

Residential System Sizing Calculation

Summary

Renae Preston
344 Blue Jay Ct
Ft White, FL 32038

Project Title:
Renae Preston

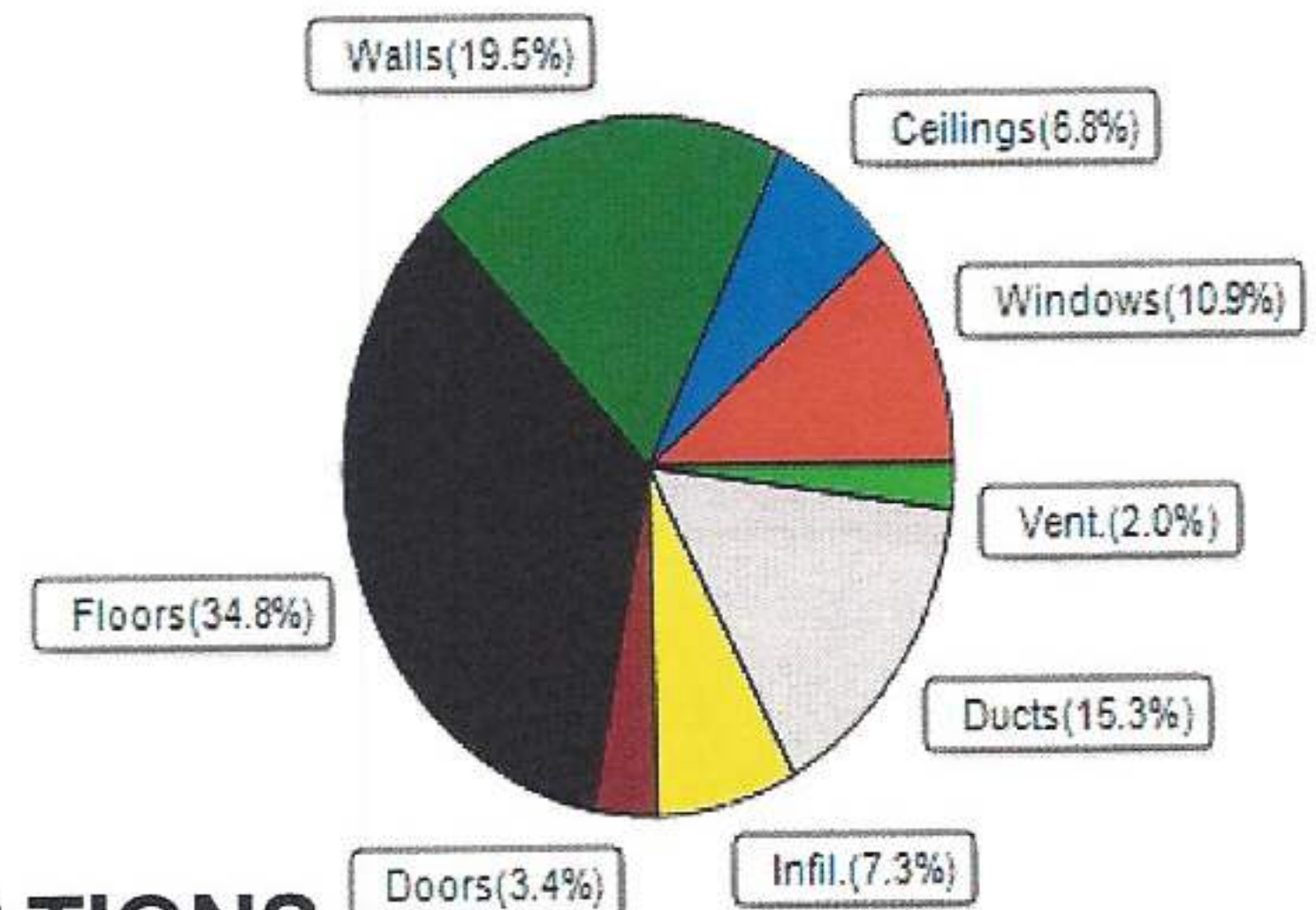
8/1/2020

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	21435 Btuh	Total cooling load calculation	16998 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 21435	Sensible (SHR = 0.75)	92.8 12749
Heat Pump + Auxiliary(0.0kW)	100.0 21435	Latent	130.1 4250
		Total (Electric Heat Pump)	100.0 16998

WINTER CALCULATIONS

Winter Heating Load (for 1371 sqft)

