

Residential System Sizing Calculation

Summary

Steven Winsberg
138 Mercury Ct
Lake City, FL 32025

Project Title:
138 Mercury Ct

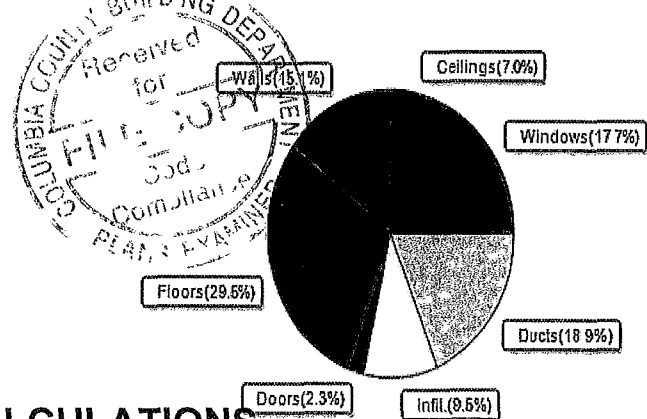
1/21/2025

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (79F) Humidity difference(54gr.)			
Winter design temperature(MJ8 99%/Cu)33 F		Summer design temperature(MJ8 99%/Cu)99 F	
Winter setpoint 70 F		Summer setpoint 75 F	
Winter temperature difference 37 F		Summer temperature difference 24 F	
Total heating load calculation	29594 Btuh	Total cooling load calculation	32429 Btuh
Submitted heating capacity % of calc Btuh		Submitted cooling capacity % of calc Btuh	
Total (Electric Heat Pump) 107.7 31882		Sensible (SHR = 0.75) 96.1 26325	
Heat Pump + Auxiliary(0 0kW) 107.7 31882		Latent 174.5 8775	
		Total (Electric Heat Pump) 108.2 35100	

WINTER CALCULATIONS

Winter Heating Load (for 2010 sqft)

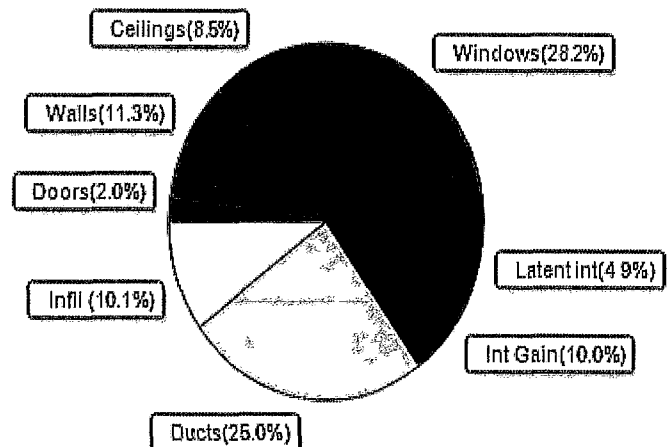
Load component		Load	
Window total	392 sqft	5226	Btuh
Wall total	1365 sqft	4482	Btuh
Door total	40 sqft	681	Btuh
Ceiling total	2211 sqft	2076	Btuh
Floor total	2010 sqft	8732	Btuh
Infiltration	69 cfm	2809	Btuh
Duct loss		5587	Btuh
Subtotal		29594	Btuh
Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS		29594	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2010 sqft)

Load component		Load	
Window total	392 sqft	9136	Btuh
Wall total	1365 sqft	3677	Btuh
Door total	40 sqft	644	Btuh
Ceiling total	2211 sqft	2750	Btuh
Floor total		0	Btuh
Infiltration	52 cfm	1367	Btuh
Internal gain		3240	Btuh
Duct gain		6589	Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load		0	Btuh
Total sensible gain		27402	Btuh
Latent gain(ducts)		1526	Btuh
Latent gain(infiltration)		1901	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
Total latent gain		5027	Btuh
TOTAL HEAT GAIN		32429	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: *Will C. [Signature]*

DATE: 01/21/2025

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Steven Winsberg
138 Mercury Ct
Lake City, FL 32025

