10

FORM 405-10

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	1209055	Builder Name:	
Street:		Permit Office:	
City, State, Zip:	, FL ,	Permit Number:	
Owner:	Lacy Crews	Jurisdiction:	
Design Location:	FL, Gainesville		

1. New construction or existing	New (From Plans)			
2. Single family or multiple family	Single-family			
3. Number of units, if multiple family	1			
4. Number of Bedrooms	3			
5. Is this a worst case?	Yes			
6. Conditioned floor area above grade (ft²)	4562			
Conditioned floor area below grade (ft²)	0			
7. Windows(338.7 sqft.)	Description		Area	
a. U-Factor:	Dbl, U=0.40		338.67	ft²
SHGC:	SHGC=0.40			
b. U-Factor:	N/A			ft²
SHGC:				
c. U-Factor:	N/A			ft²
SHGC:				
d. U-Factor:	N/A			ft²
SHGC:				
Area Weighted Average Overhang Depth:			10.297	ft.
Area Weighted Average SHGC:			0.400	
8. Floor Types (4562.0 sqft.)		Insulation	Area	
a. Slab-On-Grade Edge Insulation		R=0.0	4562.00	ft²
b. N/A		R=		ft²
c. N/A		R=		ft²

9. Wall Types (2701.7 sqft.)	Insulation	Area	
a. Frame - Wood, Exterior	R=13.0	2321.70	ft²
b. Frame - Wood, Adjacent	R=13.0	380.00	ft²
c. N/A	R=		ft²
d. N/A	R=		ft²
10. Ceiling Types (4937.0 sqft.)	Insulation	Area	
a. Under Attic (Vented)	R=30.0	4562.00	ft²
b. Knee Wall (Vented)	R=30.0	375.00	ft²
c. N/A	R=		ft²
11. Ducts		R	ft²
a. Sup: Attic, Ret: Attic, AH: Main		6	912.4
12. Cooling systems	kBtu/hr	Efficiency	
a. Central Unit	88.0	SEER:13.00	
13. Heating systems	kBtu/hr	Efficiency	
a. Electric Heat Pump	88.0	HSPF:7.70	
14. Hot water systems			
a. Electric Tankless		Cap: 1 gallons	
		EF: 1.000	
b. Conservation features			
None			
15. Credits		Pstat	

Glass/Floor Area: 0.074

Total Proposed Modified Loads: 50.37

Total Standard Reference Loads: 72.95

PASS

I hereby certify that the plans and specifications covered by this calculation are in compliance with the Florida Energy Code.

PREPARED BY: EVAN BEAMSLEY

DATE: 11/30/12

I hereby certify that this building, as designed, is in compliance with the Florida Energy Code.

OWNER/AGENT: Blenwood King

DATE: 12-4-12

Review of the plans and specifications covered by this calculation indicates compliance with the Florida Energy Code. Before construction is completed this building will be inspected for compliance with Section 553.908 Florida Statutes.

BUILDING OFFICIAL: _____

DATE: _____

GREAT SEAL OF THE STATE OF FLORIDA — IN GOD WE TRUST

- Compliance requires completion of a Florida Air Barrier and Insulation Inspection Checklist

COLUMBIA COUNTY BUILDING DEPARTMENT — Received for FILE COPY — Code Compliance — PLANS EXAMINER

PROJECT

Title:	1209055	Bedrooms:	3	Address Type:	Lot Information
Building Type:	User	Conditioned Area:	4562	Lot #	
Owner:	Lacy Crews	Total Stories:	1	Block/SubDivision:	
# of Units:	1	Worst Case:	Yes	PlatBook:	
Builder Name:		Rotate Angle:	45	Street:	
Permit Office:		Cross Ventilation:		County:	Columbia
Jurisdiction:		Whole House Fan:		City, State, Zip:	, FL ,
Family Type:	Single-family				
New/Existing:	New (From Plans)				
Comment:					

CLIMATE

√	Design Location	TMY Site	IECC Zone	Design Temp 97.5 %	Design Temp 2.5 %	Int Design Temp Winter	Int Design Temp Summer	Heating Degree Days	Design Moisture	Daily Temp Range
_____	FL, Gainesville	FL_GAINESVILLE_REGI	2	32	92	70	75	1305.5	51	Medium

