

## Model

Designation	<b>MS18UVULTM</b>	Sales code:	<b>104M0824</b>
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## Compressor design

Oil type	Polyolester	Refrigerant(s)	<b>R290, R170, R1270</b>
Oil viscosity	32cSt	Displacement	17,69cm <sup>3</sup> / 1,08cu.in
Oil quantity	473cm <sup>3</sup> / 16fl.oz	Compressors on pallet	80
Refr. charge - tech. limit	550g / 19,4oz		
Free gas volume comp.	1460cm <sup>3</sup> / 49,4fl.oz		
Weight	14,2kg / 31,3lbs		
Motor protection	2# internal		
Winding resist. ph. to ph.	3,92Ω (at 25°C)		
Max. winding temp.	125°C / 257°F		
Max. discharge temp.	130°C / 266°F		
Additional note	Good robustness against liquid intake. Compressor for laboratory and medical applications. Check special warranty terms with Secop Sales.		



## General - Configurations and Applications with MS18UVULTM and Controller

	<b>Conf. 1</b>	<b>Conf. 2</b>	<b>Conf. 3</b>
Sales code single pack:	105N4932	105N4932	105N4932
Sales code industry pack:	105N4933	105N4933	105N4933
Power supply (nominal)	100-240V,50/60Hz	100-240V,50/60Hz	100-240V,50/60Hz
Approvals	UL,VDE,CCC	UL,VDE,CCC	UL,VDE
Refrigerant	R170	R290	R1270
Number of phases	1~AC	1~AC	1~AC
Application	ULT	L+MBP	LLBP
Starting torque	HST	HST	HST
Hot gas defrost	OK	OK	OK
Long interval pull down	OK	OK	OK
System cooling	Fan cooling 3m/s	Fan cooling 3m/s	Fan cooling 3m/s
Note	See operation limits for controller		

## Controller functions

	<b>Conf. 1</b>	<b>Conf. 2</b>	<b>Conf. 3</b>
Protection	Mechanic	Mechanic	Mechanic
Max output power	1100W	1100W	1100W
No of relays	2	2	2
Hot gas defrost	yes	yes	yes
AEO speed setting	yes	yes	yes
Serial com, (Modbus)	SWI	SWI	SWI
DWI / Frequency input	yes	yes	yes
Reduced leakage current	yes	yes	yes
Note			

## Model

Designation

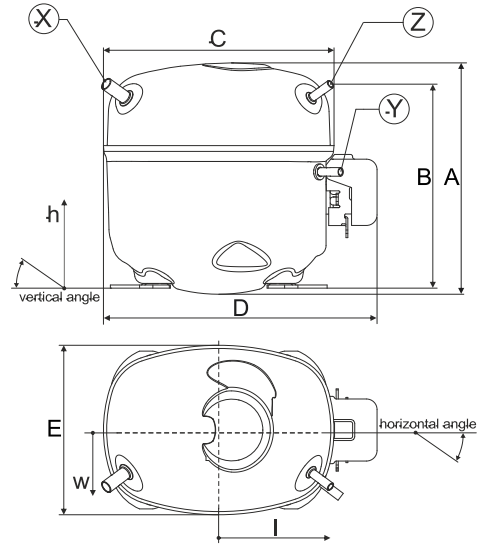
**MS18UVULTM**

Sales code:

**104M0824**

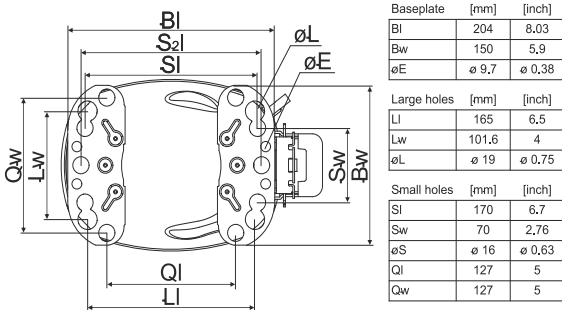
## Compressor dimensions

<b>Housing</b>	A Height	219,9mm / 8,66in
	B Height	214mm / 8,43in
	C Length shell	217mm / 8,54in
	D Length w. cover	257,6mm / 10,14in
	E Width	161,1mm / 6,34in

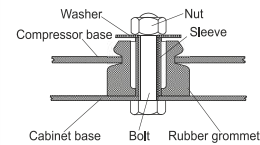


Connectors		Suction	Discharge	Process
		X	Y	Z
Diameter	[mm]	øi 10,11-10,29	øi 6,11-6,29	øi 6,11-6,29
(i:inside, o:outside)	[in]	øi 0,4-0,41	øi 0,24-0,25	øi 0,24-0,25
Material		copper	copper	copper
Horizontal angle	±2°	37°	37°	37°
Vertical angle	±2°	30°	0°	30°
Position l/h/w	[mm]	-106/193/57	114/110/81	106/94/72
	[in]	-4,2/7,6/2,2	4,5/4,3/3,2	4,2/3,7/2,8
Straight tube l.	[mm]	12	12	12
	[in]	0,5	0,5	0,5