Project Title.
138 Mercury Ct
Building Type: User

1/21/2025

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 99%/Cu)
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	0.36	NE	30.0		13.3	400 Btuh
2	2, NFRC 0.25	Vinyl	0.36	NE	13.3		13.3	178 Btuh
3	2, NFRC 0.25	Vinyl	0.36	NE	5.0		13.3	67 Btuh
4	2, NFRC 0.25	Vinyl	0.36	NE	36.0		13.3	480 Btuh
5	2, NFRC 0.25	Vinyl	0.36	NW	30.0		13.3	400 Btuh
6	2, NFRC 0.25	Vinyl	0.36	NW	20.0		13.3	266 Btuh
7	2, NFRC 0.25	Vinyl	0.36	SW	30.0		13.3	400 Btuh
8	2, NFRC 0.25	Vinyl	0.36	SW	16.0		13.3	213 Btuh
9	2, NFRC 0.25	Vinyl	0.36	SW	6.0		13.3	80 Btuh
10	2, NFRC 0.25	Vinyl	0.36	SW	36.0		13.3	480 Btuh
11	2, NFRC 0.25	Vinyl	0.36	SE	36.0		13.3	480 Btuh
12	2, NFRC 0.25	Vinyl	0.36	SW	54.0		13.3	719 Btuh
13	2, NFRC 0.25	TIM	0.36	SW	20.0		13.3	266 Btuh
14	2, NFRC 0.25	Vinyl	0.36	SE	60.0		13.3	799 Btuh
Window Total					392.3(sqft)			5226 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	72		3.28	236 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	34		3.28	112 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	45		3.28	147 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	63		3.28	207 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	75		3.28	246 Btuh
6	Frame - Wood	- Adj	(0.089)	13.0/0.0	30		3.28	99 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	190		3.28	624 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	331		3.28	1087 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	239		3.28	785 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	63		3.28	207 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	91		3.28	299 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	132		3.28	433 Btuh
Wall Total					1365(sqft)			4482 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		17.0	340 Btuh
2	Insulated - Exterior, n		(0.460)		20		17.0	340 Btuh
Door Total					40(sqft)			681Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.025)	38.0/0.0	2211		0.94	2076 Btuh
Ceiling Total					2211(sqft)			2076Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	200.0 ft(perim.)		43.7	8732 Btuh
Floor Total					2010 sqft			8732 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Steven Winsberg
138 Mercury Ct
Lake City, FL 32025

Project Title:
138 Mercury Ct
Building Type User

1/21/2025

	Envelope Subtotal.					21197 Btuh
Infiltration	Type Natural	Wholehouse ACH 0.23	Volume(cuft) 18090	Wall Ratio 1.00	CFM= 69.4	2809 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.233)					5587 Btuh
All Zones	Sensible Subtotal All Zones					29594 Btuh

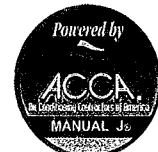
WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	29594 Btuh
	Ventilation Sens. Heat Loss (Ex.0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	29594 Btuh

EQUIPMENT

1 Electric Heat Pump	#	31882 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

Steven Winsberg
138 Mercury Ct
Lake City, FL 32025

Project Title:
138 Mercury Ct

1/21/2025

Reference City: Gainesville, FL (Defaults)
Humidity difference: 54gr.

