DesignLights Consortium Test Report

Reference Standards

UL1598-2008
ANSI C82.77-10-2014
IES LM-79-2008

Prepared For

IKIO LED LIGHTING

No. 18 Fuxing Road Nantong Economic Development Zone Nantong, Jiangsu CN
Gavin Yang,gavin.yang@evertielighting.com
Test Laboratory:
UL-CCIC Company Limited
Test Laboratory Address:

470 Allison Pointe Blvd, Suite 128 Indianapolis, IN 46250

Catalog Number

IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K)

Project Number
4791726837
Report Number
4791726837_7

Test Date
2025-04-15~2025-04-18
Issue Date
2025-04-24
Revision Date
N/A

Prepared By	**Approved By**
Elaine Zhao	Roger Xu
Zhao, Elaine	Xu, Roger

Test Summary

DLC Technical Requirements V5.1- issued 2020-02-14

Requirement Category	Test Method	Requirements	Tolerance	Test Result
Minimum Light Output (lm/ft)-Luminaires	**IES LM-79-2008**	≥375	-10%	814.39
Zonal Lumen Requirement 1(0°-60°)	**IES LM-79-2008**	≥40%	-3%	72.90%
Minimum Luminaire Efficacy (lm/W)-Luminaires	**IES LM-79-2008**	≥115	-3%	150.97
Allowable CCT (3000K)	**IES LM-79-2008/ANSI C78.377-2015**	3045±175	N/A	3012
Allowable CCT (3500K)	**IES LM-79-2008/ANSI C78.377-2015**	3465±245	N/A	3416
Allowable CCT (4000K)	**IES LM-79-2008/ANSI C78.377-2015**	3985±275	N/A	3970
Allowable CCT (5000K)	**IES LM-79-2008/ANSI C78.377-2015**	5029±283	N/A	4997
Minimum CRI	**IES LM-79-2008/CIE 13.3-1995**	≥80	-1	81
Minimum R9	**IES LM-79-2008**	≥0	-1	-1.0
Minimum Rf	**IES LM-79-2008**	≥70	-1	83
Minimum Rg	**IES LM-79-2008**	≥89	-1	95
Rcs,h1	**IES LM-79-2008**	-12%-23%	-1%	-14%
L70 Lumen maintenance (Hours)	**N/A**	≥50000	N/A	≥50000
Power Factor	**ANSI C82.77-10-2014**	≥0.9	-0.03	0.9164
Total Harmonic Distortion (A%)	**ANSI C82.77-10-2014**	≤20%	5%	9.61%
In-Situ Temperature Measurement Test for LED 1 (°C)	**UL1598-2008**	≤105	N/A	37.5
In-Situ Temperature Measurement Test for Driver 1 (°C)	**UL1598-2008**	≤90	N/A	45.3
Max Chromaticity Shift (1000-6000h)	**N/A**	≤0.004	0.0004	0.0007
Minimum Luminaire Warranty (Years)	**N/A**	≥5	N/A	≥5

Test List

Sample Received Date: 2025-04-03

Test Item	Test Date	Model Number	Tests Conducted By
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 3000K)	Zhang, Clark
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 3500K)	Zhang, Clark
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 4000K)	Zhang, Clark
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 5000K)	Zhang, Clark
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 6500K)	Zhang, Clark
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (34W, 3000K)	Zhang, Clark
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (26W, 3000K)	Zhang, Clark
Integrating Sphere Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (21W, 3000K)	Zhang, Clark
Goniophotometer Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 3000K)	Zhang, Clark
Goniophotometer Test	2025-04-15	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 6500K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 3000K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 3500K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 4000K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 5000K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W,6500K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (34W, 3000K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (26W, 3000K)	Zhang, Clark
THD and PF Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (21W, 3000K)	Zhang, Clark
In-Situ Temperature Measurement Test	2025-04-18	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 3000K)	Zhang, Clark

Remark (if any)

1. UL test equipment information is recorded on Meter Use in UL's Aurora database.
2. The accuracy method decision rule is applied when the compliance or verdict is made to the results of this report.

Product Description

Lamp/Luminaire Description: Direct Linear Ambient Luminaires
Model Number: IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K)
Electrical Parameter: 120-277 Vac， 50/60Hz
LED Package: STW8A2SD-XX
Dimming Information: Continuous dimming

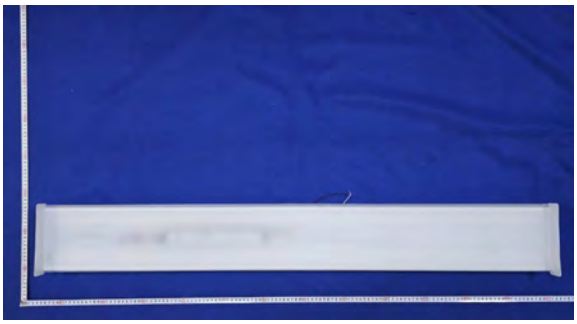
Products Scaled Value

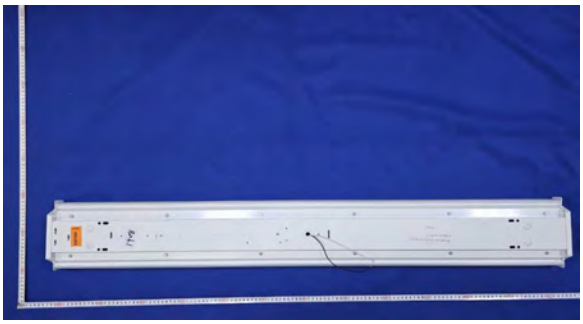
Model Number	CCT	Luminous Flux	Power	Luminous Efficacy
IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K)	3000K	6040	40	151
IK-WL04-21/26/34/40W-MV-5CCT-DY (3500K)	3500K	6200	40	155
IK-WL04-21/26/34/40W-MV-5CCT-DY (4000K)	4000K	6360	40	159
IK-WL04-21/26/34/40W-MV-5CCT-DY (5000K)	5000K	6280	40	157
IK-WL04-21/26/34/40W-MV-5CCT-DY (6500K)	6500K	6200	40	155
IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K)	3000K	5236	34	154
IK-WL04-21/26/34/40W-MV-5CCT-DY (3500K)	3500K	5372	34	158
IK-WL04-21/26/34/40W-MV-5CCT-DY (4000K)	4000K	5508	34	162
IK-WL04-21/26/34/40W-MV-5CCT-DY (5000K)	5000K	5440	34	160
IK-WL04-21/26/34/40W-MV-5CCT-DY (6500K)	6500K	5372	34	158
IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K)	3000K	4082	26	157
IK-WL04-21/26/34/40W-MV-5CCT-DY (3500K)	3500K	4186	26	161
IK-WL04-21/26/34/40W-MV-5CCT-DY (4000K)	4000K	4290	26	165
IK-WL04-21/26/34/40W-MV-5CCT-DY (5000K)	5000K	4238	26	163
IK-WL04-21/26/34/40W-MV-5CCT-DY (6500K)	6500K	4186	26	161
IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K)	3000K	3360	21	160

IK-WL04-21/26/34/40W-MV-5CCT-DY (3500K)	3500K	3444	21	164
IK-WL04-21/26/34/40W-MV-5CCT-DY (4000K)	4000K	3528	21	168
IK-WL04-21/26/34/40W-MV-5CCT-DY (5000K)	5000K	3486	21	166
IK-WL04-21/26/34/40W-MV-5CCT-DY (6500K)	6500K	3444	21	164

Note： The claimed information in the above table is provided by the customer

Photos of Products Characteristics





Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (40W, 3000K)	Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

