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Building Analysis
Entire House
Hart

Job: HART
Date: May 13, 2020
By: ENERGYCALCS.NET INC

ENERGYCALCS.NET INC 267 DELEON RD, DEBARY, FL 32713 Phone: 386-775-0908 Email: MAGGIE@ENERGYCALCS.NET Web: ENERGYCAALCS.NET

Project Information

For: HART
SW MAPLETON ST, FORT WHITE, FL 32038

Design Conditions

Location:
Jacksonville/Intnl., FL, US
Elevation: 33 ft
Latitude: 30°N

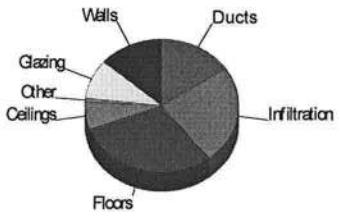
Outdoor:	Heating	Cooling
Dry bulb (°F)	33	93
Daily range (°F)	-	18 (M)
Wet bulb (°F)	-	77
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	38	18
Relative humidity (%)	50	50
Moisture difference (gr/lb)	33.1	50.3

Infiltration:	
Method	Blower door
Shielding / stories	3 (partial) / 1
Pressure / AVF	50 Pa / 2613 cfm

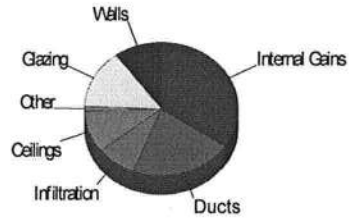
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	2.6	4784	13.6
Glazing	12.4	3329	9.5
Doors	14.6	351	1.0
Ceilings	1.0	2357	6.7
Floors	4.3	10443	29.7
Infiltration	3.9	8424	24.0
Ducts		5439	15.5
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**35127**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	1.4	2692	10.1
Glazing	14.1	3782	14.2
Doors	11.8	283	1.1
Ceilings	1.1	2746	10.3
Floors	0	0	0
Infiltration	1.0	2235	8.4
Ducts		5688	21.4
Ventilation		0	0
Internal gains		9170	34.5
Blower		0	0
Adjustments		0	
Total		**26596**	**100.0**



Latent Cooling Load = 6081 Btuh
Overall U-value = 0.081 Btuh/ft²-°F

Data entries checked.

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Notes:

Design Information

Weather: Jacksonville/Intnl., FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	38 °F

Summer Design Conditions

Outside db	93 °F
Inside db	75 °F
Design TD	18 °F
Daily range	M
Relative humidity	50 %
Moisture difference	50 gr/lb

Heating Summary

Structure	29687 Btuh
Ducts	5439 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	35127 Btuh

Sensible Cooling Equipment Load Sizing

Structure	20908 Btuh
Ducts	5688 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	26596 Btuh

Infiltration

Method	Blower door
Shielding / stories	3 (partial) / 1
Pressure / AVF	50 Pa / 2613 cfm

	Heating	Cooling
Area (ft²)	2417	2417
Volume (ft³)	22393	22393
Air changes/hour	0.55	0.31
Equiv. AVF (cfm)	204	114

Latent Cooling Equipment Load Sizing

Structure	4707 Btuh
Ducts	1374 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	6081 Btuh
Equipment Total Load (Sen+Lat)	32677 Btuh
Req. total capacity at 0.74 SHR	3.0 ton

Heating Equipment Summary

Make	Generic
Trade	
Model	SEER 15.0, HSPF 8.5
AHRI ref	
Efficiency	8.5 HSPF
Heating input	
Heating output	36000 Btuh @ 47°F
Temperature rise	30 °F
Actual air flow	1100 cfm
Air flow factor	0.031 cfm/Btuh
Static pressure	0.40 in H2O
Space thermostat	

