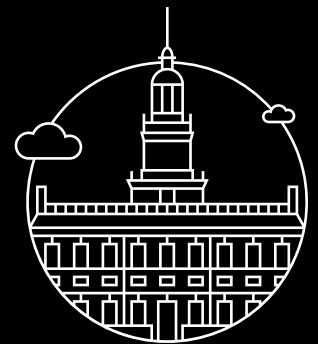


Climate Data for Philadelphia, PA

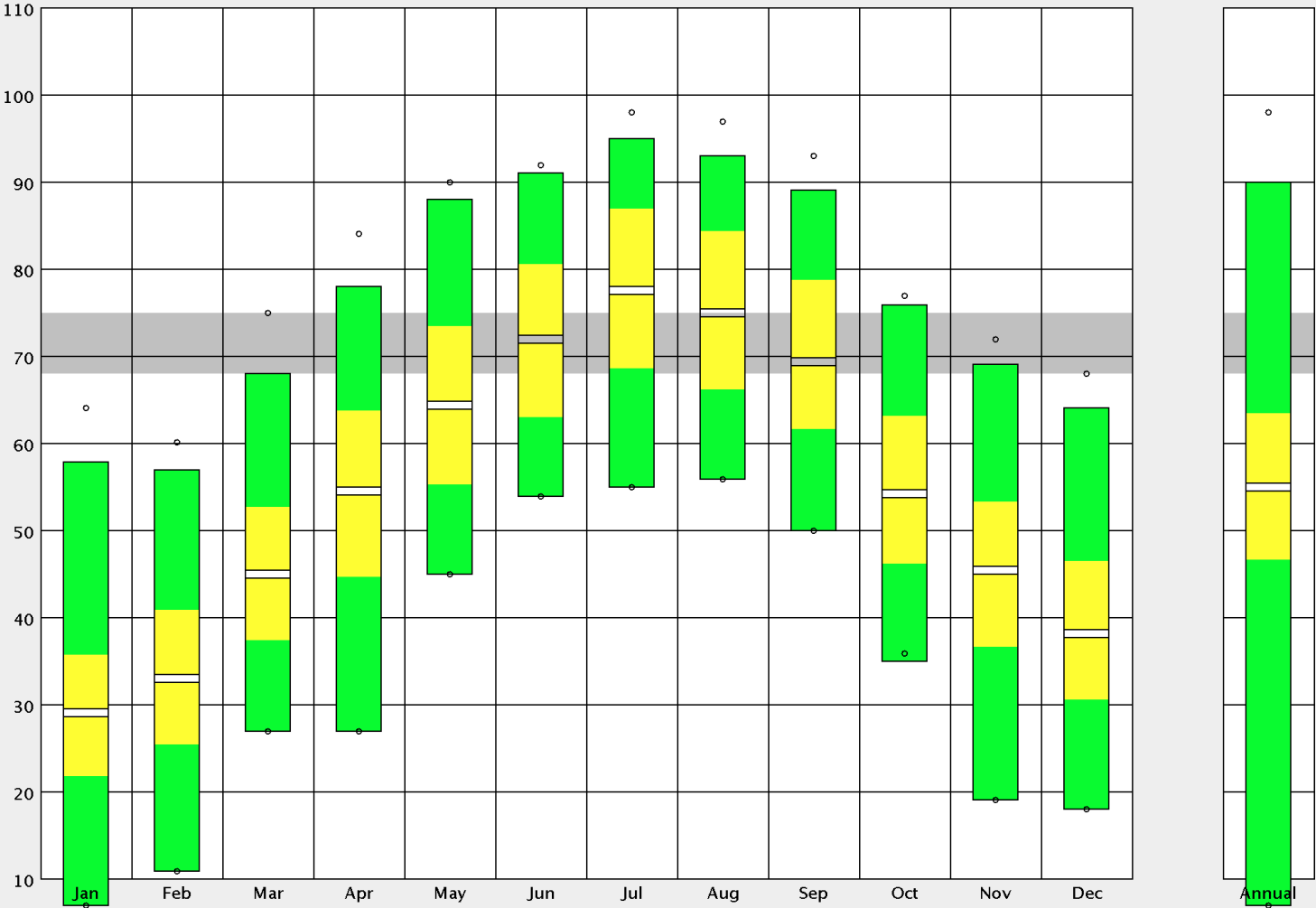


39.87° N | 75.23° W

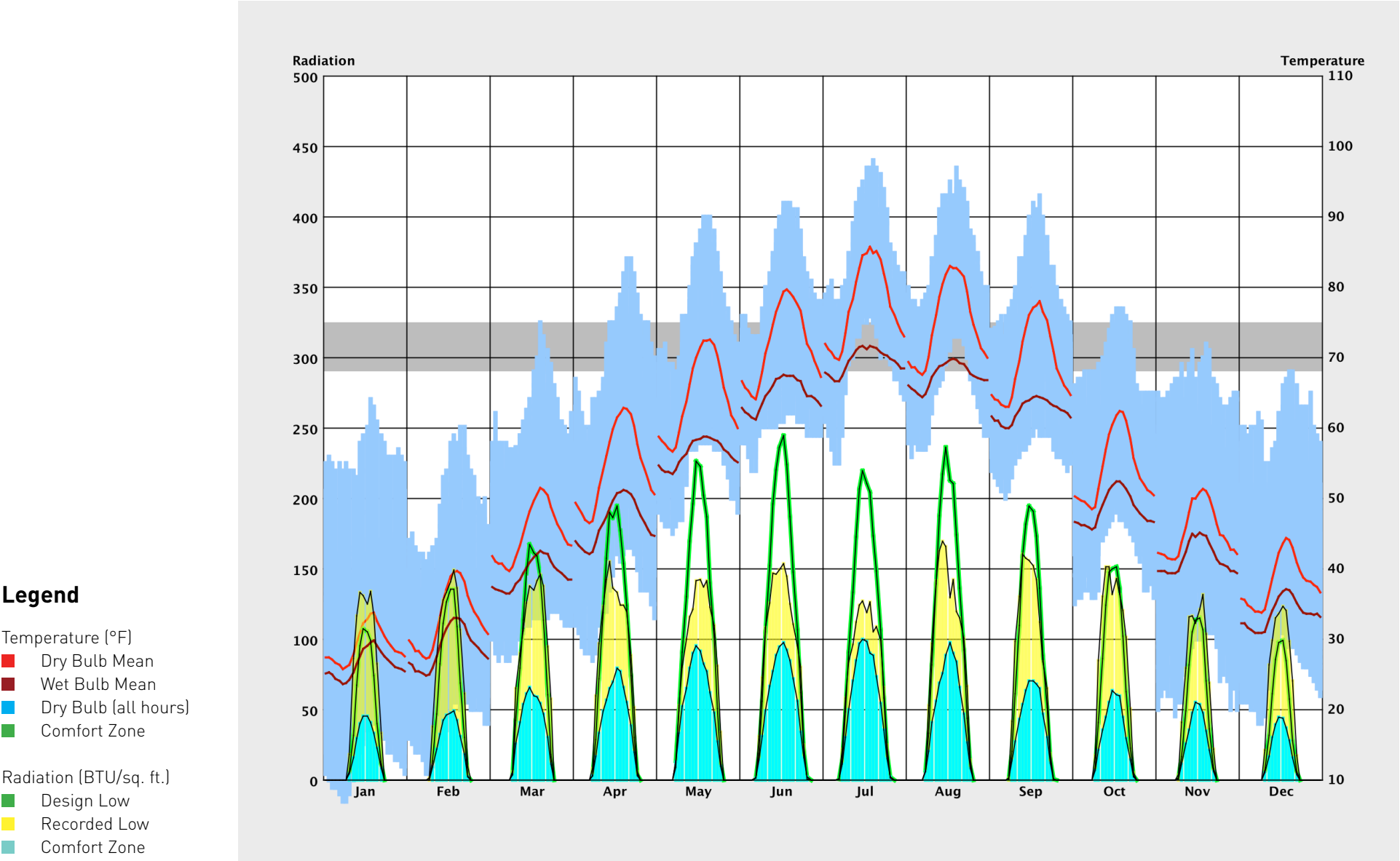
Temperature Range

Legend

- Recorded High
- Design High
- Average High
- Mean
- Average Low
- Design Low
- Recorded Low
