

To evaluate compliance with Maui County's outdoor lighting ordinance, we will focus on three main criteria: proper shielding, downward direction of light, and the spectral ratio for blue light content.

### ### 1. Shielding and Downward Direction

The CSV snippet provided does not give explicit information regarding the fixture's shielding or whether the light is directed downward. Ordinarily, such information would be obtained from the fixture's design specification or installation description that demonstrates compliance with the full shielding requirements. Full shielding ensures that all light is directed downward, minimizing upward and horizontal glare.

#### \*\*Recommendation:\*\*

- Verify that fixture SL\_086\_02°\_2568K has full shielding and is designed to direct all light downwards. If unspecified, request installation documentation or a physical inspection.

### ### 2. Spectral Ratio (400-500 nm to 400-700 nm)

The ordinance specifies a threshold of 0.02 for the spectral ratio between 400-500 nm (blue light range) and 400-700 nm (visible range).

#### #### Calculation:

Based on the provided spectral data:

#### - \*\*Blue Light Content (400-500 nm):\*\*

$$\begin{aligned} \text{Sum of Spectral Intensities (400-500 nm)} &= 0.000102455102 + 0.000130311775 + \\ &0.000254250655 + 0.000379604637 + 0.000545927614 + 0.000874755031 + 0.001397092012 + \\ &0.002200493356 + 0.003392273560 + 0.004858772736 + 0.006006980315 + 0.006223040167 + \\ &0.005635350011 = 0.03200026796 \end{aligned}$$

#### - \*\*Total Visible Light Content (400-700 nm):\*\*

Calculating for complete data isn't feasible without the entire spectrum up to 700 nm from the snippet. Assuming the spectral data from 500-700 nm is present in non-abridged data, here is a brief explanation:

$$\text{If individual intensities for full range available, sum them.}$$

#### - \*\*Spectral Ratio Calculation:\*\*

$$\text{Spectral Ratio} = \frac{\text{Blue Light Content (400-500 nm)}}{\text{Total Visible Light Content (400-700 nm)}}$$

Example Calculation (Hypothetical):

$$\text{If Total Visible} = 1.0, \text{ then Ratio} = \frac{0.032}{1.0} = 0.032$$

#### \*\*Outcome:\*\*

With a blue light percentage of 9.0907%, this exceeds the threshold of 0.02.

