wrightsoft

Building Analysis
A

Job: Rebecca Prior 300 SW L...
Date: Jun 24, 2021
By: Energycalcs.net

Energycalcs.net 267 deleon road, Debary, FL 32713

Project Information

For: Rebecca Prior
300 SW Legree Terrace, Fort White, FL 32038

Design Conditions

Location:
Gainesville Regional, FL, US
Elevation: 123 ft
Latitude: 30°N

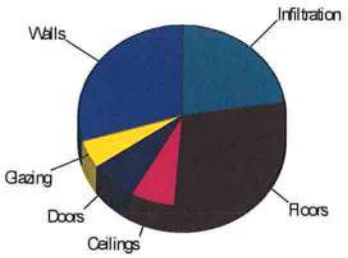
Outdoor:	Heating	Cooling
Dry bulb (°F)	33	92
Daily range (°F)	-	18 (M)
Wet bulb (°F)	-	76
Wind speed (mph)	15.0	7.5

Indoor:	Heating	Cooling
Indoor temperature (°F)	70	75
Design TD (°F)	37	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	32.6	43.8

Infiltration:	
Method	Simplified
Construction quality	Average
Fireplaces	0

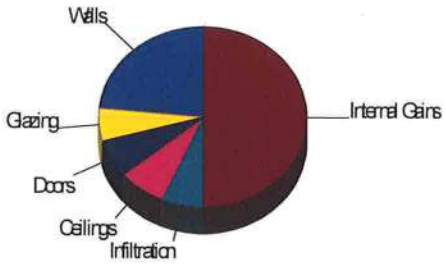
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.2	2428	29.7
Glazing	12.1	413	5.0
Doors	14.4	577	7.1
Ceilings	1.6	570	7.0
Floors	6.5	2345	28.7
Infiltration	2.8	1845	22.6
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**8177**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.8	1630	23.5
Glazing	11.8	401	5.8
Doors	11.6	466	6.7
Ceilings	1.4	514	7.4
Floors	0	0	0
Infiltration	0.7	452	6.5
Ducts		0	0
Ventilation		0	0
Internal gains		3460	50.0
Blower		0	0
Adjustments		0	
Total		**6923**	**100.0**



Latent Cooling Load = 1112 Btuh
Overall U-value = 0.126 Btuh/ft²-°F

Data entries checked.

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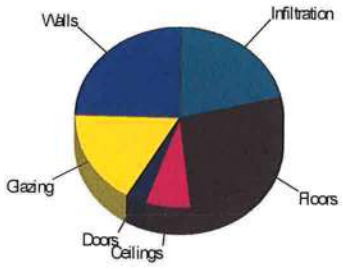
Outdoor:	**Heating**	**Cooling**
Dry bulb (°F)	33	92
Daily range (°F)	-	18 (M)
Wet bulb (°F)	-	76
Wind speed (mph)	15.0	7.5

Indoor:	**Heating**	**Cooling**
Indoor temperature (°F)	70	75
Design TD (°F)	37	17
Relative humidity (%)	50	50
Moisture difference (gr/lb)	32.6	43.8
Infiltration:		
Method	Simplified	
Construction quality	Average	
Fireplaces	0	

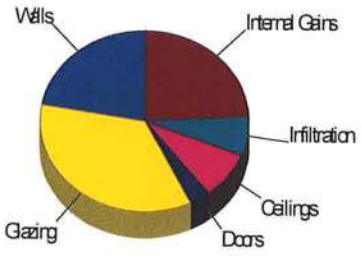
Heating

Component	Btuh/ft²	Btuh	% of load
Walls	4.2	2388	24.7
Glazing	12.1	1647	17.0
Doors	14.4	288	3.0
Ceilings	1.6	684	7.1
Floors	6.0	2605	27.0
Infiltration	2.8	2049	21.2
Ducts		0	0
Piping		0	0
Humidification		0	0
Ventilation		0	0
Adjustments		0	
Total		**9662**	**100.0**



Cooling

Component	Btuh/ft²	Btuh	% of load
Walls	2.8	1603	22.2
Glazing	18.7	2532	35.1
Doors	11.6	233	3.2
Ceilings	1.4	617	8.5
Floors	0	0	0
Infiltration	0.7	503	7.0
Ducts		0	0
Ventilation		0	0
Internal gains		1730	24.0
Blower		0	0
Adjustments		0	
Total		**7217**	**100.0**



Latent Cooling Load = 991 Btuh
Overall U-value = 0.131 Btuh/ft²-°F

WARNING: window to floor area ratio = 31.4% - more than 25%.

wrightsoft **Project Summary**
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Project Information

For: Rebecca Prior
300 SW Legree Terrace, Fort White, FL 32038

Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	37 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	44 gr/lb

Heating Summary

Structure	8177 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	8177 Btuh

Sensible Cooling Equipment Load Sizing

Structure	6923 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	6923 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	360	360
Volume (ft³)	4320	4320
Air changes/hour	0.64	0.33
Equiv. AVF (cfm)	46	24

