

Residential System Sizing Calculation

Summary

Project Title:
Lot 28 Turkey Creek

Lake City, FL 32055

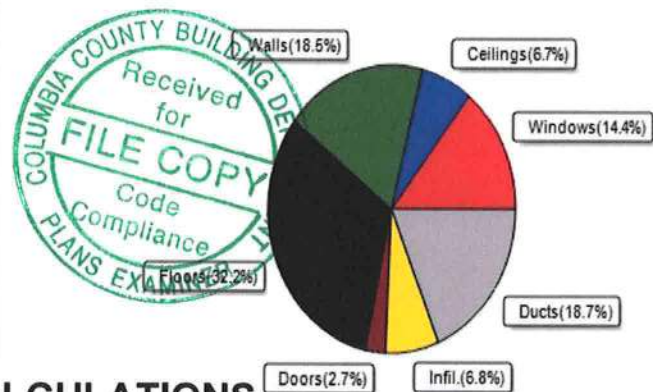
3/1/2021

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	27544 Btuh	Total cooling load calculation	24052 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	100.0 27544	Sensible (SHR = 0.70)	79.4 16229
Heat Pump + Auxiliary(0.0kW)	100.0 27544	Latent	192.3 6955
		Total (Electric Heat Pump)	96.4 23184

WINTER CALCULATIONS

Winter Heating Load (for 1736 sqft)

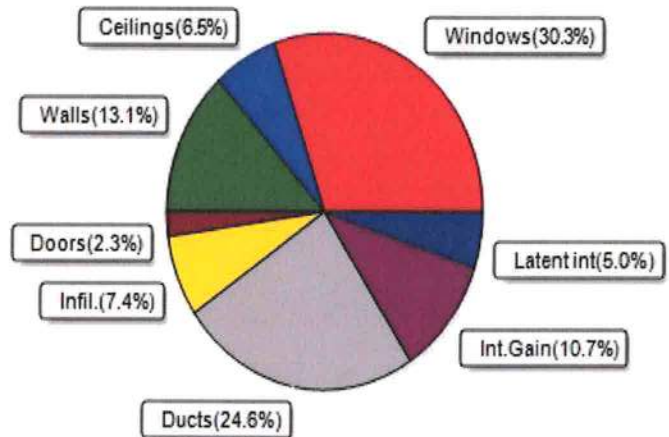
Load component		Load	
Window total	283 sqft	3957 Btuh	
Wall total	1435 sqft	5096 Btuh	
Door total	40 sqft	736 Btuh	
Ceiling total	1823 sqft	1851 Btuh	
Floor total	1736 sqft	8874 Btuh	
Infiltration	43 cfm	1874 Btuh	
Duct loss		5156 Btuh	
Subtotal		27544 Btuh	
Ventilation	0 cfm	0 Btuh	
TOTAL HEAT LOSS		27544 Btuh	



SUMMER CALCULATIONS

Summer Cooling Load (for 1736 sqft)

Load component		Load	
Window total	283 sqft	7295 Btuh	
Wall total	1435 sqft	3156 Btuh	
Door total	40 sqft	552 Btuh	
Ceiling total	1823 sqft	1573 Btuh	
Floor total		0 Btuh	
Infiltration	32 cfm	668 Btuh	
Internal gain		2580 Btuh	
Duct gain		4612 Btuh	
Sens. Ventilation	0 cfm	0 Btuh	
Blower Load		0 Btuh	
Total sensible gain		20436 Btuh	
Latent gain(ducts)		1309 Btuh	
Latent gain(infiltration)		1108 Btuh	
Latent gain(ventilation)		0 Btuh	
Latent gain(internal/occupants/other)		1200 Btuh	
Total latent gain		3616 Btuh	
TOTAL HEAT GAIN		24052 Btuh	



8th Edition

EnergyGauge® System Sizing

PREPARED BY: *[Signature]*

DATE: *3/1/2021*

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lake City, FL 32055

Project Title:
Lot 28 Turkey Creek
Building Type: User

3/1/2021

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 0.29	TIM	0.35	S	6.7		14.0	93 Btuh
2	2, NFRC 0.29	Vinyl	0.35	S	30.0		14.0	420 Btuh
3	2, NFRC 0.29	Vinyl	0.35	W	30.0		14.0	420 Btuh
4	2, NFRC 0.29	Vinyl	0.35	E	60.0		14.0	840 Btuh
5	2, NFRC 0.29	Vinyl	0.35	E	6.0		14.0	84 Btuh
6	2, NFRC 0.29	Vinyl	0.35	N	20.0		14.0	280 Btuh
7	2, NFRC 0.29	TIM	0.35	W	20.0		14.0	280 Btuh
8	2, NFRC 0.29	Vinyl	0.35	N	40.0		14.0	560 Btuh
9	2, NFRC 0.29	Vinyl	0.35	W	60.0		14.0	840 Btuh
10	2, NFRC 0.29	Vinyl	0.35	W	10.0		14.0	140 Btuh
Window Total					282.7(sqft)			3957 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	66		3.55	236 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	42		3.55	149 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	78		3.55	277 Btuh
4	Frame - Wood	- Adj	(0.089)	13.0/0.0	160		3.55	568 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	465		3.55	1651 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	196		3.55	696 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	124		3.55	440 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	56		3.55	199 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	185		3.55	657 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	63		3.55	224 Btuh
Wall Total					1435(sqft)			5096 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.460)		20		18.4	368 Btuh
2	Insulated - Garage, n		(0.460)		20		18.4	368 Btuh
Door Total					40(sqft)			736Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Vented Attic/L/Shing		(0.025)	38.0/0.0	1823		1.0	1851 Btuh
Ceiling Total					1823(sqft)			1851Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	188.0 ft(perim.)		47.2	8874 Btuh
Floor Total					1736 sqft			8874 Btuh
Envelope Subtotal:								20514 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		Load
	Natural		0.16	15624	1.00	42.8		1874 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.230)							5156 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lake City, FL 32055