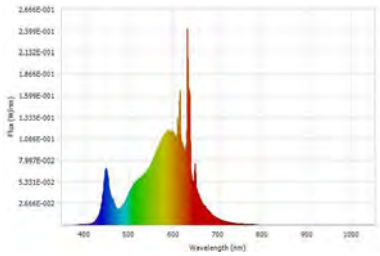
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

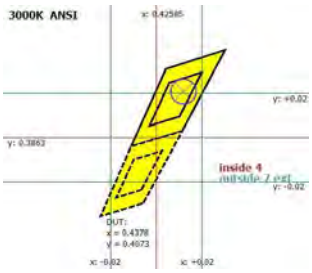
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.13	60	0.3325	39.789	0.9963	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3012	81	2.0	0.0012	6012.23	151.10	1503.06

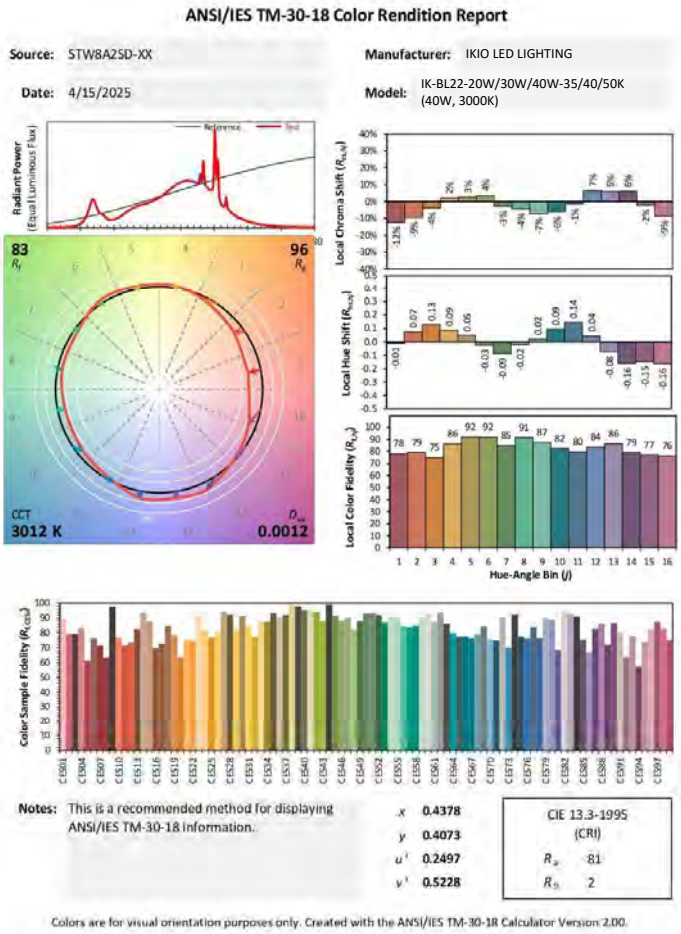




Luminous Flux (lm)	6012.23	Chrom x	0.4378
Chrom y	0.4073	Chrom u	0.2497
Chrom v	0.3485	Duv	0.0012
Chrom u'	0.2497	Chrom v'	0.5228
CCT (K)	3012	Luminous Efficacy (lm/W)	151.10
Ra	81	R1	78.0
R2	88.0	R3	97.0
R4	78.0	R5	78.0
R6	86.0	R7	83.0
R8	58.0	R9	2.0
R10	74.0	R11	77.0
R12	67.0	R13	80.0
R14	98.0	R15	71.0
Rf	83	Rg	96
Rcs,h1	-12%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3500K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

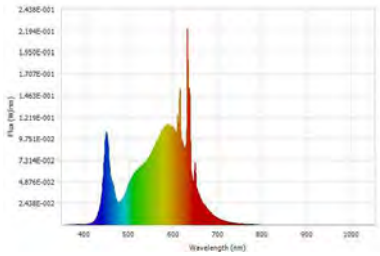
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

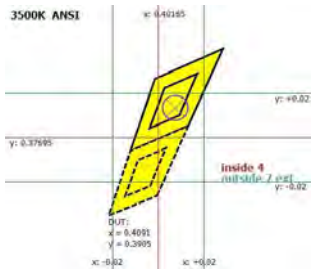
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.13	60	0.3293	39.407	0.9961	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3416	83	10.0	-0.0009	6138.72	155.78	N/A

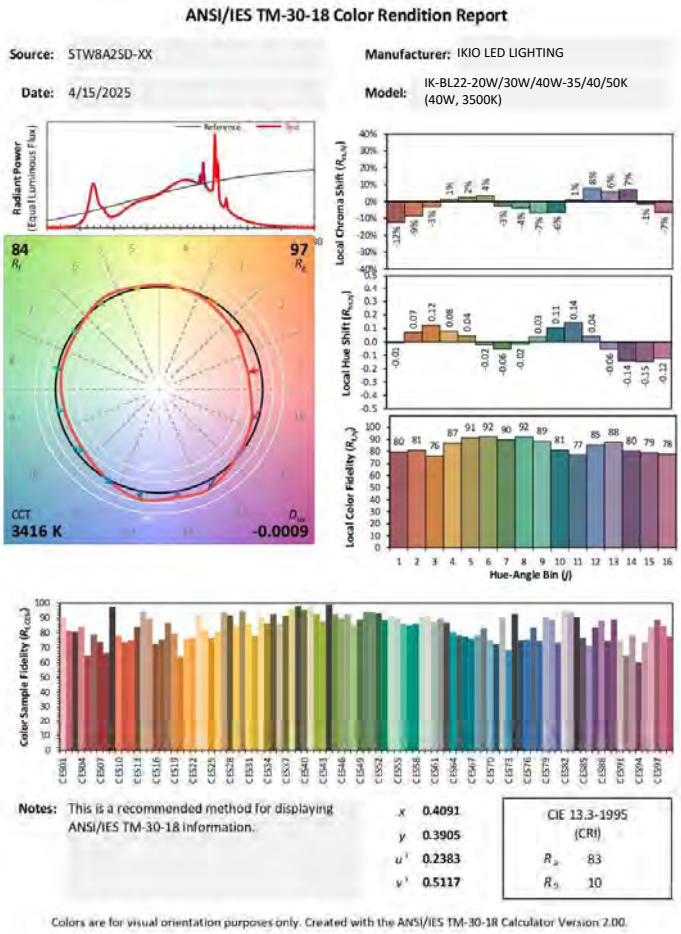




Luminous Flux (lm)	6138.72	Chrom x	0.4091
Chrom y	0.3905	Chrom u	0.2383
Chrom v	0.3412	Duv	-0.0009
Chrom u’	0.2383	Chrom v’	0.5117
CCT (K)	3416	Luminous Efficacy (lm/W)	155.78
Ra	83	R1	81.0
R2	90.0	R3	96.0
R4	81.0	R5	81.0
R6	87.0	R7	84.0
R8	63.0	R9	10.0
R10	76.0	R11	80.0
R12	67.0	R13	83.0
R14	98.0	R15	75.0
Rf	84	Rg	97
Rcs,h1	-12%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (4000K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)	45	

Test Method

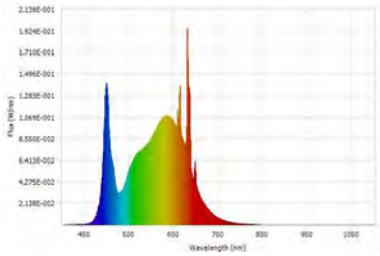
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

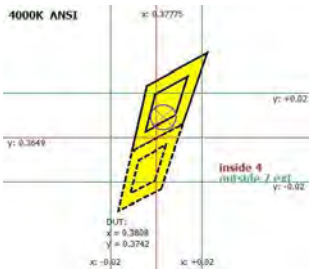
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.12	60	0.3257	38.963	0.9960	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3970	84	15.0	-0.0013	6221.86	159.69	1555.46