- Comfort ZONE



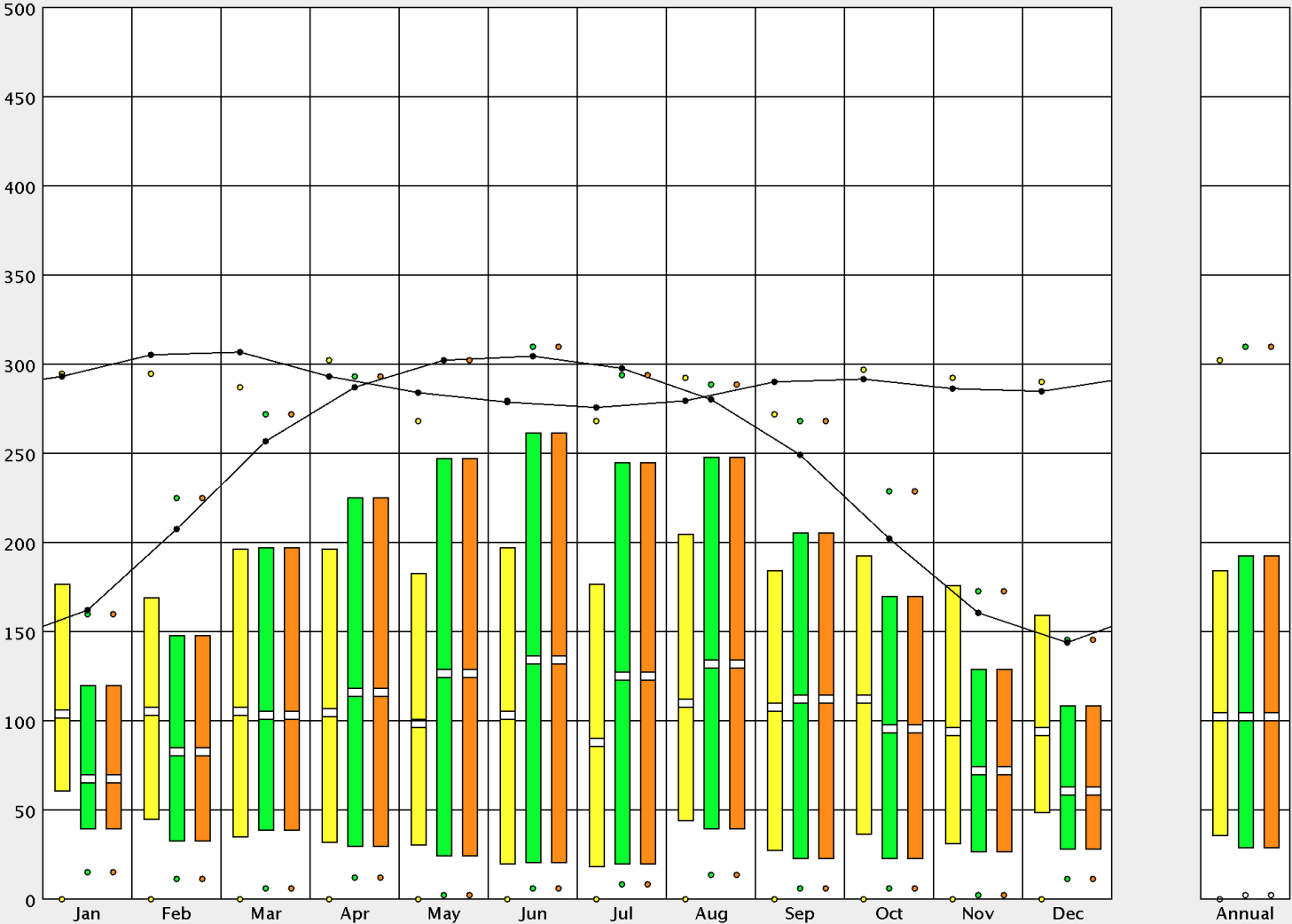
Monthly Diurnal Averages



Radiation Range

Legend

- Hourly Averages
- Recorded High
 - Average High
 - Mean
 - Average Low
 - Recorded Low
- Recorded (BTU/sqft per hr.)
- Direct Normal
 - Global Horizontal
 - Total Surface
 - Theoretical

