



Manual S Compliance Report

Entire House

Comfort Temp Company

Job:
Date: Dec 26, 2019
By:

4301 NW 6th ST, Gainesville, FL 32609 Phone: 352 275 4022 Fax: 352 376 0523 Email: jay@comforttemp.com Web: www.comforttemp.com

Project Information

For: Mayer
231 SW Heather CT, Ft. White, FL

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	19971	Btuh	Entering coil DB:	77.1°F
Outdoor design WB:	76.0°F	Latent gain:	4291	Btuh	Entering coil WB:	63.5°F
Indoor design DB:	75.0°F	Total gain:	24262	Btuh		
Indoor RH:	50%	Estimated airflow:	850	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4030G1+TEM4A0B24S21++TDR
Actual airflow:	850	cfm	
Sensible capacity:	20934	Btuh	105% of load
Latent capacity:	5110	Btuh	119% of load
Total capacity:	26044	Btuh	107% of load SHR: 80%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	18293	Btuh	Entering coil DB:	67.1°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4030G1+TEM4A0B24S21++TDR
Actual airflow:	875	cfm	
Output capacity:	20905	Btuh	114% of load
Supplemental heat required:	0	Btuh	
			Capacity balance: 22 °F
			Economic balance: -99 °F

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	875	cfm	
Output capacity:	4.6	kW	86% of load Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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Project Information

For: Mayer
231 SW Heather CT, Ft. White, FL

Notes:

Design Information

Weather: Gainesville Regional AP, FL, US

Winter Design Conditions

Outside db 33 °F
Inside db 68 °F
Design TD 35 °F

Summer Design Conditions

Outside db 92 °F
Inside db 75 °F
Design TD 17 °F
Daily range M
Relative humidity 50 %
Moisture difference 45 gr/lb

Heating Summary

Structure 13431 Btuh
Ducts 4862 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Humidification 0 Btuh
Piping 0 Btuh
Equipment load 18293 Btuh

Sensible Cooling Equipment Load Sizing

Structure 13997 Btuh
Ducts 5974 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Blower 0 Btuh
Use manufacturer's data n
Rate/swing multiplier 0.97
Equipment sensible load 19372 Btuh

Infiltration

Method Simplified
Construction quality Average
Fireplaces 0

Latent Cooling Equipment Load Sizing

Structure 3090 Btuh
Ducts 1201 Btuh
Central vent (0 cfm)
(none) 0 Btuh
Equipment latent load 4291 Btuh

	Heating	Cooling
Area (ft ²)	1726	1726
Volume (ft ³)	15534	15534
Air changes/hour	0.38	0.20
Equiv. AVF (cfm)	98	52

Equipment Total Load (Sen+Lat) 23663 Btuh
Req. total capacity at 0.70 SHR 2.3 ton

Heating Equipment Summary

Make Trane
Trade TRANE
Model 4TWR4030G1
AHRI ref 10055853
Efficiency 8.5 HSPF
Heating input 26600 Btuh @ 47°F
Heating output 28 °F
Temperature rise 875 cfm
Actual air flow 0.048 cfm/Btuh
Air flow factor 0.50 in H2O
Static pressure
Space thermostat
Capacity balance point = 22 °F
Backup:
Input = 5 kW, Output = 15738 Btuh, 100 AFUE

Cooling Equipment Summary

Make Trane
Trade TRANE
Cond 4TWR4030G1
Coil TEM4A0B24S21++TDR
AHRI ref 10055853
Efficiency 12.0 EER, 14.5 SEER
Sensible cooling 19040 Btuh
Latent cooling 8160 Btuh
Total cooling 27200 Btuh
Actual air flow 850 cfm
Air flow factor 0.043 cfm/Btuh
Static pressure 0.50 in H2O
Load sensible heat ratio 0.82

