

Residential System Sizing Calculation

Summary

Project Title:
Kevin Bedenbaugh

, FL

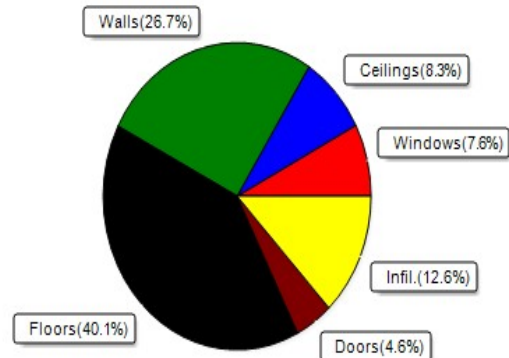
9/8/2025

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	15999 Btuh	Total cooling load calculation	11630 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	150.0 24000	Sensible (SHR = 0.75)	179.4 18000
Heat Pump + Auxiliary(0.0kW)	150.0 24000	Latent	376.3 6000
		Total (Electric Heat Pump)	206.4 24000

WINTER CALCULATIONS

Winter Heating Load (for 1152 sqft)

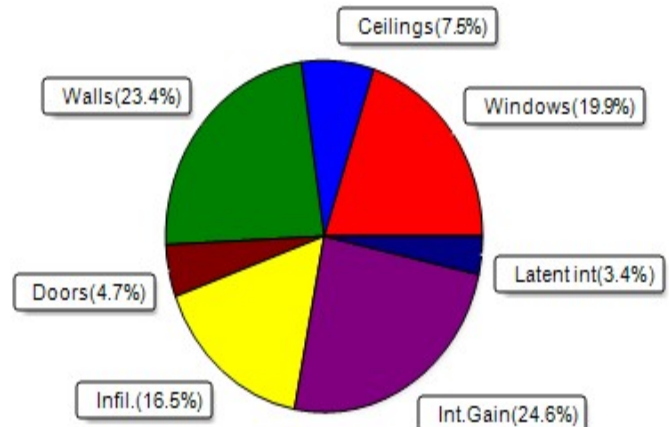
Load component	Load
Window total 117 sqft	1217 Btuh
Wall total 1203 sqft	4271 Btuh
Door total 40 sqft	736 Btuh
Ceiling total 1152 sqft	1336 Btuh
Floor total 1152 sqft	6419 Btuh
Infiltration 46 cfm	2021 Btuh
Duct loss	0 Btuh
Subtotal	15999 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	15999 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1152 sqft)

Load component	Load
Window total 117 sqft	2313 Btuh
Wall total 1203 sqft	2723 Btuh
Door total 40 sqft	552 Btuh
Ceiling total 1152 sqft	868 Btuh
Floor total	0 Btuh
Infiltration 35 cfm	720 Btuh
Internal gain	2860 Btuh
Duct gain	0 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	10036 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	1195 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	400 Btuh
Total latent gain	1595 Btuh
TOTAL HEAT GAIN	11630 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 9-8-25

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Kevin Bedenbaugh

, FL

9/8/2025

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	36.0	0.0	36.0	9	9	329 Btuh
2	2 NFRC	0.20, 0.26	No	No	N	1.5ft	1.3ft	9.0	0.0	9.0	9	9	82 Btuh
3	2 NFRC	0.20, 0.26	No	No	W	1.5ft	1.3ft	72.0	0.0	72.0	9	24	1744 Btuh
	Excursion A												
	Window Total							117 (sqft)					2313 Btuh
Walls	Type						U-Value	R-Value	Area(sqft)		HTM		Load
							Cav/Sheath						
1	Frame - Wood - Ext					0.09	13.0/0.0	275.0		2.3		622 Btuh	
2	Frame - Wood - Ext					0.09	13.0/0.0	340.0		2.3		770 Btuh	
3	Frame - Wood - Ext					0.09	13.0/0.0	320.0		2.3		724 Btuh	
4	Frame - Wood - Ext					0.09	13.0/0.0	268.0		2.3		607 Btuh	
	Wall Total							1203 (sqft)				2723 Btuh	
Doors	Type						Area (sqft)		HTM		Load		
1	Insulated - Exterior					20.0		13.8		276 Btuh			
2	Insulated - Exterior					20.0		13.8		276 Btuh			
	Door Total					40 (sqft)				552 Btuh			
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)		HTM	Load	
1	SnglAsmb no airsp/DarkMetal					0.029	0.0/38.0	1152.0		0.75		868 Btuh	
	Ceiling Total							1152 (sqft)				868 Btuh	
Floors	Type						R-Value		Size		HTM	Load	
1	Slab On Grade					0.0		1152 (ft-perimeter)		0.0		0 Btuh	
	Floor Total							1152.0 (sqft)				0 Btuh	
	Envelope Subtotal:											6456 Btuh	
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio	CFM=	Load
Natural						0.18		11520		1		34.6	720 Btuh
Internal gain						Occupants		Btuh/occupant		Appliance		Load	
						2		X 230		+		2400	2860 Btuh
	Sensible Envelope Load:											10036 Btuh	
Duct load	Extremely sealed, Supply(R6.0-Condi), Return(R6.0-Condi)											0 Btuh	
	Sensible Load All Zones											10036 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Kevin Bedenbaugh

, FL

9/8/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	10036 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	10036 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	10036 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1195 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (2.0 people @ 200 Btuh per person)	400 Btuh
	Latent other gain	0 Btuh
	Latent total gain	1595 Btuh
	TOTAL GAIN	11630 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(½))
(Ornt - compass orientation)



Version 8

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Project Title:
Kevin Bedenbaugh
Building Type: User

, FL

9/8/2025

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	36.0		10.4	374 Btuh
2	2, NFRC 0.20	Vinyl	0.26	N	9.0		10.4	94 Btuh
3	2, NFRC 0.20	Vinyl	0.26	W	72.0		10.4	749 Btuh
	Window Total				117.0(sqft)			1217 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	275		3.55	976 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	340		3.55	1207 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	320		3.55	1136 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	268		3.55	951 Btuh
	Wall Total				1203(sqft)			4271 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
2	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
	Door Total				40(sqft)			736Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Single as/D/Metal		(0.029)	0.0/38.0	1152		1.2	1336 Btuh
	Ceiling Total				1152(sqft)			1336Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	136.0 ft(perim.)		47.2	6419 Btuh
	Floor Total				1152 sqft			6419 Btuh
	Envelope Subtotal:							13979 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.24	11520	1.00	46.1		2021 Btuh
Duct load	Extremely sealed, R6.0, Supply(Con), Return(Con)						(DLM of 0.000)	0 Btuh
All Zones	Sensible Subtotal All Zones							15999 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Kevin Bedenbaugh
Building Type: User

9/8/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	15999 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	15999 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