

Residential System Sizing Calculation

Summary

Markie & Kyle Hunter
SW Ridge St
Lake City, FL

Project Title:
241106 Hunter

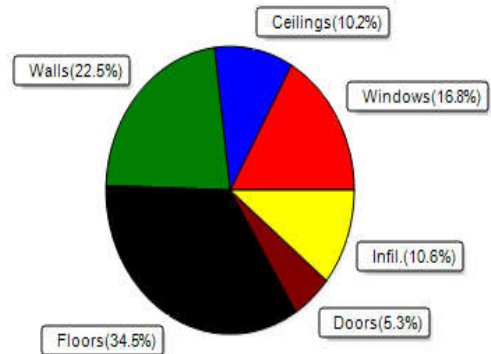
2024-10-22

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	30658	Btuh	Total cooling load calculation 21063 Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity % of calc Btuh
Total (Electric Heat Pump)	107.6	33000	Sensible (SHR = 0.75) 133.5 24750
Heat Pump + Auxiliary(0.0kW)	107.6	33000	Latent 327.2 8250
			Total (Electric Heat Pump) 156.7 33000

WINTER CALCULATIONS

Winter Heating Load (for 2456 sqft)

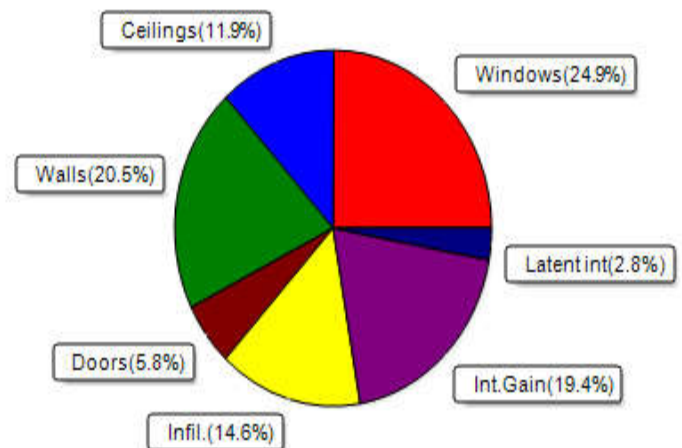
Load component			Load	
Window total	430	sqft	5162	Btuh
Wall total	1947	sqft	6911	Btuh
Door total	101	sqft	1621	Btuh
Ceiling total	2606	sqft	3140	Btuh
Floor total	2456	sqft	10573	Btuh
Infiltration	74	cfm	3251	Btuh
Duct loss			0	Btuh
Subtotal			30658	Btuh
Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS			30658	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2456 sqft)

Load component			Load	
Window total	430	sqft	5252	Btuh
Wall total	1947	sqft	4314	Btuh
Door total	101	sqft	1216	Btuh
Ceiling total	2606	sqft	2512	Btuh
Floor total			0	Btuh
Infiltration	56	cfm	1158	Btuh
Internal gain			4090	Btuh
Duct gain			0	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load			0	Btuh
Total sensible gain			18542	Btuh
Latent gain(ducts)			0	Btuh
Latent gain(infiltration)			1922	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			600	Btuh
Total latent gain			2522	Btuh
TOTAL HEAT GAIN			21063	Btuh



8th Edition

EnergyGauge® System Sizing
PREPARED BY: Evan Beamsley
DATE: 2024-10-22

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Markie & Kyle Hunter
SW Ridge St
Lake City, FL

