

**GREEN BAY WI**

Latitude = 44.48 N

Longitude = 88.13 W

Period of Record = 1973 to 1996

WMO No. 726450

Elevation = 702 feet

Average Pressure = 29.22 inches Hg

**Design Criteria Data**

|                                                  | <b>Design Value</b> | Mean Coincident (Average) Values |                         |                        |                             |
|--------------------------------------------------|---------------------|----------------------------------|-------------------------|------------------------|-----------------------------|
|                                                  |                     | Wet Bulb Temperature (°F)        | Humidity Ratio (gr/lb)  | Wind Speed (mph)       | Prevailing Direction (NSEW) |
| <b>Dry Bulb Temperature (T)</b>                  | <b>(°F)</b>         |                                  |                         |                        |                             |
| Median of Extreme Highs                          | 93                  | 74                               | 102                     | 12.6                   | SSW                         |
| 0.4% Occurrence                                  | 89                  | 74                               | 104                     | 12.4                   | SSW                         |
| 1.0% Occurrence                                  | 85                  | 72                               | 98                      | 11.2                   | SSW                         |
| 2.0% Occurrence                                  | 83                  | 70                               | 94                      | 11.2                   | SSW                         |
| Mean Daily Range                                 | 18                  | -                                | -                       | -                      | -                           |
| 97.5% Occurrence                                 | 1                   | 0                                | 4                       | 9.4                    | W                           |
| 99.0% Occurrence                                 | -7                  | -8                               | 2                       | 9.8                    | W                           |
| 99.6% Occurrence                                 | -12                 | -12                              | 2                       | 9.6                    | W                           |
| Median of Extreme Lows                           | -17                 | -17                              | 1                       | 9.9                    | W                           |
|                                                  | <b>Design Value</b> | Mean Coincident (Average) Values |                         |                        |                             |
|                                                  |                     | Dry Bulb Temperature (°F)        | Humidity Ratio (gr/lb)  | Wind Speed (mph)       | Prevailing Direction (NSEW) |
| <b>Wet Bulb Temperature (T<sub>wb</sub>)</b>     | <b>(°F)</b>         |                                  |                         |                        |                             |
| Median of Extreme Highs                          | 80                  | 89                               | 144                     | 11.8                   | SSW                         |
| 0.4% Occurrence                                  | 76                  | 85                               | 124                     | 11.5                   | SSW                         |
| 1.0% Occurrence                                  | 74                  | 83                               | 115                     | 10.3                   | SSW                         |
| 2.0% Occurrence                                  | 72                  | 79                               | 109                     | 9.6                    | SSW                         |
|                                                  | <b>Design Value</b> | Mean Coincident (Average) Values |                         |                        |                             |
|                                                  |                     | Dry Bulb Temperature (°F)        | Vapor Pressure (in. Hg) | Wind Speed (mph)       | Prevailing Direction (NSEW) |
| <b>Humidity Ratio (HR)</b>                       | <b>(gr/lb)</b>      |                                  |                         |                        |                             |
| Median of Extreme Highs                          | 145                 | 85                               | 0.94                    | 11.1                   | SSW                         |
| 0.4% Occurrence                                  | 127                 | 82                               | 0.82                    | 10.5                   | SSW                         |
| 1.0% Occurrence                                  | 118                 | 79                               | 0.77                    | 9.9                    | SSW                         |
| 2.0% Occurrence                                  | 111                 | 77                               | 0.72                    | 10.7                   | SSW                         |
| <b>Air Conditioning/<br/>Humid Area Criteria</b> | <b># of Hours</b>   | T ≥ 93°F                         | T ≥ 80°F                | T <sub>wb</sub> ≥ 73°F | T <sub>wb</sub> ≥ 67°F      |
|                                                  |                     | 8                                | 326                     | 165                    | 701                         |

**Other Site Data**

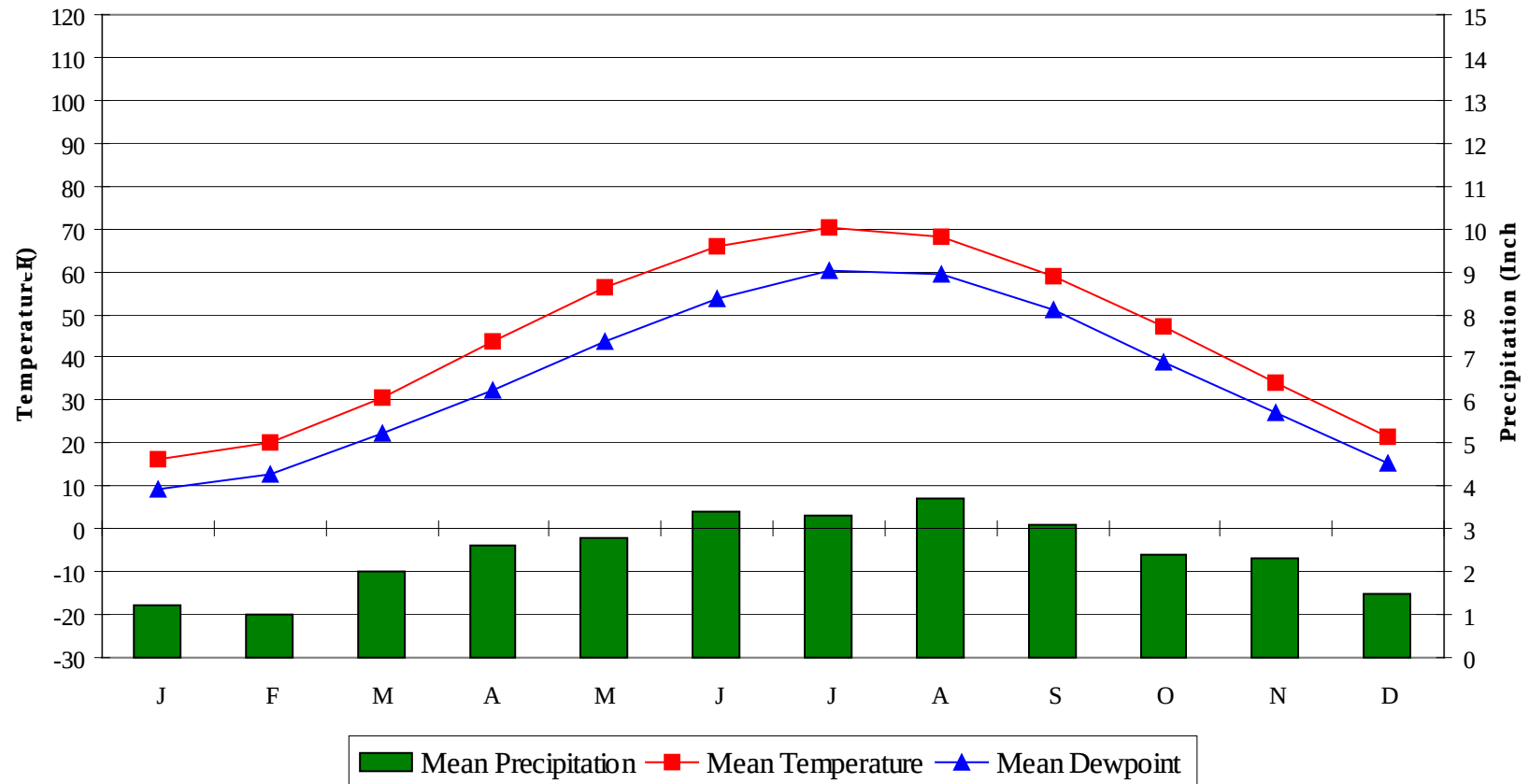
| Weather Region                                   | Rain Rate<br>100 Year Recurrence<br>(in./hr) | Basic Wind Speed<br>3 sec gust @ 33 ft<br>50 Year Recurrence (mph) | Ventilation Cooling Load Index<br>(Ton-hr/cfm/yr) Base 75°F-RH 60%<br>Latent + Sensible |
|--------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 5                                                | 2.5                                          | 90                                                                 | 1.0 + 0.3                                                                               |
| Ground Water Temperature (°F)<br>50 Foot Depth * | Frost Depth<br>50 Year Recurrence<br>(in.)   | Ground Snow Load<br>50 Year Recurrence<br>(lb/ft <sup>2</sup> )    | Average Annual<br>Freeze-Thaw Cycles<br>(#)                                             |
| 47.2                                             | 94                                           | 36                                                                 | 66                                                                                      |

