

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

2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces

Model name(s): TAA22-6G-40W-S-347-TCP

Remark: The power and CCT are adjustable.

Representative (Tested) Model:

TAA22-6G-40W-S-347-TCP(0%,3000K)

TAA22-6G-40W-S-347-TCP(50%,3500K)

TAA22-6G-40W-S-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

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1.1 Product Information:

Organization Name	Torshare Ltd.	
Brand Name	TORSHARE	
Model Number	TAA22-6G-40W-S-347-TCP	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces	
Rated Voltage / Frequency	120-347Vac, 50/60Hz	
Nominal Power	20W/30W/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-D1	
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 °C ± 1 °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 °C ± 1 °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 °C ± 1 °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	TAA22-6G-40W-S-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	0.3179	37.99	0.9959	8.31
D1	347.0	60	0.1166	37.64	0.9300	17.21
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

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

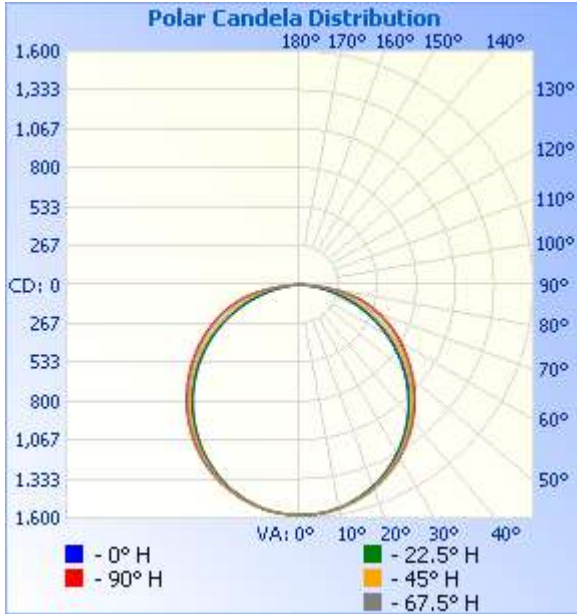
Parameter	Result		DLC V5.1 Pass Criteria	
Test Voltage (V)	120	347	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	4713.9	4648.4	>=2000(-10%)	
Luminous Efficacy (lm/W)	124.10	123.50	Standard: >= 110(-3%)	Premium: >= 125(-3%)
Zonal lumens in the 0-60 °zone (%)	76.6	--	>= 75(-3)	
SC: 0-180 °(if applicable)	1.29	--	1.0-2.0(±0.1)	
SC: 90-270 °(if applicable)	1.24	--	1.0-2.0(±0.1)	
Beam Angle (°)	116.0	--	--	
Center Beam Candle Power (cd)	1580	--	--	

Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,229.9	26.1%
0-40	2,020.1	42.9%
0-60	3,610.1	76.6%
60-90	1,099.4	23.3%
70-100	490.6	10.4%
90-120	1.2	0%
0-90	4,709.5	99.9%
90-180	3.8	0.1%
0-180	4,713.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	149.5	3.2%	90-100	0.2	0%
10-20	428.7	9.1%	100-110	0.3	0%
20-30	651.8	13.8%	110-120	0.7	0%
30-40	790.1	16.8%	120-130	1.0	0%
40-50	827.6	17.6%	130-140	0.8	0%
50-60	762.4	16.2%	140-150	0.5	0%
60-70	608.9	12.9%	150-160	0.3	0%
70-80	387.3	8.2%	160-170	0.1	0%
80-90	103.2	2.2%	170-180	0.0	0%

Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
4.0ft	98.7 fc	11.7 ft	14.0 ft
8.0ft	24.7 fc	23.5 ft	28.0 ft
12.0ft	11.0 fc	35.2 ft	42.0 ft
16.0ft	6.2 fc	46.9 ft	56.0 ft
20.0ft	3.9 fc	58.7 ft	70.0 ft

