

Residential System Sizing Calculation

Summary

533 SW Homestead Circle
Ft White, FL 32038

Project Title:
Wayne Green

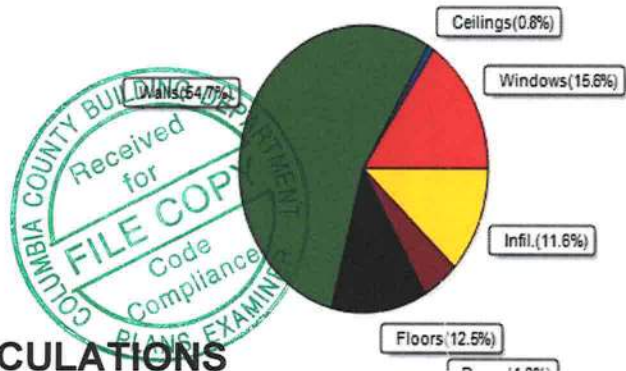
1/13/2022

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	7733	Btuh	Total cooling load calculation	9426	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	352.2	27236	Sensible (SHR = 0.70)	236.3	18655
Heat Pump + Auxiliary(0.0kW)	352.2	27236	Latent	522.0	7995
			Total (Electric Heat Pump)	282.7	26650

WINTER CALCULATIONS

Winter Heating Load (for 800 sqft)

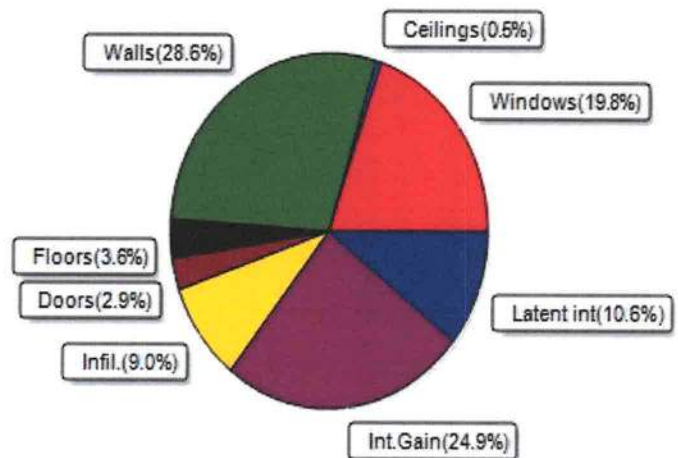
Load component		Load	
Window total	84 sqft	1210	Btuh
Wall total	1192 sqft	4232	Btuh
Door total	20 sqft	368	Btuh
Ceiling total	480 sqft	61	Btuh
Floor total	See detail report	963	Btuh
Infiltration	21 cfm	899	Btuh
Duct loss		0	Btuh
Subtotal		7733	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		7733	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 800 sqft)

Load component		Load	
Window total	84 sqft	1864	Btuh
Wall total	1192 sqft	2698	Btuh
Door total	20 sqft	276	Btuh
Ceiling total	480 sqft	49	Btuh
Floor total		337	Btuh
Infiltration	15 cfm	320	Btuh
Internal gain		2350	Btuh
Duct gain		0	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		7894	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		532	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1000	Btuh
Total latent gain		1532	Btuh
TOTAL HEAT GAIN		9426	Btuh



8th Edition

EnergyGauge® System-Sizing

PREPARED BY: _____

DATE: _____

1/13/2022

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

533 SW Homestead Circle
Ft White, FL 32038

Project Title:
Wayne Green
Building Type: User

1/13/2022

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	E	9.0		14.4	130 Btuh
3	2, NFRC 0.25	Vinyl	0.36	N	9.0		14.4	130 Btuh
4	2, NFRC 0.25	Vinyl	0.36	W	6.0		14.4	86 Btuh
5	2, NFRC 0.25	Vinyl	0.36	E	15.0		14.4	216 Btuh
6	2, NFRC 0.25	Vinyl	0.36	W	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 - Wood	- Ext	(0.089)	13.0/0.0	190		3.55	675 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	119		3.55	422 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	231		3.55	820 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	122		3.55	433 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	210		3.55	746 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	55		3.55	195 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	210		3.55	746 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	55		3.55	195 Btuh
	Wall Total					1192(sqft)		4232 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
	Door Total					20(sqft)		368Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Unvent Attic/L/Metal		(0.025)	38.0/30.0	480		0.1	61 Btuh
	Ceiling Total					480(sqft)		61Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Raised - Open		(0.050)	19.0	480.0	sqft	2.0	963 Btuh
2	Interior		(0.050)	19.0	320.0	sqft	0.0	0 Btuh
	Floor Total					800 sqft		963 Btuh
	Envelope Subtotal:							6833 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.20	6080	1.00	20.5		899 Btuh
Duct load	NA, R0.0, Supply(), Return()					(DLM of 0.000)		0 Btuh
All Zones	Sensible Subtotal All Zones							7733 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