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

Project Information

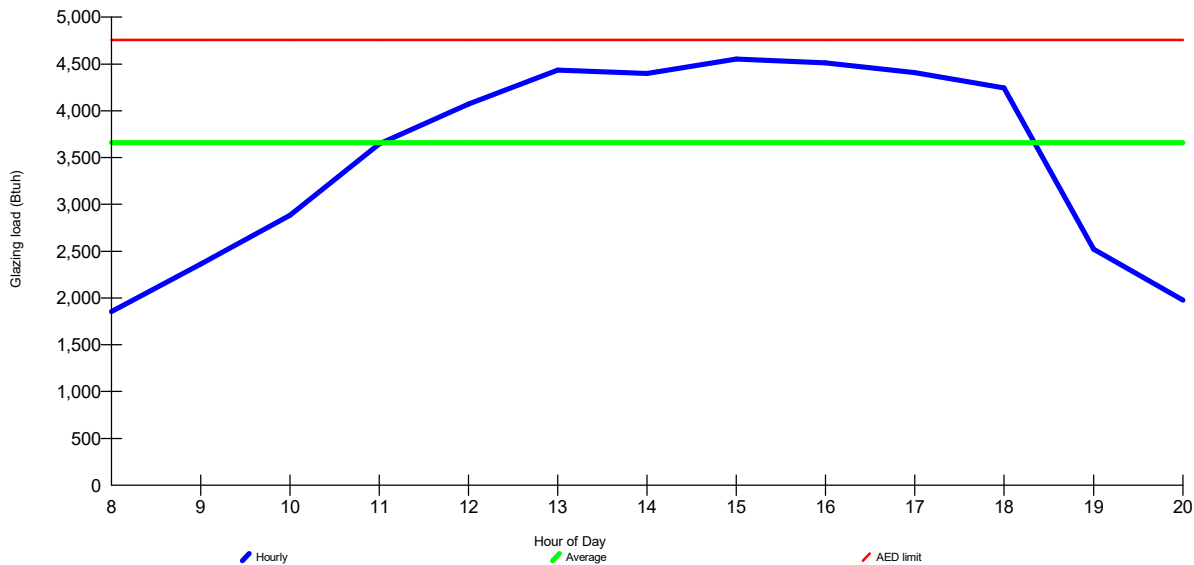
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Design Conditions

Location:		Indoor:		Heating	Cooling
Gainesville Regional AP, FL, US		Indoor temperature (°F)		68	75
Elevation:	164 ft	Design TD (°F)		35	17
Latitude:	30°N	Relative humidity (%)		50	50
		Moisture difference (gr/lb)		29.0	45.4
Outdoor:		Heating	Cooling	Infiltration:	
Dry bulb (°F)		33	92		
Daily range (°F)		-	20 (M)		
Wet bulb (°F)		-	76		
Wind speed (mph)		15.0	7.5		

Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 24.5%.

House has adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 0 Btuh

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	Room name Exposed wall Room height Room dimensions Room area					Dining 11.0 ft 9.0 ft 11.0 x 13.0 ft 143.0 ft²				Bedroom 2 16.0 ft 9.0 ft 1.0 x 160.0 ft 160.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)	
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool
6	W	12C-0sw	0.091	n	3.18	2.14	99	69	220	148	0	0	0	0
11	W	1D-c2ow	0.570	n	19.95	17.48	30	0	598	524	0	0	0	0
	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	0	0	0	0
	W	1D-c2ow	0.570	s	19.95	17.92	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	144	129	411	276
	W	1D-c2ow	0.570	w	19.95	51.01	0	0	0	0	15	0	299	765
	C	16B-30ad	0.032	-	1.12	1.66	143	143	160	238	160	160	179	266
	F	19C-19cscp	0.049	-	0.59	0.29	143	143	85	41	160	160	95	46
6	c) AED excursion									-48				373
	Envelope loss/gain								1063	903			984	1726
12	a) Infiltration b) Room ventilation								267 0	68 0			389 0	99 0
13	Internal gains: Occupants @ 230 Appliances/other						0			0 0	0			0 0
	Subtotal (lines 6 to 13)								1331	972			1373	1826
14	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
	Subtotal								1331	972			1373	1826
15	Duct loads						36%	43%	482	415	36%	43%	497	779
	Total room load Air required (cfm)								1812 87	1386 59			1870 89	2605 111

