FORM R405-2020

FLORIDA ENERGY EFFICIENCY CODE FOR BUILDING CONSTRUCTION

Florida Department of Business and Professional Regulation - Residential Performance Method

Project Name:	Nickelson Shed	Builder Name:	
Street:	205 SW Governors Glen	Permit Office:	Columbia County
City, State, Zip:	Lake City, FL, 32024	Permit Number:	
Owner:	Dale Nickelson	Jurisdiction:	
Design Location:	FL, Gainesville	County:	Columbia(Florida Climate Zone 2)

1. New construction or existing	New (From Plans)
2. Single family or multiple family	Detached
3. Number of units, if multiple family	1
4. Number of Bedrooms	0
5. Is this a worst case?	No
6. Conditioned floor area above grade (ft²)	1704
Conditioned floor area below grade (ft²)	0

7. Windows(83.0 sqft.)	Description	Area
a. U-Factor:	Dbl, U=0.36	83.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		1.500 ft
Area Weighted Average SHGC:		0.250

8. Skylights	Description	Area
U-Factor:(AVG)	N/A	N/A ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R= 0.0	1200.00 ft²
b. Floor Over Other Space	R= 19.0	504.00 ft²
c. N/A	R=	ft²

10. Wall Types(1996.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=19.0	1996.00 ft²
b. N/A		
c. N/A		
d. N/A		

11. Ceiling Types(1260.0 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=38.0	1260.00 ft²
b. N/A		
c. N/A		

12. Roof(Metal, Vented)	Deck R=0.0	1442 ft²
13. Ducts, location & insulation level	R	ft²
a.		
b.		
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	27.3	SEER2:15.00

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	24.7	HSPF2:8.20

16. Hot Water Systems	
a. Electric	Cap: 40 gallons
	EF: 0.920
b. Conservation features	
	None
17. Credits	CV, Pstat

Glass/Floor Area: 0.049

Total Proposed Modified Loads: 31.63

Total Baseline Loads: 39.50

PASS

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

PREPARED BY: _____

DATE: 11 / 27 / 2023

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

OWNER/AGENT: _____

DATE: _____

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: _____

- Compliance requires certification by the air handler unit manufacturer that the air handler enclosure qualifies as certified factory-sealed in accordance with R403.3.2.1.

- Proposed Qn of NAN exceeds the performance method default limit of 0.08 and therefore does not require duct testing. R405 .2.3

- Compliance requires an Air Barrier and Insulation Inspection Checklist in accordance with R402.4.1.1 and this project requires a PERFORMANCE envelope leakage test report with envelope leakage no greater than 5.00 ACH50 (R402.4.1.2).

FORM R405-2020

INPUT SUMMARY CHECKLIST REPORT

PROJECT

Title:	Nickelson Shed			Address type:	Street Address
Building Type:	User	Bedrooms:	0	Lot #:	---
Owner:	Dale Nickelson	Conditioned Area:	1704	Block/SubDivision:	---
Builder Home ID:		Total Stories:	2	PlatBook:	---
Builder Name:		Worst Case:	No	Street:	205 SW Governors Glen
Permit Office:	Columbia County	Rotate Angle:	0	County:	Columbia
Jurisdiction:		Cross Ventilation:	Yes	City, State, Zip:	Lake City,
Family Type:	Detached	Whole House Fan:	No		FL, 32024
New/Existing:	New (From Plans)	Terrain:	Suburban		
Year Construct:	2023	Shielding:	Suburban		
Comment:					

CLIMATE

√	Design Location	Tmy Site	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_REGIONA	32	92	70	75	1305.5	51	Medium

BLOCKS

√	Number	Name	Area	Volume
___	1	Block1	1704	14832 cu ft

SPACES

√	Number	Name	Area	Volume	Kitchen	Occupants	Bedrooms	Finished	Cooled	Heated
___	1	1st Floor	1200	10800	Yes	2	0	Yes	Yes	Yes
___	2	2nd Floor	504	4032	No	2	0	Yes	Yes	Yes

FLOORS (Total Exposed Area = 1200 sq.ft.)

