

Residential System Sizing Calculation

Summary

Truntz Res
1276 SW Jasmine St
Fort White, FL 32038

Project Title:
220544 Truntz

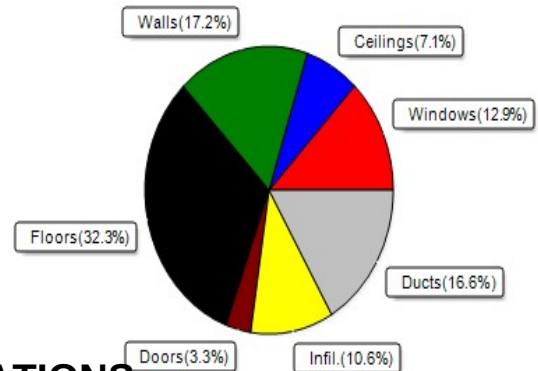
2022-05-04

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	29526 Btuh	Total cooling load calculation	29120 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	108.4 32000	Sensible (SHR = 0.75)	96.5 24000
Heat Pump + Auxiliary(0.0kW)	108.4 32000	Latent	188.5 8000
		Total (Electric Heat Pump)	109.9 32000

WINTER CALCULATIONS

Winter Heating Load (for 1969 sqft)

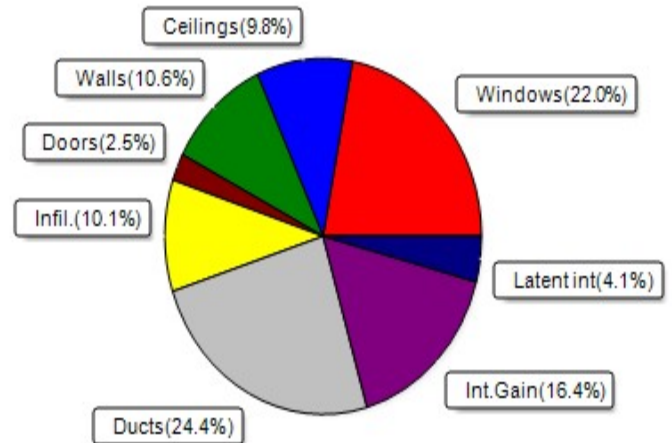
Load component		Load	
Window total	319 sqft	3822	Btuh
Wall total	1429 sqft	5073	Btuh
Door total	60 sqft	960	Btuh
Ceiling total	2076 sqft	2108	Btuh
Floor total	1969 sqft	9534	Btuh
Infiltration	71 cfm	3115	Btuh
Duct loss		4914	Btuh
Subtotal		29526	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		29526	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 1969 sqft)

Load component		Load	
Window total	319 sqft	6418	Btuh
Wall total	1429 sqft	3087	Btuh
Door total	60 sqft	720	Btuh
Ceiling total	2076 sqft	2845	Btuh
Floor total		0	Btuh
Infiltration	53 cfm	1110	Btuh
Internal gain		4780	Btuh
Duct gain		5916	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		24877	Btuh
Latent gain(ducts)		1202	Btuh
Latent gain(infiltration)		1841	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1200	Btuh
Total latent gain		4243	Btuh
TOTAL HEAT GAIN		29120	Btuh



8th Edition

EnergyGauge® System Sizing
PREPARED BY: Evan Beamsley
DATE: 2022-05-04

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Truntz Res
1276 SW Jasmine St
Fort White, FL 32038

Project Title:
220544 Truntz
Building Type: User

2022-05-04

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)
This calculation is for Worst Case. The house has been rotated 45 degrees.

