

**TIN CITY LRRS, AK**

Latitude = 65.56 N

Longitude = 167.92 W

Period of Record = 1988 To 2017

Station ID = ICAO\_PATC

Elevation = 279 Feet

Average Pressure = 29.53 inches Hg

**Design Criteria Data**

| Dry Bulb Temperature (T) | Mean Coincident (Average) Values |                           |                        |                  |                             |
|--------------------------|----------------------------------|---------------------------|------------------------|------------------|-----------------------------|
|                          | Design Value (°F)                | Wet Bulb Temperature (°F) | Humidity Ratio (gr/lb) | Wind Speed (mph) | Prevailing Direction (NSEW) |
| Median of Extreme Highs  | 66                               | 56                        | 53                     | 10.3             | N                           |
| 0.4% Occurrence          | 61                               | 54                        | 53                     | 10.6             | NNE                         |
| 1.0% Occurrence          | 57                               | 53                        | 53                     | 10.9             | N                           |
| 2.0% Occurrence          | 54                               | 51                        | 51                     | 12               | NNE                         |
| Mean Daily Range         | 8                                | -                         | -                      | -                | N                           |
| 97.5% Occurrence         | -17                              | -17                       | 2                      | 27.9             | N                           |
| 99.0% Occurrence         | -21                              | -21                       | 1                      | 27.4             | N                           |
| 99.6% Occurrence         | -24                              | -24                       | 1                      | 28.2             | N                           |
| Median of Extreme Lows   | -26                              | -26                       | 1                      | 27.7             | N                           |

| Wet Bulb Temperature (T <sub>wb</sub> ) | Design Value (°F) | Dry Bulb Temperature (°F) | Humidity Ratio (gr/lb) | Wind Speed (mph) | Prevailing Direction (NSEW) |
|-----------------------------------------|-------------------|---------------------------|------------------------|------------------|-----------------------------|
| Median of Extreme Highs                 | 58                | 62                        | 63                     | 12               | N                           |
| 0.4% Occurrence                         | 55                | 59                        | 58                     | 11.6             | N                           |
| 1.0% Occurrence                         | 53                | 56                        | 55                     | 12.4             | N                           |
| 2.0% Occurrence                         | 51                | 53                        | 52                     | 12.9             | NNE                         |

| Humidity Ratio (HR)     | Design Value (gr/lb) | Dry Bulb Temperature (°F) | Vapor Pressure (in. Hg) | Wind Speed (mph) | Prevailing Direction (NSEW) |
|-------------------------|----------------------|---------------------------|-------------------------|------------------|-----------------------------|
| Median of Extreme Highs | 67                   | 59                        | 0.44                    | 10.9             | NNE                         |
| 0.4% Occurrence         | 62                   | 56                        | 0.41                    | 11.2             | N                           |
| 1.0% Occurrence         | 57                   | 55                        | 0.39                    | 13.7             | N                           |
| 2.0% Occurrence         | 53                   | 53                        | 0.36                    | 14.2             | NNE                         |

| Air Conditioning/<br>Humid Area Criteria | Threshold  | T ≥ 93 °F | T ≥ 80 °F | Twb ≥ 73 °F | Twb ≥ 67 °F |
|------------------------------------------|------------|-----------|-----------|-------------|-------------|
|                                          | # of Hours | 0         | 0         | 0           | 0           |

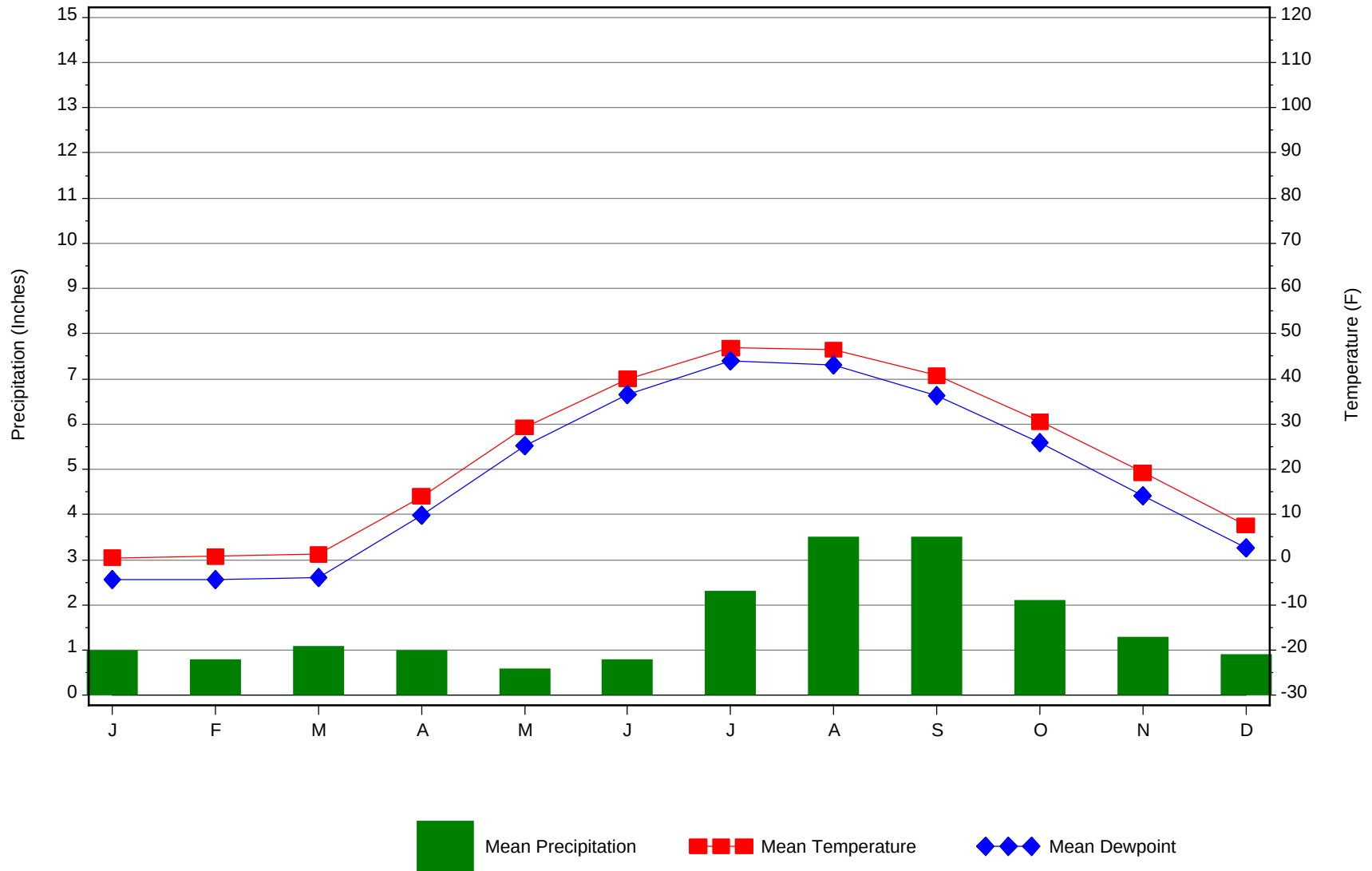
**Other Site Data**

| 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 |
|----------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1                                                  | 0.5                                          | 130                                                                | 0.0 + 0.0                                                                               |
| Ground Water<br>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>(#)                                             |
| 25.9                                               | N/A                                          | N/A                                                                | 30                                                                                      |