√	#	Floor Type	Space	Exposed Perim	Perimeter R-Value	Area	U-Factor	Joist R-Value	Tile	Wood	Carpet
___	1	Slab-On-Grade Edge Ins	1st Floor	140	0	1200 ft	0.304	---	0.00	0.00	1.00
___	2	Floor Over Other Space	2nd Floor	---	---	504 ft	0.046		0.00	0.00	1.00

ROOF

√	#	Type	Materials	Roof Area	Gable Area	Roof Color	Rad Barr	Solar Absor.	SA Tested	Emitt	Emitt Tested	Deck Insul.	Pitch (deg)
___	1	Gable or shed	Metal	1442 ft²	400 ft²	Medium	Y	0.96	No	0.9	No	0	33.69

ATTIC

√	#	Type	Ventilation	Vent Ratio (1 in)	Area	RBS	IRCC
___	1	Full attic	Vented	300	1200 ft²	Y	N

CEILING (Total Exposed Area = 1260 sq.ft.)

√	#	Ceiling Type	Space	R-Value	Ins. Type	Area	U-Factor	Framing Frac.	Truss Type
___	1	Flat ceiling under attic(Vented)	1st Floor	38.0	Double Batt	730.8ft²	0.024	0.11	Wood

FORM R405-2020

INPUT SUMMARY CHECKLIST REPORT

CEILING(Continued)

___ 2	Flat ceiling under attic(Vented)	2nd Floor	38.0	Double Batt	529.2ft²	0.024	0.11	Wood

WALLS (Total Exposed Area = 1996 sq.ft.)

√ #	Ornt	Adjacent To	Wall Type	Space	Cavity R-Value	Width Ft	Width In	Height Ft	Height In	Area sq.ft.	U-Factor	Sheath R-Value	Frm. Frac.	Solar Absor.	Below Grade
___ 1	S	Exterior	Frame - Wood	1st Floor	19.0	40.0	0	9.0	0	360.0	0.061		0.23	0.75	0 %
___ 2	E	Exterior	Frame - Wood	1st Floor	19.0	30.0	0	9.0	0	270.0	0.061		0.23	0.75	0 %
___ 3	N	Exterior	Frame - Wood	1st Floor	19.0	40.0	0	9.0	0	360.0	0.061		0.23	0.75	0 %
___ 4	W	Exterior	Frame - Wood	1st Floor	19.0	30.0	0	9.0	0	270.0	0.061		0.23	0.75	0 %
___ 5	S	Exterior	Frame - Wood	2nd Floor	19.0	28.0	0	8.0	0	224.0	0.061		0.23	0.75	0 %
___ 6	E	Exterior	Frame - Wood	2nd Floor	19.0	18.0	0	8.0	0	144.0	0.061		0.23	0.75	0 %
___ 7	N	Exterior	Frame - Wood	2nd Floor	19.0	28.0	0	8.0	0	224.0	0.061		0.23	0.75	0 %
___ 8	W	Exterior	Frame - Wood	2nd Floor	19.0	18.0	0	8.0	0	144.0	0.061		0.23	0.75	0 %

DOORS (Total Exposed Area = 143 sq.ft.)

√ #	Ornt	Adjacent To	Door Type	Space	Storms	U-Value	Width Ft	Width In	Height Ft	Height In	Area
___ 1	S	Exterior	Insulated	1st Floor	None	0.46	3.00	0	6.00	8	20.0ft²
___ 2	E	Exterior	Wood	1st Floor	None	0.46	10.00	0	7.00	0	70.0ft²
___ 3	W	Exterior	Insulated	1st Floor	None	0.46	7.00	0	7.00	6	52.5ft²

WINDOWS (Total Exposed Area = 83 sq.ft.)

