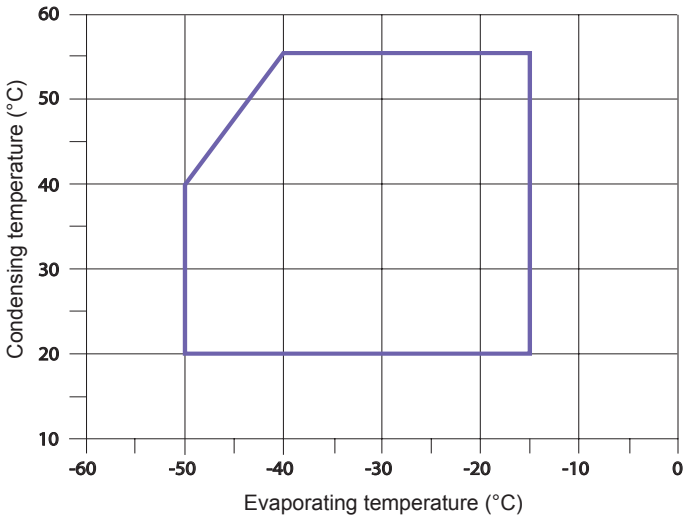


ATSL1: -35°C evaporating temperature; 40°C condensing temperature; 10K superheat; 0K liquid subcooling.

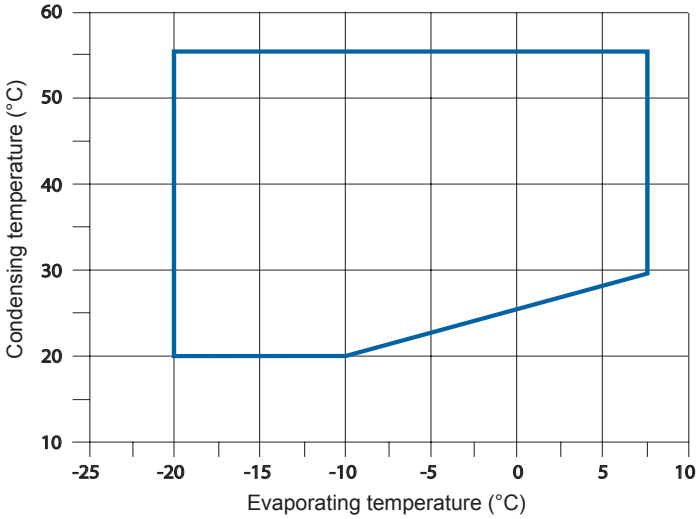
ATSH1: -10°C evaporating temperature; 45°C condensing temperature; 10K superheat; 0K liquid subcooling.

Working limits

ATSL1
R404A



ATSH1
R404A



Full load operation (100%)

Suction gas superheating 10K - 0K liquid subcooling.

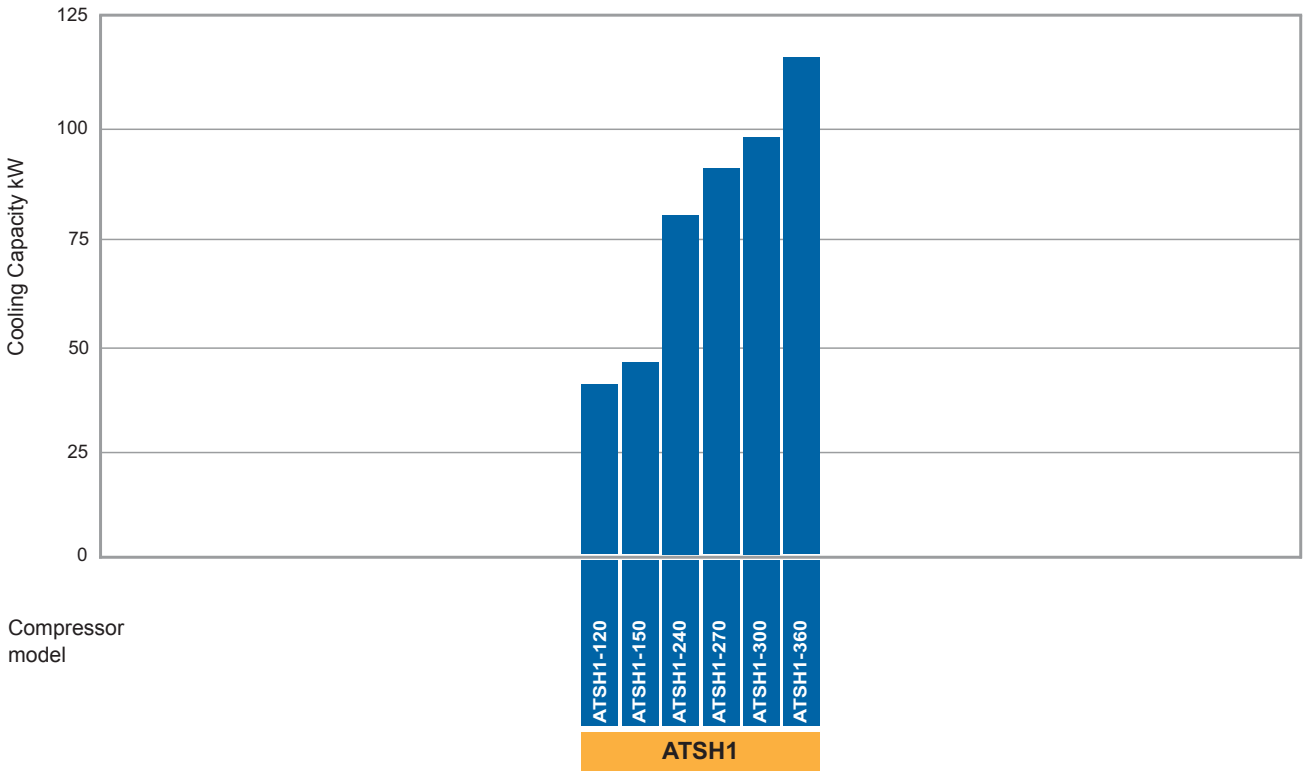
Additional cooling may be required, see selection software.

