

**JACKSON/REYNOLDS MI**

Latitude = 42.27 N

WMO No. 725395

Longitude = 84.47 W

Elevation = 1001 feet

Period of Record = 1973 to 1996

Average Pressure = 28.92 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                      | 94                  | 75                               | 109                     | 11.9                   | W                           |
| 0.4% Occurrence                              | 90                  | 74                               | 105                     | 11.3                   | SW                          |
| 1.0% Occurrence                              | 88                  | 73                               | 103                     | 10.9                   | SW                          |
| 2.0% Occurrence                              | 85                  | 72                               | 99                      | 10.1                   | SW                          |
| Mean Daily Range                             | 18                  | -                                | -                       | -                      | -                           |
| 97.5% Occurrence                             | 9                   | 8                                | 7                       | 9.3                    | WSW                         |
| 99.0% Occurrence                             | 2                   | 1                                | 5                       | 9.3                    | SW                          |
| 99.6% Occurrence                             | -3                  | -3                               | 4                       | 8.2                    | WSW                         |
| Median of Extreme Lows                       | -12                 | -12                              | 2                       | 8.9                    | WSW                         |
|                                              | <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                               | 143                     | 10.9                   | W                           |
| 0.4% Occurrence                              | 78                  | 86                               | 134                     | 10.6                   | SW                          |
| 1.0% Occurrence                              | 76                  | 84                               | 125                     | 10.1                   | SW                          |
| 2.0% Occurrence                              | 74                  | 82                               | 117                     | 9.5                    | SW                          |
|                                              | <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                      | 151                 | 87                               | 0.97                    | 9.0                    | SW                          |
| 0.4% Occurrence                              | 136                 | 84                               | 0.88                    | 9.4                    | SW                          |
| 1.0% Occurrence                              | 127                 | 81                               | 0.82                    | 9.2                    | SW                          |
| 2.0% Occurrence                              | 119                 | 78                               | 0.77                    | 8.8                    | S                           |
| <b>Air Conditioning/ 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      |
|                                              |                     | 13                               | 501                     | 261                    | 980                         |

**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 |
|--------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 6                                                | 2.8                                          | 90                                                                 | 1.4 + 0.5                                                                               |
| 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>(#)                                             |
| 50.9                                             | N/A                                          | 36                                                                 | 63                                                                                      |

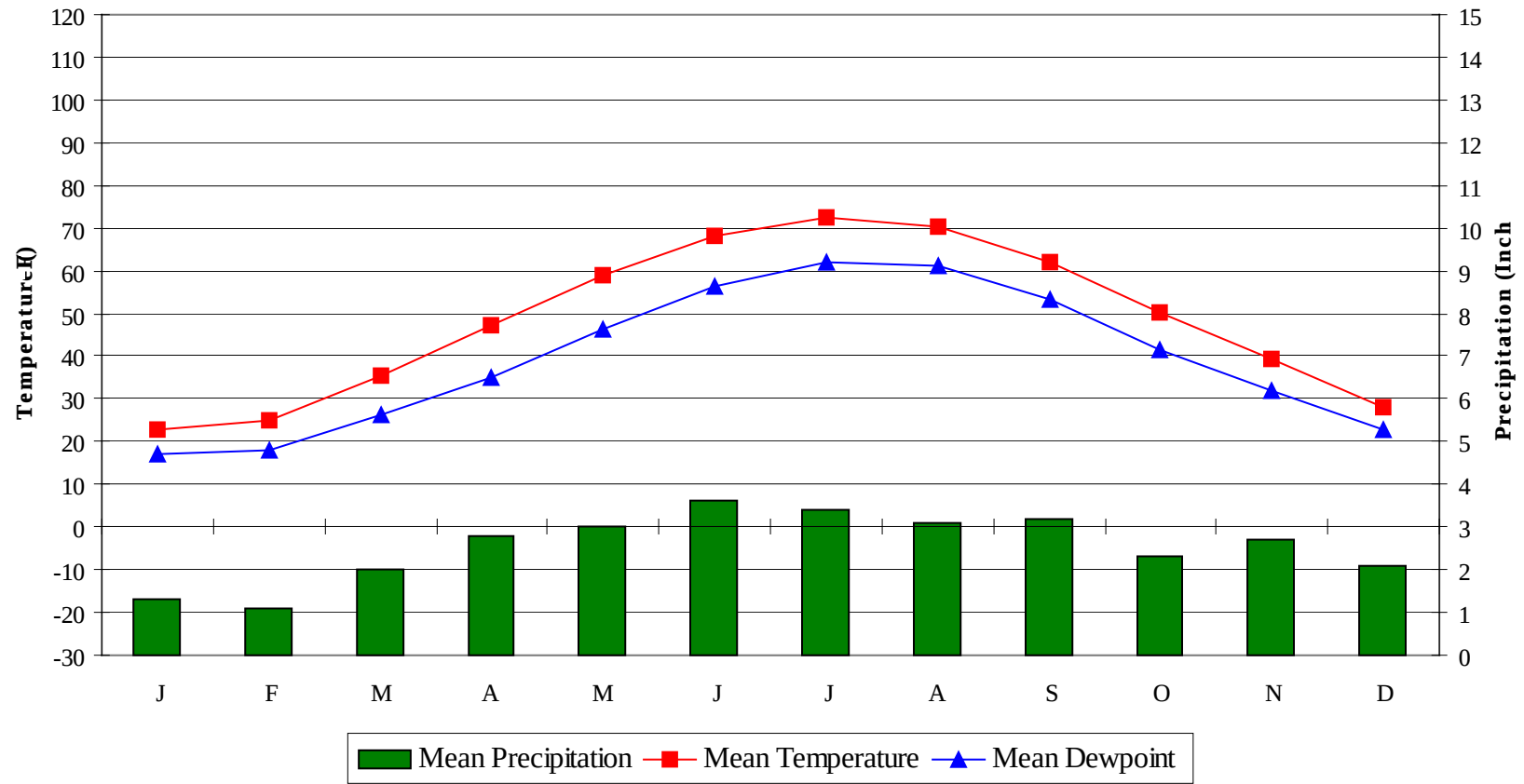
\*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

