# ZHONGSHAN Y-CHEN LIGHTING TECHNOLOGY CO.LTD

# TEST REPORT

| | |
|---|---|
| Prepared For : | ZHONGSHAN Y-CHEN LIGHTING TECHNOLOGY CO.LTD<br><br>6F,01B,No.28, Kanglong N0.3Rd, Xinmao Industrial, Henglan Town, Zhongshan City |
| Product Name: | LED STREET LIGHT |
| Model : | YC-S028-50W |
| Prepared By : | Guangdong KEYS Testing Technology Co., Ltd.<br><br>Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China |
| Test Date: | Jan 09, 2025 - Jan 14, 2025 |
| Date of Report : | Feb. 12, 2025 |
| Report No.: | |

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# TEST REPORT
## ELECTRICAL AND PHOTOMETRIC MEASUREMENTS OF SOLID-STATE LIGHTING PRODUCTS ACCODING TO LM-79-08 APPROVED METHOD

| | | |
|---|---|---|
| **Testing laboratory** | : | Guangdong KEYS Testing Technology Co., Ltd. |
| **Address** | : | Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China |
| **Testing location** | : | Guangdong KEYS Testing Technology Co., Ltd. |
| **Applicant** | : | ZHONGSHAN Y-CHEN LIGHTING TECHNOLOGY CO.LTD |
| **Address** | : | 6F,01B,No.28, Kanglong N0.3Rd, Xinmao Industrial, Henglan Town, Zhongshan City |
| **Test Procedure** | : | Electrical And Photometric Measurements of Solid-State Lighting Products Accoding to LM-79-08 Approved Method. |
| **Non-standard test method** | : | N/A |
| **Type of test object** | : | LED STREET LIGHT |
| **Trademark** | : | N/A |
| **Model/type reference** | : | YC-S028-50W |
| **Manufacturer of LED driver** | : | TMX-50W 80-450V |
| **LED driver surge protection** | : | 8KV |
| **LED type** | : | LM3030 |
| **Model Number of LED chip** | : | LM3030WW-6V-1W |
| **Manufacturer** | : | SHENZHEN LVMING PHOTOELECTRIC CO., LTD |
| **Rating** | : | AC85-375V, 50/60Hz,50W |
| **Manufacturer** | : | ZHONGSHAN Y-CHEN LIGHTING TECHNOLOGY CO.LTD |
| **Address** | : | 6F,01B,No.28, Kanglong N0.3Rd, Xinmao Industrial, Henglan Town, Zhongshan City |
| **Particulars: test item vs. test requirements** | | |

**Name and address of the testing laboratory:** **Guangdong KEYS Testing Technology Co., Ltd.**
**Building 1, No.18, Shihuan Road, Dongcheng Subdistrict, Dongguan, Guangdong, China**

**Tested by (name + signature): Sunny Li**

**Approved by (name + signature): Jason Zhan**

**1.0 TEST METHOD**

Test methods according to IESNA LM-79-08 following chapter:

**4.0 SEASONING OF SSL PRODUCT**

For the purpose of rating new SSL products, SSL products shall be tested with no seasoning.

**5.0 STABILIZATION OF SSL PRODUCT**

Before measurements are taken, the SSL product under test shall be operated long enough to reach stabilization and temperature equilibrium. The time required first abilization depends on the type of SSL products under test. The stabilization time typically ranges from 30 min (small integrated LED lamps) to 2 or more hours for large SSL luminaries. The SSL product during stabilization shall be operated in the ambient temperature as specified in section 2.2 and in the operating orientation as specified in 6. It can be Judged that stability is reached when the variation (maximum-minimum) of at least 3 reading of the light output and electrical power over a period of 30 min, taken 15 minutes apart, is less than 0.5%. The stabilization time used for each SSL product shall be reported.

**9.0 TEST METHODS FOR TLTAL LUMINOUS FLUX MEASUREMENT**

**10.0 LUMINOUS INTENSITY DISTRIDUTION**

**11.0 LUMINOUS EFFICACY**

**13.0 UNCERTAINTY STATEMENT**

The uncertainty of the light output measurements is U=1.50% (K=2), the uncertainty of the Correlated Color Temperature measurements is U=14K (K=2), at the 95% confidence level. This calibration results are traceable to the NATIONAL INSTITUTE OF METROLOGY(NIM).

**Remark:**

1. 0 hour season, pre-heating the lamp for 45 minutes at least;
2. Ambient: 65%RH, 25℃.