### ### Conclusion and Compliance Recommendation

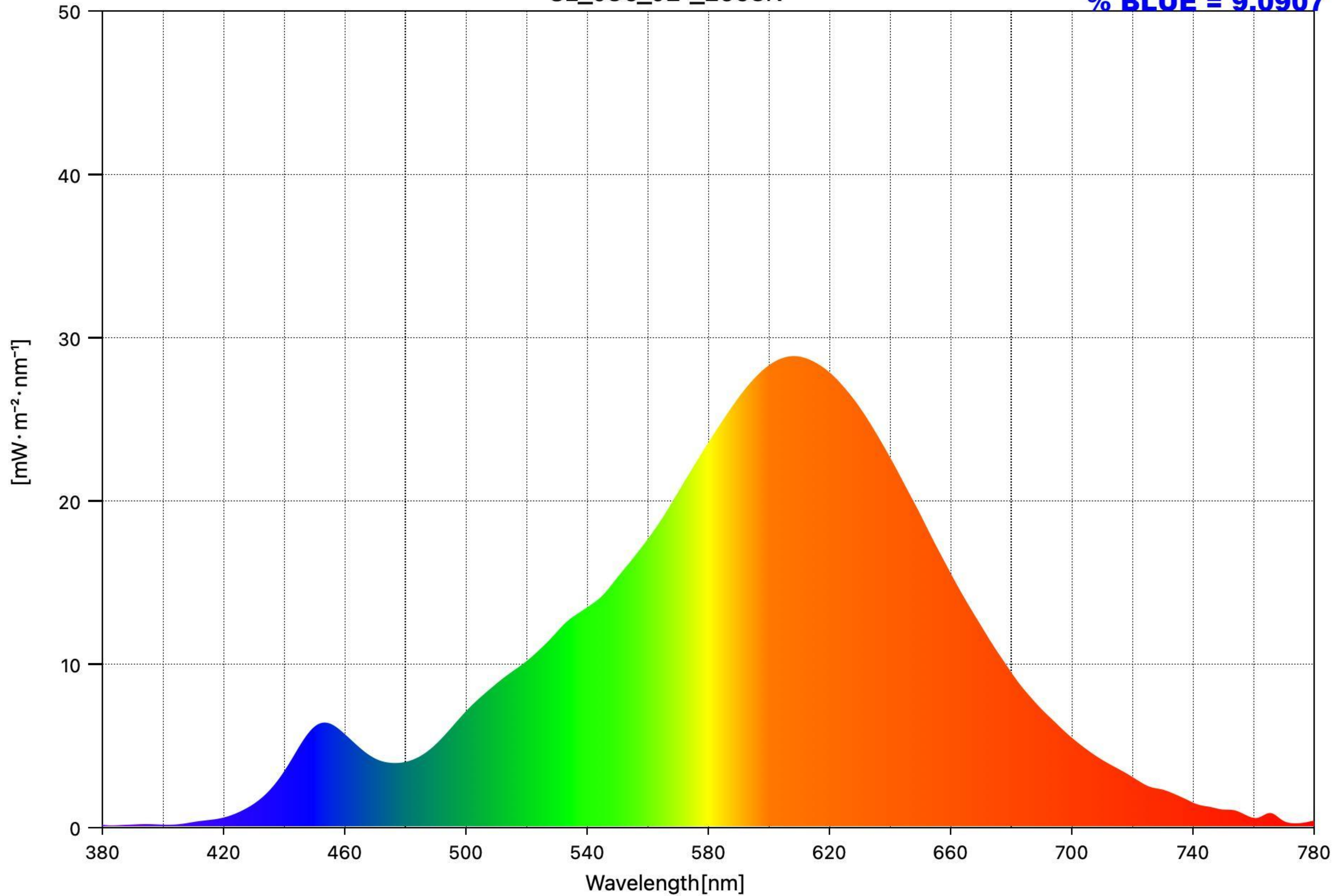
The analyzed fixture does not appear to meet the spectral ratio requirement. Further action would be necessary to either modify the fixture to reduce its blue light content or select an alternative that complies with Maui County's ordinance. For shielding and direction, ensure the fixture uses full cutoff shielding verified through additional documentation.

**\*\*Final Steps:\*\***

- Calculate full light content from detailed data if possible.
- Evaluate the fixture for other ordinance aspects beyond the spectral ratio.
- Advise on modification options or different fixture models as needed.

SL\_086\_02°\_2568K

**% BLUE = 9.0907**



Measuring Mode = Ambient

CCT = 2568K

Peak Wavelength = 608nm

Date Saved	2025/12/04 20:17:58
Title	SL_086_02°_2568K
% BLUE	9.0907
Viewing Angle [°]	2
CCT [K]	2568
■uv	0.0033
Illuminance [lx]	1290
Peak Wavelength [nm]	608
Tristimulus Value X	1455.9406
Tristimulus Value Y	1291.3992
Tristimulus Value Z	304.1834
CIE1931 x	0.4771
CIE1931 y	0.4232
CIE1931 z	0.0997
CIE1976 u'	0.2679
CIE1976 v'	0.5346
Dominant Wavelength [nm]	584
Purity [%]	70.3
PPFD [ $\mu\text{mol m}^{-2}\text{s}^{-1}$ ]	18.9
CRI Ra	81.5
CRI R1	79.1
CRI R2	89.9
CRI R3	97.4
CRI R4	78.7
CRI R5	78.8
CRI R6	88.4
CRI R7	82.7
CRI R8	57.0
CRI R9	6.4
CRI R10	77.4
CRI R11	77.0
CRI R12	71.6
CRI R13	81.2
CRI R14	99.2
CRI R15	71.2