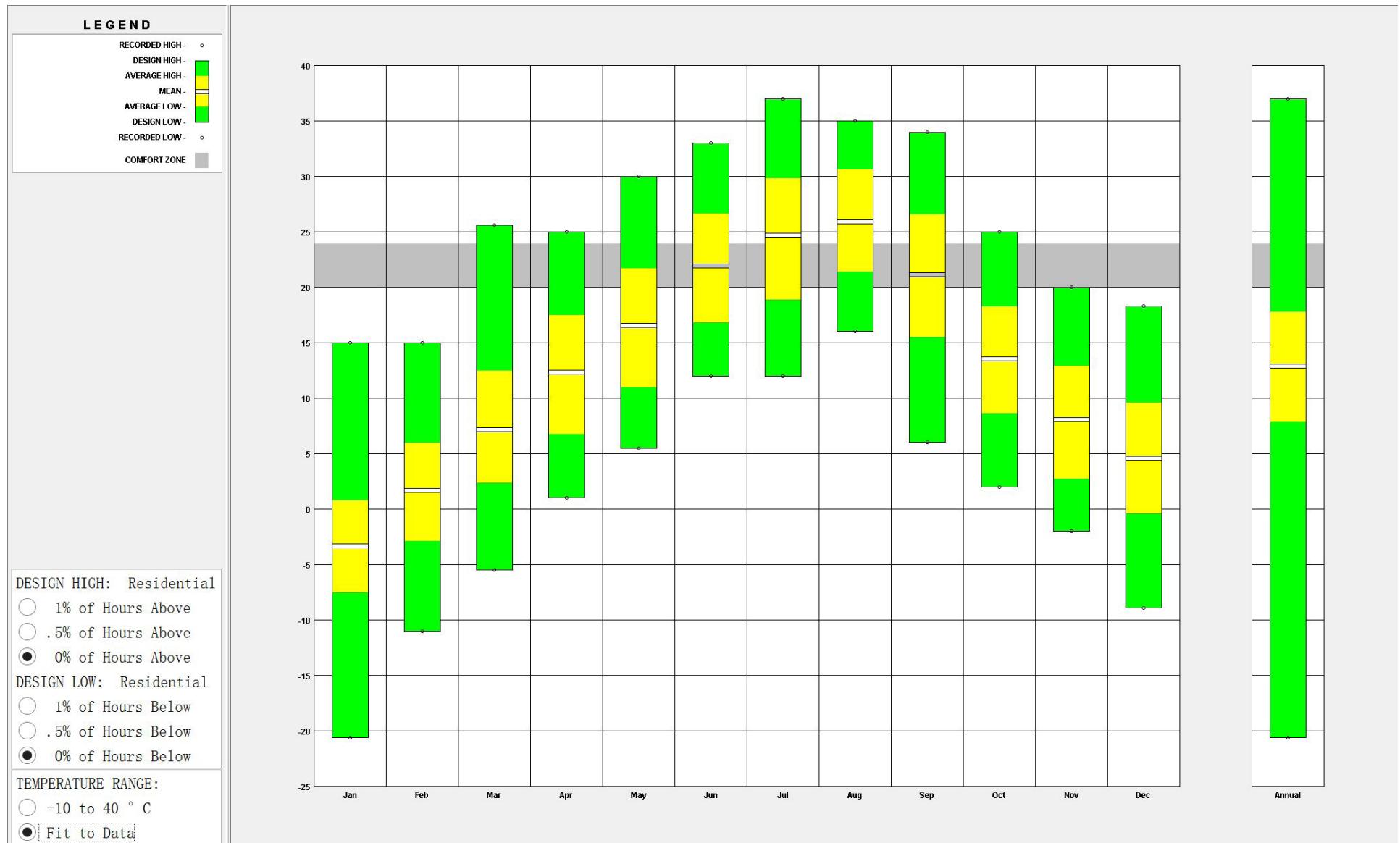


# **Weather Report for Philadelphia**

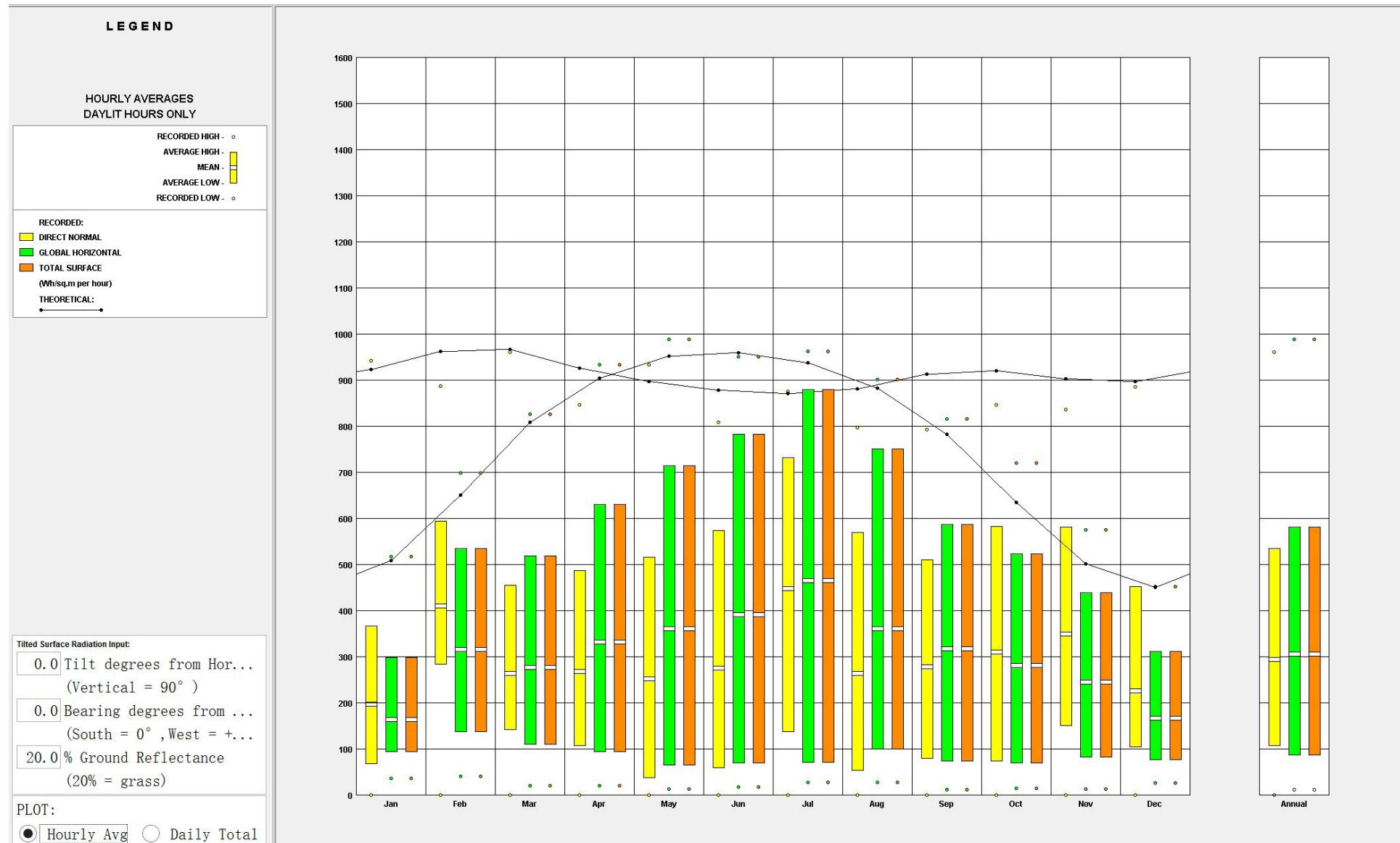
