Model
MN13UVULTM

Sales code:
105M0853

Compressor Data

Refrigerant(s)	**R170 / R290 / R1270**
Refr. charge - tech. limit	**300g / 10.58oz**
Weight	**10.80 kg / 23.81lbs**
Displacement	**12.55 cm3 / 0.77cu.in**
Compressors on pallet	**80**

General – Configurations With MN13UVULTM and Controller

–	Conf. 1	Conf. 2	Conf. 3	Conf. 4	Conf. 5
Sales code single pack:	105N4960	105N4960	105N4962	105N4962	105N4962
Power supply (nominal)	100-240 V,50/60 Hz	100-240 V,50/60 Hz	100-240 V,50/60 Hz	100-240 V,50/60 Hz	100-240 V,50/60 Hz
Number of phases	1~AC	1~AC	1~AC	1~AC	1~AC
Approvals	UL, VDE, CCC	UL, VDE, CCC	UL, VDE, CCC	UL, VDE, CCC	UL, VDE
Starting torque	HST	HST	HST	HST	HST
Refrigerant	R290	R170	R290	R170	R1270
Application	L+MBP	ULT	L+MBP	ULT	VLBP
Hot gas defrost	OK	OK	OK	OK	OK
Long interval pull down	OK	–	OK	–	–
Protection	Mechanic	Mechanic	Mechanic	Mechanic	Mechanic

Application Notes

- Provision for PE Grounding is located at the PE Stamp on the compressor
- Direct suction intake with telescope
- Compressor for laboratory and medical applications.
- Check special warranty terms with Secop Sales.

Model
MN13UVULTM

Sales code:
105M0853

Compressor Design

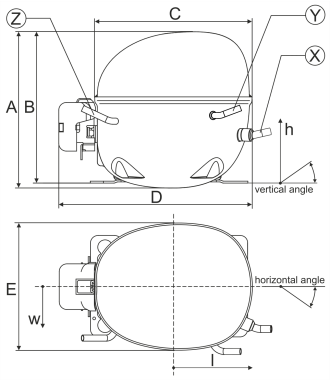
Oil type	**POE**	Motor protection	**internal**
Oil viscosity	**32cSt**	Max. winding temp.	**125 °C**
Oil quantity	**320 / 10.82fl.oz**	Max. discharge temp.	**130°C / 266°F**
Free gas volume comp.	**2,360 cm3 / 79.80fl.oz**		

Compressor Dimensions

Housing

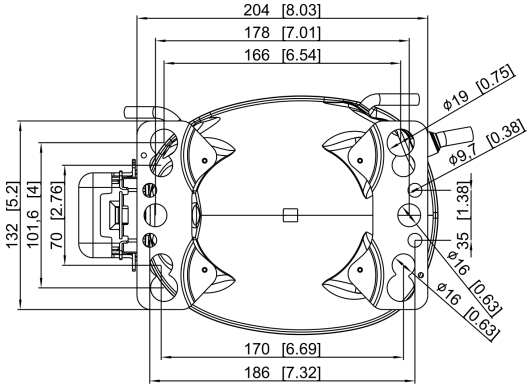
A Height	**203mm / 7.99in**
B Height	**197mm / 7.76in**
C Length shell	**205mm / 8.07in**
D Length w. cover	**252mm / 9.92in**
E Width	**166mm / 6.54in**

Find 3D Model here



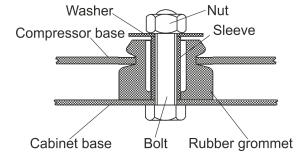
Connectors	Suction X	Discharge Y	Process Z
Diameter [mm]	øi 8.11–8.29 / 0.32–0.33in	øi 6.41–6.59 / 0.25–0.26in	øi 6.41–6.59 / 0.25–0.26in
Material	CU	CU	CU
Horizontal angle ±2°	0°	0°	0°
Vertical angle ±2°	15°	21°	155°
Position l/h/w [mm]	132/68.5/56.7 / 5.20/2.70/2.23in	94/101.7/81 / 3.70/4.00/3.19in	-109.3/94.3/72 / -4.30/3.71/2.83in
Straight tube l. [mm]	12 / 0.47in	12 / 0.47in	12 / 0.47in

Mounting Accessories

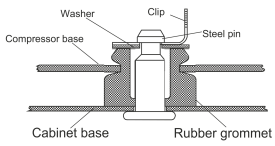


Dimensions in mm [in]

