

**ROSWELL/INDUSTRIAL NM**

Latitude = 33.30 N

WMO No. 722680

Longitude = 104.50 W

Elevation = 3668 feet

Period of Record = 1973 to 1996

Average Pressure = 26.26 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                          | 103                 | 66                               | 48                      | 11.2                   | SE                          |
| 0.4% Occurrence                                  | 100                 | 65                               | 52                      | 10.7                   | SE                          |
| 1.0% Occurrence                                  | 97                  | 65                               | 55                      | 11.0                   | S                           |
| 2.0% Occurrence                                  | 95                  | 65                               | 58                      | 10.8                   | SE                          |
| Mean Daily Range                                 | 27                  | -                                | -                       | -                      | -                           |
| 97.5% Occurrence                                 | 25                  | 23                               | 15                      | 6.4                    | N                           |
| 99.0% Occurrence                                 | 20                  | 18                               | 12                      | 6.1                    | N                           |
| 99.6% Occurrence                                 | 15                  | 14                               | 10                      | 6.7                    | N                           |
| Median of Extreme Lows                           | 6                   | 5                                | 7                       | 5.2                    | 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                          | 73                  | 89                               | 108                     | 9.3                    | SE                          |
| 0.4% Occurrence                                  | 71                  | 87                               | 100                     | 9.2                    | SE                          |
| 1.0% Occurrence                                  | 70                  | 86                               | 96                      | 9.3                    | SE                          |
| 2.0% Occurrence                                  | 69                  | 85                               | 93                      | 9.3                    | SE                          |
|                                                  | <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                          | 123                 | 76                               | 0.72                    | 7.8                    | SSE                         |
| 0.4% Occurrence                                  | 113                 | 74                               | 0.67                    | 7.5                    | SSE                         |
| 1.0% Occurrence                                  | 106                 | 74                               | 0.62                    | 8.1                    | SE                          |
| 2.0% Occurrence                                  | 103                 | 74                               | 0.60                    | 8.1                    | SSE                         |
| <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      |
|                                                  |                     | 294                              | 1539                    | 4                      | 663                         |

**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 |
|--------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 11                                               | 2.5                                          | 90                                                                 | 0.3 + 1.8                                                                               |
| 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>(#)                                             |
| 63.1                                             | N/A                                          | 8                                                                  | 66                                                                                      |

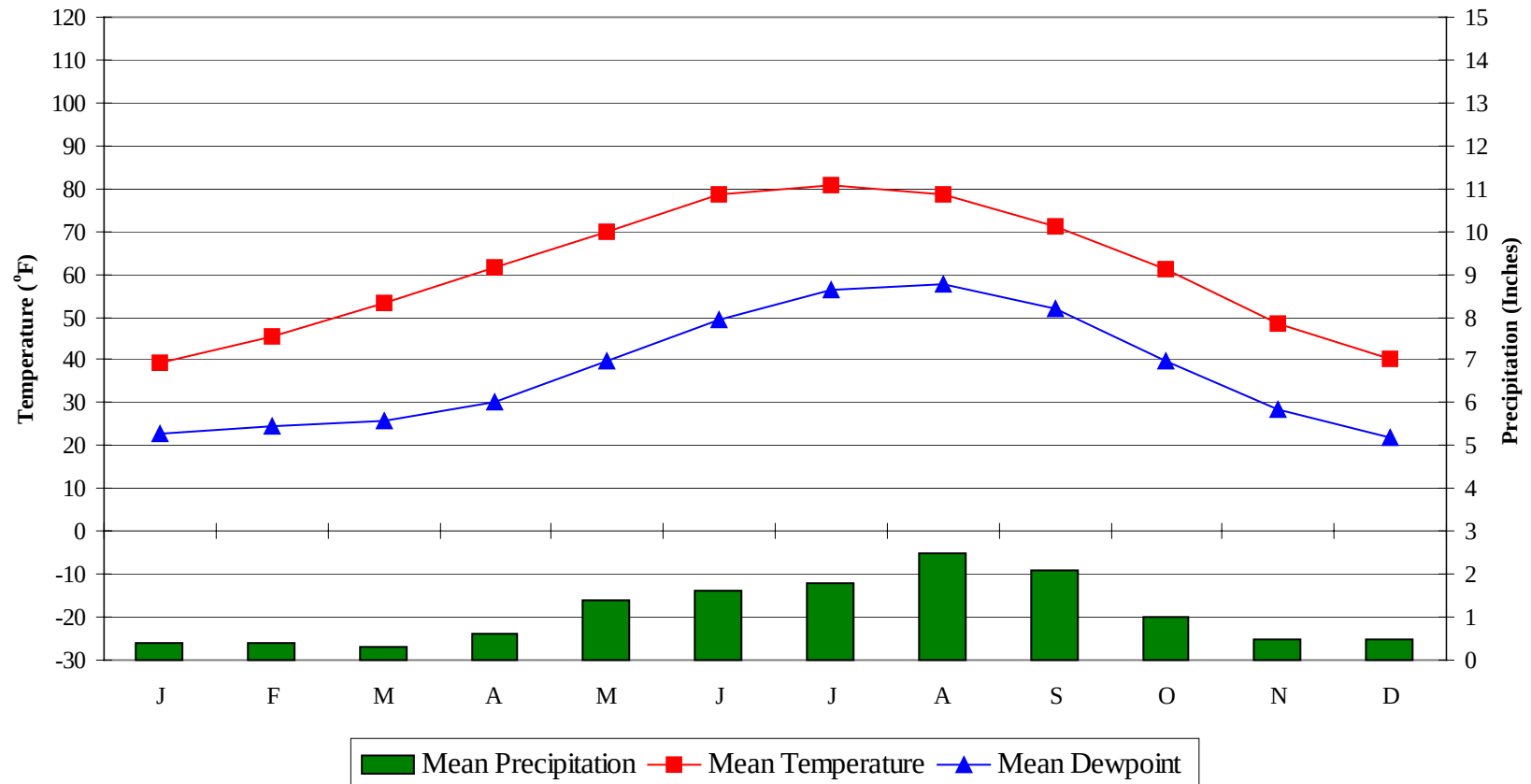
\*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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### Average Annual Climate

