



Shenzhen Belling Efficiency Testing Lab Co., Ltd



Report No.:BL201013001-9

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Total pages 22

Test report of

IES LM-79-08

Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Applicant:

RAB Lighting Inc

Address:

Northvale, New Jersey, 07647, USA

For Product:

LED Corn Lamp

Model No.:

HID-50-EX39-840-BYP-ADJ

Test laboratory: Shenzhen Belling Efficiency Testing Lab Co., Ltd, 1Floor, No.1 Building, Meibaohe Industrial Park, Dalang Street, Longhua District, Shenzhen, Guangdong Prov.518101 China.

Complied by: Jarvis zhang

Review by: Jason zhou

Project Engineer

Technical Manager

Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Shenzhen Belling Efficiency Testing Lab Co., Ltd. This report must not be used by the customer to claim product certification, approval, or endorsement By NVLAP, NIST, or any agency of the U.S. Government.



1 General

1.1 Product Information

Manufacturer	RAB Lighting Inc
Manufacturer Address	Northvale, New Jersey, 07647, USA
Brand Name	/
Luminaire Type	LED Corn Lamp
Model Number	HID-50-EX39-840-BYP-ADJ
Rated Inputs	AC 100-277V 50/60Hz
Rated Power	50 W
Nominal CCT	4000K
Date of Receipt Samples	2020-07-06
Date of test	2020-07-07 to 2020-07-10
Burning Time Before Test	0hour(For New Products)

1.2 Standards or methods

- ANSI C78.377-2017: Specifications for the Chromaticity of Solid State Lighting Products
- ANSI C82.77-10:2014: Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment - Solid State
- CIE Publication No.13.3-1995: Method of Measuring and Specifying Color Rendering of Light Sources
- IESNA LM-79-08 Approved Method: Electric & Photometric Measurement of Solid-state Lighting Products



1.3 Equipment list

Device	Manufacture	Model No.	Serial No.	Calibration due date
Goniophotometric System	SENSING	GMS-3000	N.A	2021-04-02
AC Power Source	ALL POWER	APW-110N	992257	2021-04-02
Total Luminous Flux Standard Lamp	SENSING	110V/100W	S1510065	2021-04-08
Total Spectral Radiant Flux Standard Lamp	SENSING	12V/20W	LSD12201731	2021-04-08
Digital Power Meter	YOKOGAWA	WT310	C2QM02030V	2021-04-02
Integral Sphere	SENSING	SPR-600M	N.A	2021-04-02
Digital Power Meter	YOKOGAWA	WT210	91L929742	2021-04-02
Optical Color and Electrical Measurement System	SENSING	SPR-3000	S1101108	2021-04-02
Environment Measurer	XUYAO	HS-1	N/A	2021-04-08
Environment Measurer	XUYAO	HS-1	N/A	2021-04-08
Stop watch	KISLO	K610	N/A	2021-04-27
Digital Anemometer	TECMAN	TD8901	026141	2020-09-10

Statement of Traceability: Shenzhen Belling Efficiency Testing Lab Co., Ltd attests that all calibration has been performed using suitable standards traceable to national primary standards and International System of Unit (SI).

1.4 Description

- Declaration: RAB Lighting Inc declare that their product with model HID-50-EX39-840-BYP-ADJ are the same to the product in the report BL200710004-9 and is authorized by original applicant to use their test data.
- Note: All the data in previous report BL200710004-9 is shared in report.



2 Test conducted and method

2.1 Ambient Condition

The ambient temperature in which measurements are being taken was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, the air flow around the sample(s) being tested did not affect the performance.

2.2 Power Supply Characteristics

The AC power supply had a sinusoidal voltage wave shape at the prescribed frequency (60 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

The voltage of AC power supply (RMS voltage) applied to the device under test was regulated to within ± 0.2 percent under load.

2.3 Seasoning and Stabilization

No seasoning was performed in accordance with IESNA LM-79-08. And before the measurement, the sample was stabilized until the light output and power variations were less than 0.5% in 30 minutes intervals (3 readings, 15 minutes apart).

2.4 Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The integrating sphere system is calibrated by standard light source before measurement. The system and standard light source has been calibrated regularly and traceable to the National Primary Standards. 4π geometry was used during measurement. The product was operated in its intended orientation in application and was recorded in this report.

Integrating Sphere Uncertainty: The uncertainty of the light output (luminous flux) measurements is $U=1.8\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=20\text{K}$ ($K=2$), at the 95% confidence level. The uncertainty of the CRI is $U=1.8(K=2)$, at the 95% confidence level. The uncertainty of power meter AC current $U=0.18\%$ of rdg, AC Voltage $U=0.16\%$ of rdg, Power $U=0.20\%$ ($K=2$), at the 95% confidence level.



2.5 Goniophotometer System

The goniophotometer system is calibrated by standard light source before measurement. The standard light source has been calibrated regularly and traceable to the National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report. The method according to IESNA LM-79-08 following chapter.

Goniophotometer Uncertainty :The uncertainty of the luminous intensity is $U=1.6\%$ ($K=2$), at the 95% confidence level.



3 Test Result Summary

3.1 Integrating Sphere System (Total operating time for integrating sphere test: 1.0 hour)

3.1.1 Electrical data

Model Number	Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
HID-50-EX39-840-BYP-ADJ	120.10	60	0.422	50.13	0.989
	277.06	60	0.202	51.01	0.910

3.1.2 Photometric data

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
HID-50-EX39-840-BYP-ADJ	7840.33	156.4	4032	84.2	14
	7824.93	153.4	4052	84.2	14

3.1.3 Chromaticity Coordinate

Model Number	Duv	x	y	u'	v'
HID-50-EX39-840-BYP-ADJ	-0.00127	0.3782	0.3727	0.2253	0.4994
	-0.00146	0.3772	0.3716	0.2250	0.4988



3.2 Goniophotometer System (Total operating time for luminous intensity distribution: 1.0 hour)

3.2.1 Electrical data

Model Number	Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
HID-50-EX39-840-BYP-ADJ	120.14	60	0.4160	49.37	0.9887
	277.08	60	0.2000	50.44	0.9107

3.2.2 Photometric data

Input Voltage(V)	Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
120	7731.43	156.61	80.57	98.68
277	7751.42	153.68	80.35	98.65



