



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: Lot 4 Spec House, CJ Custom Carpentry
493 Legion DR, Lake City, FL 32609

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	24485	Btuh	Entering coil DB:	76.0°F
Outdoor design WB:	76.0°F	Latent gain:	8791	Btuh	Entering coil WB:	62.9°F
Indoor design DB:	75.0°F	Total gain:	33276	Btuh		
Indoor RH:	50%	Estimated airflow:	1133	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4036N1+TEM4A0C37S31++TDR
Actual airflow:	1133	cfm	
Sensible capacity:	24480	Btuh	100% of load
Latent capacity:	9520	Btuh	108% of load
Total capacity:	34000	Btuh	102% of load SHR: 72%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	22488	Btuh	Entering coil DB:	67.6°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP		
Manufacturer:	Trane	Model:	4TWR4036N1+TEM4A0C37S31++TDR
Actual airflow:	1133	cfm	
Output capacity:	33000	Btuh	147% of load
Supplemental heat required:	0	Btuh	
Capacity balance:	22	°F	
Economic balance:	-99	°F	

Backup equipment type:	Elec strip		
Manufacturer:		Model:	
Actual airflow:	1133	cfm	
Output capacity:	4.6	kW	70% of load Temp. rise: 50 °F

Meets all requirements of ACCA Manual S.



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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	16885 Btuh
Ducts (R-6.0)	5603 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	22488 Btuh

Sensible Cooling Equipment Load Sizing

Structure	18042 Btuh
Ducts (R-6.0)	6443 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	23751 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	7691 Btuh
Ducts	1101 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	8791 Btuh

	Heating	Cooling
Area (ft²)	2071	2071
Volume (ft³)	19418	19418
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	104	52

Equipment Total Load (Sen+Lat)	32542 Btuh
Req. total capacity at 0.72 SHR	2.7 ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR4036N1
AHRI ref	211162743
Efficiency	7.5 HSPF2
Heating input	
Heating output	33000 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	1133 cfm
Air flow factor	0.050 cfm/Btuh
Static pressure	0.50 in H2O
Space thermostat	
Capacity balance point = 22 °F	
Backup:	
Input = 5 kW, Output = 15738 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR4036N1
Coil	TEM4A0C37S31++TDR
AHRI ref	211162743
Efficiency	11.7 EER2, 14.3 SEER2
Sensible cooling	24480 Btuh
Latent cooling	9520 Btuh
Total cooling	34000 Btuh
Actual air flow	1133 cfm
Air flow factor	0.046 cfm/Btuh
Static pressure	0.50 in H2O
Load sensible heat ratio	0.74

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

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Design Conditions

Location:

Gainesville Regional AP, FL, US
 Elevation: 164 ft
 Latitude: 30°N

Indoor:

Indoor temperature (°F)
 Design TD (°F)
 Relative humidity (%)
 Moisture difference (gr/lb)

Heating

68
 35
 50
 29.0

Cooling

75
 17
 50
 45.4

Outdoor:

Dry bulb (°F)
 Daily range (°F)
 Wet bulb (°F)
 Wind speed (mph)