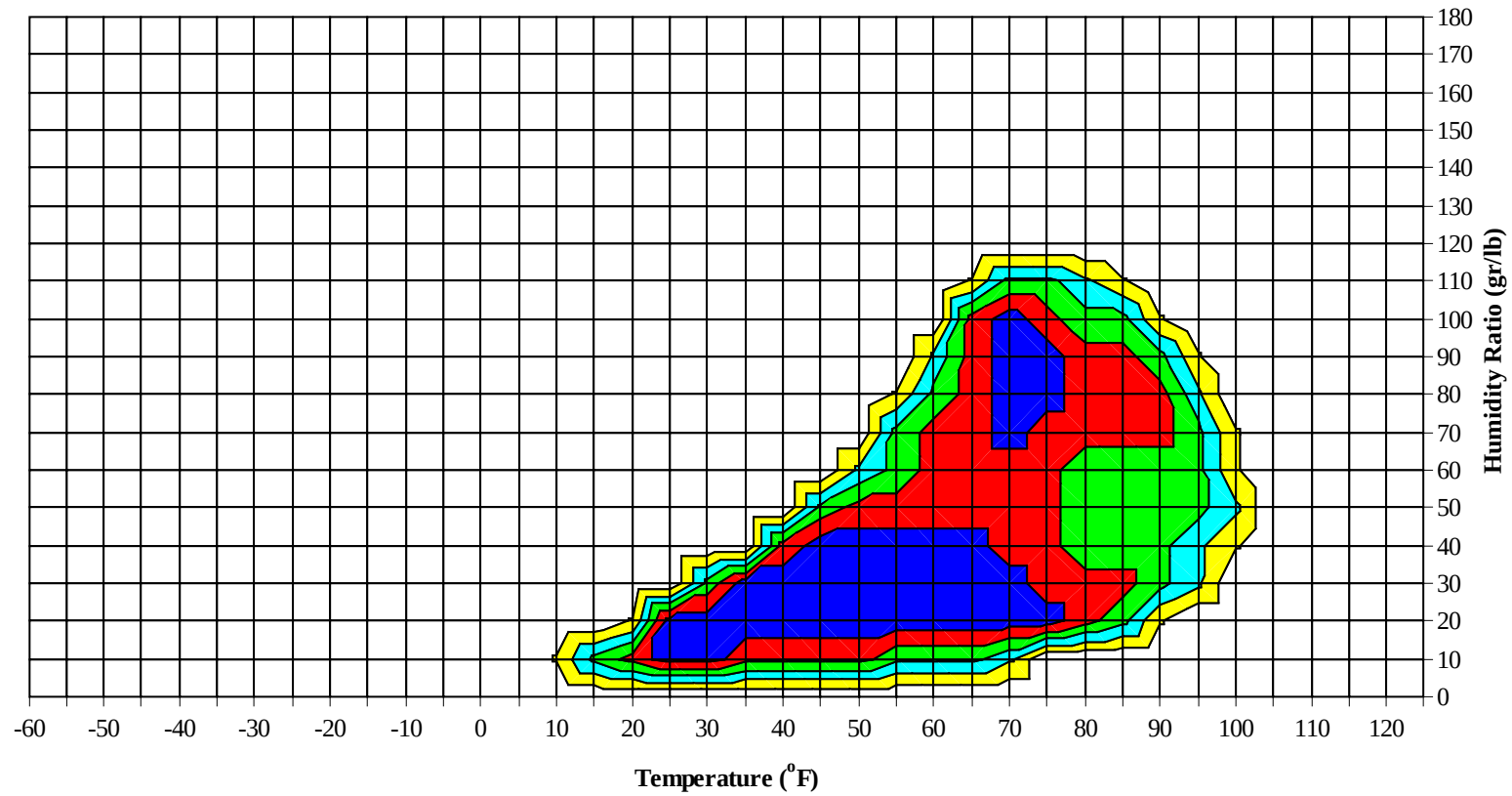


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### Long Term Psychrometric Summary



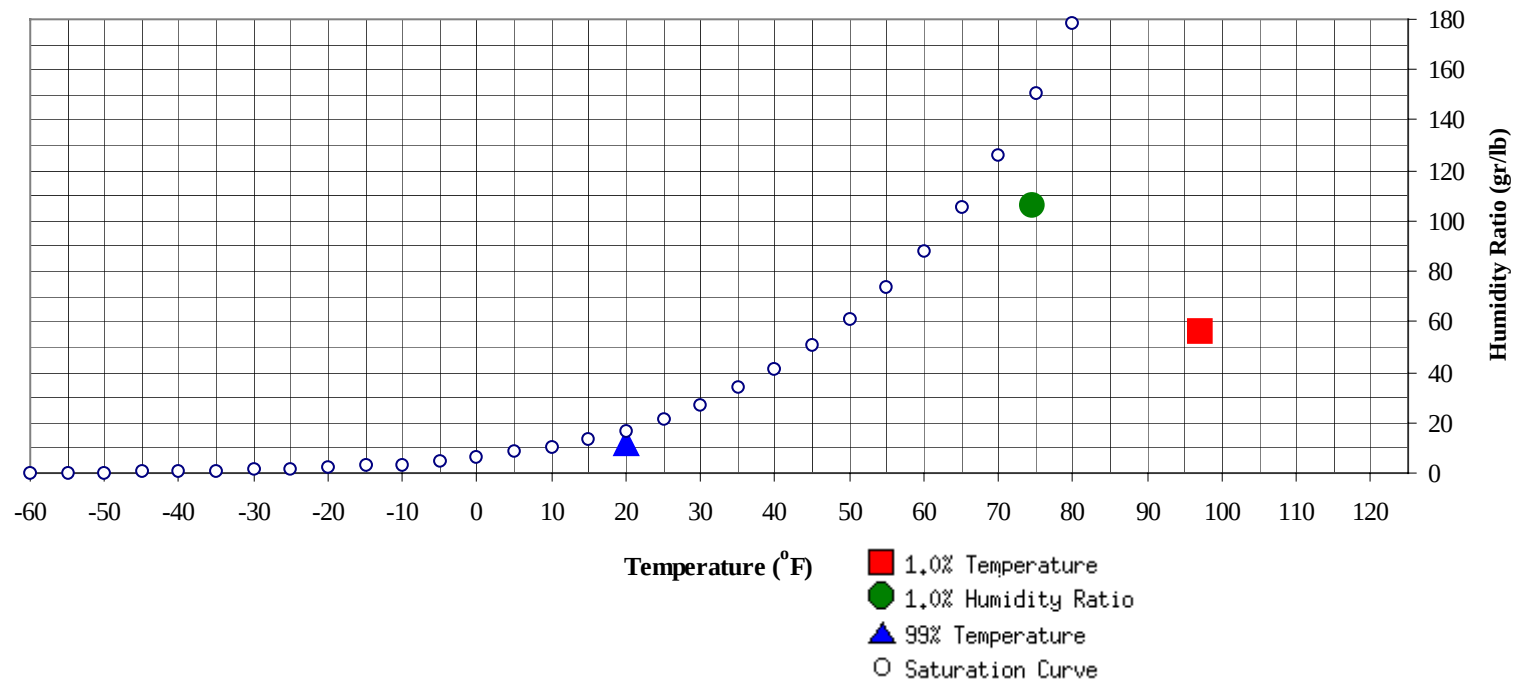
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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### Psychrometric Summary of Peak Design Values



|                     | (°F) | MCHR<br>(gr/lb) | Enthalpy<br>(btu/lb) |                            |       | MCDB<br>(°F) | MCWB<br>(°F) | MC Dewpt<br>(°F) | Enthalpy<br>(btu/lb) |
|---------------------|------|-----------------|----------------------|----------------------------|-------|--------------|--------------|------------------|----------------------|
| <b>99% Dry Bulb</b> | 20   | 12.1            | 6.6                  | <b>1.0% Humidity Ratio</b> | 106.4 | 74.5         | 67.8         | 65               | 34.5                 |
|                     |      |                 |                      | <b>Ratio</b>               |       |              |              |                  |                      |

|                      | (°F) | MCHR<br>(gr/lb) | MCWB<br>(°F) | Enthalpy<br>(btu/lb) |
|----------------------|------|-----------------|--------------|----------------------|
| <b>1.0% Dry Bulb</b> | 97   | 56.1            | 65.4         | 32.1                 |

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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 |              |                          |
| 110 / 114                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 105 / 109                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 100 / 104                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 90 / 94                      |                     |                |                |              |                          |                     |                |                |              |                          |                     | 0              |                | 0            | 58.5                     |
| 85 / 89                      |                     |                |                |              |                          |                     | 0              |                | 0            | 54.0                     |                     | 2              | 0              | 2            | 57.1                     |
| 80 / 84                      |                     | 0              |                | 0            | 51.8                     |                     | 3              | 0              | 3            | 53.1                     |                     | 11             | 2              | 13           | 53.8                     |
| 75 / 79                      |                     | 1              | 0              | 1            | 50.3                     |                     | 7              | 2              | 9            | 51.3                     | 0                   | 24             | 9              | 33           | 51.6                     |
| 70 / 74                      |                     | 4              | 0              | 4            | 48.6                     |                     | 16             | 4              | 20           | 49.7                     | 0                   | 31             | 16             | 47           | 49.4                     |
| 65 / 69                      |                     | 13             | 2              | 15           | 46.7                     | 0                   | 21             | 9              | 30           | 47.5                     | 1                   | 39             | 24             | 64           | 47.3                     |
| 60 / 64                      | 0                   | 23             | 7              | 30           | 44.7                     | 1                   | 31             | 19             | 51           | 45.3                     | 6                   | 38             | 35             | 80           | 45.1                     |
| 55 / 59                      | 1                   | 28             | 14             | 43           | 42.3                     | 5                   | 31             | 27             | 63           | 43.1                     | 15                  | 31             | 40             | 87           | 43.2                     |
| 50 / 54                      | 3                   | 34             | 25             | 62           | 40.0                     | 11                  | 31             | 34             | 76           | 41.0                     | 34                  | 29             | 46             | 108          | 40.8                     |
| 45 / 49                      | 7                   | 32             | 36             | 75           | 37.8                     | 20                  | 26             | 37             | 83           | 38.3                     | 45                  | 20             | 36             | 101          | 38.4                     |
| 40 / 44                      | 22                  | 34             | 46             | 103          | 35.3                     | 36                  | 22             | 35             | 93           | 35.5                     | 61                  | 11             | 23             | 95           | 35.5                     |
| 35 / 39                      | 43                  | 29             | 42             | 114          | 32.1                     | 45                  | 15             | 26             | 85           | 32.2                     | 47                  | 5              | 9              | 61           | 31.8                     |
| 30 / 34                      | 61                  | 26             | 40             | 127          | 28.6                     | 51                  | 11             | 16             | 78           | 28.6                     | 25                  | 4              | 5              | 34           | 28.2                     |
| 25 / 29                      | 58                  | 16             | 22             | 96           | 24.6                     | 31                  | 7              | 9              | 47           | 24.6                     | 9                   | 2              | 2              | 13           | 24.4                     |
| 20 / 24                      | 36                  | 6              | 8              | 50           | 20.3                     | 14                  | 3              | 4              | 21           | 20.4                     | 3                   | 1              | 1              | 5            | 20.1                     |
| 15 / 19                      | 10                  | 2              | 4              | 16           | 15.8                     | 6                   | 1              | 2              | 9            | 15.4                     | 1                   | 0              | 0              | 1            | 16.0                     |
| 10 / 14                      | 5                   | 1              | 1              | 7            | 11.4                     | 2                   | 1              | 1              | 4            | 10.4                     | 0                   |                |                | 0            | 13.0                     |
| 5 / 9                        | 1                   | 0              | 0              | 1            | 7.4                      | 1                   | 0              | 0              | 1            | 6.3                      |                     |                |                |              |                          |
| 0 / 4                        | 0                   | 0              | 0              | 0            | 1.4                      | 0                   |                |                | 0            | 3.8                      |                     |                |                |              |                          |
| -5 / -1                      | 0                   | 0              | 0              | 0            | -2.4                     |                     |                |                |              |                          |                     |                |                |              |                          |
| -10 / -6                     | 0                   |                |                | 0            | -7.8                     |                     |                |                |              |                          |                     |                |                |              |                          |