Bolt joint



Snap-on



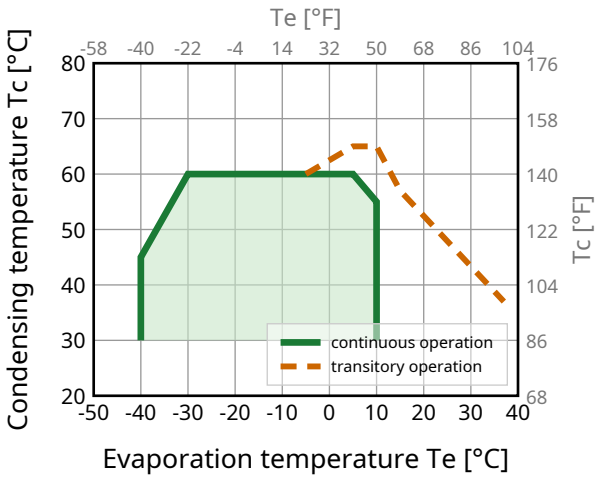
	one comp.	multi pack
Bolt joint | M6 | ø16mm	118-1917	118-1918
Bolt joint | ø1/4" | ø16mm	118-1946	–
Bolt joint | ø1/4" | ø19mm	118-1949	–
Snap-on | ø7,3 | ø16mm	118-1947	118-1919