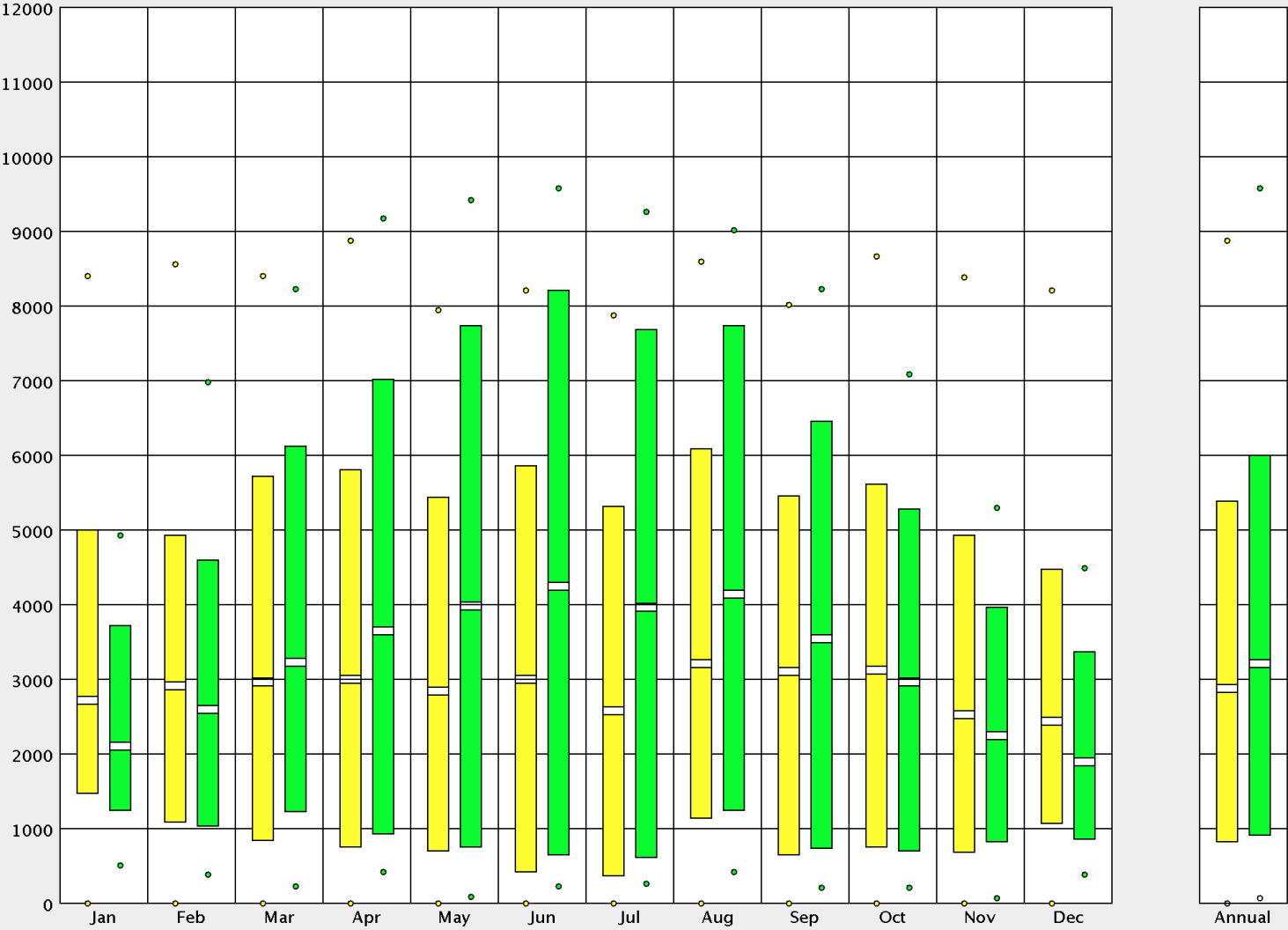


Illumination Range

Legend

- Hourly Illumination
- Recorded High
 - Average High
 - Mean
 - Average Low
 - Recorded Low

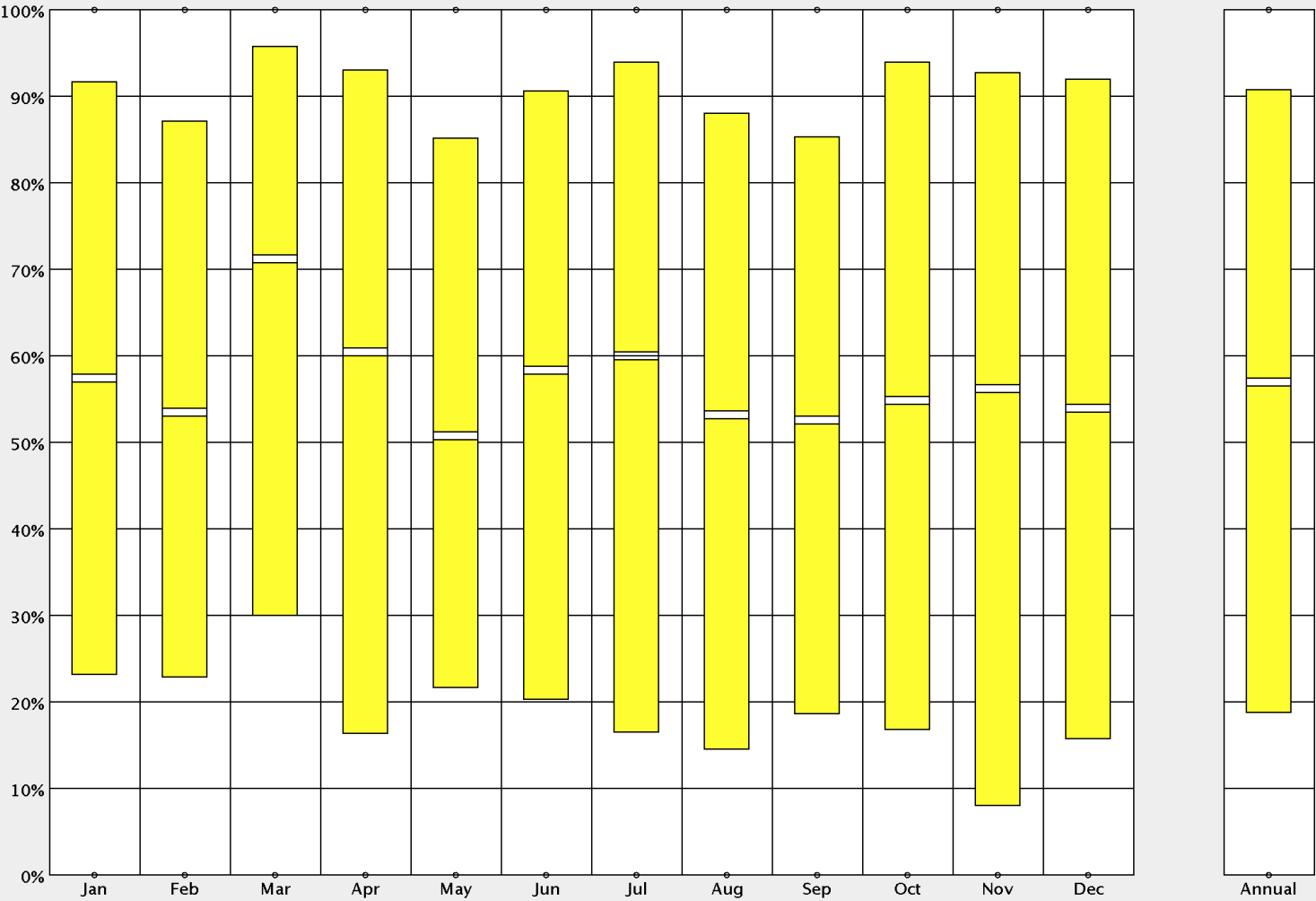
- Recorded (footcandles)
- Direct Normal
 - Global Horizontal