**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.

ROSWELL/INDUSTRIAL NM

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**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 |              |                          |
| 110 / 114                    |                     |                |                |              |                          |                     |                |                |              |                          |                     | 0              | 0              | 0            | 64.1                     |
| 105 / 109                    |                     |                |                |              |                          |                     |                |                |              |                          |                     | 2              | 1              | 3            | 65.8                     |
| 100 / 104                    |                     |                |                |              |                          |                     | 1              | 0              | 1            | 64.3                     |                     | 13             | 5              | 18           | 65.0                     |
| 95 / 99                      |                     | 0              |                | 0            | 62.0                     |                     | 7              | 2              | 9            | 61.3                     | 0                   | 36             | 14             | 49           | 63.9                     |
| 90 / 94                      |                     | 3              | 1              | 4            | 58.3                     |                     | 22             | 9              | 31           | 59.6                     | 0                   | 46             | 28             | 74           | 63.5                     |
| 85 / 89                      |                     | 16             | 4              | 20           | 56.2                     | 0                   | 38             | 16             | 54           | 57.9                     | 1                   | 50             | 37             | 88           | 63.0                     |
| 80 / 84                      |                     | 38             | 15             | 54           | 54.4                     | 1                   | 53             | 31             | 85           | 57.3                     | 9                   | 42             | 43             | 94           | 62.5                     |
| 75 / 79                      | 0                   | 39             | 22             | 62           | 52.9                     | 5                   | 45             | 35             | 85           | 56.4                     | 30                  | 29             | 43             | 101          | 61.6                     |
| 70 / 74                      | 3                   | 39             | 31             | 74           | 51.2                     | 18                  | 37             | 45             | 100          | 54.9                     | 61                  | 14             | 37             | 112          | 60.4                     |
| 65 / 69                      | 9                   | 33             | 37             | 80           | 49.2                     | 41                  | 24             | 46             | 111          | 53.5                     | 76                  | 6              | 23             | 104          | 58.6                     |
| 60 / 64                      | 27                  | 28             | 45             | 100          | 47.5                     | 67                  | 13             | 36             | 115          | 52.1                     | 46                  | 2              | 9              | 57           | 55.6                     |
| 55 / 59                      | 46                  | 19             | 34             | 99           | 45.0                     | 63                  | 6              | 18             | 86           | 49.8                     | 15                  | 0              | 1              | 16           | 51.4                     |
| 50 / 54                      | 55                  | 11             | 24             | 90           | 42.2                     | 35                  | 2              | 7              | 44           | 45.3                     | 2                   |                | 0              | 2            | 48.6                     |
| 45 / 49                      | 45                  | 7              | 14             | 66           | 39.0                     | 13                  | 1              | 2              | 16           | 41.6                     | 0                   |                |                | 0            | 46.7                     |
| 40 / 44                      | 31                  | 4              | 7              | 42           | 36.1                     | 4                   | 0              | 1              | 5            | 38.1                     |                     |                |                |              |                          |
| 35 / 39                      | 14                  | 1              | 2              | 17           | 32.5                     | 1                   |                |                | 1            | 35.6                     |                     |                |                |              |                          |
| 30 / 34                      | 7                   | 2              | 2              | 11           | 28.7                     | 0                   |                |                | 0            | 27.0                     |                     |                |                |              |                          |
| 25 / 29                      | 3                   | 0              | 0              | 3            | 24.9                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 20 / 24                      | 0                   |                |                | 0            | 21.0                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 15 / 19                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 10 / 14                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 5 / 9                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 0 / 4                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -10 / -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.

ROSWELL/INDUSTRIAL NM

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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 |              |                          |
| 110 / 114                    |                     | 0              |                | 0            | 72.0                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 105 / 109                    |                     | 1              | 0              | 1            | 68.2                     |                     | 0              |                | 0            | 65.5                     |                     |                |                |              |                          |
| 100 / 104                    |                     | 8              | 2              | 10           | 66.0                     |                     | 2              | 0              | 2            | 67.0                     |                     | 1              | 0              | 1            | 64.9                     |
| 95 / 99                      |                     | 37             | 16             | 53           | 66.5                     |                     | 23             | 6              | 29           | 66.7                     |                     | 5              | 1              | 6            | 64.0                     |
| 90 / 94                      | 0                   | 63             | 32             | 96           | 66.6                     |                     | 59             | 24             | 83           | 66.9                     |                     | 23             | 6              | 29           | 64.3                     |
| 85 / 89                      | 1                   | 60             | 40             | 101          | 66.4                     | 0                   | 61             | 36             | 97           | 66.7                     | 0                   | 44             | 16             | 60           | 63.9                     |
| 80 / 84                      | 12                  | 47             | 58             | 118          | 65.6                     | 5                   | 52             | 51             | 108          | 66.0                     | 0                   | 51             | 29             | 80           | 63.1                     |
| 75 / 79                      | 48                  | 21             | 55             | 125          | 64.5                     | 32                  | 30             | 64             | 126          | 65.0                     | 4                   | 41             | 42             | 87           | 62.2                     |
| 70 / 74                      | 107                 | 9              | 34             | 150          | 63.6                     | 94                  | 15             | 43             | 152          | 63.8                     | 26                  | 32             | 53             | 111          | 61.1                     |
| 65 / 69                      | 70                  | 2              | 9              | 81           | 62.3                     | 88                  | 5              | 18             | 111          | 62.5                     | 71                  | 18             | 46             | 136          | 59.7                     |
| 60 / 64                      | 10                  | 0              | 0              | 10           | 59.8                     | 26                  | 2              | 5              | 33           | 59.9                     | 66                  | 12             | 27             | 105          | 56.5                     |
| 55 / 59                      | 0                   | 0              |                | 0            | 55.0                     | 2                   | 0              | 0              | 2            | 56.4                     | 42                  | 6              | 12             | 60           | 52.9                     |
| 50 / 54                      |                     | 0              |                | 0            |                          | 0                   |                |                | 0            | 52.0                     | 21                  | 5              | 6              | 32           | 48.3                     |
| 45 / 49                      |                     |                |                |              |                          |                     |                |                |              |                          | 8                   | 2              | 2              | 12           | 44.0                     |
| 40 / 44                      |                     |                |                |              |                          |                     |                |                |              |                          | 1                   | 0              | 0              | 1            | 40.9                     |
| 35 / 39                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 30 / 34                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 25 / 29                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 20 / 24                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 15 / 19                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 10 / 14                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 5 / 9                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 0 / 4                        |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| -10 / -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.