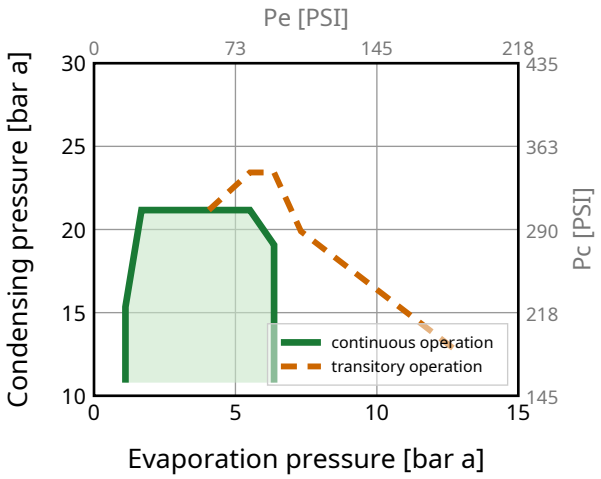
Model
MN13UVULTM System Design

Sales code:
105M0853

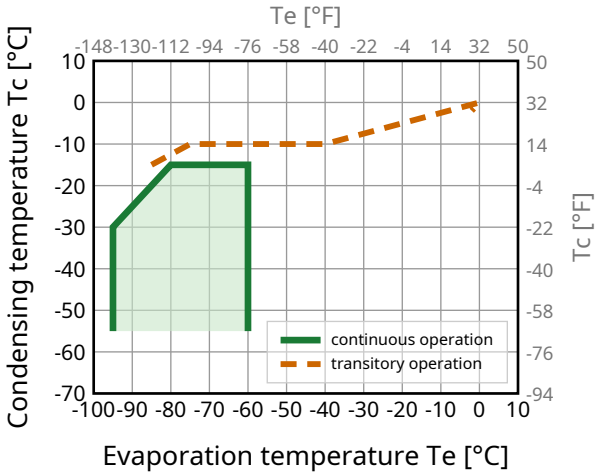
System Design

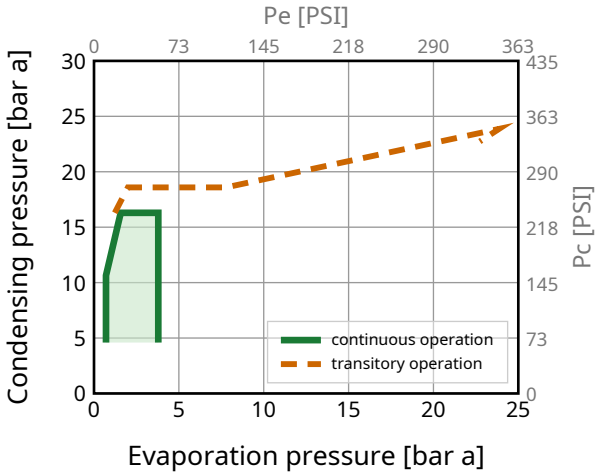
Operation Pressure Range R290



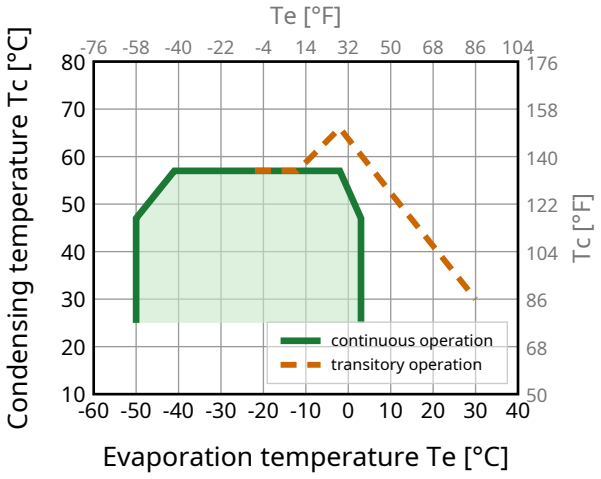


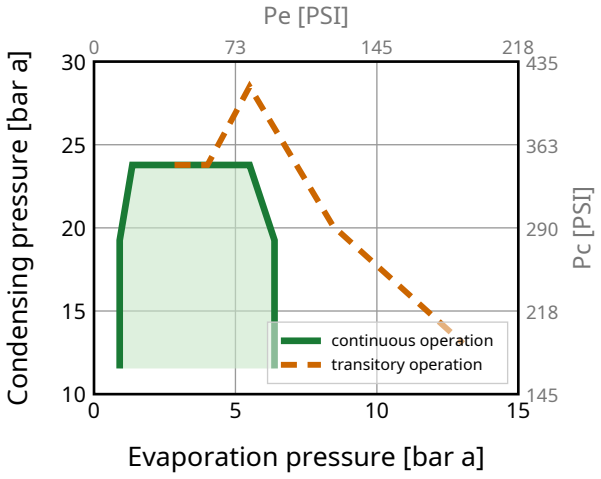
Operation Pressure Range R170





Operation Pressure Range R1270





Model
MN13UVULTM

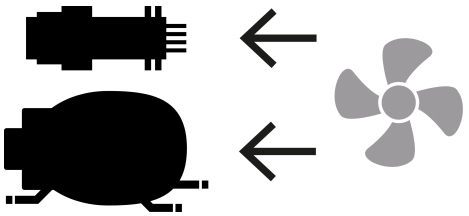
Sales code:
105M0853

System Cooling

Compressor and Controller Cooling: fan 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.



Accessories (Compressor + Controller)

103N2008	plastic cover	1 pcs

Operation Limits

Suctiongas temperature < +20 °C (contininous operation)

Model Sales code:

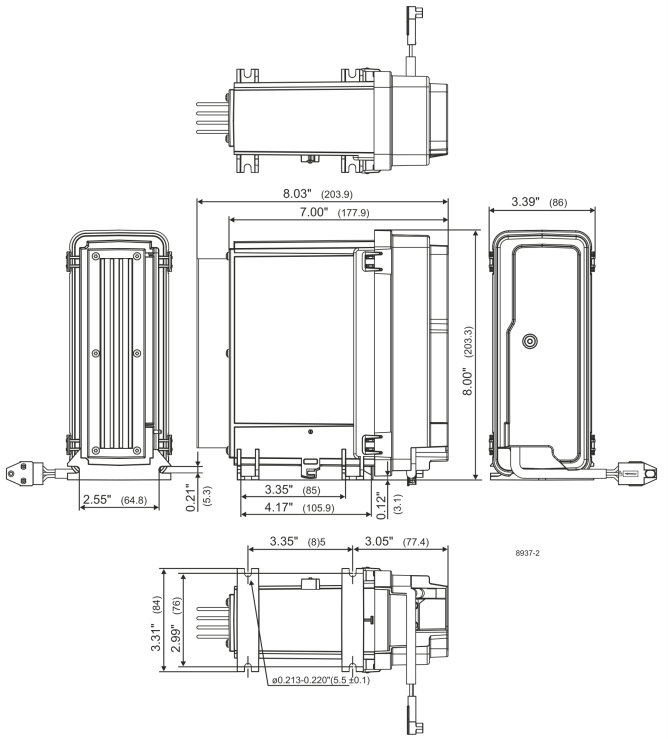
MN13UVULTM Controller Overview **105M0853**

Controller Overview

–	**Conf. 1, 2**	**Conf. 3, 4, 5**
Sales code single pack:	105N4960	105N4962
Sales code industry pack:	105N4961 (8)	105N4963 (8)
Voltage nom.:	100-240 V,50/60 Hz	100-240 V,50/60 Hz
Voltage range	90-150/180-270 V	90-150/180-270 V
Max output power	1000 W	1000 W
Compressor speed range:	2000-4500 rpm	2000-4500 rpm
Cable length:	680 mm	915 mm
Protection class:	IP54	IP54
LRA (Locked Rotor Amperage):	1,2 A	1,2 A
AEO and Defrost pin	Yes	Yes
Frequency input	Yes	Yes
Modbus input	SWI	SWI
Controller Wiring	» Controller Wiring	» Controller Wiring

Controller Dimensions

Conf. 1, 2, 3, 4, 5



Operating Instructions

For proper installation and operation of variable-speed compressors and controllers, please refer to the Operating Instructions. The document covers electrical installation, speed control, and technical data for the controller.
» Download Operating Instructions

Model
MN13UVULTM

Sales code:
105M0853

Standard Conditions — 2000 rpm

R290, 240 V/50 Hz, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**440**	1501	378	**1.77**	6.03	249	1.09	4.47	**ASHRAE LBP**
-25 -13	55 131	32 89.6	55 131	**329**	1122	283	**1.38**	4.69	239	1.05	4.12	**CECOMAF LBP**
-35 -31	40 104	20 68	40 104	**242**	825	208	**1.47**	5.01	164	0.77	2.77	**EN12900 LBP**
-6.7 20	54.4 129.9	35 95	46.1 115	**767**	2618	660	**2.18**	7.45	351	1.52	8.78	**ASHRAE MBP**
-10 14	55 131	32 89.6	55 131	**613**	2091	527	**1.83**	6.25	334	1.45	7.79	**CECOMAF MBP**
-10 14	45 113	20 68	45 113	**667**	2275	574	**2.25**	7.67	297	1.29	8.21	**EN12900 MBP**

