

LM-79-08 Test Report

For

Torshare Ltd.

(Brand Name: TORSHARE)

5th Minying Road No.3 Industrial Area Shuitian Shiyuan Town Bao'an District, Shenzhen,
Guangdong, 518108

2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model name(s): TAA24-6G-40W-P-347-TCP

Remark: The power and CCT are adjustable.

Representative (Tested) Model:

TAA24-6G-40W-P-347-TCP(0%,3000K)

TAA24-6G-40W-P-347-TCP(50%,3500K)

TAA24-6G-40W-P-347-TCP(100%,4000K)

Model Different: N/A

Test & Report By:

Ferrum Li

Engineer: Ferrum Li

Date: Jun.15,2022

Review By:

Garman Mo

Manager: Garman Mo

Note: 1.The results contained in this report pertain only to the tested samples.

2.This report does not imply product certification, approval, or endorsement by A2LA, or any agency of the Federal Government.

Laboratory: STANDARD-TECH TESTING SERVICES

Report Format Number STD-QP019-409-B/0

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

<http://www.standard-tech.com>

1.1 Product Information:

| | | |
|---|--|-----|
| Organization Name | Torshare Ltd. | |
| Brand Name | TORSHARE | |
| Model Number | TAA24-6G-40W-P-347-TCP | |
| SKU (if available) | N/A | |
| Type of Luminaire (for integral lamps, list base type and lamp type) | 2x4 Luminaires for Ambient Lighting of Interior Commercial Spaces | |
| Rated Voltage / Frequency | 120-347Vac, 50/60Hz | |
| Nominal Power | 30W/35W/40W | |
| Rated Initial Lamp Lumen | -- | |
| Declared CCT | 3000K,3500K,4000K | |
| LED Manufacturer | ShenZhen JuFei Optoelectronics Co., Ltd. | |
| LED Model | 01.JT.DG2835W80N03 | |
| Integral Controls Availability | No | |
| Dimming | Continuous | |
| Sample Number | JAE220604-B1 | |
| Luminaire Aperture (for downlights) | -- | in. |
| Luminaire Length | -- | mm |
| Luminaires Width | -- | mm |
| Number of Units (modular products) | N/A | s |

Photo



1.2 Test Specifications:

| | |
|--------------------|--|
| Date of Receipt | Jun.06,2022 |
| Date of Test | Jun.08,2022 |
| Test item | <ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters |
| Reference Standard | <ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2017 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems |

1.3 Test Methods

| |
|---|
| <p>1) Photometric and Light Distribution Measurement – Goniophotometer Method: Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1 ° vertical intervals and 22.5 ° horizontal intervals.</p> |
| <p>2) Chromaticity Measurement – Sphere-Spectroradiometer Method: Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.</p> |
| <p>3) Electrical Measurements: Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.</p> |

2.1 Electrical, Photometric and Chromaticity Measurements

| | | | |
|-------------------------|--------------------------------------|-----------------------------------|---------|
| Test date | 2022-06-08 | Test Ambient: | 25±1 °C |
| Test Orientation | As intended | Stabilization Time (min) | 60 |
| Model Number | TAA24-6G-40W-P-347-TCP(0 %,3000K) | Total Operating Time (min) | 75 |

Electrical Measurement:

| Sample No. | Voltage (Vac) | Frequency (Hz) | Current (A) | Power (W) | Power Factor | THD % |
|--------------------------|---------------|----------------|-------------|-----------|--------------|-----------|
| JAE220604- | 120.0 | 60 | 0.3138 | 37.41 | 0.9934 | 8.11 |
| B1 | 347.0 | 60 | 0.1214 | 38.18 | 0.9067 | 20.18 |
| DLC Pass Criteria | | | | | >= 0.9(-3%) | <= 20(+5) |

Photometric Measurement – Goniophotometer Method(Test Distance: 26.000m):

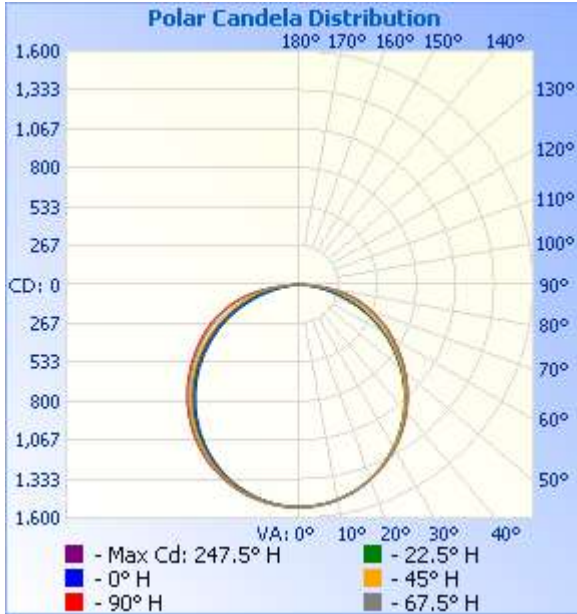
| Parameter | Result | | DLC V5.1 Pass Criteria | |
|------------------------------------|--------|--------|------------------------|----------------------|
| Test Voltage (V) | 120 | 347 | -- | |
| Frequency (Hz) | 60 | 60 | | |
| Total Luminous (lm) | 4593.2 | 4634.1 | >=3000(-10%) | |
| Luminous Efficacy (lm/W) | 122.78 | 121.38 | Standard: >= 110(-3%) | Premium: >= 125(-3%) |
| Zonal lumens in the 0-60 °zone (%) | 76.2 | -- | >= 75(-3) | |
| SC: 0-180 °(if applicable) | 1.27 | -- | 1.0-2.0(±0.1) | |
| SC: 90-270 °(if applicable) | 1.25 | -- | 1.0-2.0(±0.1) | |
| Corrected UGR(Crosswise) | 19.0 | -- | Premium: <22.0 | |
| Corrected UGR(Endwise) | 20.6 | -- | Premium: <22.0 | |
| Beam Angle (°) | 116.3 | -- | -- | |
| Center Beam Candle Power (cd) | 1524 | -- | -- | |

