

Residential System Sizing Calculation

Summary

743 SW Central Terr
Fort White, FL 32024

Project Title:
Guinn Residence

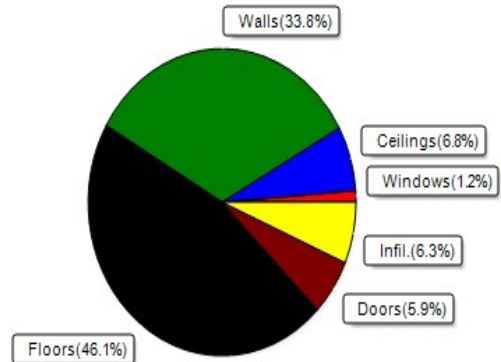
6/3/2022

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	10861	Btuh	Total cooling load calculation	7544	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Window/Wall Heat Pump)	110.5	12000	Sensible (SHR = 0.85)	151.3	10200
Heat Pump + Auxiliary(0.0kW)	110.5	12000	Latent	224.6	1800
			Total (Window/Wall Heat Pump)	159.1	12000

WINTER CALCULATIONS

Winter Heating Load (for 570 sqft)

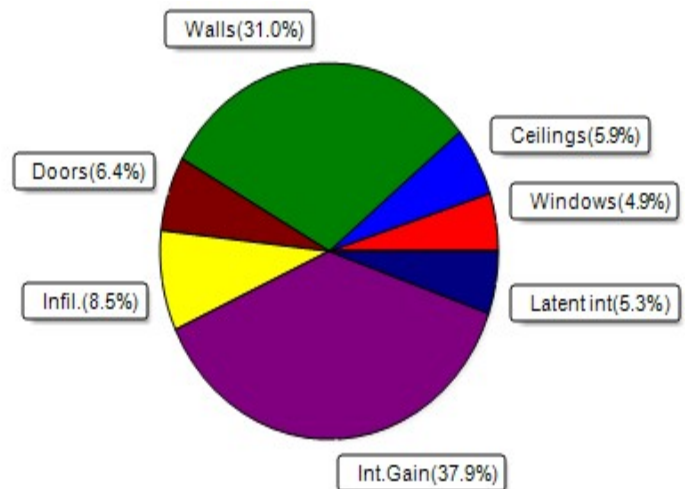
Load component	Load
Window total 13 sqft	130 Btuh
Wall total 1034 sqft	3671 Btuh
Door total 40 sqft	640 Btuh
Ceiling total 570 sqft	738 Btuh
Floor total 570 sqft	5003 Btuh
Infiltration 16 cfm	679 Btuh
Duct loss	0 Btuh
Subtotal	10861 Btuh
Ventilation 0 cfm	0 Btuh
TOTAL HEAT LOSS	10861 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 570 sqft)

Load component	Load
Window total 13 sqft	373 Btuh
Wall total 1034 sqft	2340 Btuh
Door total 40 sqft	480 Btuh
Ceiling total 570 sqft	446 Btuh
Floor total	0 Btuh
Infiltration 12 cfm	242 Btuh
Internal gain	2860 Btuh
Duct gain	0 Btuh
Sens. Ventilation 0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	6742 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	402 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	400 Btuh
Total latent gain	802 Btuh
TOTAL HEAT GAIN	7544 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

6-3-22

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

743 SW Central Terr
Fort White, FL 32024

Project Title:
Guinn Residence

6/3/2022

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.	12.5	0.0	12.5	9	24	303 Btuh	71 Btuh		
	Excursion								13 (sqft)					373 Btuh			
	Window Total																
Walls	Type				U-Value		R-Value		Area(sqft)			HTM		Load			
							Cav/Sheath										
1	Frame - Wood - Ext				0.09		13.0/0.0		153.8			2.3		348 Btuh			
2	Frame - Wood - Ext				0.09		13.0/0.0		377.0			2.3		853 Btuh			
3	Frame - Wood - Ext				0.09		13.0/0.0		133.8			2.3		303 Btuh			
4	Frame - Wood - Ext				0.09		13.0/0.0		369.5			2.3		836 Btuh			
	Wall Total									1034 (sqft)					2340 Btuh		
Doors	Type				U-Value		R-Value		Area (sqft)			HTM		Load			
1	Insulated - Exterior								20.0			12.0		240 Btuh			
2	Insulated - Exterior								20.0			12.0		240 Btuh			
	Door Total									40 (sqft)					480 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		570.0			0.78		446 Btuh			
	Ceiling Total									570 (sqft)					446 Btuh		
Floors	Type				U-Value		R-Value		Size			HTM		Load			
1	Slab On Grade						0.0		570 (ft-perimeter)			0.0		0 Btuh			
	Floor Total									570.0 (sqft)					0 Btuh		
	Envelope Subtotal:													3640 Btuh			
Infiltration	Type				Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load				
	Natural				0.12		5843		1		11.6		242 Btuh				
Internal gain					Occupants		Btuh/occupant		Appliance		Load						
					2		X 230		+		2400		2860 Btuh				
	Sensible Envelope Load:													6742 Btuh			
Duct load	Extremely sealed, Supply(R6.0-Condi), Return(R6.0-Condi)													(DGM of 0.000)		0 Btuh	
	Sensible Load All Zones													6742 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

743 SW Central Terr
Fort White, FL 32024

Project Title: Guinn Residence

Climate: FL_GAINESVILLE_REGIONAL_A

6/3/2022

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	6742 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	6742 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	6742 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	402 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (2.0 people @ 200 Btuh per person)	400 Btuh
	Latent other gain	0 Btuh
	Latent total gain	802 Btuh
	TOTAL GAIN	7544 Btuh

EQUIPMENT

1. PTAC and Room 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(1/2))
 (Ornt - compass orientation)



Version 8

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

743 SW Central Terr
Fort White, FL 32024

Project Title:
Guinn Residence
Building Type: User

6/3/2022

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=
1	2, NFRC 0.20	Vinyl	0.26	E	12.5		10.4
	Window Total				12.5(sqft)		
	Load						130 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	154		3.55
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	377		3.55
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	134		3.55
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	370		3.55
	Wall Total				1034(sqft)		
	Load						3671 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=
1	Insulated - Exterior, n		(0.400)		20		16.0
2	Insulated - Exterior, n		(0.400)		20		16.0
	Door Total				40(sqft)		
	Load						320 Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=
1	Cathedral/L/Metal		(0.032)	30.0/0.0	570		1.3
	Ceiling Total				570(sqft)		
	Load						738 Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=
1	Slab On Grade		(1.180)	0.0	106.0 ft(perim.)		47.2
	Floor Total				570 sqft		
	Load						5003 Btuh
	Envelope Subtotal:						10182 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	
	Natural		0.16	5843	1.00	15.5	679 Btuh
Duct load	Extremely sealed, R6.0, Supply(Con), Return(Con) (DLM of 0.000)						0 Btuh
All Zones	Sensible Subtotal All Zones						10861 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	10861 Btuh 0 Btuh 10861 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

743 SW Central Terr
Fort White, FL 32024

Project Title:
Guinn Residence
Building Type: User

6/3/2022

EQUIPMENT

1. Window/Wall 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