Manual J Winter Calculations

Residential Load - Component Details (continued)

N/A

Project Title:
Lot 20 Hills Of Rose Creek
Building Type: User

Lake City, FL 32024

2/13/2023

Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.16	21402	1.00	58.6	2567 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)				(DLM of 0.254)		7075 Btuh
All Zones				**Sensible Subtotal All Zones**			**34981 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss		34981 Btuh
	Ventilation Sens. Heat Loss	(Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss		34981 Btuh

EQUIPMENT

1. Electric Heat Pump	#	34981 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)

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Version 8

Residential System Sizing Calculation

Summary

N/A

Project Title:
Lot 20 Hills Of Rose Creek

Lake City, FL 32024

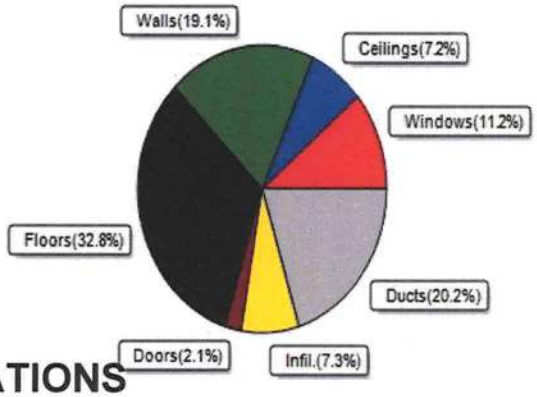
2/13/2023

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	**34981**	**Btuh**	**Total cooling load calculation**	**27474**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	100.0	34981	Sensible (SHR = 0.70)	85.5	19232
Heat Pump + Auxiliary(0.0kW)	100.0	34981	Latent	165.8	8242
			Total (Electric Heat Pump)	100.0	27474

WINTER CALCULATIONS

Winter Heating Load (for 2378 sqft)

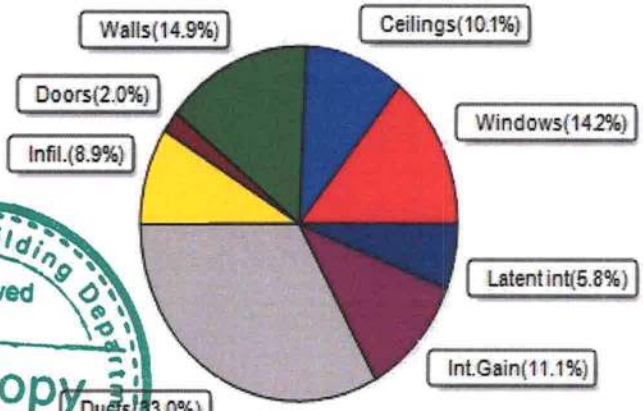
Load component			Load	
Window total	271	sqft	3902	Btuh
Wall total	1881	sqft	6678	Btuh
Door total	40	sqft	736	Btuh
Ceiling total	2497	sqft	2535	Btuh
Floor total	2378	sqft	11488	Btuh
Infiltration	59	cfm	2567	Btuh
Duct loss			7075	Btuh
Subtotal			**34981**	**Btuh**
Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS			**34981**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 2378 sqft)

Load component			Load	
Window total	271	sqft	3900	Btuh
Wall total	1881	sqft	4085	Btuh
Door total	40	sqft	552	Btuh
Ceiling total	2497	sqft	2789	Btuh
Floor total			0	Btuh
Infiltration	44	cfm	914	Btuh
Internal gain			3040	Btuh
Duct gain			7223	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load			0	Btuh
Total sensible gain			**22504**	**Btuh**
Latent gain(ducts)			1853	Btuh
Latent gain(infiltration)			1517	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			1600	Btuh
Total latent gain			**4970**	**Btuh**
TOTAL HEAT GAIN			**27474**	**Btuh**



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8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: 2 / 13 / 2023

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

N/A

Project Title:
Lot 20 Hills Of Rose Creek
Building Type: User

Lake City, FL 32024

2/13/2023

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 0.25	Vinyl	0.36	S	15.0	14.4	216 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	36.0	14.4	518 Btuh
3	2, NFRC 0.25	Vinyl	0.36	S	6.0	14.4	86 Btuh
4	2, NFRC 0.25	Vinyl	0.36	E	3.0	14.4	43 Btuh
5	2, NFRC 0.25	Vinyl	0.36	E	16.0	14.4	230 Btuh
6	2, NFRC 0.25	Vinyl	0.36	N	6.0	14.4	86 Btuh
7	2, NFRC 0.25	Vinyl	0.36	N	72.0	14.4	1037 Btuh
8	2, NFRC 0.25	TIM	0.36	W	24.0	14.4	346 Btuh
9	2, NFRC 0.25	Vinyl	0.36	N	72.0	14.4	1037 Btuh
10	2, NFRC 0.25	Vinyl	0.36	N	15.0	14.4	216 Btuh
11	2, NFRC 0.25	Vinyl	0.36	W	6.0	14.4	86 Btuh
	Window Total				271.0(sqft)		3902 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	104	3.55	367 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	157	3.55	559 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	80	3.55	282 Btuh
4	Frame - Wood	- Adj	(0.089)	13.0/0.0	90	3.55	320 Btuh
5	Frame - Wood	- Adj	(0.089)	13.0/0.0	208	3.55	738 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	217	3.55	769 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	299	3.55	1060 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	56	3.55	199 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	113	3.55	401 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	80	3.55	284 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	104	3.55	367 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	375	3.55	1331 Btuh
	Wall Total				1881(sqft)		6678 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	Flat ceil/M/Shing	(0.025)	38.0/0.0	2497	1.0	2535 Btuh
	Ceiling Total			2497(sqft)		2535Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	243.4 ft(perim.)	47.2	11488 Btuh
	Floor Total			2378 sqft		11488 Btuh

