

|                                 |                                    |
|---------------------------------|------------------------------------|
| <b>HENRY POST AAF, OK</b>       | Station ID = ICAO_KFSI             |
| Latitude = 34.65 N              | Elevation = 1189 Feet              |
| Longitude = 98.40 W             | Average Pressure = 28.74 inches Hg |
| Period of Record = 1988 To 2017 |                                    |

### Design Criteria Data

|                          | Mean Coincident (Average) Values |                           |                        |                  |                             |
|--------------------------|----------------------------------|---------------------------|------------------------|------------------|-----------------------------|
| Dry Bulb Temperature (T) | Design Value (°F)                | Wet Bulb Temperature (°F) | Humidity Ratio (gr/lb) | Wind Speed (mph) | Prevailing Direction (NSEW) |
| Median of Extreme Highs  | 105                              | 72                        | 72                     | 10.5             | S                           |
| 0.4% Occurrence          | 102                              | 73                        | 80                     | 10.3             | S                           |
| 1.0% Occurrence          | 100                              | 73                        | 83                     | 11               | S                           |
| 2.0% Occurrence          | 97                               | 73                        | 90                     | 10.8             | S                           |
| Mean Daily Range         | 21                               | -                         | -                      | -                | N                           |
| 97.5% Occurrence         | 27                               | 25                        | 15                     | 9                | N                           |
| 99.0% Occurrence         | 21                               | 19                        | 11                     | 10               | N                           |
| 99.6% Occurrence         | 16                               | 14                        | 8                      | 10.6             | N                           |
| Median of Extreme Lows   | 10                               | 8                         | 6                      | 13.8             | N                           |

|                                         | Design Value (°F) | Dry Bulb Temperature (°F) | Humidity Ratio (gr/lb) | Wind Speed (mph) | Prevailing Direction (NSEW) |
|-----------------------------------------|-------------------|---------------------------|------------------------|------------------|-----------------------------|
| Wet Bulb Temperature (T <sub>wb</sub> ) |                   |                           |                        |                  |                             |
| Median of Extreme Highs                 | 79                | 91                        | 132                    | 11.4             | S                           |
| 0.4% Occurrence                         | 78                | 91                        | 127                    | 11.3             | S                           |
| 1.0% Occurrence                         | 77                | 90                        | 122                    | 11               | S                           |
| 2.0% Occurrence                         | 76                | 89                        | 117                    | 10.8             | S                           |

|                         | Design Value (gr/lb) | Dry Bulb Temperature (°F) | Vapor Pressure (in. Hg) | Wind Speed (mph) | Prevailing Direction (NSEW) |
|-------------------------|----------------------|---------------------------|-------------------------|------------------|-----------------------------|
| Humidity Ratio (HR)     |                      |                           |                         |                  |                             |
| Median of Extreme Highs | 142                  | 85                        | 0.9                     | 10.5             | S                           |
| 0.4% Occurrence         | 137                  | 84                        | 0.88                    | 9.9              | S                           |
| 1.0% Occurrence         | 128                  | 82                        | 0.82                    | 9.1              | S                           |
| 2.0% Occurrence         | 124                  | 81                        | 0.79                    | 9.3              | S                           |

| Air Conditioning/<br>Humid Area Criteria | Threshold  | T ≥ 93 °F | T ≥ 80 °F | Twb ≥ 73 °F | Twb ≥ 67 °F |
|------------------------------------------|------------|-----------|-----------|-------------|-------------|
|                                          | # of Hours | 374       | 1590      | 802         | 2417        |

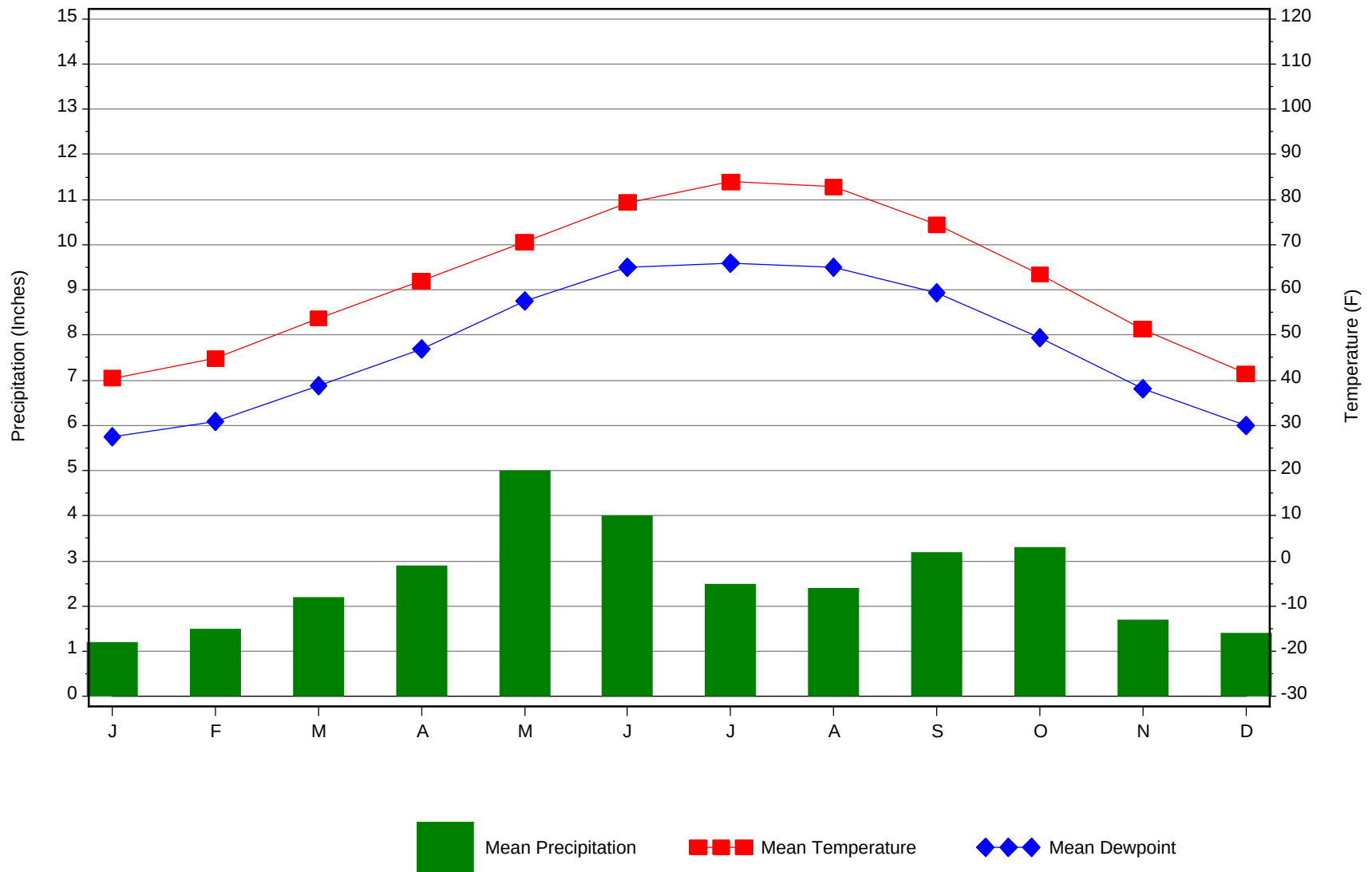
### Other Site Data

| 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                                                 | 3.8                                          | 90                                                                 | 3.3 + 2.2                                                                                |
| 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>(#)                                              |
| 65                                                 | 14                                           | 5                                                                  | 37                                                                                       |

