

Residential System Sizing Calculation

Summary

Price Res

Project Title:
220864 Price Res

Lake City, FL

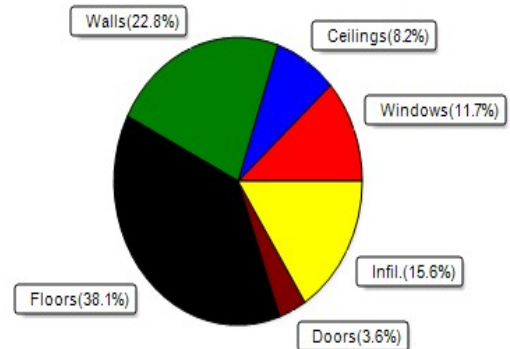
2023-04-07

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	35826 Btuh	Total cooling load calculation	29764 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	111.6 40000	Sensible (SHR = 0.75)	118.8 30000
Heat Pump + Auxiliary(0.0kW)	111.6 40000	Latent	221.6 10000
		Total (Electric Heat Pump)	134.4 40000

WINTER CALCULATIONS

Winter Heating Load (for 2071 sqft)

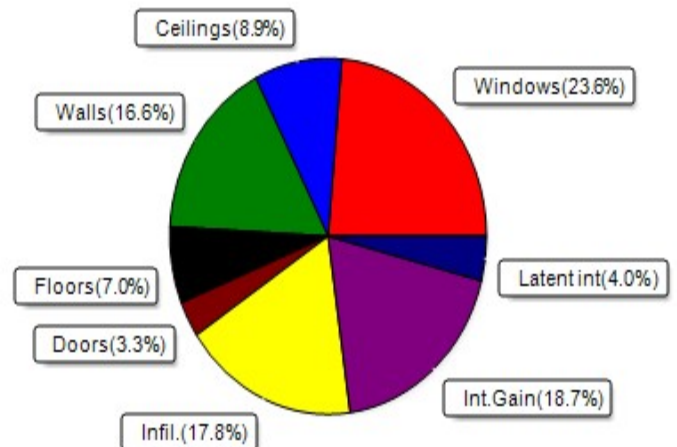
Load component	Load
Window total 299 sqft	4181 Btuh
Wall total 2379 sqft	8171 Btuh
Door total 81 sqft	1298 Btuh
Ceiling total 2087 sqft	2941 Btuh
Floor total See detail report	13632 Btuh
Infiltration 128 cfm	5603 Btuh
Duct loss	0 Btuh
Subtotal	35826 Btuh
Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
TOTAL HEAT LOSS	35826 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2071 sqft)

Load component	Load
Window total 299 sqft	7031 Btuh
Wall total 2379 sqft	4931 Btuh
Door total 81 sqft	973 Btuh
Ceiling total 2087 sqft	2662 Btuh
Floor total	2079 Btuh
Infiltration 96 cfm	1996 Btuh
Internal gain	5580 Btuh
Duct gain	0 Btuh
Sens. Ventilation Ex:0 cfm; Sup:0 cfm	0 Btuh
Blower Load	0 Btuh
Total sensible gain	25252 Btuh
Latent gain(ducts)	0 Btuh
Latent gain(infiltration)	3312 Btuh
Latent gain(ventilation)	0 Btuh
Latent gain(internal/occupants/other)	1200 Btuh
Total latent gain	4512 Btuh
TOTAL HEAT GAIN	29764 Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY: Evan Beamsley

DATE: 2023-04-07

System Sizing Calculations - Winter

Residential Load - Room by Room Component Details

Price Res
Lake City, FL

Project Title:
220864 Price Res
Building Type: User

2023-04-07

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 225 degrees.