Zonal Lumen Tabulation

| Zonal Lumen Summary | | |
|---------------------|---------|-------------|
| Zone | Lumens | % Luminaire |
| 0-30 | 1,189.4 | 25.9% |
| 0-40 | 1,955.5 | 42.6% |
| 0-60 | 3,500.7 | 76.2% |
| 60-90 | 1,091.7 | 23.8% |
| 70-100 | 497.7 | 10.8% |
| 90-120 | 0.4 | 0% |
| 0-90 | 4,592.4 | 100% |
| 90-180 | 0.4 | 0% |
| 0-180 | 4,592.8 | 100% |

| Lumens Per Zone | | | | | |
|-----------------|--------|---------|---------|--------|---------|
| Zone | Lumens | % Total | Zone | Lumens | % Total |
| 0-10 | 144.3 | 3.1% | 90-100 | 0.1 | 0% |
| 10-20 | 414.2 | 9.0% | 100-110 | 0.2 | 0% |
| 20-30 | 630.9 | 13.7% | 110-120 | 0.1 | 0% |
| 30-40 | 766.1 | 16.7% | 120-130 | 0.0 | 0% |
| 40-50 | 803.8 | 17.5% | 130-140 | 0.0 | 0% |
| 50-60 | 741.4 | 16.1% | 140-150 | 0.0 | 0% |
| 60-70 | 594.1 | 12.9% | 150-160 | 0.0 | 0% |
| 70-80 | 384.0 | 8.4% | 160-170 | 0.0 | 0% |
| 80-90 | 113.5 | 2.5% | 170-180 | 0.0 | 0% |

Photometric Data



Illuminance at a Distance

| Distance (ft) | Center Beam fc | Beam Width | Beam Width (ft) |
|---------------|----------------|------------|-----------------|
| 4.0ft | 95.3 fc | 11.9 ft | 14.0 ft |
| 8.0ft | 23.8 fc | 23.9 ft | 27.9 ft |
| 12.0ft | 10.6 fc | 35.8 ft | 41.9 ft |
| 16.0ft | 6.0 fc | 47.7 ft | 55.9 ft |
| 20.0ft | 3.8 fc | 59.7 ft | 69.9 ft |

■ Vert. Spread: 112.3°
■ Horiz. Spread: 120.4°

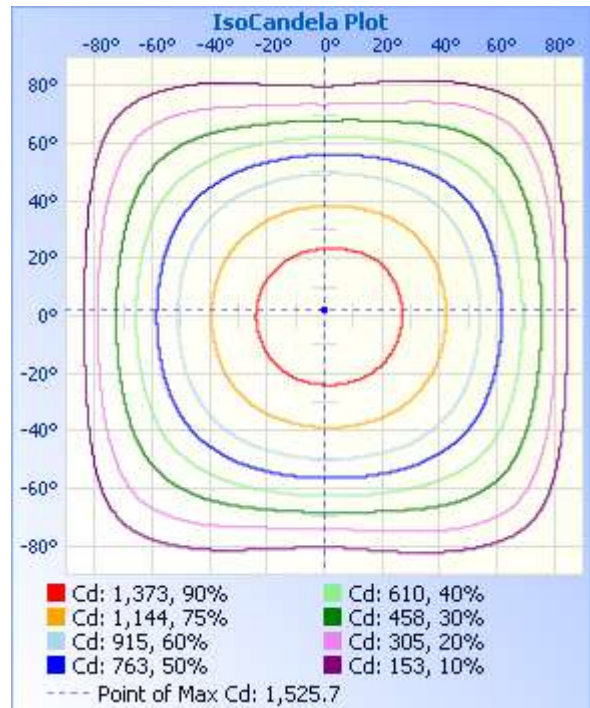
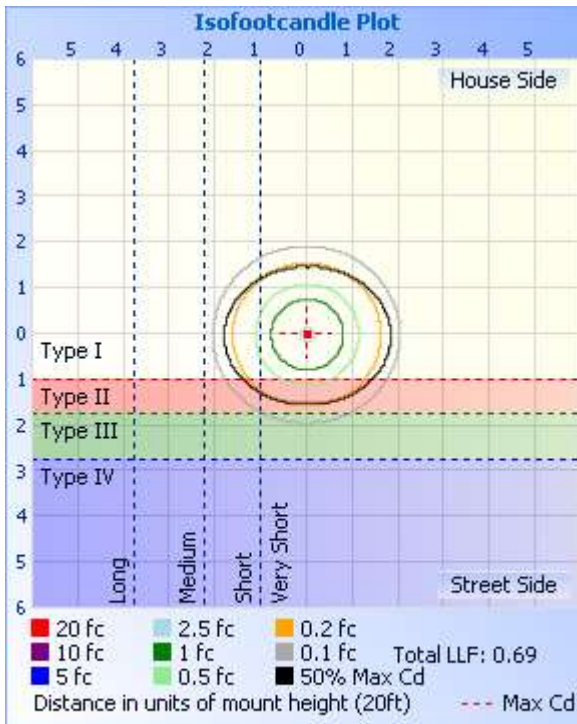


