

Residential System Sizing Calculation

Summary

Logan Jack

Project Title:
240831 Jack Res

Lake City, FL

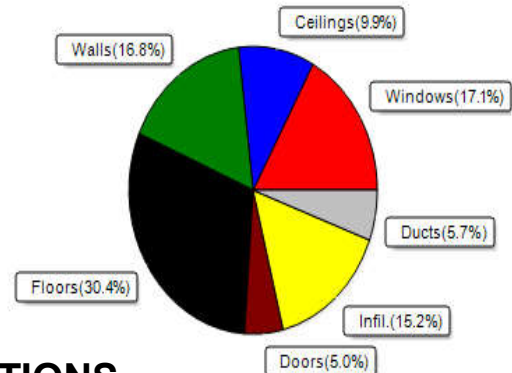
2024-07-19

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		68833 Btuh	Total cooling load calculation		54586 Btuh
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	109.0	75000	Sensible (SHR = 0.75)	122.9	56250
Heat Pump + Auxiliary(0.0kW)	109.0	75000	Latent	212.7	18750
			Total (Electric Heat Pump)	137.4	75000

WINTER CALCULATIONS

Winter Heating Load (for 4999 sqft)

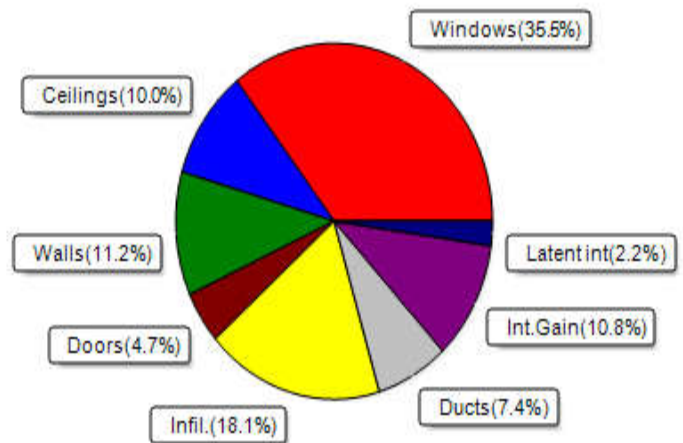
Load component		Load	
Window total	838 sqft	11738	Btuh
Wall total	3681 sqft	11534	Btuh
Door total	216 sqft	3456	Btuh
Ceiling total	5656 sqft	6815	Btuh
Floor total	See detail report	20957	Btuh
Infiltration	238 cfm	10439	Btuh
Duct loss		3894	Btuh
Subtotal		68833	Btuh
Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
TOTAL HEAT LOSS		68833	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 4999 sqft)

Load component		Load	
Window total	838 sqft	19397	Btuh
Wall total	3681 sqft	6129	Btuh
Door total	216 sqft	2592	Btuh
Ceiling total	5656 sqft	5452	Btuh
Floor total		0	Btuh
Infiltration	178 cfm	3719	Btuh
Internal gain		5880	Btuh
Duct gain		2601	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		45771	Btuh
Latent gain(ducts)		1444	Btuh
Latent gain(infiltration)		6171	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		1200	Btuh
Total latent gain		8815	Btuh
TOTAL HEAT GAIN		54586	Btuh



8th Edition



EnergyGauge® System Sizing
PREPARED BY: Evan Beamsley
DATE: 2024-07-19

EnergyGauge® / USRCZB v8.1.00

System Sizing Calculations - Winter

Residential Load - Room by Room Component Details

Logan Jack

Project Title:
240831 Jack Res
Building Type: User

Lake City, FL

2024-07-19

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 °F (TMY3 99%)

Winter Setpoint: 70 °F (Required Manual J default)

This calculation is for Worst Case. The house has been rotated 315 degrees.