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1	Room name					Flex 17.0 ft					Family 0 ft				
2	Exposed wall					9.0 ft					9.0 ft				
3	Room height					17.0					1.0				
4	Room dimensions					204.0 ft²					272.0 ft²				
5	Room area					204.0 ft²					272.0 ft²				
	Ty	Construction number	U-value (Btuh/ft²·°F)	Or	HTM (Btuh/ft²)		Area (ft²) or perimeter (ft)		Load (Btuh)		Area (ft²) or perimeter (ft)		Load (Btuh)		
					Heat	Cool	Gross	N/P/S	Heat	Cool	Gross	N/P/S	Heat	Cool	
6	W	12C-0sw	0.091	n	3.18	2.14	0	0	0	0	0	0	0	0	
11	W	1D-c2ow	0.570	n	19.95	17.48	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0	
	W	12C-0sw	0.091	s	3.18	2.14	153	123	392	263	0	0	0	0	
	W	1D-c2ow	0.570	s	19.95	17.92	30	26	598	537	0	0	0	0	
	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	0	0	0	0	
	W	1D-c2ow	0.570	w	19.95	51.01	0	0	0	0	0	0	0	0	
	C	16B-30ad	0.032	-	1.12	1.66	204	204	228	339	272	272	305	453	
	F	19C-19cscp	0.049	-	0.59	0.29	204	204	121	59	272	272	162	79	
6	c) AED excursion								25						
	Envelope loss/gain							1340	1224			466	442		
12	a) Infiltration							413	106			0	0		
	b) Room ventilation							0	0			0	0		
13	Internal gains: Occupants @ 230					2			460	2			460	900	
	Appliances/other								0				0		
	Subtotal (lines 6 to 13)							1753	1790			466	1802		
14	Less external load							0	0			0	0		
	Less transfer							0	0			0	0		
	Redistribution							0	0			0	0		
	Subtotal							1753	1790			466	1802		
15	Duct loads					36%	43%	635	764	36%	43%	169	769		
	Total room load							2388	2553			635	2572		
	Air required (cfm)							114	109			30	109		

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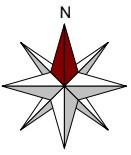


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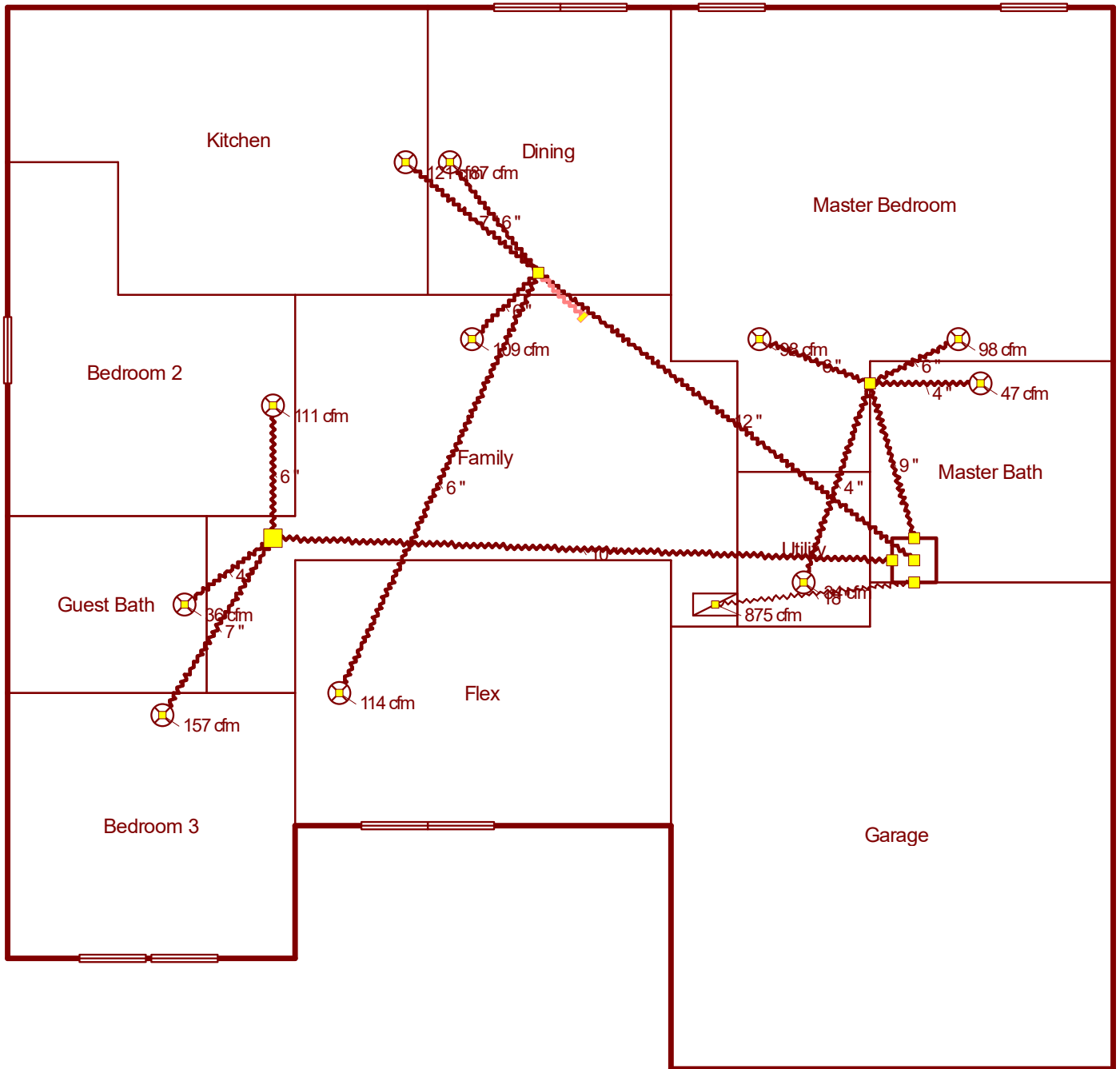
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Level 1



