

**DHAHRAN (MIL) SD**

Latitude = 26.27 N

WMO No. 404160

Longitude = 50.15 E

Elevation = 56 feet

Period of Record = 1973 to 1996

Average Pressure = 29.70 inches Hg

**Design Criteria Data**

|                                              | <b>Design Value</b> | Mean Coincident (Average) Values |                         |                        |                             |
|----------------------------------------------|---------------------|----------------------------------|-------------------------|------------------------|-----------------------------|
|                                              |                     | Wet Bulb Temperature (°F)        | Humidity Ratio (gr/lb)  | Wind Speed (mph)       | Prevailing Direction (NSEW) |
| <b>Dry Bulb Temperature (T)</b>              | <b>(°F)</b>         |                                  |                         |                        |                             |
| Median of Extreme Highs                      | 117                 | 73                               | 56                      | 12.7                   | N                           |
| 0.4% Occurrence                              | 111                 | 72                               | 58                      | 13.4                   | N                           |
| 1.0% Occurrence                              | 109                 | 72                               | 58                      | 13.7                   | N                           |
| 2.0% Occurrence                              | 108                 | 72                               | 64                      | 14.2                   | N                           |
| Mean Daily Range                             | 21                  | -                                | -                       | -                      | -                           |
| 97.5% Occurrence                             | 51                  | 47                               | 40                      | 8.2                    | WNW                         |
| 99.0% Occurrence                             | 48                  | 45                               | 38                      | 8.2                    | WNW                         |
| 99.6% Occurrence                             | 45                  | 41                               | 32                      | 9.0                    | WNW                         |
| Median of Extreme Lows                       | 41                  | 37                               | 26                      | 8.7                    | WNW                         |
|                                              | <b>Design Value</b> | Mean Coincident (Average) Values |                         |                        |                             |
|                                              |                     | Dry Bulb Temperature (°F)        | Humidity Ratio (gr/lb)  | Wind Speed (mph)       | Prevailing Direction (NSEW) |
| <b>Wet Bulb Temperature (T<sub>wb</sub>)</b> | <b>(°F)</b>         |                                  |                         |                        |                             |
| Median of Extreme Highs                      | 90                  | 96                               | 210                     | 9.1                    | E                           |
| 0.4% Occurrence                              | 87                  | 95                               | 186                     | 8.5                    | E                           |
| 1.0% Occurrence                              | 85                  | 92                               | 174                     | 6.7                    | E                           |
| 2.0% Occurrence                              | 84                  | 93                               | 164                     | 7.2                    | E                           |
|                                              | <b>Design Value</b> | Mean Coincident (Average) Values |                         |                        |                             |
|                                              |                     | Dry Bulb Temperature (°F)        | Vapor Pressure (in. Hg) | Wind Speed (mph)       | Prevailing Direction (NSEW) |
| <b>Humidity Ratio (HR)</b>                   | <b>(gr/lb)</b>      |                                  |                         |                        |                             |
| Median of Extreme Highs                      | 206                 | 93                               | 1.33                    | 8.0                    | E                           |
| 0.4% Occurrence                              | 183                 | 91                               | 1.19                    | 6.2                    | E                           |
| 1.0% Occurrence                              | 173                 | 91                               | 1.12                    | 5.6                    | E                           |
| 2.0% Occurrence                              | 162                 | 91                               | 1.06                    | 5.8                    | E                           |
| <b>Air Conditioning/ Humid Area Criteria</b> | <b># of Hours</b>   | T ≥ 93°F                         | T ≥ 80°F                | T <sub>wb</sub> ≥ 73°F | T <sub>wb</sub> ≥ 67°F      |
|                                              |                     | 1864                             | 4315                    | 1901                   | 4073                        |

**Other Site Data**

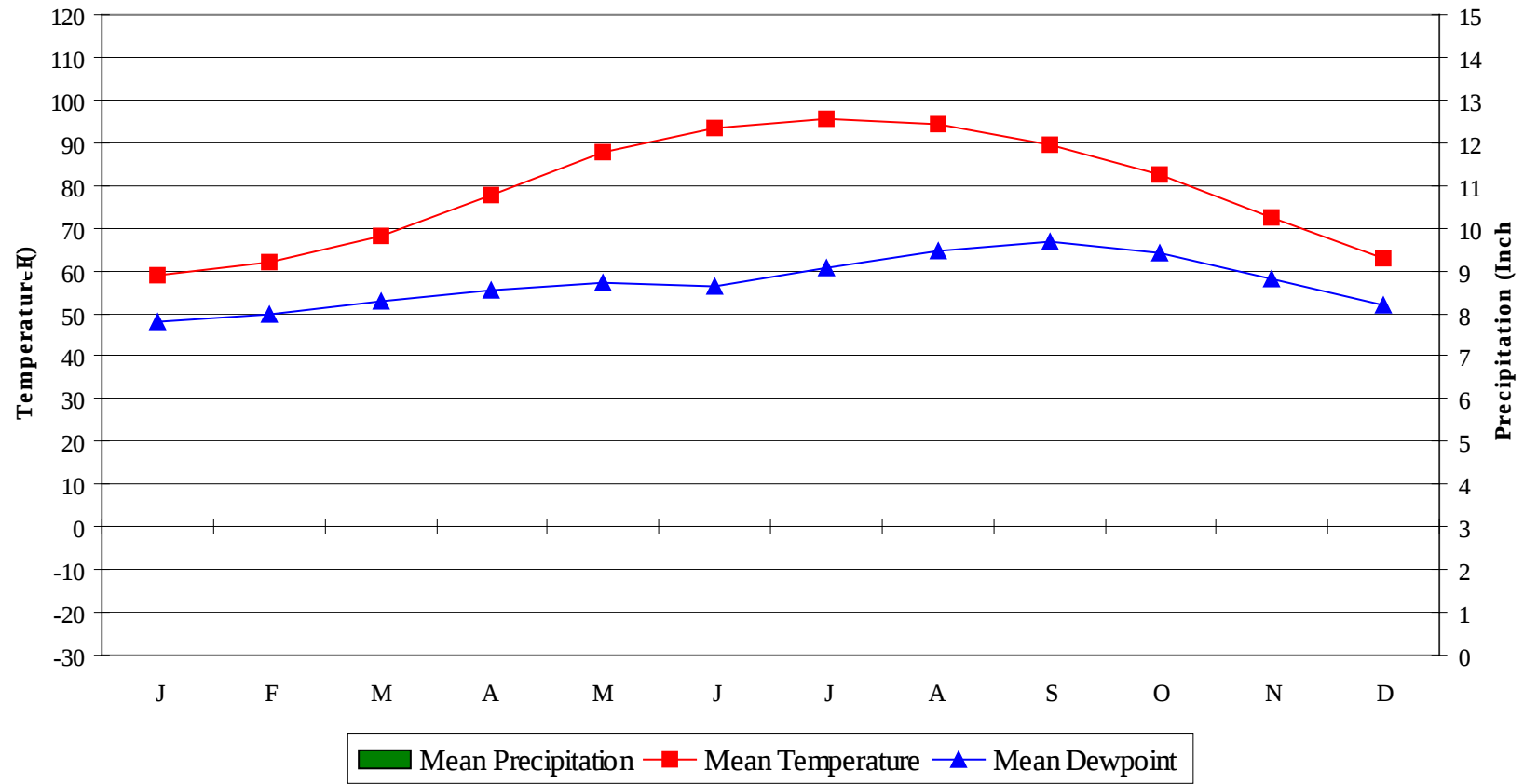
| Weather Region                                   | Rain Rate<br>100 Year Recurrence<br>(in./hr) | Basic Wind Speed<br>3 sec gust @ 33 ft<br>50 Year Recurrence (mph) | Ventilation Cooling Load Index<br>(Ton-hr/cfm/yr) Base 75°F-RH 60%<br>Latent + Sensible |
|--------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 10                                               | N/A                                          | N/A                                                                | 5.0 + 6.8                                                                               |
| Ground Water Temperature (°F)<br>50 Foot Depth * | Frost Depth<br>50 Year Recurrence<br>(in.)   | Ground Snow Load<br>50 Year Recurrence<br>(lb/ft <sup>2</sup> )    | Average Annual<br>Freeze-Thaw Cycles<br>(#)                                             |
| 81.4                                             | N/A                                          | N/A                                                                | 0                                                                                       |