R134a

Compressor	Condensing temperature	Qo (kW)	Cooling capacity								
		Pe (kW)	Power consumption								
		50Hz	Evaporating temperature °C								
	°C		20	15	10	5	0	-5	-10	-15	-20
ATSH1 - 120	30	Qo			105.0	87.3	72.0	58.9	47.6	37.9	29.65
		Pe			14.6	14.0	13.5	12.9	12.4	12.0	11.67
	40	Qo	134.9	113.5	94.9	78.7	64.7	52.7	42.3	33.5	25.85
		Pe	18.6	18.0	17.3	16.7	16.2	15.8	15.4	15.1	14.98
	50	Qo	119.8	100.4	83.5	68.9	56.4	45.7	36.4	28.5	21.7
		Pe	22.1	21.4	20.8	20.2	19.8	19.4	19.2	19.1	19.2
	60	Qo	103.4	86.1	71.1	58.3	47.3	38.0	30.0		
		Pe	26.1	25.3	24.7	24.2	23.9	23.7	23.6		
	70	Qo	85.8	70.7	57.8	46.8	37.6	29.8			
		Pe	30.3	29.6	29.1	28.7	28.5	28.4			
ATSH1 - 150	30	Qo			132.1	109.3	89.6	72.5	58.0	45.5	35.00
		Pe			16.9	16.2	15.6	15.2	14.9	14.7	14.69
	40	Qo	151.6	127.2	105.8	87.0	70.6	56.2	43.6	32.5	22.6
		Pe	26.1	25.6	25.2	24.9	24.6	24.4	24.2	24.1	24.0
	50	Qo	170.0	143.0	119.2	98.4	80.3	64.6	51.0	39.2	28.94
		Pe	21.6	20.9	20.3	19.8	19.4	19.1	18.9	18.8	18.70
	60	Qo	132.0	110.4	91.3	74.6	59.9	46.9	35.3		
		Pe	31.7	31.5	31.2	31.0	30.9	30.7	30.5		
	70	Qo	110.7	91.8	75.1	60.5	47.5	35.9			
		Pe	38.1	38.0	38.0	37.9	37.7	37.6			
ATSH1 - 240	30	Qo			213.7	177.0	145.3	118.2	95.1	75.8	59.51
		Pe			27.6	26.3	25.2	24.1	23.3	22.8	22.55
	40	Qo	276.3	231.7	192.9	159.2	130.2	105.5	84.5	66.7	51.76
		Pe	35.3	34.3	33.2	32.0	30.9	30.0	29.1	28.6	28.32
	50	Qo	247.5	206.9	171.6	141.1	114.9	92.6	73.7	57.7	44.1
		Pe	42.3	41.5	40.5	39.4	38.3	37.3	36.5	35.8	35.5
	60	Qo	218.3	181.6	149.9	122.7	99.4	79.6	62.9		
		Pe	51.1	50.3	49.3	48.3	47.2	46.1	45.2		
	70	Qo	188.6	156.0	128.0	104.1	83.8	66.7			
		Pe	61.5	60.7	59.7	58.6	57.5	56.3			
ATSH1 - 270	30	Qo			240.1	198.7	162.9	132.4	106.4	84.5	66.2
		Pe			30.9	29.4	28.1	27.0	26.1	25.4	25.0
	40	Qo	310.9	260.7	216.8	178.8	146.0	118.1	94.4	74.4	57.6
		Pe	40.1	38.7	37.3	35.9	34.7	33.6	32.6	31.9	31.4
	50	Qo	277.3	231.5	191.7	157.4	128.0	103.0	81.9	64.1	49.1
		Pe	47.9	46.5	45.2	43.9	42.7	41.5	40.5	39.7	39.1
	60	Qo	241.7	200.7	165.2	134.9	109.1	87.4	69.2		
		Pe	56.9	55.7	54.4	53.1	51.8	50.6	49.5		
	70	Qo	204.6	168.6	137.8	111.8	90.0	71.8			
		Pe	67.0	65.8	64.5	63.1	61.8	60.4			
ATSH1 - 300	30	Qo			271.4	224.3	183.4	148.3	118.8	94.7	75.66
		Pe			34.9	33.7	32.8	32.2	31.9	31.9	32.04
	40	Qo	348.7	293.7	244.7	201.7	164.2	132.1	105.1	83.0	65.5
		Pe	43.3	42.1	41.2	40.6	40.2	39.9	39.9	40.0	40.2
	50	Qo	310.5	260.5	216.2	177.2	143.4	114.4	90.1	70.2	54.3
		Pe	52.1	51.5	50.9	50.6	50.3	50.1	50.0	50.0	49.9
	60	Qo	269.4	224.7	185.1	150.5	120.4	94.8	73.3		
		Pe	65.0	64.5	64.0	63.6	63.2	62.8	62.4		
	70	Qo	224.9	185.7	151.0	120.8	94.7	72.6			
		Pe	81.8	81.2	80.5	79.8	78.9	78.0			
ATSH1 - 360	30	Qo			315.7	260.6	213.7	174.2	141.1	113.5	90.5
		Pe			39.1	39.4	39.2	38.5	37.5	36.4	35.2
	40	Qo	407.8	340.0	281.6	231.7	189.4	153.8	124.0	99.1	78.2
		Pe	49.7	49.6	49.2	48.3	47.3	46.2	45.1	44.3	43.7
	50	Qo	361.7	300.1	247.3	202.3	164.4	132.5	105.8	83.4	64.4
		Pe	62.6	61.2	59.6	58.0	56.5	55.3	54.5	54.2	54.6
	60	Qo	315.8	260.1	212.7	172.5	138.6	110.3	86.5		
		Pe	77.0	74.5	72.1	70.1	68.5	67.6	67.3		
	70	Qo	270.0	220.1	177.8	142.1	112.2	87.1			
		Pe	94.6	91.2	88.4	86.3	85.0	84.6			

