# TEST REPORT

For

# P.Q.L., Inc.

2285 WARD AVE.SIMI VALLEY, CA 93065 United States

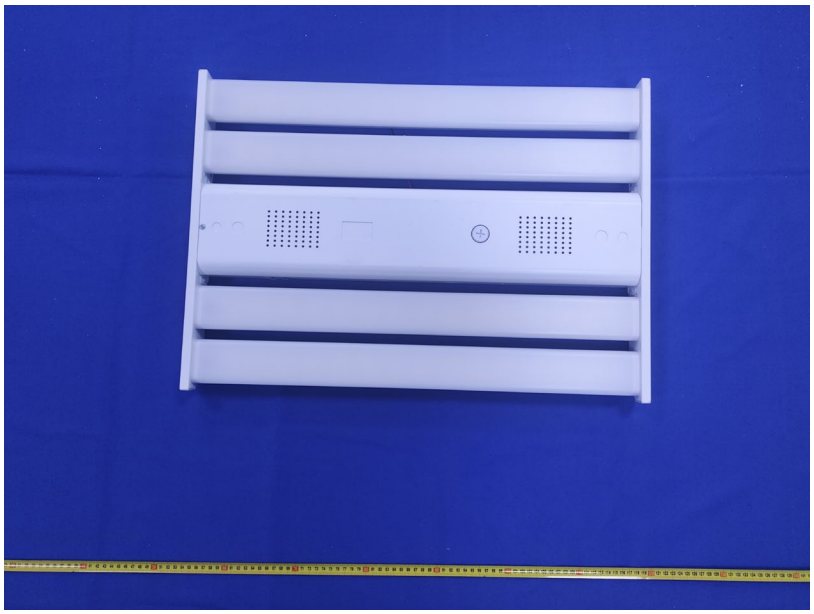
| | | |
|---|---|---|
| **Model Number:** | AY422P1753CUW | |
| **Report Type:** | Electrical, Photometric and ISTMT tests according to the following standards and show the compliance to DLC Program Technical Requirements for LED Lighting – SSL V6.0 & LUNA V2.0 | |
| **Standards:** | ANSI/IES LM-79-19: Approved Method: Optical and Electrical Measurements of Solid-State Lighting Products<br>ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting<br>ANSI/UL 1598-2008: Standard for Safety of Luminaires<br>*CIE 190:2010 Calculation and presentation of unified glare rating tables for indoor lighting luminaires (This method is not in NVLAP accreditation scope)<br>*IES TM-30-18: IES Method for Evaluating Light Source Color Rendition (This method is not in NVLAP accreditation scope) | |
| **Reviewed By:** | Hill Liu | Hill Liu |
| **Report Number:** | 2602P26481E-EE | |
| **Sample Size:** | One test sample was in good condition and received on 2026-01-13, and used for testing. The Product is feld-adjustable Color Temperature and feld-adjustable light output, all tests are conducted at the maximum light output and the least efficient white light-setting. | |
| **Test Date:** | 2026-01-19 to 2026-01-30 | |
| **Report Date:** | 2026-03-10 | |
| **Approved by:** | Blake Zhang / EE Engineer | Blake zhang |
| **Prepared By:** | Bay Area Compliance Laboratories Corp. (Shenzhen)<br>5F (B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Road, Futian Free Trade Zone<br>Shenzhen, 518038, China.<br>Tel: +86-755-33320018<br>Fax: +86-755-33320008 | |
| **Test Location 1:** | Test facility was located at No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China. | |
| **Test Location 2:** | Test facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China. | |

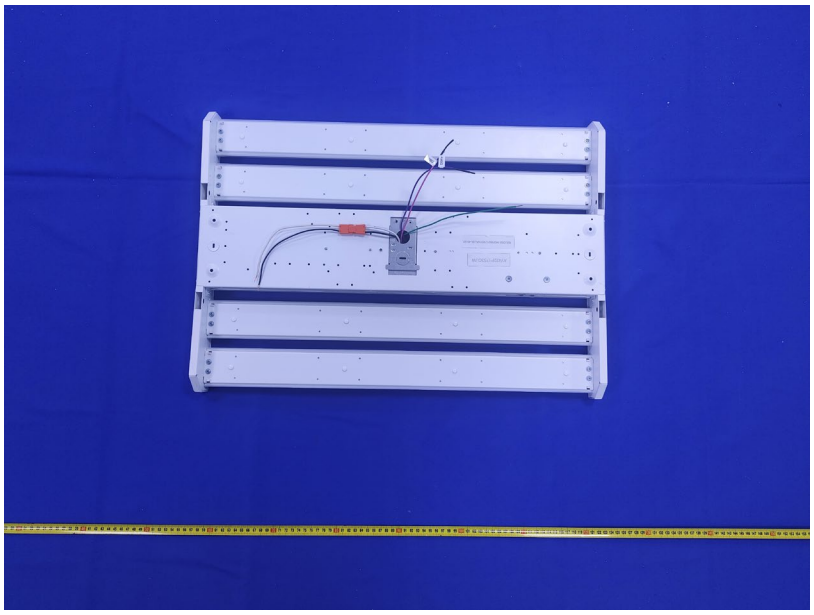
# 1. Product Description and Rating#

| Test Model | Primary Use | Rated Voltage | Power(W) | CCT(K) | LED Model | LED manufacturer | Driver Model | Test Item |
|---|---|---|---|---|---|---|---|---|
| AY422P1753CUW | High-Bay Luminaires for Commercial and Industrial Buildings | 120-277VAC 50/60Hz | 140/160/175 | 3500/4000/5000 | L128-xx80RC3500xxx | Lumileds Holding B.V. | BQ-200B2-260-AD | All |

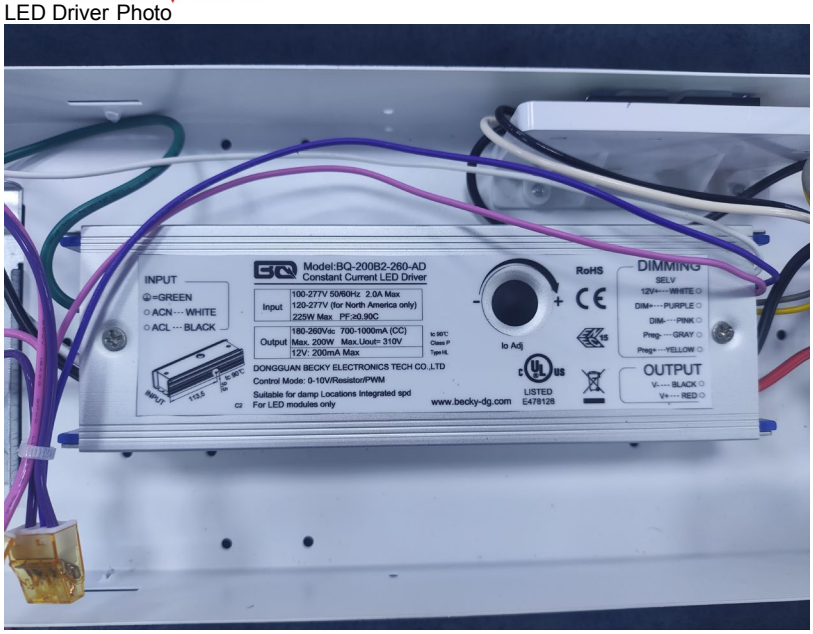
| Test Model | Power(W) | CCT(K) | Light Output (lm) | Luminous Efficacy (lm/W) |
|---|---|---|---|---|
| AY422P1753CUW | 140 | 3500 | 21560 | 154 |
| | | 4000 | 23240 | 166 |
| | | 5000 | 21840 | 156 |
| | 160 | 3500 | 24480 | 153 |
| | | 4000 | 26400 | 165 |
| | | 5000 | 24800 | 155 |
| | 175 | 3500 | 26600 | 152 |
| | | 4000 | 28700 | 164 |
| | | 5000 | 26950 | 154 |

## 2. Product Photo





LED Driver Photo



## 3. Test Result

Test Model: AY422P1753CUW
Test CCT: 3500K (Input Control Signal Applied: 0%)
Test Wattage: 175W

Test Condition: Method: Integrating Sphere System; Orientation: Downward; Test Voltage: 120.0V 60Hz;

| Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|
| Light Output(lm) ΔΔ | 26032 | ≥10000 | ≥9000 | Pass |
| Power(W) ΔΔ | 168.4 | None. | None. | N/A |
| Total Efficacy(lm/W) ΔΔ | 154.57 | ≥150 | ≥145.5 | Pass |
| CCT(K) ΔΔ | 3518 | 3220~3710 | No tolerances | Pass |
| Duv ΔΔ | -0.00015 | -0.0055~0.0065 | No tolerances | Pass |
| IES Rf ΔΔ | 84 | 70 | 69 | Pass |
| IES Rg ΔΔ | 94 | 89 | 88 | |
| IES Rcs,h1 ΔΔ | -12% | -18%~23% | -19%~24% | |
| Ra ΔΔ | 83.3 | ≥70 | ≥69 | |
| R9 ΔΔ | 11 | ≥-40 | ≥-41 | |

Test Condition: Method: Goniophotometer; Orientation: Downward; Test Voltage: 120.1V 60Hz;

| Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|
| Light Output(lm) Δ | 26042.6 | ≥10000 | ≥9000 | Pass |
| Power(W) Δ | 168.44 | None. | None. | N/A |
| Total Efficacy(lm/W) Δ | 154.61 | ≥150 | ≥145.5 | Pass |
| Zonal Lumen Distribution(20-50°) Δ | 46.55% | 20-50°≥30% | 20-50°≥20% | Pass |

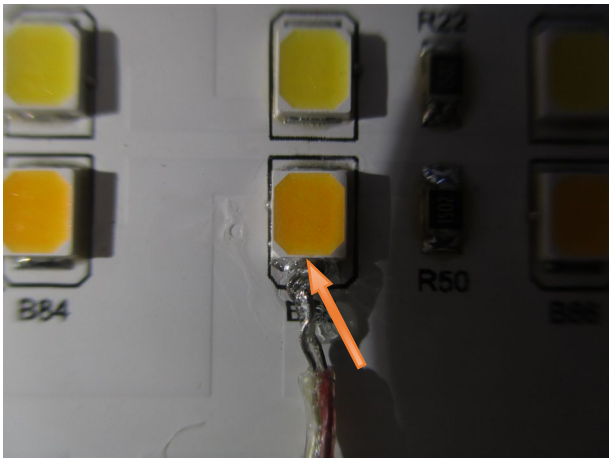
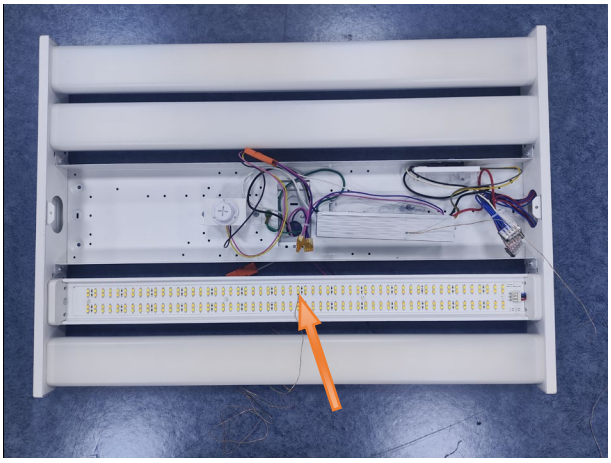
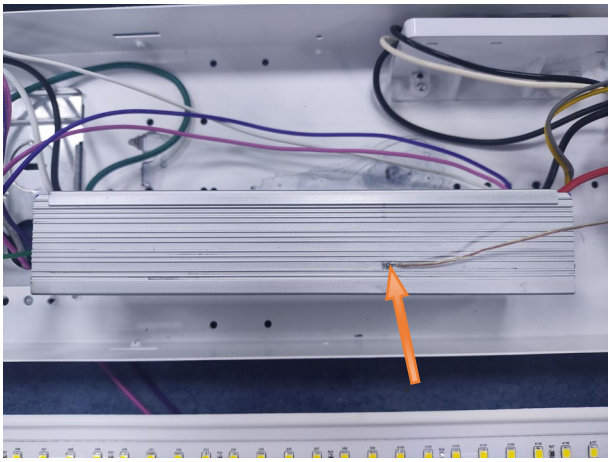
Test Condition: Test Voltage: 120.0V 60Hz;

| Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|
| $TMP_{LED}$(°C) ΔΔ | 61.1 | ≤105 | With tolerance of ⩽ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance | Pass |
| $TMP_c$(°C) ΔΔ | 50.2 | ≤85 | With tolerance of ⩽ 1.1°C or 0.4%, whichever is greater due to thermocouple tolerance | Pass |
| Drive Current/Individual LED source(mA) ΔΔ | 43.3 | ≤100 | With +5% Tolerence | Pass |
| $L_{70}$ Lumen Maintenance Life (Hours) ΔΔ | >102000 | ⩾50000 | None. | Pass |
| $L_{90}$ Lumen Maintenance Life (Hours) ΔΔ | 51000 | ≥36000 | None. | Pass |
| Color Maintenance ΔΔ | 0.0015 | ≤0.007 | ≤0.0074 | Pass |