BLOCKS

Number	Name	Area	Volume
1	Block1	4562	45620

SPACES

Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Infil ID	Finished	Cooled	Heated
1	Main	4562	45620	Yes	3	3	1	Yes	Yes	Yes

FLOORS

√	#	Floor Type	Space	Perimeter	R-Value	Area		Tile	Wood	Carpet
_____	1	Slab-On-Grade Edge Insulatio	Main	270 ft	0	4562 ft²	----	0.3	0.3	0.4

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
_____	1	Hip	Composition shingles	5483 ft²	0 ft²	Dark	0.96	No	0.9	No	0	33.7

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
_____	1	Full attic	Vented	300	4562 ft²	N	N

CEILING

√	#	Ceiling Type	Space	R-Value	Area	Framing Frac	Truss Type
_____	1	Under Attic (Vented)	Main	30	4562 ft²	0.11	Wood
_____	2	Knee Wall (Vented)	Main	30	375 ft²	0.11	Wood

WALLS

√	#	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area	Sheathing R-Value	Framing Fraction	Solar Absor.	Below Grade%
____	1	NW=>N	Exterior	Frame - Wood	Main	13	21	8	10		216.6666		0.23	0.75	0
____	2	N=>NE	Exterior	Frame - Wood	Main	13	42	4	10		423.3333		0.23	0.75	0
____	3	NE=>E	Exterior	Frame - Wood	Main	13	19	10	10		198.3333		0.23	0.75	0
____	4	E=>SE	Exterior	Frame - Wood	Main	13	58		10		580 ft²		0.23	0.75	0
____	5	S=>SW	Exterior	Frame - Wood	Main	13	44	8	10		446.6666		0.23	0.75	0
____	6	W=>NW	Exterior	Frame - Wood	Main	13	45	8	10		456.6666		0.23	0.75	0
____	7	S=>SW	Garage	Frame - Wood	Main	13	38		10		380 ft²		0.23	0.75	0

DOORS

√	#	Ornt	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
_____	1	NE=>E	Insulated	Main	None	0.400000	1		6	8	6.666666
_____	2	NW=>N	Insulated	Main	None	0.400000	1		6	8	13.33333
_____	3	NE=>E	Insulated	Main	None	0.400000	1		6	8	13.33333
_____	4	W=>NW	Insulated	Main	None	0.400000	1		6	8	6.666666
_____	5	W=>NW	Insulated	Main	None	0.400000	1		6	8	40 ft²
_____	6	S=>SW	Insulated	Main	None	0.400000	1		6	8	20 ft²
_____	7	S=>SW	Insulated	Main	None	0.400000	1		6	8	33.33333

WINDOWS

Orientation shown is the entered orientation (=>) changed to Worst Case.

√	#	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Area	Overhang Depth	Overhang Separation	Int Shade	Screening
_____	1	N=>NE	2	Metal	Low-E Double	Yes	0.4	0.4	30 ft²	21 ft 6 in	2 ft 0 in	None	None
_____	2	NE=>E	3	Metal	Low-E Double	Yes	0.4	0.4	13.33333	14 ft 0 in	2 ft 0 in	None	None
_____	3	N=>NE	2	Metal	Low-E Double	Yes	0.4	0.4	25 ft²	12 ft 0 in	2 ft 0 in	None	None
_____	4	NW=>N	1	Metal	Low-E Double	Yes	0.4	0.4	20 ft²	30 ft 0 in	2 ft 0 in	None	None
_____	5	NE=>E	3	Metal	Low-E Double	Yes	0.4	0.4	20 ft²	12 ft 0 in	2 ft 0 in	None	None
_____	6	NW=>N	1	Metal	Low-E Double	Yes	0.4	0.4	10 ft²	30 ft 0 in	0 ft 0 in	None	None
_____	7	NE=>E	3	Metal	Low-E Double	Yes	0.4	0.4	10 ft²	12 ft 0 in	0 ft 0 in	None	None
_____	8	W=>NW	6	Metal	Low-E Double	Yes	0.4	0.4	13.33333	60 ft 0 in	2 ft 0 in	None	None
_____	9	N=>NE	2	Metal	Low-E Double	Yes	0.4	0.4	30 ft²	1 ft 6 in	2 ft 0 in	None	None
_____	10	E=>SE	4	Metal	Low-E Double	Yes	0.4	0.4	30 ft²	1 ft 6 in	2 ft 0 in	None	None
_____	11	S=>SW	5	Metal	Low-E Double	Yes	0.4	0.4	8 ft²	1 ft 6 in	4 ft 0 in	None	None
_____	12	S=>SW	5	Metal	Low-E Double	Yes	0.4	0.4	42 ft²	1 ft 6 in	2 ft 0 in	None	None
_____	13	S=>SW	5	Metal	Low-E Double	Yes	0.4	0.4	24 ft²	1 ft 6 in	0 ft 0 in	None	None
_____	14	S=>SW	5	Metal	Low-E Double	Yes	0.4	0.4	33 ft²	1 ft 6 in	0 ft 0 in	None	None
_____	15	W=>NW	6	Metal	Low-E Double	Yes	0.4	0.4	30 ft²	1 ft 6 in	2 ft 0 in	None	None

