

Residential System Sizing Calculation

Summary

Project Title:
Rose Point Lot 27

, FL

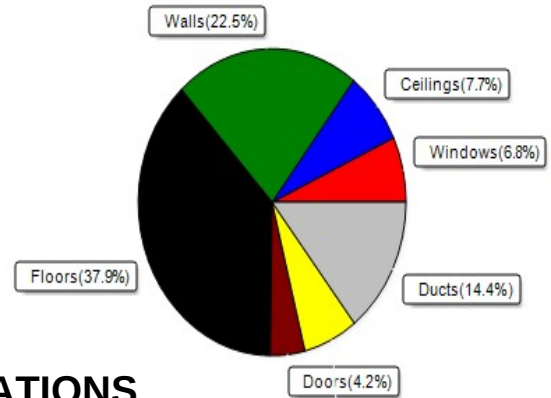
6/16/2023

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	21919 Btuh	Total cooling load calculation	18570 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	136.9 30000	Sensible (SHR = 0.85)	162.3 25500
Heat Pump + Auxiliary(0.0kW)	136.9 30000	Latent	157.5 4500
		Total (Electric Heat Pump)	161.6 30000

WINTER CALCULATIONS

Winter Heating Load (for 1320 sqft)

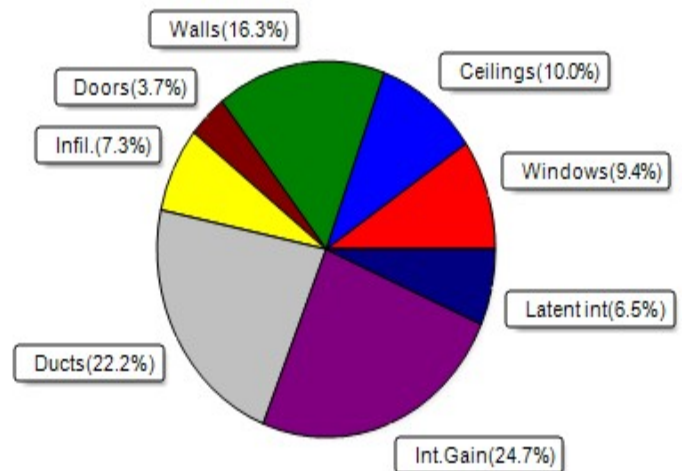
Load component	Load
Window total 144 sqft	1501 Btuh
Wall total 1387 sqft	4925 Btuh
Door total 58 sqft	924 Btuh
Ceiling total 1320 sqft	1682 Btuh
Floor total 1320 sqft	8307 Btuh
Infiltration 33 cfm	1425 Btuh
Duct loss	3155 Btuh
Subtotal	21919 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	21919 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1320 sqft)

Load component	Load
Window total 144 sqft	1752 Btuh
Wall total 1387 sqft	3023 Btuh
Door total 58 sqft	693 Btuh
Ceiling total 1320 sqft	1850 Btuh
Floor total	0 Btuh
Infiltration 24 cfm	508 Btuh
Internal gain	4580 Btuh
Duct gain	3307 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	15712 Btuh
Latent gain(ducts)	815 Btuh
Latent gain(infiltration)	842 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	2857 Btuh
TOTAL HEAT GAIN	18570 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

