Maui County Outdoor Lighting Compliance Evaluation

Fixture Title: SL_092_02°_3095K
Date Saved: 2025/12/04

Compliance Criteria:
1. **Shielding and Downward Direction:**
   - While the CSV does not explicitly provide data regarding shielding and the downward direction, compliance generally requires fixtures to be fully shielded and directed downward to minimize light pollution and stray light. This aspect would need visual inspection or manufacturer certification for verification.

2. **Spectral Ratio 400-500nm to 400-700nm Analysis:**
   - *Spectral Power Integration (400-500nm):*
     - Given Spectral Data from 400nm to 460nm, compute the sum:
       0.000002843796 + 0.000013022853 + 0.000029205519 + 0.000057375757 + 0.000099992227 + 0.000162041382 + 0.000254176615 + 0.000380634447 + 0.000508434721 + 0.000571307202 = 0.002078730119

   - *Total Spectral Power (400-700nm):*
     - While the data only extends to 460nm, assuming similar continuation, we focus on verifying spectral compliance within available data.

   - *Spectral Ratio Calculation:*
     - Ratio (400-500nm to 400-700nm): For threshold compliance, a more extended spectral profile is necessary beyond 460nm estimation. Given significant blue spectral data, if extended similarly, the ratio may exceed the threshold.
     - **% BLUE from data:** 14.6121% indicates significant blue content, subjecting it to scrutiny against the threshold of 0.02.

Key Supporting Numbers:
- Correlated Color Temperature (CCT): 3095K
- Dominant Wavelength: 582nm
- % BLUE: 14.6121%
- Calculated Spectral Power (400-460nm): 0.002078730119

Compliance Recommendation:
The given spectral data and significant blue content percentage present potential non-compliance with the spectral ratio threshold of 0.02, aimed at protecting the nocturnal environment, especially considering Maui's sensitive ecosystems and dark skies initiatives.

Action:
To achieve full compliance, the following steps are recommended:
1. Validate full shielding and downward direction via visual inspection or manufacturer certification.
2. Obtain complete spectral data extending to 700nm for accurate ratio analysis.
3. If necessary, consider alternative fixtures with lower blue light emission or incorporate adaptive controls to limit blue spectrum during critical nighttime hours.

This review emphasizes preliminary non-conformance due to high blue spectrum presence, pending further comprehensive spectral data validation.

SL_092_02°_3095K

% BLUE = 14.6121

[mW · m⁻² · nm⁻¹]

2.0
1.6
1.2
0.8
0.4
0.0

380 420 460 500 540 580 620 660 700 740 780

Wavelength[nm]

Measuring Mode = Ambient	CCT = 3095K	Peak Wavelength = 601nm

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Title	SL_092_02°_3095K
% BLUE	14.6121
Viewing Angle [°]	2
CCT [K]	3095
■uv	0.0016
Illuminance [lx]	59.1
Peak Wavelength [nm]	601
Tristimulus Value X	62.8617
Tristimulus Value Y	59.0762
Tristimulus Value Z	23.3937
CIE1931 x	0.4325
CIE1931 y	0.4065
CIE1931 z	0.1610
CIE1976 u'	0.2467
CIE1976 v'	0.5217
Dominant Wavelength [nm]	582
Purity [%]	51.8
PPFD [umolm■^{2}s■^{1}]	0.8
CRI Ra	81.2
CRI R1	79.2
CRI R2	89.3
CRI R3	96.7
CRI R4	78.7
CRI R5	78.7
CRI R6	86.3
CRI R7	83.0
CRI R8	57.3
CRI R9	0.3
CRI R10	74.5
CRI R11	76.9
CRI R12	64.2
CRI R13	81.6
CRI R14	98.4
CRI R15	71.4