■ Vert. Spread: 111.4°
■ Horiz. Spread: 120.5°

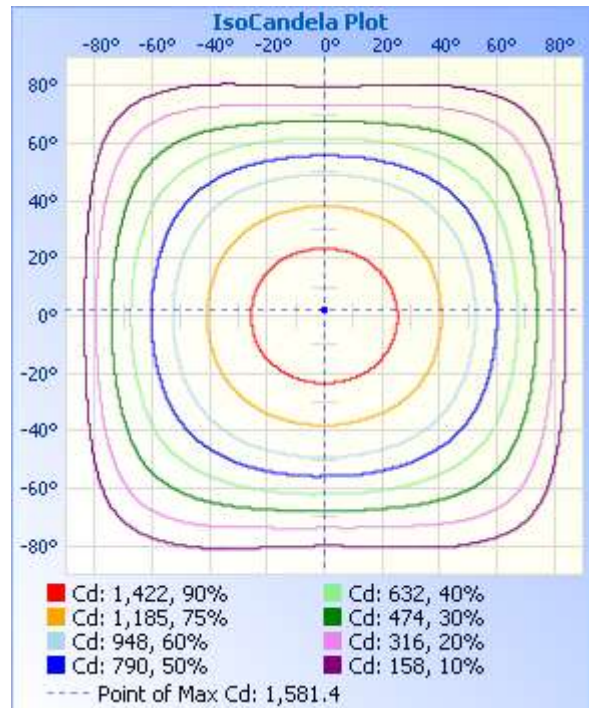
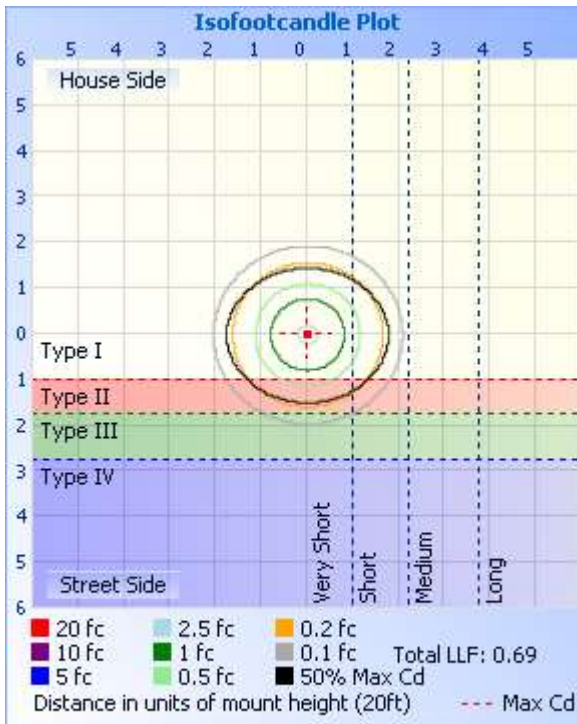


