

Residential System Sizing Calculation

Summary

Project Title:
Aspen Pest Control

, FL

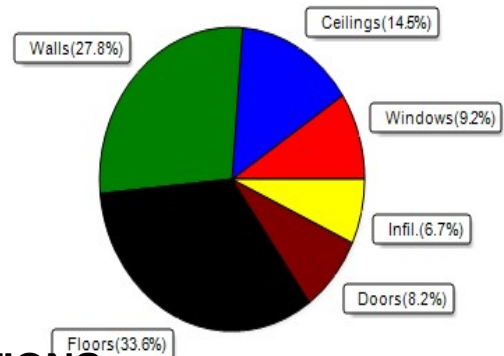
5/5/2025

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(100 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)			
Winter design temperature(TMY3 99%)	30 F	Summer design temperature(TMY3 99%)	94 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	40 F	Summer temperature difference	19 F
Total heating load calculation	13502 Btuh	Total cooling load calculation	11101 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	177.8 24000	Sensible (SHR = 0.75)	173.6 18000
Heat Pump + Auxiliary(0.0kW)	177.8 24000	Latent	818.3 6000
		Total (Electric Heat Pump)	216.2 24000

WINTER CALCULATIONS

Winter Heating Load (for 1043 sqft)

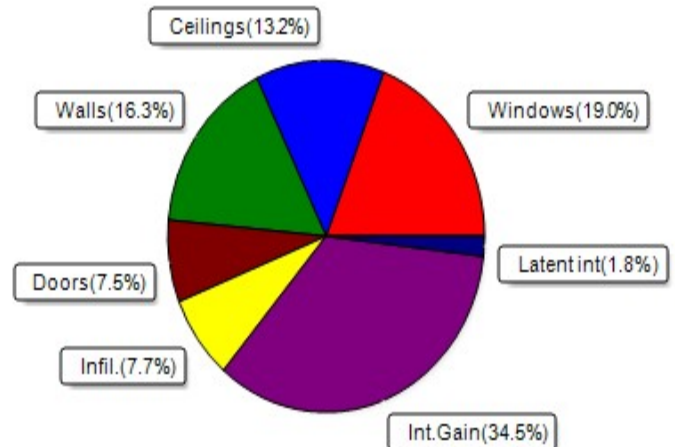
Load component	Load
Window total 120 sqft	1248 Btuh
Wall total 1044 sqft	3756 Btuh
Door total 60 sqft	1104 Btuh
Ceiling total 1043 sqft	1961 Btuh
Floor total 1043 sqft	4531 Btuh
Infiltration 21 cfm	902 Btuh
Duct loss	0 Btuh
Subtotal	13502 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	13502 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1043 sqft)

Load component	Load
Window total 120 sqft	2113 Btuh
Wall total 1044 sqft	1805 Btuh
Door total 60 sqft	828 Btuh
Ceiling total 1043 sqft	1470 Btuh
Floor total	0 Btuh
Infiltration 15 cfm	321 Btuh
Internal gain	3830 Btuh
Duct gain	0 Btuh
Sens. Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	10368 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	533 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	200 Btuh
Total latent gain	733 Btuh
TOTAL HEAT GAIN	11101 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 5-5-25

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Aspen Pest Control

, FL

5/5/2025

Reference City: Gainesville, FL (Defaults)
Humidity difference: 51gr.

Temperature Difference: 19.0F(TMY3 99%)
Summer Setpoint: 75 °F (Required Manual J default)