4 Test Data

HID-50-EX39-840-BYP-ADJ Tested at 120V

Test Condition

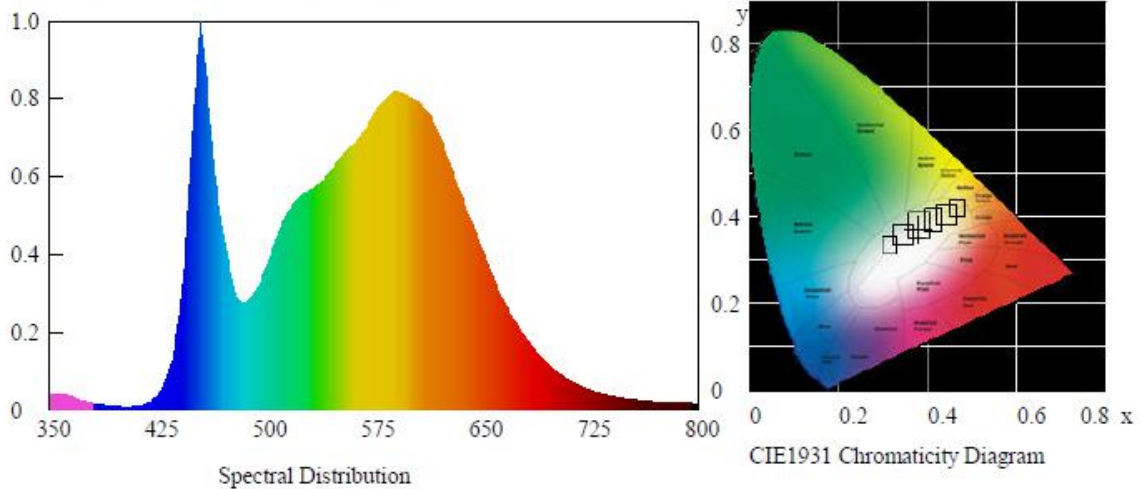
Temperature: 25°C

RH: 58%

Spectrum Range: 350-800 nm

Scan Step: 5 nm

Spectroradiometric Parameters

Chromaticity Coordinates: $x=0.3782$ $y=0.3727$ $u'=0.2253$ $v'=0.4994$

Correlated Color Temperature: 4032 K

Dominant Wavelength: 578.0 nm(E)

Colour Fidelity Index: $R_f=81$ Gamut Index: $R_g=93$

Luminous Flux: 7840.33 lm

Purity: 0.2539

Chromaticity Difference: -0.00127Duv

Peak Wavelength: 455.0 nm

Color Ratio: $K_r=38.6\%$ $K_g=51.6\%$ $K_b=9.8\%$

Bandwidth: 20.3nm

Radiant Flux: 25.41 W

Rendering Index: $R_a=84.2$ $R_1=83$ $R_2=93$ $R_3=96$ $R_4=81$ $R_5=83$ $R_6=88$ $R_7=85$ $R_8=65$ $R_9=14$ $R_{10}=81$ $R_{11}=80$ $R_{12}=61$ $R_{13}=87$ $R_{14}=98$ $R_{15}=78$ $R_e=78$

Electric Parameters

Voltage: 120.10 V

Current: 0.422 A

Power Factor: 0.989

Power: 50.13 W

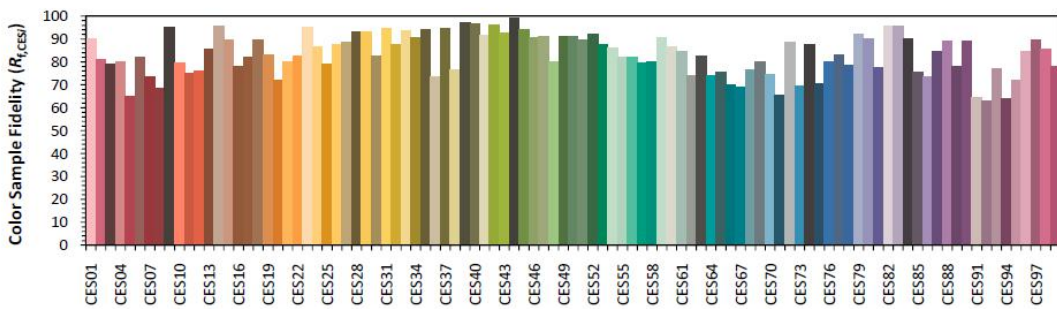
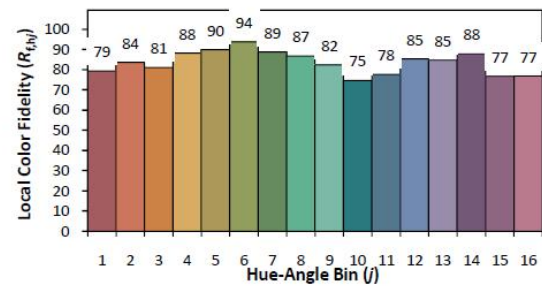
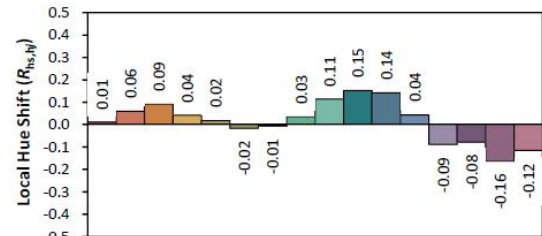
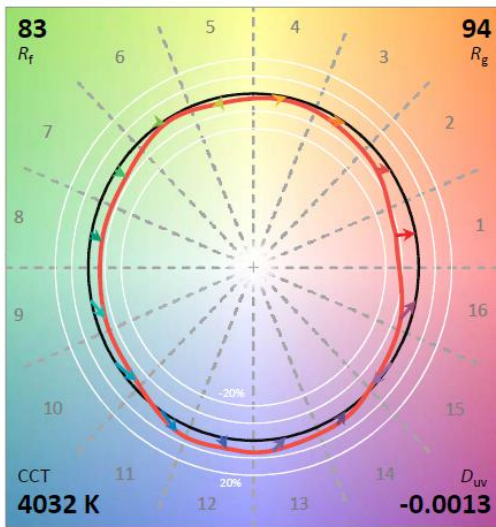
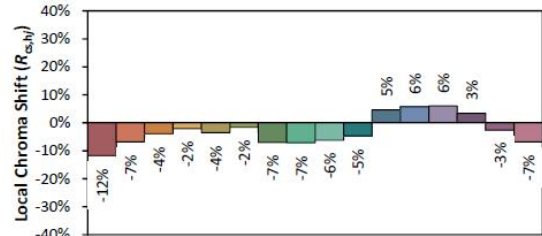
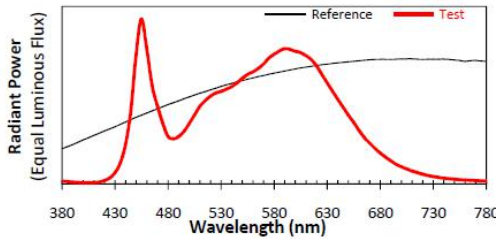
Luminous Efficacy: 156.4 lm/W



