

Residential System Sizing Calculation

Summary

David Residence
209 SW Poppy Glen
Lake City, FL 32025

Project Title:
1756 Model - Lot 10 Heritage Hills

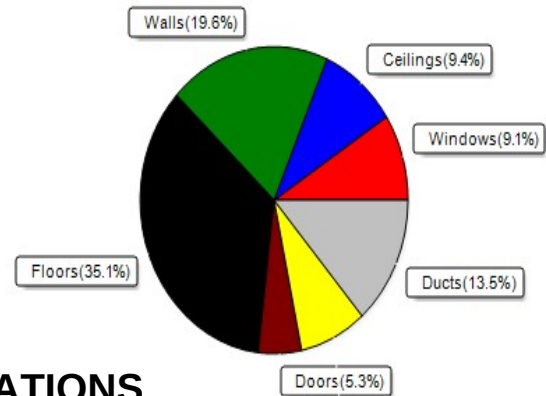
5/23/2025

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	23688 Btuh	Total cooling load calculation	21122 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	152.0 36000	Sensible (SHR = 0.85)	166.8 30600
Heat Pump + Auxiliary(0.0kW)	152.0 36000	Latent	194.6 5400
		Total (Electric Heat Pump)	170.4 36000

WINTER CALCULATIONS

Winter Heating Load (for 1756 sqft)

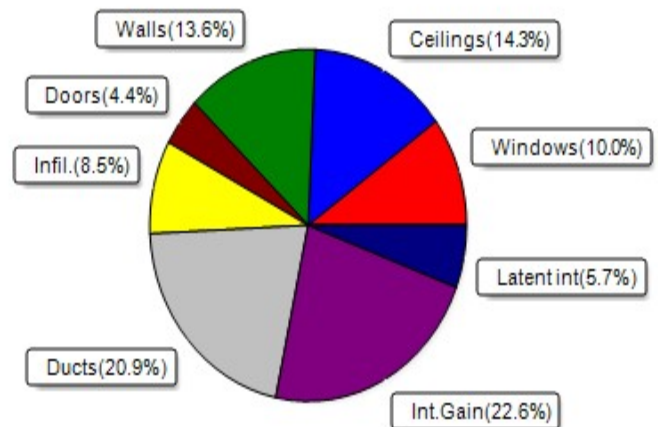
Load component	Load
Window total 163 sqft	2152 Btuh
Wall total 1343 sqft	4649 Btuh
Door total 78 sqft	1244 Btuh
Ceiling total 1756 sqft	2237 Btuh
Floor total 1756 sqft	8307 Btuh
Infiltration 43 cfm	1895 Btuh
Duct loss	3203 Btuh
Subtotal	23688 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	23688 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1756 sqft)

Load component	Load
Window total 163 sqft	2108 Btuh
Wall total 1343 sqft	2867 Btuh
Door total 78 sqft	933 Btuh
Ceiling total 1756 sqft	3020 Btuh
Floor total	0 Btuh
Infiltration 32 cfm	675 Btuh
Internal gain	4780 Btuh
Duct gain	3964 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	18347 Btuh
Latent gain(ducts)	454 Btuh
Latent gain(infiltration)	1120 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	2775 Btuh
TOTAL HEAT GAIN	21122 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 5-22-25