6-16-23

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Rose Point Lot 27

, FL

6/16/2023

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	0.20, 0.26	No	No	N	1.5ft	2.3ft	30.0	0.0	30.0	9	9	274	Btuh
2	2 NFRC	0.20, 0.26	No	No	N	7.0ft	2.3ft	30.0	0.0	30.0	9	9	274	Btuh
3	2 NFRC	0.20, 0.26	No	No	N	1.5ft	2.3ft	15.0	0.0	15.0	9	9	137	Btuh
4	2 NFRC	0.20, 0.26	No	No	S	1.5ft	2.3ft	30.0	30.0	0.0	9	11	274	Btuh
5	2 NFRC	0.20, 0.26	No	No	S	9.5ft	2.3ft	13.3	13.3	0.0	9	11	122	Btuh
6	2 NFRC	0.20, 0.26	No	No	W	1.5ft	2.3ft	6.0	0.0	6.0	9	24	145	Btuh
7	2 NFRC	0.20, 0.26	No	No	W	1.5ft	2.3ft	20.0	0.0	20.0	9	24	484	Btuh
	Excursion												39	Btuh
	Window Total							144 (sqft)					1752 Btuh	
Walls	Type	U-Value					R-Value		Area(sqft)		HTM		Load	
							Cav/Sheath							
1	Frame - Wood - Ext	0.09					13.0/0.0		163.5		2.3		370 Btuh	
2	Frame - Wood - Ext	0.09					13.0/0.0		49.5		2.3		112 Btuh	
3	Frame - Wood - Ext	0.09					13.0/0.0		80.5		2.3		182 Btuh	
4	Frame - Wood - Ext	0.09					13.0/0.0		49.5		2.3		112 Btuh	
5	Frame - Wood - Ext	0.09					13.0/0.0		75.0		2.3		170 Btuh	
6	Frame - Wood - Ext	0.09					13.0/0.0		218.3		2.3		494 Btuh	
7	Frame - Wood - Ext	0.09					13.0/0.0		54.0		2.3		122 Btuh	
8	Frame - Wood - Ext	0.09					13.0/0.0		112.5		2.3		255 Btuh	
9	Frame - Wood - Ext	0.09					13.0/0.0		73.5		2.3		166 Btuh	
10	Frame - Wood - Ext	0.09					13.0/0.0		52.5		2.3		119 Btuh	
11	Frame - Wood - Ext	0.09					13.0/0.0		25.2		2.3		57 Btuh	
12	Frame - Wood - Adj	0.09					13.0/0.0		201.2		1.7		339 Btuh	
13	Frame - Wood - Ext	0.09					13.0/0.0		232.0		2.3		525 Btuh	
	Wall Total							1387 (sqft)					3023 Btuh	
Doors	Type	U-Value					R-Value		Area (sqft)		HTM		Load	
1	Insulated - Exterior								20.0		12.0		240 Btuh	
2	Wood - Exterior								20.0		12.0		240 Btuh	
3	Insulated - Garage								17.8		12.0		213 Btuh	
	Door Total							58 (sqft)					693 Btuh	
Ceilings	Type/Color/Surface	U-Value					R-Value		Area(sqft)		HTM		Load	
1	Vented Attic/Med/Shingle	0.032					30.0/0.0		1320.0		1.40		1850 Btuh	
	Ceiling Total							1320 (sqft)					1850 Btuh	
Floors	Type	U-Value					R-Value		Size		HTM		Load	
1	Slab On Grade						0.0		1320 (ft-perimeter)		0.0		0 Btuh	
	Floor Total							1320.0 (sqft)					0 Btuh	
	Envelope Subtotal:												7318 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Rose Point Lot 27

, FL

6/16/2023

Infiltration	Type Natural	Average ACH 0.12	Volume(cuft) 11880	Wall Ratio 1	CFM= 24.4	Load 508 Btuh
Internal gain		Occupants 6	Btuh/occupant X 230	Appliance +	3200	Load 4580 Btuh
	Sensible Envelope Load:					12406 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.267)					3307 Btuh
	Sensible Load All Zones					15712 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Rose Point Lot 27

, FL

6/16/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	12406 Btuh
	Sensible Duct Load	3307 Btuh
	Total Sensible Zone Loads	15712 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	15712 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	842 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	815 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2857 Btuh
	TOTAL GAIN	18570 Btuh

EQUIPMENT

1. Central Unit	#	30000 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

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Project Title:
Rose Point Lot 27
Building Type: User

, FL

6/16/2023

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 0.20	Vinyl	0.26	N	30.0		10.4	312 Btuh
2	2, NFRC 0.20	Vinyl	0.26	N	30.0		10.4	312 Btuh
3	2, NFRC 0.20	Vinyl	0.26	N	15.0		10.4	156 Btuh
4	2, NFRC 0.20	Vinyl	0.26	S	30.0		10.4	312 Btuh
5	2, NFRC 0.20	Vinyl	0.26	S	13.3		10.4	139 Btuh
6	2, NFRC 0.20	Vinyl	0.26	W	6.0		10.4	62 Btuh
7	2, NFRC 0.20	Vinyl	0.26	W	20.0		10.4	208 Btuh
	Window Total				144.3(sqft)			1501 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	164		3.55	580 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	50		3.55	176 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	81		3.55	286 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	50		3.55	176 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	75		3.55	266 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	218		3.55	775 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	54		3.55	192 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	113		3.55	399 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	74		3.55	261 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	53		3.55	186 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	25		3.55	89 Btuh
12	Frame - Wood	- Adj	(0.089)	13.0/0.0	201		3.55	714 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	232		3.55	824 Btuh
	Wall Total				1387(sqft)			4925 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)		20		16.0	320 Btuh
2	Wood - Exterior,	n	(0.400)		20		16.0	320 Btuh
3	Insulated - Garage,	n	(0.400)		18		16.0	284 Btuh
	Door Total				58(sqft)			924Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/M/Shing		(0.032)	30.0/0.0	1320		1.3	1682 Btuh
	Ceiling Total				1320(sqft)			1682Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	176.0 ft(perim.)		47.2	8307 Btuh
	Floor Total				1320 sqft			8307 Btuh
	Envelope Subtotal:							17339 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	11880	1.00	32.5		1425 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Rose Point Lot 27
Building Type: User

6/16/2023

Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.168)	3155 Btuh
All Zones	Sensible Subtotal All Zones	21919 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	21919 Btuh 0 Btuh 21919 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	30000 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