Performance Tables — 2000 rpm

R290, 240 V/50 Hz, fan 3m/s

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-40	-40	**174**	594	150	**1.19**	4.04	147	0.71	1.96
-30	-22	**299**	1021	257	**1.53**	5.23	195	0.88	3.38
-20	-4	**468**	1599	403	**1.89**	6.44	248	1.09	5.33
-10	14	**693**	2366	596	**2.34**	7.98	297	1.29	7.96
0	32	**985**	3361	847	**2.98**	10.15	331	1.44	11.45
10	50	**1355**	4623	1165	**3.96**	13.50	342	1.48	16.02

pc= 55/131 | RGT= 32/89.6 | Tliq= 55/131 | °C/°F

-40	-40	**143**	487	123	**0.91**	3.12	156	0.74	1.77
-30	-22	**258**	879	222	**1.24**	4.22	209	0.93	3.22
-20	-4	**411**	1401	353	**1.51**	5.17	271	1.19	5.17
-10	14	**613**	2091	527	**1.83**	6.25	334	1.45	7.79
0	32	**875**	2987	753	**2.25**	7.68	389	1.68	11.29
10	50	**1210**	4127	1040	**2.84**	9.70	425	1.82	15.89

Model
MN13UVULTM

Sales code:
105M0853

Standard Conditions — 4500 rpm

R290, 240 V/50 Hz, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**1025**	3499	882	**1.81**	6.18	566	2.42	10.42	**ASHRAE LBP**
-25 -13	55 131	32 89.6	55 131	**767**	2617	660	**1.41**	4.82	542	2.32	9.61	**CECOMAF LBP**
-35 -31	40 104	20 68	40 104	**564**	1924	485	**1.50**	5.10	377	1.64	6.47	**EN12900 LBP**
-6.7 20	54.4 129.9	35 95	46.1 115	**1774**	6053	1526	**2.13**	7.25	834	3.55	20.31	**ASHRAE MBP**
-10 14	55 131	32 89.6	55 131	**1419**	4843	1221	**1.81**	6.19	783	3.33	18.05	**CECOMAF MBP**
-10 14	45 113	20 68	45 113	**1540**	5255	1325	**2.14**	7.29	720	3.07	18.95	**EN12900 MBP**

Performance Tables — 4500 rpm

R290, 240 V/50 Hz, fan 3m/s

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-40	-40	**405**	1383	349	**1.24**	4.24	326	1.43	4.56
-30	-22	**698**	2381	600	**1.56**	5.31	448	1.93	7.88
-20	-4	**1087**	3710	935	**1.87**	6.38	582	2.49	12.37
-10	14	**1601**	5463	1377	**2.22**	7.58	720	3.07	18.39
0	32	**2266**	7732	1949	**2.64**	9.00	859	3.65	26.35
10	50	**3109**	10607	2673	**3.14**	10.71	990	4.21	36.77

pc= 55/131 | RGT= 32/89.6 | Tliq= 55/131 | °C/°F

-40	-40	**329**	1124	283	**0.98**	3.33	337	1.47	4.09
-30	-22	**602**	2053	517	**1.28**	4.38	469	2.02	7.52
-20	-4	**956**	3262	822	**1.54**	5.26	620	2.65	12.03
-10	14	**1419**	4843	1221	**1.81**	6.19	783	3.33	18.05
0	32	**2018**	6887	1736	**2.12**	7.23	952	4.05	26.03
10	50	**2780**	9486	2391	**2.48**	8.45	1123	4.77	36.53