JACKSON/REYNOLDS

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### Average Annual Climate

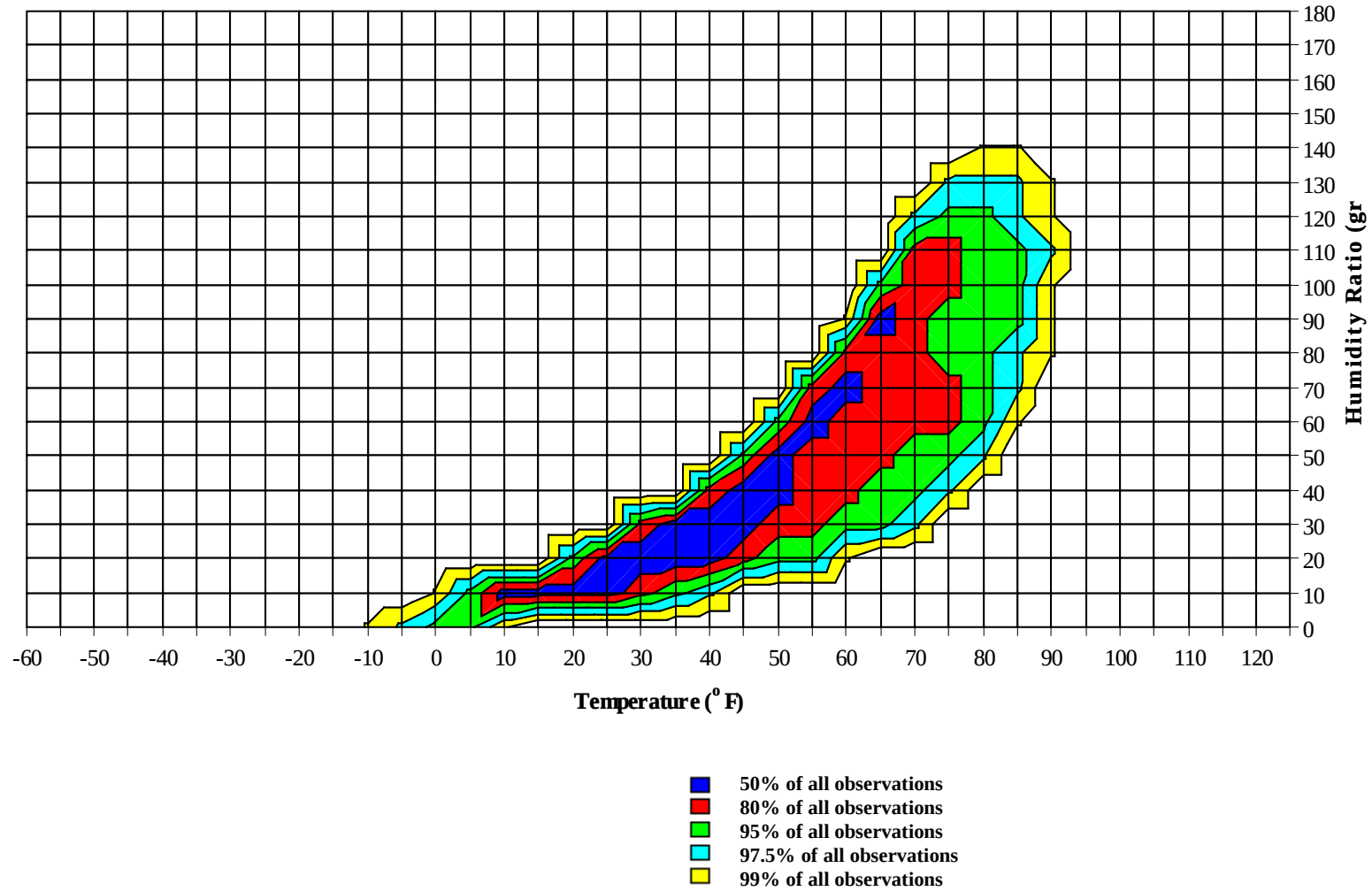


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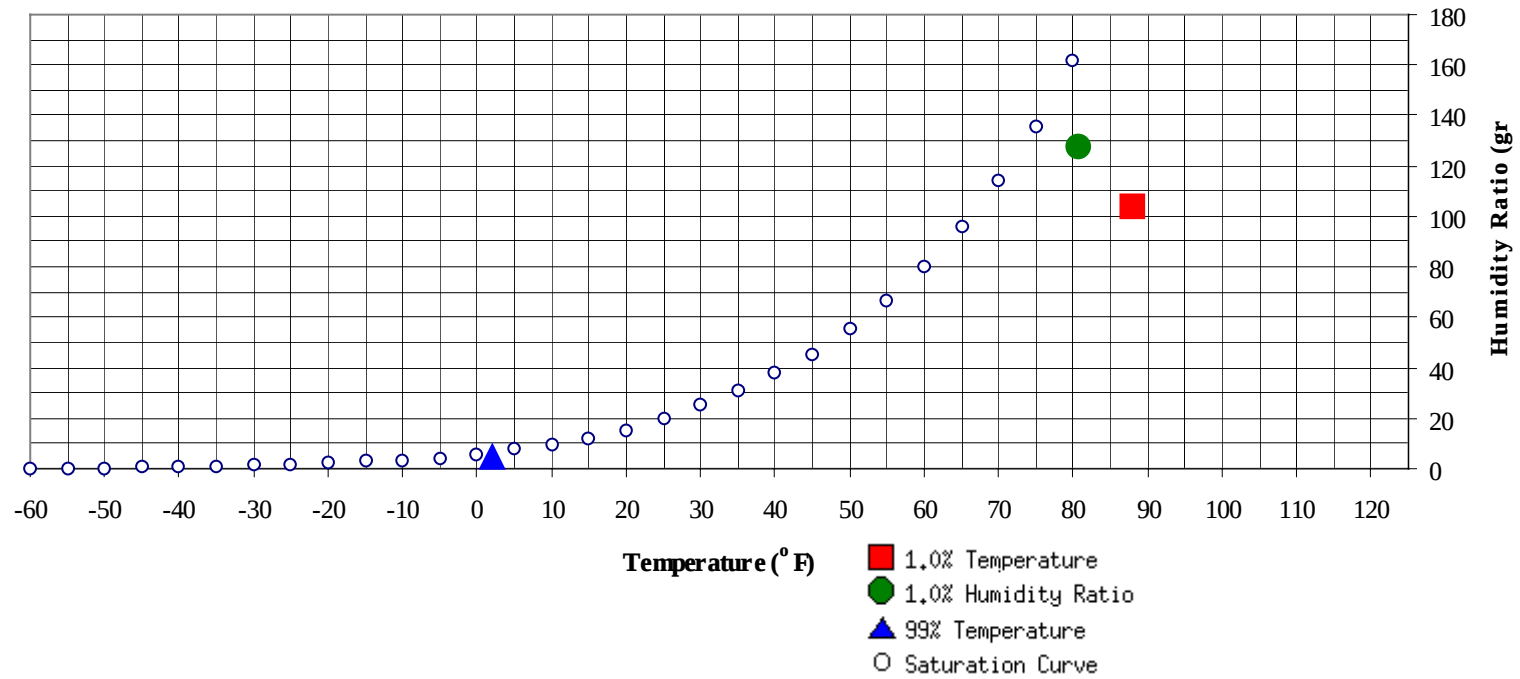
### Long Term Psychrometric Summary



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**Psychrometric Summary of Peak Design Values**

|              | (°F) | MCHR    | Enthalpy | 1.0% Humidity | (gr/lb) | MCDB | MCWB | MC Dewpt | Enthalpy |
|--------------|------|---------|----------|---------------|---------|------|------|----------|----------|
|              |      | (gr/lb) | (btu/lb) |               |         | (°F) | (°F) | (°F)     | (btu/lb) |
| 99% Dry Bulb | 2    | 4.6     | 1.2      | Ratio         | 127.4   | 80.8 | 75.2 | 73.1     | 39.4     |

| 1.0% Dry Bulb | (°F) | MCHR    | MCWB | Enthalpy |
|---------------|------|---------|------|----------|
|               |      | (gr/lb) | (°F) | (btu/lb) |
|               | 88   | 103.5   | 73.1 | 37.4     |

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**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                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 1              | 0              | 1            | 61.2                     |
| 70 / 74                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 4              | 2              | 6            | 56.8                     |
| 65 / 69                      |                     |                |                |              |                          |                     | 0              | 0              | 0            | 49.1                     |                     | 6              | 3              | 9            | 56.7                     |
| 60 / 64                      |                     | 0              |                | 0            | 52.0                     |                     | 1              | 0              | 1            | 50.2                     | 4                   | 8              | 6              | 18           | 53.5                     |
| 55 / 59                      | 0                   | 1              | 1              | 2            | 51.7                     | 0                   | 3              | 1              | 4            | 48.0                     | 5                   | 12             | 10             | 28           | 50.0                     |
| 50 / 54                      | 2                   | 3              | 3              | 8            | 48.5                     | 2                   | 5              | 3              | 10           | 46.6                     | 6                   | 18             | 16             | 41           | 45.4                     |
| 45 / 49                      | 3                   | 4              | 4              | 11           | 43.0                     | 4                   | 7              | 5              | 16           | 42.2                     | 13                  | 26             | 22             | 61           | 41.7                     |
| 40 / 44                      | 5                   | 10             | 7              | 22           | 38.5                     | 7                   | 18             | 14             | 40           | 37.9                     | 19                  | 33             | 28             | 80           | 37.5                     |
| 35 / 39                      | 19                  | 24             | 19             | 63           | 34.2                     | 21                  | 29             | 30             | 80           | 34.1                     | 32                  | 46             | 47             | 125          | 33.6                     |
| 30 / 34                      | 39                  | 48             | 46             | 133          | 30.1                     | 36                  | 36             | 37             | 109          | 30.1                     | 60                  | 43             | 48             | 151          | 29.8                     |
| 25 / 29                      | 35                  | 40             | 40             | 114          | 25.4                     | 28                  | 34             | 32             | 94           | 24.9                     | 38                  | 25             | 29             | 92           | 24.9                     |
| 20 / 24                      | 35                  | 42             | 38             | 115          | 20.7                     | 31                  | 33             | 35             | 99           | 20.3                     | 28                  | 16             | 18             | 63           | 20.3                     |
| 15 / 19                      | 37                  | 36             | 36             | 108          | 15.8                     | 27                  | 28             | 30             | 84           | 15.7                     | 19                  | 7              | 11             | 37           | 15.7                     |
| 10 / 14                      | 27                  | 19             | 26             | 71           | 11.1                     | 24                  | 16             | 18             | 58           | 10.9                     | 13                  | 3              | 5              | 20           | 10.9                     |
| 5 / 9                        | 19                  | 10             | 15             | 44           | 6.4                      | 20                  | 9              | 11             | 40           | 6.3                      | 8                   | 1              | 2              | 11           | 6.2                      |
| 0 / 4                        | 12                  | 6              | 8              | 26           | 1.4                      | 11                  | 4              | 5              | 20           | 1.3                      | 2                   | 0              | 0              | 2            | 1.3                      |
| -5 / -1                      | 6                   | 3              | 2              | 11           | -2.8                     | 7                   | 1              | 3              | 11           | -2.7                     | 1                   |                |                | 1            | -3.1                     |
| -10 / -6                     | 5                   | 2              | 2              | 9            | -7.1                     | 4                   | 0              | 1              | 5            | -6.7                     | 0                   |                |                | 0            | -5.8                     |
| -15 / -11                    | 2                   | 1              | 1              | 4            | -11.8                    | 2                   | 0              |                | 2            | -11.5                    |                     |                |                |              |                          |
| -20 / -16                    | 1                   | 0              | 0              | 1            | -16.8                    | 0                   |                |                | 0            | -15.0                    |                     |                |                |              |                          |

