

Residential System Sizing Calculation

Summary

Project Title:
Pamela Thomas

1061 SW Nebraska Ter Ft White, FL 32038

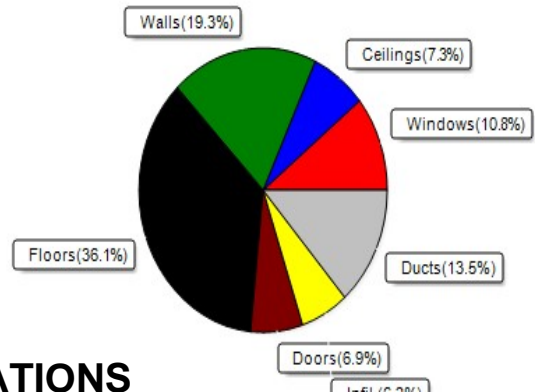
5/11/2022

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	16805	Btuh	Total cooling load calculation	15762	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	142.8	24000	Sensible (SHR = 0.85)	148.1	20400
Heat Pump + Auxiliary(0.0kW)	142.8	24000	Latent	181.4	3600
			Total (Electric Heat Pump)	152.3	24000

WINTER CALCULATIONS

Winter Heating Load (for 962 sqft)

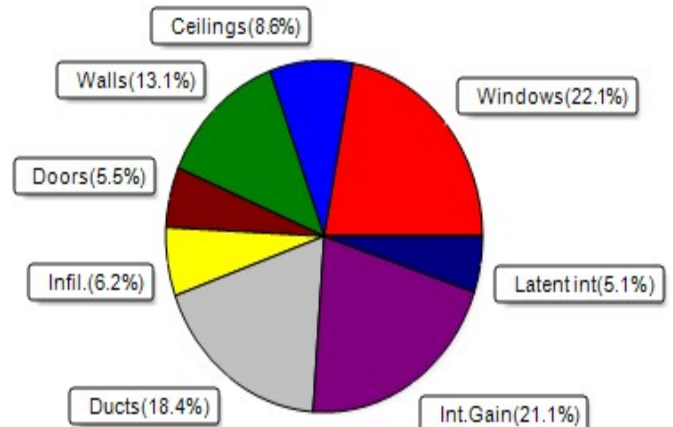
Load component			Load	
Window total	174	sqft	1810	Btuh
Wall total	912	sqft	3238	Btuh
Door total	72	sqft	1152	Btuh
Ceiling total	962	sqft	1225	Btuh
Floor total	962	sqft	6073	Btuh
Infiltration	24	cfm	1038	Btuh
Duct loss			2268	Btuh
Subtotal			16805	Btuh
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			16805	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 962 sqft)

Load component			Load	
Window total	174	sqft	3479	Btuh
Wall total	912	sqft	2064	Btuh
Door total	72	sqft	864	Btuh
Ceiling total	962	sqft	1348	Btuh
Floor total			0	Btuh
Infiltration	18	cfm	370	Btuh
Internal gain			3320	Btuh
Duct gain			2333	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			13778	Btuh
Latent gain(ducts)			571	Btuh
Latent gain(infiltration)			614	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			800	Btuh
Total latent gain			1984	Btuh
TOTAL HEAT GAIN			15762	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