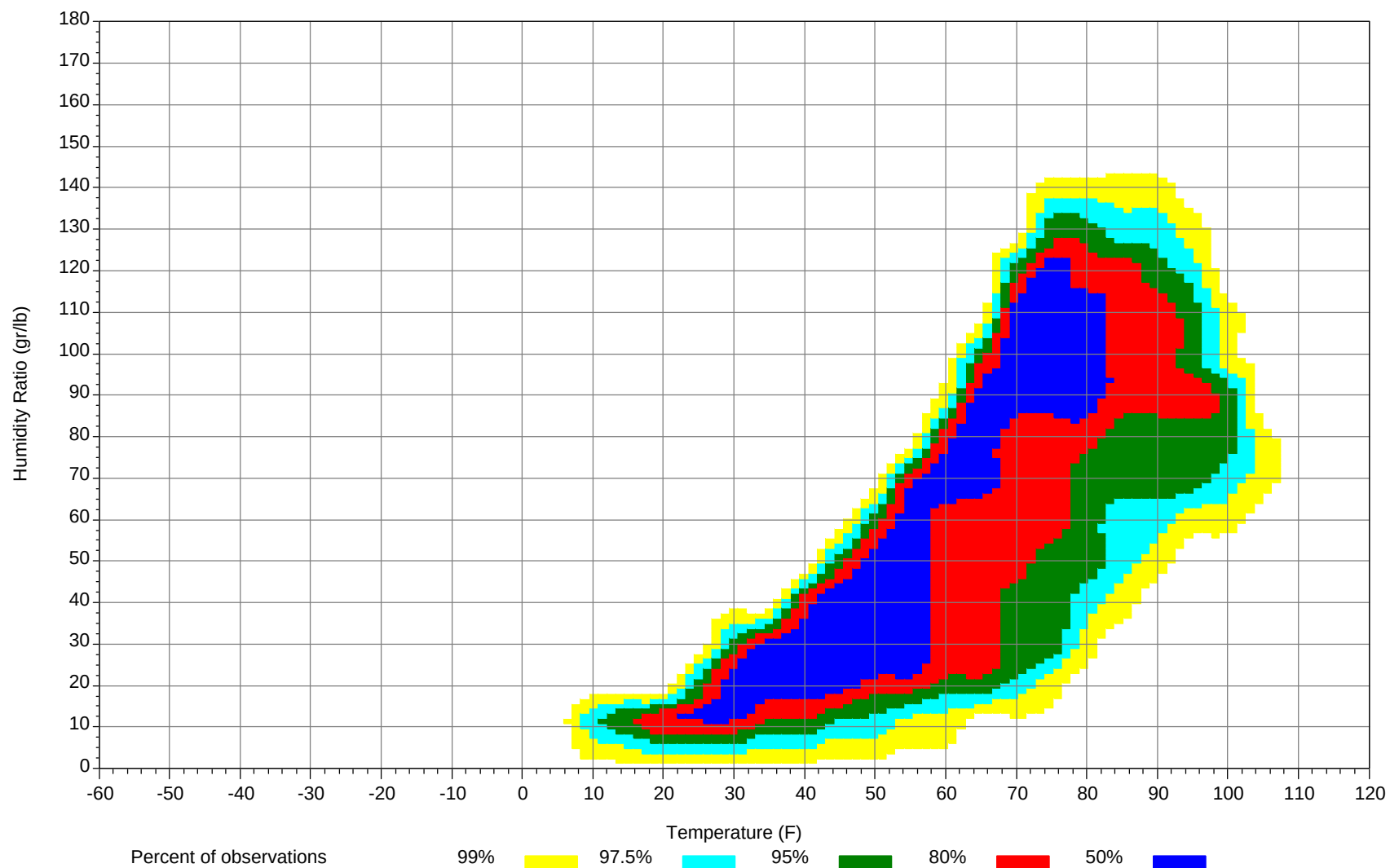
\*Note: Temperatures at greater depths can be estimated by adding 1.5° F per 100 feet additional depth.



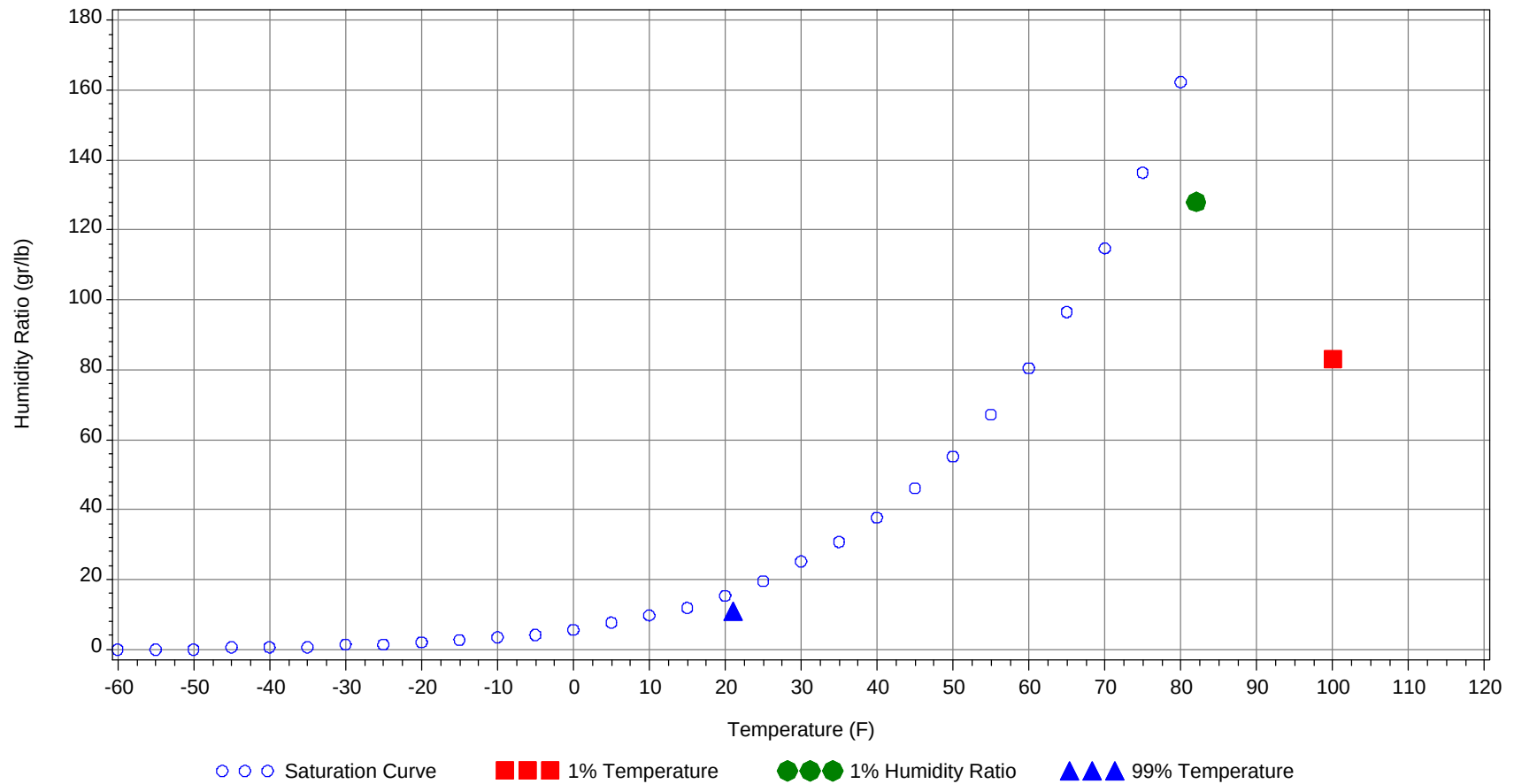
# Average Annual Climate



# 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       | 100.0              |               | 73            |               | 83.0            | 36.9                 |
| 99.0% Dry Bulb      | 21.0               |               |               |               | 11.0            | 6.7                  |
| 1.0% Humidity Ratio | 128.0              | 82.0          | 75.5          | 73.0          |                 | 39.7                 |

