

# Residential System Sizing Calculation

## Summary

Yasmanis Reyes  
162 NW CREWS GLEN  
LAKE CITY, FL 32055

Project Title:  
Yasmanis Residence



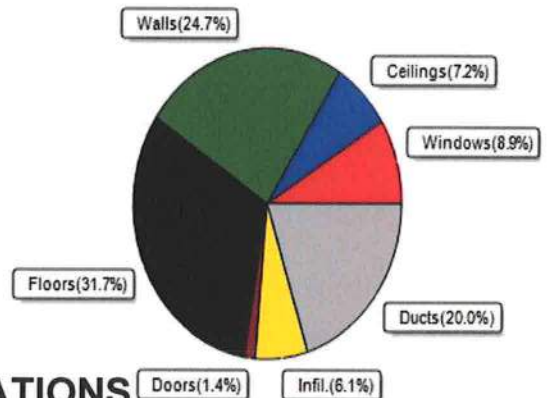
4/14/2022

|                                                                                                       |                   |                                       |                   |
|-------------------------------------------------------------------------------------------------------|-------------------|---------------------------------------|-------------------|
| Location for weather data: Gainesville, FL - Defaults: Latitude(29.7) Altitude(152 ft.) Temp Range(M) |                   |                                       |                   |
| Humidity data: Interior RH (50%) Outdoor wet bulb (77F) Humidity difference(51gr.)                    |                   |                                       |                   |
| Winter design temperature(TMY3 99%)                                                                   | 30 F              | Summer design temperature(TMY3 99%)   | 94 F              |
| Winter setpoint                                                                                       | 70 F              | Summer setpoint                       | 75 F              |
| Winter temperature difference                                                                         | 40 F              | Summer temperature difference         | 19 F              |
| <b>Total heating load calculation</b>                                                                 | <b>26943 Btuh</b> | <b>Total cooling load calculation</b> | <b>20213 Btuh</b> |
| Submitted heating capacity                                                                            | % of calc Btuh    | Submitted cooling capacity            | % of calc Btuh    |
| Total (Electric Heat Pump)                                                                            | 100.0 26943       | Sensible (SHR = 0.70)                 | 86.5 14010        |
| Heat Pump + Auxiliary(0.0kW)                                                                          | 100.0 26943       | Latent                                | 149.7 6004        |
|                                                                                                       |                   | Total (Electric Heat Pump)            | 99.0 20014        |

## WINTER CALCULATIONS

Winter Heating Load (for 1810 sqft)

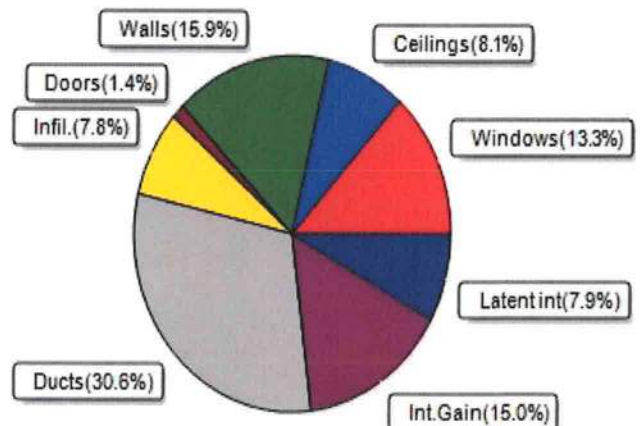
| Load component         |      |      | Load              |
|------------------------|------|------|-------------------|
| Window total           | 166  | sqft | 2390 Btuh         |
| Wall total             | 1265 | sqft | 6655 Btuh         |
| Door total             | 20   | sqft | 368 Btuh          |
| Ceiling total          | 1901 | sqft | 1929 Btuh         |
| Floor total            | 1810 | sqft | 8543 Btuh         |
| Infiltration           | 38   | cfm  | 1657 Btuh         |
| Duct loss              |      |      | 5400 Btuh         |
| <b>Subtotal</b>        |      |      | <b>26943 Btuh</b> |
| Ventilation            | 0    | cfm  | 0 Btuh            |
| <b>TOTAL HEAT LOSS</b> |      |      | <b>26943 Btuh</b> |