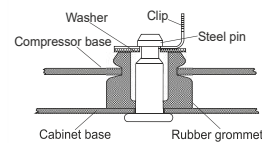
## Compressor fixation



### Bolt joint



### Snap-on



## Mounting accessories

	one comp.	multi pack
Bolt joint   M6   ø16mm	118-1958	118-1961
Snap-on   ø7,3   ø16mm		118-1962

## Application notes

Provision for PE Grounding is located at the PE Stamp on the compressor

Indirect suction intake without telescope

QR Code and Hyperlink leads to the

[Operating Instructions.](#)

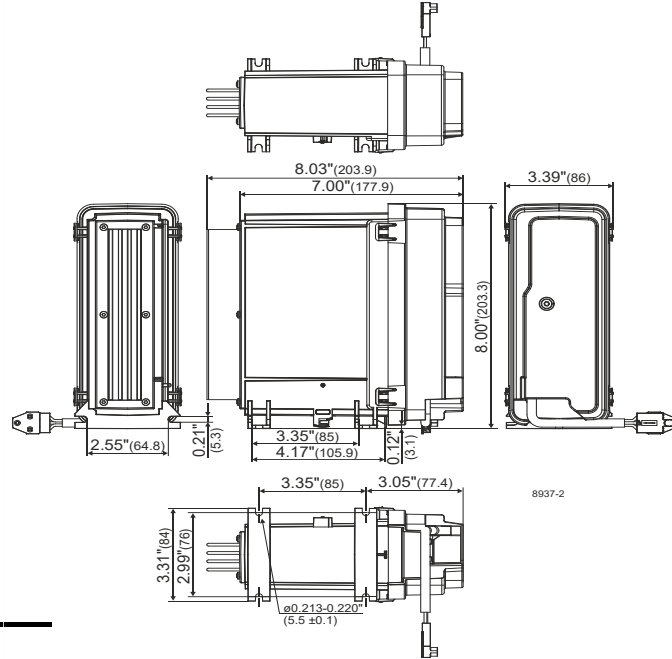


## Model

Designation	<b>MS18UVULTM</b>	<b>100-240V,50/60Hz</b>	<b>Conf. 1</b>	Sales code:	<b>104M0824</b>
Controller	<b>SLVE MP MV GFCI</b>				<b>105N4932</b>

Sales code single pack:	105N4932 (1 units)
Sales code industry pack:	105N4933 (8 units)
Adaption to compressor:	detached
Protection class:	IP54
Weight:	1,4kg/3,08lbs
Voltage nom.:	100-240V,50/60Hz
Voltage range:	90–150/180–270V
Max. current:	4,2 A(230V)/8,4 A(115V)
LRA (Locked Rotor Amperage):	2,9A
Cable length:	915mm
Compressor speed range:	2200-4500rpm
Housing plastic:	UL94-5VA

### Controller dimensions:



## Operation Limits

Suctiongas temperature < +20°C (continous operation)  
 U:100-240V LBP; 208-240V MBP; 50/60Hz

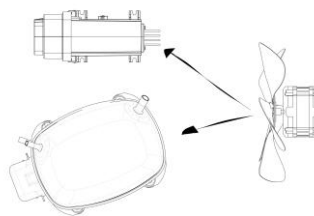
## System cooling

### Ambient/ machineroom temperatures minimum /maximum

Ambient temperature range:	10 - 43°C / 50 - 110°F
Machine room temperature range compressor:	10 - 48°C / 50 - 119°F
Machine room temperature range controller:	10 - 50°C / 50 - 122°F

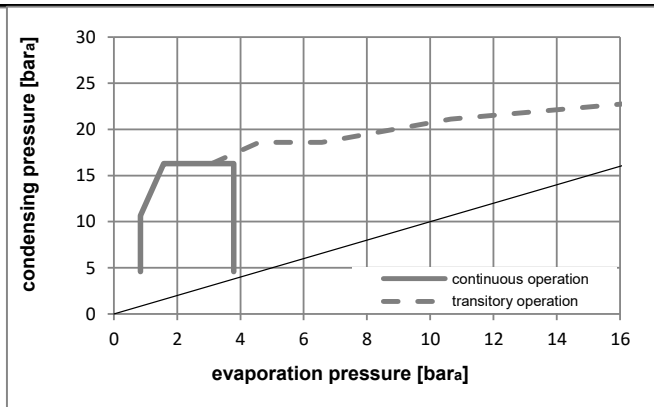
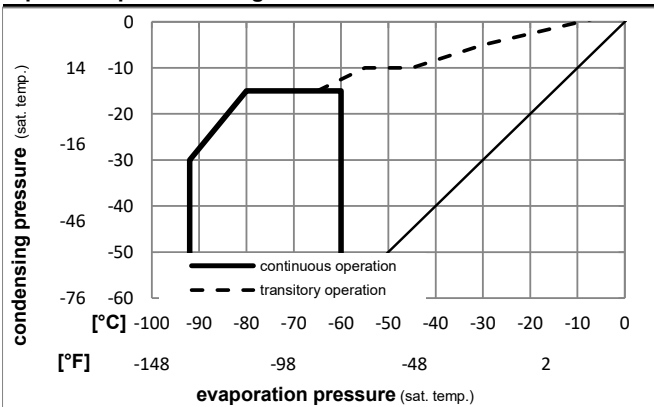
### Compressor and Controller Cooling:

