

Manual S Compliance Report

Entire House

Wade Willis Construction

Job: R1020429
Date: Oct 16, 2020
By: AMA

910 SW Sisters Welcome Rd, Lake City, FL 32025 Phone: 386-961-9962

Project Information

For: Broderick
Lake City, FL 32025

Cooling Equipment

Design Conditions

Outdoor design DB:	91.9°F	Sensible gain:	17802	Btuh
Outdoor design WB:	76.2°F	Latent gain:	4371	Btuh
Indoor design DB:	75.0°F	Total gain:	22172	Btuh
Indoor RH:	50%	Estimated airflow:	807	cfm

Entering coil DB: 82.1°F
Entering coil WB: 65.8°F



Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	2 Ton - Carrier or	Model:	25VNA825+FE4ANF002
Actual airflow:	807 cfm		
Sensible capacity:	18150 Btuh	102% of load	
Latent capacity:	6050 Btuh	138% of load	
Total capacity:	24200 Btuh	109% of load	SHR: 75%

Heating Equipment

Design Conditions

Outdoor design DB:	33.4°F	Heat loss:	20906	Btuh
Indoor design DB:	70.0°F			

Entering coil DB: 67.7°F

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	2 Ton - Carrier or	Model:	25VNA825+FE4ANF002
Actual airflow:	807 cfm		
Output capacity:	29000 Btuh	139% of load	
Supplemental heat required:	0 Btuh		

Capacity balance: 22 °F
Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	807 cfm		
Output capacity:	5.0 kW	82% of load	Temp. rise: 49 °F

Meets all requirements of ACCA Manual S.

Project Information

For: Broderick
Lake City, FL 32025

Notes: Load calculation was obtained from a digital copy of the CAD drawing.
NOTE: Spray foam on roof deck or walls - OA cfm is included in this calculation and is recommended for an outside air vent to be installed to pass the air leakage rate of 3 - 7 ACH during the blower door testing requirement.

Design Information

Weather: Gainesville Rgnl, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	37 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	47 gr/lb

Heating Summary

Structure	16943 Btuh
Ducts	2180 Btuh
Central vent (45 cfm)	1783 Btuh
Outside air	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	20906 Btuh

Sensible Cooling Equipment Load Sizing

Structure	10401 Btuh
Ducts	1458 Btuh
Central vent (45 cfm)	823 Btuh
Outside air	
Blower	5120 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	17802 Btuh

Infiltration

Method	Simplified
Construction quality	Semi-tight
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	1785 Btuh
Ducts	1172 Btuh
Central vent (45 cfm)	1413 Btuh
Outside air	
Equipment latent load	4371 Btuh

	Heating	Cooling
Area (ft²)	1456	1456
Volume (ft³)	11648	11648
Air changes/hour	0.31	0.16
Equiv. AVF (cfm)	60	31

Equipment Total Load (Sen+Lat)	22172 Btuh
Req. total capacity at 0.75 SHR	2.0 ton

Heating Equipment Summary

Make	2 Ton - Carrier or Eqv.
Trade	Split HP
Model	25VNA825
AHRI ref	9892895
Efficiency	9.5 HSPF
Heating input	
Heating output	29000 Btuh @ 47°F
Temperature rise	33 °F
Actual air flow	807 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	
Capacity balance point = 22 °F	
Backup: Aux. Heat	
Input = 5 kW, Output = 17061 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	2 Ton - Carrier or Eqv.
Trade	Split HP
Cond	25VNA825
Coil	FE4ANF002
AHRI ref	9892895
Efficiency	11.5 EER, 17 SEER
Sensible cooling	18150 Btuh
Latent cooling	6050 Btuh
Total cooling	24200 Btuh
Actual air flow	807 cfm
Air flow factor	0.068 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.80

Calculations approved by ACCA to meet all requirements of Manual J 8th Ed.