## Dry-Bulb Temperature Hours For An Average Year

|                        | January      |              |              |           |              | February     |              |              |           |              | March        |              |              |           |              |
|------------------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|
| 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) |
| 110/114                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 105/109                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 100/104                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 95/ 99                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 90/ 94                 |              |              |              |           |              |              | 0            | 0            | 0         | 64           |              | 1            | 0            | 1         | 60.9         |
| 85/ 89                 |              |              |              |           |              |              | 0            | 0            | 0         | 59.8         |              | 2            | 1            | 3         | 62.5         |
| 80/ 84                 |              | 0            |              | 0         | 60.7         |              | 2            | 0            | 2         | 58.1         |              | 8            | 4            | 12        | 62.1         |
| 75/ 79                 |              | 2            | 1            | 3         | 56           |              | 5            | 2            | 7         | 57.3         | 0            | 19           | 10           | 29        | 61           |
| 70/ 74                 |              | 5            | 2            | 7         | 54.3         |              | 11           | 6            | 17        | 55.7         | 1            | 29           | 20           | 50        | 58.1         |
| 65/ 69                 | 0            | 8            | 4            | 12        | 52           | 0            | 14           | 9            | 23        | 53.1         | 7            | 28           | 24           | 59        | 56.4         |
| 60/ 64                 | 1            | 20           | 11           | 32        | 49.6         | 4            | 25           | 19           | 48        | 51.3         | 22           | 37           | 35           | 94        | 53.7         |
| 55/ 59                 | 5            | 26           | 17           | 48        | 46.9         | 11           | 28           | 26           | 65        | 48.1         | 30           | 39           | 40           | 109       | 49.8         |
| 50/ 54                 | 9            | 33           | 28           | 70        | 43.8         | 17           | 30           | 29           | 76        | 44.4         | 39           | 30           | 40           | 109       | 45.8         |
| 45/ 49                 | 20           | 34           | 39           | 93        | 40.6         | 28           | 30           | 35           | 93        | 41           | 47           | 24           | 31           | 102       | 41.9         |
| 40/ 44                 | 34           | 31           | 36           | 101       | 37.3         | 35           | 22           | 28           | 85        | 37.6         | 40           | 14           | 19           | 73        | 38           |
| 35/ 39                 | 48           | 33           | 44           | 125       | 33.4         | 48           | 26           | 29           | 103       | 33.8         | 31           | 11           | 13           | 55        | 33.8         |
| 30/ 34                 | 58           | 27           | 32           | 117       | 29.1         | 40           | 16           | 21           | 77        | 29.4         | 19           | 4            | 7            | 30        | 29.1         |
| 25/ 29                 | 39           | 16           | 20           | 75        | 24.6         | 24           | 7            | 9            | 40        | 24.6         | 6            | 2            | 2            | 10        | 24.2         |
| 20/ 24                 | 18           | 6            | 8            | 32        | 19.9         | 8            | 4            | 4            | 16        | 19.7         | 4            | 1            | 1            | 6         | 20.3         |
| 15/ 19                 | 11           | 3            | 4            | 18        | 15.7         | 5            | 3            | 3            | 11        | 15.4         | 2            | 0            | 0            | 2         | 15.7         |
| 10/ 14                 | 5            | 1            | 1            | 7         | 11           | 3            | 1            | 1            | 5         | 10.4         | 0            | 0            | 0            | 0         | 10           |
| 5/ 9                   | 1            | 0            | 0            | 1         | 6.8          | 1            | 0            | 0            | 1         | 6            | 0            |              |              | 0         | 6.8          |
| 0/ 4                   | 0            | 0            | 0            | 0         | 1.1          | 0            |              |              | 0         | 2.9          |              |              |              |           |              |
| -5/ -1                 | 0            | 0            |              | 0         | -2.4         |              |              |              |           |              |              |              |              |           |              |
| -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.

## 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) |
| 110/114                |              |              |              |           |              |              |              |              |           |              |              | 0            |              | 0         | 74           |
| 105/109                |              |              |              |           |              |              | 0            | 0            | 0         | 69.3         |              | 1            | 0            | 1         | 71.2         |
| 100/104                |              |              |              |           |              |              | 1            | 0            | 1         | 68.6         |              | 6            | 2            | 8         | 72.8         |
| 95/ 99                 |              | 0            | 0            | 0         | 63.4         |              | 5            | 2            | 7         | 70.2         |              | 20           | 9            | 29        | 73           |
| 90/ 94                 |              | 2            | 1            | 3         | 65           |              | 15           | 7            | 22        | 70.8         | 0            | 52           | 28           | 80        | 73.6         |
| 85/ 89                 |              | 7            | 3            | 10        | 65.3         | 0            | 25           | 15           | 40        | 70.4         | 1            | 53           | 36           | 90        | 72.6         |
| 80/ 84                 |              | 19           | 10           | 29        | 64.7         | 2            | 47           | 31           | 80        | 68.9         | 16           | 52           | 58           | 126       | 71           |
| 75/ 79                 | 1            | 39           | 24           | 64        | 62.7         | 15           | 53           | 47           | 115       | 66.8         | 64           | 32           | 53           | 149       | 69.6         |
| 70/ 74                 | 9            | 46           | 39           | 94        | 60.9         | 45           | 44           | 50           | 139       | 64.7         | 85           | 18           | 36           | 139       | 67.6         |
| 65/ 69                 | 22           | 35           | 37           | 94        | 58.8         | 54           | 27           | 40           | 121       | 61.9         | 48           | 6            | 14           | 68        | 64.1         |
| 60/ 64                 | 39           | 38           | 44           | 121       | 55.4         | 58           | 19           | 32           | 109       | 58.1         | 20           | 1            | 4            | 25        | 59.8         |
| 55/ 59                 | 52           | 26           | 36           | 114       | 51.1         | 41           | 9            | 16           | 66        | 53.2         | 4            |              | 0            | 4         | 54.3         |
| 50/ 54                 | 55           | 16           | 26           | 97        | 47.2         | 23           | 3            | 6            | 32        | 48.7         | 0            |              |              | 0         | 49.4         |
| 45/ 49                 | 34           | 7            | 13           | 54        | 42.4         | 8            | 1            | 1            | 10        | 44           |              |              |              |           |              |
| 40/ 44                 | 18           | 3            | 6            | 27        | 38.3         | 2            | 0            | 0            | 2         | 38.7         |              |              |              |           |              |
| 35/ 39                 | 8            | 1            | 2            | 11        | 34.1         | 0            | 0            |              | 0         | 35.4         |              |              |              |           |              |
| 30/ 34                 | 3            | 0            | 1            | 4         | 29.9         |              |              |              |           |              |              |              |              |           |              |
| 25/ 29                 | 0            |              |              | 0         | 24.9         |              |              |              |           |              |              |              |              |           |              |
| 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.

## 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) |
| 110/114                |              |              |              |           |              |              | 0            | 0            | 0         | 71.2         |              |              |              |           |              |
| 105/109                |              | 4            | 1            | 5         | 72.5         |              | 4            | 1            | 5         | 72.2         |              | 0            | 0            | 0         | 68.4         |
| 100/104                |              | 23           | 11           | 34        | 73           |              | 21           | 9            | 30        | 73           |              | 4            | 1            | 5         | 71.4         |
| 95/ 99                 |              | 51           | 26           | 77        | 73.8         | 0            | 49           | 22           | 71        | 73.1         |              | 14           | 4            | 18        | 71.9         |
| 90/ 94                 | 1            | 65           | 47           | 113       | 73.5         | 1            | 59           | 40           | 100       | 72.9         | 0            | 30           | 13           | 43        | 71.3         |
| 85/ 89                 | 8            | 46           | 48           | 102       | 72.7         | 6            | 44           | 43           | 93        | 72.2         | 0            | 39           | 21           | 60        | 70.7         |
| 80/ 84                 | 47           | 34           | 58           | 139       | 71.5         | 37           | 39           | 59           | 135       | 71.1         | 5            | 51           | 41           | 97        | 68.6         |
| 75/ 79                 | 98           | 16           | 39           | 153       | 70.5         | 90           | 21           | 44           | 155       | 70.1         | 29           | 44           | 54           | 127       | 67.2         |
| 70/ 74                 | 73           | 7            | 16           | 96        | 68.7         | 78           | 9            | 21           | 108       | 68           | 71           | 30           | 48           | 149       | 65.9         |
| 65/ 69                 | 17           | 2            | 3            | 22        | 64.6         | 26           | 3            | 7            | 36        | 64.1         | 51           | 15           | 27           | 93        | 61.9         |
| 60/ 64                 | 4            | 0            | 0            | 4         | 59.7         | 8            | 1            | 1            | 10        | 60.1         | 38           | 8            | 18           | 64        | 57.1         |
| 55/ 59                 | 0            |              |              | 0         | 54.3         | 1            |              |              | 1         | 54.4         | 26           | 4            | 9            | 39        | 52.8         |
| 50/ 54                 |              |              |              |           |              |              |              |              |           |              | 14           | 2            | 3            | 19        | 48.7         |
| 45/ 49                 |              |              |              |           |              |              |              |              |           |              | 4            | 0            | 1            | 5         | 44.5         |
| 40/ 44                 |              |              |              |           |              |              |              |              |           |              | 1            | 0            | 0            | 1         | 40.4         |
| 35/ 39                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 30/ 34                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 25/ 29                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 20/ 24                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 15/ 19                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 10/ 14                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 5/ 9                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 0/ 4                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -5/ -1                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -10/ -6                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |

