

**STEWART INTL, NY**

Latitude = 41.50 N

Longitude = 74.10 W

Period of Record = 1988 To 2017

Station ID = ICAO\_KSWF

Elevation = 491 Feet

Average Pressure = 29.50 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  | 93                               | 75                        | 106                    | 10.8             | W                           |
| 0.4% Occurrence          | 90                               | 73                        | 97                     | 10.4             | W                           |
| 1.0% Occurrence          | 87                               | 72                        | 96                     | 9.8              | W                           |
| 2.0% Occurrence          | 84                               | 70                        | 92                     | 9.5              | W                           |
| Mean Daily Range         | 18                               | -                         | -                      | -                | W                           |
| 97.5% Occurrence         | 15                               | 13                        | 7                      | 9.1              | W                           |
| 99.0% Occurrence         | 10                               | 8                         | 6                      | 8.8              | W                           |
| 99.6% Occurrence         | 5                                | 4                         | 4                      | 7.8              | W                           |
| Median of Extreme Lows   | -2                               | -3                        | 3                      | 6.4              | W                           |

| Wet Bulb Temperature ( $T_{wb}$ ) | Design Value (°F) | Dry Bulb Temperature (°F) | Humidity Ratio (gr/lb) | Wind Speed (mph) | Prevailing Direction (NSEW) |
|-----------------------------------|-------------------|---------------------------|------------------------|------------------|-----------------------------|
| Median of Extreme Highs           | 80                | 89                        | 138                    | 9.6              | W                           |
| 0.4% Occurrence                   | 76                | 85                        | 121                    | 8.7              | W                           |
| 1.0% Occurrence                   | 75                | 83                        | 118                    | 8.3              | W                           |
| 2.0% Occurrence                   | 73                | 80                        | 112                    | 7.4              | W                           |

| 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 | 144                  | 86                        | 0.94                    | 8.9              | W                           |
| 0.4% Occurrence         | 125                  | 80                        | 0.82                    | 7.8              | WSW                         |
| 1.0% Occurrence         | 121                  | 78                        | 0.79                    | 7                | W                           |
| 2.0% Occurrence         | 113                  | 77                        | 0.74                    | 7.3              | W                           |

| Air Conditioning/<br>Humid Area Criteria | Threshold  | T ≥ 93 °F | T ≥ 80 °F | Twb ≥ 73 °F | Twb ≥ 67 °F |
|------------------------------------------|------------|-----------|-----------|-------------|-------------|
|                                          | # of Hours | 18        | 465       | 227         | 1036        |

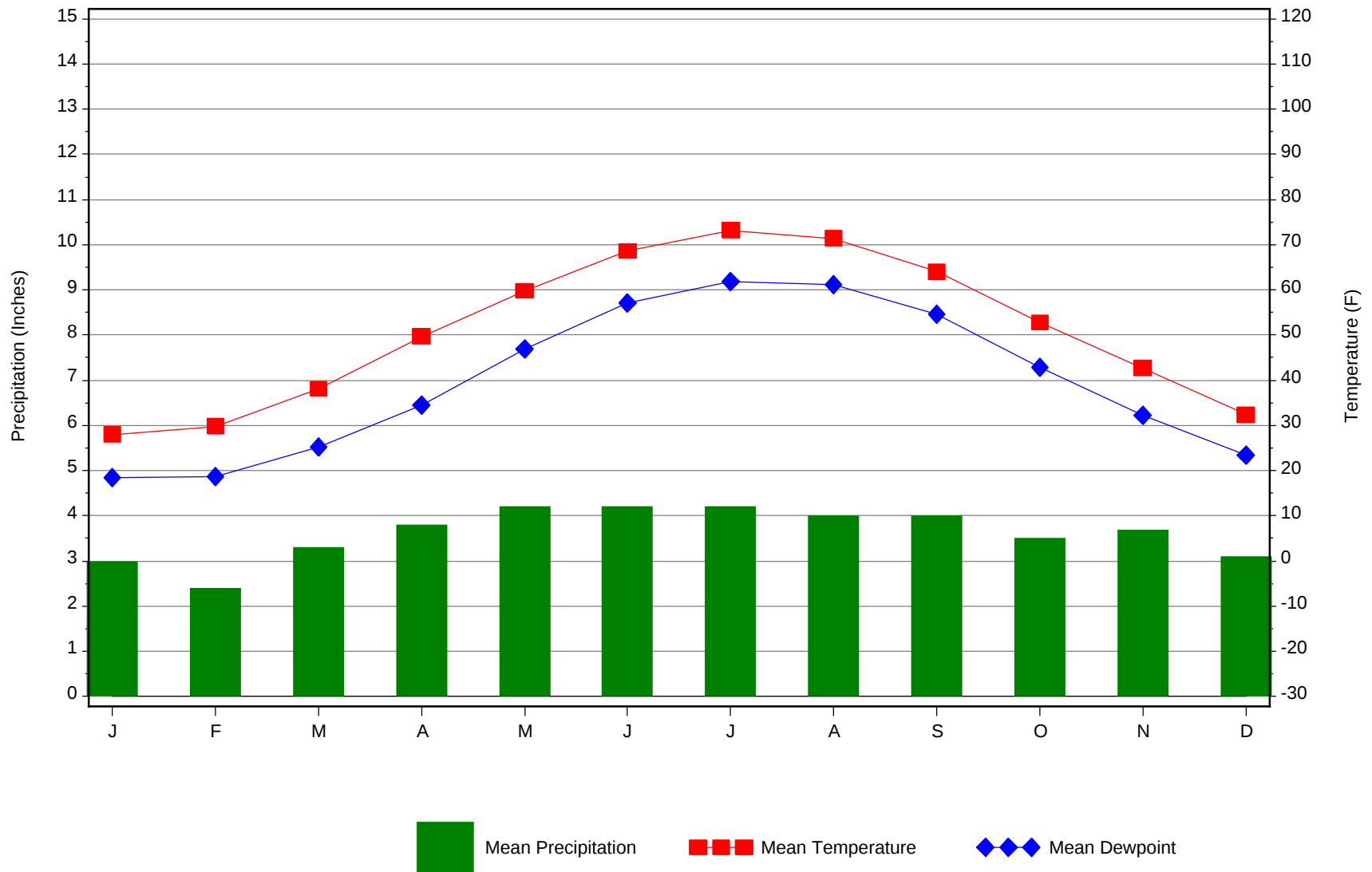
**Other Site Data**

| Weather Region                                     | Rain Rate<br>100 Year Recurrence<br>(in./hr) | Basic Wind Speed<br>3 sec gust @ 33 ft<br>50 Year Recurrence (mph) | Ventilation Cooling Load Index<br>(Ton-hr/cfm/yr) Base 75°F-RH 60%<br>Latent + Sensible |
|----------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 6                                                  | 2.8                                          | 100                                                                | 1.5 + 0.5                                                                               |
| 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>(#)                                             |
| 53.5                                               | 54                                           | 35                                                                 | 68                                                                                      |

