

System Sizing Calculation

Summary

Project Title
Willis Office

, FL

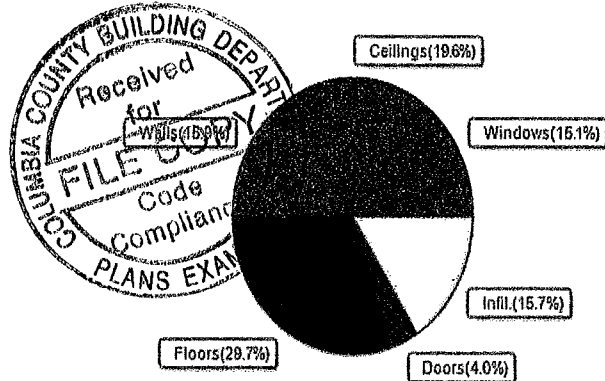
3/2/2026

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
Total heating load calculation	49315	Btuh	Total cooling load calculation	67911	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	243.3	120000	Sensible (SHR = 0.78)	186.0	93600
Heat Pump + Auxiliary(0.0kW)	243.3	120000	Latent	150.2	26400
			Total (Electric Heat Pump)	176.7	120000

WINTER CALCULATIONS

Winter Heating Load (for 5150 sqft)

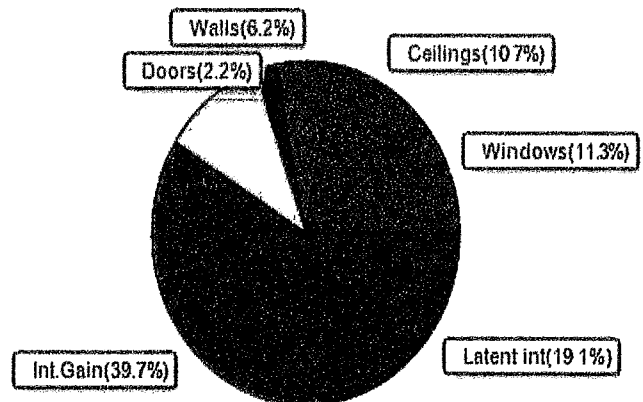
Load component		Load	
Window total	716 sqft	7450	Btuh
Wall total	2531 sqft	7822	Btuh
Door total	108 sqft	1987	Btuh
Ceiling total	5150 sqft	9680	Btuh
Floor total	5150 sqft	14632	Btuh
Infiltration	177 cfm	7743	Btuh
Duct loss		0	Btuh
Subtotal		49315	Btuh
Ventilation	Ex 0 cfm, Sup 0 cfm	0	Btuh
TOTAL HEAT LOSS		49315	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 5150 sqft)

Load component		Load	
Window total	716 sqft	7690	Btuh
Wall total	2531 sqft	4185	Btuh
Door total	108 sqft	1490	Btuh
Ceiling total	5150 sqft	7260	Btuh
Floor total		0	Btuh
Infiltration	132 cfm	2759	Btuh
Internal gain		26950	Btuh
Duct gain		0	Btuh
Sens Ventilation	Ex 0 cfm, Sup 0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		50334	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		4577	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		13000	Btuh
Total latent gain		17577	Btuh
TOTAL HEAT GAIN		67911	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY

DATE 3-2-26

[Signature]

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Willis Office

, FL

3/2/2026

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	0.20	0.26	No	No	N	1.5ft	1.3ft	90.0	0.0	90.0	9	9	823 Btuh	
2	2 NFRC	0.20	0.26	No	No	E	1.5ft	1.3ft	30.0	0.0	30.0	9	24	727 Btuh	
3	2 NFRC	0.20	0.26	No	No	S	1.5ft	1.3ft	108.0	108.0	0.0	9	11	988 Btuh	
4	2 NFRC	0.20	0.26	No	No	S	1.5ft	1.3ft	65.1	39.5	25.5	9	11	635 Btuh	
5	2 NFRC	0.20	0.26	No	No	S	1.5ft	1.3ft	81.6	39.5	42.0	9	11	812 Btuh	
6	2 NFRC	0.20	0.26	No	No	S	1.5ft	1.3ft	57.0	43.1	13.9	9	11	543 Btuh	
7	2 NFRC	0.20	0.26	No	No	S	1.5ft	1.3ft	81.6	39.5	42.0	9	11	812 Btuh	
8	2 NFRC	0.20	0.26	No	No	S	1.5ft	1.3ft	65.1	39.5	25.5	9	11	635 Btuh	
9	2 NFRC	0.20	0.26	No	No	S	1.5ft	1.3ft	108.0	108.0	0.0	9	11	988 Btuh	
10	2 NFRC	0.20	0.26	No	No	W	1.5ft	1.3ft	15.0	0.0	15.0	9	24	363 Btuh	
11	2 NFRC	0.20	0.26	No	No	W	1.5ft	1.3ft	15.0	0.0	15.0	9	24	363 Btuh	
Window Total									716 (sqft)					7690 Btuh	
Walls	Type	U-Value				R-Value		Area(sqft)		HTM		Load			
						Cav/Sheath									
1	Frame - Wood - Ext	0.08				19.0/0.0		910.0		1.7		1505 Btuh			
2	Frame - Wood - Ext	0.08				19.0/0.0		430.0		1.7		711 Btuh			
3	Frame - Wood - Ext	0.08				19.0/0.0		242.0		1.7		400 Btuh			
4	Frame - Wood - Ext	0.08				19.0/0.0		50.0		1.7		83 Btuh			
5	Frame - Wood - Ext	0.08				19.0/0.0		156.7		1.7		259 Btuh			
6	Frame - Wood - Ext	0.08				19.0/0.0		50.0		1.7		83 Btuh			
7	Frame - Wood - Ext	0.08				19.0/0.0		242.0		1.7		400 Btuh			
8	Frame - Wood - Ext	0.08				19.0/0.0		450.0		1.7		744 Btuh			
Wall Total									2531 (sqft)					4185 Btuh	
Doors	Type	U-Value				R-Value		Area (sqft)		HTM		Load			
1	Insulated - Exterior	0.047				21.0/0.0		20.0		13.8		276 Btuh			
2	Insulated - Exterior	0.047				21.0/0.0		20.0		13.8		276 Btuh			
3	Insulated - Exterior	0.047				21.0/0.0		48.0		13.8		662 Btuh			
4	Insulated - Exterior	0.047				21.0/0.0		20.0		13.8		276 Btuh			
Door Total									108 (sqft)					1490 Btuh	
Ceilings	Type/Color/Surface	U-Value				R-Value		Area(sqft)		HTM		Load			
1	SnglAsmb no airsp/DarkMetal	0.047				21.0/0.0		5150.0		1.41		7260 Btuh			
Ceiling Total									5150 (sqft)					7260 Btuh	
Floors	Type	U-Value				R-Value		Size		HTM		Load			
1	Slab On Grade	0.047				21.0/0.0		5150 (ft-perimeter)		0.0		0 Btuh			
Floor Total									5150.0 (sqft)					0 Btuh	
Envelope Subtotal:													20625 Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title:
Willis Office