5-10-22

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Pamela Thomas

1061 SW Nebraska Ter Ft White, FL 32038

5/11/2022

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	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded			
1	2 NFRC	0.20, 0.26	No	No	No	E	1.5ft.	2.3ft.	36.0	0.0	36.0	9	24	872	Btuh	
2	2 NFRC	0.20, 0.26	No	No	No	E	1.5ft.	2.3ft.	3.0	0.0	3.0	9	24	73	Btuh	
3	2 NFRC	0.20, 0.26	No	No	No	S	9.5ft.	2.3ft.	54.0	54.0	0.0	9	11	494	Btuh	
4	2 NFRC	0.20, 0.26	No	No	No	W	1.5ft.	2.3ft.	72.0	0.0	72.0	9	24	1744	Btuh	
5	2 NFRC	0.20, 0.26	No	No	No	W	1.5ft.	2.3ft.	9.0	0.0	9.0	9	24	218	Btuh	
	Excursion														78	Btuh
	Window Total								174 (sqft)						3479	Btuh
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load						
				Cav/Sheath												
1	Frame - Wood - Ext	0.09	13.0/0.0			165.0		2.3	373	Btuh						
2	Frame - Wood - Ext	0.09	13.0/0.0			327.0		2.3	740	Btuh						
3	Frame - Wood - Ext	0.09	13.0/0.0			135.0		2.3	306	Btuh						
4	Frame - Wood - Ext	0.09	13.0/0.0			285.0		2.3	645	Btuh						
	Wall Total					912 (sqft)			2064	Btuh						
Doors	Type	Area (sqft)		HTM		Load										
1	Insulated - Exterior	24.0		12.0		288 Btuh										
2	Insulated - Exterior	24.0		12.0		288 Btuh										
3	Insulated - Exterior	24.0		12.0		288 Btuh										
	Door Total	72 (sqft)				864 Btuh										
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load										
1	Vented Attic/Light/Shingle	0.032	30.0/0.0	962.0	1.40	1348 Btuh										
	Ceiling Total			962 (sqft)		1348 Btuh										
Floors	Type	R-Value	Size	HTM	Load											
1	Slab On Grade	0.0	962 (ft-perimeter)	0.0	0 Btuh											
	Floor Total		962.0 (sqft)		0 Btuh											
Envelope Subtotal:										7755	Btuh					
Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load										
	Natural	0.12	8658	1	17.8	370 Btuh										
Internal gain	Occupants	Btuh/occupant	Appliance	Load												
	4	X 230	+ 2400	3320 Btuh												
Sensible Envelope Load:										11445	Btuh					
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic)				(DGM of 0.204)	2333	Btuh									
Sensible Load All Zones										13778	Btuh					

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
 Pamela Thomas

1061 SW Nebraska Ter Ft White, FL 32038

5/11/2022

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	11445 Btuh
	Sensible Duct Load	2333 Btuh
	Total Sensible Zone Loads	13778 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	13778 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	614 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	571 Btuh
	Latent occupant gain (4.0 people @ 200 Btuh per person)	800 Btuh
	Latent other gain	0 Btuh
	Latent total gain	1984 Btuh
	TOTAL GAIN	15762 Btuh

EQUIPMENT

1. Central Unit	#16 seer	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

Project Title:
 Pamela Thomas
 1061 SW Nebraska Ter Ft White, FL 32038 Building Type: User

5/11/2022

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 0.20	Vinyl	0.26	E	36.0		10.4 374 Btuh	
2	2, NFRC 0.20	Vinyl	0.26	E	3.0		10.4 31 Btuh	
3	2, NFRC 0.20	Vinyl	0.26	S	54.0		10.4 562 Btuh	
4	2, NFRC 0.20	Vinyl	0.26	W	72.0		10.4 749 Btuh	
5	2, NFRC 0.20	Vinyl	0.26	W	9.0		10.4 94 Btuh	
	Window Total					174.0(sqft)		1810 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM= Load	
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	165		3.55 586 Btuh	
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	327		3.55 1161 Btuh	
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	135		3.55 479 Btuh	
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	285		3.55 1012 Btuh	
	Wall Total					912(sqft)		3238 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM= Load	
1	Insulated - Exterior, n		(0.400)		24		16.0 384 Btuh	
2	Insulated - Exterior, n		(0.400)		24		16.0 384 Btuh	
3	Insulated - Exterior, n		(0.400)		24		16.0 384 Btuh	
	Door Total					72(sqft)		1152Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM= Load	
1	Vented Attic/L/Shing		(0.032)	30.0/0.0	962		1.3 1225 Btuh	
	Ceiling Total					962(sqft)		1225Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM= Load	
1	Slab On Grade		(1.180)	0.0	128.7 ft(perim.)		47.2 6073 Btuh	
	Floor Total					962 sqft		6073 Btuh
	Envelope Subtotal:							13498 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM= Load		
	Natural		0.16	8658	1.00	23.7	1038 Btuh	
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)					(DLM of 0.156)		2268 Btuh
All Zones	Sensible Subtotal All Zones							16805 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

1061 SW Nebraska Ter Ft White, FL 32038

Project Title:
Pamela Thomas
Building Type: User

5/11/2022

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	16805 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	16805 Btuh

EQUIPMENT

1. Electric Heat Pump	#16 seer	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