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## Dry-Bulb Temperature Hours For An Average Year

|                           | October      |              |              |           |              | November     |              |              |           |              | December     |              |              |           |              |
|---------------------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|
| Temperature Range<br>(°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) |
| 110/114                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 105/109                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 100/104                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 95/ 99                    |              | 1            | 0            | 1         | 66.4         |              |              |              |           |              |              |              |              |           |              |
| 90/ 94                    |              | 5            | 1            | 6         | 67.8         |              |              |              |           |              |              |              |              |           |              |
| 85/ 89                    |              | 14           | 4            | 18        | 67.4         |              | 0            | 0            | 0         | 64.1         |              |              |              |           |              |
| 80/ 84                    | 0            | 30           | 12           | 42        | 65.7         |              | 4            | 1            | 5         | 63.9         |              | 0            |              | 0         | 61.2         |
| 75/ 79                    | 3            | 42           | 25           | 70        | 63.7         |              | 12           | 3            | 15        | 61.9         |              | 2            | 0            | 2         | 59.1         |
| 70/ 74                    | 15           | 44           | 40           | 99        | 61.9         | 1            | 22           | 10           | 33        | 59           | 0            | 5            | 1            | 6         | 57.2         |
| 65/ 69                    | 25           | 34           | 38           | 97        | 59.1         | 5            | 26           | 16           | 47        | 57.3         | 1            | 9            | 4            | 14        | 55.5         |
| 60/ 64                    | 46           | 35           | 45           | 126       | 56           | 15           | 38           | 30           | 83        | 54.2         | 3            | 22           | 9            | 34        | 51.8         |
| 55/ 59                    | 53           | 22           | 39           | 114       | 51.9         | 23           | 40           | 37           | 100       | 50.1         | 7            | 29           | 20           | 56        | 48.7         |
| 50/ 54                    | 50           | 14           | 25           | 89        | 47.6         | 36           | 35           | 43           | 114       | 46           | 13           | 36           | 29           | 78        | 44.7         |
| 45/ 49                    | 33           | 5            | 12           | 50        | 42.9         | 43           | 27           | 42           | 112       | 41.9         | 23           | 38           | 40           | 101       | 41.2         |
| 40/ 44                    | 15           | 2            | 4            | 21        | 38.7         | 39           | 16           | 24           | 79        | 37.7         | 37           | 32           | 42           | 111       | 37.8         |
| 35/ 39                    | 7            | 1            | 2            | 10        | 34.2         | 39           | 10           | 20           | 69        | 33.8         | 50           | 33           | 43           | 126       | 33.8         |
| 30/ 34                    | 2            | 1            | 1            | 4         | 30.1         | 26           | 5            | 10           | 41        | 29.3         | 56           | 22           | 31           | 109       | 29.6         |
| 25/ 29                    | 0            |              | 0            | 0         | 23.2         | 11           | 3            | 4            | 18        | 24.7         | 32           | 11           | 14           | 57        | 24.6         |
| 20/ 24                    | 0            |              |              | 0         | 19.8         | 3            | 1            | 1            | 5         | 20.6         | 13           | 6            | 7            | 26        | 19.9         |
| 15/ 19                    |              |              |              |           |              | 0            |              |              | 0         | 15.6         | 8            | 3            | 4            | 15        | 15.7         |
| 10/ 14                    |              |              |              |           |              |              |              |              |           |              | 4            | 1            | 1            | 6         | 10.5         |
| 5/ 9                      |              |              |              |           |              |              |              |              |           |              | 2            | 1            | 1            | 4         | 6.7          |
| 0/ 4                      |              |              |              |           |              |              |              |              |           |              | 0            | 0            | 0            | 0         | 0.2          |
| -5/ -1                    |              |              |              |           |              |              |              |              |           |              | 0            |              | 0            | 0         | -4.4         |
| -10/ -6                   |              |              |              |           |              |              |              |              |           |              | 0            |              |              | 0         | -6           |

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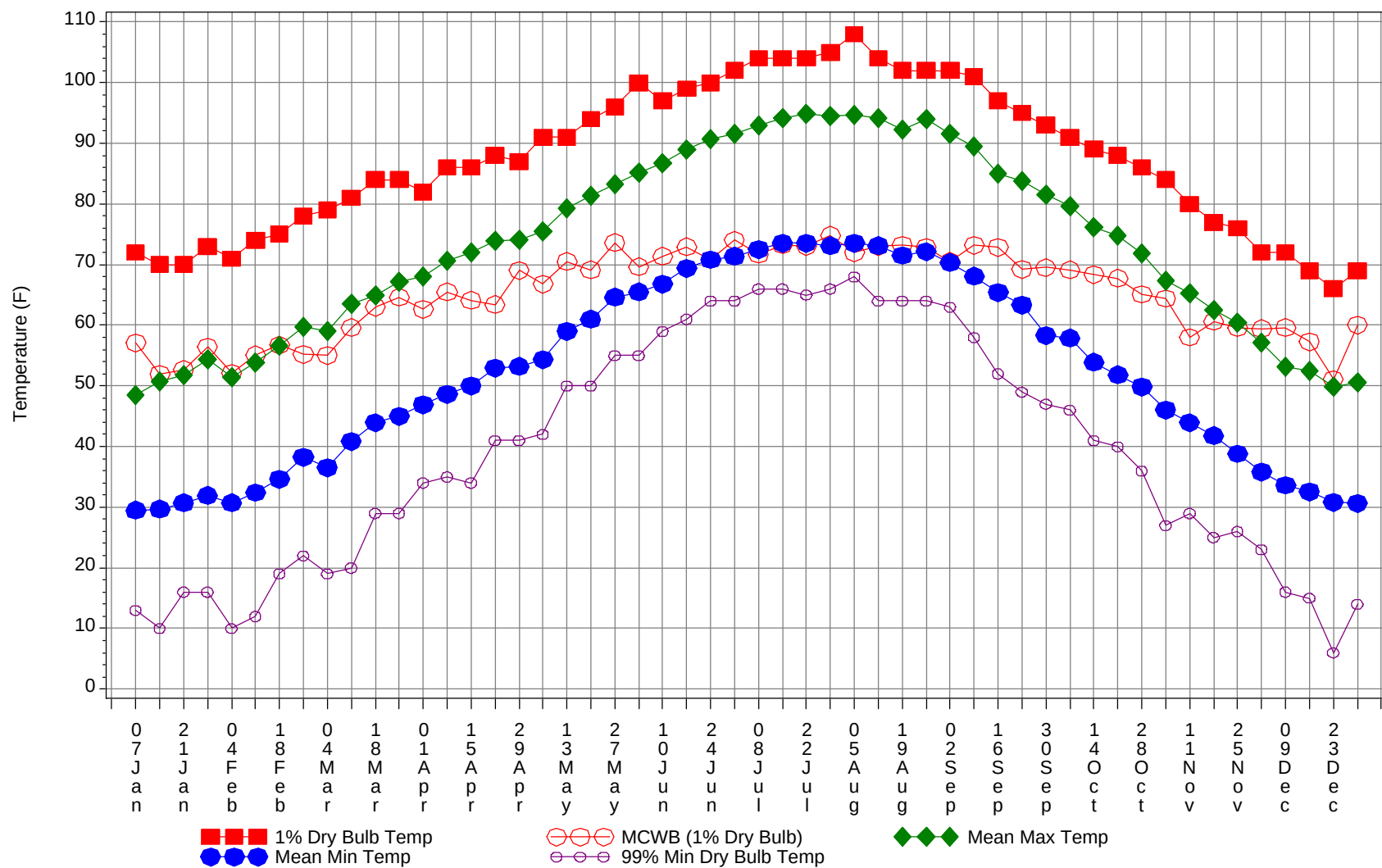


