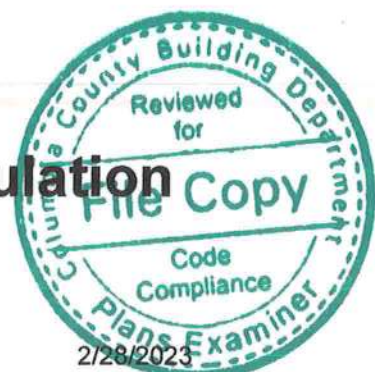


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Residential System Sizing Calculation

Summary

Project Title:
Perkins

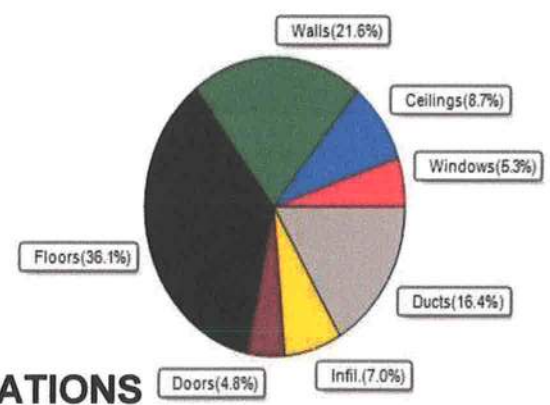
, FL

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	19980	Btuh	Total cooling load calculation	18206	Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	150.2	30000	Sensible (SHR = 0.85)	166.6	25500
Heat Pump + Auxiliary(0.0kW)	150.2	30000	Latent	155.4	4500
			Total (Electric Heat Pump)	164.8	30000

WINTER CALCULATIONS

Winter Heating Load (for 1368 sqft)

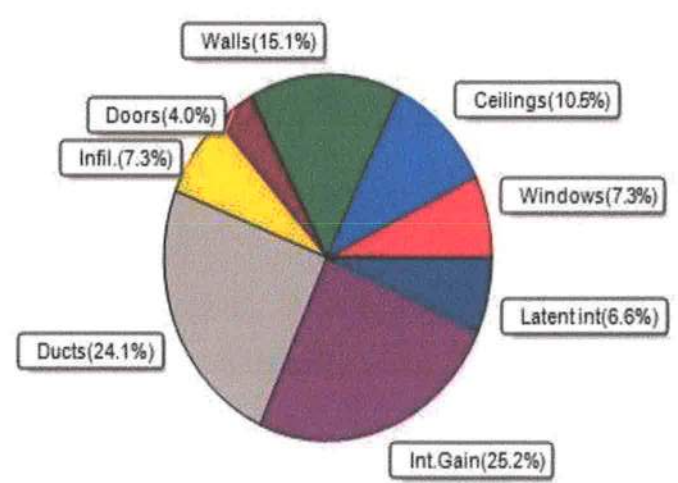
Load component		Load
Window total	102 sqft	1061 Btuh
Wall total	1215 sqft	4314 Btuh
Door total	60 sqft	960 Btuh
Ceiling total	1368 sqft	1743 Btuh
Floor total	1368 sqft	7222 Btuh
Infiltration	32 cfm	1399 Btuh
Duct loss		3282 Btuh
Subtotal		19980 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm		0 Btuh
TOTAL HEAT LOSS		19980 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1368 sqft)

Load component		Load
Window total	102 sqft	1323 Btuh
Wall total	1215 sqft	2750 Btuh
Door total	60 sqft	720 Btuh
Ceiling total	1368 sqft	1917 Btuh
Floor total		0 Btuh
Infiltration	24 cfm	498 Btuh
Internal gain		4580 Btuh
Duct gain		3523 Btuh
Sens. Ventilation Ex:0 cfm; Sup:0 cfm		0 Btuh
Blower Load		0 Btuh
Total sensible gain		15311 Btuh
Latent gain(ducts)		868 Btuh
Latent gain(infiltration)		827 Btuh
Latent gain(ventilation)		0 Btuh
Latent gain(internal/occupants/other)		1200 Btuh
Total latent gain		2895 Btuh
TOTAL HEAT GAIN		18206 Btuh