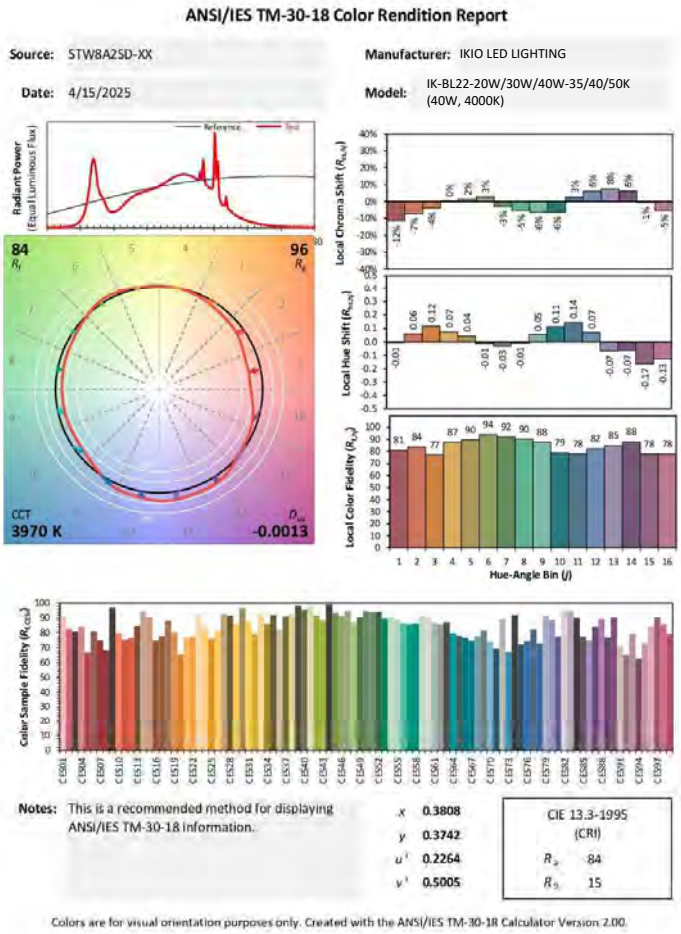




Luminous Flux (lm)	6221.86	Chrom x	0.3808
Chrom y	0.3742	Chrom u	0.2264
Chrom v	0.3337	Duv	-0.0013
Chrom u'	0.2264	Chrom v'	0.5005
CCT (K)	3970	Luminous Efficacy (lm/W)	159.69
Ra	84	R1	82.0
R2	90.0	R3	95.0
R4	83.0	R5	83.0
R6	86.0	R7	86.0
R8	67.0	R9	15.0
R10	76.0	R11	82.0
R12	64.0	R13	84.0
R14	97.0	R15	77.0
Rf	84	Rg	96
Rcs,h1	-12%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (5000K) 40W	Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

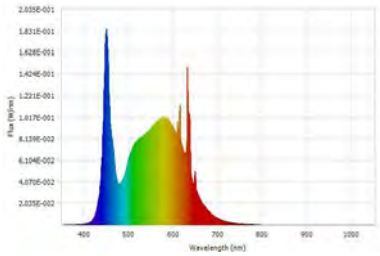
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

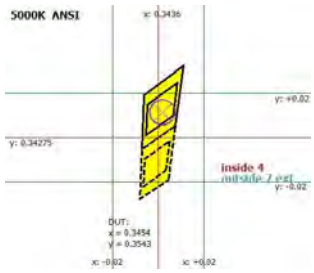
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.12	60	0.3299	39.483	0.9962	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
4997	83	12.0	0.0012	6213.76	157.38	1553.44

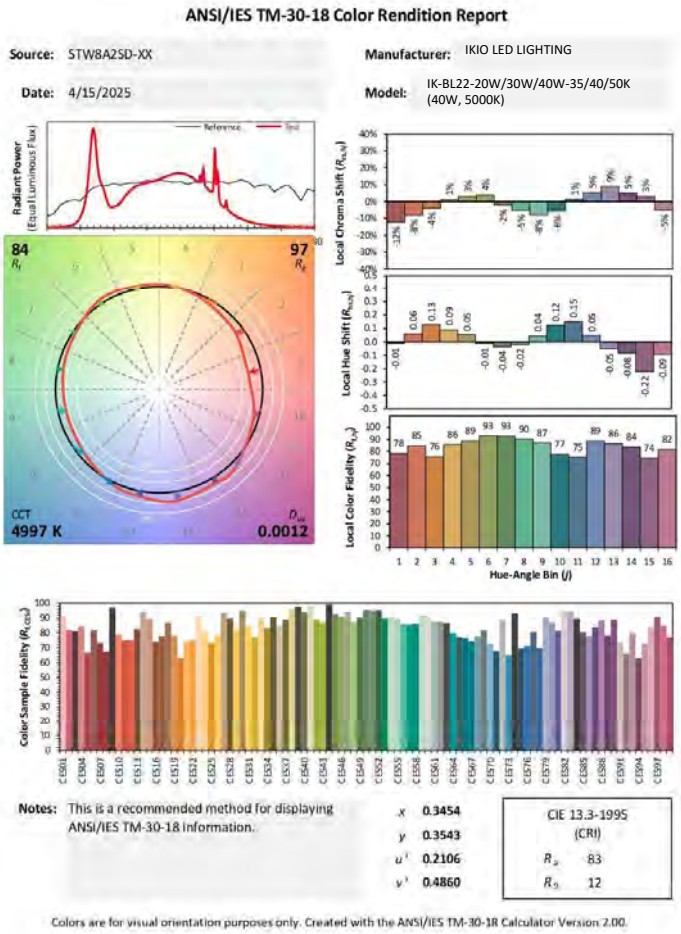




Luminous Flux (lm)	6213.76	Chrom x	0.3454
Chrom y	0.3543	Chrom u	0.2106
Chrom v	0.3240	Duv	0.0012
Chrom u'	0.2106	Chrom v'	0.4860
CCT (K)	4997	Luminous Efficacy (lm/W)	157.38
Ra	83	R1	81.0
R2	88.0	R3	93.0
R4	83.0	R5	82.0
R6	83.0	R7	88.0
R8	69.0	R9	12.0
R10	72.0	R11	82.0
R12	58.0	R13	83.0
R14	96.0	R15	76.0
Rf	84	Rg	97
Rcs,h1	-12%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (6500K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

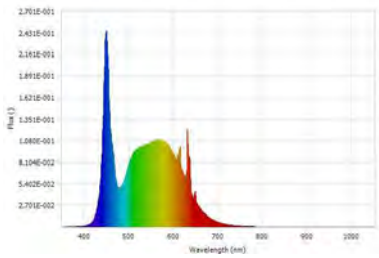
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

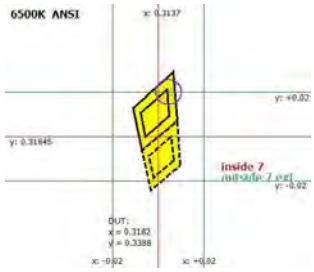
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.08	60	0.3353	40.116	0.9962	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
6163	82	-1.0	0.0054	6218.37	155.01	1554.59