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Duct System Summary

Entire House

Comfort Temp Company

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	Heating	Cooling
External static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.50 in H ₂ O	0.50 in H ₂ O
Supply / return available pressure	0.386 / 0.114 in H ₂ O	0.386 / 0.114 in H ₂ O
Lowest friction rate	0.292 in/100ft	0.292 in/100ft
Actual air flow	875 cfm	850 cfm
Total effective length (TEL)	171 ft	

Supply Branch Detail Table

Name	Design (Btuh)	Htg (cfm)	Clg (cfm)	Design FR	Diam (in)	H x W (in)	Duct Matl	Actual Ln (ft)	Ftg.Eqv Ln (ft)	Trunk
Bedroom 2	c 2605	89	111	0.311	6.0	0x0	VIFx	34.0	90.0	st2
Bedroom 3	h 3285	157	97	0.303	7.0	0x0	VIFx	37.5	90.0	st2
Dining	h 1812	87	59	0.328	6.0	0x0	VIFx	27.8	90.0	st3
Family	c 2572	30	109	0.334	6.0	0x0	VIFx	25.6	90.0	st3
Flex	h 2388	114	109	0.292	6.0	0x0	VIFx	42.4	90.0	st3
Guest Bath	h 745	36	20	0.314	4.0	0x0	VIFx	33.0	90.0	st2
Kitchen	c 2836	114	121	0.324	7.0	0x0	VIFx	29.2	90.0	st3
Master Bath	h 978	47	27	0.378	4.0	0x0	VIFx	12.3	90.0	st1
Master Bedroom	h 2050	98	82	0.376	6.0	0x0	VIFx	12.7	90.0	st1
Master Bedroom-A	h 2050	98	82	0.379	6.0	0x0	VIFx	11.8	90.0	st1
Utility	c 791	5	34	0.362	4.0	0x0	VIFx	16.8	90.0	st1

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st2	Peak AVF	282	228	0.303	517	10.0	0 x 0	VinIFlx	
st3	Peak AVF	345	398	0.292	507	12.0	0 x 0	VinIFlx	
st1	Peak AVF	248	224	0.362	560	9.0	0 x 0	VinIFlx	



Return Branch Detail Table

Name	Grille Size (in)	Htg (cfm)	Clg (cfm)	TEL (ft)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Stud/Joist Opening (in)	Duct Matl	Trunk
rb0	0x 0	875	850	39.1	0.292	495	18.0	0x 0		VIFx	