

29790

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Lester

Project Title:

Class 3 Rating

Lake City, FL

1111033

Registration No. 0

Climate: North

Reference City: Gainesville (Defaults) Summer Temperature Difference: 17.0 F

11/15/2011

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

Component Loads for Whole House

Window	Type*		Overhang		Window Area(sqft)			HTM		Load	
	Pn/SHGC/U/InSh/ExSh/IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
1	2, Clear, 0.87, None,N,N	NW	1.5ft	7ft.	72.0	0.0	72.0	29	60	4323	Btuh
2	2, Clear, 0.87, None,N,N	NE	99ft.	6ft.	15.0	0.0	15.0	29	60	901	Btuh
3	2, Clear, 0.87, None,N,N	NW	10.5f	9ft.	26.7	0.0	26.7	29	60	1603	Btuh
4	2, Clear, 0.87, None,N,N	SW	99ft.	7ft.	36.0	36.0	0.0	29	63	1043	Btuh
5	2, Clear, 0.87, None,N,N	NW	1.5ft	6ft.	15.0	0.0	15.0	29	60	901	Btuh
6	2, Clear, 0.87, None,N,N	NE	1.5ft	1.66	2.7	0.0	2.7	29	60	162	Btuh
7	2, Clear, 0.87, None,N,N	NE	1.5ft	6ft.	30.0	0.0	30.0	29	60	1801	Btuh
8	2, Clear, 0.87, None,N,N	SE	7ft.	7ft.	12.0	12.0	0.0	29	63	348	Btuh
9	2, Clear, 0.87, None,N,N	SE	11.8	9ft.	26.7	26.7	0.0	29	63	773	Btuh
10	2, Clear, 0.87, None,N,N	SE	7ft.	7ft.	36.0	36.0	0.0	29	63	1043	Btuh
11	2, Clear, 0.87, None,N,N	SE	1.5ft	5ft.	16.0	6.1	9.9	29	63	796	Btuh
12	2, Clear, 0.87, None,N,N	SW	1.5ft	5ft.	16.0	6.1	9.9	29	63	796	Btuh
13	2, Clear, 0.87, None,N,N	SW	1.5ft	5ft.	16.0	6.1	9.9	29	63	796	Btuh
Window Total					320 (sqft)					15284 Btuh	
Walls	Type	R-Value/U-Value			Area(sqft)			HTM		Load	
1	Frame - Wood - Ext	13.0/0.09			1595.5			2.1		3328 Btuh	
2	Frame - Wood - Adj	13.0/0.09			250.0			1.5		377 Btuh	
Wall Total					1846 (sqft)					3705 Btuh	
Doors	Type				Area (sqft)			HTM		Load	
1	Insulated - Exterior				6.8			9.8		67 Btuh	
2	Insulated - Adjacent				19.0			9.8		187 Btuh	
3	Insulated - Exterior				13.6			9.8		133 Btuh	
Door Total					39 (sqft)					387 Btuh	
Ceilings	Type/Color/Surface	R-Value			Area(sqft)			HTM		Load	
1	Vented Attic/DarkShingle	30.0			2370.0			1.7		3925 Btuh	
Ceiling Total					2370 (sqft)					3925 Btuh	
Floors	Type	R-Value			Size			HTM		Load	
1	Slab On Grade	0.0			245 (ft(p))			0.0		0 Btuh	
Floor Total					245.0 (sqft)					0 Btuh	
Zone Envelope Subtotal:										23301 Btuh	
Infiltration	Type	ACH			Volume(cuft)			CFM=		Load	
	SensibleNatural	0.34			20313			115.1		2142 Btuh	
Internal gain	Occupants			Btuh/occupant			Appliance		Load		
	8			X 230 +			3400		5240 Btuh		
Duct load	Partially sealed, R6.0, Supply(Attic), Return(Attic)							DGM = 0.00		0.0 Btuh	
Sensible Zone Load										30683 Btuh	

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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	30683 Btuh
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	30683 Btuh
	Sensible ventilation	0 Btuh
	Blower	0 Btuh
	Total sensible gain	30683 Btuh
	Latent infiltration gain (for 54 gr. humidity difference)	4207 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (8 people @ 200 Btuh per person)	1600 Btuh
	Latent other gain	0 Btuh
	Latent total gain	5807 Btuh
	TOTAL GAIN	36489 Btuh

*Key: Window types (Pn - Number of panes of glass)

(SHGC - Shading coefficient of glass as SHGC numerical value or as clear or tint)

(U - Window U-Factor or 'DEF' for default)

(InSh - Interior shading device: none(N), Blinds(B), Draperies(D) or Roller Shades(R))

(ExSh - Exterior shading device: none(N) or numerical value)

(BS - Insect screen: none(N), Full(F) or Half(H))

(Ornt - compass orientation)



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