## ***Dry-Bulb Temperature Hours For An Average Year***

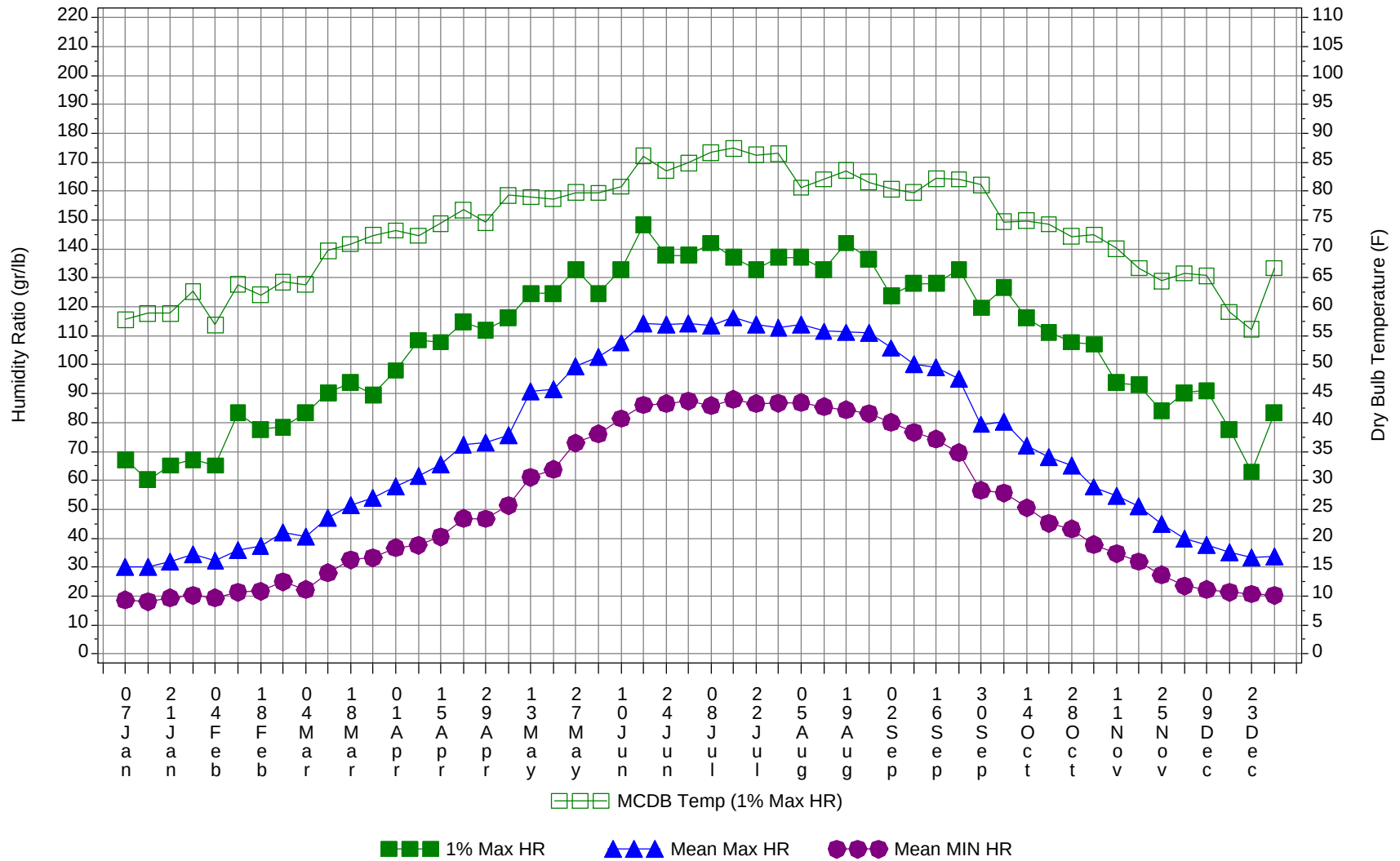
|                           | Annual                |                       |                       |              |                          |
|---------------------------|-----------------------|-----------------------|-----------------------|--------------|--------------------------|
| Temperature 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) |
| 110/114                   |                       | 0                     | 0                     | 0            | 71.7                     |
| 105/109                   |                       | 9                     | 3                     | 12           | 72                       |
| 100/104                   |                       | 54                    | 23                    | 77           | 72.8                     |
| 95/ 99                    | 0                     | 139                   | 64                    | 203          | 73.1                     |
| 90/ 94                    | 2                     | 228                   | 136                   | 366          | 72.7                     |
| 85/ 89                    | 16                    | 230                   | 170                   | 416          | 71.5                     |
| 80/ 84                    | 107                   | 288                   | 273                   | 668          | 69.7                     |
| 75/ 79                    | 298                   | 286                   | 304                   | 888          | 67.6                     |
| 70/ 74                    | 377                   | 271                   | 290                   | 938          | 64.6                     |
| 65/ 69                    | 257                   | 207                   | 225                   | 689          | 60.1                     |
| 60/ 64                    | 259                   | 242                   | 249                   | 750          | 55.3                     |
| 55/ 59                    | 253                   | 223                   | 241                   | 717          | 50.5                     |
| 50/ 54                    | 257                   | 199                   | 230                   | 686          | 46                       |
| 45/ 49                    | 240                   | 165                   | 214                   | 619          | 41.6                     |
| 40/ 44                    | 220                   | 120                   | 159                   | 499          | 37.8                     |
| 35/ 39                    | 231                   | 114                   | 152                   | 497          | 33.7                     |
| 30/ 34                    | 201                   | 74                    | 102                   | 377          | 29.3                     |
| 25/ 29                    | 112                   | 39                    | 49                    | 200          | 24.6                     |
| 20/ 24                    | 46                    | 17                    | 21                    | 84           | 19.9                     |
| 15/ 19                    | 26                    | 9                     | 11                    | 46           | 15.6                     |
| 10/ 14                    | 12                    | 4                     | 5                     | 21           | 10.7                     |
| 5/ 9                      | 4                     | 1                     | 1                     | 6            | 6.6                      |
| 0/ 4                      | 1                     | 0                     | 0                     | 1            | 1.1                      |
| -5/ -1                    | 1                     | 0                     | 0                     | 1            | -3.5                     |
| -10/ -6                   | 0                     |                       |                       | 0            | -6                       |

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

# Annual Summary of Temperatures



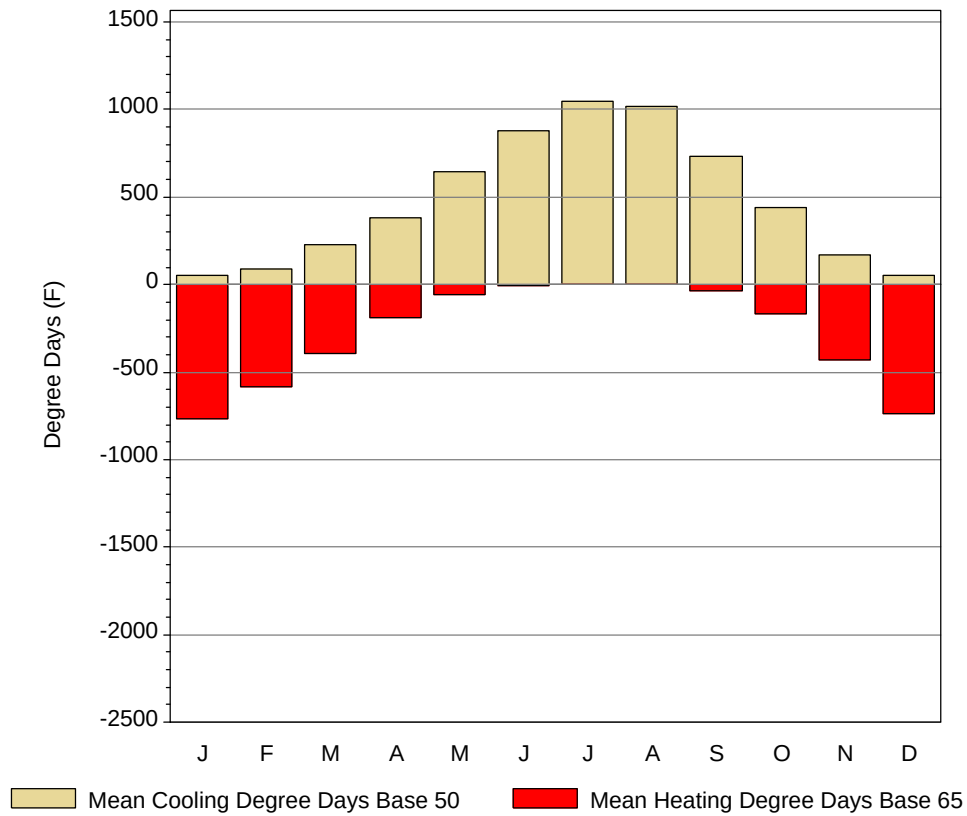
# Long Term Humidity and Dry Bulb Temperature Summary