Project Title:
Lot 28 Turkey Creek
Building Type: User

3/1/2021

All Zones	Sensible Subtotal All Zones	27544 Btuh
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WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	27544 Btuh 0 Btuh 27544 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	27544 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:
Lot 28 Turkey Creek

Lake City, FL 32055

3/1/2021

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	0.29, 0.35	No	No	S		7.5ft.	1.0ft.	6.7	6.7	0.0	13	15	85	Btuh
2	2 NFRC	0.29, 0.35	No	No	S		7.5ft.	1.0ft.	30.0	30.0	0.0	13	15	383	Btuh
3	2 NFRC	0.29, 0.35	No	No	W		7.5ft.	1.0ft.	30.0	30.0	0.0	13	35	383	Btuh
4	2 NFRC	0.29, 0.35	No	No	E		1.5ft.	1.0ft.	60.0	2.9	57.1	13	35	2012	Btuh
5	2 NFRC	0.29, 0.35	No	No	E		1.5ft.	1.0ft.	6.0	0.5	5.5	13	35	197	Btuh
6	2 NFRC	0.29, 0.35	No	No	N		1.5ft.	1.0ft.	20.0	0.0	20.0	13	13	255	Btuh
7	2 NFRC	0.29, 0.35	No	No	W		11.5f	1.0ft.	20.0	20.0	0.0	13	35	255	Btuh
8	2 NFRC	0.29, 0.35	No	No	N		10.0f	1.0ft.	40.0	0.0	40.0	13	13	510	Btuh
9	2 NFRC	0.29, 0.35	No	No	W		1.5ft.	1.0ft.	60.0	2.9	57.1	13	35	2012	Btuh
10	2 NFRC	0.29, 0.35	No	No	W		1.5ft.	1.0ft.	10.0	0.5	9.5	13	35	335	Btuh
	Excursion													868	Btuh
	Window Total								283 (sqft)					7295 Btuh	
Walls	Type					U-Value	R-Value	Area(sqft)			HTM		Load		
							Cav/Sheath								
1	Frame - Wood - Ext					0.09	13.0/0.0	66.3			2.3		150 Btuh		
2	Frame - Wood - Ext					0.09	13.0/0.0	42.0			2.3		95 Btuh		
3	Frame - Wood - Ext					0.09	13.0/0.0	78.0			2.3		177 Btuh		
4	Frame - Wood - Adj					0.09	13.0/0.0	160.0			1.7		270 Btuh		
5	Frame - Wood - Ext					0.09	13.0/0.0	465.0			2.3		1052 Btuh		
6	Frame - Wood - Ext					0.09	13.0/0.0	196.0			2.3		444 Btuh		
7	Frame - Wood - Ext					0.09	13.0/0.0	124.0			2.3		281 Btuh		
8	Frame - Wood - Ext					0.09	13.0/0.0	56.0			2.3		127 Btuh		
9	Frame - Wood - Ext					0.09	13.0/0.0	185.0			2.3		419 Btuh		
10	Frame - Wood - Ext					0.09	13.0/0.0	63.0			2.3		143 Btuh		
	Wall Total								1435 (sqft)					3156 Btuh	
Doors	Type							Area (sqft)			HTM		Load		
1	Insulated - Exterior							20.0			13.8		276 Btuh		
2	Insulated - Garage							20.0			13.8		276 Btuh		
	Door Total								40 (sqft)					552 Btuh	
Ceilings	Type/Color/Surface					U-Value	R-Value	Area(sqft)			HTM		Load		
1	Vented AtticLight/Shingle/RB					0.025	38.0/0.0	1823.0			0.86		1573 Btuh		
	Ceiling Total								1823 (sqft)					1573 Btuh	
Floors	Type						R-Value	Size			HTM		Load		
1	Slab On Grade						0.0	1736 (ft-perimeter)			0.0		0 Btuh		
	Floor Total								1736.0 (sqft)					0 Btuh	
	Envelope Subtotal:													12576 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
 Lot 28 Turkey Creek

Lake City, FL 32055

3/1/2021

Infiltration	Type Natural	Average ACH 0.12	Volume(cuft) 15624	Wall Ratio 1	CFM= 32.1	Load 668 Btuh
Internal gain		Occupants 6	Btuh/occupant X 230	Appliance +	1200	Load 2580 Btuh
					Sensible Envelope Load:	15824 Btuh
Duct load	Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic)				(DGM of 0.291)	4612 Btuh
					Sensible Load All Zones	20436 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Project Title: Climate: FL_GAINESVILLE_REGIONAL_A
Lot 28 Turkey Creek

Lake City, FL 32055

3/1/2021

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	15824 Btuh
	Sensible Duct Load	4612 Btuh
	Total Sensible Zone Loads	20436 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	20436 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1108 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1309 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	3616 Btuh
	TOTAL GAIN	24052 Btuh

EQUIPMENT

1. Central Unit	#	23184 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