Temperature Difference: 24.0F(MJ8 99%/Cu)
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	0.36	No	No	NE	5.5ft	1.0ft	30.0	0.0	30.0	14	25	763 Btuh	
2	2 NFRC	0.25	0.36	No	No	NE	9.5ft	1.0ft	13.3	0.0	13.3	14	25	339 Btuh	
3	2 NFRC	0.25	0.36	No	No	NE	9.5ft	1.0ft	5.0	0.0	5.0	14	25	127 Btuh	
4	2 NFRC	0.25	0.36	No	No	NE	1.5ft	1.0ft	36.0	0.0	36.0	14	25	916 Btuh	
5	2 NFRC	0.25	0.36	No	No	NW	1.5ft	1.0ft	30.0	0.0	30.0	14	25	763 Btuh	
6	2 NFRC	0.25	0.36	No	No	NW	1.5ft	1.0ft	20.0	0.0	20.0	14	25	509 Btuh	
7	2 NFRC	0.25	0.36	No	No	SW	1.5ft	1.0ft	30.0	8.8	21.2	14	27	685 Btuh	
8	2 NFRC	0.25	0.36	No	No	SW	1.5ft	1.0ft	16.0	5.9	10.1	14	27	351 Btuh	
9	2 NFRC	0.25	0.36	No	No	SW	1.5ft	1.0ft	6.0	2.9	3.1	14	27	122 Btuh	
10	2 NFRC	0.25	0.36	No	No	SW	1.5ft	1.0ft	36.0	8.8	27.2	14	27	844 Btuh	
11	2 NFRC	0.25	0.36	No	No	SE	5.5ft	1.0ft	36.0	36.0	0.0	14	27	500 Btuh	
12	2 NFRC	0.25	0.36	No	No	SW	12.5f	1.0ft	54.0	54.0	0.0	14	27	751 Btuh	
13	2 NFRC	0.25	0.36	No	No	SW	12.5f	1.0ft	20.0	20.0	0.0	14	27	278 Btuh	
14	2 NFRC	0.25	0.36	No	No	SE	1.5ft	1.0ft	60.0	14.7	45.3	14	27	1407 Btuh	
	Excursion AE														
	Window Total								392 (sqft)						9136 Btuh
Walls	Type	U-Value		R-Value		Area(sqft)			HTM		Load				
1	Frame - Wood - Ext		0.09		13.0/0.0			72.0		2.7		195 Btuh			
2	Frame - Wood - Ext		0.09		13.0/0.0			34.0		2.7		92 Btuh			
3	Frame - Wood - Ext		0.09		13.0/0.0			44.7		2.7		121 Btuh			
4	Frame - Wood - Ext		0.09		13.0/0.0			63.0		2.7		171 Btuh			
5	Frame - Wood - Ext		0.09		13.0/0.0			75.0		2.7		203 Btuh			
6	Frame - Wood - Adj		0.09		13.0/0.0			30.0		2.1		64 Btuh			
7	Frame - Wood - Ext		0.09		13.0/0.0			190.0		2.7		514 Btuh			
8	Frame - Wood - Ext		0.09		13.0/0.0			331.0		2.7		896 Btuh			
9	Frame - Wood - Ext		0.09		13.0/0.0			239.0		2.7		647 Btuh			
10	Frame - Wood - Ext		0.09		13.0/0.0			63.0		2.7		171 Btuh			
11	Frame - Wood - Ext		0.09		13.0/0.0			91.0		2.7		246 Btuh			
12	Frame - Wood - Ext		0.09		13.0/0.0			132.0		2.7		357 Btuh			
	Wall Total								1365 (sqft)					3677 Btuh	
Doors	Type	Area (sqft)			HTM		Load								
1	Insulated - Exterior	20.0			16.1		322 Btuh								
2	Insulated - Exterior	20.0			16.1		322 Btuh								
	Door Total			40 (sqft)			644 Btuh								
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Vented Attic/DarkShingle/RB	0.025		38.0/0.0		2211.0		1.24		2750 Btuh					
	Ceiling Total						2211 (sqft)			2750 Btuh					
Floors	Type	R-Value			Size		HTM		Load						
1	Slab On Grade	0.0			2010 (ft-perimeter)		0.0		0 Btuh						
	Floor Total						2010.0 (sqft)			0 Btuh					
	Envelope Subtotal:											16206 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

Steven Winsberg
138 Mercury Ct
Lake City, FL 32025

Project Title:
138 Mercury Ct

Climate:FL_GAINESVILLE_REGIONAL_A

1/21/2025

Infiltration	Type Natural	Average ACH 0.17	Volume(cuft) 18090	Wall Ratio 1	CFM= 52.0	Load 1367 Btuh
Internal gain		Occupants 8	Btuh/occupant X 230	Appliance +	1400	Load 3240 Btuh
	Sensible Envelope Load:					20813 Btuh
Duct load	Average sealed,Supply(R6 0-Attic), Return(R6 0-Attic) (DGM of 0.317)					6589 Btuh
	Sensible Load All Zones					27402 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Steven Winsberg
138 Mercury Ct
Lake City, FL 32025

Project Title:
138 Mercury Ct

Climate:FL_GAINESVILLE_REGIONAL_A

1/21/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	20813 Btuh
	Sensible Duct Load	6589 Btuh
	Total Sensible Zone Loads	27402 Btuh
	Sensible ventilation (Ex:0 cfm, Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	27402 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	1901 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1526 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	5027 Btuh
	TOTAL GAIN	32429 Btuh

EQUIPMENT

1 Central Unit	#	35100 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