Sky Cover Range

Legend

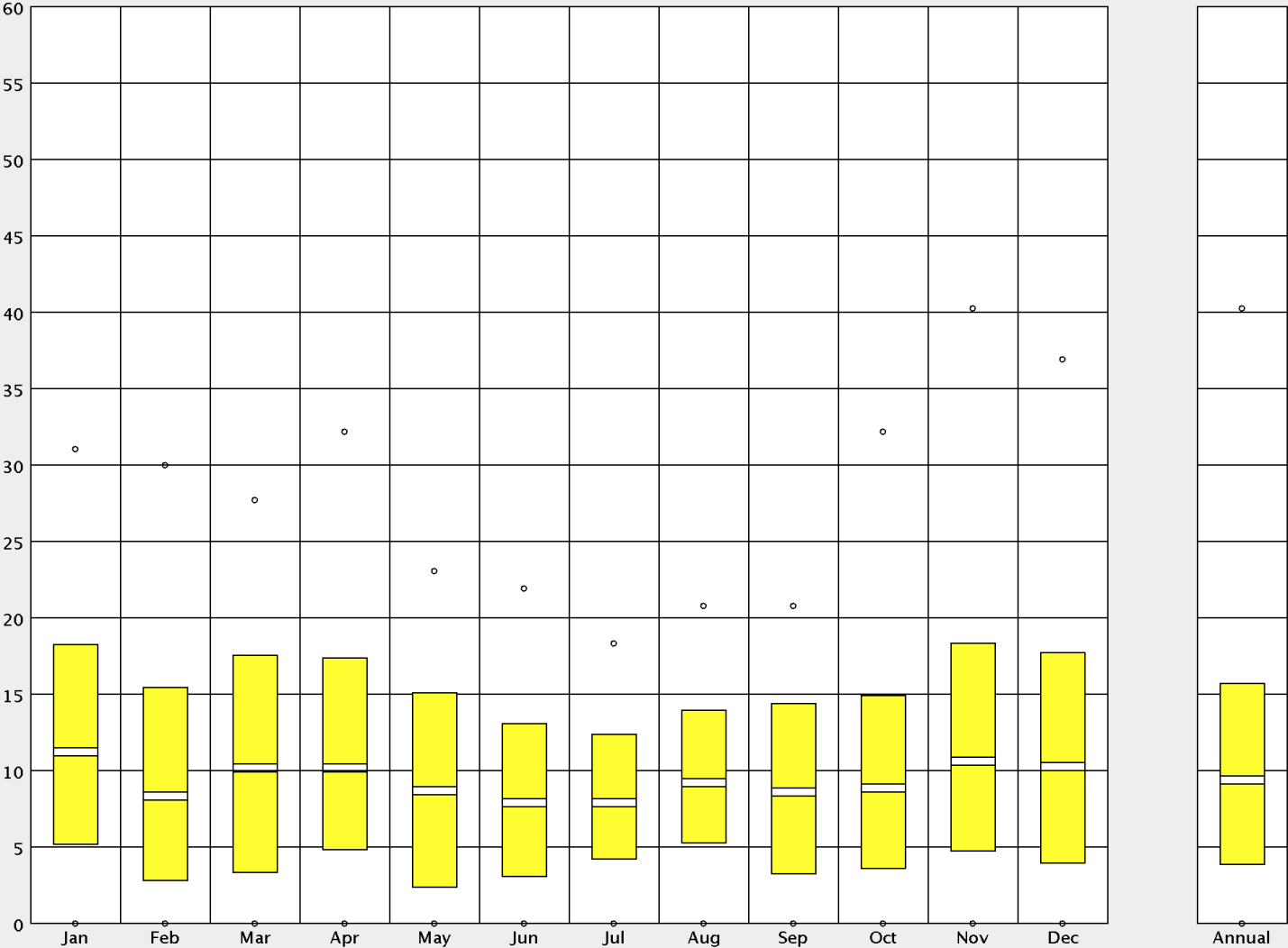
- 100% Total Cloud Cover
- Recorded High
- Average High
- Mean
- Average Low
- Recorded Low
- 0 Clear Skies



