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Residential System Sizing Calculation

Summary

343 SW Federal Court
Ft White, FL 32038

Project Title:
Pam Seely

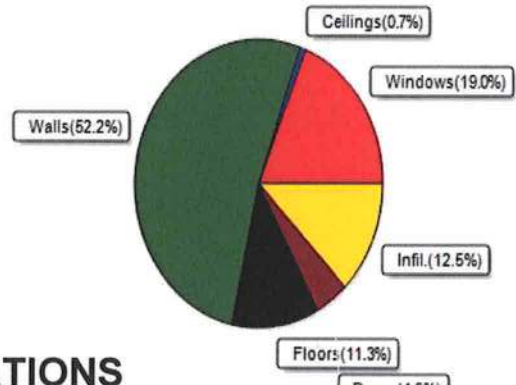
4/19/2022

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	8495 Btuh	Total cooling load calculation	10015 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 8495	Sensible (SHR = 0.70)	83.6 7010
Heat Pump + Auxiliary(0.0kW)	100.0 8495	Latent	184.8 3004
		Total (Electric Heat Pump)	100.0 10015

WINTER CALCULATIONS

Winter Heating Load (for 960 sqft)

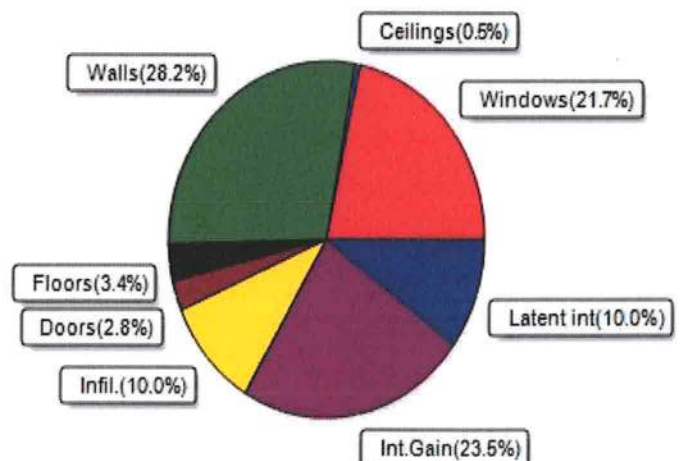
Load component		Load	
Window total	112 sqft	1613	Btuh
Wall total	1248 sqft	4431	Btuh
Door total	20 sqft	368	Btuh
Ceiling total	480 sqft	61	Btuh
Floor total	See detail report	963	Btuh
Infiltration	24 cfm	1059	Btuh
Duct loss		0	Btuh
Subtotal		8495	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		8495	Btuh



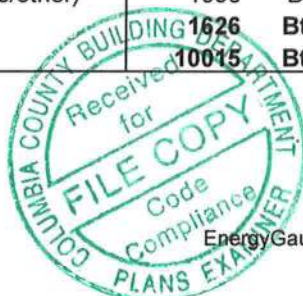
SUMMER CALCULATIONS

Summer Cooling Load (for 960 sqft)

Load component		Load	
Window total	112 sqft	2175	Btuh
Wall total	1248 sqft	2825	Btuh
Door total	20 sqft	276	Btuh
Ceiling total	480 sqft	49	Btuh
Floor total		337	Btuh
Infiltration	18 cfm	377	Btuh
Internal gain		2350	Btuh
Duct gain		0	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		8389	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		626	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1000	Btuh
Total latent gain		1626	Btuh
TOTAL HEAT GAIN		10015	Btuh



8th Edition



EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 4 / 19 / 2022

EnergyGauge® / USRCZB v7.0.00

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

343 SW Federal Court
Ft White, FL 32038

Project Title:
Pam Seely
Building Type: User

4/19/2022

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	18.0		14.4	259 Btuh
2	2, NFRC 0.25	Metal	0.36	S	40.0		14.4	576 Btuh
3	2, NFRC 0.25	Vinyl	0.36	E	6.0		14.4	86 Btuh
4	2, NFRC 0.25	Vinyl	0.36	N	9.0		14.4	130 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	12.0		14.4	173 Btuh
7	2, NFRC 0.25	Vinyl	0.36	W	12.0		14.4	173 Btuh
	Window Total					112.0(sqft)		1613 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	162		3.55	575 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	122		3.55	433 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	116		3.55	412 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	97		3.55	344 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	100		3.55	355 Btuh
	Wall Total					1248(sqft)		4431 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		480.0 sqft		0.0	0 Btuh
	Floor Total					960 sqft		963 Btuh
	Envelope Subtotal:							7435 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.20	7200	1.00	24.2		1059 Btuh
Duct load	NA, R0.0, Supply(), Return() (DLM of 0.000)							0 Btuh
All Zones	Sensible Subtotal All Zones							8495 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

343 SW Federal Court
Ft White, FL 32038

Project Title:
Pam Seely
Building Type: User

4/19/2022

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	8495 Btuh
	Ventilation Sensible Heat Loss	0 Btuh
	Total Heat Loss	8495 Btuh

EQUIPMENT

1. Electric Heat Pump	#	8495 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

343 SW Federal Court
Ft White, FL 32038

Project Title:
Pam Seely

4/19/2022

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.	18.0	18.0	0.0	12	14	218	Btuh
2	2 NFRC	0.25, 0.36	No	No	S	9.5ft.	0.5ft.	40.0	40.0	0.0	12	14	484	Btuh
3	2 NFRC	0.25, 0.36	No	No	E	1.5ft.	0.5ft.	6.0	1.5	4.5	12	31	158	Btuh
4	2 NFRC	0.25, 0.36	No	No	N	1.0ft.	7.0ft.	9.0	0.0	9.0	12	12	109	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.	12.0	0.0	12.0	12	31	371	Btuh
7	2 NFRC	0.25, 0.36	No	No	W	1.0ft.	8.0ft.	12.0	0.0	12.0	12	31	371	Btuh
Window Total								112 (sqft)					2175 Btuh	
Walls	Type	U-Value					R-Value		Area(sqft)		HTM		Load	
							Cav/Sheath							
1	Frame - Wood - Ext	0.09					13.0/0.0		162.0		2.3		367 Btuh	
2	Frame - Wood - Ext	0.09					13.0/0.0		122.0		2.3		276 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		116.0		2.3		263 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		97.0		2.3		220 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		100.0		2.3		226 Btuh	
Wall Total								1248 (sqft)					2825 Btuh	
Doors	Type								Area (sqft)		HTM		Load	
1	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	
1	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	
1	Raised - Open						19.0		480 (sqft)		0.7		337 Btuh	
2	Interior						19.0		480 (sqft)		0.0		0 Btuh	
Floor Total								960.0 (sqft)					337 Btuh	
Envelope Subtotal:													5661 Btuh	
Infiltration	Type	Average ACH					Volume(cuft)		Wall Ratio		CFM=		Load	
	Natural	0.15					7200		1		18.1		377 Btuh	
Internal gain		Occupants					Btuh/occupant		Appliance		Load			
		5					X 230		+		1200		2350 Btuh	
Sensible Envelope Load:													8389 Btuh	
Duct load	NA, Supply(R0.0-None), Return(R0.0-None)								(DGM of 0.000)				0 Btuh	
Sensible Load All Zones													8389 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

343 SW Federal Court
Ft White, FL 32038

Project Title:
Pam Seely

Climate: FL_GAINESVILLE_REGIONAL_A

4/19/2022

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	8389 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	8389 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	8389 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	626 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	1626 Btuh
	TOTAL GAIN	10015 Btuh

EQUIPMENT

1. Central Unit	#	10015 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