HeatCAD® 2019

Load Summary

Manual J8 Load Calculation

Project #:45

August 19, 2019

Project Information

Project #: 45

Name: 54

Location: tinmouth

Notes:

Outdoor Conditions

Location:		(User Specified) Tinmouth,Vermont
Elevation:		1400'
Latitude:		43.52
	Heating	**Cooling**
Dry Bulb:	-3.0 °F	82.2 °F
Daily Range:		Medium
Wet Bulb:		68.6 °F

Infiltration

Method:	Maximum ACH50
Stories:	1
Exposure Category:	One or Two Exposures
Wind Shielding:	4 - Mostly Shielded Exposures
Max ACH50:	0.80
Net Air Changes (H/C):	0.07/0.03
Net Flow (H/C):	17 cfm/7 cfm

Indoor Conditions

	Heating	**Cooling**
Room Temp:	68 °F	76 °F
Design Temp Diff:	71.0 °F	6.2 °F
Humidity:	35	50
Moisture Diff (Grains):		18.1

Ventilation

Num Occupants: 4

Heating		**Cooling**	
Type:	Heat Recovery	Type:	Heat Recovery
ACH:	0.26	ACH:	0.26
Outside Air:	60 cfm	Outside Air:	60 cfm
Sensible Eff:	50 %	Sensible Eff:	50 %

Floorplan/Levels

Basement	981 ft²
Main Floor	992 ft²
Total Heated Area:	1,973 ft²
Total Cooled Area:	1,973 ft²

Total Heating: 18,499 Btu/hr

Total Sensible: 12,330 Btu/hr

Total Latent: 1,587 Btu/hr

Load Breakdown

Name	Heating	Sensible	Latent
Windows*	8,182	7,797	
Skylights*	0	0	
Doors	398	96	
Walls	3,216	320	
Below Grade Walls	669		
Ceilings	1,264	555	
Floors	1,249	1	
Infiltration	1,280	45	81
Internal		3,320	800
Other	0		
Duct Loads	0	0	0
Ventilation	2,242	196	706
Humidification	0		
Piping Load	0		
Radiant Back Loss	0		
Blower Heat		0	
AED*		0	
Total	18,499	12,330	1,587
Total Area	1,973 ft²	1,973 ft²	

*Average Load Procedure

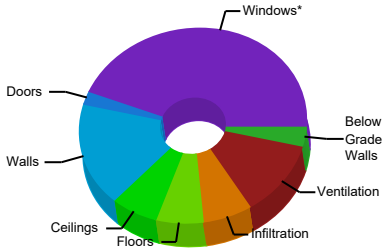
Heating ΔT¹: 70.0 JSHR: 0.89

Cooling ΔT¹: 18.0 MJ8 Tons: 1.16

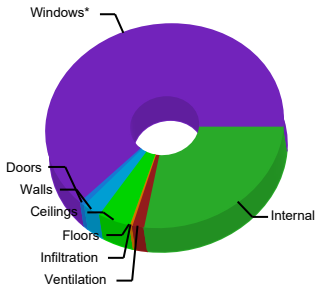
Est. Heating CFM²: 0 SqFt/Ton: 1701

Est. Cooling CFM²: 640 CFM/SqFt: 0.32

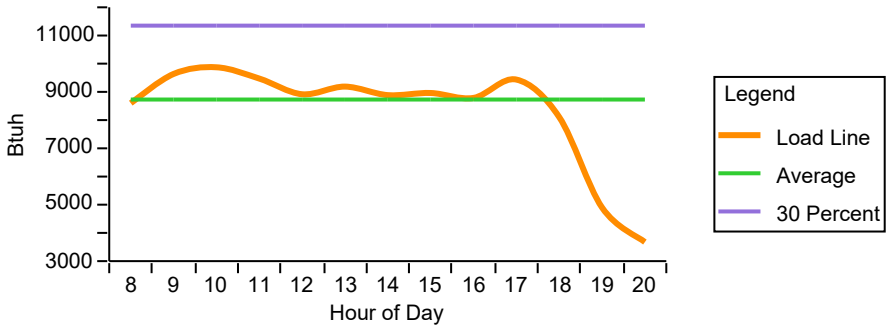
Heating Load Breakdown



Sensible Load Breakdown



Fenestration Load vs Hour of Day - Block Load (Summer)



Average Load: 8,731 Btu/hr Peak Load: 9,875 Btu/hr

Excursion Limit: 11,350 Btu/hr AED Load: 0 Btu/hr

(1) ΔT: Difference between supply air and return air (2) Estimated air flow based on specified supply air ΔT

Length = ft Area = ft² Temperature = °F Flowrate = USGPM Air Flow = cfm Heat Loss = Btu/hr
Unit Heat Loss = Btu/hr·ft² Rv = hr·ft²·°F/btu Head Loss = ft water RH = Radiant Floor Heating
BB = Baseboard FA = Forced Air OTH = Other Heating SM = Snowmelt N = Not Heated

Created Using HeatCAD 2019 (8/20/2019)
Version:19.0.0280 R (Trial)

See sections at end of report for important Notes, Assumptions and Disclaimers.

Warnings

The sensible load for some rooms peak during late fall or early winter. This behavior is caused by glass that faces South East, South or South West. Room temperature may be difficult to control if zoning is not provided.

The ventilation rate for the building is less than the Manual J recommened value of 82 CFM.

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Cold weather humidification, or some lifestyles that produce excessive moisture, may cause condensation to occur if the absolute humidity of the indoor air is too high for the momentary circumstances. Condensation can occur on surfaces or concealed within the structure, and can lead to mold, mildew, frost damage, and moisture damage. The software does not perform calculations for the estimation or detection of possible condensation problems, and it is the designers (i.e. software users) responsibility to do so independently if required. For guidance and additional cautions refer to ACCA Manual J 8th Edition, including Section 1-11 and Section 27.

The calculated values shown in this report are based on the data input by the user of the software. Inaccurate or erroneous data input will result in inaccurate or erroneous results. You are strongly advised to review all input data carefully, and to have the calculated results reviewed by an experienced heating professional to ensure reasonableness and suitability for your application.

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