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WMO No. 722680

**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 |              |                          |
| 110 / 114                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 105 / 109                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 100 / 104                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     | 0              |                | 0            | 60.0                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 90 / 94                      |                     | 4              | 0              | 4            | 59.4                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 85 / 89                      |                     | 14             | 2              | 16           | 58.4                     |                     | 1              |                | 1            | 56.5                     |                     |                |                |              |                          |
| 80 / 84                      |                     | 31             | 7              | 38           | 57.7                     |                     | 5              | 0              | 5            | 53.8                     |                     | 0              |                | 0            | 51.8                     |
| 75 / 79                      |                     | 39             | 15             | 54           | 56.8                     |                     | 14             | 1              | 15           | 52.4                     |                     | 3              | 0              | 3            | 50.5                     |
| 70 / 74                      | 1                   | 43             | 28             | 72           | 55.3                     | 0                   | 26             | 5              | 31           | 50.9                     | 0                   | 10             | 0              | 10           | 48.9                     |
| 65 / 69                      | 6                   | 38             | 41             | 86           | 53.5                     | 1                   | 26             | 12             | 39           | 49.2                     | 0                   | 17             | 3              | 20           | 47.0                     |
| 60 / 64                      | 25                  | 32             | 54             | 111          | 51.9                     | 3                   | 33             | 22             | 57           | 47.4                     | 1                   | 26             | 9              | 36           | 44.9                     |
| 55 / 59                      | 51                  | 23             | 46             | 120          | 49.5                     | 9                   | 36             | 34             | 78           | 45.2                     | 2                   | 27             | 15             | 44           | 42.6                     |
| 50 / 54                      | 72                  | 13             | 30             | 115          | 45.7                     | 21                  | 34             | 42             | 97           | 42.7                     | 5                   | 35             | 28             | 68           | 40.4                     |
| 45 / 49                      | 49                  | 5              | 14             | 68           | 41.6                     | 34                  | 29             | 41             | 104          | 39.7                     | 13                  | 33             | 37             | 83           | 37.6                     |
| 40 / 44                      | 28                  | 3              | 7              | 38           | 37.6                     | 49                  | 18             | 36             | 102          | 36.2                     | 25                  | 30             | 44             | 99           | 35.3                     |
| 35 / 39                      | 10                  | 2              | 2              | 14           | 33.9                     | 50                  | 12             | 24             | 85           | 32.6                     | 39                  | 26             | 45             | 110          | 31.8                     |
| 30 / 34                      | 4                   | 1              | 1              | 6            | 30.1                     | 39                  | 6              | 15             | 60           | 28.5                     | 58                  | 18             | 37             | 112          | 28.3                     |
| 25 / 29                      | 1                   | 0              | 0              | 1            | 25.1                     | 22                  | 2              | 6              | 30           | 24.4                     | 59                  | 12             | 17             | 87           | 24.4                     |
| 20 / 24                      | 0                   | 0              | 0              | 0            | 21.8                     | 9                   | 1              | 2              | 12           | 20.2                     | 28                  | 5              | 8              | 41           | 19.9                     |
| 15 / 19                      | 0                   |                |                | 0            | 16.8                     | 2                   | 0              | 1              | 3            | 16.1                     | 11                  | 3              | 4              | 18           | 15.2                     |
| 10 / 14                      |                     |                |                |              |                          | 1                   | 0              | 0              | 1            | 11.8                     | 4                   | 2              | 2              | 8            | 10.8                     |
| 5 / 9                        |                     |                |                |              |                          | 0                   | 0              |                | 0            | 6.0                      | 2                   | 0              | 1              | 3            | 6.2                      |
| 0 / 4                        |                     |                |                |              |                          |                     |                |                |              |                          | 1                   | 0              | 0              | 1            | 1.4                      |
| -5 / -1                      |                     |                |                |              |                          |                     |                |                |              |                          | 0                   |                | 0              | 0            | -2.1                     |
| -10 / -6                     |                     |                |                |              |                          |                     |                |                |              |                          | 0                   |                | 0              | 0            | -5.3                     |

**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.



**ROSWELL/INDUSTRIAL NM**

WMO No. 722680

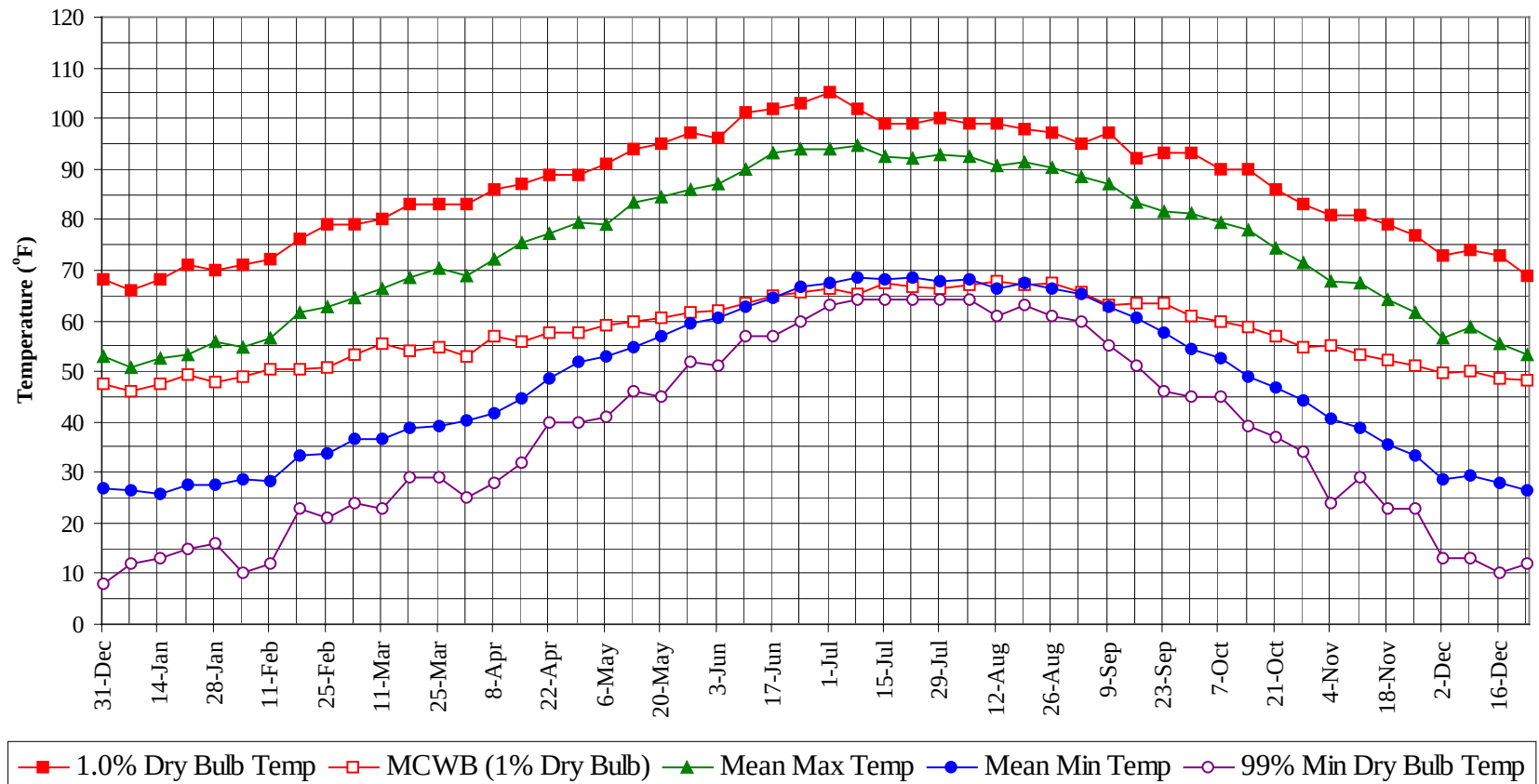
**Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)**

