

Residential System Sizing Calculation

Summary

Somerset Model

Project Title:
Isaac Construction Inc. - Pilotti

Class 3 Rating
Registration No. 0
Climate: North

Lake City, FL 32025-

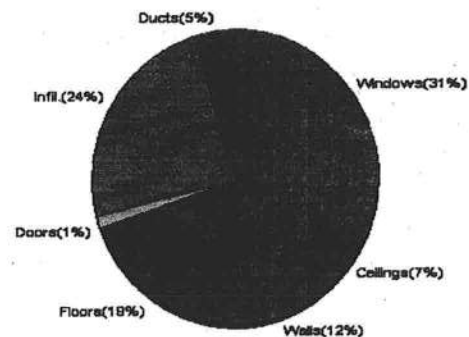
4/29/2005

Location for weather data: Gainesville - Defaults: Latitude(29) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)			
Winter design temperature	31 F	Summer design temperature	93 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	39 F	Summer temperature difference	18 F
Total heating load calculation	41277 Btuh	Total cooling load calculation	47018 Btuh
Submitted heating capacity	49000 Btuh	Submitted cooling capacity	49000 Btuh
Submitted as % of calculated	118.7 %	Submitted as % of calculated	104.2 %

WINTER CALCULATIONS

Winter Heating Load (for 2154 sqft)

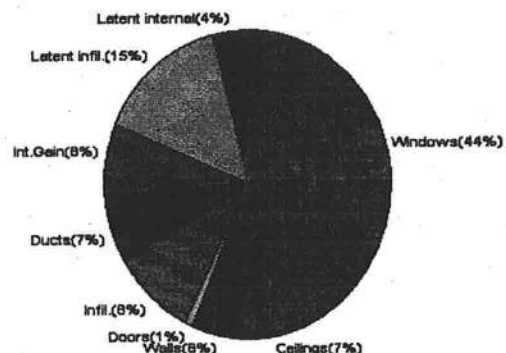
Load component		Load
Window total	456 sqft	12905 Btuh
Wall total	1738 sqft	5115 Btuh
Door total	38 sqft	536 Btuh
Ceiling total	2316 sqft	3011 Btuh
Floor total	249 ft	7868 Btuh
Infiltration	230 cfm	9876 Btuh
Subtotal		39311 Btuh
Duct loss		1966 Btuh
TOTAL HEAT LOSS		41277 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2154 sqft)

Load component		Load
Window total	456 sqft	20560 Btuh
Wall total	1738 sqft	2897 Btuh
Door total	38 sqft	385 Btuh
Ceiling total	2316 sqft	3289 Btuh
Floor total		0 Btuh
Infiltration	201 cfm	3989 Btuh
Internal gain		3600 Btuh
Subtotal(sensible)		34720 Btuh
Duct gain		3472 Btuh
Total sensible gain		38192 Btuh
Latent gain(infiltration)		6986 Btuh
Latent gain(internal)		1840 Btuh
Total latent gain		8826 Btuh
TOTAL HEAT GAIN		47018 Btuh



EnergyGauge® System Sizing based on ACCA Manual J.

PREPARED BY: _____

DATE: _____

System Sizing Calculations - Winter

Residential Load - Component Details

Somerset Model

Project Title:
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Lake City, FL 32025-

Reference City: Gainesville (Defaults) Winter Temperature Difference: 39.0 F

4/29/2005

Window	Panes/SHGC/Frame/U	Orientation	Area X	HTM=	Load
1	2, Clear, Metal, DEF	W	30.0	28.3	849 Btuh
2	2, Clear, Metal, DEF	SW	21.0	28.3	594 Btuh
3	2, Clear, Metal, DEF	W	28.0	28.3	792 Btuh
4	2, Clear, Metal, DEF	NW	21.0	28.3	594 Btuh
5	2, Clear, Metal, DEF	NW	20.0	28.3	566 Btuh
6	2, Clear, Metal, DEF	W	84.0	28.3	2377 Btuh
7	2, Clear, Metal, DEF	W	30.0	28.3	849 Btuh
8	2, Clear, Metal, DEF	N	30.0	28.3	849 Btuh
9	2, Clear, Metal, DEF	N	4.0	28.3	113 Btuh
10	2, Clear, Metal, DEF	E	60.0	28.3	1698 Btuh
11	2, Clear, Metal, DEF	E	30.0	28.3	849 Btuh
12	2, Clear, Metal, DEF	E	40.0	28.3	1132 Btuh
13	2, Clear, Metal, DEF	E	22.0	28.3	623 Btuh
14	2, Clear, Metal, DEF	S	16.0	28.3	453 Btuh
15	2, Clear, Metal, DEF	S	20.0	28.3	566 Btuh
Window Total			456		12905 Btuh
Walls	Type	R-Value	Area X	HTM=	Load
1	Frame - Exterior	13.0	1556	3.1	4824 Btuh
2	Frame - Adjacent	13.0	182	1.6	291 Btuh
Wall Total			1738		5115 Btuh
Doors	Type		Area X	HTM=	Load
1	Insulated - Exter		20	18.3	367 Btuh
2	Insulated - Adjac		18	9.4	169 Btuh
Door Total			38		536 Btuh
Ceilings	Type	R-Value	Area X	HTM=	Load
1	Under Attic	30.0	2316	1.3	3011 Btuh
Ceiling Total			2316		3011 Btuh
Floors	Type	R-Value	Size X	HTM=	Load
1	Slab-On-Grade Edge Insul	0	249.0 ft(p)	31.6	7868 Btuh
Floor Total			249		7868 Btuh
Infiltration	Type	ACH X	Building Volume	CFM=	Load
	Natural	0.80	17232(sqft)	230	9876 Btuh
	Mechanical			0	0 Btuh
Infiltration Total				230	9876 Btuh

