

# Residential System Sizing Calculation

## Summary

Project Title:  
260196 Oxley In Law Suit

Lake City, FL

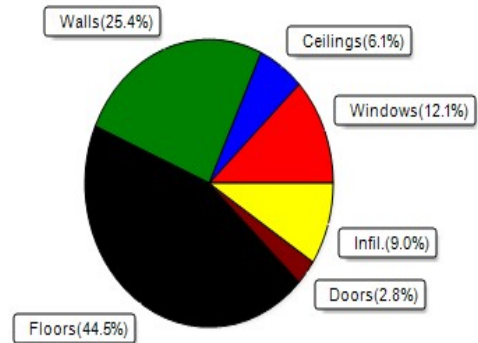
3/8/2026

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
<b>Total heating load calculation</b>	<b>11244</b>	<b>Btuh</b>	<b>Total cooling load calculation</b>	<b>11193</b>	<b>Btuh</b>
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	213.4	24000	Sensible (SHR = 0.75)	135.1	13500
Heat Pump + Auxiliary(0.0kW)	213.4	24000	Latent	374.6	4500
			<b>Total (Electric Heat Pump)</b>	<b>160.8</b>	<b>18000</b>

## WINTER CALCULATIONS

Winter Heating Load (for 672 sqft)

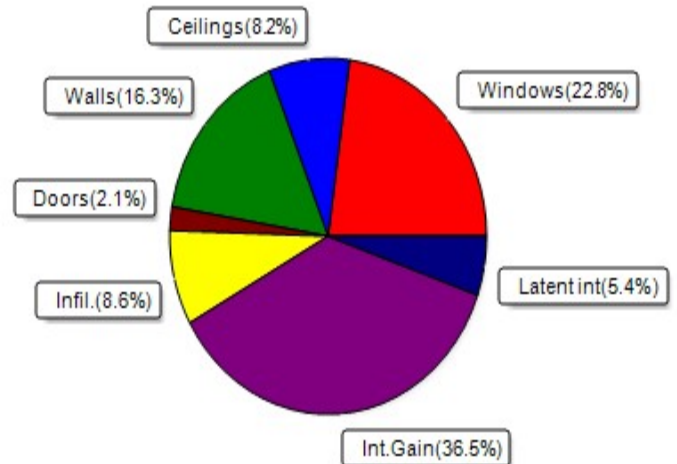
Load component	Load	
Window total	113 sqft	1362 Btuh
Wall total	806 sqft	2860 Btuh
Door total	20 sqft	320 Btuh
Ceiling total	672 sqft	682 Btuh
Floor total	See detail report	5003 Btuh
Infiltration	23 cfm	1017 Btuh
Duct loss		0 Btuh
<b>Subtotal</b>		<b>11244 Btuh</b>
Ventilation	Ex:0 cfm; Sup:0 cfm	0 Btuh
<b>TOTAL HEAT LOSS</b>		<b>11244 Btuh</b>



## SUMMER CALCULATIONS

Summer Cooling Load (for 672 sqft)

Load component	Load	
Window total	113 sqft	2555 Btuh
Wall total	806 sqft	1823 Btuh
Door total	20 sqft	240 Btuh
Ceiling total	672 sqft	921 Btuh
Floor total		0 Btuh
Infiltration	17 cfm	362 Btuh
Internal gain		4090 Btuh
Duct gain		0 Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load		0 Btuh
<b>Total sensible gain</b>		<b>9992 Btuh</b>
Latent gain(ducts)		0 Btuh
Latent gain(infiltration)		601 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		600 Btuh
<b>Total latent gain</b>		<b>1201 Btuh</b>
<b>TOTAL HEAT GAIN</b>		<b>11193 Btuh</b>



8th Edition

EnergyGauge® System Sizing  
PREPARED BY: **Evan Beamsley**  
DATE: **2026-03-08**

# System Sizing Calculations - Winter

## Residential Load - Room by Room Component Details

Project Title:  
260196 Oxley In Law Suit  
Building Type: User

Lake City, FL

3/8/2026

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 °F (TMY3 99%)  
Winter Setpoint: 70 °F (Required Manual J default)