\*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

GREEN BAY WI

WMO No. 726450

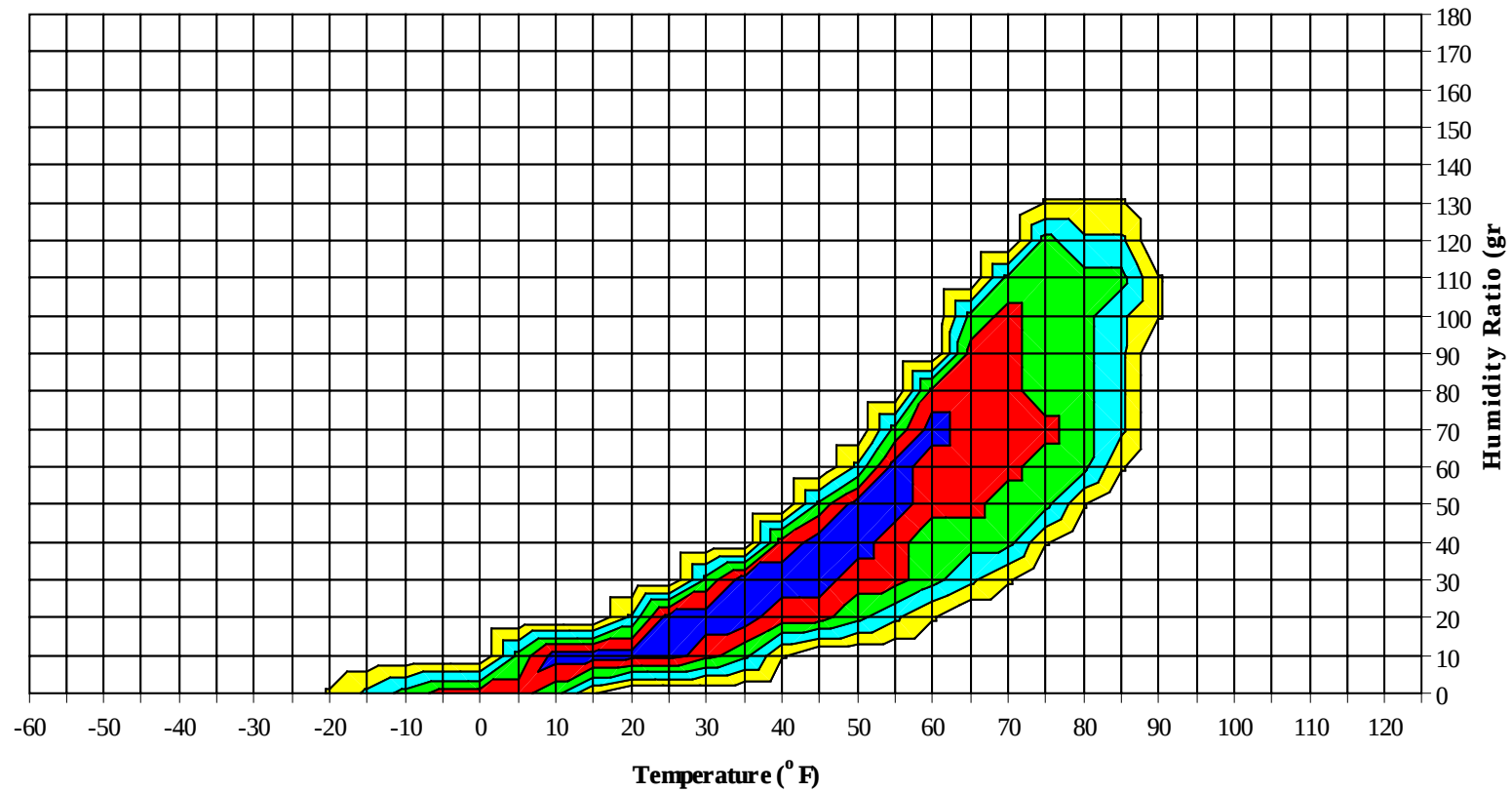
### Average Annual Climate



GREEN BAY WI

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### Long Term Psychrometric Summary

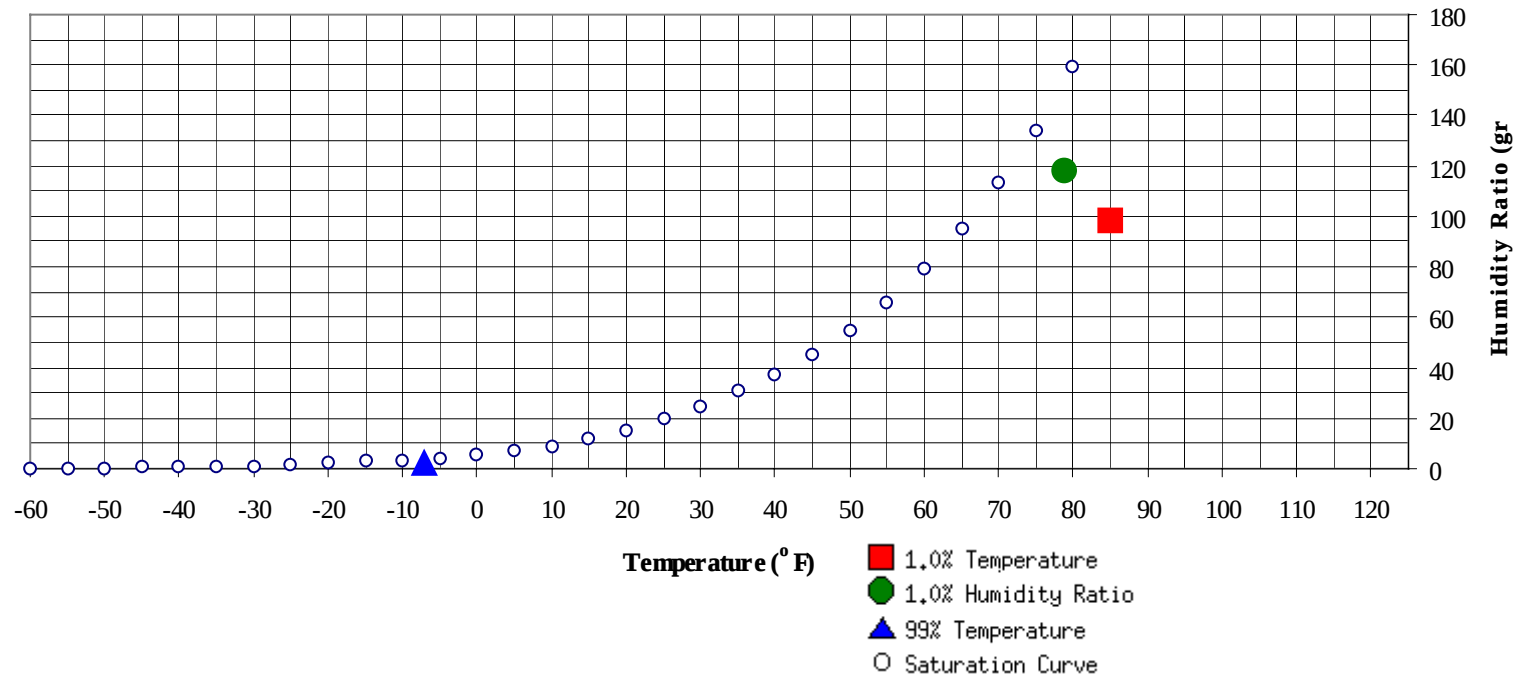


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

GREEN BAY WI

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### Psychrometric Summary of Peak Design Values



|              | (°F) | MCHR<br>(gr/lb) | Enthalpy<br>(btu/lb) | 1.0% Humidity<br>Ratio | (gr/lb) | MCDB<br>(°F) | MCWB<br>(°F) | MC Dewpt<br>(°F) | Enthalpy<br>(btu/lb) |
|--------------|------|-----------------|----------------------|------------------------|---------|--------------|--------------|------------------|----------------------|
| 99% Dry Bulb | -7   | 2.4             | -1.3                 |                        | 118.3   | 78.8         | 73.3         | 71.1             | 37.4                 |

|               | (°F) | MCHR<br>(gr/lb) | MCWB<br>(°F) | Enthalpy<br>(btu/lb) |
|---------------|------|-----------------|--------------|----------------------|
| 1.0% Dry Bulb | 85   | 98.2            | 71.6         | 35.8                 |

