

Residential System Sizing Calculation

Summary

Project Title:

Gator & Lori David - Lot 25 Rose Point

Lake City, FL 32024

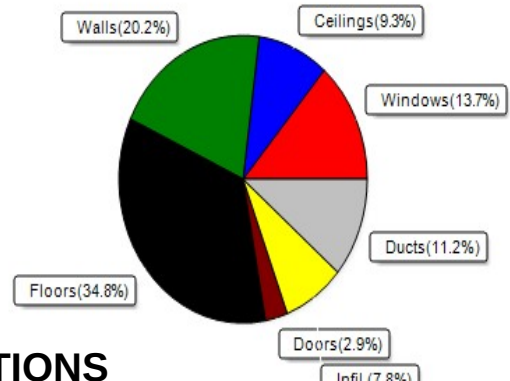
8/16/2023

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 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	21956 Btuh	Total cooling load calculation	19049 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	164.0 36000	Sensible (SHR = 0.80)	175.1 28800
Heat Pump + Auxiliary(0.0kW)	164.0 36000	Latent	276.4 7200
		Total (Electric Heat Pump)	189.0 36000

WINTER CALCULATIONS

Winter Heating Load (for 1596 sqft)

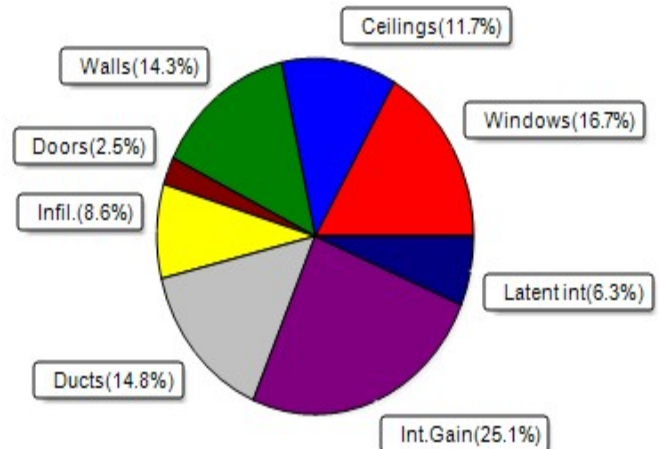
Load component	Load
Window total 228 sqft	3010 Btuh
Wall total 1252 sqft	4443 Btuh
Door total 40 sqft	640 Btuh
Ceiling total 1596 sqft	2033 Btuh
Floor total 1596 sqft	7646 Btuh
Infiltration 39 cfm	1723 Btuh
Duct loss	2461 Btuh
Subtotal	21956 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	21956 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1596 sqft)

Load component	Load
Window total 228 sqft	3176 Btuh
Wall total 1252 sqft	2730 Btuh
Door total 40 sqft	480 Btuh
Ceiling total 1596 sqft	2236 Btuh
Floor total	0 Btuh
Infiltration 30 cfm	614 Btuh
Internal gain	4780 Btuh
Duct gain	2428 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	16444 Btuh
Latent gain(ducts)	387 Btuh
Latent gain(infiltration)	1018 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	2605 Btuh
TOTAL HEAT GAIN	19049 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

8-16-23

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Gator & Lori David - Lot 25 Rose Point

Lake City, FL 32024

8/16/2023

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	0.22, 0.33	I-A	No	N	1.5ft	1.3ft	24.0	0.0	24.0	8	8	184	Btuh
2	2 NFRC	0.22, 0.33	I-A	No	E	1.5ft	1.3ft	10.0	0.0	10.0	8	15	152	Btuh
3	2 NFRC	0.22, 0.33	I-A	No	E	1.5ft	1.3ft	18.0	0.0	18.0	8	15	274	Btuh
4	2 NFRC	0.22, 0.33	I-A	No	E	1.5ft	1.3ft	4.0	0.0	4.0	8	15	61	Btuh
5	2 NFRC	0.22, 0.33	I-A	No	E	1.5ft	1.3ft	18.0	0.0	18.0	8	15	274	Btuh
6	2 NFRC	0.22, 0.33	I-A	No	E	1.5ft	1.3ft	10.0	0.0	10.0	8	15	152	Btuh
7	2 NFRC	0.22, 0.33	I-A	No	W	1.5ft	1.3ft	48.0	0.0	48.0	8	15	730	Btuh
8	2 NFRC	0.22, 0.33	I-A	No	W	1.5ft	1.3ft	54.0	0.0	54.0	8	15	821	Btuh
9	2 NFRC	0.22, 0.33	I-A	No	N	10.5f	1.3ft	24.0	0.0	24.0	8	8	184	Btuh
10	2 NFRC	0.22, 0.33	I-A	No	W	1.5ft	1.3ft	18.0	0.0	18.0	8	15	274	Btuh
	Excursion												72	Btuh
	Window Total							228 (sqft)					3176 Btuh	
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load				
					Cav/Sheath									
1	Frame - Wood - Ext		0.09		13.0/0.0		201.0		2.3		455	Btuh		
2	Frame - Wood - Ext		0.09		13.0/0.0		227.0		2.3		514	Btuh		
3	Frame - Wood - Ext		0.09		13.0/0.0		9.0		2.3		20	Btuh		
4	Frame - Wood - Ext		0.09		13.0/0.0		50.0		2.3		113	Btuh		
5	Frame - Wood - Ext		0.09		13.0/0.0		9.0		2.3		20	Btuh		
6	Frame - Wood - Ext		0.09		13.0/0.0		138.5		2.3		313	Btuh		
7	Frame - Wood - Ext		0.09		13.0/0.0		79.0		2.3		179	Btuh		
8	Frame - Wood - Ext		0.09		13.0/0.0		246.0		2.3		557	Btuh		
9	Frame - Wood - Ext		0.09		13.0/0.0		48.0		2.3		109	Btuh		
10	Frame - Wood - Ext		0.09		13.0/0.0		66.0		2.3		149	Btuh		
11	Frame - Wood - Adj		0.09		13.0/0.0		178.0		1.7		300	Btuh		
	Wall Total							1252 (sqft)					2730 Btuh	
Doors	Type	Area (sqft)		HTM		Load								
1	Insulated - Exterior		20.0		12.0		240	Btuh						
2	Insulated - Garage		20.0		12.0		240	Btuh						
	Door Total						40 (sqft)				480	Btuh		
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load				
1	Vented Attic/Med/Shingle		0.032		30.0/0.0		1596.0		1.40		2236	Btuh		
	Ceiling Total							1596 (sqft)				2236	Btuh	
Floors	Type	R-Value		Size		HTM		Load						
1	Slab On Grade		0.0		1596 (ft-perimeter)		0.0		0	Btuh				
	Floor Total						1596.0 (sqft)				0	Btuh		
	Envelope Subtotal:											8623	Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Gator & Lori David - Lot 25 Rose Point

