



- Geothermal Heat Pumps
- Packaged & HVAC Chillers
- Vapor Recovery Systems

Chiller Capacity Derate Factors

Ethylene Glycol

Glycol by		LBT (°F)	Specific Gravity	Specific Heat	Capacity Derate		Freezing Point
Volume	Weight				Factor	(%)	
10.00%	12.00%	60	1.016	0.990	0	0	+24°F
		50	1.017	0.988	0	0	
		40	1.018	0.986	0	0	
20.00%	22.00%	60	1.031	0.945	0.97	3%	+15°F
		50	1.033	0.943	0.97	3%	
		40	1.035	0.941	0.97	3%	
30.00%	33.00%	60	1.050	0.990	0.95	5%	+02°F
		50	1.052	0.896	0.94	6%	
		40	1.053	0.894	0.94	6%	
40.00%	43.00%	60	1.061	0.856	0.91	9%	-24°F
		50	1.064	0.853	0.91	9%	
		40	1.067	0.850	0.90	10%	
50.00%	53.00%	60	1.078	0.805	0.87	13%	-37°F
		50	1.080	0.800	0.86	14%	
		40	1.083	0.797	0.86	14%	

Altitude

The use of a 9 fins per inch condenser causes no equipment capacity loss up to an elevation of 5,000 feet. From 5,000 to 7,500 feet a high altitude condenser causes no equipment loss.

Above 7,500 feet a high altitude condenser must be used and the equipment capacity must be reduced using the following table:

Height Above Sea Level	Derate Factor	Percent Capacity Decrease
7,500 Feet	0.90	10%
10,000 Feet	0.82	18%
12,000 Feet	0.77	33%

Chiller Solutions LLC

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