**GREEN BAY WI**

WMO No. 726450

**Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)**

Period of Record = 1973 to 1996

| Temperature<br>Range<br>(°F) | January             |                |                |              |                          | February            |                |                |              |                          | March               |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 100 / 104                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 90 / 94                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 85 / 89                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 80 / 84                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 75 / 79                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 0              | 0              | 0            | 60.8                     |
| 70 / 74                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 1              | 0              | 1            | 59.9                     |
| 65 / 69                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 1              | 1              | 2            | 57.9                     |
| 60 / 64                      |                     |                |                |              |                          |                     |                |                |              |                          | 0                   | 3              | 1              | 5            | 53.6                     |
| 55 / 59                      |                     |                |                |              |                          |                     |                |                |              |                          | 1                   | 6              | 2              | 10           | 50.2                     |
| 50 / 54                      |                     |                |                |              |                          |                     | 1              |                | 1            | 44.7                     | 2                   | 11             | 6              | 19           | 45.7                     |
| 45 / 49                      | 0                   | 1              | 0              | 1            | 43.0                     | 0                   | 2              | 1              | 3            | 42.3                     | 5                   | 18             | 8              | 31           | 41.6                     |
| 40 / 44                      | 1                   | 2              | 1              | 4            | 38.0                     | 1                   | 10             | 4              | 15           | 37.5                     | 10                  | 33             | 21             | 64           | 37.3                     |
| 35 / 39                      | 7                   | 19             | 12             | 38           | 34.2                     | 12                  | 31             | 22             | 65           | 33.7                     | 33                  | 52             | 49             | 134          | 33.8                     |
| 30 / 34                      | 28                  | 32             | 32             | 92           | 30.3                     | 32                  | 35             | 40             | 107          | 30.0                     | 60                  | 51             | 65             | 176          | 29.8                     |
| 25 / 29                      | 31                  | 38             | 36             | 106          | 25.2                     | 28                  | 29             | 28             | 85           | 24.8                     | 45                  | 29             | 37             | 111          | 24.9                     |
| 20 / 24                      | 33                  | 35             | 32             | 100          | 20.4                     | 30                  | 33             | 31             | 94           | 20.1                     | 31                  | 21             | 27             | 79           | 20.0                     |
| 15 / 19                      | 28                  | 32             | 33             | 94           | 15.4                     | 25                  | 30             | 30             | 85           | 15.4                     | 22                  | 12             | 16             | 50           | 15.4                     |
| 10 / 14                      | 28                  | 29             | 30             | 87           | 10.7                     | 26                  | 23             | 27             | 75           | 10.6                     | 15                  | 6              | 10             | 31           | 10.6                     |
| 5 / 9                        | 24                  | 22             | 25             | 70           | 6.0                      | 23                  | 13             | 20             | 56           | 5.9                      | 13                  | 3              | 5              | 20           | 5.9                      |
| 0 / 4                        | 21                  | 14             | 19             | 54           | 1.0                      | 20                  | 7              | 12             | 39           | 1.2                      | 7                   | 1              | 1              | 10           | 1.4                      |
| -5 / -1                      | 14                  | 8              | 11             | 33           | -3.3                     | 12                  | 4              | 5              | 21           | -3.1                     | 3                   | 0              | 0              | 3            | -2.9                     |
| -10 / -6                     | 16                  | 7              | 9              | 32           | -7.5                     | 9                   | 2              | 3              | 15           | -7.5                     | 1                   |                |                | 1            | -6.6                     |
| -15 / -11                    | 10                  | 3              | 5              | 18           | -12.3                    | 3                   | 1              | 1              | 5            | -12.4                    |                     |                |                |              |                          |
| -20 / -16                    | 6                   | 2              | 2              | 10           | -16.9                    | 1                   | 1              | 0              | 2            | -17.2                    |                     |                |                |              |                          |
| -25 / -21                    | 2                   | 1              | 1              | 4            | -21.6                    | 1                   | 0              | 0              | 2            | -22.0                    |                     |                |                |              |                          |
| -30 / -26                    | 1                   | 0              | 0              | 1            | -26.3                    | 0                   |                |                | 0            | -25.9                    |                     |                |                |              |                          |

**Caution:** This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

**GREEN BAY WI**

WMO No. 726450

**Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)**

**Period of Record = 1973 to 1996**

| Temperature<br>Range<br>(°F) | April               |                |                |              |                          | May                 |                |                |              |                          | June                |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 100 / 104                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 1              | 0              | 1            | 74.8                     |
| 90 / 94                      |                     |                |                |              |                          |                     | 0              |                | 0            | 67.0                     |                     | 6              | 1              | 8            | 73.1                     |
| 85 / 89                      |                     | 1              | 0              | 1            | 66.8                     |                     | 5              | 1              | 6            | 69.0                     | 0                   | 15             | 4              | 19           | 71.6                     |
| 80 / 84                      |                     | 3              | 1              | 3            | 65.1                     |                     | 15             | 4              | 19           | 67.4                     | 1                   | 30             | 12             | 44           | 68.5                     |
| 75 / 79                      |                     | 5              | 1              | 6            | 62.8                     | 1                   | 24             | 8              | 33           | 63.9                     | 7                   | 49             | 23             | 79           | 65.6                     |
| 70 / 74                      | 0                   | 8              | 3              | 11           | 58.9                     | 4                   | 29             | 15             | 47           | 60.5                     | 18                  | 50             | 38             | 106          | 63.0                     |
| 65 / 69                      | 1                   | 11             | 7              | 20           | 56.4                     | 12                  | 36             | 28             | 76           | 57.8                     | 39                  | 41             | 48             | 128          | 60.2                     |
| 60 / 64                      | 5                   | 19             | 10             | 34           | 53.0                     | 27                  | 43             | 36             | 107          | 54.7                     | 53                  | 26             | 48             | 127          | 56.9                     |
| 55 / 59                      | 8                   | 30             | 15             | 52           | 48.3                     | 35                  | 40             | 40             | 115          | 50.8                     | 57                  | 15             | 39             | 111          | 53.2                     |
| 50 / 54                      | 13                  | 34             | 26             | 73           | 45.0                     | 44                  | 30             | 48             | 122          | 46.7                     | 38                  | 4              | 19             | 61           | 48.9                     |
| 45 / 49                      | 27                  | 38             | 37             | 102          | 41.7                     | 51                  | 17             | 37             | 105          | 42.9                     | 19                  | 0              | 6              | 26           | 44.4                     |
| 40 / 44                      | 46                  | 40             | 49             | 135          | 38.0                     | 41                  | 7              | 22             | 70           | 38.8                     | 8                   | 0              | 2              | 10           | 39.8                     |
| 35 / 39                      | 53                  | 29             | 42             | 124          | 33.8                     | 22                  | 1              | 9              | 32           | 34.2                     | 1                   |                |                | 1            | 36.1                     |
| 30 / 34                      | 48                  | 19             | 33             | 100          | 29.6                     | 10                  | 1              | 2              | 12           | 29.9                     |                     |                |                |              |                          |
| 25 / 29                      | 26                  | 4              | 12             | 41           | 24.8                     | 1                   |                | 0              | 1            | 25.1                     |                     |                |                |              |                          |
| 20 / 24                      | 9                   | 1              | 3              | 13           | 20.1                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 15 / 19                      | 3                   | 0              | 1              | 4            | 15.0                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 10 / 14                      | 0                   | 0              |                | 1            | 10.8                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 5 / 9                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 0 / 4                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -10 / -6                     |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -15 / -11                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -20 / -16                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -25 / -21                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -30 / -26                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |

**Caution:** This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

**GREEN BAY WI**

WMO No. 726450

**Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)**

**Period of Record = 1973 to 1996**

| Temperature<br>Range<br>(°F) | July                |                |                |              |                          | August              |                |                |              |                          | September           |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 100 / 104                    |                     | 0              | 0              | 0            | 81.9                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     | 2              | 0              | 2            | 76.7                     |                     | 1              | 0              | 1            | 77.2                     |                     |                |                |              |                          |
| 90 / 94                      | 0                   | 8              | 2              | 10           | 75.3                     |                     | 4              | 0              | 4            | 76.4                     |                     | 0              |                | 0            | 74.7                     |
| 85 / 89                      | 0                   | 27             | 8              | 36           | 72.8                     | 0                   | 16             | 3              | 19           | 73.7                     |                     | 3              | 0              | 3            | 72.4                     |
| 80 / 84                      | 4                   | 60             | 23             | 86           | 70.1                     | 1                   | 40             | 13             | 54           | 70.8                     |                     | 13             | 2              | 15           | 70.3                     |
| 75 / 79                      | 13                  | 62             | 38             | 112          | 67.5                     | 7                   | 64             | 28             | 99           | 68.0                     | 1                   | 24             | 7              | 31           | 67.1                     |
| 70 / 74                      | 38                  | 52             | 58             | 148          | 65.4                     | 29                  | 61             | 56             | 146          | 65.8                     | 9                   | 38             | 20             | 66           | 64.2                     |
| 65 / 69                      | 63                  | 25             | 59             | 147          | 62.6                     | 59                  | 42             | 60             | 161          | 63.0                     | 20                  | 46             | 33             | 99           | 61.0                     |
| 60 / 64                      | 68                  | 10             | 40             | 118          | 58.9                     | 66                  | 16             | 52             | 134          | 59.2                     | 35                  | 49             | 41             | 126          | 57.4                     |
| 55 / 59                      | 42                  | 1              | 18             | 61           | 54.7                     | 47                  | 3              | 26             | 75           | 54.8                     | 44                  | 37             | 50             | 131          | 53.2                     |
| 50 / 54                      | 18                  | 0              | 3              | 21           | 50.4                     | 28                  | 0              | 9              | 37           | 50.3                     | 53                  | 21             | 47             | 121          | 49.1                     |
| 45 / 49                      | 3                   |                | 0              | 3            | 46.1                     | 10                  | 0              | 1              | 12           | 46.1                     | 38                  | 7              | 24             | 69           | 44.8                     |
| 40 / 44                      | 0                   |                |                | 0            | 43.0                     | 1                   |                | 0              | 2            | 41.5                     | 24                  | 1              | 12             | 37           | 40.6                     |
| 35 / 39                      |                     |                |                |              |                          | 0                   |                |                | 0            | 38.0                     | 11                  | 0              | 4              | 15           | 36.1                     |
| 30 / 34                      |                     |                |                |              |                          |                     |                |                |              |                          | 4                   |                | 1              | 5            | 31.1                     |
| 25 / 29                      |                     |                |                |              |                          |                     |                |                |              |                          | 1                   |                | 0              | 1            | 27.2                     |
| 20 / 24                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 15 / 19                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 10 / 14                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 5 / 9                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 0 / 4                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -10 / -6                     |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -15 / -11                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -20 / -16                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -25 / -21                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -30 / -26                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |

**Caution:** This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

**GREEN BAY WI**

WMO No. 726450

**Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)**
**Period of Record = 1973 to 1996**

| Temperature<br>Range<br>(°F) | October             |                |                |              |                          | November            |                |                |              |                          | December            |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 100 / 104                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 90 / 94                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 85 / 89                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 80 / 84                      |                     | 1              | 0              | 1            | 64.3                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 75 / 79                      |                     | 3              | 0              | 3            | 64.1                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 70 / 74                      | 0                   | 9              | 1              | 10           | 61.5                     |                     | 0              |                | 0            | 60.0                     |                     |                |                |              |                          |
| 65 / 69                      | 2                   | 16             | 6              | 24           | 58.3                     |                     | 1              | 0              | 1            | 58.6                     |                     |                |                |              |                          |
| 60 / 64                      | 9                   | 31             | 14             | 54           | 55.5                     | 1                   | 4              | 1              | 5            | 55.7                     |                     |                |                |              |                          |
| 55 / 59                      | 16                  | 40             | 29             | 85           | 51.8                     | 3                   | 10             | 4              | 17           | 52.7                     | 0                   | 0              | 0              | 1            | 55.7                     |
| 50 / 54                      | 31                  | 52             | 39             | 123          | 47.4                     | 8                   | 16             | 10             | 34           | 48.3                     | 1                   | 1              | 0              | 2            | 48.8                     |
| 45 / 49                      | 49                  | 49             | 52             | 150          | 43.4                     | 13                  | 26             | 18             | 56           | 43.6                     | 1                   | 3              | 1              | 4            | 43.7                     |
| 40 / 44                      | 47                  | 28             | 50             | 125          | 38.9                     | 24                  | 38             | 29             | 91           | 38.7                     | 3                   | 8              | 4              | 14           | 38.4                     |
| 35 / 39                      | 44                  | 15             | 37             | 96           | 34.6                     | 37                  | 49             | 45             | 131          | 34.0                     | 16                  | 28             | 20             | 63           | 34.5                     |
| 30 / 34                      | 33                  | 3              | 16             | 51           | 30.3                     | 51                  | 48             | 58             | 158          | 29.7                     | 43                  | 56             | 52             | 151          | 30.2                     |
| 25 / 29                      | 14                  | 0              | 4              | 18           | 25.7                     | 42                  | 26             | 38             | 106          | 24.9                     | 40                  | 41             | 42             | 122          | 25.3                     |
| 20 / 24                      | 3                   |                | 1              | 4            | 21.4                     | 29                  | 13             | 20             | 63           | 20.3                     | 36                  | 33             | 34             | 104          | 20.4                     |
| 15 / 19                      | 0                   |                |                | 0            | 16.9                     | 17                  | 5              | 12             | 33           | 15.8                     | 29                  | 27             | 29             | 85           | 15.6                     |
| 10 / 14                      |                     |                |                |              |                          | 7                   | 2              | 5              | 14           | 11.1                     | 27                  | 19             | 24             | 70           | 10.9                     |
| 5 / 9                        |                     |                |                |              |                          | 4                   | 1              | 1              | 6            | 6.2                      | 18                  | 12             | 17             | 46           | 6.1                      |
| 0 / 4                        |                     |                |                |              |                          | 2                   | 0              | 1              | 3            | 1.4                      | 12                  | 10             | 11             | 33           | 1.2                      |
| -5 / -1                      |                     |                |                |              |                          | 0                   | 0              | 0              | 1            | -3.2                     | 7                   | 5              | 6              | 18           | -3.2                     |
| -10 / -6                     |                     |                |                |              |                          | 1                   |                | 0              | 1            | -7.2                     | 8                   | 4              | 5              | 17           | -7.6                     |
| -15 / -11                    |                     |                |                |              |                          |                     |                |                |              |                          | 5                   | 2              | 2              | 8            | -12.1                    |
| -20 / -16                    |                     |                |                |              |                          |                     |                |                |              |                          | 2                   | 0              | 1              | 4            | -16.8                    |
| -25 / -21                    |                     |                |                |              |                          |                     |                |                |              |                          | 0                   | 0              |                | 1            | -21.2                    |
| -30 / -26                    |                     |                |                |              |                          |                     |                |                |              |                          | 0                   |                |                | 0            | -25.0                    |

