

Residential System Sizing Calculation

Summary

Tim & Lisa Bixler
266 SW Challenger Ln
Lake City, FL 32025

Project Title:
Bixler Hanger

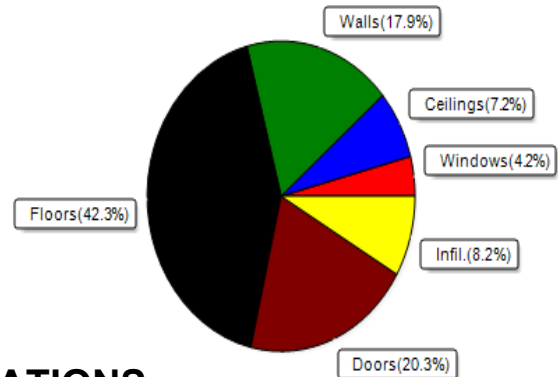
8/18/2025

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (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	14439 Btuh	Total cooling load calculation	11289 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	232.0 33500	Sensible (SHR = 0.75)	259.4 25125
Heat Pump + Auxiliary(0.0kW)	232.0 33500	Latent	522.8 8375
		Total (Electric Heat Pump)	296.8 33500

WINTER CALCULATIONS

Winter Heating Load (for 1000 sqft)

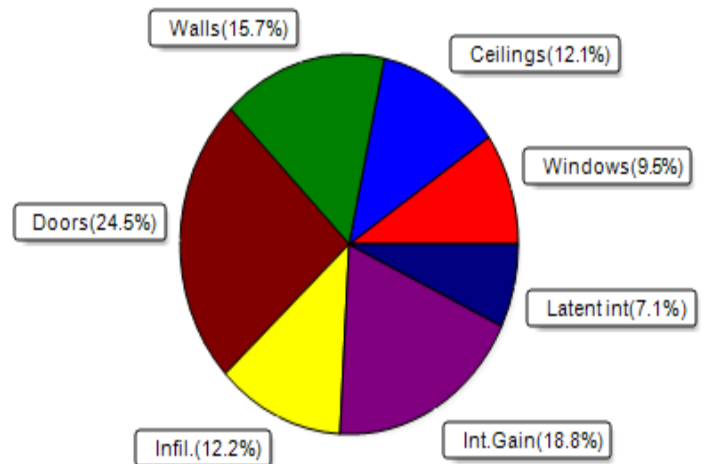
Load component	Load
Window total 45 sqft	599 Btuh
Wall total 903 sqft	2582 Btuh
Door total 172 sqft	2927 Btuh
Ceiling total 1100 sqft	1033 Btuh
Floor total 1000 sqft	6112 Btuh
Infiltration 29 cfm	1185 Btuh
Duct loss	0 Btuh
Subtotal	14439 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	14439 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1000 sqft)

Load component	Load
Window total 45 sqft	1078 Btuh
Wall total 903 sqft	1775 Btuh
Door total 172 sqft	2769 Btuh
Ceiling total 1100 sqft	1368 Btuh
Floor total	0 Btuh
Infiltration 22 cfm	577 Btuh
Internal gain	2120 Btuh
Duct gain	0 Btuh
Sens. Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	9687 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	802 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	800 Btuh
Total latent gain	1602 Btuh
TOTAL HEAT GAIN	11289 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

8 / 18 / 2025

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Tim & Lisa Bixler
266 SW Challenger Ln
Lake City, FL 32025

Project Title:
Bixler Hanger
Building Type: User

8/18/2025

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	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.36	N	15.0		13.3	200 Btuh
2	2, NFRC 0.25	Vinyl	0.36	N	6.0		13.3	80 Btuh
3	2, NFRC 0.25	Vinyl	0.36	W	9.0		13.3	120 Btuh
4	2, NFRC 0.25	Vinyl	0.36	E	15.0		13.3	200 Btuh
	Window Total					45.0(sqft)		599 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	247		2.86	706 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	151		2.86	432 Btuh
3	Frame - Wood	- Adj	(0.077)	19.0/0.0	360		2.86	1029 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	145		2.86	415 Btuh
	Wall Total					903(sqft)		2582 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Garage,	n	(0.460)		40		17.0	681 Btuh
2	Insulated - Exterior,	n	(0.460)		20		17.0	340 Btuh
3	Insulated - Exterior,	n	(0.460)		112		17.0	1906 Btuh
	Door Total					172(sqft)		2927Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.025)	38.0/0.0	1100		0.94	1033 Btuh
	Ceiling Total					1100(sqft)		1033Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	140.0 ft(perim.)		43.7	6112 Btuh
	Floor Total					1000 sqft		6112 Btuh
	Envelope Subtotal:							13254 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.22	8000	1.00	29.3		1185 Btuh
Duct load	NA, R0.0, Supply(), Return() (DLM of 0.000)							0 Btuh
All Zones	Sensible Subtotal All Zones							14439 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Tim & Lisa Bixler
266 SW Challenger Ln
Lake City, FL 32025