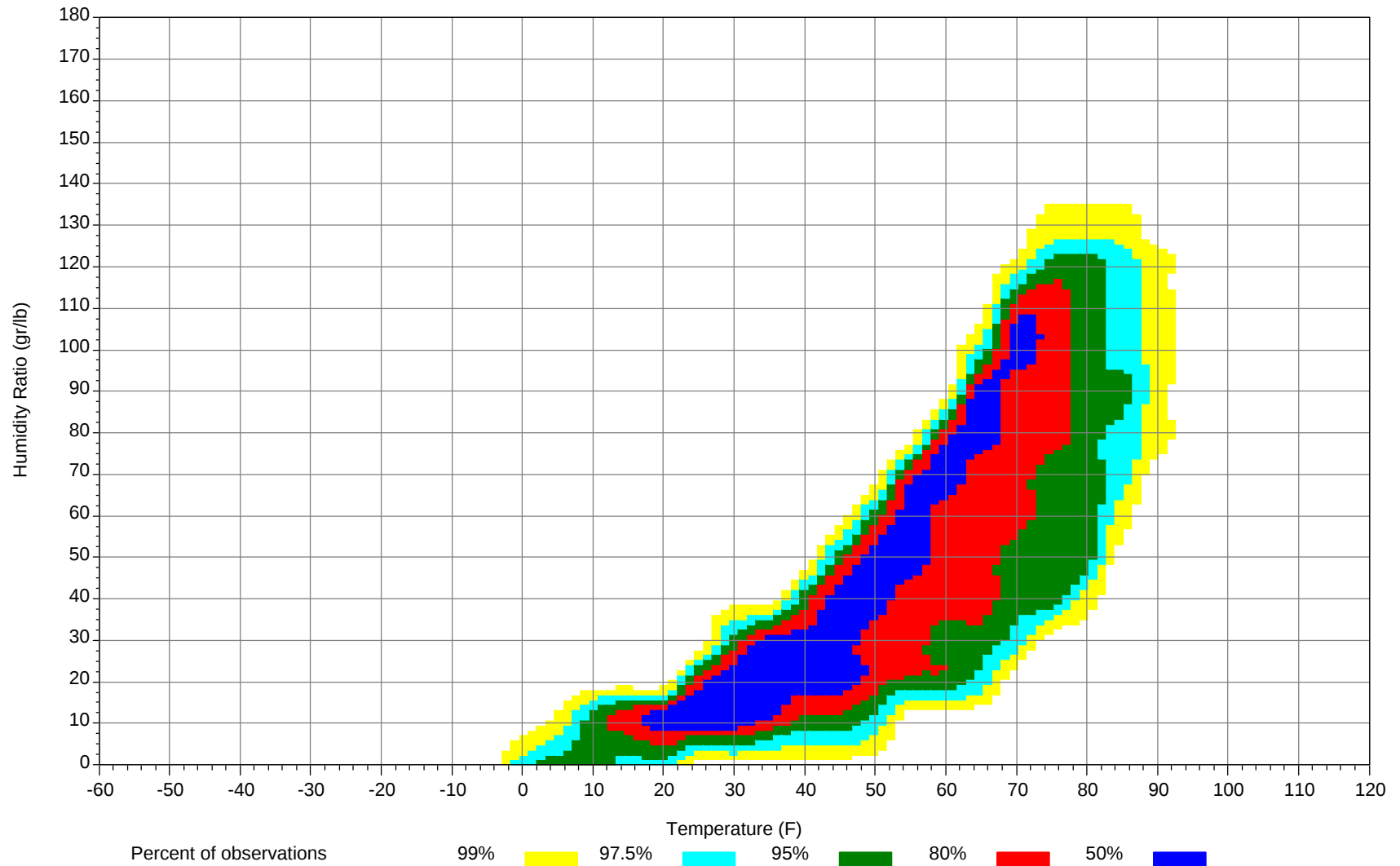
\*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



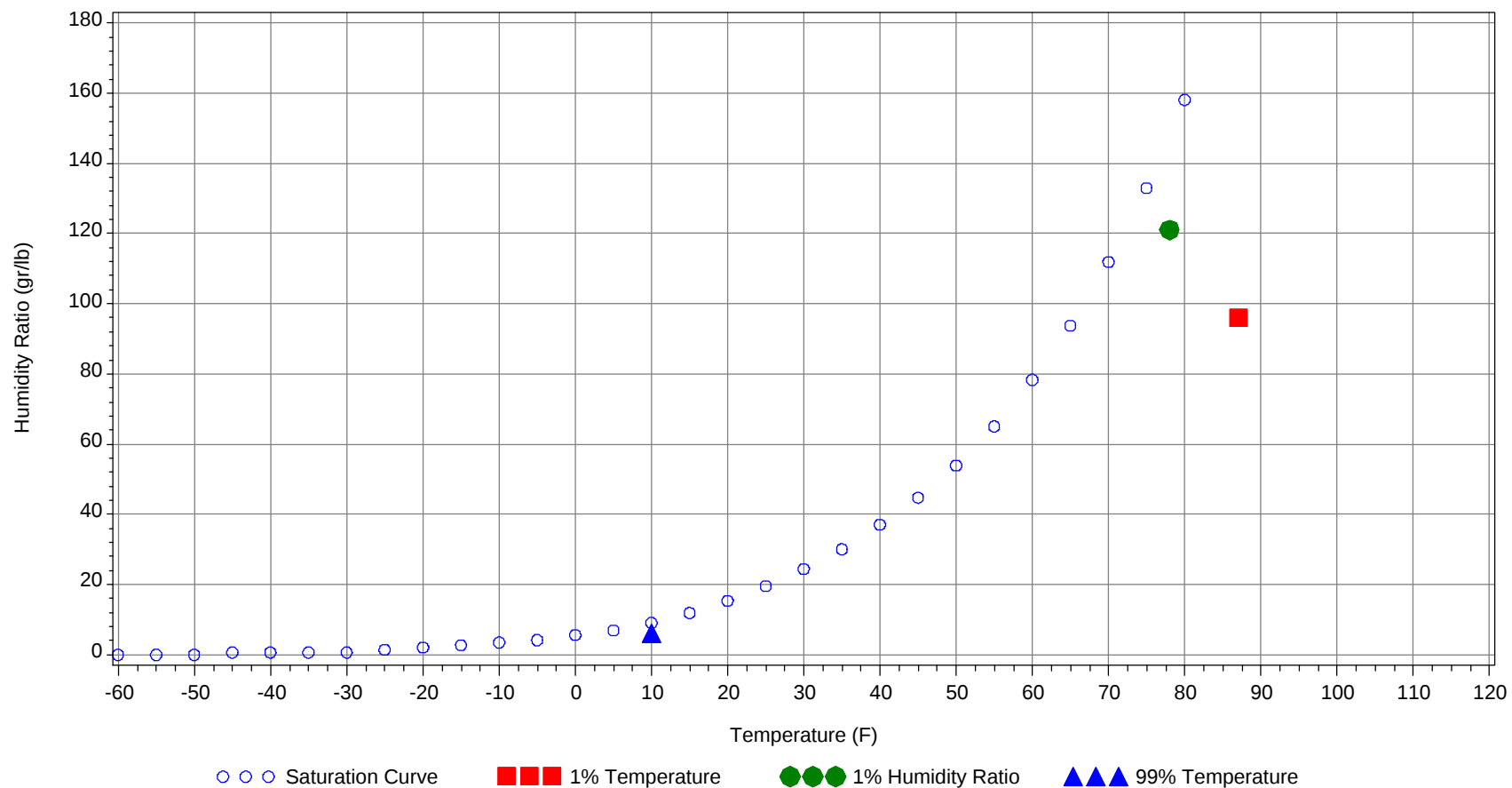
# Average Annual Climate



# 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       | 87.0               |               | 72            |               | 96.0            | 36.7                 |
| 99.0% Dry Bulb      | 10.0               |               |               |               | 6.0             | 3.3                  |
| 1.0% Humidity Ratio | 121.0              | 78.0          | 73.6          | 72.0          |                 | 37.7                 |

## 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) |
| 100/104                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 95/ 99                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 90/ 94                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 85/ 89                 |              |              |              |           |              |              |              |              |           |              |              | 0            | 0            | 0         | 65.3         |
| 80/ 84                 |              |              |              |           |              |              |              |              |           |              |              | 0            | 0            | 0         | 63.9         |
| 75/ 79                 |              |              |              |           |              |              |              |              |           |              |              | 1            | 1            | 2         | 62.5         |
| 70/ 74                 |              | 0            |              | 0         | 60           |              | 0            |              | 0         | 60.5         | 0            | 3            | 2            | 5         | 58.4         |
| 65/ 69                 | 0            | 0            |              | 0         | 60.8         |              | 0            | 0            | 0         | 57.1         | 0            | 4            | 3            | 7         | 55.7         |
| 60/ 64                 | 0            | 1            | 1            | 2         | 57.6         | 0            | 2            | 1            | 3         | 54.6         | 1            | 10           | 6            | 17        | 52.2         |
| 55/ 59                 | 2            | 5            | 2            | 9         | 52.7         | 1            | 3            | 2            | 6         | 49.6         | 4            | 15           | 11           | 30        | 48.3         |
| 50/ 54                 | 2            | 5            | 4            | 11        | 47.3         | 2            | 9            | 5            | 16        | 44.4         | 8            | 24           | 18           | 50        | 44.9         |
| 45/ 49                 | 5            | 14           | 10           | 29        | 42.2         | 6            | 17           | 13           | 36        | 40.6         | 19           | 39           | 33           | 91        | 40.6         |
| 40/ 44                 | 11           | 22           | 17           | 50        | 37.8         | 8            | 23           | 16           | 47        | 36.7         | 24           | 39           | 37           | 100       | 36.9         |
| 35/ 39                 | 29           | 44           | 37           | 110       | 33.5         | 24           | 44           | 40           | 108       | 32.8         | 49           | 49           | 52           | 150       | 33           |
| 30/ 34                 | 43           | 50           | 54           | 147       | 29           | 41           | 46           | 49           | 136       | 28.9         | 54           | 35           | 44           | 133       | 28.6         |
| 25/ 29                 | 44           | 41           | 44           | 129       | 23.9         | 46           | 35           | 42           | 123       | 23.7         | 43           | 16           | 25           | 84        | 23.6         |
| 20/ 24                 | 29           | 23           | 26           | 78        | 19.4         | 29           | 20           | 24           | 73        | 19.2         | 21           | 7            | 9            | 37        | 19.4         |
| 15/ 19                 | 32           | 21           | 27           | 80        | 15.4         | 29           | 14           | 17           | 60        | 15.1         | 13           | 4            | 6            | 23        | 15.1         |
| 10/ 14                 | 26           | 13           | 16           | 55        | 10.3         | 19           | 7            | 9            | 35        | 10.2         | 6            | 1            | 2            | 9         | 10.1         |
| 5/ 9                   | 13           | 6            | 8            | 27        | 5.5          | 11           | 3            | 4            | 18        | 5.7          | 3            | 0            | 0            | 3         | 5.6          |
| 0/ 4                   | 9            | 2            | 3            | 14        | 0.9          | 4            | 1            | 2            | 7         | 0.6          | 1            |              | 0            | 1         | 1.5          |
| -5/ -1                 | 2            | 0            | 1            | 3         | -3.7         | 2            | 0            | 0            | 2         | -3.8         | 0            |              |              | 0         | -4.5         |
| -10/ -6                | 1            | 0            | 0            | 1         | -7.5         | 1            |              |              | 1         | -6.9         |              |              |              |           |              |
| -15/-11                | 1            | 0            | 0            | 1         | -12.3        |              |              |              |           |              |              |              |              |           |              |
| -20/-16                | 0            |              |              | 0         | -16          |              |              |              |           |              |              |              |              |           |              |