**This calculation is for Worst Case. The house has been rotated 135 degrees.**

<b>Component Loads for Room #1: Living Kitchen</b>								
Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
2	2, NFRC 0.22	Vinyl	0.30	SW	12.0		12.0	144 Btuh
3	2, NFRC 0.22	Vinyl	0.30	NW	26.7		12.0	320 Btuh
4	2, NFRC 0.22	Vinyl	0.30	NE	37.5		12.0	450 Btuh
	Window Total					76.2(sqft)		914 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	174		3.55	618 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	149		3.55	529 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	99		3.55	351 Btuh
	Wall Total					422(sqft)		1498 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
2	Insulated - Exterior,	n	(0.400)		13		16.0	213 Btuh
	Door Total					13(sqft)		213Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.025)	38.0/0.0	370		1.0	376 Btuh
	Ceiling Total					370(sqft)		376Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	56.0 ft(perim.)		47.2	2643 Btuh
	Floor Total					370 sqft		2643 Btuh
<b>Room Envelope Subtotal:</b>								<b>5644 Btuh</b>
Infiltration	Type	Wholehouse	ACH	Room Volume	Wall Ratio	CFM=		Load
	Natural		0.23	3330	0.52	12.1		533 Btuh
Duct load	No ducts assigned to this zone.						(DLM of 0.000)	0 Btuh
Room #1	<b>Sensible Room Subtotal</b>							<b>6177 Btuh</b>

# Manual J Winter Calculations

## Residential Load - Component Details (continued)

Lake City, FL

Project Title:  
260196 Oxley In Law Suit  
Building Type: User

3/8/2026

### Component Loads for Room #2: Bed Bath

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.22	Vinyl	0.30	SE	13.3		12.0	160 Btuh
5	2, NFRC 0.22	Vinyl	0.30	NE	4.0		12.0	48 Btuh
6	2, NFRC 0.22	Vinyl	0.30	NE	20.0		12.0	240 Btuh
	Window Total					37.3(sqft)		448 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	169		3.55	600 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	102		3.55	362 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	113		3.55	399 Btuh
	Wall Total					384(sqft)		1362 Btuh
Doors	Type	Storm	Ueff.	R-Value	Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)		7		16.0	107 Btuh
	Door Total					7(sqft)		107Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value	Area	X	HTM=	Load	
2	Flat ceil/D/Shing	(0.025)	38.0/0.0	302		1.0	307 Btuh	
	Ceiling Total					302(sqft)		307Btuh
Floors	Type	Ueff.	R-Value	Size	X	HTM=	Load	
2	Slab On Grade	(1.180)	0.0	50.0 ft(perim.)		47.2	2360 Btuh	
	Floor Total					302 sqft		2360 Btuh
<b>Room Envelope Subtotal:</b>								<b>4583 Btuh</b>
Infiltration	Type	Wholehouse	ACH	Room Volume	Wall Ratio	CFM=	Load	
	Natural		0.23	2718	0.48	11.0	484 Btuh	
Duct load	No ducts assigned to this zone. (DLM of 0.000)						0 Btuh	
Room #2	<b>Sensible Room Subtotal</b>							<b>5067 Btuh</b>

### SYSTEM GROUPS (BLOCK LOADS)

Heating Loads For System(s):1 Block #1:Block1 Serving Rooms: 1	Block load	6177 Btuh
---	------------	-----------

# Manual J Winter Calculations

## Residential Load - Component Details (continued)

Lake City, FL

Project Title:  
260196 Oxley In Law Suit  
Building Type: User

3/8/2026

Heating Loads For System(s):2 Block #2:Block2 Serving Rooms: 2	Block load	5067 Btuh
---	------------	-----------

### WHOLE HOUSE TOTALS

<b>Totals for Heating</b>	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss      (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	11244 Btuh 0 Btuh 11244 Btuh
---------------------------	--	------------------------------------

### EQUIPMENT

1. Electric Heat Pump	#	12000 Btuh
2. Electric Heat Pump	#	12000 Btuh

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

# System Sizing Calculations - Summer

## Residential Load - Room by Room Component Details

Project Title:  
260196 Oxley In Law Suit

Lake City, FL

3/8/2026

Reference City: Gainesville, FL (Defaults)  
Humidity difference: 51gr.