ANSI/IES TM-30-18 Color Rendition Report

Source: BL201013001-9
 Date: 2020/10/13

Manufacturer: RAB Lighting Inc
 Model: HID-50-EX39-840-BYP-ADJ



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

x 0.3782
 y 0.3727
 u' 0.2253
 v' 0.4994

CIE 13.3-1995 (CRI)	
R_a	84
R_9	14

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



Zonal Flux Diagram

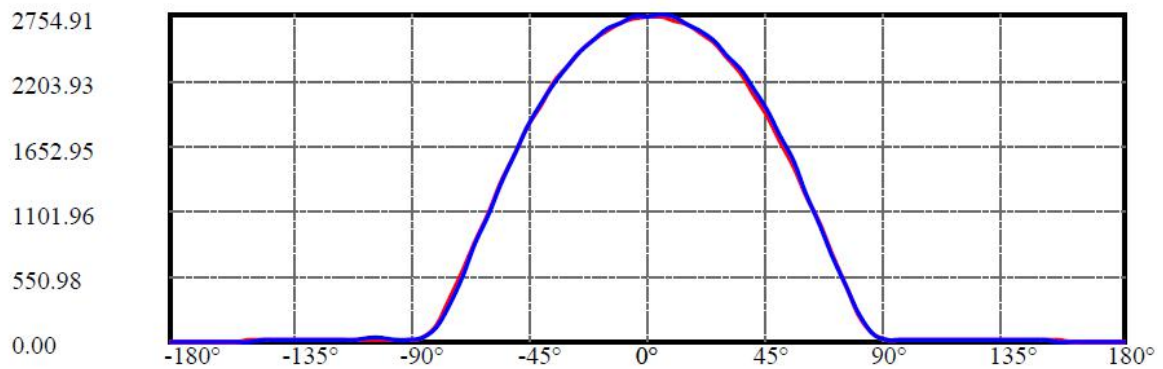
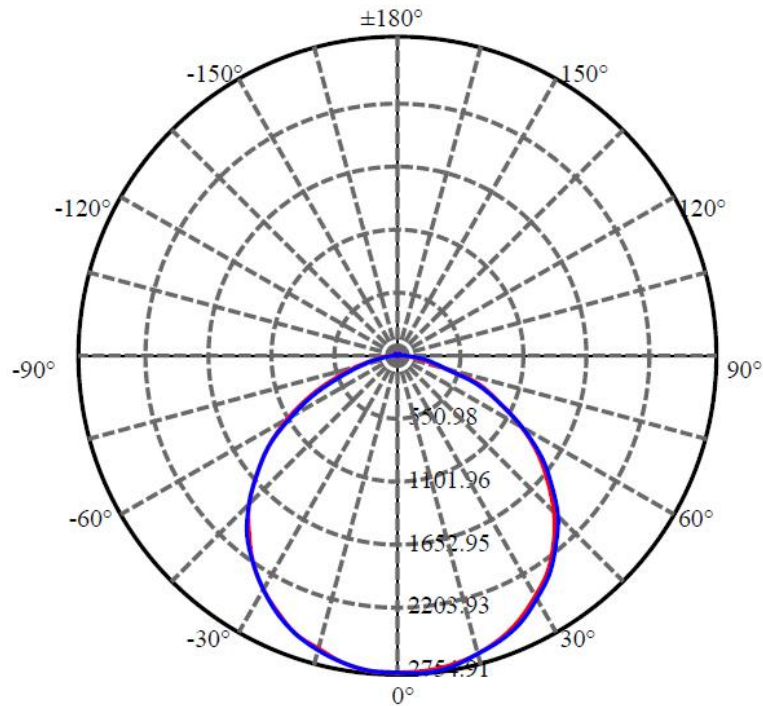
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2736.800	0.000	0	0.00%	0.00%
5.0	2726.224	65.309	65.309	0.00%	0.84%
10.0	2692.972	193.862	259.171	0.00%	3.35%
15.0	2640.381	316.371	575.542	0.00%	7.44%
20.0	2568.265	429.266	1004.807	0.00%	13.00%
25.0	2473.062	528.742	1533.549	0.00%	19.84%
30.0	2356.130	611.138	2144.687	0.00%	27.74%
35.0	2217.341	673.476	2818.163	0.00%	36.45%
40.0	2052.398	712.374	3530.537	0.00%	45.66%
45.0	1862.516	724.878	4255.415	0.00%	55.04%
50.0	1650.961	709.949	4965.364	0.00%	64.22%
55.0	1419.062	667.525	5632.889	0.00%	72.86%
60.0	1161.927	596.588	6229.477	0.00%	80.57%
65.0	902.134	501.777	6731.255	0.00%	87.06%
70.0	651.984	393.513	7124.767	0.00%	92.15%
75.0	390.028	272.365	7397.132	0.00%	95.68%
80.0	176.762	151.657	7548.79	0.00%	97.64%
85.0	50.273	61.691	7610.481	0.00%	98.44%
90.0	19.637	19.142	7629.623	0.00%	98.68%
95.0	16.046	9.770	7639.393	0.00%	98.81%
100.0	18.110	9.281	7648.674	0.00%	98.93%
105.0	21.404	10.573	7659.247	0.00%	99.07%
110.0	22.549	11.489	7670.736	0.00%	99.21%
115.0	21.122	11.058	7681.794	0.00%	99.36%
120.0	19.793	9.946	7691.74	0.00%	99.49%
125.0	19.694	9.127	7700.867	0.00%	99.60%
130.0	15.495	7.651	7708.518	0.00%	99.70%
135.0	13.134	5.785	7714.303	0.00%	99.78%
140.0	12.540	4.754	7719.057	0.00%	99.84%
145.0	11.395	3.993	7723.05	0.00%	99.89%
150.0	9.628	3.096	7726.146	0.00%	99.93%
155.0	7.606	2.181	7728.327	0.00%	99.96%
160.0	5.811	1.407	7729.734	0.00%	99.98%
165.0	4.581	0.856	7730.59	0.00%	99.99%
170.0	3.803	0.497	7731.088	0.00%	100.00%
175.0	3.478	0.260	7731.348	0.00%	100.00%
180.0	3.553	0.084	7731.432	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ——