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

## 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) |
| 100/104                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 95/ 99                 |              |              |              |           |              |              |              |              |           |              |              | 0            |              | 0         | 75           |
| 90/ 94                 |              | 0            | 0            | 0         | 66.4         |              | 2            | 1            | 3         | 69.7         |              | 7            | 2            | 9         | 73.2         |
| 85/ 89                 |              | 1            | 0            | 1         | 66.1         |              | 5            | 2            | 7         | 69.3         | 0            | 14           | 6            | 20        | 71.8         |
| 80/ 84                 |              | 4            | 2            | 6         | 64.1         | 0            | 16           | 8            | 24        | 66.6         | 1            | 41           | 20           | 62        | 69           |
| 75/ 79                 | 0            | 7            | 4            | 11        | 60.2         | 1            | 24           | 15           | 40        | 63.9         | 8            | 55           | 36           | 99        | 66.5         |
| 70/ 74                 | 1            | 12           | 8            | 21        | 57.3         | 6            | 35           | 25           | 66        | 60.7         | 33           | 55           | 59           | 147       | 64.2         |
| 65/ 69                 | 3            | 16           | 10           | 29        | 54.6         | 13           | 34           | 28           | 75        | 58           | 49           | 31           | 43           | 123       | 61.5         |
| 60/ 64                 | 8            | 33           | 22           | 63        | 51.2         | 33           | 52           | 46           | 131       | 55           | 68           | 25           | 43           | 136       | 58.3         |
| 55/ 59                 | 15           | 38           | 35           | 88        | 48           | 54           | 45           | 56           | 155       | 51.8         | 49           | 9            | 23           | 81        | 54           |
| 50/ 54                 | 31           | 47           | 47           | 125       | 45.1         | 65           | 27           | 44           | 136       | 47.8         | 25           | 2            | 8            | 35        | 49.4         |
| 45/ 49                 | 54           | 41           | 49           | 144       | 41.1         | 49           | 7            | 19           | 75        | 43.3         | 7            | 0            | 1            | 8         | 44.6         |
| 40/ 44                 | 46           | 25           | 30           | 101       | 37.5         | 18           | 1            | 5            | 24        | 39.2         | 0            |              | 0            | 0         | 39.9         |
| 35/ 39                 | 51           | 12           | 25           | 88        | 33.8         | 7            | 0            | 1            | 8         | 35.7         | 0            |              |              | 0         | 36.4         |
| 30/ 34                 | 24           | 4            | 7            | 35        | 29.3         | 2            |              | 0            | 2         | 31.4         |              |              |              |           |              |
| 25/ 29                 | 7            | 1            | 1            | 9         | 24.7         |              |              |              |           |              |              |              |              |           |              |
| 20/ 24                 | 1            | 0            | 0            | 1         | 19.3         |              |              |              |           |              |              |              |              |           |              |
| 15/ 19                 | 0            |              |              | 0         | 15           |              |              |              |           |              |              |              |              |           |              |
| 10/ 14                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 5/ 9                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 0/ 4                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -5/ -1                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -10/ -6                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -15/-11                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -20/-16                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |

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

## 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) |
| 100/104                |              | 0            | 0            | 0         | 74.5         |              |              |              |           |              |              |              |              |           |              |
| 95/ 99                 |              | 2            | 1            | 3         | 75.1         |              | 1            | 0            | 1         | 75.6         |              |              |              |           |              |
| 90/ 94                 |              | 15           | 5            | 20        | 73.9         |              | 7            | 2            | 9         | 73.9         |              | 2            | 0            | 2         | 73.1         |
| 85/ 89                 | 0            | 27           | 12           | 39        | 72.3         | 0            | 21           | 7            | 28        | 72.5         |              | 5            | 1            | 6         | 72.4         |
| 80/ 84                 | 2            | 68           | 34           | 104       | 70.1         | 1            | 62           | 28           | 91        | 70           | 0            | 20           | 7            | 27        | 69.3         |
| 75/ 79                 | 20           | 70           | 62           | 152       | 68           | 11           | 71           | 49           | 131       | 67.8         | 2            | 43           | 21           | 66        | 66.9         |
| 70/ 74                 | 71           | 44           | 70           | 185       | 66.2         | 57           | 53           | 74           | 184       | 66.3         | 19           | 56           | 39           | 114       | 64.6         |
| 65/ 69                 | 68           | 15           | 37           | 120       | 63.3         | 65           | 21           | 44           | 130       | 63.2         | 31           | 43           | 40           | 114       | 61.5         |
| 60/ 64                 | 61           | 7            | 23           | 91        | 59.4         | 68           | 10           | 33           | 111       | 59.5         | 53           | 43           | 58           | 154       | 58.1         |
| 55/ 59                 | 21           | 0            | 4            | 25        | 55           | 36           | 2            | 10           | 48        | 55           | 56           | 22           | 41           | 119       | 53.7         |
| 50/ 54                 | 5            |              | 0            | 5         | 50.3         | 10           | 0            | 1            | 11        | 50.8         | 45           | 6            | 23           | 74        | 49.4         |
| 45/ 49                 | 1            |              | 0            | 1         | 46.8         | 0            |              |              | 0         | 46           | 24           | 1            | 7            | 32        | 44.5         |
| 40/ 44                 |              |              |              |           |              |              |              |              |           |              | 8            |              | 1            | 9         | 40.1         |
| 35/ 39                 |              |              |              |           |              |              |              |              |           |              | 2            |              | 0            | 2         | 36           |
| 30/ 34                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 25/ 29                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 20/ 24                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 15/ 19                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 10/ 14                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 5/ 9                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 0/ 4                   |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -5/ -1                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -10/ -6                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -15/-11                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -20/-16                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |

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## Dry-Bulb Temperature Hours For An Average Year

|                        | October      |              |              |           |              | November     |              |              |           |              | December     |              |              |           |              |
|------------------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|--------------|--------------|--------------|-----------|--------------|
| 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) |
| 100/104                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 95/ 99                 |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| 90/ 94                 |              |              | 0            | 0         | 64           |              |              |              |           |              |              |              |              |           |              |
| 85/ 89                 |              | 0            | 0            | 0         | 71.2         |              |              |              |           |              |              |              |              |           |              |
| 80/ 84                 |              | 2            | 0            | 2         | 67.6         |              |              |              |           |              |              |              |              |           |              |
| 75/ 79                 | 0            | 9            | 2            | 11        | 64.8         |              | 0            | 0            | 0         | 62.5         |              |              |              |           |              |
| 70/ 74                 | 2            | 21           | 8            | 31        | 62.7         |              | 3            | 0            | 3         | 61.4         |              | 0            | 0            | 0         | 57.1         |
| 65/ 69                 | 4            | 26           | 14           | 44        | 59.6         | 0            | 6            | 3            | 9         | 59.3         | 0            | 1            | 0            | 1         | 60.3         |
| 60/ 64                 | 15           | 43           | 33           | 91        | 56.2         | 6            | 16           | 10           | 32        | 56           | 1            | 2            | 1            | 4         | 56.8         |
| 55/ 59                 | 32           | 53           | 46           | 131       | 51.9         | 11           | 26           | 17           | 54        | 51.5         | 2            | 6            | 3            | 11        | 52.4         |
| 50/ 54                 | 50           | 49           | 54           | 153       | 47.3         | 19           | 39           | 28           | 86        | 46.7         | 5            | 12           | 9            | 26        | 47.5         |
| 45/ 49                 | 55           | 30           | 46           | 131       | 42.8         | 32           | 52           | 45           | 129       | 41.8         | 11           | 24           | 15           | 50        | 42.2         |
| 40/ 44                 | 39           | 11           | 23           | 73        | 38.6         | 32           | 39           | 40           | 111       | 37.4         | 15           | 32           | 22           | 69        | 37.7         |
| 35/ 39                 | 35           | 4            | 17           | 56        | 34.9         | 49           | 36           | 48           | 133       | 33.4         | 40           | 55           | 51           | 146       | 33.7         |
| 30/ 34                 | 12           | 1            | 3            | 16        | 31           | 50           | 18           | 33           | 101       | 29.1         | 52           | 50           | 58           | 160       | 29.1         |
| 25/ 29                 | 3            |              | 0            | 3         | 26.8         | 28           | 5            | 13           | 46        | 24.6         | 51           | 33           | 43           | 127       | 24.1         |
| 20/ 24                 | 0            |              |              | 0         | 19.5         | 9            | 1            | 3            | 13        | 20.1         | 28           | 16           | 22           | 66        | 19.6         |
| 15/ 19                 |              |              |              |           |              | 4            | 0            | 1            | 5         | 16.3         | 24           | 12           | 15           | 51        | 15.6         |
| 10/ 14                 |              |              |              |           |              | 0            | 0            |              | 0         | 12.4         | 13           | 4            | 7            | 24        | 10.7         |
| 5/ 9                   |              |              |              |           |              |              |              |              |           |              | 5            | 1            | 2            | 8         | 6.1          |
| 0/ 4                   |              |              |              |           |              |              |              |              |           |              | 1            | 0            | 0            | 1         | 1.6          |
| -5/ -1                 |              |              |              |           |              |              |              |              |           |              | 1            | 0            | 0            | 1         | -3.2         |
| -10/ -6                |              |              |              |           |              |              |              |              |           |              | 0            |              | 0            | 0         | -6.9         |
| -15/-11                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |
| -20/-16                |              |              |              |           |              |              |              |              |           |              |              |              |              |           |              |

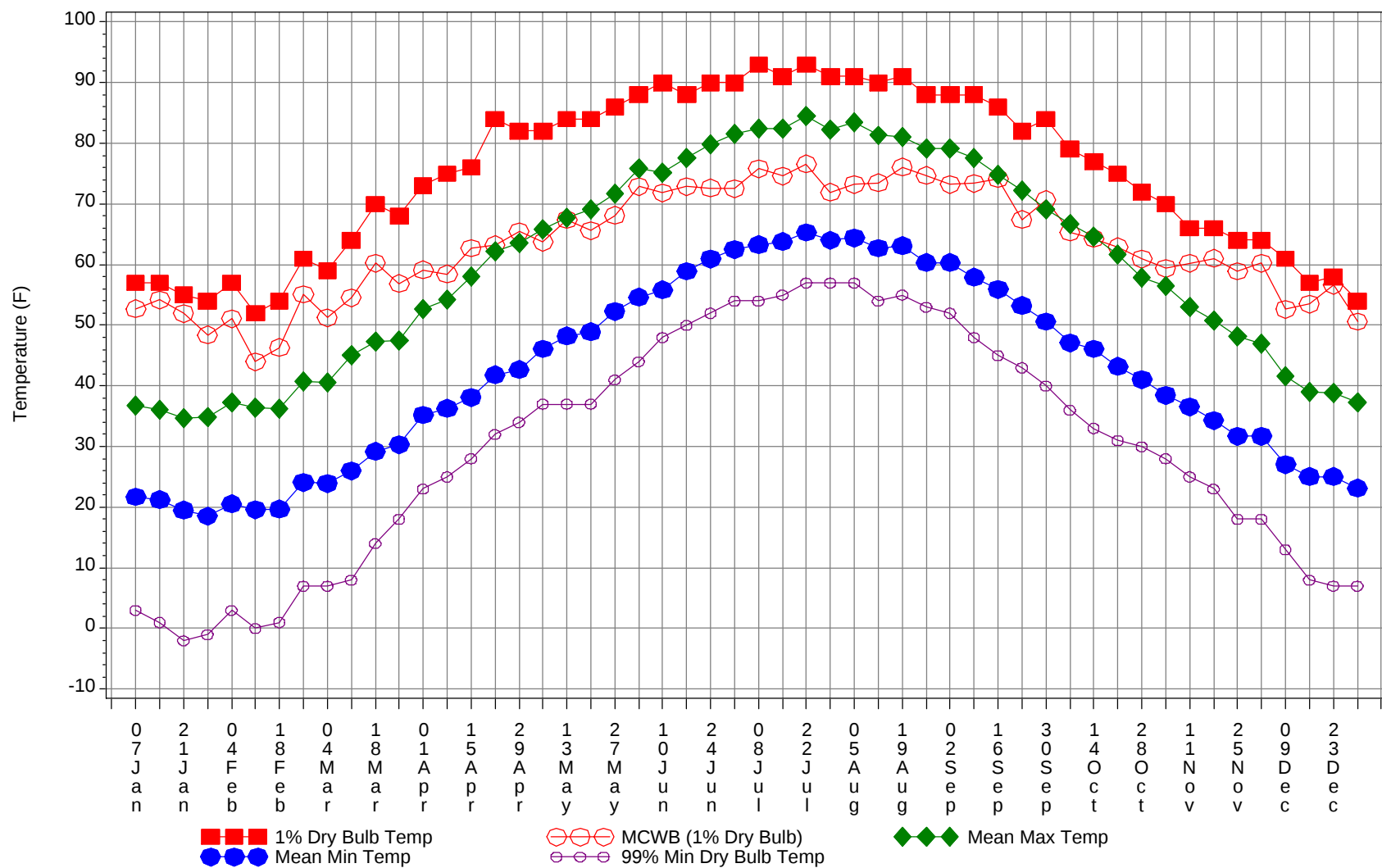
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## ***Dry-Bulb Temperature Hours For An Average Year***