Table--1 UNIT: cd

| C (DEG) \ □ (DEG) | 0 | 22.5 | 45 | 67.5 | 90 | 112.5 | 135 | 157.5 | 180 | 202.5 | 225 | 247.5 | 270 | 292.5 | 315 | 337.5 |
|-------------------|------|------|------|------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| 0 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 | 1524 |
| 5 | 1522 | 1521 | 1523 | 1520 | 1518 | 1515 | 1516 | 1515 | 1514 | 1512 | 1514 | 1515 | 1517 | 1517 | 1519 | 1522 |
| 10 | 1506 | 1508 | 1508 | 1502 | 1498 | 1496 | 1495 | 1494 | 1495 | 1492 | 1492 | 1493 | 1495 | 1498 | 1502 | 1505 |
| 15 | 1481 | 1481 | 1483 | 1471 | 1464 | 1462 | 1462 | 1464 | 1463 | 1460 | 1458 | 1457 | 1462 | 1465 | 1472 | 1478 |
| 20 | 1442 | 1445 | 1441 | 1425 | 1418 | 1416 | 1415 | 1420 | 1420 | 1414 | 1413 | 1411 | 1415 | 1420 | 1429 | 1438 |
| 25 | 1393 | 1395 | 1388 | 1370 | 1358 | 1357 | 1357 | 1363 | 1364 | 1359 | 1359 | 1354 | 1355 | 1363 | 1375 | 1388 |
| 30 | 1333 | 1333 | 1324 | 1301 | 1289 | 1287 | 1288 | 1298 | 1300 | 1294 | 1293 | 1285 | 1285 | 1293 | 1309 | 1323 |
| 35 | 1260 | 1260 | 1248 | 1223 | 1208 | 1206 | 1208 | 1221 | 1224 | 1218 | 1215 | 1203 | 1202 | 1215 | 1233 | 1251 |
| 40 | 1179 | 1178 | 1161 | 1135 | 1117 | 1117 | 1121 | 1136 | 1139 | 1134 | 1128 | 1113 | 1111 | 1124 | 1148 | 1169 |
| 45 | 1089 | 1086 | 1068 | 1037 | 1017 | 1018 | 1025 | 1043 | 1046 | 1041 | 1030 | 1012 | 1010 | 1026 | 1051 | 1077 |
| 50 | 993 | 988 | 964 | 933 | 910 | 910 | 921 | 942 | 948 | 941 | 924 | 905 | 901 | 919 | 949 | 978 |
| 55 | 893 | 883 | 855 | 819 | 795 | 795 | 811 | 836 | 844 | 836 | 812 | 790 | 784 | 805 | 839 | 875 |
| 60 | 794 | 778 | 740 | 699 | 672 | 674 | 697 | 728 | 740 | 729 | 696 | 670 | 663 | 685 | 726 | 769 |
| 65 | 693 | 674 | 624 | 574 | 544 | 549 | 580 | 621 | 633 | 620 | 578 | 544 | 534 | 561 | 612 | 667 |
| 70 | 581 | 564 | 513 | 447 | 413 | 421 | 467 | 510 | 523 | 508 | 465 | 417 | 402 | 434 | 501 | 558 |
| 75 | 462 | 446 | 397 | 321 | 279 | 297 | 354 | 398 | 415 | 397 | 352 | 292 | 270 | 309 | 387 | 442 |
| 80 | 316 | 313 | 276 | 208 | 153 | 185 | 244 | 278 | 289 | 278 | 242 | 181 | 146 | 198 | 270 | 312 |
| 85 | 114 | 121 | 121 | 98.6 | 50.5 | 86.4 | 113 | 117 | 118 | 113 | 106 | 81.0 | 45.6 | 91.5 | 116 | 120 |
| 90 | 0.18 | 0.20 | 0.35 | 0.49 | 0.53 | 0.61 | 0.45 | 0.44 | 0.00 | 0.00 | 0.01 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95 | 0.00 | 0.00 | 0.00 | 0.18 | 0.44 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100 | 0.00 | 0.00 | 0.00 | 0.18 | 0.53 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.62 | 0.00 | 0.00 | 0.00 |
| 105 | 0.00 | 0.00 | 0.00 | 0.18 | 1.06 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.26 | 0.00 | 1.41 | 0.00 | 0.00 | 0.00 |
| 110 | 0.00 | 0.00 | 0.00 | 0.18 | 1.06 | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.41 | 0.00 | 0.00 | 0.00 |
| 115 | 0.00 | 0.00 | 0.00 | 0.18 | 0.44 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.15 | 0.00 | 0.00 | 0.00 |
| 120 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 125 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 130 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 135 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 140 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 145 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 150 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 155 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 160 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 165 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 170 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 175 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 180 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

2.2 Electrical, Photometric and Chromaticity Measurements

| | | | |
|-------------------------|--------------------------------------|-----------------------------------|---------|
| Test date | 2022-06-08 | Test Ambient: | 25±1 °C |
| Test Orientation | As intended | Stabilization Time (min) | 60 |
| Model Number | TAA24-6G-40W-P-347-TCP(0 %,3000K) | Total Operating Time (min) | 61 |

