

Residential System Sizing Calculation

Summary

The Fortune's

Project Title:
Lot 85 Emerald Cove Ph 1

Lake City, FL 32025

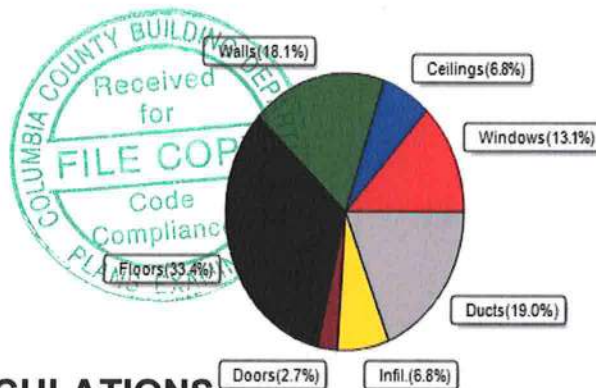
5/25/2021

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	26953 Btuh	Total cooling load calculation	21403 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 26953	Sensible (SHR = 0.70)	86.0 14982
Heat Pump + Auxiliary(0.0kW)	100.0 26953	Latent	161.6 6421
		Total (Electric Heat Pump)	100.0 21403

WINTER CALCULATIONS

Winter Heating Load (for 1710 sqft)

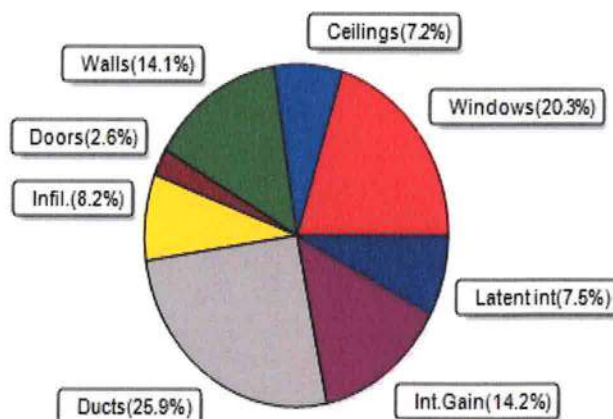
Load component		Load	
Window total	245 sqft	3523	Btuh
Wall total	1376 sqft	4885	Btuh
Door total	40 sqft	736	Btuh
Ceiling total	1796 sqft	1823	Btuh
Floor total	1710 sqft	9015	Btuh
Infiltration	42 cfm	1846	Btuh
Duct loss		5125	Btuh
Subtotal		26953	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		26953	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1710 sqft)

Load component		Load	
Window total	245 sqft	4348	Btuh
Wall total	1376 sqft	3019	Btuh
Door total	40 sqft	552	Btuh
Ceiling total	1796 sqft	1550	Btuh
Floor total		0	Btuh
Infiltration	32 cfm	658	Btuh
Internal gain		3040	Btuh
Duct gain		4265	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		17431	Btuh
Latent gain(ducts)		1281	Btuh
Latent gain(infiltration)		1091	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1600	Btuh
Total latent gain		3973	Btuh
TOTAL HEAT GAIN		21403	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

5/25/2021

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

The Fortune's

Lake City, FL 32025

Project Title:
Lot 85 Emerald Cove Ph 1
Building Type: User

5/25/2021

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)

Component Loads for Whole House								
Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.36	S	30.0		14.4	432 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	4.0		14.4	58 Btuh
3	2, NFRC 0.25	Vinyl	0.36	E	20.0		14.4	288 Btuh
4	2, NFRC 0.25	TIM	0.36	N	40.0		14.4	576 Btuh
5	2, NFRC 0.25	TIM	0.36	N	40.0		14.4	576 Btuh
6	2, NFRC 0.25	TIM	0.36	E	16.7		14.4	240 Btuh
7	2, NFRC 0.25	Vinyl	0.36	N	30.0		14.4	432 Btuh
8	2, NFRC 0.25	Vinyl	0.36	N	15.0		14.4	216 Btuh
9	2, NFRC 0.25	Vinyl	0.36	W	4.0		14.4	58 Btuh
10	2, NFRC 0.25	Vinyl	0.36	W	45.0		14.4	648 Btuh
Window Total					244.7(sqft)			3523 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	59		3.55	208 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	171		3.55	607 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	252		3.55	893 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	73		3.55	260 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	73		3.55	260 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	61		3.55	218 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	105		3.55	373 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	78		3.55	277 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	92		3.55	325 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	248		3.55	880 Btuh
11	Frame - Wood	- Adj	(0.089)	13.0/0.0	165		3.55	584 Btuh
Wall Total					1376(sqft)			4885 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
2	Insulated - Garage, n		(0.460)		20		18.4	368 Btuh
Door Total					40(sqft)			736Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Vented Attic/L/Shing		(0.025)	38.0/0.0	1796		1.0	1823 Btuh
Ceiling Total					1796(sqft)			1823Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	191.0 ft(perim.)		47.2	9015 Btuh
Floor Total					1710 sqft			9015 Btuh
Envelope Subtotal:								19982 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.16	15390	1.00	42.1		1846 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.235)							5125 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