GARAGE

√	#	Floor Area	Ceiling Area	Exposed Wall Perimeter	Avg. Wall Height	Exposed Wall Insulation
_____	1	961.99994 ft²	961.99994 ft²	113 ft	9 ft	1

INFILTRATION

#	Scope	Method	SLA	CFM 50	ELA	EqLA	ACH	ACH 50
1	Wholehouse	Best Guess	0.000699	8376.3	459.84	864.81	0.5389	11.016

HEATING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Block	Ducts
_____	1	Electric Heat Pump	None	HSPF: 7.7	88 kBtu/hr	1	sys#1

COOLING SYSTEM

√	#	System Type	Subtype	Efficiency	Capacity	Air Flow	SHR	Block	Ducts
_____	1	Central Unit	None	SEER: 13	88 kBtu/hr	2640 cfm	0.75	1	sys#1

HOT WATER SYSTEM

√	#	System Type	SubType	Location	EF	Cap	Use	SetPnt	Conservation
_____	1	Electric	Tankless	Exterior	0.92	1 gal	60 gal	120 deg	None

SOLAR HOT WATER SYSTEM

√	FSEC Cert #	Company Name	System Model #	Collector Model #	Collector Area	Storage Volume	FEF
_____	None	None			ft²		

DUCTS

√	#	---- Supply ---- Location	R-Value	Area	---- Return ---- Location	Area	Leakage Type	Air Handler	CFM 25	Percent Leakage	QN	RLF	HVAC # Heat	HVAC # Cool
_____	1	Attic	6	912.4 ft	Attic	228.1 ft	Default Leakage	Main	(Default)	(Default) %			1	1

TEMPERATURES

Programable Thermostat: Y

Ceiling Fans:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cooling	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[X]	[X]	[ ]	[ ]	[ ]
Heating	[X]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]
Venting	[ ]	[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[X]	[X]	[ ]

Thermostat Schedule: HERS 2006 Reference

Schedule Type		Hours 1	2	3	4	5	6	7	8	9	10	11	12
Cooling (WD)	AM	78	78	78	78	78	78	78	78	80	80	80	80
	PM	80	80	78	78	78	78	78	78	78	78	78	78
Cooling (WEH)	AM	78	78	78	78	78	78	78	78	78	78	78	78
	PM	78	78	78	78	78	78	78	78	78	78	78	78
Heating (WD)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66
Heating (WEH)	AM	66	66	66	66	66	68	68	68	68	68	68	68
	PM	68	68	68	68	68	68	68	68	68	68	66	66

FORM 405-10

Florida Code Compliance Checklist

Florida Department of Business and Professional Regulations
Residential Whole Building Performance Method

ADDRESS: , FL,	PERMIT #:

MANDATORY REQUIREMENTS SUMMARY - See individual code sections for full details.

