

Project Information

For: PLUMB LEVEL/BRYCE & NICOLE RESIDENCE

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 24474 Btuh
Ducts (R-6.0) 12815 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 37288 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft ²)	1956	1956
Volume (ft ³)	17543	17543
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	111	58

Heating Equipment Summary

Make RHEEM
Trade
Model RP14AY42AJ2N
AHRI ref 214568774

Efficiency 7.5 HSPF2
Heating input
Heating output 40000 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1400 cfm
Air flow factor 0.038 cfm/Btuh
Static pressure 0.53 in H2O
Space thermostat
Capacity balance point = 0 °F

Backup:
Input = 9 kW, Output = 30085 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 16501 Btuh
Ducts (R-6.0) 16279 Btuh
Central vent (0 cfm) 0 Btuh

Blower 0 Btuh

Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 31928 Btuh

Latent Cooling Equipment Load Sizing

Structure 2521 Btuh
Ducts 4768 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 7289 Btuh

Equipment Total Load (Sen+Lat) 39217 Btuh
Req. total capacity at 0.70 SHR 3.8 ton

Cooling Equipment Summary

Make RHEEM
Trade
Cond RP14AY42AJ2N
Coil RH2TY4821STANN
AHRI ref 214568774
Efficiency 14.3 SEER2
Sensible cooling 28000 Btuh
Latent cooling 12000 Btuh
Total cooling 40000 Btuh
Actual air flow 1400 cfm
Air flow factor 0.043 cfm/Btuh
Static pressure 0.53 in H2O
Load sensible heat ratio 0.82

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:	32780	Btuh	Entering coil DB:	79.8°F
Outdoor design WB:	75.8°F	Latent gain:	7289	Btuh	Entering coil WB:	64.8°F
Indoor design DB:	75.0°F	Total gain:	40069	Btuh		
Indoor RH:	50%	Estimated airflow:	1400	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	RHEEM	Model:	RP14AY42AJ2N+RH2TY4821STANN
Actual airflow:	1400	cfm	
Sensible capacity:	28000	Btuh	85% of load
Latent capacity:	12000	Btuh	165% of load
Total capacity:	40000	Btuh	100% of load SHR: 70%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	37288	Btuh	Entering coil DB:	67.7°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	RHEEM	Model:	RP14AY42AJ2N+RH2TY4821STANN
Actual airflow:	1400	cfm	
Output capacity:	40000	Btuh	107% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	0	°F	
Economic balance:	0	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1400	cfm	
Output capacity:	8.8	kW	81% of load Temp. rise: 0 °F

Meets all requirements of ACCA Manual S.