

Project Information

For: JOHNSON/LAMNECK RESIDENCE
Columbus County, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	24324	Btuh	Entering coil DB:	78.1°F
Outdoor design WB:	75.8°F	Latent gain:	4174	Btuh	Entering coil WB:	64.0°F
Indoor design DB:	75.0°F	Total gain:	28498	Btuh		
Indoor RH:	50%	Estimated airflow:	1093	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	TRANE	Model:	5TWR4036A1000A+5TEM4D04AC31SA
Actual airflow:	1093	cfm	
Sensible capacity:	26240	Btuh	108% of load
Latent capacity:	6560	Btuh	157% of load
Total capacity:	32800	Btuh	115% of load SHR: 80%



Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	27358	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:	5TWR4036A1000A+5TEM4D04AC31SA
Actual airflow:	1093	cfm	
Output capacity:	31400	Btuh	115% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	0	°F	
Economic balance:	0	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1093	cfm	
Output capacity:	7.8	kW	97% of load Temp. rise: 0 °F

Meets all requirements of ACCA Manual S.

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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 21905 Btuh
Ducts (R-6.0) 5453 Btuh
Central vent (0 cfm) 0 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 27358 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft ²)	1872	1872
Volume (ft ³)	18393	18393
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	116	61

Heating Equipment Summary

Make TRANE
Trade
Model 5TWR4036A1000A
AHRI ref 215610865

Efficiency 7.5 HSPF2
Heating input
Heating output 31400 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1093 cfm
Air flow factor 0.040 cfm/Btuh
Static pressure 0.53 in H2O
Space thermostat
Capacity balance point = 0 °F

Backup:
Input = 8 kW, Output = 26577 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 16721 Btuh
Ducts (R-6.0) 7603 Btuh
Central vent (0 cfm) 0 Btuh
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 23691 Btuh

Latent Cooling Equipment Load Sizing

Structure 2604 Btuh
Ducts 1570 Btuh
Central vent (0 cfm) 0 Btuh
Equipment latent load 4174 Btuh
Equipment Total Load (Sen+Lat) 27866 Btuh
Req. total capacity at 0.80 SHR 2.5 ton

Cooling Equipment Summary

Make TRANE
Trade
Cond 5TWR4036A1000A
Coil 5TEM4D04AC31SA
AHRI ref 215610865
Efficiency 11.7 EER2, 14 SEER2
Sensible cooling 26240 Btuh
Latent cooling 6560 Btuh
Total cooling 32800 Btuh
Actual air flow 1093 cfm
Air flow factor 0.045 cfm/Btuh
Static pressure 0.53 in H2O
Load sensible heat ratio 0.85

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