√ #	Ornt	Wall ID	Frame	Panes	NFRC	U-Factor	SHGC	Imp	Storm	Total Area (ft²)	Same Units	Width (ft)	Height (ft)	--Overhang-- Depth (ft)	Sep. (ft)	Interior Shade	Screen
___ 1	S	1	Vinyl	Low-E Double	Y	0.36	0.25	N	N	18.0	2	3.00	3.00	1.5	3.0	None	None
___ 2	S	5	Vinyl	Low-E Double	Y	0.36	0.25	N	N	18.0	2	3.00	3.00	1.5	0.5	None	None
___ 3	N	7	Vinyl	Low-E Double	Y	0.36	0.25	N	N	27.0	2	3.00	4.50	1.5	0.5	None	None
___ 4	S	5	TIM	Low-E Double	Y	0.36	0.25	N	N	20.0	1	3.00	6.67	1.5	0.5	None	None

INFILTRATION

√ #	Scope	Method	SLA	CFM50	ELA	EqLA	ACH	ACH50	Space(s)	Infiltration Test Volume
___ 1	Wholehouse	Proposed ACH(50)	0.00028	1236	67.81	127.31	0.1337	5.0	All	14832 cu ft

MASS

√ #	Mass Type	Area	Thickness	Furniture Fraction	Space
___ 1	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	1st Floor
___ 2	Default(8 lbs/sq.ft.)	0 ft²	0 ft	0.30	2nd Floor

HEATING SYSTEM

√ #	System Type	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	----Geothermal HeatPump---- Entry	Power	Volt	Current	Ducts	Block
___ 1	Electric Heat Pump	None/Single		HSPF2: 8.20	24.7		0.00	0.00	0.00	sys#0	1

FORM R405-2020

INPUT SUMMARY CHECKLIST REPORT

COOLING SYSTEM

√	#	System Type	Subtype/Speed	AHRI #	Efficiency	Capacity kBtu/hr	Air Flow cfm	SHR	Duct	Block
___	1	Central Unit	None/Single		SEER2:15.0	27.3	720	0.75	Ductless	1

HOT WATER SYSTEM

√	#	System Type	Subtype	Location	EF(UEF)	Cap	Use	SetPnt	Fixture Flow	Pipe Ins.	Pipe length
___	1	Electric	None	1st Floor	0.92 (0.92)	40.00 gal	40 gal	120 deg	Standard	None	12

		Recirculation System	Recirc Control Type	Loop length	Branch length	Pump power	DWHR	Facilities Connected	Equal Flow	DWHR Eff	Other Credits
___	1	No		NA	NA	NA	No	NA	NA	NA	None

DUCTS

√	Duct #	Supply Location	Supply R-Value	Supply Area	Return Location	Return R-Value	Return Area	Leakage Type	Air Handler	CFM 25 TOT	CFM 25 OUT	QN	RLF	HVAC # Heat	HVAC # Cool

TEMPERATURES

Programable Thermostat: Y Ceiling Fans: N

	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 R405-2020

ENERGY PERFORMANCE LEVEL (EPL) DISPLAY CARD

ESTIMATED ENERGY PERFORMANCE INDEX* = 80

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

205 SW Governors Glen,Lake City,FL,32024

1. New construction or existing		New (From Plans)
2. Single family or multiple family		Detached
3. Number of units, if multiple family		1
4. Number of Bedrooms		0
5. Is this a worst case?		No
6. Conditioned floor area above grade (ft²)		1704
Conditioned floor area below grade (ft²)		0

7. Windows**	Description	Area
a. U-Factor:	Dbl, U=0.36	83.00 ft²
SHGC:	SHGC=0.25	
b. U-Factor:	N/A	ft²
SHGC:		
c. U-Factor:	N/A	ft²
SHGC:		
Area Weighted Average Overhang Depth:		1.500 ft
Area Weighted Average SHGC:		0.250

8. Skylights	Description	Area
U-Factor:(AVG)	N/A	N/A ft²
SHGC(AVG):	N/A	

9. Floor Types	Insulation	Area
a. Slab-On-Grade Edge Insulation	R= 0.0	1200.00 ft²
b. Floor Over Other Space	R= 19.0	504.00 ft²
c. N/A	R=	ft²

