

### Project Information

For: Tan 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 18186 Btuh  
Ducts 2779 Btuh  
Central vent (0 cfm)  
(none) 0 Btuh  
Humidification 0 Btuh  
Piping 0 Btuh  
Equipment load 20964 Btuh

#### Sensible Cooling Equipment Load Sizing

Structure 13496 Btuh  
Ducts 4278 Btuh  
Central vent (0 cfm)  
(none) 0 Btuh  
Blower 0 Btuh  
Use manufacturer's data n  
Rate/swing multiplier 0.97  
Equipment sensible load 17312 Btuh

#### Infiltration

Method Simplified  
Construction quality Average  
Fireplaces 0

#### Latent Cooling Equipment Load Sizing

Structure 1995 Btuh  
Ducts 910 Btuh  
Central vent (0 cfm)  
(none) 0 Btuh  
Equipment latent load 2905 Btuh

	Heating	Cooling
Area (ft²)	1575	1575
Volume (ft³)	14218	14218
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	90	47

**Equipment Total Load (Sen+Lat)** 20217 Btuh  
Req. total capacity at 0.80 SHR 1.8 ton

#### Heating Equipment Summary

Make Trane  
Trade TRANE  
Model 4TWR4024N1  
AHRI ref 209842212  
Efficiency 7.5 HSPF2  
Heating input 22600 Btuh @ 47°F  
Heating output 26 °F  
Temperature rise 780 cfm  
Actual air flow 0.037 cfm/Btuh  
Air flow factor 0.53 in H2O  
Static pressure  
Space thermostat  
Capacity balance point = 32 °F  
Backup:  
Input = 6 kW, Output = 21287 Btuh, 100 AFUE

#### Cooling Equipment Summary

Make Trane  
Trade TRANE  
Cond 4TWR4024N1  
Coil TEM4B0B24M21++TDR  
AHRI ref 209842212  
Efficiency 11.7 EER2, 14.3 SEER2  
Sensible cooling 18720 Btuh  
Latent cooling 4680 Btuh  
Total cooling 23400 Btuh  
Actual air flow 780 cfm  
Air flow factor 0.044 cfm/Btuh  
Static pressure 0.53 in H2O  
Load sensible heat ratio 0.86

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:	17775	Btuh	Entering coil DB:	78.1°F
Outdoor design WB:	75.8°F	Latent gain:	2905	Btuh	Entering coil WB:	64.0°F
Indoor design DB:	75.0°F	Total gain:	20679	Btuh		
Indoor RH:	50%	Estimated airflow:	780	cfm		

#### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4024N1+TEM4B0B24M21++TDR		
Actual airflow:	780	cfm			
Sensible capacity:	18720	Btuh	105%	of load	
Latent capacity:	4680	Btuh	161%	of load	
Total capacity:	23400	Btuh	113%	of load	SHR: 80%

### Heating Equipment

#### Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	20964	Btuh	Entering coil DB:	68.5°F
Indoor design DB:	70.0°F					

#### Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4024N1+TEM4B0B24M21++TDR		
Actual airflow:	780	cfm			
Output capacity:	22600	Btuh	108%	of load	Capacity balance: 32 °F
Supplemental heat required:	0	Btuh			Economic balance: -99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	780	cfm			
Output capacity:	6.2	kW	102%	of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.