Performance data refereted to 10K suction superheat, 0K liquid subcooling.

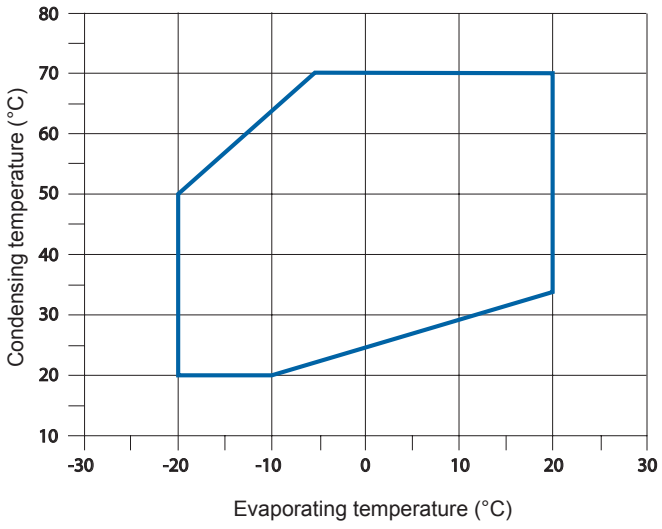
R134a



ATSH1: -10°C evaporating temperature; 45°C condensing temperature; 10K superheat; 0K liquid subcooling.

Working limits

ATSH1
R134a



Full load operation (100%)

Suction gas superheating 5K - 0K liquid subcooling.

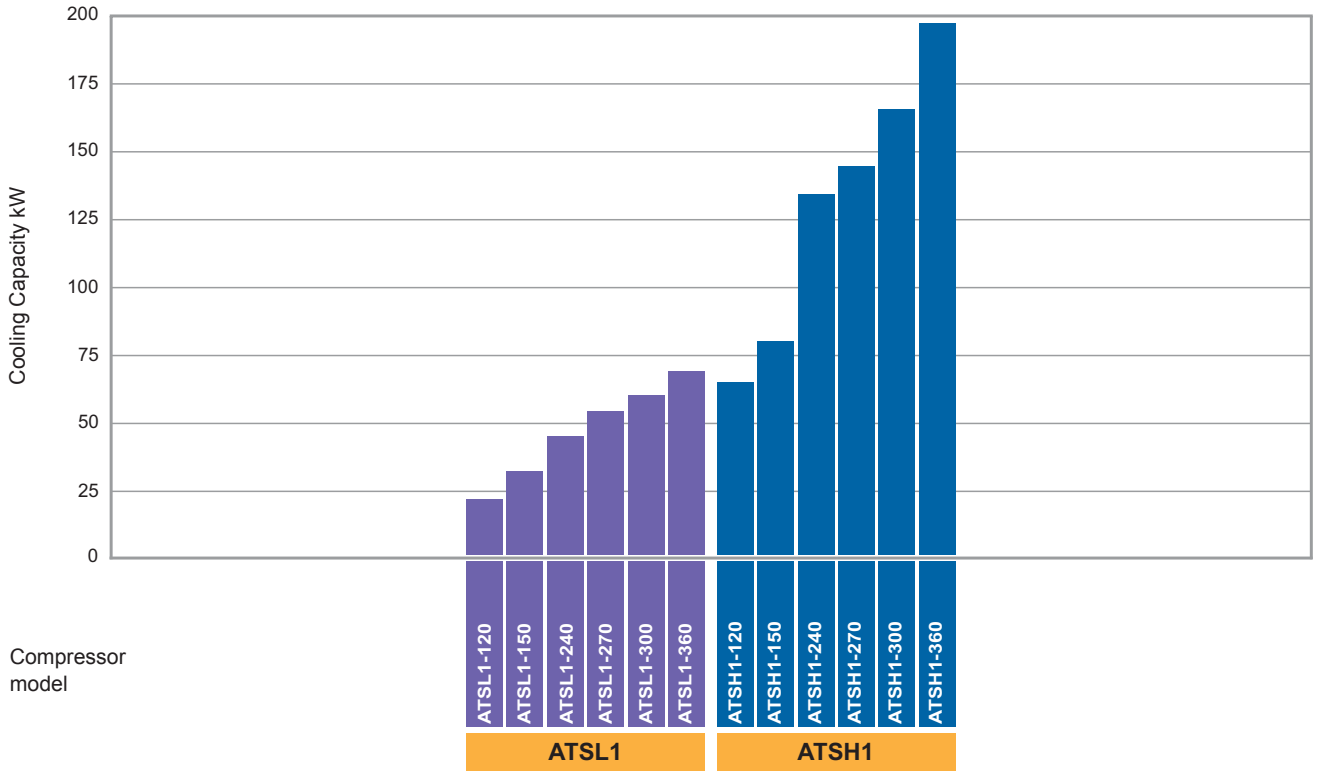
Additional cooling may be required, see selection software.