Component Loads for Room #1: 1st Floor

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.35	S	10.0		14.0	140 Btuh
2	2, NFRC 0.25	Vinyl	0.35	S	6.0		14.0	84 Btuh
3	2, NFRC 0.25	Vinyl	0.35	SW	6.0		14.0	84 Btuh
4	2, NFRC 0.25	Vinyl	0.35	SW	18.0		14.0	252 Btuh
5	2, NFRC 0.25	Vinyl	0.35	SW	30.0		14.0	420 Btuh
6	2, NFRC 0.25	Vinyl	0.35	NW	10.0		14.0	140 Btuh
7	2, NFRC 0.25	Vinyl	0.35	NW	15.0		14.0	210 Btuh
8	2, NFRC 0.25	Vinyl	0.35	NW	25.0		14.0	350 Btuh
9	2, NFRC 0.25	Vinyl	0.35	NE	25.0		14.0	350 Btuh
10	2, NFRC 0.25	Vinyl	0.35	NE	10.0		14.0	140 Btuh
11	2, NFRC 0.25	Vinyl	0.35	NE	30.0		14.0	420 Btuh
12	2, NFRC 0.25	Vinyl	0.35	SE	15.0		14.0	210 Btuh
13	2, NFRC 0.25	Vinyl	0.35	N	6.0		14.0	84 Btuh
	Window Total					206.0(sqft)		2884 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	123		3.55	435 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	21		3.55	73 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	210		3.55	746 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	183		3.55	649 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	348		3.09	1076 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	208		3.55	738 Btuh
7	Frame - Wood	- Ext	(0.089)	13.0/0.0	166		3.55	591 Btuh
8	Frame - Wood	- Ext	(0.089)	13.0/0.0	94		3.55	335 Btuh
9	Frame - Wood	- Ext	(0.089)	13.0/0.0	92		3.55	325 Btuh
10	Frame - Wood	- Adj	(0.089)	13.0/0.0	69		3.55	243 Btuh
	Wall Total					1513(sqft)		5211 Btuh
Doors	Type	Storm	Ueff.	R-Value	Area	X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)		10		16.0	160 Btuh
2	Insulated - Exterior,	n	(0.400)		10		16.0	160 Btuh
3	Insulated - Exterior,	n	(0.400)		10		16.0	160 Btuh
4	Insulated - Garage,	n	(0.400)		20		16.0	320 Btuh
	Door Total					50(sqft)		800Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value	Area	X	HTM=	Load	
1	Single as/D/Shing	(0.034)	30.0/0.0	659		1.4	896 Btuh	
2	Flat ceil/D/Shing	(0.032)	30.0/0.0	135		1.3	172 Btuh	
4	Knee wall/D/Shing	(0.049)	19.0/0.0	24		2.0	47 Btuh	
	Ceiling Total					818(sqft)		1115Btuh
Floors	Type	Ueff.	R-Value	Size	X	HTM=	Load	
1	Slab On Grade	(1.180)	0.0	163.0 ft(perim.)		47.2	7694 Btuh	
	Floor Total					1141 sqft		7694 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Price Res
Lake City, FL

Project Title:
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Building Type: User

2023-04-07

	Room Envelope Subtotal:	17704 Btuh
Infiltration	Type Wholehouse ACH Room Volume Wall Ratio CFM= Natural 0.33 14605 0.64 81.2	3563 Btuh
Duct load	Average sealed, Supply(R6.0-Cond.), Return(R6.0-Cond.) (DLM of 0.000)	0 Btuh
Room #1	Sensible Room Subtotal	21267 Btuh

Component Loads for Room #2: 2nd Floor

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
14	2, NFRC 0.25	Vinyl	0.35	SW	26.7		14.0	373 Btuh
15	2, NFRC 0.25	Metal	0.35	NE	6.0		14.0	84 Btuh
16	2, NFRC 0.25	Vinyl	0.35	SE	30.0		14.0	420 Btuh
	Window Total					62.7(sqft)		877 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
11	Frame - Wood	- Ext	(0.089)	13.0/0.0	141		3.55	502 Btuh
12	Frame - Wood	- Ext	(0.089)	13.0/0.0	88		3.55	312 Btuh
13	Frame - Wood	- Ext	(0.089)	13.0/0.0	146		3.55	518 Btuh
14	Frame - Wood	- Ext	(0.077)	19.0/0.0	218		3.09	674 Btuh
	Wall Total					593(sqft)		2006 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
5	Insulated - Exterior, n		(0.400)		13		16.0	213 Btuh
	Door Total					13(sqft)		213Btuh
Ceilings	Type/Color/Surface	Ueff.	R-Value	Area	X	HTM=	Load	
3	Single as/D/Shing	(0.034)	30.0/0.0	582		1.4	792 Btuh	
	Ceiling Total					582(sqft)		792Btuh
Floors	Type	Ueff.	R-Value	Size	X	HTM=	Load	
2	Interior	(1.180)	0.0	544.0 sqft		0.0	0 Btuh	
	Floor Total					544 sqft		0 Btuh
	Room Envelope Subtotal:							3889 Btuh
Infiltration	Type	Wholehouse	ACH	Room Volume	Wall Ratio	CFM=	Load	
	Natural		0.33	5576	0.25	31.9	1397 Btuh	
Duct load	Average sealed, Supply(R6.0-Cond.), Return(R6.0-Cond.) (DLM of 0.000)						0 Btuh	