Project Title:
241106 Hunter
Building Type: User

2024-10-22

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	0.30	N	36.0		12.0	432 Btuh
2	2, NFRC 0.20	Vinyl	0.30	E	16.0		12.0	192 Btuh
3	2, NFRC 0.20	Vinyl	0.30	N	72.0		12.0	864 Btuh
4	2, NFRC 0.20	Vinyl	0.30	W	48.0		12.0	576 Btuh
5	2, NFRC 0.20	Vinyl	0.30	N	48.0		12.0	576 Btuh
6	2, NFRC 0.20	Vinyl	0.30	N	32.0		12.0	384 Btuh
7	2, NFRC 0.20	Vinyl	0.30	N	24.0		12.0	288 Btuh
8	2, NFRC 0.20	Vinyl	0.30	E	9.3		12.0	112 Btuh
9	2, NFRC 0.20	Vinyl	0.30	E	20.0		12.0	240 Btuh
10	2, NFRC 0.20	Vinyl	0.30	E	3.0		12.0	36 Btuh
11	2, NFRC 0.20	Vinyl	0.30	E	9.3		12.0	112 Btuh
12	2, NFRC 0.20	Vinyl	0.30	S	4.0		12.0	48 Btuh
13	2, NFRC 0.20	Vinyl	0.30	S	16.5		12.0	198 Btuh
14	2, NFRC 0.20	Vinyl	0.30	S	32.0		12.0	384 Btuh
15	2, NFRC 0.20	Vinyl	0.30	S	36.0		12.0	432 Btuh
16	2, NFRC 0.20	Vinyl	0.30	W	8.0		12.0	96 Btuh
17	2, NFRC 0.20	Vinyl	0.30	W	16.0		12.0	192 Btuh
Window Total					430.2(sqft)			5162 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	81		3.55	288 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	139		3.55	494 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	30		3.55	107 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	17		3.55	60 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	62		3.55	220 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	128		3.55	453 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	94		3.55	334 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	399		3.55	1418 Btuh
9	Frame - Wood	- Adj	(0.089)	13.0/0.0	105		3.55	373 Btuh
10	Frame - Wood	- Adj	(0.089)	13.0/0.0	54		3.55	192 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	64		3.55	225 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	42		3.55	149 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	120		3.55	426 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	63		3.55	224 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	102		3.55	362 Btuh
16	Frame - Wood	- Ext	(0.089)	13.0/0.0	447		3.55	1587 Btuh
Wall Total					1947(sqft)			6911 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Markie & Kyle Hunter
SW Ridge St
Lake City, FL

Project Title:
241106 Hunter
Building Type: User

2024-10-22

Doors	Type	Storm Ueff.		Area X	HTM=	Load
1	Insulated - Exterior, n	(0.400)		5	16.0	85 Btuh
2	Insulated - Exterior, n	(0.400)		24	16.0	384 Btuh
3	Insulated - Exterior, n	(0.400)		16	16.0	256 Btuh
4	Insulated - Exterior, n	(0.400)		16	16.0	256 Btuh
5	Insulated - Garage, n	(0.400)		24	16.0	384 Btuh
6	Insulated - Exterior, n	(0.400)		16	16.0	256 Btuh
	Door Total			101(sqft)		1621Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Flat ceil/D/Shing	(0.241)	0.0/22.0	2456	1.2	2959 Btuh
2	Knee wall/D/Shing	(0.241)	0.0/22.0	150	1.2	181 Btuh
	Ceiling Total			2606(sqft)		3140Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	224.0 ft(perim.)	47.2	10573 Btuh
	Floor Total			2456 sqft		10573 Btuh
	Envelope Subtotal:					27407 Btuh
Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural	0.20	22423	1.00	74.1	3251 Btuh
Duct load	Average sealed, R6.0, Supply(Con), Return(Con) (DLM of 0.000)					0 Btuh
All Zones	Sensible Subtotal All Zones					30658 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	30658 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	30658 Btuh

