

Residential System Sizing Calculation

Summary

Project Title:
Brinkley

, FL

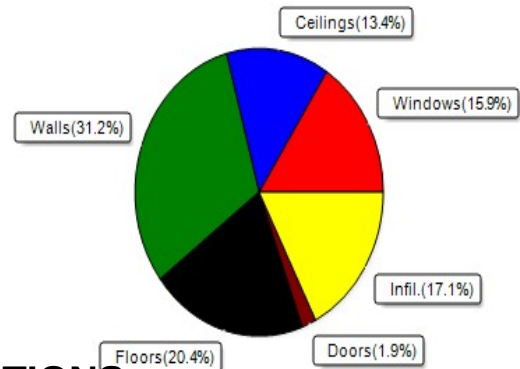
4/19/2021

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	46208 Btuh	Total cooling load calculation	33590 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	129.8 60000	Sensible (SHR = 0.85)	186.8 51000
Heat Pump + Auxiliary(0.0kW)	129.8 60000	Latent	143.2 9000
		Total (Electric Heat Pump)	178.6 60000

WINTER CALCULATIONS

Winter Heating Load (for 4800 sqft)

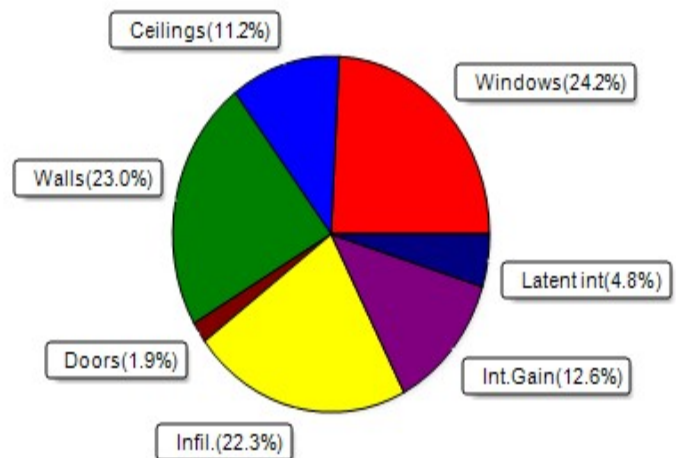
Load component	Load
Window total 306 sqft	7349 Btuh
Wall total 3592 sqft	14424 Btuh
Door total 102 sqft	859 Btuh
Ceiling total 4800 sqft	6214 Btuh
Floor total See detail report	9440 Btuh
Infiltration 181 cfm	7923 Btuh
Duct loss	0 Btuh
Subtotal	46208 Btuh
Ventilation 0 cfm	0 Btuh
TOTAL HEAT LOSS	46208 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 4800 sqft)

Load component	Load
Window total 306 sqft	8124 Btuh
Wall total 3592 sqft	7717 Btuh
Door total 102 sqft	644 Btuh
Ceiling total 4800 sqft	3759 Btuh
Floor total	0 Btuh
Infiltration 136 cfm	2822 Btuh
Internal gain	4240 Btuh
Duct gain	0 Btuh
Sens. Ventilation 0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	27307 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	4683 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1600 Btuh
Total latent gain	6283 Btuh
TOTAL HEAT GAIN	33590 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

4-19-21

Residential System Sizing Calculation

Summary

Project Title:
Brinkley

, FL

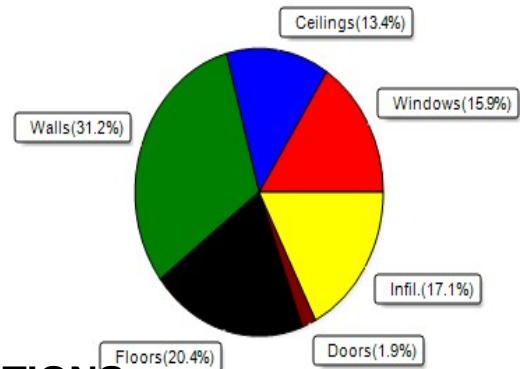
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Heat Pump + Auxiliary(0.0kW)	129.8	60000	Latent	143.2	9000
			Total (Electric Heat Pump)	178.6	60000

WINTER CALCULATIONS

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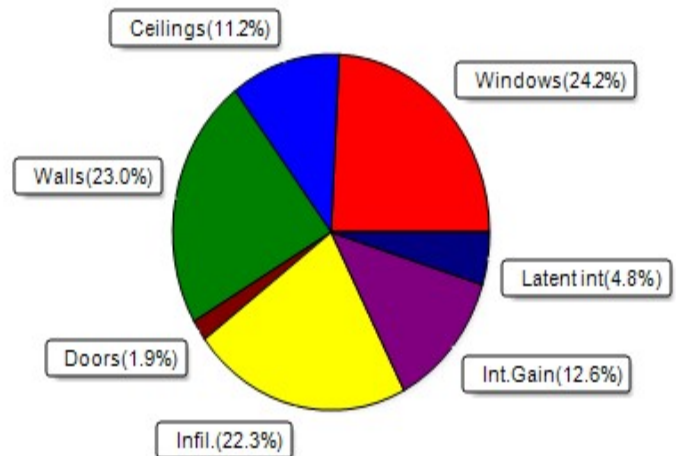
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TOTAL HEAT GAIN	33590 Btuh