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

David Residence
209 SW Poppy Glen
Lake City, FL 32025

Project Title:
1756 Model - Lot 10 Heritage Hills

5/23/2025

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	0.22, 0.33	No	No	N		1.5ft.	1.3ft.	45.0	0.0	45.0	11	11	490	Btuh	
2	2 NFRC	0.22, 0.33	No	No	N		1.5ft.	1.3ft.	20.0	0.0	20.0	11	11	218	Btuh	
3	2 NFRC	0.22, 0.33	No	No	N		1.5ft.	1.3ft.	9.0	0.0	9.0	11	11	98	Btuh	
4	2 NFRC	0.22, 0.33	No	No	E		1.5ft.	1.3ft.	16.0	0.0	16.0	11	27	440	Btuh	
5	2 NFRC	0.22, 0.33	No	No	S		1.5ft.	1.3ft.	54.0	54.0	0.0	11	13	588	Btuh	
6	2 NFRC	0.22, 0.33	No	No	S		1.5ft.	1.3ft.	15.0	15.0	0.0	11	13	163	Btuh	
7	2 NFRC	0.22, 0.33	No	No	W		1.5ft.	1.3ft.	4.0	0.0	4.0	11	27	110	Btuh	
	Window Total								163 (sqft)					2108		Btuh
Walls	Type					U-Value	R-Value		Area(sqft)		HTM		Load			
							Cav/Sheath									
1	Frame - Wood - Ext					0.09	13.0/0.6		396.0		2.2		871		Btuh	
2	Frame - Wood - Ext					0.09	13.0/0.6		266.0		2.2		585		Btuh	
3	Frame - Wood - Ext					0.09	13.0/0.6		235.0		2.2		517		Btuh	
4	Frame - Wood - Ext					0.09	13.0/0.6		278.0		2.2		611		Btuh	
5	Frame - Wood - Adj					0.09	13.0/0.0		168.2		1.7		284		Btuh	
	Wall Total								1343 (sqft)					2867		Btuh
Doors	Type							Area (sqft)		HTM		Load				
1	Insulated - Exterior							40.0		12.0		480		Btuh		
2	Insulated - Exterior							20.0		12.0		240		Btuh		
3	Insulated - Garage							17.8		12.0		213		Btuh		
	Door Total								78 (sqft)					933		Btuh
Ceilings	Type/Color/Surface					U-Value	R-Value		Area(sqft)		HTM		Load			
1	Vented Attic/DarkShingle					0.032	30.0/0.0		1756.0		1.72		3020		Btuh	
	Ceiling Total								1756 (sqft)					3020		Btuh
Floors	Type					R-Value		Size		HTM		Load				
1	Slab On Grade					0.0		1756 (ft-perimeter)		0.0		0		Btuh		
	Floor Total								1756.0 (sqft)					0		Btuh
	Envelope Subtotal:													8928		Btuh
Infiltration	Type					Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load		
	Natural					0.12		15804		1		32.5		675 <td>Btuh</td>		Btuh
Internal gain						Occupants		Btuh/occupant		Appliance		Load				
						6		X 230		+		3400		4780		Btuh
	Sensible Envelope Load:													14383		Btuh
Duct load	Extremelysealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.276)													3964		Btuh
	Sensible Load All Zones													18347		Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

David Residence
209 SW Poppy Glen
Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
1756 Model - Lot 10 Heritage Hills

5/23/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	14383 Btuh
	Sensible Duct Load	3964 Btuh
	Total Sensible Zone Loads	18347 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	18347 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1120 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	454 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2775 Btuh
	TOTAL GAIN	21122 Btuh

EQUIPMENT

1. Central Unit	#	36000 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

David Residence
209 SW Poppy Glen
Lake City, FL 32025

Project Title:
1756 Model - Lot 10 Heritage Hills
Building Type: User

5/23/2025

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 0.22	Vinyl	0.33	N	45.0		13.2	594 Btuh
2	2, NFRC 0.22	Vinyl	0.33	N	20.0		13.2	264 Btuh
3	2, NFRC 0.22	Vinyl	0.33	N	9.0		13.2	119 Btuh
4	2, NFRC 0.22	Vinyl	0.33	E	16.0		13.2	211 Btuh
5	2, NFRC 0.22	Vinyl	0.33	S	54.0		13.2	713 Btuh
6	2, NFRC 0.22	Vinyl	0.33	S	15.0		13.2	198 Btuh
7	2, NFRC 0.22	Vinyl	0.33	W	4.0		13.2	53 Btuh
	Window Total				163.0(sqft)			2152 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.086)	13.0/0.6	396		3.45	1366 Btuh
2	Frame - Wood	- Ext	(0.086)	13.0/0.6	266		3.45	917 Btuh
3	Frame - Wood	- Ext	(0.086)	13.0/0.6	235		3.45	810 Btuh
4	Frame - Wood	- Ext	(0.086)	13.0/0.6	278		3.45	959 Btuh
5	Frame - Wood	- Adj	(0.089)	13.0/0.0	168		3.55	597 Btuh
	Wall Total				1343(sqft)			4649 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.400)		40		16.0	640 Btuh
2	Insulated - Exterior, n		(0.400)		20		16.0	320 Btuh
3	Insulated - Garage, n		(0.400)		18		16.0	284 Btuh
	Door Total				78(sqft)			1244Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.032)	30.0/0.0	1756		1.3	2237 Btuh
	Ceiling Total				1756(sqft)			2237Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	176.0 ft(perim.)		47.2	8307 Btuh
	Floor Total				1756 sqft			8307 Btuh
	Envelope Subtotal:							18589 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	15804	1.00	43.3		1895 Btuh
Duct load	Extremely sealed, R6.0, Supply(Att), Return(Att)						(DLM of 0.156)	3203 Btuh
All Zones	Sensible Subtotal All Zones							23688 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

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209 SW Poppy Glen
Lake City, FL 32025

Project Title:
1756 Model - Lot 10 Heritage Hills
Building Type: User

5/23/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	23688 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	23688 Btuh

EQUIPMENT

1. Electric Heat Pump	#	36000 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