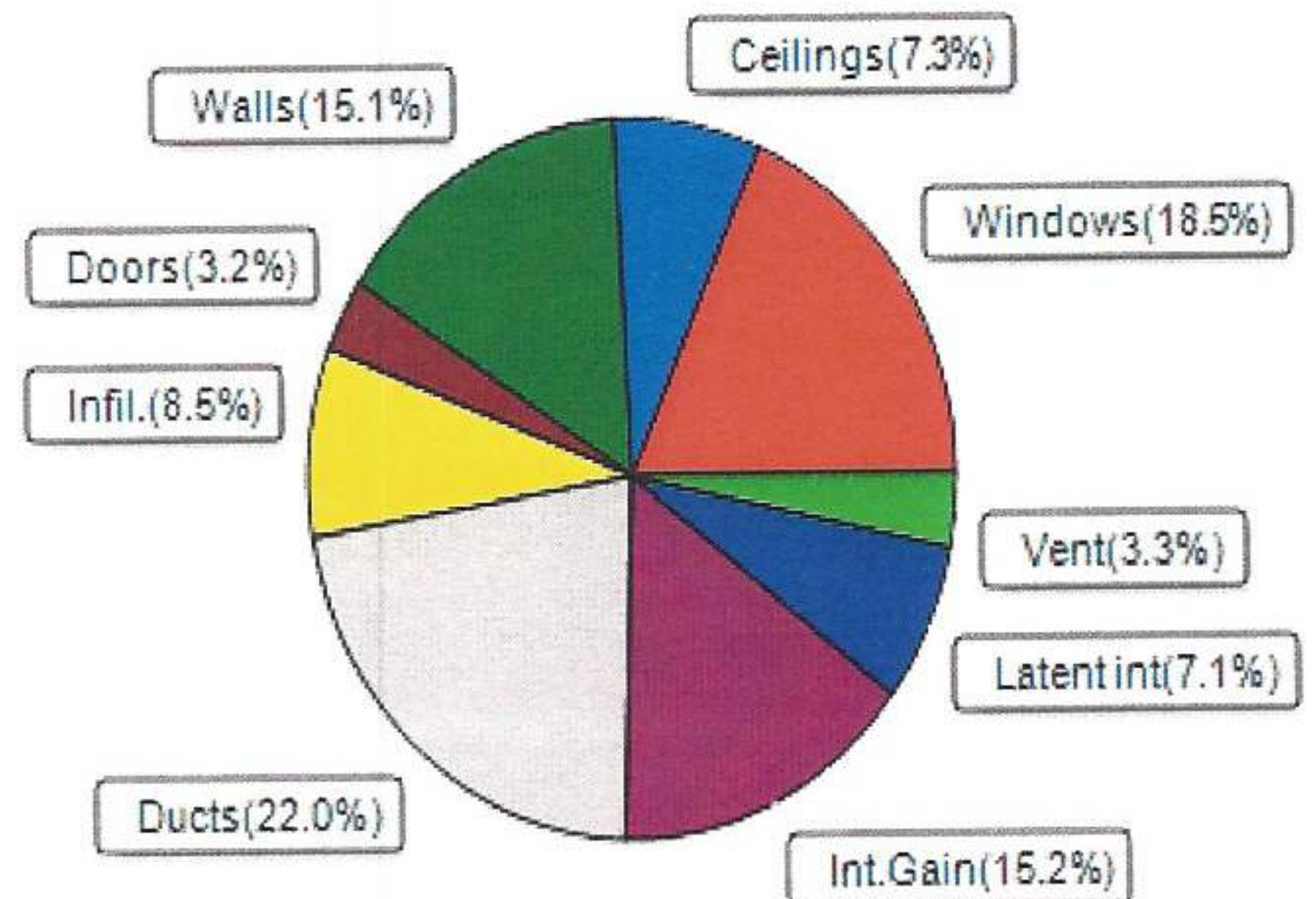
Load component		Load	
Window total	162 sqft	2333	Btuh
Wall total	1176 sqft	4177	Btuh
Door total	40 sqft	736	Btuh
Ceiling total	1438 sqft	1460	Btuh
Floor total	1371 sqft	7458	Btuh
Infiltration	36 cfm	1565	Btuh
Duct loss		3269	Btuh
Subtotal		20997	Btuh
Ventilation	10 cfm	438	Btuh
TOTAL HEAT LOSS		21435	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1371 sqft)

Load component		Load	
Window total	162 sqft	3139	Btuh
Wall total	1176 sqft	2564	Btuh
Door total	40 sqft	552	Btuh
Ceiling total	1438 sqft	1241	Btuh
Floor total		0	Btuh
Infiltration	26 cfm	540	Btuh
Internal gain		2580	Btuh
Duct gain		2909	Btuh
Sens. Ventilation	10 cfm	208	Btuh
Blower Load		0	Btuh
Total sensible gain		13733	Btuh
Latent gain(ducts)		824	Btuh
Latent gain(infiltration)		896	Btuh
Latent gain(ventilation)		345	Btuh
Latent gain(internal/occupants/other)		1200	Btuh
Total latent gain		3266	Btuh
TOTAL HEAT GAIN		16998	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

8/3/2020

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Renae Preston
344 Blue Jay Ct
Ft White, FL 32038

