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# Residential System Sizing Calculation

## Summary

Doug & Maci Peeler
SW Dairy Street
Lake City, FL 32025

Project Title:
Doug Peeler Residence

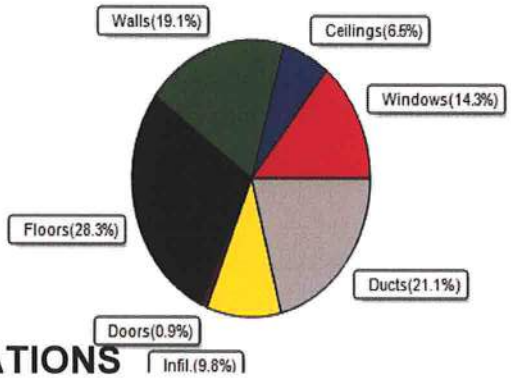
2/16/2022

| | | | | | |
|---|---|---|---|---|---|
| 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 |
| **Total heating load calculation** | **39977** | **Btuh** | **Total cooling load calculation** | **32203** | **Btuh** |
| Submitted heating capacity | % of calc | Btuh | Submitted cooling capacity | % of calc | Btuh |
| Total (Electric Heat Pump) | 100.0 | 39977 | Sensible (SHR = 0.70) | 87.4 | 22542 |
| Heat Pump + Auxiliary(0.0kW) | 100.0 | 39977 | Latent | 150.9 | 9661 |
| | | | Total (Electric Heat Pump) | 100.0 | 32203 |

## WINTER CALCULATIONS

Winter Heating Load (for 2792 sqft)

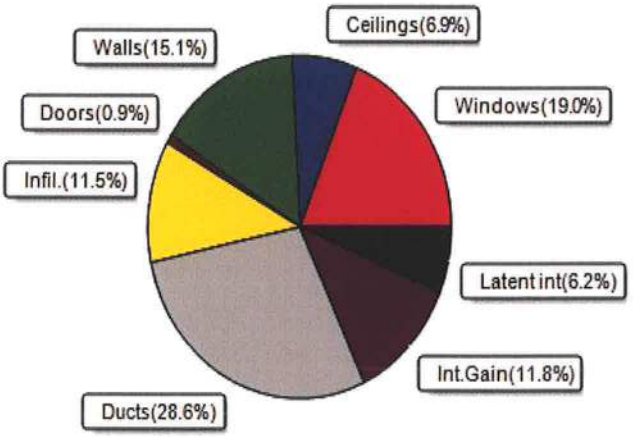
| Load component | | | Load | |
|---|---|---|---|---|
| Window total | 396 | sqft | 5700 | Btuh |
| Wall total | 2153 | sqft | 7642 | Btuh |
| Door total | 20 | sqft | 368 | Btuh |
| Ceiling total | 2578 | sqft | 2617 | Btuh |
| Floor total | See detail report | | 11328 | Btuh |
| Infiltration | 89 | cfm | 3902 | Btuh |
| Duct loss | | | 8420 | Btuh |
| **Subtotal** | | | **39977** | **Btuh** |
| Ventilation | 0 | cfm | 0 | Btuh |
| **TOTAL HEAT LOSS** | | | **39977** | **Btuh** |




## SUMMER CALCULATIONS

Summer Cooling Load (for 2792 sqft)

| Load component | | | Load | |
|---|---|---|---|---|
| Window total | 396 | sqft | 6108 | Btuh |
| Wall total | 2153 | sqft | 4872 | Btuh |
| Door total | 20 | sqft | 276 | Btuh |
| Ceiling total | 2578 | sqft | 2225 | Btuh |
| Floor total | | | 0 | Btuh |
| Infiltration | 67 | cfm | 1390 | Btuh |
| Internal gain | | | 3800 | Btuh |
| Duct gain | | | 7128 | Btuh |
| Sens. Ventilation | 0 | cfm | 0 | Btuh |
| Blower Load | | | 0 | Btuh |
| **Total sensible gain** | | | **25799** | **Btuh** |
| Latent gain(ducts) | | | 2097 | Btuh |
| Latent gain(infiltration) | | | 2307 | Btuh |
| Latent gain(ventilation) | | | 0 | Btuh |
| Latent gain(internal/occupants/other) | | | 2000 | Btuh |
| **Total latent gain** | | | **6404** | **Btuh** |
| **TOTAL HEAT GAIN** | | | **32203** | **Btuh** |