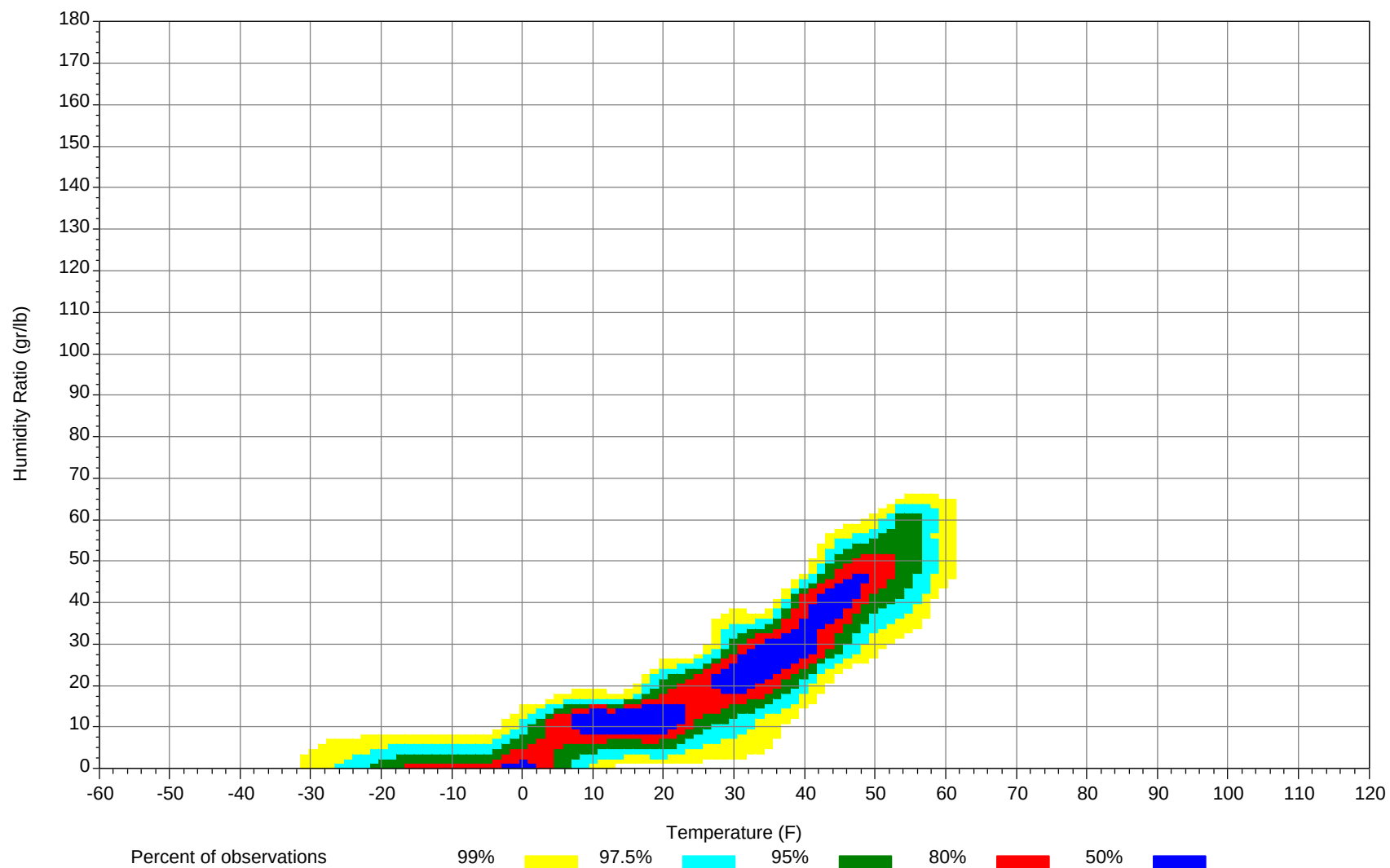
\*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



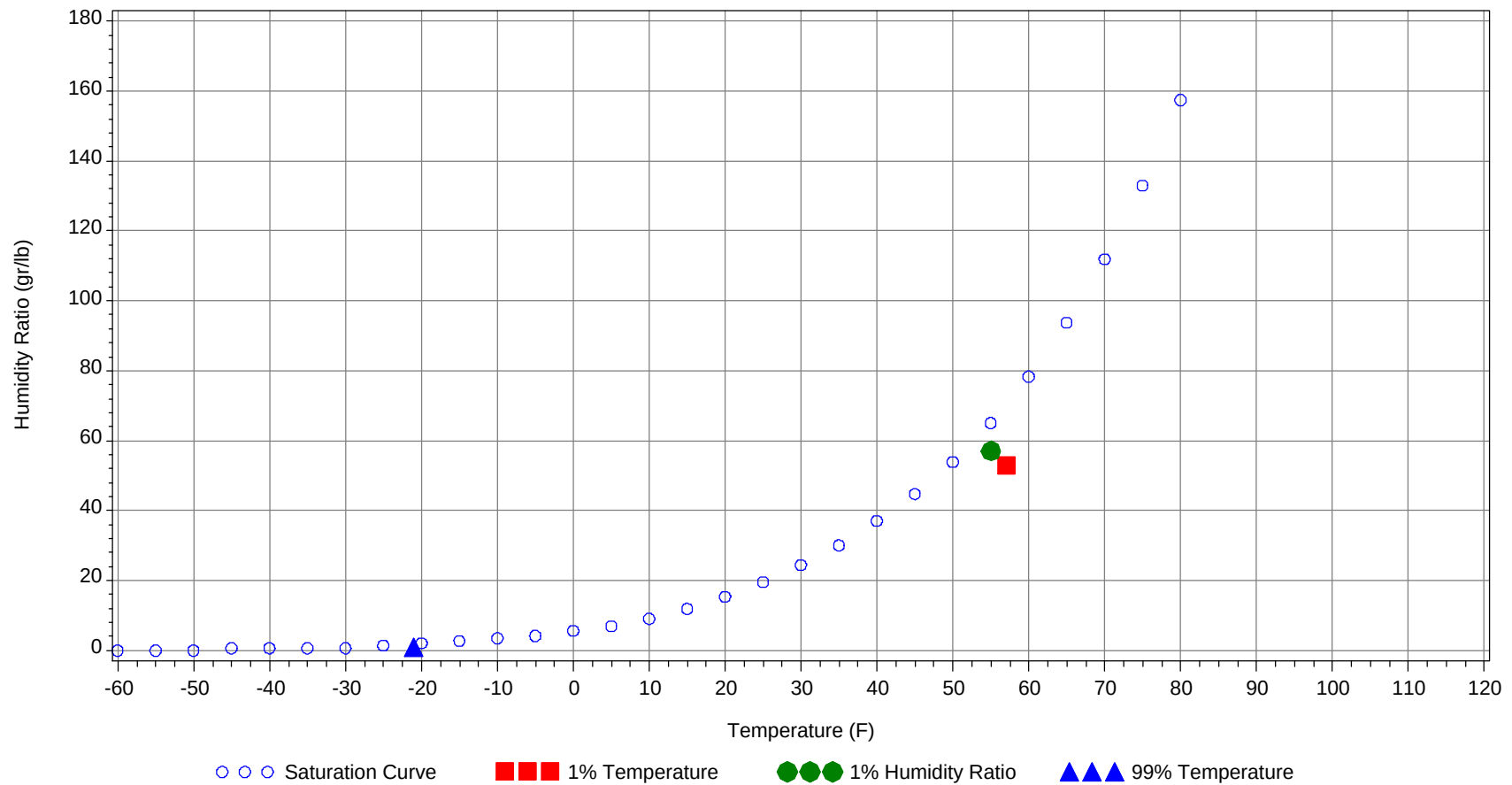
# Average Annual Climate



# Long Term Psychrometric Summary



# Psychrometric Summary of Peak Design Values



|                     | (° F) /<br>(gr/lb) | MCDB<br>(° F) | MCWB<br>(° F) | MCDP<br>(° F) | MCHR<br>(gr/lb) | Enthalpy<br>(btu/lb) |
|---------------------|--------------------|---------------|---------------|---------------|-----------------|----------------------|
| 1.0% Dry Bulb       | 57.0               |               | 53            |               | 53.0            | 22.0                 |
| 99.0% Dry Bulb      | -21.0              |               |               |               | 1.0             | -4.8                 |
| 1.0% Humidity Ratio | 57.0               | 55.0          | 53            | 51.7          |                 | 22.1                 |