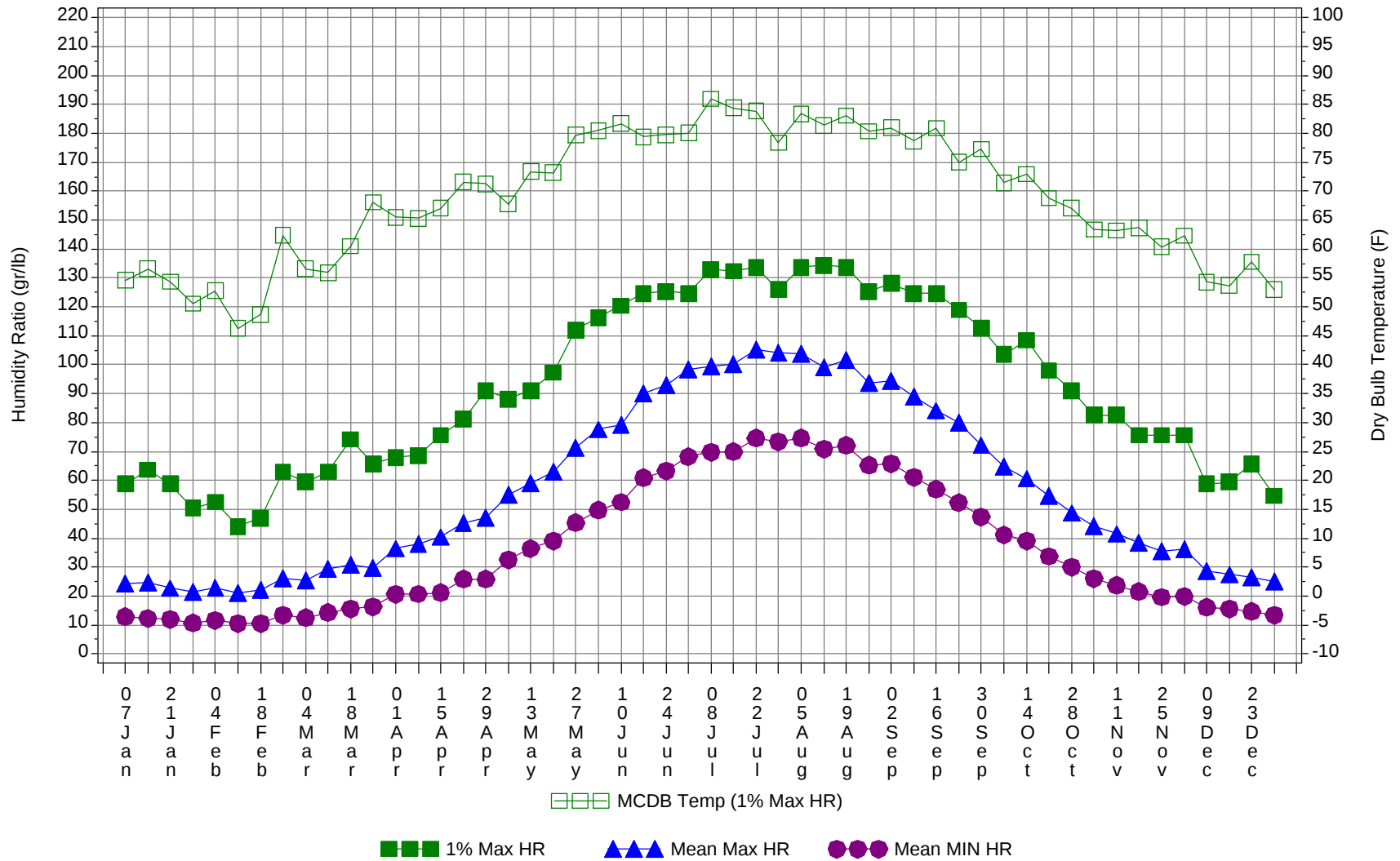
|                            | Annual       |              |              |           |               |
|----------------------------|--------------|--------------|--------------|-----------|---------------|
| Temperature Range<br>(° F) | 01 To 08 LST | 09 To 16 LST | 17 to 00 LST | Total Obs | M C W B (° F) |
| 100/104                    |              | 0            | 0            | 0         | 74.5          |
| 95/ 99                     |              | 4            | 1            | 5         | 75.2          |
| 90/ 94                     |              | 33           | 9            | 42        | 73.4          |
| 85/ 89                     | 0            | 74           | 28           | 102       | 72            |
| 80/ 84                     | 4            | 213          | 99           | 316       | 69.4          |
| 75/ 79                     | 42           | 279          | 189          | 510       | 66.9          |
| 70/ 74                     | 190          | 282          | 284          | 756       | 64.6          |
| 65/ 69                     | 233          | 198          | 222          | 653       | 61.2          |
| 60/ 64                     | 313          | 242          | 275          | 830       | 57            |
| 55/ 59                     | 283          | 224          | 250          | 757       | 52            |
| 50/ 54                     | 266          | 220          | 241          | 727       | 47.1          |
| 45/ 49                     | 261          | 226          | 238          | 725       | 42            |
| 40/ 44                     | 202          | 191          | 192          | 585       | 37.6          |
| 35/ 39                     | 287          | 244          | 270          | 801       | 33.5          |
| 30/ 34                     | 278          | 203          | 249          | 730       | 29            |
| 25/ 29                     | 223          | 131          | 169          | 523       | 24            |
| 20/ 24                     | 117          | 67           | 84           | 268       | 19.4          |
| 15/ 19                     | 103          | 52           | 66           | 221       | 15.4          |
| 10/ 14                     | 64           | 25           | 33           | 122       | 10.3          |
| 5/ 9                       | 31           | 9            | 13           | 53        | 5.7           |
| 0/ 4                       | 14           | 4            | 5            | 23        | 0.9           |
| -5/ -1                     | 5            | 0            | 1            | 6         | -3.7          |
| -10/ -6                    | 2            | 0            | 0            | 2         | -7.2          |
| -15/-11                    | 1            | 0            | 0            | 1         | -12.3         |
| -20/-16                    | 0            |              |              | 0         | -16           |

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

# Annual Summary of Temperatures



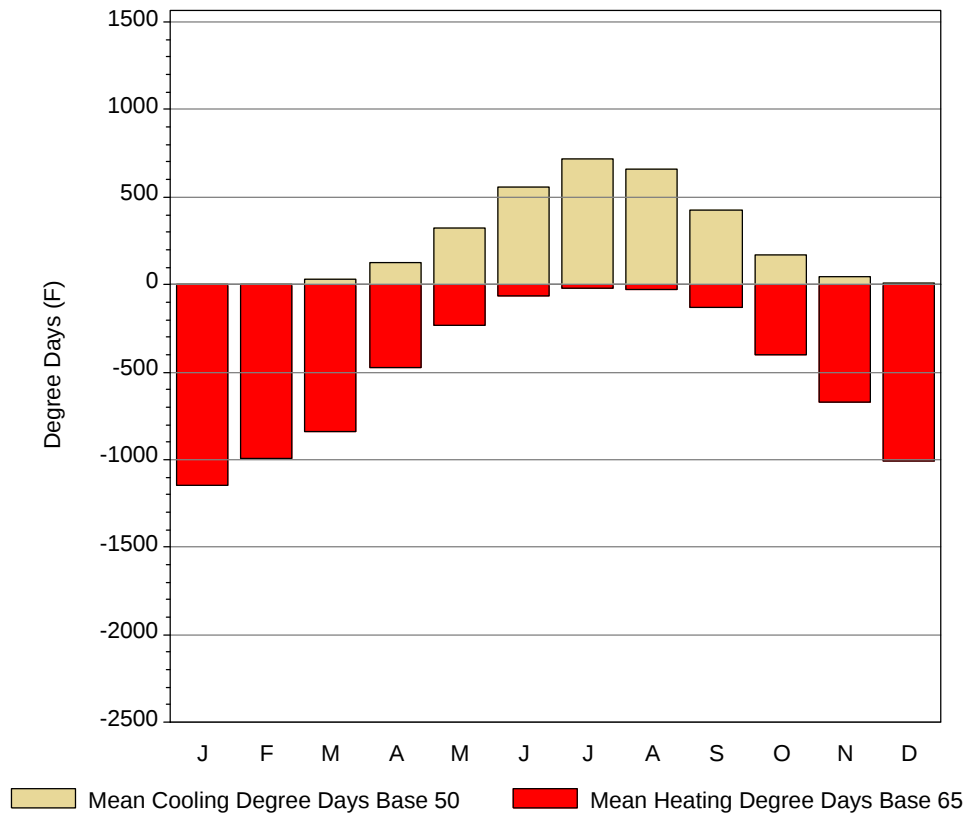
# Long Term Humidity and Dry Bulb Temperature Summary



