

Residential System Sizing Calculation

Summary

Kevin Holder
130 SW JOSHUA CT
Lake City, FL 32024

Project Title:
Holder Addition

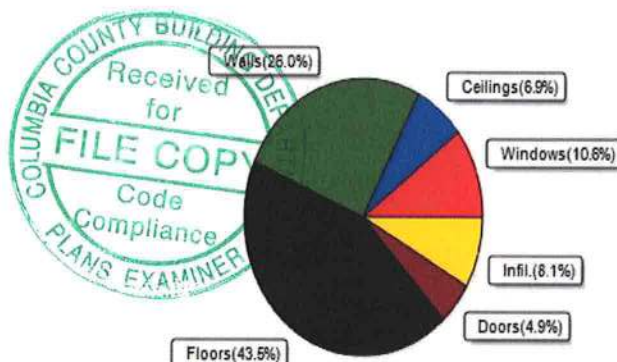
11/4/2020

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 7493 Btuh			Total cooling load calculation 7143 Btuh		
Submitted heating capacity % of calc Btuh			Submitted cooling capacity % of calc Btuh		
Total (Electric Heat Pump) 100.0 7493			Sensible (SHR = 0.70) 89.0 4970		
Heat Pump + Auxiliary(0.0kW) 100.0 7493			Latent 136.7 2130		
			Total (Electric Heat Pump) 99.4 7100		

WINTER CALCULATIONS

Winter Heating Load (for 512 sqft)

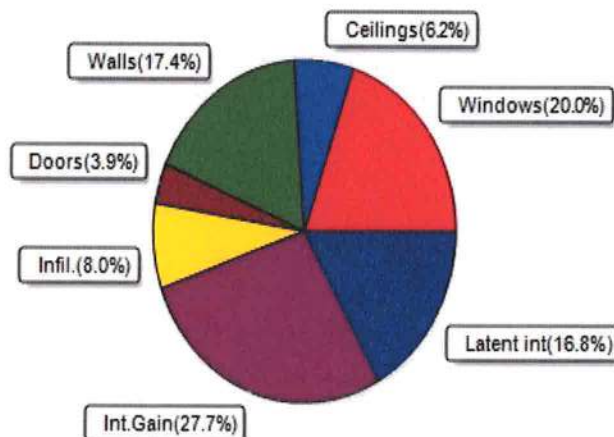
Load component		Load	
Window total	55 sqft	792	Btuh
Wall total	549 sqft	1949	Btuh
Door total	20 sqft	368	Btuh
Ceiling total	512 sqft	520	Btuh
Floor total	512 sqft	3257	Btuh
Infiltration	14 cfm	607	Btuh
Duct loss		0	Btuh
Subtotal		7493	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		7493	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 512 sqft)

Load component		Load	
Window total	55 sqft	1427	Btuh
Wall total	549 sqft	1243	Btuh
Door total	20 sqft	276	Btuh
Ceiling total	512 sqft	442	Btuh
Floor total		0	Btuh
Infiltration	10 cfm	216	Btuh
Internal gain		1980	Btuh
Duct gain		0	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		5584	Btuh
Latent gain(ducts)		0	Btuh
Latent gain(infiltration)		359	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1200	Btuh
Total latent gain		1559	Btuh
TOTAL HEAT GAIN		7143	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: _____

DATE: _____

[Signature]
11/04/2020

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Kevin Holder
130 SW JOSHUA CT
Lake City, FL 32024

Project Title:
Holder Addition
Building Type: User

11/4/2020

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	SE	20.0		14.4	288 Btuh
2	2, NFRC 0.25	Vinyl	0.36	NE	15.0		14.4	216 Btuh
3	2, NFRC 0.25	Vinyl	0.36	W	20.0		14.4	288 Btuh
	Window Total				55.0(sqft)			792 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	31		3.55	110 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	124		3.55	440 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	273		3.55	969 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	121		3.55	430 Btuh
	Wall Total				549(sqft)			1949 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	512		1.0	520 Btuh	
	Ceiling Total				512(sqft)			520Btuh
Floors	Type	Ueff.	R-Value	Size	X	HTM=	Load	
1	Slab On Grade	(1.180)	0.0	69.0 ft(perim.)		47.2	3257 Btuh	
	Floor Total				512 sqft			3257 Btuh
	Envelope Subtotal:							6886 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=	Load	
	Natural		0.18	4608	1.00	13.9	607 Btuh	
Duct load	NA, R0.0, Supply(), Return() (DLM of 0.000)						0 Btuh	
All Zones	Sensible Subtotal All Zones							7493 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	7493 Btuh 0 Btuh 7493 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

Kevin Holder
130 SW JOSHUA CT
Lake City, FL 32024

Project Title:
Holder Addition
Building Type: User

11/4/2020

EQUIPMENT

1. Electric Heat Pump	#	7493 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

Kevin Holder
130 SW JOSHUA CT
Lake City, FL 32024

Project Title:
Holder Addition

11/4/2020

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	SE		1.5ft.	1.0ft.	20.0	5.9	14.1	12	25	421	Btuh
2	2 NFRC	0.25, 0.36	No	No	NE		1.5ft.	1.0ft.	15.0	0.0	15.0	12	24	355	Btuh
3	2 NFRC	0.25, 0.36	No	No	W		1.5ft.	1.0ft.	20.0	1.0	19.0	12	31	600	Btuh
	Excursion													52	Btuh
	Window Total								55 (sqft)					1427 Btuh	
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Frame - Wood - Ext		0.09		13.0/0.0		31.0		2.3		70	Btuh			
2	Frame - Wood - Ext		0.09		13.0/0.0		124.0		2.3		281	Btuh			
3	Frame - Wood - Ext		0.09		13.0/0.0		273.0		2.3		618	Btuh			
4	Frame - Wood - Ext		0.09		13.0/0.0		121.0		2.3		274	Btuh			
	Wall Total						549 (sqft)				1243 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	512.0	0.86	442	Btuh								
	Ceiling Total					512 (sqft)	442	Btuh							
Floors	Type	R-Value		Size		HTM	Load								
1	Slab On Grade		0.0	512 (ft-perimeter)		0.0	0	Btuh							
	Floor Total					512.0 (sqft)	0	Btuh							
	Envelope Subtotal:											3388 Btuh			
Infiltration	Type	Average ACH		Volume(cuft)		Wall Ratio	CFM=	Load							
	Natural		0.14	4608		1	10.4	216	Btuh						
Internal gain		Occupants		Btuh/occupant		Appliance		Load							
			6	X	230	+	600	1980	Btuh						
	Sensible Envelope Load:											5584 Btuh			
Duct load	NA, Supply(R0.0=None), Return(R0.0=None)											(DGM of 0.000)		0 Btuh	
	Sensible Load All Zones											5584 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

Kevin Holder
130 SW JOSHUA CT
Lake City, FL 32024

Project Title:
Holder Addition

Climate:FL_GAINESVILLE_REGIONAL_A

11/4/2020

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	5584 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	5584 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	5584 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	359 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	1559 Btuh
	TOTAL GAIN	7143 Btuh

EQUIPMENT

1. Central Unit	#	7100 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