Test Condition: Method: Integrating THDi、PF Test ; Orientation: Downward;

| Test Voltage | Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|---|
| 120 | Power Factor ΔΔ | 0.9964 | ≥0.9 | ≥0.87 | Pass |
| 120 | THDi ΔΔ | 2.59% | ≤20% | ≤25% | Pass |
| 277 | Power Factor ΔΔ | 0.9465 | ≥0.9 | ≥0.87 | Pass |
| 277 | THDi ΔΔ | 7.49% | ≤20% | ≤25% | Pass |

Note:
1. The test results were measured directly from the test equipment.
2. The DLC requirements were listed according to DLC Program Technical Requirements for LED Lighting – SSL V6.0 & LUNA V2.0
3. The conclusion is only for information. When determining the compliance of the result, tolerances and/or allowances may be applied to the measured value.
4. ΔTest facility was located at No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.
5. ΔΔTest facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

| Test CCT: 3500K (Input Control Signal Applied: 0%) | |
|---|---|
| Temperature measurement point on $TMP_{LED}$ | |
|  |  |
| Driver Case Measurement Point $T_c$ | |
|  | |

[Integrating Sphere System]

## Photometric and Electrical Measurement Result

| Voltage (V) | Frequency (Hz) | Current (A) | Power (W) | Power Factor | Luminous Flux(lm) | Efficacy (lm/W) |
|---|---|---|---|---|---|---|
| 120.0 | 60 | 1.408 | 168.4 | 0.9964 | 26032 | 154.57 |

| Radiant Flux (W) | CCT (K) | Duv | x | y | u' | v' |
|---|---|---|---|---|---|---|
| 79.183 | 3518 | -0.00015 | 0.4042 | 0.3898 | 0.2354 | 0.5107 |

## Color Rendering Index

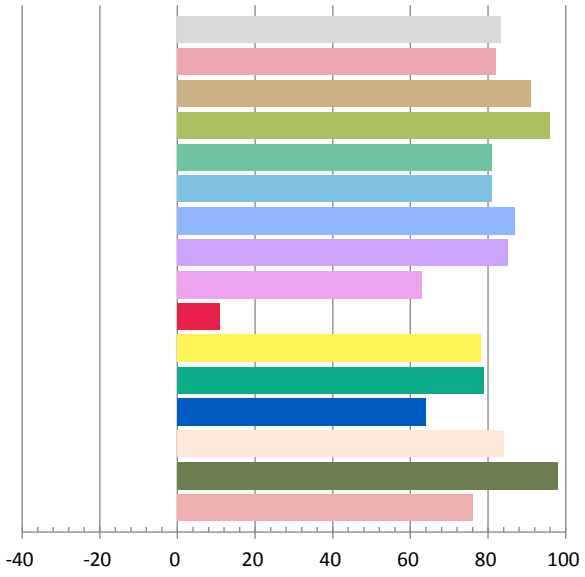
| Ra |
|---|
| **83.3** |

| R1 | R2 | R3 | R4 |
|---|---|---|---|
| 82 | 91 | 96 | 81 |

| R5 | R6 | R7 | R8 |
|---|---|---|---|
| 81 | 87 | 85 | 63 |

| R9 | R10 | R11 | R12 |
|---|---|---|---|
| 11 | 78 | 79 | 64 |

| R13 | R14 | R15 |
|---|---|---|
| 84 | 98 | 76 |



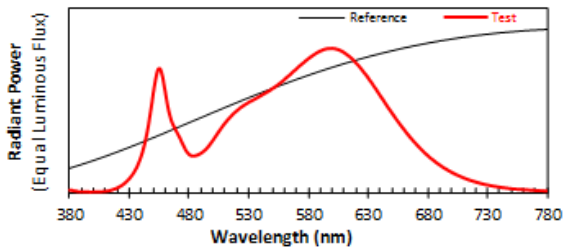
# ANSI/IES TM-30-18 Color Rendition Report

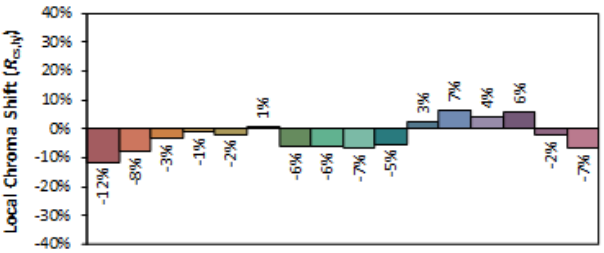
**Source:** User SPD

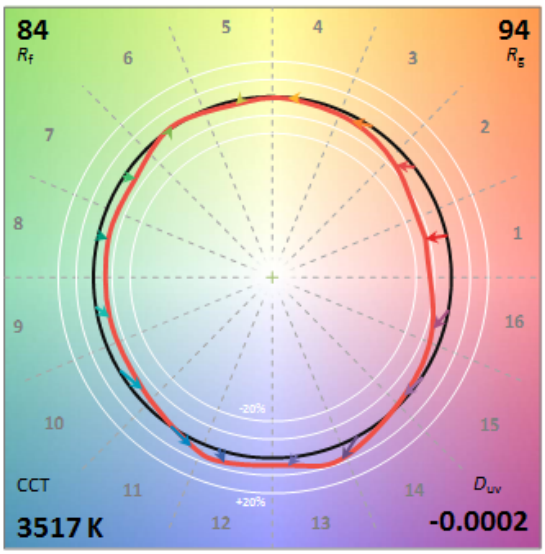
**Manufacturer:** P.Q.L., Inc.

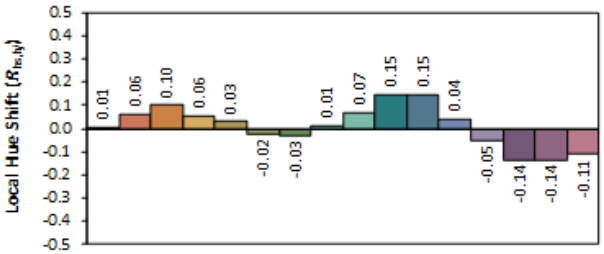
**Date:** 2026/1/19

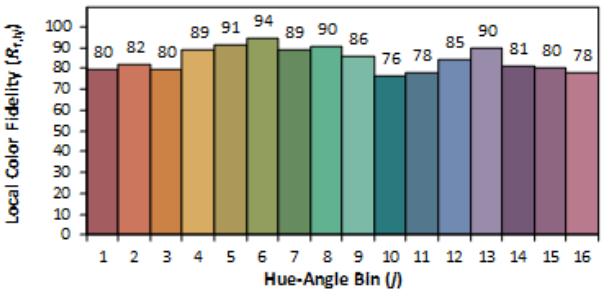
**Model:** AY422P1753CUW

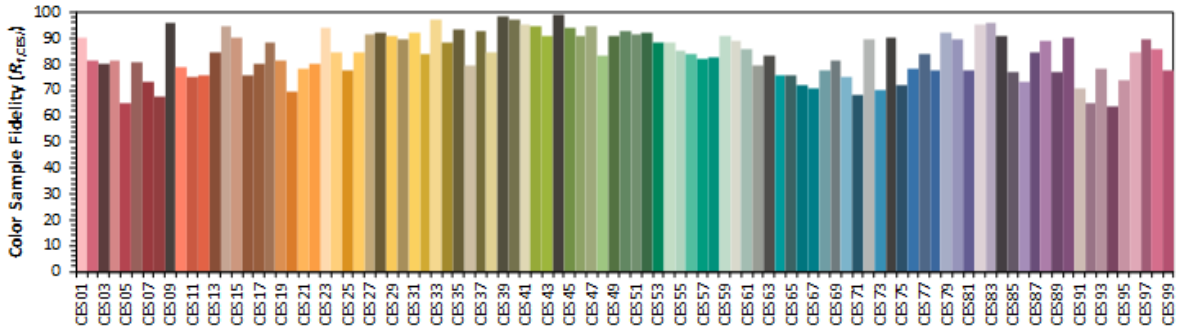



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

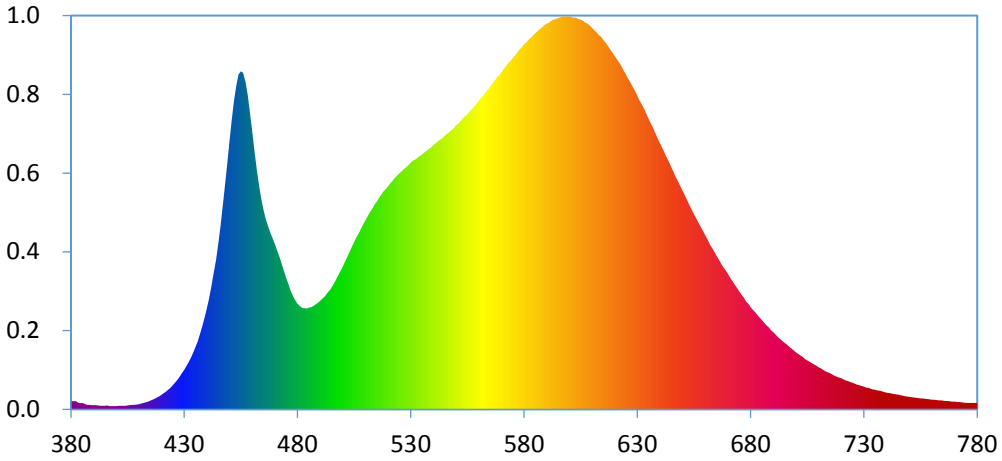
| | |
|---|---|
| $x$ | **0.4042** |
| $y$ | **0.3897** |
| $u'$ | **0.2354** |
| $v'$ | **0.5107** |

CIE 13.3-1995 (CRI)

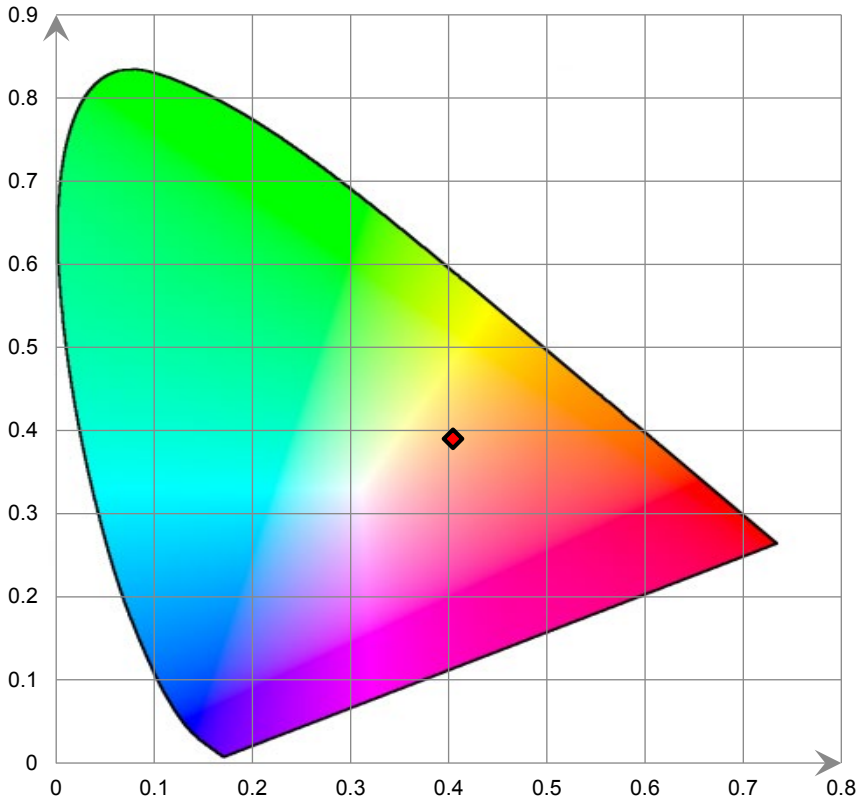
| | |
|---|---|
| $R_a$ | 83 |
| $R_9$ | 11 |

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

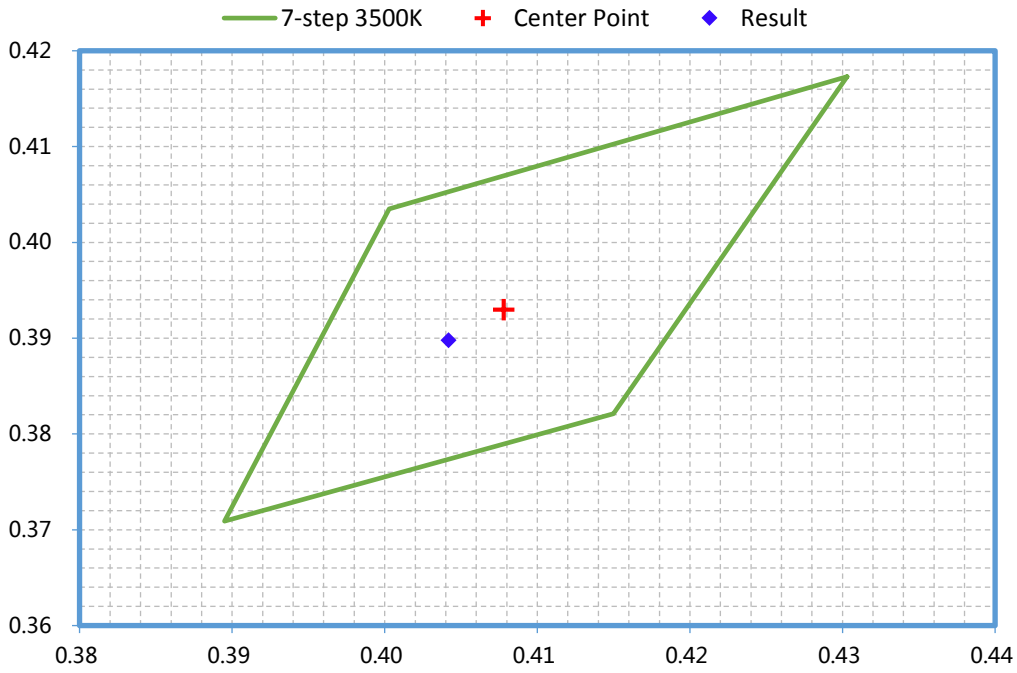
Relative Spectral Power Distribution




*CIE 1931 x y Chromaticity Diagram



*ANSI C78.377-2024 Chromaticity Quadrangles



[Goniophotometer System]