R22

Compressor	Condensing temperature	Qo (kW) / Pe (kW)	Cooling capacity / Power consumption / Evaporating temperature °C							
	°C	50Hz	12.5	10	5	0	-5	-10	-15	-20
ATSH1 - 120	30	Qo	162.6	150.7	128.8	109.3	92.1	77.0	63.8	52.45
		Pe	31.3	29.9	27.3	25.0	22.9	21.1	19.5	18.27
	40	Qo	149.0	137.9	117.5	99.5	83.5	69.6	57.5	47.06
		Pe	33.5	32.1	29.5	27.2	25.1	23.4	22.0	21.00
	50	Qo	134.3	124.1	105.2	88.6	74.0	61.3	50.3	40.87
		Pe	36.2	34.8	32.2	29.9	28.1	26.5	25.4	24.57
	60	Qo	118.3	108.9	91.7	76.6	63.4	52.0		
		Pe	39.6	38.2	35.7	33.6	31.9	30.5		
ATSH1 - 150	30	Qo	211.1	195.0	165.2	138.6	115.3	95.2	78.5	65.14
		Pe	25.7	25.4	24.7	24.1	23.6	23.1	22.9	22.81
	40	Qo	192.8	177.8	150.0	125.4	103.8	85.2	69.8	57.60
		Pe	31.0	30.7	30.1	29.5	29.0	28.6	28.4	28.36
	50	Qo	172.8	158.8	133.0	110.0	89.9	72.7	58.5	47.17
		Pe	37.2	37.0	36.6	36.2	35.9	35.7	35.6	35.73
	60	Qo	149.7	136.7	112.6	91.1	72.3	56.2		
		Pe	45.2	45.1	45.1	45.0	45.0	45.0		
ATSH1 - 240	30	Qo	342.7	316.6	268.3	225.1	187.2	154.6	127.6	106.19
		Pe	45.4	44.7	43.2	41.7	40.3	39.0	37.7	36.63
	40	Qo	314.9	290.6	245.5	205.2	169.8	139.5	114.4	94.59
		Pe	52.9	52.0	50.4	48.9	47.6	46.3	45.3	44.43
	50	Qo	282.0	259.7	218.3	181.3	148.9	121.3	98.5	80.74
		Pe	61.6	60.7	59.2	57.8	56.6	55.7	55.0	54.56
	60	Qo	244.5	224.3	187.0	153.8	124.9	100.3		
		Pe	72.6	71.9	70.5	69.4	68.6	68.1		
ATSH1 - 270	30	Qo	383.8	355.0	300.9	251.9	208.7	172.0	142.5	120.90
		Pe	50.3	49.5	48.0	46.5	45.1	43.7	42.3	40.95
	40	Qo	350.7	324.3	274.6	229.4	189.5	155.5	128.3	108.31
		Pe	58.4	57.5	55.9	54.4	53.1	51.9	50.8	49.84
	50	Qo	312.7	288.8	243.8	202.7	166.4	135.5	110.8	92.78
		Pe	68.3	67.4	65.8	64.4	63.3	62.4	61.8	61.35
	60	Qo	269.8	248.7	208.6	172.0	139.7	112.2		
		Pe	81.1	80.2	78.8	77.6	76.9	76.5		
ATSH1 - 300	30	Qo	430.2	397.2	337.0	283.9	237.5	197.0	162.1	131.97
		Pe	49.1	48.8	48.3	48.1	48.0	47.9	47.8	47.52
	40	Qo	394.8	364.0	307.8	258.3	215.0	177.3	144.6	116.48
		Pe	61.7	61.3	60.7	60.3	60.1	59.9	59.7	59.39
	50	Qo	354.7	326.0	273.8	227.9	187.7	152.8	122.4	96.15
		Pe	74.6	74.2	73.6	73.3	73.2	73.2	73.1	72.99
	60	Qo	307.7	281.2	233.0	190.6	153.6	121.4		
		Pe	88.0	87.7	87.4	87.4	87.6	87.9		
ATSH1 - 360	30	Qo	514.6	474.6	401.6	337.5	281.7	233.8	193.3	159.80
		Pe	60.2	59.6	58.5	57.6	56.9	56.5	56.3	56.35
	40	Qo	469.2	432.7	365.9	307.1	255.8	211.4	173.5	141.62
		Pe	74.8	74.2	73.1	72.2	71.5	71.0	70.6	70.53
	50	Qo	420.7	387.3	326.2	272.0	224.4	182.9	147.0	116.14
		Pe	90.5	90.0	89.0	88.2	87.5	86.9	86.6	86.39
	60	Qo	365.4	334.8	278.6	228.5	184.0	144.7		
		Pe	107.3	106.9	106.1	105.4	104.8	104.3		