**Caution:** This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.



**GREEN BAY WI**

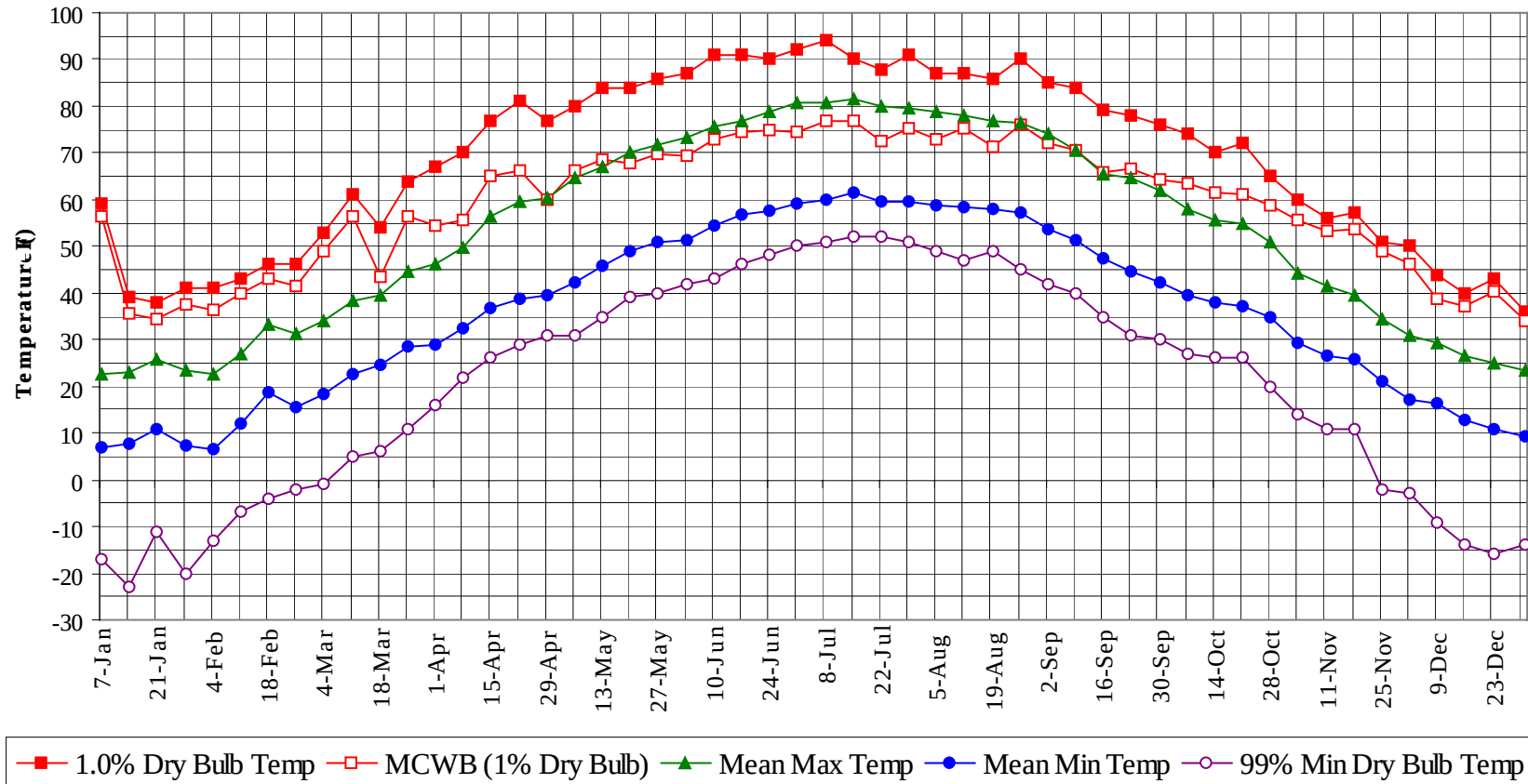
WMO No. 726450

**Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)****Period of Record = 1973 to 1996**

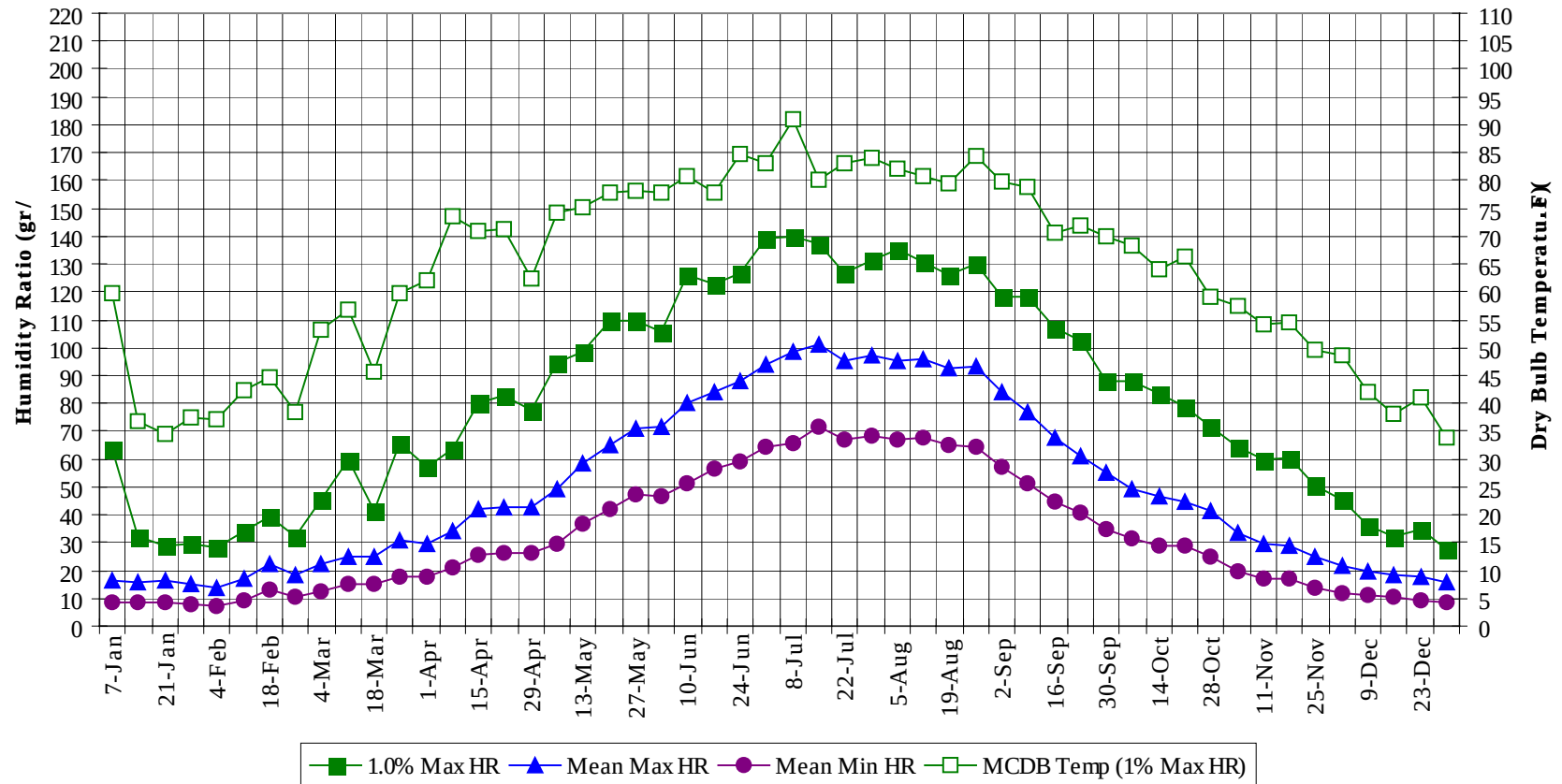
| Annual Totals                |                     |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|
| Temperature<br>Range<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 100 / 104                    |                     | 0              | 0              | 0            | 81.9                     |
| 95 / 99                      |                     | 4              | 1              | 4            | 76.5                     |
| 90 / 94                      | 0                   | 19             | 4              | 23           | 74.7                     |
| 85 / 89                      | 1                   | 67             | 16             | 84           | 72.4                     |
| 80 / 84                      | 6                   | 163            | 55             | 225          | 69.7                     |
| 75 / 79                      | 28                  | 233            | 106            | 366          | 66.8                     |
| 70 / 74                      | 100                 | 249            | 191            | 540          | 64.3                     |
| 65 / 69                      | 198                 | 221            | 242            | 661          | 61.1                     |
| 60 / 64                      | 266                 | 202            | 246            | 713          | 57.1                     |
| 55 / 59                      | 254                 | 183            | 224            | 660          | 52.5                     |
| 50 / 54                      | 236                 | 171            | 206            | 614          | 47.8                     |
| 45 / 49                      | 216                 | 160            | 186            | 562          | 43.2                     |
| 40 / 44                      | 207                 | 167            | 192            | 567          | 38.6                     |
| 35 / 39                      | 237                 | 223            | 239            | 698          | 34.1                     |
| 30 / 34                      | 307                 | 244            | 298            | 848          | 29.9                     |
| 25 / 29                      | 226                 | 166            | 197            | 589          | 25.0                     |
| 20 / 24                      | 169                 | 136            | 148            | 454          | 20.3                     |
| 15 / 19                      | 123                 | 105            | 120            | 348          | 15.5                     |
| 10 / 14                      | 104                 | 78             | 94             | 276          | 10.7                     |
| 5 / 9                        | 80                  | 50             | 66             | 197          | 6.0                      |
| 0 / 4                        | 62                  | 32             | 44             | 137          | 1.2                      |
| -5 / -1                      | 36                  | 17             | 23             | 75           | -3.2                     |
| -10 / -6                     | 33                  | 13             | 18             | 65           | -7.5                     |
| -15 / -11                    | 18                  | 6              | 8              | 31           | -12.2                    |
| -20 / -16                    | 9                   | 3              | 3              | 15           | -16.9                    |
| -25 / -21                    | 4                   | 1              | 1              | 6            | -21.6                    |
| -30 / -26                    | 1                   | 0              | 0              | 2            | -26.1                    |

**Caution:** This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

## Annual Summary of Temperatures



## Long Term Humidity and Dry Bulb Temperature Summary



**GREEN BAY WI**

WMO No. 726450

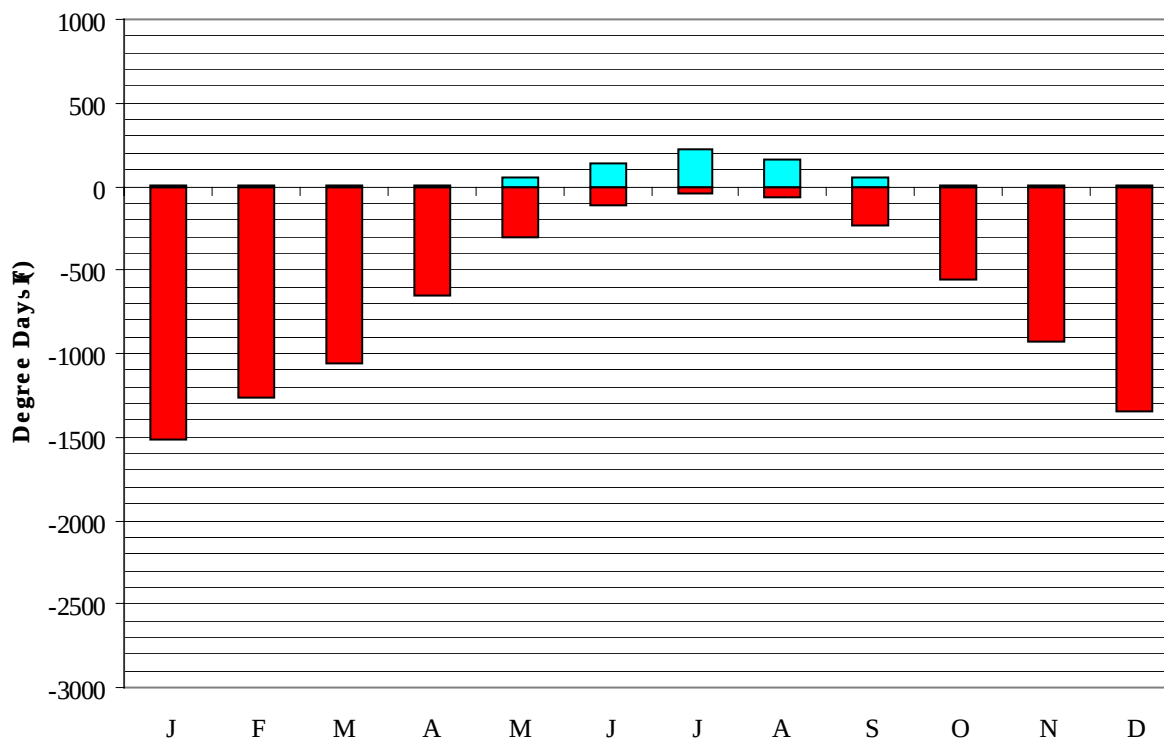
**Long Term Dry Bulb Temperature and Humidity Summary**

