

Residential System Sizing Calculation

Summary

Adam & Carrie Hogue
229 SW Stell Glen
Lake City, FL 32024

Project Title:
Hogue Residence

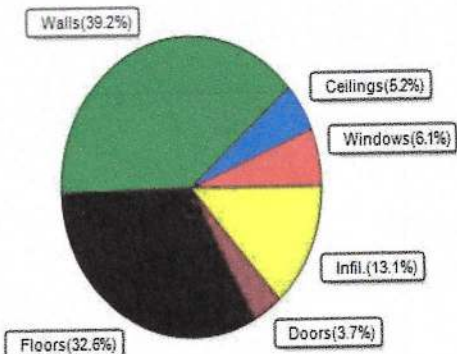
6/28/2022

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 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	19672 Btuh	Total cooling load calculation	12480 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 19672	Sensible (SHR = 0.70)	86.0 8730
Heat Pump + Auxiliary(0.0kW)	100.0 19672	Latent	160.7 3741
		Total (Electric Heat Pump)	99.9 12472

WINTER CALCULATIONS

Winter Heating Load (for 1410 sqft)

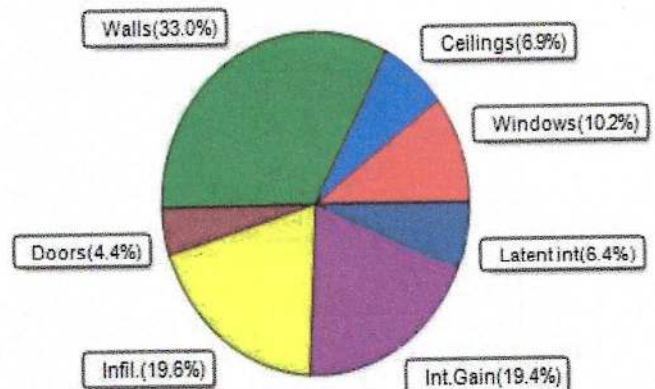
Load component		Load	
Window total	84 sqft	1210	Btuh
Wall total	1919 sqft	7705	Btuh
Door total	40 sqft	736	Btuh
Ceiling total	1001 sqft	1016	Btuh
Floor total	See detail report	6419	Btuh
Infiltration	59 cfm	2585	Btuh
Duct loss		0	Btuh
Subtotal		19672	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		19672	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1410 sqft)

Load component		Load	
Window total	84 sqft	1273	Btuh
Wall total	1919 sqft	4122	Btuh
Door total	40 sqft	552	Btuh
Ceiling total	1001 sqft	864	Btuh
Floor total		0	Btuh
Infiltration	44 cfm	921	Btuh
Internal gain		2420	Btuh
Duct gain		0	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		10152	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		1528	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		800	Btuh
Total latent gain		2328	Btuh
TOTAL HEAT GAIN		12480	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 6 / 28 / 2022

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Adam & Carrie Hogue
229 SW Stell Glen
Lake City, FL 32024

Project Title:
Hogue Residence
Building Type: User

6/28/2022

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.36	S	30.0		14.4	432 Btuh
2	2, NFRC 0.25	Vinyl	0.36	N	15.0		14.4	216 Btuh
3	2, NFRC 0.25	Vinyl	0.36	W	9.0		14.4	130 Btuh
4	2, NFRC 0.25	Vinyl	0.36	N	15.0		14.4	216 Btuh
5	2, NFRC 0.25	Vinyl	0.36	S	15.0		14.4	216 Btuh
Window Total					84.0(sqft)			1210 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Steel	- Ext	(0.100)	19.0/0.0	435		4.02	1747 Btuh
2	Frame - Steel	- Ext	(0.100)	19.0/0.0	231		4.02	926 Btuh
3	Frame - Steel	- Ext	(0.100)	19.0/0.0	32		4.02	129 Btuh
4	Frame - Steel	- Ext	(0.100)	19.0/0.0	64		4.02	257 Btuh
5	Frame - Steel	- Ext	(0.100)	19.0/0.0	80		4.02	321 Btuh
6	Frame - Steel	- Ext	(0.100)	19.0/0.0	289		4.02	1161 Btuh
7	Frame - Steel	- Ext	(0.100)	19.0/0.0	92		4.02	369 Btuh
8	Frame - Steel	- Ext	(0.100)	19.0/0.0	242		4.02	971 Btuh
9	Frame - Steel	- Ext	(0.100)	19.0/0.0	115		4.02	461 Btuh
10	Frame - Steel	- Ext	(0.100)	19.0/0.0	225		4.02	904 Btuh
11	Frame - Steel	- Ext	(0.100)	19.0/0.0	115		4.02	461 Btuh
Wall Total					1919(sqft)			7705 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
Door Total					40(sqft)			736Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Vented Attic/L/Metal		(0.025)	38.0/0.0	550		1.0	558 Btuh
2	Vented Attic/L/Metal		(0.025)	38.0/0.0	451		1.0	458 Btuh
Ceiling Total					1001(sqft)			1016Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	136.0 ft(perim.)		47.2	6419 Btuh
2	Interior		(1.180)	19.0	430.0 sqft		0.0	0 Btuh
Floor Total					1410 sqft			6419 Btuh
Envelope Subtotal:								17087 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.23	15200	1.00	59.0		2585 Btuh
Duct load	NA, R0.0, Supply(), Return() (DLM of 0.000)							0 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Adam & Carrie Hogue
229 SW Stell Glen
Lake City, FL 32024