**SUMMARY OF TEST RESULT:**

| SPECTRORADIOMETRIC TESTING IN INTEGRATING SPHERE | |
|---|---|
| **PHOTOMETRIC** | -- |
| Total integrated flux | 5884 |
| **SPECTRORADIOMETRIC** | -- |
| Chromaticity ordinate x | 0.3480 |
| Chromaticity ordinate y | 0.3616 |
| Chromaticity ordinate u' | 0.2095 |
| Chromaticity ordinate v' | 0.3266 |
| Correlates color temp CCT(K) | 4929 |
| Color rendering index(CRI) | 80 |
| Total radiant flux(W) | -- |
| **ELECTRICAL** | -- |
| Input voltage(Volts) | 219V |
| Input current(A) | 0.228 |
| Input power(Watts) | 48.89 |
| Power factor | 0.98 |
| Off state power(watts) | 0.0 |
| **EFFICACY** | -- |
| Lumens/watt | 120.36 |

| LUMINOUS INTENSITY DISTRIBUTION | |
|---|---|
| Maximum intensity (if applicable)(cd) | 508.4 |
| Beam angle(50%Imax)(°) | 106.6 |
| Zonal lumens in the 0°-60°zone (%) | 85.85 |
| Zonal lumens in the 0°-90°zone (%) | 100.00 |
| Zonal lumens in the 0°-120°zone (%) | 100.00 |
| Zonal lumens in the 0°-180°zone (%) | 100.00 |

**Note:** The test data was only good for the test sample. It may have deviation for other test sample.

# Lightsource Test Report

**Product Infomation**

Product Type: NSL1805S-50W

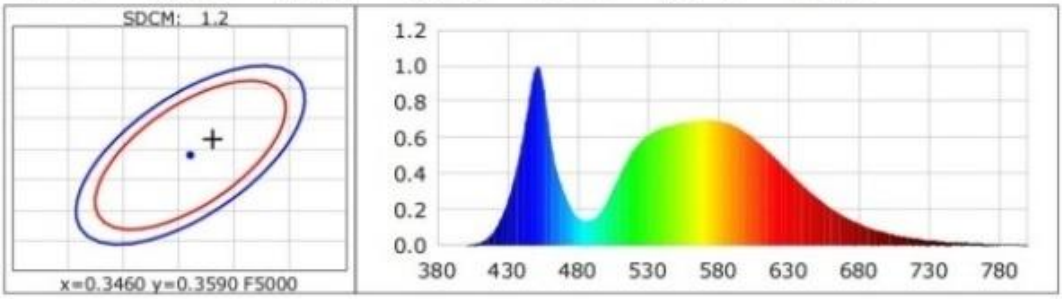
**CIE Colorimetric Parameters**

Chromaticity coordinates: x=0.3480 y=0.3616 u(u')=0.2095 v=0.3266 v'=0.4899
CCT: Tc=4929K (duv=0.00380) Color Ratio: R=0.145 G=0.823 B=0.032
Peak Wavelength: 451.8nm Half Bandwidth: 24.1nm
Dominant Wavelength: 570.4nm Color Purity: 0.129
CRI: Ra=80 TM30: Rf= 75, Rg= 93
GAI: GAI_BB_8=85.7, GAI_BB_15=93.2, GAI_EES=77.5

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| R1 =71 | R2 =79 | R3 =84 | R4 =73 | R5 =70 | R6 =70 | R7 =84 | R8 =58 |
| R9 =-25 | R10=48 | R11=69 | R12=40 | R13=72 | R14=91 | R15=65 | |

Color Quality Scale: Qa= 73.7, Qf= 73.6, Qp= 74.7, Qg= 89.0

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Q1 =80 | Q2 =97 | Q3 =67 | Q4 =61 | Q5 =69 | Q6 =72 | Q7 =76 | Q8 =85 |
| Q9 =93 | Q10=78 | Q11=74 | Q12=75 | Q13=76 | Q14=62 | Q15=69 | |

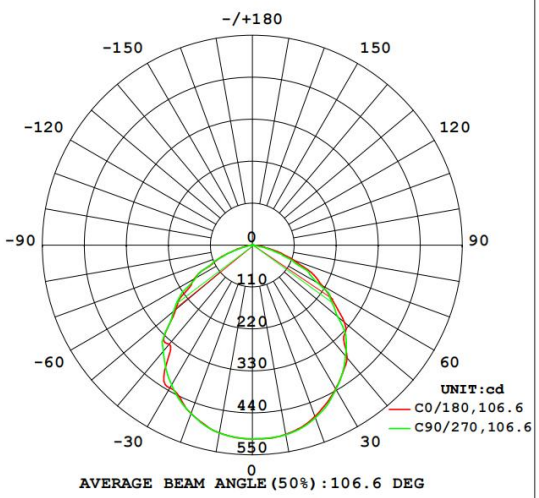


# STREETLIGHT PHOTOMETRIC TEST REPORT

| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
|---|---|---|
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |

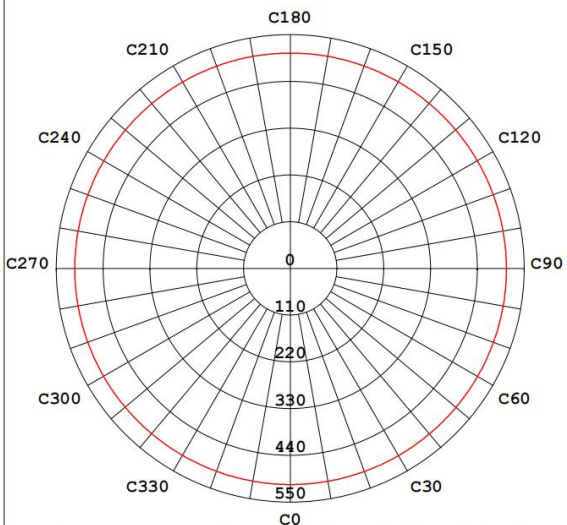
| DATA OF LAMP | | PHOTOMETRIC DATA | | | |
|---|---|---|---|---|---|
| MODEL | -- | Imax(cd) | 508.4 | η street_up(%) | 0.0 |
| NOMINAL POWER(W) | -- | LOR(%) | 100.0 | η street_down(%) | 52.6 |
| RATED VOLTAGE(V) | -- | TOTAL FLUX(lm) | 5884 | η house_up(%) | 0.0 |
| NOMINAL FLUX(lm) | 5884.4 | MAXIMUM @(C,γ ) | 0,4.0 | η house_down(%) | 47.4 |
| LAMPS INSIDE | 1 | η up(%) | 0.0 | 76 FLASHAREA(m2) | 0.00100 |
| TEST VOLTAGE(V) | -- | η down(%) | 100.0 | SLI | 16.152 |

INTENSITY DISTRIBUTION DIAGRAM
IN C PLANS




AVERAGE BEAM ANGLE(50%):106.6 DEG

MAX INTENSITY CONE SURFACE
DISTRIBUTION DIAGRAM



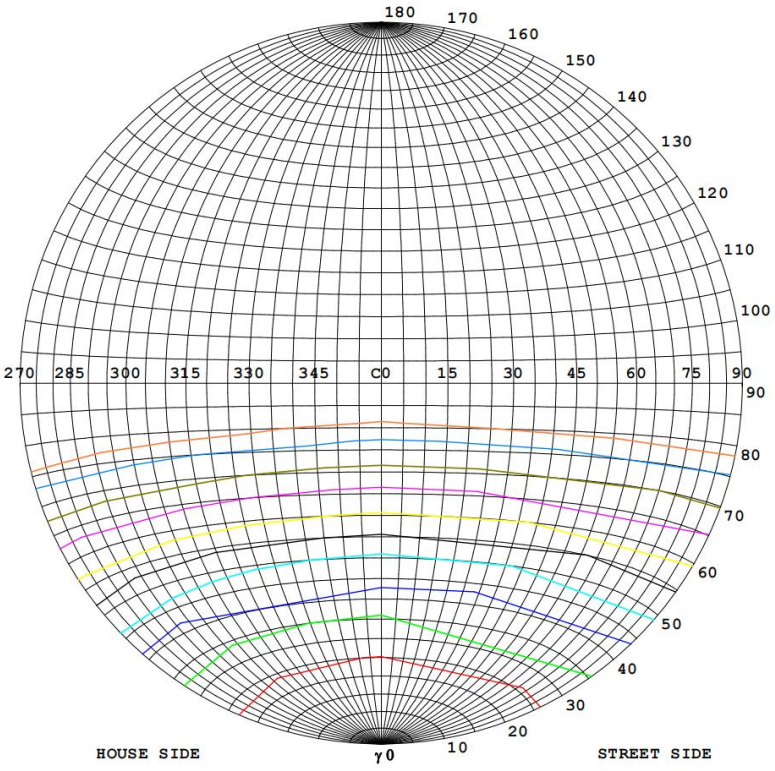

HOUSE SIDE Max @ γ = 4.0DEG STREET SIDE

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## STREETLIGHT ISOCANDELA DIAGRAM

| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
|---|---|---|
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |




Classification:

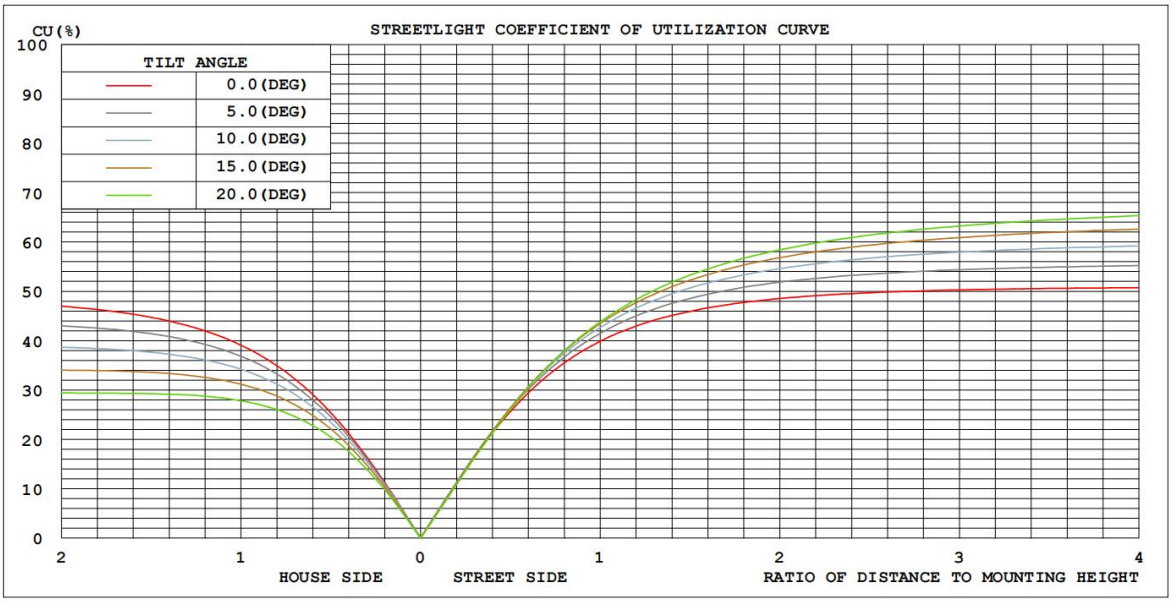
IES:Type V - Very Short
CIE:Narrow - Short
IES:Cut-off
CIE:Full cut-off
Max.At80:24.36cd/klm
Max.At90:1.694cd/klm
Max.80-90:24.36cd/klm

