

Miranda
HVAC Load Calculations

for

House Craft Homes
10523 US Highway 441
Alachua FL 32615

Prepared By:

R. M. Walsh
North Central Florida Air Conditioning
P.O Box 358604
Gainesville, FL 32635
386-454-4767
Thursday, September 08, 2022



Project Report

General Project Information

Project Title: Miranda
Project Date: Friday, March 1, 2022
Project Comment: Edit the file AUTOLOAD.RHV so that it contains your company name, weather data, and any other information you would like to have in each new project that you start.

Client Name: House Craft Homes
Client Address: 10523 US Highway 441
Client City: Alachua FL 32615
Client Phone: 386-462-5323
Client Fax: 888-769-0105
Client E-Mail Address: housecraftinvoices@gmail.com
Company Name: North Central Florida Air Conditioning
Company Representative: R. M. Walsh
Company Address: P.O Box 358604
Company City: Gainesville, FL 32635
Company Phone: 386-454-4767
Company Fax: 386-454-4854
Company Comment:

Design Data

Reference City: Gainesville AP, Florida
Building Orientation: Front door faces South
Daily Temperature Range: Medium
Latitude: 29 Degrees
Elevation: 152 ft.
Altitude Factor: 0.995

	Outdoor Dry Bulb	Outdoor Wet Bulb	Outdoor Rel.Hum	Indoor Rel.Hum	Indoor Dry Bulb	Grains Differenc e
Winter:	33	30.8	n/a	n/a	70	n/a
Summer:	92	77	51%	50%	75	52

Check Figures

Total Building Supply CFM:	875	CFM Per Square ft.:	0.473
Square ft. of Room Area:	1,850	Square ft. Per Ton:	662
Volume (ft³):	17,858		

Building Loads

Total Heating Required Including Ventilation Air:	33,183 Btuh	33.183 MBH
Total Sensible Gain:	24,521 Btuh	75 %
Total Latent Gain:	8,379 Btuh	25 %
Total Cooling Required Including Ventilation Air:	32,900 Btuh	2.74 Tons (Based On Sensible + Latent)
		2.79 Tons (Based On 75% Sensible Capacity)

Notes

Rhvac is an ACCA approved Manual J, D and S computer program.
Calculations are performed per ACCA Manual J 8th Edition, Version 2, and ACCA Manual D.
All computed results are estimates as building use and weather may vary.
Be sure to select a unit that meets both sensible and latent loads according to the manufacturer's performance data at your design conditions.



Duct Size Preview

Room or Duct Name	Source	Minimum Velocity	Maximum Velocity	Rough. Factor	Design L/100	SP Loss	Duct Velocity	Duct Length	Htg Flow	Clg Flow	Act. Flow	Duct Size	Reg Size
System 1													
Supply Runouts													
Zone 1													
1-Master Bath	Built-In	450	750	0.01	0.1		121.4		21	21	21	2--4	
2-WIC	Built-In	450	750	0.01	0.1		259.6		32	23	23	1--4	
3-Master	Built-In	450	750	0.01	0.1		537.8		53	144	144	1--7	
4-Great Room	Built-In	450	750	0.01	0.1		491.6		49	131	131	1--7	
5-Kitchen/Pamtry	Built-In	450	750	0.01	0.1		643.4		32	175	175	2--5	
6-Bedroom 2	Built-In	450	750	0.01	0.1		502.1		54	99	99	1--6	
7-Bath 1	Built-In	450	750	0.01	0.1		164.4		12	14	14	1--4	
8-Bedroom 3	Built-In	450	750	0.01	0.1		514.6		57	101	101	1--6	
9-Laundry	Built-In	450	750	0.01	0.1		239.5		18	21	21	1--4	
10-Dinning	Built-In	450	750	0.01	0.1		595.9		37	81	81	1--5	
11-Living	Built-In	450	750	0.01	0.1		469.7		26	64	64	1--5	
Other Ducts in System 1													
Supply Main Trunk	Built-In	650	900	0.003	0.1		740.8		391	875	875	10x17	

