



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: Slone
365 SW Crow Ter, Ft. White, FL 32038

Cooling Equipment

Design Conditions

Outdoor design DB:	92.0°F	Sensible gain:	23330	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	76.0°F	Latent gain:	5067	Btuh	Entering coil WB:	62.5°F
Indoor design DB:	75.0°F	Total gain:	28397	Btuh		
Indoor RH:	50%	Estimated airflow:	1167	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	4TWR4036G1+TEM4A0B36S31++TDR	
Actual airflow:	1167	cfm		
Sensible capacity:	26262	Btuh	113% of load	
Latent capacity:	6215	Btuh	123% of load	
Total capacity:	32477	Btuh	114% of load	SHR: 81%

Heating Equipment

Design Conditions

Outdoor design DB:	33.0°F	Heat loss:	23489	Btuh	Entering coil DB:	68.0°F
Indoor design DB:	68.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Trane	Model:	4TWR4036G1+TEM4A0B36S31++TDR	
Actual airflow:	1167	cfm		
Output capacity:	26342	Btuh	112% of load	Capacity balance: 23 °F
Supplemental heat required:	0	Btuh		Economic balance: -99 °F

Backup equipment type:	Elec strip			
Manufacturer:		Model:		
Actual airflow:	1167	cfm		
Output capacity:	4.6	kW	67% 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	17703 Btuh
Ducts	5786 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	23489 Btuh

Sensible Cooling Equipment Load Sizing

Structure	17448 Btuh
Ducts	5882 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Blower	0 Btuh
Use manufacturer's data	n
Rate/swing multiplier	0.97
Equipment sensible load	22630 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

Latent Cooling Equipment Load Sizing

Structure	3960 Btuh
Ducts	1106 Btuh
Central vent (0 cfm)	0 Btuh
(none)	
Equipment latent load	5067 Btuh

	Heating	Cooling
Area (ft²)	2076	2076
Volume (ft³)	16608	16608
Air changes/hour	0.32	0.16
Equiv. AVF (cfm)	89	44

Equipment Total Load (Sen+Lat)	27697 Btuh
Req. total capacity at 0.60 SHR	3.1 ton

Heating Equipment Summary

Make	Trane
Trade	TRANE
Model	4TWR4036G1
AHRI ref	201763659
Efficiency	8.2 HSPF
Heating input	
Heating output	34400 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	1167 cfm
Air flow factor	0.050 cfm/Btuh
Static pressure	0.55 in H2O
Space thermostat	
Capacity balance point = 23 °F	
Backup:	
Input = 5 kW, Output = 15738 Btuh, 100 AFUE	

Cooling Equipment Summary

Make	Trane
Trade	TRANE
Cond	4TWR4036G1
Coil	TEM4A0B36S31++TDR
AHRI ref	201763659
Efficiency	11.5 EER, 14 SEER
Sensible cooling	21000 Btuh
Latent cooling	14000 Btuh
Total cooling	35000 Btuh
Actual air flow	1167 cfm
Air flow factor	0.050 cfm/Btuh
Static pressure	0.55 in H2O
Load sensible heat ratio	0.82