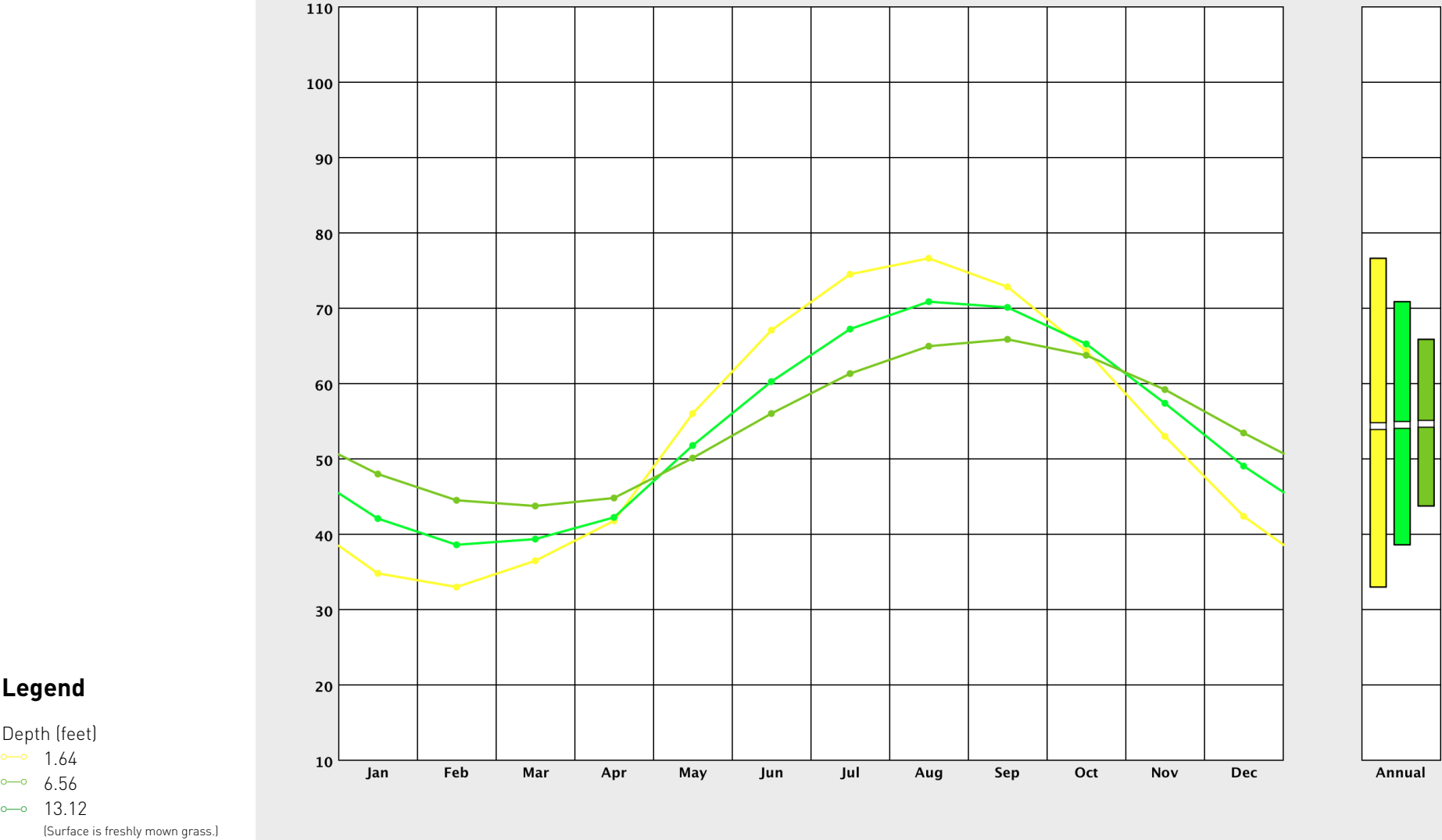
Wind Velocity Range

Legend

- Miles Per Hour
- Recorded High
 - Average High
 - Mean
 - Average Low
 - Recorded Low

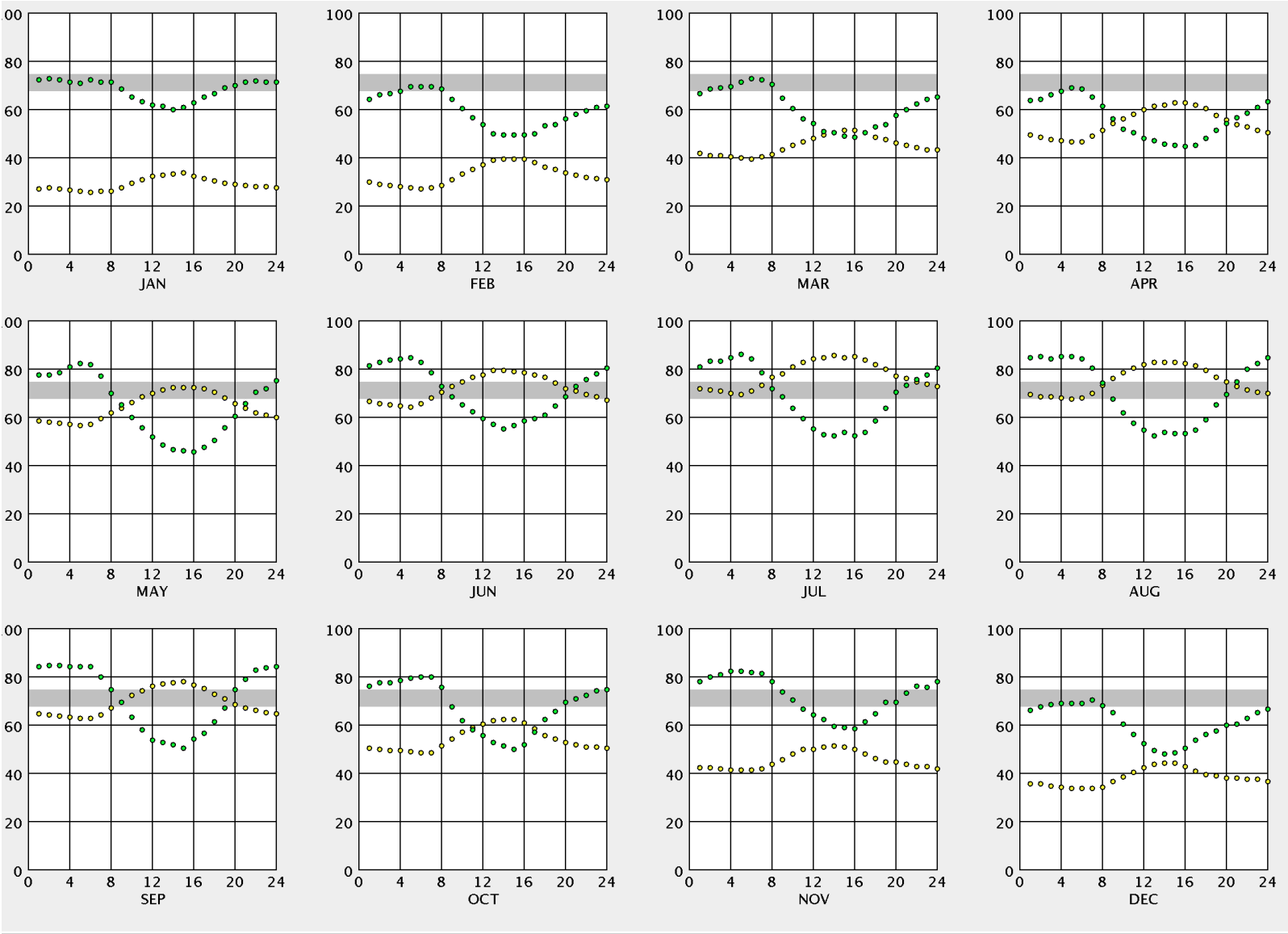


Ground Temperature (Monthly Average)