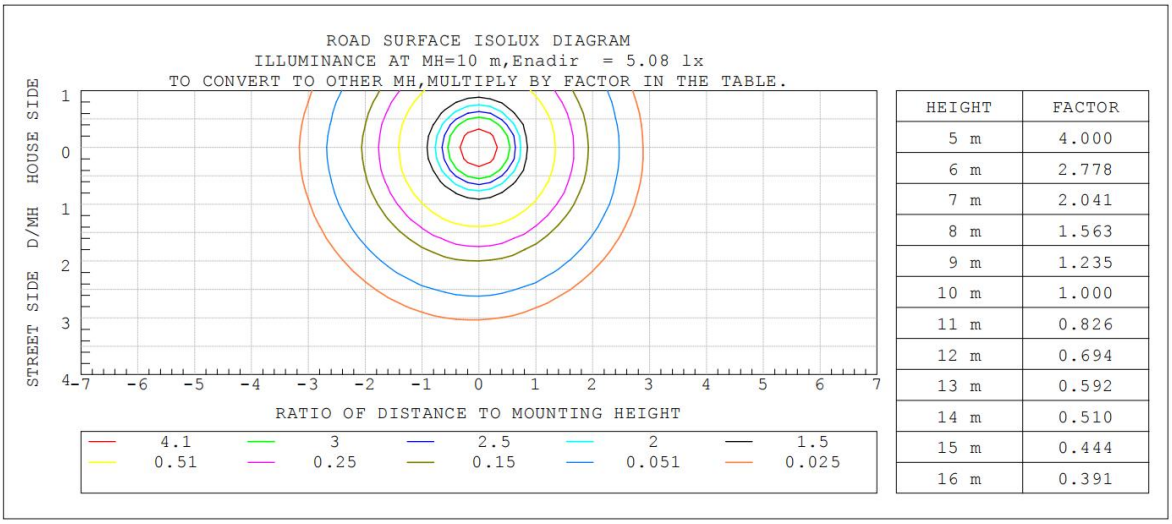
| ISOCANDELA DIAGRAM | |
|---|---|
| UNIT | cd |
| Imax=100% | 508 |
| 90% | 458 |
| 80% | 407 |
| 70% | 356 |
| 60% | 305 |
| 50% | 254 |
| 40% | 203 |
| 30% | 153 |
| 20% | 102 |
| 10% | 51 |
| 5% | 25 |

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## COEFFICIENT OF UTILIZATION CURVE AND ISOLUX DIAGRAM




| HEIGHT | FACTOR |
|---|---|
| 5 m | 4.000 |
| 6 m | 2.778 |
| 7 m | 2.041 |
| 8 m | 1.563 |
| 9 m | 1.235 |
| 10 m | 1.000 |
| 11 m | 0.826 |
| 12 m | 0.694 |
| 13 m | 0.592 |
| 14 m | 0.510 |
| 15 m | 0.444 |
| 16 m | 0.391 |

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## ZONAL FLUX DIAGRAM

| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
|---|---|---|
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |

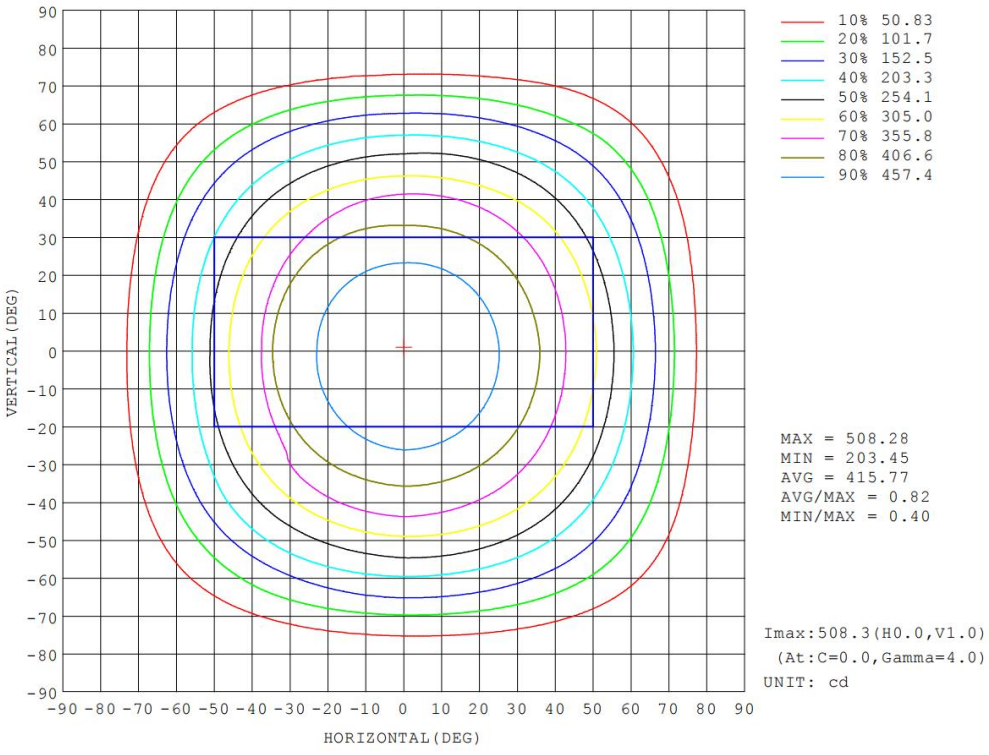
| γ | C0 | C90 | C180 | C270 | | | | | γ | Φ zone | Φ total | %lum,lamp |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 503.9 | 504.6 | 499.6 | 499.9 | | | | | 0- 10 | 48.24 | 48.24 | 3.68,3.68 |
| 20 | 478.4 | 481.7 | 469.9 | 470.1 | | | | | 10- 20 | 138.6 | 186.9 | 14.2,14.2 |
| 30 | 435.7 | 437.9 | 432.2 | 423.6 | | | | | 20- 30 | 209.5 | 396.3 | 30.2,30.2 |
| 40 | 386.4 | 379.8 | 338.8 | 363.1 | | | | | 30- 40 | 251.7 | 648.1 | 49.4,49.4 |
| 50 | 314.7 | 291.1 | 262.5 | 269.7 | | | | | 40- 50 | 254.8 | 902.8 | 68.8,68.8 |
| 60 | 209.2 | 195.3 | 175.4 | 170.6 | | | | | 50- 60 | 213.0 | 1116 | 85,85 |
| 70 | 115.3 | 97.75 | 78.09 | 76.98 | | | | | 60- 70 | 138.7 | 1255 | 95.6,95.6 |
| 80 | 31.98 | 9.262 | 14.01 | 5.159 | | | | | 70- 80 | 51.93 | 1307 | 99.5,99.5 |
| 90 | 2.193 | 0.9552 | 2.223 | 0.3639 | | | | | 80- 90 | 6.139 | 1313 | 100,100 |
| 100 | | | | | | | | | 90-100 | | | |
| 110 | | | | | | | | | 100-110 | | | |
| 120 | | | | | | | | | 110-120 | | | |
| 130 | | | | | | | | | 120-130 | | | |
| 140 | | | | | | | | | 130-140 | | | |
| 150 | | | | | | | | | 140-150 | | | |
| 160 | | | | | | | | | 150-160 | | | |
| 170 | | | | | | | | | 160-170 | | | |
| 180 | | | | | | | | | 170-180 | | | |
| DEG | LUMINOUS INTENSITY:cd | | | | | | | | | UNIT:lm | | |