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

Project Information

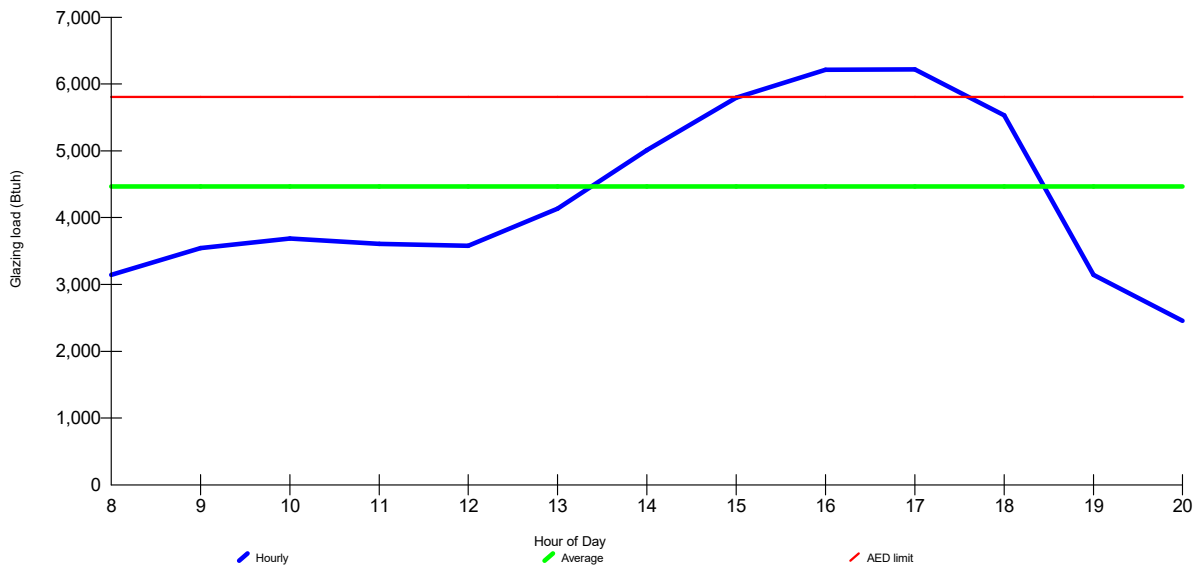
For: Slone
 365 SW Crow Ter, Ft. White, FL 32038

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 39.2%.

House does not have adequate exposure diversity (AED), based on AED limit of 30%.

AED excursion: 409 Btuh (PFG - 1.3*AFG)

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Right-J® Worksheet

Entire House

Comfort Temp Company

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1	Room name					Family Room 14.0 ft					Bedroom 2 31.0 ft				
2	Exposed wall					8.0 ft					8.0 ft				
3	Room height					1.0					1.0				
4	Room dimensions					380.0 ft					228.0 ft				
5	Room area					380.0 ft²					228.0 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	128	128	408	274	
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	33.24	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	12C-0sw	0.091	w	3.18	2.14	112	112	357	240	120	105	334	225	
	G	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	380	380	426	632	228	228	255	379	
	F	22A-tpl	0.989	-	34.62	0.00	380	14	485	0	228	31	1073	0	
										</					

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1	Room name						Hall Bath				Bedroom 3			
2	Exposed wall						6.0 ft				31.0 ft			
3	Room height						8.0 ft				8.0 ft			
4	Room dimensions						11.0 x 6.0 ft				1.0 x 232.0 ft			
5	Room area						66.0 ft²				232.0 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	48	48	153	103	128	128	408	274
.	W	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	120	90	287	192
.	G	1D-c2ow	0.570	e	19.95	33.24	0	0	0	0	30	16	598	997
.	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	0	0	0	0
11	W	12C-0sw	0.091	s	3.18	2.14	0	0	0	0	0	0	0	0
	G	1D-c2ow	0.570	w	3.18	2.14	0	0	0	0	0	0	0	0
	C	1D-c2ow	0.570	w	19.95	51.01	0	0	0	0	0	0	0	0
	F	16B-30ad	0.032	-	1.12	1.66	66	66	74	110	232	232	260	386
		22A-tpl	0.989	-	34.62	0.00	66	6	208	0	232	31	1073	0
6	c) AED excursion									-13				-119
	Envelope loss/gain								434	200			2626	1731
12	a) Infiltration								123	30			633	154
	b) Room ventilation								0	0			0	0
13	Internal gains:		Occupants @	230			0			0	1			230
										0				0
	Subtotal (lines 6 to 13)								557	229			3259	2114
	Less external load								0	0			0	0
	Less transfer								0	0			0	0
	Redistribution								0	0			0	0
14	Subtotal								557	229			3259	2114
15	Duct loads						33%	34%	182	77	33%	34%	1065	713
	Total room load								739	307			4324	2827
	Air required (cfm)								37	15			215	141