Period of Record = 1973 to 1996

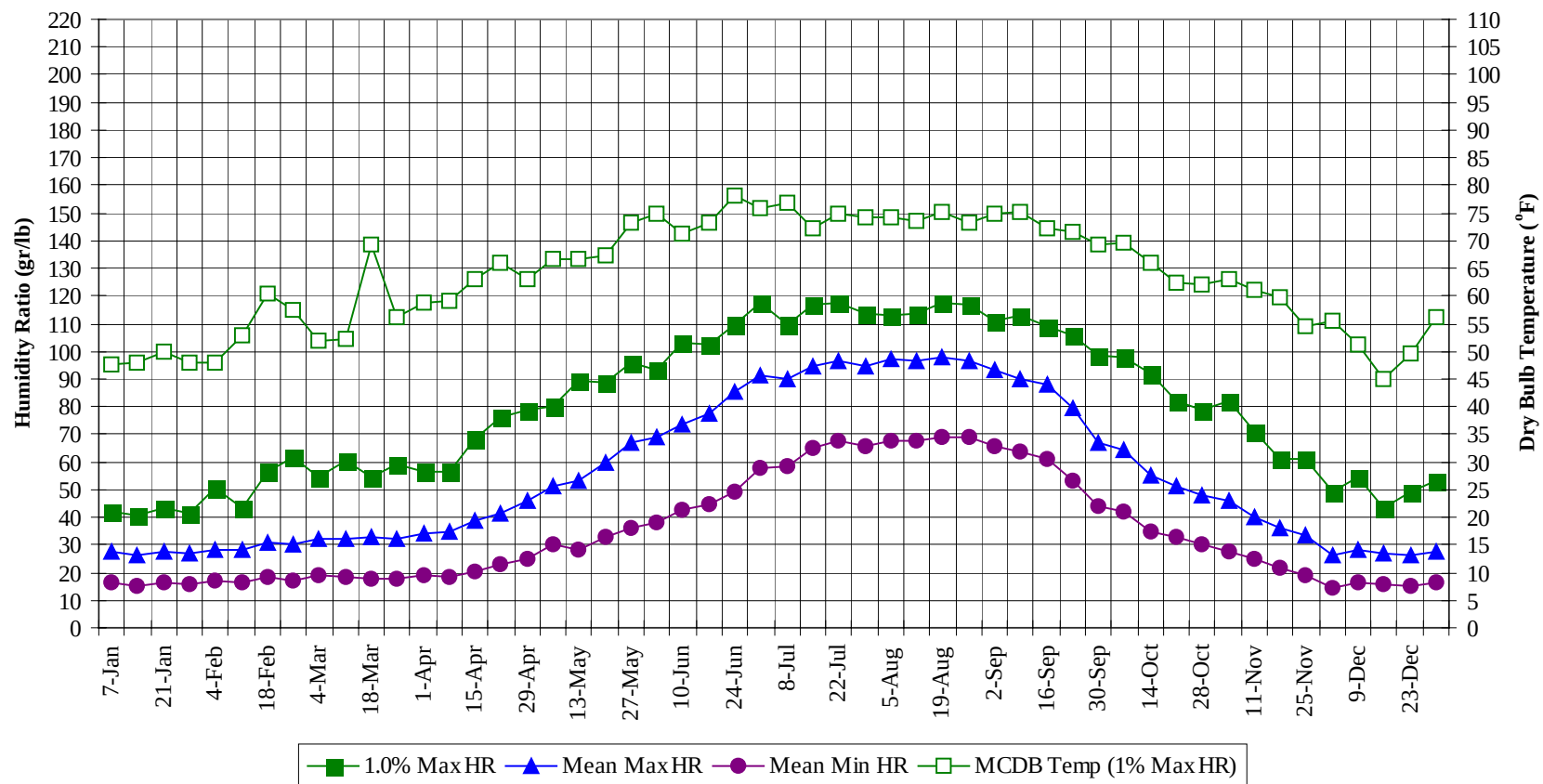
| Annual Totals                |                     |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|
| Temperature<br>Range<br>(°F) | Hour<br>Group (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 |              |                          |
| 110 / 114                    |                     | 0              | 0              | 0            | 65.0                     |
| 105 / 109                    |                     | 3              | 1              | 4            | 66.8                     |
| 100 / 104                    |                     | 24             | 8              | 32           | 65.5                     |
| 95 / 99                      | 0                   | 107            | 40             | 147          | 65.2                     |
| 90 / 94                      | 0                   | 220            | 99             | 319          | 64.9                     |
| 85 / 89                      | 2                   | 283            | 149            | 434          | 63.6                     |
| 80 / 84                      | 27                  | 333            | 235            | 594          | 61.7                     |
| 75 / 79                      | 119                 | 292            | 284            | 696          | 60.1                     |
| 70 / 74                      | 308                 | 274            | 295            | 877          | 58.4                     |
| 65 / 69                      | 359                 | 243            | 269            | 872          | 55.4                     |
| 60 / 64                      | 274                 | 240            | 267            | 782          | 50.6                     |
| 55 / 59                      | 250                 | 209            | 242            | 701          | 46.5                     |
| 50 / 54                      | 260                 | 194            | 246            | 701          | 42.6                     |
| 45 / 49                      | 239                 | 154            | 222            | 615          | 39.0                     |
| 40 / 44                      | 260                 | 121            | 200            | 581          | 35.8                     |
| 35 / 39                      | 250                 | 90             | 151            | 491          | 32.2                     |
| 30 / 34                      | 246                 | 68             | 117            | 431          | 28.5                     |
| 25 / 29                      | 184                 | 39             | 57             | 280          | 24.5                     |
| 20 / 24                      | 90                  | 16             | 22             | 127          | 20.2                     |
| 15 / 19                      | 32                  | 6              | 10             | 48           | 15.5                     |
| 10 / 14                      | 12                  | 4              | 4              | 20           | 11.1                     |
| 5 / 9                        | 5                   | 1              | 1              | 7            | 6.4                      |
| 0 / 4                        | 2                   | 0              | 0              | 2            | 1.6                      |
| -5 / -1                      | 1                   | 0              | 0              | 1            | -2.2                     |
| -10 / -6                     | 0                   |                | 0              | 0            | -6.3                     |