Heating

33
 -
 -
 15.0

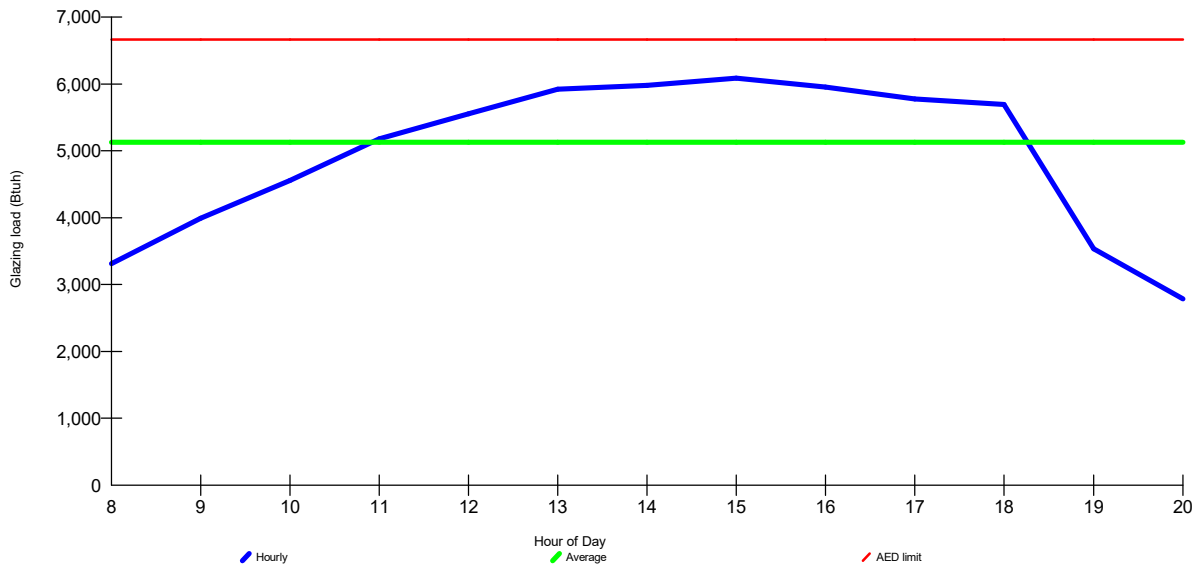
Cooling

92
 20 (M)
 76
 7.5

Infiltration:

Test for Adequate Exposure Diversity

Hourly Glazing Load



Maximum hourly glazing load exceeds average by 18.7%.

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

AED excursion: 0 Btuh

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1	Room name						Living Room				Master Bedroom			
2	Exposed wall						20.0 ft				29.0 ft			
3	Room height						12.0 ft				9.0 ft			
4	Room dimensions						1.0 x 375.0 ft				15.0 x 14.0 ft			
5	Room area						375.0 ft²				210.0 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
.	G	1D-c2ow	0.570	n	19.95	17.48	0	0	0	0	0	0	0	0
.	G	4A5-2ow	0.470	n	16.45	12.58	0	0	0	0	0	0	0	0
11	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0
	G	1D-c2ow	0.570	e	19.95	51.01	0	0	0	0	0	0	0	0
	W	12C-0sw	0.091	s	3.18	2.14	240	149	475	319	135	99	315	212
	G	10D-w	0.490	s	17.15	9.41	28	23	480	264	0	0	0	0
	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	36	36	592	453
	G	4A5-2ow	0.470	s	16.45	12.58	63	63	1036	792	0	0	0	0
	W	12C-0sw	0.091	w	3.18	2.14	0	0	0	0	126	126	401	269
	G	4A5-2ow	0.470	w	16.45	32.31	0	0	0	0	0	0	0	0
	C	16B-30ad	0.032	-	1.12	1.66	0	0	0	0	0	0	0	0
	C	16B-38ad	0.026	-	0.91	1.35	375	375	341	507	210	210	191	284
	F	19C-19cscp	0.049	-	0.59	0.29	375	375	223	108	210	210	125	61
6	c) AED excursion									-108				-10
	Envelope loss/gain								2555	1882			1625	1268
12	a) Infiltration								526	128			572	139
	b) Room ventilation								0	0			0	0
13	Internal gains: Occupants @ 230						2			460	2			460
	Appliances/other									900				300
	Subtotal (lines 6 to 13)								3081	3370			2197	2167
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								3081	3370			2197	2167
15	Duct loads						31%	30%	956	998	34%	40%	757	872
	Total room load								4037	4368			2954	3039
	Air required (cfm)								203	202			149	141

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... Documents\CJ Custom Carp. Lot 4 Spec House.rup Calc = MJ8 Front Door faces: N