10. Wall Types(1996.0 sqft.)	Insulation	Area
a. Frame - Wood, Exterior	R=19.0	1996.00 ft²
b. N/A		
c. N/A		
d. N/A		

11. Ceiling Types(1260.0 sqft.)	Insulation	Area
a. Flat ceiling under att (Vented)	R=38.0	1260.00 ft²
b. N/A		
c. N/A		

12. Roof(Metal, Vented)	Deck R=0.0	1442 ft²
13. Ducts, location & insulation level		R ft²
a.		
b.		
c.		

14. Cooling Systems	kBtu/hr	Efficiency
a. Central Unit	27.3	SEER2:15.00

15. Heating Systems	kBtu/hr	Efficiency
a. Electric Heat Pump	24.7	HSPF2:8.20

16. Hot Water Systems	
a. Electric	Cap: 40 gallons
	EF: 0.920
b. Conservation features	
	None
17. Credits	CV, 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: 205 SW Governors Glen City/FL Zip: Lake City,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 Energy Rating. For information about the Florida Building Code, Energy Conservation, contact the Florida Building Commission's support staff.

**Label required by Section R303.1.3 of the Florida Building Code, Energy Conservation, if not DEFAULT.

Envelope Leakage Test Report (Blower Door Test)
Residential Prescriptive, Performance or ERI Method Compliance
2020 Florida Building Code, Energy Conservation, 7th Edition

Jurisdiction:	Permit #:

Job Information

Builder: Community: Lot: NA

Address: 205 SW Governors Glen

City: Lake City State: FL Zip: 32024

Air Leakage Test Results *Passing results must meet either the Performance, Prescriptive, or ERI Method*

○ **PRESCRIPTIVE METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding 7 air changes per hour at a pressure of 0.2 inch w.g. (50 Pascals) in Climate Zones 1 and 2.

● **PERFORMANCE or ERI METHOD-**The building or dwelling unit shall be tested and verified as having an air leakage rate of not exceeding the selected ACH(50) value, as shown on Form R405-2020 (Performance) or R406-2020 (ERI), section labeled as infiltration, sub-section ACH50.

ACH(50) specified on Form R405-2020-Energy Calc (Performance) or R406-2020 (ERI): 5.000

_____ x 60 ÷ 14832 = _____
CFM(50) Building Volume ACH(50)

☐ **PASS**

☐ When ACH(50) is less than 3, Mechanical Ventilation installation must be verified by building department.

Method for calculating building volume:

○ Retrieved from architectural plans

● Code software calculated

○ Field measured and calculated

R402.4.1.2 Testing. Testing shall be conducted in accordance with ANSI/RESNET/ICC 380 and reported at a pressure of 0.2 inch w.g. (50 Pascals). Testing shall be conducted by either individuals as defined in Section 553.993(5) or (7), *Florida Statutes*, or individuals licensed as set forth in Section 489.105(3)(f), (g), or (i) or an approved third party. A written report of the results of the test shall be signed by the party conducting the test and provided to the *code official*. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*.

During testing:
1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, back draft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open.
4. Exterior doors for continuous ventilation systems and heat recovery ventilators shall be closed and sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Testing Company

Company Name: _____ Phone: _____

I hereby verify that the above Air Leakage results are in accordance with the 2020 7th Edition Florida Building Code Energy Conservation requirements according to the compliance method selected above.