**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

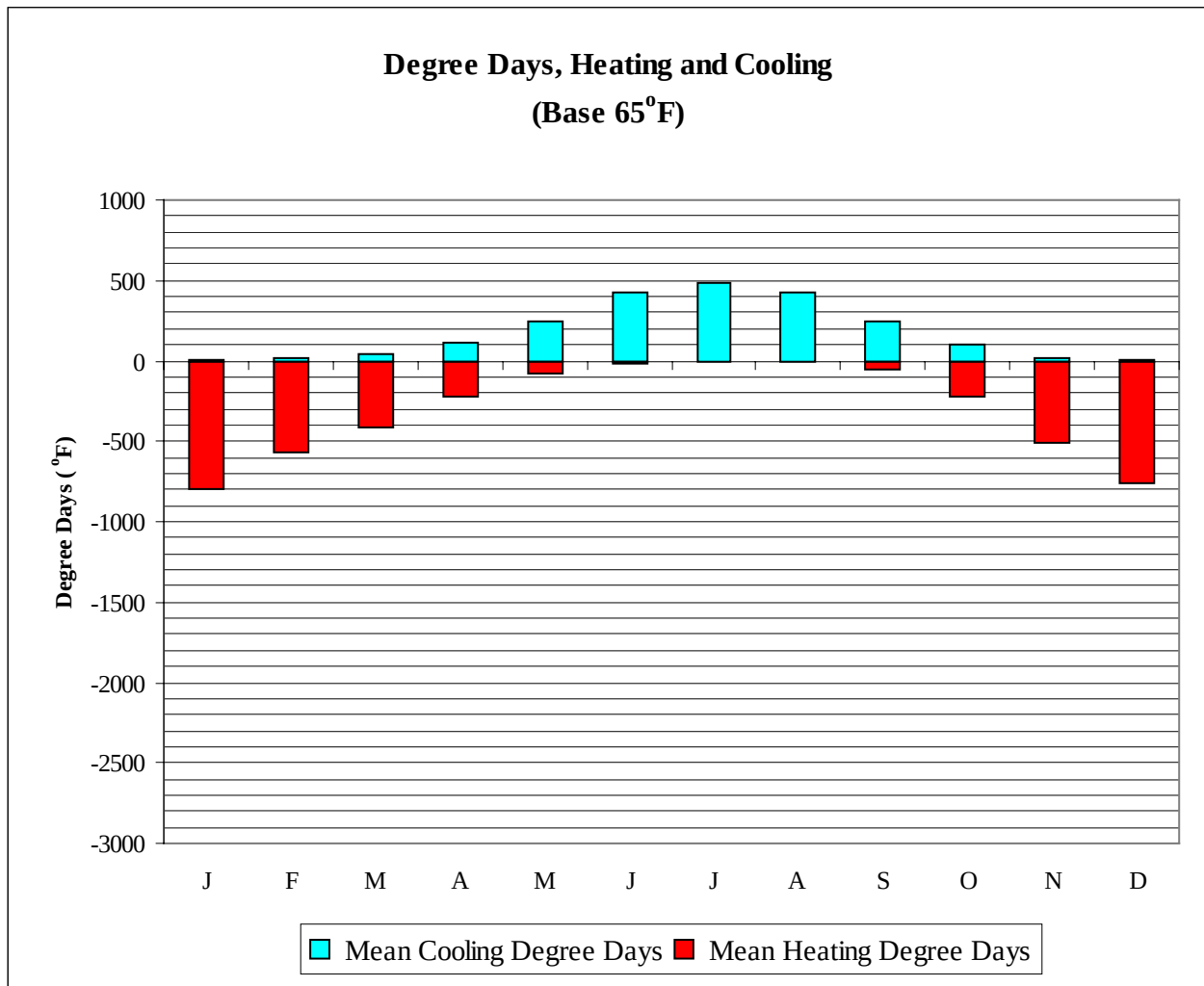


**ROSWELL/INDUSTRIAL NM**

WMO No. 722680

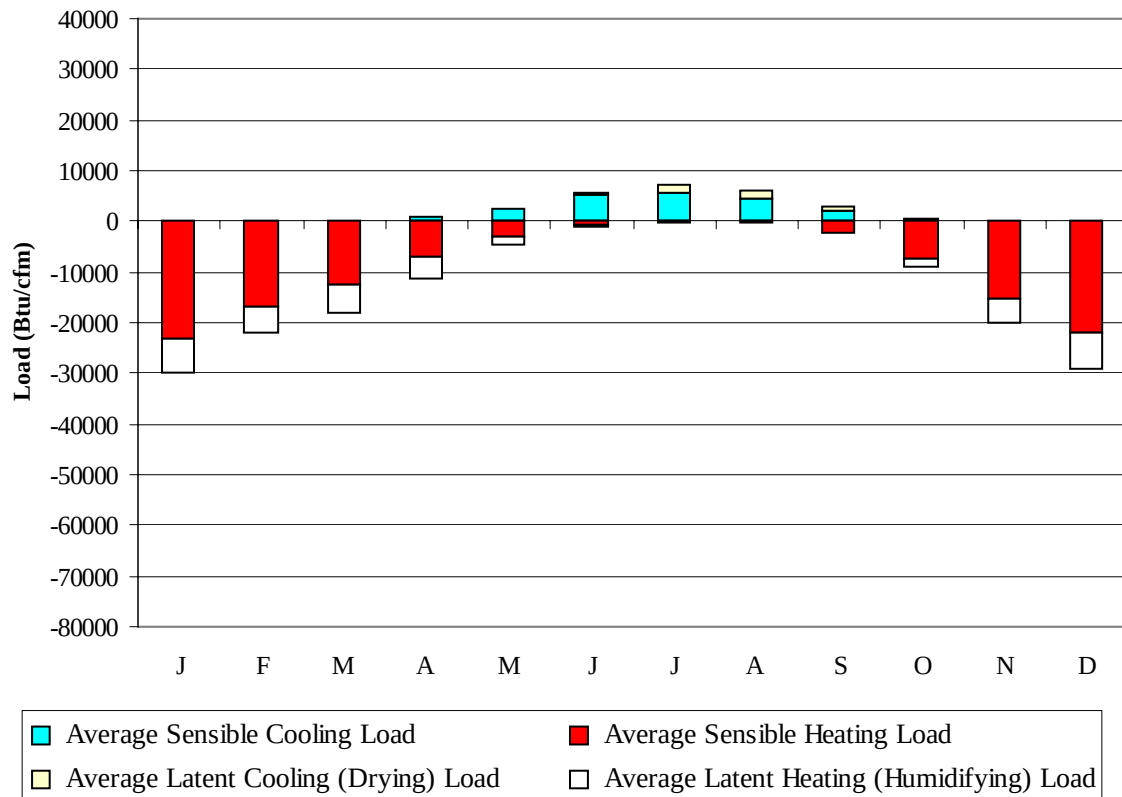
**Long Term Dry Bulb Temperature and Humidity Summary**