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

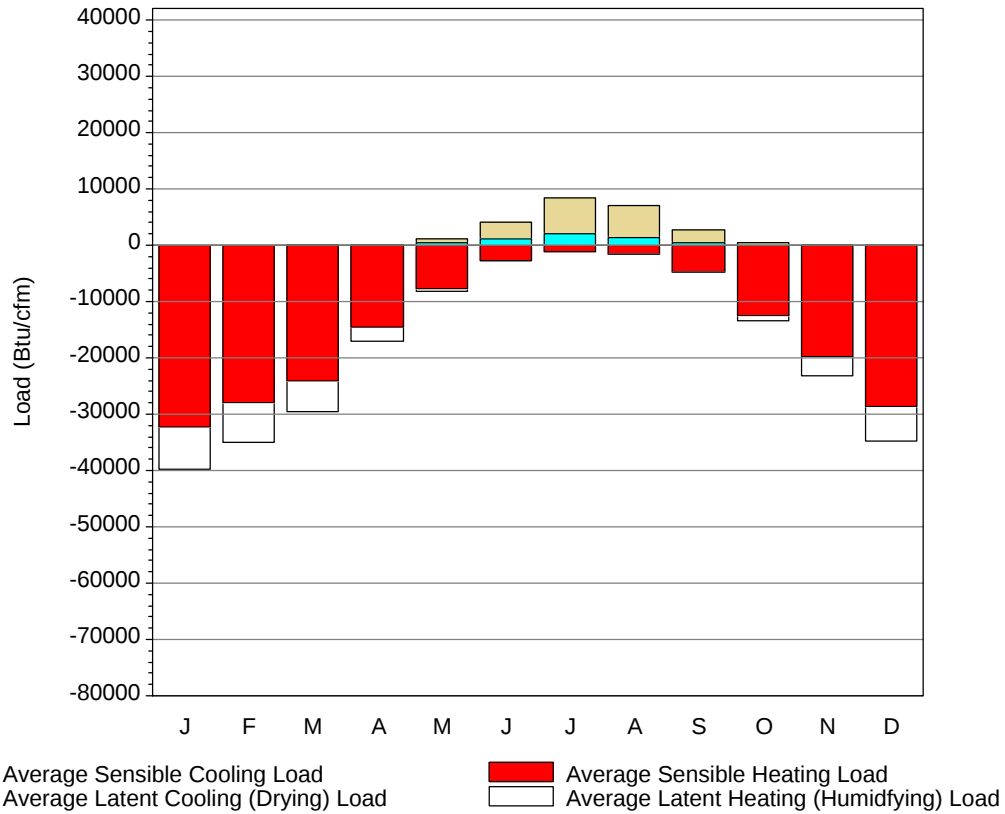
| Week Ending | 1.0% Temp (° F) | MCWB@ 1% Temp (° F) | Mean Max Temp (° F) | Mean Min Temp (° F) | 99% Temp (° F) | 1.0% HR (gr/lb) | MCDB@ 1% HR (° F) | Mean Max HR (gr/lb) | Mean Min HR (gr/lb) |
|-------------|-----------------|---------------------|---------------------|---------------------|----------------|-----------------|-------------------|---------------------|---------------------|
| 7-Jan       | 57              | 52.7                | 36.7                | 21.7                | 3              | 58.8            | 54.6              | 24.2                | 12.8                |
| 14-Jan      | 57              | 54.2                | 36.1                | 21.2                | 1              | 63.7            | 56.6              | 24.8                | 12.2                |
| 21-Jan      | 55              | 51.9                | 34.6                | 19.5                | -2             | 58.8            | 54.4              | 22.7                | 11.9                |
| 28-Jan      | 54              | 48.4                | 34.8                | 18.5                | -1             | 50.4            | 50.6              | 21.5                | 10.6                |
| 4-Feb       | 57              | 51.1                | 37.3                | 20.5                | 3              | 52.5            | 52.8              | 22.9                | 11.5                |
| 11-Feb      | 52              | 44                  | 36.4                | 19.6                | 0              | 44.1            | 46.3              | 21.1                | 10.4                |
| 18-Feb      | 54              | 46.3                | 36.3                | 19.7                | 1              | 46.9            | 48.7              | 22.1                | 10.4                |
| 25-Feb      | 61              | 55.1                | 40.8                | 24.1                | 7              | 63              | 62.4              | 26.2                | 13.4                |
| 4-Mar       | 59              | 51.2                | 40.5                | 23.9                | 7              | 59.5            | 56.6              | 25.3                | 12.5                |
| 11-Mar      | 64              | 54.5                | 45.1                | 26                  | 8              | 63              | 55.9              | 29.3                | 14.3                |
| 18-Mar      | 70              | 60.2                | 47.3                | 29.2                | 14             | 74.2            | 60.5              | 30.9                | 15.6                |
| 25-Mar      | 68              | 56.9                | 47.5                | 30.3                | 18             | 65.8            | 68.1              | 29.7                | 16.3                |
| 1-Apr       | 73              | 59.1                | 52.7                | 35.2                | 23             | 67.9            | 65.5              | 36.4                | 20.6                |
| 8-Apr       | 75              | 58.4                | 54.3                | 36.3                | 25             | 68.6            | 65.3              | 38                  | 20.7                |
| 15-Apr      | 76              | 62.7                | 58                  | 38.1                | 28             | 75.6            | 67.1              | 40.4                | 21.2                |
| 22-Apr      | 84              | 63.3                | 62.2                | 41.8                | 32             | 81.2            | 71.6              | 45.3                | 25.9                |
| 29-Apr      | 82              | 65.4                | 63.5                | 42.7                | 34             | 91              | 71.3              | 47.2                | 25.8                |
| 6-May       | 82              | 63.7                | 65.8                | 46.1                | 37             | 88.2            | 67.8              | 55                  | 32.5                |
| 13-May      | 84              | 67.4                | 67.7                | 48.2                | 37             | 91              | 73.4              | 59.1                | 36.4                |
| 20-May      | 84              | 65.6                | 69.1                | 48.9                | 37             | 97.3            | 73.2              | 63.1                | 39.1                |
| 27-May      | 86              | 68.1                | 71.7                | 52.3                | 41             | 112             | 79.7              | 71.4                | 45.3                |
| 4-Jun       | 88              | 72.9                | 75.8                | 54.6                | 44             | 116.2           | 80.5              | 77.6                | 49.7                |
| 10-Jun      | 90              | 71.8                | 75.2                | 55.8                | 48             | 120.4           | 81.7              | 79.2                | 52.5                |
| 17-Jun      | 88              | 72.9                | 77.6                | 58.9                | 50             | 124.6           | 79.4              | 90.2                | 60.9                |
| 24-Jun      | 90              | 72.6                | 79.9                | 60.9                | 52             | 125.3           | 79.8              | 93.1                | 63.2                |
| 1-Jul       | 90              | 72.5                | 81.6                | 62.5                | 54             | 124.6           | 80.1              | 98.5                | 68.2                |
| 8-Jul       | 93              | 75.8                | 82.5                | 63.3                | 54             | 133             | 86                | 99.4                | 69.8                |
| 15-Jul      | 91              | 74.6                | 82.5                | 63.8                | 55             | 132.3           | 84.4              | 100.1               | 70                  |
| 22-Jul      | 93              | 76.6                | 84.5                | 65.3                | 57             | 133.7           | 83.9              | 105.2               | 74.6                |
| 29-Jul      | 91              | 71.9                | 82.3                | 64                  | 57             | 126             | 78.4              | 104.2               | 73.3                |
| 5-Aug       | 91              | 73.2                | 83.5                | 64.4                | 57             | 133.7           | 83.4              | 103.8               | 74.6                |
| 12-Aug      | 90              | 73.5                | 81.3                | 62.7                | 54             | 134.4           | 81.4              | 99.1                | 70.8                |
| 19-Aug      | 91              | 76.1                | 81                  | 63.1                | 55             | 133.7           | 83.1              | 101.5               | 72.1                |
| 26-Aug      | 88              | 74.7                | 79.1                | 60.3                | 53             | 125.3           | 80.4              | 93.8                | 65.3                |
| 2-Sep       | 88              | 73.2                | 79.1                | 60.3                | 52             | 128.1           | 81                | 94.4                | 65.7                |
| 9-Sep       | 88              | 73.4                | 77.5                | 57.9                | 48             | 124.6           | 78.7              | 89                  | 61.1                |
| 16-Sep      | 86              | 74.2                | 74.8                | 55.9                | 45             | 124.6           | 80.9              | 84.1                | 56.9                |
| 23-Sep      | 82              | 67.4                | 72.3                | 53.2                | 43             | 119             | 75                | 79.9                | 52.3                |
| 30-Sep      | 84              | 70.7                | 69.1                | 50.6                | 40             | 112.7           | 77.3              | 72.2                | 47.3                |
| 7-Oct       | 79              | 65.3                | 66.7                | 47.1                | 36             | 103.6           | 71.5              | 64.7                | 41.1                |
| 14-Oct      | 77              | 64.3                | 64.6                | 46.1                | 33             | 108.5           | 73                | 60.6                | 39.1                |
| 21-Oct      | 75              | 62.9                | 61.6                | 43.2                | 31             | 98              | 68.8              | 54.6                | 33.7                |
| 28-Oct      | 72              | 60.9                | 57.9                | 41                  | 30             | 91              | 67.1              | 48.7                | 30                  |
| 4-Nov       | 70              | 59.4                | 56.4                | 38.4                | 28             | 82.6            | 63.4              | 44.1                | 26                  |
| 11-Nov      | 66              | 60.2                | 53                  | 36.5                | 25             | 82.6            | 63.2              | 41.5                | 23.7                |
| 18-Nov      | 66              | 61                  | 50.8                | 34.3                | 23             | 75.6            | 63.7              | 38.3                | 21.5                |
| 25-Nov      | 64              | 58.9                | 48.1                | 31.7                | 18             | 75.6            | 60.4              | 35.6                | 19.6                |
| 2-Dec       | 64              | 60.2                | 46.9                | 31.7                | 18             | 75.6            | 62.3              | 36.1                | 19.9                |
| 9-Dec       | 61              | 52.6                | 41.6                | 27                  | 13             | 58.8            | 54.3              | 28.6                | 16.1                |
| 16-Dec      | 57              | 53.5                | 39                  | 25                  | 8              | 59.5            | 53.7              | 27.4                | 15.5                |
| 23-Dec      | 58              | 56.6                | 38.9                | 25                  | 7              | 65.8            | 57.8              | 26.5                | 14.6                |
| 31-Dec      | 54              | 50.6                | 37.2                | 23.1                | 7              | 54.6            | 53                | 25                  | 13.3                |