Project Title:
Bixler Hanger
Building Type: User

8/18/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	14439 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	14439 Btuh

EQUIPMENT

1. Electric Heat Pump	#	33500 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

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Tim & Lisa Bixler
266 SW Challenger Ln
Lake City, FL 32025

Project Title:
Bixler Hanger

8/18/2025

Reference City: Gainesville, FL (Defaults)
Humidity difference: 54gr.

Temperature Difference: 24.0F(MJ8 99%/Cu)
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	0.25, 0.36	No	No	N	1.0ft.	8.0ft.	15.0	0.0	15.0	14	14	208 Btuh	
2	2 NFRC	0.25, 0.36	No	No	N	1.0ft.	8.0ft.	6.0	0.0	6.0	14	14	83 Btuh	
3	2 NFRC	0.25, 0.36	No	No	W	1.5ft.	8.0ft.	9.0	0.0	9.0	14	33	295 Btuh	
4	2 NFRC	0.25, 0.36	No	No	E	1.5ft.	8.0ft.	15.0	0.0	15.0	14	33	491 Btuh	
Window Total									45 (sqft)					1078 Btuh
Walls	Type	U-Value	R-Value	Area(sqft)		HTM		Load						
			Cav/Sheath											
1	Frame - Wood - Ext	0.08	19.0/0.0	247.0		2.0		504 Btuh						
2	Frame - Wood - Ext	0.08	19.0/0.0	151.0		2.0		308 Btuh						
3	Frame - Wood - Adj	0.08	19.0/0.0	360.0		1.9		668 Btuh						
4	Frame - Wood - Ext	0.08	19.0/0.0	145.0		2.0		296 Btuh						
Wall Total				903 (sqft)				1775 Btuh						
Doors	Type	Area (sqft)		HTM		Load								
1	Insulated - Garage	40.0		16.1		644 Btuh								
2	Insulated - Exterior	20.0		16.1		322 Btuh								
3	Insulated - Exterior	112.0		16.1		1803 Btuh								
Door Total		172 (sqft)				2769 Btuh								
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)		HTM		Load						
1	Vented Attic/DarkShingle/RB	0.025	38.0/0.0	1100.0		1.24		1368 Btuh						
Ceiling Total				1100 (sqft)				1368 Btuh						
Floors	Type	R-Value		Size		HTM		Load						
1	Slab On Grade	0.0		1000 (ft-perimeter)		0.0		0 Btuh						
Floor Total				1000.0 (sqft)				0 Btuh						
Envelope Subtotal:										6990 Btuh				
Infiltration	Type	Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load				
	Natural	0.16		8000		1		21.9		577 Btuh				
Internal gain	Occupants		Btuh/occupant		Appliance		Load							
	4		X 230		+		1200		2120 Btuh					
Sensible Envelope Load:										9687 Btuh				
Duct load	NA, Supply(R0.0-None), Return(R0.0-None) (DGM of 0.000)									0 Btuh				
Sensible Load All Zones										9687 Btuh				

Manual J Summer Calculations

Residential Load - Component Details (continued)

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266 SW Challenger Ln
Lake City, FL 32025

Project Title:
Bixler Hanger

Climate:FL_GAINESVILLE_REGIONAL_A

8/18/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	9687 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	9687 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	9687 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	802 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (4.0 people @ 200 Btuh per person)	800 Btuh
	Latent other gain	0 Btuh
	Latent total gain	1602 Btuh
TOTAL GAIN	11289 Btuh	

EQUIPMENT

1. Central Unit	#	33500 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)



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