| 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          | 66.0              | 45.9                   | 50.8                  | 26.4                  | 12.0             | 42.0               | 47.8                 | 27.5                   | 16.1                   |
| 14-Jan         | 68.0              | 47.5                   | 52.4                  | 25.7                  | 13.0             | 40.6               | 47.9                 | 26.3                   | 15.4                   |
| 21-Jan         | 71.0              | 49.1                   | 53.4                  | 27.6                  | 15.0             | 43.4               | 50.1                 | 27.7                   | 16.3                   |
| 28-Jan         | 70.0              | 47.8                   | 55.9                  | 27.6                  | 16.0             | 41.3               | 47.9                 | 27.3                   | 15.9                   |
| 4-Feb          | 71.0              | 49.0                   | 54.8                  | 28.6                  | 10.0             | 50.4               | 47.9                 | 28.5                   | 17.2                   |
| 11-Feb         | 72.0              | 50.5                   | 56.6                  | 28.3                  | 12.0             | 43.4               | 52.9                 | 28.5                   | 16.7                   |
| 18-Feb         | 76.0              | 50.4                   | 61.8                  | 33.2                  | 23.0             | 56.7               | 60.4                 | 30.8                   | 18.5                   |
| 25-Feb         | 79.0              | 50.7                   | 62.9                  | 33.7                  | 21.0             | 61.6               | 57.6                 | 30.2                   | 17.1                   |
| 4-Mar          | 79.0              | 53.2                   | 64.6                  | 36.5                  | 24.0             | 54.6               | 52.0                 | 32.5                   | 18.9                   |
| 11-Mar         | 80.0              | 55.6                   | 66.5                  | 36.6                  | 23.0             | 60.2               | 52.3                 | 32.4                   | 18.3                   |
| 18-Mar         | 83.0              | 53.9                   | 68.4                  | 38.6                  | 29.0             | 54.6               | 69.4                 | 32.8                   | 17.8                   |
| 25-Mar         | 83.0              | 54.9                   | 70.4                  | 39.2                  | 29.0             | 58.8               | 56.2                 | 32.5                   | 17.5                   |
| 1-Apr          | 83.0              | 53.0                   | 69.0                  | 40.2                  | 25.0             | 56.7               | 58.8                 | 34.2                   | 18.7                   |
| 8-Apr          | 86.0              | 56.9                   | 72.3                  | 41.5                  | 28.0             | 56.7               | 59.1                 | 34.9                   | 18.2                   |
| 15-Apr         | 87.0              | 56.0                   | 75.3                  | 44.7                  | 32.0             | 68.6               | 63.2                 | 38.4                   | 20.6                   |
| 22-Apr         | 89.0              | 57.7                   | 77.3                  | 48.6                  | 40.0             | 76.3               | 66.0                 | 41.4                   | 22.8                   |
| 29-Apr         | 89.0              | 57.5                   | 79.6                  | 51.7                  | 40.0             | 79.1               | 63.2                 | 46.1                   | 25.1                   |
| 6-May          | 91.0              | 58.9                   | 79.0                  | 52.8                  | 41.0             | 79.8               | 66.8                 | 51.2                   | 30.3                   |
| 13-May         | 94.0              | 59.7                   | 83.3                  | 54.8                  | 46.0             | 89.6               | 66.5                 | 53.3                   | 28.2                   |
| 20-May         | 95.0              | 60.4                   | 84.5                  | 56.9                  | 45.0             | 88.9               | 67.3                 | 59.9                   | 33.2                   |
| 27-May         | 97.0              | 61.7                   | 86.0                  | 59.5                  | 52.0             | 95.9               | 73.2                 | 67.2                   | 36.3                   |
| 3-Jun          | 96.0              | 62.1                   | 86.9                  | 60.4                  | 51.0             | 93.1               | 74.8                 | 69.1                   | 38.1                   |
| 10-Jun         | 101.0             | 63.5                   | 89.9                  | 62.7                  | 57.0             | 102.9              | 71.3                 | 73.2                   | 42.5                   |
| 17-Jun         | 102.0             | 64.8                   | 93.1                  | 64.4                  | 57.0             | 102.2              | 73.2                 | 77.5                   | 44.5                   |
| 24-Jun         | 103.0             | 65.7                   | 94.0                  | 66.8                  | 60.0             | 109.9              | 78.2                 | 85.6                   | 49.4                   |
| 1-Jul          | 105.0             | 66.4                   | 93.9                  | 67.5                  | 63.0             | 117.6              | 76.0                 | 91.2                   | 58.1                   |
| 8-Jul          | 102.0             | 65.3                   | 94.6                  | 68.6                  | 64.0             | 109.9              | 76.8                 | 89.8                   | 58.2                   |
| 15-Jul         | 99.0              | 67.4                   | 92.3                  | 68.0                  | 64.0             | 116.9              | 72.1                 | 94.7                   | 65.3                   |
| 22-Jul         | 99.0              | 66.8                   | 92.1                  | 68.5                  | 64.0             | 117.6              | 75.0                 | 96.8                   | 67.4                   |
| 29-Jul         | 100.0             | 66.3                   | 92.7                  | 67.9                  | 64.0             | 113.4              | 74.2                 | 94.3                   | 65.4                   |
| 5-Aug          | 99.0              | 67.2                   | 92.3                  | 68.3                  | 64.0             | 112.7              | 74.1                 | 96.9                   | 67.5                   |
| 12-Aug         | 99.0              | 67.9                   | 90.6                  | 66.5                  | 61.0             | 113.4              | 73.4                 | 96.6                   | 67.8                   |
| 19-Aug         | 98.0              | 67.0                   | 91.2                  | 67.3                  | 63.0             | 117.6              | 75.2                 | 97.9                   | 68.8                   |
| 26-Aug         | 97.0              | 67.3                   | 90.4                  | 66.3                  | 61.0             | 116.9              | 73.2                 | 96.6                   | 68.7                   |
| 2-Sep          | 95.0              | 65.6                   | 88.6                  | 65.2                  | 60.0             | 111.3              | 74.8                 | 93.4                   | 66.0                   |
| 9-Sep          | 97.0              | 63.2                   | 87.1                  | 62.8                  | 55.0             | 112.7              | 75.0                 | 89.9                   | 63.4                   |
| 16-Sep         | 92.0              | 63.5                   | 83.5                  | 60.4                  | 51.0             | 109.2              | 72.3                 | 88.0                   | 61.2                   |
| 23-Sep         | 93.0              | 63.3                   | 81.5                  | 57.5                  | 46.0             | 105.7              | 71.5                 | 79.3                   | 53.3                   |
| 30-Sep         | 93.0              | 60.9                   | 81.3                  | 54.3                  | 45.0             | 98.7               | 69.2                 | 67.0                   | 43.8                   |
| 7-Oct          | 90.0              | 59.9                   | 79.6                  | 52.5                  | 45.0             | 98.0               | 69.6                 | 64.6                   | 42.2                   |
| 14-Oct         | 90.0              | 58.9                   | 78.1                  | 48.9                  | 39.0             | 91.7               | 65.9                 | 55.0                   | 34.9                   |
| 21-Oct         | 86.0              | 57.1                   | 74.5                  | 46.7                  | 37.0             | 81.9               | 62.3                 | 51.1                   | 32.8                   |
| 28-Oct         | 83.0              | 54.8                   | 71.5                  | 44.1                  | 34.0             | 79.1               | 61.9                 | 48.0                   | 30.5                   |
| 4-Nov          | 81.0              | 55.2                   | 67.7                  | 40.6                  | 24.0             | 81.9               | 63.2                 | 45.9                   | 27.7                   |
| 11-Nov         | 81.0              | 53.3                   | 67.5                  | 38.8                  | 29.0             | 70.7               | 61.0                 | 39.8                   | 24.7                   |
| 18-Nov         | 79.0              | 52.2                   | 64.2                  | 35.7                  | 23.0             | 60.9               | 59.8                 | 36.1                   | 21.5                   |
| 25-Nov         | 77.0              | 51.1                   | 61.5                  | 33.5                  | 23.0             | 60.9               | 54.5                 | 33.2                   | 19.2                   |
| 2-Dec          | 73.0              | 49.6                   | 56.5                  | 28.7                  | 13.0             | 49.0               | 55.4                 | 26.5                   | 14.6                   |
| 9-Dec          | 74.0              | 50.0                   | 58.7                  | 29.5                  | 13.0             | 54.6               | 51.3                 | 28.3                   | 16.7                   |
| 16-Dec         | 73.0              | 48.7                   | 55.4                  | 28.0                  | 10.0             | 43.4               | 44.8                 | 26.8                   | 15.8                   |
| 23-Dec         | 69.0              | 48.3                   | 53.2                  | 26.5                  | 12.0             | 49.0               | 49.5                 | 26.3                   | 14.9                   |
| 31-Dec         | 68.0              | 47.5                   | 52.8                  | 26.9                  | 8.0              | 53.2               | 56.2                 | 27.8                   | 16.5                   |



|     | Mean Cooling<br>Degree Days (°F) | Mean Heating<br>Degree Days (°F) |
|-----|----------------------------------|----------------------------------|
| JAN | 3                                | 802                              |
| FEB | 13                               | 566                              |
| MAR | 45                               | 408                              |
| APR | 119                              | 217                              |
| MAY | 249                              | 78                               |
| JUN | 428                              | 12                               |
| JUL | 488                              | 1                                |
| AUG | 423                              | 4                                |
| SEP | 241                              | 56                               |
| OCT | 98                               | 223                              |
| NOV | 22                               | 513                              |
| DEC | 5                                | 765                              |
| ANN | 2136                             | 3645                             |

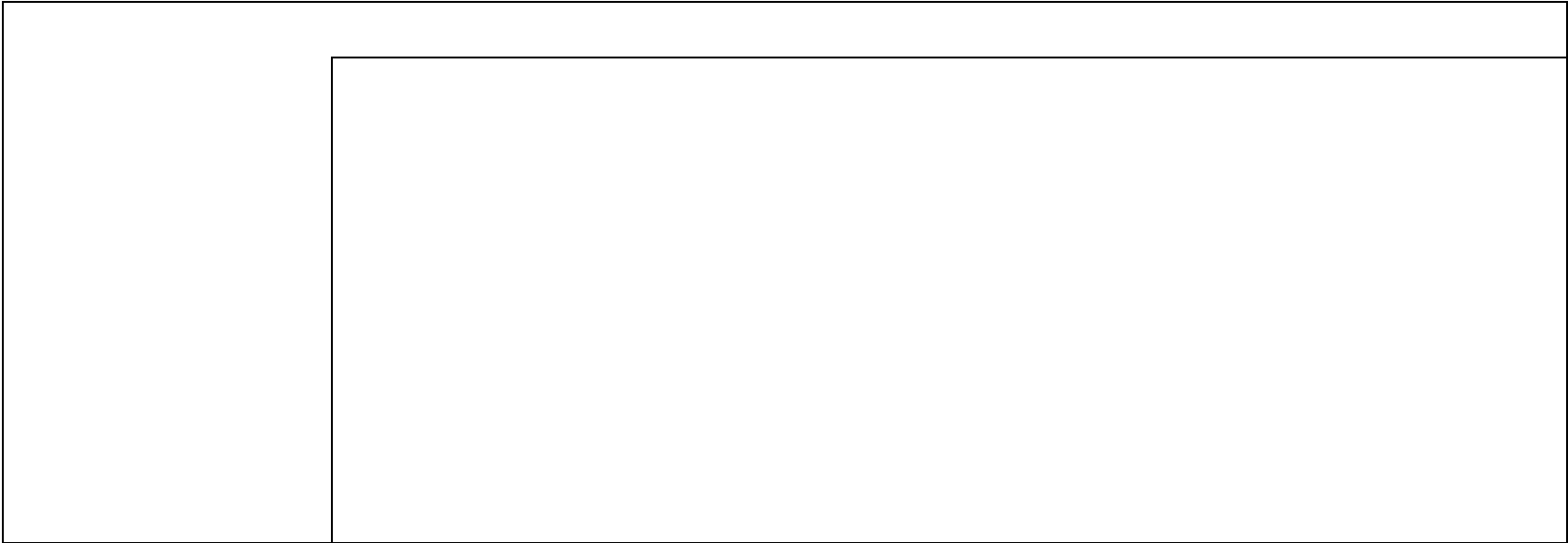
**Average Ventilation and Infiltration Loads**  
**(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)**