Electrical Measurement:

| Sample No. | Voltage (Vac) | Frequency (Hz) | Current (A) | Power (W) | Power Factor | THD % |
|--------------------------|---------------|----------------|-------------|-----------|--------------|-----------|
| JAE220604- | 120.0 | 60 | 0.3145 | 37.51 | 0.9939 | 8.05 |
| B1 | 347.0 | 60 | 0.1216 | 38.27 | 0.9072 | 20.13 |
| DLC Pass Criteria | | | | | >= 0.9(-3%) | <= 20(+5) |

Chromaticity Measurement - Sphere-Spectroradiometer

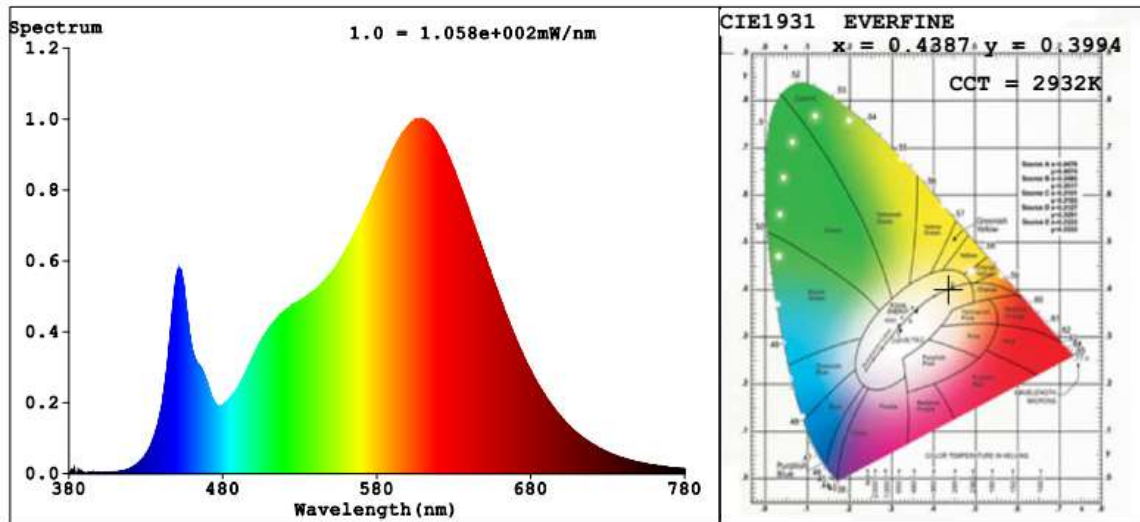
Method(Self-absorption:1.1869)(4π geometry):

| Parameter | Result | Parameter | Result |
|-----------------------|---------------------|-----------------------------|--------|
| Test Voltage (V) | 120 | Color Rendering Index (CRI) | 86.2 |
| Frequency (Hz) | 60 | R9 | 21 |
| CCT (K) | 2932 | Rg | 98 |
| Duv | -0.0021 | Rf | 86 |
| Chromaticity (x, y) | x=0.4387 y=0.3994 | Rcs,h1(%) | -10 |
| Chromaticity (u', v') | u'=0.2538 v'=0.5198 | | |

Photometric Measurement –Sphere-Spectroradiometer Method:

| Parameter | Result | | DLC V5.1 Pass Criteria | |
|--------------------------|--------|--------|------------------------|----------------------|
| Test Voltage (V) | 120 | 347 | -- | |
| Frequency (Hz) | 60 | 60 | | |
| Total Luminous (lm) | 4615 | 4656 | >=3000(-10%) | |
| Luminous Efficacy (lm/W) | 123.03 | 121.66 | Standard: >= 110(-3%) | Premium: >= 125(-3%) |

Spectral Power Distribution & Chromaticity Diagram



Special Color Rendering Indices

| | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|
| R1 =86 | R2 =95 | R3 =95 | R4 =85 | R5 =87 | R6 =94 | R7 =83 | |
| R8 =64 | R9 =21 | R10=88 | R11=87 | R12=79 | R13=89 | R14=98 | R15=79 |