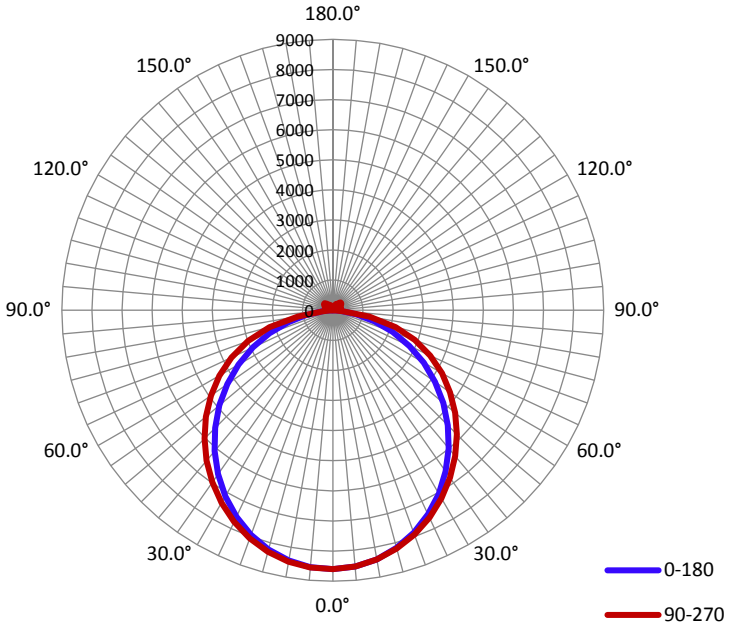
## Electrical Measurement

| Input Voltage (V) | Frequency (Hz) | Input Current (A) | Power (W) | Power Factor |
|---|---|---|---|---|
| 120.1 | 60 | 1.4058 | 168.44 | 0.9977 |

## Photometric Measurement

| Luminous Flux (lm) | Efficacy (lm/W) | $I_{max}$ (cd) | S/MH (C0/180) | S/MH (C90/270) |
|---|---|---|---|---|
| 26042.6 | 154.61 | 8604.0 | 1.24 | 1.28 |

## Luminous Intensity Distribution




| | C0/180 | C45/225 | C90/270 | C135/315 | AVG. |
|---|---|---|---|---|---|
| Beam Angle (50% $I_{max}$): | 108.6 | 114.3 | 119.4 | 114.3 | 114.2 |
| Field Angle (10% $I_{max}$): | 159.7 | 164.6 | 163.5 | 164.5 | 163.1 |

## Luminous Intensity (cd) Distribution Data

| C / γ | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° |
|---|---|---|---|---|---|---|---|---|
| 0° | 8601 | 8601 | 8601 | 8601 | 8601 | 8601 | 8601 | 8601 |
| 1° | 8597 | 8596 | 8595 | 8596 | 8597 | 8597 | 8597 | 8597 |
| 2° | 8588 | 8587 | 8585 | 8587 | 8588 | 8589 | 8588 | 8592 |
| 3° | 8578 | 8576 | 8573 | 8575 | 8576 | 8577 | 8579 | 8581 |
| 4° | 8565 | 8560 | 8556 | 8560 | 8561 | 8562 | 8564 | 8569 |
| 5° | 8546 | 8542 | 8538 | 8541 | 8543 | 8547 | 8545 | 8553 |
| 6° | 8525 | 8520 | 8515 | 8520 | 8523 | 8526 | 8527 | 8532 |
| 7° | 8500 | 8492 | 8490 | 8496 | 8498 | 8501 | 8502 | 8509 |
| 8° | 8470 | 8465 | 8461 | 8468 | 8471 | 8475 | 8474 | 8481 |
| 9° | 8439 | 8432 | 8430 | 8438 | 8442 | 8446 | 8444 | 8450 |
| 10° | 8403 | 8396 | 8395 | 8405 | 8409 | 8414 | 8411 | 8418 |
| 11° | 8362 | 8358 | 8358 | 8370 | 8372 | 8380 | 8374 | 8382 |
| 12° | 8320 | 8315 | 8316 | 8331 | 8334 | 8342 | 8335 | 8341 |
| 13° | 8274 | 8269 | 8273 | 8287 | 8292 | 8298 | 8293 | 8296 |
| 14° | 8224 | 8220 | 8225 | 8244 | 8248 | 8255 | 8248 | 8250 |
| 15° | 8172 | 8169 | 8176 | 8194 | 8201 | 8207 | 8199 | 8201 |
| 16° | 8117 | 8111 | 8122 | 8144 | 8153 | 8157 | 8147 | 8147 |
| 17° | 8058 | 8056 | 8065 | 8089 | 8101 | 8102 | 8092 | 8091 |
| 18° | 7997 | 7994 | 8008 | 8034 | 8047 | 8048 | 8037 | 8031 |
| 19° | 7932 | 7931 | 7946 | 7976 | 7988 | 7991 | 7976 | 7970 |
| 20° | 7863 | 7864 | 7883 | 7915 | 7928 | 7931 | 7913 | 7904 |
| 21° | 7792 | 7793 | 7815 | 7852 | 7867 | 7868 | 7848 | 7836 |
| 22° | 7721 | 7722 | 7747 | 7785 | 7802 | 7802 | 7778 | 7767 |
| 23° | 7643 | 7646 | 7673 | 7717 | 7736 | 7733 | 7708 | 7694 |
| 24° | 7563 | 7568 | 7600 | 7646 | 7667 | 7666 | 7636 | 7616 |
| 25° | 7483 | 7488 | 7523 | 7574 | 7596 | 7592 | 7560 | 7537 |
| 26° | 7397 | 7405 | 7445 | 7498 | 7524 | 7519 | 7482 | 7456 |
| 27° | 7313 | 7319 | 7364 | 7423 | 7448 | 7443 | 7402 | 7372 |
| 28° | 7223 | 7234 | 7281 | 7343 | 7371 | 7365 | 7321 | 7285 |
| 29° | 7132 | 7143 | 7195 | 7264 | 7293 | 7285 | 7236 | 7198 |
| 30° | 7038 | 7052 | 7107 | 7181 | 7213 | 7203 | 7149 | 7106 |
| 31° | 6941 | 6957 | 7019 | 7096 | 7130 | 7118 | 7062 | 7014 |
| 32° | 6845 | 6861 | 6928 | 7010 | 7047 | 7033 | 6972 | 6917 |
| 33° | 6743 | 6763 | 6834 | 6921 | 6961 | 6945 | 6880 | 6823 |
| 34° | 6642 | 6663 | 6740 | 6833 | 6875 | 6857 | 6786 | 6724 |
| 35° | 6538 | 6563 | 6644 | 6742 | 6784 | 6768 | 6690 | 6623 |
| 36° | 6432 | 6456 | 6546 | 6649 | 6696 | 6674 | 6593 | 6519 |
| 37° | 6323 | 6353 | 6446 | 6556 | 6604 | 6581 | 6495 | 6415 |
| 38° | 6214 | 6246 | 6346 | 6460 | 6511 | 6487 | 6395 | 6310 |
| 39° | 6104 | 6139 | 6244 | 6365 | 6417 | 6391 | 6293 | 6203 |
| 40° | 5990 | 6028 | 6141 | 6266 | 6322 | 6293 | 6190 | 6093 |
| 41° | 5877 | 5917 | 6036 | 6168 | 6226 | 6194 | 6085 | 5982 |
| 42° | 5761 | 5804 | 5930 | 6067 | 6131 | 6094 | 5981 | 5870 |
| 43° | 5642 | 5691 | 5822 | 5966 | 6030 | 5994 | 5871 | 5757 |
| 44° | 5526 | 5576 | 5715 | 5863 | 5932 | 5892 | 5765 | 5642 |
| 45° | 5406 | 5459 | 5605 | 5761 | 5830 | 5788 | 5657 | 5526 |
| 46° | 5285 | 5342 | 5494 | 5655 | 5727 | 5684 | 5544 | 5410 |
| 47° | 5162 | 5223 | 5382 | 5551 | 5625 | 5578 | 5434 | 5290 |
| 48° | 5040 | 5105 | 5270 | 5442 | 5520 | 5471 | 5321 | 5171 |
| 49° | 4915 | 4983 | 5157 | 5336 | 5416 | 5364 | 5208 | 5050 |

## Luminous Intensity (cd) Distribution Data

| C / γ | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° |
|---|---|---|---|---|---|---|---|---|
| 50° | 4789 | 4862 | 5042 | 5228 | 5310 | 5256 | 5093 | 4930 |
| 51° | 4665 | 4741 | 4927 | 5117 | 5202 | 5147 | 4979 | 4809 |
| 52° | 4537 | 4616 | 4810 | 5006 | 5092 | 5035 | 4862 | 4684 |
| 53° | 4409 | 4495 | 4693 | 4893 | 4983 | 4924 | 4746 | 4562 |
| 54° | 4281 | 4369 | 4575 | 4783 | 4872 | 4811 | 4627 | 4435 |
| 55° | 4151 | 4242 | 4456 | 4666 | 4760 | 4695 | 4509 | 4309 |
| 56° | 4020 | 4116 | 4337 | 4552 | 4648 | 4582 | 4390 | 4183 |
| 57° | 3887 | 3990 | 4216 | 4435 | 4531 | 4464 | 4262 | 4056 |
| 58° | 3755 | 3862 | 4096 | 4320 | 4420 | 4350 | 4147 | 3927 |
| 59° | 3623 | 3733 | 3972 | 4201 | 4300 | 4229 | 4024 | 3797 |
| 60° | 3489 | 3605 | 3851 | 4085 | 4186 | 4113 | 3904 | 3669 |
| 61° | 3356 | 3474 | 3725 | 3962 | 4064 | 3990 | 3778 | 3537 |
| 62° | 3218 | 3344 | 3601 | 3842 | 3941 | 3871 | 3653 | 3407 |
| 63° | 3084 | 3216 | 3478 | 3720 | 3822 | 3748 | 3529 | 3277 |
| 64° | 2947 | 3082 | 3350 | 3594 | 3695 | 3623 | 3402 | 3143 |
| 65° | 2811 | 2953 | 3227 | 3470 | 3570 | 3498 | 3276 | 3012 |
| 66° | 2674 | 2819 | 3097 | 3341 | 3437 | 3368 | 3148 | 2878 |
| 67° | 2535 | 2687 | 2971 | 3212 | 3304 | 3239 | 3019 | 2746 |
| 68° | 2399 | 2554 | 2841 | 3078 | 3169 | 3106 | 2891 | 2611 |
| 69° | 2259 | 2423 | 2713 | 2944 | 3032 | 2970 | 2760 | 2480 |
| 70° | 2124 | 2292 | 2584 | 2808 | 2897 | 2834 | 2630 | 2347 |
| 71° | 1985 | 2157 | 2449 | 2669 | 2752 | 2694 | 2495 | 2213 |
| 72° | 1848 | 2027 | 2316 | 2532 | 2610 | 2554 | 2360 | 2080 |
| 73° | 1712 | 1895 | 2180 | 2388 | 2466 | 2413 | 2225 | 1946 |
| 74° | 1575 | 1764 | 2045 | 2247 | 2320 | 2268 | 2087 | 1813 |
| 75° | 1440 | 1634 | 1906 | 2101 | 2165 | 2125 | 1946 | 1683 |
| 76° | 1305 | 1504 | 1768 | 1956 | 1997 | 1974 | 1807 | 1551 |
| 77° | 1173 | 1380 | 1629 | 1793 | 1811 | 1811 | 1667 | 1426 |
| 78° | 1042 | 1257 | 1491 | 1621 | 1624 | 1636 | 1527 | 1301 |
| 79° | 914 | 1133 | 1350 | 1440 | 1428 | 1453 | 1385 | 1176 |
| 80° | 789 | 1004 | 1207 | 1259 | 1234 | 1269 | 1236 | 1046 |
| 81° | 668 | 873 | 1048 | 1077 | 1032 | 1086 | 1073 | 916 |
| 82° | 562 | 749 | 887 | 889 | 844 | 896 | 906 | 786 |
| 83° | 456 | 623 | 717 | 700 | 650 | 704 | 733 | 660 |
| 84° | 349 | 503 | 555 | 520 | 480 | 523 | 569 | 535 |
| 85° | 258 | 386 | 393 | 353 | 310 | 356 | 406 | 414 |
| 86° | 179 | 278 | 232 | 208 | 140 | 212 | 242 | 292 |
| 87° | 121 | 169 | 90 | 64 | 52 | 69 | 99 | 182 |
| 88° | 63 | 62 | 48 | 13 | 30 | 15 | 51 | 74 |
| 89° | 5 | 32 | 7 | 8 | 9 | 8 | 7 | 39 |
| 90° | 4 | 3 | 10 | 9 | 10 | 9 | 10 | 3 |
| 91° | 3 | 5 | 14 | 14 | 15 | 13 | 13 | 5 |
| 92° | 4 | 8 | 18 | 21 | 22 | 19 | 17 | 6 |
| 93° | 5 | 23 | 21 | 27 | 29 | 27 | 20 | 17 |
| 94° | 7 | 29 | 36 | 43 | 33 | 39 | 28 | 30 |
| 95° | 10 | 35 | 73 | 58 | 39 | 51 | 57 | 36 |
| 96° | 12 | 40 | 120 | 74 | 60 | 63 | 101 | 42 |
| 97° | 14 | 45 | 142 | 128 | 117 | 114 | 118 | 46 |
| 98° | 16 | 48 | 144 | 188 | 175 | 173 | 134 | 51 |
| 99° | 18 | 53 | 146 | 241 | 233 | 234 | 150 | 56 |

