



System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Ashley Johnson

Project Title:

Norris Const Johnson Project

Lake City, FL 32055

Building Type: User

4/29/2024

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 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 0.21	Metal	0.33	N	9.0		12.2	110 Btuh
2	2, NFRC 0.21	Metal	0.33	E	6.0		12.2	73 Btuh
3	2, NFRC 0.21	Metal	0.33	E	30.0		12.2	366 Btuh
4	2, NFRC 0.21	Metal	0.33	S	40.0		12.2	488 Btuh
5	2, NFRC 0.21	Metal	0.33	S	30.0		12.2	366 Btuh
6	2, NFRC 0.21	Metal	0.33	W	6.0		12.2	73 Btuh
7	2, NFRC 0.21	Metal	0.33	W	15.0		12.2	183 Btuh
Window Total					136.0(sqft)			1661 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.085)	13.0/1.0	317		3.14	996 Btuh
2	Frame - Wood	- Ext	(0.085)	13.0/1.0	258		3.14	811 Btuh
3	Frame - Wood	- Ext	(0.085)	13.0/1.0	274		3.14	860 Btuh
4	Frame - Wood	- Ext	(0.085)	13.0/1.0	291		3.14	914 Btuh
Wall Total					1141(sqft)			3581 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		18		17.0	303 Btuh
2	Insulated - Exterior,	n	(0.460)		33		17.0	567 Btuh
3	Insulated - Exterior,	n	(0.460)		18		17.0	303 Btuh
4	Insulated - Exterior,	n	(0.460)		33		17.0	567 Btuh
Door Total					102(sqft)			1740Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
1	Flat ceil/D/Shing		(0.014)	30.0/38.0	1846		0.53	984 Btuh
Ceiling Total					1846(sqft)			984Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
1	Slab On Grade		(1.180)	0.0	172.5 ft(perim.)		43.7	7531 Btuh
Floor Total					1846 sqft			7531 Btuh
Envelope Subtotal:								15496 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=		
	Natural		0.16	14764	1.00	38.6		1562 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.244)							4166 Btuh
All Zones	Sensible Subtotal All Zones							21224 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Ashley Johnson

Lake City, FL 32055

Project Title:
Norris Const Johnson Project
Building Type: User

4/29/2024

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	21224 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	21224 Btuh

EQUIPMENT

1. Electric Heat Pump	#	48000 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

Ashley Johnson

Project Title:

Norris Const Johnson Project

Lake City, FL 32055

4/29/2024

Reference City: Gainesville, FL (Defaults)

Temperature Difference: 17.0F(MJ8 99%)

Humidity difference: 47gr.

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	0.21, 0.33	B-L	No	N		10.0f	1.0ft	9.0	0.0	9.0	8	8	69	Btuh
2	2 NFRC	0.21, 0.33	B-L	No	E		1.5ft	1.0ft	6.0	0.5	5.5	8	19	107	Btuh
3	2 NFRC	0.21, 0.33	B-L	No	E		1.5ft	1.0ft	30.0	1.5	28.5	8	19	548	Btuh
4	2 NFRC	0.21, 0.33	B-L	No	S		10.0f	1.0ft	40.0	40.0	0.0	8	9	307	Btuh
5	2 NFRC	0.21, 0.33	B-L	No	S		10.0f	1.0ft	30.0	30.0	0.0	8	9	230	Btuh
6	2 NFRC	0.21, 0.33	B-L	No	W		1.5ft	1.0ft	6.0	0.5	5.5	8	19	107	Btuh
7	2 NFRC	0.21, 0.33	B-L	No	W		1.5ft	1.0ft	15.0	0.7	14.3	8	19	274	Btuh
	Excursion													19	Btuh
	Window Total								136 (sqft)					1663	Btuh
Walls	Type		U-Value		R-Value		Area(sqft)		HTM		Load				
					Cav/Sheath										
1	Frame - Wood - Ext		0.08		13.0/1.0		317.2		2.0		633		Btuh		
2	Frame - Wood - Ext		0.08		13.0/1.0		258.3		2.0		515		Btuh		
3	Frame - Wood - Ext		0.08		13.0/1.0		274.0		2.0		546		Btuh		
4	Frame - Wood - Ext		0.08		13.0/1.0		291.1		2.0		580		Btuh		
	Wall Total						1141 (sqft)				2274		Btuh		
Doors	Type		Area (sqft)		HTM		Load								
1	Insulated - Exterior		17.8		12.9		229		Btuh						
2	Insulated - Exterior		33.3		12.9		429		Btuh						
3	Insulated - Exterior		17.8		12.9		229		Btuh						
4	Insulated - Exterior		33.3		12.9		429		Btuh						
	Door Total		102 (sqft)				1317		Btuh						
Ceilings	Type/Color/Surface		U-Value		R-Value		Area(sqft)		HTM		Load				
1	Vented Attic/DarkShingle		0.014		30.0/38.0		1845.5		0.35		638		Btuh		
	Ceiling Total						1846 (sqft)				638		Btuh		
Floors	Type		R-Value		Size		HTM		Load						
1	Slab On Grade		0.0		1846 (ft-perimeter)		0.0		0		Btuh				
	Floor Total				1845.5 (sqft)				0		Btuh				
	Envelope Subtotal:													5892	Btuh
Infiltration	Type		Average ACH		Volume(cuft)		Wall Ratio		CFM=		Load				
	Natural		0.12		14764		1		28.9		538		Btuh		
Internal gain	Occupants		Btuh/occupant		Appliance		Load								
	3		X 230		+ 1200		1890		Btuh						
	Sensible Envelope Load:													8320	Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.631)													5250	Btuh
	Sensible Load All Zones													13570	Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Ashley Johnson

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Norris Const Johnson Project

Lake City, FL 32055

4/29/2024

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	8320 Btuh
	Sensible Duct Load	5250 Btuh
	Total Sensible Zone Loads	13570 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	13570 Btuh
	Latent infiltration gain (for 47 gr. humidity difference)	920 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1109 Btuh
	Latent occupant gain (3.0 people @ 200 Btuh per person)	600 Btuh
	Latent other gain	1200 Btuh
	Latent total gain	3829 Btuh
	TOTAL GAIN	17400 Btuh

EQUIPMENT

1. Central Unit	#	48000 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(1/2))

(Ornt - compass orientation)



Version 8