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## ISOCANDELA DIAGRAM

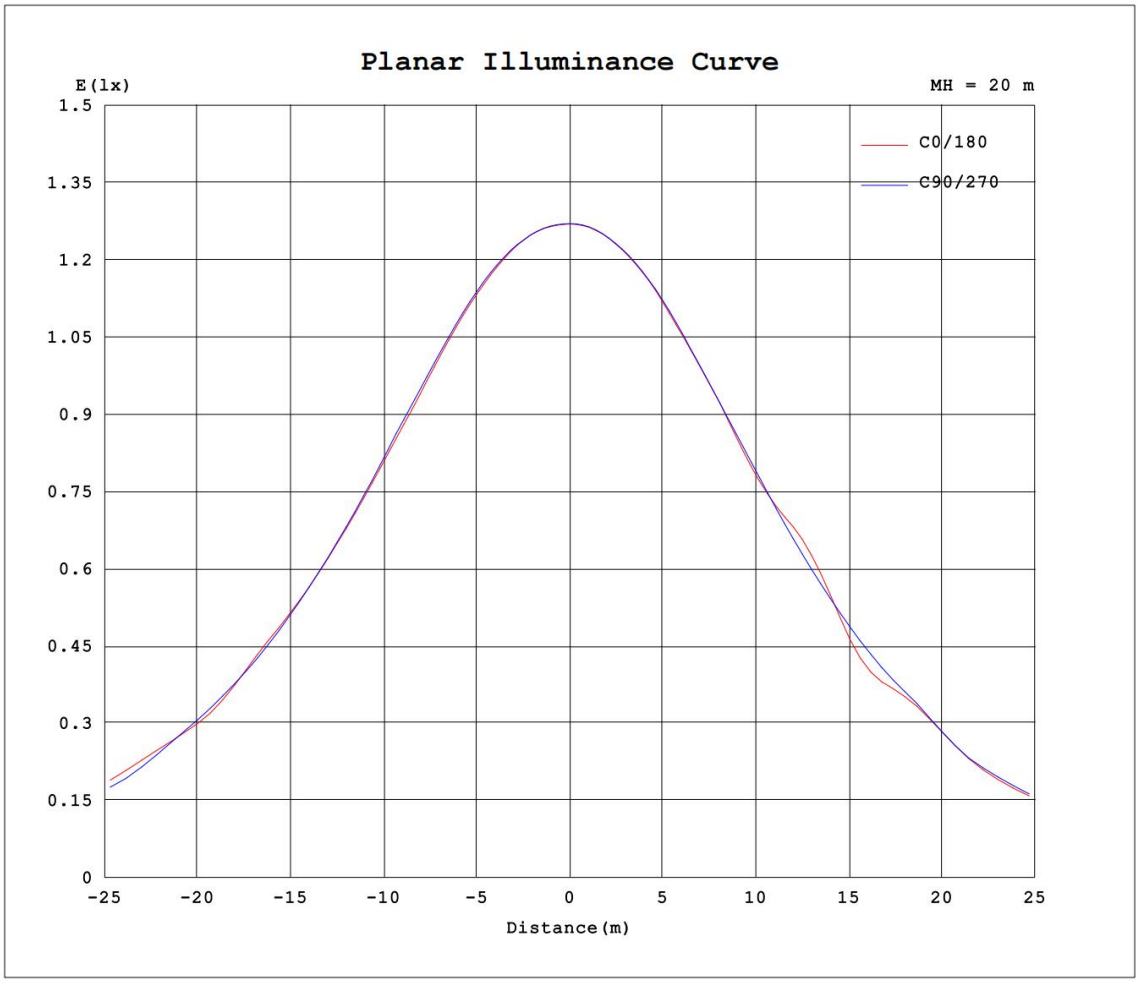
| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
|---|---|---|
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |




C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## Planar Illuminance Curve



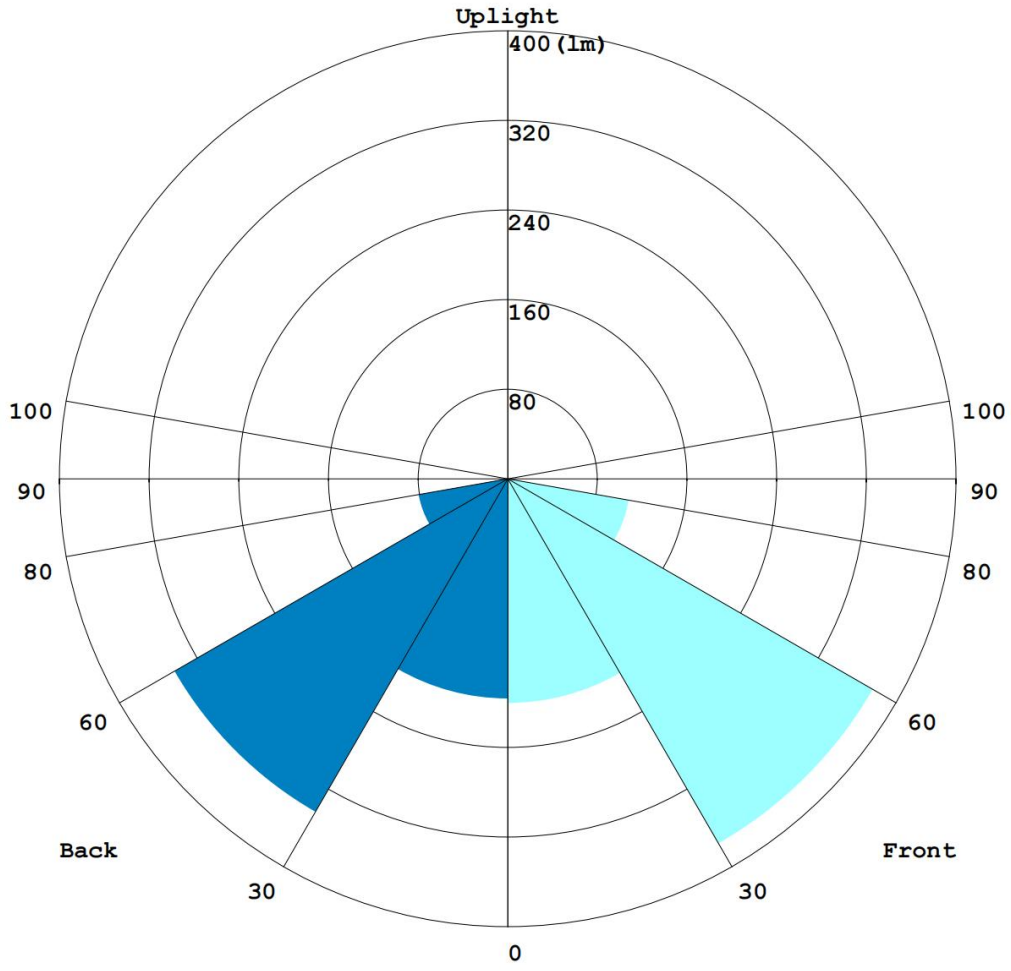

C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## LCS REPORT

| | | |
|---|---|---|
| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |

### LUMINAIRE CLASSIFICATION SYSTEM(LCS) GRAPH




C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## BUG REPORT

| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
|---|---|---|
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |

IESNA Luminaire Flux Distribution Table:

| Zone | Lumens | Luminaire % |
|---|---|---|
| FL - Front-Low(0-30) | 200.17 | 15.2 |
| FM - Front-Medium(30-60) | 376.08 | 28.7 |
| FH - Front-High(60-80) | 109.79 | 8.4 |
| FVH - Front-Very High(80-90) | 4.3028 | 0.3 |
| Total Forward Light | 690.34 | 52.6 |
| BL - Back-Low(0-30) | 196.17 | 14.9 |
| BM - Back-Medium(30-60) | 343.44 | 26.2 |
| BH - Back-High(60-80) | 80.874 | 6.2 |
| BVH - Back-Very High(80-90) | 1.8365 | 0.1 |
| Total Back Light | 622.32 | 47.4 |
| UL - Uplight-Low(90-100) | 0 | 0.0 |
| UH - Uplight-High(100-180) | 0 | 0.0 |
| Total Up Light | 0 | 0.0 |

| BUG(Back,Up,Glare) Rating | B1-U0-G0 |
|---|---|

| Zone | Downward Lumens | Upward Lumens | Total Lumens |
|---|---|---|---|
| House Side | 622.32 | 0 | 622.32 |
| Street Side | 690.34 | 0 | 690.34 |

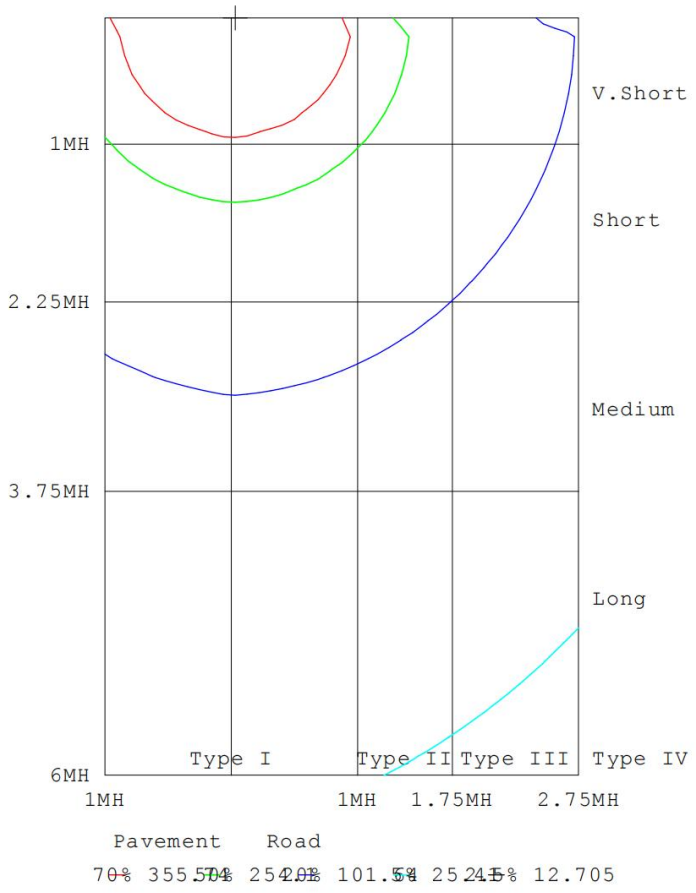
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## ROAD ISOCANDELA REPORT

| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
|---|---|---|
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |

ROAD SURFACE ISOCANDELA DIAGRAM




C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## LUMINOUS DISTRIBUTION INTENSITY DATA

| Test:U:0V I:0A P:0W PF:0.0000 Freq:0Hz Lamp Flux:5884.4 x1 lm | | |
|---|---|---|
| SPEC.: | TYPE: | WEIGHT: |
| MFR.: EVERFINE | DIM.: | SERIAL No.: |
| | SUR.:360*145mm | Shielding Angle: |