Table--1 UNIT: cd

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	1580	1580	1580	1580	1580	1580	1580	1580	1580	1580	1580	1580	1580	1580	1580	1580
5	1573	1571	1572	1575	1575	1574	1575	1576	1573	1571	1566	1573	1574	1571	1572	1571
10	1552	1552	1548	1552	1554	1552	1556	1559	1559	1553	1550	1549	1552	1549	1549	1553
15	1522	1520	1517	1517	1520	1518	1524	1529	1529	1525	1515	1513	1511	1510	1515	1522
20	1478	1477	1469	1468	1468	1470	1481	1487	1487	1484	1470	1463	1460	1461	1466	1473
25	1424	1420	1413	1405	1407	1413	1423	1432	1433	1429	1413	1398	1394	1396	1405	1417
30	1356	1353	1343	1333	1333	1339	1354	1365	1370	1361	1341	1327	1320	1323	1334	1349
35	1281	1276	1262	1252	1251	1256	1273	1289	1295	1284	1262	1243	1232	1236	1254	1270
40	1192	1187	1173	1158	1156	1163	1184	1203	1209	1196	1169	1147	1137	1141	1162	1183
45	1096	1092	1072	1058	1051	1061	1087	1108	1116	1101	1069	1047	1032	1039	1060	1085
50	995	988	965	947	938	950	979	1004	1016	998	963	934	919	927	953	982
55	889	880	853	828	817	831	867	897	912	890	849	815	798	810	838	874
60	785	771	734	703	689	708	747	787	810	781	732	692	672	685	719	763
65	675	660	612	572	558	578	626	676	700	673	613	562	541	555	598	652
70	561	545	492	440	421	445	506	561	584	556	495	432	405	423	478	536
75	444	425	372	308	282	311	383	439	466	436	374	302	269	293	359	419
80	295	286	249	186	151	188	257	300	315	296	249	181	142	173	238	281
85	99.2	101	97.2	74.0	48.5	75.5	105	109	110	105	94.0	67.0	41.7	63.5	88.6	97.9
90	0.71	0.62	0.44	0.02	0.00	0.00	0.54	0.79	0.35	0.11	0.01	0.00	0.00	0.01	0.09	0.19
95	0.57	0.42	0.35	0.00	0.00	0.00	0.42	0.49	0.26	0.00	0.00	0.00	0.00	0.00	0.09	0.09
100	0.69	0.39	0.35	0.00	0.00	0.00	0.39	0.57	0.26	0.09	0.00	0.00	0.00	0.18	0.09	0.35
105	0.80	0.36	0.35	0.17	0.09	0.09	0.36	0.66	0.26	0.12	0.00	0.00	0.18	0.42	0.09	0.29
110	0.95	0.81	0.44	0.79	0.90	0.61	0.56	1.15	0.26	0.16	0.00	0.00	0.96	0.33	0.09	0.22
115	1.13	1.23	0.97	0.59	1.24	0.61	1.05	1.35	0.26	0.21	0.00	0.00	1.37	0.18	0.09	0.15
120	1.32	1.38	1.32	1.14	1.41	1.06	1.23	1.47	0.26	0.25	0.00	0.31	1.77	1.48	0.09	0.09
125	1.32	1.52	1.41	2.36	2.48	1.49	1.23	1.49	0.26	0.29	0.00	0.40	2.64	1.41	0.00	0.09
130	1.32	1.50	1.32	2.43	2.57	1.47	1.19	1.52	0.26	0.33	0.00	0.50	2.57	1.35	0.00	0.00
135	1.41	1.43	0.88	2.39	2.65	1.45	0.97	1.56	0.26	0.35	0.00	0.29	2.46	1.31	0.00	0.00
140	1.31	1.26	0.00	2.16	2.73	1.44	0.00	1.41	0.26	0.35	0.00	0.00	1.32	1.29	0.00	0.00
145	1.21	0.92	0.00	1.76	1.84	1.42	0.00	1.13	0.26	0.35	0.00	0.00	1.49	1.28	0.00	0.00
150	1.11	0.62	0.00	1.18	1.77	1.40	0.00	1.14	0.26	0.35	0.00	0.00	1.35	1.26	0.00	0.00
155	0.79	0.34	0.00	0.93	1.71	0.96	0.00	0.77	0.26	0.35	0.00	0.00	1.15	1.24	0.09	0.00
160	0.50	0.09	0.00	0.70	1.76	0.67	0.00	0.55	0.26	0.35	0.09	0.09	0.35	1.14	0.23	0.00
165	0.38	0.09	0.00	0.44	1.54	0.60	0.00	0.36	0.26	0.35	0.09	0.10	0.33	1.20	0.29	0.00
170	0.37	0.09	0.00	0.32	1.36	0.50	0.00	0.27	0.26	0.35	0.09	0.13	0.30	1.47	0.31	0.00
175	0.36	0.09	0.00	0.28	1.27	0.39	0.00	0.19	0.26	0.35	0.09	0.16	0.27	1.40	0.34	0.00
180	0.35	0.09	0.00	0.26	1.23	0.35	0.00	0.36	0.26	0.35	0.09	0.18	0.26	1.23	0.35	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	TAA22-6G-40W-S-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-D1	120.0	60	0.3181	38.03	0.9962	8.28
	347.0	60	0.1167	37.69	0.9304	17.15
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer

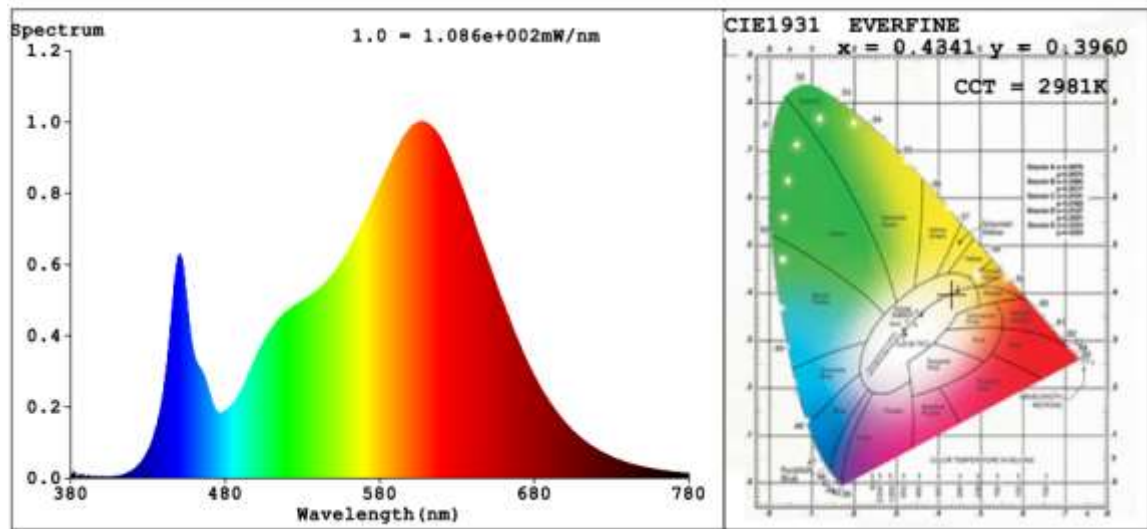
Method(Self-absorption:1.1358)(4π geometry):

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	85.9
Frequency (Hz)	60	R9	20
CCT (K)	2981	Rg	98
Duv	-0.0029	Rf	86
Chromaticity (x, y)	x=0.4341 y=0.3960	Rcs,h1(%)	-10
Chromaticity (u', v')	u'=0.2523 v'=0.5178		

Photometric Measurement –Sphere-Spectroradiometer Method:

Parameter	Result		DLC V5.1 Pass Criteria	
Test Voltage (V)	120	347	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	4741	4675	>=2000(-10%)	
Luminous Efficacy (lm/W)	124.66	124.04	Standard: >= 110(-3%)	Premium: >= 125(-3%)

Spectral Power Distribution & Chromaticity Diagram



Special Color Rendering Indices

R1 =86	R2 =94	R3 =96	R4 =85	R5 =87	R6 =93	R7 =83	
R8 =64	R9 =20	R10=87	R11=87	R12=79	R13=88	R14=98	R15=79

TM30

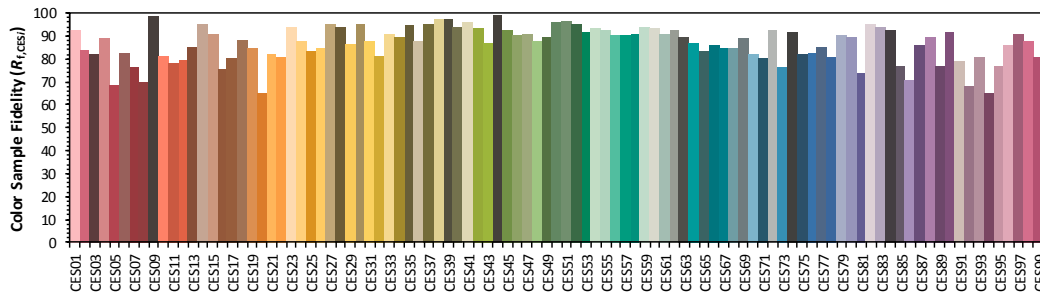
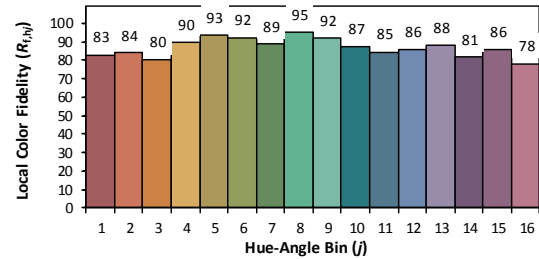
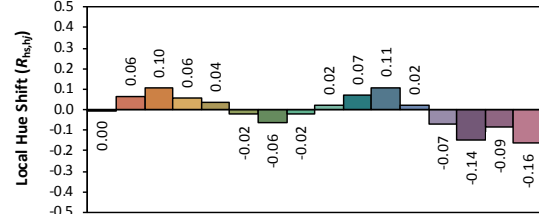
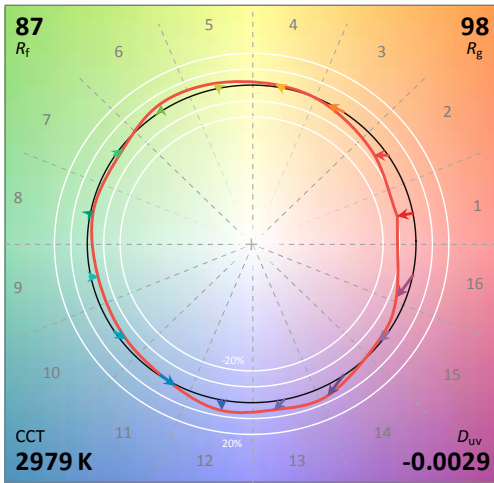
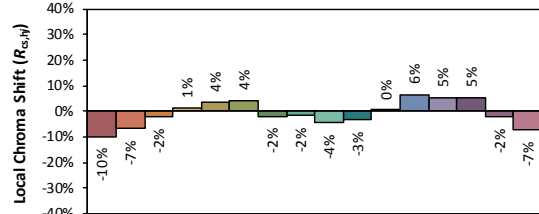
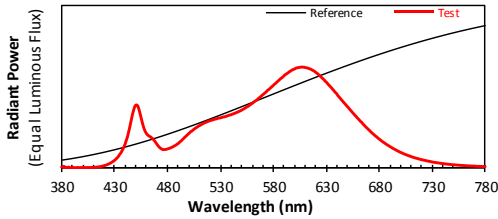
ANSI/IES TM-30-18 Color Rendition Report