## SUMMER CALCULATIONS

Summer Cooling Load (for 1810 sqft)

| Load component                        |      |      | Load              |
|---------------------------------------|------|------|-------------------|
| Window total                          | 166  | sqft | 2689 Btuh         |
| Wall total                            | 1265 | sqft | 3211 Btuh         |
| Door total                            | 20   | sqft | 276 Btuh          |
| Ceiling total                         | 1901 | sqft | 1640 Btuh         |
| Floor total                           |      |      | 0 Btuh            |
| Infiltration                          | 28   | cfm  | 590 Btuh          |
| Internal gain                         |      |      | 3040 Btuh         |
| Duct gain                             |      |      | 4755 Btuh         |
| Sens. Ventilation                     | 0    | cfm  | 0 Btuh            |
| Blower Load                           |      |      | 0 Btuh            |
| <b>Total sensible gain</b>            |      |      | <b>16201 Btuh</b> |
| Latent gain(ducts)                    |      |      | 1433 Btuh         |
| Latent gain(infiltration)             |      |      | 979 Btuh          |
| Latent gain(ventilation)              |      |      | 0 Btuh            |
| Latent gain(internal/occupants/other) |      |      | 1600 Btuh         |
| <b>Total latent gain</b>              |      |      | <b>4012 Btuh</b>  |
| <b>TOTAL HEAT GAIN</b>                |      |      | <b>20213 Btuh</b> |



8th Edition

EnergyGauge® System Sizing

PREPARED BY: \_\_\_\_\_

DATE: 4 / 14 / 2022

# System Sizing Calculations - Winter

## Residential Load - Whole House Component Details

Yasmanis Reyes  
162 NW CREWS GLEN  
LAKE CITY, FL 32055

Project Title:  
Yasmanis Residence  
Building Type: User

4/14/2022

Reference City: Gainesville, FL (Defaults) Winter Temperature Difference: 40.0 F (TMY3 99%)

| Component Loads for Whole House |                                                               |            |         |                     |                  |      |      |            |
|---------------------------------|---------------------------------------------------------------|------------|---------|---------------------|------------------|------|------|------------|
| Window                          | Panes/Type                                                    | Frame      | U       | Orientation         | Area(sqft)       | X    | HTM= | Load       |
| 1                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | W                   | 15.0             |      | 14.4 | 216 Btuh   |
| 2                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | W                   | 15.0             |      | 14.4 | 216 Btuh   |
| 3                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | S                   | 3.0              |      | 14.4 | 43 Btuh    |
| 4                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | S                   | 15.0             |      | 14.4 | 216 Btuh   |
| 5                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | S                   | 6.0              |      | 14.4 | 86 Btuh    |
| 6                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | E                   | 30.0             |      | 14.4 | 432 Btuh   |
| 7                               | 2, NFRC 0.25                                                  | Metal      | 0.36    | E                   | 40.0             |      | 14.4 | 576 Btuh   |
| 8                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | N                   | 30.0             |      | 14.4 | 432 Btuh   |
| 9                               | 2, NFRC 0.25                                                  | Vinyl      | 0.36    | N                   | 12.0             |      | 14.4 | 173 Btuh   |
| Window Total                    |                                                               |            |         |                     | 166.0(sqft)      |      |      | 2390 Btuh  |
| Walls                           | Type                                                          | Ornt.      | Ueff.   | R-Value<br>(Cav/Sh) | Area             | X    | HTM= | Load       |
| 1                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 102              |      | 5.26 | 539 Btuh   |
| 2                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 32               |      | 5.26 | 168 Btuh   |
| 3                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 44               |      | 5.26 | 232 Btuh   |
| 4                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 32               |      | 5.26 | 168 Btuh   |
| 5                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 102              |      | 5.26 | 539 Btuh   |
| 6                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 371              |      | 5.26 | 1951 Btuh  |
| 7                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 229              |      | 5.26 | 1203 Btuh  |
| 8                               | Conc Blk,Hollow - Ext                                         |            | (0.132) | 5.0/0.0             | 353              |      | 5.26 | 1856 Btuh  |
| Wall Total                      |                                                               |            |         |                     | 1265(sqft)       |      |      | 6655 Btuh  |
| Doors                           | Type                                                          | Storm      | Ueff.   |                     | Area             | X    | HTM= | Load       |
| 1                               | Insulated - Exterior, n                                       |            | (0.460) |                     | 20               |      | 18.4 | 368 Btuh   |
| Door Total                      |                                                               |            |         |                     | 20(sqft)         |      |      | 368Btuh    |
| Ceilings                        | Type/Color/Surface                                            |            | Ueff.   | R-Value             | Area             | X    | HTM= | Load       |
| 1                               | Vented Attic/L/Shing                                          |            | (0.025) | 38.0/0.0            | 1901             |      | 1.0  | 1929 Btuh  |
| Ceiling Total                   |                                                               |            |         |                     | 1901(sqft)       |      |      | 1929Btuh   |
| Floors                          | Type                                                          |            | Ueff.   | R-Value             | Size             | X    | HTM= | Load       |
| 1                               | Slab On Grade                                                 |            | (1.180) | 0.0                 | 181.0 ft(perim.) |      | 47.2 | 8543 Btuh  |
| Floor Total                     |                                                               |            |         |                     | 1810 sqft        |      |      | 8543 Btuh  |
| Envelope Subtotal:              |                                                               |            |         |                     |                  |      |      | 19886 Btuh |
| Infiltration                    | Type                                                          | Wholehouse | ACH     | Volume(cuft)        | Wall Ratio       | CFM= |      |            |
|                                 | Natural                                                       |            | 0.16    | 14480               | 1.00             | 37.8 |      | 1657 Btuh  |
| Duct load                       | Average sealed, R6.0, Supply(Att), Return(Att) (DLM of 0.251) |            |         |                     |                  |      |      | 5400 Btuh  |
| All Zones                       | Sensible Subtotal All Zones                                   |            |         |                     |                  |      |      | 26943 Btuh |