## Luminous Intensity (cd) Distribution Data

| C / γ | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° |
|---|---|---|---|---|---|---|---|---|
| 100° | 20 | 60 | 148 | 244 | 277 | 248 | 153 | 62 |
| 101° | 22 | 66 | 150 | 242 | 278 | 246 | 155 | 69 |
| 102° | 23 | 72 | 152 | 240 | 276 | 244 | 156 | 75 |
| 103° | 25 | 79 | 154 | 238 | 273 | 242 | 159 | 81 |
| 104° | 26 | 85 | 156 | 236 | 270 | 240 | 161 | 87 |
| 105° | 28 | 91 | 160 | 235 | 268 | 239 | 166 | 94 |
| 106° | 30 | 97 | 164 | 234 | 266 | 237 | 172 | 101 |
| 107° | 32 | 102 | 170 | 234 | 264 | 237 | 178 | 108 |
| 108° | 34 | 105 | 175 | 235 | 263 | 239 | 183 | 113 |
| 109° | 36 | 108 | 182 | 238 | 264 | 241 | 187 | 116 |
| 110° | 37 | 111 | 189 | 241 | 265 | 245 | 193 | 119 |
| 111° | 39 | 114 | 197 | 246 | 268 | 251 | 200 | 122 |
| 112° | 41 | 115 | 204 | 251 | 273 | 256 | 207 | 125 |
| 113° | 41 | 117 | 211 | 255 | 278 | 259 | 213 | 127 |
| 114° | 40 | 119 | 218 | 261 | 281 | 264 | 221 | 129 |
| 115° | 40 | 120 | 225 | 267 | 285 | 270 | 229 | 129 |
| 116° | 42 | 120 | 233 | 274 | 290 | 275 | 237 | 129 |
| 117° | 44 | 105 | 240 | 280 | 296 | 281 | 244 | 128 |
| 118° | 47 | 104 | 248 | 286 | 302 | 287 | 253 | 110 |
| 119° | 48 | 104 | 255 | 292 | 307 | 293 | 261 | 107 |
| 120° | 48 | 104 | 261 | 298 | 313 | 299 | 269 | 107 |
| 121° | 48 | 119 | 266 | 304 | 318 | 306 | 276 | 107 |
| 122° | 48 | 121 | 267 | 310 | 324 | 312 | 280 | 121 |
| 123° | 47 | 119 | 266 | 317 | 329 | 318 | 281 | 124 |
| 124° | 48 | 118 | 266 | 324 | 335 | 325 | 281 | 124 |
| 125° | 49 | 120 | 266 | 331 | 341 | 333 | 281 | 124 |
| 126° | 51 | 124 | 267 | 338 | 348 | 340 | 280 | 125 |
| 127° | 53 | 128 | 265 | 343 | 355 | 347 | 279 | 132 |
| 128° | 56 | 130 | 261 | 347 | 362 | 353 | 272 | 134 |
| 129° | 59 | 127 | 258 | 349 | 368 | 357 | 266 | 135 |
| 130° | 58 | 127 | 254 | 347 | 373 | 357 | 263 | 133 |
| 131° | 58 | 129 | 214 | 345 | 375 | 354 | 255 | 135 |
| 132° | 57 | 129 | 177 | 343 | 374 | 351 | 195 | 138 |
| 133° | 58 | 129 | 174 | 342 | 371 | 349 | 180 | 141 |
| 134° | 59 | 127 | 171 | 339 | 368 | 346 | 177 | 142 |
| 135° | 60 | 124 | 170 | 330 | 365 | 335 | 174 | 142 |
| 136° | 61 | 104 | 198 | 324 | 362 | 328 | 175 | 140 |
| 137° | 62 | 97 | 210 | 318 | 351 | 322 | 207 | 118 |
| 138° | 63 | 91 | 207 | 302 | 345 | 313 | 214 | 111 |
| 139° | 65 | 89 | 204 | 235 | 338 | 245 | 210 | 101 |
| 140° | 67 | 82 | 201 | 216 | 326 | 220 | 206 | 98 |
| 141° | 68 | 82 | 200 | 212 | 254 | 215 | 202 | 94 |
| 142° | 69 | 82 | 203 | 207 | 230 | 210 | 199 | 90 |
| 143° | 71 | 86 | 202 | 214 | 223 | 211 | 200 | 89 |
| 144° | 72 | 98 | 195 | 248 | 218 | 257 | 197 | 94 |
| 145° | 73 | 101 | 194 | 250 | 222 | 265 | 191 | 110 |
| 146° | 75 | 106 | 195 | 243 | 261 | 258 | 190 | 111 |
| 147° | 76 | 114 | 196 | 238 | 266 | 250 | 191 | 114 |
| 148° | 78 | 115 | 196 | 232 | 259 | 244 | 192 | 121 |
| 149° | 79 | 111 | 194 | 232 | 252 | 239 | 192 | 119 |

## Luminous Intensity (cd) Distribution Data

| C / γ | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° |
|---|---|---|---|---|---|---|---|---|
| 150° | 81 | 112 | 190 | 227 | 244 | 237 | 191 | 114 |
| 151° | 83 | 114 | 170 | 216 | 242 | 226 | 186 | 110 |
| 152° | 84 | 113 | 151 | 212 | 235 | 221 | 160 | 111 |
| 153° | 87 | 108 | 135 | 209 | 224 | 219 | 153 | 110 |
| 154° | 88 | 95 | 124 | 207 | 220 | 218 | 132 | 108 |
| 155° | 90 | 95 | 121 | 204 | 218 | 217 | 128 | 99 |
| 156° | 91 | 95 | 109 | 201 | 216 | 215 | 125 | 92 |
| 157° | 92 | 94 | 107 | 177 | 213 | 198 | 115 | 92 |
| 158° | 93 | 93 | 115 | 161 | 205 | 170 | 128 | 91 |
| 159° | 94 | 85 | 113 | 145 | 172 | 152 | 127 | 91 |
| 160° | 94 | 83 | 125 | 129 | 157 | 135 | 133 | 89 |
| 161° | 94 | 83 | 128 | 123 | 136 | 131 | 139 | 89 |
| 162° | 94 | 82 | 118 | 115 | 131 | 118 | 131 | 86 |
| 163° | 93 | 82 | 123 | 121 | 118 | 128 | 120 | 84 |
| 164° | 92 | 83 | 119 | 123 | 125 | 126 | 123 | 84 |
| 165° | 90 | 88 | 107 | 135 | 125 | 137 | 116 | 82 |
| 166° | 90 | 92 | 91 | 123 | 139 | 128 | 94 | 84 |
| 167° | 89 | 91 | 89 | 126 | 124 | 117 | 89 | 93 |
| 168° | 88 | 88 | 87 | 120 | 126 | 111 | 85 | 89 |
| 169° | 87 | 84 | 72 | 92 | 118 | 94 | 79 | 86 |
| 170° | 85 | 81 | 68 | 85 | 81 | 80 | 71 | 79 |
| 171° | 82 | 87 | 68 | 77 | 76 | 79 | 67 | 73 |
| 172° | 79 | 89 | 77 | 61 | 67 | 65 | 68 | 76 |
| 173° | 76 | 87 | 75 | 60 | 58 | 62 | 76 | 77 |
| 174° | 74 | 84 | 70 | 67 | 57 | 65 | 72 | 73 |
| 175° | 73 | 83 | 75 | 65 | 67 | 72 | 67 | 70 |
| 176° | 74 | 84 | 81 | 69 | 64 | 69 | 76 | 68 |
| 177° | 77 | 82 | 83 | 73 | 77 | 80 | 75 | 68 |
| 178° | 79 | 76 | 81 | 76 | 79 | 85 | 75 | 67 |
| 179° | 78 | 72 | 72 | 72 | 88 | 84 | 71 | 67 |
| 180° | 78 | 72 | 73 | 78 | 86 | 77 | 73 | 70 |

Luminous Intensity (cd) Distribution Data (cont.)

| C / γ | 180° | 202.5° | 225° | 247.5° | 270° | 292.5° | 315° | 337.5° |
|---|---|---|---|---|---|---|---|---|
| 0° | 8601 | 8601 | 8601 | 8601 | 8601 | 8601 | 8601 | 8601 |
| 1° | 8600 | 8602 | 8602 | 8603 | 8604 | 8603 | 8601 | 8599 |
| 2° | 8596 | 8599 | 8601 | 8604 | 8602 | 8602 | 8598 | 8594 |
| 3° | 8590 | 8593 | 8596 | 8599 | 8599 | 8595 | 8592 | 8585 |
| 4° | 8580 | 8584 | 8588 | 8593 | 8593 | 8586 | 8583 | 8574 |
| 5° | 8566 | 8570 | 8577 | 8582 | 8583 | 8576 | 8571 | 8559 |
| 6° | 8549 | 8556 | 8563 | 8568 | 8569 | 8561 | 8554 | 8541 |
| 7° | 8526 | 8534 | 8545 | 8554 | 8553 | 8544 | 8535 | 8519 |
| 8° | 8501 | 8512 | 8524 | 8532 | 8533 | 8525 | 8511 | 8493 |
| 9° | 8472 | 8485 | 8500 | 8510 | 8511 | 8501 | 8484 | 8465 |
| 10° | 8440 | 8454 | 8472 | 8485 | 8485 | 8473 | 8455 | 8432 |
| 11° | 8405 | 8422 | 8441 | 8455 | 8455 | 8444 | 8423 | 8397 |
| 12° | 8368 | 8384 | 8407 | 8423 | 8426 | 8410 | 8388 | 8358 |
| 13° | 8324 | 8343 | 8368 | 8388 | 8390 | 8374 | 8349 | 8315 |
| 14° | 8278 | 8300 | 8328 | 8350 | 8354 | 8334 | 8307 | 8269 |
| 15° | 8229 | 8253 | 8284 | 8307 | 8311 | 8293 | 8262 | 8221 |
| 16° | 8177 | 8206 | 8237 | 8264 | 8269 | 8247 | 8212 | 8169 |
| 17° | 8123 | 8152 | 8187 | 8218 | 8222 | 8200 | 8162 | 8115 |
| 18° | 8064 | 8094 | 8136 | 8165 | 8174 | 8148 | 8108 | 8055 |
| 19° | 8004 | 8035 | 8079 | 8114 | 8120 | 8095 | 8050 | 7994 |
| 20° | 7939 | 7972 | 8020 | 8057 | 8066 | 8039 | 7990 | 7930 |
| 21° | 7871 | 7907 | 7960 | 8000 | 8011 | 7979 | 7928 | 7863 |
| 22° | 7800 | 7839 | 7897 | 7939 | 7951 | 7918 | 7861 | 7793 |
| 23° | 7726 | 7768 | 7829 | 7875 | 7889 | 7854 | 7791 | 7721 |
| 24° | 7651 | 7694 | 7760 | 7810 | 7823 | 7789 | 7723 | 7645 |
| 25° | 7572 | 7617 | 7688 | 7741 | 7755 | 7719 | 7650 | 7567 |
| 26° | 7491 | 7538 | 7614 | 7671 | 7687 | 7648 | 7572 | 7487 |
| 27° | 7407 | 7456 | 7536 | 7596 | 7617 | 7575 | 7496 | 7403 |
| 28° | 7319 | 7373 | 7458 | 7523 | 7544 | 7500 | 7417 | 7318 |
| 29° | 7230 | 7286 | 7376 | 7445 | 7466 | 7422 | 7332 | 7233 |
| 30° | 7138 | 7196 | 7291 | 7365 | 7388 | 7340 | 7249 | 7141 |
| 31° | 7046 | 7105 | 7206 | 7285 | 7308 | 7261 | 7162 | 7048 |
| 32° | 6950 | 7013 | 7119 | 7200 | 7229 | 7177 | 7073 | 6954 |
| 33° | 6850 | 6915 | 7027 | 7114 | 7145 | 7091 | 6981 | 6859 |
| 34° | 6751 | 6818 | 6936 | 7028 | 7060 | 7003 | 6889 | 6759 |
| 35° | 6648 | 6721 | 6843 | 6941 | 6972 | 6915 | 6794 | 6660 |
| 36° | 6543 | 6618 | 6747 | 6850 | 6884 | 6823 | 6700 | 6557 |
| 37° | 6435 | 6516 | 6649 | 6756 | 6793 | 6731 | 6601 | 6452 |
| 38° | 6329 | 6411 | 6549 | 6664 | 6703 | 6638 | 6502 | 6348 |
| 39° | 6217 | 6304 | 6449 | 6568 | 6609 | 6542 | 6400 | 6239 |
| 40° | 6107 | 6197 | 6348 | 6471 | 6517 | 6444 | 6298 | 6131 |
| 41° | 5994 | 6086 | 6244 | 6373 | 6420 | 6347 | 6196 | 6022 |
| 42° | 5877 | 5975 | 6139 | 6275 | 6324 | 6247 | 6090 | 5911 |
| 43° | 5763 | 5862 | 6032 | 6174 | 6223 | 6146 | 5984 | 5796 |
| 44° | 5645 | 5748 | 5925 | 6072 | 6125 | 6046 | 5876 | 5684 |
| 45° | 5526 | 5632 | 5816 | 5968 | 6024 | 5942 | 5766 | 5568 |
| 46° | 5405 | 5516 | 5706 | 5864 | 5921 | 5839 | 5656 | 5451 |
| 47° | 5285 | 5398 | 5595 | 5758 | 5818 | 5732 | 5546 | 5334 |
| 48° | 5162 | 5278 | 5483 | 5653 | 5712 | 5625 | 5433 | 5213 |
| 49° | 5037 | 5159 | 5369 | 5542 | 5607 | 5516 | 5319 | 5095 |