Compressor	Condensing temperature	Qo (kW) / Pe (kW)	Cooling capacity / Power consumption / Evaporating temperature °C							
	°C	50Hz	-15	-20	-25	-30	-35	-40	-45	-50
ATSL1 - 120	30	Qo	64.3	52.4	42.3	33.8	26.7	20.8	15.8	11.5
		Pe	20.0	18.6	17.5	16.5	15.7	15.1	14.5	13.9
	40	Qo	58.0	46.9	37.6	29.9	23.4	18.0	13.5	9.5
		Pe	22.9	21.5	20.4	19.5	18.7	18.1	17.6	17.1
	50	Qo	50.7	40.7	32.3	25.4	19.6	14.9		
		Pe	26.5	25.1	24.0	23.1	22.3	21.8		
ATSL1 - 150	30	Qo	83.5	68.2	55.2	44.2	35.0	27.2	20.5	14.8
		Pe	26.3	25.2	24.3	23.5	22.7	22.0	21.2	20.3
	40	Qo	75.1	60.9	48.8	38.6	30.1	22.8	16.6	11.1
		Pe	30.9	30.1	29.4	28.7	28.0	27.1	26.2	25.1
	50	Qo	65.8	52.7	41.6	32.3	24.5	17.8		
		Pe	36.8	36.3	35.7	35.0	34.3	33.4		
ATSL1 - 240	30	Qo	129.1	104.9	84.5	67.5	53.4	41.8	32.3	24.27
		Pe	39.4	36.4	33.9	31.9	30.3	29.1	28.2	27.45
	40	Qo	117.6	94.9	75.9	60.1	47.2	36.6	27.9	20.63
		Pe	45.2	42.3	40.0	38.0	36.5	35.4	34.5	33.79
	50	Qo	105.0	83.8	66.2	51.7	40.0	30.4		
		Pe	52.7	49.8	47.5	45.6	44.1	42.9		
ATSL1 - 270	30	Qo	145.9	118.6	95.6	76.3	60.3	47.2	36.4	27.61
		Pe	45.0	41.2	38.2	35.8	33.9	32.5	31.3	30.35
	40	Qo	132.2	106.9	85.6	67.9	53.3	41.4	31.6	23.53
		Pe	51.8	48.0	45.0	42.7	40.8	39.4	38.3	37.33
	50	Qo	118.3	94.7	75.0	58.6	45.2	34.2		
		Pe	60.8	56.8	53.6	51.1	49.1	47.5		
ATSL1 - 300	30	Qo	162.6	131.0	104.9	83.6	66.3	52.3	40.8	31.0
		Pe	49.9	45.5	42.1	39.5	37.6	36.3	35.5	34.8
	40	Qo	147.5	118.1	94.0	74.5	58.7	45.9	35.4	26.5
		Pe	56.8	52.8	49.7	47.3	45.5	44.3	43.4	42.7
	50	Qo	131.9	104.6	82.3	64.3	49.8	38.1		
		Pe	66.4	62.5	59.3	56.9	55.0	53.5		
ATSL1 - 360	30	Qo	199.1	161.1	129.1	102.4	80.5	62.6	48.2	36.5
		Pe	60.4	55.6	51.6	48.3	45.7	43.6	42.1	40.9
	40	Qo	180.4	145.1	115.6	91.1	71.1	54.9	41.8	31.2
		Pe	68.9	64.5	60.8	57.7	55.2	53.1	51.3	49.9
	50	Qo	160.9	128.2	101.0	78.6	60.3	45.5		
		Pe	80.9	76.5	72.7	69.4	66.5	64.0		

R22

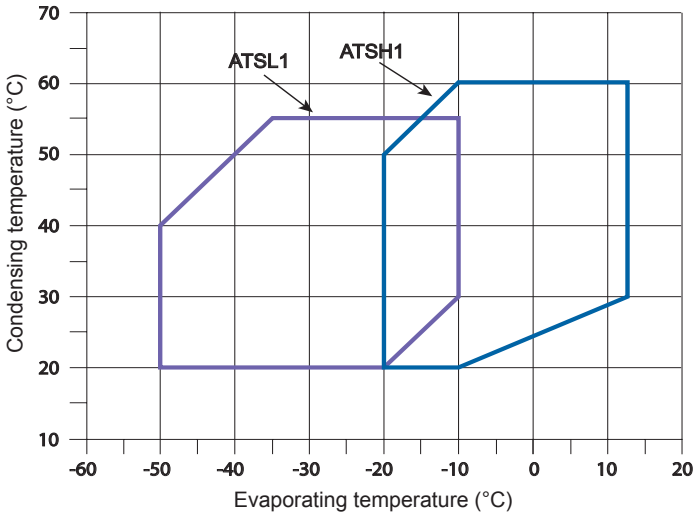


ATSL1: -35°C evaporating temperature; 40°C condensing temperature; 10K superheat; 0K liquid subcooling.

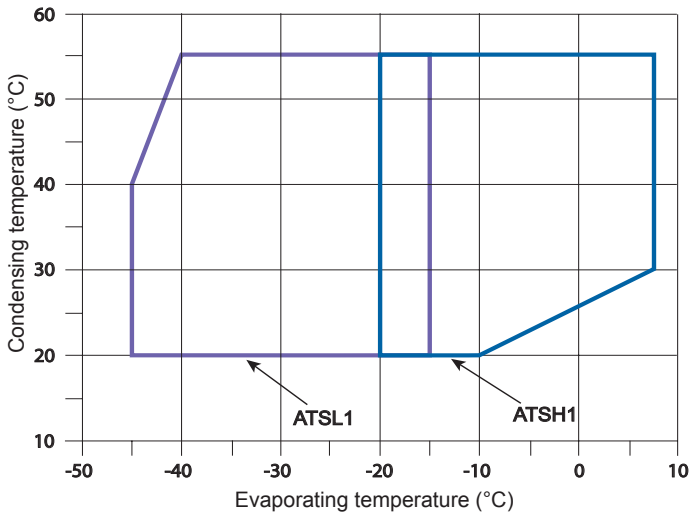
ATSH1: -10°C evaporating temperature; 45°C condensing temperature; 10K superheat; 0K liquid subcooling.