Source: 01. JT. DG2835W80N03

Manufacturer: Torshare Ltd.

Date: 2022-06-08

Model: TAA22-6G-40W-S-347-TCP (0%, 3000K)



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

x 0.4342
 y 0.3959
 u' 0.2523
 v' 0.5177

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

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	TAA22-6G-40W-S-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-D1	120.0	60	0.3162	37.88	0.9982	8.03
	347.0	60	0.1155	37.43	0.9341	16.94
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer

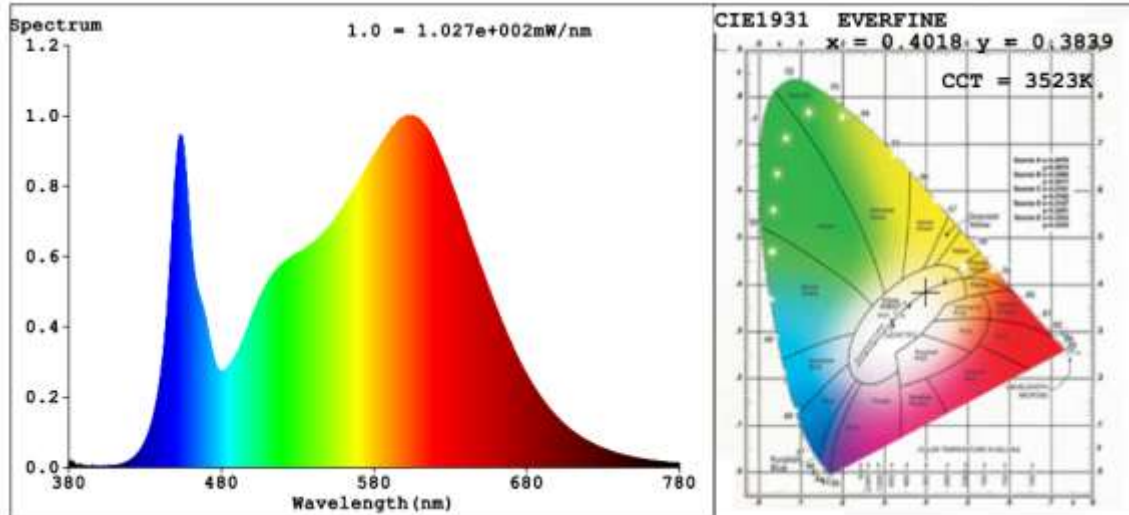
Method(Self-absorption:1.1360)(4π geometry):