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8th Edition

EnergyGauge® System Sizing
PREPARED BY: Will C Fry
DATE: 2 / /16 / 2022

# System Sizing Calculations - Winter

## Residential Load - Whole House Component Details

Doug & Maci Peeler
SW Dairy Street
Lake City, FL 32025

Project Title:
Doug Peeler Residence
Building Type: User

2/16/2022

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 | N | 30.0 | 14.4 | 432 Btuh |
| 2 | 2, NFRC 0.25 | Vinyl | 0.36 | N | 72.0 | 14.4 | 1037 Btuh |
| 3 | 2, NFRC 0.25 | TIM | 0.36 | N | 40.0 | 14.4 | 576 Btuh |
| 4 | 2, NFRC 0.25 | Vinyl | 0.36 | N | 30.0 | 14.4 | 432 Btuh |
| 5 | 2, NFRC 0.25 | Vinyl | 0.36 | W | 30.0 | 14.4 | 432 Btuh |
| 6 | 2, NFRC 0.25 | Vinyl | 0.36 | S | 30.0 | 14.4 | 432 Btuh |
| 7 | 2, NFRC 0.25 | Vinyl | 0.36 | S | 50.0 | 14.4 | 720 Btuh |
| 8 | 2, NFRC 0.25 | Vinyl | 0.36 | S | 15.0 | 14.4 | 216 Btuh |
| 9 | 2, NFRC 0.25 | TIM | 0.36 | S | 33.3 | 14.4 | 480 Btuh |
| 10 | 2, NFRC 0.25 | Vinyl | 0.36 | E | 10.0 | 14.4 | 144 Btuh |
| 11 | 2, NFRC 0.25 | Vinyl | 0.36 | E | 30.0 | 14.4 | 432 Btuh |
| 12 | 2, NFRC 0.25 | Vinyl | 0.36 | N | 12.0 | 14.4 | 173 Btuh |
| 13 | 2, NFRC 0.25 | Vinyl | 0.36 | N | 13.5 | 14.4 | 194 Btuh |
| | Window Total | | | | 395.8(sqft) | | 5700 Btuh |

| Walls | Type | Ornt. | Ueff. | R-Value (Cav/Sh) | Area X | HTM= | Load |
|---|---|---|---|---|---|---|---|
| 1 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 74 | 3.55 | 263 Btuh |
| 2 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 40 | 3.55 | 142 Btuh |
| 3 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 275 | 3.55 | 975 Btuh |
| 4 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 40 | 3.55 | 142 Btuh |
| 5 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 93 | 3.55 | 330 Btuh |
| 6 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 330 | 3.55 | 1172 Btuh |
| 7 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 99 | 3.55 | 351 Btuh |
| 8 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 90 | 3.55 | 320 Btuh |
| 9 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 205 | 3.55 | 727 Btuh |
| 10 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 70 | 3.55 | 249 Btuh |
| 11 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 162 | 3.55 | 575 Btuh |
| 12 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 320 | 3.55 | 1136 Btuh |
| 13 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 109 | 3.55 | 388 Btuh |
| 14 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 137 | 3.55 | 485 Btuh |
| 15 | Frame - Wood | - Ext | (0.089) | 13.0/0.0 | 109 | 3.55 | 388 Btuh |
| | Wall Total | | | | 2153(sqft) | | 7642 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 | 2224 | 1.0 | 2258 Btuh |
| 2 | Vented Attic/L/Shing | (0.025) | 38.0/0.0 | 354 | 1.0 | 359 Btuh |
| | Ceiling Total | | | 2578(sqft) | | 2617Btuh |

| Floors | Type | Ueff. | R-Value | Size X | HTM= | Load |
|---|---|---|---|---|---|---|
| 1 | Slab On Grade | (1.180) | 0.0 | 240.0 ft(perim.) | 47.2 | 11328 Btuh |
| 2 | Interior | (1.180) | 19.0 | 337.0 sqft | 0.0 | 0 Btuh |
| | Floor Total | | | 2792 sqft | | 11328 Btuh |