Component Loads for Room #1: Main

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	Metal	0.35	NW	48.0		14.0	672 Btuh
2	2, NFRC 0.25	Metal	0.35	NE	18.8		14.0	262 Btuh
3	2, NFRC 0.25	Metal	0.35	NW	200.0		14.0	2800 Btuh
4	2, NFRC 0.25	Metal	0.35	NW	16.0		14.0	224 Btuh
5	2, NFRC 0.25	Metal	0.35	NW	32.0		14.0	448 Btuh
6	2, NFRC 0.25	Metal	0.35	W	18.0		14.0	252 Btuh
7	2, NFRC 0.25	Metal	0.35	NE	36.0		14.0	504 Btuh
8	2, NFRC 0.25	Metal	0.35	E	18.0		14.0	252 Btuh
9	2, NFRC 0.25	Metal	0.35	NE	32.0		14.0	448 Btuh
10	2, NFRC 0.25	Metal	0.35	NE	32.0		14.0	448 Btuh
11	2, NFRC 0.25	Metal	0.35	NE	30.0		14.0	420 Btuh
12	2, NFRC 0.25	Metal	0.35	SE	36.0		14.0	504 Btuh
13	2, NFRC 0.25	Metal	0.35	SE	24.0		14.0	336 Btuh
14	2, NFRC 0.25	Metal	0.35	SE	48.0		14.0	672 Btuh
15	2, NFRC 0.25	Metal	0.35	SE	12.3		14.0	173 Btuh
16	2, NFRC 0.25	Metal	0.35	SE	36.0		14.0	504 Btuh
17	2, NFRC 0.25	Metal	0.35	SE	24.0		14.0	336 Btuh
18	2, NFRC 0.25	Metal	0.35	SW	54.0		14.0	756 Btuh
19	2, NFRC 0.25	Metal	0.35	S	4.0		14.0	56 Btuh
20	2, NFRC 0.25	Metal	0.35	SW	12.0		14.0	168 Btuh
21	2, NFRC 0.25	Metal	0.35	W	4.0		14.0	56 Btuh
22	2, NFRC 0.25	Metal	0.35	NW	10.0		14.0	140 Btuh
Window Total					745.1(sqft)			10431 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Logan Jack
Lake City, FL

Project Title:
240831 Jack Res
Building Type: User

2024-07-19

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	88	3.09	272 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	91	3.09	282 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	206	3.09	637 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	137	3.09	422 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	135	3.09	418 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	29	3.09	89 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	49	3.09	151 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	29	3.09	89 Btuh
9	Frame - Wood	- Ext	(0.077)	19.0/0.0	20	3.09	62 Btuh