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	86.7
Frequency (Hz)	60	R9	23
CCT (K)	3523	Rg	97
Duv	-0.0022	Rf	86
Chromaticity (x, y)	x=0.4018 y=0.3839	Rcs,h1(%)	-10
Chromaticity (u', v')	u'=0.2362 v'=0.5079		

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V5.1 Pass Criteria	
Test Voltage (V)	120	347	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	5140	5069	>=2000(-10%)	
Luminous Efficacy (lm/W)	135.69	135.43	Standard: >= 110(-3%)	Premium: >= 125(-3%)

Spectral Power Distribution & Chromaticity Diagram



Special Color Rendering Indices

R1 =87	R2 =94	R3 =96	R4 =85	R5 =87	R6 =92	R7 =85		
R8 =67	R9 =23	R10=86	R11=86	R12=71	R13=89	R14=99	R15=80	

TM30

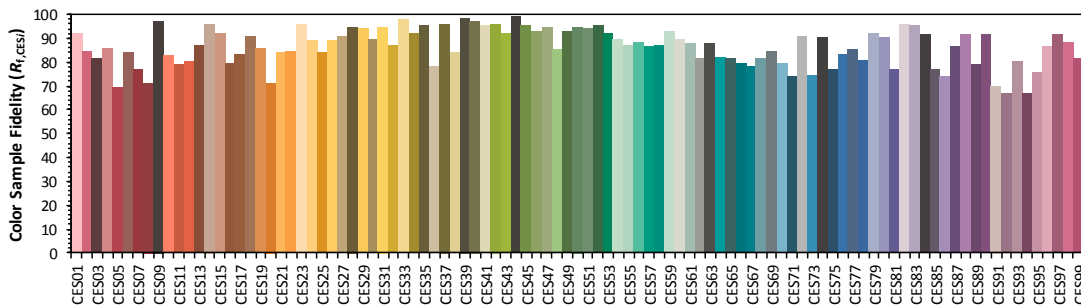
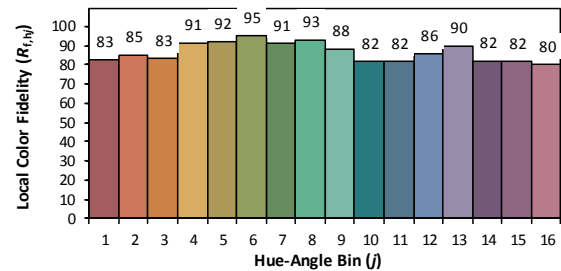
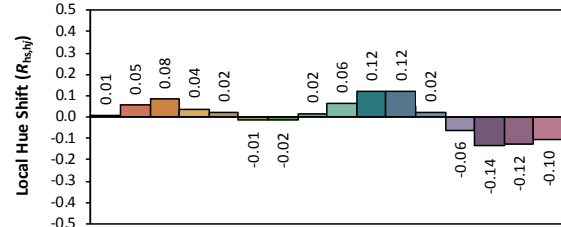
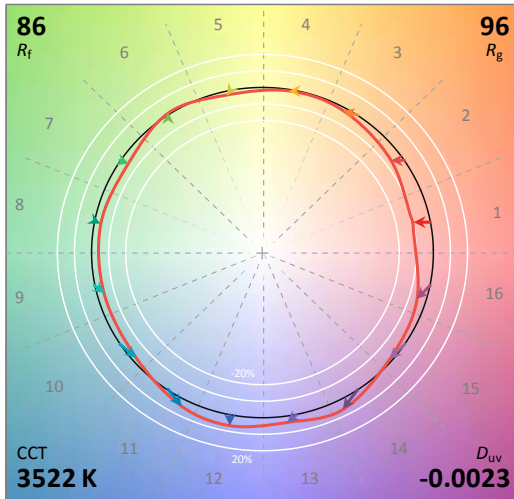
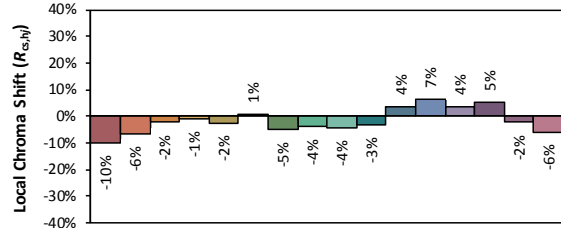
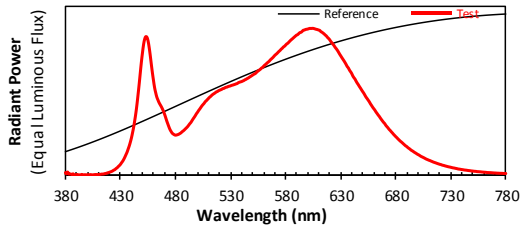
ANSI/IES TM-30-18 Color Rendition Report