Project Title:
Hogue Residence
Building Type: User

6/28/2022

All Zones	Sensible Subtotal All Zones	19672 Btuh
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WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	19672 Btuh 0 Btuh 19672 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	19672 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

Adam & Carrie Hogue
229 SW Stell Glen
Lake City, FL 32024

Project Title:
Hogue Residence

6/28/2022

Reference City: Gainesville, FL

Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

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	S		1.0ft.	11.0f	30.0	0.0	30.0	12	14	422	Btuh
2	2 NFRC	0.25, 0.36	No	No	N		1.0ft.	10.0f	15.0	0.0	15.0	12	12	181	Btuh
3	2 NFRC	0.25, 0.36	No	No	W		1.0ft.	10.0f	9.0	0.0	9.0	12	31	278	Btuh
4	2 NFRC	0.25, 0.36	No	No	N		1.0ft.	3.0ft.	15.0	0.0	15.0	12	12	181	Btuh
5	2 NFRC	0.25, 0.36	No	No	S		1.0ft.	4.0ft.	15.0	5.0	10.0	12	14	201	Btuh
	Excursion													9	Btuh
	Window Total								84 (sqft)					1273 Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)			HTM		Load	
								Cav/Sheath							
1	Frame - Steel- Ext						0.10	19.0/0.0	435.0			2.1		935 Btuh	
2	Frame - Steel- Ext						0.10	19.0/0.0	230.7			2.1		496 Btuh	
3	Frame - Steel- Ext						0.10	19.0/0.0	32.0			2.1		69 Btuh	
4	Frame - Steel- Ext						0.10	19.0/0.0	64.0			2.1		138 Btuh	
5	Frame - Steel- Ext						0.10	19.0/0.0	80.0			2.1		172 Btuh	
6	Frame - Steel- Ext						0.10	19.0/0.0	289.0			2.1		621 Btuh	
7	Frame - Steel- Ext						0.10	19.0/0.0	92.0			2.1		198 Btuh	
8	Frame - Steel- Ext						0.10	19.0/0.0	241.7			2.1		519 Btuh	
9	Frame - Steel- Ext						0.10	19.0/0.0	114.7			2.1		246 Btuh	
10	Frame - Steel- Ext						0.10	19.0/0.0	225.0			2.1		483 Btuh	
11	Frame - Steel- Ext						0.10	19.0/0.0	114.7			2.1		246 Btuh	
	Wall Total								1919 (sqft)					4122 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			
	Door Total								40 (sqft)					552 Btuh	
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)			HTM		Load	
1	Vented Attic/Light/Metal/RB						0.025	38.0/0.0	550.0			0.86		475 Btuh	
2	Vented Attic/Light/Metal/RB						0.025	38.0/0.0	451.0			0.86		389 Btuh	
	Ceiling Total								1001 (sqft)					864 Btuh	
Floors	Type						R-Value		Size			HTM		Load	
1	Slab On Grade						0.0		980 (ft-perimeter)			0.0		0 Btuh	
2	Interior						19.0		430 (sqft)			0.0		0 Btuh	
	Floor Total								1410.0 (sqft)					0 Btuh	
	Envelope Subtotal:													6811 Btuh	
Infiltration	Type						Average ACH	Volume(cuft)			Wall Ratio	CFM=		Load	
	Natural						0.17	15200			1	44.3		921 Btuh	
Internal gain							Occupants	Btuh/occupant			Appliance		Load		
							4	X 230			+	1500		2420 Btuh	
	Sensible Envelope Load:													10152 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Adam & Carrie Hogue
229 SW Stell Glen
Lake City, FL 32024

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Hogue Residence

6/28/2022

Duct load	NA, Supply(R0.0-None), Return(R0.0-None)	(DGM of 0.000)	0 Btuh
		Sensible Load All Zones	10152 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Adam & Carrie Hogue
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Project Title:
Hogue Residence

Climate:FL_GAINESVILLE_REGIONAL_A

6/28/2022

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	10152 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	10152 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	10152 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1528 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	2328 Btuh
	TOTAL GAIN	12480 Btuh

EQUIPMENT

1. Central Unit	#	12472 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