**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.

## 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                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 0              | 0              | 0            | 74.1                     |
| 90 / 94                      |                     |                |                |              |                          |                     | 1              | 0              | 1            | 69.4                     |                     | 6              | 2              | 8            | 72.1                     |
| 85 / 89                      |                     | 0              | 0              | 0            | 64.4                     |                     | 9              | 3              | 12           | 69.3                     |                     | 24             | 11             | 35           | 70.5                     |
| 80 / 84                      |                     | 5              | 2              | 7            | 64.3                     |                     | 17             | 8              | 25           | 66.9                     | 1                   | 40             | 21             | 61           | 68.5                     |
| 75 / 79                      |                     | 7              | 4              | 11           | 62.2                     | 1                   | 23             | 13             | 37           | 64.6                     | 10                  | 53             | 38             | 101          | 66.1                     |
| 70 / 74                      | 1                   | 12             | 8              | 22           | 58.4                     | 7                   | 35             | 27             | 69           | 61.2                     | 26                  | 51             | 49             | 127          | 64.0                     |
| 65 / 69                      | 6                   | 18             | 13             | 38           | 56.2                     | 18                  | 41             | 34             | 94           | 58.3                     | 49                  | 34             | 47             | 131          | 61.5                     |
| 60 / 64                      | 11                  | 25             | 17             | 54           | 53.1                     | 33                  | 42             | 42             | 117          | 55.0                     | 54                  | 20             | 35             | 110          | 57.8                     |
| 55 / 59                      | 12                  | 31             | 26             | 68           | 48.7                     | 35                  | 36             | 43             | 114          | 51.1                     | 42                  | 9              | 22             | 73           | 53.6                     |
| 50 / 54                      | 21                  | 33             | 33             | 87           | 45.2                     | 47                  | 24             | 34             | 105          | 47.3                     | 33                  | 3              | 11             | 47           | 49.5                     |
| 45 / 49                      | 30                  | 37             | 40             | 107          | 42.0                     | 42                  | 13             | 25             | 80           | 43.4                     | 16                  | 1              | 3              | 20           | 45.4                     |
| 40 / 44                      | 45                  | 32             | 39             | 115          | 38.2                     | 36                  | 5              | 14             | 55           | 39.6                     | 5                   | 0              | 0              | 5            | 41.1                     |
| 35 / 39                      | 44                  | 23             | 30             | 97           | 34.0                     | 20                  | 1              | 3              | 25           | 35.4                     | 2                   |                |                | 2            | 36.5                     |
| 30 / 34                      | 38                  | 12             | 17             | 68           | 29.8                     | 7                   | 0              | 1              | 8            | 31.0                     | 0                   |                |                | 0            | 34.0                     |
| 25 / 29                      | 19                  | 4              | 7              | 30           | 25.2                     | 1                   |                |                | 1            | 25.7                     |                     |                |                |              |                          |
| 20 / 24                      | 9                   | 1              | 3              | 13           | 20.7                     | 0                   |                |                | 0            | 21.0                     |                     |                |                |              |                          |
| 15 / 19                      | 2                   | 0              | 1              | 3            | 16.2                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 10 / 14                      | 1                   |                | 0              | 1            | 11.5                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 5 / 9                        | 0                   |                |                | 0            | 5.3                      |                     |                |                |              |                          |                     |                |                |              |                          |
| 0 / 4                        | 0                   |                |                | 0            | 3.0                      |                     |                |                |              |                          |                     |                |                |              |                          |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -10 / -6                     |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -15 / -11                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -20 / -16                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |

**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.

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**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            | 78.5                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     | 3              | 1              | 4            | 76.6                     |                     | 0              |                | 0            | 79.0                     |                     | 0              | 0              | 0            | 76.3                     |
| 90 / 94                      |                     | 12             | 5              | 18           | 75.5                     |                     | 7              | 2              | 9            | 75.9                     |                     | 3              | 1              | 4            | 73.7                     |
| 85 / 89                      | 0                   | 36             | 19             | 55           | 73.5                     |                     | 25             | 10             | 35           | 73.8                     |                     | 5              | 2              | 7            | 72.2                     |
| 80 / 84                      | 4                   | 62             | 40             | 105          | 70.3                     | 1                   | 52             | 29             | 82           | 70.9                     | 0                   | 21             | 8              | 29           | 69.9                     |
| 75 / 79                      | 19                  | 63             | 52             | 134          | 68.1                     | 10                  | 65             | 49             | 124          | 68.4                     | 3                   | 33             | 18             | 54           | 67.1                     |
| 70 / 74                      | 51                  | 45             | 58             | 154          | 66.3                     | 46                  | 55             | 60             | 161          | 66.6                     | 15                  | 41             | 30             | 86           | 64.7                     |
| 65 / 69                      | 63                  | 19             | 41             | 123          | 63.1                     | 62                  | 29             | 45             | 136          | 63.3                     | 30                  | 45             | 42             | 117          | 61.4                     |
| 60 / 64                      | 56                  | 8              | 23             | 86           | 59.3                     | 52                  | 12             | 32             | 95           | 59.4                     | 37                  | 41             | 44             | 122          | 57.4                     |
| 55 / 59                      | 37                  | 1              | 8              | 46           | 55.2                     | 44                  | 4              | 15             | 63           | 55.1                     | 42                  | 29             | 41             | 112          | 53.5                     |
| 50 / 54                      | 14                  |                | 1              | 15           | 50.9                     | 23                  | 0              | 4              | 27           | 50.7                     | 45                  | 16             | 31             | 93           | 49.5                     |
| 45 / 49                      | 4                   |                | 0              | 4            | 46.4                     | 9                   |                | 1              | 10           | 46.2                     | 33                  | 5              | 16             | 54           | 45.3                     |
| 40 / 44                      | 0                   |                |                | 0            | 43.0                     | 2                   |                | 0              | 2            | 41.2                     | 19                  | 1              | 6              | 26           | 41.0                     |
| 35 / 39                      |                     |                |                |              |                          | 0                   |                |                | 0            | 38.0                     | 11                  | 0              | 2              | 13           | 36.6                     |
| 30 / 34                      |                     |                |                |              |                          |                     |                |                |              |                          | 3                   |                | 0              | 3            | 32.4                     |
| 25 / 29                      |                     |                |                |              |                          |                     |                |                |              |                          | 0                   |                |                | 0            | 27.8                     |
| 20 / 24                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 15 / 19                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 10 / 14                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 5 / 9                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 0 / 4                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -10 / -6                     |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -15 / -11                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -20 / -16                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |

**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.

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**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                      |                     | 2              | 0              | 2            | 66.0                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 75 / 79                      | 0                   | 7              | 1              | 8            | 63.8                     |                     | 0              |                | 0            | 63.3                     |                     |                |                |              |                          |
| 70 / 74                      | 1                   | 15             | 6              | 23           | 60.7                     |                     | 3              | 0              | 3            | 60.1                     |                     |                |                |              |                          |
| 65 / 69                      | 5                   | 26             | 16             | 47           | 58.4                     | 1                   | 5              | 2              | 8            | 58.7                     | 0                   | 1              | 0              | 1            | 61.9                     |
| 60 / 64                      | 17                  | 34             | 27             | 78           | 55.4                     | 5                   | 11             | 10             | 27           | 56.7                     | 1                   | 2              | 1              | 4            | 58.8                     |
| 55 / 59                      | 22                  | 42             | 33             | 98           | 51.3                     | 13                  | 17             | 14             | 45           | 52.8                     | 2                   | 2              | 4              | 8            | 54.2                     |
| 50 / 54                      | 37                  | 45             | 45             | 126          | 47.7                     | 14                  | 22             | 16             | 53           | 47.6                     | 3                   | 4              | 4              | 11           | 48.8                     |
| 45 / 49                      | 41                  | 38             | 45             | 124          | 43.6                     | 17                  | 30             | 23             | 71           | 42.9                     | 5                   | 8              | 5              | 18           | 43.3                     |
| 40 / 44                      | 46                  | 24             | 37             | 107          | 39.4                     | 29                  | 39             | 35             | 103          | 38.6                     | 8                   | 17             | 9              | 35           | 38.8                     |
| 35 / 39                      | 40                  | 12             | 26             | 78           | 35.3                     | 38                  | 46             | 47             | 131          | 34.3                     | 27                  | 45             | 34             | 106          | 34.5                     |
| 30 / 34                      | 26                  | 3              | 10             | 40           | 31.1                     | 54                  | 43             | 47             | 144          | 29.9                     | 59                  | 61             | 65             | 184          | 30.4                     |
| 25 / 29                      | 10                  | 0              | 2              | 12           | 26.7                     | 37                  | 17             | 32             | 86           | 25.5                     | 44                  | 40             | 43             | 128          | 25.4                     |
| 20 / 24                      | 3                   | 0              | 0              | 3            | 21.9                     | 22                  | 5              | 10             | 37           | 21.3                     | 34                  | 29             | 32             | 95           | 20.8                     |
| 15 / 19                      | 0                   | 0              |                | 0            | 18.0                     | 6                   | 2              | 2              | 10           | 16.5                     | 24                  | 19             | 20             | 63           | 16.0                     |
| 10 / 14                      | 0                   | 0              |                | 0            |                          | 2                   | 0              | 1              | 3            | 11.7                     | 17                  | 10             | 13             | 40           | 11.1                     |
| 5 / 9                        |                     |                |                |              |                          | 1                   | 0              | 0              | 1            | 8.1                      | 11                  | 6              | 9              | 26           | 6.6                      |
| 0 / 4                        |                     |                |                |              |                          |                     |                |                |              |                          | 6                   | 3              | 5              | 14           | 1.5                      |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          | 3                   | 1              | 1              | 5            | -2.3                     |
| -10 / -6                     |                     |                |                |              |                          |                     |                |                |              |                          | 2                   | 1              | 1              | 4            | -7.1                     |
| -15 / -11                    |                     |                |                |              |                          |                     |                |                |              |                          | 1                   | 0              | 1              | 2            | -11.3                    |
| -20 / -16                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |

**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.

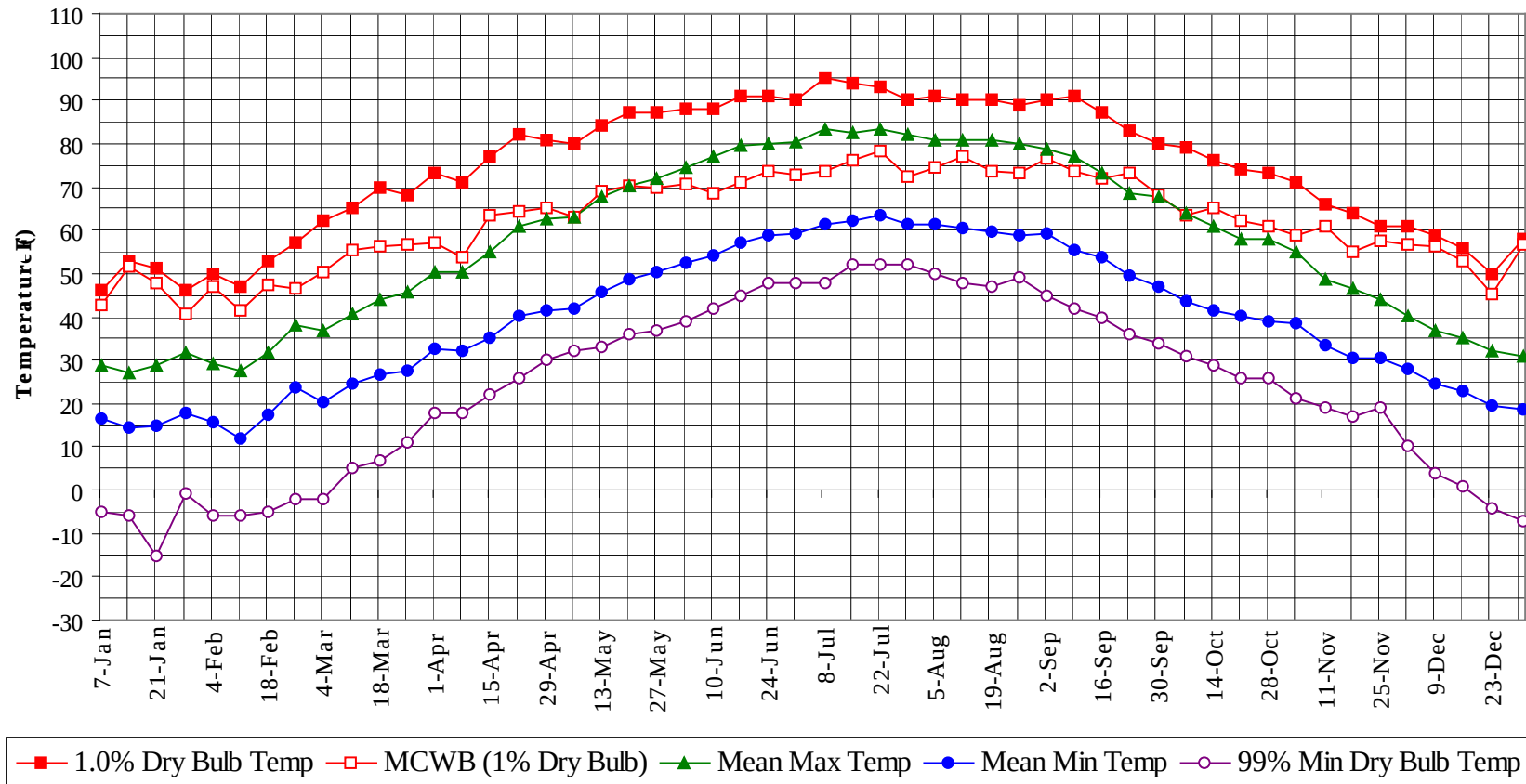


**JACKSON/REYNOLDS MI WMO No. 725395**  
**Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)**  
**Period of Record = 1973 to 1996**