Manual J Winter Calculations

Residential Load - Component Details (continued)

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Building Type: User

2023-04-07

Room #2	Sensible Room Subtotal	5286 Btuh
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Component Loads for Room #3: bonus Room

Window	Panes/Type	Frame	U	Orientation	Area(sqft)	X	HTM=	Load
17	2, NFRC 0.25	Vinyl	0.35	E	30.0		14.0	420 Btuh
	Window Total				30.0(sqft)			420 Btuh
Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area	X	HTM=	Load
15	Frame - Wood	- Ext	(0.077)	19.0/0.0	35		3.09	109 Btuh
16	Frame - Wood	- Adj	(0.089)	13.0/0.0	16		3.55	55 Btuh
17	Frame - Wood	- Adj	(0.089)	13.0/0.0	67		3.55	236 Btuh
18	Frame - Wood	- Ext	(0.089)	13.0/0.0	104		3.55	369 Btuh
19	Frame - Wood	- Ext	(0.089)	13.0/0.0	14		3.55	50 Btuh
20	Frame - Wood	- Ext	(0.089)	13.0/0.0	23		3.55	83 Btuh
21	Frame - Wood	- Ext	(0.089)	13.0/0.0	14		3.55	50 Btuh
	Wall Total				273(sqft)			954 Btuh
Doors	Type	Storm	Ueff.		Area	X	HTM=	Load
6	Insulated - Garage, n		(0.400)		18		16.0	284 Btuh
	Door Total				18(sqft)			284Btuh
Ceilings	Type/Color/Surface		Ueff.	R-Value	Area	X	HTM=	Load
5	Flat ceil/D/Shing		(0.032)	30.0/0.0	240		1.3	306 Btuh
6	Single as/D/Shing		(0.051)	19.0/0.0	207		2.0	422 Btuh
7	Knee wall/D/Shing		(0.032)	30.0/0.0	240		1.3	306 Btuh
	Ceiling Total				687(sqft)			1034Btuh
Floors	Type		Ueff.	R-Value	Size	X	HTM=	Load
3	Raised Wood - Adj		(0.385)	0.0	386.0 sqft		15.4	5939 Btuh
	Floor Total				386 sqft			5939 Btuh
	Room Envelope Subtotal:							8631 Btuh
Infiltration	Type	Wholehouse	ACH	Room Volume	Wall Ratio	CFM=		
	Natural		0.33	2972	0.11	14.7		643 Btuh
Duct load	No ducts assigned to this zone. (DLM of 0.000)							0 Btuh
Room #3	Sensible Room Subtotal							9274 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

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2023-04-07

SYSTEM GROUPS (BLOCK LOADS)

Heating Loads For System(s):1 Block #1:Block1 Serving Rooms: 1, 2	Block load	26553 Btuh
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Heating Loads For System(s):2 Block #2:Block2 Serving Rooms: 3	Block load	9274 Btuh
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WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm) Total Heat Loss	35826 Btuh 0 Btuh 35826 Btuh
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EQUIPMENT

1. Electric Heat Pump	#	30000 Btuh
2. Electric Heat Pump	#	10000 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

Envelope Leakage Test Report (Blower Door Test)
Residential Prescriptive, Performance or ERI Method Compliance
2020 Florida Building Code, Energy Conservation, 7th Edition