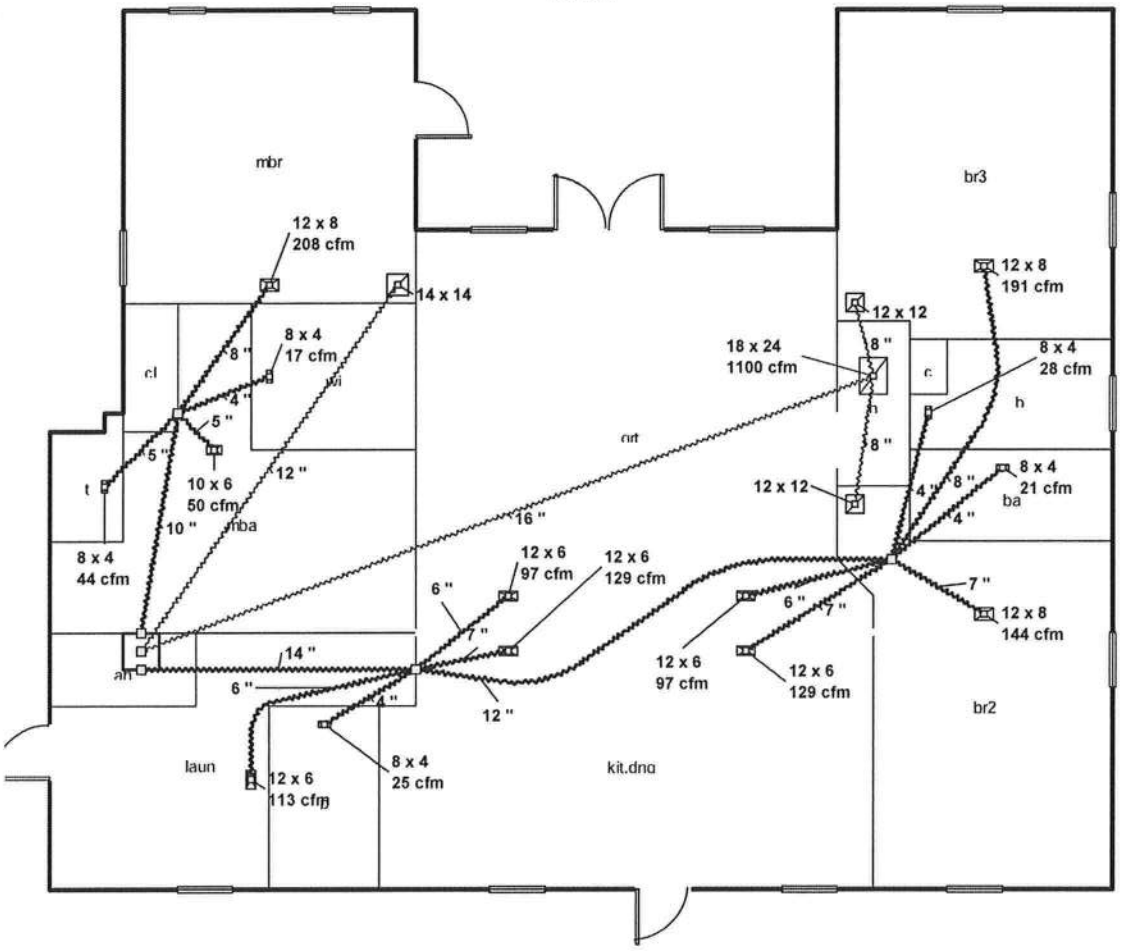
Capacity balance point = 33 °F

Cooling Equipment Summary

Make	Generic
Trade	
Cond	SEER 15.0, HSPF 8.5
Coil	
AHRI ref	
Efficiency	12.8 EER, 15 SEER
Sensible cooling	26640 Btuh
Latent cooling	9360 Btuh
Total cooling	36000 Btuh
Actual air flow	1100 cfm
Air flow factor	0.041 cfm/Btuh
Static pressure	0.40 in H2O
Load sensible heat ratio	0.81

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

Level 1



Job #: HART **Performed by ENERGYCALCS.NET INC for:** HART SW MAPLETON ST FORT WHITE, FL 32038	**Hart** ENERGYCALCS.NET INC 267 DELEON RD DEBARY, FL 32713 Phone: 386-775-0908 ENERGYCAALCS.NET MAGGIE@ENERGYCALCS.NET	Scale: 1 : 97 Page 1 Right-Suite® Universal 2019 19.0.18 RSU19927 2020-May-13 16:53:10 ...ELWOOD CONSTRUCTION HART-...

