

Project Information

For: PERRY/LEAR 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

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

Heating Summary

Structure 14523 Btuh
Ducts 2064 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 16587 Btuh

Sensible Cooling Equipment Load Sizing

Structure 15175 Btuh
Ducts 3142 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 17841 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 1384 Btuh
Ducts 672 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Equipment latent load 2056 Btuh

	Heating	Cooling
Area (ft²)	792	792
Volume (ft³)	7542	7542
Air changes/hour	0.61	0.32
Equiv. AVF (cfm)	77	40

Equipment Total Load (Sen+Lat) 19897 Btuh
Req. total capacity at 0.80 SHR 1.9 ton

Heating Equipment Summary

Make Trane
Trade TRANE
Model 4TWR4024N1
AHRI ref 211068818
Efficiency 7.5 HSPF2
Heating input 23200 Btuh @ 47°F
Heating output 27 °F
Temperature rise 773 cfm
Actual air flow 0.047 cfm/Btuh
Air flow factor 0.53 in H2O
Static pressure
Space thermostat
Capacity balance point = 25 °F
Backup:
Input = 5 kW, Output = 17233 Btuh, 100 AFUE

Cooling Equipment Summary

Make Trane
Trade TRANE
Cond 4TWR4024N1
Coil TEM4A0B18S21++TDR
AHRI ref 211068818
Efficiency 11.7 EER2, 14.3 SEER2
Sensible cooling 18560 Btuh
Latent cooling 4640 Btuh
Total cooling 23200 Btuh
Actual air flow 773 cfm
Air flow factor 0.042 cfm/Btuh
Static pressure 0.53 in H2O
Load sensible heat ratio 0.90

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

Project Information

For: PERRY/LEAR RESIDENCE
 Columbia County, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	18317	Btuh	Entering coil DB:	77.3°F
Outdoor design WB:	75.8°F	Latent gain:	2056	Btuh	Entering coil WB:	63.6°F
Indoor design DB:	75.0°F	Total gain:	20373	Btuh		
Indoor RH:	50%	Estimated airflow:	773	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4024N1+TEM4A0B18S21++TDR		
Actual airflow:	773	cfm			
Sensible capacity:	18560	Btuh	101%	of load	
Latent capacity:	4640	Btuh	226%	of load	
Total capacity:	23200	Btuh	114%	of load	SHR: 80%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	16587	Btuh	Entering coil DB:	68.9°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4024N1+TEM4A0B18S21++TDR		
Actual airflow:	773	cfm			
Output capacity:	23200	Btuh	140%	of load	Capacity balance: 25 °F
Supplemental heat required:	0	Btuh			Economic balance: -99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	773	cfm			
Output capacity:	5.1	kW	104%	of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.