Lake City, FL 32024

8/16/2023

Infiltration	Type Natural	Average ACH 0.12	Volume(cuft) 14364	Wall Ratio 1	CFM= 29.5	Load 614 Btuh
Internal gain		Occupants 6	Btuh/occupant X 230	Appliance +	3400	Load 4780 Btuh
					Sensible Envelope Load:	14016 Btuh
Duct load	Extremely sealed, Supply(R8.0-Attic), Return(R8.0-Attic) (DGM of 0.173)					2428 Btuh
					Sensible Load All Zones	16444 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Gator & Lori David - Lot 25 Rose Point

Lake City, FL 32024

8/16/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	14016 Btuh
	Sensible Duct Load	2428 Btuh
	Total Sensible Zone Loads	16444 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	16444 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1018 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	387 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2605 Btuh
	TOTAL GAIN	19049 Btuh

EQUIPMENT

1. Central Unit	#	36000 Btuh
-----------------	---	------------

*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:

Gator & Lori David - Lot 25 Rose Point

Lake City, FL 32024

Building Type: User

8/16/2023

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 0.22	Vinyl	0.33	N	24.0		13.2	317 Btuh
2	2, NFRC 0.22	Vinyl	0.33	E	10.0		13.2	132 Btuh
3	2, NFRC 0.22	Vinyl	0.33	E	18.0		13.2	238 Btuh
4	2, NFRC 0.22	Vinyl	0.33	E	4.0		13.2	53 Btuh
5	2, NFRC 0.22	Vinyl	0.33	E	18.0		13.2	238 Btuh
6	2, NFRC 0.22	Vinyl	0.33	E	10.0		13.2	132 Btuh
7	2, NFRC 0.22	Vinyl	0.33	W	48.0		13.2	634 Btuh
8	2, NFRC 0.22	Vinyl	0.33	W	54.0		13.2	713 Btuh
9	2, NFRC 0.22	Vinyl	0.33	N	24.0		13.2	317 Btuh
10	2, NFRC 0.22	Vinyl	0.33	W	18.0		13.2	238 Btuh
	Window Total				228.0(sqft)			3010 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	201		3.55	714 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	227		3.55	806 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	9		3.55	32 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	50		3.55	178 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	9		3.55	32 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	139		3.55	492 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	79		3.55	280 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	246		3.55	873 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	48		3.55	170 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	66		3.55	234 Btuh
11	Frame - Wood	- Adj	(0.089)	13.0/0.0	178		3.55	632 Btuh
	Wall Total				1252(sqft)			4443 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.400)		20		16.0	320 Btuh
2	Insulated - Garage, n		(0.400)		20		16.0	320 Btuh
	Door Total				40(sqft)			640Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/M/Shing		(0.032)	30.0/0.0	1596		1.3	2033 Btuh
	Ceiling Total				1596(sqft)			2033Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	162.0 ft(perim.)		47.2	7646 Btuh
	Floor Total				1596 sqft			7646 Btuh
	Envelope Subtotal:							17772 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	14364	1.00	39.3		1723 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32024

Project Title:
Gator & Lori David - Lot 25 Rose Point
Building Type: User

8/16/2023

Duct load	Extremely sealed, R8.0, Supply(Att), Return(Att) (DLM of 0.126)	2461 Btuh
All Zones	Sensible Subtotal All Zones	21956 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	21956 Btuh 0 Btuh 21956 Btuh
---------------------------	---	------------------------------------

EQUIPMENT

1. Electric Heat Pump	#	36000 Btuh
-----------------------	---	------------

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