10	Frame - Wood	- Ext	(0.077)	19.0/0.0	201	3.09	622 Btuh
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	53	3.55	189 Btuh
12	Frame - Wood	- Ext	(0.077)	19.0/0.0	243	3.09	751 Btuh
13	Frame - Wood	- Ext	(0.077)	19.0/0.0	23	3.09	72 Btuh
14	Frame - Wood	- Adj	(0.089)	13.0/0.0	229	3.55	814 Btuh
15	Frame - Wood	- Ext	(0.077)	19.0/0.0	58	3.09	180 Btuh
16	Frame - Wood	- Ext	(0.077)	19.0/0.0	53	3.09	165 Btuh
17	Frame - Wood	- Ext	(0.077)	19.0/0.0	23	3.09	72 Btuh
18	Frame - Wood	- Ext	(0.077)	19.0/0.0	131	3.09	406 Btuh
19	Frame - Wood	- Ext	(0.077)	19.0/0.0	91	3.09	281 Btuh
20	Frame - Wood	- Ext	(0.077)	19.0/0.0	62	3.09	191 Btuh
21	Frame - Wood	- Ext	(0.077)	19.0/0.0	91	3.09	281 Btuh
22	Frame - Wood	- Ext	(0.077)	19.0/0.0	131	3.09	406 Btuh
23	Frame - Wood	- Ext	(0.077)	19.0/0.0	65	3.09	202 Btuh
24	Frame - Wood	- Ext	(0.077)	19.0/0.0	53	3.09	165 Btuh
25	Frame - Wood	- Adj	(0.089)	13.0/0.0	58	3.55	205 Btuh
26	Frame - Wood	- Ext	(0.077)	19.0/0.0	98	3.09	302 Btuh
27	Frame - Wood	- Ext	(0.077)	19.0/0.0	17	3.09	52 Btuh
28	Frame - Wood	- Ext	(0.077)	19.0/0.0	24	3.09	75 Btuh
29	Frame - Wood	- Ext	(0.077)	19.0/0.0	71	3.09	220 Btuh
30	Frame - Wood	- Ext	(0.077)	19.0/0.0	24	3.09	73 Btuh
31	Frame - Wood	- Ext	(0.077)	19.0/0.0	17	3.09	52 Btuh
32	Frame - Wood	- Ext	(0.077)	19.0/0.0	153	3.09	474 Btuh
33	Frame - Wood	- Ext	(0.077)	19.0/0.0	3	3.09	10 Btuh
34	Frame - Wood	- Ext	(0.077)	19.0/0.0	177	3.09	546 Btuh
Wall Total					2935(sqft)		9229 Btuh
Doors	Type	Storm	Ueff.		Area X	HTM=	Load
1	Insulated - Exterior, n		(0.400)		24	16.0	384 Btuh
2	Insulated - Exterior, n		(0.400)		80	16.0	1280 Btuh
3	Insulated - Exterior, n		(0.400)		8	16.0	128 Btuh
4	Insulated - Exterior, n		(0.400)		16	16.0	256 Btuh
5	Insulated - Garage, n		(0.400)		24	16.0	384 Btuh
6	Insulated - Exterior, n		(0.400)		16	16.0	256 Btuh
7	Insulated - Garage, n		(0.400)		24	16.0	384 Btuh
Door Total					192(sqft)		3072Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Logan Jack
Lake City, FL