COMPONENT	SECTION	SUMMARY OF REQUIREMENT(S)	CHECK
Air leakage	402.4	To be caulked, gasketed, weatherstripped or otherwise sealed. Recessed lighting IC-rated as meeting ASTM E 283. Windows and doors = 0.30 cfm/sq.ft. Testing or visual inspection required. Fireplaces: gasketed doors & outdoor combustion air. Must complete envelope leakage report or visually verify Table 402.4.2.	
Thermostat & controls	403.1	At least one thermostat shall be provided for each separate heating and cooling system. Where forced-air furnace is primary system, programmable thermostat is required. Heat pumps with supplemental electric heat must prevent supplemental heat when compressor can meet the load.	
Ducts	403.2.2 403.3.3	All ducts, air handlers, filter boxes and building cavities which form the primary air containment passageways for air distribution systems shall be considered ducts or plenum chambers, shall be constructed and sealed in accordance with Section 503.2.7.2 of this code. Building framing cavities shall not be used as supply ducts.	
Water heaters	403.4	Heat trap required for vertical pipe risers. Comply with efficiencies in Table 403.4.3.2. Provide switch or clearly marked circuit breaker (electric) or shutoff (gas). Circulating system pipes insulated to = R-2 + accessible manual OFF switch.	
Mechanical ventilation	403.5	Homes designed to operate at positive pressure or with mechanical ventilation systems shall not exceed the minimum ASHRAE 62 level. No make-up air from attics, crawlspaces, garages or outdoors adjacent to pools or spas.	
Swimming Pools & Spas	403.9	Pool pumps and pool pump motors with a total horsepower (HP) of = 1 HP shall have the capability of operating at two or more speeds. Spas and heated pools must have vapor-retardant covers or a liquid cover or other means proven to reduce heat loss except if 70% of heat from site-recovered energy. Off/timer switch required. Gas heaters minimum thermal efficiency=78% (82% after 4/16/13). Heat pump pool heaters minimum COP= 4.0.	
Cooling/heating equipment	403.6	Sizing calculation performed & attached. Minimum efficiencies per Tables 503.2.3. Equipment efficiency verification required. Special occasion cooling or heating capacity requires separate system or variable capacity system. Electric heat >10kW must be divided into two or more stages.	
Ceilings/knee walls	405.2.1	R-19 space permitting.	

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 69

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

, , FL,

1. New construction or existing		New (From Plans)
2. Single family or multiple family		Single-family
3. Number of units, if multiple family		1
4. Number of Bedrooms		3
5. Is this a worst case?		Yes
6. Conditioned floor area (ft²)		4562
7. Windows**	Description	Area
a. U-Factor:	Dbl, U=0.40	338.67 ft²
SHGC:	SHGC=0.40	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
d. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		10.297 ft.
Area Weighted Average SHGC:		0.400

8. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R=0.0	4562.00 ft²
b. N/A	R=	ft²
c. N/A	R=	ft²

9. Wall Types	Insulation	Area
a. Frame - Wood, Exterior	R=13.0	2321.70 ft²
b. Frame - Wood, Adjacent	R=13.0	380.00 ft²
c. N/A	R=	ft²
d. N/A	R=	ft²

10. Ceiling Types	Insulation	Area
a. Under Attic (Vented)	R=30.0	4562.00 ft²
b. Knee Wall (Vented)	R=30.0	375.00 ft²
c. N/A	R=	ft²

11. Ducts	R	ft²
a. Sup: Attic, Ret: Attic, AH: Main	6	912.4

12. Cooling systems	kBtu/hr	Efficiency
a. Central Unit	88.0	SEER:13.00

13. Heating systems	kBtu/hr	Efficiency
a. Electric Heat Pump	88.0	HSPF:7.70

14. Hot water systems	
a. Electric	Cap: 1 gallons
	EF: 0.92
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: Glenwood King Date: 12-4-12

Address of New Home: 3452 SW CR242 Lake City City/FL Zip: FL 32024

*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.

Residential System Sizing Calculation

Summary

Lacy Crews

Project Title:
1209055

, FL

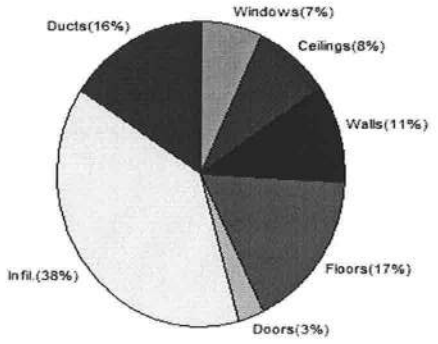
11/30/2012

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	**69562**	**Btuh**	**Total cooling load calculation**	**73549**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	126.5	88000	Sensible (SHR = 0.75)	127.1	66000
Heat Pump + Auxiliary(0.0kW)	126.5	88000	Latent	101.8	22000
			Total (Electric Heat Pump)	119.6	88000