The Fortune's

Lake City, FL 32025

Project Title:
Lot 85 Emerald Cove Ph 1
Building Type: User

5/25/2021

All Zones	Sensible Subtotal All Zones	26953 Btuh
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WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	26953 Btuh 0 Btuh 26953 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	26953 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

The Fortune's

Project Title:

Lot 85 Emerald Cove Ph 1

Lake City, FL 32025

5/25/2021

Reference City: Gainesville, FL

Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

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	S		8.0ft.	1.0ft.	30.0	30.0	0.0	12	14	363 Btuh
2	2 NFRC	0.25, 0.36	No	No	S		8.0ft.	1.0ft.	4.0	4.0	0.0	12	14	48 Btuh
3	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	20.0	1.0	19.0	12	31	600 Btuh
4	2 NFRC	0.25, 0.36	No	No	N		9.0ft.	1.0ft.	40.0	0.0	40.0	12	12	484 Btuh
5	2 NFRC	0.25, 0.36	No	No	N		9.0ft.	1.0ft.	40.0	0.0	40.0	12	12	484 Btuh
6	2 NFRC	0.25, 0.36	No	No	E		5.0ft.	1.0ft.	16.7	7.9	8.8	12	31	367 Btuh
7	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	30.0	0.0	30.0	12	12	363 Btuh
8	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	15.0	0.0	15.0	12	12	181 Btuh
9	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	4.0	1.0	3.0	12	31	105 Btuh
10	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	45.0	2.2	42.8	12	31	1351 Btuh
	Window Total								245 (sqft)					4348 Btuh
Walls	Type	U-Value					R-Value		Area(sqft)		HTM		Load	
							Cav/Sheath							
1	Frame - Wood - Ext	0.09					13.0/0.0		58.5		2.3		132 Btuh	
2	Frame - Wood - Ext	0.09					13.0/0.0		171.0		2.3		387 Btuh	
3	Frame - Wood - Ext	0.09					13.0/0.0		251.5		2.3		569 Btuh	
4	Frame - Wood - Ext	0.09					13.0/0.0		73.3		2.3		166 Btuh	
5	Frame - Wood - Ext	0.09					13.0/0.0		73.3		2.3		166 Btuh	
6	Frame - Wood - Ext	0.09					13.0/0.0		61.3		2.3		139 Btuh	
7	Frame - Wood - Ext	0.09					13.0/0.0		105.0		2.3		238 Btuh	
8	Frame - Wood - Ext	0.09					13.0/0.0		78.0		2.3		177 Btuh	
9	Frame - Wood - Ext	0.09					13.0/0.0		91.5		2.3		207 Btuh	
10	Frame - Wood - Ext	0.09					13.0/0.0		248.0		2.3		561 Btuh	
11	Frame - Wood - Adj	0.09					13.0/0.0		164.5		1.7		277 Btuh	
	Wall Total								1376 (sqft)					3019 Btuh
Doors	Type	U-Value					R-Value		Area (sqft)		HTM		Load	
1	Insulated - Exterior								20.0		13.8		276 Btuh	
2	Insulated - Garage								20.0		13.8		276 Btuh	
	Door Total								40 (sqft)					552 Btuh
Ceilings	Type/Color/Surface	U-Value					R-Value		Area(sqft)		HTM		Load	
1	Vented AtticLight/Shingle/RB	0.025					38.0/0.0		1796.0		0.86		1550 Btuh	
	Ceiling Total								1796 (sqft)					1550 Btuh
Floors	Type	U-Value					R-Value		Size		HTM		Load	
1	Slab On Grade						0.0		1710 (ft-perimeter)		0.0		0 Btuh	
	Floor Total								1710.0 (sqft)					0 Btuh
	Envelope Subtotal:													9468 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

The Fortune's

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 85 Emerald Cove Ph 1

Lake City, FL 32025

5/25/2021

Infiltration	Type Natural	Average ACH 0.12	Volume(cuft) 15390	Wall Ratio 1	CFM= 31.6	Load 658 Btuh
Internal gain		Occupants 8	Btuh/occupant X 230	Appliance +	1200	Load 3040 Btuh
					Sensible Envelope Load:	13166 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)				(DGM of 0.324)	4265 Btuh
					Sensible Load All Zones	17431 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

The Fortune's

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 85 Emerald Cove Ph 1

Lake City, FL 32025

5/25/2021

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	13166 Btuh
	Sensible Duct Load	4265 Btuh
	Total Sensible Zone Loads	17431 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	17431 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1091 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1281 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3973 Btuh
	TOTAL GAIN	21403 Btuh

EQUIPMENT

1. Central Unit	#	21403 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