

Project Information

For: Robbins/Masters Residence
 Columbia County, FL

Notes:

Design Information

Weather: Gainesville, FL, US

Winter Design Conditions

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

Ventilation Method MJ8

Heating Summary

Structure 20415 Btuh
 Ducts (R-6.0) 2379 Btuh
 Central vent (0 cfm) 0 Btuh
 Humidification 0 Btuh
 Piping 0 Btuh
 Equipment load 22793 Btuh

Infiltration

Method Simplified
 Construction quality Semi-tight
 Fireplaces 0

	Heating	Cooling
Area (ft ²)	1536	1536
Volume (ft ³)	12288	12288
Air changes/hour	0.26	0.14
Equiv. AVF (cfm)	53	29

Heating Equipment Summary

Make Rheem
 Trade RHEEM
 Model RP14AY24AJ2N
 AHRI ref 208546201
 Efficiency 7.5 HSPF2
 Heating input
 Heating output 22800 Btuh @ 47°F
 Temperature rise 27 °F
 Actual air flow 760 cfm
 Air flow factor 0.033 cfm/Btuh
 Static pressure 0.53 in H2O
 Space thermostat
 Capacity balance point = 34 °F

Backup:
 Input = 8 kW, Output = 25789 Btuh, 100 AFUE

Summer Design Conditions

Outside db 92 °F
 Inside db 75 °F
 Design TD 17 °F
 Daily range M
 Relative humidity 50 %
 Moisture difference 43 gr/lb

Sensible Cooling Equipment Load Sizing

Structure 14641 Btuh
 Ducts (R-6.0) 3343 Btuh
 Central vent (0 cfm) 0 Btuh
 Blower 0 Btuh
 Use manufacturer's data n
 Rate/swing multiplier 0.97
 Equipment sensible load 17517 Btuh

Latent Cooling Equipment Load Sizing

Structure 1444 Btuh
 Ducts 681 Btuh
 Central vent (0 cfm) 0 Btuh
 Equipment latent load 2125 Btuh
Equipment Total Load (Sen+Lat) 19642 Btuh
 Req. total capacity at 0.80 SHR 1.8 ton

Cooling Equipment Summary

Make Rheem
 Trade RHEEM
 Cond RP14AY24AJ2N
 Coil RH2TY2417STANN
 AHRI ref 208546201
 Efficiency 9.0 EER2, 14.3 SEER2
 Sensible cooling 18240 Btuh
 Latent cooling 4560 Btuh
 Total cooling 22800 Btuh
 Actual air flow 760 cfm
 Air flow factor 0.042 cfm/Btuh
 Static pressure 0.53 in H2O
 Load sensible heat ratio 0.89

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

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	17985 Btuh	Entering coil DB:	77.0°F
Outdoor design WB:	75.8°F	Latent gain:	2125 Btuh	Entering coil WB:	63.5°F
Indoor design DB:	75.0°F	Total gain:	20110 Btuh		
Indoor RH:	50%	Estimated airflow:	760 cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Rheem	Model:	RP14AY24AJ2N+RH2TY2417STANN		
Actual airflow:	760 cfm				
Sensible capacity:	18240 Btuh	101% of load			
Latent capacity:	4560 Btuh	215% of load			
Total capacity:	22800 Btuh	113% of load	SHR:	80%	

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	22793 Btuh	Entering coil DB:	69.0°F
Indoor design DB:	70.0°F				

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Rheem	Model:	RP14AY24AJ2N+RH2TY2417STANN		
Actual airflow:	760 cfm				
Output capacity:	22800 Btuh	100% of load		Capacity balance:	34 °F
Supplemental heat required:	0 Btuh			Economic balance:	-99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	760 cfm				
Output capacity:	7.6 kW	113% of load	Temp. rise:	50 °F	

Meets all requirements of ACCA Manual S.