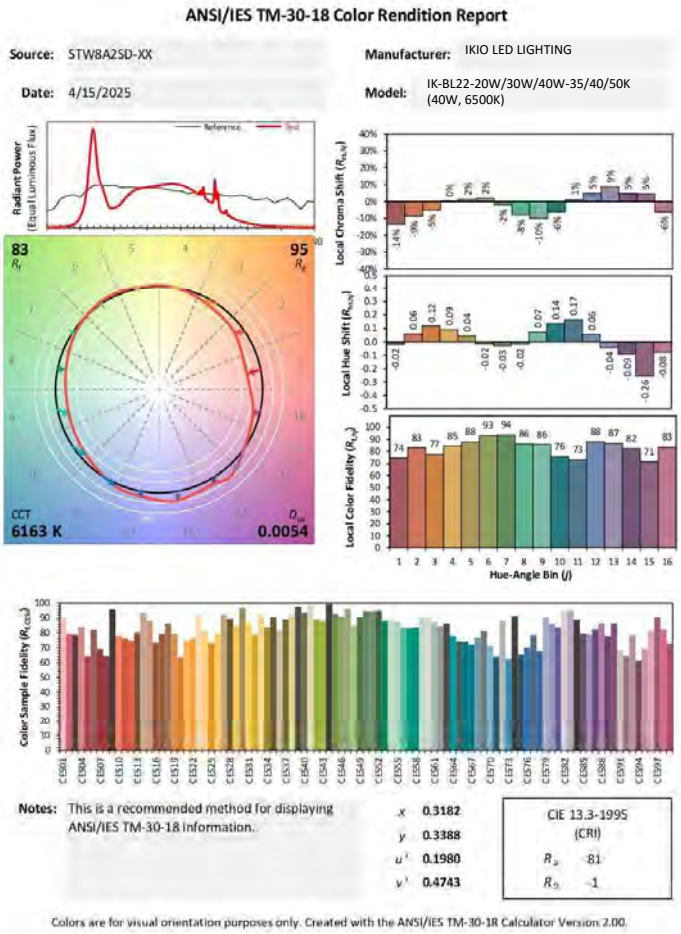




Luminous Flux (lm)	6218.37	Chrom x	0.3182
Chrom y	0.3388	Chrom u	0.1980
Chrom v	0.3162	Duv	0.0054
Chrom u’	0.1980	Chrom v’	0.4743
CCT (K)	6163	Luminous Efficacy (lm/W)	155.01
Ra	82	R1	79.0
R2	86.0	R3	91.0
R4	82.0	R5	80.0
R6	81.0	R7	87.0
R8	68.0	R9	-1.0
R10	66.0	R11	81.0
R12	58.0	R13	80.0
R14	95.0	R15	73.0
Rf	83	Rg	95
Rcs,h1	-14%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K) 34W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

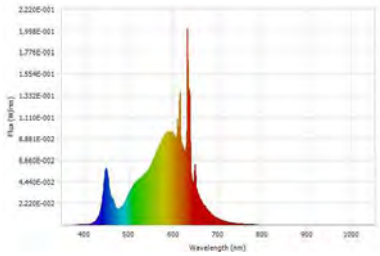
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

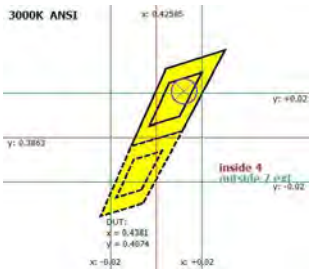
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.16	60	0.2677	31.943	0.9931	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3007	81	3.0	0.0011	4948.26	154.91	N/A

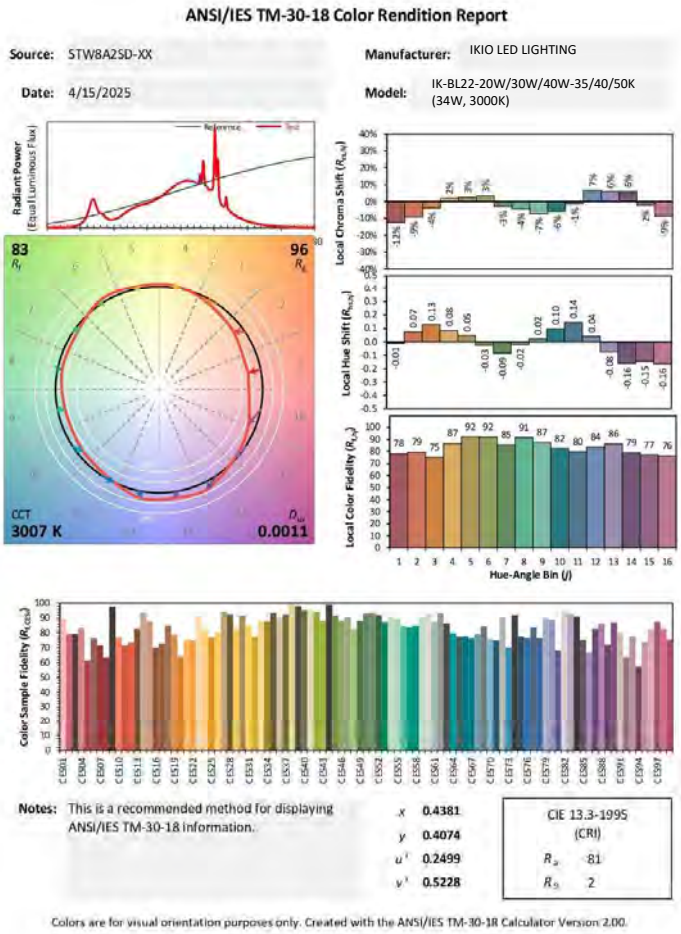




Luminous Flux (lm)	4948.26	Chrom x	0.4381
Chrom y	0.4074	Chrom u	0.2499
Chrom v	0.3486	Duv	0.0011
Chrom u’	0.2499	Chrom v’	0.5228
CCT (K)	3007	Luminous Efficacy (lm/W)	154.91
Ra	81	R1	78.0
R2	89.0	R3	97.0
R4	78.0	R5	78.0
R6	86.0	R7	83.0
R8	58.0	R9	3.0
R10	74.0	R11	77.0
R12	67.0	R13	80.0
R14	99.0	R15	71.0
Rf	83	Rg	96
Rcs,h1	-12%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3500K) 34W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)	45	

Test Method

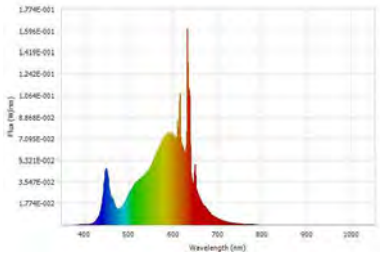
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

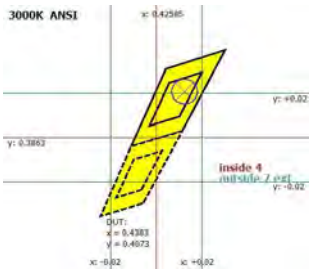
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120	60	0.2072	24.694	0.9931	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
3003	81	3.0	0.0011	3902.38	158.03	N/A