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.22	Metal	0.30	NE	32.0		12.0	384 Btuh
2	2, NFRC 0.22	Metal	0.30	NE	72.0		12.0	864 Btuh
3	2, NFRC 0.22	Metal	0.30	NW	36.0		12.0	432 Btuh
4	2, NFRC 0.22	Metal	0.30	NE	54.0		12.0	648 Btuh
5	2, NFRC 0.22	Metal	0.30	NE	15.0		12.0	180 Btuh
6	2, NFRC 0.22	Metal	0.30	SE	4.0		12.0	48 Btuh
7	2, NFRC 0.22	Metal	0.30	SE	15.0		12.0	180 Btuh
8	2, NFRC 0.22	Metal	0.30	SW	18.0		12.0	216 Btuh
9	2, NFRC 0.22	Metal	0.30	SW	32.0		12.0	384 Btuh
10	2, NFRC 0.22	Metal	0.30	SW	18.0		12.0	216 Btuh
11	2, NFRC 0.22	Metal	0.30	SW	4.0		12.0	48 Btuh
12	2, NFRC 0.22	Metal	0.30	NW	6.0		12.0	72 Btuh
13	2, NFRC 0.22	Metal	0.30	NW	12.5		12.0	150 Btuh
Window Total					318.5(sqft)			3822 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	115		3.55	408 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	48		3.55	170 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	183		3.55	650 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	281		3.55	998 Btuh
5	Frame - Wood	- Adj	(0.089)	13.0/0.0	111		3.55	394 Btuh
6	Frame - Wood	- Adj	(0.089)	13.0/0.0	48		3.55	170 Btuh
7	Frame - Wood	- Adj	(0.089)	13.0/0.0	51		3.55	179 Btuh
8	Frame - Wood	- Adj	(0.089)	13.0/0.0	45		3.55	160 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	93		3.55	330 Btuh
10	Frame - Wood	- Ext	(0.089)	13.0/0.0	18		3.55	64 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	21		3.55	75 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	18		3.55	64 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	54		3.55	192 Btuh
14	Frame - Wood	- Ext	(0.089)	13.0/0.0	53		3.55	188 Btuh
15	Frame - Wood	- Ext	(0.089)	13.0/0.0	291		3.55	1031 Btuh
Wall Total					1429(sqft)			5073 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior, n		(0.400)		24		16.0	384 Btuh
2	Insulated - Garage, n		(0.400)		20		16.0	320 Btuh
3	Insulated - Exterior, n		(0.400)		16		16.0	256 Btuh
Door Total					60(sqft)			960Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Vented Attic/D/Shing		(0.025)	38.0/0.0	2076		1.0	2108 Btuh
Ceiling Total					2076(sqft)			2108Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	202.0 ft(perim.)		47.2	9534 Btuh
Floor Total					1969 sqft			9534 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Truntz Res
1276 SW Jasmine St
Fort White, FL 32038

Project Title:
220544 Truntz
Building Type: User

2022-05-04

	Envelope Subtotal:	21497 Btuh
Infiltration	Type Wholehouse ACH Volume(cuft) Wall Ratio CFM= Natural 0.23 18312 1.00 71.1	3115 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.200)	4914 Btuh
All Zones	Sensible Subtotal All Zones	29526 Btuh

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	29526 Btuh 0 Btuh 29526 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	32000 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

Truntz Res
1276 SW Jasmine St
Fort White, FL 32038

Project Title:
220544 Truntz

2022-05-04

Reference City: Gainesville, FL Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.
This calculation is for Worst Case. The house has been rotated 45 degrees.