Fan cooling 3m/s  
 Ensure proper airflow of 3 m/s at both compressor and electronic units.  
 The airflow for the electronics must be directed to the heat sink.



## Operation pressure range

R170



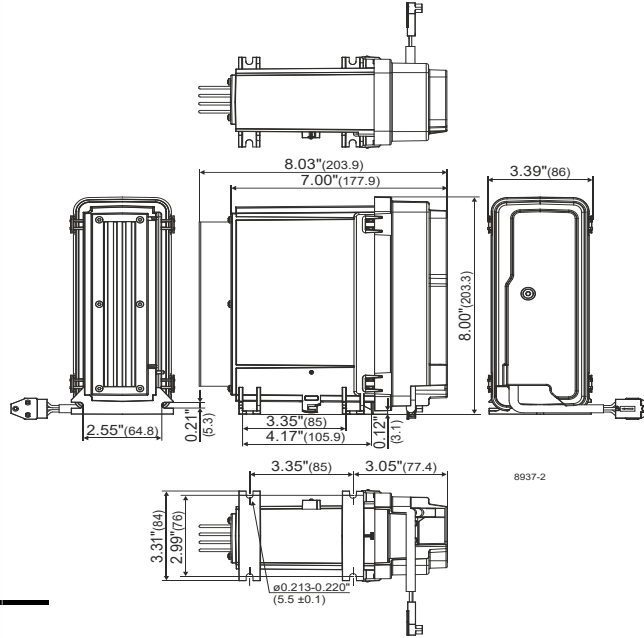
## Model

Designation **MS18UVULTM 100-240V,50/60Hz Conf. 2** Sales code: **104M0824**

Controller **SLVE MP MV GFCI** **105N4932**

Sales code single pack: 105N4932 (1 units)  
 Sales code industry pack: 105N4933 (8 units)  
 Adaption to compressor: detached  
 Protection class: IP54  
 Weight: 1,4kg/3,08lbs  
 Voltage nom.: 100-240V,50/60Hz  
 Voltage range: 90-150/180-270V  
 Max. current: 4,2 A(230V)/8,4 A(115V)  
 LRA (Locked Rotor Amperage) 2,9A  
 Cable length: 915mm  
 Compressor speed range: 2200-4500rpm  
 Housing plastic: UL94-5VA

### Controller dimensions:



## Operation Limits

Suctiongas temperature < +20°C (continous operation)  
 U:100-240V LBP; 208-240V MBP; 50/60Hz

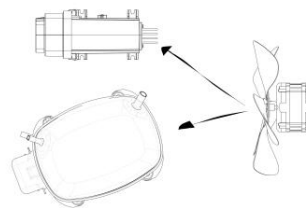
## System cooling

### Ambient/ machineroom temperatures minimum /maximum

Ambient temperature range: 10 - 43°C / 50 - 110°F  
 Machine room temperature range compressor: 10 - 48°C / 50 - 119°F  
 Machine room temperature range controller: 10 - 50°C / 50 - 122°F

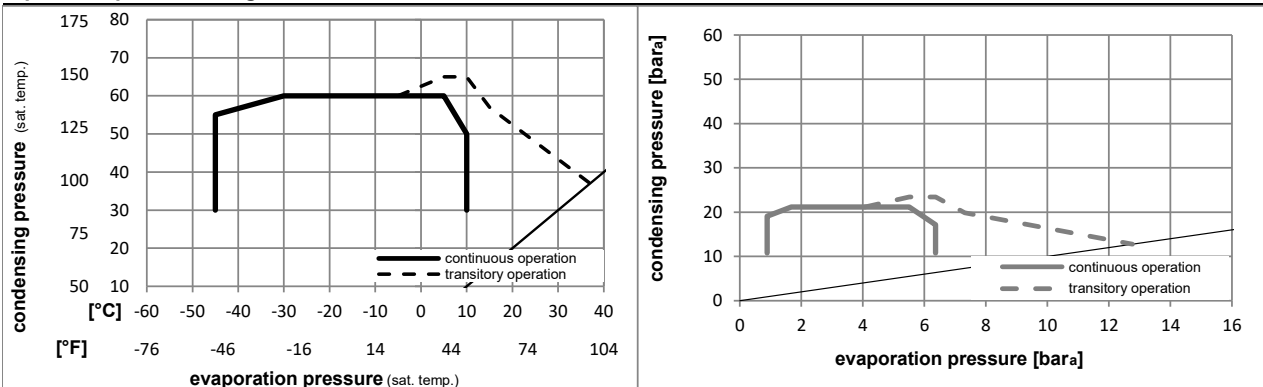
### Compressor and Controller Cooling:

