



NSC5000-ULT BHO EXTRACTION

120 lbs/hr Solvent Condensed and Subcooled to -54°C (-65°F)

CALCULATION

From 50°C (122°F) Condensed and Subcooled to -30°C (-22°F):


Flowing System	Yes	
Material being cooled flowing through chiller?	No	
Fluid	70/30 (Butane/Propane)	
Inlet Temperature	50	°C
Desired Outlet Temperature	-54	°C
Ambient	90°F	
Required dT	-10	°C
Flow Rate: (120 lbs/hr)	2.00	lb/min

Condensing Temperature = -13.34C (8.06F)

Calculations			
Inlet Temperature	50.00	°C	
Outlet Temperature	-54.00	°C	
Flow Rate	0.00000	m³/min	
Specific Heat (Liquid)	2.3500	kJ/kg °K	
Specific Heat (Gas)	1.7150	kJ/kg °K	
Density	440.1646	kg/m³	
Mass flow rate	0.01511975	kg/sec	
Volume	3.8	m³	
Mass	1666.2	kg	
Static System Power	0.0	kW	
Heat of Vaporization	397.9	kJ/kg	
Condensing Temperature	-13.3	°C	
Start Phase	Gas		
End Phase	Liquid		
Phase Change Energy	6.0161472	kW	
Flowing System Power (Gas)	1.64139214	kW	
Flowing System Power (Liquid)	1.44612817	kW	
Flowing System Power	9.10366751	kW	
Required dT	-10	°C	

NSC5000-ULT	100F	0.08
Ambient	Watts	BTU/hr
90F	10,951	37,400
70F	13,118	44,800
	108.35	370
100F	9867.5	33700
110F	8784	30000

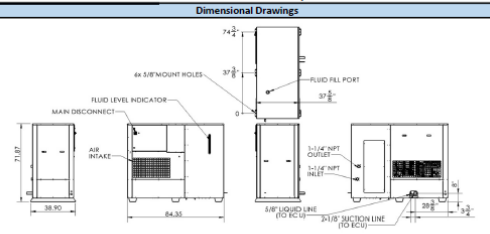
Absolute minimum capacity	31070	BTU/hr	
	9.11	kW	
WARNING PHASE CHANGE!!! - Assumes phase change happens at -13.3°C			
Chiller Options at -64°C fluid outlet and 90°F Ambient			
Chiller Model	Capacity (BTU/hr)	Capacity (Watts)	% Oversized
NSC5000-ULT	37,400	10,951	20%
NSC10000-ULT	74,900	21,931	141%
NSC15000-ULT	112,400	32,912	262%
NSC5000-ULT has 33,700 BTU/hr (9,868 Watts) at -64C (-83F) Chiller Fluid Temperature at 100F Ambient = 8% oversized.			



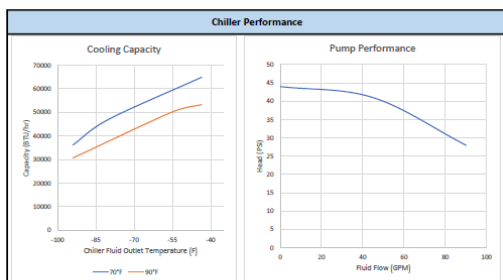
NSC5000-ULT

5 Ton Air Cooled Ultra Low Temp Chiller

Dimensional Drawings




LENGTH	WIDTH	HEIGHT	WEIGHT	TANK CAPACITY	FLUID CONNECTIONS
84"	39"	72"	1965 lbs	20 Gallon Stainless Steel	1-1/4" NPT



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All information is For Reference Only





NSC5000-ULT

Standard Features and Benefits

Performance	Working Temperature Range	-112°F (-80°C) to 70°F (21°C)
	Temperature Stability	±2
Performance	Cooling Capacity at 70°F	-94°F (-70°C) - 36,200 BTU/hr (10,610 Watts) -80°F (-62.2°C) - 47,100 BTU/hr (13,800 Watts) -83.6°F (-42°C) - 62,900 BTU/hr (19,020 Watts)
	Ambient Temperature (Standard)	80°F - 100°F
	Pump Performance	0 GPM @ 44 PSI 45 GPM @ 41 PSI 90 GPM @ 28 PSI
User Interface	Controls	Electronic Programmed Temperature Controller (PLC) with Constant (Setpoint & Process) Temperature Readout
Refrigeration Circuit	Additional Features	Fluid Level Indicator, Touch Screen Controls
	Compressor	Capeland Discos
	Heat Exchanger	Brazed Plate Heat Exchanger
	Refrigerant	R508B
Process Fluid Circuit	Additional Features	Access Ports, Service Valves, Filter Drier, Sight Glass, Liquid Receiver, Thermostatic Expansion Valve (TXV), Oil Separator
	Max Heat Rejection	40,000 BTU/hr (11.7 kW)
Construction	Frame	Galvanized Steel
	Enclosure	Powder Coated Steel Enclosure with Easy Access Panels
Quality	Warranty	1 Year Standard Warranty
	UL/CSA Certified (Full Assembly)	Certified for Outdoor Use ETL 3170655, UL STD 1010-2-011, CAN/CSA STD. C22.2 No. 681010-2-011
	Manufacturing	Manufactured in the U.S.A. Certified ISO 9001:2015 Company
Power	Available Voltages	Max Amps (FLA) 480VAC / 3P / 60Hz (STANDARD) 26.7 Amps (std)
		Recommended Breaker/Service (MCA) 31.4 Amps (std)

Optional Upgrades

UPGRADES	Process Heating UL/CSA Outdoor Certified Extended Ambient (-15°F)	External Temperature Monitoring Alternate Pumps	Controller Auto Start Remote Start Crating
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More Options and Customization Available - Contact Factory for More Information

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