TM30

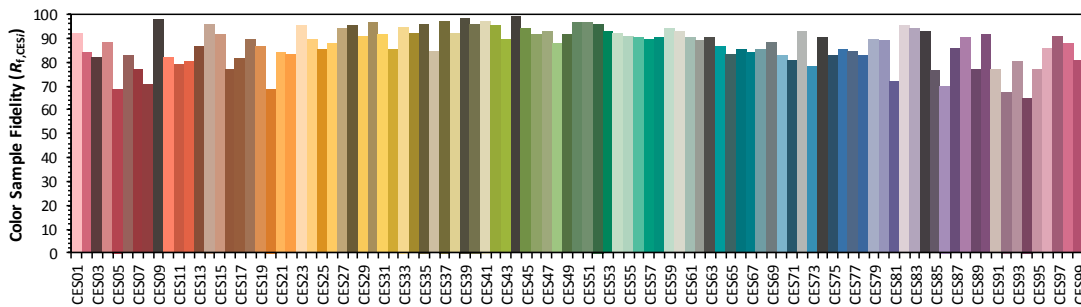
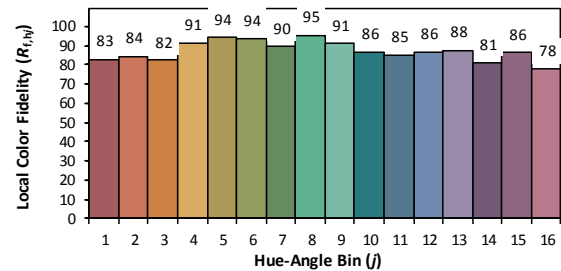
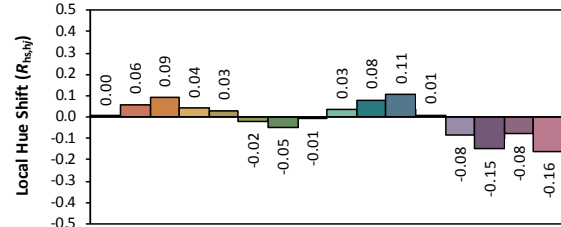
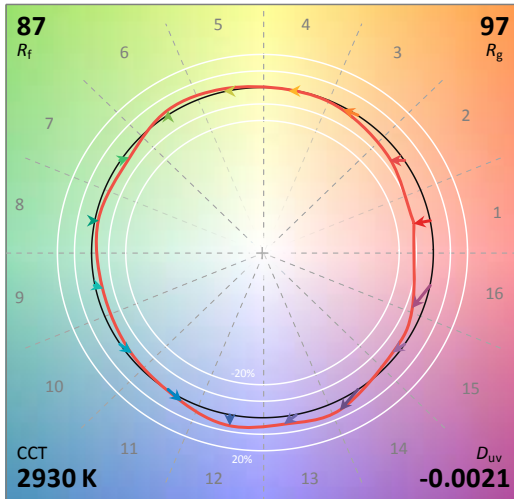
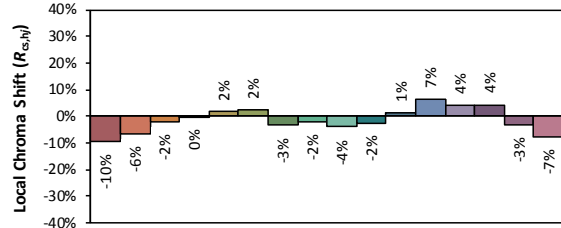
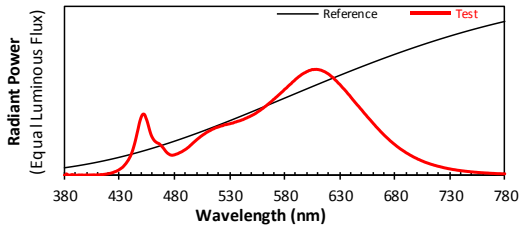
ANSI/IES TM-30-18 Color Rendition Report

Source: 01. JT. DG2835W80N03

Manufacturer: Torshare Ltd.

Date: 2022-06-08

Model: TAA24-6G-40W-P-347-TCP (0%, 3000K)



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

x 0.4387
 y 0.3993
 u' 0.2538
 v' 0.5198

| | |
|---------------------|----|
| CIE 13.3-1995 (CRI) | |
| R_a | 86 |
| R_g | 21 |

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0

2.3 Electrical, Photometric and Chromaticity Measurements

| | | | |
|-------------------------|---------------------------------------|-----------------------------------|---------|
| Test date | 2022-06-08 | Test Ambient: | 25±1 °C |
| Test Orientation | As intended | Stabilization Time (min) | 60 |
| Model Number | TAA24-6G-40W-P-347-TCP(5 0%,3500K) | Total Operating Time (min) | 61 |

Electrical Measurement:

| Sample No. | Voltage (Vac) | Frequency (Hz) | Current (A) | Power (W) | Power Factor | THD % |
|--------------------------|---------------|----------------|-------------|-----------|--------------|-----------|
| JAE220604-B1 | 120.0 | 60 | 0.3101 | 37.03 | 0.9952 | 7.85 |
| | 347.0 | 60 | 0.1193 | 37.67 | 0.9102 | 19.87 |
| DLC Pass Criteria | | | | | >= 0.9(-3%) | <= 20(+5) |

Chromaticity Measurement - Sphere-Spectroradiometer

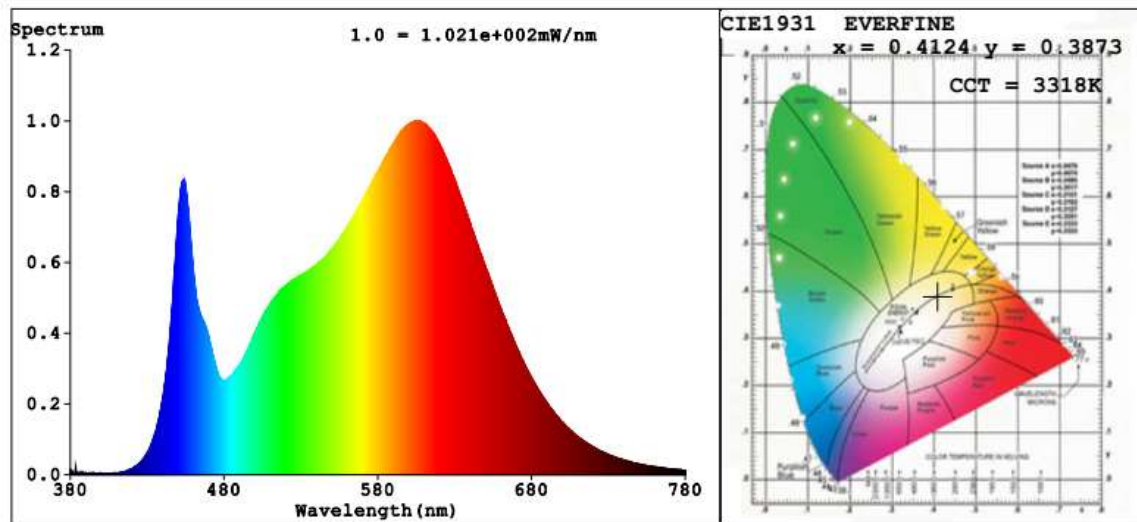
Method(Self-absorption:1.1872)(4π geometry):

