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Residential System Sizing Calculation

Summary

Project Title:
Hunnington Lot 24 Rose Pointe

Lake City, FL 32024

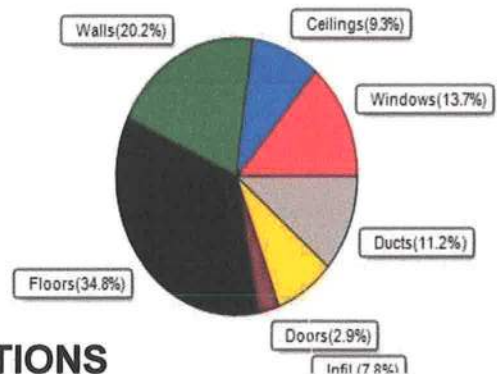
9/27/2022

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	18078 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	164.0 36000	Sensible (SHR = 0.80)	186.2 28800
Heat Pump + Auxiliary(0.0kW)	164.0 36000	Latent	276.0 7200
		Total (Electric Heat Pump)	199.1 36000

WINTER CALCULATIONS

Winter Heating Load (for 1596 sqft)

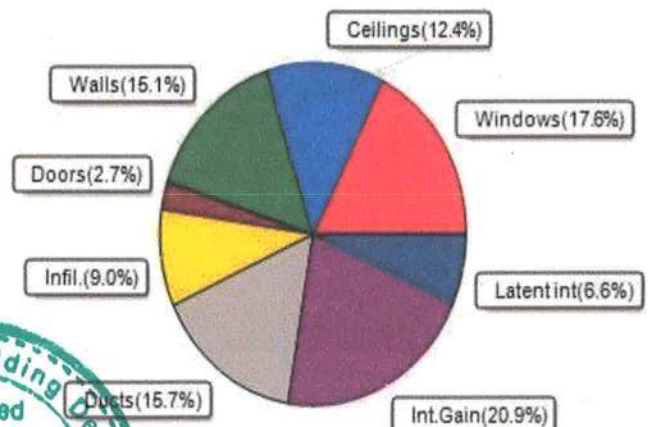
Load component		Load
Window total	228 sqft	3010 Btuh
Wall total	1252 sqft	4443 Btuh
Door total	40 sqft	640 Btuh
Ceiling total	1596 sqft	2033 Btuh
Floor total	1596 sqft	7646 Btuh
Infiltration	39 cfm	1723 Btuh
Duct loss		2461 Btuh
Subtotal		21956 Btuh
Ventilation	0 cfm	0 Btuh
TOTAL HEAT LOSS		21956 Btuh



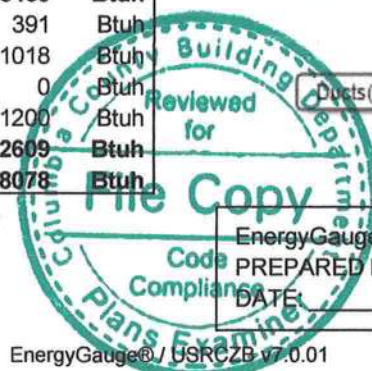
SUMMER CALCULATIONS

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		3780 Btuh
Duct gain		2452 Btuh
Sens. Ventilation	0 cfm	0 Btuh
Blower Load		0 Btuh
Total sensible gain		15469 Btuh
Latent gain(ducts)		391 Btuh
Latent gain(infiltration)		1018 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		1200 Btuh
Total latent gain		2609 Btuh
TOTAL HEAT GAIN		18078 Btuh



8th Edition



EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

9-27-22

EnergyGauge® / USRC2B v7.0.01

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:

Hunnington Lot 24 Rose Pointe

Lake City, FL 32024

9/27/2022

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	Ormt	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/Light/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
Hunnington Lot 24 Rose Pointe

Lake City, FL 32024

9/27/2022

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.12	14364	1	29.5	614 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		6	X 230	+	2400	3780 Btuh
Sensible Envelope Load:						13016 Btuh
Duct load	Extremely sealed, Supply(R8.0-Attic), Return(R8.0-Attic)			(DGM of 0.188)		2452 Btuh
Sensible Load All Zones						15469 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Hunnington Lot 24 Rose Pointe

Lake City, FL 32024

9/27/2022

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	13016 Btuh
	Sensible Duct Load	2452 Btuh
	Total Sensible Zone Loads	15469 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	15469 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1018 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	391 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2609 Btuh
	TOTAL GAIN	18078 Btuh

EQUIPMENT

1. Central Unit	#	36000 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:
Hunnington Lot 24 Rose Pointe
Building Type: User
Lake City, FL 32024
9/27/2022
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 0.22	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	Vented Attic/L/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:
Hunnington Lot 24 Rose Pointe
Building Type: User

9/27/2022

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 Sensible Heat Loss Total Heat Loss	21956 Btuh 0 Btuh 21956 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	36000 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