**Xiaoyu Duan**

Weather File: NE Philadelphia AP 724085 TMY3

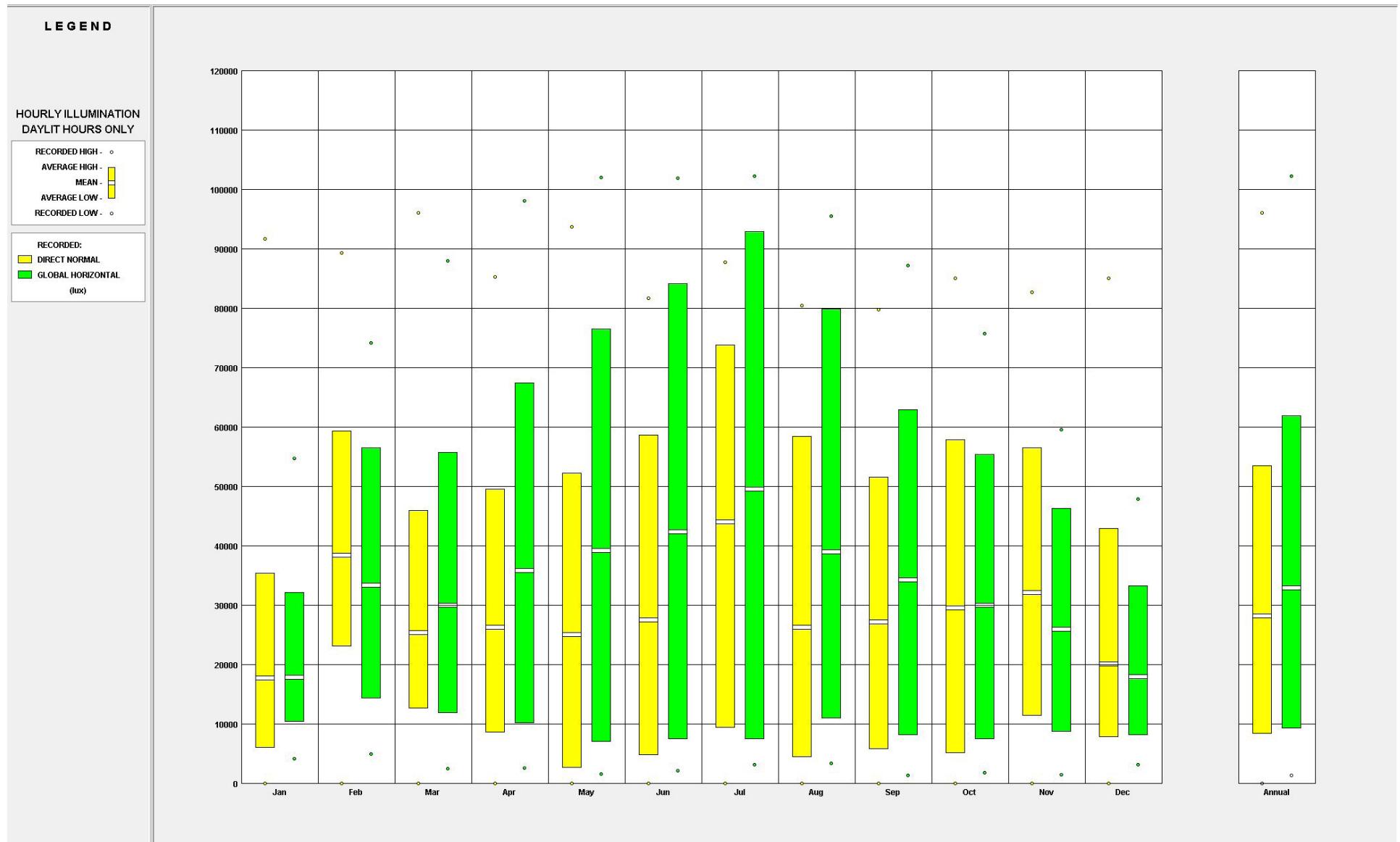
# Temperature Range