C90/C270: ——

Field angle(10%Imax):C0/180Left:76.7 Right:78.8

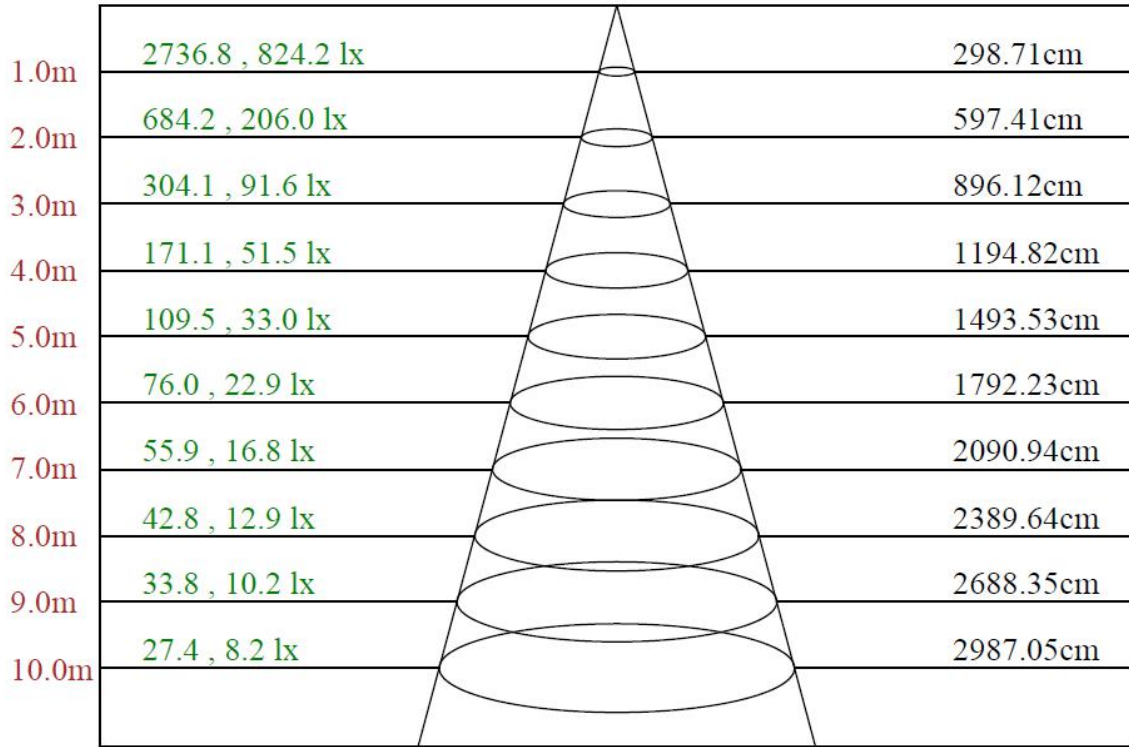
:C90/270Left:75.5 Right:79.2

Beam Angle(50%Imax):C0/180Left:54.7 Right:57.2

:C90/270Left:54.2 Right:57.7



Lux distance Curve



Max , Ave Beam angle of C90 plane 112.39

**Luminous Intensity Distribution Data**

C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	2736.80	2735.46	2708.31	2662.85	2599.74	2507.67	2389.14	2265.18	2093.72
22.5	2736.80	2736.13	2709.44	2660.58	2590.24	2503.83	2390.27	2255.46	2085.13
45.0	2736.80	2724.82	2693.84	2652.21	2589.56	2499.75	2388.24	2249.58	2089.88
67.5	2736.80	2708.99	2679.58	2635.93	2565.35	2482.79	2374.44	2241.43	2089.42
90.0	2736.80	2754.91	2729.80	2677.32	2615.12	2529.61	2417.42	2289.39	2135.34
112.5	2736.80	2734.55	2704.69	2653.80	2590.01	2493.87	2390.05	2252.29	2099.15
135.0	2736.80	2732.97	2697.23	2644.52	2573.95	2480.30	2367.20	2226.05	2070.65
157.5	2736.80	2732.52	2689.09	2641.13	2559.02	2462.66	2349.33	2202.53	2036.95
180.0	2736.80	2721.66	2685.92	2624.62	2549.74	2448.63	2326.94	2182.39	1999.40
202.5	2736.80	2714.65	2674.83	2622.81	2541.60	2440.49	2312.01	2165.65	1992.38
225.0	2736.80	2712.84	2676.19	2607.88	2527.35	2423.30	2296.17	2158.64	1975.42
247.5	2736.80	2689.09	2652.89	2595.44	2516.95	2410.86	2288.26	2146.88	1983.79
270.0	2736.80	2730.93	2694.51	2631.40	2549.29	2451.12	2320.15	2177.19	2017.94
292.5	2736.80	2725.28	2690.22	2633.21	2558.34	2458.36	2343.90	2198.68	2024.50
315.0	2736.80	2732.52	2694.29	2642.04	2574.17	2480.53	2355.89	2219.94	2063.19
337.5	2736.80	2732.29	2706.73	2660.36	2591.82	2495.23	2388.69	2246.18	2081.51
360.0	2736.80	2735.46	2708.31	2662.85	2599.74	2507.67	2389.14	2265.18	2093.72
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1904.62	1689.73	1473.93	1238.00	994.16	741.72	458.74	213.99	60.17
22.5	1906.65	1712.57	1499.49	1262.88	1006.82	765.69	485.20	236.83	67.86
45.0	1900.32	1704.43	1493.84	1256.78	979.91	752.80	493.57	237.51	65.60
67.5	1902.81	1695.61	1467.60	1214.70	962.94	731.08	459.19	228.92	62.88
90.0	1954.16	1748.77	1518.94	1256.55	979.68	724.98	462.58	241.58	74.19
112.5	1917.29	1720.26	1487.95	1223.98	952.54	679.74	430.91	209.24	62.66
135.0	1882.45	1669.82	1427.11	1173.99	898.25	635.63	381.38	169.88	49.54
157.5	1834.72	1613.72	1372.14	1107.03	847.35	615.95	345.18	149.75	43.66
180.0	1807.35	1588.16	1356.53	1097.98	839.66	598.98	342.24	137.08	36.19
202.5	1796.95	1582.28	1363.32	1090.29	817.49	584.96	326.41	128.26	37.32
225.0	1777.49	1570.74	1333.91	1067.45	820.21	571.84	315.78	132.10	37.10
247.5	1775.00	1561.02	1329.16	1057.72	836.95	567.77	320.98	134.82	36.87
270.0	1821.83	1587.94	1338.89	1079.66	817.04	549.22	294.51	121.24	36.65
292.5	1838.11	1627.29	1382.32	1119.92	836.27	587.22	333.87	130.52	34.84
315.0	1877.25	1666.43	1424.84	1163.58	899.60	631.10	372.55	165.35	45.01
337.5	1903.26	1676.61	1435.02	1180.32	945.30	693.08	417.34	191.14	53.84
360.0	1904.62	1689.73	1473.93	1238.00	994.16	741.72	458.74	213.99	60.17
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	22.17	15.61	14.25	19.68	22.39	19.45	18.10	21.94	17.87
22.5	24.88	17.19	15.83	22.39	23.98	28.50	27.60	28.73	21.94
45.0	24.88	16.51	16.06	20.81	22.62	22.85	22.62	24.43	19.00
67.5	23.98	16.97	16.06	20.81	25.11	19.00	18.10	25.11	19.91
90.0	24.66	16.51	18.55	22.85	24.88	22.62	20.58	20.58	15.83
112.5	19.45	14.48	18.78	23.07	20.81	19.00	16.74	14.25	11.54
135.0	17.19	14.48	19.45	22.85	22.39	18.55	16.29	14.48	12.22
157.5	16.06	13.12	15.16	18.32	18.32	18.78	19.00	18.55	13.35
180.0	15.38	12.89	15.38	17.42	21.26	20.58	18.55	17.64	12.44
202.5	18.32	14.02	17.19	21.49	26.24	28.50	28.28	23.30	18.10
225.0	16.97	15.38	16.74	19.45	23.30	22.85	21.26	21.04	16.29
247.5	15.83	17.42	19.68	22.85	22.39	20.13	18.32	20.36	15.83
270.0	18.10	21.72	26.69	26.01	25.11	21.26	19.45	16.29	11.99
292.5	17.19	16.97	22.39	19.68	19.45	17.64	16.29	12.89	11.54
315.0	19.00	18.55	21.04	25.56	21.72	19.00	16.97	15.16	11.99
337.5	20.13	14.93	16.51	19.23	20.81	19.23	18.55	20.36	18.10
360.0	22.17	15.61	14.25	19.68	22.39	19.45	18.10	21.94	17.87