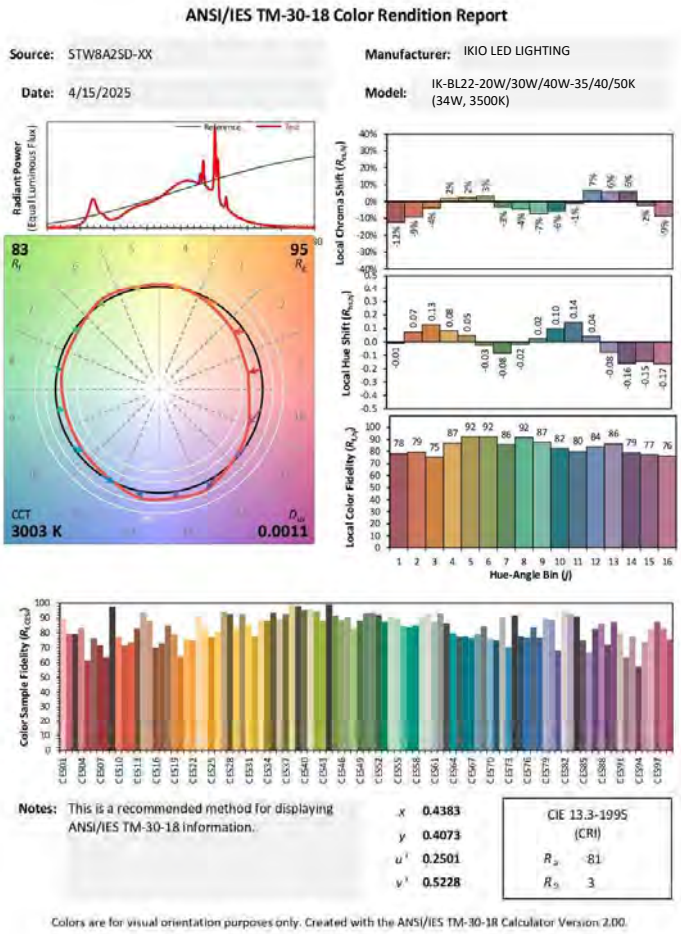




Luminous Flux (lm)	3902.38	Chrom x	0.4383
Chrom y	0.4073	Chrom u	0.2501
Chrom v	0.3486	Duv	0.0011
Chrom u’	0.2501	Chrom v’	0.5228
CCT (K)	3003	Luminous Efficacy (lm/W)	158.03
Ra	81	R1	78.0
R2	89.0	R3	97.0
R4	78.0	R5	79.0
R6	86.0	R7	83.0
R8	58.0	R9	3.0
R10	75.0	R11	77.0
R12	67.0	R13	80.0
R14	99.0	R15	71.0
Rf	83	Rg	95
Rcs,h1	-12%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Integrating Sphere Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (4000K) 34W	Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

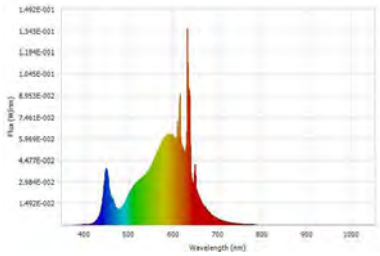
1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. The reference standard lamp is rated current 2.679A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
3.The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

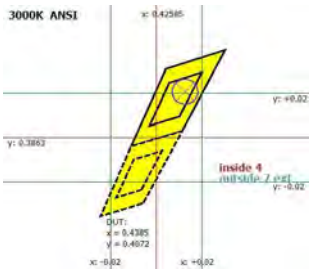
Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120	60	0.1721	20.411	0.9881	Horizontal

Test Results

CCT (K)	CRI (Ra)	R9	Duv	Flux (lm)	Luminous Efficacy (lm/W)	Efficacy(lm/ft)
2999	81	3.0	0.0010	3257.55	159.60	814.39

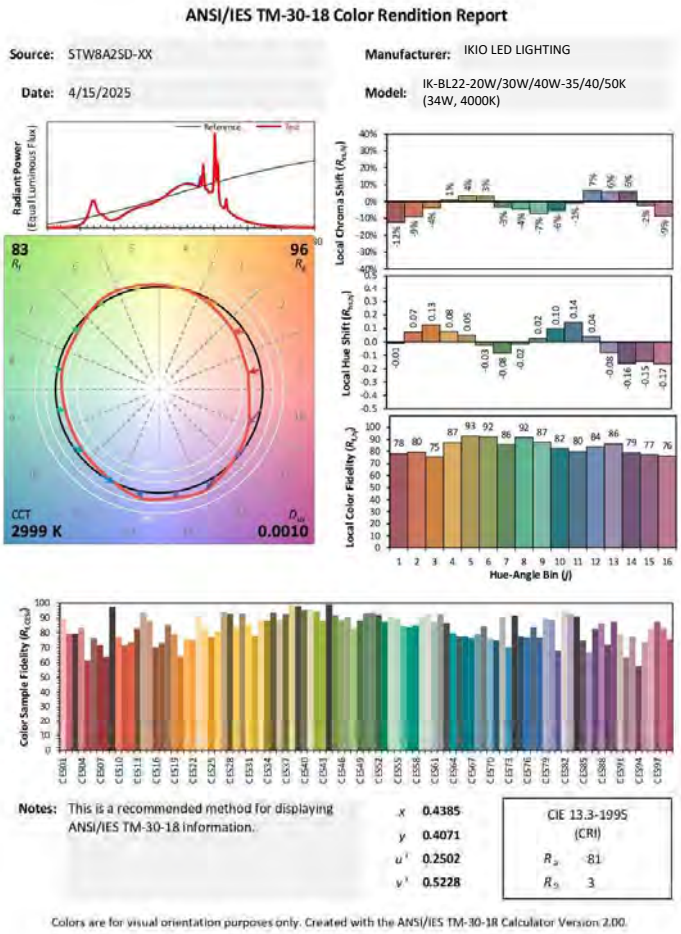




Luminous Flux (lm)	3257.55	Chrom x	0.4385
Chrom y	0.4072	Chrom u	0.2502
Chrom v	0.3485	Duv	0.0010
Chrom u'	0.2502	Chrom v'	0.5228
CCT (K)	2999	Luminous Efficacy (lm/W)	159.60
Ra	81	R1	79.0
R2	89.0	R3	97.0
R4	78.0	R5	79.0
R6	86.0	R7	83.0
R8	58.0	R9	3.0
R10	75.0	R11	77.0
R12	68.0	R13	80.0
R14	99.0	R15	71.0
Rf	83	Rg	96
Rcs,h1	-12%		

Integrating Sphere Test (Cont'd)

TM-30 Report



Goniophotometer Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using a type C goniophotometer and software.
3.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 reference standard lamp is rated current 3.8581A, 3.8558A, 3.8466A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonallumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.06	60	0.3331	39.892	0.9976	6.80%	Horizontal

Test Results

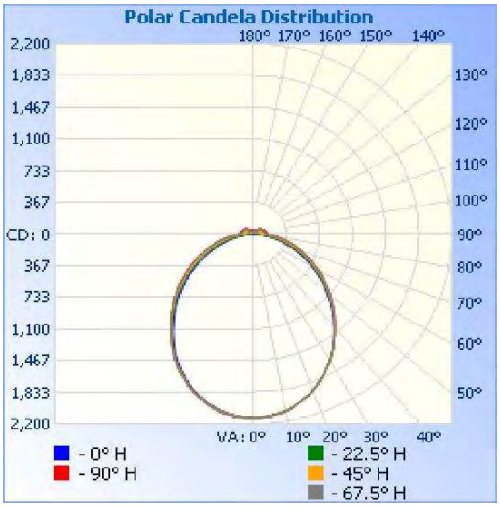
Luminous Flux (lm)	Zonal Lumen Requirement 1	Zonal Lumen Requirement 2	Beam Angle (50%)		Luminous Efficacy (lm/W)
	0°-60°	N/A	Horizontal Spread	Vertical Spread	
6022.3	73.00%	N/A	103.9	99.8	150.97

Backlight	Uplight	Glare
N/A	N/A	N/A

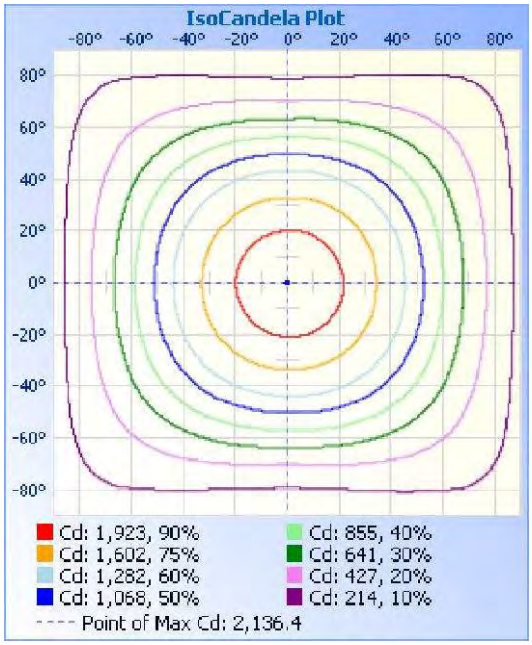
UGR		Spacing Criteria (0-180°)	Spacing Criteria (90°-270°)
Crosswise	Endwise		
N/A	N/A	1.20	1.20