# Manual J Winter Calculations

## Residential Load - Component Details (continued)

Yasmanis Reyes  
162 NW CREWS GLEN  
LAKE CITY, FL 32055

Project Title:  
Yasmanis Residence  
Building Type: User

4/14/2022

### WHOLE HOUSE TOTALS

|                           |                                |            |
|---------------------------|--------------------------------|------------|
| <b>Totals for Heating</b> | Subtotal Sensible Heat Loss    | 26943 Btuh |
|                           | Ventilation Sensible Heat Loss | 0 Btuh     |
|                           | Total Heat Loss                | 26943 Btuh |

### EQUIPMENT

|                       |   |            |
|-----------------------|---|------------|
| 1. Electric Heat Pump | # | 26943 Btuh |
|-----------------------|---|------------|

Key: Window types - NFRC (Requires U-Factor and Shading coefficient(SHGC) of glass as numerical values)  
or - Glass as 'Clear' or 'Tint' (Uses U-Factor and SHGC defaults)  
U - (Window U-Factor)  
HTM - (ManualJ Heat Transfer Multiplier)



Version 8

# System Sizing Calculations - Summer

## Residential Load - Whole House Component Details

Yasmanis Reyes  
162 NW CREWS GLEN  
LAKE CITY, FL 32055

Project Title:  
Yasmanis Residence

4/14/2022

Reference City: Gainesville, FL

Temperature Difference: 19.0F(TMY3 99%) Humidity difference: 51gr.