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1	Room name					Powder				Laundry				
2	Exposed wall					0 ft				9.0 ft				
3	Room height					8.0 ft				8.0 ft				
4	Room dimensions					4.0 x 8.0 ft				9.0 x 6.0 ft				
5	Room area					32.0 ft²				54.0 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	12C-0sw	0.091	e	3.18	2.14	0	0	0	0	72	57	182	122
	G	1D-c2ow	0.570	e	19.95	33.24	0	0	0	0	15	8	299	499
	W	12C-0sw	0.091	s	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
	G	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	32	32	36	53	54	54	60	90
	F	22A-tpl	0.989	-	34.62	0.00	32	0	0	0	54	9	312	0
6	c) AED excursion								-3				-67	
	Envelope loss/gain							36	50			853	644	
12	a) Infiltration							0	0			184	45	
	b) Room ventilation							0	0			0	0	
13	Internal gains: Occupants @ 230					0			0	0				0
	Appliances/other								0				500	
	Subtotal (lines 6 to 13)							36	50			1037	1188	
14	Less external load							0	0			0	0	
	Less transfer							0	0			0	0	
	Redistribution							0	0			0	0	
	Subtotal							36	50			1037	1188	
15	Duct loads					33%	34%	12	17	33%	34%	339	401	
	Total room load							48	67			1375	1589	
	Air required (cfm)							2	3			68	79	

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Level 2

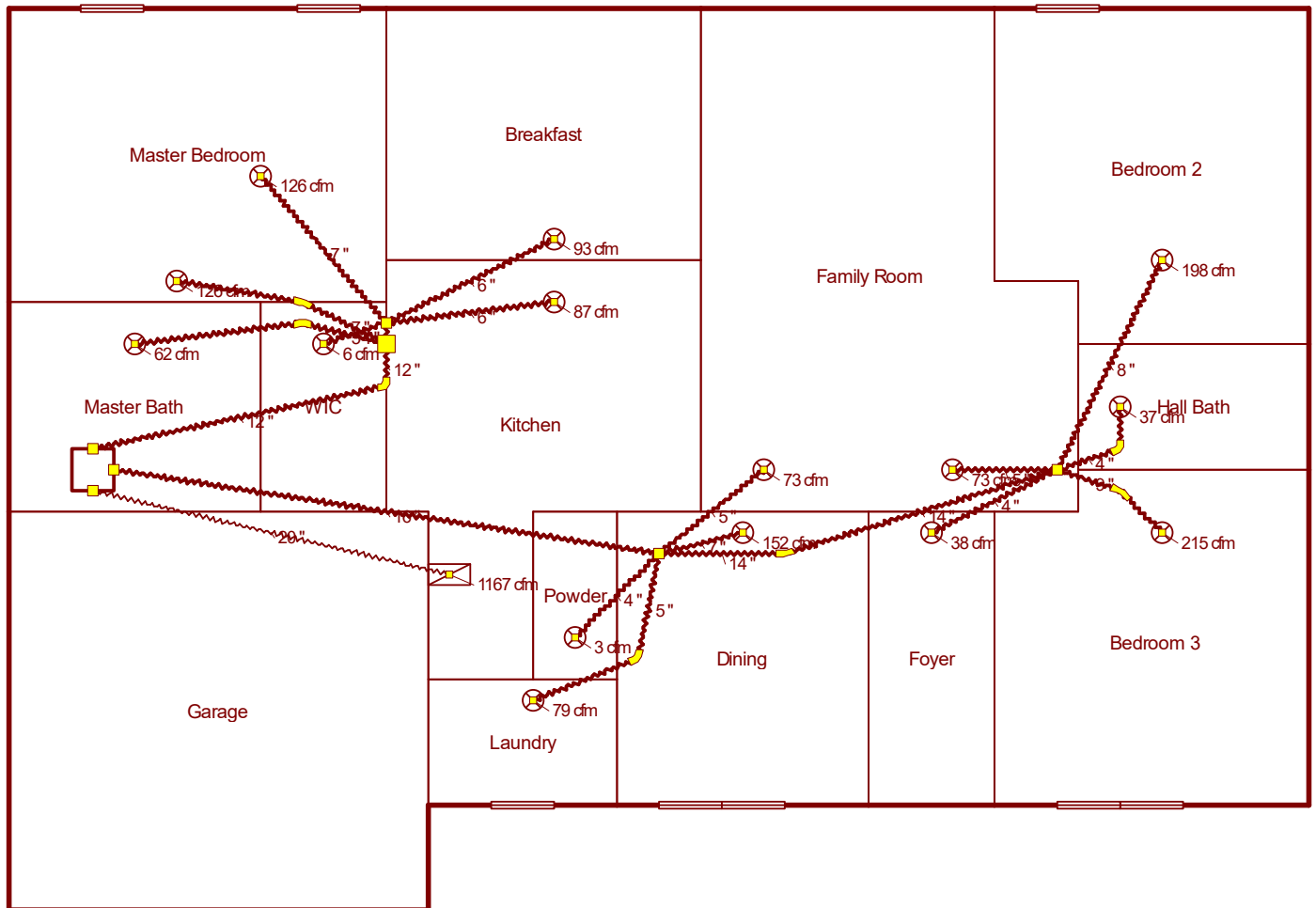
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Level 1