WINTER CALCULATIONS

Winter Heating Load (for 4562 sqft)

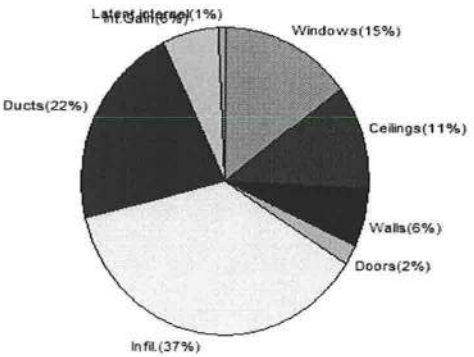
Load component			Load	
Window total	339	sqft	5012	Btuh
Wall total	2230	sqft	7322	Btuh
Door total	133	sqft	1973	Btuh
Ceiling total	4937	sqft	5817	Btuh
Floor total	4562	sqft	11788	Btuh
Infiltration	656	cfm	26560	Btuh
Duct loss			11088	Btuh
Subtotal			**69562**	**Btuh**
Ventilation	0	cfm	0	Btuh
TOTAL HEAT LOSS			**69562**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 4562 sqft)

Load component			Load	
Window total	339	sqft	10891	Btuh
Wall total	2230	sqft	4462	Btuh
Door total	133	sqft	1493	Btuh
Ceiling total	4937	sqft	8176	Btuh
Floor total			0	Btuh
Infiltration	492	cfm	9153	Btuh
Internal gain			4690	Btuh
Duct gain			13082	Btuh
Sens. Ventilation	0	cfm	0	Btuh
Blower Load			0	Btuh
Total sensible gain			**51947**	**Btuh**
Latent gain(ducts)			3030	Btuh
Latent gain(infiltration)			17972	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			600	Btuh
Total latent gain			**21602**	**Btuh**
TOTAL HEAT GAIN			**73549**	**Btuh**



Powered by ACCA MANUAL J 8th Edition

EnergyGauge® System Sizing
PREPARED BY: CRAIG BERMSLEY
DATE: 11/30/12

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Lacy Crews

, FL

Project Title:
1209055
Building Type: User

11/30/2012

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 F (MJ8 99%)
This calculation is for Worst Case. The house has been rotated 270 degrees.

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
1	2, NFRC 0.40	Metal	0.40	W	30.0	14.8	444 Btuh
2	2, NFRC 0.40	Metal	0.40	NW	13.3	14.8	197 Btuh
3	2, NFRC 0.40	Metal	0.40	W	25.0	14.8	370 Btuh
4	2, NFRC 0.40	Metal	0.40	SW	20.0	14.8	296 Btuh
5	2, NFRC 0.40	Metal	0.40	NW	20.0	14.8	296 Btuh
6	2, NFRC 0.40	Metal	0.40	SW	10.0	14.8	148 Btuh
7	2, NFRC 0.40	Metal	0.40	NW	10.0	14.8	148 Btuh
8	2, NFRC 0.40	Metal	0.40	S	13.3	14.8	197 Btuh
9	2, NFRC 0.40	Metal	0.40	W	30.0	14.8	444 Btuh
10	2, NFRC 0.40	Metal	0.40	N	30.0	14.8	444 Btuh
11	2, NFRC 0.40	Metal	0.40	E	8.0	14.8	118 Btuh
12	2, NFRC 0.40	Metal	0.40	E	42.0	14.8	622 Btuh
13	2, NFRC 0.40	Metal	0.40	E	24.0	14.8	355 Btuh
14	2, NFRC 0.40	Metal	0.40	E	33.0	14.8	488 Btuh
15	2, NFRC 0.40	Metal	0.40	S	30.0	14.8	444 Btuh
	Window Total				338.7(sqft)		5012 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.089)	13.0/0.0	173	3.28	569 Btuh
2	Frame - Wood	- Ext	(0.089)	13.0/0.0	338	3.28	1111 Btuh
3	Frame - Wood	- Ext	(0.089)	13.0/0.0	135	3.28	443 Btuh
4	Frame - Wood	- Ext	(0.089)	13.0/0.0	550	3.28	1806 Btuh
5	Frame - Wood	- Ext	(0.089)	13.0/0.0	340	3.28	1115 Btuh
6	Frame - Wood	- Ext	(0.089)	13.0/0.0	367	3.28	1204 Btuh
7	Frame - Wood	- Adj	(0.089)	13.0/0.0	327	3.28	1073 Btuh
	Wall Total				2230(sqft)		7322 Btuh

