

Residential System Sizing Calculation

Summary

Project Title:
Heatherman

, FL

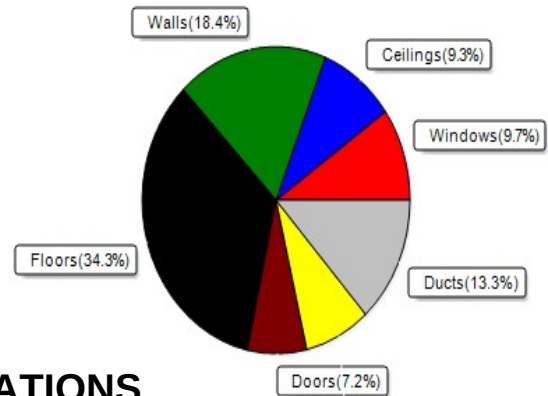
9/16/2025

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	22431 Btuh	Total cooling load calculation	21540 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	160.5 36000	Sensible (SHR = 0.75)	142.9 27000
Heat Pump + Auxiliary(0.0kW)	160.5 36000	Latent	339.3 9000
		Total (Electric Heat Pump)	167.1 36000

WINTER CALCULATIONS

Winter Heating Load (for 1629 sqft)

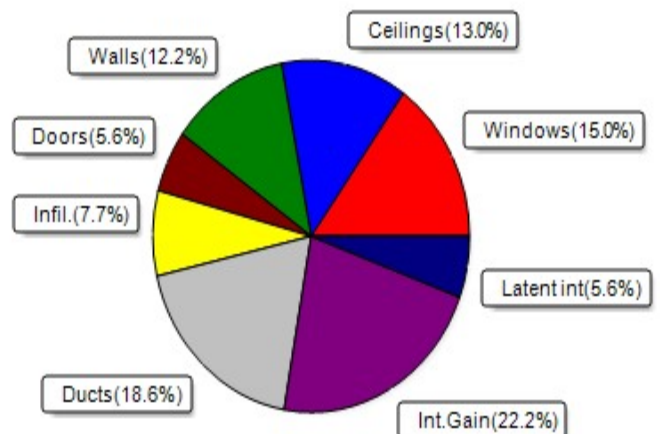
Load component	Load
Window total 210 sqft	2184 Btuh
Wall total 1160 sqft	4118 Btuh
Door total 88 sqft	1619 Btuh
Ceiling total 1629 sqft	2075 Btuh
Floor total 1629 sqft	7694 Btuh
Infiltration 40 cfm	1761 Btuh
Duct loss	2980 Btuh
Subtotal	22431 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	22431 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1629 sqft)

Load component	Load
Window total 210 sqft	3238 Btuh
Wall total 1160 sqft	2625 Btuh
Door total 88 sqft	1214 Btuh
Ceiling total 1629 sqft	2801 Btuh
Floor total	0 Btuh
Infiltration 30 cfm	627 Btuh
Internal gain	4780 Btuh
Duct gain	3602 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	18888 Btuh
Latent gain(ducts)	411 Btuh
Latent gain(infiltration)	1041 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	2652 Btuh
TOTAL HEAT GAIN	21540 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 9-16-25