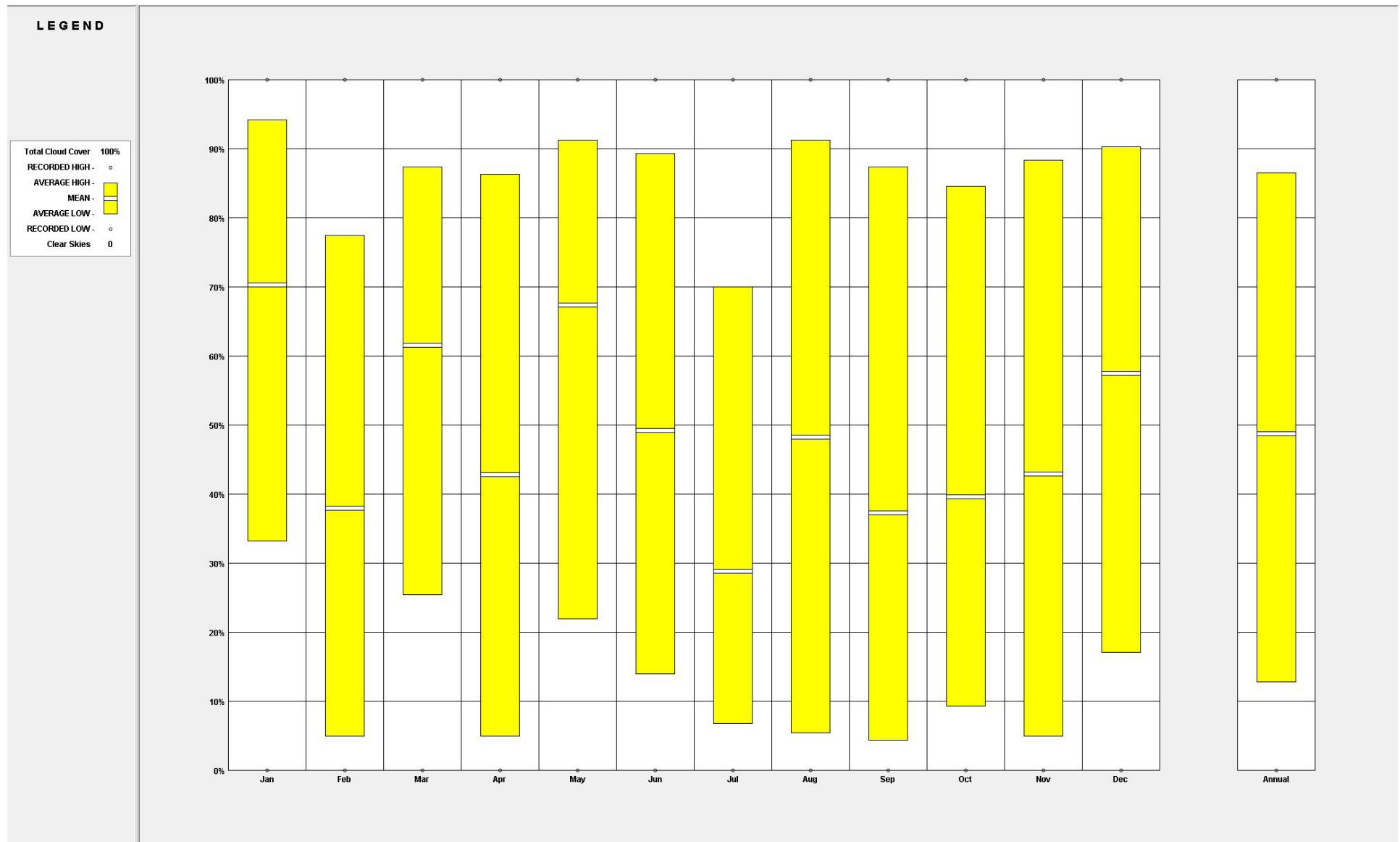
# Radiation Range



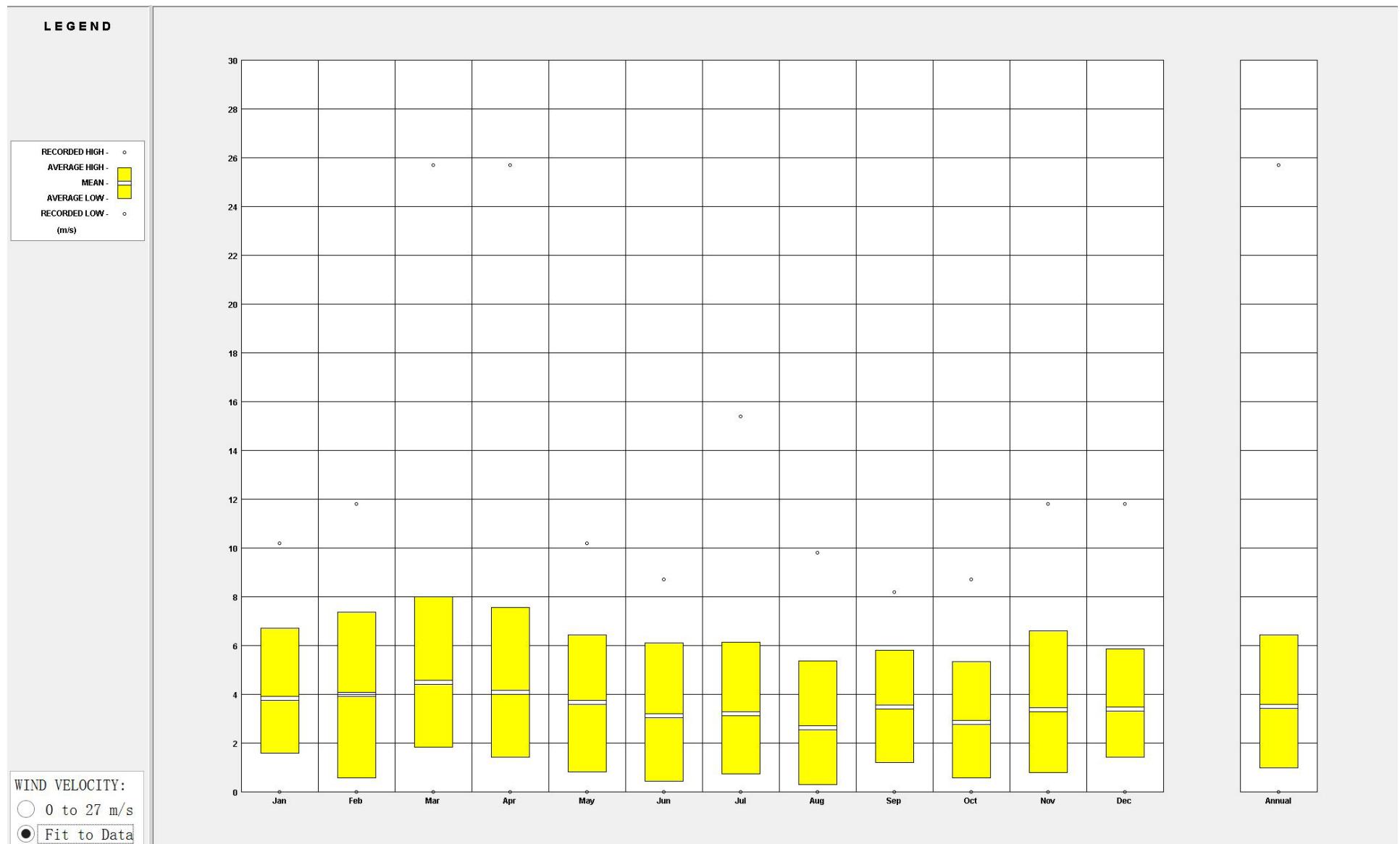
# Illumination Range



