

Residential System Sizing Calculation

Summary

SpecHouse

Project Title:
304241SpecHouseBryanZecher

Class 3 Rating
Registration No. 0
Climate: North

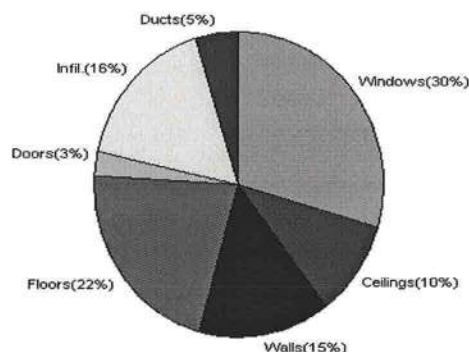
4/29/2003

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	28270 Btuh	Total cooling load calculation	27585 Btuh
Submitted heating capacity	33000 Btuh	Submitted cooling capacity	32000 Btuh
Submitted as % of calculated	116.7 %	Submitted as % of calculated	116.0 %

WINTER CALCULATIONS

Winter Heating Load (for 2024 sqft)

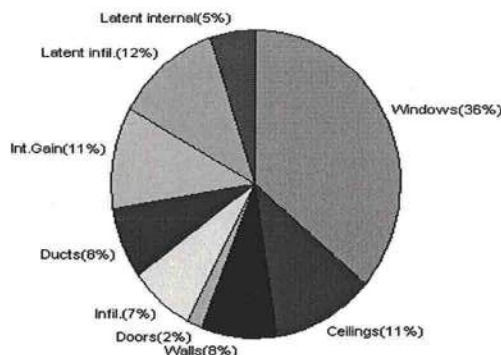
Load component		Load
Window total	297 sqft	8405 Btuh
Wall total	1264 sqft	4164 Btuh
Door total	49 sqft	729 Btuh
Ceiling total	2172 sqft	2824 Btuh
Floor total	195 ft	6162 Btuh
Infiltration	108 cfm	4640 Btuh
Subtotal		26923 Btuh
Duct loss		1346 Btuh
TOTAL HEAT LOSS		28270 Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 2024 sqft)

Load component		Load
Window total	297 sqft	10051 Btuh
Wall total	1264 sqft	2330 Btuh
Door total	49 sqft	501 Btuh
Ceiling total	2172 sqft	3084 Btuh
Floor total		0 Btuh
Infiltration	95 cfm	1874 Btuh
Internal gain		3000 Btuh
Subtotal(sensible)		20839 Btuh
Duct gain		2084 Btuh
Total sensible gain		22923 Btuh
Latent gain(infiltration)		3282 Btuh
Latent gain(internal)		1380 Btuh
Total latent gain		4662 Btuh
TOTAL HEAT GAIN		27585 Btuh



EnergyGauge® System Sizing based on ACCA Manual J.

PREPARED BY: *E. J. B. Adams*

DATE: *29 APR 03*

System Sizing Calculations - Winter

Residential Load - Component Details

SpecHouse
, FL

Project Title:
304241SpecHouseBryanZecher

Class 3 Rating
Registration No. 0
Climate: North

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

4/29/2003

Window	Panes/SHGC/Frame/U	Orientation	Area X	HTM=	Load
1	2, Clear, Metal, DEF	N	30.0	28.3	849 Btuh
2	2, Clear, Metal, DEF	NW	15.0	28.3	424 Btuh
3	2, Clear, Metal, DEF	N	30.0	28.3	849 Btuh
4	2, Clear, Metal, DEF	NE	15.0	28.3	424 Btuh
5	2, Clear, Metal, DEF	N	10.0	28.3	283 Btuh
6	2, Clear, Metal, DEF	N	18.0	28.3	509 Btuh
7	2, Clear, Metal, DEF	E	30.0	28.3	849 Btuh
8	2, Clear, Metal, DEF	E	6.0	28.3	170 Btuh
9	2, Clear, Metal, DEF	S	16.0	28.3	453 Btuh
10	2, Clear, Metal, DEF	S	72.0	28.3	2038 Btuh
11	2, Clear, Metal, DEF	S	16.0	28.3	453 Btuh
12	2, Clear, Metal, DEF	S	4.0	28.3	113 Btuh
13	2, Clear, Metal, DEF	W	15.0	28.3	424 Btuh
14	2, Clear, Metal, DEF	W	16.0	28.3	453 Btuh
15	2, Clear, Metal, DEF	W	4.0	28.3	113 Btuh
Window Total			297		8405 Btuh
Walls	Type	R-Value	Area X	HTM=	Load
1	Frame - Adjacent	11.0	153	1.8	275 Btuh
2	Frame - Exterior	11.0	1111	3.5	3888 Btuh
Wall Total			1264		4164 Btuh
Doors	Type		Area X	HTM=	Load
1	Insulated - Exter		20	18.3	363 Btuh
2	Insulated - Adjac		20	9.4	186 Btuh
3	Insulated - Exter		10	18.3	180 Btuh
Door Total			49		729Btuh
Ceilings	Type	R-Value	Area X	HTM=	Load
1	Under Attic	30.0	2024	1.3	2631 Btuh
2	Under Attic	30.0	148	1.3	192 Btuh
Ceiling Total			2172		2824Btuh
Floors	Type	R-Value	Size X	HTM=	Load
1	Slab-On-Grade Edge Insul	0	195.0 ft(p)	31.6	6162 Btuh
Floor Total			195		6162 Btuh
Infiltration	Type	ACH X	Building Volume	CFM=	Load
	Natural	0.40	16192(sqft)	108	4640 Btuh
	Mechanical			0	0 Btuh
Infiltration Total				108	4640 Btuh