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

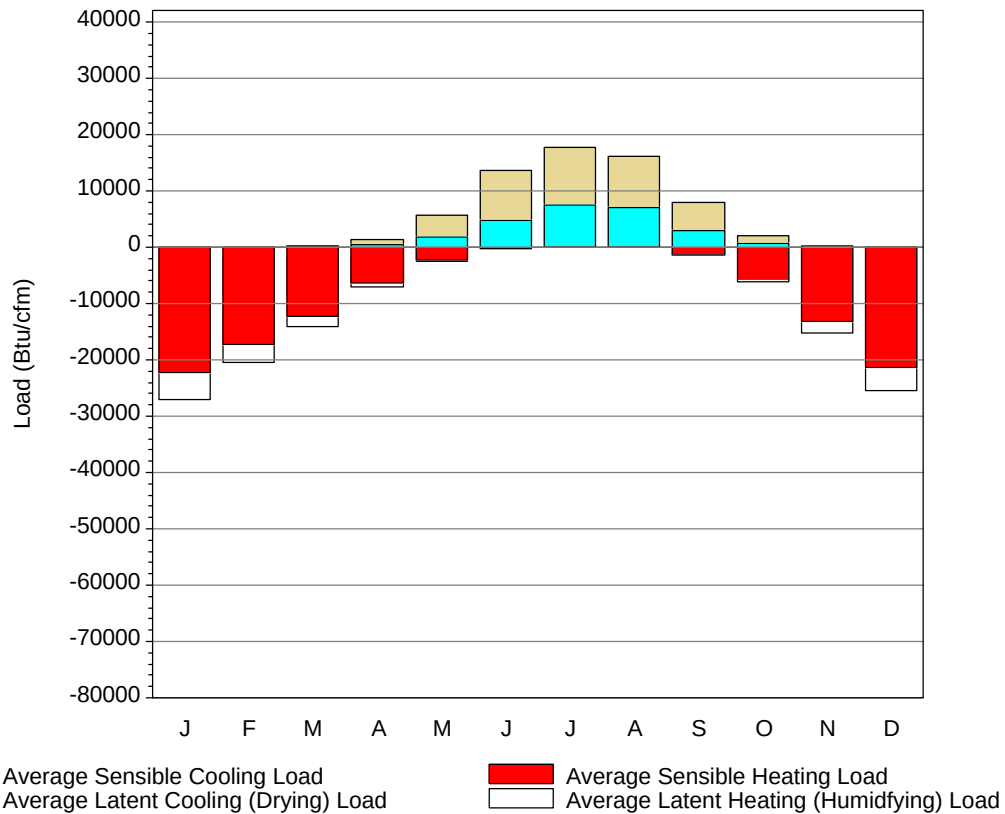
| Week Ending | 1.0% Temp (° F) | MCWB@ 1% Temp (° F) | Mean Max Temp (° F) | Mean Min Temp (° F) | 99% Temp (° F) | 1.0% HR (gr/lb) | MCDB@ 1% HR (° F) | Mean Max HR (gr/lb) | Mean Min HR (gr/lb) |
|-------------|-----------------|---------------------|---------------------|---------------------|----------------|-----------------|-------------------|---------------------|---------------------|
| 7-Jan       | 72              | 57.1                | 48.4                | 29.5                | 13             | 67.2            | 57.8              | 30.2                | 18.6                |
| 14-Jan      | 70              | 51.9                | 50.8                | 29.7                | 10             | 60.2            | 58.9              | 30                  | 18                  |
| 21-Jan      | 70              | 52.7                | 51.8                | 30.7                | 16             | 65.1            | 58.9              | 32                  | 19.4                |
| 28-Jan      | 73              | 56.4                | 54.4                | 31.9                | 16             | 67.2            | 62.7              | 34.4                | 20.3                |
| 4-Feb       | 71              | 52.1                | 51.4                | 30.7                | 10             | 65.1            | 56.9              | 32.3                | 19.3                |
| 11-Feb      | 74              | 55.1                | 53.8                | 32.4                | 12             | 83.3            | 63.9              | 35.8                | 21.3                |
| 18-Feb      | 75              | 56.7                | 56.6                | 34.6                | 19             | 77.7            | 62.1              | 37.3                | 21.6                |
| 25-Feb      | 78              | 55.2                | 59.7                | 38.2                | 22             | 78.4            | 64.3              | 41.9                | 24.9                |
| 4-Mar       | 79              | 55                  | 59                  | 36.5                | 19             | 83.3            | 63.9              | 40.6                | 22.3                |
| 11-Mar      | 81              | 59.6                | 63.5                | 40.8                | 20             | 90.3            | 69.7              | 47.1                | 28                  |
| 18-Mar      | 84              | 63                  | 64.9                | 43.9                | 29             | 93.8            | 70.9              | 51.5                | 32.6                |
| 25-Mar      | 84              | 64.6                | 67.1                | 45                  | 29             | 89.6            | 72.4              | 53.8                | 33.2                |
| 1-Apr       | 82              | 62.6                | 68                  | 46.9                | 34             | 98              | 73.2              | 57.8                | 36.7                |
| 8-Apr       | 86              | 65.5                | 70.6                | 48.6                | 35             | 108.5           | 72.3              | 61.6                | 37.5                |
| 15-Apr      | 86              | 64.1                | 72                  | 50                  | 34             | 107.8           | 74.4              | 65.6                | 40.5                |
| 22-Apr      | 88              | 63.4                | 73.9                | 52.9                | 41             | 114.8           | 76.8              | 72.3                | 46.8                |
| 29-Apr      | 87              | 69                  | 74.1                | 53.2                | 41             | 112             | 74.6              | 73.2                | 46.7                |
| 6-May       | 91              | 66.8                | 75.4                | 54.3                | 42             | 116.2           | 79.3              | 75.7                | 51.3                |
| 13-May      | 91              | 70.5                | 79.3                | 59                  | 50             | 124.6           | 79                | 90.9                | 61                  |
| 20-May      | 94              | 69.1                | 81.3                | 61                  | 50             | 124.6           | 78.7              | 91.6                | 63.8                |
| 27-May      | 96              | 73.6                | 83.2                | 64.6                | 55             | 133             | 79.8              | 99.5                | 72.9                |
| 4-Jun       | 100             | 69.6                | 85.2                | 65.5                | 55             | 124.6           | 79.7              | 102.7               | 76                  |
| 10-Jun      | 97              | 71.4                | 86.7                | 66.8                | 59             | 133             | 80.8              | 107.6               | 81.4                |
| 17-Jun      | 99              | 72.9                | 88.9                | 69.4                | 61             | 148.4           | 86.1              | 114.2               | 86.1                |
| 24-Jun      | 100             | 70.8                | 90.7                | 70.8                | 64             | 137.9           | 83.6              | 113.8               | 86.5                |
| 1-Jul       | 102             | 74                  | 91.5                | 71.4                | 64             | 137.9           | 84.9              | 114.3               | 87.4                |
| 8-Jul       | 104             | 71.7                | 92.9                | 72.5                | 66             | 142.1           | 86.7              | 113.7               | 85.9                |
| 15-Jul      | 104             | 73.3                | 94.1                | 73.5                | 66             | 137.2           | 87.4              | 116.3               | 88                  |
| 22-Jul      | 104             | 73                  | 94.9                | 73.5                | 65             | 133             | 86.3              | 113.8               | 86.6                |
| 29-Jul      | 105             | 74.8                | 94.5                | 73.1                | 66             | 137.2           | 86.5              | 112.8               | 86.7                |
| 5-Aug       | 108             | 72                  | 94.7                | 73.5                | 68             | 137.2           | 80.6              | 113.9               | 86.9                |
| 12-Aug      | 104             | 73                  | 94.2                | 73.1                | 64             | 133             | 82.1              | 111.6               | 85.4                |
| 19-Aug      | 102             | 73.2                | 92.3                | 71.5                | 64             | 142.1           | 83.6              | 111.2               | 84.4                |
| 26-Aug      | 102             | 72.8                | 93.9                | 72.1                | 64             | 136.5           | 81.6              | 110.9               | 83.1                |
| 2-Sep       | 102             | 70.5                | 91.5                | 70.3                | 63             | 123.9           | 80.4              | 105.8               | 80.1                |
| 9-Sep       | 101             | 73.2                | 89.4                | 68.1                | 58             | 128.1           | 79.8              | 100.2               | 76.6                |
| 16-Sep      | 97              | 72.8                | 85                  | 65.4                | 52             | 128.1           | 82.2              | 99.1                | 74.3                |
| 23-Sep      | 95              | 69.2                | 83.7                | 63.3                | 49             | 133             | 82.1              | 95.2                | 69.6                |
| 30-Sep      | 93              | 69.5                | 81.5                | 58.3                | 47             | 119.7           | 81.1              | 79.4                | 56.6                |
| 7-Oct       | 91              | 69.1                | 79.6                | 57.9                | 46             | 126.7           | 74.7              | 80.4                | 55.7                |
| 14-Oct      | 89              | 68.3                | 76.2                | 53.9                | 41             | 116.2           | 74.9              | 72.1                | 50.5                |
| 21-Oct      | 88              | 67.7                | 74.7                | 51.8                | 40             | 111.3           | 74.3              | 68.1                | 45.1                |
| 28-Oct      | 86              | 65.1                | 71.9                | 49.8                | 36             | 107.8           | 72.2              | 65                  | 43.2                |
| 4-Nov       | 84              | 64.4                | 67.4                | 46                  | 27             | 107.1           | 72.5              | 57.7                | 37.8                |
| 11-Nov      | 80              | 58                  | 65.3                | 43.9                | 29             | 93.8            | 70.1              | 54.6                | 34.7                |
| 18-Nov      | 77              | 60.6                | 62.5                | 41.8                | 25             | 93.1            | 66.7              | 51.1                | 31.9                |
| 25-Nov      | 76              | 59.6                | 60.5                | 38.8                | 26             | 84              | 64.5              | 44.8                | 27.3                |
| 2-Dec       | 72              | 59.4                | 57.2                | 35.8                | 23             | 90.3            | 65.8              | 39.9                | 23.5                |
| 9-Dec       | 72              | 59.6                | 53.2                | 33.6                | 16             | 91              | 65.4              | 37.6                | 22.3                |
| 16-Dec      | 69              | 57.3                | 52.5                | 32.5                | 15             | 77.7            | 59.1              | 35.1                | 21.4                |
| 23-Dec      | 66              | 51                  | 49.8                | 30.8                | 6              | 63              | 56.1              | 33.3                | 20.7                |
| 31-Dec      | 69              | 60                  | 50.5                | 30.6                | 14             | 83.3            | 66.7              | 33.7                | 20.3                |