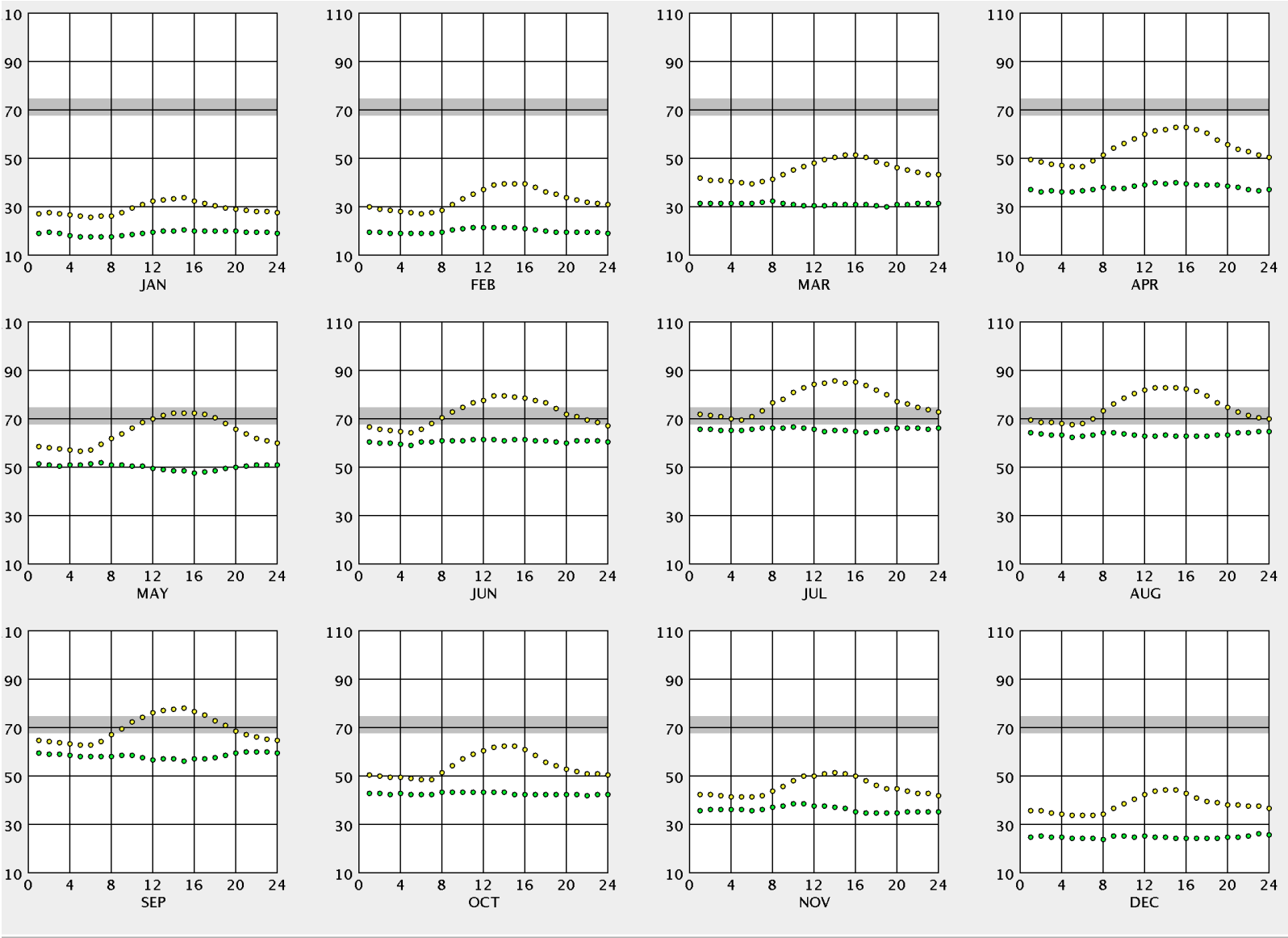


Dry Bulb x Relative Humidity

- Legend**
- Dry Bulb
 - Humidity
 - Comfort Zone



Dry Bulb x Dew Point



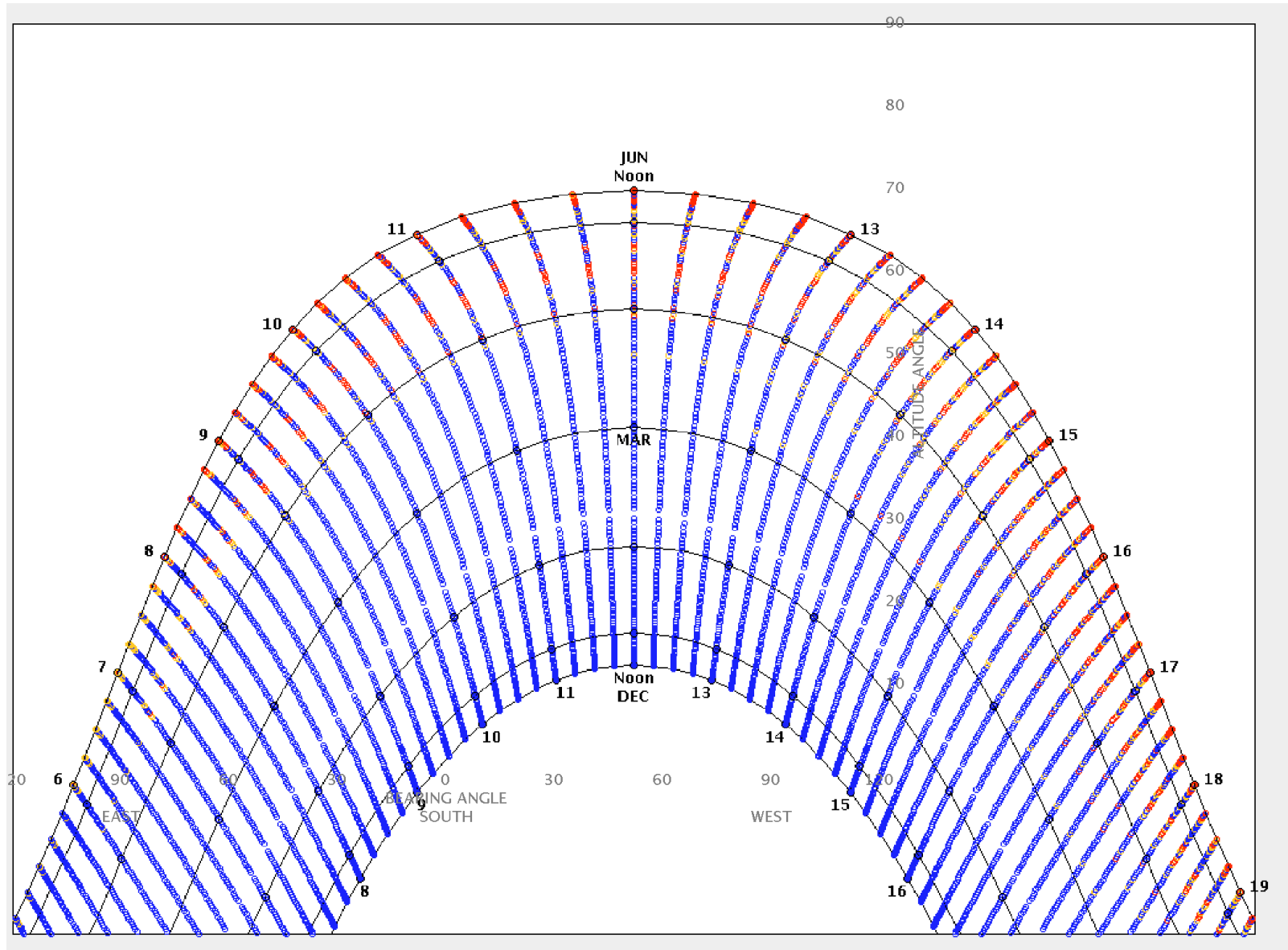
Legend

- Dry Bulb
- Humidity
- Comfort Zone

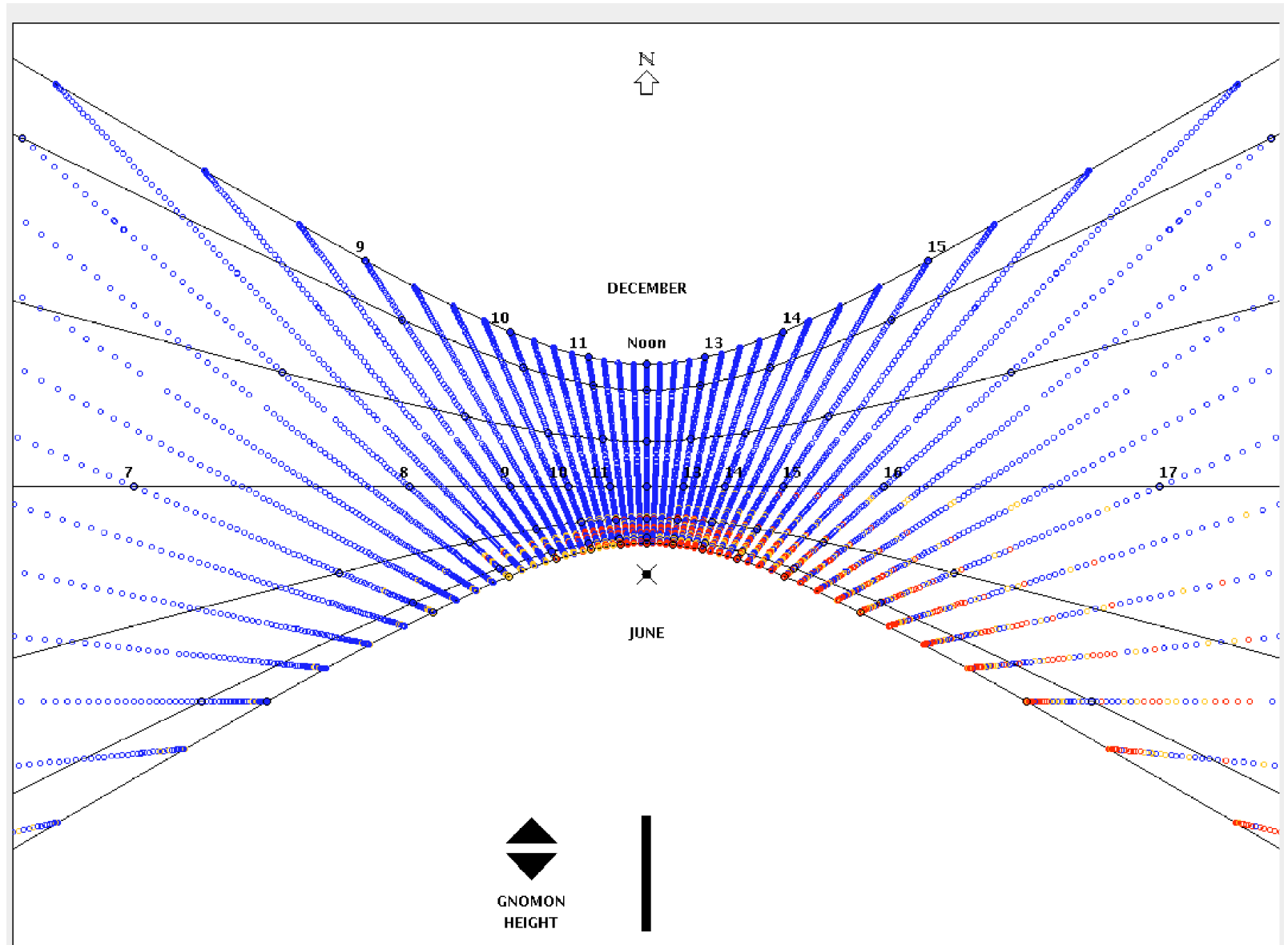
Sun Shading Chart

Legend

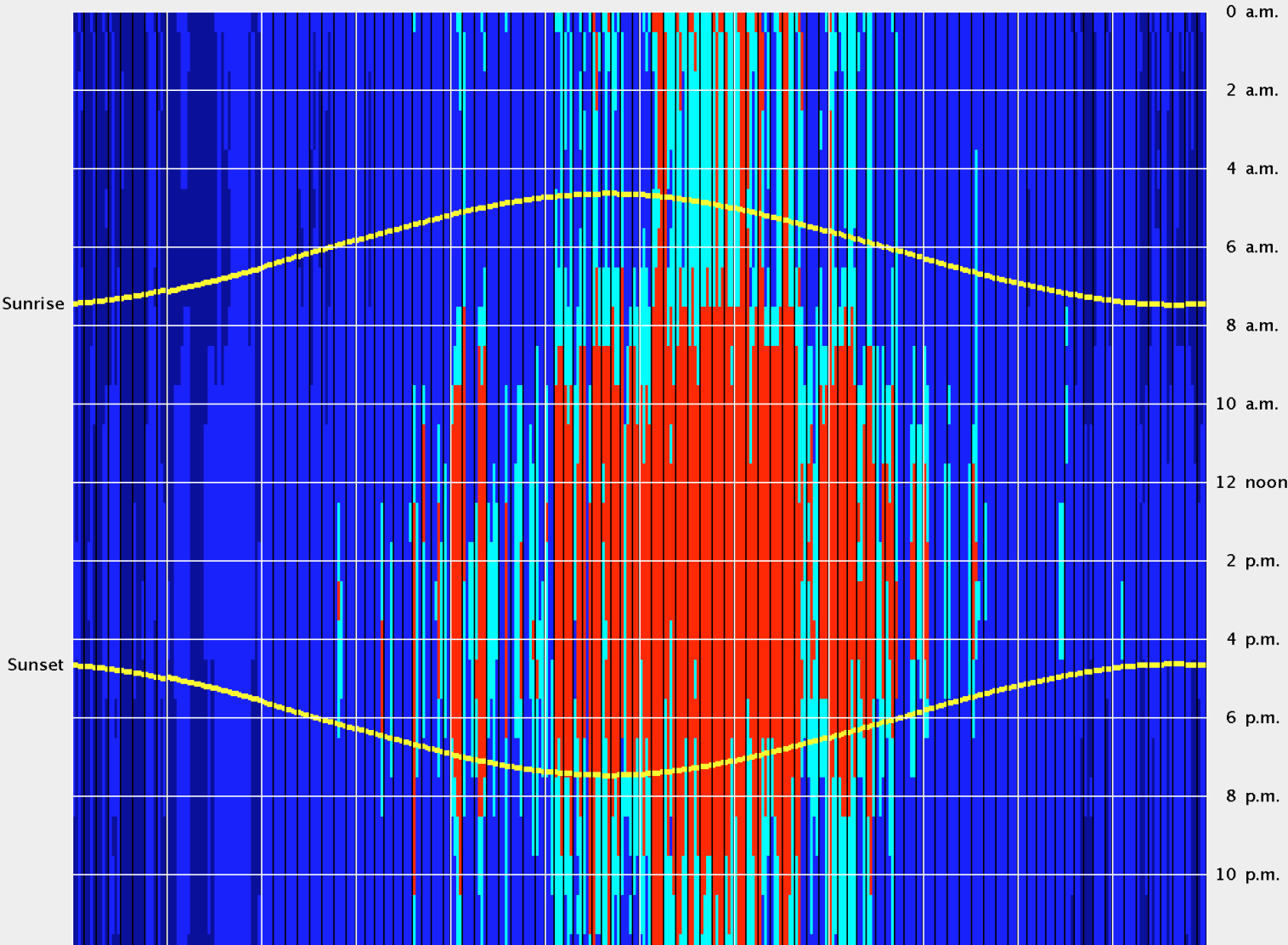
- Warm/Hot > 75°F
(Shade Needed)