# Manual J Winter Calculations

## Residential Load - Component Details (continued)

Doug & Maci Peeler
SW Dairy Street
Lake City, FL 32025

Project Title:
Doug Peeler Residence
Building Type: User

2/16/2022

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Envelope Subtotal: | | 27655 Btuh |
| **Infiltration** | Type<br>Natural | Wholehouse<br> | ACH<br>0.22 | Volume(cuft)<br>24791 | Wall Ratio<br>1.00 | CFM=<br>89.1 | 3902 Btuh |
| **Duct load** | Average sealed, R6.0, Supply(Att), Return(Att) | | | | | (DLM of 0.267) | 8420 Btuh |
| **All Zones** | | | | | **Sensible Subtotal All Zones** | | **39977 Btuh** |

### WHOLE HOUSE TOTALS

| | | |
|---|---|---|
| **Totals for Heating** | Subtotal Sensible Heat Loss<br>Ventilation Sensible Heat Loss<br>Total Heat Loss | 39977 Btuh<br>0 Btuh<br>39977 Btuh |

### EQUIPMENT

| | | |
|---|---|---|
| 1. Electric Heat Pump | # | 39977 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

Doug & Maci Peeler
SW Dairy Street
Lake City, FL 32025

Project Title:
Doug Peeler Residence

2/16/2022

Reference City: Gainesville, FL  Temperature Difference: 19.0F(TMY3 99%)  Humidity difference: 51gr.

### Component Loads for Whole House

| Window | Type* Panes | SHGC | U | InSh | IS | Ornt | Overhang Len | Hgt | Window Area(sqft) Gross | Shaded | Unshaded | HTM Shaded | Unshaded | Load |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 NFRC | 0.25, | 0.36 | No | No | N | 1.5ft. | 1.0ft. | 30.0 | 0.0 | 30.0 | 12 | 12 | 363 Btuh |
| 2 | 2 NFRC | 0.25, | 0.36 | No | No | N | 9.5ft. | 0.3ft. | 72.0 | 0.0 | 72.0 | 12 | 12 | 871 Btuh |
| 3 | 2 NFRC | 0.25, | 0.36 | No | No | N | 9.5ft. | 0.3ft. | 40.0 | 0.0 | 40.0 | 12 | 12 | 484 Btuh |
| 4 | 2 NFRC | 0.25, | 0.36 | No | No | N | 1.5ft. | 1.0ft. | 30.0 | 0.0 | 30.0 | 12 | 12 | 363 Btuh |
| 5 | 2 NFRC | 0.25, | 0.36 | No | No | W | 1.0ft. | 4.0ft. | 30.0 | 0.0 | 30.0 | 12 | 31 | 928 Btuh |
| 6 | 2 NFRC | 0.25, | 0.36 | No | No | S | 1.5ft. | 1.0ft. | 30.0 | 30.0 | 0.0 | 12 | 14 | 363 Btuh |
| 7 | 2 NFRC | 0.25, | 0.36 | No | No | S | 11.5f | 1.0ft. | 50.0 | 50.0 | 0.0 | 12 | 14 | 605 Btuh |
| 8 | 2 NFRC | 0.25, | 0.36 | No | No | S | 11.5f | 1.0ft. | 15.0 | 15.0 | 0.0 | 12 | 14 | 181 Btuh |
| 9 | 2 NFRC | 0.25, | 0.36 | No | No | S | 11.5f | 1.0ft. | 33.3 | 33.3 | 0.0 | 12 | 14 | 403 Btuh |
| 10 | 2 NFRC | 0.25, | 0.36 | No | No | E | 1.0ft. | 3.0ft. | 10.0 | 0.0 | 10.0 | 12 | 31 | 309 Btuh |
| 11 | 2 NFRC | 0.25, | 0.36 | No | No | E | 1.0ft. | 4.0ft. | 30.0 | 0.0 | 30.0 | 12 | 31 | 928 Btuh |
| 12 | 2 NFRC | 0.25, | 0.36 | No | No | N | 1.0ft. | 3.0ft. | 12.0 | 0.0 | 12.0 | 12 | 12 | 145 Btuh |
| 13 | 2 NFRC | 0.25, | 0.36 | No | No | N | 1.0ft. | 3.0ft. | 13.5 | 0.0 | 13.5 | 12 | 12 | 163 Btuh |
| | Window Total | | | | | | | | 396 (sqft) | | | | | 6108 Btuh |