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Heatherman

, FL

9/16/2025

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	0.20, 0.26	No	No	N	1.5ft	1.3ft	24.0	0.0	24.0	9	9	220 Btuh	
2	2 NFRC	0.20, 0.26	No	No	N	1.5ft	1.3ft	30.0	0.0	30.0	9	9	274 Btuh	
3	2 NFRC	0.20, 0.26	No	No	E	1.5ft	1.3ft	45.0	0.0	45.0	9	24	1090 Btuh	
4	2 NFRC	0.20, 0.26	No	No	S	1.5ft	1.3ft	72.0	72.0	0.0	9	11	659 Btuh	
5	2 NFRC	0.20, 0.26	No	No	W	1.5ft	1.3ft	30.0	0.0	30.0	9	24	727 Btuh	
6	2 NFRC	0.20, 0.26	No	No	W	1.5ft	1.3ft	9.0	0.0	9.0	9	24	218 Btuh	
Excursion A														
Window Total								210 (sqft)					3238 Btuh	
Walls	Type					U-Value	R-Value	Area(sqft)			HTM		Load	
							Cav/Sheath							
1	Frame - Wood - Ext					0.09	13.0/0.0	317.0			2.3		717 Btuh	
2	Frame - Wood - Ext					0.09	13.0/0.0	273.0			2.3		618 Btuh	
3	Frame - Wood - Ext					0.09	13.0/0.0	291.0			2.3		659 Btuh	
4	Frame - Wood - Ext					0.09	13.0/0.0	279.0			2.3		631 Btuh	
Wall Total								1160 (sqft)					2625 Btuh	
Doors	Type							Area (sqft)			HTM		Load	
1	Insulated - Exterior							20.0			13.8		276 Btuh	
2	Insulated - Exterior							20.0			13.8		276 Btuh	
3	Insulated - Exterior							48.0			13.8		662 Btuh	
Door Total								88 (sqft)					1214 Btuh	
Ceilings	Type/Color/Surface					U-Value	R-Value	Area(sqft)			HTM		Load	
1	Vented Attic/DarkShingle					0.032	30.0/0.0	1629.0			1.72		2801 Btuh	
Ceiling Total								1629 (sqft)					2801 Btuh	
Floors	Type						R-Value	Size			HTM		Load	
1	Slab On Grade						0.0	1629 (ft-perimeter)			0.0		0 Btuh	
Floor Total								1629.0 (sqft)					0 Btuh	
	Envelope Subtotal:												9879 Btuh	
Infiltration	Type					Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load
	Natural					0.12		14661		1		30.1		
Internal gain						Occupants		Btuh/occupant		Appliance		Load		
						6		X	230	+	3400		4780 Btuh	
	Sensible Envelope Load:												15286 Btuh	
Duct load	Extremely sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.236)												3602 Btuh	
	Sensible Load All Zones												18888 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title:
Heatherman

Climate:FL_GAINESVILLE_REGIONAL_A

, FL

9/16/2025

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	15286 Btuh
	Sensible Duct Load	3602 Btuh
	Total Sensible Zone Loads	18888 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	18888 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1041 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	411 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2652 Btuh
	TOTAL GAIN	21540 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(½))

(Ornt - compass orientation)



Version 8

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

, FL

Project Title:
Heatherman
Building Type: User

9/16/2025

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 0.20	Vinyl	0.26	N	24.0		10.4	250 Btuh
2	2, NFRC 0.20	Vinyl	0.26	N	30.0		10.4	312 Btuh
3	2, NFRC 0.20	Vinyl	0.26	E	45.0		10.4	468 Btuh
4	2, NFRC 0.20	Vinyl	0.26	S	72.0		10.4	749 Btuh
5	2, NFRC 0.20	Vinyl	0.26	W	30.0		10.4	312 Btuh
6	2, NFRC 0.20	Vinyl	0.26	W	9.0		10.4	94 Btuh
	Window Total				210.0(sqft)			2184 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	317		3.55	1125 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	273		3.55	969 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	291		3.55	1033 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	279		3.55	991 Btuh
	Wall Total				1160(sqft)			4118 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
	Door Total				88(sqft)			1619Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.032)	30.0/0.0	1629		1.3	2075 Btuh
	Ceiling Total				1629(sqft)			2075Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	163.0 ft(perim.)		47.2	7694 Btuh
	Floor Total				1629 sqft			7694 Btuh
	Envelope Subtotal:							17690 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	14661	1.00	40.2		1761 Btuh
Duct load	Extremely sealed, R6.0, Supply(Att), Return(Att)						(DLM of 0.153)	2980 Btuh
All Zones	Sensible Subtotal All Zones							22431 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Heatherman
Building Type: User

9/16/2025

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	22431 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	22431 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