<i>C/γ(°)</i>	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	14.48	15.16	14.48	12.44	9.73	7.01	4.98	4.07	3.62
22.5	18.10	17.19	15.83	14.02	10.86	7.47	5.20	4.30	3.62
45.0	15.83	15.61	14.70	13.35	10.18	7.24	5.20	4.07	3.39
67.5	14.25	13.80	12.67	10.41	8.37	6.33	5.20	4.30	3.85
90.0	11.76	9.95	9.73	9.05	7.47	5.88	4.98	4.07	3.62
112.5	10.41	9.50	8.60	7.24	5.88	5.20	4.07	3.62	3.39
135.0	10.41	9.73	8.37	7.01	5.88	4.75	4.30	3.17	3.17
157.5	11.31	10.63	9.27	7.69	6.33	4.98	4.07	3.62	3.39
180.0	12.67	13.35	12.67	9.27	7.47	5.66	4.52	3.39	2.94
202.5	16.74	16.06	14.48	11.54	7.92	5.66	4.52	3.62	3.17
225.0	15.83	15.61	13.80	11.31	7.69	5.66	4.30	3.39	3.17
247.5	13.57	12.89	11.08	9.05	7.47	5.43	4.30	3.62	3.39
270.0	10.86	10.18	9.50	7.92	6.56	5.66	4.52	4.07	4.07
292.5	10.63	9.50	8.60	6.79	5.66	4.98	4.07	3.62	3.62
315.0	10.18	9.50	8.14	7.47	6.33	5.20	4.30	3.85	3.62
337.5	13.12	11.99	10.41	9.50	7.92	5.88	4.75	4.07	3.62
360.0	14.48	15.16	14.48	12.44	9.73	7.01	4.98	4.07	3.62
<i>C/γ(°)</i>	180.0								
0.0	3.55								
22.5	3.55								
45.0	3.55								
67.5	3.55								
90.0	3.55								
112.5	3.55								
135.0	3.55								
157.5	3.55								
180.0	3.55								
202.5	3.55								
225.0	3.55								
247.5	3.55								
270.0	3.55								
292.5	3.55								
315.0	3.55								
337.5	3.55								
360.0	3.55								

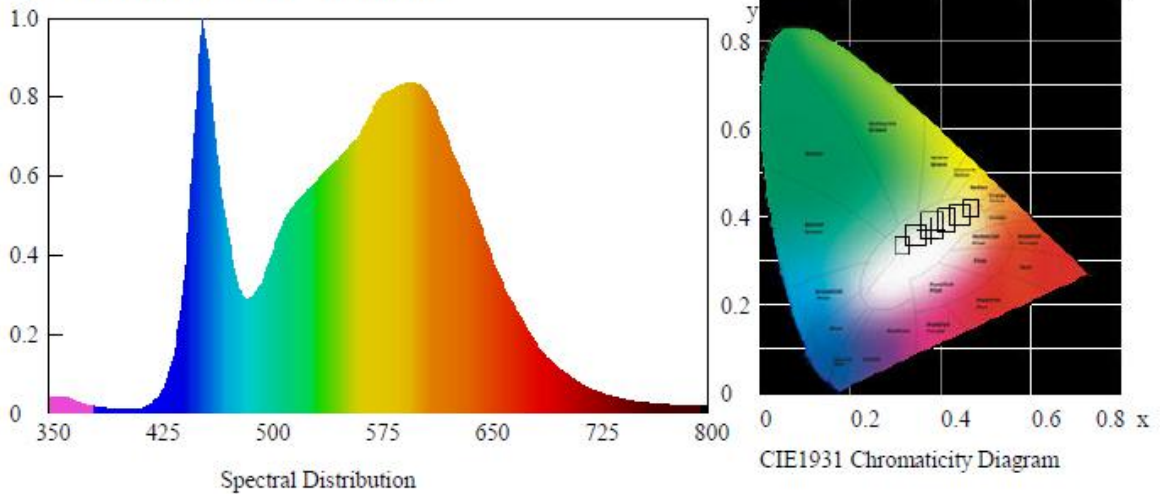
**HID-50-EX39-840-BYP-ADJ Tested at 277V****Test Condition**

Temperature: 25°C

RH: 58%

Spectrum Range: 350-800 nm

Scan Step: 5 nm

Spectroradiometric ParametersChromaticity Coordinates: $x=0.3772$ $y=0.3716$ $u'=0.225$ $v'=0.4988$

Correlated Color Temperature: 4052 K

Dominant Wavelength: 578.0 nm(E)