Model
MN13UVULTM

Sales code:
105M0853

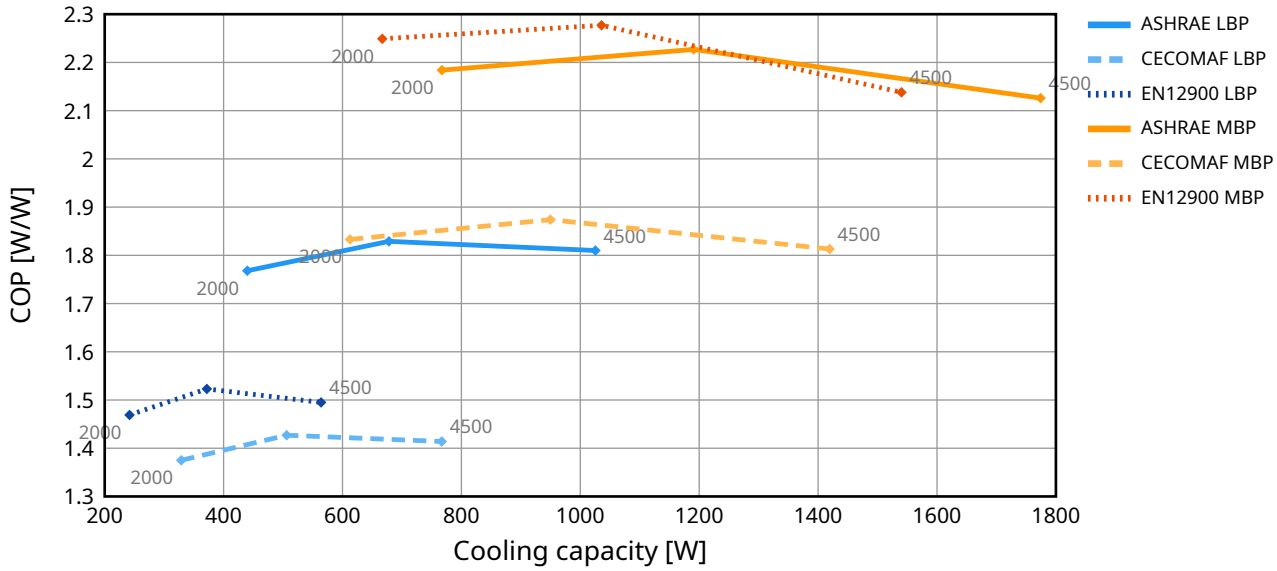
Optimal Performance

R290, 240 V/50 Hz, fan 3m/s
Shows the speed (RPM) that achieves the highest COP at each standard condition.

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	RPM	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[rpm]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**678**	2313	583	**1.83**	6.24	371	**3000**	**ASHRAE LBP**
-25 -13	55 131	32 89.6	55 131	**506**	1727	435	**1.43**	4.87	355	**3000**	**CECOMAF LBP**
-35 -31	40 104	20 68	40 104	**372**	1269	320	**1.52**	5.20	244	**3000**	**EN12900 LBP**
-6.7 20	54.4 129.9	35 95	46.1 115	**1190**	4062	1024	**2.23**	7.60	535	**3000**	**ASHRAE MBP**
-10 14	55 131	32 89.6	55 131	**950**	3240	817	**1.87**	6.39	507	**3000**	**CECOMAF MBP**
-10 14	45 113	20 68	45 113	**1036**	3534	891	**2.28**	7.77	455	**3000**	**EN12900 MBP**

Cooling Capacity vs. COP

R290, 240 V/50 Hz, fan 3m/s



Model
MN13UVULTM

Sales code:
105M0853

Standard Conditions — 2000 rpm

R170, 240 V/50 Hz, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-85 -121	-35 -31	10 50	-15 5	**203**	693	175	**1.56**	5.34	130	0.66	1.65	**ULT 1**
-85 -121	-40 -40	10 50	-20 -4	**216**	737	186	**1.78**	6.07	121	0.64	1.70	**ULT 2**
-85 -121	-45 -49	10 50	-25 -13	**228**	779	196	**2.04**	6.96	112	0.61	1.74	**ULT 3**
-95 -139	-35 -31	10 50	-30 -22	**112**	382	96	**1.23**	4.18	92	0.57	0.82	**ULT 4**
-95 -139	-40 -40	10 50	-35 -31	**122**	418	105	**1.42**	4.83	86	0.55	0.88	**ULT 5**
-95 -139	-45 -49	10 50	-40 -40	**132**	452	114	**1.64**	5.58	81	0.54	0.92	**ULT 6**

Performance Tables — 2000 rpm

R170, 240 V/50 Hz, fan 3m/s

pc= -35/-31 | RGT= 10/50 | Tliq= -35/-31 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-95	-139	**117**	400	101	**1.28**	4.37	92	0.57	0.84
-90	-130	**170**	578	146	**1.54**	5.25	110	0.61	1.22
-85	-121	**234**	799	201	**1.80**	6.16	130	0.66	1.68
-80	-112	**313**	1069	269	**2.10**	7.18	149	0.72	2.25
-75	-103	**409**	1394	351	**2.46**	8.41	166	0.77	2.94
-70	-94	**523**	1783	449	**2.92**	9.95	179	0.82	3.77
-65	-85	**657**	2241	565	**3.51**	11.97	187	0.85	4.75
-60	-76	**814**	2777	700	**4.32**	14.72	189	0.86	5.91

pc= -25/-13 | RGT= 10/50 | Tliq= -25/-13 | °C/°F

-95	-139	**95**	324	82	**0.95**	3.23	100	0.59	0.72
-90	-130	**145**	496	125	**1.20**	4.10	121	0.64	1.10
-85	-121	**207**	706	178	**1.43**	4.88	144	0.70	1.57
-80	-112	**282**	961	242	**1.66**	5.67	169	0.79	2.15
-75	-103	**372**	1269	320	**1.92**	6.54	194	0.87	2.84
-70	-94	**480**	1636	412	**2.21**	7.54	217	0.96	3.67
-65	-85	**607**	2070	522	**2.57**	8.76	236	1.04	4.66
-60	-76	**755**	2577	650	**3.01**	10.27	251	1.10	5.82