- Comfort > 68°F
(Shade Helps)
- Cool/Cold < 68°F
(Sun Needed)



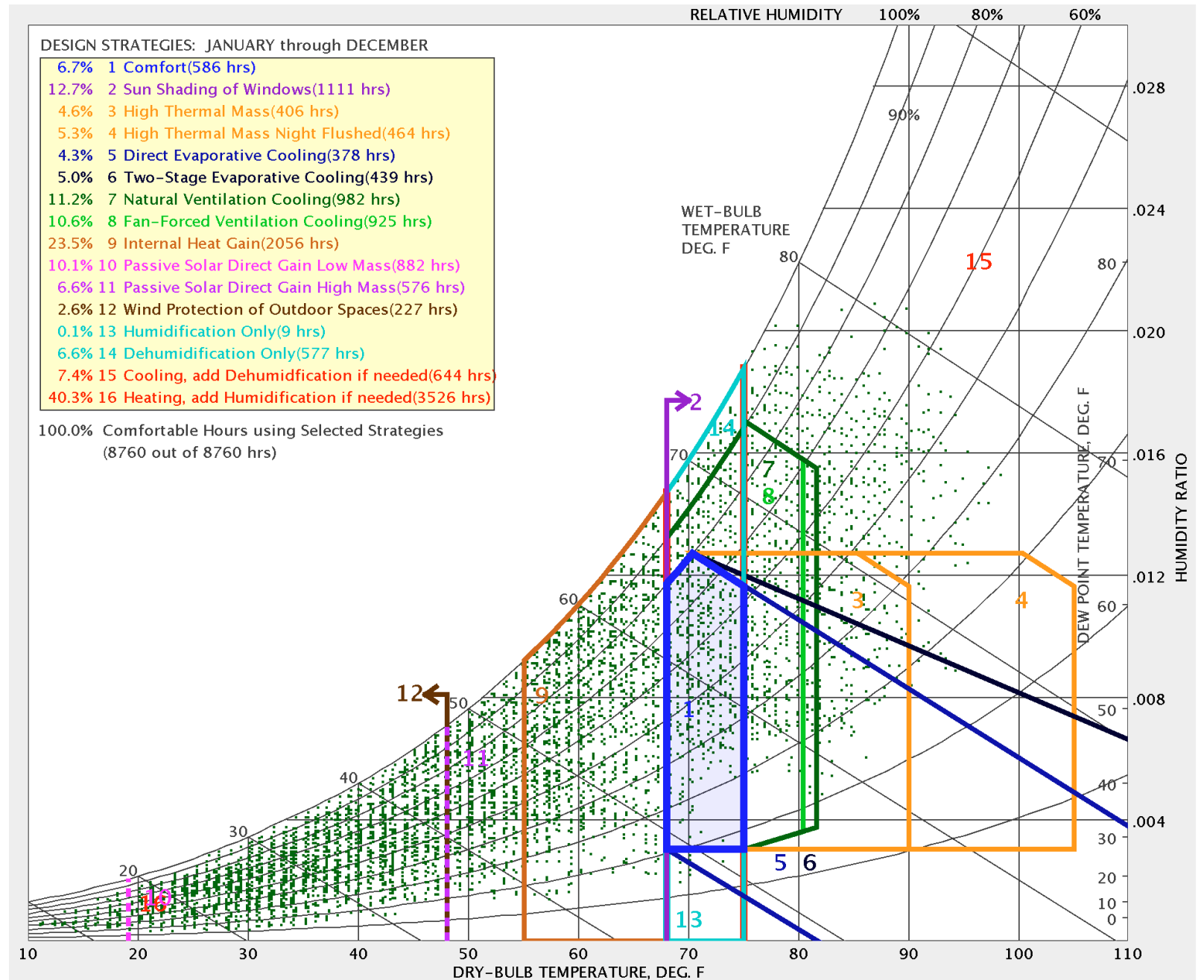
Sun Chart



Timetable Plot



Psychrometric Chart



Important Passive Design Strategies

- [1] Provide double pane high performance glazing (Low-E) on west, north and east; but clear on south for maximum passive solar gain.
- [2] For passive solar heating face most of the glass area south to maximize winter sun exposure, but design overhangs to fully shade in summer.
- [3] Good natural ventilation can reduce or eliminate air conditioning in warm weather if windows are well shaded and oriented to prevailing breezes.

* Data and strategies collected from Climate Consultant 6.0
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