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

DHAHRAN (MIL) SD

WMO No. 404160

### Average Annual Climate

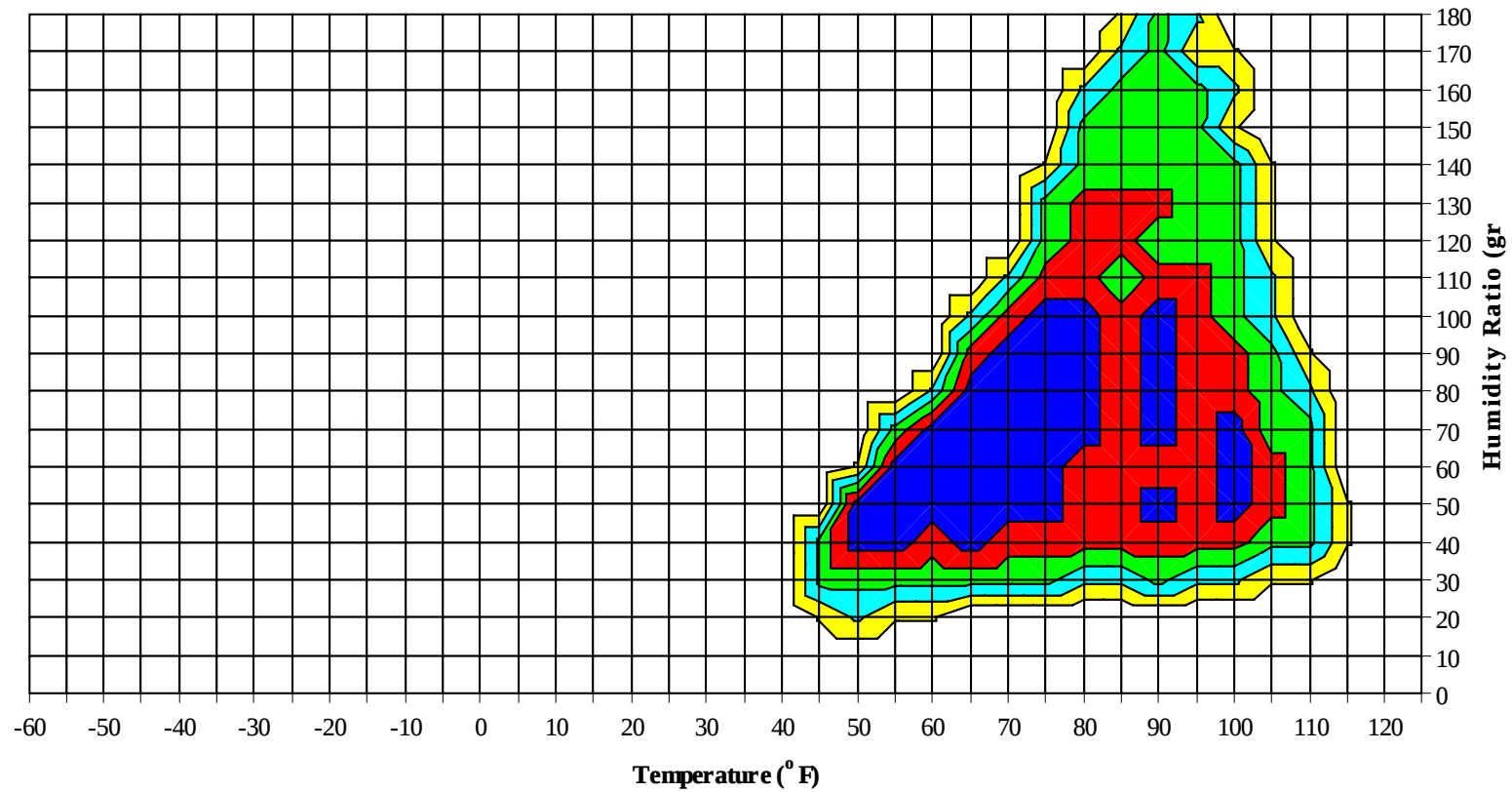


No Precipitation Data Available

DHAHRAN (MIL) SD

WMO No. 404160

### Long Term Psychrometric Summary

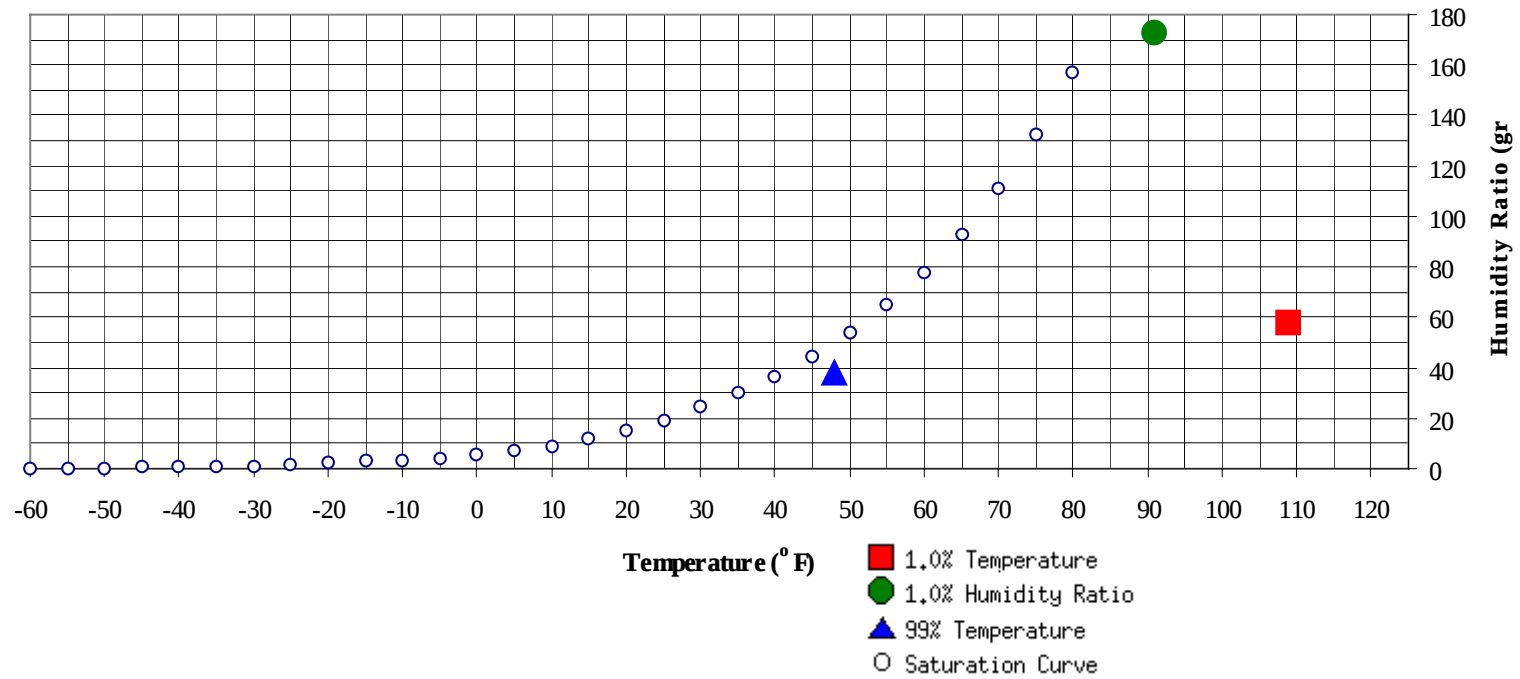


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

DHAHRAN (MIL) SD

WMO No. 404160

### Psychrometric Summary of Peak Design Values



|              | (°F) | MCHR<br>(gr/lb) | Enthalpy<br>(btu/lb) | 1.0% Humidity<br>Ratio | (gr/lb) | MCDB<br>(°F) | MCWB<br>(°F) | MC Dewpt<br>(°F) | Enthalpy<br>(btu/lb) |
|--------------|------|-----------------|----------------------|------------------------|---------|--------------|--------------|------------------|----------------------|
| 99% Dry Bulb | 48   | 38.2            | 17.4                 |                        | 172.9   | 90.8         | 84.4         | 82.4             | 49.0                 |

|               | (°F) | MCHR<br>(gr/lb) | MCWB<br>(°F) | Enthalpy<br>(btu/lb) |
|---------------|------|-----------------|--------------|----------------------|
| 1.0% Dry Bulb | 109  | 57.9            | 71.7         | 35.3                 |