Colour Fidelity Index: $R_f=81$ Gamut Index: $R_g=93$

Luminous Flux: 7824.93 lm

Purity: 0.2476

Chromaticity Difference: -0.00146Duv

Peak Wavelength: 455.0 nm

Color Ratio: $K_r=38.5\%$ $K_g=51.6\%$ $K_b=9.9\%$

Bandwidth: 28.6nm

Radiant Flux: 25.49 W

Rendering Index: $R_a=84.2$

R1=84 R2=93 R3=95 R4=81 R5=83 R6=89 R7=85 R8=65

R9=14 R10=82 R11=80 R12=62 R13=87 R14=98 R15=78 $R_e=78$ **Electric Parameters**

Voltage: 277.06 V

Current: 0.202 A

Power Factor: 0.910

Power: 51.01 W

Luminous Efficacy: 153.4 lm/W



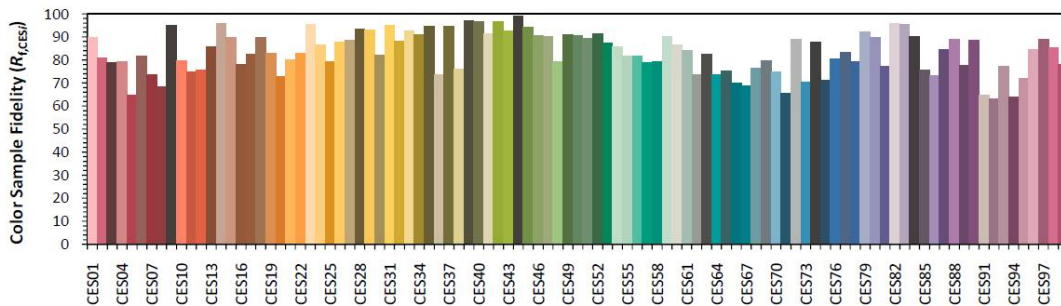
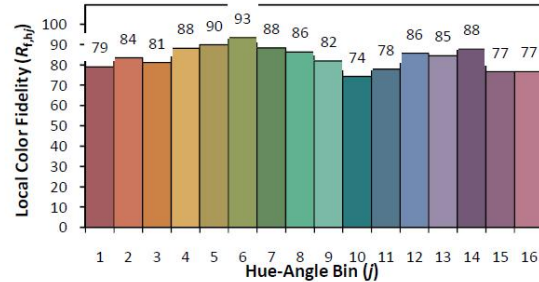
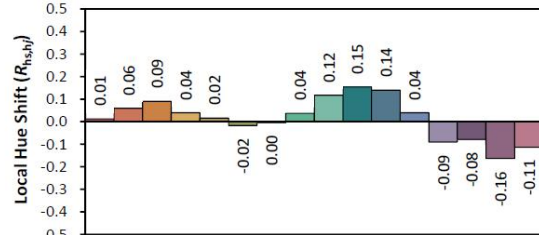
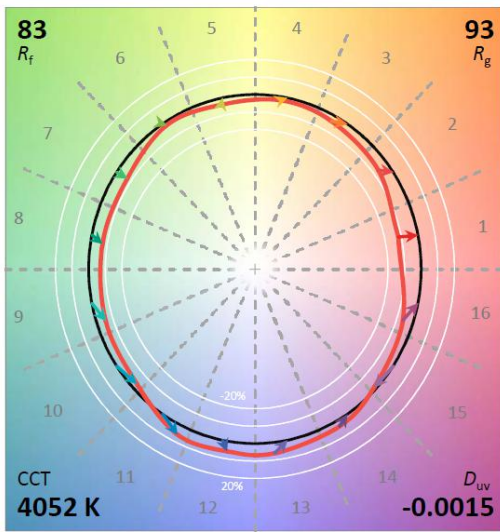
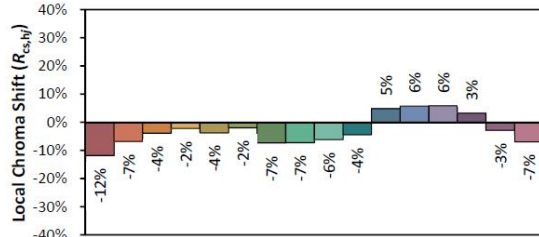
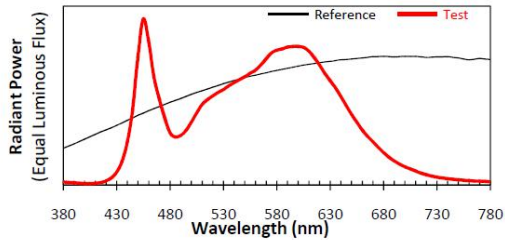
ANSI/IES TM-30-18 Color Rendition Report

Source: BL201013001-9

Manufacturer: RAB Lighting Inc

Date: 2020/10/13

Model: HID-50-EX39-840-BYP-ADJ



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

x 0.3772
 y 0.3716
 u' 0.2250
 v' 0.4988

CIE 13.3-1995 (CRI)	
R _a	84
R ₉	14

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



Zonal Flux Diagram

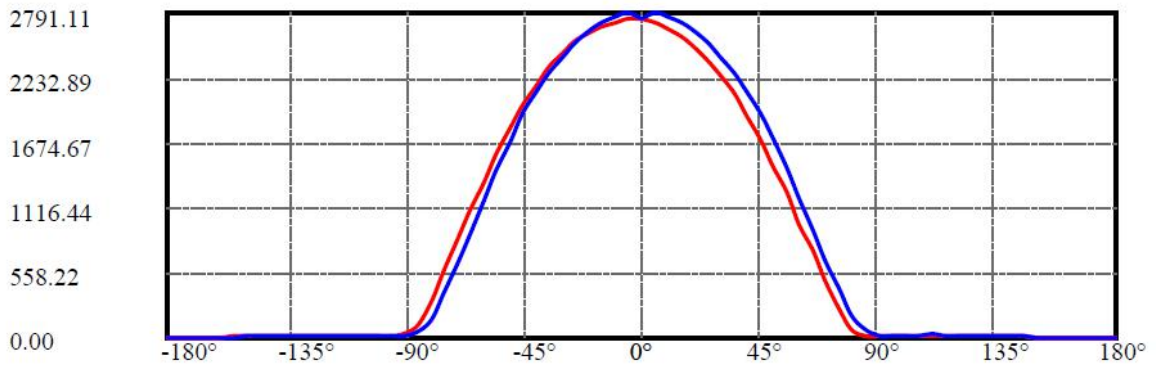
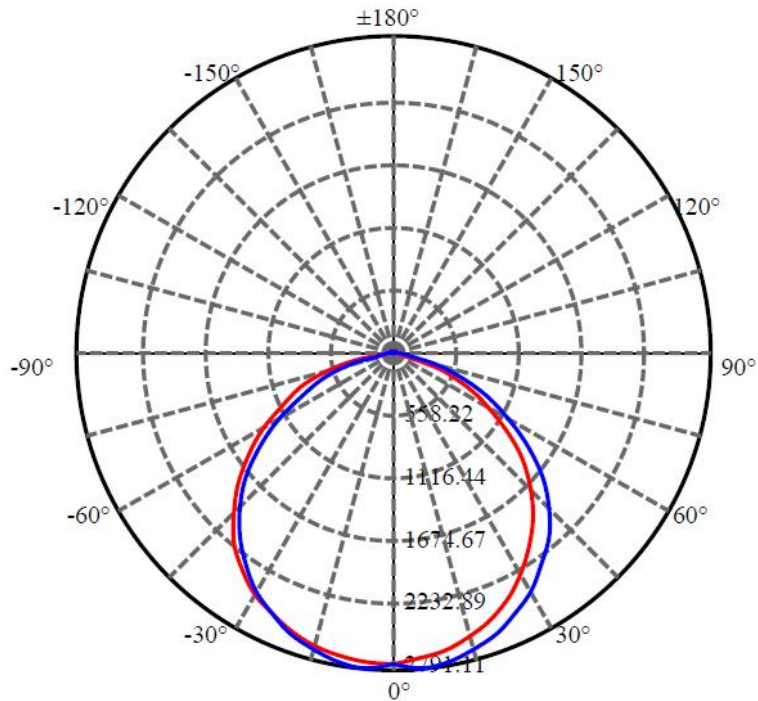
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2736.743	0.000	0	0.00%	0.00%
5.0	2723.383	65.274	65.274	0.00%	0.84%
10.0	2691.358	193.702	258.977	0.00%	3.34%
15.0	2638.256	316.149	575.126	0.00%	7.42%
20.0	2565.131	428.832	1003.958	0.00%	12.95%
25.0	2470.500	528.145	1532.103	0.00%	19.77%
30.0	2354.569	610.616	2142.719	0.00%	27.64%
35.0	2215.299	672.945	2815.664	0.00%	36.32%
40.0	2051.012	711.802	3527.466	0.00%	45.51%
45.0	1864.343	724.960	4252.425	0.00%	54.86%
50.0	1654.030	710.939	4963.364	0.00%	64.03%
55.0	1418.824	668.141	5631.505	0.00%	72.65%
60.0	1162.250	596.608	6228.113	0.00%	80.35%
65.0	906.550	502.929	6731.042	0.00%	86.84%
70.0	650.170	394.172	7125.214	0.00%	91.92%
75.0	399.466	274.358	7399.572	0.00%	95.46%
80.0	184.018	156.124	7555.696	0.00%	97.47%
85.0	64.050	67.406	7623.102	0.00%	98.34%
90.0	23.020	23.840	7646.942	0.00%	98.65%
95.0	17.012	10.961	7657.903	0.00%	98.79%
100.0	18.940	9.769	7667.672	0.00%	98.92%
105.0	21.466	10.812	7678.484	0.00%	99.06%
110.0	22.215	11.417	7689.901	0.00%	99.21%
115.0	21.258	11.007	7700.908	0.00%	99.35%
120.0	21.438	10.379	7711.288	0.00%	99.48%
125.0	18.580	9.250	7720.538	0.00%	99.60%
130.0	16.124	7.546	7728.083	0.00%	99.70%
135.0	13.501	5.986	7734.07	0.00%	99.78%
140.0	12.488	4.812	7738.882	0.00%	99.84%
145.0	11.364	3.980	7742.861	0.00%	99.89%
150.0	9.630	3.091	7745.953	0.00%	99.93%
155.0	7.812	2.207	7748.16	0.00%	99.96%
160.0	6.133	1.463	7749.622	0.00%	99.98%
165.0	4.856	0.906	7750.528	0.00%	99.99%
170.0	3.996	0.525	7751.053	0.00%	100.00%
175.0	3.774	0.278	7751.331	0.00%	100.00%
180.0	3.813	0.091	7751.422	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