1	Room name						Bedroom 2				Guest Bath			
2	Exposed wall						27.0 ft				6.0 ft			
3	Room height						9.0 ft				9.0 ft			
4	Room dimensions						1.0 x 162.0 ft				12.0 x 6.0 ft			
5	Room area						162.0 ft²				72.0 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
.	G	1D-c2ow	0.570	n	19.95	17.48	0	0	0	0	0	0	0	0
.	G	4A5-2ow	0.470	n	16.45	12.58	0	0	0	0	0	0	0	0
11	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	0	0	0	0
.	G	1D-c2ow	0.570	e	19.95	51.01	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	s	3.18	2.14	135	135	430	289	0	0	0	0
.	G	10D-w	0.490	s	17.15	9.41	0	0	0	0	0	0	0	0
.	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0
.	G	4A5-2ow	0.470	s	16.45	12.58	0	0	0	0	0	0	0	0
.	W	12C-0sw	0.091	w	3.18	2.14	108	90	287	192	54	54	172	115
.	G	4A5-2ow	0.470	w	16.45	32.31	18	0	296	582	0	0	0	0
.	C	16B-30ad	0.032	-	1.12	1.66	0	0	0	0	0	0	0	0
.	C	16B-38ad	0.026	-	0.91	1.35	162	162	147	219	72	72	66	97
.	F	19C-19cscp	0.049	-	0.59	0.29	162	162	96	47	72	72	43	21
6	c) AED excursion									254				-8
	Envelope loss/gain								1256	1583			280	225
12	a) Infiltration								533	129			118	29
	b) Room ventilation								0	0			0	0
13	Internal gains: Occupants @ 230 Appliances/other						1			230 250	0			0 0
	Subtotal (lines 6 to 13)								1789	2192			399	254
14	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
15	Subtotal								1789	2192			399	254
	Duct loads						34%	40%	616	882	31%	30%	124	75
	Total room load								2406	3074			522	330
	Air required (cfm)								121	142			26	15

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



Level 2

Job #:
Performed for:
Lot 4 Spec House
493 Legion DR
Lake City, FL 32609

Comfort Temp Company
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Duct System Summary

Entire House

Comfort Temp Company

Job:
Date: Dec 26, 2019
By:

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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	0.356 / 0.144 in H ₂ O	0.356 / 0.144 in H ₂ O
Lowest friction rate	0.220 in/100ft	0.220 in/100ft
Actual air flow	1133 cfm	1133 cfm
Total effective length (TEL)	227 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 3074	121	142	0.220	7.0	0x0	VIFx	51.4	110.0	st4
Bedroom 3	h 2096	106	94	0.232	6.0	0x0	VIFx	43.2	110.0	st4
Bedroom 4	h 2000	101	96	0.303	6.0	0x0	VIFx	27.3	90.0	st2
Dining	c 2695	98	125	0.267	6.0	0x0	VIFx	33.5	100.0	st2
Foyer	h 609	31	18	0.312	4.0	0x0	VIFx	24.1	90.0	st2
Guest Bath	h 522	26	15	0.232	4.0	0x0	VIFx	43.2	110.0	st4
Kitchen	c 2997	127	139	0.292	7.0	0x0	VIFx	32.1	90.0	st2
Laundry	c 798	8	37	0.296	4.0	0x0	VIFx	30.1	90.0	st1
Living Room	h 2019	102	101	0.319	6.0	0x0	VIFx	21.4	90.0	st2
Living Room-A	h 2019	102	101	0.301	6.0	0x0	VIFx	28.1	90.0	st2
Master Bath	h 1583	80	77	0.250	5.0	0x0	VIFx	32.4	110.0	st3
Master Bedroom	h 2954	149	141	0.301	7.0	0x0	VIFx	28.2	90.0	st1
Powder	c 170	7	8	0.305	4.0	0x0	VIFx	26.5	90.0	st1
WC	c 50	2	2	0.259	4.0	0x0	VIFx	27.6	110.0	st3
WIC	h 475	24	13	0.248	4.0	0x0	VIFx	33.4	110.0	st3
WIC 1	h 976	49	24	0.240	5.0	0x0	VIFx	38.4	110.0	st3

Supply Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
st4	Peak AVF	253	252	0.220	725	8.0	0 x 0	VinIFlx	st2
st2	Peak AVF	814	831	0.220	595	16.0	0 x 0	VinIFlx	
st3	Peak AVF	155	116	0.240	580	7.0	0 x 0	VinIFlx	st1
st1	Peak AVF	320	302	0.240	724	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
rb1	0x 0	447	441	65.4	0.220	569	12.0	0x 0		VIFx	
rb2	0x 0	686	693	41.0	0.352	496	16.0	0x 0		VIFx	