R170 · 12–24 V DC

ULTRA-LOW TEMPERATURE MOBILE MEDICAL COOLING

SECOP

MP2UVULTM

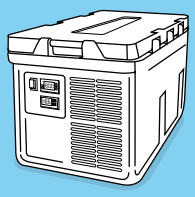
DC-POWERED APPLICATIONS

VARIABLE SPEED DRIVE

NATURAL REFRIGERANT

ULTRA-LOW TEMPERATURE

MEDICAL APPLICATIONS



- → **Mobile solution which is able to reach -70 °C to -86 °C**
- → **Ideal solution for mains voltage independent transport of mRNA-based COVID-19 vaccines**
- → **Precise cooling and control of target temperature**
- → **Perfect for vaccine transportation with temperature control and no risk of wasting vaccine**
- → **Reliable long lasting systems with low TCO life cycle**
- → **Optimized and proven design for robust transport boxes**
- → **Electronically controlled variable-speed drive compressor**
- → **Easy °CCD® (Cool Capacity Drive) controller customization via Tool4Cool®**

Secop has developed the technology for an ultra-low temperature cooling system. This system is optimized for the last mile of distribution for the new generations of vaccines and offers mobile operation even in high ambient conditions such as in tropical regions.

This solution with a MP2UVULTM compressor takes advantage of Secop's experience in medical applications, vaccine solar freezers, and mobile solutions and combines all of these areas of use.

Battery-driven active cooling systems for mRNA-based vaccines provide a lot of advantages compared to existing passive cooling (dry ice) transport boxes. Active systems offer temperature control, do not need huge quantities of dry ice, are re-usable, do not waste tons of CO_2, and prevent wasting vaccine.

They are suitable for any distribution point, including in remote areas where the availability of CO_2 cannot be guaranteed or ambient conditions are severe.

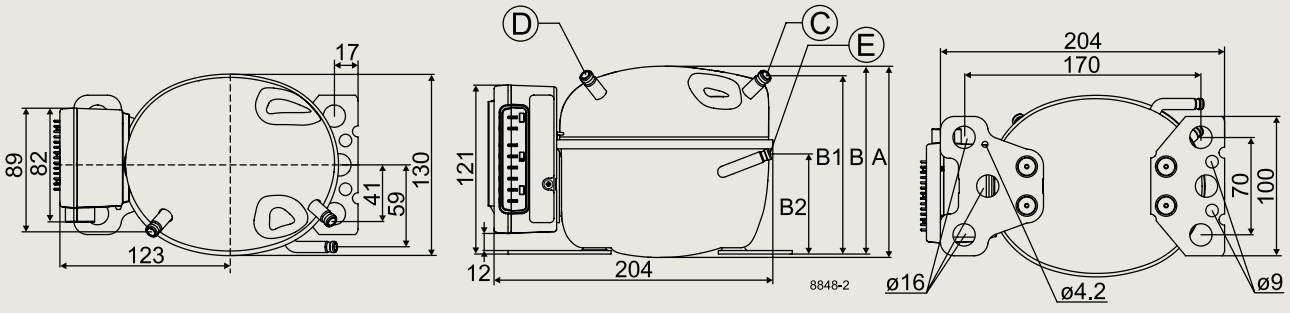
GENERAL	MP2UVULTM
Compressor	101M0800
Electronic unit	101NULT1
Approvals	UL 60335-2-34, UL 60335-1, CB IEC 60335-2-34, CB IEC 60335-1

APPLICATION		R170
Application		Low temperature stage in a 2-stage cascade system
Evaporating temperature	°C | °F	-90 to -60 | -130 to -76
Voltage range / max. voltage	V DC	9.6–17 / 21.3–31.5
Speed range	rpm	2500–4400

PERFORMANCE DATA ULT (12 V DC • static cooling) @ **2500 rpm**								
Evaporating temperature	°C | °F	-90 | -130	-85 | -121	-80 | -112	-75 | -103	-70 | -94	-65 | -85	-60 | -76
Cooling capacity	W | BTU/h	26 | 89	39 | 131	54 | 185	73 | 249	96 | 326	122 | 416	152 | 519
Power consumption	W	18	23	27	31	34	37	39
COP	W/W	1.44	1.71	2.03	2.39	2.81	3.31	3.91
EER	BTU/Wh	4.90	5.84	6.92	8.15	9.59	11.30	13.37
Test conditions	Condensing temperature: -35 °C | Suction gas temperature: -20 °C | Ambient temperature: 32.2 °C | Liquid temperature: -35 °C							

PERFORMANCE DATA ULT (12 V DC • static cooling) @ **4400 rpm**								
Evaporating temperature	°C | °F	-90 | -130	-85 | -121	-80 | -112	-75 | -103	-70 | -94	-65 | -85	-60 | -76
Cooling capacity	W | BTU/h	46 | 156	68 | 231	95 | 325	129 | 439	168 | 574	214 | 732	267 | 913
Power consumption	W	33	40	47	54	60	64	67
COP	W/W	1.40	1.69	2.01	2.39	2.83	3.34	3.97
EER	BTU/Wh	4.79	5.76	6.87	8.15	9.65	11.42	13.54
Test conditions	Condensing temperature: -35 °C | Suction gas temperature: -20 °C | Ambient temperature: 32.2 °C | Liquid temperature: -35 °C							

DIMENSIONS			
Height	mm	A	137
		B / B1 / B2	135 / 128 / 73
Suction connector	location/I.D. mm | angle material | seal	C	6.2 | 40° Cu-plated steel | Al cap
Process connector	location/I.D. mm | angle material | seal	D	6.2 | 45° Cu-plated steel | Al cap
Discharge connector	location/I.D. mm | angle material | seal	E	5.0 | 21° Cu-plated steel | Al cap
Connector tolerance	I.D. mm		±0.09, on 5.0 +0.12/+0.20



ULTRA-LOW TEMPERATURE SYSTEMS

Secop recommends using 2-stage cascade systems for the temperature range from -60 °C to -90 °C. These have been developed for highest reliability and product safety at ultra-low temperatures.

Learn more about the
ULTRA-LOW TEMPERATURE (ULT) FREEZER
www.secop.com/ult

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Produced by Secop | June 2022

DES.N.101.J2.02