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Manual S Compliance Report
Entire House
Hart

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Date: May 13, 2020
By: ENERGYCALCS.NET INC

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Project Information

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SW MAPLETON ST, FORT WHITE, FL 32038

Cooling Equipment

Design Conditions

Outdoor design DB:	92.8°F	Sensible gain:	26596	Btuh	Entering coil DB:	76.4°F
Outdoor design WB:	77.0°F	Latent gain:	6081	Btuh	Entering coil WB:	63.2°F
Indoor design DB:	75.0°F	Total gain:	32677	Btuh		
Indoor RH:	50%	Estimated airflow:	1100	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP			
Manufacturer:	Generic		Model:	SEER 15.0, HSPF 8.5
Actual airflow:	1100	cfm		
Sensible capacity:	29900	Btuh	112% of load	
Latent capacity:	6100	Btuh	100% of load	
Total capacity:	36000	Btuh	110% of load	SHR: 83%

Heating Equipment

Design Conditions

Outdoor design DB:	32.5°F	Heat loss:	35127	Btuh	Entering coil DB:	69.2°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	Generic		Model:	SEER 15.0, HSPF 8.5		
Actual airflow:	1100	cfm				
Output capacity:	36000	Btuh	102% of load		Capacity balance:	33 °F
Supplemental heat required:		0 Btuh			Economic balance:	-99 °F

Meets all requirements of ACCA Manual S.

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Duct System Summary
Entire House
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Project Information

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	Heating	Cooling
External static pressure	0.40 in H2O	0.40 in H2O
Pressure losses	0 in H2O	0 in H2O
Available static pressure	0.40 in H2O	0.40 in H2O
Supply / return available pressure	0.299 / 0.101 in H2O	0.299 / 0.101 in H2O
Lowest friction rate	0.161 in/100ft	0.161 in/100ft
Actual air flow	1100 cfm	1100 cfm
Total effective length (TEL)	249 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
b	h	909	28	25	0.174	4.0	0x0	MFx	51.5	120.0	st3
ba	h	671	21	9	0.175	4.0	0x0	MFx	51.1	120.0	st3
br2	c	3489	142	144	0.177	7.0	0x0	MFx	49.1	120.0	st3
br3	h	6106	191	108	0.161	8.0	0x0	MFx	61.2	125.0	st3
grt	c	2339	70	97	0.269	6.0	0x0	MFx	21.4	90.0	st2
grt-A	c	2339	70	97	0.174	6.0	0x0	MFx	51.5	120.0	st3
kit.dng	c	3129	68	129	0.272	7.0	0x0	MFx	20.1	90.0	st2
kit.dng-A	c	3129	68	129	0.173	7.0	0x0	MFx	52.7	120.0	st3
laun	h	3619	113	100	0.243	6.0	0x0	MFx	28.2	95.0	st2
mba	h	1596	50	27	0.285	5.0	0x0	MFx	15.0	90.0	st1
mbr	h	6628	208	193	0.270	8.0	0x0	MFx	20.8	90.0	st1
p	h	794	25	10	0.270	4.0	0x0	MFx	20.8	90.0	st2
t	h	1412	44	15	0.277	5.0	0x0	MFx	17.8	90.0	st1
wi	c	416	3	17	0.278	4.0	0x0	MFx	17.6	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
st3	Peak AVF	520	512	0.161	662	***12.0***	***0*** x ***0***	VinlFlx	st2
st2	Peak AVF	796	849	0.161	794	***14.0***	***0*** x ***0***	VinlFlx	
st1	Peak AVF	304	251	0.270	558	10.0	0 x 0	VinlFlx	

Bold/italic values have been manually overridden

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	0x0	1100	1100	62.7	0.161	504	20.0	0x 0		MFx	rst3

Return Trunk Detail Table

Name	Trunk Type	Htg (cfm)	Clg (cfm)	Design FR	Veloc (fpm)	Diam (in)	H x W (in)	Duct Material	Trunk
rst3	Peak AVF	1100	1100	0.161	788	***16.0***	***0*** x ***0***	VnlFlx	

Bold/italic values have been manually overridden