Jurisdiction:	Permit #:
Job Information	
Builder: Blake Construction Community: Lot: NA	
Address:	
City: Lake City State: FL Zip:	
Air Leakage Test Results <i>Passing results must meet either the Performance, Prescriptive, or ERI Method</i>	
☐ PRESCRIPTIVE METHOD-The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2. ☒ PERFORMANCE or ERI METHOD-The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2020 (Performance) or R406-2020 (ERI), section labeled as infiltration, sub-section ACH50. ACH(50) specified on Form R405-2020-Energy Calc (Performance) or R406-2020 (ERI): 7.000	
$\frac{\text{CFM}(50)}{\text{Building Volume}} \times 60 \div \frac{23153}{\text{ACH}(50)} =$ PASS ☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department. Method for calculating building volume: ☐ Retrieved from architectural plans ☒ Code software calculated ☐ Field measured and calculated	
R402.4.1.2 Testing. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), <i>Florida Statutes</i>, or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the <i>code official</i>. Testing shall be performed at any time after creation of all penetrations of the <i>building thermal envelope</i>. During testing: 1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures. 2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures. 3. Interior doors, if installed at the time of the test, shall be open. 4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed. 5. Heating and cooling systems, if installed at the time of the test, shall be turned off. 6. Supply and return registers, if installed at the time of the test, shall be fully open.	
Testing Company	
Company Name: _____ Phone: _____ I hereby verify that the above Air Leakage results are in accordance with the 2020 7th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above. Signature of Tester: _____ Date of Test: _____ Printed Name of Tester: _____ License/Certification #: _____ Issuing Authority: _____	

System Sizing Calculations - Summer

Residential Load - Room by Room Component Details

Price Res

Project Title:
220864 Price Res

Lake City, FL

2023-04-07

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 225 degrees.

Component Loads for Room #1: 1st Floor

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	S		1.5ft	1.8ft	10.0	10.0	0.0	12	14	119	Btuh
2	2 NFRC	0.25, 0.35	No	No	S		1.5ft	1.8ft	6.0	6.0	0.0	12	14	71	Btuh
3	2 NFRC	0.25, 0.35	No	No	SW		8.0ft	2.5ft	6.0	6.0	0.0	12	25	71	Btuh
4	2 NFRC	0.25, 0.35	No	No	SW		8.0ft	2.5ft	18.0	18.0	0.0	12	25	214	Btuh
5	2 NFRC	0.25, 0.35	No	No	SW		1.5ft	3.0ft	30.0	0.0	30.0	12	25	737	Btuh
6	2 NFRC	0.25, 0.35	No	No	NW		1.5ft	9.0ft	10.0	0.0	10.0	12	23	234	Btuh
7	2 NFRC	0.25, 0.35	No	No	NW		1.5ft	9.0ft	15.0	0.0	15.0	12	23	352	Btuh
8	2 NFRC	0.25, 0.35	No	No	NW		1.5ft	3.0ft	25.0	0.0	25.0	12	23	586	Btuh
9	2 NFRC	0.25, 0.35	No	No	NE		9.5ft	1.5ft	25.0	0.0	25.0	12	23	586	Btuh
10	2 NFRC	0.25, 0.35	No	No	NE		9.5ft	1.5ft	10.0	0.0	10.0	12	23	234	Btuh
11	2 NFRC	0.25, 0.35	No	No	NE		9.5ft	1.5ft	30.0	0.0	30.0	12	23	703	Btuh
12	2 NFRC	0.25, 0.35	No	No	SE		1.5ft	8.0ft	15.0	0.0	15.0	12	25	368	Btuh
13	2 NFRC	0.25, 0.35	No	No	N		1.5ft	1.5ft	6.0	0.0	6.0	12	12	71	Btuh
	Window Total								206 (sqft)					4350 Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)			HTM		Load	
								Cav/Sheath							
1	Frame - Wood - Ext						0.09	13.0/0.0	122.5			2.3		277 Btuh	
2	Frame - Wood - Ext						0.09	13.0/0.0	20.7			2.3		47 Btuh	
3	Frame - Wood - Ext						0.09	13.0/0.0	210.2			2.3		476 Btuh	
4	Frame - Wood - Ext						0.09	13.0/0.0	182.7			2.3		413 Btuh	
5	Frame - Wood - Ext						0.08	19.0/0.0	348.0			1.7		575 Btuh	
6	Frame - Wood - Ext						0.09	13.0/0.0	208.0			2.3		471 Btuh	
7	Frame - Wood - Ext						0.09	13.0/0.0	166.3			2.3		376 Btuh	
8	Frame - Wood - Ext						0.09	13.0/0.0	94.4			2.3		214 Btuh	
9	Frame - Wood - Ext						0.09	13.0/0.0	91.5			2.3		207 Btuh	
10	Frame - Wood - Adj						0.09	13.0/0.0	68.5			1.7		116 Btuh	
	Wall Total								1513 (sqft)					3172 Btuh	
Doors	Type						Area (sqft)			HTM		Load			
1	Insulated - Exterior						10.0			12.0		120 Btuh			
2	Insulated - Exterior						10.0			12.0		120 Btuh			
3	Insulated - Exterior						10.0			12.0		120 Btuh			
4	Insulated - Garage						20.0			12.0		240 Btuh			
	Door Total								50 (sqft)					600 Btuh	
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)			HTM		Load	
1	SnglAsmb w airsp/DarkShingle						0.034	30.0/0.0	659.0			0.99		650 Btuh	
2	Vented Attic/DarkShingle						0.032	30.0/0.0	135.0			1.72		232 Btuh	
4	Knee wall to attic/DarkShingle						0.049	19.0/0.0	24.0			2.65		64 Btuh	
	Ceiling Total								818 (sqft)					946 Btuh	
Floors	Type						R-Value		Size			HTM		Load	
1	Slab On Grade						0.0		1141 (ft-perimeter)			0.0		0 Btuh	
	Floor Total								1141.0 (sqft)					0 Btuh	
	Zone Envelope Subtotal:													9068 Btuh	