# 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   | 4.6                                   | 0                                     | 1148.4                                |
| FEB   | 5.1                                   | 0.1                                   | 996.6                                 |
| MAR   | 33.3                                  | 3.3                                   | 837.1                                 |
| APR   | 127.3                                 | 18.7                                  | 477.4                                 |
| MAY   | 325.7                                 | 68.4                                  | 230.3                                 |
| JUN   | 557.8                                 | 171                                   | 64.3                                  |
| JUL   | 718.6                                 | 272.8                                 | 19.3                                  |
| AUG   | 662.1                                 | 228.4                                 | 31.3                                  |
| SEP   | 428.4                                 | 99.6                                  | 129.4                                 |
| OCT   | 171.6                                 | 19.1                                  | 398.2                                 |
| NOV   | 46.6                                  | 1.5                                   | 672.3                                 |
| DEC   | 8                                     | 0.1                                   | 1009.1                                |
| ANN   | 3089.1                                | 883                                   | 6013.7                                |

## 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                                       | -32176                                  | 0                                     | -7681                                 |
| FEB   | 0                                       | -28028                                  | 0                                     | -6970                                 |
| MAR   | 10                                      | -24071                                  | 16                                    | -5517                                 |
| APR   | 89                                      | -14526                                  | 38                                    | -2588                                 |
| MAY   | 373                                     | -7780                                   | 685                                   | -457                                  |
| JUN   | 1060                                    | -2652                                   | 3039                                  | -19                                   |
| JUL   | 2019                                    | -1017                                   | 6448                                  | 0                                     |
| AUG   | 1487                                    | -1499                                   | 5560                                  | -1                                    |
| SEP   | 446                                     | -4755                                   | 2286                                  | -52                                   |
| OCT   | 37                                      | -12494                                  | 337                                   | -906                                  |
| NOV   | 1                                       | -19733                                  | 15                                    | -3319                                 |
| DEC   | 0                                       | -28564                                  | 3                                     | -6156                                 |
| ANN   | 5522                                    | -177295                                 | 18427                                 | -33666                                |

| Station Information |                       | Shading Geometry in Dimensionless Units |       |
|---------------------|-----------------------|-----------------------------------------|-------|
| City, State, WBAN   | NEWYORKCITY, NY 94728 | Window:                                 | 1.000 |
| Lat, Lon, Elev      | 40.78N 73.97W 187ft   | Overhang:                               | 0.556 |
| Press, Stn_Type     | 14.7psia Primary      | Vert Gap:                               | 0.324 |

| 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   | 610  | 870  | 1220 | 1560 | 1800 | 1940 | 1910 | 1710 | 1370 | 1010 | 640  | 510  | 1260 |
|                                                                              | Std.Dev. | 35   | 73   | 74   | 108  | 134  | 122  | 106  | 87   | 87   | 67   | 52   | 39   | 30   |
|                                                                              | Minimum  | 530  | 720  | 1050 | 1360 | 1520 | 1600 | 1670 | 1540 | 1220 | 910  | 540  | 430  | 1180 |
|                                                                              | Maximum  | 690  | 1040 | 1400 | 1740 | 2040 | 2170 | 2080 | 1870 | 1540 | 1200 | 750  | 570  | 1320 |
|                                                                              | Diffuse  | 320  | 430  | 580  | 740  | 900  | 970  | 950  | 840  | 660  | 470  | 340  | 280  | 630  |
| Clear Day                                                                    | Global   | 840  | 1190 | 1670 | 2160 | 2470 | 2580 | 2500 | 2210 | 1780 | 1290 | 890  | 730  | 1700 |
| NORTH                                                                        | Global   | 190  | 260  | 350  | 450  | 550  | 620  | 600  | 500  | 390  | 290  | 210  | 170  | 380  |
|                                                                              | Diffuse  | 190  | 260  | 350  | 440  | 520  | 560  | 550  | 480  | 390  | 290  | 210  | 170  | 370  |
| Clear Day                                                                    | Global   | 180  | 240  | 330  | 430  | 580  | 670  | 620  | 480  | 360  | 270  | 200  | 160  | 380  |
| EAST                                                                         | Global   | 410  | 560  | 740  | 910  | 1000 | 1040 | 1050 | 970  | 820  | 650  | 430  | 350  | 750  |
|                                                                              | Diffuse  | 240  | 330  | 430  | 540  | 630  | 670  | 660  | 600  | 490  | 370  | 260  | 210  | 450  |
| Clear Day                                                                    | Global   | 640  | 840  | 1090 | 1300 | 1410 | 1430 | 1390 | 1300 | 1120 | 880  | 660  | 560  | 1050 |
| SOUTH                                                                        | Global   | 980  | 1090 | 1100 | 990  | 870  | 820  | 850  | 970  | 1080 | 1140 | 940  | 860  | 970  |
|                                                                              | Diffuse  | 350  | 430  | 510  | 560  | 600  | 620  | 620  | 610  | 550  | 470  | 360  | 310  | 500  |
| Clear Day                                                                    | Global   | 1800 | 1890 | 1770 | 1440 | 1120 | 980  | 1030 | 1270 | 1590 | 1780 | 1760 | 1710 | 1510 |
| WEST                                                                         | Global   | 410  | 550  | 740  | 890  | 980  | 1040 | 1030 | 950  | 800  | 630  | 410  | 340  | 730  |
|                                                                              | Diffuse  | 240  | 330  | 440  | 540  | 630  | 680  | 670  | 600  | 490  | 370  | 250  | 200  | 450  |
| Clear Day                                                                    | Global   | 640  | 840  | 1090 | 1300 | 1410 | 1430 | 1390 | 1300 | 1120 | 880  | 660  | 560  | 1050 |

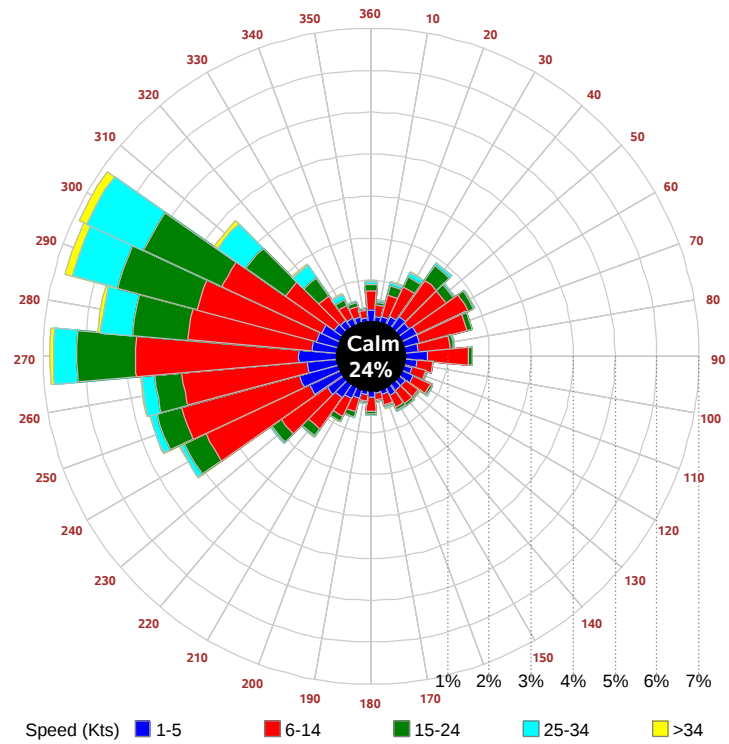
**Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995**

| 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 | 390 | 590 | 860 | 1120 | 1300 | 1400 | 1380 | 1230 | 980 | 700 | 430 | 320 | 890  |
| NORTH                                                                                              | Unshaded | 130 | 180 | 240 | 310  | 370  | 410  | 400  | 340  | 270 | 200 | 140 | 120 | 260  |
|                                                                                                    | Shaded   | 120 | 160 | 210 | 270  | 320  | 360  | 350  | 300  | 240 | 180 | 130 | 100 | 230  |
| EAST                                                                                               | Unshaded | 280 | 390 | 520 | 650  | 700  | 740  | 740  | 690  | 580 | 450 | 300 | 230 | 520  |
|                                                                                                    | Shaded   | 250 | 340 | 450 | 550  | 590  | 610  | 620  | 580  | 500 | 400 | 260 | 210 | 450  |
| SOUTH                                                                                              | Unshaded | 730 | 800 | 770 | 650  | 550  | 510  | 530  | 620  | 740 | 820 | 700 | 650 | 670  |
|                                                                                                    | Shaded   | 710 | 730 | 600 | 430  | 370  | 370  | 380  | 400  | 530 | 720 | 670 | 630 | 540  |
| WEST                                                                                               | Unshaded | 280 | 380 | 520 | 630  | 690  | 730  | 730  | 670  | 570 | 440 | 280 | 230 | 510  |
|                                                                                                    | Shaded   | 250 | 340 | 450 | 530  | 580  | 610  | 610  | 560  | 490 | 380 | 250 | 200 | 440  |