Project Title:
240831 Jack Res
Building Type: User

2024-07-19

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Flat ceil/D/Shing	(0.241)	0.0/22.0	4587	1.2	5527 Btuh
2	Knee wall/D/Shing	(0.241)	0.0/22.0	614	1.2	740 Btuh
	Ceiling Total			5201(sqft)		6267Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	357.0 ft(perim.)	47.2	16850 Btuh
	Floor Total			4587 sqft		16850 Btuh
	Room Envelope Subtotal:					45849 Btuh
Infiltration	Type	Wholehouse ACH	Room Volume	Wall Ratio	CFM=	
	Natural	0.25	52292	0.80	189.8	8323 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DLM of 0.072)					3894 Btuh
Room #1	Sensible Room Subtotal					58067 Btuh

Component Loads for Room #2: Caslta

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
23	2, NFRC 0.25	Metal	0.35	NW	24.0	14.0	336 Btuh
24	2, NFRC 0.25	Metal	0.35	NE	8.0	14.0	112 Btuh
25	2, NFRC 0.25	Metal	0.35	SE	13.3	14.0	187 Btuh
26	2, NFRC 0.25	Metal	0.35	SW	48.0	14.0	672 Btuh
	Window Total				93.3(sqft)		1307 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
35	Frame - Wood	- Ext	(0.077)	19.0/0.0	206	3.09	637 Btuh
36	Frame - Wood	- Ext	(0.077)	19.0/0.0	142	3.09	439 Btuh
37	Frame - Wood	- Ext	(0.077)	19.0/0.0	47	3.09	144 Btuh
38	Frame - Wood	- Ext	(0.077)	19.0/0.0	52	3.09	160 Btuh
39	Frame - Wood	- Ext	(0.077)	19.0/0.0	112	3.09	346 Btuh
40	Frame - Wood	- Ext	(0.077)	19.0/0.0	55	3.09	170 Btuh
41	Frame - Wood	- Ext	(0.077)	19.0/0.0	50	3.09	155 Btuh
42	Frame - Wood	- Ext	(0.077)	19.0/0.0	83	3.09	256 Btuh
	Wall Total				746(sqft)		2306 Btuh
Doors	Type	Storm	Ueff.		Area X	HTM=	Load
8	Insulated - Exterior, n		(0.400)		8	16.0	128 Btuh
9	Insulated - Exterior, n		(0.400)		16	16.0	256 Btuh
	Door Total				24(sqft)		384Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Logan Jack
Lake City, FL