Summary

System 1

Heating Flow: 391

Cooling Flow: 875



Equipment Data - System 1 - Main Floor

Cooling

System Type:	Air Source Heat Pump
Outdoor Model:	DZ14SN0361A*
Indoor Model:	ARUF37D14A*
Tradename:	DAIKIN
Outdoor Manufacturer:	DAIKIN MANUFACTURING COMPANY, L.P.
Description:	Air Source Heat Pump
AHRI Reference No.:	7998865
Capacity:	34,400
Efficiency:	14 SEER

Heating

System Type:	Air Source Heat Pump
Model:	DZ14SN0361A*
Tradename:	DAIKIN
Manufacturer:	DAIKIN MANUFACTURING COMPANY, L.P.
Description:	Air Source Heat Pump
Capacity:	32,800
Efficiency:	8.2 HSPF



Manual S Performance Data - System 1 - Main Floor

Loads and Design Conditions

Cooling:

Outdoor Dry Bulb:	0	Sensible Gain:	24.521
Outdoor Wet Bulb:	77	Latent Gain:	8.379
Indoor Dry Bulb:	75	Total Gain:	32.900
Indoor RH:	50	Load SHR:	0.75
Supply Airflow:	0	Entering Dry Bulb:	0
		Entering Wet Bulb:	0

Heating:

Outdoor Dry Bulb:	33	Sensible Loss:	33.183
Indoor Dry Bulb:	70	Entering Dry Bulb:	62.8
Indoor RH:	30	Supply Airflow:	391

Equipment Performance Data at System Design Conditions

Cooling:

Model Type: Air Source Heat Pump, Outdoor Model: DZ14SN0361A*, Indoor Model: ARUF37D14A*
, AHRI Reference Number: 7998865 Nominal Capacity: 34.400, Manufacturer: DAIKIN MANUFACTURING COMPANY, L.P.

Interpolation Results:

		<u>Load</u>	<u>Percent of Load</u>
Sensible Capacity:	0.000	24.521	0%
Latent Capacity:	0.000	8.379	0%
Total Capacity:	0.000	32.900	0%

Heating:

Model Type: Air Source Heat Pump, Model: DZ14SN0361A*, Nominal Capacity: 32.800, Manufacturer: DAIKIN MANUFACTURING COMPANY, L.P.

Results:

		<u>Load</u>	<u>Percent of Load</u>
Heating Capacity:	32.800	33.183	99%



Manual S Performance Data - System 2

Loads and Design Conditions

Outdoor Dry Bulb:	0	Sensible Gain:	0.000
Outdoor Wet Bulb:	77	Latent Gain:	0.000
Indoor Dry Bulb:	75	Total Gain:	0.000
Indoor RH:	50	Load SHR:	0.00
Supply Airflow:	0	Entering Dry Bulb:	0
		Entering Wet Bulb:	0

Equipment Performance Data at System Design Conditions

Model Type: Standard Air Conditioner,
Manufacturer:

Interpolation Results:

		<u>Load</u>	<u>Percent of Load</u>
Sensible Capacity:	0.000	0.000	0%
Latent Capacity:	0.000	0.000	0%
Total Capacity:	0.000	0.000	0%



Manual S Performance Data - System 3

Loads and Design Conditions

Outdoor Dry Bulb:	0	Sensible Gain:	0.000
Outdoor Wet Bulb:	77	Latent Gain:	0.000
Indoor Dry Bulb:	75	Total Gain:	0.000
Indoor RH:	50	Load SHR:	0.00
Supply Airflow:	0	Entering Dry Bulb:	0
		Entering Wet Bulb:	0

Equipment Performance Data at System Design Conditions

Model Type: Standard Air Conditioner,
Manufacturer:

Interpolation Results:

		<u>Load</u>	<u>Percent of Load</u>
Sensible Capacity:	0.000	0.000	0%
Latent Capacity:	0.000	0.000	0%
Total Capacity:	0.000	0.000	0%