DHAHRAN (MIL) SD

WMO No. 404160

**Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)**

Period of Record = 1973 to 1996

| Temperature<br>Range<br>(°F) | January             |                |                |              |                          | February            |                |                |              |                          | March               |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 115 / 119                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 110 / 114                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 105 / 109                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 100 / 104                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     |                |                |              |                          |                     | 0              |                | 0            | 65.5                     |                     | 1              | 0              | 1            | 65.5                     |
| 90 / 94                      |                     |                |                |              |                          |                     | 0              | 0              | 0            | 63.0                     |                     | 4              | 0              | 4            | 65.2                     |
| 85 / 89                      |                     |                |                |              |                          |                     | 0              | 0              | 0            | 61.3                     |                     | 9              | 1              | 10           | 64.6                     |
| 80 / 84                      |                     | 1              | 0              | 1            | 61.3                     |                     | 4              | 0              | 4            | 61.4                     | 0                   | 35             | 7              | 42           | 63.7                     |
| 75 / 79                      |                     | 7              | 0              | 7            | 61.6                     |                     | 20             | 2              | 22           | 60.7                     | 3                   | 67             | 23             | 93           | 62.3                     |
| 70 / 74                      | 0                   | 45             | 9              | 54           | 60.2                     | 1                   | 66             | 18             | 85           | 59.6                     | 32                  | 78             | 71             | 180          | 61.5                     |
| 65 / 69                      | 5                   | 62             | 28             | 96           | 58.6                     | 11                  | 60             | 40             | 112          | 58.9                     | 52                  | 35             | 61             | 149          | 60.1                     |
| 60 / 64                      | 35                  | 71             | 78             | 184          | 56.5                     | 50                  | 49             | 86             | 186          | 57.0                     | 71                  | 16             | 57             | 144          | 57.4                     |
| 55 / 59                      | 63                  | 43             | 84             | 190          | 52.5                     | 70                  | 19             | 58             | 147          | 52.8                     | 61                  | 4              | 23             | 88           | 53.2                     |
| 50 / 54                      | 78                  | 14             | 37             | 130          | 48.2                     | 60                  | 4              | 17             | 81           | 48.5                     | 23                  | 0              | 4              | 28           | 48.5                     |
| 45 / 49                      | 55                  | 4              | 10             | 69           | 43.7                     | 28                  | 1              | 3              | 32           | 43.7                     | 5                   |                | 0              | 5            | 43.4                     |
| 40 / 44                      | 10                  | 0              | 1              | 11           | 38.0                     | 4                   |                | 0              | 4            | 39.0                     | 0                   |                |                | 0            | 40.0                     |
| 35 / 39                      | 2                   | 0              |                | 2            | 34.7                     | 0                   |                |                | 0            | 35.2                     |                     |                |                |              |                          |

**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.

DHAHRAN (MIL) SD

WMO No. 404160

**Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)****Period of Record = 1973 to 1996**

| Temperature<br>Range<br>(°F) | April               |                |                |              |                          | May                 |                |                |              |                          | June                |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 115 / 119                    |                     |                |                |              |                          |                     | 1              | 0              | 1            | 71.1                     |                     | 1              |                | 1            | 72.7                     |
| 110 / 114                    |                     |                |                |              |                          |                     | 2              | 0              | 2            | 71.2                     |                     | 9              | 0              | 9            | 72.0                     |
| 105 / 109                    |                     | 1              |                | 1            | 70.8                     |                     | 18             | 1              | 19           | 70.6                     |                     | 57             | 3              | 60           | 71.0                     |
| 100 / 104                    |                     | 5              | 0              | 5            | 68.9                     | 0                   | 53             | 6              | 60           | 70.5                     | 0                   | 93             | 24             | 117          | 70.9                     |
| 95 / 99                      |                     | 18             | 2              | 20           | 68.4                     | 3                   | 82             | 26             | 111          | 69.8                     | 14                  | 69             | 69             | 152          | 70.4                     |
| 90 / 94                      | 0                   | 40             | 6              | 46           | 67.2                     | 16                  | 55             | 52             | 124          | 69.2                     | 57                  | 11             | 76             | 144          | 69.9                     |
| 85 / 89                      | 2                   | 50             | 15             | 67           | 66.3                     | 35                  | 24             | 57             | 116          | 69.0                     | 63                  | 1              | 41             | 105          | 68.9                     |
| 80 / 84                      | 17                  | 77             | 51             | 145          | 65.7                     | 88                  | 11             | 73             | 172          | 68.2                     | 79                  | 0              | 25             | 104          | 68.5                     |
| 75 / 79                      | 51                  | 36             | 80             | 166          | 64.9                     | 71                  | 1              | 26             | 99           | 66.2                     | 23                  |                | 2              | 25           | 67.6                     |
| 70 / 74                      | 89                  | 12             | 61             | 162          | 63.0                     | 30                  | 0              | 5              | 35           | 63.3                     | 3                   |                | 0              | 3            | 65.1                     |
| 65 / 69                      | 43                  | 2              | 19             | 64           | 60.1                     | 4                   |                | 1              | 5            | 59.8                     | 0                   |                |                | 0            | 66.0                     |
| 60 / 64                      | 31                  | 0              | 6              | 37           | 57.2                     | 1                   |                | 0              | 1            | 57.2                     |                     |                |                |              |                          |
| 55 / 59                      | 6                   | 0              | 0              | 6            | 53.8                     | 0                   |                |                | 0            | 59.0                     |                     |                |                |              |                          |
| 50 / 54                      | 1                   |                | 0              | 1            | 48.4                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 45 / 49                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 40 / 44                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 35 / 39                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |

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**DHAHRAN (MIL) SD**

**WMO No. 404160**

**Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)**

**Period of Record = 1973 to 1996**

| Temperature<br>Range<br>(°F) | July                |                |                |              |                          | August              |                |                |              |                          | September           |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 115 / 119                    |                     | 2              | 0              | 2            | 72.5                     |                     | 1              |                | 1            | 73.8                     |                     | 0              |                | 0            | 70.0                     |
| 110 / 114                    |                     | 18             | 0              | 18           | 72.3                     | 0                   | 9              | 0              | 9            | 73.2                     |                     | 2              | 0              | 2            | 70.0                     |
| 105 / 109                    | 0                   | 98             | 8              | 106          | 72.7                     | 0                   | 71             | 2              | 73           | 73.2                     |                     | 21             | 0              | 21           | 71.4                     |
| 100 / 104                    | 2                   | 90             | 39             | 131          | 73.6                     | 0                   | 110            | 26             | 136          | 74.8                     |                     | 78             | 5              | 83           | 73.3                     |
| 95 / 99                      | 28                  | 36             | 76             | 140          | 73.6                     | 14                  | 50             | 74             | 139          | 75.7                     | 1                   | 94             | 32             | 127          | 75.2                     |
| 90 / 94                      | 73                  | 4              | 77             | 154          | 73.3                     | 65                  | 7              | 90             | 161          | 76.2                     | 14                  | 36             | 72             | 122          | 76.3                     |
| 85 / 89                      | 73                  | 0              | 35             | 108          | 71.9                     | 80                  | 0              | 39             | 119          | 74.1                     | 36                  | 7              | 69             | 111          | 76.4                     |
| 80 / 84                      | 66                  |                | 11             | 77           | 70.7                     | 78                  | 0              | 16             | 94           | 71.9                     | 108                 | 2              | 52             | 162          | 73.8                     |
| 75 / 79                      | 5                   |                | 1              | 6            | 68.0                     | 11                  |                | 1              | 12           | 68.6                     | 72                  | 0              | 9              | 81           | 70.8                     |
| 70 / 74                      | 0                   |                |                | 0            | 63.0                     | 0                   |                |                | 0            | 61.3                     | 9                   |                | 1              | 10           | 66.4                     |
| 65 / 69                      |                     |                |                |              |                          |                     |                |                |              |                          | 0                   |                |                | 0            | 53.0                     |
| 60 / 64                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 55 / 59                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 50 / 54                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 45 / 49                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 40 / 44                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 35 / 39                      |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |

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DHAHRAN (MIL) SD

WMO No. 404160

**Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)**

**Period of Record = 1973 to 1996**

| Temperature<br>Range<br>(°F) | October             |                |                |              |                          | November            |                |                |              |                          | December            |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 115 / 119                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 110 / 114                    |                     |                |                |              |                          |                     |                |                |              |                          |                     |                |                |              |                          |
| 105 / 109                    |                     | 1              |                | 1            | 69.2                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 100 / 104                    |                     | 11             | 0              | 11           | 68.9                     |                     |                |                |              |                          |                     |                |                |              |                          |
| 95 / 99                      |                     | 52             | 3              | 55           | 70.7                     |                     | 1              |                | 1            | 67.4                     |                     |                |                |              |                          |
| 90 / 94                      | 0                   | 87             | 16             | 103          | 72.2                     |                     | 8              | 0              | 8            | 68.2                     |                     |                |                |              |                          |
| 85 / 89                      | 4                   | 54             | 46             | 104          | 73.1                     | 0                   | 25             | 1              | 26           | 68.8                     |                     | 0              |                | 0            | 63.2                     |
| 80 / 84                      | 44                  | 33             | 100            | 177          | 72.8                     | 2                   | 86             | 19             | 107          | 68.3                     | 0                   | 8              |                | 8            | 65.2                     |
| 75 / 79                      | 86                  | 9              | 57             | 152          | 70.1                     | 17                  | 67             | 64             | 149          | 67.2                     | 0                   | 40             | 4              | 44           | 64.3                     |
| 70 / 74                      | 79                  | 2              | 22             | 103          | 66.5                     | 51                  | 37             | 86             | 175          | 64.7                     | 10                  | 79             | 38             | 127          | 62.4                     |
| 65 / 69                      | 25                  | 0              | 4              | 29           | 62.4                     | 62                  | 11             | 38             | 110          | 61.5                     | 23                  | 48             | 54             | 125          | 60.6                     |
| 60 / 64                      | 9                   |                | 1              | 10           | 58.4                     | 69                  | 5              | 24             | 98           | 57.2                     | 56                  | 44             | 74             | 174          | 57.3                     |
| 55 / 59                      | 0                   |                | 0              | 0            | 55.3                     | 33                  | 1              | 7              | 41           | 51.7                     | 74                  | 22             | 56             | 153          | 52.7                     |
| 50 / 54                      |                     |                |                |              |                          | 6                   |                | 0              | 6            | 46.3                     | 61                  | 7              | 19             | 87           | 48.1                     |
| 45 / 49                      |                     |                |                |              |                          | 0                   |                |                | 0            | 40.0                     | 23                  | 1              | 2              | 26           | 43.2                     |
| 40 / 44                      |                     |                |                |              |                          |                     |                |                |              |                          | 1                   |                | 0              | 1            | 37.2                     |
| 35 / 39                      |                     |                |                |              |                          |                     |                |                |              |                          | 0                   |                |                | 0            | 31.5                     |

**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.

**DHAHRAN (MIL) SD**

WMO No. 404160

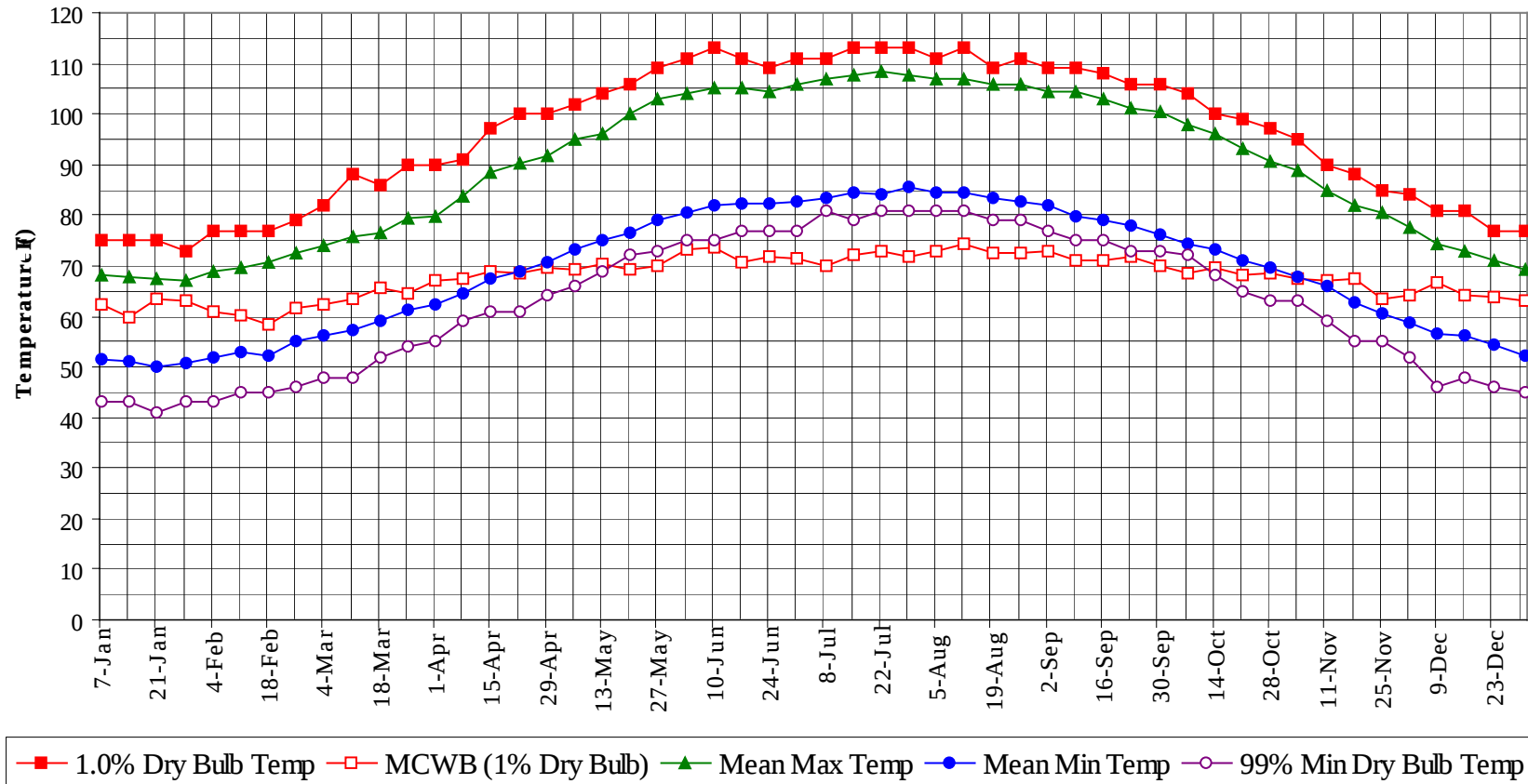
**Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)**