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	0.22, 0.30	No	No	NE		10.8f	0.5ft	32.0	0.0	32.0	10	20	655	Btuh
2	2 NFRC	0.22, 0.30	No	No	NE		10.8f	0.0ft	72.0	0.0	72.0	10	20	1475	Btuh
3	2 NFRC	0.22, 0.30	No	No	NW		28.5f	0.5ft	36.0	0.0	36.0	10	20	737	Btuh
4	2 NFRC	0.22, 0.30	No	No	NE		1.5ft	1.0ft	54.0	0.0	54.0	10	20	1106	Btuh
5	2 NFRC	0.22, 0.30	No	No	NE		1.5ft	1.0ft	15.0	0.0	15.0	10	20	307	Btuh
6	2 NFRC	0.22, 0.30	No	No	SE		1.5ft	8.0ft	4.0	0.0	4.0	10	21	86	Btuh
7	2 NFRC	0.22, 0.30	No	No	SE		1.5ft	8.0ft	15.0	0.0	15.0	10	21	322	Btuh
8	2 NFRC	0.22, 0.30	No	No	SW		7.5ft	2.5ft	18.0	18.0	0.0	10	21	186	Btuh
9	2 NFRC	0.22, 0.30	No	No	SW		9.5ft	2.0ft	32.0	32.0	0.0	10	21	330	Btuh
10	2 NFRC	0.22, 0.30	No	No	SW		7.5ft	2.5ft	18.0	18.0	0.0	10	21	186	Btuh
11	2 NFRC	0.22, 0.30	No	No	SW		1.5ft	1.0ft	4.0	2.9	1.1	10	21	53	Btuh
12	2 NFRC	0.22, 0.30	No	No	NW		1.5ft	8.0ft	6.0	0.0	6.0	10	20	123	Btuh
13	2 NFRC	0.22, 0.30	No	No	NW		1.5ft	1.0ft	12.5	0.0	12.5	10	20	256	Btuh
	Excursion													595	Btuh
	Window Total								319 (sqft)					6418 Btuh	
Walls	Type	U-Value		R-Value		Area(sqft)		HTM		Load					
					Cav/Sheath										
1	Frame - Wood - Ext		0.09		13.0/0.0		115.0		2.3		260 Btuh				
2	Frame - Wood - Ext		0.09		13.0/0.0		48.0		2.3		109 Btuh				
3	Frame - Wood - Ext		0.09		13.0/0.0		183.0		2.3		414 Btuh				
4	Frame - Wood - Ext		0.09		13.0/0.0		281.0		2.3		636 Btuh				
5	Frame - Wood - Adj		0.09		13.0/0.0		111.0		1.7		187 Btuh				
6	Frame - Wood - Adj		0.09		13.0/0.0		48.0		1.7		81 Btuh				
7	Frame - Wood - Adj		0.09		13.0/0.0		50.5		1.7		85 Btuh				
8	Frame - Wood - Adj		0.09		13.0/0.0		45.0		1.7		76 Btuh				
9	Frame - Wood - Ext		0.09		13.0/0.0		93.0		2.3		210 Btuh				
10	Frame - Wood - Ext		0.09		13.0/0.0		18.0		2.3		41 Btuh				
11	Frame - Wood - Ext		0.09		13.0/0.0		21.0		2.3		48 Btuh				
12	Frame - Wood - Ext		0.09		13.0/0.0		18.0		2.3		41 Btuh				
13	Frame - Wood - Ext		0.09		13.0/0.0		54.0		2.3		122 Btuh				
14	Frame - Wood - Ext		0.09		13.0/0.0		53.0		2.3		120 Btuh				
15	Frame - Wood - Ext		0.09		13.0/0.0		290.5		2.3		657 Btuh				
	Wall Total							1429 (sqft)				3087 Btuh			
Doors	Type	Area (sqft)		HTM		Load									
1	Insulated - Exterior		24.0		12.0		288 Btuh								
2	Insulated - Garage		20.0		12.0		240 Btuh								
3	Insulated - Exterior		16.0		12.0		192 Btuh								
	Door Total						60 (sqft)				720 Btuh				
Ceilings	Type/Color/Surface	U-Value		R-Value		Area(sqft)		HTM		Load					
1	Vented Attic/DarkShingle		0.025		38.0/0.0		2076.0		1.37		2845 Btuh				
	Ceiling Total						2076 (sqft)				2845 Btuh				
Floors	Type	R-Value		Size		HTM		Load							
1	Slab On Grade		0.0		1969 (ft-perimeter)		0.0		0 Btuh						
	Floor Total						1969.0 (sqft)				0 Btuh				

Manual J Summer Calculations

Residential Load - Component Details (continued)

Truntz Res
1276 SW Jasmine St
Fort White, FL 32038

Project Title:
220544 Truntz

Climate:FL_GAINESVILLE_REGIONAL_A

2022-05-04

	Envelope Subtotal:					13071 Btuh
Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.17	18312	1	53.4	1110 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		6	X 230	+	3400	4780 Btuh
	Sensible Envelope Load:					18961 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.312)					5916 Btuh
	Sensible Load All Zones					24877 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Truntz Res
1276 SW Jasmine St
Fort White, FL 32038

Project Title:
220544 Truntz

Climate:FL_GAINESVILLE_REGIONAL_A

2022-05-04

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	18961 Btuh
	Sensible Duct Load	5916 Btuh
	Total Sensible Zone Loads	24877 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	24877 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	1841 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1202 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	4243 Btuh
	TOTAL GAIN	29120 Btuh

EQUIPMENT

1. Central Unit	#	32000 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