Goniophotometer Test (Cont'd)

Polar Candela Distribution



IsoCandela Plot



Goniophotometer Test (Cont'd)

Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1608.2	26.70%
0-40	2580.8	42.90%
0-60	4397.0	73.00%
60-90	1253.1	20.80%
70-100	697.3	11.60%
90-120	240.2	4.00%
0-90	5650.1	93.80%
90-180	372.2	6.20%
0-180	6022.3	100.00%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-5	50.8	0.80%	90-95	47.2	0.80%
5-10	150.1	2.50%	95-100	44.9	0.70%
10-15	243.0	4.00%	100-105	42.6	0.70%
15-20	325.3	5.40%	105-110	39.3	0.70%
20-25	393.7	6.50%	110-115	35.0	0.60%
25-30	445.2	7.40%	115-120	31.1	0.50%
30-35	479.6	8.00%	120-125	26.9	0.40%
35-40	493.0	8.20%	125-130	22.3	0.40%
40-45	491.9	8.20%	130-135	18.4	0.30%
45-50	475.7	7.90%	135-140	15.2	0.30%
50-55	444.6	7.40%	140-145	12.9	0.20%
55-60	404.0	6.70%	145-150	10.6	0.20%
60-65	353.0	5.90%	150-155	8.6	0.10%
65-70	294.9	4.90%	155-160	6.7	0.10%
70-75	236.2	3.90%	160-165	4.9	0.10%
75-80	177.0	2.90%	165-170	3.3	0.10%
80-85	121.2	2.00%	170-175	1.8	0.00%
85-90	70.8	1.20%	175-180	0.6	0.00%

Goniophotometer Test (Cont'd)

Intensity Data(cd)

Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136	2136
1	2130	2132	2130	2130	2132	2126	2126	2133	2129	2133	2132	2132	2132	2127	2128	2133	2130
2	2127	2130	2129	2128	2127	2124	2124	2130	2127	2130	2131	2129	2132	2125	2127	2132	2127
3	2123	2126	2126	2125	2126	2119	2118	2124	2127	2128	2127	2127	2130	2123	2121	2128	2123
4	2119	2121	2123	2122	2128	2116	2112	2120	2120	2126	2126	2126	2130	2120	2117	2122	2119
5	2114	2117	2116	2120	2121	2113	2111	2117	2114	2119	2121	2121	2128	2119	2113	2118	2114
6	2105	2110	2112	2113	2119	2106	2102	2108	2108	2112	2116	2120	2126	2115	2107	2108	2105
7	2099	2104	2102	2104	2108	2101	2097	2100	2101	2103	2107	2110	2118	2108	2102	2103	2099
8	2089	2092	2092	2096	2103	2095	2089	2090	2094	2099	2099	2105	2111	2103	2096	2094	2089
9	2083	2086	2086	2088	2094	2086	2081	2082	2083	2089	2092	2097	2104	2095	2087	2087	2083
10	2075	2076	2073	2078	2083	2078	2074	2074	2074	2080	2083	2088	2096	2089	2083	2080	2075
11	2064	2067	2065	2069	2076	2069	2065	2064	2062	2072	2074	2080	2087	2083	2073	2069	2064
12	2055	2057	2054	2055	2061	2056	2053	2054	2052	2060	2064	2067	2073	2070	2065	2059	2055
13	2039	2041	2040	2040	2046	2043	2040	2039	2039	2045	2047	2054	2059	2057	2050	2046	2039
14	2024	2026	2022	2021	2028	2025	2022	2023	2026	2031	2034	2038	2044	2040	2036	2031	2024
15	2007	2011	2007	2006	2011	2007	2008	2009	2011	2015	2019	2022	2028	2023	2020	2015	2007
16	1993	1995	1990	1988	1993	1988	1990	1992	1995	1999	2003	2003	2010	2005	2004	2001	1993
17	1977	1981	1979	1978	1981	1975	1977	1978	1977	1984	1988	1991	1995	1988	1987	1985	1977
18	1965	1966	1965	1964	1965	1960	1961	1967	1965	1976	1977	1982	1981	1978	1976	1975	1965
19	1950	1951	1948	1946	1947	1940	1943	1949	1948	1957	1962	1964	1966	1959	1958	1960	1950
20	1929	1932	1929	1928	1928	1923	1926	1932	1928	1938	1942	1946	1950	1943	1942	1941	1929
25	1812	1816	1812	1813	1815	1808	1808	1810	1811	1824	1830	1834	1840	1832	1827	1823	1812
30	1692	1696	1695	1692	1695	1690	1690	1690	1685	1703	1710	1713	1718	1715	1712	1706	1692
35	1544	1549	1549	1550	1553	1549	1544	1545	1539	1555	1565	1573	1576	1572	1567	1559	1544
40	1388	1396	1398	1402	1404	1399	1393	1387	1382	1400	1414	1423	1427	1424	1417	1404	1388
45	1233	1247	1254	1261	1263	1256	1246	1234	1220	1249	1267	1281	1285	1278	1269	1252	1233
50	1070	1088	1102	1114	1115	1104	1088	1070	1060	1089	1114	1132	1135	1126	1110	1090	1070
55	908	929	948	966	973	963	939	913	896	929	958	982	991	983	961	932	908
60	755	777	802	826	834	822	794	764	736	772	809	837	850	840	816	785	755
65	597	622	656	686	694	680	646	609	582	614	659	696	709	698	666	629	597
70	452	480	519	556	567	550	509	465	435	472	521	564	579	566	528	484	452
75	318	348	395	436	449	431	384	332	301	340	395	443	460	446	403	353	318
80	197	230	281	324	340	321	270	215	182	221	280	330	350	334	287	233	197
85	94	128	180	226	239	221	171	116	79	119	177	229	248	233	186	131	94
90	7	48	98	137	152	138	96	45	4	44	97	139	156	143	102	50	7
95	3	41	91	130	144	130	92	41	2	42	91	130	144	129	90	41	3
100	3	39	87	125	138	126	88	41	5	41	88	126	139	125	88	40	3
105	4	37	84	119	132	120	86	39	5	37	86	121	132	120	85	38	4
110	5	29	78	112	124	113	82	34	5	29	77	114	125	113	82	34	5
115	5	22	66	105	117	106	76	31	6	24	66	108	119	106	76	31	5
120	5	21	53	98	109	99	69	31	7	22	55	98	111	99	69	30	5
125	8	21	41	83	100	90	61	31	9	23	44	84	101	91	60	30	8
130	9	22	34	66	86	78	54	30	10	24	36	67	87	79	54	30	9
135	11	23	32	50	73	67	51	30	12	24	34	52	75	68	52	30	11
140	13	24	31	43	64	62	48	30	13	26	34	44	66	62	48	30	13
145	15	25	31	36	57	55	44	29	16	25	33	38	60	56	44	29	15
150	16	24	31	31	51	50	42	27	17	26	33	33	52	50	42	28	16
155	18	26	30	28	46	45	38	27	19	27	33	29	46	46	39	28	18
160	20	26	28	27	39	40	34	27	21	26	30	28	41	42	36	27	20
165	23	25	28	25	33	34	31	27	21	26	30	26	36	36	32	27	23
170	24	25	27	25	26	29	29	26	24	26	27	25	29	31	30	26	24
175	24	23	24	23	20	24	26	24	24	25	25	23	22	26	26	25	24
180	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22

Goniophotometer Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (6500K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1.The sample was tested according to the IES LM-79-2008, and the product is assume to be brand new without seasoning.
2.Photometric parameters were measured using a type C goniophotometer and software.
3.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 reference standard lamp is rated current 3.8581A, 3.8558A, 3.8466A omni-directional Incandescent lamp and was calibrated by National Institute of Metrology P.R.China.
4.The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonallumen were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. Photometric distance was more than five times of the largest dimension of the test SSL product.

Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.9	120.06	60	0.3349	40.114	0.9976	6.75%	Horizontal

Test Results

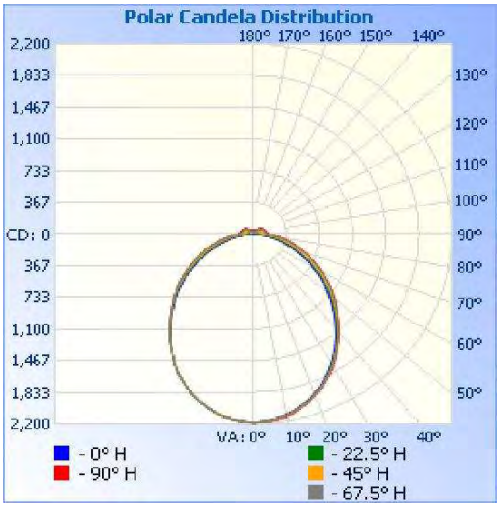
Luminous Flux (lm)	Zonal Lumen Requirement 1	Zonal Lumen Requirement 2	Beam Angle (50%)		Luminous Efficacy (lm/W)
	0°-60°	N/A	Horizontal Spread	Vertical Spread	
6214.7	72.90%	N/A	104.9	100.4	154.93

Backlight	Uplight	Glare
N/A	N/A	N/A

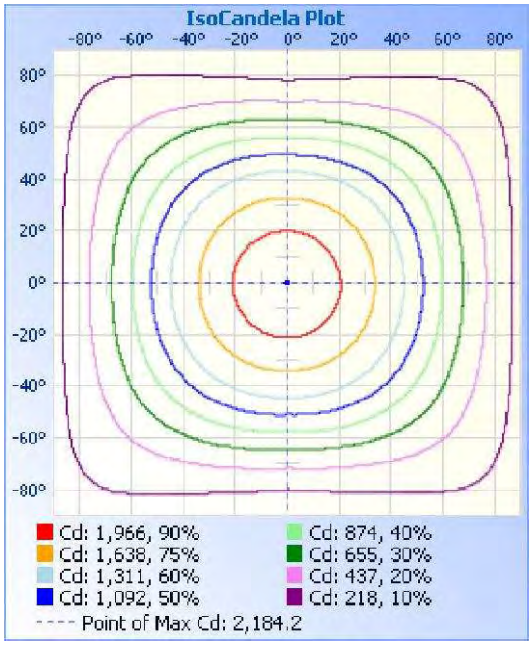
UGR		Spacing Criteria (0-180°)	Spacing Criteria (90°-270°)
Crosswise	Endwise		
N/A	N/A	1.20	1.22

Goniophotometer Test (Cont'd)

Polar Candela Distribution



IsoCandela Plot



Goniophotometer Test (Cont'd)

Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1648.2	26.50%
0-40	2648.6	42.60%
0-60	4522.9	72.80%
60-90	1304.5	21.00%
70-100	727.9	11.70%
90-120	250.4	4.00%
0-90	5827.4	93.80%
90-180	387.3	6.20%
0-180	6214.7	100.00%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	%Total	Zone	Lumens	%Total
0-5	51.9	0.80%	90-95	49.3	0.80%
5-10	153.6	2.50%	95-100	46.9	0.80%
10-15	248.7	4.00%	100-105	44.4	0.70%
15-20	333.0	5.40%	105-110	41.0	0.70%
20-25	403.4	6.50%	110-115	36.5	0.60%
25-30	457.6	7.40%	115-120	32.3	0.50%
30-35	491.9	7.90%	120-125	27.9	0.40%
35-40	508.5	8.20%	125-130	23.2	0.40%
40-45	506.7	8.20%	130-135	19.0	0.30%
45-50	489.5	7.90%	135-140	15.8	0.30%
50-55	460.6	7.40%	140-145	13.3	0.20%
55-60	417.5	6.70%	145-150	11.0	0.20%
60-65	365.2	5.90%	150-155	8.8	0.10%
65-70	307.5	4.90%	155-160	6.9	0.10%
70-75	245.2	3.90%	160-165	5.1	0.10%
75-80	184.9	3.00%	165-170	3.4	0.10%
80-85	127.4	2.00%	170-175	1.9	0.00%
85-90	74.3	1.20%	175-180	0.6	0.00%

Goniophotometer Test (Cont'd)

Intensity Data(cd)

Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184	2184
1	2179	2182	2178	2181	2180	2174	2176	2181	2177	2179	2179	2177	2180	2176	2178	2181	2178
2	2176	2177	2179	2179	2180	2173	2172	2180	2178	2178	2179	2176	2178	2171	2170	2178	2175
3	2172	2176	2174	2176	2178	2171	2168	2175	2172	2175	2176	2174	2175	2167	2165	2174	2172
4	2165	2172	2174	2176	2178	2169	2166	2171	2167	2171	2172	2172	2176	2165	2162	2167	2166
5	2162	2163	2168	2172	2177	2166	2162	2168	2163	2167	2166	2167	2168	2159	2157	2162	2163
6	2155	2162	2163	2166	2171	2162	2156	2158	2156	2158	2159	2161	2164	2156	2151	2153	2154
7	2148	2152	2155	2160	2167	2160	2153	2153	2149	2151	2150	2152	2157	2148	2142	2147	2146
8	2138	2146	2148	2155	2163	2154	2146	2144	2142	2144	2144	2146	2150	2142	2137	2137	2137
9	2130	2137	2141	2146	2154	2148	2141	2139	2135	2137	2134	2137	2142	2135	2128	2132	2131
10	2118	2126	2130	2138	2148	2142	2133	2130	2124	2127	2125	2126	2133	2127	2122	2121	2120
11	2109	2115	2121	2126	2136	2130	2124	2121	2114	2116	2114	2114	2122	2115	2110	2112	2109
12	2098	2104	2106	2113	2123	2120	2114	2108	2102	2105	2100	2101	2107	2102	2096	2098	2097
13	2086	2091	2094	2098	2109	2107	2102	2096	2088	2089	2085	2084	2090	2086	2084	2084	2082
14	2069	2080	2081	2086	2096	2090	2087	2081	2074	2075	2072	2070	2077	2071	2068	2068	2066
15	2056	2065	2067	2071	2077	2077	2073	2070	2061	2063	2058	2055	2059	2055	2053	2056	2053
16	2037	2047	2051	2057	2065	2061	2058	2056	2047	2046	2043	2040	2040	2036	2036	2040	2037
17	2020	2032	2038	2043	2049	2043	2043	2040	2030	2032	2027	2024	2026	2020	2022	2025	2021
18	2004	2013	2020	2026	2030	2026	2024	2021	2014	2015	2013	2009	2009	2001	2002	2006	2004
19	1986	1993	2000	2006	2010	2005	2006	2006	1996	1996	1991	1989	1989	1981	1982	1990	1988
20	1970	1976	1983	1988	1992	1984	1984	1985	1978	1980	1975	1973	1971	1964	1965	1974	1972
25	1855	1872	1879	1885	1891	1884	1883	1880	1867	1870	1865	1861	1862	1854	1852	1857	1855
30	1725	1742	1751	1758	1766	1765	1761	1754	1741	1744	1738	1737	1738	1734	1731	1732	1726
35	1577	1598	1607	1618	1622	1617	1616	1609	1594	1598	1596	1593	1592	1585	1584	1580	1573
40	1418	1438	1458	1469	1477	1474	1469	1458	1440	1445	1449	1450	1450	1442	1434	1427	1421
45	1252	1278	1301	1315	1320	1315	1306	1292	1272	1284	1291	1296	1296	1287	1275	1261	1252
50	1088	1121	1148	1170	1176	1166	1151	1130	1108	1127	1140	1152	1150	1137	1118	1098	1084
55	922	954	990	1016	1029	1022	1000	973	946	969	986	1004	1007	994	969	943	924
60	758	794	830	864	878	870	845	813	780	804	830	852	859	844	814	783	758
65	601	639	686	723	738	729	696	658	625	651	685	712	720	704	668	630	600
70	449	486	541	586	604	592	553	506	473	501	544	579	589	570	527	480	450
75	312	352	408	459	478	465	420	368	331	362	412	453	466	445	396	342	310
80	188	230	293	346	368	352	304	248	209	244	296	342	356	334	282	225	190
85	83	124	185	239	261	245	196	139	100	135	190	236	250	230	178	119	84
90	3	46	101	147	164	152	109	54	9	51	104	145	160	144	100	46	4
95	4	43	95	136	151	136	94	43	4	43	94	135	150	136	94	43	4
100	4	42	92	131	145	131	92	42	4	42	92	131	144	130	92	42	4
105	5	39	89	125	139	125	89	40	4	39	88	124	137	124	89	40	4
110	5	30	81	119	131	118	85	36	5	30	82	117	130	118	84	35	6
115	6	24	68	112	123	111	79	32	6	23	68	110	122	111	79	33	6
120	7	23	57	103	115	104	72	32	6	21	56	102	114	103	71	32	7
125	9	24	45	87	105	94	64	32	8	22	43	87	104	93	63	32	8
130	10	25	37	69	91	82	56	32	10	23	35	69	90	82	56	31	10
135	12	25	36	54	78	71	54	31	12	24	32	52	76	69	53	31	12
140	14	26	34	46	67	65	50	31	14	25	32	44	66	64	50	30	14
145	16	27	35	39	62	58	47	31	16	25	33	37	60	58	47	30	15
150	17	26	34	34	54	53	44	30	16	25	33	33	53	52	43	28	18
155	19	28	33	32	48	48	41	30	19	26	32	29	47	46	39	28	19
160	21	27	31	29	43	43	37	28	21	26	31	28	41	41	35	28	21
165	23	27	30	26	36	37	34	28	23	26	29	26	33	35	32	28	23
170	24	26	29	26	29	31	31	27	24	26	28	25	26	30	29	27	24
175	24	25	26	24	23	27	28	26	24	25	25	23	21	25	25	25	25
180	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.06	60	0.3331	39.89	0.9976	6.80%	Horizontal
24.8	277.04	60	0.1433	38.81	0.9775	8.23%	Horizontal