## Dry-Bulb Temperature Hours For An Average Year

|                              | January               |                       |                       |              |                          | February              |                       |                       |              |                          | March                 |                       |                       |              |                          |
|------------------------------|-----------------------|-----------------------|-----------------------|--------------|--------------------------|-----------------------|-----------------------|-----------------------|--------------|--------------------------|-----------------------|-----------------------|-----------------------|--------------|--------------------------|
| Temperature<br>Range<br>(°F) | 01<br>To<br>08<br>LST | 09<br>To<br>16<br>LST | 17<br>to<br>00<br>LST | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | 01<br>To<br>08<br>LST | 09<br>To<br>16<br>LST | 17<br>to<br>00<br>LST | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | 01<br>To<br>08<br>LST | 09<br>To<br>16<br>LST | 17<br>to<br>00<br>LST | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
| 70/ 74                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 65/ 69                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 60/ 64                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 55/ 59                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 50/ 54                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 45/ 49                       | 0                     |                       |                       | 0            | 38                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 40/ 44                       | 0                     | 0                     | 0                     | 0            | 36.8                     | 0                     | 0                     | 0                     | 0            | 40                       |                       |                       |                       |              |                          |
| 35/ 39                       | 2                     | 2                     | 2                     | 6            | 33.8                     | 2                     | 2                     | 2                     | 6            | 34.6                     | 0                     | 1                     | 1                     | 2            | 33.3                     |
| 30/ 34                       | 9                     | 8                     | 8                     | 25           | 30.5                     | 9                     | 10                    | 9                     | 28           | 30.7                     | 5                     | 5                     | 6                     | 16           | 29.7                     |
| 25/ 29                       | 13                    | 13                    | 12                    | 38           | 26.4                     | 11                    | 11                    | 13                    | 35           | 26                       | 9                     | 10                    | 10                    | 29           | 25.6                     |
| 20/ 24                       | 11                    | 11                    | 13                    | 35           | 21.3                     | 12                    | 11                    | 12                    | 35           | 21                       | 9                     | 11                    | 11                    | 31           | 19.9                     |
| 15/ 19                       | 13                    | 16                    | 15                    | 44           | 16.4                     | 12                    | 12                    | 11                    | 35           | 16                       | 14                    | 18                    | 17                    | 49           | 15.7                     |
| 10/ 14                       | 15                    | 15                    | 12                    | 42           | 11.2                     | 18                    | 18                    | 16                    | 52           | 11.1                     | 21                    | 22                    | 25                    | 68           | 10.7                     |
| 5/ 9                         | 20                    | 19                    | 22                    | 61           | 5.9                      | 19                    | 18                    | 20                    | 57           | 6.2                      | 23                    | 24                    | 25                    | 72           | 6                        |
| 0/ 4                         | 27                    | 28                    | 29                    | 84           | 1.2                      | 24                    | 25                    | 27                    | 76           | 1                        | 31                    | 33                    | 39                    | 103          | 0.9                      |
| -5/ -1                       | 27                    | 27                    | 24                    | 78           | -3.4                     | 19                    | 22                    | 19                    | 60           | -3.4                     | 34                    | 32                    | 32                    | 98           | -3.3                     |
| -10/ -6                      | 39                    | 43                    | 40                    | 122          | -7.8                     | 32                    | 31                    | 34                    | 97           | -7.8                     | 43                    | 44                    | 40                    | 127          | -7.7                     |
| -15/-11                      | 29                    | 27                    | 30                    | 86           | -12.5                    | 25                    | 26                    | 27                    | 78           | -12.5                    | 29                    | 24                    | 22                    | 75           | -12.3                    |
| -20/-16                      | 26                    | 25                    | 26                    | 77           | -17.2                    | 23                    | 22                    | 20                    | 65           | -16.9                    | 21                    | 17                    | 16                    | 54           | -17.1                    |
| -25/-21                      | 11                    | 11                    | 10                    | 32           | -21.8                    | 12                    | 11                    | 11                    | 34           | -21.9                    | 8                     | 5                     | 4                     | 17           | -21.6                    |
| -30/-26                      | 3                     | 3                     | 3                     | 9            | -26.9                    | 4                     | 4                     | 3                     | 11           | -26.7                    | 1                     | 1                     | 0                     | 2            | -26.3                    |
| -35/-31                      | 1                     | 1                     | 1                     | 3            | -30.6                    | 2                     | 2                     | 1                     | 5            | -32                      | 0                     | 0                     |                       | 0            | -30.6                    |
| -40/-36                      |                       |                       |                       |              |                          | 0                     | 0                     | 0                     | 0            | -36                      |                       |                       |                       |              |                          |

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

|                        | April        |              |              |           |              | May          |              |              |           |              | June         |              |              |           |              |
|------------------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|
| Temperature Range (°F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (°F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (°F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (°F) |
| 70/ 74                 |              |              |              |           |              |              |              |              |           |              |              | 0            | 1            | 1         | 57.1         |
| 65/ 69                 |              |              |              |           |              |              | 0            | 0            | 0         | 54.6         | 0            | 2            | 1            | 3         | 55.9         |
| 60/ 64                 |              |              |              |           |              | 0            | 0            | 0            | 0         | 49.9         | 1            | 4            | 4            | 9         | 53.5         |
| 55/ 59                 |              |              |              |           |              | 1            | 1            | 1            | 3         | 48.3         | 3            | 8            | 6            | 17        | 50.5         |
| 50/ 54                 |              |              |              |           |              | 1            | 2            | 2            | 5         | 45.5         | 10           | 20           | 18           | 48        | 47.7         |
| 45/ 49                 |              | 0            |              | 0         | 40           | 2            | 5            | 4            | 11        | 42.1         | 25           | 38           | 37           | 100       | 44.2         |
| 40/ 44                 | 0            | 1            | 0            | 1         | 36.9         | 7            | 13           | 11           | 31        | 38.9         | 43           | 48           | 50           | 141       | 40.5         |
| 35/ 39                 | 4            | 6            | 7            | 17        | 33.9         | 21           | 31           | 33           | 85        | 35           | 73           | 72           | 72           | 217       | 36.4         |
| 30/ 34                 | 20           | 24           | 24           | 68        | 30.8         | 79           | 98           | 101          | 278       | 30.9         | 71           | 45           | 49           | 165       | 31.6         |
| 25/ 29                 | 23           | 22           | 24           | 69        | 26           | 74           | 52           | 55           | 181       | 26.3         | 13           | 2            | 3            | 18        | 27.4         |
| 20/ 24                 | 23           | 27           | 33           | 83        | 21           | 29           | 21           | 22           | 72        | 21.4         | 0            |              |              | 0         | 23.7         |
| 15/ 19                 | 35           | 37           | 37           | 109       | 16.2         | 17           | 13           | 11           | 41        | 16.7         |              |              |              |           |              |
| 10/ 14                 | 35           | 35           | 37           | 107       | 11.1         | 8            | 6            | 5            | 19        | 11.5         |              |              |              |           |              |
| 5/ 9                   | 33           | 34           | 30           | 97        | 6.3          | 4            | 4            | 3            | 11        | 6.7          |              |              |              |           |              |
| 0/ 4                   | 29           | 27           | 31           | 87        | 1.1          | 2            | 1            | 1            | 4         | 1.7          |              |              |              |           |              |
| -5/ -1                 | 22           | 16           | 13           | 51        | -3.2         | 1            | 0            | 0            | 1         | -2.4         |              |              |              |           |              |
| -10/ -6                | 13           | 9            | 6            | 28        | -7.3         | 0            | 0            |              | 0         | -5.9         |              |              |              |           |              |
| -15/-11                | 3            | 1            | 0            | 4         | -11.6        |              | 0            |              | 0         | -11          |              |              |              |           |              |
| -20/-16                | 0            |              |              | 0         | -15          |              |              |              |           |              |              |              |              |           |              |
| -25/-21                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -30/-26                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -35/-31                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -40/-36                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |

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## Dry-Bulb Temperature Hours For An Average Year

|                        | July         |              |              |           |              | August       |              |              |           |              | September    |              |              |           |              |
|------------------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|
| Temperature Range (°F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (°F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (°F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (°F) |
| 70/ 74                 |              | 1            | 1            | 2         | 57.1         |              | 0            |              | 0         | 58.8         |              |              |              |           |              |
| 65/ 69                 |              | 3            | 2            | 5         | 56.8         |              | 0            | 1            | 1         | 58.3         |              | 0            | 0            | 0         | 55.2         |
| 60/ 64                 | 1            | 7            | 7            | 15        | 55.1         | 1            | 4            | 3            | 8         | 56.4         |              | 1            | 1            | 2         | 52           |
| 55/ 59                 | 9            | 19           | 19           | 47        | 52.8         | 6            | 17           | 15           | 38        | 53.5         | 1            | 3            | 3            | 7         | 50.3         |
| 50/ 54                 | 31           | 45           | 45           | 121       | 49.5         | 33           | 46           | 44           | 123       | 49.9         | 8            | 15           | 14           | 37        | 48.7         |
| 45/ 49                 | 94           | 99           | 98           | 291       | 45.6         | 106          | 115          | 115          | 336       | 45.4         | 43           | 52           | 50           | 145       | 44.9         |
| 40/ 44                 | 87           | 66           | 66           | 219       | 41.7         | 75           | 57           | 60           | 192       | 40.9         | 66           | 79           | 71           | 216       | 40.3         |
| 35/ 39                 | 26           | 8            | 10           | 44        | 37.5         | 26           | 7            | 11           | 44        | 36.4         | 77           | 61           | 69           | 207       | 35.5         |
| 30/ 34                 | 0            | 0            | 0            | 0         | 32.9         | 1            | 0            | 0            | 1         | 31.3         | 38           | 26           | 28           | 92        | 30.6         |
| 25/ 29                 |              |              |              |           |              |              |              |              |           |              | 6            | 3            | 4            | 13        | 25.5         |
| 20/ 24                 |              |              |              |           |              |              |              |              |           |              | 1            | 1            | 1            | 3         | 20.9         |
| 15/ 19                 |              |              |              |           |              |              |              |              |           |              | 0            | 0            | 0            | 0         | 16.4         |
| 10/ 14                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 5/ 9                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 0/ 4                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -5/ -1                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -10/ -6                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -15/-11                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -20/-16                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -25/-21                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -30/-26                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -35/-31                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -40/-36                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |

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## Dry-Bulb Temperature Hours For An Average Year

| Temperature<br>Range<br>(°F) | October               |                       |                       |              |                          | November              |                       |                       |              |                          | December              |                       |                       |              |                          |
|------------------------------|-----------------------|-----------------------|-----------------------|--------------|--------------------------|-----------------------|-----------------------|-----------------------|--------------|--------------------------|-----------------------|-----------------------|-----------------------|--------------|--------------------------|
|                              | 01<br>To<br>08<br>LST | 09<br>To<br>16<br>LST | 17<br>to<br>00<br>LST | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | 01<br>To<br>08<br>LST | 09<br>To<br>16<br>LST | 17<br>to<br>00<br>LST | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | 01<br>To<br>08<br>LST | 09<br>To<br>16<br>LST | 17<br>to<br>00<br>LST | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
| 70/ 74                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 65/ 69                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 60/ 64                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 55/ 59                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 50/ 54                       | 0                     | 0                     | 0                     | 0            | 45                       |                       |                       |                       |              |                          |                       |                       |                       |              |                          |
| 45/ 49                       | 2                     | 3                     | 3                     | 8            | 42.9                     |                       | 0                     | 0                     | 0            | 42                       | 0                     | 0                     | 0                     | 0            | 39.3                     |
| 40/ 44                       | 11                    | 14                    | 14                    | 39           | 39.8                     | 1                     | 1                     | 1                     | 3            | 37.9                     | 1                     | 1                     | 0                     | 2            | 34.1                     |
| 35/ 39                       | 52                    | 61                    | 55                    | 168          | 35.4                     | 11                    | 11                    | 11                    | 33           | 34.8                     | 2                     | 3                     | 2                     | 7            | 33.5                     |
| 30/ 34                       | 76                    | 73                    | 77                    | 226          | 30.5                     | 33                    | 31                    | 31                    | 95           | 30.9                     | 13                    | 13                    | 15                    | 41           | 30.1                     |
| 25/ 29                       | 61                    | 57                    | 59                    | 177          | 25.2                     | 36                    | 35                    | 34                    | 105          | 25.2                     | 21                    | 18                    | 19                    | 58           | 25.8                     |
| 20/ 24                       | 30                    | 27                    | 24                    | 81           | 20.8                     | 41                    | 45                    | 44                    | 130          | 20.5                     | 18                    | 16                    | 16                    | 50           | 20.8                     |
| 15/ 19                       | 10                    | 9                     | 11                    | 30           | 16.3                     | 48                    | 46                    | 48                    | 142          | 16                       | 24                    | 28                    | 24                    | 76           | 15.9                     |
| 10/ 14                       | 4                     | 3                     | 4                     | 11           | 11.5                     | 31                    | 33                    | 28                    | 92           | 11                       | 27                    | 29                    | 29                    | 85           | 11                       |
| 5/ 9                         | 1                     | 1                     | 0                     | 2            | 6.8                      | 17                    | 16                    | 20                    | 53           | 6.1                      | 34                    | 32                    | 32                    | 98           | 5.9                      |
| 0/ 4                         | 0                     | 0                     | 0                     | 0            | 3.3                      | 11                    | 11                    | 11                    | 33           | 1.2                      | 34                    | 35                    | 35                    | 104          | 1.2                      |
| -5/ -1                       |                       |                       |                       |              |                          | 5                     | 6                     | 6                     | 17           | -3.3                     | 23                    | 20                    | 20                    | 63           | -3.3                     |
| -10/ -6                      |                       |                       |                       |              |                          | 4                     | 3                     | 3                     | 10           | -7.4                     | 28                    | 28                    | 30                    | 86           | -7.7                     |
| -15/-11                      |                       |                       |                       |              |                          | 1                     | 1                     | 1                     | 3            | -11.9                    | 14                    | 16                    | 16                    | 46           | -12.4                    |
| -20/-16                      |                       |                       |                       |              |                          | 1                     | 0                     | 0                     | 1            | -16.2                    | 6                     | 7                     | 7                     | 20           | -17                      |
| -25/-21                      |                       |                       |                       |              |                          |                       |                       |                       |              |                          | 2                     | 2                     | 2                     | 6            | -21.6                    |
| -30/-26                      |                       |                       |                       |              |                          |                       |                       |                       |              |                          | 1                     | 0                     | 0                     | 1            | -26                      |
| -35/-31                      |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       | 0                     |                       | 0            | -31                      |
| -40/-36                      |                       |                       |                       |              |                          |                       |                       |                       |              |                          |                       |                       |                       |              |                          |

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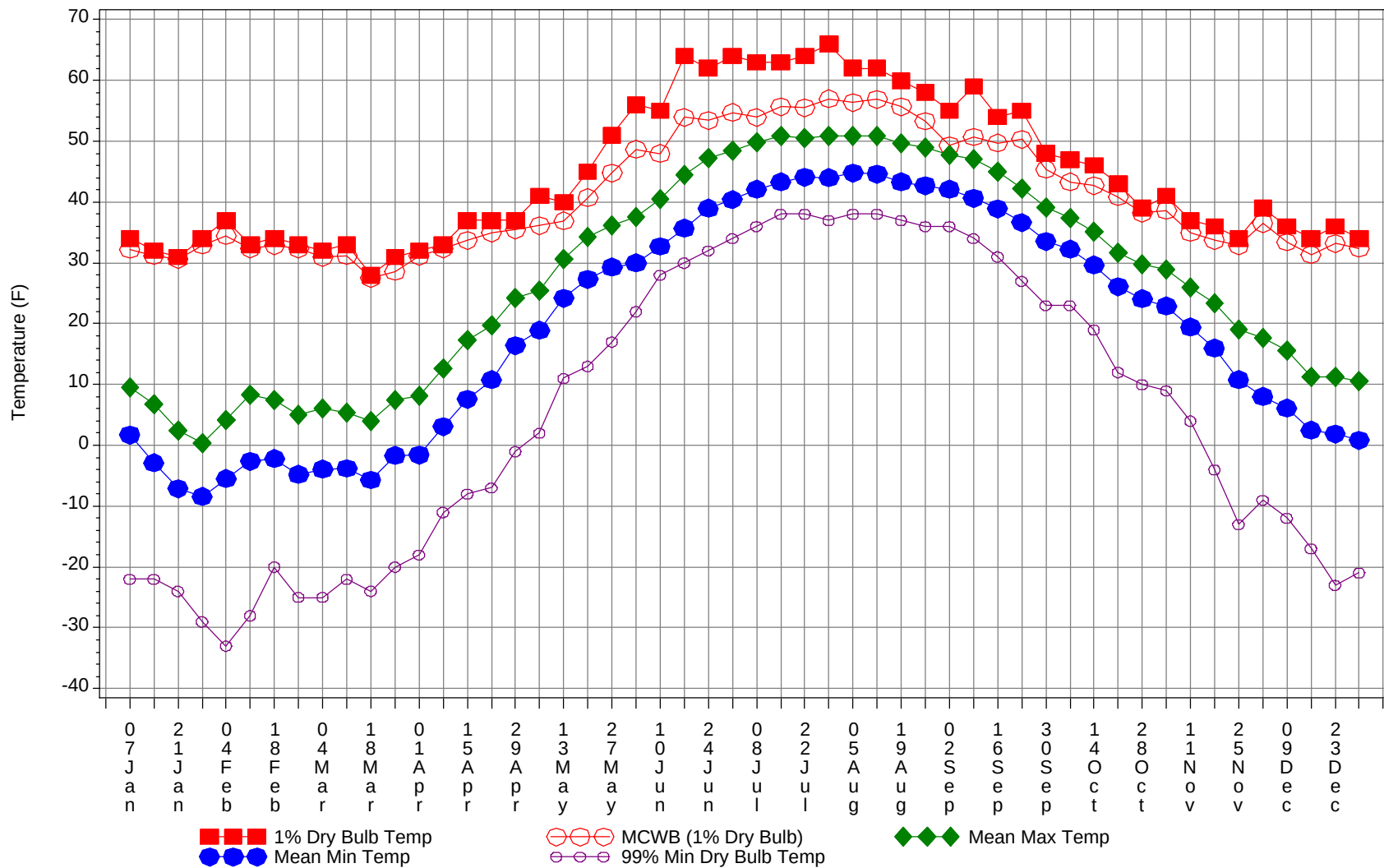