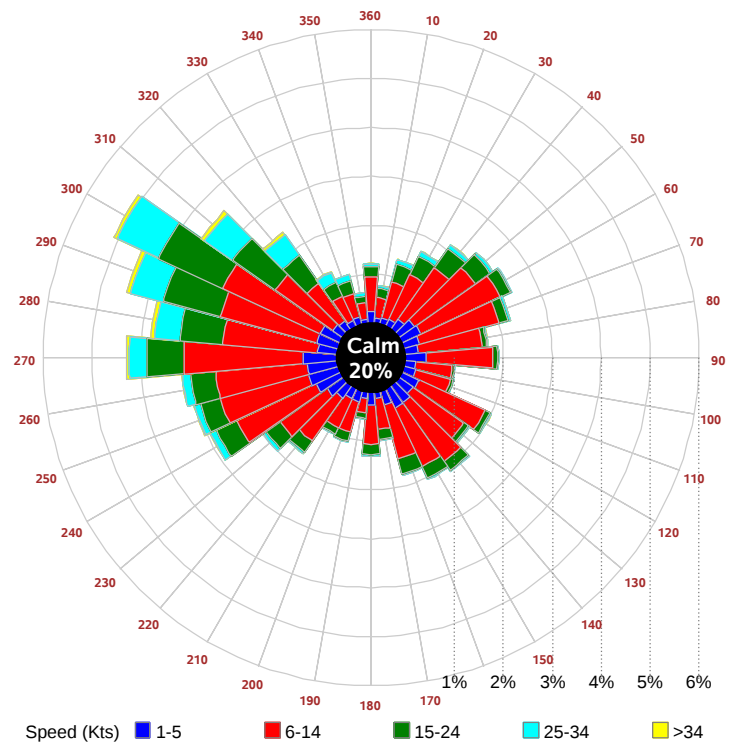
| AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS Percentage Uncertainty = 9 |          |       |      |     |     |     |      |      |     |     |     |  |
|-----------------------------------------------------------------------------------------------------------------|----------|-------|------|-----|-----|-----|------|------|-----|-----|-----|--|
|                                                                                                                 |          | March |      |     |     |     | June |      |     |     |     |  |
|                                                                                                                 |          | 9am   | 11am | 1pm | 3pm | 5pm | 9am  | 11am | 1pm | 3pm | 5pm |  |
| HORIZ.                                                                                                          | M.Clear  | 39    | 71   | 79  | 60  | 22  | 48   | 83   | 100 | 93  | 64  |  |
|                                                                                                                 | M.Cloudy | 23    | 45   | 48  | 38  | 14  | 31   | 54   | 71  | 67  | 44  |  |
| NORTH                                                                                                           | M.Clear  | 10    | 14   | 15  | 13  | 7   | 17   | 17   | 18  | 18  | 16  |  |
|                                                                                                                 | M.Cloudy | 9     | 15   | 16  | 14  | 6   | 13   | 18   | 20  | 20  | 16  |  |
| EAST                                                                                                            | M.Clear  | 69    | 53   | 15  | 13  | 7   | 72   | 69   | 29  | 18  | 16  |  |
|                                                                                                                 | M.Cloudy | 25    | 30   | 16  | 14  | 6   | 33   | 40   | 26  | 20  | 16  |  |
| SOUTH                                                                                                           | M.Clear  | 40    | 73   | 82  | 62  | 22  | 13   | 35   | 49  | 43  | 21  |  |
|                                                                                                                 | M.Cloudy | 17    | 38   | 41  | 32  | 10  | 12   | 25   | 37  | 33  | 18  |  |
| WEST                                                                                                            | M.Clear  | 10    | 14   | 26  | 66  | 55  | 13   | 17   | 18  | 55  | 75  |  |
|                                                                                                                 | M.Cloudy | 9     | 15   | 20  | 33  | 19  | 12   | 18   | 20  | 39  | 42  |  |
| M.Clear                                                                                                         | (% hrs)  | 38    | 35   | 34  | 32  | 34  | 38   | 39   | 34  | 34  | 35  |  |

|         |          | Sept |      |     |     |     | Dec |      |     |     |     |  |
|---------|----------|------|------|-----|-----|-----|-----|------|-----|-----|-----|--|
|         |          | 9am  | 11am | 1pm | 3pm | 5pm | 9am | 11am | 1pm | 3pm | 5pm |  |
| HORIZ.  | M.Clear  | 28   | 66   | 82  | 73  | 42  | 14  | 38   | 42  | 24  | 0   |  |
|         | M.Cloudy | 17   | 41   | 56  | 50  | 27  | 9   | 23   | 25  | 15  | 0   |  |
| NORTH   | M.Clear  | 9    | 15   | 17  | 16  | 12  | 5   | 10   | 10  | 7   | 0   |  |
|         | M.Cloudy | 8    | 15   | 18  | 17  | 11  | 4   | 9    | 10  | 6   | 0   |  |
| EAST    | M.Clear  | 60   | 65   | 26  | 16  | 12  | 34  | 34   | 10  | 7   | 0   |  |
|         | M.Cloudy | 21   | 33   | 22  | 17  | 11  | 11  | 16   | 10  | 6   | 0   |  |
| SOUTH   | M.Clear  | 22   | 58   | 75  | 65  | 34  | 33  | 75   | 81  | 52  | 0   |  |
|         | M.Cloudy | 11   | 30   | 44  | 38  | 19  | 10  | 28   | 29  | 18  | 0   |  |
| WEST    | M.Clear  | 9    | 15   | 17  | 54  | 66  | 5   | 10   | 22  | 42  | 0   |  |
|         | M.Cloudy | 8    | 15   | 18  | 33  | 30  | 4   | 9    | 13  | 15  | 0   |  |
| M.Clear | (% hrs)  | 43   | 46   | 40  | 39  | 39  | 33  | 32   | 31  | 30  | 35  |  |

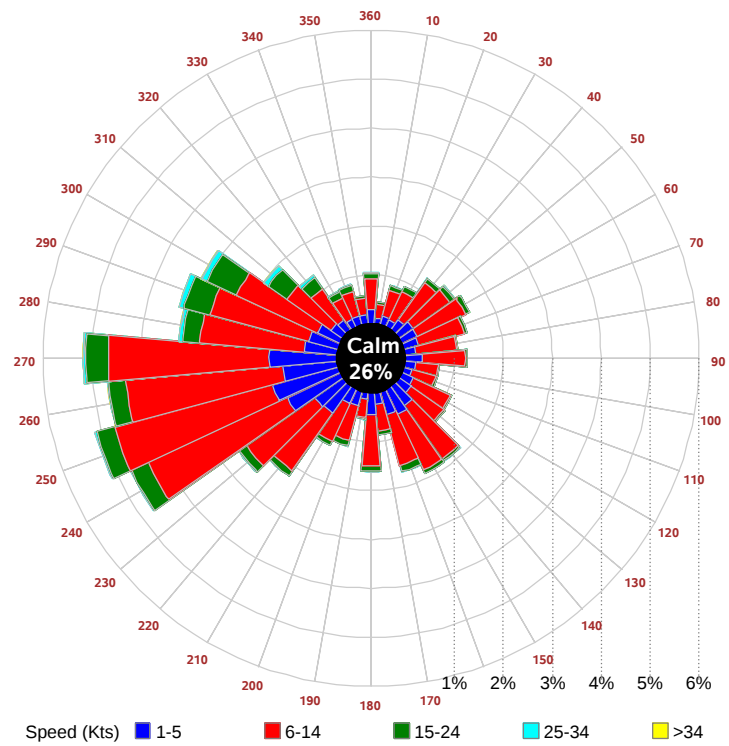
## Wind Summary - December, January, and February



## Wind Summary - March, April, and May



## Wind Summary - June, July, and August



## Wind Summary - September, October, and November