533 SW Homestead Circle
Ft White, FL 32038

Project Title:
Wayne Green
Building Type: User

1/13/2022

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	7733 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	7733 Btuh

EQUIPMENT

1. Electric Heat Pump	#	27236 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

533 SW Homestead Circle
Ft White, FL 32038

Project Title:
Wayne Green

1/13/2022

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		9.5ft.	0.5ft.	30.0	30.0	0.0	12	14	363	Btuh		
2	2 NFRC	0.25, 0.36	No	No	E		1.0ft.	7.0ft.	9.0	0.0	9.0	12	31	278	Btuh		
3	2 NFRC	0.25, 0.36	No	No	N		1.5ft.	0.5ft.	9.0	0.0	9.0	12	12	109	Btuh		
4	2 NFRC	0.25, 0.36	No	No	W		1.0ft.	7.0ft.	6.0	0.0	6.0	12	31	186	Btuh		
5	2 NFRC	0.25, 0.36	No	No	E		1.0ft.	2.0ft.	15.0	0.0	15.0	12	31	464	Btuh		
6	2 NFRC	0.25, 0.36	No	No	W		1.0ft.	2.0ft.	15.0	0.0	15.0	12	31	464	Btuh		
Window Total									84 (sqft)					1864 Btuh			
Walls	Type						U-Value	R-Value	Area(sqft)		HTM		Load				
							Cav/Sheath										
1	Frame - Wood - Ext						0.09	13.0/0.0	190.0		2.3		430 Btuh				
2	Frame - Wood - Ext						0.09	13.0/0.0	119.0		2.3		269 Btuh				
3	Frame - Wood - Ext						0.09	13.0/0.0	231.0		2.3		523 Btuh				
4	Frame - Wood - Ext						0.09	13.0/0.0	122.0		2.3		276 Btuh				
5	Frame - Wood - Ext						0.09	13.0/0.0	210.0		2.3		475 Btuh				
6	Frame - Wood - Ext						0.09	13.0/0.0	55.0		2.3		124 Btuh				
7	Frame - Wood - Ext						0.09	13.0/0.0	210.0		2.3		475 Btuh				
8	Frame - Wood - Ext						0.09	13.0/0.0	55.0		2.3		124 Btuh				
Wall Total									1192 (sqft)					2698 Btuh			
Doors	Type								Area (sqft)		HTM		Load				
	Insulated - Exterior								20.0		13.8		276 Btuh				
Door Total									20 (sqft)					276 Btuh			
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)		HTM		Load				
	Unvented AtticLight/Metal						0.025	38.0/30.0	480.0		0.10		49 Btuh				
Ceiling Total									480 (sqft)					49 Btuh			
Floors	Type						R-Value		Size		HTM		Load				
	Raised - Open						19.0		480 (sqft)		0.7		337 Btuh				
2	Interior						19.0		320 (sqft)		0.0		0 Btuh				
Floor Total									800.0 (sqft)					337 Btuh			
Envelope Subtotal:														5224 Btuh			
Infiltration	Type						Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load		
	Natural						0.15		6080		1		15.4		320 Btuh		
Internal gain							Occupants		Btuh/occupant		Appliance		Load				
							5		X 230		+		1200		2350 Btuh		
Sensible Envelope Load:														7894 Btuh			
Duct load	NA, Supply(R0.0=None), Return(R0.0=None)													(DGM of 0.000)		0 Btuh	
Sensible Load All Zones														7894 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

533 SW Homestead Circle
Ft White, FL 32038

Project Title:
Wayne Green

Climate:FL_GAINESVILLE_REGIONAL_A

1/13/2022

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	7894 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	7894 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	7894 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	532 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (5.0 people @ 200 Btuh per person)	1000 Btuh
	Latent other gain	0 Btuh
	Latent total gain	1532 Btuh
	TOTAL GAIN	9426 Btuh

EQUIPMENT

1. Central Unit	#	26650 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