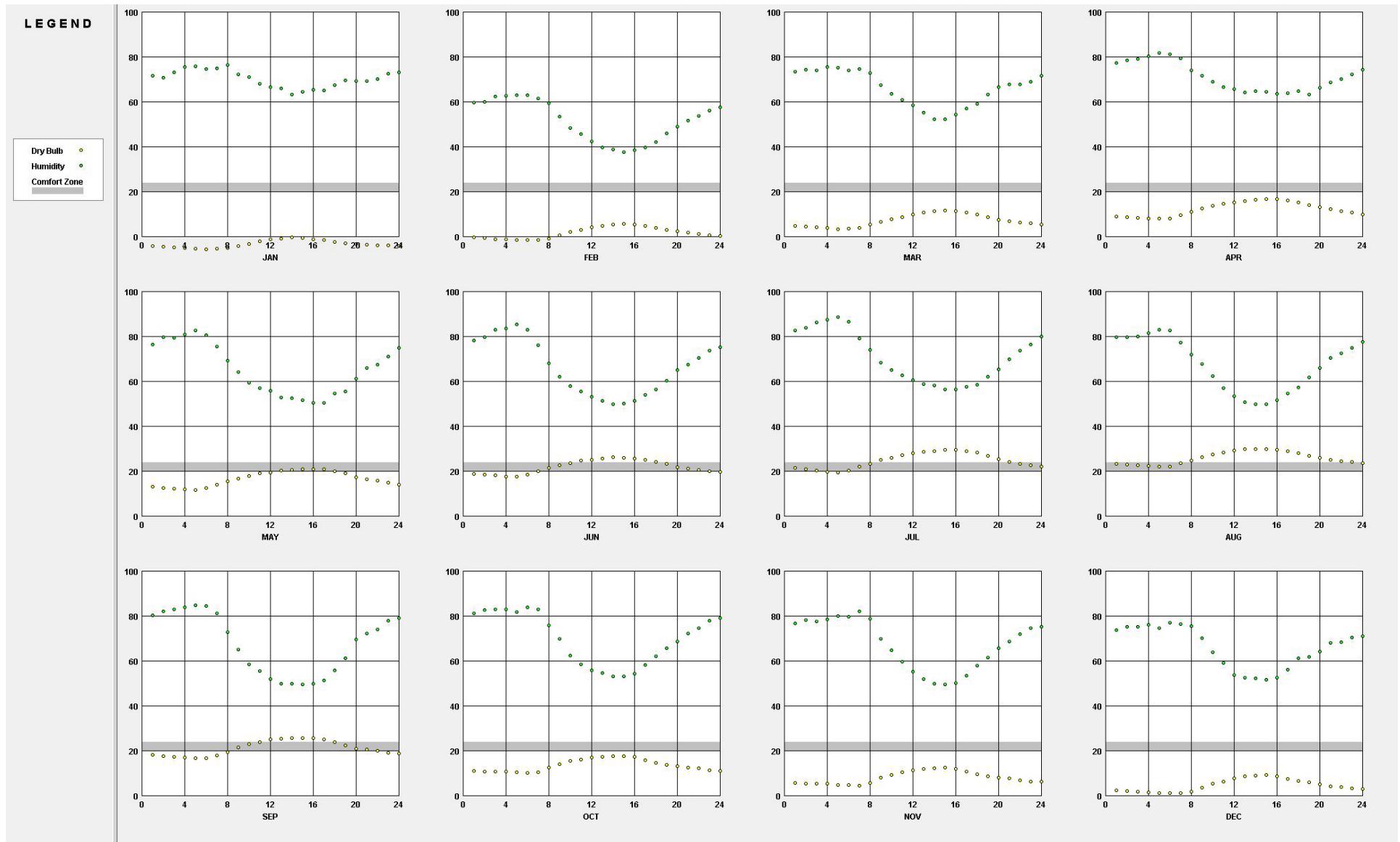
## Sky Cover Range



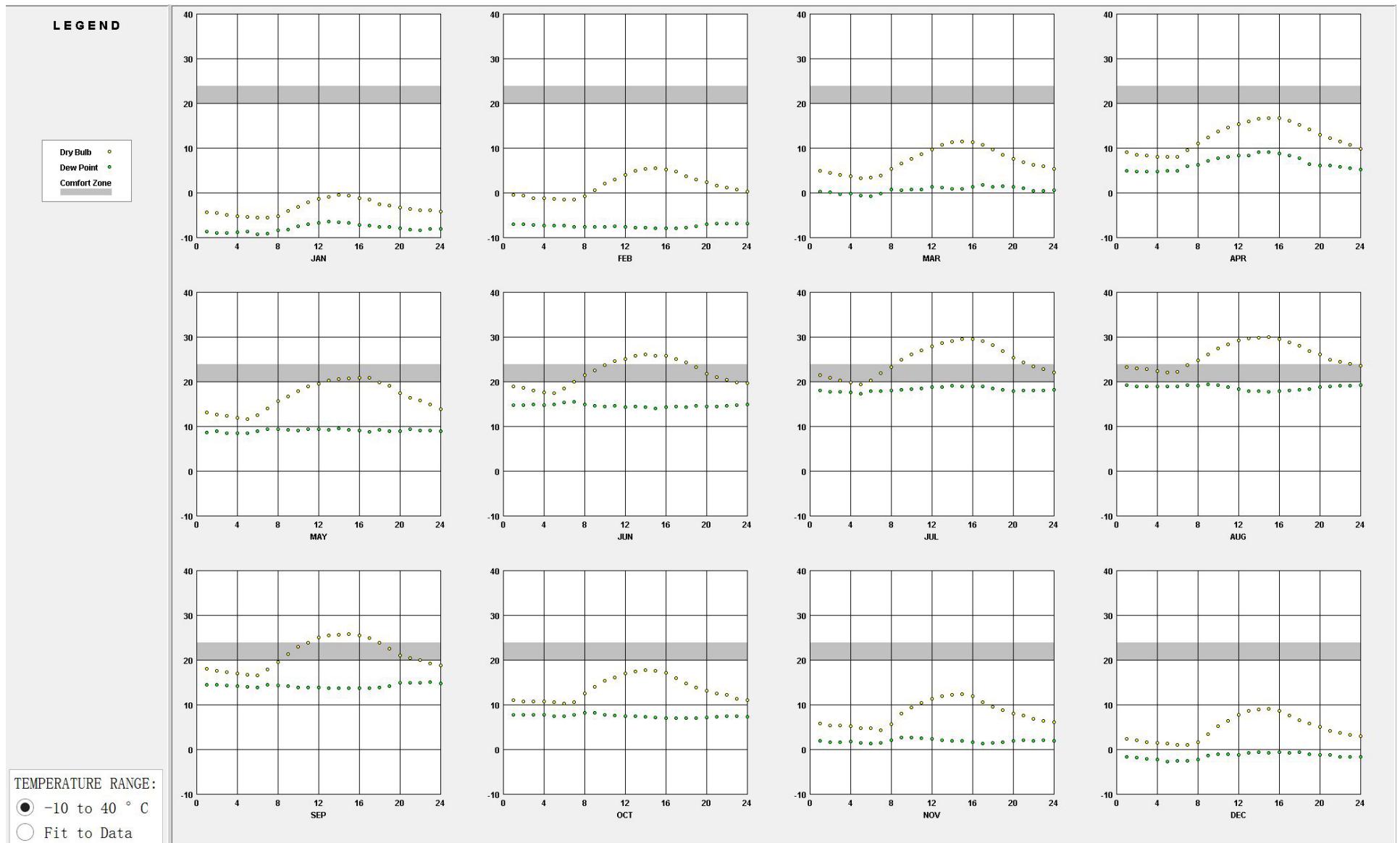