Project Title:
240831 Jack Res
Building Type: User

2024-07-19

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
3	Flat ceil/D/Shing	(0.241)	0.0/22.0	303	1.2	365 Btuh
4	Knee wall/D/Shing	(0.241)	0.0/22.0	30	1.2	36 Btuh
5	Sloped ce/D/Shing	(0.241)	0.0/22.0	122	1.2	147 Btuh
	Ceiling Total			455(sqft)		548Btuh
Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
2	Slab On Grade	(1.180)	0.0	87.0 ft(perim.)	47.2	4106 Btuh
	Floor Total			412 sqft		4106 Btuh
	Room Envelope Subtotal:					8651 Btuh
Infiltration	Type	Wholehouse ACH	Room Volume	Wall Ratio	CFM=	
	Natural	0.25	4326	0.20	48.2	2115 Btuh
Duct load	No ducts assigned to this zone. (DLM of 0.000)					0 Btuh
Room #2	Sensible Room Subtotal					10767 Btuh

SYSTEM GROUPS (BLOCK LOADS)

Heating Loads For System(s):1 Block #1:Block1 Serving Rooms: 1	Block load	58067 Btuh
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Heating Loads For System(s):2 Block #2:Block2 Serving Rooms: 2	Block load	10767 Btuh
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Manual J Winter Calculations

Residential Load - Component Details (continued)

Logan Jack
Lake City, FL

Project Title:
240831 Jack Res
Building Type: User

2024-07-19

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	68833 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	68833 Btuh

EQUIPMENT

1. Electric Heat Pump	#	63000 Btuh
2. Electric Heat Pump	#	12000 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)



Version 8

System Sizing Calculations - Summer

Residential Load - Room by Room Component Details

Logan Jack

Project Title:
240831 Jack Res

Lake City, FL

2024-07-19

Reference City: Gainesville, FL (Defaults)

Temperature Difference: 19.0F(TMY3 99%)

Humidity difference: 51gr.

Summer Setpoint: 75 °F (Required Manual J default)

This calculation is for Worst Case. The house has been rotated 315 degrees.

Component Loads for Room #1: Main

Window	Type*						Overhang		Window Area(sqft)			HTM		Load	
	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
1	2 NFRC	0.25, 0.35	No	No	NW		12.3f	2.3ft	48.0	0.0	48.0	12	23	1126	Btuh
2	2 NFRC	0.25, 0.35	No	No	NE		42.5f	0.0ft	18.8	0.0	18.8	12	23	440	Btuh
3	2 NFRC	0.25, 0.35	No	No	NW		15.2f	1.0ft	200.0	0.0	200.0	12	23	4690	Btuh
4	2 NFRC	0.25, 0.35	No	No	NW		15.2f	2.3ft	16.0	0.0	16.0	12	23	375	Btuh
5	2 NFRC	0.25, 0.35	No	No	NW		8.2ft	0.0ft	32.0	0.0	32.0	12	23	750	Btuh
6	2 NFRC	0.25, 0.35	No	No	W		1.5ft	0.3ft	18.0	2.7	15.3	12	31	502	Btuh
7	2 NFRC	0.25, 0.35	No	No	NE		1.5ft	0.3ft	36.0	0.0	36.0	12	23	844	Btuh
8	2 NFRC	0.25, 0.35	No	No	E		1.5ft	0.3ft	18.0	2.7	15.3	12	31	502	Btuh
9	2 NFRC	0.25, 0.35	No	No	NE		1.5ft	1.3ft	32.0	0.0	32.0	12	23	750	Btuh
10	2 NFRC	0.25, 0.35	No	No	NE		1.5ft	1.3ft	32.0	0.0	32.0	12	23	750	Btuh
11	2 NFRC	0.25, 0.35	No	No	NE		1.5ft	1.3ft	30.0	0.0	30.0	12	23	703	Btuh
12	2 NFRC	0.25, 0.35	No	No	SE		1.5ft	5.0ft	36.0	0.0	36.0	12	25	884	Btuh
13	2 NFRC	0.25, 0.35	No	No	SE		1.5ft	1.0ft	24.0	8.8	15.2	12	25	478	Btuh
14	2 NFRC	0.25, 0.35	No	No	SE		11.2f	3.0ft	48.0	48.0	0.0	12	25	572	Btuh
15	2 NFRC	0.25, 0.35	No	No	SE		11.2f	0.5ft	12.3	12.3	0.0	12	25	147	Btuh
16	2 NFRC	0.25, 0.35	No	No	SE		1.5ft	5.0ft	36.0	0.0	36.0	12	25	884	Btuh
17	2 NFRC	0.25, 0.35	No	No	SE		1.5ft	1.0ft	24.0	8.8	15.2	12	25	478	Btuh
18	2 NFRC	0.25, 0.35	No	No	SW		1.5ft	1.3ft	54.0	10.2	43.8	12	25	1197	Btuh
19	2 NFRC	0.25, 0.35	No	No	S		1.5ft	1.3ft	4.0	4.0	0.0	12	14	48	Btuh
20	2 NFRC	0.25, 0.35	No	No	SW		1.5ft	1.3ft	12.0	6.8	5.2	12	25	209	Btuh
21	2 NFRC	0.25, 0.35	No	No	W		1.5ft	1.3ft	4.0	0.0	4.0	12	31	123	Btuh
22	2 NFRC	0.25, 0.35	No	No	NW		1.5ft	0.3ft	10.0	0.0	10.0	12	23	234	Btuh
Window Total									745 (sqft)					16687 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Logan Jack