**Period of Record = 1973 to 1996**

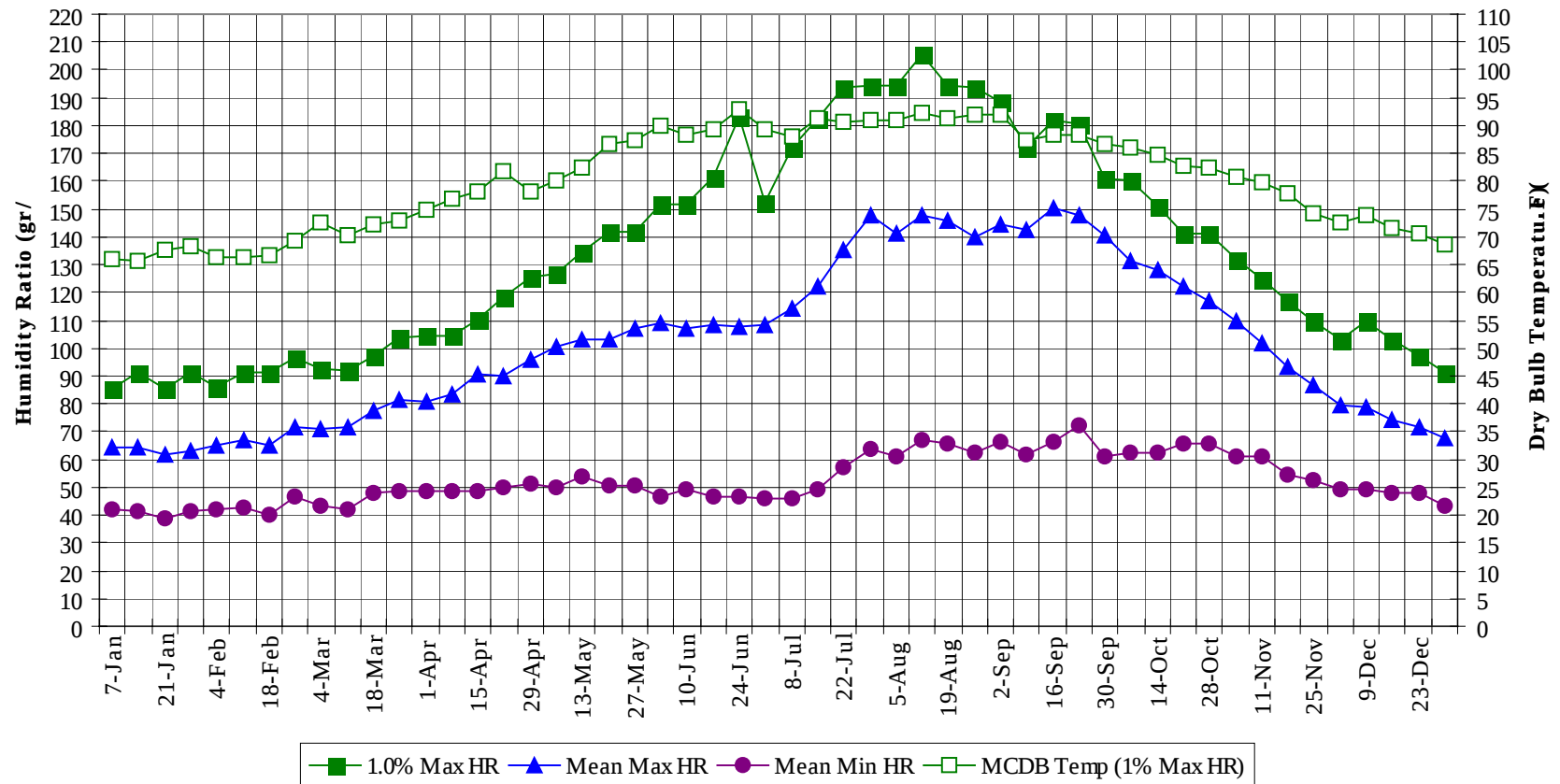
| Temperature<br>Range<br>(°F) | Annual Totals       |                |                |              |                          |
|------------------------------|---------------------|----------------|----------------|--------------|--------------------------|
|                              | Hour<br>Group (LST) |                |                | Total<br>Obs | M<br>C<br>W<br>B<br>(°F) |
|                              | 01<br>To<br>08      | 09<br>To<br>16 | 17<br>To<br>00 |              |                          |
| 115 / 119                    |                     | 5              | 0              | 5            | 72.7                     |
| 110 / 114                    | 0                   | 40             | 1              | 41           | 72.3                     |
| 105 / 109                    | 0                   | 268            | 14             | 282          | 72.2                     |
| 100 / 104                    | 3                   | 438            | 101            | 543          | 72.8                     |
| 95 / 99                      | 60                  | 402            | 284            | 747          | 72.7                     |
| 90 / 94                      | 227                 | 252            | 393            | 872          | 72.5                     |
| 85 / 89                      | 295                 | 172            | 307            | 774          | 71.5                     |
| 80 / 84                      | 486                 | 256            | 356            | 1098         | 69.7                     |
| 75 / 79                      | 343                 | 247            | 269            | 859          | 66.6                     |
| 70 / 74                      | 306                 | 317            | 308            | 931          | 62.9                     |
| 65 / 69                      | 225                 | 217            | 245            | 687          | 60.1                     |
| 60 / 64                      | 320                 | 185            | 322            | 827          | 57.0                     |
| 55 / 59                      | 305                 | 90             | 226            | 620          | 52.7                     |
| 50 / 54                      | 226                 | 25             | 76             | 328          | 48.2                     |
| 45 / 49                      | 107                 | 5              | 15             | 127          | 43.6                     |
| 40 / 44                      | 15                  | 0              | 1              | 16           | 38.2                     |
| 35 / 39                      | 2                   | 0              |                | 2            | 34.6                     |

**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



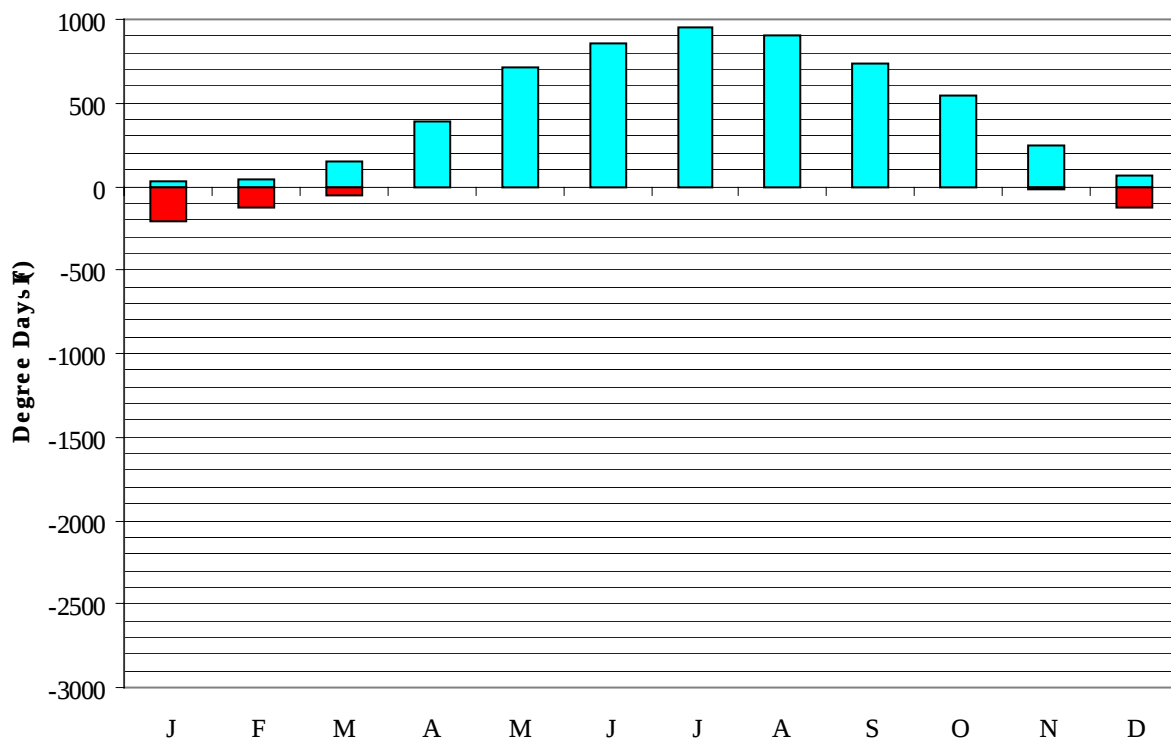
**DHAHRAN (MIL) SD****WMO No. 404160****Long Term Dry Bulb Temperature and Humidity Summary**