# Wind Velocity Range



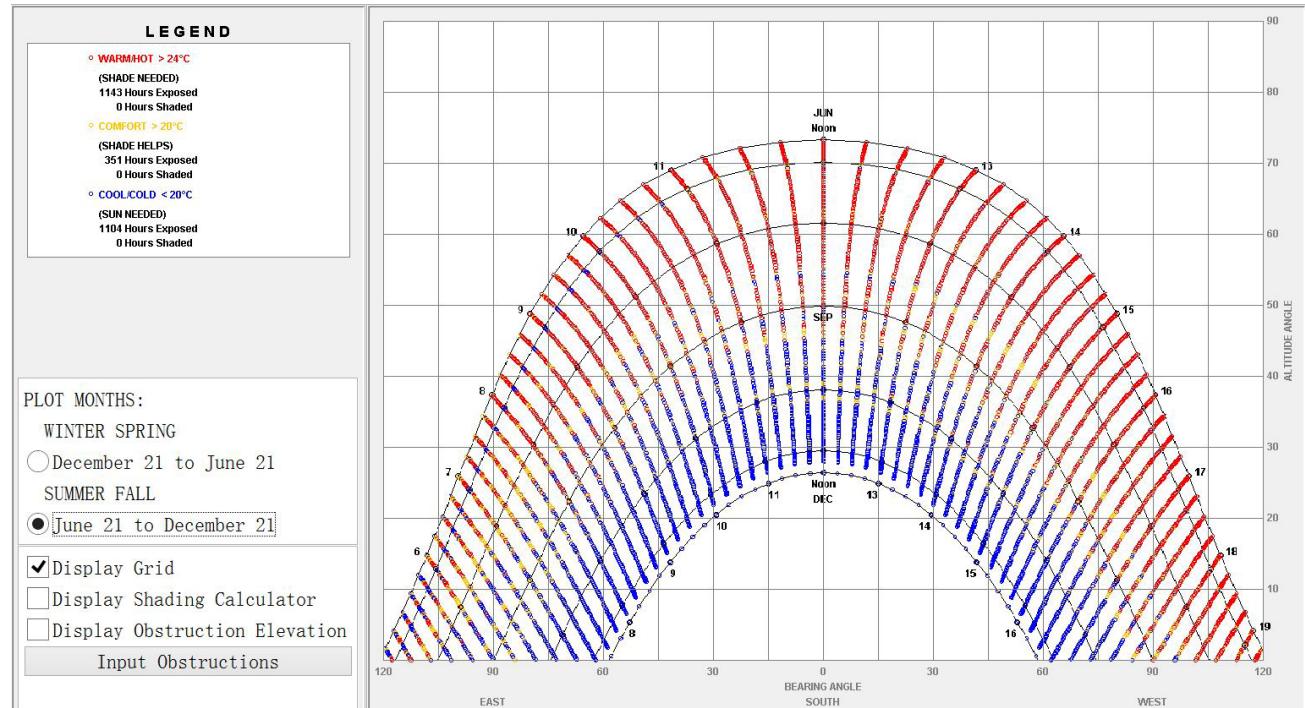
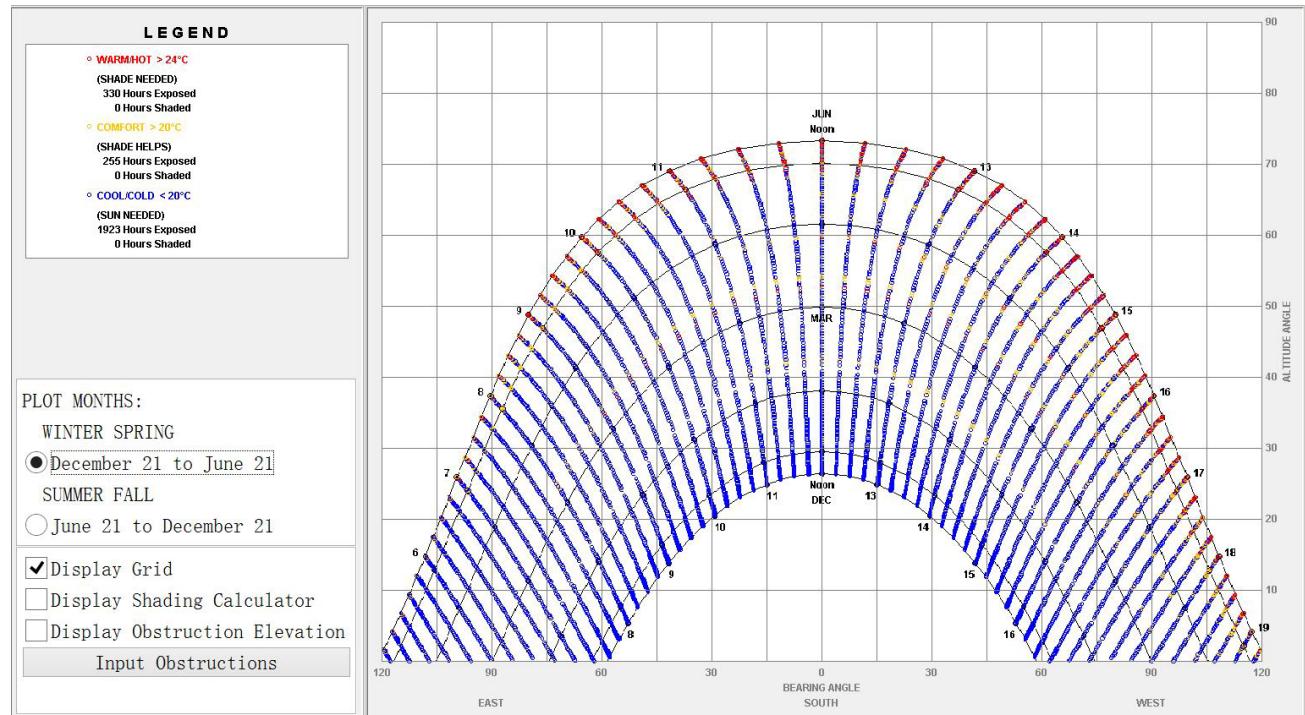
# Dry Bulb x Relative Humidity