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
240831 Jack Res

Lake City, FL

2024-07-19

Walls	Type	U-Value	R-Value	Area(sqft)	HTM	Load
			Cav/Sheath			
1	Frame - Wood - Ext	0.08	19.0/0.0	88.0	1.7	146 Btuh
2	Frame - Wood - Ext	0.08	19.0/0.0	91.3	1.7	151 Btuh
3	Frame - Wood - Ext	0.08	19.0/0.0	206.0	1.7	341 Btuh
4	Frame - Wood - Ext	0.08	19.0/0.0	136.7	1.7	226 Btuh
5	Frame - Wood - Ext	0.08	19.0/0.0	135.3	1.7	224 Btuh
6	Frame - Wood - Ext	0.08	19.0/0.0	28.7	1.7	47 Btuh
7	Frame - Wood - Ext	0.08	19.0/0.0	49.0	1.7	81 Btuh
8	Frame - Wood - Ext	0.08	19.0/0.0	28.7	1.7	47 Btuh
9	Frame - Wood - Ext	0.08	19.0/0.0	20.0	1.7	33 Btuh
10	Frame - Wood - Ext	0.08	19.0/0.0	201.3	1.7	333 Btuh
11	Frame - Wood - Ext	0.09	13.0/0.0	53.3	2.3	121 Btuh
12	Frame - Wood - Ext	0.08	19.0/0.0	243.0	1.7	402 Btuh
13	Frame - Wood - Ext	0.08	19.0/0.0	23.3	1.7	39 Btuh
14	Frame - Wood - Adj	0.09	13.0/0.0	229.3	1.7	387 Btuh
15	Frame - Wood - Ext	0.08	19.0/0.0	58.3	1.7	96 Btuh
16	Frame - Wood - Ext	0.08	19.0/0.0	53.3	1.7	88 Btuh
17	Frame - Wood - Ext	0.08	19.0/0.0	23.3	1.7	39 Btuh
18	Frame - Wood - Ext	0.08	19.0/0.0	131.3	1.7	217 Btuh
19	Frame - Wood - Ext	0.08	19.0/0.0	91.0	1.7	150 Btuh
20	Frame - Wood - Ext	0.08	19.0/0.0	61.7	1.7	102 Btuh
21	Frame - Wood - Ext	0.08	19.0/0.0	91.0	1.7	150 Btuh
22	Frame - Wood - Ext	0.08	19.0/0.0	131.3	1.7	217 Btuh
23	Frame - Wood - Ext	0.08	19.0/0.0	65.3	1.7	108 Btuh
24	Frame - Wood - Ext	0.08	19.0/0.0	53.3	1.7	88 Btuh
25	Frame - Wood - Adj	0.09	13.0/0.0	57.7	1.7	97 Btuh
26	Frame - Wood - Ext	0.08	19.0/0.0	97.7	1.7	162 Btuh
27	Frame - Wood - Ext	0.08	19.0/0.0	16.7	1.7	28 Btuh
28	Frame - Wood - Ext	0.08	19.0/0.0	24.3	1.7	40 Btuh
29	Frame - Wood - Ext	0.08	19.0/0.0	71.3	1.7	118 Btuh
30	Frame - Wood - Ext	0.08	19.0/0.0	23.5	1.7	39 Btuh
31	Frame - Wood - Ext	0.08	19.0/0.0	16.7	1.7	28 Btuh
32	Frame - Wood - Ext	0.08	19.0/0.0	153.3	1.7	254 Btuh
33	Frame - Wood - Ext	0.08	19.0/0.0	3.3	1.7	6 Btuh
34	Frame - Wood - Ext	0.08	19.0/0.0	176.7	1.7	292 Btuh
	Wall Total			2935 (sqft)		4896 Btuh
Doors	Type			Area (sqft)	HTM	Load
1	Insulated - Exterior			24.0	12.0	288 Btuh
2	Insulated - Exterior			80.0	12.0	960 Btuh
3	Insulated - Exterior			8.0	12.0	96 Btuh
4	Insulated - Exterior			16.0	12.0	192 Btuh
5	Insulated - Garage			24.0	12.0	288 Btuh
6	Insulated - Exterior			16.0	12.0	192 Btuh
7	Insulated - Garage			24.0	12.0	288 Btuh
	Door Total			192 (sqft)		2304 Btuh
Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Unvented Attic/DarkShingle	0.241	0.0/22.0	4587.0	0.96	4422 Btuh
2	Knee wall to attic/DarkShingle	0.241	0.0/22.0	614.0	0.96	592 Btuh
	Ceiling Total			5201 (sqft)		5014 Btuh
Floors	Type		R-Value	Size	HTM	Load
1	Slab On Grade		0.0	4587 (ft-perimeter)	0.0	0 Btuh
	Floor Total			4587.0 (sqft)		0 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Logan Jack
Lake City, FL

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
240831 Jack Res

2024-07-19

	Zone Envelope Subtotal:					28901 Btuh
Infiltration	Type Natural	Wholehouse ACH 0.19	Volume(cuft) 52292	Wall Ratio 0.80	CFM= 142.3	Load 2965 Btuh
Internal gain		Occupants 4	Btuh/occupant X 230	Appliance +	3400	Load 4320 Btuh
	Sensible Envelope Load:					36186 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.071)					2560 Btuh
	Sensible Zone Load					38746 Btuh

