

31

Residential System Sizing Calculation

Summary

Hunter and Luci Ketcham
Hwy 441 south
Lake City, FL

Project Title:
Ketcham Residence

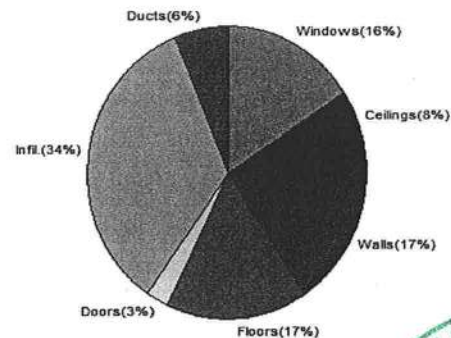
9/18/2012

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)			
Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(54gr.)			
Winter design temperature(MJ8 99%)	33 F	Summer design temperature(MJ8 99%)	92 F
Winter setpoint	70 F	Summer setpoint	75 F
Winter temperature difference	37 F	Summer temperature difference	17 F
Total heating load calculation	64427 Btuh	Total cooling load calculation	60076 Btuh
Submitted heating capacity	% of calc Btuh	Submitted cooling capacity	% of calc Btuh
Total (Electric Heat Pump)	111.8 72000	Sensible (SHR = 0.75)	129.1 54000
Heat Pump + Auxiliary(0.0kW)	111.8 72000	Latent	98.6 18000
		Total (Electric Heat Pump)	119.8 72000

WINTER CALCULATIONS

Winter Heating Load (for 4309 sqft)

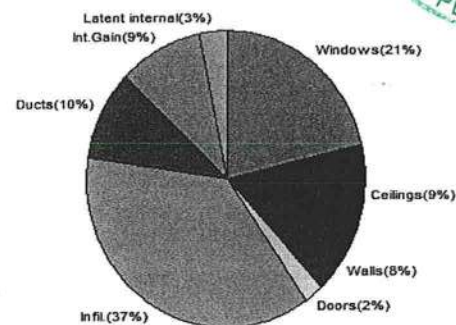
Load component		Load	
Window total	504 sqft	10259	Btuh
Wall total	4238 sqft	10962	Btuh
Door total	98 sqft	1664	Btuh
Ceiling total	4340 sqft	5121	Btuh
Floor total	See detail report	10719	Btuh
Infiltration	535 cfm	21672	Btuh
Duct loss		4030	Btuh
Subtotal		64427	Btuh
Ventilation	0 cfm	0	Btuh
TOTAL HEAT LOSS		64427	Btuh



SUMMER CALCULATIONS

Summer Cooling Load (for 4309 sqft)

Load component		Load	
Window total	504 sqft	12800	Btuh
Wall total	4238 sqft	4515	Btuh
Door total	98 sqft	1259	Btuh
Ceiling total	4340 sqft	5569	Btuh
Floor total		191	Btuh
Infiltration	401 cfm	7468	Btuh
Internal gain		5700	Btuh
Duct gain		4311	Btuh
Sens. Ventilation	0 cfm	0	Btuh
Blower Load		0	Btuh
Total sensible gain		41813	Btuh
Latent gain(ducts)		1598	Btuh
Latent gain(infiltration)		14664	Btuh
Latent gain(ventilation)		0	Btuh
Latent gain(internal/occupants/other)		2000	Btuh
Total latent gain		18263	Btuh
TOTAL HEAT GAIN		60076	Btuh



8th Edition

EnergyGauge® System Sizing

PREPARED BY:

DATE: 9/18/12

William H. Freeman

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 74

The lower the EnergyPerformance Index, the more efficient the home.

Hwy 441 south, Lake City, FL,

1. New construction or existing	New (From Plans)	9. Wall Types	Insulation	Area
2. Single family or multiple family	Single-family	a. Face Brick - Wood, Exterior	R=19.0	3991.70 ft ²
3. Number of units, if multiple family	1	b. Frame - Wood, Exterior	R=13.0	512.00 ft ²
4. Number of Bedrooms	5	c. Frame - Wood, Adjacent	R=19.0	240.00 ft ²
5. Is this a worst case?	No	d. other (see details)	R=	96.00 ft ²
6. Conditioned floor area (ft ²)	4309	10. Ceiling Types	Insulation	Area
7. Windows**	Description	a. Under Attic (Vented)	R=30.0	3959.00 ft ²
a. U-Factor:	DbI, U=0.55	b. Cathedral/Single Assembly (Vented)	R=30.0	381.00 ft ²
SHGC:	SHGC=0.50	c. N/A	R=	ft ²
b. U-Factor:	N/A	11. Ducts	R	ft ²
SHGC:		a. Sup: Main, Ret: Main, AH: Main	6	287.26
c. U-Factor:	N/A	b. Sup: Attic, Ret: Attic, AH: Main	6	1
SHGC:		c. Sup: Attic, Ret: Attic, AH: Main	6	287.26
d. U-Factor:	N/A	12. Cooling systems	kBtu/hr	Efficiency
SHGC:		a. Central Unit	36.0	SEER:13.00
Area Weighted Average Overhang Depth:	3.477 ft.	b. Central Unit	12.0	SEER:13.00
Area Weighted Average SHGC:	0.500	c. Central Unit	24.0	SEER:13.00
8. Floor Types	Insulation	13. Heating systems	kBtu/hr	Efficiency
a. Slab-On-Grade Edge Insulation	R=0.0	a. Electric Heat Pump	36.0	HSPF:7.70
b. Floor Over Other Space	R=19.0	b. Electric Heat Pump	12.0	HSPF:7.70
c. other (see details)	R=	c. Electric Heat Pump	24.0	HSPF:7.70
	318.00 ft ²	14. Hot water systems	Cap: 1 gallons	EF: 0.59
		a. Natural Gas		
		b. Conservation features		
		None		
		15. Credits		Pstat

I certify that this home has complied with the Florida Energy Efficiency Code for Building Construction through the above energy saving features which will be installed (or exceeded) in this home before final inspection. Otherwise, a new EPL Display Card will be completed based on installed Code compliant features.

Builder Signature: _____ Date: _____

Address of New Home: _____ City/FL Zip: _____



*Note: This is not a Building Energy Rating. If your Index is below 70, your home may qualify for energy efficient mortgage (EEM) incentives if you obtain a Florida EnergyGauge Rating. Contact the EnergyGauge Hotline at (321) 638-1492 or see the EnergyGauge web site at energygauge.com for information and a list of certified Raters. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section 303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.