| Week<br>Ending | 1.0%<br>Temp (°F) | MCWB @<br>1% Temp (°F) | Mean Max<br>Temp (°F) | Mean Min<br>Temp (°F) | 99%<br>Temp (°F) | 1.0%<br>HR (gr/lb) | MCDB @<br>1% HR (°F) | Mean Max<br>HR (gr/lb) | Mean Min<br>HR (gr/lb) |
|----------------|-------------------|------------------------|-----------------------|-----------------------|------------------|--------------------|----------------------|------------------------|------------------------|
| 7-Jan          | 59.0              | 56.5                   | 22.6                  | 6.8                   | -17.0            | 63.7               | 59.8                 | 16.1                   | 8.3                    |
| 14-Jan         | 39.0              | 35.8                   | 22.9                  | 7.7                   | -23.0            | 32.2               | 36.8                 | 15.6                   | 8.4                    |
| 21-Jan         | 38.0              | 34.3                   | 25.6                  | 10.7                  | -11.0            | 28.7               | 34.6                 | 16.7                   | 8.5                    |
| 28-Jan         | 41.0              | 37.7                   | 23.6                  | 7.5                   | -20.0            | 29.4               | 37.3                 | 15.2                   | 7.6                    |
| 4-Feb          | 41.0              | 36.4                   | 22.5                  | 6.5                   | -13.0            | 28.0               | 37.1                 | 13.7                   | 7.2                    |
| 11-Feb         | 43.0              | 39.9                   | 27.1                  | 11.8                  | -7.0             | 34.3               | 42.4                 | 16.8                   | 9.2                    |
| 18-Feb         | 46.0              | 43.0                   | 33.0                  | 18.6                  | -4.0             | 39.2               | 44.7                 | 22.1                   | 13.2                   |
| 25-Feb         | 46.0              | 41.7                   | 31.3                  | 15.6                  | -2.0             | 32.2               | 38.4                 | 18.6                   | 10.3                   |
| 4-Mar          | 53.0              | 49.0                   | 34.1                  | 18.3                  | -1.0             | 45.5               | 53.2                 | 22.4                   | 12.7                   |
| 11-Mar         | 61.0              | 56.3                   | 38.3                  | 22.8                  | 5.0              | 59.5               | 56.8                 | 25.1                   | 14.8                   |
| 18-Mar         | 54.0              | 43.4                   | 39.6                  | 24.6                  | 6.0              | 41.3               | 45.7                 | 25.1                   | 15.3                   |
| 25-Mar         | 64.0              | 56.3                   | 44.5                  | 28.5                  | 11.0             | 65.8               | 59.6                 | 31.1                   | 18.0                   |
| 1-Apr          | 67.0              | 54.3                   | 46.2                  | 29.1                  | 16.0             | 57.4               | 61.9                 | 29.9                   | 17.4                   |
| 8-Apr          | 70.0              | 55.5                   | 49.6                  | 32.4                  | 22.0             | 63.7               | 73.6                 | 34.0                   | 20.9                   |
| 15-Apr         | 77.0              | 65.0                   | 56.5                  | 36.9                  | 26.0             | 79.8               | 70.8                 | 41.9                   | 25.4                   |
| 22-Apr         | 81.0              | 66.3                   | 59.5                  | 38.8                  | 29.0             | 82.6               | 71.1                 | 42.8                   | 26.2                   |
| 29-Apr         | 77.0              | 60.0                   | 60.3                  | 39.6                  | 31.0             | 77.7               | 62.5                 | 43.0                   | 26.0                   |
| 6-May          | 80.0              | 66.1                   | 64.6                  | 42.2                  | 31.0             | 94.5               | 74.3                 | 49.6                   | 29.8                   |
| 13-May         | 84.0              | 68.8                   | 67.2                  | 45.9                  | 35.0             | 98.7               | 75.3                 | 58.7                   | 36.8                   |
| 20-May         | 84.0              | 67.7                   | 70.2                  | 48.8                  | 39.0             | 109.9              | 78.0                 | 65.2                   | 42.1                   |
| 27-May         | 86.0              | 69.8                   | 71.7                  | 50.8                  | 40.0             | 109.9              | 78.0                 | 70.7                   | 47.3                   |
| 3-Jun          | 87.0              | 69.5                   | 73.3                  | 51.5                  | 42.0             | 105.7              | 77.8                 | 71.8                   | 46.6                   |
| 10-Jun         | 91.0              | 73.1                   | 75.7                  | 54.6                  | 43.0             | 126.0              | 80.9                 | 80.0                   | 51.4                   |
| 17-Jun         | 91.0              | 74.4                   | 76.7                  | 56.9                  | 46.0             | 122.5              | 77.9                 | 84.4                   | 56.6                   |
| 24-Jun         | 90.0              | 74.9                   | 78.7                  | 57.6                  | 48.0             | 126.7              | 84.8                 | 88.3                   | 59.4                   |
| 1-Jul          | 92.0              | 74.4                   | 80.8                  | 59.1                  | 50.0             | 139.3              | 82.9                 | 93.8                   | 64.1                   |
| 8-Jul          | 94.0              | 77.0                   | 80.6                  | 60.1                  | 51.0             | 140.0              | 90.9                 | 98.8                   | 65.8                   |
| 15-Jul         | 90.0              | 76.7                   | 81.6                  | 61.5                  | 52.0             | 137.2              | 80.0                 | 101.1                  | 71.5                   |
| 22-Jul         | 88.0              | 72.5                   | 80.1                  | 59.7                  | 52.0             | 126.7              | 83.1                 | 95.0                   | 66.9                   |
| 29-Jul         | 91.0              | 75.2                   | 79.8                  | 59.5                  | 51.0             | 131.6              | 84.2                 | 97.2                   | 68.0                   |
| 5-Aug          | 87.0              | 72.9                   | 78.7                  | 58.9                  | 49.0             | 135.1              | 82.2                 | 95.0                   | 66.9                   |
| 12-Aug         | 87.0              | 75.2                   | 77.9                  | 58.3                  | 47.0             | 130.9              | 80.8                 | 95.7                   | 67.8                   |
| 19-Aug         | 86.0              | 71.5                   | 77.0                  | 57.8                  | 49.0             | 126.0              | 79.4                 | 92.6                   | 65.1                   |
| 26-Aug         | 90.0              | 76.0                   | 76.3                  | 57.4                  | 45.0             | 130.2              | 84.5                 | 93.4                   | 64.7                   |
| 2-Sep          | 85.0              | 72.2                   | 74.2                  | 53.6                  | 42.0             | 118.3              | 79.8                 | 83.8                   | 57.1                   |
| 9-Sep          | 84.0              | 70.7                   | 70.5                  | 51.4                  | 40.0             | 118.3              | 78.9                 | 76.8                   | 51.1                   |
| 16-Sep         | 79.0              | 65.8                   | 65.6                  | 47.2                  | 35.0             | 107.1              | 70.6                 | 67.3                   | 44.4                   |
| 23-Sep         | 78.0              | 66.6                   | 64.7                  | 44.8                  | 31.0             | 102.2              | 71.9                 | 60.8                   | 40.5                   |
| 30-Sep         | 76.0              | 64.3                   | 61.8                  | 42.1                  | 30.0             | 88.2               | 69.8                 | 55.2                   | 34.8                   |
| 7-Oct          | 74.0              | 63.3                   | 58.0                  | 39.7                  | 27.0             | 88.2               | 68.2                 | 49.2                   | 31.5                   |
| 14-Oct         | 70.0              | 61.6                   | 55.5                  | 38.1                  | 26.0             | 83.3               | 64.1                 | 46.6                   | 29.0                   |
| 21-Oct         | 72.0              | 61.0                   | 54.6                  | 37.4                  | 26.0             | 79.1               | 66.3                 | 44.6                   | 28.7                   |
| 28-Oct         | 65.0              | 58.8                   | 51.0                  | 34.7                  | 20.0             | 71.4               | 59.3                 | 41.2                   | 24.9                   |
| 4-Nov          | 60.0              | 55.7                   | 44.3                  | 29.4                  | 14.0             | 64.4               | 57.3                 | 33.5                   | 19.8                   |
| 11-Nov         | 56.0              | 53.2                   | 41.4                  | 26.5                  | 11.0             | 59.5               | 54.2                 | 29.3                   | 17.2                   |
| 18-Nov         | 57.0              | 53.8                   | 39.4                  | 25.7                  | 11.0             | 60.2               | 54.6                 | 28.7                   | 16.9                   |
| 25-Nov         | 51.0              | 48.8                   | 34.3                  | 21.0                  | -2.0             | 50.4               | 49.4                 | 24.8                   | 14.1                   |
| 2-Dec          | 50.0              | 46.3                   | 30.8                  | 17.2                  | -3.0             | 45.5               | 48.7                 | 21.5                   | 12.0                   |
| 9-Dec          | 44.0              | 38.8                   | 29.1                  | 16.2                  | -9.0             | 36.4               | 41.9                 | 19.9                   | 11.4                   |
| 16-Dec         | 40.0              | 37.2                   | 26.4                  | 12.7                  | -14.0            | 32.2               | 38.0                 | 18.3                   | 10.4                   |
| 23-Dec         | 43.0              | 40.1                   | 25.1                  | 10.8                  | -16.0            | 35.0               | 41.0                 | 17.5                   | 9.5                    |
| 31-Dec         | 36.0              | 33.9                   | 23.5                  | 9.3                   | -14.0            | 27.3               | 33.8                 | 15.6                   | 8.7                    |

GREEN BAY WI

WMO No. 726450

**Degree Days, Heating and Cooling**  
(Base 65°F)



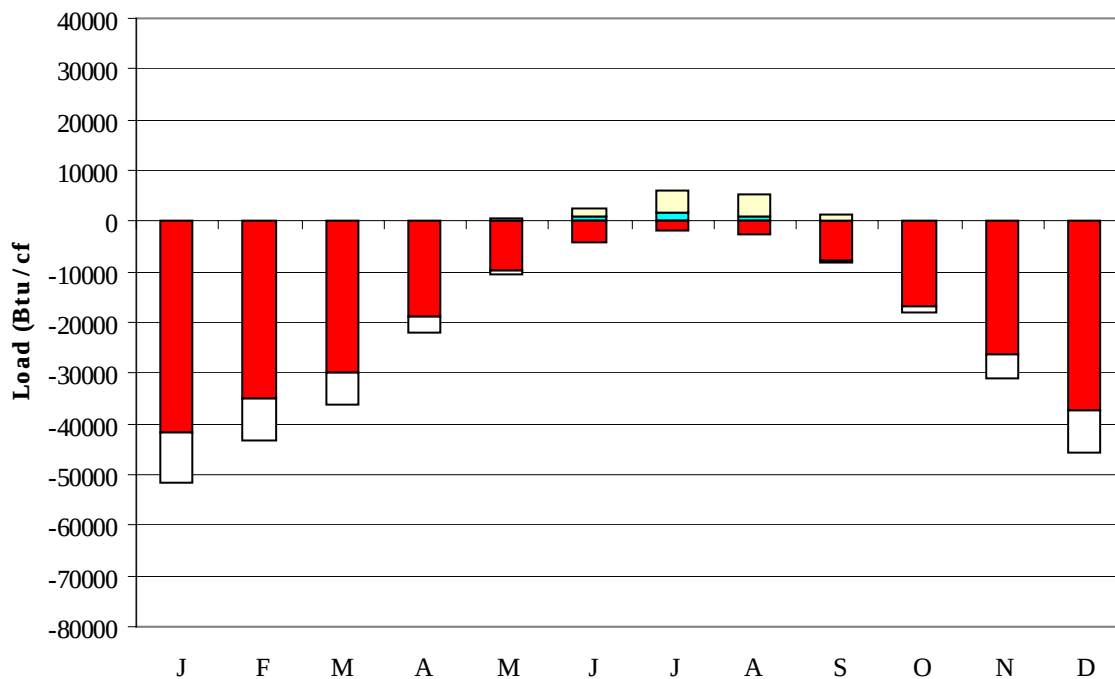
Mean Cooling Degree Days Mean Heating Degree Days

