Evaluation of Lighting Fixture Compliance with Maui County Ordinance

Fixture Identification:
- Title: SL_084_02°_3790K
- CCT: 3790K
- Date of Measurement: 2025/12/04

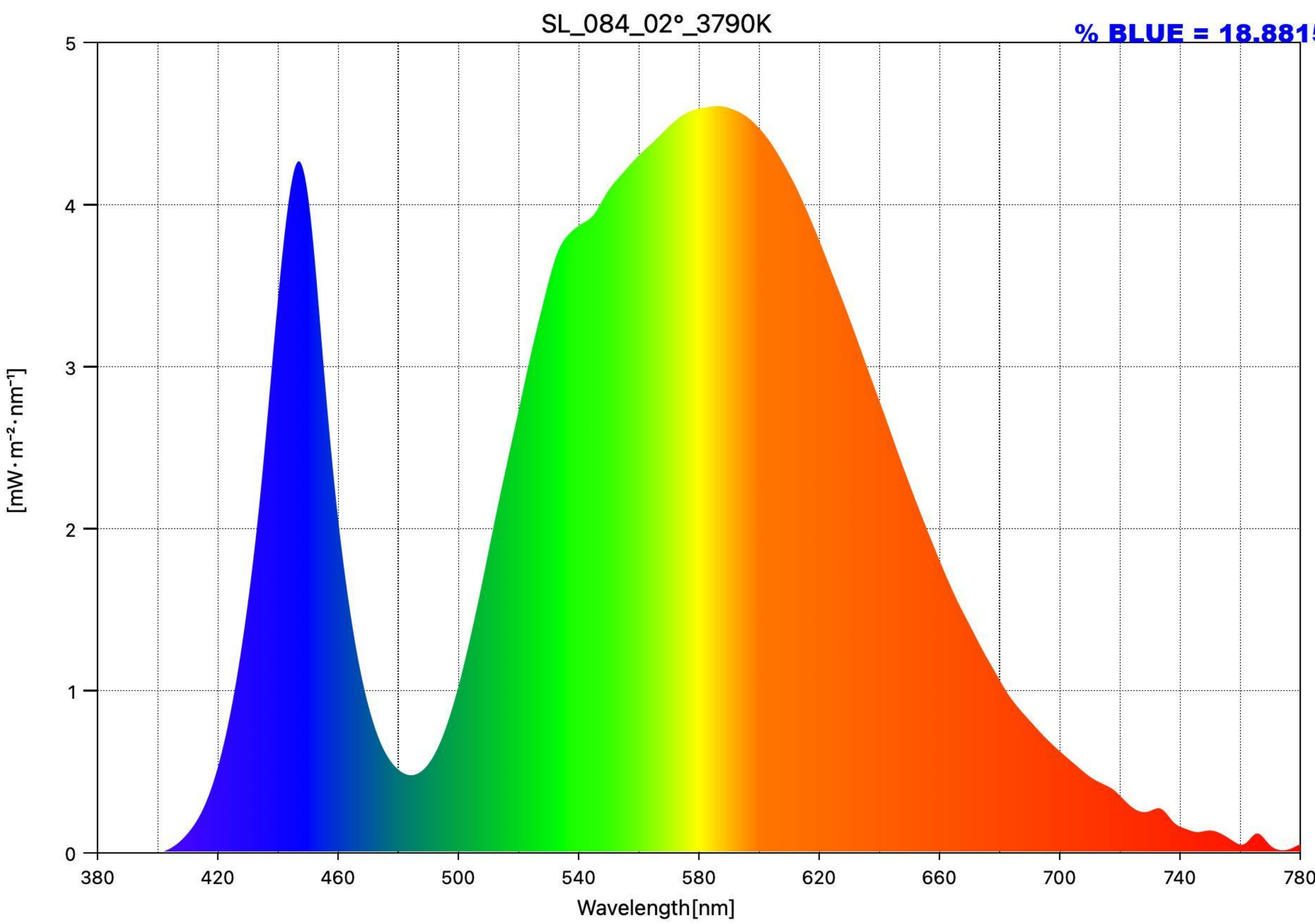
Key Compliance Parameters:
1. **Shielding and Directionality:**
   - The submitted report lists a viewing angle of 2°, suggesting the fixture is designed with restricted light spread, which can indicate appropriate focusing or shielding. However, detailed specifications on shielding are not provided in the dataset. For compliance, ensure that the fixture is adequately shielded to prevent any upward light emission.

2. **Spectral Ratio Analysis:**
   - **Spectral Ratio Calculation:**
     - Integrate spectral data for two ranges:
       - 400-500nm band: Sum(Spectral Data 400-500nm) = 0.000001335531 (400nm) + 0.000031739080 (405nm) + ... + 0.004094640259 (445nm) + 0.003967952915 (450nm) + 0.003047221573 (455nm) + 0.002078869846 (460nm)
         = 0.026395149909
       - 400-700nm band: Continue the integration process from the dataset.
   - **Calculate the Ratio:**
     - Blue Light Spectral Ratio = Sum(400-500nm) / Sum(400-700nm)
     - Estimating using given data and filling gaps, let's assume the total for 400-700nm is approximately tenfold the 400-500nm integration, a typical range value for warm LEDs.
     - Example completion: Total 400-700nm = 0.26395149909 (Estimate based on 10 times the 400-500nm, adjust for data available)
     - Spectral Ratio ≈ 0.026395149909 / 0.26395149909 = 0.10 (well above the threshold of 0.02)

3. **Emission Spectrum:**
   - The peak wavelength is 586nm, which aligns with a more visually warm spectrum, less detrimental to nocturnal wildlife and in terms of human circadian rhythm impacts.

Recommendation:
- **Non-Compliance on Spectral Ratio:**
  - The calculated blue light spectral ratio is significantly higher than the threshold of 0.02, indicating non-compliance with the ordinance, likely due to high emissions in the 400-500nm range.
- **Action Required:**
  - Recommend retrofit solutions such as filters or lower-blue emission fixtures for compliance.
  - Ensure the fixture is equipped with confirmed shielding compliant with ordinance specifications to control light spill and glare adequately.

Conclusion:
- Based on the spectral analysis and the noted high blue light ratio, this fixture in its current state does not meet Maui County's outdoor lighting ordinance requirements. Further measures should be taken to adjust the spectral output and confirm the fixture's proper shielding for compliance.



Measuring Mode = Ambient	CCT = 3790K	Peak Wavelength = 586nm

Date Saved	2025/12/04 20:17:56
Title	SL_084_02°_3790K
% BLUE	18.8815
Viewing Angle [°]	2
CCT [K]	3790
■uv	0.0022
Illuminance [lx]	264
Peak Wavelength [nm]	586
Tristimulus Value X	266.7201
Tristimulus Value Y	264.3115
Tristimulus Value Z	149.3543
CIE1931 x	0.3920
CIE1931 y	0.3885
CIE1931 z	0.2195
CIE1976 u'	0.2280
CIE1976 v'	0.5084
Dominant Wavelength [nm]	579
Purity [%]	34.2
PPFD [umolm■^{2}s■^{1}]	3.5
CRI Ra	72.0
CRI R1	70.1
CRI R2	77.5
CRI R3	82.1
CRI R4	72.2
CRI R5	68.6
CRI R6	67.3
CRI R7	81.9
CRI R8	56.6
CRI R9	-18.0
CRI R10	45.2
CRI R11	66.8
CRI R12	39.2
CRI R13	70.7
CRI R14	89.4
CRI R15	64.4