8th Edition

EnergyGauge® System Sizing
PREPARED BY:
DATE: 2-28-23

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Project Title:
Perkins

, FL

2/28/2023

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	0.20, 0.26	No	No	N	1.5ft	2.3ft	9.0	0.0	9.0	9	9	82	Btuh	
2	2 NFRC	0.20, 0.26	No	No	N	1.5ft	2.3ft	15.0	0.0	15.0	9	9	137	Btuh	
3	2 NFRC	0.20, 0.26	No	No	S	1.5ft	2.3ft	60.0	60.0	0.0	9	11	549	Btuh	
4	2 NFRC	0.20, 0.26	No	No	W	1.5ft	2.3ft	12.0	0.0	12.0	9	24	291	Btuh	
5	2 NFRC	0.20, 0.26	No	No	W	1.5ft	2.3ft	6.0	0.0	6.0	9	24	145	Btuh	
	Excursion												118	Btuh	
	Window Total							102 (sqft)						1323	Btuh
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Frame - Wood - Ext		0.09		13.0/0.0		388.0		2.3		878	Btuh			
2	Frame - Wood - Ext		0.09		13.0/0.0		256.5		2.3		581	Btuh			
3	Frame - Wood - Ext		0.09		13.0/0.0		352.0		2.3		797	Btuh			
4	Frame - Wood - Ext		0.09		13.0/0.0		218.5		2.3		495	Btuh			
	Wall Total							1215 (sqft)				2750	Btuh		
Doors	Type	U-Value		R-Value		Area (sqft)		HTM		Load					
1	Insulated - Exterior						20.0		12.0		240	Btuh			
2	Insulated - Exterior						20.0		12.0		240	Btuh			
3	Wood - Exterior						20.0		12.0		240	Btuh			
	Door Total							60 (sqft)				720	Btuh		
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Vented Attic/Med/Shingle		0.032		30.0/0.0		1368.0		1.40		1917	Btuh			
	Ceiling Total							1368 (sqft)				1917	Btuh		
Floors	Type	U-Value		R-Value		Size		HTM		Load					
1	Slab On Grade				0.0		1368 (ft-perimeter)		0.0		0	Btuh			
	Floor Total							1368.0 (sqft)				0	Btuh		
	Envelope Subtotal:											6710	Btuh		
Infiltration	Type	Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load					
	Natural														
			0.12		12312	1		23.9		498	Btuh				
Internal gain		Occupants		Btuh/occupant		Appliance		Load							
			6	X	230	+	3200		4580	Btuh					
	Sensible Envelope Load:											11788	Btuh		
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.299)											3523	Btuh		
	Sensible Load All Zones											15311	Btuh		

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title:
Perkins

Climate: FL_GAINESVILLE_REGIONAL_A

, FL

2/28/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	11788 Btuh
	Sensible Duct Load	3523 Btuh
	Total Sensible Zone Loads	15311 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	15311 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	827 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	868 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	2895 Btuh
	TOTAL GAIN	18206 Btuh

EQUIPMENT

1. Central Unit	#	30000 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:
Perkins
Building Type: User

, FL

2/28/2023

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 0.20	Vinyl	0.26	N	9.0		10.4	94 Btuh
2	2, NFRC 0.20	Vinyl	0.26	N	15.0		10.4	156 Btuh
3	2, NFRC 0.20	Vinyl	0.26	S	60.0		10.4	624 Btuh
4	2, NFRC 0.20	Vinyl	0.26	W	12.0		10.4	125 Btuh
5	2, NFRC 0.20	Vinyl	0.26	W	6.0		10.4	62 Btuh
	Window Total				102.0(sqft)			1061 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	388		3.55	1378 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	257		3.55	911 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	352		3.55	1250 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	219		3.55	776 Btuh
	Wall Total				1215(sqft)			4314 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)		20		16.0	320 Btuh
2	Insulated - Exterior,	n	(0.400)		20		16.0	320 Btuh
3	Wood - Exterior,	n	(0.400)		20		16.0	320 Btuh
	Door Total				60(sqft)			960Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/M/Shing		(0.032)	30.0/0.0	1368		1.3	1743 Btuh
	Ceiling Total				1368(sqft)			1743Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	153.0 ft(perim.)		47.2	7222 Btuh
	Floor Total				1368 sqft			7222 Btuh
	Envelope Subtotal:							15299 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	12312	1.00	31.9		1399 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att)						(DLM of 0.197)	3282 Btuh
All Zones	Sensible Subtotal All Zones							19980 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Project Title:
Perkins
Building Type: User

, FL

2/28/2023

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	19980 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	19980 Btuh

EQUIPMENT

1. Electric Heat Pump	#	30000 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