| Walls | Type | U-Value | R-Value Cav/Sheath | Area(sqft) | HTM | Load |
|---|---|---|---|---|---|---|
| 1 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 74.0 | 2.3 | 167 Btuh |
| 2 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 40.0 | 2.3 | 91 Btuh |
| 3 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 274.7 | 2.3 | 622 Btuh |
| 4 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 40.0 | 2.3 | 91 Btuh |
| 5 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 93.0 | 2.3 | 210 Btuh |
| 6 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 330.0 | 2.3 | 747 Btuh |
| 7 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 99.0 | 2.3 | 224 Btuh |
| 8 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 90.0 | 2.3 | 204 Btuh |
| 9 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 204.7 | 2.3 | 463 Btuh |
| 10 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 70.0 | 2.3 | 158 Btuh |
| 11 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 162.0 | 2.3 | 367 Btuh |
| 12 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 320.0 | 2.3 | 724 Btuh |
| 13 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 109.3 | 2.3 | 247 Btuh |
| 14 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 136.5 | 2.3 | 309 Btuh |
| 15 | Frame - Wood - Ext | 0.09 | 13.0/0.0 | 109.3 | 2.3 | 247 Btuh |
| | Wall Total | | | 2153 (sqft) | | 4872 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 Attic/Light/Shingle/RB | 0.025 | 38.0/0.0 | 2224.0 | 0.86 | 1919 Btuh |
| 2 | Vented Attic/Light/Shingle/RB | 0.025 | 38.0/0.0 | 354.0 | 0.86 | 305 Btuh |
| | Ceiling Total | | | 2578 (sqft) | | 2225 Btuh |

| Floors | Type | R-Value | Size | HTM | Load |
|---|---|---|---|---|---|
| 1 | Slab On Grade | 0.0 | 2455 (ft-perimeter) | 0.0 | 0 Btuh |
| 2 | Interior | 19.0 | 337 (sqft) | 0.0 | 0 Btuh |
| | Floor Total | | 2792.0 (sqft) | | 0 Btuh |

| | |
|---|---|
| Envelope Subtotal: | 13481 Btuh |

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Doug & Maci Peeler
SW Dairy Street
Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Doug Peeler Residence

2/16/2022

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Infiltration** | Type<br>Natural | Average ACH<br>0.16 | Volume(cuft)<br>24791 | Wall Ratio<br>1 | | CFM=<br>66.8 | Load<br>1390 | Btuh |
| **Internal gain** | | Occupants<br>10 | Btuh/occupant<br>X 230 | | + | Appliance<br>1500 | Load<br>3800 | Btuh |
| | | | | | Sensible Envelope Load: | | 18671 | Btuh |
| **Duct load** | Average sealed,Supply(R6.0-Attic), Return(R6.0-Attic) | | | | (DGM of 0.382) | | 7128 | Btuh |
| | | | | | **Sensible Load All Zones** | | **25799** | **Btuh** |