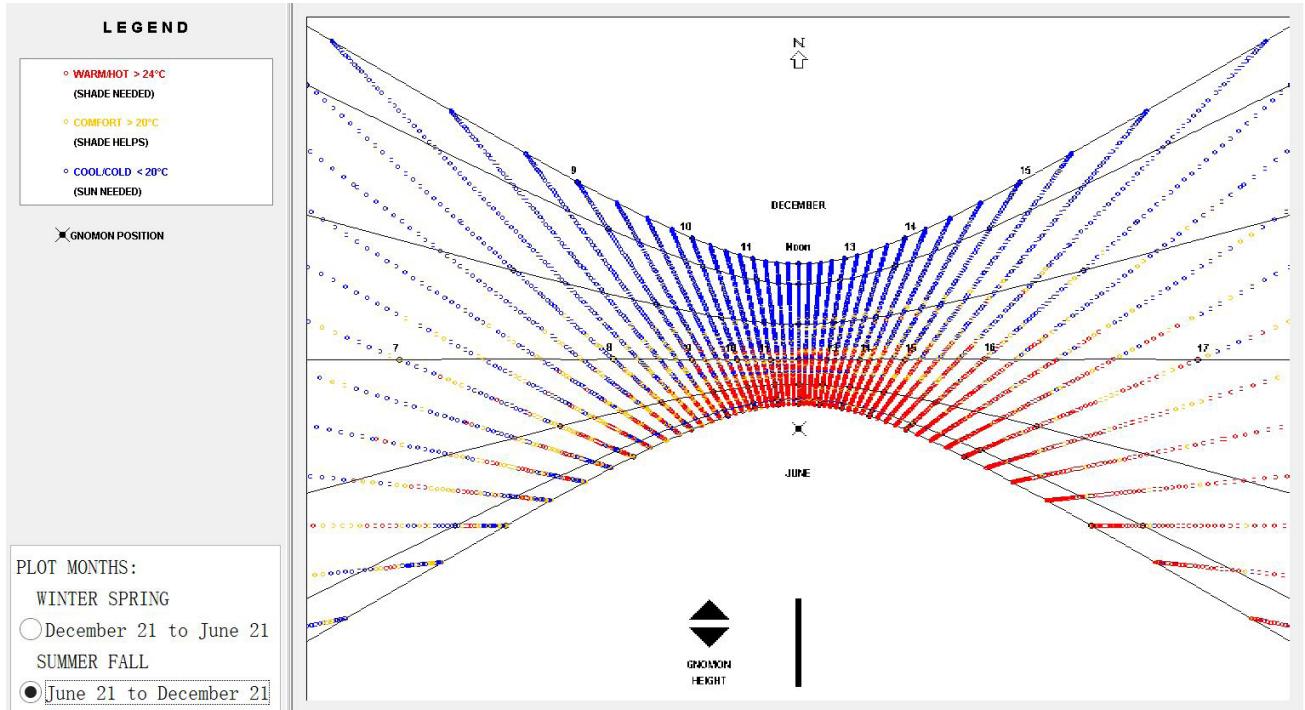
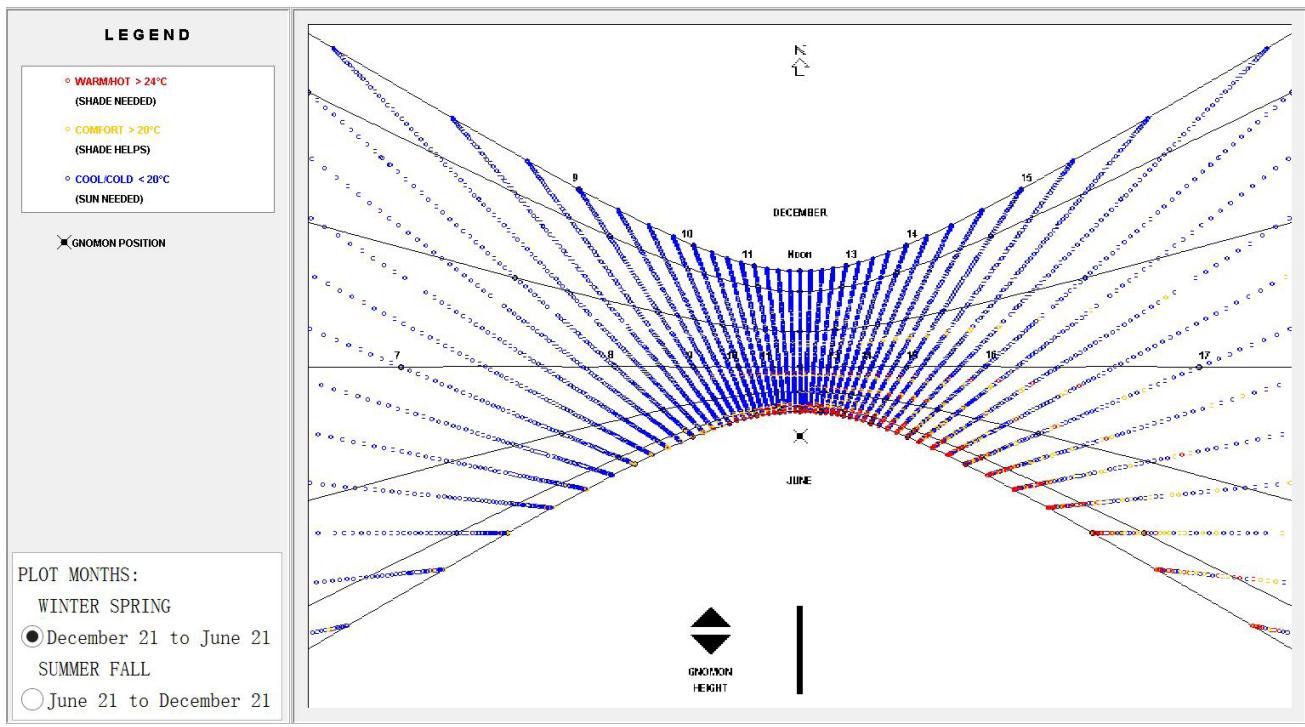
# Dry Bulb x Dew Point