Totals for Heating	Subtotal	26923 Btuh
	Duct Loss(using duct multiplier of 0.05)	1346 Btuh
	Total Btuh Loss	28270 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

SpecHouse

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4/29/2003

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

SpecHouse

Project Title:

, FL

304241SpecHouseBryanZecher

Class 3 Rating

Registration No. 0

Climate: North

Reference City: Gainesville (Defaults)

Summer Temperature Difference: 18.0 F

4/29/2003

Window	Type	Overhang		Window Area(sqft)			HTM		Load		
	Panes/SHGC/U/InSh/ExSh Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded			
1	2, Clear, DEF, N, N	N	1.5	5.5	30.0	0.0	30.0	22	22	660	Btuh
2	2, Clear, DEF, N, N	NW	3	5.5	15.0	0.0	15.0	22	50	750	Btuh
3	2, Clear, DEF, N, N	N	9.5	5.5	30.0	0.0	30.0	22	22	660	Btuh
4	2, Clear, DEF, N, N	NE	11.5	5.5	15.0	0.0	15.0	22	50	750	Btuh
5	2, Clear, DEF, N, N	N	11.5	7	10.0	0.0	10.0	22	22	220	Btuh
6	2, Clear, DEF, N, N	N	1.5	6.5	18.0	0.0	18.0	22	22	396	Btuh
7	2, Clear, DEF, N, N	E	1.5	5.5	30.0	6.7	23.3	22	72	1825	Btuh
8	2, Clear, DEF, N, N	E	1.5	1.5	6.0	5.0	1.0	22	72	183	Btuh
9	2, Clear, DEF, N, N	S	1.5	4.5	16.0	16.0	0.0	22	37	352	Btuh
10	2, Clear, DEF, N, N	S	1.5	8.5	72.0	72.0	0.0	22	37	1584	Btuh
11	2, Clear, DEF, N, N	S	1.5	2.5	16.0	8.0	8.0	22	37	472	Btuh
12	2, Clear, DEF, N, N	S	6	2.5	4.0	4.0	0.0	22	37	88	Btuh
13	2, Clear, DEF, N, N	W	1.5	5.5	15.0	2.2	12.8	22	72	968	Btuh
14	2, Clear, DEF, N, N	W	1.5	4.5	16.0	3.0	13.0	22	72	1003	Btuh
15	2, Clear, DEF, N, N	W	1.5	1.5	4.0	3.0	1.0	22	72	139	Btuh
Window Total					297					10051	Btuh
Walls	Type	R-Value			Area			HTM		Load	
1	Frame - Adjacent	11.0			153.0			1.1		174 Btuh	
2	Frame - Exterior	11.0			1111.0			1.9		2155 Btuh	
Wall Total					1264.0					2330 Btuh	
Doors	Type				Area			HTM		Load	
1	Insulated - Exter				19.8			10.1		201 Btuh	
2	Insulated - Adjac				19.8			10.1		201 Btuh	
3	Insulated - Exter				9.8			10.1		99 Btuh	
Door Total					49.4					501 Btuh	
Ceilings	Type/Color	R-Value			Area			HTM		Load	
1	Under Attic/Dark	30.0			2024.0			1.4		2874 Btuh	
2	Under Attic/Dark	30.0			148.0			1.4		210 Btuh	
Ceiling Total					2172.0					3084 Btuh	
Floors	Type	R-Value			Size			HTM		Load	
1	Slab-On-Grade Edge Insulation	0.0			195.0 ft(p)			0.0		0 Btuh	
Floor Total					195.0					0 Btuh	
Infiltration	Type	ACH			Volume			CFM=		Load	
	Natural	0.35			16192			94.6		1874 Btuh	
	Mechanical							0		0 Btuh	
	Infiltration Total							95		1874 Btuh	

Internal gain	Occupants	Btuh/occupant	Appliance	Load
	6	X 300 +	1200	3000 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

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Totals for Cooling	Subtotal	20839 Btuh
	Duct gain(using duct multiplier of 0.10)	2084 Btuh
	Total sensible gain	22923 Btuh
	Latent infiltration gain (for 51 gr. humidity difference)	3282 Btuh
	Latent occupant gain (6 people @ 230 Btuh per person)	1380 Btuh
	Latent other gain	0 Btuh
	TOTAL GAIN	27585 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)