EQUIPMENT

1. Electric Heat Pump	#	33000 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

Markie & Kyle Hunter
SW Ridge St
Lake City, FL

Project Title:
241106 Hunter
Building Type: User

2024-10-22

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

Markie & Kyle Hunter
SW Ridge St
Lake City, FL

Project Title:
241106 Hunter

2024-10-22

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, 0.30	No	No	N		1.5ft	0.7ft	36.0	36.0	0.0	10	11	357	Btuh
2	2 NFRC	0.20, 0.30	No	No	E		14.0f	0.0ft	16.0	16.0	0.0	10	25	159	Btuh
3	2 NFRC	0.20, 0.30	No	No	N		24.7f	0.0ft	72.0	72.0	0.0	10	11	713	Btuh
4	2 NFRC	0.20, 0.30	No	No	W		14.0f	0.0ft	48.0	48.0	0.0	10	25	476	Btuh
5	2 NFRC	0.20, 0.30	No	No	N		15.7f	0.0ft	48.0	48.0	0.0	10	11	476	Btuh
6	2 NFRC	0.20, 0.30	No	No	N		1.5ft	0.7ft	32.0	32.0	0.0	10	11	317	Btuh
7	2 NFRC	0.20, 0.30	No	No	N		1.5ft	0.7ft	24.0	24.0	0.0	10	11	238	Btuh
8	2 NFRC	0.20, 0.30	No	No	E		1.5ft	7.3ft	9.3	0.0	9.3	10	25	233	Btuh
9	2 NFRC	0.20, 0.30	No	No	E		1.5ft	9.7ft	20.0	0.0	20.0	10	25	500	Btuh
10	2 NFRC	0.20, 0.30	No	No	E		1.5ft	11.0f	3.0	0.0	3.0	10	25	75	Btuh
11	2 NFRC	0.20, 0.30	No	No	E		1.5ft	7.7ft	9.3	0.0	9.3	10	25	233	Btuh
12	2 NFRC	0.20, 0.30	No	No	S		1.5ft	0.7ft	4.0	0.0	4.0	10	10	40	Btuh
13	2 NFRC	0.20, 0.30	No	No	S		11.0f	0.5ft	16.5	0.0	16.5	10	10	163	Btuh
14	2 NFRC	0.20, 0.30	No	No	S		11.0f	0.0ft	32.0	0.0	32.0	10	10	317	Btuh
15	2 NFRC	0.20, 0.30	No	No	S		1.5ft	8.0ft	36.0	0.0	36.0	10	10	357	Btuh
16	2 NFRC	0.20, 0.30	No	No	W		1.5ft	10.0f	8.0	0.0	8.0	10	25	200	Btuh
17	2 NFRC	0.20, 0.30	No	No	W		1.5ft	12.0f	16.0	0.0	16.0	10	25	400	Btuh
Window Total									430 (sqft)					5252 Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)		HTM		Load		
							Cav/Sheath								
1	Frame - Wood - Ext						0.09	13.0/0.0	81.0		2.3		183 Btuh		
2	Frame - Wood - Ext						0.09	13.0/0.0	139.2		2.3		315 Btuh		
3	Frame - Wood - Ext						0.09	13.0/0.0	30.0		2.3		68 Btuh		
4	Frame - Wood - Ext						0.09	13.0/0.0	17.0		2.3		38 Btuh		
5	Frame - Wood - Ext						0.09	13.0/0.0	62.0		2.3		140 Btuh		
6	Frame - Wood - Ext						0.09	13.0/0.0	127.5		2.3		289 Btuh		
7	Frame - Wood - Ext						0.09	13.0/0.0	94.0		2.3		213 Btuh		
8	Frame - Wood - Ext						0.09	13.0/0.0	399.3		2.3		904 Btuh		
9	Frame - Wood - Adj						0.09	13.0/0.0	105.0		1.7		177 Btuh		
10	Frame - Wood - Adj						0.09	13.0/0.0	54.0		1.7		91 Btuh		
11	Frame - Wood - Ext						0.09	13.0/0.0	63.5		2.3		144 Btuh		
12	Frame - Wood - Ext						0.09	13.0/0.0	42.0		2.3		95 Btuh		
13	Frame - Wood - Ext						0.09	13.0/0.0	120.0		2.3		272 Btuh		
14	Frame - Wood - Ext						0.09	13.0/0.0	63.0		2.3		143 Btuh		
15	Frame - Wood - Ext						0.09	13.0/0.0	102.0		2.3		231 Btuh		
16	Frame - Wood - Ext						0.09	13.0/0.0	447.0		2.3		1012 Btuh		
Wall Total									1947 (sqft)					4314 Btuh	
Doors	Type								Area (sqft)		HTM		Load		
1	Insulated - Exterior								5.3		12.0		64 Btuh		
2	Insulated - Exterior								24.0		12.0		288 Btuh		
3	Insulated - Exterior								16.0		12.0		192 Btuh		
4	Insulated - Exterior								16.0		12.0		192 Btuh		
5	Insulated - Garage								24.0		12.0		288 Btuh		
6	Insulated - Exterior								16.0		12.0		192 Btuh		
Door Total									101 (sqft)					1216 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Markie & Kyle Hunter
SW Ridge St
Lake City, FL

Project Title:
241106 Hunter

Climate:FL_GAINESVILLE_REGIONAL_A

2024-10-22

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Unvented Attic/DarkShingle	0.241	0.0/22.0	2456.0	0.96	2368 Btuh
2	Knee wall to attic/DarkShingle	0.241	0.0/22.0	150.0	0.96	145 Btuh
	Ceiling Total			2606 (sqft)		2512 Btuh
Floors	Type		R-Value	Size	HTM	Load
1	Slab On Grade		0.0	2456 (ft-perimeter)	0.0	0 Btuh
	Floor Total			2456.0 (sqft)		0 Btuh
	Envelope Subtotal:					13294 Btuh
Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.15	22423	1	55.6	1158 Btuh
Internal gain		Occupants	Btuh/occupant	Appliance		Load
		3	X 230	+	3400	4090 Btuh
	Sensible Envelope Load:					18542 Btuh
Duct load	Average sealed, Supply(R6.0-Condi), Return(R6.0-Condi)				(DGM of 0.000)	0 Btuh
	Sensible Load All Zones					18542 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Markie & Kyle Hunter
SW Ridge St
Lake City, FL

Project Title:
241106 Hunter

Climate:FL_GAINESVILLE_REGIONAL_A

2024-10-22

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	18542 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	18542 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	18542 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1922 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (3.0 people @ 200 Btuh per person)	600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2522 Btuh
	TOTAL GAIN	21063 Btuh

EQUIPMENT

1. Central Unit	#	33000 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