

Residential System Sizing Calculation

Summary

Ben & Cammy Scott

Project Title:
250773 Scott In-law

Lake City, FL

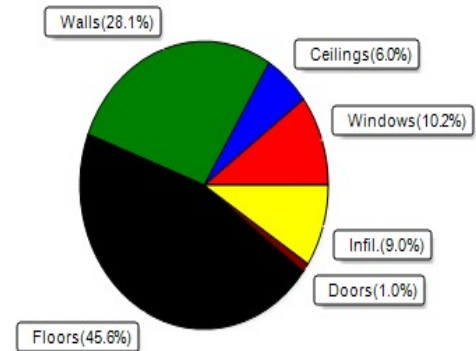
8/15/2025

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	10347	Btuh	Total cooling load calculation	8853	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	116.0	12000	Sensible (SHR = 0.75)	113.9	9000
Heat Pump + Auxiliary(0.0kW)	116.0	12000	Latent	315.4	3000
			Total (Electric Heat Pump)	135.5	12000

WINTER CALCULATIONS

Winter Heating Load (for 616 sqft)

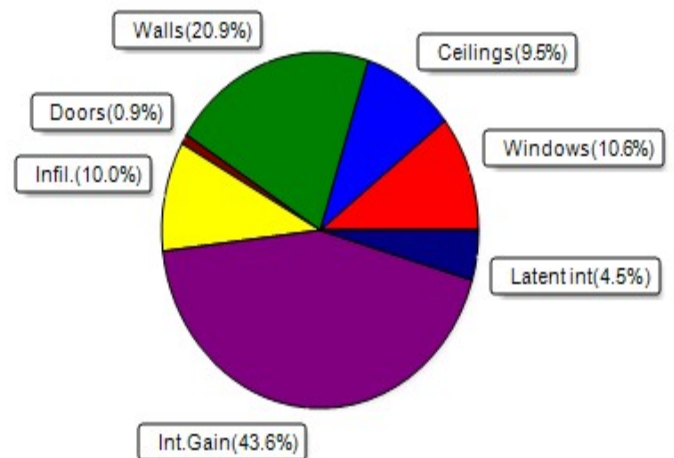
Load component		Load	
Window total	76 sqft	1059	Btuh
Wall total	818 sqft	2903	Btuh
Door total	7 sqft	107	Btuh
Ceiling total	616 sqft	625	Btuh
Floor total	616 sqft	4720	Btuh
Infiltration	21 cfm	932	Btuh
Duct loss		0	Btuh
Subtotal		10347	Btuh
Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS		10347	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 616 sqft)

Load component		Load	
Window total	76 sqft	935	Btuh
Wall total	818 sqft	1851	Btuh
Door total	7 sqft	80	Btuh
Ceiling total	616 sqft	844	Btuh
Floor total		0	Btuh
Infiltration	16 cfm	332	Btuh
Internal gain		3860	Btuh
Duct gain		0	Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load		0	Btuh
Total sensible gain		7902	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		551	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		400	Btuh
Total latent gain		951	Btuh
TOTAL HEAT GAIN		8853	Btuh



8th Edition

EnergyGauge® System Sizing
PREPARED BY: Evan Beamsley
DATE: 2025-08-15

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Ben & Cammy Scott

Project Title:
250773 Scott In-law
Building Type: User

Lake City, FL

8/15/2025

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 0.25	Vinyl	0.35	N	5.3		14.0	75 Btuh
2	2, NFRC 0.25	Vinyl	0.35	N	12.0		14.0	168 Btuh
3	2, NFRC 0.25	Vinyl	0.35	S	45.0		14.0	630 Btuh
4	2, NFRC 0.25	Vinyl	0.35	S	13.3		14.0	187 Btuh
	Window Total					75.7(sqft)		1059 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	235		3.55	833 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	198		3.55	703 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	187		3.55	664 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	198		3.55	703 Btuh
	Wall Total					818(sqft)		2903 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)		7		16.0	107 Btuh
	Door Total					7(sqft)		107Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.025)	38.0/0.0	616		1.0	625 Btuh
	Ceiling Total					616(sqft)		625Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	100.0 ft(perim.)		47.2	4720 Btuh
	Floor Total					616 sqft		4720 Btuh
	Envelope Subtotal:							9414 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio		CFM=	
	Natural		0.23	5544	1.00		21.3	932 Btuh
Duct load	NA, R0.0, Supply(), Return() (DLM of 0.000)							0 Btuh
All Zones	Sensible Subtotal All Zones							10347 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Ben & Cammy Scott

Project Title:
250773 Scott In-law
Building Type: User

Lake City, FL

8/15/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	10347 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	10347 Btuh

EQUIPMENT

1. Electric Heat Pump	#	12000 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

Ben & Cammy Scott

Project Title:
250773 Scott In-law

Lake City, FL

8/15/2025

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	0.25, 0.35	No	No	N	1.5ft	6.0ft	5.3	5.3	0.0	12	14	64 Btuh
2	2 NFRC	0.25, 0.35	No	No	N	1.5ft	6.0ft	12.0	7.6	4.4	12	14	152 Btuh
3	2 NFRC	0.25, 0.35	No	No	S	6.0ft	0.7ft	45.0	0.0	45.0	12	12	536 Btuh
4	2 NFRC	0.25, 0.35	No	No	S	6.0ft	1.5ft	13.3	0.0	13.3	12	12	159 Btuh
	Excursion												25 Btuh
	Window Total							76 (sqft)					935 Btuh
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load			
1	Frame - Wood - Ext		0.09		13.0/0.0		234.7		2.3	531 Btuh			
2	Frame - Wood - Ext		0.09		13.0/0.0		198.0		2.3	448 Btuh			
3	Frame - Wood - Ext		0.09		13.0/0.0		187.0		2.3	423 Btuh			
4	Frame - Wood - Ext		0.09		13.0/0.0		198.0		2.3	448 Btuh			
	Wall Total						818 (sqft)				1851 Btuh		
Doors	Type	Area (sqft)		HTM		Load							
1	Insulated - Exterior		6.7		12.0	80 Btuh							
	Door Total					80 Btuh							
	7 (sqft)												
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load			
1	Vented Attic/DarkShingle		0.025		38.0/0.0		616.0		1.37	844 Btuh			
	Ceiling Total						616 (sqft)			844 Btuh			
Floors	Type	R-Value		Size		HTM		Load					
1	Slab On Grade		0.0		616 (ft-perimeter)		0.0	0 Btuh					
	Floor Total						616.0 (sqft)			0 Btuh			
	Envelope Subtotal:										3710 Btuh		
Infiltration	Type	Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load			
	Natural												
			0.17		5544		1		15.9	332 Btuh			
Internal gain	Occupants		Btuh/occupant		Appliance		Load						
			2	X	230	+	3400	3860 Btuh					
	Sensible Envelope Load:										7902 Btuh		
Duct load	NA, Supply(R0.0-None), Return(R0.0-None)										0 Btuh		
	Sensible Load All Zones										7902 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Ben & Cammy Scott

Project Title: 250773 Scott In-law

Climate: FL_GAINESVILLE_REGIONAL_A

Lake City, FL

8/15/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	7902 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	7902 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	7902 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	551 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	951 Btuh
	TOTAL GAIN	8853 Btuh

EQUIPMENT

1. Central Unit	#	12000 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