|     | Average Sensible<br>Cooling Load | Average Sensible<br>Heating Load | Average Latent<br>Cooling Load | Average Latent<br>Heating Load |
|-----|----------------------------------|----------------------------------|--------------------------------|--------------------------------|
|     | (Btu/cfm)                        | (Btu/cfm)                        | (Btu/cfm)                      | (Btu/cfm)                      |
| JAN | 2                                | -23153                           | 0                              | -6755                          |
| FEB | 34                               | -16717                           | 0                              | -5431                          |
| MAR | 181                              | -12559                           | 0                              | -5599                          |
| APR | 864                              | -7109                            | 0                              | -4043                          |
| MAY | 2461                             | -2968                            | 29                             | -1752                          |
| JUN | 5250                             | -643                             | 544                            | -386                           |
| JUL | 5785                             | -118                             | 1416                           | -21                            |
| AUG | 4608                             | -298                             | 1564                           | -5                             |
| SEP | 2177                             | -2269                            | 596                            | -121                           |
| OCT | 648                              | -7439                            | 27                             | -1334                          |
| NOV | 68                               | -15389                           | 0                              | -4452                          |
| DEC | 4                                | -22163                           | 0                              | -6876                          |
| ANN | 22082                            | -110825                          | 4176                           | -36775                         |

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

No Solar Radiation  
Data Available



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

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

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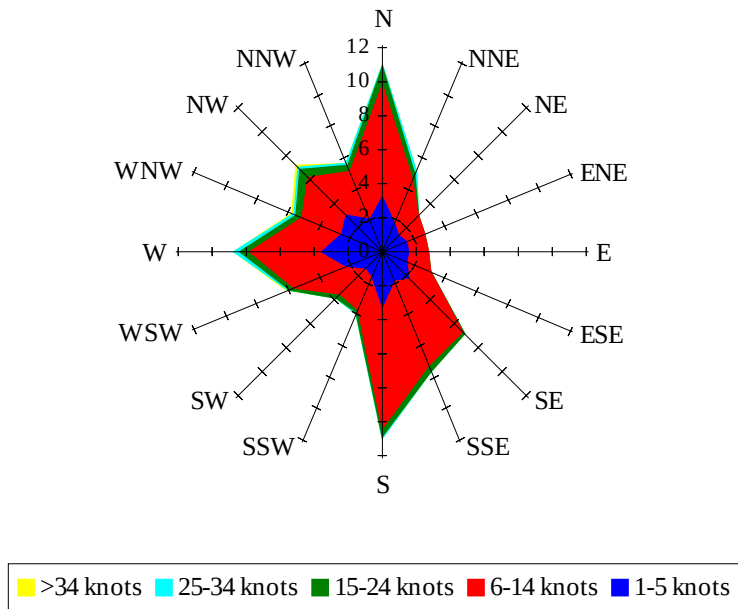
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## Wind Summary - December, January, and February

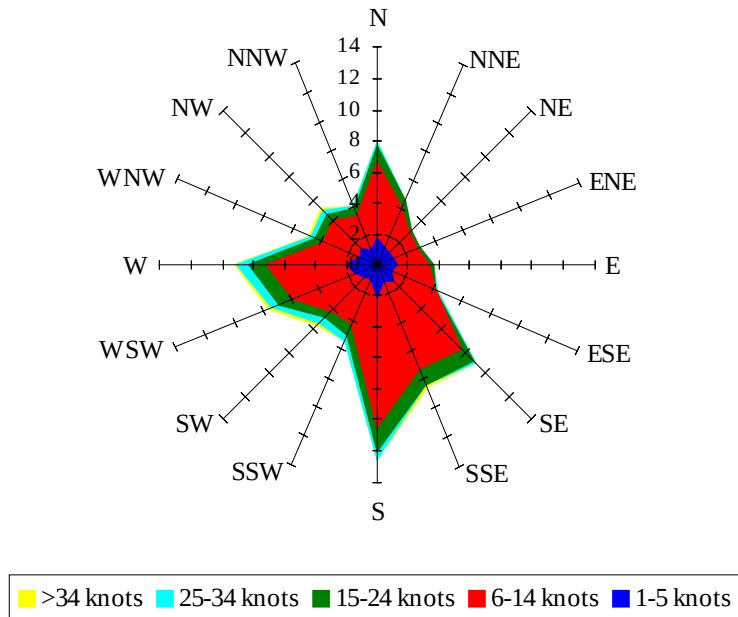
Labels of Percent Frequency on North Axis



Percent Calm = 6.80

## Wind Summary - March, April, and May

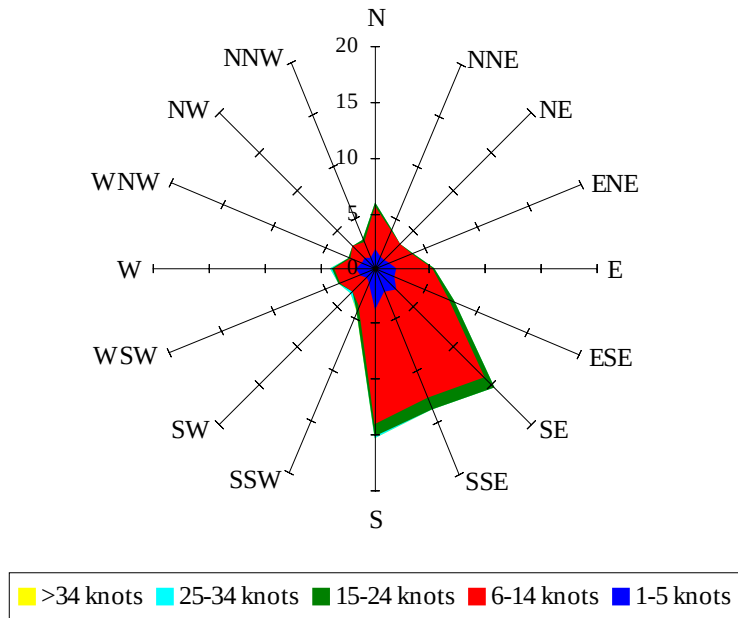
Labels of Percent Frequency on North Axis



Percent Calm = 3.06

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

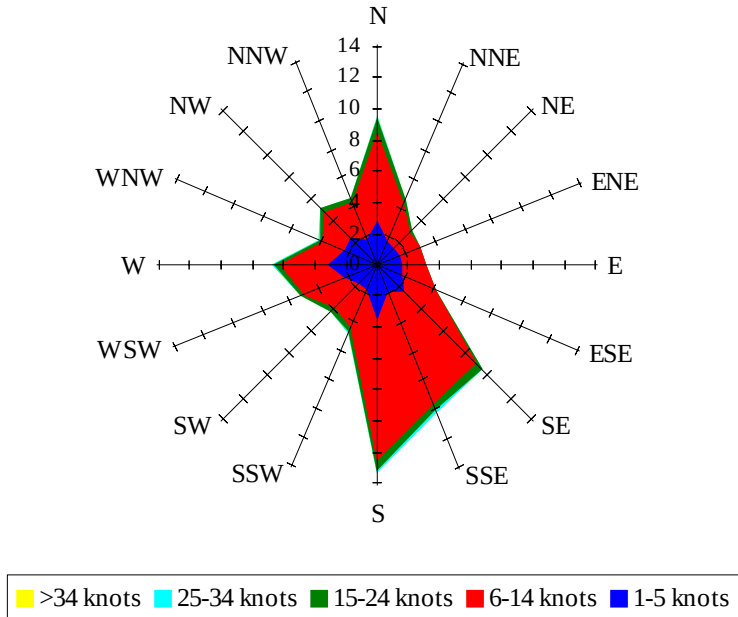
Labels of Percent Frequency on North Axis



Percent Calm = 4.39

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

Labels of Percent Frequency on North Axis



Percent Calm = 6.34