Model
MN13UVULTM

Sales code:
105M0853

Standard Conditions — 4500 rpm

R170, 240 V/50 Hz, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-85 -121	-35 -31	10 50	-15 5	**472**	1612	406	**1.58**	5.39	299	1.32	3.85	**ULT 1**
-85 -121	-40 -40	10 50	-20 -4	**500**	1707	430	**1.78**	6.07	281	1.25	3.94	**ULT 2**
-85 -121	-45 -49	10 50	-25 -13	**527**	1797	453	**2.03**	6.92	260	1.16	4.01	**ULT 3**
-95 -139	-35 -31	10 50	-30 -22	**262**	893	225	**1.28**	4.37	204	0.94	1.93	**ULT 4**
-95 -139	-40 -40	10 50	-35 -31	**286**	976	246	**1.45**	4.94	198	0.92	2.05	**ULT 5**
-95 -139	-45 -49	10 50	-40 -40	**309**	1053	265	**1.64**	5.61	188	0.88	2.15	**ULT 6**

Performance Tables — 4500 rpm

R170, 240 V/50 Hz, fan 3m/s

pc= -35/-31 | RGT= 10/50 | Tliq= -35/-31 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-95	-139	**274**	935	236	**1.34**	4.58	204	0.94	1.96
-90	-130	**396**	1351	341	**1.58**	5.39	251	1.12	2.84
-85	-121	**545**	1860	469	**1.82**	6.22	299	1.32	3.91
-80	-112	**726**	2476	624	**2.08**	7.10	349	1.52	5.22
-75	-103	**943**	3217	811	**2.37**	8.07	399	1.72	6.79
-70	-94	**1201**	4098	1033	**2.68**	9.13	449	1.93	8.67
-65	-85	**1505**	5134	1294	**3.02**	10.31	498	2.13	10.89
-60	-76	**1859**	6343	1599	**3.41**	11.62	546	2.34	13.49

pc= -25/-13 | RGT= 10/50 | Tliq= -25/-13 | °C/°F

-95	-139	**220**	752	190	**1.04**	3.54	212	0.97	1.68
-90	-130	**340**	1161	293	**1.27**	4.33	268	1.19	2.59
-85	-121	**485**	1654	417	**1.48**	5.06	327	1.43	3.69
-80	-112	**658**	2247	566	**1.69**	5.78	389	1.68	5.02
-75	-103	**866**	2955	745	**1.91**	6.53	453	1.95	6.62
-70	-94	**1112**	3794	956	**2.15**	7.33	518	2.22	8.52
-65	-85	**1401**	4782	1205	**2.40**	8.19	584	2.50	10.76
-60	-76	**1739**	5932	1495	**2.67**	9.13	650	2.78	13.40

Model
MN13UVULTM

Sales code:
105M0853

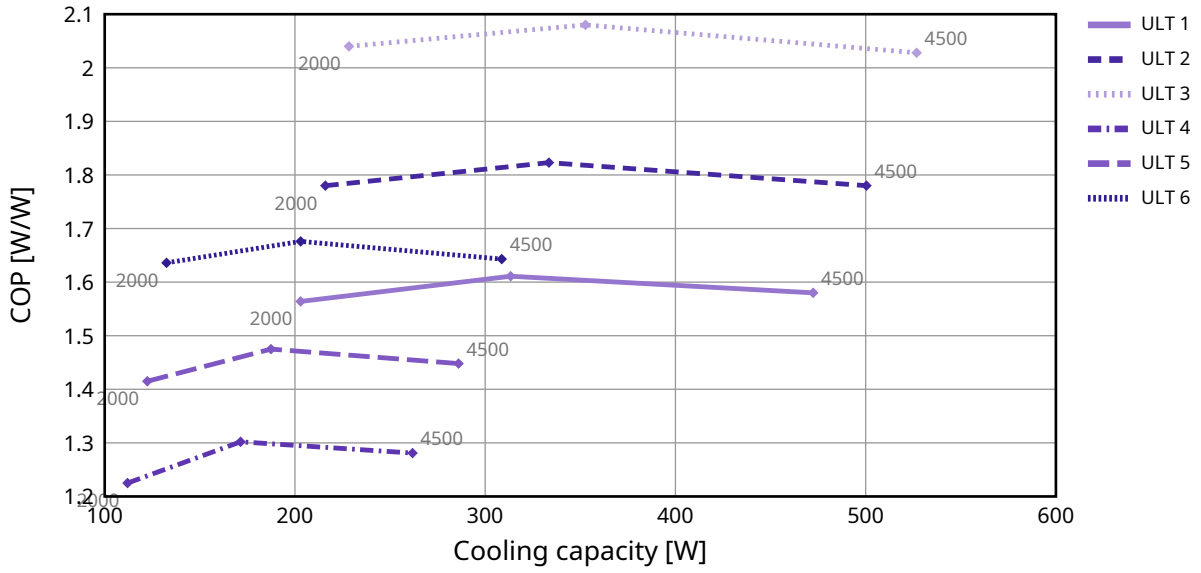
Optimal Performance

R170, 240 V/50 Hz, fan 3m/s
Shows the speed (RPM) that achieves the highest COP at each standard condition.