Manual J Summer Calculations

Residential Load - Component Details (continued)

Price Res

Project Title:
220864 Price Res

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

2023-04-07

Infiltration	Type Natural	Wholehouse ACH 0.25	Volume(cuft) 14605	Wall Ratio 0.64	CFM= 60.9	Load 1269 Btuh
Internal gain		Occupants 3	Btuh/occupant X 230	Appliance +	2400	Load 3090 Btuh
	Sensible Envelope Load:					13427 Btuh
Duct load	Average sealed, Supply(R6.0-Cond.), Return(R6.0-Cond.) (DGM of 0.000)					0 Btuh
	Sensible Zone Load					13427 Btuh

Component Loads for Room #2: 2nd Floor

Window	Type*					Overhang		Window Area(sqft)			HTM		Load
	Panes	SHGC	U	InSh	IS Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
14	2 NFRC	0.25, 0.35	No	No	SW	1.5ft	1.0ft	26.7	5.9	20.8	12	25	581 Btuh
15	2 NFRC	0.25, 0.35	No	No	NE	1.5ft	1.0ft	6.0	0.0	6.0	12	23	141 Btuh
16	2 NFRC	0.25, 0.35	No	No	SE	1.5ft	6.0ft	30.0	0.0	30.0	12	25	737 Btuh
	Window Total							63 (sqft)					1458 Btuh
Walls	Type	U-Value					R-Value		Area(sqft)		HTM		Load
							Cav/Sheath						
11	Frame - Wood - Ext	0.09					13.0/0.0		141.3		2.3		320 Btuh
12	Frame - Wood - Ext	0.09					13.0/0.0		88.0		2.3		199 Btuh
13	Frame - Wood - Ext	0.09					13.0/0.0		146.0		2.3		330 Btuh
14	Frame - Wood - Ext	0.08					19.0/0.0		218.0		1.7		360 Btuh
	Wall Total							593 (sqft)					1210 Btuh
Doors	Type								Area (sqft)		HTM		Load
5	Insulated - Exterior								13.3		12.0		160 Btuh
	Door Total							13 (sqft)					160 Btuh
Ceilings	Type/Color/Surface	U-Value					R-Value		Area(sqft)		HTM		Load
3	SnglAsmb w airsp/DarkShingle	0.034					30.0/0.0		582.0		0.99		574 Btuh
	Ceiling Total							582 (sqft)					574 Btuh
Floors	Type						R-Value		Size		HTM		Load
2	Interior						0.0		544 (sqft)		0.0		0 Btuh
	Floor Total							544.0 (sqft)					0 Btuh
	Zone Envelope Subtotal:												3402 Btuh

Infiltration	Type Natural	Wholehouse ACH 0.25	Volume(cuft) 5576	Wall Ratio 0.25	CFM= 23.9	Load 498 Btuh
Internal gain		Occupants 2	Btuh/occupant X 230	Appliance +	900	Load 1360 Btuh
	Sensible Envelope Load:					5260 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Price Res