Latent Cooling Equipment Load Sizing

Structure	1112 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	1112 Btuh
Equipment Total Load (Sen+Lat)	8035 Btuh
Req. total capacity at 0.87 SHR	0.7 ton

Heating Equipment Summary

Make	9K
Trade	
Model	
AHRI ref	
Efficiency	8.5 HSPF
Heating input	
Heating output	9000 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	300 cfm
Air flow factor	0.037 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	

Capacity balance point = 0 °F

Cooling Equipment Summary

Make	9K
Trade	
Cond	
Coil	
AHRI ref	
Efficiency	15 SEER
Sensible cooling	7830 Btuh
Latent cooling	1170 Btuh
Total cooling	9000 Btuh
Actual air flow	300 cfm
Air flow factor	0.043 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.86

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

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Notes:

Design Information

Weather: Gainesville Regional, FL, US

Winter Design Conditions

Outside db	33 °F
Inside db	70 °F
Design TD	37 °F

Summer Design Conditions

Outside db	92 °F
Inside db	75 °F
Design TD	17 °F
Daily range	M
Relative humidity	50 %
Moisture difference	44 gr/lb

Heating Summary

Structure	9662 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Humidification	0 Btuh
Piping	0 Btuh
Equipment load	9662 Btuh

Sensible Cooling Equipment Load Sizing

Structure	7217 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Blower	0 Btuh
Use manufacturer's data	y
Rate/swing multiplier	1.00
Equipment sensible load	7217 Btuh

Infiltration

Method	Simplified
Construction quality	Average
Fireplaces	0

	Heating	Cooling
Area (ft²)	432	432
Volume (ft³)	5184	5184
Air changes/hour	0.59	0.31
Equiv. AVF (cfm)	51	27

Latent Cooling Equipment Load Sizing

Structure	991 Btuh
Ducts	0 Btuh
Central vent (0 cfm) (none)	0 Btuh
Equipment latent load	991 Btuh
Equipment Total Load (Sen+Lat)	8208 Btuh
Req. total capacity at 0.89 SHR	0.7 ton

Heating Equipment Summary

Make	9K
Trade	
Model	
AHRI ref	
Efficiency	8.5 HSPF
Heating input	
Heating output	9000 Btuh @ 47°F
Temperature rise	27 °F
Actual air flow	300 cfm
Air flow factor	0.031 cfm/Btuh
Static pressure	0 in H2O
Space thermostat	

Capacity balance point = 0 °F

Cooling Equipment Summary

Make	9K
Trade	
Cond	
Coil	
AHRI ref	
Efficiency	15 SEER
Sensible cooling	8010 Btuh
Latent cooling	990 Btuh
Total cooling	9000 Btuh
Actual air flow	300 cfm
Air flow factor	0.042 cfm/Btuh
Static pressure	0 in H2O
Load sensible heat ratio	0.88

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

Manual S Compliance Report
A

Job: Rebecca Prior 300 SW L...
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Project Information

For: Rebecca Prior
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Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	6923	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	75.8°F	Latent gain:	1112	Btuh	Entering coil WB:	62.5°F
Indoor design DB:	75.0°F	Total gain:	8035	Btuh		
Indoor RH:	50%	Estimated airflow:	300	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	9K		Model:		
Actual airflow:	300	cfm			
Sensible capacity:	7800	Btuh	113% of load		
Latent capacity:	1200	Btuh	108% of load		
Total capacity:	9000	Btuh	112% of load	SHR:	87%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	8177	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	9K		Model:			
Actual airflow:	300	cfm				
Output capacity:	9000	Btuh	110% of load			
Supplemental heat required:	0	Btuh				

Capacity balance:	0 °F
Economic balance:	0 °F

Meets all requirements of ACCA Manual S.

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Cooling Equipment

Design Conditions

Outdoor design DB:	92.2°F	Sensible gain:	7217	Btuh	Entering coil DB:	75.0°F
Outdoor design WB:	75.8°F	Latent gain:	991	Btuh	Entering coil WB:	62.5°F
Indoor design DB:	75.0°F	Total gain:	8208	Btuh		
Indoor RH:	50%	Estimated airflow:	300	cfm		

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP				
Manufacturer:	9K		Model:		
Actual airflow:	300	cfm			
Sensible capacity:	8000	Btuh	111% of load		
Latent capacity:	1000	Btuh	101% of load		
Total capacity:	9000	Btuh	110% of load	SHR:	89%

Heating Equipment

Design Conditions

Outdoor design DB:	33.2°F	Heat loss:	9662	Btuh	Entering coil DB:	70.0°F
Indoor design DB:	70.0°F					

Manufacturer's Performance Data at Actual Design Conditions

Equipment type:	Split ASHP					
Manufacturer:	9K		Model:			
Actual airflow:	300	cfm				
Output capacity:	9000	Btuh	93% of load		Capacity balance:	0 °F
Supplemental heat required:	662	Btuh			Economic balance:	0 °F

Meets all requirements of ACCA Manual S.