| Week<br>Ending | 1.0%<br>Temp (°F) | MCWB @<br>1% Temp (°F) | Mean Max<br>Temp (°F) | Mean Min<br>Temp (°F) | 99%<br>Temp (°F) | 1.0%<br>HR (gr/lb) | MCDB @<br>1% HR (°F) | Mean Max<br>HR (gr/lb) | Mean Min<br>HR (gr/lb) |
|----------------|-------------------|------------------------|-----------------------|-----------------------|------------------|--------------------|----------------------|------------------------|------------------------|
| 7-Jan          | 75.0              | 62.5                   | 68.3                  | 51.5                  | 43.0             | 85.4               | 66.2                 | 64.6                   | 42.0                   |
| 14-Jan         | 75.0              | 59.7                   | 67.8                  | 51.1                  | 43.0             | 91.0               | 65.7                 | 64.2                   | 41.5                   |
| 21-Jan         | 75.0              | 63.3                   | 67.3                  | 50.0                  | 41.0             | 85.4               | 67.5                 | 61.9                   | 38.8                   |
| 28-Jan         | 73.0              | 62.9                   | 67.2                  | 50.9                  | 43.0             | 91.0               | 68.2                 | 63.0                   | 41.1                   |
| 4-Feb          | 77.0              | 60.9                   | 68.9                  | 52.0                  | 43.0             | 86.1               | 66.5                 | 65.1                   | 42.2                   |
| 11-Feb         | 77.0              | 60.2                   | 69.7                  | 52.8                  | 45.0             | 91.0               | 66.4                 | 67.1                   | 42.5                   |
| 18-Feb         | 77.0              | 58.4                   | 70.7                  | 52.2                  | 45.0             | 91.0               | 66.7                 | 64.8                   | 39.8                   |
| 25-Feb         | 79.0              | 61.7                   | 72.6                  | 55.1                  | 46.0             | 96.6               | 69.4                 | 71.3                   | 46.3                   |
| 4-Mar          | 82.0              | 62.4                   | 73.9                  | 56.2                  | 48.0             | 92.4               | 72.6                 | 70.7                   | 43.2                   |
| 11-Mar         | 88.0              | 63.3                   | 75.9                  | 57.3                  | 48.0             | 91.7               | 70.4                 | 71.7                   | 42.3                   |
| 18-Mar         | 86.0              | 65.7                   | 76.5                  | 59.3                  | 52.0             | 97.3               | 72.3                 | 77.6                   | 47.9                   |
| 25-Mar         | 90.0              | 64.7                   | 79.4                  | 61.3                  | 54.0             | 103.6              | 73.0                 | 81.4                   | 48.4                   |
| 1-Apr          | 90.0              | 67.1                   | 79.9                  | 62.4                  | 55.0             | 104.3              | 74.7                 | 80.8                   | 48.3                   |
| 8-Apr          | 91.0              | 67.6                   | 83.7                  | 64.6                  | 59.0             | 104.3              | 76.9                 | 83.5                   | 48.6                   |
| 15-Apr         | 97.0              | 68.9                   | 88.4                  | 67.4                  | 61.0             | 110.6              | 78.0                 | 90.6                   | 48.5                   |
| 22-Apr         | 100.0             | 68.4                   | 90.2                  | 68.8                  | 61.0             | 118.3              | 81.7                 | 90.0                   | 50.1                   |
| 29-Apr         | 100.0             | 69.8                   | 91.8                  | 70.9                  | 64.0             | 125.3              | 78.0                 | 95.9                   | 51.3                   |
| 6-May          | 102.0             | 69.2                   | 95.1                  | 73.4                  | 66.0             | 126.7              | 80.3                 | 100.3                  | 50.1                   |
| 13-May         | 104.0             | 70.2                   | 96.1                  | 75.1                  | 69.0             | 134.4              | 82.3                 | 103.2                  | 53.7                   |
| 20-May         | 106.0             | 69.4                   | 99.9                  | 76.5                  | 72.0             | 142.1              | 86.7                 | 102.9                  | 50.3                   |
| 27-May         | 109.0             | 70.1                   | 103.0                 | 78.9                  | 73.0             | 142.1              | 87.5                 | 106.9                  | 50.7                   |
| 3-Jun          | 111.0             | 73.2                   | 104.0                 | 80.7                  | 75.0             | 151.9              | 90.0                 | 109.2                  | 46.6                   |
| 10-Jun         | 113.0             | 73.5                   | 105.3                 | 81.8                  | 75.0             | 151.9              | 88.4                 | 107.2                  | 48.9                   |
| 17-Jun         | 111.0             | 70.8                   | 105.2                 | 82.2                  | 77.0             | 161.7              | 89.5                 | 108.5                  | 46.4                   |
| 24-Jun         | 109.0             | 71.6                   | 104.4                 | 82.3                  | 77.0             | 183.4              | 92.9                 | 107.8                  | 46.5                   |
| 1-Jul          | 111.0             | 71.6                   | 106.0                 | 82.6                  | 77.0             | 152.6              | 89.4                 | 108.6                  | 46.2                   |
| 8-Jul          | 111.0             | 70.0                   | 107.0                 | 83.3                  | 81.0             | 172.2              | 88.2                 | 114.3                  | 46.2                   |
| 15-Jul         | 113.0             | 72.2                   | 107.5                 | 84.4                  | 79.0             | 182.7              | 91.2                 | 122.1                  | 49.5                   |
| 22-Jul         | 113.0             | 72.7                   | 108.3                 | 84.2                  | 81.0             | 193.9              | 90.5                 | 135.2                  | 57.0                   |
| 29-Jul         | 113.0             | 71.8                   | 107.7                 | 85.4                  | 81.0             | 194.6              | 91.0                 | 147.5                  | 64.0                   |
| 5-Aug          | 111.0             | 72.9                   | 106.9                 | 84.6                  | 81.0             | 194.6              | 91.1                 | 141.2                  | 60.8                   |
| 12-Aug         | 113.0             | 74.5                   | 106.9                 | 84.3                  | 81.0             | 205.8              | 92.1                 | 148.0                  | 66.7                   |
| 19-Aug         | 109.0             | 72.3                   | 106.0                 | 83.3                  | 79.0             | 194.6              | 91.4                 | 146.0                  | 65.4                   |
| 26-Aug         | 111.0             | 72.6                   | 105.8                 | 82.7                  | 79.0             | 193.9              | 92.0                 | 140.0                  | 62.1                   |
| 2-Sep          | 109.0             | 72.8                   | 104.5                 | 81.8                  | 77.0             | 188.3              | 92.0                 | 144.2                  | 66.1                   |
| 9-Sep          | 109.0             | 70.9                   | 104.4                 | 79.6                  | 75.0             | 172.2              | 87.4                 | 142.4                  | 61.5                   |
| 16-Sep         | 108.0             | 71.1                   | 103.0                 | 78.9                  | 75.0             | 182.0              | 88.3                 | 150.1                  | 66.6                   |
| 23-Sep         | 106.0             | 71.8                   | 101.1                 | 77.9                  | 73.0             | 180.6              | 88.2                 | 147.6                  | 72.3                   |
| 30-Sep         | 106.0             | 70.1                   | 100.6                 | 76.1                  | 73.0             | 161.0              | 86.6                 | 140.5                  | 61.0                   |
| 7-Oct          | 104.0             | 68.6                   | 97.9                  | 74.5                  | 72.0             | 160.3              | 86.0                 | 131.1                  | 62.5                   |
| 14-Oct         | 100.0             | 69.5                   | 95.9                  | 73.3                  | 68.0             | 151.2              | 84.7                 | 128.3                  | 62.2                   |
| 21-Oct         | 99.0              | 68.0                   | 93.2                  | 71.2                  | 65.0             | 141.4              | 82.7                 | 122.2                  | 65.5                   |
| 28-Oct         | 97.0              | 68.4                   | 90.6                  | 69.5                  | 63.0             | 141.4              | 82.4                 | 116.7                  | 65.5                   |
| 4-Nov          | 95.0              | 67.4                   | 88.8                  | 67.7                  | 63.0             | 132.3              | 80.7                 | 110.0                  | 60.9                   |
| 11-Nov         | 90.0              | 67.0                   | 85.0                  | 65.9                  | 59.0             | 124.6              | 79.8                 | 101.8                  | 60.8                   |
| 18-Nov         | 88.0              | 67.4                   | 81.9                  | 62.8                  | 55.0             | 116.9              | 78.0                 | 93.0                   | 54.8                   |
| 25-Nov         | 85.0              | 63.5                   | 80.5                  | 60.7                  | 55.0             | 109.9              | 74.3                 | 86.8                   | 52.5                   |
| 2-Dec          | 84.0              | 64.1                   | 77.5                  | 58.9                  | 52.0             | 102.9              | 72.5                 | 79.6                   | 49.3                   |
| 9-Dec          | 81.0              | 66.8                   | 74.4                  | 56.7                  | 46.0             | 109.9              | 73.9                 | 78.5                   | 49.1                   |
| 16-Dec         | 81.0              | 64.0                   | 72.8                  | 56.1                  | 48.0             | 102.9              | 71.5                 | 74.4                   | 47.9                   |
| 23-Dec         | 77.0              | 64.0                   | 70.9                  | 54.3                  | 46.0             | 97.3               | 70.5                 | 71.8                   | 47.7                   |
| 31-Dec         | 77.0              | 63.0                   | 69.3                  | 52.1                  | 45.0             | 91.0               | 68.7                 | 67.6                   | 43.2                   |