## ***Dry-Bulb Temperature Hours For An Average Year***

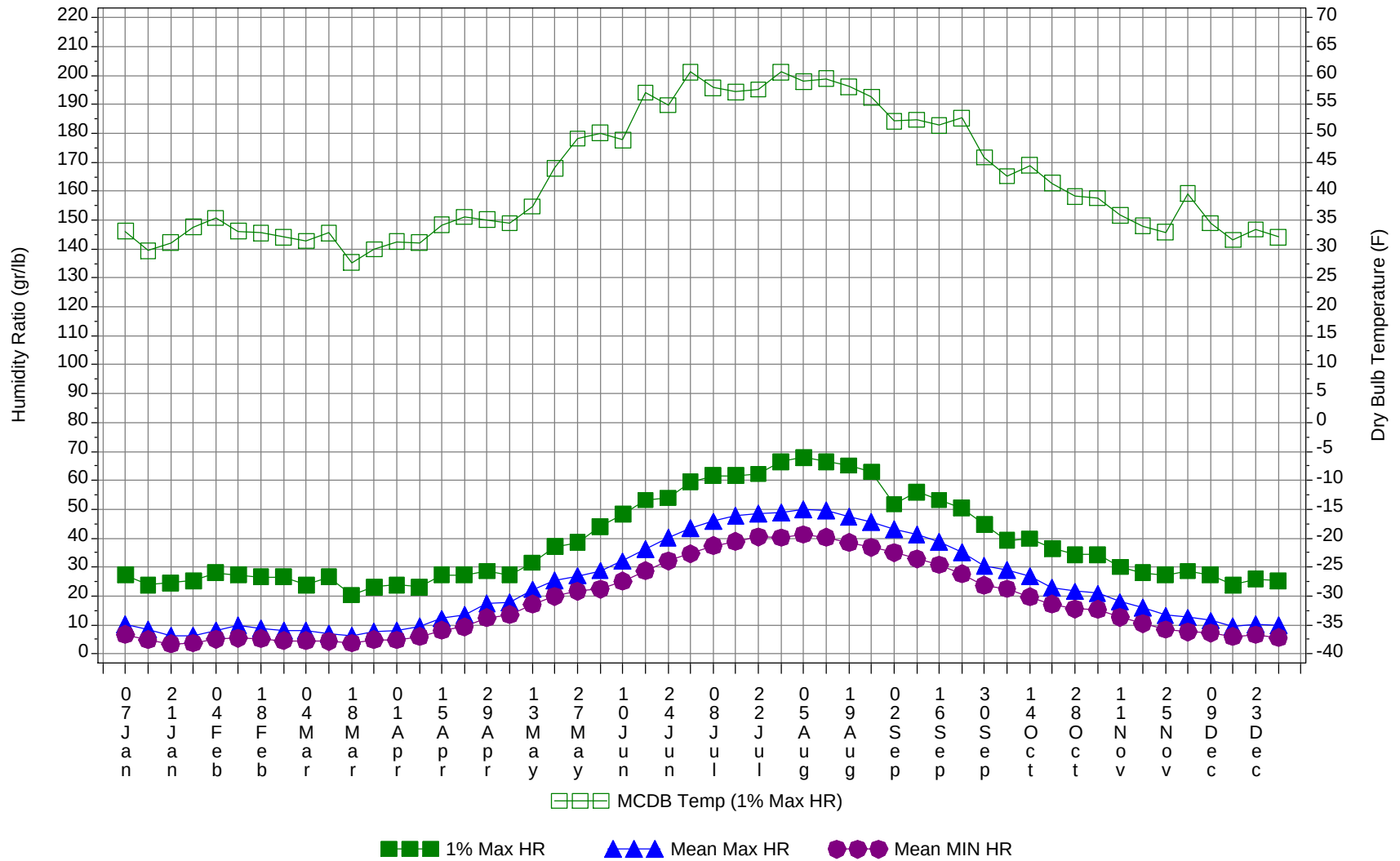
|                            | Annual       |              |              |           |               |
|----------------------------|--------------|--------------|--------------|-----------|---------------|
| Temperature Range<br>(° F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (° F) |
| 70/ 74                     |              | 1            | 1            | 2         | 57.2          |
| 65/ 69                     | 0            | 5            | 4            | 9         | 56.6          |
| 60/ 64                     | 3            | 17           | 14           | 34        | 54.7          |
| 55/ 59                     | 20           | 50           | 43           | 113       | 52.4          |
| 50/ 54                     | 84           | 130          | 123          | 337       | 49.2          |
| 45/ 49                     | 274          | 316          | 308          | 898       | 45.2          |
| 40/ 44                     | 292          | 282          | 274          | 848       | 40.7          |
| 35/ 39                     | 296          | 267          | 275          | 838       | 35.7          |
| 30/ 34                     | 359          | 339          | 354          | 1052      | 30.8          |
| 25/ 29                     | 271          | 225          | 235          | 731       | 25.8          |
| 20/ 24                     | 176          | 170          | 175          | 521       | 20.9          |
| 15/ 19                     | 174          | 177          | 173          | 524       | 16.1          |
| 10/ 14                     | 158          | 159          | 155          | 472       | 11            |
| 5/ 9                       | 150          | 146          | 151          | 447       | 6.1           |
| 0/ 4                       | 156          | 159          | 171          | 486       | 1.1           |
| -5/ -1                     | 129          | 121          | 114          | 364       | -3.3          |
| -10/ -6                    | 158          | 154          | 150          | 462       | -7.7          |
| -15/-11                    | 100          | 93           | 94           | 287       | -12.4         |
| -20/-16                    | 75           | 69           | 68           | 212       | -17.1         |
| -25/-21                    | 33           | 28           | 27           | 88        | -21.8         |
| -30/-26                    | 9            | 8            | 7            | 24        | -26.7         |
| -35/-31                    | 3            | 3            | 2            | 8         | -31.4         |
| -40/-36                    | 0            | 0            | 0            | 0         | -36           |

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



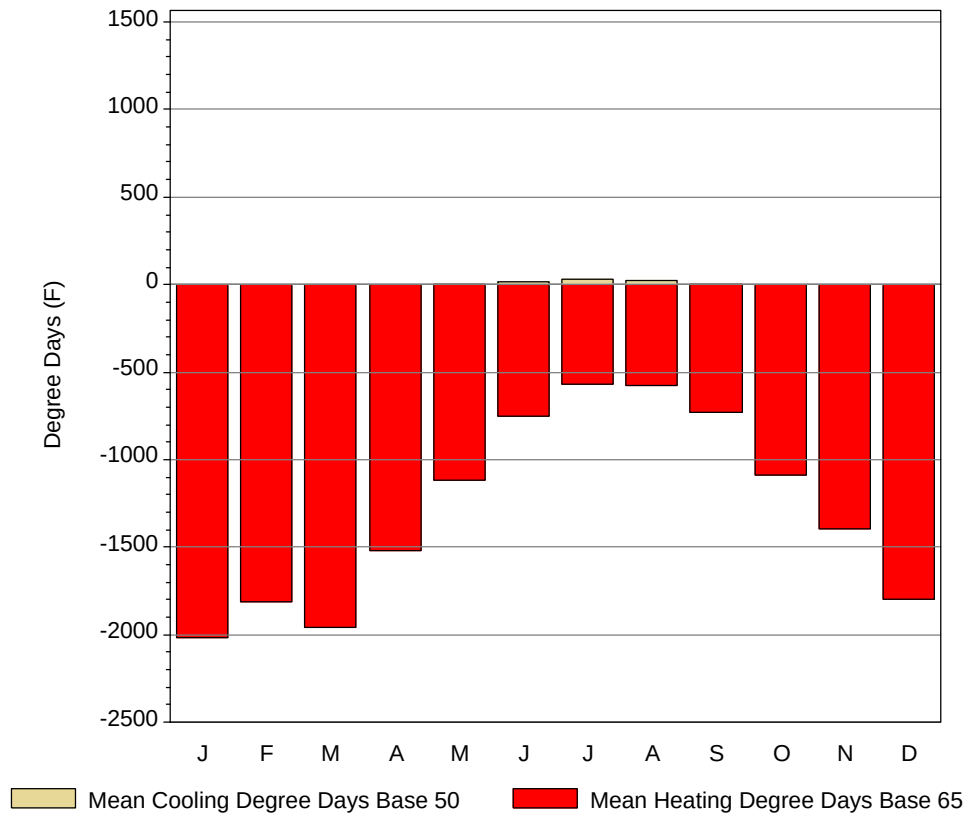
# Long Term Humidity and Dry Bulb Temperature Summary