Working limits

ATSL1/ATSH1 R22



ATSL1/ATSH1 R407A/R407F



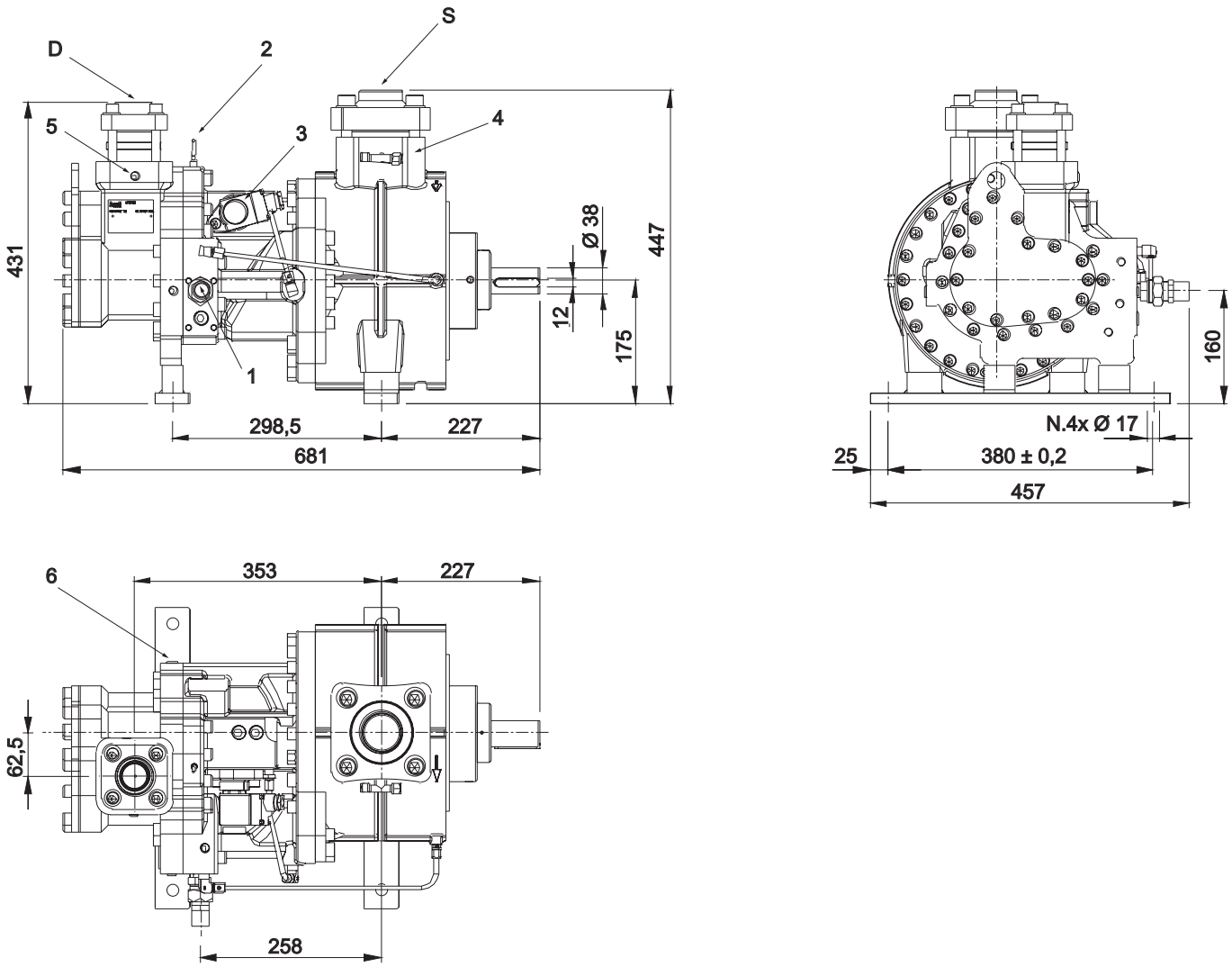
Full load operation (100%) - ATSL1

Full load operation (100%) - ATSH1

Suction gas superheating 10K - 0K liquid subcooling.
Additional cooling may be required, see selection software.