DHAHRAN (MIL) SD

WMO No. 404160

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



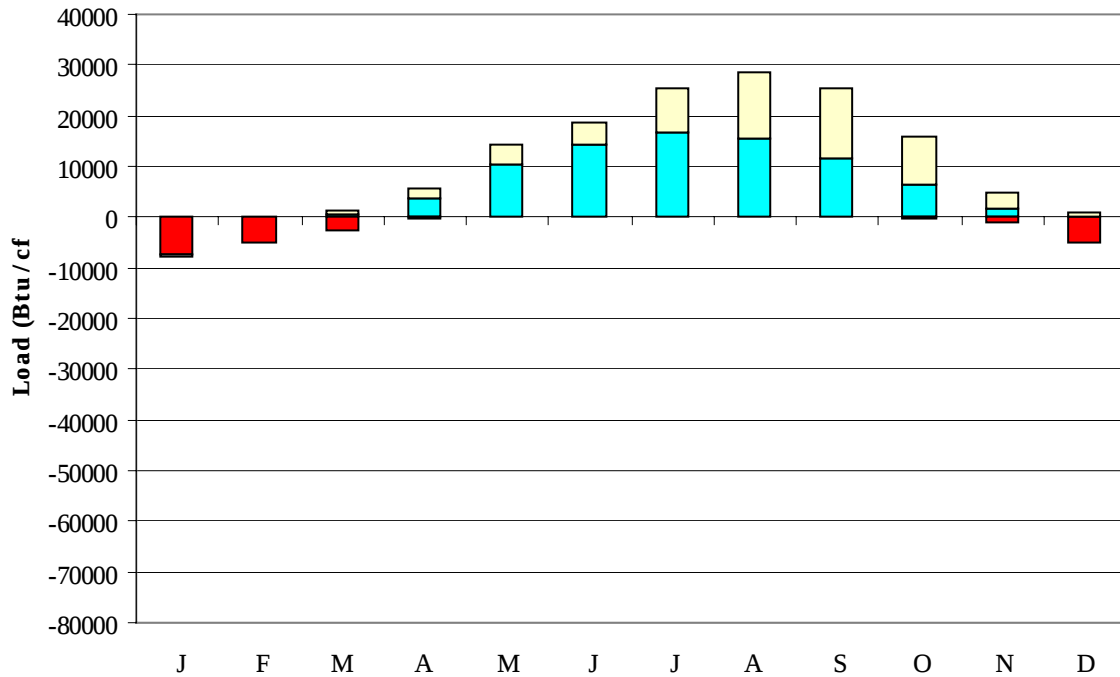
■ Mean Cooling Degree Days ■ Mean Heating Degree Days

|     | Mean Cooling<br>Degree Days (°F) | Mean Heating<br>Degree Days (°F) |
|-----|----------------------------------|----------------------------------|
| JAN | 24                               | 210                              |
| FEB | 45                               | 131                              |
| MAR | 151                              | 56                               |
| APR | 387                              | 5                                |
| MAY | 708                              | 0                                |
| JUN | 855                              | 0                                |
| JUL | 948                              | 0                                |
| AUG | 906                              | 0                                |
| SEP | 741                              | 0                                |
| OCT | 539                              | 1                                |
| NOV | 242                              | 23                               |
| DEC | 70                               | 126                              |
| ANN | 5615                             | 552                              |

DHAHRAN (MIL) SD

WMO No. 404160

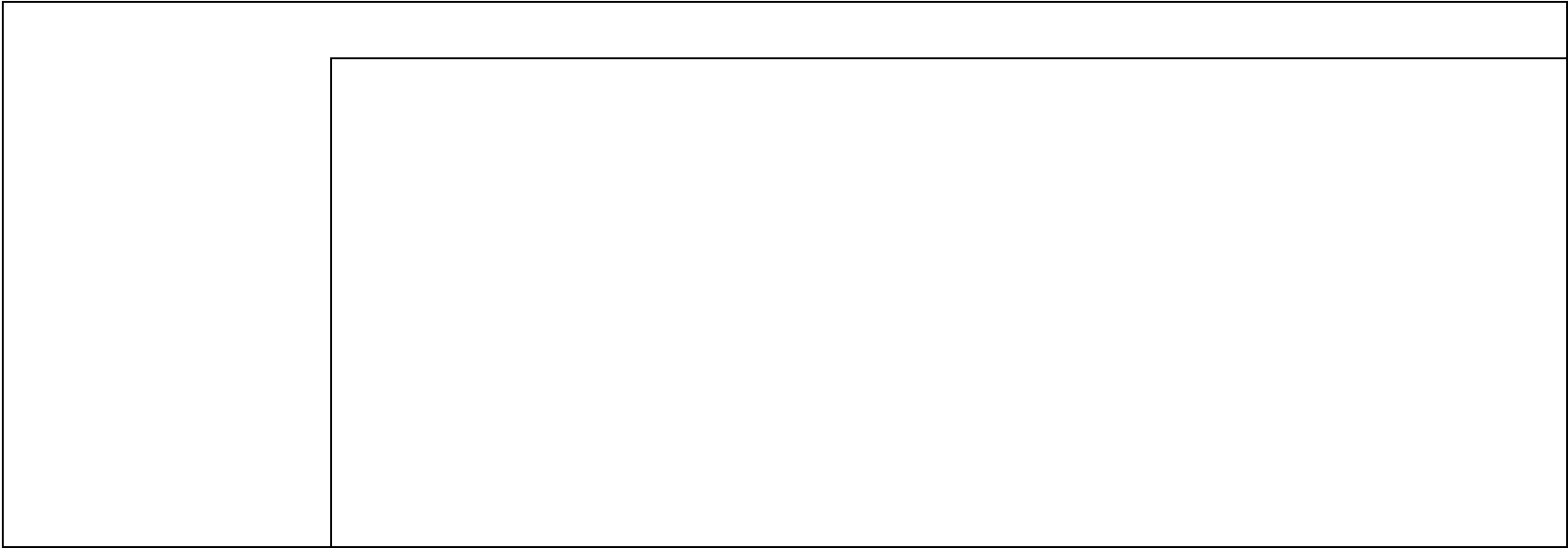
**Average Ventilation and Infiltration Loads**  
**(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)**



