

Residential System Sizing Calculation

Summary

Project Title:
Lot 3 Mayfair Unit 5

Lake City, FL 32025

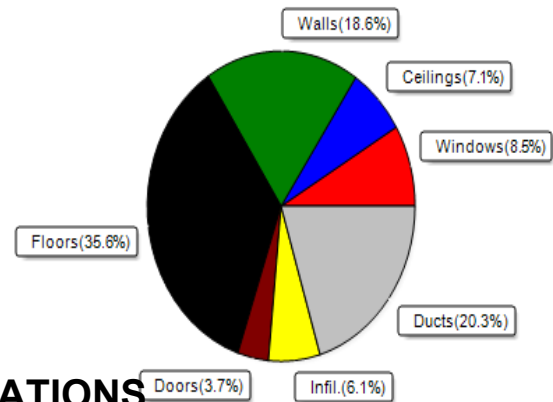
12/5/2024

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (79F) Humidity difference(54gr.)			
Winter design temperature(MJ8 99%/Cu)	33 F	Summer design temperature(MJ8 99%/Cu)	99 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	37 F	Summer temperature difference	24 F
Total heating load calculation	18255 Btuh	Total cooling load calculation	18409 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	111.7 20400	Sensible (SHR = 0.75)	99.5 15300
Heat Pump + Auxiliary(0.0kW)	111.7 20400	Latent	168.4 5100
		Total (Electric Heat Pump)	110.8 20400

WINTER CALCULATIONS

Winter Heating Load (for 1311 sqft)

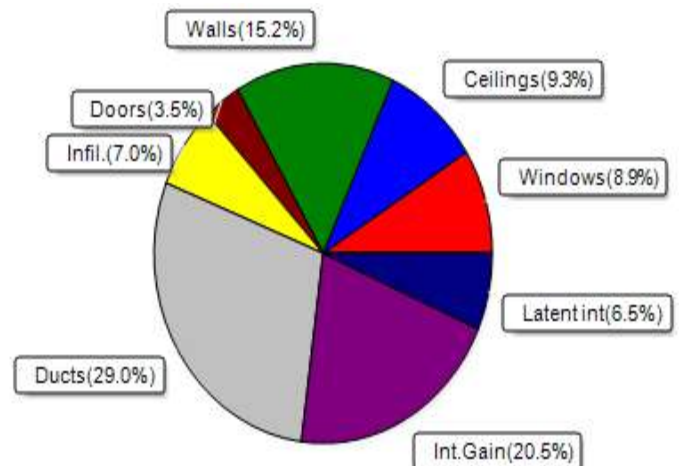
Load component	Load
Window total 117 sqft	1558 Btuh
Wall total 1035 sqft	3399 Btuh
Door total 40 sqft	681 Btuh
Ceiling total 1376 sqft	1292 Btuh
Floor total 1311 sqft	6505 Btuh
Infiltration 27 cfm	1110 Btuh
Duct loss	3710 Btuh
Subtotal	18255 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	18255 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1311 sqft)

Load component	Load
Window total 117 sqft	1645 Btuh
Wall total 1035 sqft	2802 Btuh
Door total 40 sqft	644 Btuh
Ceiling total 1376 sqft	1711 Btuh
Floor total	0 Btuh
Infiltration 21 cfm	540 Btuh
Internal gain	3780 Btuh
Duct gain	4258 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	15380 Btuh
Latent gain(ducts)	1078 Btuh
Latent gain(infiltration)	751 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	3029 Btuh
TOTAL HEAT GAIN	18409 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

12 / 5 / 2024

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lake City, FL 32025

Project Title:
Lot 3 Mayfair Unit 5
Building Type: User

12/5/2024

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 99%/Cu)
Winter Setpoint: 70 °F (Required Manual J default)

Component Loads for Whole House									
Window	Panels/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load	
1	2, NFRC 0.25	Vinyl	0.36	S	15.0		13.3	200 Btuh	
2	2, NFRC 0.25	Vinyl	0.36	S	30.0		13.3	400 Btuh	
3	2, NFRC 0.25	Vinyl	0.36	S	15.0		13.3	200 Btuh	
4	2, NFRC 0.25	Vinyl	0.36	N	15.0		13.3	200 Btuh	
5	2, NFRC 0.25	TIM	0.36	N	20.0		13.3	266 Btuh	
6	2, NFRC 0.25	Vinyl	0.36	N	18.0		13.3	240 Btuh	
7	2, NFRC 0.25	Vinyl	0.36	W	4.0		13.3	53 Btuh	
	Window Total					117.0(sqft)			1558 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load	
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	77		3.28	253 Btuh	
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	94		3.28	309 Btuh	
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	97		3.28	319 Btuh	
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	228		3.28	749 Btuh	
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	315		3.28	1034 Btuh	
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	224		3.28	736 Btuh	
	Wall Total					1035(sqft)			3399 Btuh
Doors	Type	Storm	Ueff.	R-Value	Area	X	HTM=	Load	
1	Insulated - Exterior,	n	(0.460)		20		17.0	340 Btuh	
2	Insulated - Exterior,	n	(0.460)		20		17.0	340 Btuh	
	Door Total					40(sqft)			681Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value	Area	X	HTM=	Load		
1	Flat ceil/D/Shing	(0.025)	38.0/0.0	1376		0.94	1292 Btuh		
	Ceiling Total					1376(sqft)			1292Btuh
Floors	Type	Ueff.	R-Value	Size	X	HTM=	Load		
1	Slab On Grade	(1.180)	0.0	149.0 ft(perim.)		43.7	6505 Btuh		
	Floor Total					1311 sqft			6505 Btuh
Envelope Subtotal:								13436 Btuh	
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	Load		
	Natural		0.16	10488	1.00	27.4	1110 Btuh		
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.255)							3710 Btuh	
All Zones	Sensible Subtotal All Zones							18255 Btuh	

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32025

Project Title:
Lot 3 Mayfair Unit 5
Building Type: User

12/5/2024

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	18255 Btuh 0 Btuh 18255 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	20400 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

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
 Lot 3 Mayfair Unit 5

Lake City, FL 32025

12/5/2024

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	11122 Btuh
	Sensible Duct Load	4258 Btuh
	Total Sensible Zone Loads	15380 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	15380 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	751 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1078 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3029 Btuh
	TOTAL GAIN	18409 Btuh

EQUIPMENT

1. Central Unit	#	20400 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