

Residential System Sizing Calculation

Summary

Project Title:
Revis Residence

, FL

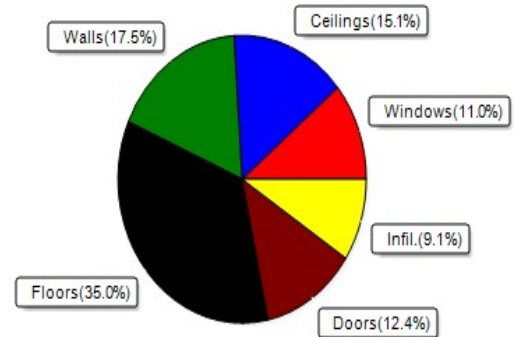
12/17/2024

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	27275 Btuh	Total cooling load calculation	22954 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	154.0 42000	Sensible (SHR = 0.75)	155.2 31500
Heat Pump + Auxiliary(0.0kW)	154.0 42000	Latent	394.2 10500
		Total (Electric Heat Pump)	183.0 42000

WINTER CALCULATIONS

Winter Heating Load (for 2185 sqft)

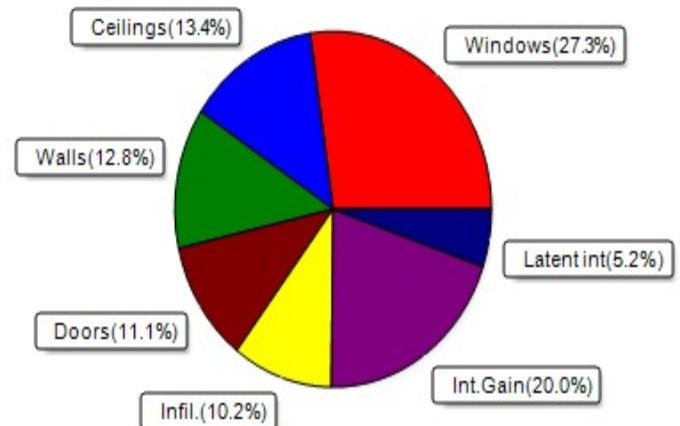
Load component	Load
Window total 289 sqft	3009 Btuh
Wall total 1342 sqft	4763 Btuh
Door total 184 sqft	3386 Btuh
Ceiling total 2185 sqft	4107 Btuh
Floor total 2185 sqft	9534 Btuh
Infiltration 56 cfm	2476 Btuh
Duct loss	0 Btuh
Subtotal	27275 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	27275 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2185 sqft)

Load component	Load
Window total 289 sqft	6273 Btuh
Wall total 1342 sqft	2936 Btuh
Door total 184 sqft	2539 Btuh
Ceiling total 2185 sqft	3080 Btuh
Floor total	0 Btuh
Infiltration 42 cfm	882 Btuh
Internal gain	4580 Btuh
Duct gain	0 Btuh
Sens.Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	20291 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	1464 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	2664 Btuh
TOTAL HEAT GAIN	22954 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____ 12-17-24

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Revis Residence

, FL

12/17/2024

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	0.33, 0.26	No	No	N	1.5ft	2.3ft	30.0	0.0	30.0	12	12	356	Btuh
2	2 NFRC	0.33, 0.26	No	No	N	1.5ft	2.3ft	13.3	0.0	13.3	12	12	158	Btuh
3	2 NFRC	0.33, 0.26	No	No	N	1.5ft	2.3ft	24.0	0.0	24.0	12	12	285	Btuh
4	2 NFRC	0.33, 0.26	No	No	N	1.5ft	2.3ft	30.0	0.0	30.0	12	12	356	Btuh
5	2 NFRC	0.33, 0.26	No	No	E	1.5ft	2.3ft	72.0	0.0	72.0	12	37	2646	Btuh
6	2 NFRC	0.33, 0.26	No	No	S	1.5ft	2.3ft	72.0	72.0	0.0	12	14	855	Btuh
7	2 NFRC	0.33, 0.26	No	No	S	1.5ft	2.3ft	6.0	6.0	0.0	12	14	71	Btuh
8	2 NFRC	0.33, 0.26	No	No	W	1.5ft	2.3ft	6.0	0.0	6.0	12	37	221	Btuh
9	2 NFRC	0.33, 0.26	No	No	W	1.5ft	2.3ft	36.0	0.0	36.0	12	37	1323	Btuh
Window Total								289 (sqft)					6273 Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)		HTM		Load	
								Cav/Sheath						
1	Frame - Wood - Ext						0.09	13.0/0.0	224.7		2.3		508 Btuh	
2	Frame - Wood - Ext						0.09	13.0/0.0	49.5		2.3		112 Btuh	
3	Frame - Wood - Ext						0.09	13.0/0.0	78.0		2.3		177 Btuh	
4	Frame - Wood - Ext						0.09	13.0/0.0	172.5		2.3		390 Btuh	
5	Frame - Wood - Ext						0.09	13.0/0.0	393.0		2.3		889 Btuh	
6	Frame - Wood - Ext						0.09	13.0/0.0	249.0		2.3		564 Btuh	
7	Frame - Wood - Adj						0.09	13.0/0.0	175.0		1.7		295 Btuh	
Wall Total								1342 (sqft)					2936 Btuh	
Doors	Type								Area (sqft)		HTM		Load	
1	Insulated - Exterior								20.0		13.8		276 Btuh	
2	Insulated - Exterior								48.0		13.8		662 Btuh	
3	Insulated - Exterior								48.0		13.8		662 Btuh	
4	Insulated - Exterior								48.0		13.8		662 Btuh	
5	Insulated - Garage								20.0		13.8		276 Btuh	
Door Total								184 (sqft)					2539 Btuh	
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)		HTM		Load	
1	SnglAsmb no airsp/DarkShingle						0.047	0.0/21.0	2185.0		1.41		3080 Btuh	
Ceiling Total								2185 (sqft)					3080 Btuh	
Floors	Type						R-Value		Size		HTM		Load	
1	Slab On Grade						0.0		2185 (ft-perimeter)		0.0		0 Btuh	
Floor Total								2185.0 (sqft)					0 Btuh	
	Envelope Subtotal:												14829 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
 Revis Residence