Luminous Intensity (cd) Distribution Data (cont.)

| C / γ | 180° | 202.5° | 225° | 247.5° | 270° | 292.5° | 315° | 337.5° |
|---|---|---|---|---|---|---|---|---|
| 50° | 4914 | 5038 | 5255 | 5434 | 5500 | 5407 | 5207 | 4973 |
| 51° | 4787 | 4916 | 5139 | 5323 | 5391 | 5297 | 5090 | 4852 |
| 52° | 4660 | 4793 | 5022 | 5212 | 5280 | 5184 | 4975 | 4729 |
| 53° | 4532 | 4669 | 4905 | 5098 | 5169 | 5073 | 4857 | 4606 |
| 54° | 4402 | 4545 | 4788 | 4984 | 5057 | 4959 | 4741 | 4482 |
| 55° | 4273 | 4419 | 4667 | 4869 | 4942 | 4844 | 4621 | 4356 |
| 56° | 4142 | 4292 | 4547 | 4752 | 4829 | 4727 | 4501 | 4229 |
| 57° | 4010 | 4165 | 4427 | 4637 | 4714 | 4612 | 4382 | 4103 |
| 58° | 3878 | 4037 | 4304 | 4516 | 4596 | 4491 | 4259 | 3976 |
| 59° | 3744 | 3908 | 4182 | 4398 | 4478 | 4373 | 4137 | 3847 |
| 60° | 3610 | 3778 | 4060 | 4275 | 4356 | 4251 | 4014 | 3718 |
| 61° | 3474 | 3647 | 3932 | 4154 | 4232 | 4131 | 3888 | 3591 |
| 62° | 3338 | 3517 | 3809 | 4028 | 4108 | 4004 | 3764 | 3459 |
| 63° | 3201 | 3385 | 3680 | 3902 | 3979 | 3879 | 3636 | 3330 |
| 64° | 3065 | 3253 | 3554 | 3772 | 3847 | 3749 | 3510 | 3197 |
| 65° | 2925 | 3118 | 3425 | 3643 | 3709 | 3618 | 3383 | 3067 |
| 66° | 2789 | 2987 | 3296 | 3506 | 3574 | 3483 | 3254 | 2934 |
| 67° | 2649 | 2852 | 3164 | 3368 | 3430 | 3344 | 3124 | 2803 |
| 68° | 2509 | 2718 | 3032 | 3227 | 3287 | 3203 | 2991 | 2669 |
| 69° | 2371 | 2584 | 2897 | 3084 | 3142 | 3058 | 2858 | 2537 |
| 70° | 2232 | 2449 | 2761 | 2939 | 2992 | 2915 | 2722 | 2404 |
| 71° | 2092 | 2315 | 2622 | 2790 | 2842 | 2767 | 2585 | 2270 |
| 72° | 1956 | 2179 | 2480 | 2640 | 2687 | 2619 | 2444 | 2137 |
| 73° | 1816 | 2046 | 2337 | 2491 | 2531 | 2468 | 2302 | 2005 |
| 74° | 1678 | 1911 | 2192 | 2336 | 2359 | 2314 | 2157 | 1871 |
| 75° | 1541 | 1776 | 2045 | 2172 | 2172 | 2148 | 2012 | 1737 |
| 76° | 1412 | 1642 | 1899 | 1994 | 1978 | 1971 | 1866 | 1604 |
| 77° | 1282 | 1507 | 1751 | 1810 | 1781 | 1783 | 1720 | 1470 |
| 78° | 1153 | 1371 | 1600 | 1615 | 1580 | 1590 | 1561 | 1337 |
| 79° | 1020 | 1235 | 1440 | 1422 | 1383 | 1395 | 1402 | 1203 |
| 80° | 890 | 1099 | 1281 | 1225 | 1186 | 1200 | 1244 | 1068 |
| 81° | 763 | 964 | 1121 | 1028 | 988 | 1005 | 1084 | 934 |
| 82° | 642 | 827 | 940 | 832 | 784 | 806 | 905 | 800 |
| 83° | 528 | 696 | 762 | 636 | 590 | 612 | 726 | 671 |
| 84° | 421 | 568 | 580 | 467 | 427 | 443 | 547 | 542 |
| 85° | 323 | 440 | 406 | 299 | 299 | 274 | 369 | 413 |
| 86° | 243 | 313 | 339 | 131 | 171 | 119 | 309 | 285 |
| 87° | 164 | 189 | 273 | 48 | 44 | 47 | 249 | 162 |
| 88° | 85 | 78 | 206 | 28 | 9 | 27 | 189 | 58 |
| 89° | 57 | 59 | 139 | 8 | 8 | 8 | 129 | 51 |
| 90° | 29 | 41 | 72 | 8 | 9 | 9 | 69 | 47 |
| 91° | 1 | 23 | 7 | 13 | 14 | 14 | 9 | 42 |
| 92° | 1 | 5 | 12 | 20 | 20 | 21 | 15 | 38 |
| 93° | 3 | 13 | 18 | 26 | 27 | 26 | 20 | 34 |
| 94° | 4 | 22 | 37 | 30 | 31 | 30 | 41 | 29 |
| 95° | 6 | 31 | 56 | 35 | 44 | 36 | 63 | 35 |
| 96° | 10 | 37 | 75 | 51 | 58 | 53 | 85 | 40 |
| 97° | 12 | 42 | 121 | 89 | 71 | 94 | 131 | 44 |
| 98° | 14 | 46 | 138 | 136 | 121 | 139 | 140 | 48 |
| 99° | 15 | 52 | 139 | 183 | 178 | 185 | 142 | 54 |

Luminous Intensity (cd) Distribution Data (cont.)

| C / γ | 180° | 202.5° | 225° | 247.5° | 270° | 292.5° | 315° | 337.5° |
|---|---|---|---|---|---|---|---|---|
| 100° | 17 | 60 | 142 | 230 | 239 | 230 | 144 | 61 |
| 101° | 18 | 68 | 144 | 231 | 263 | 231 | 146 | 68 |
| 102° | 20 | 75 | 146 | 229 | 261 | 229 | 147 | 74 |
| 103° | 22 | 81 | 148 | 228 | 259 | 227 | 149 | 81 |
| 104° | 23 | 88 | 152 | 226 | 257 | 226 | 153 | 87 |
| 105° | 25 | 93 | 158 | 225 | 254 | 225 | 159 | 92 |
| 106° | 27 | 97 | 167 | 224 | 253 | 224 | 167 | 97 |
| 107° | 29 | 101 | 180 | 226 | 251 | 226 | 178 | 100 |
| 108° | 31 | 104 | 187 | 229 | 252 | 229 | 186 | 103 |
| 109° | 33 | 106 | 194 | 234 | 254 | 234 | 193 | 106 |
| 110° | 35 | 107 | 200 | 243 | 257 | 242 | 200 | 107 |
| 111° | 37 | 108 | 208 | 256 | 266 | 255 | 207 | 108 |
| 112° | 39 | 108 | 215 | 264 | 275 | 262 | 215 | 109 |
| 113° | 41 | 109 | 224 | 270 | 286 | 268 | 225 | 109 |
| 114° | 41 | 109 | 232 | 276 | 291 | 274 | 233 | 109 |
| 115° | 39 | 108 | 240 | 282 | 297 | 280 | 242 | 109 |
| 116° | 40 | 107 | 247 | 288 | 303 | 286 | 250 | 109 |
| 117° | 41 | 106 | 253 | 295 | 309 | 292 | 255 | 106 |
| 118° | 43 | 90 | 257 | 302 | 315 | 302 | 259 | 89 |
| 119° | 44 | 90 | 259 | 310 | 321 | 309 | 261 | 90 |
| 120° | 46 | 90 | 260 | 316 | 329 | 316 | 262 | 90 |
| 121° | 47 | 92 | 258 | 322 | 336 | 325 | 260 | 92 |
| 122° | 47 | 104 | 257 | 329 | 342 | 332 | 258 | 105 |
| 123° | 47 | 108 | 254 | 336 | 348 | 339 | 255 | 105 |
| 124° | 47 | 106 | 250 | 340 | 355 | 342 | 252 | 105 |
| 125° | 48 | 106 | 246 | 342 | 362 | 344 | 248 | 106 |
| 126° | 48 | 107 | 242 | 343 | 366 | 344 | 244 | 111 |
| 127° | 48 | 115 | 238 | 340 | 368 | 341 | 240 | 117 |
| 128° | 49 | 120 | 232 | 335 | 368 | 337 | 232 | 118 |
| 129° | 51 | 122 | 226 | 330 | 365 | 331 | 227 | 119 |
| 130° | 55 | 125 | 223 | 324 | 360 | 325 | 224 | 121 |
| 131° | 58 | 128 | 218 | 319 | 354 | 319 | 218 | 123 |
| 132° | 60 | 129 | 178 | 312 | 347 | 312 | 168 | 120 |
| 133° | 61 | 128 | 152 | 305 | 340 | 305 | 150 | 120 |
| 134° | 63 | 128 | 149 | 299 | 332 | 299 | 147 | 119 |
| 135° | 64 | 127 | 147 | 287 | 325 | 290 | 146 | 118 |
| 136° | 65 | 127 | 146 | 281 | 318 | 281 | 146 | 120 |
| 137° | 66 | 130 | 175 | 274 | 306 | 274 | 173 | 118 |
| 138° | 66 | 126 | 183 | 268 | 297 | 267 | 182 | 111 |
| 139° | 67 | 116 | 180 | 223 | 290 | 215 | 179 | 95 |
| 140° | 67 | 98 | 177 | 186 | 282 | 184 | 177 | 92 |
| 141° | 68 | 96 | 173 | 180 | 256 | 179 | 175 | 87 |
| 142° | 68 | 83 | 170 | 176 | 202 | 175 | 173 | 73 |
| 143° | 68 | 75 | 172 | 173 | 189 | 172 | 178 | 72 |
| 144° | 68 | 74 | 172 | 213 | 184 | 210 | 177 | 74 |
| 145° | 67 | 79 | 171 | 223 | 180 | 216 | 177 | 83 |
| 146° | 66 | 93 | 171 | 218 | 207 | 210 | 178 | 83 |
| 147° | 66 | 93 | 173 | 212 | 223 | 205 | 175 | 84 |
| 148° | 66 | 94 | 169 | 206 | 220 | 199 | 175 | 93 |
| 149° | 66 | 103 | 169 | 201 | 215 | 194 | 174 | 98 |

Luminous Intensity (cd) Distribution Data (cont.)