C90/C270: —

Field angle(10%Imax):C0/180Left:80.9 Right:74.4

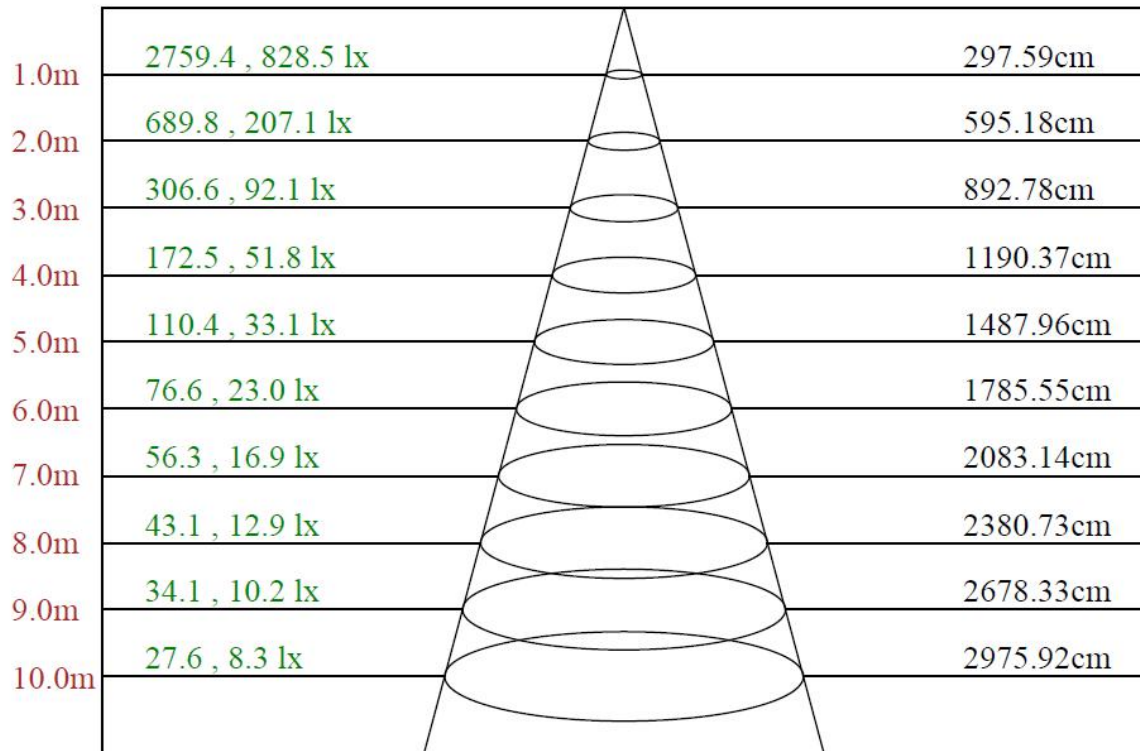
:C90/270Left:77.2 Right:77.9

Beam Angle(50%Imax):C0/180Left:59.4 Right:52.3

:C90/270Left:55.8 Right:56.3



Lux distance Curve



Max , Ave

Beam angle of C270 plane 112.19

**Luminous Intensity Distribution Data**

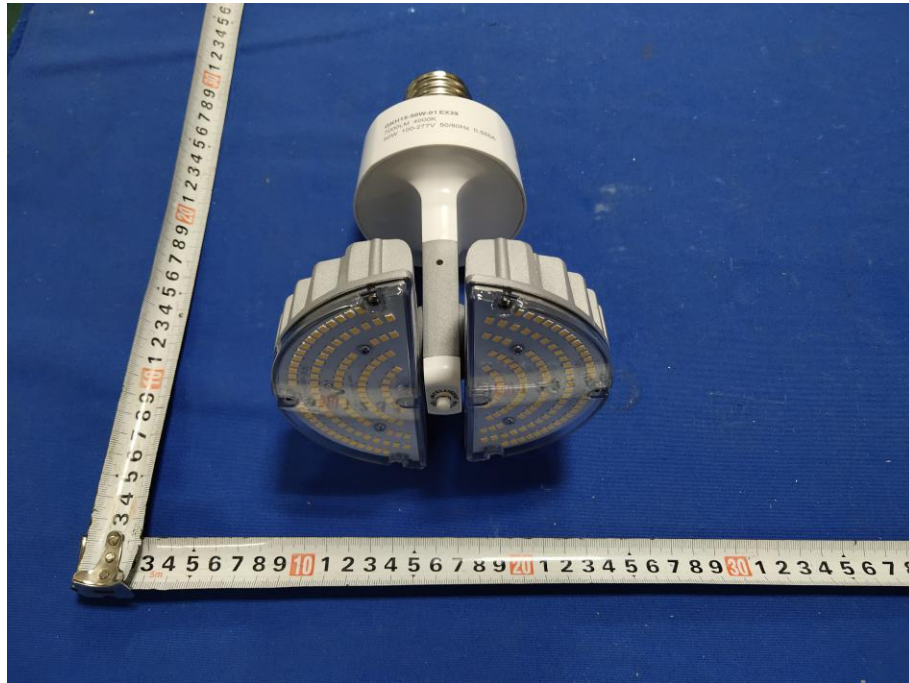
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	2736.74	2701.86	2654.35	2583.09	2496.95	2379.73	2246.08	2091.78	1907.51
22.5	2736.74	2685.66	2632.37	2566.88	2470.08	2357.97	2220.10	2069.13	1878.21
45.0	2736.74	2677.89	2620.61	2550.67	2466.75	2347.31	2222.32	2058.92	1866.22
67.5	2736.74	2664.34	2621.05	2555.34	2462.54	2353.31	2224.54	2079.57	1894.41
90.0	2736.74	2788.67	2763.36	2701.42	2630.82	2535.80	2417.02	2278.04	2121.31
112.5	2736.74	2762.47	2738.72	2690.98	2616.17	2525.59	2415.47	2279.38	2120.20
135.0	2736.74	2737.83	2718.51	2663.68	2604.40	2519.15	2412.14	2280.71	2134.63
157.5	2736.74	2717.18	2695.42	2657.46	2599.52	2521.81	2413.69	2287.37	2142.17
180.0	2736.74	2732.72	2706.08	2675.00	2615.94	2540.02	2444.33	2317.12	2172.81
202.5	2736.74	2727.84	2714.07	2679.22	2619.94	2545.12	2444.11	2324.00	2177.03
225.0	2736.74	2708.52	2699.20	2663.01	2611.06	2531.14	2438.11	2317.56	2168.15
247.5	2736.74	2709.41	2692.09	2651.24	2594.63	2514.49	2418.13	2298.03	2153.05
270.0	2736.74	2791.11	2753.59	2705.41	2629.49	2533.80	2416.14	2270.72	2109.54
292.5	2736.74	2748.04	2721.84	2662.12	2580.64	2481.85	2363.52	2208.78	2044.27
315.0	2736.74	2722.51	2674.55	2616.61	2536.02	2434.78	2310.68	2161.93	1991.43
337.5	2736.74	2698.09	2655.91	2589.97	2507.16	2406.14	2266.72	2121.75	1935.26
360.0	2736.74	2701.86	2654.35	2583.09	2496.95	2379.73	2246.08	2091.78	1907.51
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1697.93	1477.25	1242.15	971.74	751.50	478.21	247.10	73.49	25.98
22.5	1683.28	1471.48	1244.14	964.63	730.64	459.34	246.21	68.16	24.64
45.0	1678.62	1457.50	1219.28	947.98	719.31	454.68	237.77	66.60	25.09
67.5	1678.17	1468.15	1214.84	952.20	729.97	464.22	234.22	77.70	24.42
90.0	1931.49	1709.26	1464.82	1198.63	918.68	661.37	411.16	186.27	62.16
112.5	1937.26	1740.11	1499.46	1240.59	962.19	696.00	439.14	210.91	70.82
135.0	1960.57	1755.88	1524.54	1278.33	1002.82	743.51	479.32	241.55	84.81
157.5	1974.78	1762.09	1539.42	1287.88	1037.23	796.13	523.28	281.29	107.23
180.0	1996.76	1795.62	1571.39	1341.16	1084.08	847.41	577.89	309.93	110.12
202.5	1996.76	1819.37	1606.46	1372.24	1106.28	866.95	586.55	318.58	116.56
225.0	1998.09	1804.50	1595.14	1363.36	1101.84	844.75	589.88	321.03	122.55
247.5	1991.43	1788.07	1564.28	1323.40	1056.10	828.76	565.46	300.82	111.89
270.0	1916.17	1690.16	1440.40	1175.32	891.59	641.17	373.42	161.85	46.18