, FL

12/17/2024

Infiltration	Type Natural	Average ACH 0.13	Volume(cuft) 19665	Wall Ratio 1	CFM= 42.3	Load 882 Btuh
Internal gain		Occupants 6	Btuh/occupant X 230	Appliance +	3200	Load 4580 Btuh
	Sensible Envelope Load:					20291 Btuh
Duct load	Extremely sealed, Supply(R6.0-Condi), Return(R6.0-Condi) (DGM of 0.000)					0 Btuh
	Sensible Load All Zones					20291 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Revis Residence

, FL

12/17/2024

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	20291 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	20291 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	20291 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1464 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2664 Btuh
	TOTAL GAIN	22954 Btuh

EQUIPMENT

1. Central Unit	#	42000 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:
Revis Residence
Building Type: User

, FL

12/17/2024

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 0.33	Vinyl	0.26	N	30.0		10.4	312 Btuh
2	2, NFRC 0.33	Vinyl	0.26	N	13.3		10.4	139 Btuh
3	2, NFRC 0.33	Vinyl	0.26	N	24.0		10.4	250 Btuh
4	2, NFRC 0.33	Vinyl	0.26	N	30.0		10.4	312 Btuh
5	2, NFRC 0.33	Vinyl	0.26	E	72.0		10.4	749 Btuh
6	2, NFRC 0.33	Vinyl	0.26	S	72.0		10.4	749 Btuh
7	2, NFRC 0.33	Vinyl	0.26	S	6.0		10.4	62 Btuh
8	2, NFRC 0.33	Vinyl	0.26	W	6.0		10.4	62 Btuh
9	2, NFRC 0.33	Vinyl	0.26	W	36.0		10.4	374 Btuh
	Window Total				289.3(sqft)			3009 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	225		3.55	798 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	50		3.55	176 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	78		3.55	277 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	173		3.55	612 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	393		3.55	1395 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	249		3.55	884 Btuh
7	Frame - Wood	- Adj	(0.089)	13.0/0.0	175		3.55	621 Btuh
	Wall Total				1342(sqft)			4763 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)		48		18.4	883 Btuh
3	Insulated - Exterior,	n	(0.460)		48		18.4	883 Btuh
4	Insulated - Exterior,	n	(0.460)		48		18.4	883 Btuh
5	Insulated - Garage,	n	(0.460)		20		18.4	368 Btuh
	Door Total				184(sqft)			3386Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Single as/D/Shing		(0.047)	0.0/21.0	2185		1.9	4107 Btuh
	Ceiling Total				2185(sqft)			4107Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	202.0 ft(perim.)		47.2	9534 Btuh
	Floor Total				2185 sqft			9534 Btuh
	Envelope Subtotal:							24800 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.17	19665	1.00	56.4		2476 Btuh
Duct load	Extremely sealed, R6.0, Supply(Con), Return(Con) (DLM of 0.000)							0 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

, FL

Project Title:
Revis Residence
Building Type: User

12/17/2024

All Zones	Sensible Subtotal All Zones	27275 Btuh
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WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	27275 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	27275 Btuh

EQUIPMENT

1. Electric Heat Pump	#	42000 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