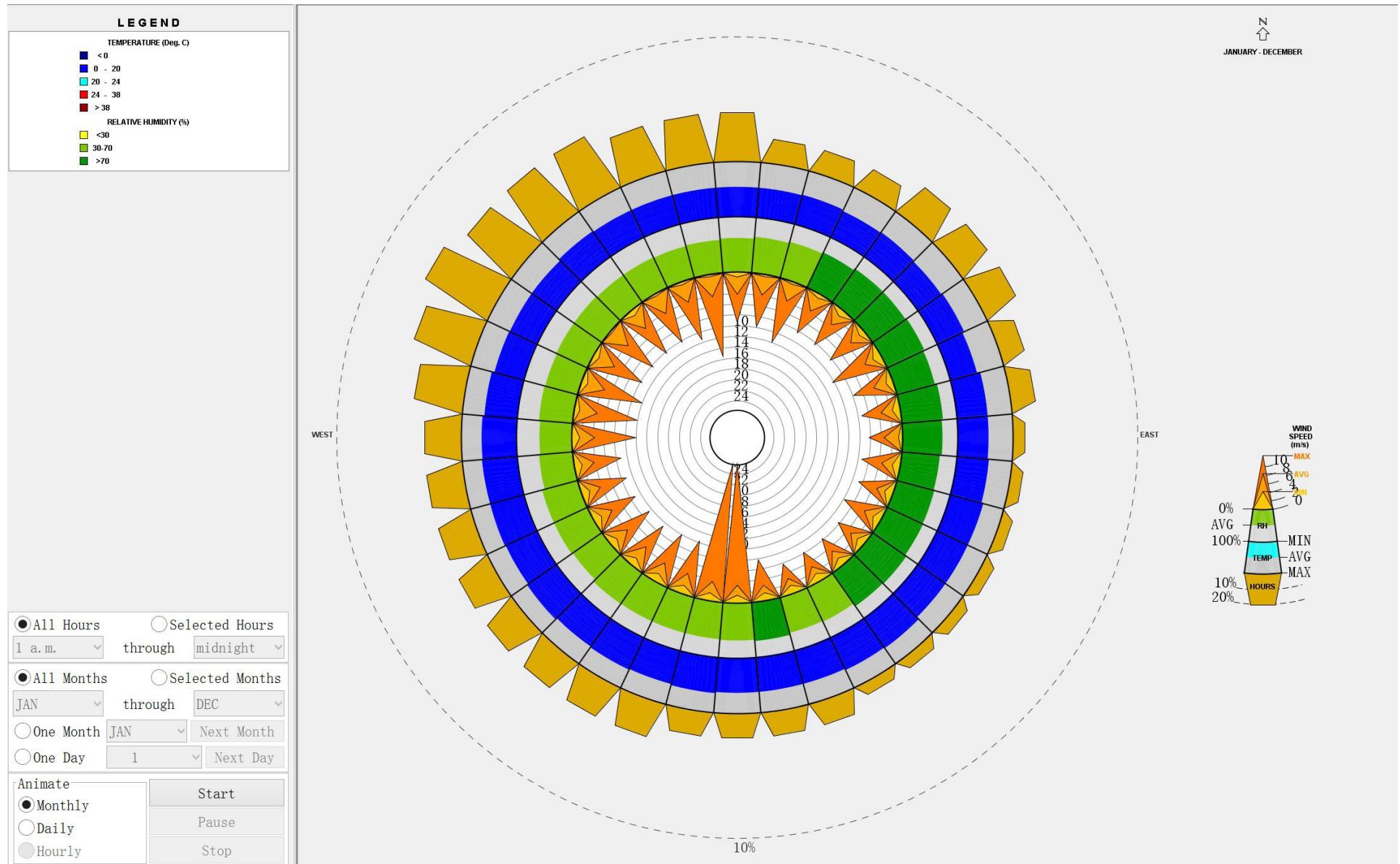
# Sun Shading Chart



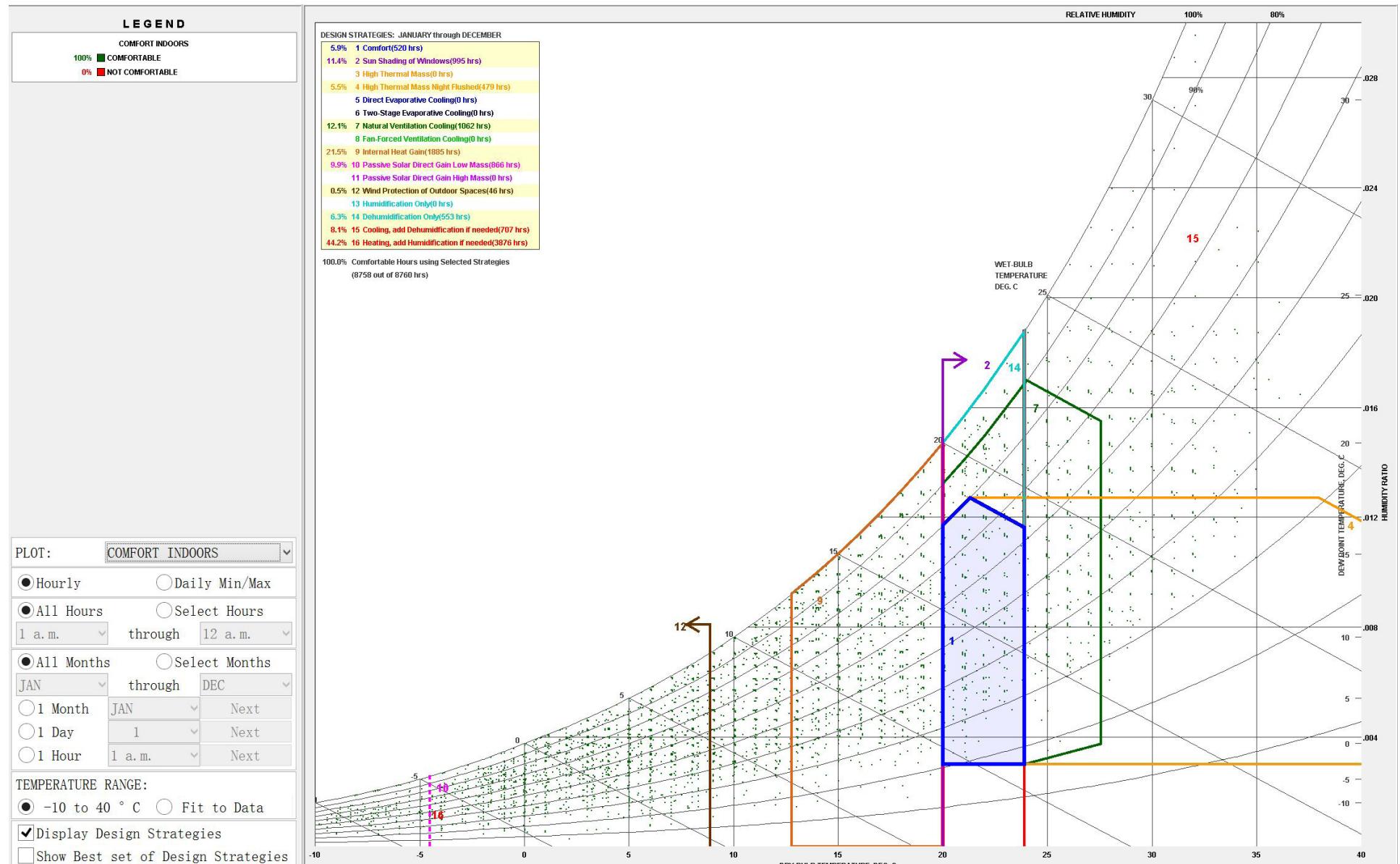
# Sun Chart



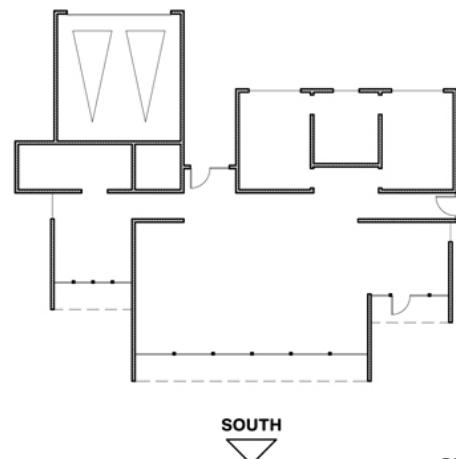
# Wind Wheel



# Psychrometric Chart



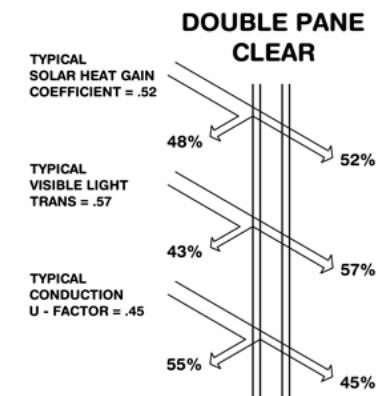
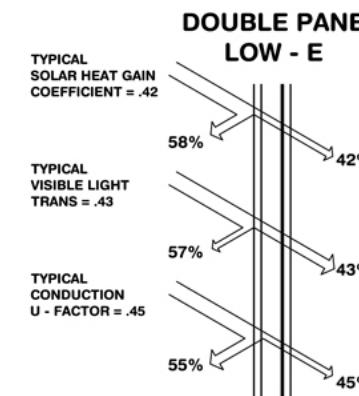
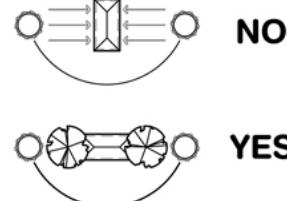
## Passive Design Strategies



1

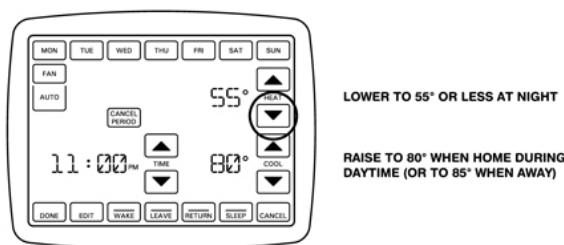
ORIENT BROAD BUILDING SURFACES AWAY FROM THE HOT WESTERN SUN. ONLY NORTHERN AND SOUTHERN EXPOSURES ARE EASILY SHADED

For passive solar heating face most of the glass area south to maximize winter sun exposure, but design overhangs to fully shade in summer

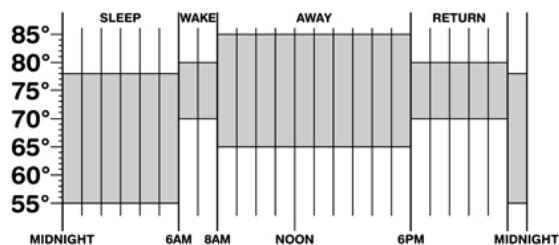


2

Provide double pane high performance glazing (Low-E) on west, north, and east, but clear on south for maximum passive solar gain



3



Lower the indoor comfort temperature at night to reduce heating energy consumption (lower thermostat heating setback) (see comfort low criteria)