| C / γ | 180° | 202.5° | 225° | 247.5° | 270° | 292.5° | 315° | 337.5° |
|---|---|---|---|---|---|---|---|---|
| 150° | 66 | 103 | 168 | 204 | 208 | 196 | 170 | 98 |
| 151° | 66 | 102 | 165 | 201 | 202 | 192 | 168 | 101 |
| 152° | 67 | 105 | 168 | 198 | 204 | 189 | 163 | 106 |
| 153° | 68 | 105 | 165 | 198 | 200 | 188 | 148 | 99 |
| 154° | 69 | 97 | 143 | 192 | 197 | 184 | 132 | 98 |
| 155° | 71 | 94 | 122 | 191 | 195 | 181 | 116 | 93 |
| 156° | 73 | 88 | 118 | 186 | 191 | 176 | 108 | 84 |
| 157° | 76 | 79 | 104 | 180 | 188 | 174 | 98 | 80 |
| 158° | 78 | 79 | 92 | 176 | 183 | 169 | 90 | 80 |
| 159° | 80 | 79 | 99 | 167 | 180 | 157 | 95 | 80 |
| 160° | 83 | 80 | 106 | 135 | 173 | 129 | 92 | 79 |
| 161° | 85 | 80 | 106 | 126 | 149 | 118 | 99 | 73 |
| 162° | 87 | 75 | 118 | 108 | 125 | 105 | 104 | 68 |
| 163° | 89 | 76 | 115 | 95 | 110 | 96 | 103 | 66 |
| 164° | 90 | 75 | 113 | 105 | 97 | 100 | 107 | 67 |
| 165° | 91 | 74 | 107 | 103 | 103 | 102 | 98 | 69 |
| 166° | 90 | 73 | 98 | 116 | 100 | 112 | 95 | 70 |
| 167° | 89 | 73 | 86 | 111 | 114 | 112 | 78 | 76 |
| 168° | 88 | 77 | 75 | 107 | 110 | 108 | 75 | 79 |
| 169° | 85 | 78 | 71 | 94 | 110 | 99 | 73 | 78 |
| 170° | 83 | 75 | 71 | 81 | 93 | 80 | 63 | 76 |
| 171° | 80 | 72 | 61 | 70 | 68 | 71 | 54 | 71 |
| 172° | 78 | 64 | 58 | 68 | 64 | 65 | 55 | 72 |
| 173° | 74 | 61 | 58 | 60 | 58 | 47 | 60 | 77 |
| 174° | 70 | 65 | 63 | 51 | 49 | 47 | 63 | 79 |
| 175° | 67 | 65 | 63 | 60 | 50 | 57 | 60 | 78 |
| 176° | 65 | 64 | 59 | 64 | 60 | 55 | 64 | 79 |
| 177° | 65 | 64 | 67 | 63 | 56 | 57 | 75 | 81 |
| 178° | 67 | 65 | 70 | 76 | 73 | 70 | 78 | 83 |
| 179° | 70 | 68 | 72 | 81 | 79 | 72 | 78 | 80 |
| 180° | 74 | 72 | 73 | 78 | 86 | 77 | 72 | 70 |

## Zonal Lumen Density Measurement

| Deg | Flux (lm) | % |
|---|---|---|
| 0-5 | 205.1 | 0.79 |
| 5-10 | 607.9 | 2.33 |
| 10-15 | 988.5 | 3.80 |
| 15-20 | 1333.5 | 5.12 |
| 20-25 | 1631.3 | 6.26 |
| 25-30 | 1872.9 | 7.19 |
| 30-35 | 2052.0 | 7.88 |
| 35-40 | 2165.0 | 8.32 |
| 40-45 | 2211.0 | 8.49 |
| 45-50 | 2190.6 | 8.41 |
| 50-55 | 2106.1 | 8.09 |
| 55-60 | 1960.5 | 7.52 |
| 60-65 | 1757.1 | 6.75 |
| 65-70 | 1497.5 | 5.75 |
| 70-75 | 1185.7 | 4.55 |
| 75-80 | 818.9 | 3.15 |
| 80-85 | 401.5 | 1.54 |
| 85-90 | 70.8 | 0.27 |
| 90-95 | 12.0 | 0.05 |
| 95-100 | 51.1 | 0.19 |
| 100-105 | 81.3 | 0.32 |
| 105-110 | 86.3 | 0.33 |
| 110-115 | 94.6 | 0.36 |
| 115-120 | 99.8 | 0.38 |
| 120-125 | 102.6 | 0.40 |
| 125-130 | 100.2 | 0.38 |
| 130-135 | 85.9 | 0.33 |
| 135-140 | 71.0 | 0.28 |
| 140-145 | 52.3 | 0.20 |
| 145-150 | 48.7 | 0.18 |
| 150-155 | 38.6 | 0.15 |
| 155-160 | 26.8 | 0.10 |
| 160-165 | 17.3 | 0.07 |
| 165-170 | 11.2 | 0.04 |
| 170-175 | 5.0 | 0.02 |
| 175-180 | 1.7 | 0.01 |

| Deg | Flux (lm) | % |
|---|---|---|
| 0-5 | 205.1 | 0.79 |
| 0-10 | 813.0 | 3.12 |
| 0-15 | 1801.5 | 6.92 |
| 0-20 | 3135.0 | 12.04 |
| 0-25 | 4766.2 | 18.30 |
| 0-30 | 6639.2 | 25.49 |
| 0-35 | 8691.2 | 33.37 |
| 0-40 | 10856.2 | 41.69 |
| 0-45 | 13067.2 | 50.18 |
| 0-50 | 15257.8 | 58.59 |
| 0-55 | 17363.9 | 66.68 |
| 0-60 | 19324.4 | 74.20 |
| 0-65 | 21081.5 | 80.95 |
| 0-70 | 22579.0 | 86.70 |
| 0-75 | 23764.8 | 91.25 |
| 0-80 | 24583.7 | 94.40 |
| 0-85 | 24985.2 | 95.94 |
| 0-90 | 25056.0 | 96.21 |
| 0-95 | 25068.0 | 96.26 |
| 0-100 | 25119.2 | 96.45 |
| 0-105 | 25200.4 | 96.77 |
| 0-110 | 25286.7 | 97.10 |
| 0-115 | 25381.3 | 97.46 |
| 0-120 | 25481.2 | 97.84 |
| 0-125 | 25583.8 | 98.24 |
| 0-130 | 25684.0 | 98.62 |
| 0-135 | 25769.9 | 98.95 |
| 0-140 | 25840.9 | 99.23 |
| 0-145 | 25893.2 | 99.43 |
| 0-150 | 25941.9 | 99.61 |
| 0-155 | 25980.5 | 99.76 |
| 0-160 | 26007.3 | 99.86 |
| 0-165 | 26024.7 | 99.93 |
| 0-170 | 26035.9 | 99.97 |
| 0-175 | 26040.9 | 99.99 |
| 0-180 | 26042.6 | 100.00 |

Test Model: AY422P1753CUW
Test CCT: 4000K (Input Control Signal Applied: 50%)
Test Wattage: 175W

Test Condition: Method: Integrating Sphere System; Orientation: Downward; Test Voltage: 120.0V 60Hz;

| Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|
| Light Output(lm) ΔΔ | 27442 | ≥10000 | ≥9000 | Pass |
| Power(W) ΔΔ | 163.9 | None. | None. | N/A |
| Total Efficacy(lm/W) ΔΔ | 167.41 | ≥150 | ≥145.5 | Pass |
| CCT(K) ΔΔ | 4152 | 3710~4260 | No tolerances | Pass |
| Duv ΔΔ | -0.000252 | -0.005~0.007 | No tolerances | Pass |
| IES Rf ΔΔ | 84 | 70 | 69 | Pass |
| IES Rg ΔΔ | 94 | 89 | 88 | |
| IES Rcs,h1 ΔΔ | -11% | -18%~23% | -19%~24% | |
| Ra ΔΔ | 84.5 | ≥70 | ≥69 | |
| R9 ΔΔ | 17 | ≥-40 | ≥-41 | |

Test Condition: Method: Integrating THDi、PF Test ; Orientation: Downward;

| Test Voltage | Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|---|
| 120 | Power Factor ΔΔ | 0.9962 | ≥0.9 | ≥0.87 | Pass |
| 120 | THDi ΔΔ | 2.63% | ≤20% | ≤25% | Pass |
| 277 | Power Factor ΔΔ | 0.9443 | ≥0.9 | ≥0.87 | Pass |
| 277 | THDi ΔΔ | 7.73% | ≤20% | ≤25% | Pass |

Note:
1. The test results were measured directly from the test equipment.
2. The DLC requirements were listed according to DLC Program Technical Requirements for LED Lighting – SSL V6.0 & LUNA V2.0
3. The conclusion is only for information. When determining the compliance of the result, tolerances and/or allowances may be applied to the measured value.
4. ΔΔTest facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

[Integrating Sphere System]

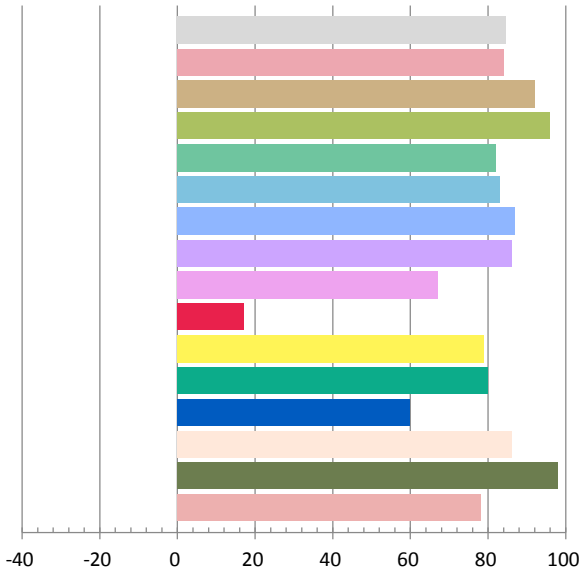
## Photometric and Electrical Measurement Result

| Voltage (V) | Frequency (Hz) | Current (A) | Power (W) | Power Factor | Luminous Flux(lm) | Efficacy (lm/W) |
|---|---|---|---|---|---|---|
| 120.0 | 60 | 1.371 | 163.9 | 0.9962 | 27442 | 167.41 |

| Radiant Flux (W) | CCT (K) | Duv | x | y | u' | v' |
|---|---|---|---|---|---|---|
| 84.870 | 4152 | -0.000252 | 0.3739 | 0.3720 | 0.2226 | 0.4985 |

## Color Rendering Index

| Ra | | | |
|---|---|---|---|
| **84.5** | | | |
| R1 | R2 | R3 | R4 |
| 84 | 92 | 96 | 82 |
| R5 | R6 | R7 | R8 |
| 83 | 87 | 86 | 67 |
| R9 | R10 | R11 | R12 |
| 17 | 79 | 80 | 60 |
| R13 | R14 | R15 | |
| 86 | 98 | 78 | |



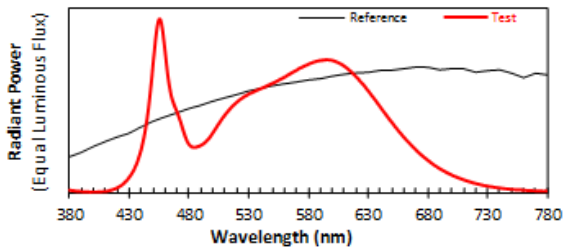
# ANSI/IES TM-30-18 Color Rendition Report

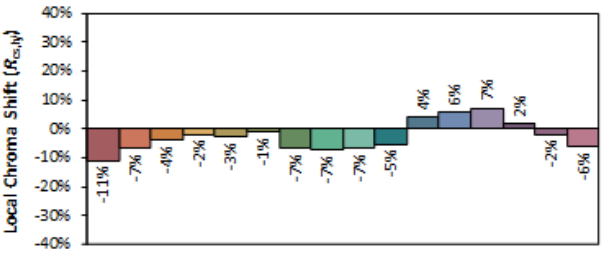
**Source:** User SPD

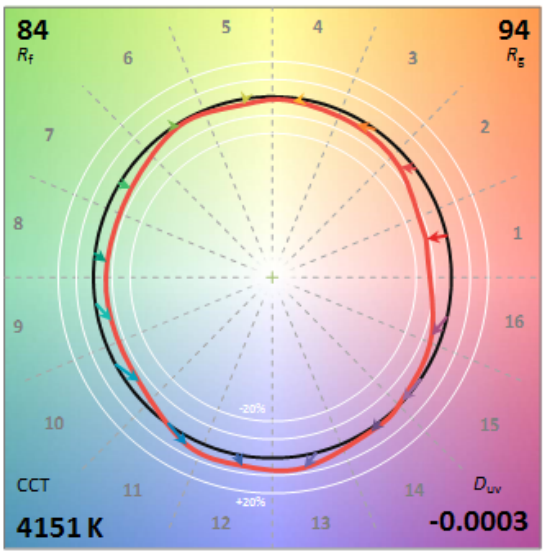
**Manufacturer:** P.Q.L., Inc.