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3500K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.00	60	0.3316	39.58	0.9945	6.91%	Horizontal
24.8	277.05	60	0.1419	38.42	0.9771	8.08%	Horizontal

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (4000K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.00	60	0.3273	39.06	0.9943	6.99%	Horizontal
24.8	277.05	60	0.1403	37.96	0.9764	7.98%	Horizontal

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (5000K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.00	60	0.3318	39.61	0.9945	6.8%	Horizontal
24.8	277.05	60	0.1421	38.47	0.9771	8.18%	Horizontal

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (6500K) 40W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.06	60	0.3349	40.11	0.9976	6.75%	Horizontal
24.8	277.00	60	0.1437	38.93	0.9777	8.22%	Horizontal

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K) 34W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.04	60	0.2688	31.96	0.9905	9.61%	Horizontal
24.8	277.06	60	0.1181	31.56	0.9641	8.43%	Horizontal

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K) 26W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.09	60	0.2076	24.63	0.9885	8.27%	Horizontal
24.8	277.00	60	0.0947	24.71	0.9418	7.73%	Horizontal

THD and PF Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K) 21W		Sample ID.	8307503
Operate time (Min.)	90	Stabilization time (Min.)		45

Test Method

1. The samples were tested according to the ANSI C82.77-10-2014.
2. The ambient temperature condition was maintained at 25 °C ± 1 °C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.8	120.05	60	0.1724	20.33	0.9825	7.12%	Horizontal
24.8	277.02	60	0.0813	20.66	0.9164	9.29%	Horizontal

In-Situ Temperature Measurement Test

Model No.	IK-WL04-21/26/34/40W-MV-5CCT-DY (3000K) 40W	Sample ID.	8307503

Test Method

1. In-Situ Temperature Measurement Test is conducted according to the UL 1598-2008, Section 14.
2. The testing was conducted in a room with ambient temperature of 25 °C ± 5 °C. The apparatus construction followed those described in UL1598-2008 for normal temperature testing. Thermocouples were placed on the LED package in the locations indicated by LM-80 report. Thermocouples were placed on the LED driver case in the locations specified by the manufacture if necessary. The temperature was recorded after the lamp was operated by 7.5 hours.
3.The data and photos in LM-80 test report is provided by the customer/ The data and photos in driver specification is provided by the customer.

In-Situ Temperature Measurement Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Current THD	Orientation
24.2	120.06	60	0.3331	39.892	0.9976	6.80%	Horizontal

Test Results (LEDs)

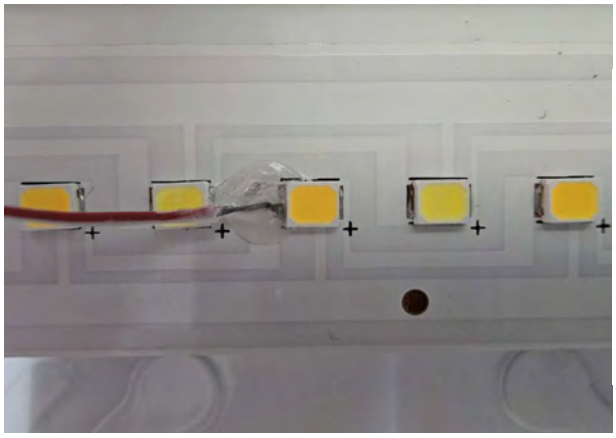
Thermocouple Location	Declared Light Source Current (mA)	Temperature for Light Source (°C)		Max Chromaticity Shift (1000-6000h)	LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp (°C)
		Test Result	Test Result (Correct to 25 °C)				
Ambient TEMP	N/A	24.2	25.0				
TMP of Location 1	85	36.7	37.5	0.0007	STW8A2SD-XX	150	105

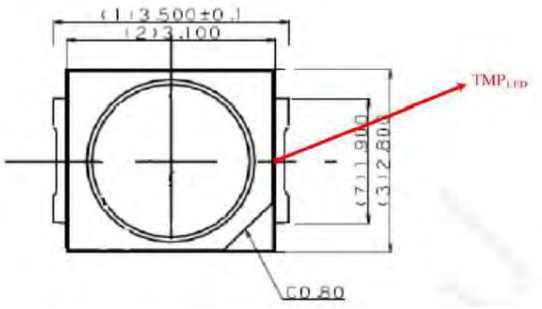
Test Results (Drivers)

Thermocouple Location	Temperature for Driver (°C)		Driver Model Number	Driver Limit Temp (°C)
	Test Result	Test Result (Correct to 25 °C)		
Ambient TEMP	24.2	25.0		
TMP of Location 1	44.5	45.3	SIF40-I0850 120-277 W D1 F S3S6	90

In-Situ Temperature Measurement Test (Cont'd)

Test Photos for Ts Point of Light Sources & Tc Point of Drivers





******** END OF REPORT. THIS PAGE INTENTIONALLY LEFT BLANK ********