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

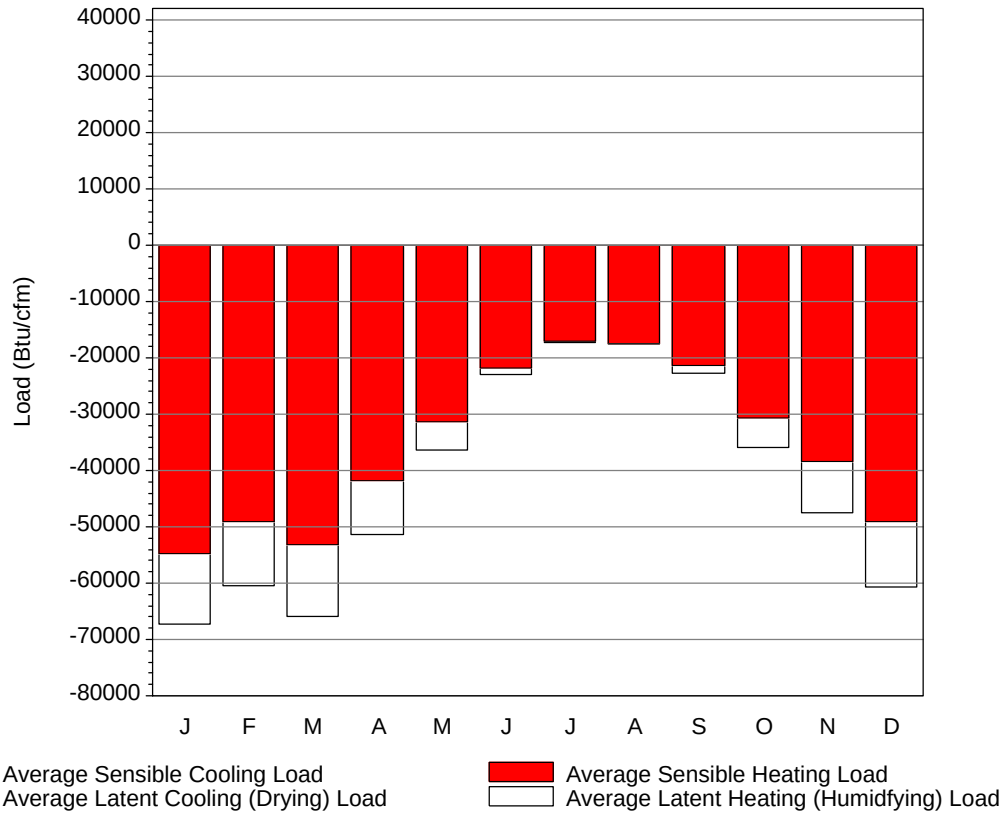
| Week Ending | 1.0% Temp (°F) | MCWB@ 1% Temp (°F) | Mean Max Temp (°F) | Mean Min Temp (°F) | 99% Temp (°F) | 1.0% HR (gr/lb) | MCDB@ 1% HR (°F) | Mean Max HR (gr/lb) | Mean Min HR (gr/lb) |
|-------------|----------------|--------------------|--------------------|--------------------|---------------|-----------------|------------------|---------------------|---------------------|
| 7-Jan       | 34             | 32.2               | 9.6                | 1.7                | -22           | 27.3            | 33.1             | 10.2                | 6.7                 |
| 14-Jan      | 32             | 31.2               | 6.8                | -2.9               | -22           | 23.8            | 29.7             | 8.4                 | 4.9                 |
| 21-Jan      | 31             | 30.6               | 2.5                | -7.1               | -24           | 24.5            | 31.1             | 6.4                 | 3.5                 |
| 28-Jan      | 34             | 32.9               | 0.4                | -8.4               | -29           | 25.2            | 33.8             | 6.4                 | 3.7                 |
| 4-Feb       | 37             | 34.5               | 4.1                | -5.5               | -33           | 28              | 35.4             | 8.2                 | 5.1                 |
| 11-Feb      | 33             | 32.3               | 8.3                | -2.6               | -28           | 27.3            | 33.1             | 9.8                 | 5.4                 |
| 18-Feb      | 34             | 32.8               | 7.5                | -2.2               | -20           | 26.6            | 32.8             | 8.8                 | 5.2                 |
| 25-Feb      | 33             | 32.3               | 5                  | -4.8               | -25           | 26.6            | 32.1             | 8                   | 4.6                 |
| 4-Mar       | 32             | 30.9               | 6.1                | -3.9               | -25           | 23.8            | 31.4             | 8                   | 4.5                 |
| 11-Mar      | 33             | 31.2               | 5.3                | -3.8               | -22           | 26.6            | 32.8             | 7.1                 | 4.4                 |
| 18-Mar      | 28             | 27.5               | 4                  | -5.7               | -24           | 20.3            | 27.7             | 6.1                 | 3.7                 |
| 25-Mar      | 31             | 28.6               | 7.4                | -1.7               | -20           | 23.1            | 30               | 7.8                 | 4.9                 |
| 1-Apr       | 32             | 31.1               | 8.1                | -1.6               | -18           | 23.8            | 31.3             | 8.1                 | 4.8                 |
| 8-Apr       | 33             | 32.3               | 12.7               | 3.1                | -11           | 23.1            | 31.1             | 9.5                 | 6                   |
| 15-Apr      | 37             | 33.7               | 17.3               | 7.6                | -8            | 27.3            | 34.2             | 12.2                | 8.1                 |
| 22-Apr      | 37             | 34.9               | 19.7               | 10.8               | -7            | 27.3            | 35.6             | 13.6                | 9.3                 |
| 29-Apr      | 37             | 35.4               | 24.2               | 16.4               | -1            | 28.7            | 35.1             | 17.3                | 12.4                |
| 6-May       | 41             | 36.1               | 25.5               | 18.9               | 2             | 27.3            | 34.5             | 17.9                | 13.5                |
| 13-May      | 40             | 36.9               | 30.7               | 24.2               | 11            | 31.5            | 37.4             | 22.3                | 17.2                |
| 20-May      | 45             | 40.7               | 34.2               | 27.3               | 13            | 37.1            | 44               | 25.4                | 19.8                |
| 27-May      | 51             | 44.8               | 36.2               | 29.3               | 17            | 38.5            | 49.1             | 27                  | 21.6                |
| 4-Jun       | 56             | 48.7               | 37.6               | 30                 | 22            | 44.1            | 50.1             | 28.8                | 22.4                |
| 10-Jun      | 55             | 48                 | 40.5               | 32.7               | 28            | 48.3            | 48.9             | 32.1                | 25.1                |
| 17-Jun      | 64             | 53.9               | 44.5               | 35.7               | 30            | 53.2            | 57.1             | 36.2                | 28.7                |
| 24-Jun      | 62             | 53.4               | 47.2               | 39                 | 32            | 53.9            | 54.9             | 40.2                | 32.2                |
| 1-Jul       | 64             | 54.7               | 48.4               | 40.4               | 34            | 59.5            | 60.6             | 43.4                | 34.6                |
| 8-Jul       | 63             | 53.9               | 49.9               | 42.1               | 36            | 61.6            | 57.9             | 45.8                | 37.4                |
| 15-Jul      | 63             | 55.7               | 50.9               | 43.3               | 38            | 61.6            | 57.2             | 47.9                | 38.8                |
| 22-Jul      | 64             | 55.5               | 50.5               | 44.1               | 38            | 62.3            | 57.6             | 48.5                | 40.4                |
| 29-Jul      | 66             | 57                 | 50.9               | 44                 | 37            | 66.5            | 60.6             | 49                  | 40.2                |
| 5-Aug       | 62             | 56.4               | 50.9               | 44.8               | 38            | 67.9            | 59               | 50                  | 41.3                |
| 12-Aug      | 62             | 56.9               | 50.8               | 44.6               | 38            | 66.5            | 59.5             | 49.7                | 40.3                |
| 19-Aug      | 60             | 55.7               | 49.7               | 43.3               | 37            | 65.1            | 58.1             | 47.4                | 38.5                |
| 26-Aug      | 58             | 53.3               | 49                 | 42.7               | 36            | 63              | 56.3             | 45.5                | 36.9                |
| 2-Sep       | 55             | 49.3               | 47.8               | 42.1               | 36            | 51.8            | 52.1             | 43.2                | 35                  |
| 9-Sep       | 59             | 50.7               | 47                 | 40.6               | 34            | 56              | 52.4             | 41.4                | 32.9                |
| 16-Sep      | 54             | 49.7               | 44.9               | 38.9               | 31            | 53.2            | 51.4             | 38.7                | 30.8                |
| 23-Sep      | 55             | 50.3               | 42.2               | 36.6               | 27            | 50.4            | 52.7             | 35.1                | 27.6                |
| 30-Sep      | 48             | 45.4               | 39.1               | 33.5               | 23            | 44.8            | 45.9             | 30.4                | 23.7                |
| 7-Oct       | 47             | 43.3               | 37.4               | 32.2               | 23            | 39.2            | 42.6             | 29                  | 22.5                |
| 14-Oct      | 46             | 42.7               | 35.2               | 29.6               | 19            | 39.9            | 44.5             | 26.7                | 19.7                |
| 21-Oct      | 43             | 40.9               | 31.7               | 26.1               | 12            | 36.4            | 41.4             | 22.9                | 17.1                |
| 28-Oct      | 39             | 38.2               | 29.7               | 24.1               | 10            | 34.3            | 39.1             | 21.6                | 15.6                |
| 4-Nov       | 41             | 38.6               | 28.9               | 22.9               | 9             | 34.3            | 38.8             | 20.9                | 15.3                |
| 11-Nov      | 37             | 35                 | 26                 | 19.4               | 4             | 30.1            | 35.9             | 18                  | 12.6                |
| 18-Nov      | 36             | 33.7               | 23.3               | 16                 | -4            | 28              | 34               | 16.1                | 10.5                |
| 25-Nov      | 34             | 32.8               | 19                 | 10.8               | -13           | 27.3            | 32.9             | 13.3                | 8.4                 |
| 2-Dec       | 39             | 36.5               | 17.6               | 8                  | -9            | 28.7            | 39.6             | 12.6                | 7.6                 |
| 9-Dec       | 36             | 33.4               | 15.6               | 6.1                | -12           | 27.3            | 34.5             | 11.5                | 7.2                 |
| 16-Dec      | 34             | 31.4               | 11.3               | 2.5                | -17           | 23.8            | 31.6             | 9.5                 | 6                   |
| 23-Dec      | 36             | 33.2               | 11.3               | 1.9                | -23           | 25.9            | 33.4             | 10.3                | 6.6                 |
| 31-Dec      | 34             | 32.4               | 10.5               | 0.8                | -21           | 25.2            | 32.1             | 9.8                 | 5.6                 |