Fan cooling 3m/s  
 Ensure proper airflow of 3 m/s at both compressor and electronic units.  
 The airflow for the electronics must be directed to the heat sink.



## Operation pressure range

R290



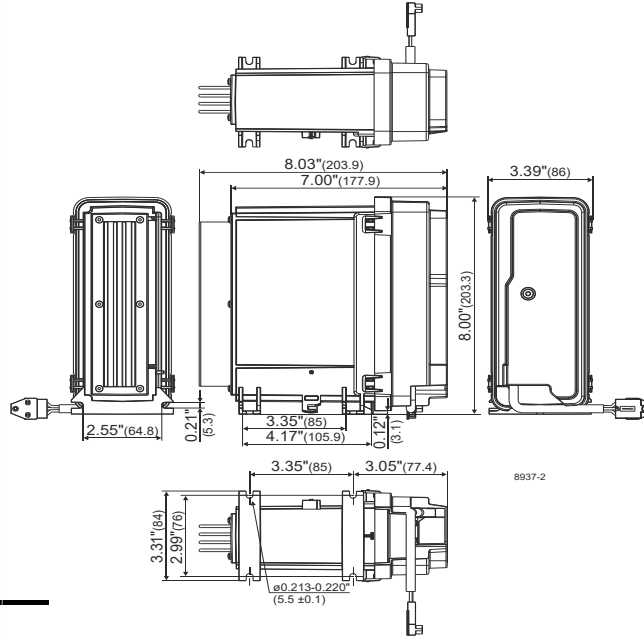
## Model

Designation **MS18UVULTM 100-240V,50/60Hz Conf. 3** Sales code: **104M0824**

Controller **SLVE MP MV GFCI** **105N4932**

Sales code single pack: 105N4932 (1 units)  
 Sales code industry pack: 105N4933 (8 units)  
 Adaption to compressor: detached  
 Protection class: IP54  
 Weight: 1,4kg/3,08lbs  
 Voltage nom.: 100-240V,50/60Hz  
 Voltage range: 90-150/180-270V  
 Max. current: 4,2 A(230V)/8,4 A(115V)  
 LRA (Locked Rotor Amperage) 2,9A  
 Cable length: 915mm  
 Compressor speed range: 2200-4500rpm  
 Housing plastic: UL94-5VA

### Controller dimensions:



## Operation Limits

Suctiongas temperature < +20°C (continous operation)  
 U:100-240V LBP; 208-240V MBP; 50/60Hz

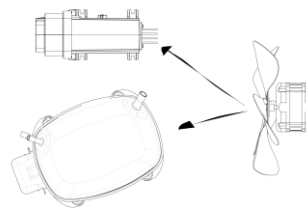
## System cooling

### Ambient/ machineroom temperatures minimum /maximum

Ambient temperature range: 10 - 43°C / 50 - 110°F  
 Machine room temperature range compressor: 10 - 48°C / 50 - 119°F  
 Machine room temperature range controller: 10 - 50°C / 50 - 122°F

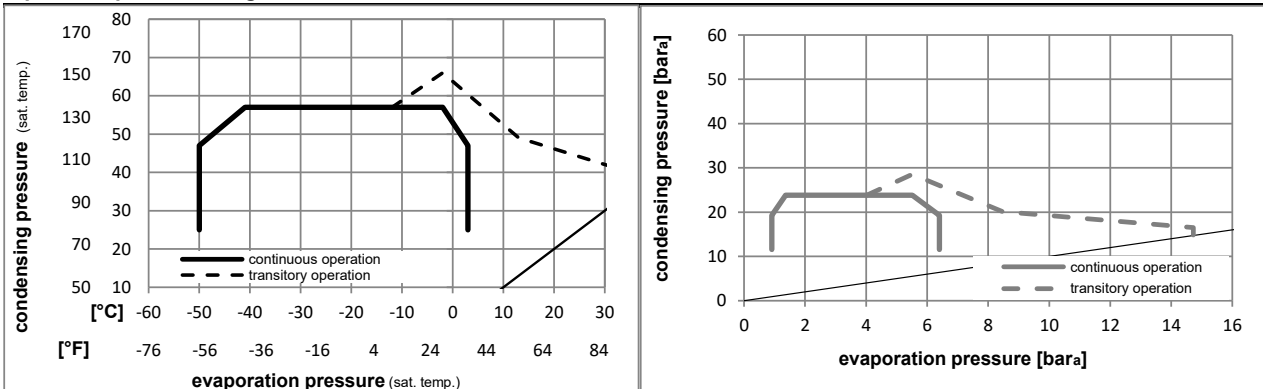
### Compressor and Controller Cooling:

Fan cooling 3m/s  
 Ensure proper airflow of 3 m/s at both compressor and electronic units.  
 The airflow for the electronics must be directed to the heat sink.



## Operation pressure range

R1270

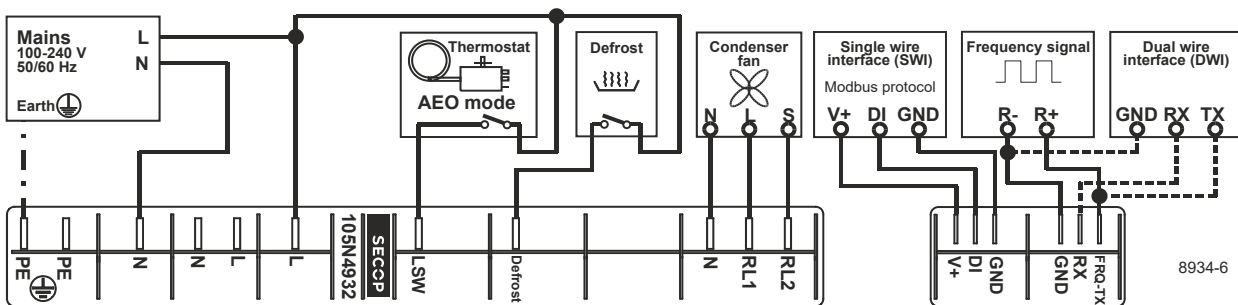
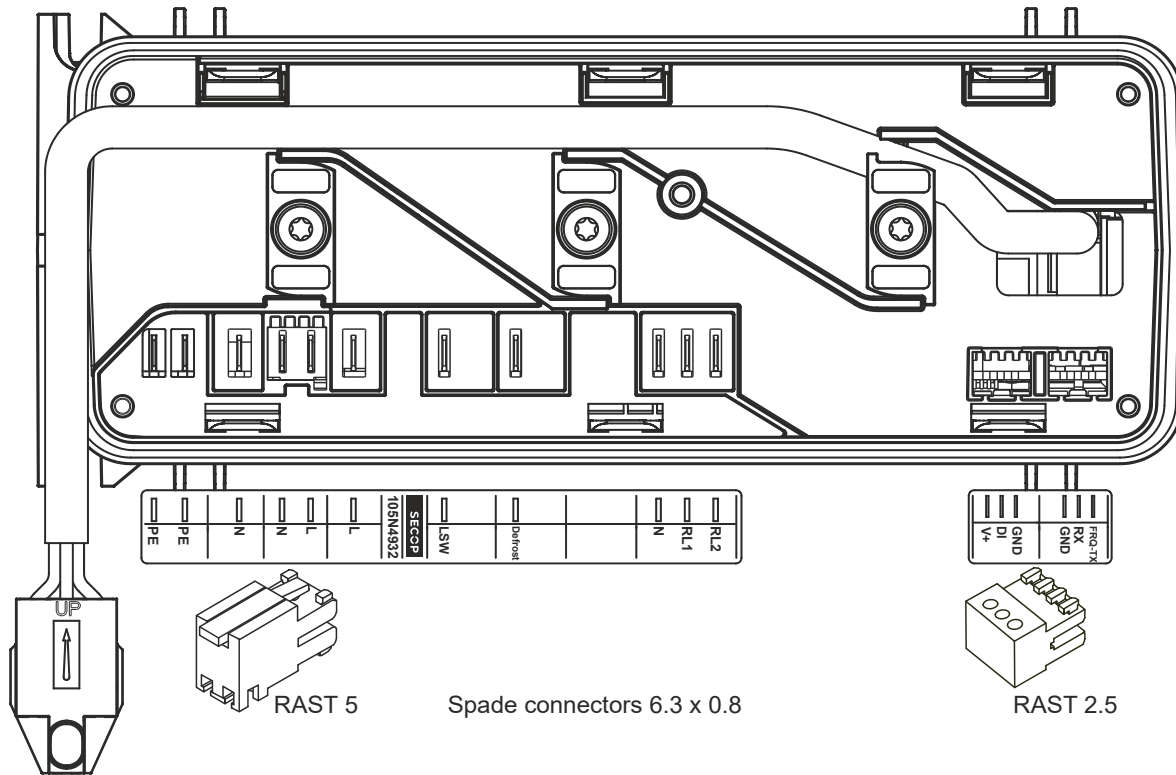