Signature of Tester: _____ Date of Test: _____

Printed Name of Tester: _____

License/Certification #: _____ Issuing Authority: _____

Residential System Sizing Calculation

Summary

Dale Nickelson
205 SW Governors Glen
Lake City, FL 32024

Project Title:
Nickelson Shed

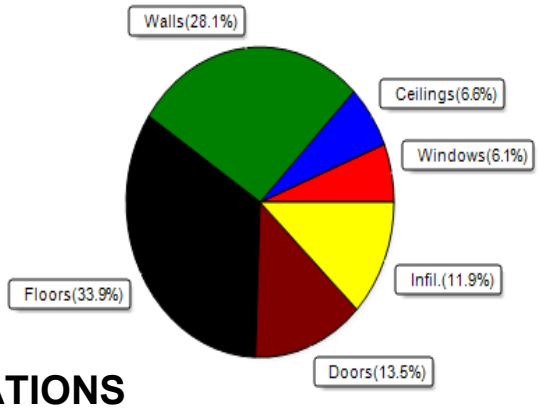
11/27/2023

Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M)					
Humidity data: Interior RH (50%) Outdoor wet bulb (79F) Humidity difference(54gr.)					
Winter design temperature(MJ8 99%/Cu)	33	F	Summer design temperature(MJ8 99%/Cu)	99	F
Winter setpoint	70	F	Summer setpoint	75	F
Winter temperature difference	37	F	Summer temperature difference	24	F
Total heating load calculation	**18031**	**Btuh**	**Total cooling load calculation**	**13738**	**Btuh**
Submitted heating capacity	% of calc	Btuh	Submitted cooling capacity	% of calc	Btuh
Total (Electric Heat Pump)	137.0	24703	Sensible (SHR = 0.75)	178.2	20475
Heat Pump + Auxiliary(0.0kW)	137.0	24703	Latent	303.4	6825
			Total (Electric Heat Pump)	198.7	27300

WINTER CALCULATIONS

Winter Heating Load (for 1704 sqft)

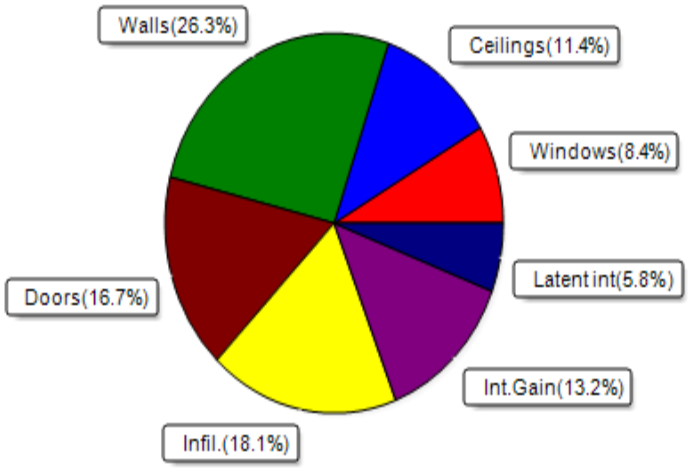
Load component			Load	
Window total	83	sqft	1106	Btuh
Wall total	1771	sqft	5062	Btuh
Door total	143	sqft	2425	Btuh
Ceiling total	1260	sqft	1183	Btuh
Floor total	See detail report		6112	Btuh
Infiltration	53	cfm	2142	Btuh
Duct loss			0	Btuh
Subtotal			**18031**	**Btuh**
Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
TOTAL HEAT LOSS			**18031**	**Btuh**



SUMMER CALCULATIONS

Summer Cooling Load (for 1704 sqft)

Load component			Load	
Window total	83	sqft	1154	Btuh
Wall total	1771	sqft	3612	Btuh
Door total	143	sqft	2294	Btuh
Ceiling total	1260	sqft	1567	Btuh
Floor total			0	Btuh
Infiltration	40	cfm	1042	Btuh
Internal gain			1820	Btuh
Duct gain			0	Btuh
Sens.Ventilation	Ex:0 cfm; Sup:0 cfm		0	Btuh
Blower Load			0	Btuh
Total sensible gain			**11489**	**Btuh**
Latent gain(ducts)			0	Btuh
Latent gain(infiltration)			1450	Btuh
Latent gain(ventilation)			0	Btuh
Latent gain(internal/occupants/other)			800	Btuh
Total latent gain			**2250**	**Btuh**
TOTAL HEAT GAIN			**13738**	**Btuh**



Powered by ACCA MANUAL J8 8th Edition

EnergyGauge® System Sizing
PREPARED BY: _____
DATE: 11 / 27 / 2023

System Sizing Calculations - Winter

Residential Load - Whole House Component Details

Dale Nickelson
205 SW Governors Glen
Lake City, FL 32024

Project Title:
Nickelson Shed
Building Type: User

11/27/2023

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 37.0 °F (MJ8 99%/Cu)
Winter Setpoint: 70 °F (Required Manual J default)

Component Loads for Whole House

Window	Panes/Type	Frame	U	Orientation	Area(sqft) X	HTM=	Load
1	2, NFRC 0.25	Vinyl	0.36	S	18.0	13.3	240 Btuh
2	2, NFRC 0.25	Vinyl	0.36	S	18.0	13.3	240 Btuh
3	2, NFRC 0.25	Vinyl	0.36	N	27.0	13.3	360 Btuh
4	2, NFRC 0.25	TIM	0.36	S	20.0	13.3	266 Btuh
	Window Total				83.0(sqft)		1106 Btuh