Project Title:
Renae Preston
Building Type: User

8/1/2020

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 0.25	Vinyl	0.36	S	30.0		14.4	432 Btuh
2	2, NFRC 0.25	Vinyl	0.36	E	30.0		14.4	432 Btuh
3	2, NFRC 0.25	Vinyl	0.36	N	20.0		14.4	288 Btuh
4	2, NFRC 0.25	Vinyl	0.36	N	30.0		14.4	432 Btuh
5	2, NFRC 0.25	Vinyl	0.36	N	16.0		14.4	230 Btuh
6	2, NFRC 0.25	Vinyl	0.36	W	6.0		14.4	86 Btuh
7	2, NFRC 0.25	Vinyl	0.36	W	30.0		14.4	432 Btuh
Window Total					162.0(sqft)			2333 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	97		3.55	344 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	344		3.55	1220 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	239		3.55	849 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	291		3.55	1033 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	34		3.55	121 Btuh
6	Frame - Wood	- Adj	(0.089)	13.0/0.0	172		3.55	611 Btuh
Wall Total					1176(sqft)			4177 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	Vented Attic/L/Shing		(0.025)	38.0/0.0	1438		1.0	1460 Btuh
Ceiling Total					1438(sqft)			1460Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	158.0 ft(perim.)		47.2	7458 Btuh
Floor Total					1371 sqft			7458 Btuh
Envelope Subtotal:								16163 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural(Adjusted for ventilation)		0.18	12339	1.00	35.7		1565 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.184)							3269 Btuh
All Zones	Sensible Subtotal All Zones							20997 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Renae Preston
344 Blue Jay Ct
Ft White, FL 32038

Project Title:
Renae Preston
Building Type: User

8/1/2020

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	20997 Btuh 438 Btuh 21435 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	21435 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

Renae Preston
344 Blue Jay Ct
Ft White, FL 32038

Project Title:
Renae Preston

8/1/2020

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	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded			
1	2 NFRC	0.25, 0.36	No	No	S		7.5ft.	1.0ft.	30.0	30.0	0.0	12	14	363	Btuh	
2	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	1.0ft.	30.0	1.5	28.5	12	31	901	Btuh	
3	2 NFRC	0.25, 0.36	No	No	N		5.5ft.	1.0ft.	20.0	0.0	20.0	12	12	242	Btuh	
4	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	30.0	0.0	30.0	12	12	363	Btuh	
5	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	1.0ft.	16.0	0.0	16.0	12	12	194	Btuh	
6	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	6.0	0.5	5.5	12	31	176	Btuh	
7	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	30.0	1.5	28.5	12	31	901	Btuh	
	Window Total								162 (sqft)					3139 Btuh		
Walls	Type						U-Value	R-Value	Area(sqft)			HTM		Load		
								Cav/Sheath								
1	Frame - Wood - Ext						0.09	13.0/0.0	97.0			2.3		219 Btuh		
2	Frame - Wood - Ext						0.09	13.0/0.0	343.5			2.3		777 Btuh		
3	Frame - Wood - Ext						0.09	13.0/0.0	239.0			2.3		541 Btuh		
4	Frame - Wood - Ext						0.09	13.0/0.0	291.0			2.3		659 Btuh		
5	Frame - Wood - Ext						0.09	13.0/0.0	34.0			2.3		77 Btuh		
6	Frame - Wood - Adj						0.09	13.0/0.0	172.0			1.7		290 Btuh		
	Wall Total								1176 (sqft)					2564 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/Light/Shingle/RB						0.025	38.0/0.0	1438.0			0.86		1241 Btuh		
	Ceiling Total						1438 (sqft)					1241 Btuh				
Floors	Type						R-Value		Size			HTM		Load		
1	Slab On Grade						0.0		1371 (ft-perimeter)			0.0		0 Btuh		
	Floor Total						1371.0 (sqft)					0 Btuh				
	Envelope Subtotal:													7495 Btuh		
Infiltration	Type						Average ACH	Volume(cuft)		Wall Ratio		CFM=		Load		
	Natural(Adjusted for ventilation)						0.13	12339		1		26.0		540 Btuh		
Internal gain							Occupants	Btuh/occupant			Appliance		Load			
							6	X	230	+		1200		2580 Btuh		
	Sensible Envelope Load:													10616 Btuh		
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)										(DGM of 0.274)			2909 Btuh		
	Sensible Load All Zones													13525 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Renae Preston
344 Blue Jay Ct
Ft White, FL 32038

Project Title:
Renae Preston

Climate: FL_GAINESVILLE_REGIONAL_A

8/1/2020

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	10616 Btuh
	Sensible Duct Load	2909 Btuh
	Total Sensible Zone Loads	13525 Btuh
	Sensible ventilation	208 Btuh
	Blower	0 Btuh
	Total sensible gain	13733 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	896 Btuh
	Latent ventilation gain	345 Btuh
	Latent duct gain	824 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3266 Btuh
	TOTAL GAIN	16998 Btuh

EQUIPMENT

1. Central Unit	#	16998 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