### Component Loads for Whole House

| Window        | Type*                                                                |            |    |      |      |             | Overhang      |                     | Window Area(sqft) |        |          | HTM       |           | Load       |      |
|---------------|----------------------------------------------------------------------|------------|----|------|------|-------------|---------------|---------------------|-------------------|--------|----------|-----------|-----------|------------|------|
|               | Panes                                                                | SHGC       | U  | InSh | IS   | Ornt        | Len           | Hgt                 | Gross             | Shaded | Unshaded | Shaded    | Unshaded  |            |      |
| 1             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | W    |             | 1.5ft.        | 0.5ft.              | 15.0              | 2.2    | 12.8     | 12        | 31        | 422        | Btuh |
| 2             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | W    |             | 1.5ft.        | 0.5ft.              | 15.0              | 2.2    | 12.8     | 12        | 31        | 422        | Btuh |
| 3             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | S    |             | 1.5ft.        | 0.5ft.              | 3.0               | 3.0    | 0.0      | 12        | 14        | 36         | Btuh |
| 4             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | S    |             | 1.5ft.        | 0.5ft.              | 15.0              | 15.0   | 0.0      | 12        | 14        | 181        | Btuh |
| 5             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | S    |             | 1.5ft.        | 0.5ft.              | 6.0               | 6.0    | 0.0      | 12        | 14        | 73         | Btuh |
| 6             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | E    |             | 13.5f         | 0.5ft.              | 30.0              | 30.0   | 0.0      | 12        | 31        | 363        | Btuh |
| 7             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | E    |             | 13.5f         | 0.5ft.              | 40.0              | 40.0   | 0.0      | 12        | 31        | 484        | Btuh |
| 8             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | N    |             | 1.5ft.        | 0.5ft.              | 30.0              | 0.0    | 30.0     | 12        | 12        | 363        | Btuh |
| 9             | 2 NFRC                                                               | 0.25, 0.36 | No | No   | N    |             | 1.5ft.        | 0.5ft.              | 12.0              | 0.0    | 12.0     | 12        | 12        | 145        | Btuh |
|               | Excursion                                                            |            |    |      |      |             |               |                     |                   |        |          |           |           | 199        | Btuh |
|               | Window Total                                                         |            |    |      |      |             |               |                     | 166 (sqft)        |        |          |           |           | 2689 Btuh  |      |
| Walls         | Type                                                                 |            |    |      |      | U-Value     | R-Value       | Area(sqft)          |                   |        | HTM      |           | Load      |            |      |
|               |                                                                      |            |    |      |      |             | Cav/Sheath    |                     |                   |        |          |           |           |            |      |
| 1             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 102.3               |                   |        | 2.5      |           | 260 Btuh  |            |      |
| 2             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 32.0                |                   |        | 2.5      |           | 81 Btuh   |            |      |
| 3             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 44.0                |                   |        | 2.5      |           | 112 Btuh  |            |      |
| 4             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 32.0                |                   |        | 2.5      |           | 81 Btuh   |            |      |
| 5             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 102.3               |                   |        | 2.5      |           | 260 Btuh  |            |      |
| 6             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 370.7               |                   |        | 2.5      |           | 941 Btuh  |            |      |
| 7             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 228.7               |                   |        | 2.5      |           | 581 Btuh  |            |      |
| 8             | Concrete Blk,Hollow- Ext                                             |            |    |      |      | 0.13        | 5.0/0.0       | 352.7               |                   |        | 2.5      |           | 895 Btuh  |            |      |
|               | Wall Total                                                           |            |    |      |      |             |               |                     | 1265 (sqft)       |        |          |           |           | 3211 Btuh  |      |
| Doors         | Type                                                                 |            |    |      |      |             |               | Area (sqft)         |                   |        | HTM      |           | Load      |            |      |
|               |                                                                      |            |    |      |      |             |               |                     |                   |        |          |           |           |            |      |
| 1             | Insulated - Exterior                                                 |            |    |      |      |             |               | 20.0                |                   |        | 13.8     |           | 276 Btuh  |            |      |
|               | Door Total                                                           |            |    |      |      |             |               |                     | 20 (sqft)         |        |          |           |           | 276 Btuh   |      |
| Ceilings      | Type/Color/Surface                                                   |            |    |      |      | U-Value     | R-Value       | Area(sqft)          |                   |        | HTM      |           | Load      |            |      |
|               |                                                                      |            |    |      |      |             |               |                     |                   |        |          |           |           |            |      |
| 1             | Vented AtticLight/Shingle/RB                                         |            |    |      |      | 0.025       | 38.0/0.0      | 1900.5              |                   |        | 0.86     |           | 1640 Btuh |            |      |
|               | Ceiling Total                                                        |            |    |      |      |             |               |                     | 1901 (sqft)       |        |          |           |           | 1640 Btuh  |      |
| Floors        | Type                                                                 |            |    |      |      |             | R-Value       | Size                |                   |        | HTM      |           | Load      |            |      |
|               |                                                                      |            |    |      |      |             |               |                     |                   |        |          |           |           |            |      |
| 1             | Slab On Grade                                                        |            |    |      |      |             | 0.0           | 1810 (ft-perimeter) |                   |        | 0.0      |           | 0 Btuh    |            |      |
|               | Floor Total                                                          |            |    |      |      |             |               |                     | 1810.0 (sqft)     |        |          |           |           | 0 Btuh     |      |
|               | Envelope Subtotal:                                                   |            |    |      |      |             |               |                     |                   |        |          |           |           | 7816 Btuh  |      |
| Infiltration  | Type                                                                 |            |    |      |      | Average ACH | Volume(cuft)  |                     | Wall Ratio        |        | CFM=     |           | Load      |            |      |
|               |                                                                      |            |    |      |      |             |               |                     |                   |        |          |           |           |            |      |
| Natural       |                                                                      |            |    |      | 0.12 | 14480       |               | 1                   |                   | 28.4   |          | 590 Btuh  |           |            |      |
| Internal gain |                                                                      |            |    |      |      | Occupants   | Btuh/occupant |                     | Appliance         |        | Load     |           |           |            |      |
|               |                                                                      |            |    |      |      |             |               |                     |                   |        |          |           |           |            |      |
|               |                                                                      |            |    |      | 8    | X 230       |               | +                   |                   | 1200   |          | 3040 Btuh |           |            |      |
|               | Sensible Envelope Load:                                              |            |    |      |      |             |               |                     |                   |        |          |           |           | 11446 Btuh |      |
| Duct load     | Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) (DGM of 0.415) |            |    |      |      |             |               |                     |                   |        |          |           |           | 4755 Btuh  |      |
|               | Sensible Load All Zones                                              |            |    |      |      |             |               |                     |                   |        |          |           |           | 16201 Btuh |      |

