

Residential System Sizing Calculation

Summary

Mike & Chrissy Deese

Project Title

Deese Project

Lake City, FL

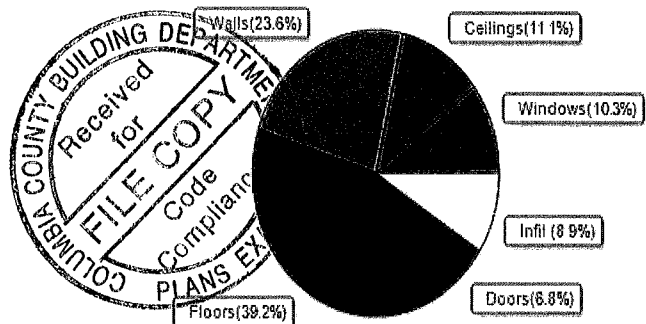
12/23/2025

Location for weather data: Gainesville, FL - Defaults: Latitude(30) Altitude(164 ft) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (76F) Humidity difference(47gr.)			
Winter design temperature(MJ8 99%)	33 F	Summer design temperature(MJ8 99%)	92 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	37 F	Summer temperature difference	17 F
Total heating load calculation	13362 Btuh	Total cooling load calculation	11685 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	224.5 30000	Sensible (SHR = 0.75)	239.8 22500
Heat Pump + Auxiliary(0.0kW)	224.5 30000	Latent	326.0 7500
		Total (Electric Heat Pump)	256.7 30000

WINTER CALCULATIONS

Winter Heating Load (for 900 sqft)

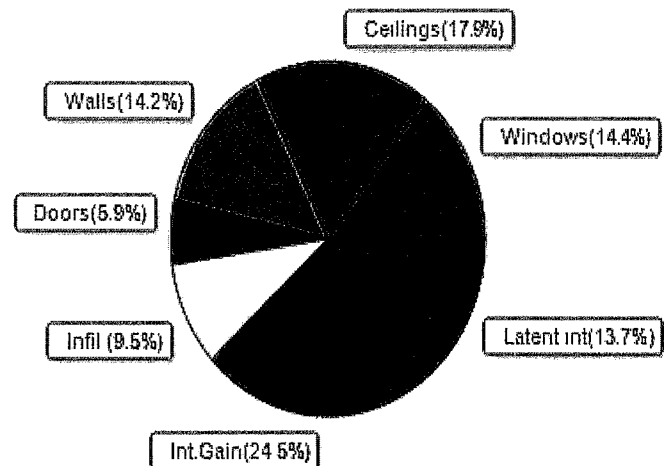
Load component		Load	
Window total	113 sqft	1380	Btuh
Wall total	1154 sqft	3159	Btuh
Door total	53 sqft	908	Btuh
Ceiling total	900 sqft	1487	Btuh
Floor total	900 sqft	5239	Btuh
Infiltration	29 cfm	1190	Btuh
Duct loss		0	Btuh
Subtotal		13362	Btuh
Ventilation	Ex 0 cfm; Sup:0 cfm	0	Btuh
TOTAL HEAT LOSS		13362	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 900 sqft)

Load component		Load	
Window total	113 sqft	1682	Btuh
Wall total	1154 sqft	1656	Btuh
Door total	53 sqft	687	Btuh
Ceiling total	900 sqft	2089	Btuh
Floor total		0	Btuh
Infiltration	22 cfm	410	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		9384	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		701	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
Total latent gain		2301	Btuh
TOTAL HEAT GAIN		11685	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: *Mike Deese*

DATE 12/23/25

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Mike & Chrissy Deese

Project Title.

Deese Project

Lake City, FL

Building Type. User

12/23/2025

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference 37.0 °F (MJ8 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 0.21	Metal	0.33	N	6.0		12.2	73 Btuh
2	2, NFRC 0.21	Metal	0.33	E	6.0		12.2	73 Btuh
3	2, NFRC 0.21	Metal	0.33	E	26.0		12.2	317 Btuh
4	2, NFRC 0.21	Metal	0.33	S	26.0		12.2	317 Btuh
5	2, NFRC 0.21	Metal	0.33	S	13.0		12.2	159 Btuh
6	2, NFRC 0.21	Metal	0.33	W	30.0		12.2	366 Btuh
7	2, NFRC 0.21	Metal	0.33	W	6.0		12.2	73 Btuh
Window Total					113.0(sqft)			1380 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.074)	19.0/1.0	291		2.74	796 Btuh
2	Frame - Wood	- Ext	(0.074)	19.0/1.0	298		2.74	816 Btuh
3	Frame - Wood	- Ext	(0.074)	19.0/1.0	271		2.74	742 Btuh
4	Frame - Wood	- Ext	(0.074)	19.0/1.0	294		2.74	805 Btuh
Wall Total					1154(sqft)			3159 Btuh
Doors	Type	Storm	Ueff		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		33		17.0	567 Btuh
2	Insulated - Exterior, n		(0.460)		20		17.0	340 Btuh
Door Total					53(sqft)			908Btuh
Ceilings	Type/Color/Surface		Ueff	R-Value	Area	X	HTM=	Load
1	Sloped ce/D/Metal		(0.045)	21.0/0.0	900		1.7	1487 Btuh
Ceiling Total					900(sqft)			1487Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	120.0 ft(perim)		43.7	5239 Btuh
Floor Total					900 sqft			5239 Btuh
Envelope Subtotal.								12172 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.18	9900	1.00	29.4		1190 Btuh
Duct load	NA, R0.0, Supply(), Return()						(DLM of 0.000)	0 Btuh
All Zones	Sensible Subtotal All Zones							13362 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Mike & Chrissy Deese

