

Residential System Sizing Calculation

Summary

Project Title:
Franklin Addition

, FL

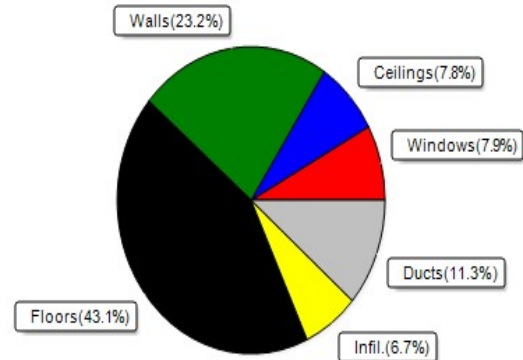
6/26/2024

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(100 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	5916 Btuh	Total cooling load calculation	5632 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	202.9 12000	Sensible (SHR = 0.75)	183.2 9000
Heat Pump + Auxiliary(0.0kW)	202.9 12000	Latent	416.8 3000
		Total (Electric Heat Pump)	213.1 12000

WINTER CALCULATIONS

Winter Heating Load (for 364 sqft)

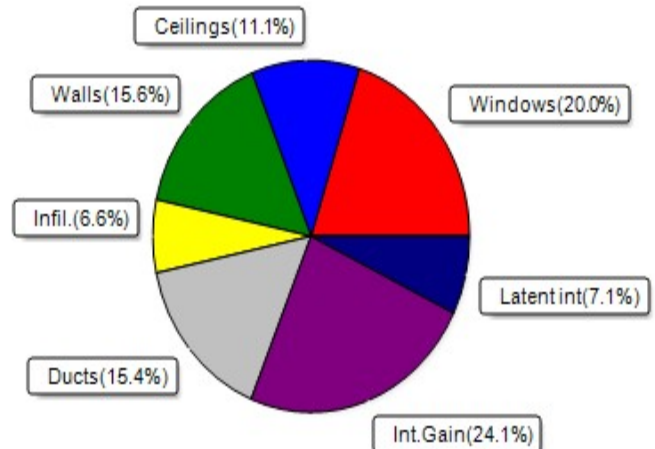
Load component	Load
Window total 45 sqft	468 Btuh
Wall total 387 sqft	1374 Btuh
Door total 0 sqft	0 Btuh
Ceiling total 364 sqft	464 Btuh
Floor total 364 sqft	2549 Btuh
Infiltration 9 cfm	393 Btuh
Duct loss	668 Btuh
Subtotal	5916 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	5916 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 364 sqft)

Load component	Load
Window total 45 sqft	1128 Btuh
Wall total 387 sqft	876 Btuh
Door total 0 sqft	0 Btuh
Ceiling total 364 sqft	626 Btuh
Floor total	0 Btuh
Infiltration 7 cfm	140 Btuh
Internal gain	1360 Btuh
Duct gain	782 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	4913 Btuh
Latent gain(ducts)	87 Btuh
Latent gain(infiltration)	233 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	400 Btuh
Total latent gain	720 Btuh
TOTAL HEAT GAIN	5632 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 6-26-24

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Franklin Addition

, FL

6/26/2024

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	0.20, 0.26	No	No	E		1.5ft	1.3ft	15.0	0.0	15.0	9	24	363	Btuh		
2	2 NFRC	0.20, 0.26	No	No	W		1.5ft	1.3ft	30.0	0.0	30.0	9	24	727	Btuh		
	Excursion													38	Btuh		
	Window Total								45 (sqft)					1128	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		220	Btuh
	2	Frame - Wood - Ext						0.09		13.0/0.0		208.0		2.3		471	Btuh
	3	Frame - Wood - Ext						0.09		13.0/0.0		82.0		2.3		186	Btuh
	Wall Total										387 (sqft)				876	Btuh	
Ceilings	Type/Color/Surface						U-Value		R-Value		Area(sqft)		HTM		Load		
	1 Vented Attic/DarkShingle						0.032		30.0/0.0		364.0		1.72		626	Btuh	
	Ceiling Total										364 (sqft)				626	Btuh	
Floors	Type								R-Value		Size		HTM		Load		
	1 Slab On Grade								0.0		364 (ft-perimeter)		0.0		0	Btuh	
	Floor Total										364.0 (sqft)				0	Btuh	
	Envelope Subtotal:													2630 Btuh			
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load		
	Natural						0.14		2912		1		6.7		140	Btuh	
Internal gain							Occupants		Btuh/occupant				Appliance		Load		
							2		X 230		+		900		1360	Btuh	
	Sensible Envelope Load:													4130 Btuh			
Duct load	Extremely sealed, Supply(R6.0-Attic), Return(R6.0-Attic)													(DGM of 0.189)		782 Btuh	
	Sensible Load All Zones													4913 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Franklin Addition

, FL

6/26/2024

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	4130 Btuh
	Sensible Duct Load	782 Btuh
	Total Sensible Zone Loads	4913 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	4913 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	233 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	87 Btuh
	Latent occupant gain (2.0 people @ 200 Btuh per person)	400 Btuh
	Latent other gain	0 Btuh
	Latent total gain	720 Btuh
	TOTAL GAIN	5632 Btuh

EQUIPMENT

1. Central Unit	#	12000 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

, FL

Project Title:
Franklin Addition
Building Type: User

6/26/2024

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 0.20	Vinyl	0.26	E	15.0		10.4	156 Btuh
2	2, NFRC 0.20	Vinyl	0.26	W	30.0		10.4	312 Btuh
	Window Total				45.0(sqft)			468 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	208		3.55	738 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	82		3.55	291 Btuh
	Wall Total				387(sqft)			1374 Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.032)	30.0/0.0	364		1.3	464 Btuh
	Ceiling Total				364(sqft)			464Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	54.0 ft(perim.)		47.2	2549 Btuh
	Floor Total				364 sqft			2549 Btuh
	Envelope Subtotal:							4854 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.18	2912	1.00	9.0		393 Btuh
Duct load	Extremely sealed, R6.0, Supply(Att), Return(Att)						(DLM of 0.127)	668 Btuh
All Zones	Sensible Subtotal All Zones							5916 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss		5916 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)		0 Btuh
	Total Heat Loss		5916 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Franklin Addition
Building Type: User

6/26/2024

EQUIPMENT

1. Electric Heat Pump	#	12000 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