

Residential System Sizing Calculation

Summary

Project Title:
Lot 5 Rosepoint

, FL

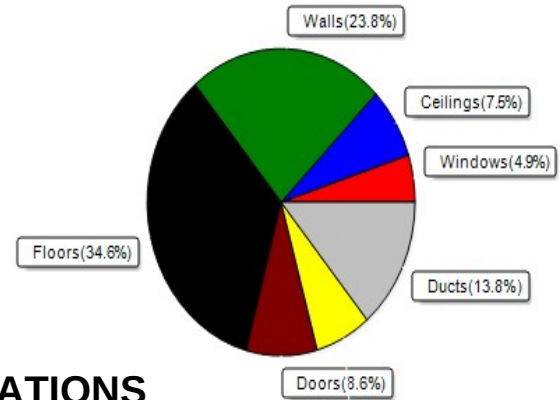
10/7/2024

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	17040 Btuh	Total cooling load calculation	14867 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	140.8 24000	Sensible (SHR = 0.75)	140.9 18000
Heat Pump + Auxiliary(0.0kW)	140.8 24000	Latent	287.0 6000
		Total (Electric Heat Pump)	161.4 24000

WINTER CALCULATIONS

Winter Heating Load (for 1000 sqft)

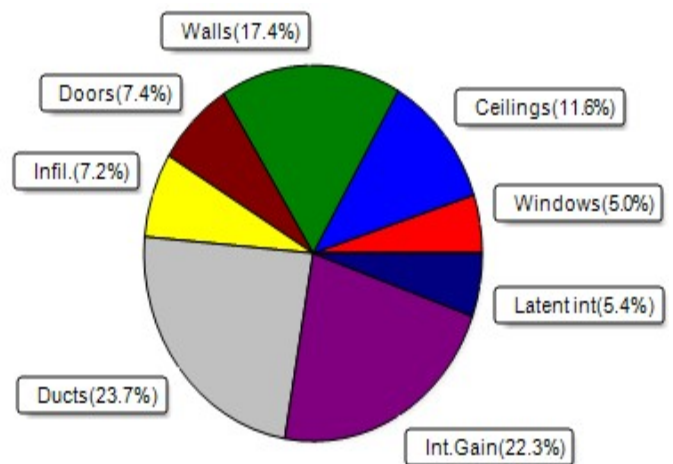
Load component	Load
Window total 81 sqft	842 Btuh
Wall total 1144 sqft	4062 Btuh
Door total 80 sqft	1472 Btuh
Ceiling total 1000 sqft	1274 Btuh
Floor total 1000 sqft	5900 Btuh
Infiltration 26 cfm	1133 Btuh
Duct loss	2357 Btuh
Subtotal	17040 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	17040 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1000 sqft)

Load component	Load
Window total 81 sqft	741 Btuh
Wall total 1144 sqft	2589 Btuh
Door total 80 sqft	1104 Btuh
Ceiling total 1000 sqft	1720 Btuh
Floor total	0 Btuh
Infiltration 19 cfm	404 Btuh
Internal gain	3320 Btuh
Duct gain	2899 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	12776 Btuh
Latent gain(ducts)	621 Btuh
Latent gain(infiltration)	670 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	800 Btuh
Total latent gain	2091 Btuh
TOTAL HEAT GAIN	14867 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____ 10-4-24

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Lot 5 Rosepoint

, FL

10/7/2024

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	1.3ft	6.0	0.0	6.0	9	9	55 Btuh
2	2 NFRC	0.20, 0.26	No	No	S		1.5ft	1.3ft	75.0	75.0	0.0	9	11	686 Btuh
	Window Total								81 (sqft)					741 Btuh
Walls	Type						U-Value	R-Value	Area(sqft)			HTM		Load
							Cav/Sheath							
1	Frame - Wood - Ext						0.09	13.0/0.0	440.0			2.3		996 Btuh
2	Frame - Wood - Ext						0.09	13.0/0.0	166.5			2.3		377 Btuh
3	Frame - Wood - Ext						0.09	13.0/0.0	391.0			2.3		885 Btuh
4	Frame - Wood - Ext						0.09	13.0/0.0	146.5			2.3		332 Btuh
	Wall Total								1144 (sqft)					2589 Btuh
Doors	Type								Area (sqft)			HTM		Load
1	Insulated - Exterior								40.0			13.8		552 Btuh
2	Insulated - Exterior								20.0			13.8		276 Btuh
3	Insulated - Exterior								20.0			13.8		276 Btuh
	Door Total								80 (sqft)					1104 Btuh
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)			HTM		Load
1	Vented Attic/DarkShingle						0.032	30.0/0.0	1000.0			1.72		1720 Btuh
	Ceiling Total								1000 (sqft)					1720 Btuh
Floors	Type							R-Value	Size			HTM		Load
1	Slab On Grade							0.0	1000 (ft-perimeter)			0.0		0 Btuh
	Floor Total								1000.0 (sqft)					0 Btuh
	Envelope Subtotal:													6154 Btuh
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=	Load
	Natural						0.13		9000		1		19.4	404 Btuh
Internal gain							Occupants		Btuh/occupant		Appliance		Load	
							4		X 230		+ 2400		3320 Btuh	
	Sensible Envelope Load:													9878 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.293)													2899 Btuh
	Sensible Load All Zones													12776 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 5 Rosepoint

, FL

10/7/2024

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	9878 Btuh
	Sensible Duct Load	2899 Btuh
	Total Sensible Zone Loads	12776 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	12776 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	670 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	621 Btuh
	Latent occupant gain (4.0 people @ 200 Btuh per person)	800 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2091 Btuh
	TOTAL GAIN	14867 Btuh

EQUIPMENT

1. Central Unit	#	24000 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

, FL

Project Title:
Lot 5 Rosepoint
Building Type: User

10/7/2024

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	6.0		10.4	62 Btuh
2	2, NFRC 0.20	Vinyl	0.26	S	75.0		10.4	780 Btuh
	Window Total				81.0(sqft)			842 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	440		3.55	1562 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	167		3.55	591 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	391		3.55	1388 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	147		3.55	520 Btuh
	Wall Total				1144(sqft)			4062 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		40		18.4	736 Btuh
2	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
3	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
	Door Total				80(sqft)			1472Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.032)	30.0/0.0	1000		1.3	1274 Btuh
	Ceiling Total				1000(sqft)			1274Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	125.0 ft(perim.)		47.2	5900 Btuh
	Floor Total				1000 sqft			5900 Btuh
	Envelope Subtotal:							13550 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.17	9000	1.00	25.8		1133 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)						(DLM of 0.161)	2357 Btuh
All Zones	Sensible Subtotal All Zones							17040 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Lot 5 Rosepoint
Building Type: User

10/7/2024

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	17040 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	17040 Btuh

EQUIPMENT

1. Electric Heat Pump	#	24000 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