

Residential System Sizing Calculation

Summary

Melodie Tessier
Pinemount Road
Lake City, FL

Project Title:
Tessier Res

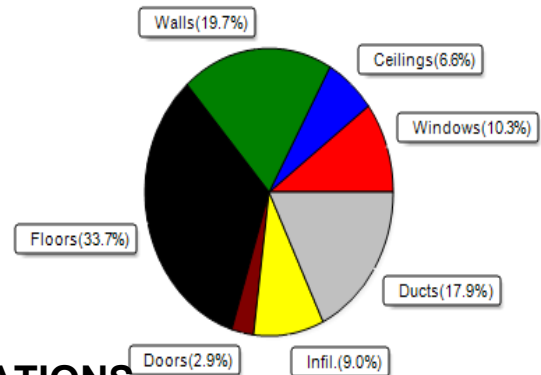
4/3/2024

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (79F) Humidity difference(54gr.)			
Winter design temperature(MJ8 99%/Cu)33 F		Summer design temperature(MJ8 99%/Cu)99 F	
Winter setpoint 70 F		Summer setpoint 75 F	
Winter temperature difference 37 F		Summer temperature difference 24 F	
Total heating load calculation	23758 Btuh	Total cooling load calculation	21526 Btuh
Submitted heating capacity % of calc Btuh		Submitted cooling capacity % of calc Btuh	
Total (Electric Heat Pump) 108.0 25665		Sensible (SHR = 0.75) 81.6 14642	
Heat Pump + Auxiliary(0.0kW) 108.0 25665		Latent 136.5 4881	
		Total (Electric Heat Pump) 90.7 19523	

WINTER CALCULATIONS

Winter Heating Load (for 1523 sqft)

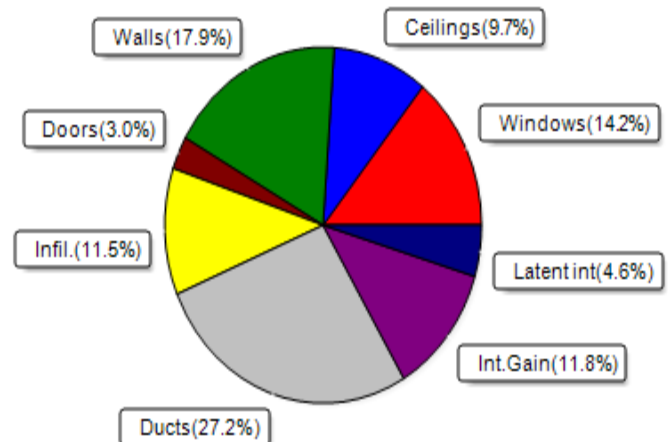
Load component		Load	
Window total	183 sqft	2438 Btuh	
Wall total	1427 sqft	4686 Btuh	
Door total	40 sqft	681 Btuh	
Ceiling total	1675 sqft	1573 Btuh	
Floor total	1523 sqft	8004 Btuh	
Infiltration	53 cfm	2129 Btuh	
Duct loss		4248 Btuh	
Subtotal		23758 Btuh	
Ventilation Ex:0 cfm; Sup:0 cfm		0 Btuh	
TOTAL HEAT LOSS		23758 Btuh	



SUMMER CALCULATIONS

Summer Cooling Load (for 1523 sqft)

Load component		Load	
Window total	183 sqft	3058 Btuh	
Wall total	1427 sqft	3863 Btuh	
Door total	40 sqft	644 Btuh	
Ceiling total	1675 sqft	2083 Btuh	
Floor total		0 Btuh	
Infiltration	39 cfm	1036 Btuh	
Internal gain		2550 Btuh	
Duct gain		4717 Btuh	
Sens.Ventilation Ex:0 cfm; Sup:0 cfm		0 Btuh	
Blower Load		0 Btuh	
Total sensible gain		17950 Btuh	
Latent gain(ducts)		1135 Btuh	
Latent gain(infiltration)		1440 Btuh	
Latent gain(ventilation)		0 Btuh	
Latent gain(internal/occupants/other)		1000 Btuh	
Total latent gain		3575 Btuh	
TOTAL HEAT GAIN		21526 Btuh	



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____ 4 / 3 / 2024

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Melodie Tessier
Pinemount Road
Lake City, FL