Walls	Type	Ornt.	Ueff.	R-Value (Cav/Sh)	Area X	HTM=	Load
1	Frame - Wood	- Ext	(0.077)	19.0/0.0	322	2.86	921 Btuh
2	Frame - Wood	- Ext	(0.077)	19.0/0.0	200	2.86	572 Btuh
3	Frame - Wood	- Ext	(0.077)	19.0/0.0	360	2.86	1029 Btuh
4	Frame - Wood	- Ext	(0.077)	19.0/0.0	218	2.86	622 Btuh
5	Frame - Wood	- Ext	(0.077)	19.0/0.0	186	2.86	532 Btuh
6	Frame - Wood	- Ext	(0.077)	19.0/0.0	144	2.86	412 Btuh
7	Frame - Wood	- Ext	(0.077)	19.0/0.0	197	2.86	563 Btuh
8	Frame - Wood	- Ext	(0.077)	19.0/0.0	144	2.86	412 Btuh
	Wall Total				1771(sqft)		5062 Btuh

Doors	Type	Storm	Ueff.		Area X	HTM=	Load
1	Insulated - Exterior,	n	(0.460)		20	17.0	340 Btuh
2	Wood - Exterior,	n	(0.460)		70	17.0	1191 Btuh
3	Insulated - Exterior,	n	(0.460)		53	17.0	894 Btuh
	Door Total				143(sqft)		2425Btuh

Ceilings	Type/Color/Surface	Ueff.	R-Value	Area X	HTM=	Load
1	Flat ceil/M/Metal	(0.025)	38.0/0.0	731	0.94	686 Btuh
2	Flat ceil/M/Metal	(0.025)	38.0/0.0	529	0.94	497 Btuh
	Ceiling Total			1260(sqft)		1183Btuh

Floors	Type	Ueff.	R-Value	Size X	HTM=	Load
1	Slab On Grade	(1.180)	0.0	140.0 ft(perim.)	43.7	6112 Btuh
2	Interior	(1.180)	19.0	504.0 sqft	0.0	0 Btuh
	Floor Total			1704 sqft		6112 Btuh

				Envelope Subtotal:		15889 Btuh
Infiltration	Type	Wholehouse	ACH	Volume(cuft)	Wall Ratio	CFM=
	Natural		0.21	14832	1.00	52.9	2142 Btuh
Duct load	NA, R0.0, Supply(), Return()				(DLM of 0.000)		0 Btuh
All Zones				**Sensible Subtotal All Zones**			**18031 Btuh**

Manual J Winter Calculations

Residential Load - Component Details (continued)

Dale Nickelson
205 SW Governors Glen
Lake City, FL 32024

Project Title:
Nickelson Shed
Building Type: User

11/27/2023

WHOLE HOUSE TOTALS

Totals for Heating	Subtotal Sensible Heat Loss	18031 Btuh
	Ventilation Sens. Heat Loss (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Total Heat Loss	18031 Btuh

EQUIPMENT

1. Electric Heat Pump	#	24703 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)

Powered by ACCA Air Conditioning Contractors of America MANUAL J®

Version 8

System Sizing Calculations - Summer

Residential Load - Whole House Component Details

Dale Nickelson
205 SW Governors Glen
Lake City, FL 32024

Project Title:
Nickelson Shed

11/27/2023

Reference City: Gainesville, FL (Defaults)
Humidity difference: 54gr.

Temperature Difference: 24.0F(MJ8 99%/Cu)
Summer Setpoint: 75 °F (Required Manual J default)

Component Loads for Whole House

	Type*					Overhang		Window Area(sqft)			HTM		Load
Window	Panes	SHGC	U	InSh	IS	Ornt	Len	Hgt	Gross	Shaded	Unshaded	Shaded	Unshaded	
1	2 NFRC	0.25,	0.36	No	No	S	1.5ft.	3.0ft.	18.0	18.0	0.0	14	16	250 Btuh
2	2 NFRC	0.25,	0.36	No	No	S	1.5ft.	0.5ft.	18.0	18.0	0.0	14	16	250 Btuh
3	2 NFRC	0.25,	0.36	No	No	N	1.5ft.	0.5ft.	27.0	0.0	27.0	14	14	375 Btuh
4	2 NFRC	0.25,	0.36	No	No	S	1.5ft.	0.5ft.	20.0	20.0	0.0	14	16	278 Btuh
	Window Total								83 (sqft)					1154 Btuh