|     | 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 | 17                                      | -7475                                   | 122                                   | -170                                  |
| FEB | 68                                      | -5014                                   | 206                                   | -102                                  |
| MAR | 683                                     | -2465                                   | 792                                   | -45                                   |
| APR | 3749                                    | -325                                    | 1891                                  | -27                                   |
| MAY | 10457                                   | -10                                     | 3831                                  | -21                                   |
| JUN | 14387                                   | 0                                       | 4108                                  | -34                                   |
| JUL | 16549                                   | 0                                       | 8708                                  | -10                                   |
| AUG | 15469                                   | 0                                       | 13062                                 | -11                                   |
| SEP | 11450                                   | 0                                       | 13771                                 | -5                                    |
| OCT | 6532                                    | -71                                     | 9232                                  | -14                                   |
| NOV | 1547                                    | -1155                                   | 3128                                  | -41                                   |
| DEC | 123                                     | -4862                                   | 675                                   | -77                                   |
| ANN | 81031                                   | -21377                                  | 59526                                 | -557                                  |

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

No Solar Radiation  
Data Available



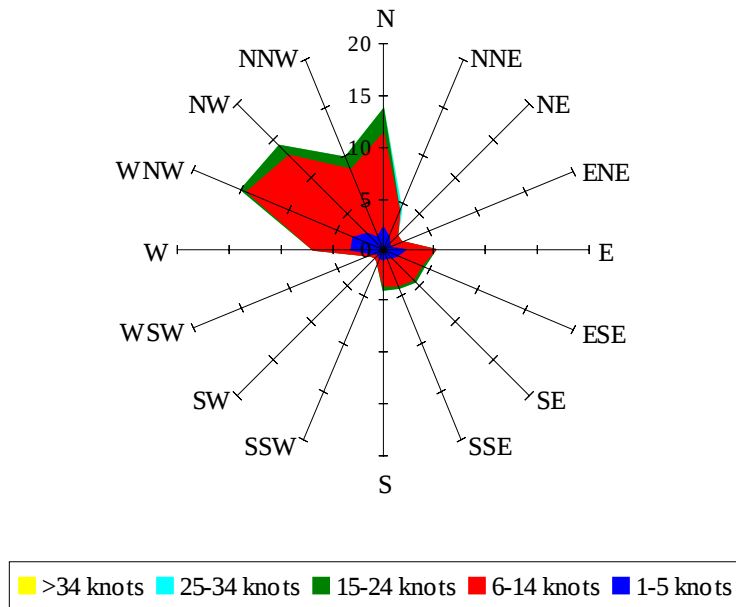
**Average Annual Solar Heat and Illumination – Nearest Available Site**

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

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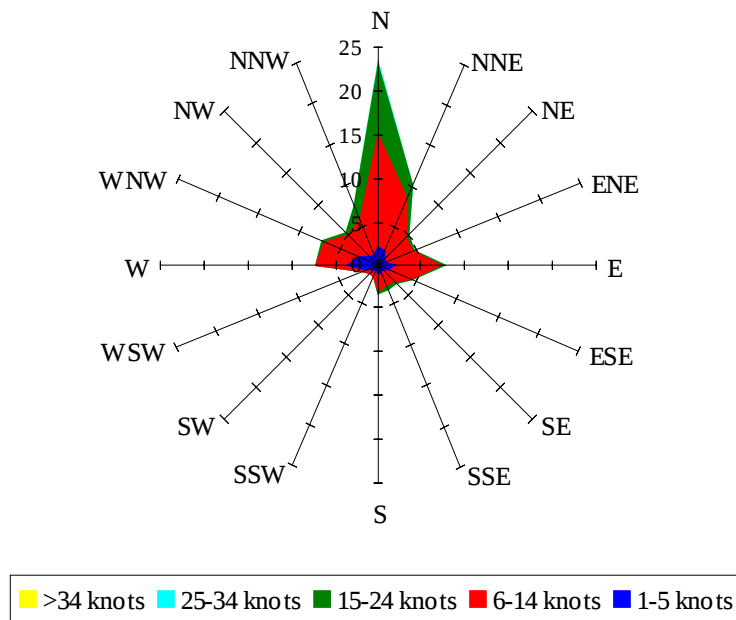
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# **Wind Summary - December, January, and February** **Labels of Percent Frequency on North Axis**



Percent Calm = 6.59

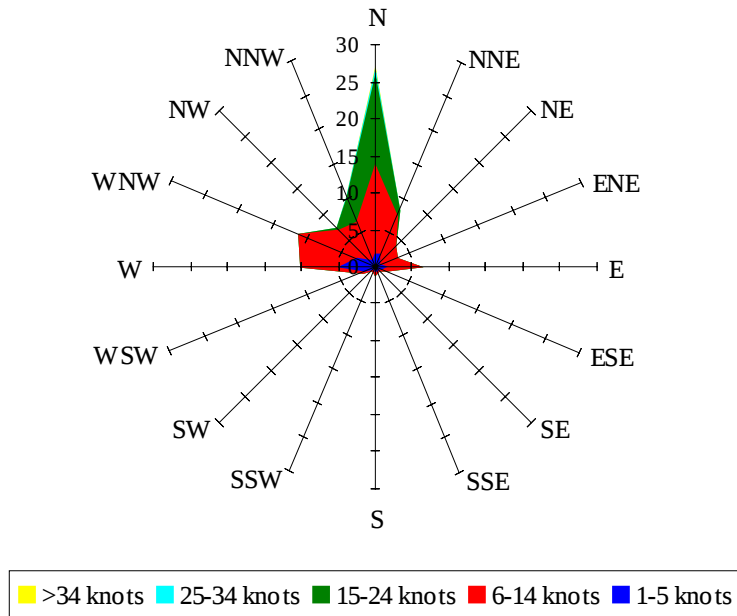
# **Wind Summary - March, April, and May** **Labels of Percent Frequency on North Axis**



Percent Calm = 5.88

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

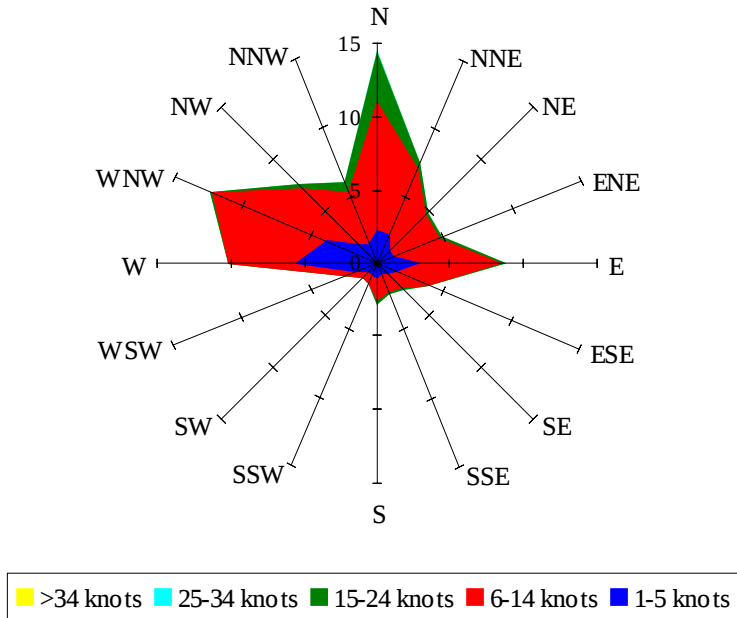
Labels of Percent Frequency on North Axis



Percent Calm = 6.46

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

Labels of Percent Frequency on North Axis



Percent Calm = 8.49