Project Title:
Tessier Res
Building Type: User

4/3/2024

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 99%/Cu)
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	30.0		13.3	400 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	9.0		13.3	120 Btuh
3	2, NFRC 0.25	Vinyl	0.36	E	9.0		13.3	120 Btuh
4	2, NFRC 0.25	TIM	0.36	N	40.0		13.3	533 Btuh
5	2, NFRC 0.25	Vinyl	0.36	N	75.0		13.3	999 Btuh
6	2, NFRC 0.25	Vinyl	0.36	W	20.0		13.3	266 Btuh
	Window Total					183.0(sqft)		2438 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	499		3.28	1639 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	258		3.28	847 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	423		3.28	1389 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	247		3.28	811 Btuh
	Wall Total					1427(sqft)		4686 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		17.0	340 Btuh
2	Insulated - Exterior, n		(0.460)		20		17.0	340 Btuh
	Door Total					40(sqft)		681Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.025)	38.0/0.0	1675		0.94	1573 Btuh
	Ceiling Total					1675(sqft)		1573Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	183.3 ft(perim.)		43.7	8004 Btuh
	Floor Total					1523 sqft		8004 Btuh
	Envelope Subtotal:							17382 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.23	13707	1.00	52.6		2129 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)						(DLM of 0.218)	4248 Btuh
All Zones	Sensible Subtotal All Zones							23758 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Melodie Tessier
Pinemount Road
Lake City, FL

Project Title:
Tessier Res
Building Type: User

4/3/2024

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	23758 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	23758 Btuh

EQUIPMENT

1. Electric Heat Pump	#	25665 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

Melodie Tessier
Pinemount Road
Lake City, FL

Project Title:
Tessier Res

4/3/2024

Reference City: Gainesville, FL (Defaults)
Humidity difference: 54gr.

Temperature Difference: 24.0F(MJ8 99%/Cu)
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.	30.0	30.0	0.0	14	16	417 Btuh	
2	2 NFRC	0.25, 0.36	No	No	S		1.5ft.	1.0ft.	9.0	9.0	0.0	14	16	125 Btuh	
3	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	9.0	0.7	8.3	14	33	281 Btuh	
4	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	40.0	0.0	40.0	14	14	556 Btuh	
5	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	75.0	0.0	75.0	14	14	1042 Btuh	
6	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	20.0	1.0	19.0	14	33	636 Btuh	
	Window Total								183 (sqft)					3058 Btuh	
Walls	Type						U-Value		R-Value		Area(sqft)		HTM		Load
									Cav/Sheath						
1	Frame - Wood - Ext						0.09		13.0/0.0		499.0		2.7		1351 Btuh
2	Frame - Wood - Ext						0.09		13.0/0.0		258.0		2.7		698 Btuh
3	Frame - Wood - Ext						0.09		13.0/0.0		423.0		2.7		1145 Btuh
4	Frame - Wood - Ext						0.09		13.0/0.0		247.0		2.7		669 Btuh
	Wall Total										1427 (sqft)				3863 Btuh
Doors	Type										Area (sqft)		HTM		Load
1	Insulated - Exterior										20.0		16.1		322 Btuh
2	Insulated - Exterior										20.0		16.1		322 Btuh
	Door Total										40 (sqft)				644 Btuh
Ceilings	Type/Color/Surface						U-Value		R-Value		Area(sqft)		HTM		Load
1	Vented Attic/DarkShingle/RB						0.025		38.0/0.0		1675.3		1.24		2083 Btuh
	Ceiling Total										1675 (sqft)				2083 Btuh
Floors	Type								R-Value		Size		HTM		Load
1	Slab On Grade								0.0		1523 (ft-perimeter)		0.0		0 Btuh
	Floor Total										1523.0 (sqft)				0 Btuh
	Envelope Subtotal:													9648 Btuh	
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load
	Natural						0.17		13707		1		39.4		
Internal gain							Occupants		Btuh/occupant		Appliance				Load
							5		X 230		+		1400		2550 Btuh
	Sensible Envelope Load:													13234 Btuh	
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.356)													4717 Btuh	
	Sensible Load All Zones													17950 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Melodie Tessier
Pinemount Road
Lake City, FL

Project Title:
Tessier Res

Climate:FL_GAINESVILLE_REGIONAL_A

4/3/2024

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	13234 Btuh
	Sensible Duct Load	4717 Btuh
	Total Sensible Zone Loads	17950 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	17950 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	1440 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1135 Btuh
	Latent occupant gain (5.0 people @ 200 Btuh per person)	1000 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3575 Btuh
	TOTAL GAIN	21526 Btuh

EQUIPMENT

1. Central Unit	#	19523 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