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System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Brinkley

, FL

4/19/2021

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	0.27, 0.60	No	No	N		1.5ft	2.3ft	35.6	0.0	35.6	17	17	607	Btuh	
2	2 NFRC	0.27, 0.60	No	No	N		1.5ft	2.3ft	5.4	0.0	5.4	17	17	93	Btuh	
3	2 NFRC	0.27, 0.60	No	No	E		1.5ft	2.3ft	35.6	0.0	35.6	17	37	1331	Btuh	
4	2 NFRC	0.27, 0.60	No	No	S		1.5ft	2.3ft	17.8	17.8	0.0	17	19	304	Btuh	
5	2 NFRC	0.27, 0.60	No	No	S		1.5ft	2.3ft	5.4	5.4	0.0	17	19	93	Btuh	
6	2 NFRC	0.27, 0.60	No	No	S		1.5ft	2.3ft	35.6	35.6	0.0	17	19	607	Btuh	
7	2 NFRC	0.27, 0.60	No	No	W		1.5ft	2.3ft	17.8	0.0	17.8	17	37	665	Btuh	
8	2 NFRC	0.27, 0.60	No	No	N		1.5ft	2.3ft	35.6	0.0	35.6	17	17	607	Btuh	
9	2 NFRC	0.27, 0.60	No	No	N		1.5ft	2.3ft	5.4	0.0	5.4	17	17	93	Btuh	
10	2 NFRC	0.27, 0.60	No	No	E		1.5ft	2.3ft	35.6	0.0	35.6	17	37	1331	Btuh	
11	2 NFRC	0.27, 0.60	No	No	S		1.5ft	2.3ft	5.4	5.4	0.0	17	19	93	Btuh	
12	2 NFRC	0.27, 0.60	No	No	S		1.5ft	2.3ft	17.8	17.8	0.0	17	19	304	Btuh	
13	2 NFRC	0.27, 0.60	No	No	W		1.5ft	2.3ft	53.3	0.0	53.3	17	37	1996	Btuh	
	Window Total								306 (sqft)					8124 Btuh		
Walls	Type					U-Value	R-Value		Area(sqft)		HTM		Load			
							Cav/Sheath									
1	Frame - Steel - Ext						0.10		19.0/0.0		516.8		2.1		1110	Btuh
2	Frame - Steel - Ext						0.10		19.0/0.0		324.4		2.1		697	Btuh
3	Frame - Steel - Ext						0.10		19.0/0.0		521.2		2.1		1120	Btuh
4	Frame - Steel - Ext						0.10		19.0/0.0		382.2		2.1		821	Btuh
5	Frame - Steel - Ext						0.10		19.0/0.0		559.0		2.1		1201	Btuh
6	Frame - Steel - Ext						0.10		19.0/0.0		364.4		2.1		783	Btuh
7	Frame - Steel - Ext						0.10		19.0/0.0		576.8		2.1		1239	Btuh
8	Frame - Steel - Ext						0.10		19.0/0.0		346.7		2.1		745	Btuh
	Wall Total								3592 (sqft)					7717 Btuh		
Doors	Type							Area (sqft)		HTM		Load				
1	Insulated - Exterior								42.2		6.3		266		Btuh	
2	Insulated - Exterior								40.0		6.3		252		Btuh	
3	Insulated - Exterior								20.0		6.3		126		Btuh	
	Door Total								102 (sqft)					644 Btuh		
Ceilings	Type/Color/Surface					U-Value	R-Value		Area(sqft)		HTM		Load			
1	Cath/Sngl Assem/Light/Metal						0.032		30.0/0.0		2400.0		0.78		1880	Btuh
2	Cath/Sngl Assem/Light/Metal						0.032		30.0/0.0		2400.0		0.78		1880	Btuh
	Ceiling Total								4800 (sqft)					3759 Btuh		
Floors	Type							R-Value		Size		HTM		Load		
1	Slab On Grade								0.0		2400 (ft-perimeter)		0.0		0	Btuh
2	Interior								0.0		2400 (sqft)		0.0		0	Btuh
	Floor Total								4800.0 (sqft)					0 Btuh		
	Envelope Subtotal:													20244 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Brinkley

, FL

4/19/2021

Infiltration	Type Natural	Average ACH 0.17	Volume(cuft) 48000	Wall Ratio 1	CFM= 135.7	Load 2822 Btuh
Internal gain		Occupants 8	Btuh/occupant X 230	Appliance +	2400	Load 4240 Btuh
	Sensible Envelope Load:					27307 Btuh
Duct load	Extremely sealed, Supply(R6.0-Condi), Return(R6.0-Condi) (DGM of 0.000)					0 Btuh
	Sensible Load All Zones					27307 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title:
Brinkley

Climate: FL_GAINESVILLE_REGIONAL_A

, FL

4/19/2021

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	27307 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	27307 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	27307 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	4683 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (8.0 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	6283 Btuh
	TOTAL GAIN	33590 Btuh

EQUIPMENT

1. Central Unit	#	60000 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