# Manual J Summer Calculations

## Residential Load - Component Details (continued)

Doug & Maci Peeler
SW Dairy Street
Lake City, FL 32025

Project Title: Climate:FL_GAINESVILLE_REGIONAL_A
Doug Peeler Residence

2/16/2022

### WHOLE HOUSE TOTALS

| | | | |
|---|---|---|---|
| | **Sensible Envelope Load All Zones** | **18671** | **Btuh** |
| | Sensible Duct Load | 7128 | Btuh |
| | **Total Sensible Zone Loads** | **25799** | **Btuh** |
| | Sensible ventilation | 0 | Btuh |
| | Blower | 0 | Btuh |
| **Whole House** | **Total sensible gain** | **25799** | **Btuh** |
| **Totals for Cooling** | Latent infiltration gain (for 51 gr. humidity difference) | 2307 | Btuh |
| | Latent ventilation gain | 0 | Btuh |
| | Latent duct gain | 2097 | Btuh |
| | Latent occupant gain (10.0 people @ 200 Btuh per person) | 2000 | Btuh |
| | Latent other gain | 0 | Btuh |
| | **Latent total gain** | **6404** | **Btuh** |
| | **TOTAL GAIN** | **32203** | **Btuh** |

### EQUIPMENT

| | | |
|---|---|---|
| 1. Central Unit | # | 32203 Btuh |

*Key: Window types (Panes - 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)

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6234448

Prepared By: Harry Moul

# TOTAL HEATING AND COOLING REQUIREMENTS

Page 2

For:

Name: Charles Peeler

Address: Dairy St

City: Lake City FIA

| (✓) Check Constr. Type | ITEM | | | AREA SQUARE FEET | DESIGN TEMPERATURE DIFFERENCE 30° | 35° | 40° | 45° | 50° | HEATING (BTUH LOSS) | DESIGN TEMP 90° | 95° | COOLING (BTUH GAIN) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | HEATING MULTIPLIER (CIRCLE ONE) | | | | | | COOLING MULT. (CIRCLE) | | |
| | Gross Wall Area | | | 2452 | | | | | | | | | |
| | Glass Area (From page 1) | | | 202 | | | | | | 8080 | | | 8300 |
| | Partitions, Frame | | | | | | | | | | | | |
| | Finished 1 side, No Insulation | | | | 17 | 19 | 22 | 25 | 28 | | 6.5 | 10.0 | |
| | Finished 2 sides, No Insulation | | | | 9 | 11 | 12 | 14 | 16 | | 4.5 | 6.0 | |
| | Finished 2 sides, R-5 | | | | 4 | 5 | 5.5 | 6 | 7 | | 2.5 | 3.5 | |
| | Finished 2 sides, R-11 | | | | 2 | 3 | 3 | 4 | 4 | | 2.0 | 2.5 | |
| | Other | | | | | | | | | | | | |
| | Doors (Excluding glass) | | | | | | | | | | | | |
| | No weatherstripping | | | | 135 | 160 | 180 | 200 | 225 | | 10.0 | 13.0 | |
| | Weatherstripped | | | 74 | 70 | 85 | 95 | 110 | 120 | 7030 | 10.0 | 13.0 | 962 |
| | R-5 Insulation, No weatherstripping | | | | 123 | 144 | 164 | 185 | 205 | | 4.3 | 5.5 | |
| | R-5 Insulation, weatherstripping | | | | 68 | 79 | 90 | 101 | 113 | | 4.0 | 5.0 | |
| | Other | | | | | | | | | | | | |
| | Net Exterior Walls | | | | | | | | | | | | |
| | CBS Furred, No Insulation | | | | 9 | 10 | 12 | 13 | 14 | | 4.5 | 6.0 | |
| | CBS Furred, R-3 Insulation | | | | 5 | 6 | 7 | 8 | 8 | | 3.0 | 4.2 | |
| | CBS Furred, R-4 Insulation | | | | 4 | 5 | 6 | 6 | 7 | | 2.7 | 3.8 | |
| | CBS Furred, R-5 Insulation | | | | 4 | 5 | 5 | 6 | 6 | | 2.5 | 3.5 | |
| | Frame, No Insulation | | | | 8 | 9 | 10 | 11 | 13 | | 5.5 | 7.0 | |
| | Frame, R-11 Insulation | | | 2176 | 2 | 2 | 3 | 3 | 4 | 6528 | 2.5 | 3.0 | 6528 |
| | Frame, R-14 Insulation | | | | 1.5 | 1.7 | 2 | 2.5 | 3 | | 2 | 2.8 | |
| | Other | | | | | | | | | | | | |
| | Ceiling under attic | Roof | | | | | | | | | | | |
| | No Insulation | DK | LT | | 18 | 21 | 24 | 27 | 30 | | 9 7 | 10 8.5 | |
| | R-11 Insulation | DK | LT | | 2.4 | 2.8 | 3.2 | 3.5 | 3.9 | | 2.5 2 | 3 2.5 | |
| | R-19 Insulation | DK | LT | | 1.5 | 1.7 | 1.9 | 2.2 | 2.4 | | 1.5 1.5 | 2 1.5 | |
| | R-22 Insulation | DK | LT | | 1.2 | 1.5 | 1.7 | 1.9 | 2.1 | | 1.5 1.0 | 1.5 1.5 | |
| | R-26 Insulation | DK | LT | | 1.1 | 1.3 | 1.4 | 1.6 | 1.8 | | 1.3 1 | 1.5 1.2 | |
| | R-30 Insulation | DK | LT | 2455 | 1 | 1.1 | 1.3 | 1.4 | 1.6 | 3192 | 1.1 .9 | 1.3 1.0 | 3192 |
| | Other | | | | | | | | | | | | |
| | Floor, Concrete Slab | | | Perimeter Ft. | | | | | | | | | |
| | No Edge Insulation | | | | 35 | 40 | 40 | 45 | 45 | | 0 | 0 | |
| | Other | | | | | | | | | | | | |
| | Subtotal | | | | | | | | | 24830 | | | 1898 |
| | People @ 300 & Appl. @ 1200 | | | | | | | | | | | | 780 |
| | Sensible BTUH Gain | | | | | | | | | | | | 2672 |
| | Duct BTUH Loss & Gain | | | | | | | | | | | | |
| | 2 In. Flex. or 1 In. Rigid | | | | | | .10 | | | 2483 | .10 | | 269 |
| | 1½ In. Rigid | | | | | | .075 | | | | .075 | | |
| | Total BTUH Loss | | | | | | | | | 27313 | | | |
| | Subtotal BTUH Gain | | | | | | | | | | | | 2948 |
| | x 1.3 = Total BTUH Gain | | | | | | | | | | | | 3832 |

