wrightsoft

Manual S Compliance Report
Entire House

Job: J-11414 - C-1309
Date: Dec 06, 2024
By: LaNika Stewart

Project Information

For: Rosenbloom/McConnell Residence
Alachua County, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.4°F	Sensible gain:	33978	Btuh	Entering coil DB:	76.6°F
Outdoor design WB:	75.8°F	Latent gain:	6021	Btuh	Entering coil WB:	63.9°F
Indoor design DB:	75.0°F	Total gain:	39999	Btuh		
Indoor RH:	50%	Estimated airflow:	1533	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: ArcoAire Model: HVH848GKA**+FCMB4B48L0C*++UI

Actual airflow:	1533	cfm			
Sensible capacity:	36800	Btuh	108% of load		
Latent capacity:	9200	Btuh	153% of load		
Total capacity:	46000	Btuh	115% of load	SHR:	80%

Heating Equipment

Design Conditions

Outdoor design DB:	33.3°F	Heat loss:	37451	Btuh	Entering coil DB:	66.9°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type: Split ASHP
Manufacturer: ArcoAire Model: HVH848GKA**+FCMB4B48L0C*++UI

Actual airflow:	1533	cfm			
Output capacity:	46000	Btuh	123% of load	Capacity balance:	25 °F
Supplemental heat required:	0	Btuh		Economic balance:	-99 °F

Backup equipment type: Elec strip
Manufacturer: Model:

Actual airflow:	1533	cfm			
Output capacity:	10.4	kW	95% of load	Temp. rise:	50 °F

Meets all requirements of ACCA Manual S.

DB Clst	37	26	14	1	1
Entire House	2057	34066	32373	1533	1533
Other equip loads		3386	1605		
Equip. @ 0.97 RSM			33095		
Latent cooling			6021		
TOTALS	2057	37451	39116	1533	1533

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Universal Engineering Science

Lawrence Parnell PX2707 12/31/2024
Examiner-License No.

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

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Project Summary
Entire House

Job: J-11414 - C-1309
Date: Dec 05, 2024
By: LaNilka Stewart

Project Information

For: Rosenbloom/McConnell Residence
Alachua County, 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	ASHRAE 62.2-2019	

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	29015	Btuh
Ducts (R-6.0)	5050	Btuh
Central vent (84 cfm)	3386	Btuh
Outside air		
Humidification	0	Btuh
Piping	0	Btuh
Equipment load	37451	Btuh

Sensible Cooling Equipment Load Sizing

Structure	29231	Btuh
Ducts (R-6.0)	3142	Btuh
Central vent (84 cfm)	1605	Btuh
Outside air		
Blower	0	Btuh
Use manufacturer's data	n	
Rate/swing multiplier	0.97	
Equipment sensible load	33095	Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	2058	2058
Volume (ft³)	20573	20573
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	110	55

Latent Cooling Equipment Load Sizing

Structure	2014	Btuh
Ducts	1527	Btuh
Central vent (84 cfm)	2479	Btuh
Outside air		
Equipment latent load	6021	Btuh
Equipment Total Load (Sen+Lat)	39116	Btuh
Req. total capacity at 0.80 SHR	3.4	ton

Heating Equipment Summary

Make	ArcoAire
Trade	DURACOMFORT DELUXE 18 VS HP
Model	HVH848GKA**
AHRI ref	
Efficiency	9 HSPF2
Heating input	
Heating output	46000 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	1533 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 = 35469 Btuh, 100 AFUE

Cooling Equipment Summary

Make	ArcoAire
Trade	DURACOMFORT DELUXE 18 VS HP
Cond	HVH848GKA**
Coil	FCMB4B48L0C*++UI
AHRI ref	
Efficiency	10.0 EER2, 18 SEER2
Sensible cooling	36800 Btuh
Latent cooling	9200 Btuh
Total cooling	46000 Btuh
Actual air flow	1533 cfm
Air flow factor	0.047 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.

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Load Short Form
Entire House

Job: J-11414 - C-1309
Date: Dec 05, 2024
By: LaNilka Stewart

Project Information

For: Rosenbloom/McConnell Residence
Alachua County, FL

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Design Information

	Htg	Clg
Outside db (°F)	33	92
Inside db (°F)	70	75
Design TD (°F)	37	17
Daily range	-	M
Inside humidity (%)	50	50
Moisture difference (gr/lb)	33	43

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

HEATING EQUIPMENT

Make	ArcoAire
Trade	DURACOMFORT DELUXE 18 VS HP
Model	HVH848GKA**
AHRI ref	
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COOLING EQUIPMENT

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ROOM NAME	Area (ft²)	Htg load (Btuh)	Clg load (Btuh)	Htg AVF (cfm)	Clg AVF (cfm)
HVAC	12	9	517	0	24
Craft	232	5698	4919	256	233
Hall	72	52	27	2	1
Laundry	63	1134	1924	51	91
Dining/Foyer	332	3503	3693	158	175
Kims Bed	250	5661	4031	255	191
KB Clst	31	394	124	18	6
Bath 1	76	1287	425	58	20
Kitchen	233	4879	6390	220	303
Living	295	3540	5935	159	281
Bath 2	63	905	171	41	8
Bath 3	50	36	19	2	1
Safe	36	843	260	38	12
Daniels Bed	277	6099	3925	274	186

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Rosenboom — McConnell 4-ton

Clint Wilson

WILSON HEAT & AIR INC
P. O. BOX 531
LAKE BUTLER FL 32054

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