Component Loads for Room #2: Caslta

Window	Type*					Overhang		Window Area(sqft)			HTM		Load	
	Panes	SHGC	U	InSh	IS Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
23	2 NFRC	0.25, 0.35	No	No	NW	1.5ft	3.0ft	24.0	0.0	24.0	12	23	563	Btuh
24	2 NFRC	0.25, 0.35	No	No	NE	1.5ft	3.0ft	8.0	0.0	8.0	12	23	188	Btuh
25	2 NFRC	0.25, 0.35	No	No	SE	8.2ft	0.0ft	13.3	13.3	0.0	12	25	159	Btuh
26	2 NFRC	0.25, 0.35	No	No	SW	4.0ft	1.3ft	48.0	31.5	16.5	12	25	780	Btuh
	Window Total							93 (sqft)					1690 Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)		HTM		Load	
								Cav/Sheath						
35	Frame - Wood - Ext					0.08	19.0/0.0	206.0		1.7		341		Btuh
36	Frame - Wood - Ext					0.08	19.0/0.0	142.0		1.7		235		Btuh
37	Frame - Wood - Ext					0.08	19.0/0.0	46.7		1.7		77		Btuh
38	Frame - Wood - Ext					0.08	19.0/0.0	51.7		1.7		85		Btuh
39	Frame - Wood - Ext					0.08	19.0/0.0	112.0		1.7		185		Btuh
40	Frame - Wood - Ext					0.08	19.0/0.0	55.0		1.7		91		Btuh
41	Frame - Wood - Ext					0.08	19.0/0.0	50.0		1.7		83		Btuh
42	Frame - Wood - Ext					0.08	19.0/0.0	82.7		1.7		137		Btuh
	Wall Total							746 (sqft)					1234 Btuh	
Doors	Type								Area (sqft)		HTM		Load	
8	Insulated - Exterior							8.0		12.0		96		Btuh
9	Insulated - Exterior							16.0		12.0		192		Btuh
	Door Total							24 (sqft)					288 Btuh	
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)		HTM		Load	
3	Unvented Attic/DarkShingle					0.241	0.0/22.0	303.0		0.96		292		Btuh
4	Knee wall to attic/DarkShingle					0.241	0.0/22.0	30.0		0.96		29		Btuh
5	Unvented Attic/DarkShingle					0.241	0.0/22.0	122.0		0.96		118		Btuh
	Ceiling Total							455 (sqft)					439 Btuh	
Floors	Type						R-Value		Size		HTM		Load	
2	Slab On Grade					0.0		412 (ft-perimeter)		0.0		0		Btuh
	Floor Total							412.0 (sqft)					0 Btuh	
	Zone Envelope Subtotal:												3650 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Logan Jack
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Infiltration	Type Natural	Wholehouse ACH 0.19	Volume(cuft) 4326	Wall Ratio 0.20	CFM= 36.2	Load 754 Btuh
Internal gain		Occupants 2	Btuh/occupant X 230	Appliance +	1100	Load 1560 Btuh
					Sensible Envelope Load:	5964 Btuh
Duct load	No ducts assigned to this zone. (DGM of 0.000)					0 Btuh
					Sensible Zone Load	5964 Btuh

The following window Excursion will be assigned to the system loads.

Windows	July excursion for System 1	577 Btuh
	July excursion for System 2	443 Btuh
	Excursion Subtotal:	1020 Btuh
Duct load		41 Btuh
	Sensible Excursion Load	1061 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Logan Jack
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SYSTEM GROUPS (BLOCK LOADS)

Cooling Loads For System(s): 1 Block #1:Block1 Serving Zones: 1	Sensible Envelope Load	36186 Btuh
	Window Excursion	577 Btuh
	Sensible Duct Load (duct gain multiplier of 0.071) (Includes 41 Btuh due to window excursion)	2601 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Zone Sensible gain	39364 Btuh
	Latent infiltration/ventilation gain	4920 Btuh
	Latent duct gain	1444 Btuh
	Latent occupant gain	800 Btuh
	Latent other gain	0 Btuh
	Total block load	46529 Btuh

Cooling Loads For System(s): 2 Block #2:Block2 Serving Zones: 2	Sensible Envelope Load	5964 Btuh
	Window Excursion	443 Btuh
	Sensible Duct Load (duct gain multiplier of 0.000) (Includes 0 Btuh due to window excursion)	0 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Zone Sensible gain	6406 Btuh
	Latent infiltration/ventilation gain	1251 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain	400 Btuh
	Latent other gain	0 Btuh
	Total block load	8057 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Logan Jack
Lake City, FL

Project Title:
240831 Jack Res

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WHOLE HOUSE TOTALS

Whole House Totals for Cooling	Sensible Envelope Load All Zones	43169 Btuh
	Sensible Duct Load	2601 Btuh
	Total Sensible Zone Loads	45771 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	45771 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	6171 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	1444 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	8815 Btuh
	TOTAL GAIN	54586 Btuh

EQUIPMENT

1. Central Unit	#	63000 Btuh
2. Central Unit	#	12000 Btuh

*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