|     | Mean Cooling<br>Degree Days (°F) | Mean Heating<br>Degree Days (°F) |
|-----|----------------------------------|----------------------------------|
| JAN | 0                                | 1513                             |
| FEB | 0                                | 1267                             |
| MAR | 0                                | 1062                             |
| APR | 10                               | 647                              |
| MAY | 50                               | 304                              |
| JUN | 134                              | 114                              |
| JUL | 217                              | 46                               |
| AUG | 164                              | 69                               |
| SEP | 56                               | 237                              |
| OCT | 6                                | 553                              |
| NOV | 0                                | 929                              |
| DEC | 0                                | 1345                             |
| ANN | 637                              | 8086                             |

GREEN BAY WI

WMO No. 726450

**Average Ventilation and Infiltration Loads**  
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



|     | Average Sensible Cooling Load (Btu/cfm) | Average Sensible Heating Load (Btu/cfm) | Average Latent Cooling Load (Btu/cfm) | Average Latent Heating Load (Btu/cfm) |
|-----|-----------------------------------------|-----------------------------------------|---------------------------------------|---------------------------------------|
| JAN | 0                                       | -41640                                  | 0                                     | -9829                                 |
| FEB | 0                                       | -35044                                  | 0                                     | -8284                                 |
| MAR | 0                                       | -29936                                  | 0                                     | -6281                                 |
| APR | 42                                      | -18999                                  | 6                                     | -3063                                 |
| MAY | 249                                     | -9732                                   | 404                                   | -726                                  |
| JUN | 836                                     | -4214                                   | 1675                                  | -24                                   |
| JUL | 1528                                    | -2033                                   | 4484                                  | 0                                     |
| AUG | 896                                     | -2825                                   | 4279                                  | 0                                     |
| SEP | 219                                     | -7908                                   | 1243                                  | -131                                  |
| OCT | 10                                      | -16657                                  | 43                                    | -1412                                 |
| NOV | 0                                       | -26416                                  | 0                                     | -4785                                 |
| DEC | 0                                       | -37279                                  | 0                                     | -8311                                 |
| ANN | 3780                                    | -232683                                 | 12134                                 | -42846                                |

## Average Annual Solar Radiation – Nearest Available Site

(Source: National Renewable Energy Laboratory, Golden CO, 1995)

City: GREEN BAY  
 State: WI  
 WBAN No: 14898  
 Lat(N): 44.48  
 Long(W): 88.13  
 Elev(ft): 702

Stn Type: Secondary  
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1  
 Overhang: 0.663  
 Vert Gap: 0.331

| AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day), Percentage Uncertainty = 9 |         | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | Year |
|-------------------------------------------------------------------------------|---------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| HORIZ                                                                         | Global  | 550  | 820  | 1160 | 1480 | 1810 | 1980 | 1940 | 1660 | 1250 | 850  | 510  | 430  | 1210 |
|                                                                               | Std Dev | 45   | 64   | 82   | 93   | 153  | 140  | 82   | 117  | 99   | 65   | 44   | 38   | 37   |
|                                                                               | Minimum | 420  | 710  | 940  | 1330 | 1560 | 1700 | 1750 | 1480 | 1060 | 690  | 430  | 330  | 1140 |
|                                                                               | Maximum | 620  | 960  | 1310 | 1660 | 2130 | 2260 | 2080 | 1990 | 1450 | 970  | 610  | 540  | 1290 |
|                                                                               | Diffuse | 300  | 420  | 580  | 700  | 800  | 830  | 810  | 720  | 580  | 420  | 310  | 260  | 560  |
| Clear Day                                                                     | Global  | 730  | 1090 | 1610 | 2130 | 2500 | 2650 | 2540 | 2220 | 1730 | 1190 | 770  | 620  | 1650 |
| NORTH                                                                         | Global  | 180  | 250  | 350  | 430  | 550  | 630  | 590  | 480  | 360  | 260  | 180  | 150  | 370  |
|                                                                               | Diffuse | 180  | 250  | 350  | 420  | 500  | 540  | 520  | 450  | 360  | 260  | 180  | 150  | 350  |
| Clear Day                                                                     | Global  | 160  | 220  | 300  | 410  | 580  | 690  | 620  | 470  | 330  | 230  | 160  | 140  | 360  |
| EAST                                                                          | Global  | 380  | 560  | 740  | 900  | 1060 | 1130 | 1120 | 990  | 790  | 560  | 350  | 300  | 740  |
|                                                                               | Diffuse | 220  | 320  | 430  | 520  | 600  | 640  | 620  | 550  | 440  | 320  | 220  | 180  | 420  |
| Clear Day                                                                     | Global  | 600  | 840  | 1120 | 1360 | 1500 | 1540 | 1490 | 1380 | 1150 | 870  | 620  | 530  | 1080 |
| SOUTH                                                                         | Global  | 990  | 1140 | 1130 | 1010 | 930  | 890  | 920  | 1000 | 1050 | 1010 | 770  | 800  | 970  |
|                                                                               | Diffuse | 340  | 440  | 510  | 540  | 580  | 590  | 590  | 560  | 500  | 410  | 310  | 290  | 470  |
| Clear Day                                                                     | Global  | 1830 | 1990 | 1920 | 1560 | 1240 | 1090 | 1140 | 1400 | 1720 | 1880 | 1790 | 1730 | 1600 |
| WEST                                                                          | Global  | 390  | 560  | 740  | 880  | 1040 | 1130 | 1120 | 1000 | 790  | 560  | 350  | 310  | 740  |
|                                                                               | Diffuse | 220  | 320  | 430  | 520  | 600  | 640  | 630  | 560  | 450  | 320  | 220  | 190  | 430  |
| Clear Day                                                                     | Global  | 600  | 840  | 1120 | 1360 | 1500 | 1540 | 1490 | 1380 | 1150 | 870  | 620  | 530  | 1080 |

## Average Annual Solar Heat and Illumination – Nearest Available Site

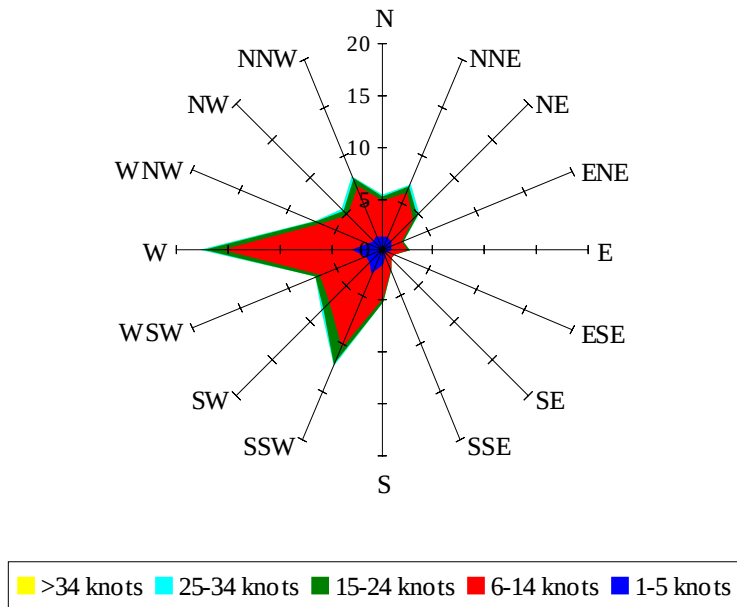
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

| AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9 |          | Jan | Feb | Mar | Apr  | May  | Jun  | Jul  | Aug  | Sep | Oct | Nov | Dec | Year |
|-----------------------------------------------------------------------------------------------------|----------|-----|-----|-----|------|------|------|------|------|-----|-----|-----|-----|------|
| HORIZ                                                                                               | Unshaded | 340 | 550 | 810 | 1050 | 1300 | 1440 | 1400 | 1190 | 880 | 580 | 330 | 270 | 850  |
| NORTH                                                                                               | Unshaded | 120 | 180 | 240 | 300  | 370  | 410  | 390  | 320  | 250 | 180 | 120 | 100 | 250  |
|                                                                                                     | Shaded   | 100 | 150 | 200 | 250  | 310  | 350  | 340  | 280  | 210 | 150 | 100 | 86  | 210  |
| EAST                                                                                                | Unshaded | 260 | 390 | 520 | 640  | 750  | 800  | 800  | 710  | 560 | 390 | 240 | 200 | 520  |
|                                                                                                     | Shaded   | 230 | 330 | 440 | 520  | 610  | 650  | 650  | 580  | 460 | 330 | 210 | 170 | 430  |
| SOUTH                                                                                               | Unshaded | 750 | 840 | 800 | 680  | 600  | 550  | 580  | 650  | 730 | 740 | 580 | 600 | 670  |
|                                                                                                     | Shaded   | 720 | 770 | 600 | 400  | 340  | 350  | 350  | 370  | 490 | 620 | 550 | 580 | 510  |
| WEST                                                                                                | Unshaded | 270 | 390 | 530 | 620  | 740  | 810  | 800  | 720  | 560 | 390 | 240 | 210 | 520  |
|                                                                                                     | Shaded   | 230 | 330 | 440 | 510  | 600  | 650  | 650  | 590  | 470 | 330 | 210 | 180 | 430  |

| AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9 |          | March |      |     |     |     | June |      |     |     |     |
|------------------------------------------------------------------------------------------------------------------|----------|-------|------|-----|-----|-----|------|------|-----|-----|-----|
|                                                                                                                  |          | 9am   | 11am | 1pm | 3pm | 5pm | 9am  | 11am | 1pm | 3pm | 5pm |
| HORIZ.                                                                                                           | M.Clear  | 40    | 68   | 75  | 57  | 21  | 52   | 85   | 99  | 91  | 65  |
|                                                                                                                  | M.Cloudy | 24    | 44   | 49  | 36  | 14  | 33   | 56   | 67  | 64  | 46  |
| NORTH                                                                                                            | M.Clear  | 10    | 14   | 14  | 12  | 7   | 13   | 16   | 17  | 16  | 14  |
|                                                                                                                  | M.Cloudy | 10    | 16   | 17  | 13  | 6   | 13   | 18   | 19  | 19  | 15  |
| EAST                                                                                                             | M.Clear  | 74    | 52   | 14  | 12  | 7   | 81   | 69   | 26  | 16  | 14  |
|                                                                                                                  | M.Cloudy | 27    | 29   | 17  | 13  | 6   | 37   | 41   | 24  | 19  | 15  |
| SOUTH                                                                                                            | M.Clear  | 45    | 79   | 88  | 67  | 23  | 12   | 40   | 55  | 48  | 23  |
|                                                                                                                  | M.Cloudy | 19    | 38   | 44  | 31  | 10  | 12   | 28   | 38  | 35  | 19  |
| WEST                                                                                                             | M.Clear  | 10    | 14   | 27  | 68  | 59  | 12   | 16   | 17  | 55  | 80  |
|                                                                                                                  | M.Cloudy | 10    | 16   | 21  | 32  | 20  | 12   | 18   | 19  | 39  | 47  |
| M.Clear                                                                                                          | (% hrs)  | 30    | 30   | 29  | 30  | 31  | 40   | 38   | 34  | 34  | 36  |
|                                                                                                                  |          | Sept  |      |     |     |     | Dec  |      |     |     |     |
|                                                                                                                  |          | 9am   | 11am | 1pm | 3pm | 5pm | 9am  | 11am | 1pm | 3pm | 5pm |
| HORIZ.                                                                                                           | M.Clear  | 30    | 63   | 79  | 70  | 41  | 11   | 33   | 37  | 19  | 0   |
|                                                                                                                  | M.Cloudy | 17    | 38   | 49  | 45  | 26  | 7    | 21   | 23  | 12  | 0   |
| NORTH                                                                                                            | M.Clear  | 9     | 13   | 15  | 14  | 10  | 5    | 9    | 9   | 6   | 0   |
|                                                                                                                  | M.Cloudy | 7     | 14   | 17  | 15  | 10  | 3    | 9    | 10  | 5   | 0   |
| EAST                                                                                                             | M.Clear  | 67    | 64   | 23  | 14  | 10  | 33   | 33   | 9   | 6   | 0   |
|                                                                                                                  | M.Cloudy | 21    | 31   | 20  | 15  | 10  | 8    | 15   | 10  | 5   | 0   |
| SOUTH                                                                                                            | M.Clear  | 25    | 62   | 80  | 69  | 37  | 33   | 77   | 84  | 52  | 0   |
|                                                                                                                  | M.Cloudy | 11    | 29   | 41  | 37  | 19  | 8    | 25   | 29  | 14  | 0   |
| WEST                                                                                                             | M.Clear  | 9     | 13   | 15  | 55  | 72  | 5    | 9    | 23  | 42  | 0   |
|                                                                                                                  | M.Cloudy | 7     | 14   | 17  | 31  | 31  | 3    | 9    | 13  | 12  | 0   |
| M.Clear                                                                                                          | (% hrs)  | 39    | 37   | 30  | 30  | 34  | 27   | 27   | 27  | 30  | 31  |

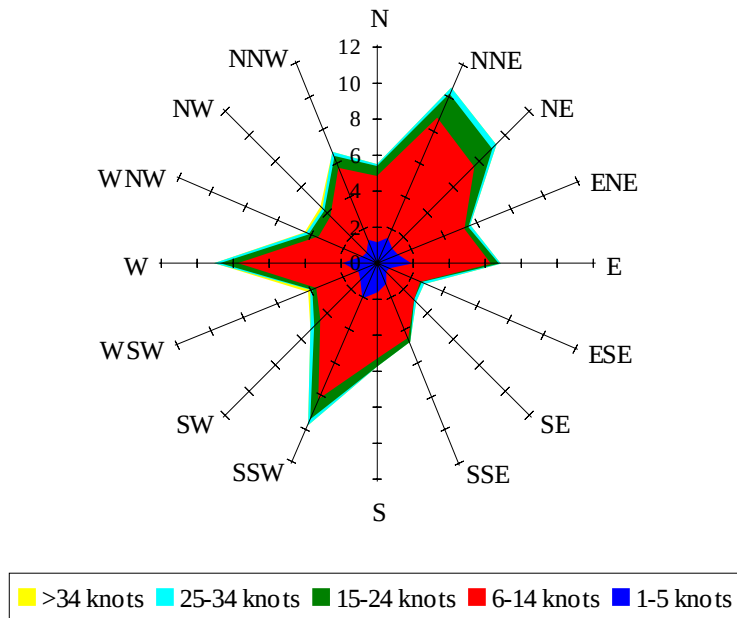


# **Wind Summary - December, January, and February** **Labels of Percent Frequency on North Axis**



Percent Calm = 4.44

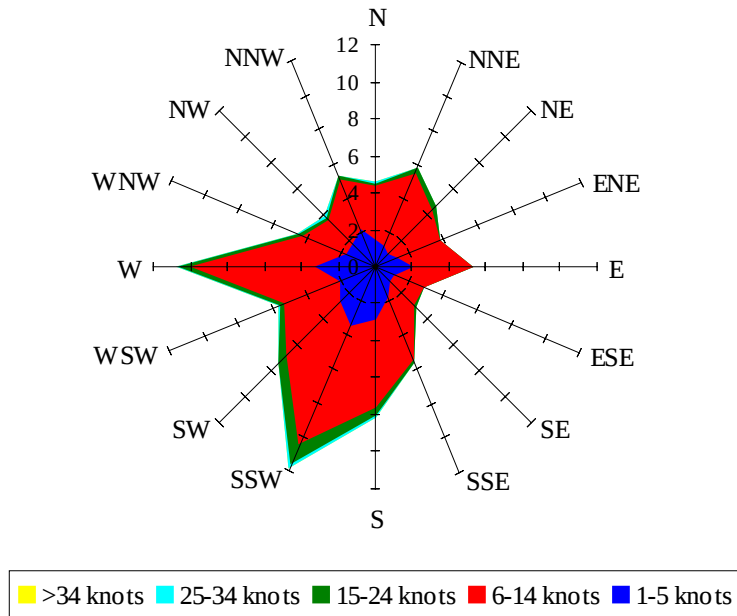
# **Wind Summary - March, April, and May** **Labels of Percent Frequency on North Axis**



Percent Calm = 4.62

### Wind Summary - June, July, and August

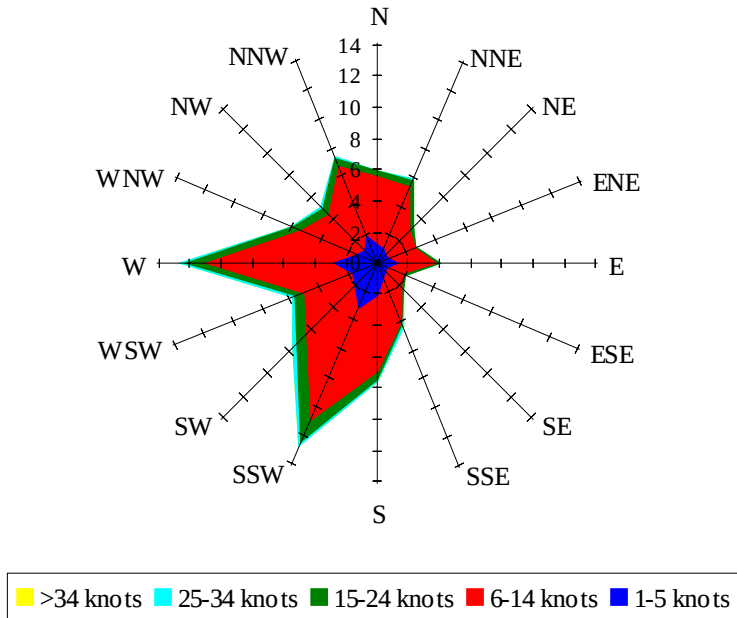
Labels of Percent Frequency on North Axis



Percent Calm = 7.95

### Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 5.84