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	RPM	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[rpm]	
-85 -121	-35 -31	10 50	-15 5	**313**	1069	270	**1.61**	5.50	194	**3000**	**ULT 1**
-85 -121	-40 -40	10 50	-20 -4	**334**	1138	287	**1.82**	6.22	183	**3000**	**ULT 2**
-85 -121	-45 -49	10 50	-25 -13	**353**	1203	303	**2.08**	7.10	170	**3000**	**ULT 3**
-95 -139	-35 -31	10 50	-30 -22	**171**	585	147	**1.30**	4.44	132	**3000**	**ULT 4**
-95 -139	-40 -40	10 50	-35 -31	**187**	639	161	**1.48**	5.03	127	**3000**	**ULT 5**
-95 -139	-45 -49	10 50	-40 -40	**203**	693	175	**1.68**	5.72	121	**3000**	**ULT 6**

Cooling Capacity vs. COP

R170, 240 V/50 Hz, fan 3m/s



Model
MN13UVULTM

Sales code:
105M0853

Standard Conditions — 2000 rpm

R1270, 240 V/50 Hz, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**521**	1778	448	**1.63**	5.58	319	1.39	5.26	**ASHRAE LBP**
-25 -13	55 131	32 89.6	55 131	**392**	1338	337	**1.28**	4.35	307	1.34	4.86	**CECOMAF LBP**
-35 -31	40 104	20 68	40 104	**293**	1001	252	**1.40**	4.77	210	0.94	3.32	**EN12900 LBP**
-23.3 -10	48.8 119.8	4.4 39.9	48.8 119.8	**426**	1455	367	**1.40**	4.78	304	1.33	5.78	**ARI540 LBP**
-23.3 -10	40.6 105.1	32.2 90	32.2 90	**548**	1868	471	**1.94**	6.62	282	1.23	5.52	**AHAM LBP**
-35 -31	45 113	32 89.6	45 113	**281**	959	242	**1.29**	4.41	217	0.97	3.13	**opt LBP**

Performance Tables — 2000 rpm

R1270, 240 V/50 Hz, fan 3m/s

pc= 35/95 | RGT= 32/89.6 | Tliq= 35/95 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-50	-58	**136**	464	117	**1.04**	3.56	130	0.67	1.38
-40	-40	**248**	848	214	**1.41**	4.82	176	0.81	2.54
-30	-22	**407**	1388	350	**1.77**	6.04	230	1.01	4.18
-20	-4	**622**	2121	535	**2.20**	7.52	282	1.23	6.43
-10	14	**904**	3083	777	**2.81**	9.60	321	1.40	9.44
0	32	**1263**	4309	1086	**3.76**	12.83	336	1.46	13.36
3	37	**1387**	4734	1193	**4.16**	14.18	334	1.44	14.75

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

-50	-58	**110**	374	94	**0.78**	2.64	141	0.69	1.21
-40	-40	**214**	731	184	**1.14**	3.89	188	0.85	2.38
-30	-22	**360**	1227	309	**1.44**	4.91	250	1.10	4.02
-20	-4	**556**	1898	478	**1.76**	6.00	316	1.38	6.27
-10	14	**815**	2780	701	**2.17**	7.39	376	1.63	9.28
0	32	**1146**	3910	985	**2.74**	9.34	419	1.79	13.23
3	37	**1261**	4303	1084	**2.96**	10.09	427	1.82	14.64

Model
MN13UVULTM

Sales code:
105M0853

Standard Conditions — 4500 rpm

R1270, 240 V/50 Hz, fan 3m/s

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	I	ṁ	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**1214**	4144	1044	**1.67**	5.70	726	3.10	12.25	**ASHRAE LBP**
-25 -13	55 131	32 89.6	55 131	**914**	3120	786	**1.31**	4.47	698	2.98	11.33	**CECOMAF LBP**
-35 -31	40 104	20 68	40 104	**684**	2333	588	**1.41**	4.80	486	2.08	7.73	**EN12900 LBP**
-23.3 -10	48.8 119.8	4.4 39.9	48.8 119.8	**992**	3385	853	**1.42**	4.83	700	2.98	13.44	**ARI540 LBP**
-23.3 -10	40.6 105.1	32.2 90	32.2 90	**1271**	4337	1093	**1.93**	6.58	659	2.81	12.82	**AHAM LBP**
-35 -31	45 113	32 89.6	45 113	**656**	2237	564	**1.31**	4.48	500	2.14	7.31	**opt LBP**