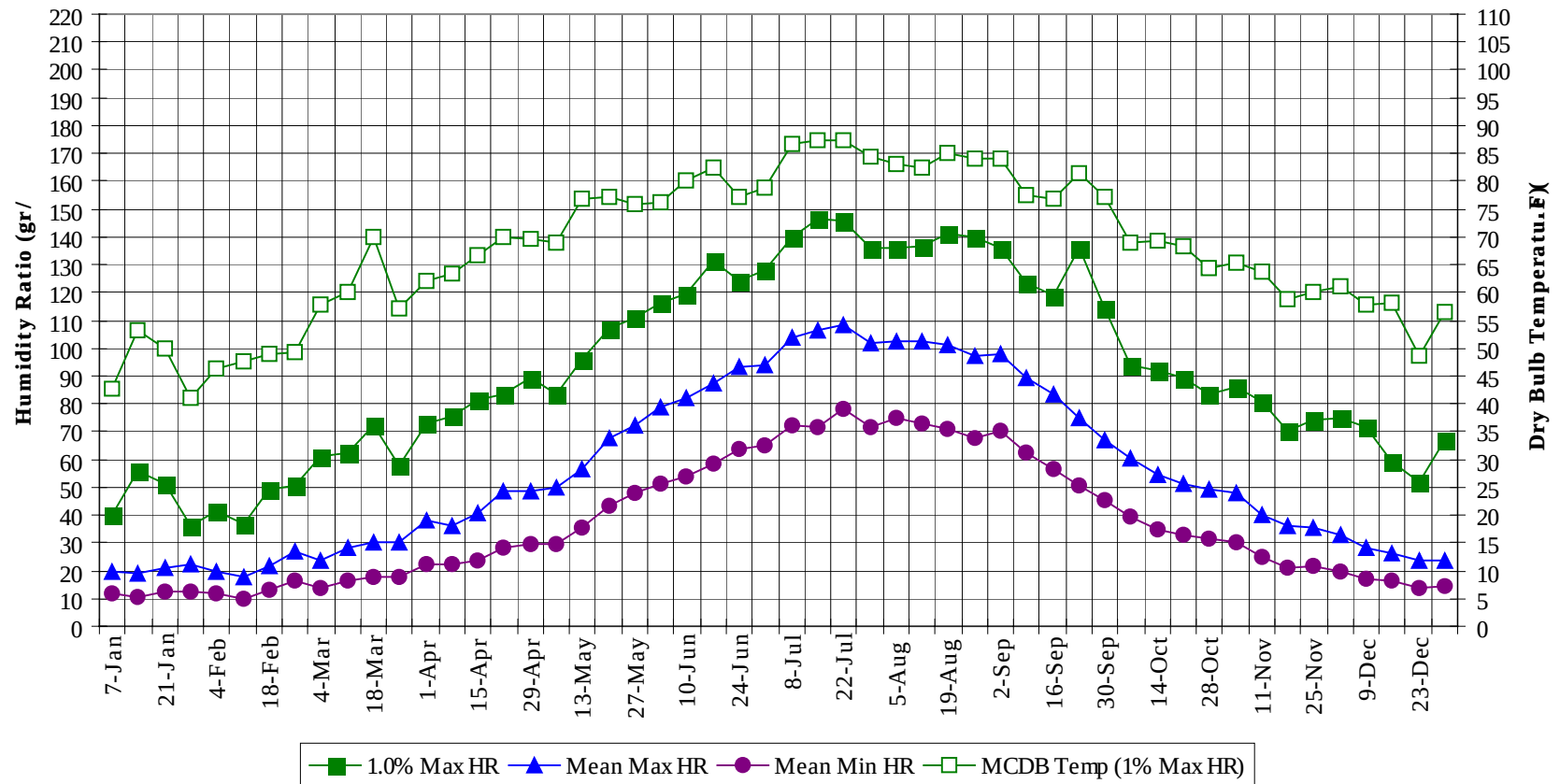
| Temperature<br>Range<br>(°F) | Annual Totals       |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (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            | 78.5                     |
| 95 / 99                      |                     | 4              | 1              | 5            | 76.4                     |
| 90 / 94                      |                     | 29             | 10             | 39           | 74.5                     |
| 85 / 89                      | 0                   | 97             | 44             | 142          | 72.4                     |
| 80 / 84                      | 6                   | 197            | 105            | 308          | 69.6                     |
| 75 / 79                      | 44                  | 249            | 174            | 468          | 67.1                     |
| 70 / 74                      | 147                 | 261            | 240            | 648          | 64.6                     |
| 65 / 69                      | 235                 | 223            | 240            | 698          | 61.1                     |
| 60 / 64                      | 271                 | 202            | 237            | 711          | 56.9                     |
| 55 / 59                      | 258                 | 186            | 217            | 660          | 52.3                     |
| 50 / 54                      | 249                 | 173            | 201            | 624          | 47.8                     |
| 45 / 49                      | 217                 | 168            | 188            | 573          | 43.2                     |
| 40 / 44                      | 220                 | 179            | 192            | 590          | 38.7                     |
| 35 / 39                      | 255                 | 228            | 239            | 722          | 34.3                     |
| 30 / 34                      | 322                 | 247            | 273            | 842          | 30.1                     |
| 25 / 29                      | 212                 | 160            | 188            | 559          | 25.3                     |
| 20 / 24                      | 161                 | 128            | 139            | 427          | 20.6                     |
| 15 / 19                      | 115                 | 91             | 102            | 307          | 15.8                     |
| 10 / 14                      | 83                  | 50             | 64             | 196          | 11.0                     |
| 5 / 9                        | 60                  | 27             | 38             | 125          | 6.4                      |
| 0 / 4                        | 32                  | 13             | 17             | 63           | 1.4                      |
| -5 / -1                      | 16                  | 5              | 6              | 27           | -2.7                     |
| -10 / -6                     | 11                  | 3              | 4              | 18           | -6.9                     |
| -15 / -11                    | 5                   | 1              | 1              | 7            | -11.6                    |
| -20 / -16                    | 2                   | 0              | 0              | 2            | -16.6                    |