| Parameter | Result | Parameter | Result |
|-----------------------|---------------------|-----------------------------|--------|
| Test Voltage (V) | 120 | Color Rendering Index (CRI) | 87.1 |
| Frequency (Hz) | 60 | R9 | 26 |
| CCT (K) | 3318 | Rg | 97 |
| Duv | -0.0030 | Rf | 87 |
| Chromaticity (x, y) | x=0.4124 y=0.3873 | Rcs,h1(%) | -10 |
| Chromaticity (u', v') | u'=0.2418 v'=0.5109 | | |

Photometric Measurement – Sphere-Spectroradiometer Method:

| Parameter | Result | | DLC V5.1 Pass Criteria | |
|--------------------------|--------|--------|------------------------|----------------------|
| Test Voltage (V) | 120 | 347 | -- | |
| Frequency (Hz) | 60 | 60 | | |
| Total Luminous (lm) | 4911 | 4955 | >=3000(-10%) | |
| Luminous Efficacy (lm/W) | 132.62 | 131.54 | Standard: >= 110(-3%) | Premium: >= 125(-3%) |

Spectral Power Distribution & Chromaticity Diagram



Special Color Rendering Indices

R1 =88 R2 =96 R3 =95 R4 =86 R5 =88 R6 =94 R7 =84
 R8 =67 R9 =26 R10=90 R11=87 R12=75 R13=90 R14=98 R15=81

TM30

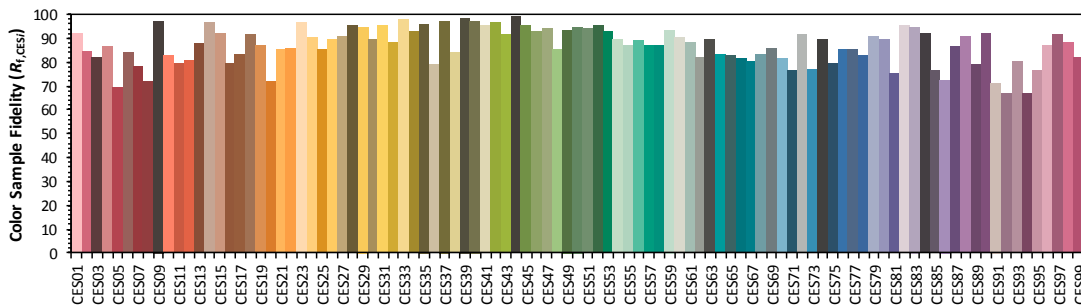
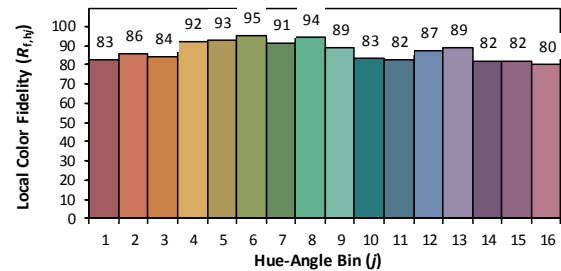
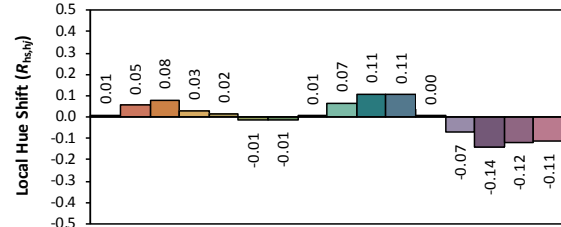
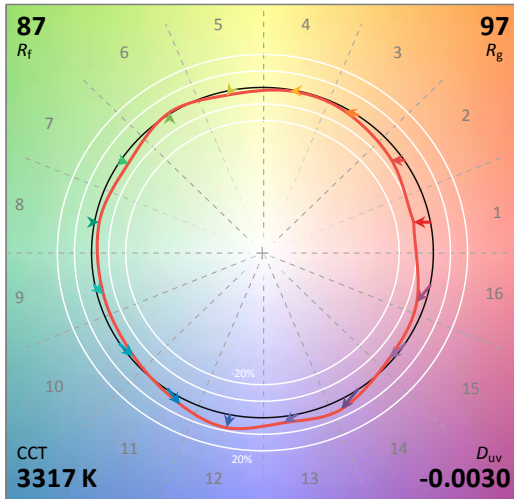
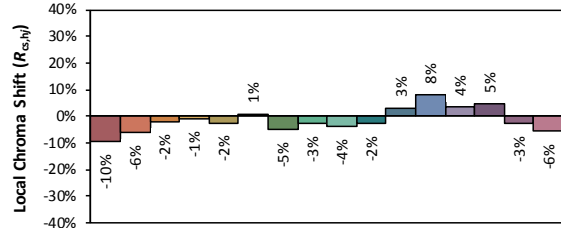
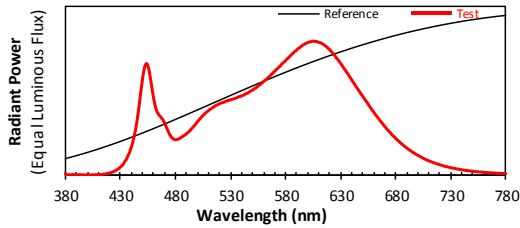
ANSI/IES TM-30-18 Color Rendition Report

Source: 01. JT. DG2835W80N03

Manufacturer: Torshare Ltd.