# 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   | 50.6                                  | 4                                     | 766.4                                 |
| FEB   | 89.9                                  | 11.2                                  | 582.5                                 |
| MAR   | 225.2                                 | 42.3                                  | 391.5                                 |
| APR   | 383.7                                 | 95.9                                  | 186.2                                 |
| MAY   | 642.5                                 | 233.9                                 | 58.4                                  |
| JUN   | 876.6                                 | 430.1                                 | 3.5                                   |
| JUL   | 1048.9                                | 584.3                                 | 0.3                                   |
| AUG   | 1020.1                                | 556.1                                 | 1                                     |
| SEP   | 734.4                                 | 315.8                                 | 32.2                                  |
| OCT   | 437.2                                 | 122.2                                 | 169.8                                 |
| NOV   | 168.8                                 | 23.3                                  | 429.4                                 |
| DEC   | 52.9                                  | 3.4                                   | 736.6                                 |
| ANN   | 5730.8                                | 2422.5                                | 3357.8                                |

## 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   | 5                                       | -22222                                  | 5                                     | -4746                                 |
| FEB   | 32                                      | -17171                                  | 18                                    | -3321                                 |
| MAR   | 178                                     | -12151                                  | 175                                   | -1880                                 |
| APR   | 501                                     | -6331                                   | 909                                   | -588                                  |
| MAY   | 1904                                    | -2363                                   | 3860                                  | -57                                   |
| JUN   | 4709                                    | -253                                    | 8907                                  | -1                                    |
| JUL   | 7593                                    | -38                                     | 10212                                 | 0                                     |
| AUG   | 7094                                    | -91                                     | 8953                                  | 0                                     |
| SEP   | 3060                                    | -1341                                   | 4915                                  | -16                                   |
| OCT   | 778                                     | -5849                                   | 1203                                  | -350                                  |
| NOV   | 62                                      | -13199                                  | 153                                   | -1919                                 |
| DEC   | 3                                       | -21453                                  | 36                                    | -4037                                 |
| ANN   | 25919                                   | -102462                                 | 39346                                 | -16915                                |

| Station Information |                        | Shading Geometry in Dimensionless Units |       |
|---------------------|------------------------|-----------------------------------------|-------|
| City, State, WBAN   | WICHITAFALLS, TX 13966 | Window:                                 | 1.000 |
| Lat, Lon, Elev      | 33.97N 98.48W 1030ft   | Overhang:                               | 0.365 |
| Press, Stn Type     | 14.2psia Secondary     | Vert Gap:                               | 0.275 |

| AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day) Percentage Uncertainty = 9 |          |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------------------------------------------------------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                                                                              |          | Jan  | Feb  | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct  | Nov  | Dec  | Year |
| HORIZ.                                                                       | Global   | 910  | 1160 | 1500 | 1830 | 2030 | 2200 | 2200 | 2000 | 1640 | 1340 | 980  | 820  | 1550 |
|                                                                              | Std.Dev. | 77   | 82   | 118  | 124  | 122  | 106  | 121  | 108  | 113  | 115  | 77   | 64   | 35   |
|                                                                              | Minimum  | 710  | 1010 | 1270 | 1590 | 1820 | 2030 | 1990 | 1740 | 1430 | 1080 | 850  | 660  | 1480 |
|                                                                              | Maximum  | 1020 | 1340 | 1700 | 2030 | 2230 | 2430 | 2510 | 2180 | 1850 | 1500 | 1110 | 960  | 1620 |
|                                                                              | Diffuse  | 350  | 450  | 570  | 680  | 760  | 760  | 720  | 660  | 580  | 450  | 370  | 320  | 560  |
| Clear Day                                                                    | Global   | 1170 | 1510 | 1940 | 2340 | 2570 | 2650 | 2590 | 2380 | 2030 | 1600 | 1220 | 1060 | 1920 |
| NORTH                                                                        | Global   | 240  | 300  | 380  | 460  | 560  | 650  | 620  | 490  | 400  | 320  | 260  | 220  | 410  |
|                                                                              | Diffuse  | 240  | 300  | 380  | 450  | 500  | 520  | 510  | 460  | 390  | 320  | 260  | 220  | 380  |
| Clear Day                                                                    | Global   | 220  | 280  | 350  | 430  | 580  | 700  | 640  | 480  | 360  | 290  | 230  | 200  | 400  |
| EAST                                                                         | Global   | 590  | 720  | 890  | 1020 | 1080 | 1150 | 1200 | 1120 | 960  | 810  | 630  | 540  | 890  |
|                                                                              | Diffuse  | 290  | 370  | 470  | 550  | 600  | 620  | 610  | 570  | 490  | 390  | 320  | 270  | 460  |
| Clear Day                                                                    | Global   | 820  | 1010 | 1210 | 1360 | 1410 | 1440 | 1420 | 1350 | 1220 | 1030 | 840  | 750  | 1160 |
| SOUTH                                                                        | Global   | 1330 | 1310 | 1210 | 990  | 770  | 690  | 730  | 910  | 1120 | 1360 | 1320 | 1300 | 1080 |
|                                                                              | Diffuse  | 400  | 460  | 520  | 540  | 540  | 530  | 530  | 530  | 520  | 470  | 420  | 370  | 490  |
| Clear Day                                                                    | Global   | 2040 | 1980 | 1700 | 1220 | 860  | 720  | 780  | 1050 | 1470 | 1840 | 1980 | 2000 | 1470 |
| WEST                                                                         | Global   | 610  | 750  | 910  | 1060 | 1120 | 1210 | 1210 | 1130 | 980  | 850  | 640  | 550  | 920  |
|                                                                              | Diffuse  | 300  | 370  | 470  | 560  | 610  | 630  | 620  | 580  | 500  | 400  | 320  | 270  | 470  |
| Clear Day                                                                    | Global   | 820  | 1010 | 1210 | 1360 | 1410 | 1440 | 1420 | 1350 | 1220 | 1030 | 840  | 750  | 1160 |

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

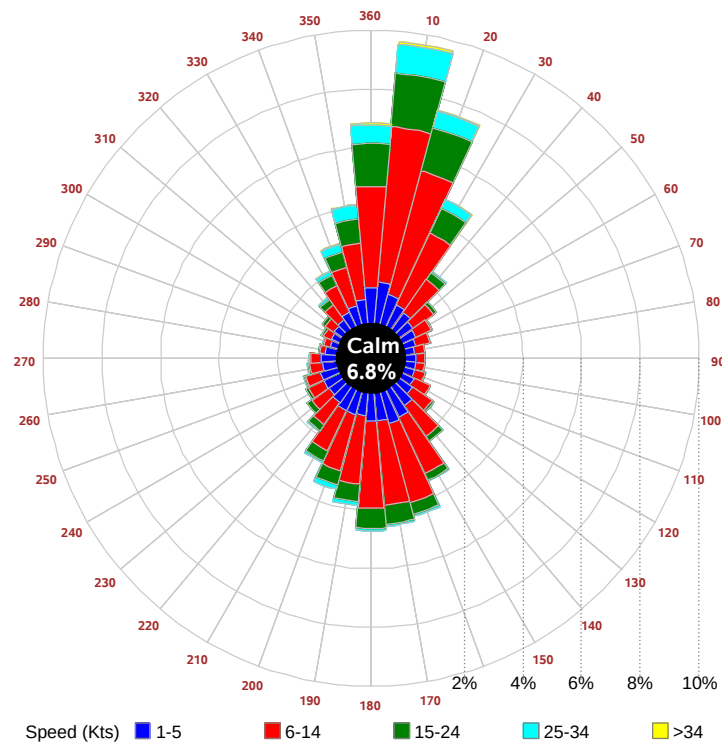
| AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING Percentage Uncertainty = 9 |          |      |     |      |      |      |      |      |      |      |     |     |     |      |
|----------------------------------------------------------------------------------------------------|----------|------|-----|------|------|------|------|------|------|------|-----|-----|-----|------|
|                                                                                                    |          | Jan  | Feb | Mar  | Apr  | May  | Jun  | Jul  | Aug  | Sep  | Oct | Nov | Dec | Year |
| HORIZ.                                                                                             | Unshaded | 610  | 810 | 1080 | 1330 | 1480 | 1610 | 1620 | 1460 | 1180 | 940 | 660 | 540 | 1110 |
| NORTH                                                                                              | Unshaded | 170  | 210 | 260  | 310  | 370  | 410  | 390  | 320  | 270  | 220 | 180 | 150 | 270  |
|                                                                                                    | Shaded   | 160  | 200 | 250  | 290  | 340  | 380  | 360  | 310  | 260  | 210 | 170 | 140 | 260  |
| EAST                                                                                               | Unshaded | 410  | 500 | 630  | 730  | 770  | 820  | 860  | 800  | 680  | 570 | 440 | 370 | 630  |
|                                                                                                    | Shaded   | 380  | 470 | 580  | 660  | 690  | 740  | 780  | 730  | 630  | 530 | 410 | 350 | 580  |
| SOUTH                                                                                              | Unshaded | 1000 | 950 | 810  | 610  | 460  | 410  | 430  | 540  | 730  | 950 | 980 | 970 | 730  |
|                                                                                                    | Shaded   | 980  | 900 | 690  | 450  | 350  | 350  | 350  | 390  | 570  | 870 | 960 | 960 | 650  |
| WEST                                                                                               | Unshaded | 420  | 530 | 650  | 760  | 800  | 870  | 860  | 800  | 700  | 610 | 450 | 380 | 650  |
|                                                                                                    | Shaded   | 390  | 490 | 600  | 690  | 730  | 790  | 780  | 730  | 640  | 560 | 420 | 360 | 600  |