Climate:FL_GAINESVILLE_REGIONAL_A

, FL

3/2/2026

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.15	51500	1	132.4	2759 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		65	X 230	+	12000	26950 Btuh
					Sensible Envelope Load:	50334 Btuh
Duct load	Extremely sealed, Supply(R6 0-Cond), Return(R6 0-Cond)				(DGM of 0.000)	0 Btuh
					Sensible Load All Zones	50334 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title.
Willis Office

Climate.FL_GAINESVILLE_REGIONAL_A

, FL

3/2/2026

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	50334 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	50334 Btuh
	Sensible ventilation (Ex:0 cfm, Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	50334 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	4577 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (65 0 people @ 200 Btuh per person)	13000 Btuh
	Latent other gain	0 Btuh
	Latent total gain	17577 Btuh
	TOTAL GAIN	67911 Btuh

EQUIPMENT

1 Central Unit	Multiple #Multiple	120000 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

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Project Title:
Willis Office
Building Type: User

, FL

3/2/2026

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 0.20	Vinyl	0.26	N	90.0		10.4	936 Btuh
2	2, NFRC 0.20	Vinyl	0.26	E	30.0		10.4	312 Btuh
3	2, NFRC 0.20	Vinyl	0.26	S	108.0		10.4	1123 Btuh
4	2, NFRC 0.20	Vinyl	0.26	S	65.1		10.4	677 Btuh
5	2, NFRC 0.20	Vinyl	0.26	S	81.6		10.4	848 Btuh
6	2, NFRC 0.20	Vinyl	0.26	S	57.0		10.4	593 Btuh
7	2, NFRC 0.20	Vinyl	0.26	S	81.6		10.4	848 Btuh
8	2, NFRC 0.20	Vinyl	0.26	S	65.1		10.4	677 Btuh
9	2, NFRC 0.20	Vinyl	0.26	S	108.0		10.4	1123 Btuh
10	2, NFRC 0.20	Vinyl	0.26	W	15.0		10.4	156 Btuh
11	2, NFRC 0.20	Vinyl	0.26	W	15.0		10.4	156 Btuh
Window Total					716.3(sqft)			7450 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	910		3.09	2813 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	430		3.09	1329 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	242		3.09	748 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	50		3.09	155 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	157		3.09	484 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	50		3.09	155 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	242		3.09	748 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	450		3.09	1391 Btuh
Wall Total					2531(sqft)			7822 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		20		18.4	368 Btuh
2	Insulated - Exterior,	n	(0.460)		20		18.4	368 Btuh
3	Insulated - Exterior,	n	(0.460)		48		18.4	883 Btuh
4	Insulated - Exterior,	n	(0.460)		20		18.4	368 Btuh
Door Total					108(sqft)			1987Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Single as/D/Metal		(0.047)	21.0/0.0	5150		1.9	9680 Btuh
Ceiling Total					5150(sqft)			9680Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	310.0 ft(perim.)		47.2	14632 Btuh
Floor Total					5150 sqft			14632 Btuh
Envelope Subtotal:								41572 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.21	51500	1.00	176.5		7743 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Project Title:
Willis Office
Building Type. User

, FL

3/2/2026

Duct load	Extremely sealed, R6.0, Supply(Con), Return(Con) (DLM of 0 000)	0 Btuh
All Zones	Sensible Subtotal All Zones	49315 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex.0 cfm; Sup 0 cfm) Total Heat Loss	49315 Btuh 0 Btuh 49315 Btuh
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EQUIPMENT

1. Electric Heat Pump	Multiple #Multiple	120000 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