

Residential System Sizing Calculation

Summary

Project Title:
Canter Hanger

Lake City, FL 32025

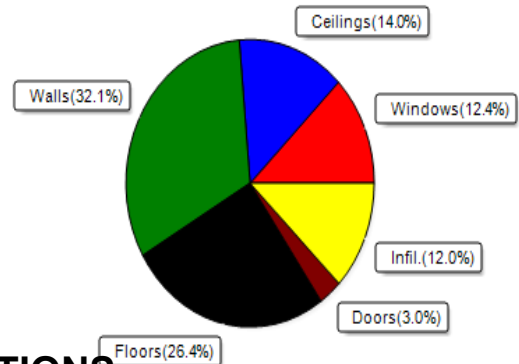
2/24/2022

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		12159 Btuh	Total cooling load calculation		10248 Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	100.0	12159	Sensible (SHR = 0.70)	81.7	7174
Heat Pump + Auxiliary(0.0kW)	100.0	12159	Latent	209.8	3075
			Total (Electric Heat Pump)	100.0	10248

WINTER CALCULATIONS

Winter Heating Load (for 1600 sqft)

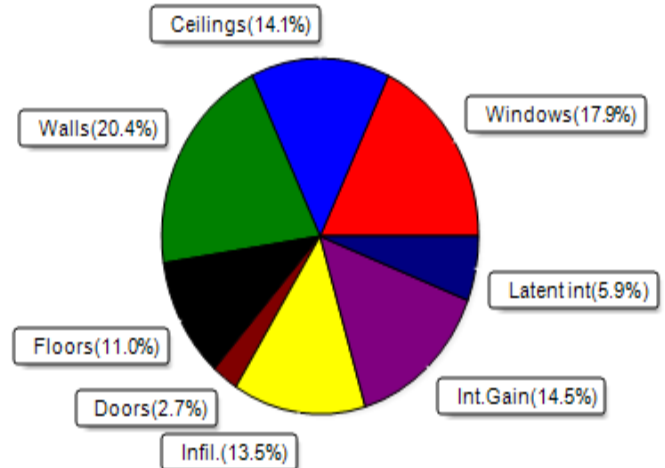
Load component		Load	
Window total	105 sqft	1512	Btuh
Wall total	1262 sqft	3900	Btuh
Door total	20 sqft	368	Btuh
Ceiling total	1680 sqft	1706	Btuh
Floor total	1600 sqft	3209	Btuh
Infiltration	33 cfm	1464	Btuh
Duct loss		0	Btuh
Subtotal		12159	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		12159	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1600 sqft)

Load component		Load	
Window total	105 sqft	1836	Btuh
Wall total	1262 sqft	2086	Btuh
Door total	20 sqft	276	Btuh
Ceiling total	1680 sqft	1450	Btuh
Floor total		1123	Btuh
Infiltration	25 cfm	522	Btuh
Internal gain		1490	Btuh
Duct gain		0	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		8783	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		866	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		600	Btuh
Total latent gain		1466	Btuh
TOTAL HEAT GAIN		10248	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: 2 / 24 / 2022

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lake City, FL 32025

Project Title:
Canter Hanger
Building Type: User

2/24/2022

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	N	75.0		14.4	1080 Btuh
2	2, NFRC 0.25	Vinyl	0.36	W	15.0		14.4	216 Btuh
3	2, NFRC 0.25	Vinyl	0.36	E	15.0		14.4	216 Btuh
Window Total					105.0(sqft)			1512 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	405		3.09	1252 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	460		3.09	1422 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	198		3.09	613 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	198		3.09	613 Btuh
Wall Total					1262(sqft)			3900 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	Vented Attic/L/Shing	(0.025)	38.0/0.0		1680		1.0	1706 Btuh
Ceiling Total					1680(sqft)			1706Btuh
Floors	Type	Ueff.	R-Value		Size	X	HTM=	Load
1	Raised Wood - Adj	(0.050)	19.0		1600.0 sqft		2.0	3209 Btuh
Floor Total					1600 sqft			3209 Btuh
Envelope Subtotal:								10695 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	12800	1.00	33.4		1464 Btuh
Duct load	NA, R0.0, Supply(), Return() (DLM of 0.000)							0 Btuh
All Zones	Sensible Subtotal All Zones							12159 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	12159 Btuh 0 Btuh 12159 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32025

Project Title:
Canter Hanger
Building Type: User

2/24/2022

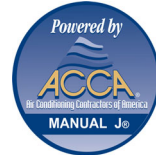
EQUIPMENT

1. Electric Heat Pump	#	12159 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

Project Title:
Canter Hanger

Lake City, FL 32025

2/24/2022

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	N		1.0ft.	4.0ft.	75.0	0.0	75.0	12	12	907 Btuh	
2	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	2.0ft.	15.0	0.0	15.0	12	31	464 Btuh	
3	2 NFRC	0.25, 0.36	No	No	E		1.5ft.	2.0ft.	15.0	0.0	15.0	12	31	464 Btuh	
Window Total									105 (sqft)					1836 Btuh	
Walls	Type							U-Value	R-Value	Area(sqft)		HTM		Load	
								Cav/Sheath							
	1	Frame - Wood - Ext						0.08	19.0/0.0	405.0		1.7		670 Btuh	
	2	Frame - Wood - Ext						0.08	19.0/0.0	460.0		1.7		761 Btuh	
	3	Frame - Wood - Ext						0.08	19.0/0.0	198.3		1.7		328 Btuh	
	4	Frame - Wood - Ext						0.08	19.0/0.0	198.3		1.7		328 Btuh	
	Wall Total									1262 (sqft)				2086 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	Vented Attic/Light/Shingle/RB						0.025	38.0/0.0	1680.0		0.86		1450 Btuh	
	Ceiling Total									1680 (sqft)				1450 Btuh	
Floors	Type							R-Value		Size		HTM		Load	
	1	Raised Wood - Adj						19.0		1600 (sqft)		0.7		1123 Btuh	
	Floor Total									1600.0 (sqft)				1123 Btuh	
	Envelope Subtotal:													6771 Btuh	
Infiltration	Type							Average ACH		Volume(cuft)		Wall Ratio		CFM=	Load
	Natural							0.12		12800		1		25.1	522 Btuh
Internal gain								Occupants		Btuh/occupant		Appliance		Load	
								3		X 230		+		800	1490 Btuh
	Sensible Envelope Load:													8783 Btuh	
Duct load	NA, Supply(R0.0-None), Return(R0.0-None)										(DGM of 0.000)			0 Btuh	
	Sensible Load All Zones													8783 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Canter Hanger

Lake City, FL 32025

2/24/2022

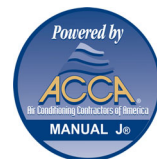
WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	8783 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	8783 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	8783 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	866 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (3.0 people @ 200 Btuh per person)	600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	1466 Btuh
	TOTAL GAIN	10248 Btuh

EQUIPMENT

1. Central Unit	#	10248 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