Totals for Heating	Subtotal	39311 Btuh
	Duct Loss(using duct multiplier of 0.05)	1966 Btuh
	Total Btuh Loss	41277 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Somerset Model

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Lake City, FL 32025-

4/29/2005

Key: Window types (SHGC - Shading coefficient of glass as SHGC numerical value or as clear or tint)
(Frame types - metal, wood or insulated metal)
(U - Window U-Factor or 'DEF' for default)
(HTM - ManualJ Heat Transfer Multiplier)

Key: Floor size (perimeter(p) for slab-on-grade or area for all other floor types)

System Sizing Calculations - Summer

Residential Load - Component Details

Somerset Model

Project Title:

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Climate: North

Lake City, FL 32025-

Isaac Construction Inc. - Pilotti

Reference City: Gainesville (Defaults)

Summer Temperature Difference: 18.0 F

4/29/2005

Window	Type	Panes/SHGC/U/InSh/ExSh Omt	Overhang		Window Area(sqft)			HTM		Load
	Len		Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded		
1	2, Clear, DEF, N, N	W	1.5	6	30.0	4.0	26.0	22	72	1962 Btuh
2	2, Clear, DEF, N, N	SW	1.5	8	21.0	0.0	21.0	22	62	1302 Btuh
3	2, Clear, DEF, N, N	W	1.5	8	28.0	0.0	28.0	22	72	2016 Btuh
4	2, Clear, DEF, N, N	NW	2.5	8	21.0	0.0	21.0	22	50	1050 Btuh
5	2, Clear, DEF, N, N	NW	10.5	9.66	20.0	0.0	20.0	22	50	1000 Btuh
6	2, Clear, DEF, N, N	W	10.3	8	84.0	84.0	0.0	22	72	1848 Btuh
7	2, Clear, DEF, N, N	W	10.3	8	30.0	30.0	0.0	22	72	660 Btuh
8	2, Clear, DEF, N, N	N	1.5	6	30.0	0.0	30.0	22	22	660 Btuh
9	2, Clear, DEF, N, N	N	1.5	2	4.0	0.0	4.0	22	22	88 Btuh
10	2, Clear, DEF, N, N	E	1.5	8	60.0	7.7	52.3	22	72	3936 Btuh
11	2, Clear, DEF, N, N	E	1.5	6	30.0	4.0	26.0	22	72	1962 Btuh
12	2, Clear, DEF, N, N	E	1.5	5	40.0	10.0	30.0	22	72	2382 Btuh
13	2, Clear, DEF, N, N	E	9.5	9.66	22.0	13.6	8.4	22	72	902 Btuh
14	2, Clear, DEF, N, N	S	1.5	5	16.0	16.0	0.0	22	37	352 Btuh
15	2, Clear, DEF, N, N	S	1.5	6	20.0	20.0	0.0	22	37	440 Btuh
Window Total					456					20560 Btuh
Walls	Type	R-Value		Area			HTM		Load	
1	Frame - Exterior	13.0		1556.0			1.7		2707 Btuh	
2	Frame - Adjacent	13.0		182.0			1.0		189 Btuh	
Wall Total				1738.0					2897 Btuh	
Doors	Type			Area			HTM		Load	
1	Insulated - Exter			20.0			10.1		203 Btuh	
2	Insulated - Adjac			18.0			10.1		183 Btuh	
Door Total				38.0					385 Btuh	
Ceilings	Type/Color	R-Value		Area			HTM		Load	
1	Under Attic/Dark	30.0		2316.0			1.4		3289 Btuh	
Ceiling Total				2316.0					3289 Btuh	
Floors	Type	R-Value		Size			HTM		Load	
1	Slab-On-Grade Edge Insulation	0.0		249.0 ft(p)			0.0		0 Btuh	
Floor Total				249.0					0 Btuh	
Infiltration	Type	ACH		Volume			CFM=		Load	
	Natural	0.70		17232			201.4		3989 Btuh	
	Mechanical						0		0 Btuh	
Infiltration Total							201		3989 Btuh	
Internal gain	Occupants		Btuh/occupant		Appliance		Load			
	8		X 300 +		1200		3600 Btuh			

Manual J Summer Calculations

Residential Load - Component Details (continued)

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Totals for Cooling	Subtotal	34720 Btuh
	Duct gain(using duct multiplier of 0.10)	3472 Btuh
	Total sensible gain	38192 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	6986 Btuh
	Latent occupant gain (8 people @ 230 Btuh per person)	1840 Btuh
	Latent other gain	0 Btuh
	TOTAL GAIN	47018 Btuh

Key: Window types (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/Daperies(B) or Roller Shades(R))
(ExSh - Exterior shading device: none(N) or numerical value)
(Ornt - compass orientation)