Date: 2022-06-08

Model: TAA24-6G-40W-P-347-TCP (50%, 3500K)



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

x 0.4125
 y 0.3872
 u' 0.2419
 v' 0.5108

CIE 13.3-1995 (CRI)
 R_a 87
 R_g 26

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0

2.4 Electrical, Photometric and Chromaticity Measurements

| | | | |
|-------------------------|------------------------------------|-----------------------------------|---------|
| Test date | 2022-06-08 | Test Ambient: | 25±1 °C |
| Test Orientation | As intended | Stabilization Time (min) | 60 |
| Model Number | TAA24-6G-40W-P-347-TCP(100%,4000K) | Total Operating Time (min) | 61 |

Electrical Measurement:

| Sample No. | Voltage (Vac) | Frequency (Hz) | Current (A) | Power (W) | Power Factor | THD % |
|--------------------------|---------------|----------------|-------------|-----------|--------------|-----------|
| JAE220604- | 120.0 | 60 | 0.3189 | 38.04 | 0.9941 | 7.94 |
| B1 | 347.0 | 60 | 0.1192 | 37.53 | 0.9072 | 20.09 |
| DLC Pass Criteria | | | | | >= 0.9(-3%) | <= 20(+5) |

Chromaticity Measurement - Sphere-Spectroradiometer

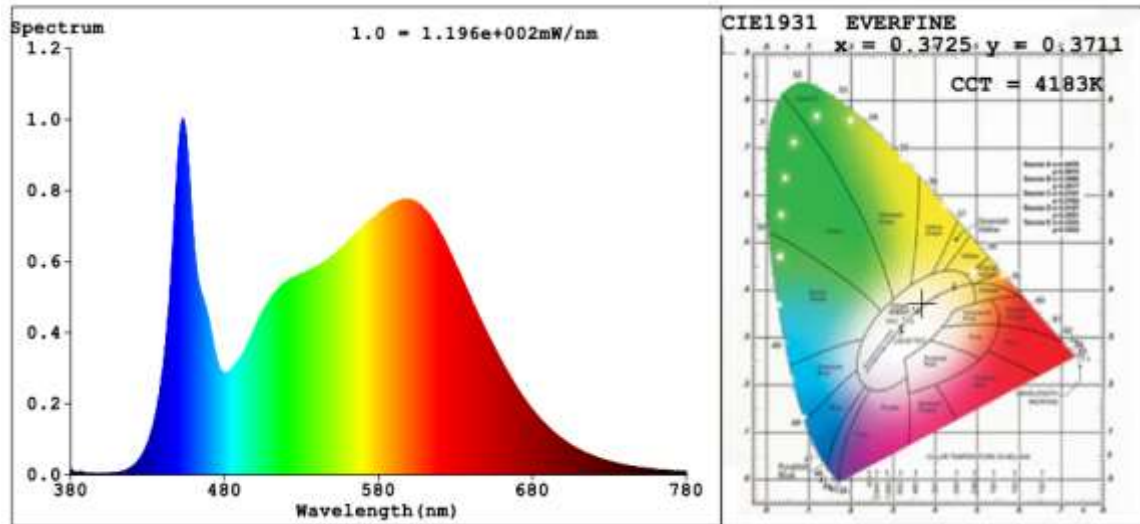
Method(Self-absorption:1.1873)(4π geometry):

| Parameter | Result | Parameter | Result |
|-----------------------|---------------------|-----------------------------|--------|
| Test Voltage (V) | 120 | Color Rendering Index (CRI) | 86.2 |
| Frequency (Hz) | 60 | R9 | 20 |
| CCT (K) | 4183 | Rg | 95 |
| Duv | -0.0003 | Rf | 86 |
| Chromaticity (x, y) | x=0.3725 y=0.3711 | Rcs,h1(%) | -11 |
| Chromaticity (u', v') | u'=0.2221 v'=0.4979 | | |

Photometric Measurement – Sphere-Spectroradiometer Method:

| Parameter | Result | | DLC V5.1 Pass Criteria | |
|--------------------------|--------|--------|------------------------|----------------------|
| Test Voltage (V) | 120 | 347 | -- | |
| Frequency (Hz) | 60 | 60 | | |
| Total Luminous (lm) | 4924 | 4968 | >=3000(-10%) | |
| Luminous Efficacy (lm/W) | 129.44 | 132.37 | Standard: >= 110(-3%) | Premium: >= 125(-3%) |