Source: 01. JT. DG2835W80N03

Manufacturer: Torshare Ltd.

Date: 2022-06-08

Model: TAA22-6G-40W-S-347-TCP (50%, 3500K)



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

x 0.4018
y 0.3838
u' 0.2363
v' 0.5078

CIE 13.3-1995 (CRI)
R_a 87
R_g 23

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	TAA22-6G-40W-S-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-D1	120.0	60	0.3212	38.41	0.9965	8.18
	347.0	60	0.1174	37.98	0.9321	17.07
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer

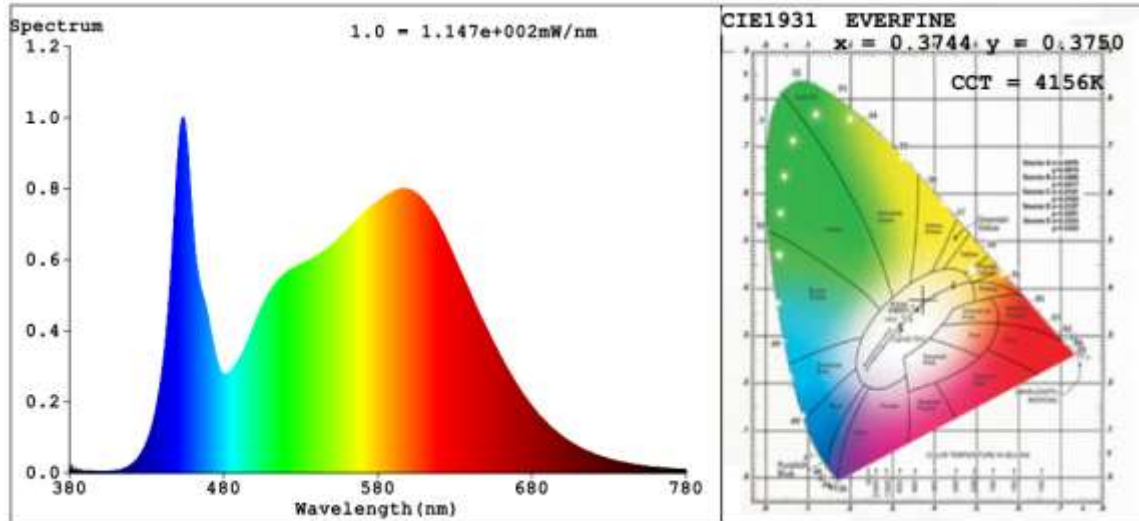
Method(Self-absorption:1.1362)(4π geometry):

Parameter	Result	Parameter	Result
Test Voltage (V)	120	Color Rendering Index (CRI)	85.1
Frequency (Hz)	60	R9	16
CCT (K)	4156	Rg	95
Duv	0.0010	Rf	85
Chromaticity (x, y)	x=0.3744 y=0.3750	Rcs,h1(%)	-12
Chromaticity (u', v')	u'=0.2218 v'=0.4999		

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result		DLC V5.1 Pass Criteria	
Test Voltage (V)	120	347	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	4991	4922	>=2000(-10%)	
Luminous Efficacy (lm/W)	129.94	129.59	Standard: >= 110(-3%)	Premium: >= 125(-3%)