# Degree Days, Heating and Cooling (Base 65 F) & Cooling (Base 50F)



| Month | Mean Cooling Degree Days (°F) Base 50 | Mean Cooling Degree Days (°F) Base 65 | Mean Heating Degree Days (°F) Base 65 |
|-------|---------------------------------------|---------------------------------------|---------------------------------------|
| JAN   | 0                                     | 0                                     | 2016.6                                |
| FEB   | 0                                     | 0                                     | 1811.8                                |
| MAR   | 0                                     | 0                                     | 1957.8                                |
| APR   | 0                                     | 0                                     | 1519.5                                |
| MAY   | 1.2                                   | 0                                     | 1116.1                                |
| JUN   | 13.8                                  | 0.3                                   | 751.6                                 |
| JUL   | 30.6                                  | 0.7                                   | 568                                   |
| AUG   | 20.4                                  | 0.1                                   | 577.1                                 |
| SEP   | 4.3                                   | 0                                     | 733.2                                 |
| OCT   | 0                                     | 0                                     | 1087.1                                |
| NOV   | 0                                     | 0                                     | 1392.9                                |
| DEC   | 0                                     | 0                                     | 1798.3                                |
| ANN   | 70.3                                  | 1.1                                   | 15330                                 |

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



| Month | Average Sensible Cooling Load (Btu/cfm) | Average Sensible Heating Load (Btu/cfm) | Average Latent Cooling Load (Btu/cfm) | Average Latent Heating Load (Btu/cfm) |
|-------|-----------------------------------------|-----------------------------------------|---------------------------------------|---------------------------------------|
| JAN   | 0                                       | -54677                                  | 0                                     | -12655                                |
| FEB   | 0                                       | -49161                                  | 0                                     | -11290                                |
| MAR   | 0                                       | -53158                                  | 0                                     | -12694                                |
| APR   | 0                                       | -41719                                  | 0                                     | -9728                                 |
| MAY   | 0                                       | -31339                                  | 0                                     | -5066                                 |
| JUN   | 0                                       | -21809                                  | 0                                     | -1124                                 |
| JUL   | 0                                       | -17122                                  | 0                                     | -28                                   |
| AUG   | 0                                       | -17368                                  | 0                                     | -166                                  |
| SEP   | 0                                       | -21337                                  | 0                                     | -1267                                 |
| OCT   | 0                                       | -30589                                  | 0                                     | -5398                                 |
| NOV   | 0                                       | -38436                                  | 0                                     | -9000                                 |
| DEC   | 0                                       | -49022                                  | 0                                     | -11722                                |
| ANN   | 0                                       | -425737                                 | 0                                     | -80138                                |

| Station Information |     | Shading<br>Geometry in<br>Dimensionless<br>Units |     |
|---------------------|-----|--------------------------------------------------|-----|
| City, State, WBAN   | N/A | N/A                                              | N/A |
| Lat, Lon, Elev      | N/A | N/A                                              | N/A |
| Press Stn Type      | N/A | N/A                                              | N/A |

| AVERAGE INCIDENT SOLAR RADIATION<br>(Btu/sq.ft./day), Percentage Uncertainty = 9 |          |     |     |     |     |     |     |     |     |     |     |     |     |      |
|----------------------------------------------------------------------------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                                                                                  |          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year |
| HORIZ.                                                                           | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Std.Dev. |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Minimum  |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Maximum  |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Diffuse  |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Clear Day                                                                        | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
| NORTH                                                                            | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Diffuse  |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Clear Day                                                                        | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
| EAST                                                                             | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Diffuse  |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Clear Day                                                                        | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
| SOUTH                                                                            | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Diffuse  |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Clear Day                                                                        | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
| WEST                                                                             | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                  | Diffuse  |     |     |     |     |     |     |     |     |     |     |     |     |      |
| Clear Day                                                                        | Global   |     |     |     |     |     |     |     |     |     |     |     |     |      |