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Yasmanis Reyes  
162 NW CREWS GLEN  
LAKE CITY, FL 32055

Project Title: Climate:FL\_GAINESVILLE\_REGIONAL\_A  
Yasmanis Residence

4/14/2022

### WHOLE HOUSE TOTALS

|                                           |                                                           |                   |
|-------------------------------------------|-----------------------------------------------------------|-------------------|
| <b>Whole House<br/>Totals for Cooling</b> | <b>Sensible Envelope Load All Zones</b>                   | <b>11446 Btuh</b> |
|                                           | Sensible Duct Load                                        | 4755 Btuh         |
|                                           | <b>Total Sensible Zone Loads</b>                          | <b>16201 Btuh</b> |
|                                           | Sensible ventilation                                      | 0 Btuh            |
|                                           | Blower                                                    | 0 Btuh            |
|                                           | <b>Total sensible gain</b>                                | <b>16201 Btuh</b> |
|                                           | Latent infiltration gain (for 51 gr. humidity difference) | 979 Btuh          |
|                                           | Latent ventilation gain                                   | 0 Btuh            |
|                                           | Latent duct gain                                          | 1433 Btuh         |
|                                           | Latent occupant gain (8.0 people @ 200 Btuh per person)   | 1600 Btuh         |
|                                           | Latent other gain                                         | 0 Btuh            |
|                                           | <b>Latent total gain</b>                                  | <b>4012 Btuh</b>  |
|                                           | <b>TOTAL GAIN</b>                                         | <b>20213 Btuh</b> |

### EQUIPMENT

|                 |   |            |
|-----------------|---|------------|
| 1. Central Unit | # | 20014 Btuh |
|-----------------|---|------------|

\*Key: Window types (Panels - Number and type of panes of glass)  
(SHGC - Shading coefficient of glass as SHGC numerical value)  
(U - Window U-Factor)  
(InSh - Interior shading device: none(No), Blinds(B), Draperies(D) or Roller Shades(R))  
- For Blinds: Assume medium color, half closed  
- For Draperies: Assume medium weave, half closed  
- For Roller shades: Assume translucent, half closed  
(IS - Insect screen: none(N), Full(F) or Half(½))  
(Ornt - compass orientation)



Version 8