Temperature Difference: 19.0F(TMY3 99%)  
Summer Setpoint: 75 °F (Required Manual J default)

**This calculation is for Worst Case. The house has been rotated 135 degrees.**

### Component Loads for Room #1: Living Kitchen

Window	Type*						Overhang		Window Area(sqft)			HTM		Load
	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
2	2 NFRC	0.22	0.30	No	No	SW	1.3ft	1.5ft	12.0	2.1	9.9	10	21	234 Btuh
3	2 NFRC	0.22	0.30	No	No	NW	7.3ft	1.3ft	26.7	0.0	26.7	10	20	546 Btuh
4	2 NFRC	0.22	0.30	No	No	NE	1.3ft	1.0ft	37.5	0.0	37.5	10	20	768 Btuh
Window Total											76 (sqft)		1549 Btuh	
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load				
				Cav/Sheath										
3	Frame - Wood - Ext	0.09	13.0/0.0			174.0		2.3	394 Btuh					
4	Frame - Wood - Ext	0.09	13.0/0.0			149.0		2.3	337 Btuh					
5	Frame - Wood - Ext	0.09	13.0/0.0			99.0		2.3	224 Btuh					
Wall Total						422 (sqft)				955 Btuh				
Doors	Type	Area (sqft)		HTM		Load								
2	Insulated - Exterior	13.3		12.0		160 Btuh								
Door Total		13 (sqft)				160 Btuh								
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load								
1	Vented Attic/DarkShingle	0.025	38.0/0.0	370.0	1.37	507 Btuh								
Ceiling Total				370 (sqft)		507 Btuh								
Floors	Type	R-Value		Size	HTM	Load								
1	Slab On Grade	0.0		370 (ft-perimeter)	0.0	0 Btuh								
Floor Total				370.0 (sqft)		0 Btuh								
Zone Envelope Subtotal:						3171 Btuh								
Infiltration	Type	Wholehouse ACH		Volume(cuft)	Wall Ratio	CFM=	Load							
	Natural	0.17		3330	0.52	9.1	190 Btuh							
Internal gain	Occupants	Btuh/occupant		Appliance		Load								
	2	X 230 +		2400		2860 Btuh								
Sensible Envelope Load:						6221 Btuh								
Duct load	No duct system No ducts assigned to this zone.					(DGM of 0.000)	0 Btuh							
<b>Sensible Zone Load</b>						<b>6221 Btuh</b>								

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Project Title: Climate:FL\_GAINESVILLE\_REGIONAL\_A  
260196 Oxley In Law Suit

Lake City, FL

3/8/2026

### Component Loads for Room #2: Bed Bath

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, 0.30	No	No	SE	1.3ft	1.5ft	13.3	1.4	11.9	10	21	271	Btuh	
5	2 NFRC	0.22, 0.30	No	No	NE	1.3ft	1.0ft	4.0	0.0	4.0	10	20	82	Btuh	
6	2 NFRC	0.22, 0.30	No	No	NE	1.3ft	1.0ft	20.0	0.0	20.0	10	20	410	Btuh	
<b>Window Total</b>									<b>37 (sqft)</b>					<b>762</b>	<b>Btuh</b>
Walls	Type	U-Value		R-Value		Area(sqft)			HTM		Load				
				Cav/Sheath											
1	Frame - Wood - Ext	0.09	13.0/0.0			169.0			2.3	383		Btuh			
2	Frame - Wood - Ext	0.09	13.0/0.0			102.0			2.3	231		Btuh			
6	Frame - Wood - Ext	0.09	13.0/0.0			112.5			2.3	255		Btuh			
<b>Wall Total</b>						<b>384 (sqft)</b>					<b>868</b>		<b>Btuh</b>		
Doors	Type	Area(sqft)			HTM		Load								
1	Insulated - Exterior	6.7			12.0		80								
<b>Door Total</b>		<b>7 (sqft)</b>					<b>80</b>								
							<b>80</b>								
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load					
2	Vented Attic/DarkShingle	0.025	38.0/0.0			302.0			1.37	414		Btuh			
<b>Ceiling Total</b>						<b>302 (sqft)</b>				<b>414</b>		<b>Btuh</b>			
Floors	Type	R-Value			Size		HTM		Load						
2	Slab On Grade	0.0			302 (ft-perimeter)		0.0		0		Btuh				
<b>Floor Total</b>						<b>302.0 (sqft)</b>				<b>0</b>		<b>Btuh</b>			
<b>Zone Envelope Subtotal:</b>											<b>2124</b>		<b>Btuh</b>		
Infiltration	Type	Wholehouse ACH		Volume(cuft)		Wall Ratio		CFM=		Load					
	Natural	0.17		2718		0.48		8.3		173		Btuh			
Internal gain	Occupants			Btuh/occupant		Appliance		Load							
	1			X 230		+		1000		1230		Btuh			
<b>Sensible Envelope Load:</b>											<b>3527</b>		<b>Btuh</b>		
Duct load	No duct systemNo ducts assigned to this zone. (DGM of 0.000)										0		Btuh		
<b>Sensible Zone Load</b>											<b>3527</b>		<b>Btuh</b>		

The following window Excursion will be assigned to the system loads.