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

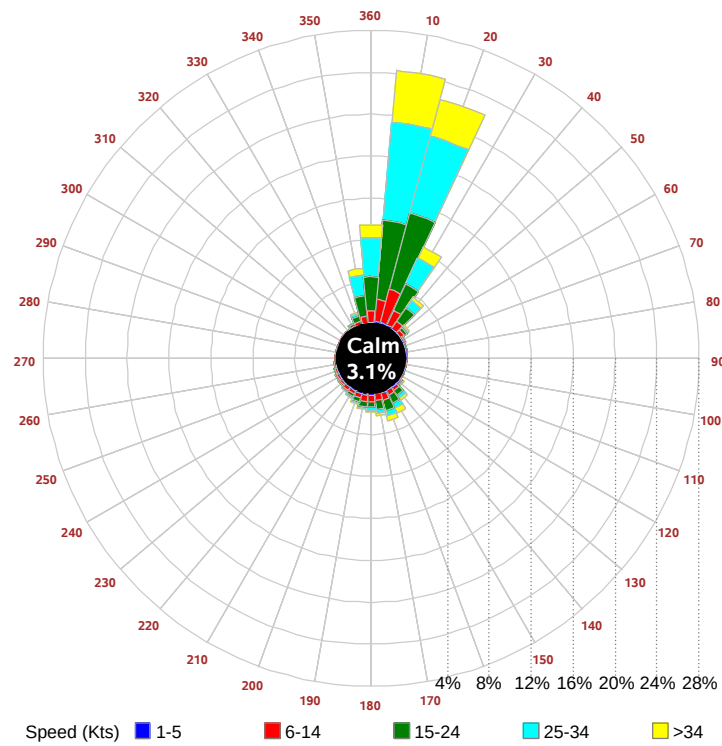
| AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9 |          |     |     |     |     |     |     |     |     |     |     |     |     |      |
|-----------------------------------------------------------------------------------------------------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
|                                                                                                     |          | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Year |
| HORIZ.                                                                                              | Unshaded |     |     |     |     |     |     |     |     |     |     |     |     |      |
| NORTH                                                                                               | Unshaded |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                                     | Shaded   |     |     |     |     |     |     |     |     |     |     |     |     |      |
| EAST                                                                                                | Unshaded |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                                     | Shaded   |     |     |     |     |     |     |     |     |     |     |     |     |      |
| SOUTH                                                                                               | Unshaded |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                                     | Shaded   |     |     |     |     |     |     |     |     |     |     |     |     |      |
| WEST                                                                                                | Unshaded |     |     |     |     |     |     |     |     |     |     |     |     |      |
|                                                                                                     | Shaded   |     |     |     |     |     |     |     |     |     |     |     |     |      |

| AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9 |          |       |      |     |     |     |  |      |      |     |     |     |
|------------------------------------------------------------------------------------------------------------------|----------|-------|------|-----|-----|-----|--|------|------|-----|-----|-----|
|                                                                                                                  |          | March |      |     |     |     |  | June |      |     |     |     |
|                                                                                                                  |          | 9am   | 11am | 1pm | 3pm | 5pm |  | 9am  | 11am | 1pm | 3pm | 5pm |
| HORIZ.                                                                                                           | M.Clear  |       |      |     |     |     |  |      |      |     |     |     |
|                                                                                                                  | M.Cloudy |       |      |     |     |     |  |      |      |     |     |     |
| NORTH                                                                                                            | M.Clear  |       |      |     |     |     |  |      |      |     |     |     |
|                                                                                                                  | M.Cloudy |       |      |     |     |     |  |      |      |     |     |     |
| EAST                                                                                                             | M.Clear  |       |      |     |     |     |  |      |      |     |     |     |
|                                                                                                                  | M.Cloudy |       |      |     |     |     |  |      |      |     |     |     |
| SOUTH                                                                                                            | M.Clear  |       |      |     |     |     |  |      |      |     |     |     |
|                                                                                                                  | M.Cloudy |       |      |     |     |     |  |      |      |     |     |     |
| WEST                                                                                                             | M.Clear  |       |      |     |     |     |  |      |      |     |     |     |
|                                                                                                                  | M.Cloudy |       |      |     |     |     |  |      |      |     |     |     |
| M.Clear                                                                                                          | (% hrs)  |       |      |     |     |     |  |      |      |     |     |     |

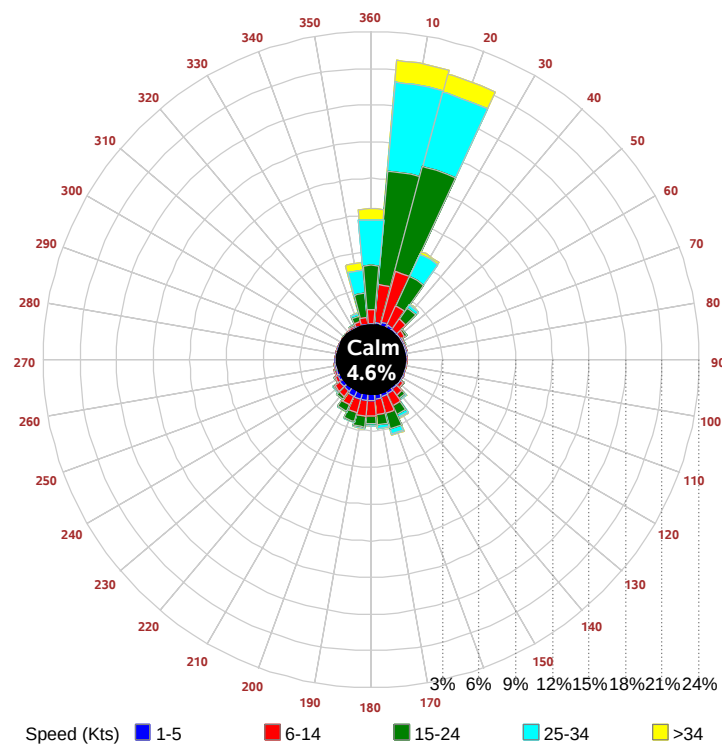
|         |          | Sept |      |     |     |     |  | Dec |      |     |     |     |
|---------|----------|------|------|-----|-----|-----|--|-----|------|-----|-----|-----|
|         |          | 9am  | 11am | 1pm | 3pm | 5pm |  | 9am | 11am | 1pm | 3pm | 5pm |
| HORIZ.  | M.Clear  |      |      |     |     |     |  |     |      |     |     |     |
|         | M.Cloudy |      |      |     |     |     |  |     |      |     |     |     |
| NORTH   | M.Clear  |      |      |     |     |     |  |     |      |     |     |     |
|         | M.Cloudy |      |      |     |     |     |  |     |      |     |     |     |
| EAST    | M.Clear  |      |      |     |     |     |  |     |      |     |     |     |
|         | M.Cloudy |      |      |     |     |     |  |     |      |     |     |     |
| SOUTH   | M.Clear  |      |      |     |     |     |  |     |      |     |     |     |
|         | M.Cloudy |      |      |     |     |     |  |     |      |     |     |     |
| WEST    | M.Clear  |      |      |     |     |     |  |     |      |     |     |     |
|         | M.Cloudy |      |      |     |     |     |  |     |      |     |     |     |
| M.Clear | (% hrs)  |      |      |     |     |     |  |     |      |     |     |     |



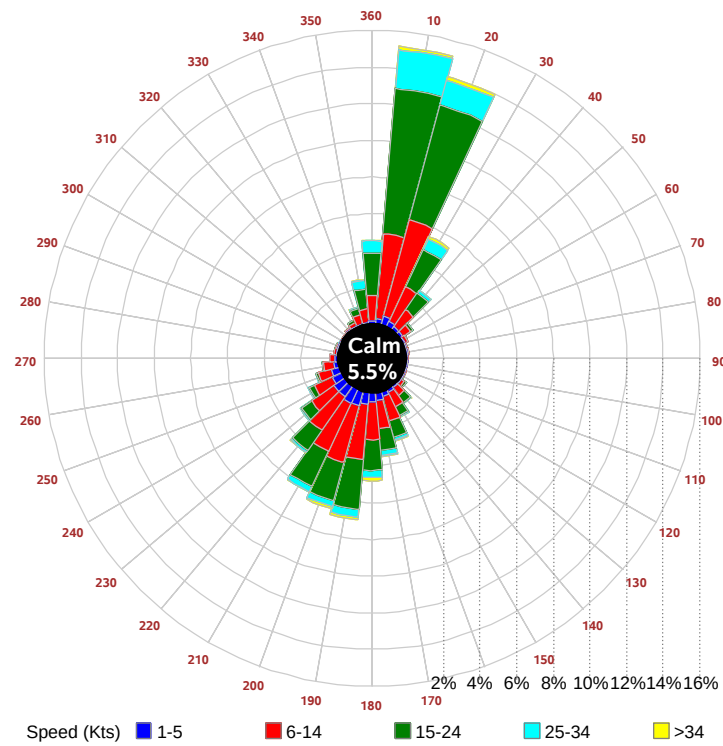
## Wind Summary - December, January, and February



## Wind Summary - March, April, and May



## Wind Summary - June, July, and August



## Wind Summary - September, October, and November