292.5	1864.44	1642.43	1394.67	1128.92	846.97	586.77	329.46	127.21	35.30
315.0	1791.84	1571.83	1326.07	1056.99	791.02	533.05	285.73	103.01	29.53
337.5	1731.90	1510.78	1254.13	992.61	774.59	500.41	264.86	95.91	27.53
360.0	1697.93	1477.25	1242.15	971.74	751.50	478.21	247.10	73.49	25.98
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	14.65	13.99	16.87	19.76	19.32	18.21	21.98	16.21	13.54
22.5	15.32	16.21	19.76	22.87	26.64	26.86	28.86	21.54	18.21
45.0	16.21	15.99	19.54	22.42	21.98	20.87	24.20	19.98	15.99
67.5	17.76	17.54	23.53	24.87	18.87	18.43	21.98	18.87	15.10
90.0	21.54	21.09	24.42	25.98	27.09	21.76	19.54	17.98	13.77
112.5	20.43	15.99	18.21	21.09	20.20	18.65	17.54	14.21	11.55
135.0	24.42	17.10	17.98	23.53	22.87	20.43	17.32	15.99	12.88
157.5	28.86	15.10	14.88	18.43	22.42	19.76	22.20	18.21	19.32
180.0	31.97	16.21	14.43	16.65	20.43	21.98	20.43	18.21	21.31
202.5	37.08	19.32	15.32	18.87	23.31	26.64	27.97	26.86	24.42
225.0	35.74	18.65	15.32	18.43	21.98	23.09	24.64	23.31	20.20
247.5	35.97	17.54	15.76	18.87	23.76	23.53	20.43	21.54	20.20
270.0	20.43	19.09	23.31	25.53	24.42	23.76	22.20	19.76	14.43
292.5	17.76	16.65	23.76	21.76	21.54	19.09	16.87	13.99	12.21
315.0	15.99	16.65	23.09	23.76	21.76	17.76	16.65	14.21	11.99
337.5	14.21	15.10	16.87	20.65	18.87	19.32	20.20	16.43	12.88
360.0	14.65	13.99	16.87	19.76	19.32	18.21	21.98	16.21	13.54



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	13.32	14.21	12.21	8.66	6.66	5.55	4.22	3.77	3.77
22.5	17.32	16.21	13.54	10.43	6.88	5.33	4.44	3.55	3.55
45.0	16.21	15.76	13.32	10.43	6.88	5.11	4.22	3.77	3.55
67.5	13.10	12.21	10.21	8.66	6.88	5.11	4.22	3.55	3.55
90.0	11.10	9.99	9.55	8.44	7.10	5.55	4.66	3.77	4.00
112.5	10.88	9.99	8.66	7.10	6.22	5.33	4.44	4.00	3.77
135.0	10.88	9.55	8.88	7.55	6.66	5.55	4.44	4.22	3.55
157.5	13.99	11.55	10.66	9.32	8.21	6.66	5.11	4.22	3.77
180.0	15.10	13.99	13.99	12.66	10.66	8.21	5.55	4.22	3.77
202.5	17.98	16.21	15.54	14.43	12.21	8.44	5.99	4.66	3.77
225.0	15.54	15.10	14.88	14.21	11.99	8.21	6.22	4.44	3.77
247.5	15.10	13.32	13.32	11.32	9.32	7.33	5.77	4.44	3.55
270.0	11.77	11.10	10.21	9.32	7.55	6.44	5.33	4.66	4.66
292.5	11.32	10.21	8.88	7.10	5.99	5.33	4.44	3.55	4.00
315.0	10.66	9.55	8.44	6.66	5.55	4.88	4.44	3.77	3.77
337.5	11.77	10.88	9.55	7.77	6.22	5.11	4.22	3.33	3.55
360.0	13.32	14.21	12.21	8.66	6.66	5.55	4.22	3.77	3.77
C/ γ (°)	180.0								
0.0	3.81								
22.5	3.81								
45.0	3.81								
67.5	3.81								
90.0	3.81								
112.5	3.81								
135.0	3.81								
157.5	3.81								
180.0	3.81								
202.5	3.81								
225.0	3.81								
247.5	3.81								
270.0	3.81								
292.5	3.81								
315.0	3.81								
337.5	3.81								
360.0	3.81								



Photo Document



****End of test report****