ATSH1/L1- 120
ATSH1/L1- 150

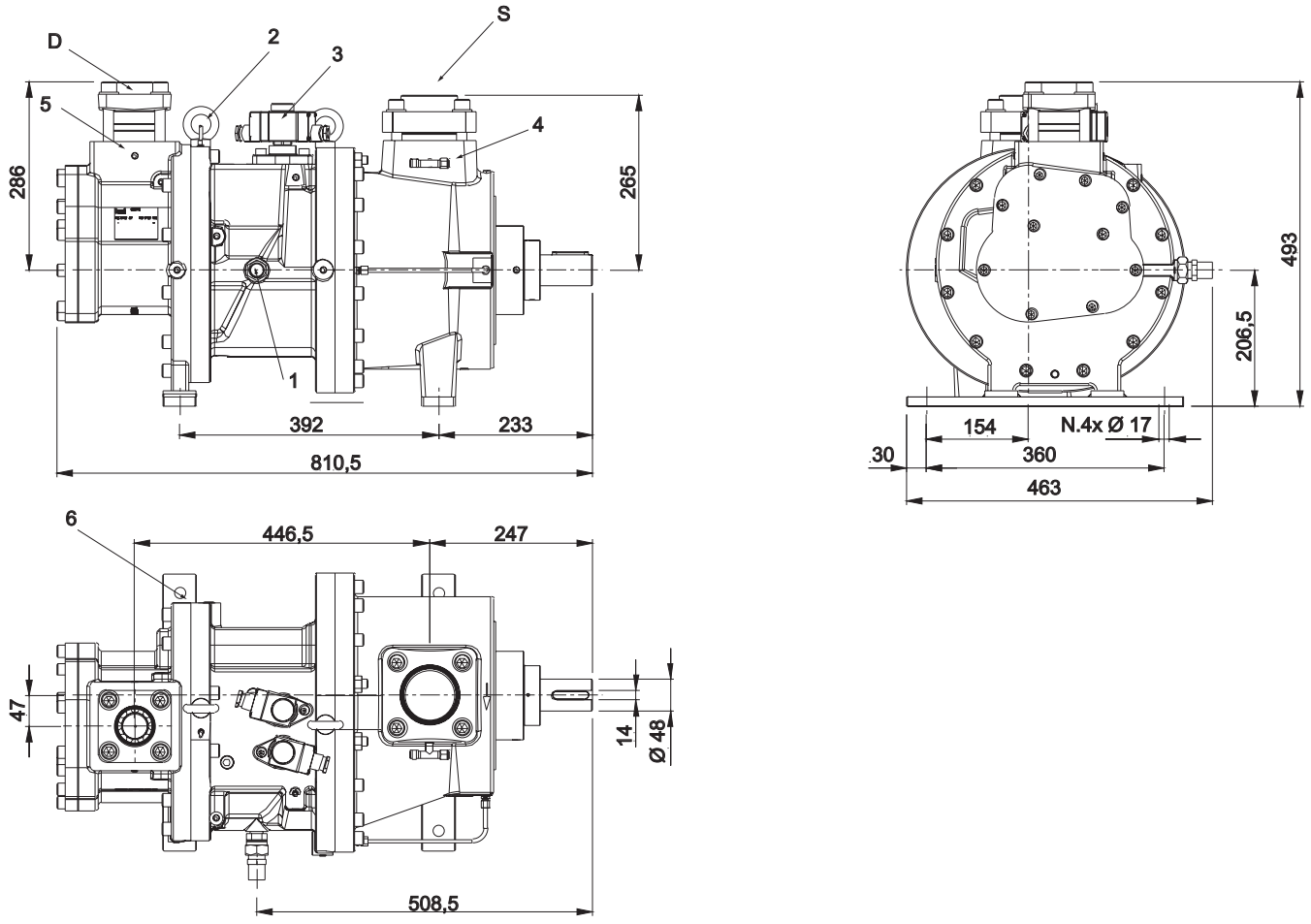
Dimensional drawing



DRAWING NOTES	
1	Connection for oil return valve
2	Discharge temperature sensor
3	Capacity control valve
4	Low pressure connection
5	High pressure connection
6	Liquid injection/economiser connection
S	Suction
D	Discharge