### Model

Designation **MS18UVULTM 100-240V,50/60Hz Conf. 1,2,3** Sales code: **104M0824**

Controller **SLVE MP MV GFCI** **105N4932**

### Controller connections



### Accessories (Compressor + Controller) - check operation manual for details

103N2008	plastic cover	1 pcs
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### Model

Designation **MS18UVULTM 100-240V,50/60Hz Conf. 1** Sales code: **104M0824**

Controller **SLVE MP MV GFCI** **105N4932**

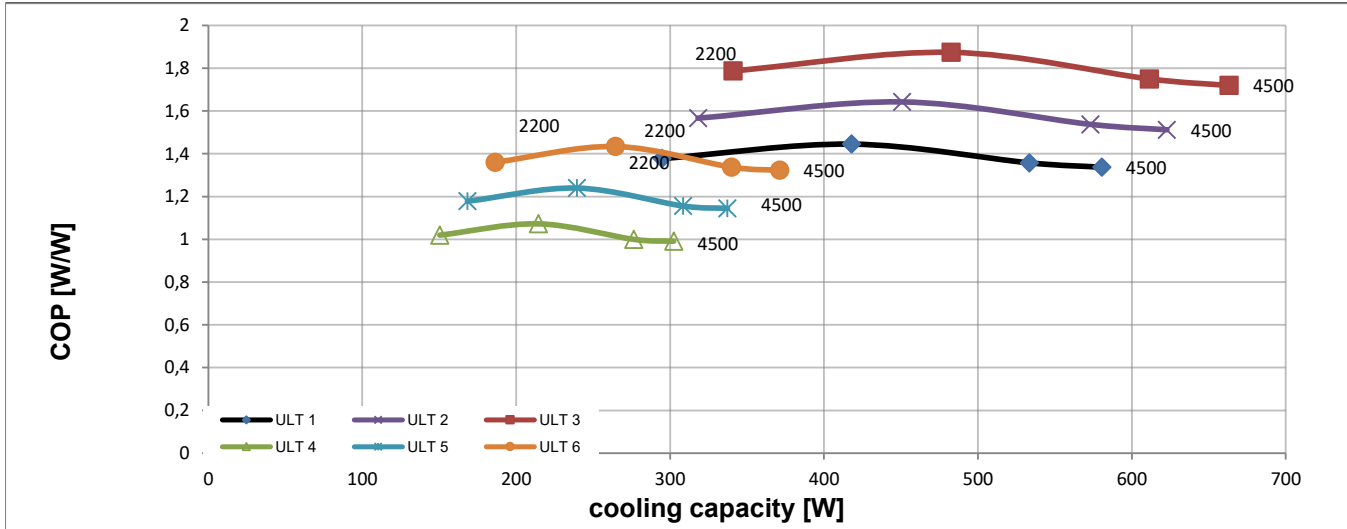
### Optimization + standard conditions

R170, 220V, 50Hz, Rpm\_N 4500, Fan cooling 3m/s

	Evaporating pressure (saturation temperature)				Condensing pressure (saturation temperature)						Power consumption			
	pe	pc	RGT	Tliq	Return gas temp.			Cooling capacity	COP	EER	P1	Current consumption		
					[W]	[Btu/h]	[kcal/h]					I	ṁ	
[°C]	[°F]	[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	[W]	[A]	[kg/h]		
ULT 1	-85	-35	10	-15	580,6	1983	499,6	1,34	4,57	1,15	434,2	2,15	4,72	
ULT 2	-85	-40	10	-20	622,8	2127	536,0	1,51	5,16	1,30	411,9	2,04	4,90	
ULT 3	-85	-45	10	-25	663,2	2265	570,7	1,72	5,87	1,48	385,7	1,92	5,05	
ULT 4	-95	-35	10	-30	302,3	1032	260,2	0,99	3,39	0,85	305,0	1,52	2,23	
ULT 5	-95	-40	10	-35	337,3	1152	290,3	1,14	3,91	0,99	294,6	1,47	2,41	
ULT 6	-95	-45	10	-40	371,2	1268	319,5	1,32	4,52	1,14	280,7	1,40	2,59	

### Standard conditions with different RPM

R170, 220V, 50Hz, Fan cooling 3m/s



Test conditions:	pe [°C]	pc [°C]	Tliq [°C]	Tsuc [°C]
ULT 1	-85	-35	-15	10
ULT 2	-85	-40	-20	10
ULT 3	-85	-45	-25	10
ULT 4	-95	-35	-30	10
ULT 5	-95	-40	-35	10
ULT 6	-95	-45	-40	10