| 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  | 32    | 73   | 90  | 79  | 43  | 35   | 78   | 102 | 103 | 79  |  |
|                                                                                                                 | M.Cloudy | 19    | 46   | 60  | 52  | 28  | 24   | 57   | 77  | 81  | 62  |  |
| NORTH                                                                                                           | M.Clear  | 9     | 14   | 15  | 14  | 10  | 24   | 16   | 17  | 17  | 16  |  |
|                                                                                                                 | M.Cloudy | 8     | 16   | 18  | 17  | 11  | 15   | 17   | 19  | 19  | 18  |  |
| EAST                                                                                                            | M.Clear  | 74    | 69   | 22  | 14  | 10  | 70   | 79   | 44  | 17  | 16  |  |
|                                                                                                                 | M.Cloudy | 25    | 37   | 21  | 17  | 11  | 35   | 53   | 37  | 19  | 18  |  |
| SOUTH                                                                                                           | M.Clear  | 29    | 63   | 78  | 69  | 37  | 10   | 19   | 35  | 36  | 20  |  |
|                                                                                                                 | M.Cloudy | 13    | 35   | 47  | 40  | 21  | 10   | 19   | 31  | 32  | 20  |  |
| WEST                                                                                                            | M.Clear  | 9     | 14   | 15  | 61  | 79  | 10   | 16   | 17  | 41  | 77  |  |
|                                                                                                                 | M.Cloudy | 8     | 16   | 18  | 36  | 36  | 10   | 17   | 19  | 36  | 57  |  |
| M.Clear                                                                                                         | (% hrs)  | 42    | 42   | 42  | 42  | 43  | 45   | 46   | 47  | 49  | 52  |  |

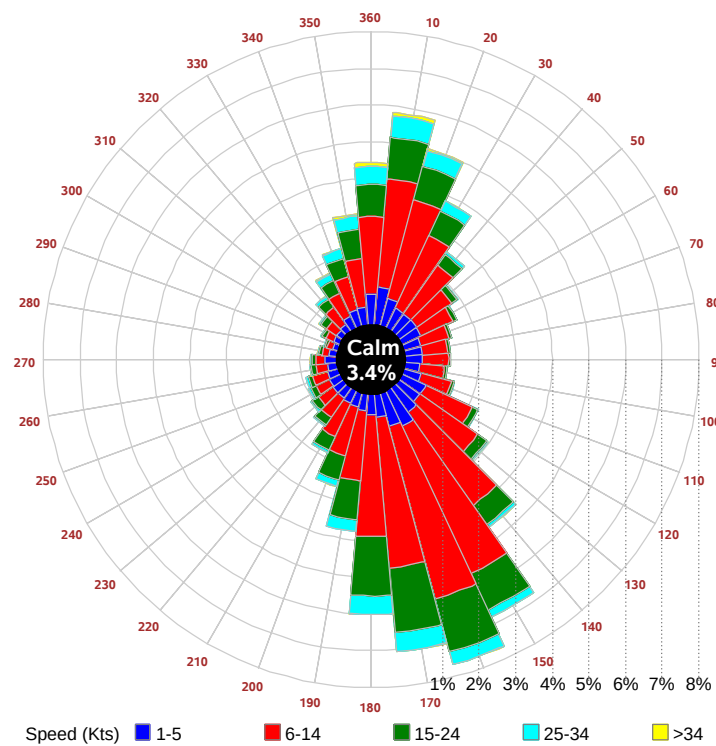
|         |          | Sept |      |     |     |     | Dec |      |     |     |     |  |
|---------|----------|------|------|-----|-----|-----|-----|------|-----|-----|-----|--|
|         |          | 9am  | 11am | 1pm | 3pm | 5pm | 9am | 11am | 1pm | 3pm | 5pm |  |
| HORIZ.  | M.Clear  | 19   | 64   | 90  | 89  | 62  | 13  | 46   | 59  | 46  | 12  |  |
|         | M.Cloudy | 12   | 41   | 57  | 61  | 42  | 8   | 29   | 38  | 28  | 8   |  |
| NORTH   | M.Clear  | 7    | 14   | 16  | 16  | 14  | 5   | 10   | 12  | 10  | 5   |  |
|         | M.Cloudy | 5    | 14   | 18  | 19  | 14  | 4   | 11   | 13  | 11  | 4   |  |
| EAST    | M.Clear  | 54   | 78   | 43  | 16  | 14  | 43  | 52   | 12  | 10  | 5   |  |
|         | M.Cloudy | 18   | 40   | 30  | 19  | 14  | 12  | 24   | 14  | 11  | 4   |  |
| SOUTH   | M.Clear  | 12   | 46   | 68  | 67  | 45  | 33  | 81   | 94  | 80  | 32  |  |
|         | M.Cloudy | 7    | 27   | 40  | 43  | 28  | 10  | 33   | 44  | 33  | 11  |  |
| WEST    | M.Clear  | 7    | 14   | 16  | 43  | 77  | 5   | 10   | 13  | 52  | 42  |  |
|         | M.Cloudy | 5    | 14   | 18  | 32  | 43  | 4   | 11   | 14  | 24  | 13  |  |
| M.Clear | (% hrs)  | 51   | 51   | 52  | 50  | 52  | 44  | 43   | 43  | 45  | 46  |  |



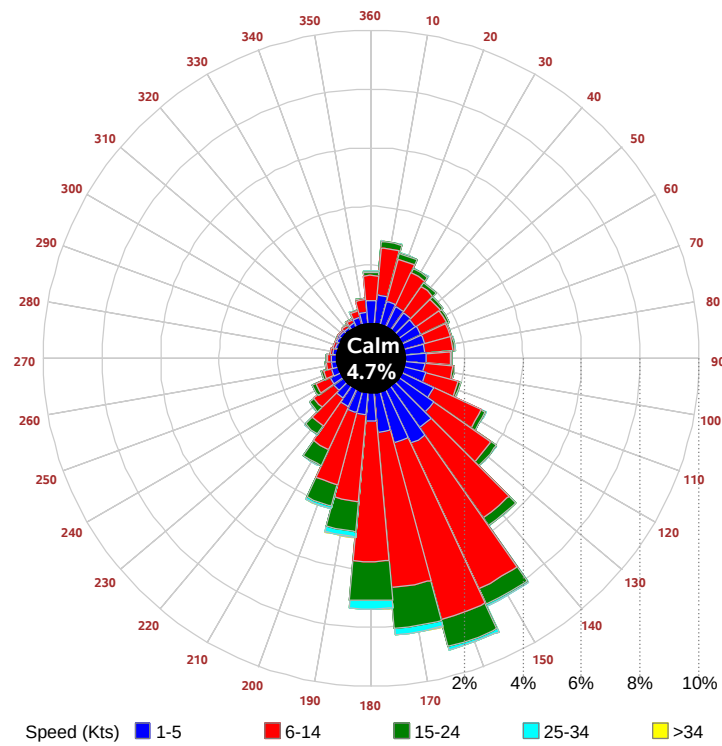
## Wind Summary - December, January, and February



## Wind Summary - March, April, and May



## Wind Summary - June, July, and August



## Wind Summary - September, October, and November