<b>Windows</b>	July excursion for System 1	176	Btuh
	July excursion for System 2	68	Btuh
	<b>Excursion Subtotal:</b>	<b>244</b>	<b>Btuh</b>

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Project Title: Climate:FL\_GAINESVILLE\_REGIONAL\_A  
260196 Oxley In Law Suit

Lake City, FL

3/8/2026

<b>Duct load</b>		0 Btuh
	<b>Sensible Excursion Load</b>	<b>244 Btuh</b>

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Project Title: Climate:FL\_GAINESVILLE\_REGIONAL\_A  
260196 Oxley In Law Suit

Lake City, FL

3/8/2026

**SYSTEM GROUPS (BLOCK LOADS)**

<p style="text-align: center;"><b>Cooling Loads</b></p> <p style="text-align: center;"><b>For System(s): 1</b></p> <p style="text-align: center;"><b>Block #1:Block1</b></p> <p style="text-align: center;"><b>Serving Zones:</b></p> <p style="text-align: center;"><b>1</b></p>	<p><b>Sensible Envelope Load</b></p> <p>Window Excursion</p> <p>Sensible Duct Load (duct gain multiplier of 0.000) (Includes 0 Btuh due to window excursion)</p> <p>Sensible ventilation (Ex:0 cfm; Sup:0 cfm)</p> <p style="text-align: center;"><b>Zone Sensible gain</b></p> <p>Latent infiltration/ventilation gain</p> <p>Latent duct gain</p> <p>Latent occupant gain</p> <p>Latent other gain</p> <p style="text-align: center;"><b>Total block load</b></p>	<p><b>6221 Btuh</b></p> <p>176 Btuh</p> <p>0 Btuh</p> <p>0 Btuh</p> <p><b>6397 Btuh</b></p> <p>315 Btuh</p> <p>0 Btuh</p> <p>400 Btuh</p> <p>0 Btuh</p> <p><b>7112 Btuh</b></p>
---	---	---

<p style="text-align: center;"><b>Cooling Loads</b></p> <p style="text-align: center;"><b>For System(s): 2</b></p> <p style="text-align: center;"><b>Block #2:Block2</b></p> <p style="text-align: center;"><b>Serving Zones:</b></p> <p style="text-align: center;"><b>2</b></p>	<p><b>Sensible Envelope Load</b></p> <p>Window Excursion</p> <p>Sensible Duct Load (duct gain multiplier of 0.000) (Includes 0 Btuh due to window excursion)</p> <p>Sensible ventilation (Ex:0 cfm; Sup:0 cfm)</p> <p style="text-align: center;"><b>Zone Sensible gain</b></p> <p>Latent infiltration/ventilation gain</p> <p>Latent duct gain</p> <p>Latent occupant gain</p> <p>Latent other gain</p> <p style="text-align: center;"><b>Total block load</b></p>	<p><b>3527 Btuh</b></p> <p>68 Btuh</p> <p>0 Btuh</p> <p>0 Btuh</p> <p><b>3595 Btuh</b></p> <p>286 Btuh</p> <p>0 Btuh</p> <p>200 Btuh</p> <p>0 Btuh</p> <p><b>4081 Btuh</b></p>
---	---	--

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Project Title: Climate:FL\_GAINESVILLE\_REGIONAL\_A  
 260196 Oxley In Law Suit

Lake City, FL

3/8/2026

WHOLE HOUSE TOTALS		
<b>Whole House Totals for Cooling</b>	<b>Sensible Envelope Load All Zones</b>	<b>9992 Btuh</b>
	Sensible Duct Load	0 Btuh
	<b>Total Sensible Zone Loads</b>	<b>9992 Btuh</b>
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	<b>Total sensible gain</b>	<b>9992 Btuh</b>
	Latent infiltration gain (for 51 gr. humidity difference)	601 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (3.0 people @ 200 Btuh per person)	600 Btuh
	Latent other gain	0 Btuh
	<b>Latent total gain</b>	<b>1201 Btuh</b>
<b>TOTAL GAIN</b>	<b>11193 Btuh</b>	

EQUIPMENT		
1. Central Unit	#	9000 Btuh
2. Central Unit	#	9000 Btuh

\*Key: Window types (Panes - 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