Table--1 UNIT: cd

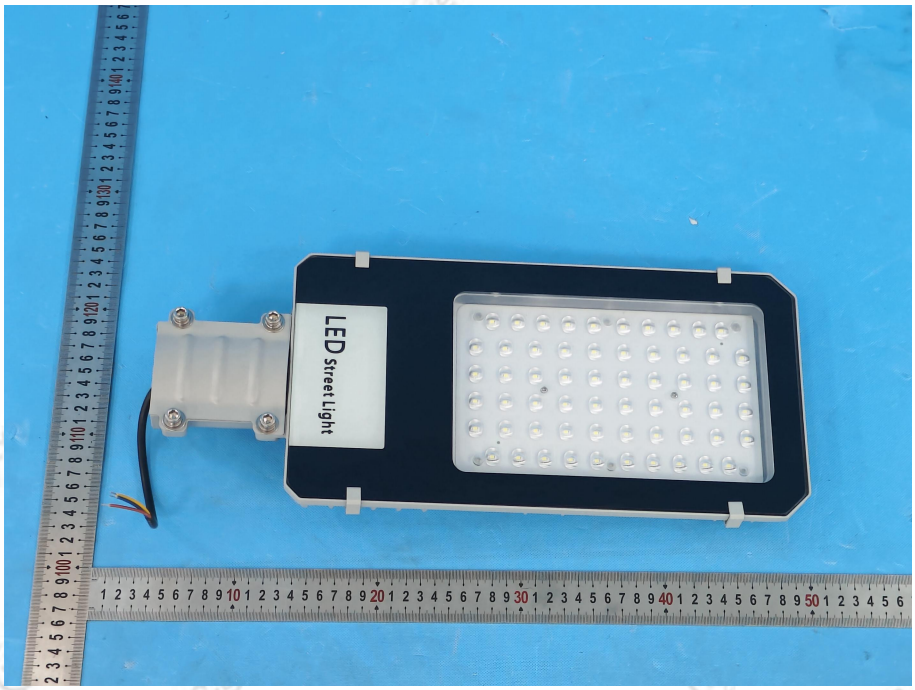
| γ (DEG) \ C(DEG) | 0 | 90 | 180 | 270 |
|---|---|---|---|---|
| 0 | 508 | 508 | 508 | 508 |
| 5 | 508 | 508 | 506 | 506 |
| 10 | 504 | 505 | 500 | 500 |
| 15 | 495 | 497 | 487 | 488 |
| 20 | 478 | 482 | 470 | 470 |
| 25 | 459 | 463 | 445 | 449 |
| 30 | 436 | 438 | 432 | 424 |
| 35 | 411 | 411 | 401 | 395 |
| 40 | 386 | 380 | 339 | 363 |
| 45 | 339 | 347 | 321 | 322 |
| 50 | 315 | 291 | 263 | 270 |
| 55 | 259 | 251 | 215 | 230 |
| 60 | 209 | 195 | 175 | 171 |
| 65 | 171 | 157 | 116 | 119 |
| 70 | 115 | 97.8 | 78.1 | 77.0 |
| 75 | 68.0 | 53.8 | 39.9 | 32.7 |
| 80 | 32.0 | 9.26 | 14.0 | 5.16 |
| 85 | 8.69 | 2.76 | 3.11 | 1.68 |
| 90 | 2.19 | 0.96 | 2.22 | 0.36 |

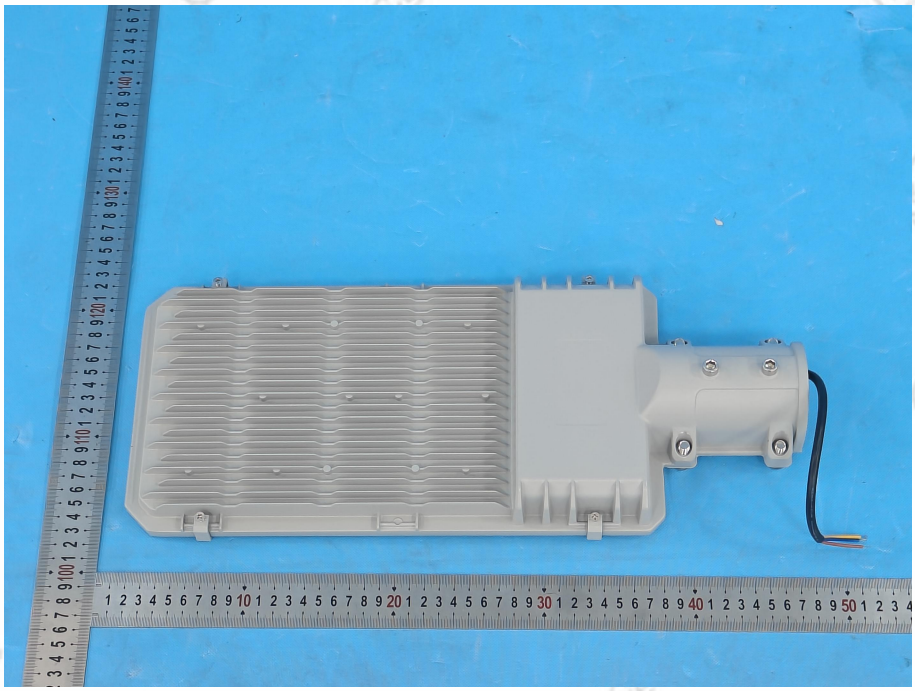
C Range: 0 - 360DEG
C Interval: 90.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:DAMIN
Test Date:2024-08-28

γ Range: 0 - 90DEG
γ Interval: 1.0DEG
Test System:EVERFINE GO-2000A_V1 SYSTEM V2.00.411
Humidity:65.0%
Test Distance:10.200m [K=1.0000]
Remarks:

## ANNEX A:

**Photo-documentation**



**--The end of report--**