**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



**JACKSON/REYNOLDS****MI****WMO No. 725395****Long Term Dry Bulb Temperature and Humidity Summary**

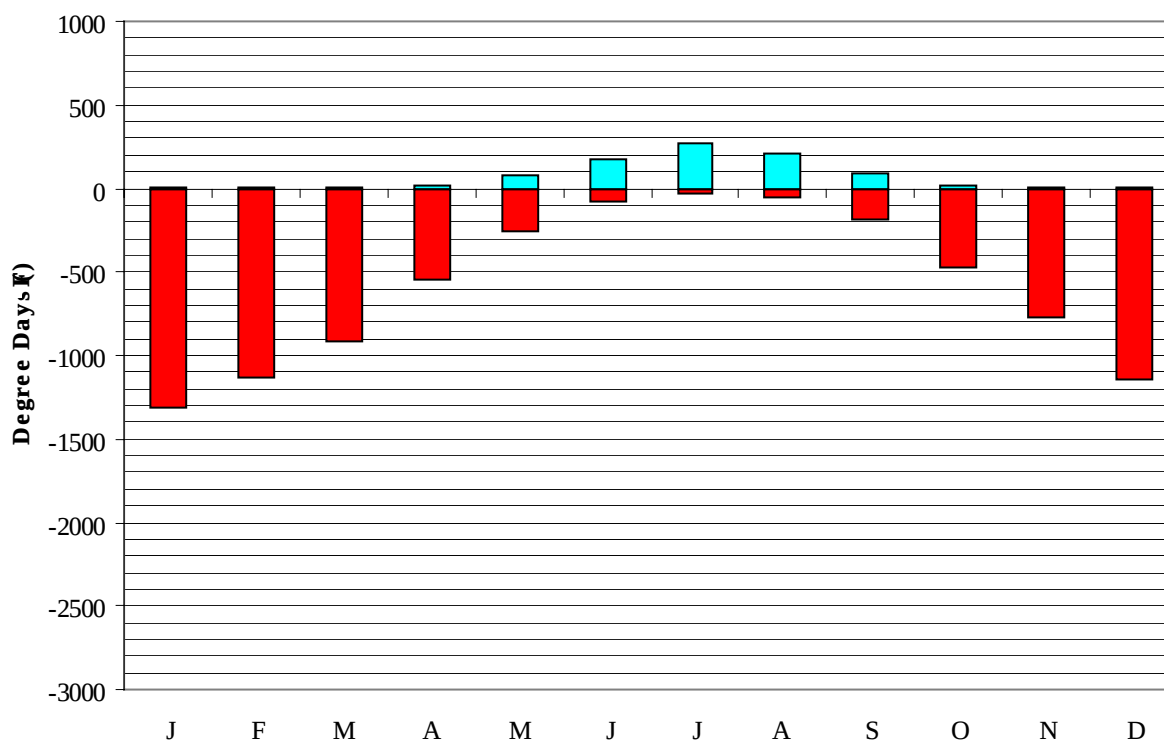
| Week<br>Ending | 1.0%<br>Temp (°F) | MCWB @<br>1% Temp (°F) | Mean Max<br>Temp (°F) | Mean Min<br>Temp (°F) | 99%<br>Temp (°F) | 1.0%<br>HR (gr/lb) | MCDB @<br>1% HR (°F) | Mean Max<br>HR (gr/lb) | Mean Min<br>HR (gr/lb) |
|----------------|-------------------|------------------------|-----------------------|-----------------------|------------------|--------------------|----------------------|------------------------|------------------------|
| 7-Jan          | 46.0              | 42.7                   | 28.8                  | 16.5                  | -5.0             | 39.9               | 42.7                 | 19.8                   | 11.9                   |
| 14-Jan         | 53.0              | 51.7                   | 27.3                  | 14.2                  | -6.0             | 56.0               | 53.3                 | 19.3                   | 10.7                   |
| 21-Jan         | 51.0              | 47.7                   | 28.9                  | 14.9                  | -15.0            | 51.1               | 49.8                 | 21.0                   | 12.3                   |
| 28-Jan         | 46.0              | 40.7                   | 31.6                  | 17.8                  | -1.0             | 36.4               | 40.9                 | 22.2                   | 12.5                   |
| 4-Feb          | 50.0              | 47.2                   | 29.2                  | 15.6                  | -6.0             | 41.3               | 46.4                 | 19.6                   | 11.6                   |
| 11-Feb         | 47.0              | 41.6                   | 27.3                  | 11.7                  | -6.0             | 37.1               | 47.6                 | 17.7                   | 9.6                    |
| 18-Feb         | 53.0              | 47.5                   | 32.0                  | 17.3                  | -5.0             | 49.0               | 49.0                 | 21.5                   | 12.8                   |
| 25-Feb         | 57.0              | 46.4                   | 38.0                  | 23.8                  | -2.0             | 50.4               | 49.2                 | 27.0                   | 16.7                   |
| 4-Mar          | 62.0              | 50.4                   | 36.9                  | 20.4                  | -2.0             | 60.9               | 57.7                 | 23.8                   | 13.8                   |
| 11-Mar         | 65.0              | 55.6                   | 40.7                  | 24.4                  | 5.0              | 62.3               | 60.0                 | 28.1                   | 16.7                   |
| 18-Mar         | 70.0              | 56.1                   | 44.2                  | 26.6                  | 7.0              | 72.1               | 70.0                 | 30.2                   | 17.7                   |
| 25-Mar         | 68.0              | 56.6                   | 45.6                  | 27.4                  | 11.0             | 58.1               | 57.1                 | 30.3                   | 17.8                   |
| 1-Apr          | 73.0              | 57.3                   | 50.2                  | 32.7                  | 18.0             | 72.8               | 62.1                 | 38.1                   | 22.4                   |
| 8-Apr          | 71.0              | 53.6                   | 50.3                  | 32.3                  | 18.0             | 75.6               | 63.5                 | 36.4                   | 22.5                   |
| 15-Apr         | 77.0              | 63.5                   | 54.9                  | 35.1                  | 22.0             | 81.2               | 66.6                 | 40.4                   | 23.6                   |
| 22-Apr         | 82.0              | 64.5                   | 61.1                  | 40.2                  | 26.0             | 83.3               | 69.9                 | 48.3                   | 28.5                   |
| 29-Apr         | 81.0              | 65.2                   | 62.6                  | 41.3                  | 30.0             | 89.6               | 69.5                 | 48.8                   | 29.8                   |
| 6-May          | 80.0              | 63.1                   | 63.2                  | 41.7                  | 32.0             | 83.3               | 68.8                 | 49.7                   | 29.8                   |
| 13-May         | 84.0              | 68.8                   | 67.7                  | 45.6                  | 33.0             | 95.9               | 76.7                 | 56.7                   | 35.6                   |
| 20-May         | 87.0              | 70.3                   | 70.3                  | 48.7                  | 36.0             | 107.1              | 77.1                 | 67.6                   | 43.0                   |
| 27-May         | 87.0              | 69.8                   | 71.8                  | 50.5                  | 37.0             | 111.3              | 75.9                 | 72.4                   | 48.1                   |
| 3-Jun          | 88.0              | 70.8                   | 74.6                  | 52.7                  | 39.0             | 116.2              | 76.2                 | 78.7                   | 51.5                   |
| 10-Jun         | 88.0              | 68.4                   | 76.9                  | 54.3                  | 42.0             | 119.7              | 80.0                 | 82.1                   | 53.9                   |
| 17-Jun         | 91.0              | 71.2                   | 79.5                  | 57.1                  | 45.0             | 131.6              | 82.3                 | 87.2                   | 58.6                   |
| 24-Jun         | 91.0              | 73.8                   | 80.1                  | 58.8                  | 48.0             | 123.9              | 77.3                 | 93.1                   | 63.6                   |
| 1-Jul          | 90.0              | 72.8                   | 80.3                  | 59.3                  | 48.0             | 128.1              | 78.8                 | 93.7                   | 64.9                   |
| 8-Jul          | 95.0              | 73.6                   | 83.4                  | 61.4                  | 48.0             | 140.0              | 86.6                 | 104.0                  | 72.0                   |
| 15-Jul         | 94.0              | 76.3                   | 82.7                  | 62.3                  | 52.0             | 146.3              | 87.3                 | 106.5                  | 71.7                   |
| 22-Jul         | 93.0              | 78.5                   | 83.4                  | 63.3                  | 52.0             | 145.6              | 87.2                 | 108.2                  | 78.0                   |
| 29-Jul         | 90.0              | 72.3                   | 82.0                  | 61.4                  | 52.0             | 135.8              | 84.3                 | 101.9                  | 71.7                   |
| 5-Aug          | 91.0              | 74.7                   | 81.0                  | 61.3                  | 50.0             | 135.8              | 83.1                 | 102.5                  | 74.7                   |
| 12-Aug         | 90.0              | 77.2                   | 80.7                  | 60.4                  | 48.0             | 136.5              | 82.5                 | 102.3                  | 72.9                   |
| 19-Aug         | 90.0              | 73.7                   | 80.6                  | 59.5                  | 47.0             | 141.4              | 85.1                 | 101.1                  | 70.7                   |
| 26-Aug         | 89.0              | 73.1                   | 79.9                  | 58.8                  | 49.0             | 140.0              | 84.0                 | 97.5                   | 67.9                   |
| 2-Sep          | 90.0              | 76.7                   | 78.7                  | 59.2                  | 45.0             | 135.8              | 84.0                 | 98.1                   | 70.2                   |
| 9-Sep          | 91.0              | 73.4                   | 77.2                  | 55.4                  | 42.0             | 123.2              | 77.5                 | 89.3                   | 62.5                   |
| 16-Sep         | 87.0              | 71.9                   | 73.1                  | 53.6                  | 40.0             | 119.0              | 76.9                 | 83.1                   | 56.2                   |
| 23-Sep         | 83.0              | 73.0                   | 68.5                  | 49.7                  | 36.0             | 135.8              | 81.6                 | 74.7                   | 50.5                   |
| 30-Sep         | 80.0              | 68.3                   | 67.5                  | 46.9                  | 34.0             | 114.1              | 77.1                 | 67.2                   | 45.2                   |
| 7-Oct          | 79.0              | 63.5                   | 63.9                  | 43.8                  | 31.0             | 93.8               | 69.1                 | 60.2                   | 39.1                   |
| 14-Oct         | 76.0              | 65.0                   | 60.9                  | 41.7                  | 29.0             | 91.7               | 69.4                 | 54.2                   | 35.0                   |
| 21-Oct         | 74.0              | 62.2                   | 58.0                  | 40.3                  | 26.0             | 89.6               | 68.3                 | 51.2                   | 32.6                   |
| 28-Oct         | 73.0              | 60.9                   | 57.9                  | 38.9                  | 26.0             | 83.3               | 64.4                 | 49.4                   | 31.6                   |
| 4-Nov          | 71.0              | 58.8                   | 55.1                  | 38.3                  | 21.0             | 86.1               | 65.3                 | 47.7                   | 30.5                   |
| 11-Nov         | 66.0              | 61.0                   | 48.5                  | 33.6                  | 19.0             | 80.5               | 63.7                 | 39.9                   | 25.0                   |
| 18-Nov         | 64.0              | 54.9                   | 46.5                  | 30.5                  | 17.0             | 70.0               | 58.8                 | 36.0                   | 21.1                   |
| 25-Nov         | 61.0              | 57.8                   | 44.1                  | 30.3                  | 19.0             | 74.2               | 60.0                 | 35.4                   | 21.7                   |
| 2-Dec          | 61.0              | 56.9                   | 40.3                  | 27.8                  | 10.0             | 74.9               | 61.1                 | 32.8                   | 19.4                   |
| 9-Dec          | 59.0              | 56.3                   | 36.6                  | 24.5                  | 4.0              | 71.4               | 57.9                 | 28.2                   | 17.2                   |
| 16-Dec         | 56.0              | 52.9                   | 35.2                  | 23.0                  | 1.0              | 58.8               | 58.1                 | 26.0                   | 16.5                   |
| 23-Dec         | 50.0              | 45.4                   | 32.0                  | 19.6                  | -4.0             | 51.8               | 48.5                 | 23.6                   | 14.1                   |
| 31-Dec         | 58.0              | 56.8                   | 31.1                  | 18.7                  | -7.0             | 67.2               | 56.6                 | 23.6                   | 14.2                   |