Project Title:

Deese Project

Lake City, FL

Building Type: User

12/23/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	13362 Btuh
	Ventilation Sens Heat Loss (Ex.0 cfm, Sup.0 cfm)	0 Btuh
	Total Heat Loss	13362 Btuh

EQUIPMENT

1. Electric Heat Pump	#	30000 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

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Mike & Chrissy Deese

Project Title

Deese Project

Lake City, FL

12/23/2025

Reference City: Gainesville, FL (Defaults)

Temperature Difference: 17 0F(MJ8 99%)

Humidity difference: 47gr.

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	0.21	0.33	B-L	No	N	0.5ft	4.3ft	6.0	0.0	6.0	8	8	46 Btuh	
2	2 NFRC	0.21	0.33	B-L	No	E	0.5ft	4.3ft	6.0	0.0	6.0	8	19	113 Btuh	
3	2 NFRC	0.21	0.33	B-L	No	E	0.5ft	4.3ft	26.0	0.0	26.0	8	19	489 Btuh	
4	2 NFRC	0.21	0.33	B-L	No	S	12.0f	4.3ft	26.0	26.0	0.0	8	9	200 Btuh	
5	2 NFRC	0.21	0.33	B-L	No	S	12.0f	4.3ft	13.0	13.0	0.0	8	9	100 Btuh	
6	2 NFRC	0.21	0.33	B-L	No	W	0.5ft	4.3ft	30.0	0.0	30.0	8	19	565 Btuh	
7	2 NFRC	0.21	0.33	B-L	No	W	0.5ft	4.3ft	6.0	0.0	6.0	8	19	113 Btuh	
Excursion														57 Btuh	
Window Total									113 (sqft)					1682 Btuh	
Walls	Type						U-Value		R-Value		Area(sqft)		HTM		Load
									Cav/Sheath						
1	Frame - Wood - Ext						0.07		19.0/1.0		290.7		1.4		417 Btuh
2	Frame - Wood - Ext						0.07		19.0/1.0		298.0		1.4		428 Btuh
3	Frame - Wood - Ext						0.07		19.0/1.0		271.0		1.4		389 Btuh
4	Frame - Wood - Ext						0.07		19.0/1.0		294.0		1.4		422 Btuh
Wall Total											1154 (sqft)				1656 Btuh
Doors	Type										Area (sqft)		HTM		Load
1	Insulated - Exterior										33.3		12.9		429 Btuh
2	Insulated - Exterior										20.0		12.9		258 Btuh
Door Total											53 (sqft)				687 Btuh
Ceilings	Type/Color/Surface						U-Value		R-Value		Area(sqft)		HTM		Load
1	Vented Attic/DarkMetal						0.045		21.0/0.0		900.0		2.32		2089 Btuh
Ceiling Total											900 (sqft)				2089 Btuh
Floors	Type								R-Value		Size		HTM		Load
1	Slab On Grade								0.0		900 (ft-perimeter)		0.0		0 Btuh
Floor Total											900.0 (sqft)				0 Btuh
Envelope Subtotal:														6114 Btuh	
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load
	Natural						0.13		9900		1		22.0		
Internal gain							Occupants		Btuh/occupant		Appliance				Load
							2		X 230		+		2400		
Sensible Envelope Load														9384 Btuh	
Duct load	NA, Supply(R0.0=None), Return(R0.0=None)												(DGM of 0.000)		0 Btuh
Sensible Load All Zones														9384 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Mike & Chrissy Deese

Project Title
Deese Project

Climate.FL_GAINESVILLE_REGIONAL_A

Lake City, FL

12/23/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	9384 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	9384 Btuh
	Sensible ventilation (Ex 0 cfm, Sup 0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	9384 Btuh
	Latent infiltration gain (for 47 gr humidity difference)	701 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	1200 Btuh
	Latent total gain	2301 Btuh
	TOTAL GAIN	11685 Btuh

EQUIPMENT

1. Central Unit	#	30000 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