Spectral Power Distribution & Chromaticity Diagram



Special Color Rendering Indices

R1 =86 R2 =93 R3 =96 R4 =84 R5 =85 R6 =90 R7 =87
R8 =68 R9 =20 R10=83 R11=85 R12=65 R13=88 R14=99 R15=80

TM30

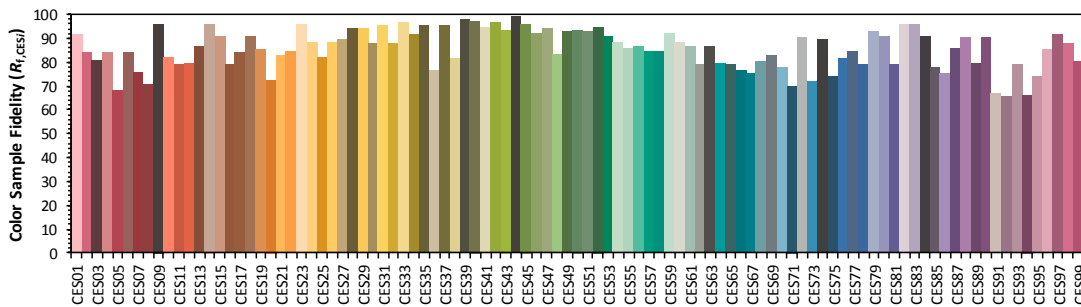
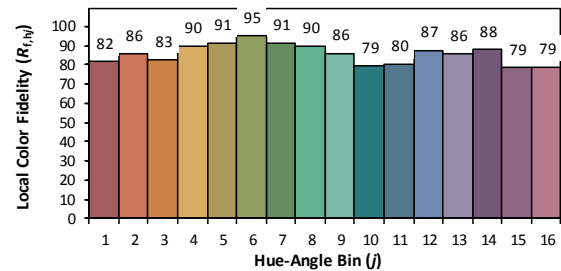
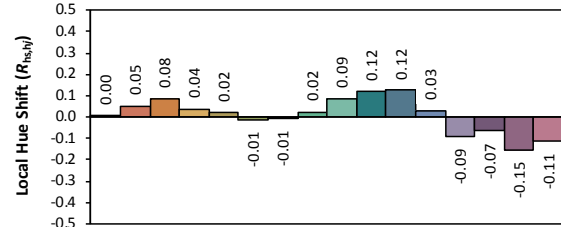
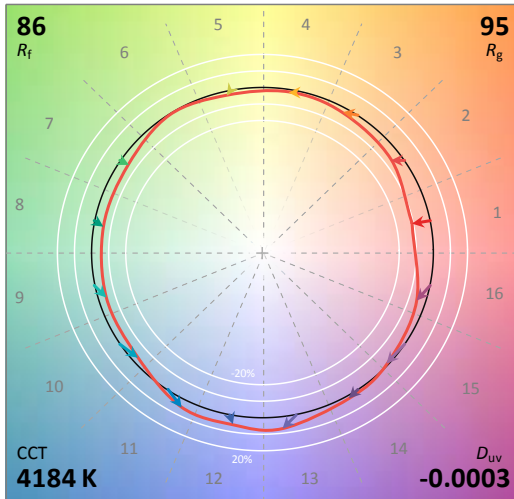
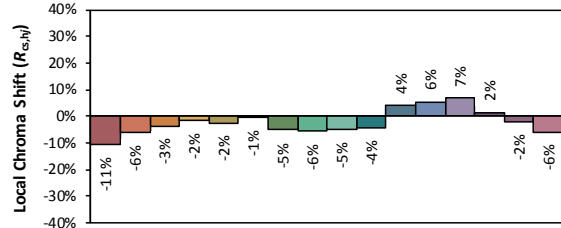
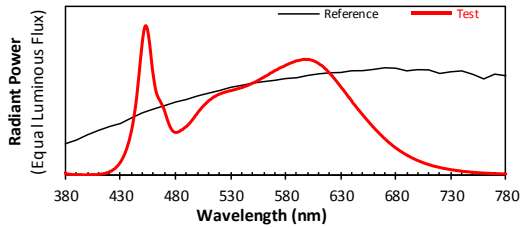
ANSI/IES TM-30-18 Color Rendition Report

Source: 01. JT. DG2835W80N03

Manufacturer: Torshare Ltd.

Date: 2022-06-08

Model: TAA24-6G-40W-P-347-TCP (100%, 4000K)



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

x 0.3725
 y 0.3710
 u' 0.2222
 v' 0.4978

CIE 13.3-1995
 (CRI)
 R_a 86
 R_g 20

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0

3. Test Equipment

| Equipment ID | Equipment Name | Last Calibration Date | Next Calibration Date |
|---|--|---------------------------------|-----------------------|
| ST-R-423 | 2 meter Integrating Sphere | Verified by D204 standard lamp | |
| ST-R-327 | Spectral analysis system HAAS-2000 | Verified by D204 standard lamp | |
| ST-R-332 | Standard Lamp | 2021-07-07 | 2022-07-06 |
| ST-R-333 | Power Meter for Integrating Sphere | 2021-06-25 | 2022-06-24 |
| ST-R-405 | Temperature Probe for Integrating Sphere | 2022-01-21 | 2023-01-20 |
| ST-R-355 | Goniophotometer system | Verified by D908S standard lamp | |
| ST-R-359 | Standard Lamp | 2021-07-07 | 2022-07-06 |
| ST-R-358 | Power Meter for Goniophotometer | 2021-06-25 | 2022-06-24 |
| ST-R-354 | hygrothermograph for Goniophotometer | 2021-06-26 | 2022-06-25 |
| Expand Uncertainty: Photometric Measurement (Sphere):3.06%, k=2 Chromaticity Measurement(Sphere):43.20K, k=2 Photometric Measurement(Goniophotometer):3.36%, k=2 | | | |

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