ATSH1/L1- 240
ATSH1/L1- 270

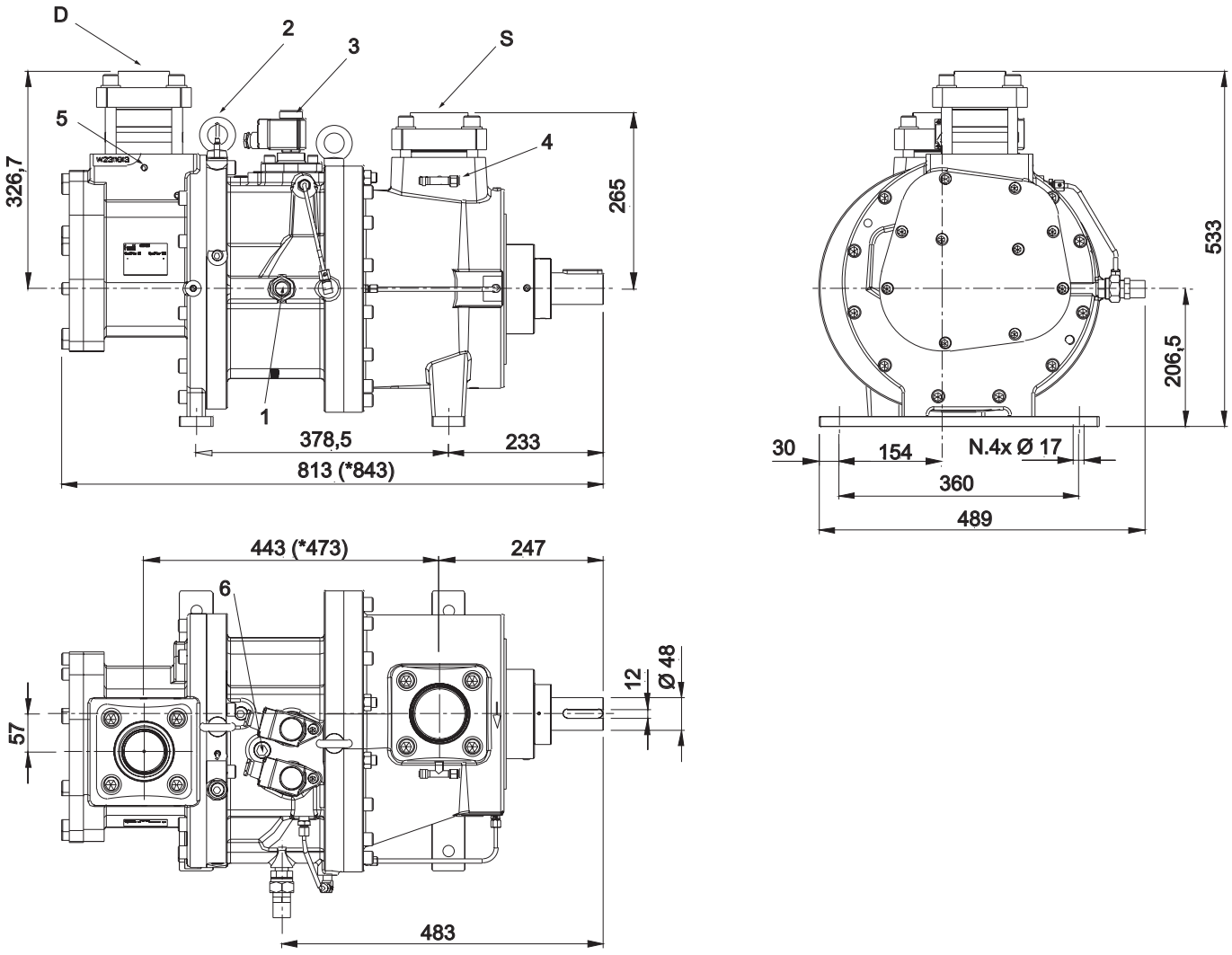
Dimensional drawing



DRAWING NOTES	
1	Connection for oil return valve
2	Discharge temperature sensor
3	Capacity control valve
4	Low pressure connection
5	High pressure connection
6	Liquid injection/economiser connection
S	Suction
D	Discharge

ATSH1/L1- 300
ATSH1/L1- 360*

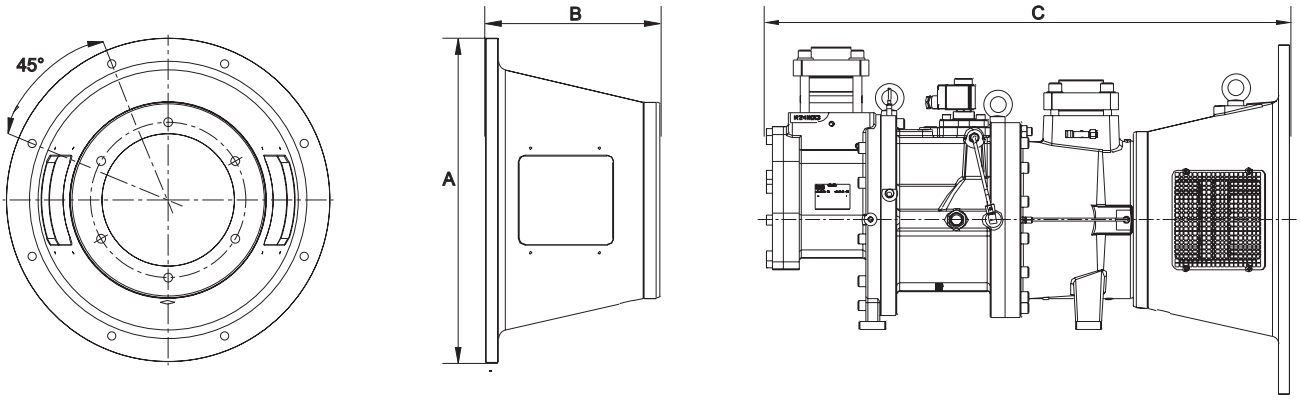
Dimensional drawing



DRAWING NOTES	
1	Connection for oil return valve
2	Discharge temperature sensor
3	Capacity control valve
4	Low pressure connection
5	High pressure connection
6	Liquid injection/economiser connection
S	Suction
D	Discharge

COUPLING HOUSING

Dimensional drawing



Compressor	Motor (IEC Standard)	Weight Coupling	Weight Coupling Housing	Coupling Housing Dimension	Coupling Housing Dimension	Total Lenght Compressor with Coupling Housing
	kW	kg	kg	B (mm)	A (mm)	C (mm)
ATSH1 - 120 ATSL1 - 120	18	10	22	250	350	796
	22	10	22	250	350	796
	30	11	26	250	400	796
	37	11	26	250	400	796
ATSH1 - 150 ATSL1 - 150	30	11	26	250	400	796
	37	11	26	250	400	796
	45	11	29	250	450	796
	55	11	47	296	550	842
ATSH1/L1 - 240 ATSH1/L1 - 270	55	15	47	296	550	958
	75	15	47	296	550	958
	90	15	47	296	550	958
ATSH1/L1 - 300	55	15	47	296	550	960
	75	15	47	296	550	960
	90	15	47	296	550	960
	110	15	60	296	660	960
	132	15	60	296	660	960
ATSH1/L1 - 360	55	15	47	296	550	990
	75	15	47	296	550	990
	90	15	47	296	550	990
	110	15	60	296	660	990
	132	15	60	296	660	990

Company with more than 75 years of experience that manufactures compressor for refrigeration and air conditioning industries. The great experience gained over the years provides cutting-edge products and solutions, in line with the latest market demand. Additional or different equipment and devices are meant to meet the peculiarity of each application worldwide, always paying specific attention to the energy saving and in full respect of the environment. Furthermore all quality and construction directives indicated by the relevant authorities are strictly followed.

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