Doors	Type	Storm	Ueff.	Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.400)	7	14.8	99 Btuh
2	Insulated - Exterior,	n	(0.400)	13	14.8	197 Btuh
3	Insulated - Exterior,	n	(0.400)	13	14.8	197 Btuh
4	Insulated - Exterior,	n	(0.400)	7	14.8	99 Btuh
5	Insulated - Exterior,	n	(0.400)	40	14.8	592 Btuh
6	Insulated - Garage,	n	(0.400)	20	14.8	296 Btuh
7	Insulated - Garage,	n	(0.400)	33	14.8	493 Btuh
	Door Total			133(sqft)		1973Btuh

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Vented Attic/D/Shing	(0.032)	30.0/0.0	4562	1.2	5376 Btuh
2	Knee Wall/D/Shing	(0.032)	30.0/0.0	375	1.2	442 Btuh
	Ceiling Total			4937(sqft)		5817Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	270.0 ft(perim.)	43.7	11788 Btuh
	Floor Total			4562 sqft		11788 Btuh

Manual J Winter Calculations

Residential Load - Component Details (continued)

Lacy Crews
, FL

Project Title:
1209055
Building Type: User

11/30/2012

	Envelope Subtotal:	31914 Btuh
Infiltration	Type: Natural; Wholehouse: ; ACH: 0.86; Volume(cuft): 45620; Wall Ratio: 1.00; CFM=: 655.7	26560 Btuh
Duct load	Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.190)	11088 Btuh
All Zones	**Sensible Subtotal All Zones**	**69562 Btuh**

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss Ventilation Sensible Heat Loss Total Heat Loss	69562 Btuh 0 Btuh 69562 Btuh

EQUIPMENT

1. Electric Heat Pump	#	88000 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

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Lacy Crews

Project Title:
1209055

, FL

11/30/2012

Reference City: Gainesville, FL Temperature Difference: 17.0F(MJ8 99%) Humidity difference: 54gr.
This calculation is for Worst Case. The house has been rotated 270 degrees.

Component Loads for Whole House

Window	Type* Panes	SHGC	U	InSh	IS	Ornt	Overhang Len	Hgt	Window Area(sqft) Gross	Shaded	Unshaded	HTM Shaded	Unshaded	Load
1	2 NFRC	0.40, 0.40		No	No	W	21.5f	2.0ft	30.0	30.0	0.0	15	45	456 Btuh
2	2 NFRC	0.40, 0.40		No	No	NW	14.0f	2.0ft	13.3	0.0	13.3	15	34	449 Btuh
3	2 NFRC	0.40, 0.40		No	No	W	12.0f	2.0ft	25.0	25.0	0.0	15	45	380 Btuh
4	2 NFRC	0.40, 0.40		No	No	SW	30.0f	2.0ft	20.0	20.0	0.0	15	35	304 Btuh
5	2 NFRC	0.40, 0.40		No	No	NW	12.0f	2.0ft	20.0	0.0	20.0	15	34	674 Btuh
6	2 NFRC	0.40, 0.40		No	No	SW	30.0f	0.0ft	10.0	10.0	0.0	15	35	152 Btuh
7	2 NFRC	0.40, 0.40		No	No	NW	12.0f	0.0ft	10.0	0.0	10.0	15	34	337 Btuh
8	2 NFRC	0.40, 0.40		No	No	S	60.0f	2.0ft	13.3	13.3	0.0	15	18	203 Btuh
9	2 NFRC	0.40, 0.40		No	No	W	1.5ft	2.0ft	30.0	0.0	30.0	15	45	1361 Btuh
10	2 NFRC	0.40, 0.40		No	No	N	1.5ft	2.0ft	30.0	0.0	30.0	15	15	456 Btuh
11	2 NFRC	0.40, 0.40		No	No	E	1.5ft	4.0ft	8.0	0.0	8.0	15	45	363 Btuh
12	2 NFRC	0.40, 0.40		No	No	E	1.5ft	2.0ft	42.0	0.0	42.0	15	45	1905 Btuh
13	2 NFRC	0.40, 0.40		No	No	E	1.5ft	0.0ft	24.0	7.5	16.5	15	45	864 Btuh
14	2 NFRC	0.40, 0.40		No	No	E	1.5ft	0.0ft	33.0	7.5	25.5	15	45	1272 Btuh
15	2 NFRC	0.40, 0.40		No	No	S	1.5ft	2.0ft	30.0	30.0	0.0	15	18	456 Btuh
	Excursion													1258 Btuh
	Window Total								339 (sqft)					10891 Btuh

