

Project Information

For: IC/GOODSON RESIDENCE
337 SW Tompkins St, Lake City, FL 32024

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 35354 Btuh
Ducts (R-6.0) 7868 Btuh
Central vent (0 cfm) 0 Btuh

Humidification 0 Btuh
Piping 0 Btuh
Equipment load 43222 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

	Heating	Cooling
Area (ft ²)	2624	2624
Volume (ft ³)	26500	26500
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	141	71

Heating Equipment Summary

Make Trane
Trade TRANE
Model 5TWR5048A1000A
AHRI ref

Efficiency 8.5 HSPF2
Heating input
Heating output 43500 Btuh @ 47°F
Temperature rise 26 °F
Actual air flow 1500 cfm
Air flow factor 0.035 cfm/Btuh
Static pressure 0.53 in H2O
Space thermostat
Capacity balance point = 33 °F

Backup:
Input = 13 kW, Output = 43511 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 27633 Btuh
Ducts (R-6.0) 10993 Btuh
Central vent (0 cfm) 0 Btuh

Blower 0 Btuh

Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 37621 Btuh

Latent Cooling Equipment Load Sizing

Structure 2480 Btuh
Ducts 2264 Btuh
Central vent (0 cfm) 0 Btuh

Equipment latent load 4744 Btuh

Equipment Total Load (Sen+Lat) 42365 Btuh
Req. total capacity at 0.80 SHR 3.9 ton

Cooling Equipment Summary

Make Trane
Trade TRANE
Cond 5TWR5048A1000A
Coil 5TEM4D06AC41SA
AHRI ref
Efficiency 12.0 EER2, 16 SEER2
Sensible cooling 36000 Btuh
Latent cooling 9000 Btuh
Total cooling 45000 Btuh
Actual air flow 1500 cfm
Air flow factor 0.039 cfm/Btuh
Static pressure 0.53 in H2O
Load sensible heat ratio 0.89

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:	38626	Btuh	Entering coil DB:	78.3°F
Outdoor design WB:	75.8°F	Latent gain:	4744	Btuh	Entering coil WB:	64.1°F
Indoor design DB:	75.0°F	Total gain:	43369	Btuh		
Indoor RH:	50%	Estimated airflow:	1500	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	5TWR5048A1000A+5TEM4D06AC41SA	
Actual airflow:	1500	cfm		
Sensible capacity:	38930	Btuh	101% of load	
Latent capacity:	5316	Btuh	112% of load	
Total capacity:	44246	Btuh	102% of load	SHR: 88%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	43222	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:	5TWR5048A1000A+5TEM4D06AC41SA		
Actual airflow:	1500	cfm			
Output capacity:	34093	Btuh	79% of load		Capacity balance: 33 °F
Supplemental heat required:	9129	Btuh			Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:		Model:		
Actual airflow:	1500	cfm		
Output capacity:	12.8	kW	101% of load	Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.