Manual J Winter Calculations

Residential Load - Component Details (continued)

Chandra Miller

Project Title:
220940 Miller Res

Lake City, FL

Building Type: User

2022-08-08

	Envelope Subtotal:	25894 Btuh
Infiltration	Type Wholehouse ACH Volume(cuft) Wall Ratio CFM= Natural 0.23 18391 1.00 71.1	3115 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.164)	4748 Btuh
All Zones	**Sensible Subtotal All Zones**	**33757 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	33757 Btuh 0 Btuh 33757 Btuh

EQUIPMENT

1. Electric Heat Pump	#	37000 Btuh

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)

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System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Chandra Miller

Project Title:
220940 Miller Res

Lake City, FL

2022-08-08

Reference City: Gainesville, FL Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.
This calculation is for Worst Case. The house has been rotated 225 degrees.

Component Loads for Whole House

	Type*					Overhang		Window Area(sqft)			HTM		Load	
Window	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
1	2 NFRC	0.25, 0.35		No	No	SW	1.5ft	6.0ft	12.0	0.0	12.0	12	25	295	Btuh
2	2 NFRC	0.25, 0.35		No	No	SW	1.5ft	6.0ft	30.0	0.0	30.0	12	25	737	Btuh
3	2 NFRC	0.25, 0.35		No	No	NW	1.5ft	2.0ft	15.0	0.0	15.0	12	23	352	Btuh
4	2 NFRC	0.25, 0.35		No	No	SW	1.5ft	2.0ft	53.3	3.7	49.6	12	25	1263	Btuh
5	2 NFRC	0.25, 0.35		No	No	SW	1.5ft	2.0ft	26.7	2.5	24.2	12	25	623	Btuh
6	2 NFRC	0.25, 0.35		No	No	NW	1.5ft	8.0ft	30.0	0.0	30.0	12	23	703	Btuh
7	2 NFRC	0.25, 0.35		No	No	NW	1.5ft	8.0ft	12.0	0.0	12.0	12	23	281	Btuh
8	2 NFRC	0.25, 0.35		No	No	NW	1.5ft	8.0ft	4.0	0.0	4.0	12	23	94	Btuh
9	2 NFRC	0.25, 0.35		No	No	NW	1.5ft	6.0ft	16.0	0.0	16.0	12	23	375	Btuh
10	2 NFRC	0.25, 0.35		No	No	NE	1.5ft	4.0ft	30.0	0.0	30.0	12	23	703	Btuh
11	2 NFRC	0.25, 0.35		No	No	NE	1.5ft	2.0ft	15.0	0.0	15.0	12	23	352	Btuh
12	2 NFRC	0.25, 0.35		No	No	NE	6.0ft	1.5ft	60.0	0.0	60.0	12	23	1407	Btuh
13	2 NFRC	0.25, 0.35		No	No	SE	1.5ft	4.0ft	6.0	0.0	6.0	12	25	147	Btuh
	Excursion													907	Btuh
	Window Total								310 (sqft)					8240	Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load	
1	Frame - Wood - Ext	0.09	13.0/0.0	192.0	2.3	435	Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	109.5	2.3	248	Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	329.5	2.3	746	Btuh
4	Frame - Wood - Ext	0.09	13.0/0.0	298.0	2.3	674	Btuh
5	Frame - Wood - Ext	0.09	13.0/0.0	79.5	2.3	180	Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	34.5	2.3	78	Btuh
7	Frame - Wood - Ext	0.09	13.0/0.0	75.0	2.3	170	Btuh
8	Frame - Wood - Ext	0.09	13.0/0.0	49.5	2.3	112	Btuh
9	Frame - Wood - Ext	0.09	13.0/0.0	164.5	2.3	372	Btuh
10	Frame - Wood - Adj	0.09	13.0/0.0	303.2	1.7	511	Btuh
11	Frame - Wood - Adj	0.09	13.0/0.0	199.5	1.7	336	Btuh
12	Frame - Wood - Ext	0.09	13.0/0.0	121.5	2.3	275	Btuh
	Wall Total			1956 (sqft)		4138	Btuh

Doors	Type	Area (sqft)	HTM	Load	
1	Insulated - Exterior	20.0	12.0	240	Btuh
2	Insulated - Garage	17.8	12.0	213	Btuh
	Door Total	38 (sqft)		453	Btuh

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load	
1	Vented Attic/DarkShingle	0.025	38.0/0.0	1999.0	1.37	2740	Btuh
2	Knee Wall/DarkShingle	0.025	38.0/0.0	172.0	1.37	236	Btuh
	Ceiling Total			2171 (sqft)		2975	Btuh

Floors	Type	R-Value	Size	HTM	Load	
1	Slab On Grade	0.0	1999 (ft-perimeter)	0.0	0	Btuh
	Floor Total		1999.0 (sqft)		0	Btuh

Envelope Subtotal:	15806	Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Chandra Miller | Project Title: 220940 Miller Res | Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

2022-08-08

Infiltration	Type	Average ACH	Volume(cuft)		Wall Ratio		CFM=	Load	
	Natural	0.17	18391		1		53.4	1110	Btuh
Internal gain		Occupants	Btuh/occupant				Appliance	Load	
		6	X	230	+		3400	4780	Btuh
						Sensible Envelope Load:		21696	Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic)					(DGM of 0.274)		5954	Btuh
						Sensible Load All Zones		**27650**	**Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Chandra Miller | Project Title: 220940 Miller Res | Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

2022-08-08

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**21696**	**Btuh**
	Sensible Duct Load	5954	Btuh
	Total Sensible Zone Loads	**27650**	**Btuh**
	Sensible ventilation	0	Btuh
	Blower	0	Btuh
	Total sensible gain	**27650**	**Btuh**
	Latent infiltration gain (for 51 gr. humidity difference)	1841	Btuh
	Latent ventilation gain	0	Btuh
	Latent duct gain	1196	Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200	Btuh
	Latent other gain	0	Btuh
	Latent total gain	**4238**	**Btuh**
	TOTAL GAIN	**31888**	**Btuh**

EQUIPMENT

1. Central Unit	#	37000 Btuh

*Key: Window types (Panes - 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)

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