

Project Information

For: NORTON RESIDENCE
Lake City, 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 31454 Btuh
Ducts (R-6.0) 9345 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 40799 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft ²)	2794	2794
Volume (ft ³)	27731	27731
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	148	74

Heating Equipment Summary

Make Trane
Trade TRANE
Model 4TWR4060N1000A
AHRI ref 209842243

Efficiency 7.5 HSPF2
Heating input
Heating output 55000 Btuh @ 47°F
Temperature rise 27 °F
Actual air flow 1833 cfm
Air flow factor 0.045 cfm/Btuh
Static pressure 0.53 in H2O
Space thermostat
Capacity balance point = 25 °F

Backup:
Input = 10 kW, Output = 35767 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 26958 Btuh
Ducts (R-6.0) 13112 Btuh
Central vent (0 cfm) 0 Btuh

Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 39028 Btuh

Latent Cooling Equipment Load Sizing

Structure 2976 Btuh
Ducts 2694 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 5671 Btuh

Equipment Total Load (Sen+Lat) 44699 Btuh
Req. total capacity at 0.80 SHR 4.1 ton

Cooling Equipment Summary

Make Trane
Trade TRANE
Cond 4TWR4060N1000A
Coil TEM4B0C60S51SA
AHRI ref 209842243
Efficiency 11.7 EER2, 14.3 SEER2
Sensible cooling 44000 Btuh
Latent cooling 11000 Btuh
Total cooling 55000 Btuh
Actual air flow 1833 cfm
Air flow factor 0.046 cfm/Btuh
Static pressure 0.53 in H2O
Load sensible heat ratio 0.88

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:	40070	Btuh	Entering coil DB:	78.3°F
Outdoor design WB:	75.8°F	Latent gain:	5671	Btuh	Entering coil WB:	64.0°F
Indoor design DB:	75.0°F	Total gain:	45741	Btuh		
Indoor RH:	50%	Estimated airflow:	1833	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4060N1000A+TEM4B0C60S51SA		
Actual airflow:	1833	cfm			
Sensible capacity:	44121	Btuh	110% of load		
Latent capacity:	8341	Btuh	147% of load		
Total capacity:	52461	Btuh	115% of load	SHR:	84%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	40799	Btuh	Entering coil DB:	68.4°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	Trane	Model:	4TWR4060N1000A+TEM4B0C60S51SA		
Actual airflow:	1833	cfm			
Output capacity:	55000	Btuh	135% of load	Capacity balance:	25 °F
Supplemental heat required:	0	Btuh		Economic balance:	-99 °F

Backup equipment type:	Elec strip				
Manufacturer:		Model:			
Actual airflow:	1833	cfm			
Output capacity:	10.5	kW	88% of load	Temp. rise:	50 °F

Meets all requirements of ACCA Manual S.