Spectral Power Distribution & Chromaticity Diagram



Special Color Rendering Indices

R1 =84 R2 =92 R3 =96 R4 =83 R5 =84 R6 =88 R7 =86
R8 =67 R9 =16 R10=81 R11=83 R12=63 R13=86 R14=99 R15=78

TM30

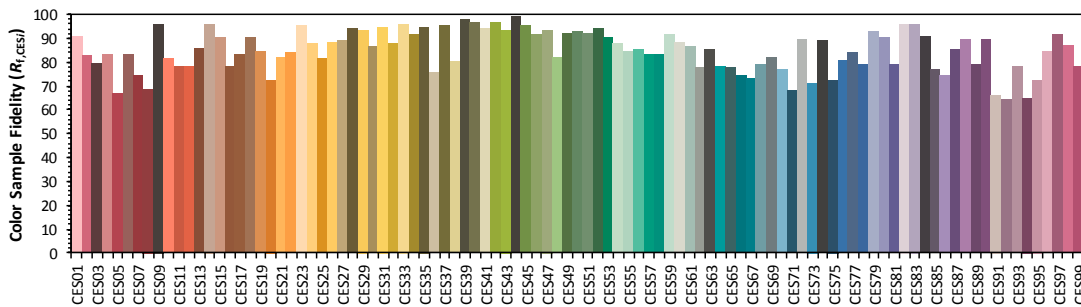
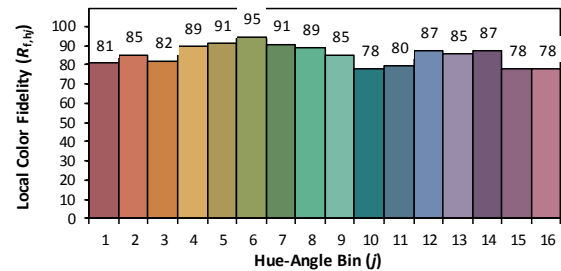
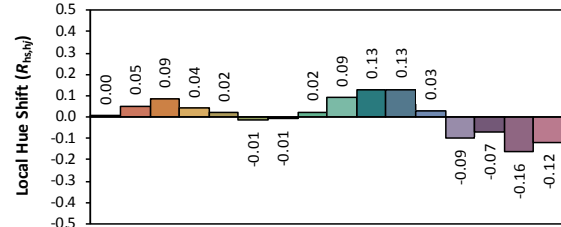
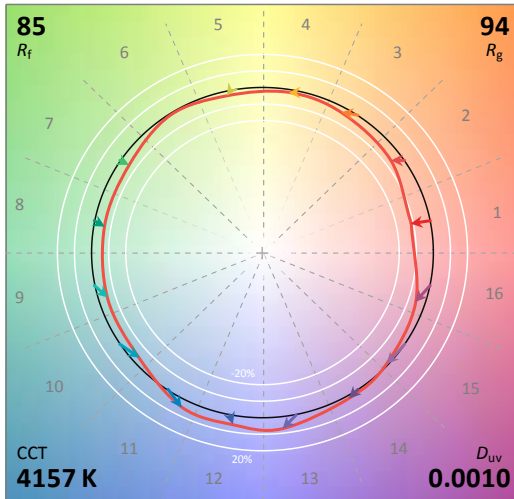
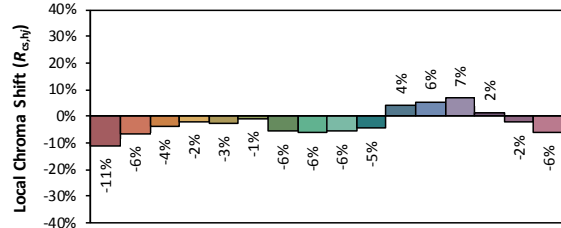
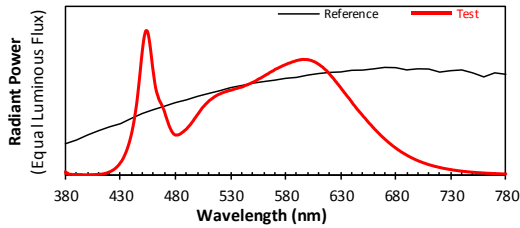
ANSI/IES TM-30-18 Color Rendition Report

Source: 01. JT. DG2835W80N03

Manufacturer: Torshare Ltd.

Date: 2022-06-08

Model: TAA22-6G-40W-S-347-TCP (100%, 4000K)



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

x 0.3743
 y 0.3749
 u' 0.2218
 v' 0.4998

CIE 13.3-1995 (CRI)	
R_a	85
R_g	16

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 *******