Project Title:
220864 Price Res

Climate:FL_GAINESVILLE_REGIONAL_A

Lake City, FL

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Duct load	Average sealed, Supply(R6.0-Cond.), Return(R6.0-Cond.) (DGM of 0.000)	0 Btuh
	Sensible Zone Load	5260 Btuh

Component Loads for Room #3: bonus Room

Window	Type*						Overhang		Window Area(sqft)			HTM		Load		
	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded			
17	2 NFRC	0.25, 0.35	No	No	E		1.5ft	1.0ft	30.0	1.5	28.5	12	31	895	Btuh	
	Window Total								30 (sqft)					895	Btuh	
Walls	Type						U-Value	R-Value	Area(sqft)			HTM		Load		
							Cav/Sheath									
15	Frame - Wood - Ext						0.08	19.0/0.0	35.2			1.7		58	Btuh	
16	Frame - Wood - Adj						0.09	13.0/0.0	15.6			1.7		26	Btuh	
17	Frame - Wood - Adj						0.09	13.0/0.0	66.6			1.7		112	Btuh	
18	Frame - Wood - Ext						0.09	13.0/0.0	104.0			2.3		235	Btuh	
19	Frame - Wood - Ext						0.09	13.0/0.0	14.2			2.3		32	Btuh	
20	Frame - Wood - Ext						0.09	13.0/0.0	23.3			2.3		53	Btuh	
21	Frame - Wood - Ext						0.09	13.0/0.0	14.2			2.3		32	Btuh	
	Wall Total								273 (sqft)					549	Btuh	
Doors	Type									Area (sqft)			HTM		Load	
										17.8			12.0		213	
6	Insulated - Garage														Btuh	
	Door Total									18 (sqft)					213	
Ceilings	Type/Color/Surface						U-Value	R-Value	Area(sqft)			HTM		Load		
5	Vented Attic/DarkShingle						0.032	30.0/0.0	240.0			1.72		413	Btuh	
6	SnglAsmb no airsp/DarkShingle						0.051	19.0/0.0	207.0			1.53		317	Btuh	
7	Knee wall to attic/DarkShingle						0.032	30.0/0.0	240.0			1.72		413	Btuh	
	Ceiling Total								687 (sqft)					1142		
Floors	Type								R-Value			HTM		Load		
									Size							
3	Raised Wood - Adj								0.0			386 (sqft)		5.4		
	Floor Total								386.0 (sqft)					2079		
	Zone Envelope Subtotal:													4878		
														Btuh		

Infiltration	Type	Wholehouse ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.25	2972	0.11	11.0	229 Btuh
Internal gain	Occupants	Btuh/occupant	Appliance	Load		
	1	X 230	+	900	1130 Btuh	
	Sensible Envelope Load:					6237 Btuh
Duct load	No ducts assigned to this zone. (DGM of 0.000)					0 Btuh
	Sensible Zone Load					6237 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Price Res

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

Windows	July excursion for System 1	0 Btuh
	July excursion for System 2	328 Btuh
	Excursion Subtotal:	328 Btuh
Duct load		0 Btuh
	Sensible Excursion Load	328 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Price Res
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SYSTEM GROUPS (BLOCK LOADS)

Cooling Loads For System(s): 1 Block #1:Block1 Serving Zones: 1, 2	Sensible Envelope Load	18687 Btuh
	Window Excursion	0 Btuh
	Sensible Duct Load (duct gain multiplier of 0.000)	0 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Zone Sensible gain	18687 Btuh
	Latent infiltration/ventilation gain	2932 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain	1000 Btuh
	Latent other gain	0 Btuh
	Total block load	22619 Btuh

Cooling Loads For System(s): 2 Block #2:Block2 Serving Zones: 3	Sensible Envelope Load	6237 Btuh
	Window Excursion	328 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	6565 Btuh
	Latent infiltration/ventilation gain	380 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain	200 Btuh
	Latent other gain	0 Btuh
	Total block load	7145 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

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WHOLE HOUSE TOTALS		
Whole House Totals for Cooling	Sensible Envelope Load All Zones	25252 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	25252 Btuh
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	25252 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	3312 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (6.0 people @ 200 Btuh per person)	1200 Btuh
	Latent other gain	0 Btuh
	Latent total gain	4512 Btuh
	TOTAL GAIN	29764 Btuh

EQUIPMENT		
1. Central Unit	#	30000 Btuh
2. Central Unit	#	10000 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