Component Loads for Whole House

Window	Type*					Overhang		Window Area(sqft)			HTM		Load			
	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded			
1	2 NFRC	0.20, 0.26	No	No	N		1.5ft.	1.3ft.	30.0	0.0	30.0	9	9	274	Btuh	
2	2 NFRC	0.20, 0.26	No	No	S		1.5ft.	1.3ft.	30.0	30.0	0.0	9	11	274	Btuh	
3	2 NFRC	0.20, 0.26	No	No	W		1.5ft.	1.3ft.	60.0	0.0	60.0	9	24	1453	Btuh	
	Excursion													111	Btuh	
	Window Total								120 (sqft)					2113	Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)			HTM		Load		
								Cav/Sheath								
1	Frame - Steel - Ext						0.10	21.0/0.0	222.0			1.9		417	Btuh	
2	Frame - Wood - Adj						0.07	21.0/0.0	340.0			1.4		483	Btuh	
3	Frame - Steel - Ext						0.10	21.0/0.0	222.0			1.9		417	Btuh	
4	Frame - Steel - Ext						0.10	21.0/0.0	260.0			1.9		488	Btuh	
	Wall Total							1044 (sqft)						1805	Btuh	
Doors	Type						Area (sqft)			HTM		Load				
1	Insulated - Garage						20.0			13.8		276	Btuh			
2	Insulated - Exterior						40.0			13.8		552	Btuh			
	Door Total							60 (sqft)					828	Btuh		
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)			HTM		Load		
1	SnglAsmb no airsp/DarkMetal						0.047	21.0/0.0	1043.0			1.41		1470	Btuh	
	Ceiling Total							1043 (sqft)						1470	Btuh	
Floors	Type						R-Value			Size			HTM		Load	
1	Slab On Grade						0.0			1043 (ft-perimeter)			0.0		0	Btuh
	Floor Total							1043.0 (sqft)						0	Btuh	
	Envelope Subtotal:													6216 Btuh		
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load	
	Natural						0.10		9387		1		15.4		321	Btuh
Internal gain						Occupants		Btuh/occupant		Appliance		Load				
						1		X 230		+		3600		3830	Btuh	
	Sensible Envelope Load:													10368 Btuh		
Duct load	Extremelysealed, Supply(R6.0-Cond),Return(R6.0-Cond)										(DGM of 0.000)			0 Btuh		
	Sensible Load All Zones													10368 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Aspen Pest Control

, FL

5/5/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	10368 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	10368 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	10368 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	533 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (1.0 people @ 200 Btuh per person)	200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	733 Btuh
	TOTAL GAIN	11101 Btuh

EQUIPMENT

1. Central Unit	#	24000 Btuh
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*Key: Window types (Panels - Number and type of panes of glass)
(SHGC - Shading coefficient of glass as SHGC numerical value)
(U - Window U-Factor)
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))
- For Blinds: Assume medium color, half closed
For Draperies: Assume medium weave, half closed
For Roller shades: Assume translucent, half closed
(IS - Insect screen: none(N), Full(F) or Half(1/2))
(Ornt - compass orientation)



Version 8

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

, FL

Project Title:
Aspen Pest Control
Building Type: User

5/5/2025

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 °F (TMY3 99%)
Winter Setpoint: 70 °F (Required Manual J default)

Component Loads for Whole House								
Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.20	Vinyl	0.26	N	30.0		10.4	312 Btuh
2	2, NFRC 0.20	Vinyl	0.26	S	30.0		10.4	312 Btuh
3	2, NFRC 0.20	Vinyl	0.26	W	60.0		10.4	624 Btuh
	Window Total				120.0(sqft)			1248 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Steel	- Ext	(0.097)	21.0/0.0	222		3.89	864 Btuh
2	Frame - Wood	- Adj	(0.075)	21.0/0.0	340		2.99	1017 Btuh
3	Frame - Steel	- Ext	(0.097)	21.0/0.0	222		3.89	864 Btuh
4	Frame - Steel	- Ext	(0.097)	21.0/0.0	260		3.89	1012 Btuh
	Wall Total				1044(sqft)			3756 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Garage,	n	(0.460)		20		18.4	368 Btuh
2	Insulated - Exterior,	n	(0.460)		40		18.4	736 Btuh
	Door Total				60(sqft)			1104Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Single as/D/Metal		(0.047)	21.0/0.0	1043		1.9	1961 Btuh
	Ceiling Total				1043(sqft)			1961Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	96.0 ft(perim.)		47.2	4531 Btuh
	Floor Total				1043 sqft			4531 Btuh
	Envelope Subtotal:							12600 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.13	9387	1.00	20.6		902 Btuh
Duct load	Extremely sealed, R6.0, Supply(Con), Return(Con)						(DLM of 0.000)	0 Btuh
All Zones	Sensible Subtotal All Zones							13502 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Aspen Pest Control
Building Type: User

5/5/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	13502 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	13502 Btuh

EQUIPMENT

1. Electric Heat Pump	#	24000 Btuh
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Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)
U - (Window U-Factor)
HTM - (ManualJ Heat Transfer Multiplier)



Version 8