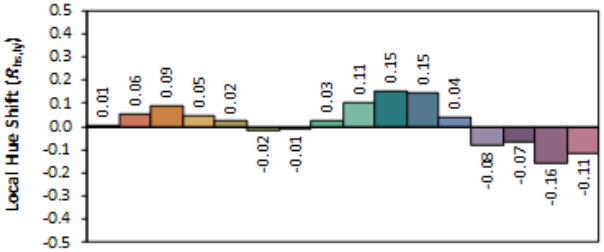
**Date:** 2026/1/19

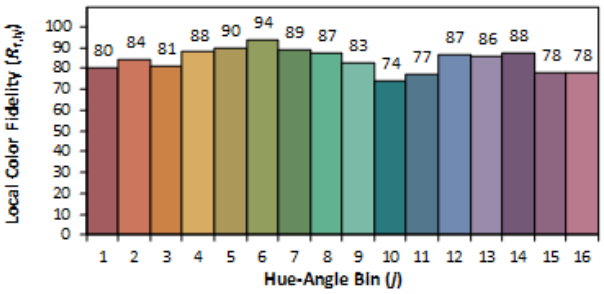
**Model:** AY422P1753CUW

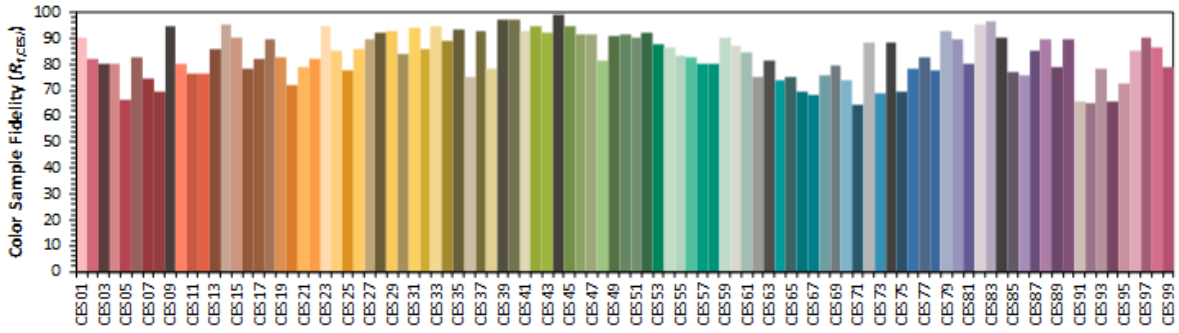



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

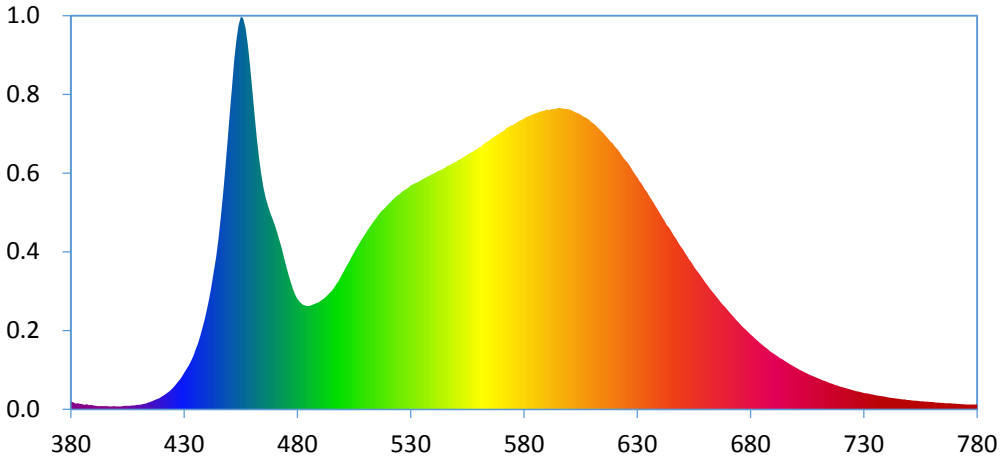
| | |
|---|---|
| $x$ | **0.3738** |
| $y$ | **0.3719** |
| $u'$ | **0.2227** |
| $v'$ | **0.4984** |

CIE 13.3-1995 (CRI)

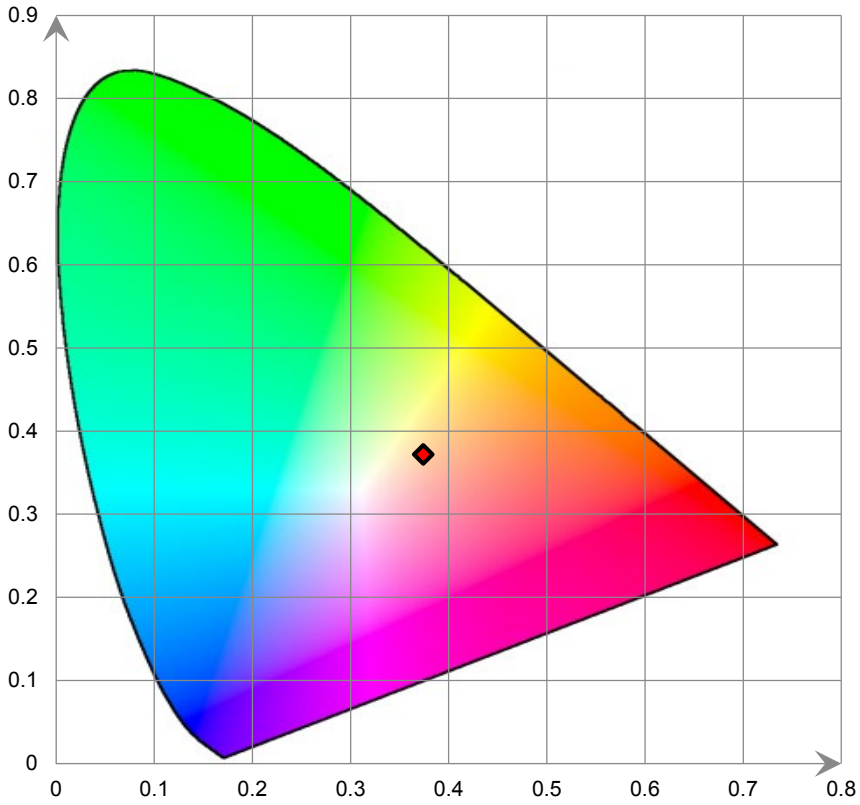
| | |
|---|---|
| $R_a$ | 84 |
| $R_9$ | 16 |

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

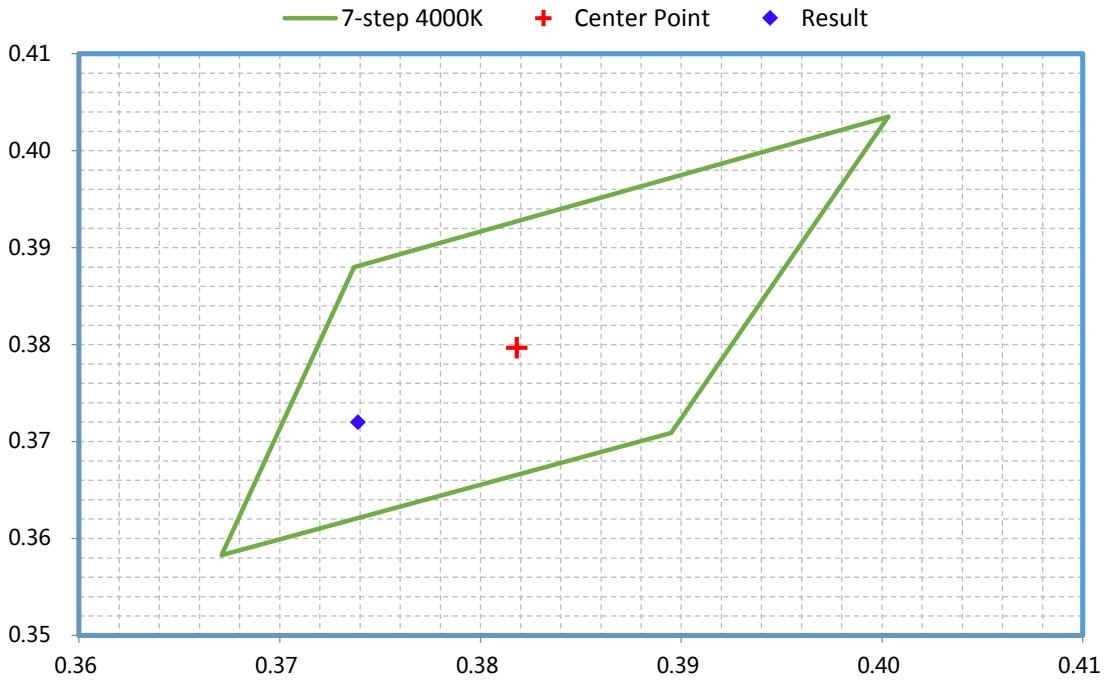
Relative Spectral Power Distribution




*CIE 1931 x y Chromaticity Diagram



*ANSI C78.377-2024 Chromaticity Quadrangles



Test Model: AY422P1753CUW
Test CCT: 5000K (Input Control Signal Applied: 100%)
Test Wattage: 175W

Test Condition: Method: Integrating Sphere System; Orientation: Downward; Test Voltage: 120.0V 60Hz;

| Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|
| Light Output(lm) ΔΔ | 26645 | ≥10000 | ≥9000 | Pass |
| Power(W) ΔΔ | 170.1 | None. | None. | N/A |
| Total Efficacy(lm/W) ΔΔ | 156.64 | ≥150 | ≥145.5 | Pass |
| CCT(K) ΔΔ | 5182 | 4746~5312 | No tolerances | Pass |
| Duv ΔΔ | 0.00201 | -0.004~0.008 | No tolerances | Pass |
| IES Rf ΔΔ | 83 | 70 | 69 | Pass |
| IES Rg ΔΔ | 95 | 89 | 88 | |
| IES Rcs,h1 ΔΔ | -12% | -18%~23% | -19%~24% | |
| Ra ΔΔ | 83.5 | ≥70 | ≥69 | |
| R9 ΔΔ | 12 | ≥-40 | ≥-41 | |

Test Condition: Method: Integrating THDi、PF Test ; Orientation: Downward;

| Test Voltage | Test Item | Test Result | DLC Requirements | DLC Requirements(With tolerances and/or allowances) | Conclusion |
|---|---|---|---|---|---|
| 120 | Power Factor ΔΔ | 0.9964 | ≥0.9 | ≥0.87 | Pass |
| 120 | THDi ΔΔ | 2.66% | ≤20% | ≤25% | Pass |
| 277 | Power Factor ΔΔ | 0.9475 | ≥0.9 | ≥0.87 | Pass |
| 277 | THDi ΔΔ | 7.38% | ≤20% | ≤25% | Pass |

Note:
1. The test results were measured directly from the test equipment.
2. The DLC requirements were listed according to DLC Program Technical Requirements for LED Lighting – SSL V6.0 & LUNA V2.0
3. The conclusion is only for information. When determining the compliance of the result, tolerances and/or allowances may be applied to the measured value.
4. ΔΔTest facility was located at Room 301, No.113, Pingkang Road, Dalang, Dongguan, Guangdong, China.

[Integrating Sphere System]

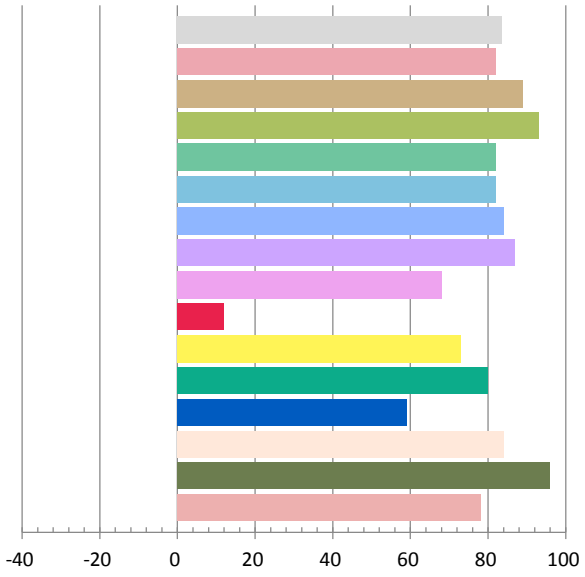
## Photometric and Electrical Measurement Result

| Voltage (V) | Frequency (Hz) | Current (A) | Power (W) | Power Factor | Luminous Flux(lm) | Efficacy (lm/W) |
|---|---|---|---|---|---|---|
| 120.0 | 60 | 1.423 | 170.1 | 0.9964 | 26645 | 156.64 |

| Radiant Flux (W) | CCT (K) | Duv | x | y | u' | v' |
|---|---|---|---|---|---|---|
| 83.864 | 5182 | 0.00201 | 0.3405 | 0.3518 | 0.2082 | 0.4841 |

## Color Rendering Index

| Ra | | | |
|---|---|---|---|
| **83.5** | | | |
| R1 | R2 | R3 | R4 |
| 82 | 89 | 93 | 82 |
| R5 | R6 | R7 | R8 |
| 82 | 84 | 87 | 68 |
| R9 | R10 | R11 | R12 |
| 12 | 73 | 80 | 59 |
| R13 | R14 | R15 | |
| 84 | 96 | 78 | |



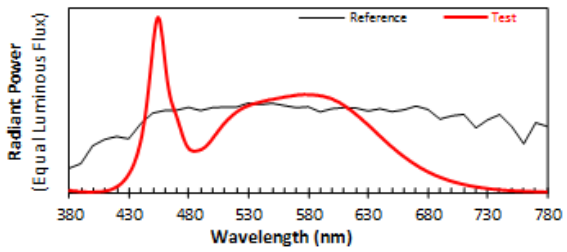
# ANSI/IES TM-30-18 Color Rendition Report

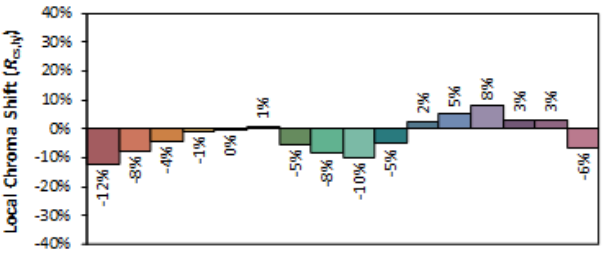
**Source:** User SPD

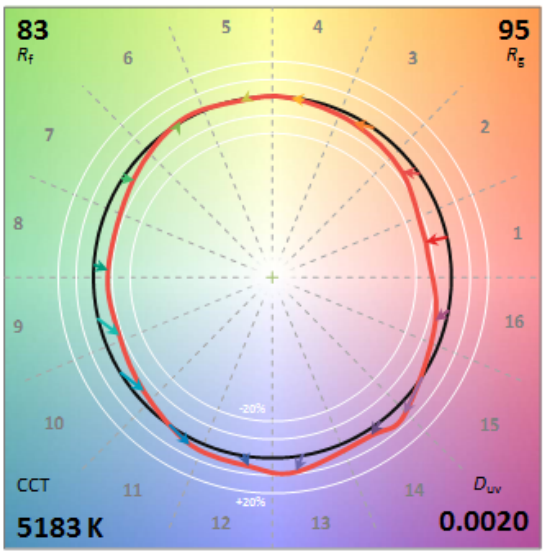
**Manufacturer:** P.Q.L., Inc.