Calculated Heating Requirements _____ BTUH

Size of Unit Chosen . . . . . _____ BTUH

% Oversized . . . . . _____

% Undersized . . . . . _____

Calculated Cooling Requirements _____ BTU

Size of Unit Chosen . . . . . _____ BTU

% Oversized . . . . . _____

% Undersized . . . . . _____

# RESIDENTIAL HEATING AND COOLING REQUIREMENTS*

HVAC WORKSHEET FOR WATT-WISE LIVING



## HEATING AND COOLING REQUIREMENTS DUE TO GLASS AREA

| WINDOWS & GLASS DOORS | AREA SQUARE FEET | DESIGN TEMPERATURE DIFFERENCE 30° | 35° | 40° | 45° | 50° | HEATING (BTUH LOSS) |
|---|---|---|---|---|---|---|---|
| | | HEATING MULTIPLIER (CIRCLE ONE) | | | | | |
| Glass Doors, Infiltration less than 1.0 CFM/FT | | | | | | | |
| Single Glass | | 50 | 60 | 70 | 75 | 85 | |
| Double Glass | | 40 | 45 | 50 | 55 | 60 | |
| Other Sliding Glass Doors | | | | | | | |
| Single Glass | | 75 | 85 | 100 | 115 | 125 | |
| Double Glass | | 60 | 70 | 80 | 90 | 100 | |
| Windows, Infiltration less than 0.50 CFM/FT | | | | | | | |
| Single Glass | | 40 | 50 | 55 | 60 | 70 | |
| Double Glass | | 25 | 30 | 35 | 40 | 45 | |
| Windows, Infiltration less than 0.75 CFM/FT | | | | | | | |
| Single Glass | | 45 | 50 | 60 | 65 | 75 | |
| Double Glass | | 30 | 35 | 40 | 45 | 50 | |
| Other Windows | 202 | | | | | | 9080 |
| Single Glass | | 75 | 90 | 105 | 115 | 130 | |
| Double Glass | | 60 | 70 | 80 | 90 | 105 | |
| Fixed or Picture Windows | | | | | | | |
| Single Glass | | 40 | 50 | 55 | 60 | 70 | |
| Double Glass | | 25 | 30 | 35 | 40 | 45 | |
| Other | | | | | | | |
| Total BTUH Loss (Enter on Line 2, Page 2) | 202 | | | | | | 9080 |