Walls	Type	U-Value	R-Value Cav/Sheath	Area(sqft)	HTM	Load
1	Frame - Wood - Ext	0.09	13.0/0.0	173.3	2.1	362 Btuh
2	Frame - Wood - Ext	0.09	13.0/0.0	338.3	2.1	706 Btuh
3	Frame - Wood - Ext	0.09	13.0/0.0	135.0	2.1	282 Btuh
4	Frame - Wood - Ext	0.09	13.0/0.0	550.0	2.1	1147 Btuh
5	Frame - Wood - Ext	0.09	13.0/0.0	339.7	2.1	708 Btuh
6	Frame - Wood - Ext	0.09	13.0/0.0	366.7	2.1	765 Btuh
7	Frame - Wood - Adj	0.09	13.0/0.0	326.7	1.5	493 Btuh
	Wall Total			2230 (sqft)		4462 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	6.7	11.2	75 Btuh
2	Insulated - Exterior	13.3	11.2	149 Btuh
3	Insulated - Exterior	13.3	11.2	149 Btuh
4	Insulated - Exterior	6.7	11.2	75 Btuh
5	Insulated - Exterior	40.0	11.2	448 Btuh
6	Insulated - Garage	20.0	11.2	224 Btuh
7	Insulated - Garage	33.3	11.2	373 Btuh
	Door Total	133 (sqft)		1493 Btuh

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/DarkShingle	0.032	30.0/0.0	4562.0	1.66	7555 Btuh
2	Knee Wall/DarkShingle	0.032	30.0/0.0	375.0	1.66	621 Btuh
	Ceiling Total			4937 (sqft)		8176 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	4562 (ft-perimeter)	0.0	0 Btuh
	Floor Total		4562.0 (sqft)		0 Btuh

	Envelope Subtotal:	25022 Btuh

Manual J Summer Calculations

Residential Load - Component Details (continued)

Lacy Crews

Project Title: 1209055

Climate:FL_GAINESVILLE_REGIONAL_A

, FL

11/30/2012

Infiltration	Type	Average ACH	Volume(cuft)		Wall Ratio		CFM=	Load
	Natural	0.65	45620		1		491.8	9153 Btuh
Internal gain		Occupants	Btuh/occupant				Appliance	Load
		3	X	230	+		4000	4690 Btuh
						Sensible Envelope Load:		38865 Btuh
Duct load	Average sealed, Supply(R6.0-Attic), Return(R6.0-Attic)					(DGM of 0.337)		13082 Btuh
						Sensible Load All Zones		**51947 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Lacy Crews

Project Title: 1209055

Climate:FL_GAINESVILLE_REGIONAL_A

, FL

11/30/2012

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**38865**	**Btuh**
	Sensible Duct Load	13082	Btuh
	Total Sensible Zone Loads	**51947**	**Btuh**
	Sensible ventilation	0	Btuh
	Blower	0	Btuh
	Total sensible gain	**51947**	**Btuh**
	Latent infiltration gain (for 54 gr. humidity difference)	17972	Btuh
	Latent ventilation gain	0	Btuh
	Latent duct gain	3030	Btuh
	Latent occupant gain (3.0 people @ 200 Btuh per person)	600	Btuh
	Latent other gain	0	Btuh
	Latent total gain	**21602**	**Btuh**
	TOTAL GAIN	**73549**	**Btuh**

EQUIPMENT

1. Central Unit	#	88000 Btuh

*Key: Window types (Panes - 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