Walls	Type	U-Value	R-Value	Area(sqft)	HTM	Load
			Cav/Sheath			
1	Frame - Wood - Ext	0.08	19.0/0.0	322.0	2.0	657 Btuh
2	Frame - Wood - Ext	0.08	19.0/0.0	200.0	2.0	408 Btuh
3	Frame - Wood - Ext	0.08	19.0/0.0	360.0	2.0	734 Btuh
4	Frame - Wood - Ext	0.08	19.0/0.0	217.5	2.0	444 Btuh
5	Frame - Wood - Ext	0.08	19.0/0.0	186.0	2.0	379 Btuh
6	Frame - Wood - Ext	0.08	19.0/0.0	144.0	2.0	294 Btuh
7	Frame - Wood - Ext	0.08	19.0/0.0	197.0	2.0	402 Btuh
8	Frame - Wood - Ext	0.08	19.0/0.0	144.0	2.0	294 Btuh
	Wall Total			1771 (sqft)		3612 Btuh

Doors	Type	Area (sqft)	HTM	Load
1	Insulated - Exterior	20.0	16.1	322 Btuh
2	Wood - Exterior	70.0	16.1	1127 Btuh
3	Insulated - Exterior	52.5	16.1	845 Btuh
	Door Total	143 (sqft)		2294 Btuh

Ceilings	Type/Color/Surface	U-Value	R-Value	Area(sqft)	HTM	Load
1	Vented Attic/Med/Metal/RB	0.025	38.0/0.0	730.8	1.24	909 Btuh
2	Vented Attic/Med/Metal/RB	0.025	38.0/0.0	529.2	1.24	658 Btuh
	Ceiling Total			1260 (sqft)		1567 Btuh

Floors	Type	R-Value	Size	HTM	Load
1	Slab On Grade	0.0	1200 (ft-perimeter)	0.0	0 Btuh
2	Interior	19.0	504 (sqft)	0.0	0 Btuh
	Floor Total		1704.0 (sqft)		0 Btuh
				Envelope Subtotal:	8627 Btuh

Infiltration	Type	Average ACH	Volume(cuft)	Wall Ratio	CFM=	Load
	Natural	0.16	14832	1	39.7	1042 Btuh
Internal gain		Occupants	Btuh/occupant		Appliance	Load
		4	X 230	+	900	1820 Btuh
					Sensible Envelope Load:	11489 Btuh
Duct load	NA, Supply(R0.0-None), Return(R0.0-None)				(DGM of 0.000)	0 Btuh
					Sensible Load All Zones	**11489 Btuh**

Manual J Summer Calculations

Residential Load - Component Details (continued)

Dale Nickelson
205 SW Governors Glen
Lake City, FL 32024

Project Title: Nickelson Shed

Climate:FL_GAINESVILLE_REGIONAL_A

11/27/2023

WHOLE HOUSE TOTALS

Whole House Totals for Cooling	**Sensible Envelope Load All Zones**	**11489 Btuh**
	Sensible Duct Load	0 Btuh
	Total Sensible Zone Loads	**11489 Btuh**
	Sensible ventilation (Ex:0 cfm; Sup:0 cfm)	0 Btuh
	Blower	0 Btuh
	Total sensible gain	**11489 Btuh**
	Latent infiltration gain (for 54 gr. humidity difference)	1450 Btuh
	Latent ventilation gain	0 Btuh
	Latent duct gain	0 Btuh
	Latent occupant gain (4.0 people @ 200 Btuh per person)	800 Btuh
	Latent other gain	0 Btuh
	Latent total gain	**2250 Btuh**
	TOTAL GAIN	**13738 Btuh**

EQUIPMENT

1. Central Unit	#	27300 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)

Powered by ACCA Air Conditioning Contractors of America MANUAL J®

Version 8