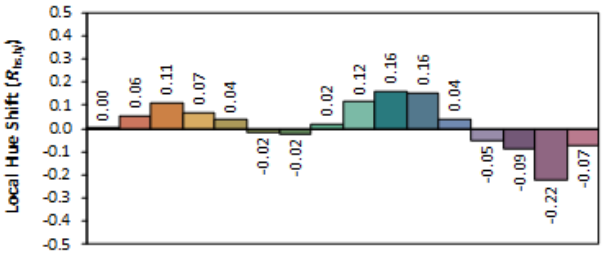
**Date:** 2026/1/19

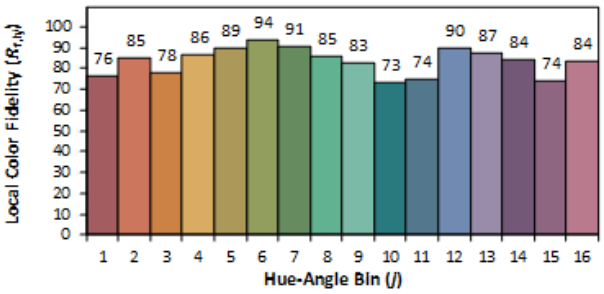
**Model:** AY422P1753CUW

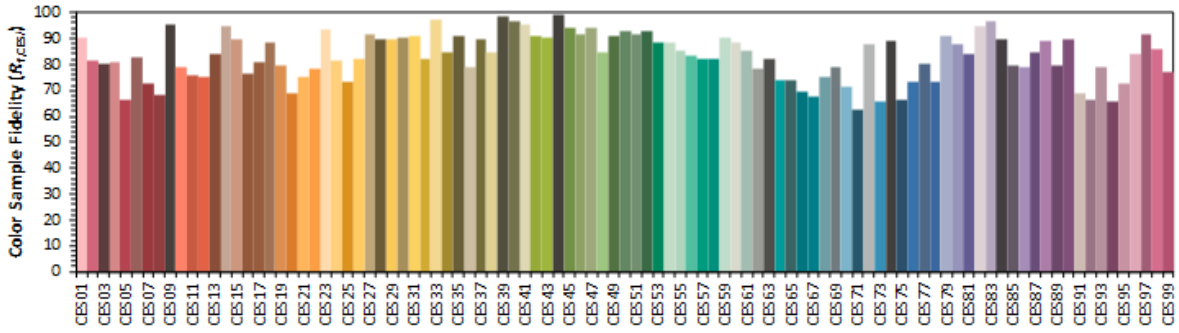



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

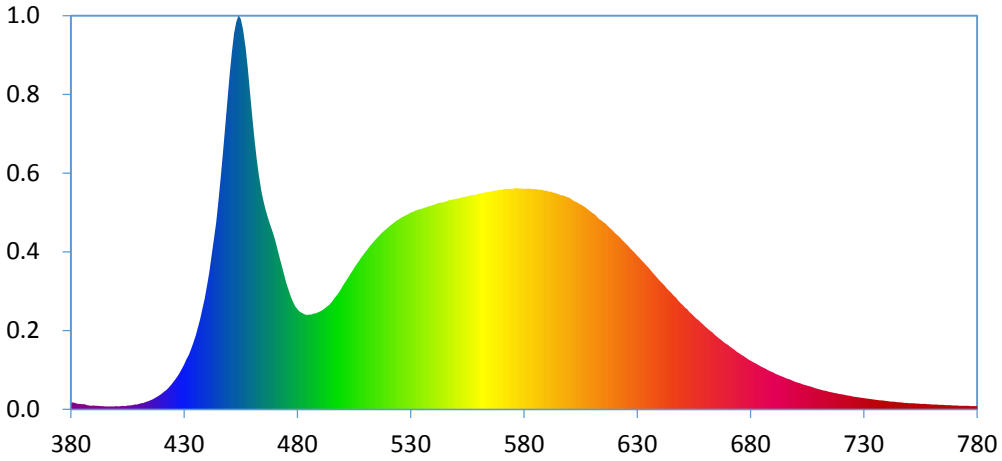
| | |
|---|---|
| $x$ | 0.3404 |
| $y$ | 0.3517 |
| $u'$ | 0.2082 |
| $v'$ | 0.4840 |

CIE 13.3-1995 (CRI)

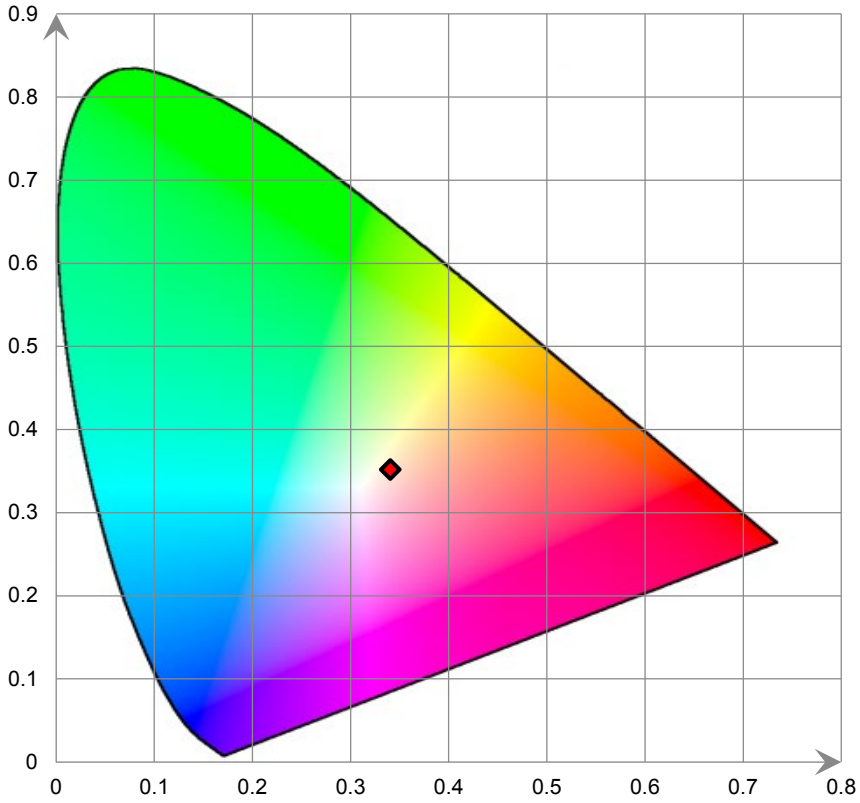
| | |
|---|---|
| $R_a$ | 83 |
| $R_9$ | 12 |

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

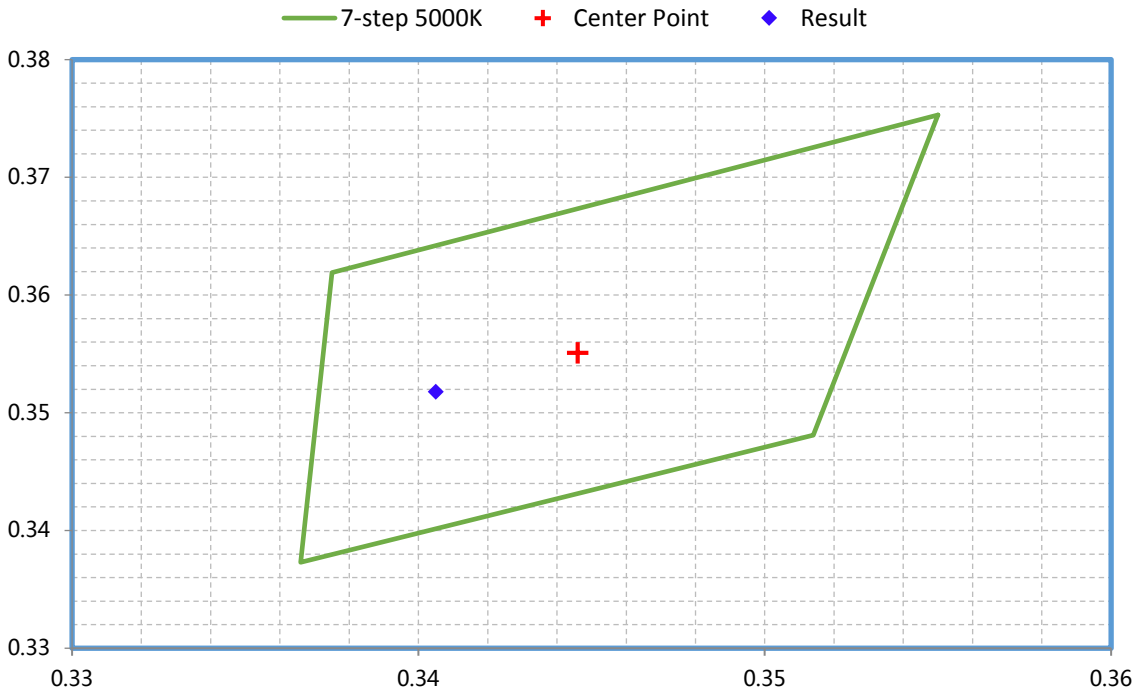
Relative Spectral Power Distribution




*CIE 1931 x y Chromaticity Diagram



*ANSI C78.377-2024 Chromaticity Quadrangles



# 4. Description of Test Equipment

| Device | Manufacture | Model No | Serial No | Calibration date | Calibration due date |
|---|---|---|---|---|---|
| 2.0m integrating sphere | EVERFINE | R98 | 11010018 | 2025-07-25 | 2026-07-24 |
| spectroradiometer | EVERFINE | HAAS-2000 | G112048TS81331121 | 2025-07-25 | 2026-07-24 |
| Digital Power Meter | EVERFINE | PF2010A | 1011004 | 2025-07-25 | 2026-07-24 |
| Digital CC&CV DC Power Supply | EVERFINE | WY305-V1 | 1101047 | 2025-07-25 | 2026-07-24 |
| Standard Light Source | EVERFINE | D204 | N/A | 2023-05-12 | 2026-05-11 |
| Special zero-voltage synchronous switching AC | EVERFINE | DPS1010-YF | 1011001T | 2025-07-25 | 2026-07-24 |
| AC Power Supply | INVENTFINE | CHP-5KVA | 900511765 | 2025-08-30 | 2026-08-29 |
| DC Power Supply | INVENTFINE | WL3010 | JWDMP030001 | 2025-08-30 | 2026-08-29 |
| Power Meter | INVENTFINE | WT500 | GSDSQ200007 | 2025-08-30 | 2026-08-29 |
| Goniophotometer | INVENTFINE | GPM-1900 | YWGCF120001 | 2025-07-25 | 2026-07-24 |
| Wireless Weather Station | ZHONGXING | KG218 | N/A | 2025-09-06 | 2026-09-05 |
| Standard Light Source | INVENTFINE | N/A | JWBYR040008 | 2023-05-12 | 2026-05-11 |
| Multimeter | FLUKE | 115C | N/A | 2025-07-25 | 2026-07-24 |
| Hybrid Recorder | YOKOGAWA | DR240 | 10# | 2025-07-25 | 2026-07-24 |
| AC POWER SUPPLY | HengPu | HPA 1103 | 0003394 | 2025-07-25 | 2026-07-24 |

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

# 5. Test Method

Product was tested with no seasoning. All stabilization and measurements were made in compliance with ANSI/IES LM-79-19. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at 25°C±1.2°C during measurement. And relative humidity is maintained between 10% and 65%.The air flow around the SSL product is less than 0.2m/s.

**Integrating Sphere System**

The system includes AC power source, digital power meter, DC power supply, Spectroradiometer, and integrating sphere. The integrating sphere system is calibrated by standard spectrum light source before measurement. 4π geometry was used during measurement.

**Goniophotometer System**

Type C goniophotometer was used for measuring luminous intensity distribution. The vertical angle (γ) test intervals were set no more than 1 degree while data for 1 degree intervals is reported. The horizontal angle (C plane) test intervals were set no more than 22.5 degree.

**ISTMT Test**

The LED which has the highest temperature was measured at the location of LED case which is specified by LED source manufacturer and detailed by LM-80 report. The drive current of LED package/module/ array was calculated as the total output current of the driver measured by multimeter, divided by the number of branches in parallel of LEDs.

# Statement

1. The information marked “superscript #” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.

2. This report includes some test methods are not in NVLAP accreditation scope marked *.

3. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

5. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K=2 with the 95% confidence interval.

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**********END OF REPORT**********