Job #:
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Duct System Summary

Entire House

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	Heating	Cooling
External static pressure	0.55 in H ₂ O	0.55 in H ₂ O
Pressure losses	0 in H ₂ O	0 in H ₂ O
Available static pressure	0.55 in H ₂ O	0.55 in H ₂ O
Supply / return available pressure	0.436 / 0.114 in H ₂ O	0.436 / 0.114 in H ₂ O
Lowest friction rate	0.240 in/100ft	0.240 in/100ft
Actual air flow	1167 cfm	1167 cfm
Total effective length (TEL)	229 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	h 3984	198	158	0.246	8.0	0x0	VIFx	57.1	120.0	st7
Bedroom 3	h 4324	215	141	0.240	9.0	0x0	VIFx	51.9	130.0	st7
Breakfast	h 1870	93	84	0.298	6.0	0x0	VIFx	26.3	120.0	st3
Dining	c 3035	109	152	0.362	7.0	0x0	VIFx	30.4	90.0	st2
Family Room	c 1457	51	73	0.355	5.0	0x0	VIFx	32.7	90.0	st2
Family Room-A	c 1457	51	73	0.255	5.0	0x0	VIFx	50.9	120.0	st7
Foyer	h 766	38	17	0.253	4.0	0x0	VIFx	52.6	120.0	st7
Hall Bath	h 739	37	15	0.241	4.0	0x0	VIFx	51.1	130.0	st7
Kitchen	c 1729	16	87	0.300	6.0	0x0	VIFx	25.4	120.0	st3
Laundry	c 1589	68	79	0.319	5.0	0x0	VIFx	36.8	100.0	st2
Master Bath	h 1247	62	27	0.315	5.0	0x0	VIFx	28.5	110.0	st3
Master Bedroom	c 2518	111	126	0.319	7.0	0x0	VIFx	26.9	110.0	st3
Master Bedroom-A	c 2518	111	126	0.298	7.0	0x0	VIFx	26.5	120.0	st3
Powder	c 67	2	3	0.358	4.0	0x0	VIFx	32.0	90.0	st2
WIC	c 126	4	6	0.310	4.0	0x0	VIFx	20.5	120.0	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
st3	Peak AVF	397	455	0.298	579	12.0	0 x 0	VinIFlx	st1
st1	Peak AVF	397	455	0.298	579	12.0	0 x 0	VinIFlx	
st6	Peak AVF	539	405	0.240	504	14.0	0 x 0	VinIFlx	st2
st7	Peak AVF	539	405	0.240	504	14.0	0 x 0	VinIFlx	st6
st2	Peak AVF	770	712	0.240	551	16.0	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	1167	1167	47.5	0.240	535	20.0	0x 0		VIFx	