### Model

Designation **MS18UVULTM 100-240V,50/60Hz Conf. 2** Sales code: **104M0824**

Controller **SLVE MP MV GFCI** **105N4932**

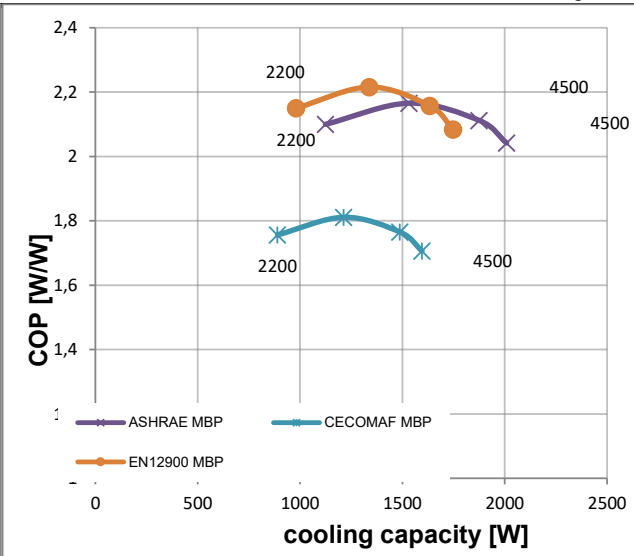
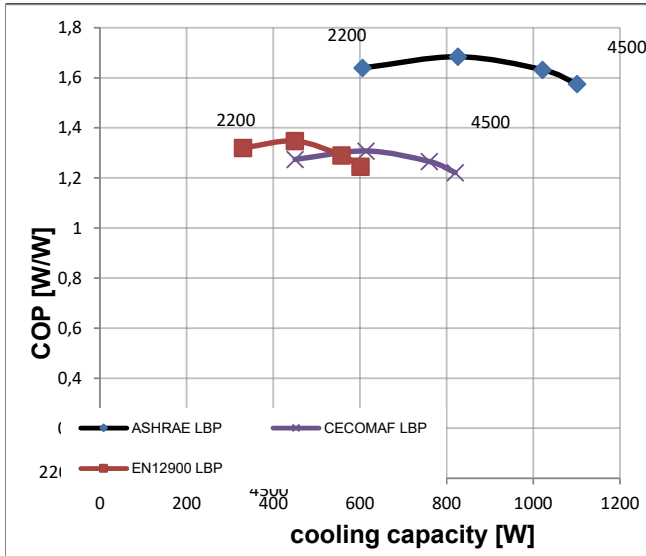
### Optimization + standard conditions

R290, 220V, 50Hz, Rpm\_N 4500, Fan cooling 3m/s

	Evaporating pressure (saturation temperature)				Condensing pressure (saturation temperature)			COP	EER	Power consumption			ASHRAE LBP	
	pe	pc	RGT	Tliq	[W]	[Btu/h]	[kcal/h]			P1	I	ṁ		
	[°C]	[°C]	[°C]	[°C]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	[W]	[A]	[kg/h]	
	-23	54	32	32	1101,2	3761	947,7	1,58	5,38	1,36	699,1	3,43	11,15	ASHRAE LBP
	[°F]	-10	130	90	90									
	-25	55	32	55	819,9	2800	705,6	1,22	4,17	1,05	671,3	3,29	10,21	CECOMAF LBP
	[°F]	-13	131	90	131									
	-35	40	20	40	601,3	2054	517,5	1,24	4,25	1,07	483,1	2,39	6,87	EN12900 LBP
	[°F]	-31	104	68	104									
	-7	54	35	46	2009,1	6861	1729,0	2,04	6,97	1,76	984,0	4,78	22,92	ASHRAE MBP
	[°F]	20	130	95	115									
	-10	55	32	55	1596,1	5451	1373,6	1,71	5,83	1,47	935,6	4,55	20,19	CECOMAF MBP
	[°F]	14	131	90	131									
	-10	45	20	45	1748,4	5971	1504,7	2,08	7,12	1,79	839,1	4,09	21,47	EN12900 MBP
	[°F]	14	113	68	113									

### Standard conditions with different RPM

R290, 220V, 50Hz, Fan cooling 3m/s



**Test conditions:**

	pe [°C]	pc [°C]	Tliq [°C]	Tsuc [°C]
ASHRAE LBP	-23	54,44	32,22	32,22
CECOMAF LBP	-25	55	55	32
EN12900 LBP	-35	40	40	20

	pe [°C]	pc [°C]	Tliq [°C]	Tsuc [°C]
ASHRAE MBP	-6,66	54,44	46,11	35,00
CECOMAF MBP	-10,00	55,00	55,00	32,00
EN12900 MBP	-10,00	45,00	45,00	20,00

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Controller **SLVE MP MV GFCI** **105N4932**

