

Idaho Power Heating and Cooling Efficiency Program

Heating Load at 30° F Sizing Worksheet



An IDACORP Company

This worksheet verifies that a heat pump has been sized to program requirements. A copy of this completed form or outputs from Manual J or equivalent must be submitted with the incentive application.

Customer Information

Name (on account) _____

Technician Information

Technician name _____ Technician HVAC license # _____
 Company name _____ Company phone () _____
 Company address _____ City _____ State _____ Zip _____

Instructions

This form must be filled out completely. All equipment must be properly sized using this sizing worksheet or program approved equivalent procedure (Manual-J, etc.) If using Manual-S, latent and sensible capacity at design conditions must be reported. The unit installed must be within ½ ton of the dominant load. When performing the cooling load calculations, technicians must use the design conditions indicated on this worksheet. **Submit the detailed capacity table for the equipment you will be installing showing that the heating capacity at 30°F outdoor temperature meets or exceeds the heat loss at 30°F.**

Sizing Assumptions	
Cooling Design Temperature	
Boise, Nampa, Payette	94-100°F
Pocatello	90-96°F
Twin Falls	95-101°F
Design Conditions For All Regions	
Heat ACH	pre-1970: Max .50; 1970-1980 .30 - .40; 1990 – present .20 - .30 (Use 0.2 ACH less for Cool ACH)
Duct multiplier	1.0 for all ducts inside house or finished basement; 1.10 - 1.20 for return only in attics; 1.20 - 1.30 for supply and return ducts in attics or uninsulated crawlspace. Assumes at least R-4 insulation.
Exterior shading (Cooling only)	Must report orientation. Big trees and buildings should be .50

For each appropriate surface, use respective R-Value (insulation), orientation (windows) and door construction to calculate heating BTUs and cooling BTUs. Then, add the ACH multiplier, number of appliances/people, and duct multiplier based on the information in the above assumptions chart.

Heat Pump Sizing Worksheet—Heating load at 30°F.

Total from Page 1

Heat BTUH	Cool BTUH

Sky Lights	Sq. Feet	North Heat	North Cool	NE/NW Heat	NE/NW Cool	East/West Heat	East/West Cool	SE/SW Heat	SE/SW Cool	South Heat	South Cool
Single Pane		52.0	62.2	52.0	93.5	52.0	118	52.0	108.7	52.0	81.7
Double Pane		28.1	38.4	28.1	66.0	28.1	87.7	28.1	79.4	28.1	55.6

Heat BTUH	Cool BTUH

Doors	Sq. Feet	Heat	Cool
Wood Doors		12.9	11.1
Insulated Doors		9.6	8.3

Heat BTUH	Cool BTUH

Air Changes/hour	Sq. Feet (Floor area from page 1)	Heat (0.2)	Cool (0.2)	Heat (0.3)	Cool (0.3)	Heat (0.4)	Cool (0.4)	Heat (0.5)	Cool (0.5)	Heat (0.6)	Cool (0.6)	Heat (0.7)	Cool (0.7)
(Select ACH based on vintage indicated in the sizing assumptions.)		1.0	0.5	1.5	0.8	2.0	1.1	2.5	1.3	3.0	1.6	3.5	1.8

Cool BTUH

Number of Appliances	Add 1,200 BTU per appliance for cooling only
Number of People	Add 230 BTU per person for cooling only

Heat BTUH	Cool BTUH

Sub Total 1

Heat BTUH	Cool BTUH

Sub Total 2

Heat BTUH	Cool BTUH

Total

Design Temperature Offset	Heat	Cool	Heat	Cool	Heat	Cool	Heat	Cool	Heat	Cool	
(For each degree of outdoor design temperature over 95°F, multiply cool BTUH in Subtotal Box 2 by design temperature multiplier)*	n/a	96°F	n/a	97°F	n/a	98°F	n/a	99°F	n/a	100°F	105°F
	n/a	1.015	n/a	1.03	n/a	1.045	n/a	1.06	n/a	1.075	1.15

* Example: If cooling design temperature is 100°F, multiply cooling load in Subtotal 2 box by 1.075.