	Envelope Subtotal:	25340 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

N/A

Project Title: Lot 20 Hills Of Rose Creek

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL 32024

2/13/2023

Infiltration	Type Natural	Average ACH 0.12	Volume(cuft) 21402	Wall Ratio 1		CFM= 44.0	Load 914	Btuh
Internal gain		Occupants 8	Btuh/occupant X 230		+	Appliance 1200	Load 3040	Btuh
					Sensible Envelope Load:		15280	Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)				(DGM of 0.473)		7223	Btuh
					Sensible Load All Zones		**22504**	**Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

N/A

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Lot 20 Hills Of Rose Creek

Lake City, FL 32024

2/13/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**15280 Btuh**
	Sensible Duct Load	7223 Btuh
	Total Sensible Zone Loads	**22504 Btuh**
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	**22504 Btuh**
	Latent infiltration gain (for 51 gr. humidity difference)	1517 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1853 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**4970 Btuh**
	TOTAL GAIN	**27474 Btuh**

EQUIPMENT

1. Central Unit	#	27474 Btuh

*Key: Window types (Panes - 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)

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Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

N/A

Project Title:
Lot 20 Hills Of Rose Creek

Lake City, FL 32024

2/13/2023

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	0.25, 0.36		No	No	S	1.5ft.	1.0ft.	15.0	15.0	0.0	12	14	181 Btuh
2	2 NFRC	0.25, 0.36		No	No	S	7.5ft.	1.5ft.	36.0	36.0	0.0	12	14	436 Btuh
3	2 NFRC	0.25, 0.36		No	No	S	1.5ft.	1.0ft.	6.0	6.0	0.0	12	14	73 Btuh
4	2 NFRC	0.25, 0.36		No	No	E	1.5ft.	1.0ft.	3.0	0.7	2.3	12	31	79 Btuh
5	2 NFRC	0.25, 0.36		No	No	E	1.5ft.	1.0ft.	16.0	1.0	15.0	12	31	477 Btuh
6	2 NFRC	0.25, 0.36		No	No	N	1.5ft.	2.5ft.	6.0	0.0	6.0	12	12	73 Btuh
7	2 NFRC	0.25, 0.36		No	No	N	1.5ft.	1.0ft.	72.0	0.0	72.0	12	12	871 Btuh
8	2 NFRC	0.25, 0.36		No	No	W	10.5f	1.5ft.	24.0	21.6	2.4	12	31	335 Btuh
9	2 NFRC	0.25, 0.36		No	No	N	12.5f	1.0ft.	72.0	0.0	72.0	12	12	871 Btuh
10	2 NFRC	0.25, 0.36		No	No	N	1.5ft.	1.0ft.	15.0	0.0	15.0	12	12	181 Btuh
11	2 NFRC	0.25, 0.36		No	No	W	1.5ft.	1.0ft.	6.0	0.5	5.5	12	31	176 Btuh
	Excursion													147 Btuh
	Window Total								271 (sqft)					3900 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.09	13.0/0.0	103.5	2.3	234 Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	157.3	2.3	356 Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	79.5	2.3	180 Btuh
4	Frame - Wood - Adj	0.09	13.0/0.0	90.0	1.7	152 Btuh
5	Frame - Wood - Adj	0.09	13.0/0.0	208.0	1.7	351 Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	216.5	2.3	490 Btuh
7	Frame - Wood - Ext	0.09	13.0/0.0	298.7	2.3	676 Btuh
8	Frame - Wood - Ext	0.09	13.0/0.0	56.0	2.3	127 Btuh
9	Frame - Wood - Ext	0.09	13.0/0.0	113.0	2.3	256 Btuh
10	Frame - Wood - Ext	0.09	13.0/0.0	80.0	2.3	181 Btuh
11	Frame - Wood - Ext	0.09	13.0/0.0	103.5	2.3	234 Btuh
12	Frame - Wood - Ext	0.09	13.0/0.0	375.0	2.3	849 Btuh
	Wall Total			1881 (sqft)		4085 Btuh

Doors	Type	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 Attic/Med/Shingle/RB	0.025	38.0/0.0	2497.0	1.12	2789 Btuh
	Ceiling Total			2497 (sqft)		2789 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	2378 (ft-perimeter)	0.0	0 Btuh
	Floor Total		2378.0 (sqft)		0 Btuh

		Envelope Subtotal:	11326 Btuh