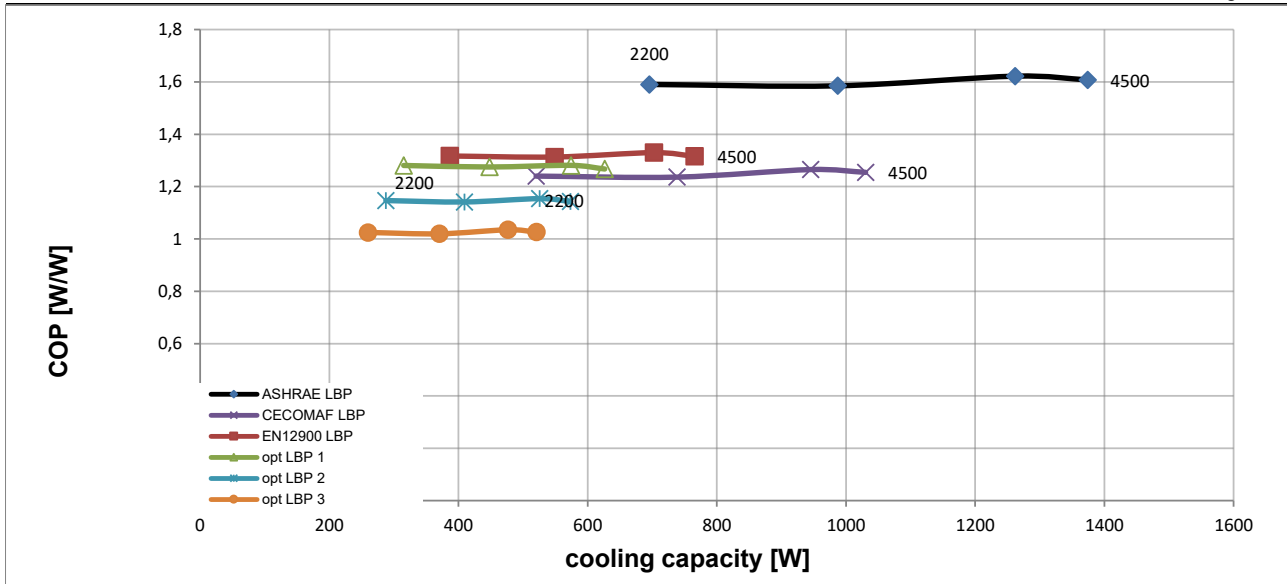
### Optimization + standard conditions

R1270, 220V, 50Hz, Rpm\_N 4500, Fan cooling 3m/s

	Evaporating pressure (saturation temperature)				Condensing pressure (saturation temperature)			Return gas temp.			Liquid temp.			Cooling capacity			COP			EER			Power consumption			ASHRAE LBP	
	pe	pc	RGT	Tliq	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	P1	I	ṁ	[W]	[A]	[kg/h]											
[°C]	[°C]	[°C]	[°C]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[kcal/Wh]	[W]	[A]	[kg/h]	[W]	[A]	[kg/h]												
-23	54	32	32	1374,3	4694	1182,8	1,61	5,49	1,38	854,9	4,17	13,88	854,9	4,17	13,88	ASHRAE LBP											
[°F]	-10	130	90	90																					CECOMAF LBP		
-25	55	32	55	1030,3	3519	886,7	1,25	4,28	1,08	821,4	4,01	12,76	821,4	4,01	12,76	CECOMAF LBP									EN12900 LBP		
[°F]	-13	131	90	131																						opt LBP 1	
-35	40	20	40	765,7	2615	659,0	1,32	4,49	1,13	582,0	2,87	8,66	582,0	2,87	8,66	EN12900 LBP									opt LBP 2		
[°F]	-31	104	68	104																						opt LBP 3	
-40	35	20	35	626,4	2139	539,1	1,27	4,33	1,09	494,3	2,45	6,77	494,3	2,45	6,77	opt LBP 1											
[°F]	-40	95	68	95																							
-40	40	20	40	573,4	1958	493,4	1,14	3,90	0,98	501,6	2,48	6,47	501,6	2,48	6,47	opt LBP 2											
[°F]	-40	104	68	104																							
-40	45	20	45	520,6	1778	448,0	1,03	3,50	0,88	507,3	2,51	6,15	507,3	2,51	6,15	opt LBP 3											
[°F]	-40	113	68	113																							

### Standard conditions with different RPM

R1270, 220V, 50Hz, Fan cooling 3m/s



Test conditions:	pe [°C]	pc [°C]	Tliq [°C]	Tsuc [°C]
ASHRAE LBP	-23	54	32	32
CECOMAF LBP	-25	55	55	32
EN12900 LBP	-35	40	40	20
opt LBP 1	-40	35	35	20
opt LBP 2	-40	40	40	20
opt LBP 3	-40	45	45	20