Performance Tables — 4500 rpm

R1270, 240 V/50 Hz, fan 3m/s

pc= 35/95 | RGT= 32/89.6 | Tliq= 35/95 | °C/°F

pe		Cooling capacity			COP	EER	P	I	ṁ
[°C]	[°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[A]	[kg/h]
-50	-58	**315**	1074	271	**1.09**	3.74	288	1.27	3.21
-40	-40	**579**	1977	498	**1.43**	4.87	406	1.76	5.92
-30	-22	**946**	3228	814	**1.77**	6.03	535	2.29	9.72
-20	-4	**1439**	4910	1238	**2.14**	7.30	673	2.87	14.89
-10	14	**2082**	7104	1791	**2.54**	8.68	818	3.49	21.75
0	32	**2899**	9891	2493	**2.99**	10.19	971	4.12	30.68
3	37	**3182**	10855	2736	**3.13**	10.67	1017	4.32	33.83

pc= 45/113 | RGT= 32/89.6 | Tliq= 45/113 | °C/°F

-50	-58	**252**	859	217	**0.86**	2.93	293	1.30	2.79
-40	-40	**499**	1704	429	**1.17**	3.99	427	1.84	5.55
-30	-22	**838**	2858	720	**1.46**	4.97	575	2.46	9.37
-20	-4	**1291**	4404	1110	**1.75**	5.98	736	3.14	14.54
-10	14	**1882**	6423	1619	**2.07**	7.07	909	3.87	21.44
0	32	**2637**	8997	2268	**2.41**	8.24	1092	4.64	30.45
3	37	**2898**	9889	2493	**2.52**	8.61	1149	4.88	33.65

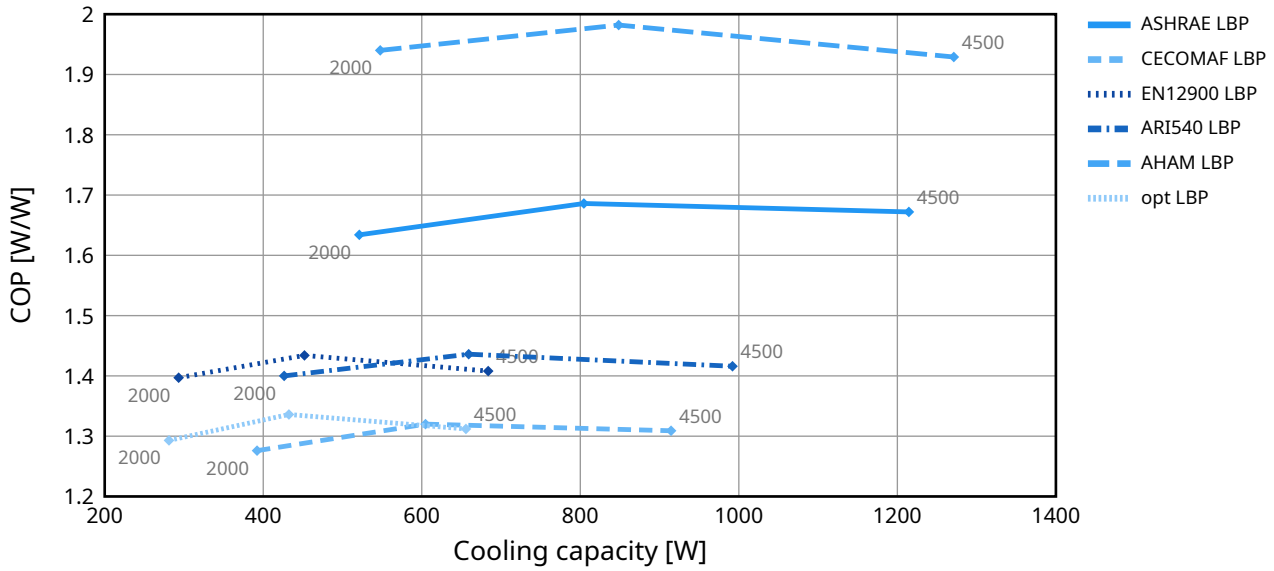
Model
MN13UVULTM

Sales code:
105M0853

Optimal Performance

R1270, 240 V/50 Hz, fan 3m/s
Shows the speed (RPM) that achieves the highest COP at each standard condition.

pe	pc	RGT	Tliq	Cooling capacity			COP	EER	P	RPM	
[°C] [°F]	[°C] [°F]	[°C] [°F]	[°C] [°F]	[W]	[Btu/h]	[kcal/h]	[W/W]	[Btu/Wh]	[W]	[rpm]	
-23.3 -10	54.4 129.9	32.2 90	32.2 90	**804**	2745	692	**1.69**	5.75	477	**3000**	**ASHRAE LBP**
-25 -13	55 131	32 89.6	55 131	**605**	2063	520	**1.32**	4.50	458	**3000**	**CECOMAF LBP**
-35 -31	40 104	20 68	40 104	**452**	1542	389	**1.43**	4.89	315	**3000**	**EN12900 LBP**
-23.3 -10	48.8 119.8	4.4 39.9	48.8 119.8	**659**	2249	567	**1.44**	4.90	459	**3000**	**ARI540 LBP**
-23.3 -10	40.6 105.1	32.2 90	32.2 90	**848**	2895	730	**1.98**	6.76	428	**3000**	**AHAM LBP**
-35 -31	45 113	32 89.6	45 113	**432**	1475	372	**1.34**	4.56	324	**3000**	**opt LBP**

Cooling Capacity vs. COP

R1270, 240 V/50 Hz, fan 3m/s