COLUMBIA COUNTY BUILDING DEPARTMENT Received for FILE COPY Code Compliance PLANS EXAMINER

| WINDOWS & GLASS DOORS | AREA SQUARE FEET | COOLING MULTIPLIER (CIRCLE) SINGLE GLASS 90° C | T | R | 95° C | T | R | DOUBLE GLASS 90° C | T | R | 95° C | T | R | COOLING (BTUH GAIN) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No Shading | | | | | | | | | | | | | | |
| N | | 30 | 22 | 20 | 30 | 26 | 25 | 20 | 14 | 13 | 25 | 17 | 16 | |
| NE & NW | | 60 | 41 | 36 | 65 | 45 | 41 | 50 | 29 | 24 | 50 | 32 | 27 | |
| E & W | | 85 | 60 | 53 | 90 | 64 | 57 | 70 | 44 | 36 | 75 | 47 | 39 | |
| SE & SW | | 75 | 51 | 45 | 80 | 55 | 50 | 60 | 37 | 30 | 65 | 40 | 33 | |
| S | | 45 | 31 | 28 | 50 | 35 | 33 | 35 | 21 | 18 | 40 | 24 | 21 | |
| Draperies or Blinds | | | | | | | | | | | | | | |
| N | 40 | 20 | 17 | 16 | 25 | 21 | 20 | 15 | 11 | 11 | 20 | 14 | 14 | 800 |
| NE & NW | | 35 | 33 | 30 | 40 | 37 | 34 | 30 | 22 | 21 | 35 | 25 | 24 | |
| E & W | 132 | 55 | 48 | 43 | 55 | 52 | 47 | 45 | 32 | 30 | 50 | 35 | 33 | 6750 |
| SE & SW | | 45 | 39 | 35 | 50 | 43 | 39 | 40 | 26 | 25 | 40 | 29 | 28 | |
| S | 30 | 30 | 26 | 24 | 30 | 30 | 28 | 25 | 17 | 16 | 25 | 20 | 19 | 750 |
| Roller Shades | | | | | | | | | | | | | | |
| N | | 25 | 19 | 17 | 25 | 23 | 22 | 20 | 12 | 11 | 20 | 15 | 14 | |
| NE & NW | | 45 | 36 | 32 | 50 | 40 | 37 | 40 | 26 | 22 | 45 | 29 | 25 | |
| E & W | | 65 | 53 | 47 | 70 | 57 | 51 | 55 | 37 | 32 | 60 | 40 | 35 | |
| SE & SW | | 55 | 44 | 39 | 60 | 48 | 44 | 50 | 32 | 27 | 50 | 35 | 30 | |
| S | | 35 | 28 | 25 | 40 | 32 | 30 | 30 | 20 | 16 | 35 | 23 | 19 | |
| Awnings, Porches, Etc. | | | | | | | | | | | | | | |
| All Directions | | 25 | 22 | 20 | 30 | 26 | 25 | 15 | 14 | 13 | 20 | 17 | 16 | |
| Other | | | | | | | | | | | | | | |
| Total BTUH Gain (Line 2, Page 2) | 202 | | | | | | | | | | | | | 8300 |