JACKSON/REYNOLDS

MI

WMO No. 725395

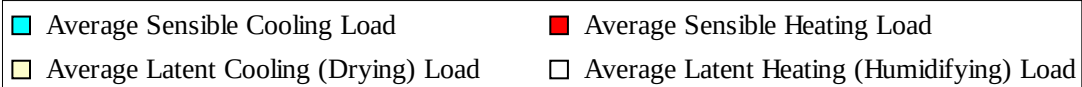
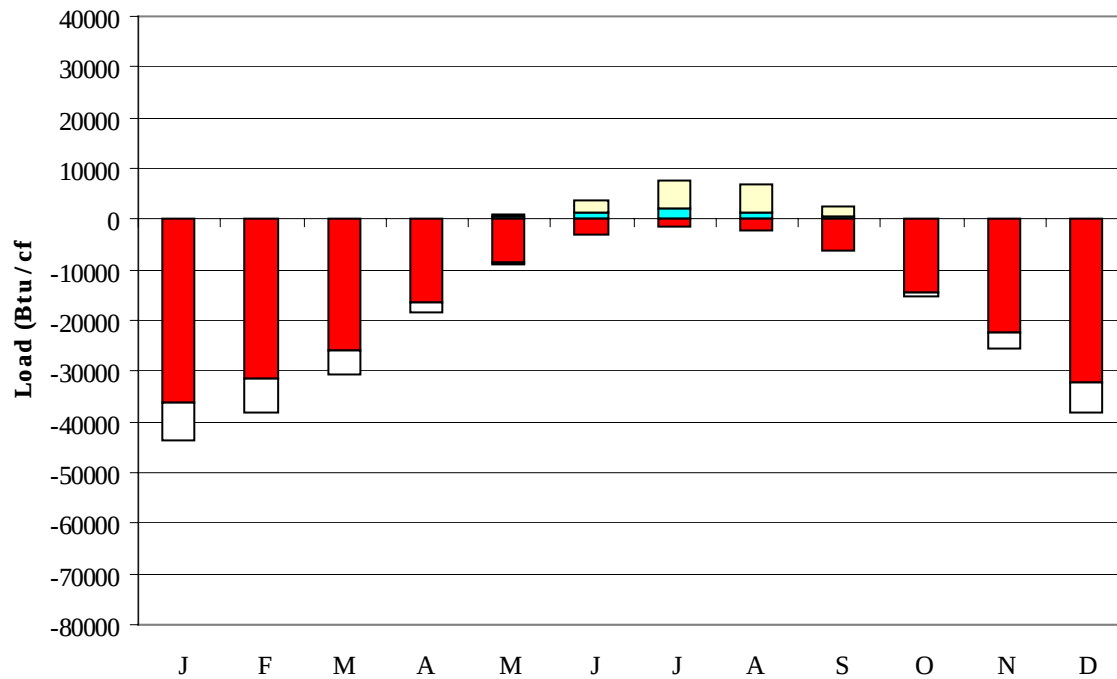
**Degree Days, Heating and Cooling**  
(Base 65°F)



Mean Cooling Degree Days Mean Heating Degree Days

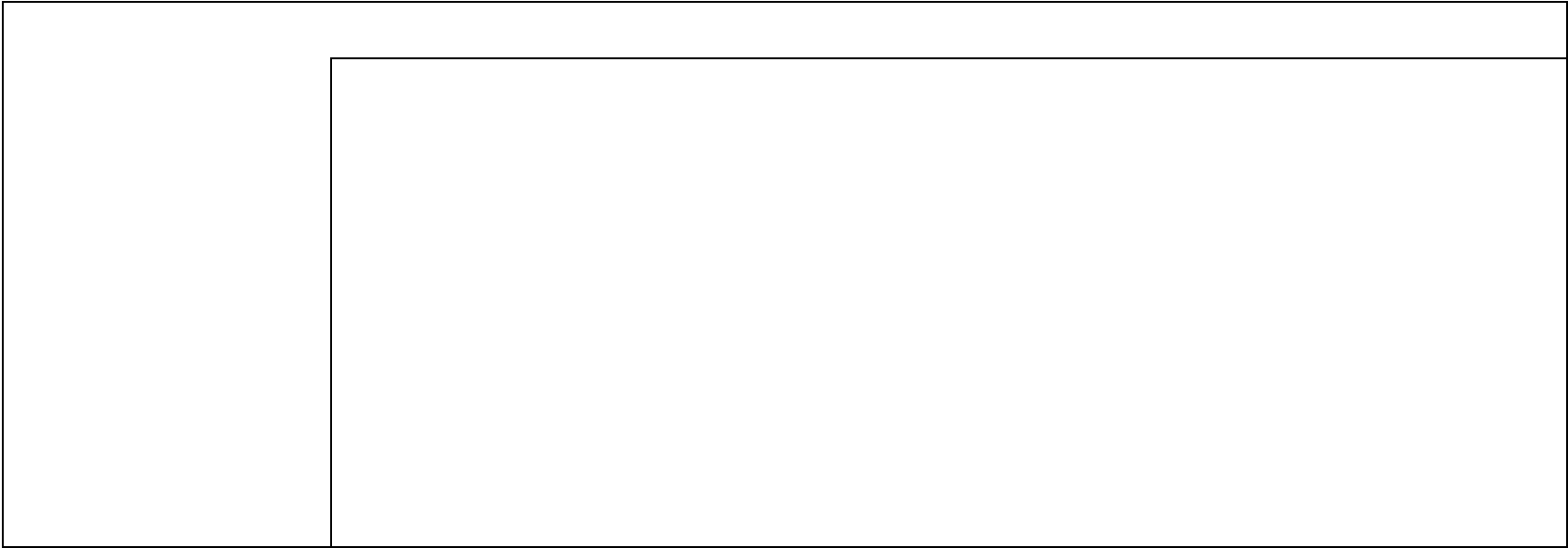
|     | Mean Cooling<br>Degree Days (°F) | Mean Heating<br>Degree Days (°F) |
|-----|----------------------------------|----------------------------------|
| JAN | 0                                | 1309                             |
| FEB | 0                                | 1134                             |
| MAR | 3                                | 914                              |
| APR | 18                               | 546                              |
| MAY | 73                               | 257                              |
| JUN | 179                              | 81                               |
| JUL | 267                              | 33                               |
| AUG | 214                              | 51                               |
| SEP | 91                               | 182                              |
| OCT | 14                               | 473                              |
| NOV | 1                                | 778                              |
| DEC | 0                                | 1148                             |
| ANN | 860                              | 6906                             |

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



|     | Average Sensible<br>Cooling Load<br>(Btu/cfm) | Average Sensible<br>Heating Load<br>(Btu/cfm) | Average Latent<br>Cooling Load<br>(Btu/cfm) | Average Latent<br>Heating Load<br>(Btu/cfm) |
|-----|-----------------------------------------------|-----------------------------------------------|---------------------------------------------|---------------------------------------------|
| JAN | 0                                             | -36329                                        | 0                                           | -7446                                       |
| FEB | 0                                             | -31600                                        | 0                                           | -6456                                       |
| MAR | 1                                             | -26061                                        | 0                                           | -4784                                       |
| APR | 68                                            | -16285                                        | 26                                          | -2323                                       |
| MAY | 393                                           | -8438                                         | 677                                         | -411                                        |
| JUN | 1181                                          | -3091                                         | 2645                                        | -25                                         |
| JUL | 2046                                          | -1457                                         | 5712                                        | 0                                           |
| AUG | 1355                                          | -2103                                         | 5361                                        | -4                                          |
| SEP | 457                                           | -6231                                         | 1858                                        | -58                                         |
| OCT | 23                                            | -14490                                        | 102                                         | -840                                        |
| NOV | 0                                             | -22464                                        | 8                                           | -3071                                       |
| DEC | 0                                             | -32153                                        | 2                                           | -5895                                       |
| ANN | 5524                                          | -200702                                       | 16391                                       | -31313                                      |

**Average Annual Solar Radiation – Nearest Available Site**  
(Source: National Renewable Energy Laboratory, Golden CO, 1995)



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

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

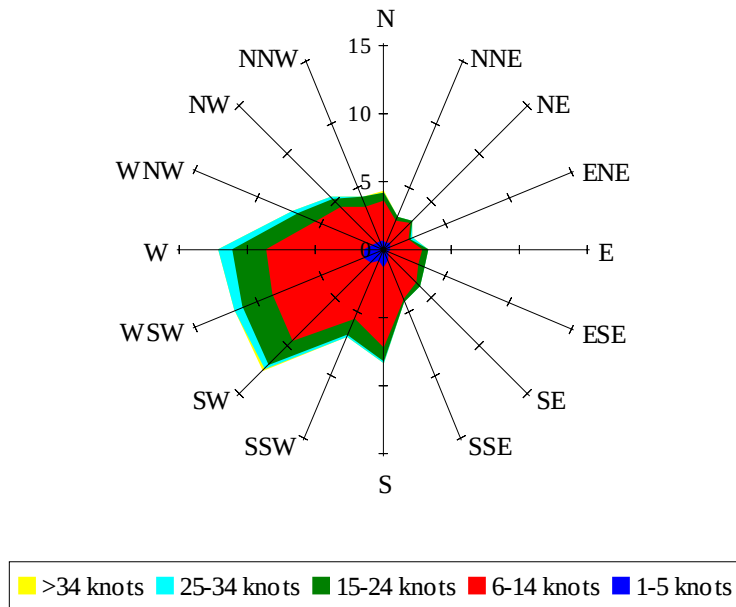
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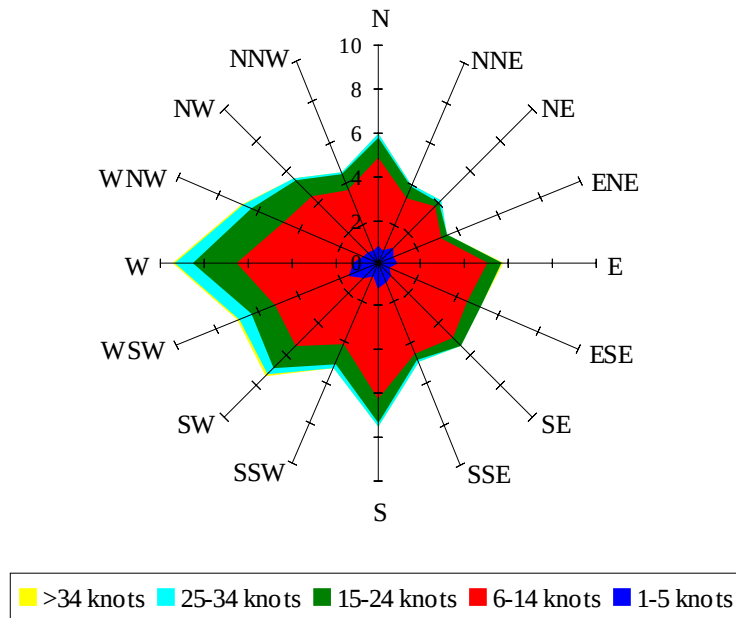


# **Wind Summary - December, January, and February** **Labels of Percent Frequency on North Axis**



Percent Calm = 6.21

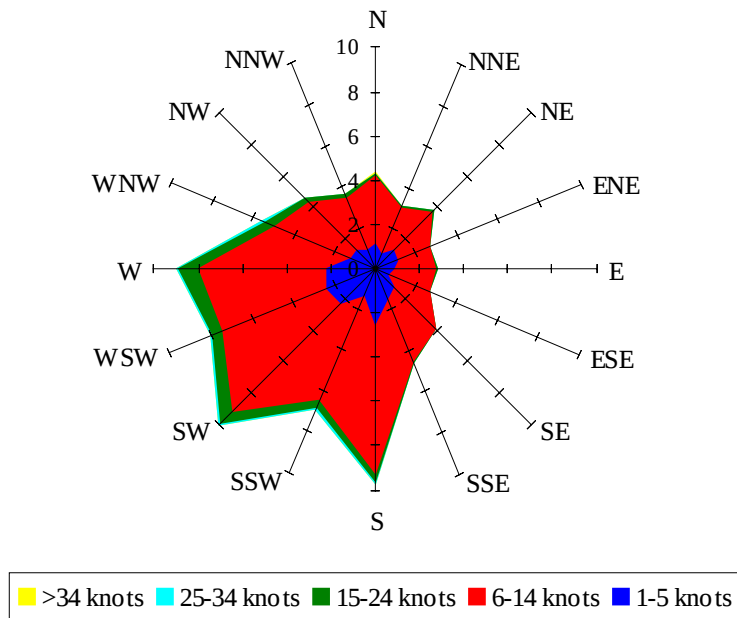
# **Wind Summary - March, April, and May** **Labels of Percent Frequency on North Axis**



Percent Calm = 8.97

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

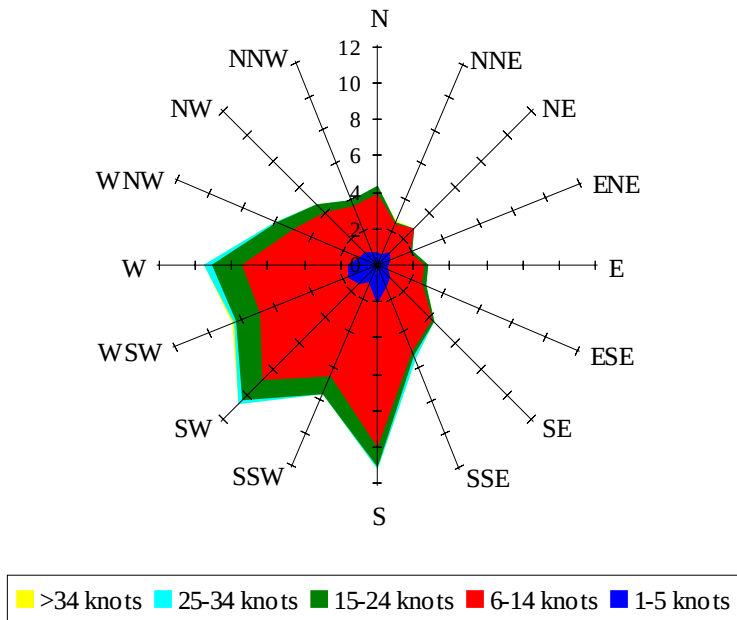
Labels of Percent Frequency on North Axis



Percent Calm = 15.79

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

Labels of Percent Frequency on North Axis



Percent Calm = 11.17