



Shenzhen Belling Efficiency Testing Lab Co., Ltd



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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-100-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-100-EX39-840-BYP-ADJ
Rated Inputs	AC 100-277V 50/60Hz
Rated Power	100 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-100-EX39-840-BYP-ADJ are the same to the product in the report BL200710006-9 and is authorized by original applicant to use their test data.
- Note: All the data in previous report BL200710006-9 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-100-EX39-840-BYP-ADJ	120.08	60	0.811	96.30	0.989
	277.20	60	0.384	94.51	0.888

3.1.2 Photometric data

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
HID-100-EX39-840-BYP-ADJ	14560.56	151.2	4071	84.4	15
	14025.28	148.4	4106	84.5	16

3.1.3 Chromaticity Coordinate

Model Number	Duv	x	y	u'	v'
HID-100-EX39-840-BYP-ADJ	-0.00221	0.3759	0.3693	0.2251	0.4976
	-0.00263	0.3742	0.3673	0.2248	0.4964



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-100-EX39-840-BYP-ADJ	119.96	60	0.8020	95.09	0.9889
	277.05	60	0.3810	93.77	0.8879

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	14453.00	151.99	80.61	98.44
277	13915.60	148.40	80.65	98.45



4 Test Data

HID-100-EX39-840-BYP-ADJ Tested at 120V

Test Condition

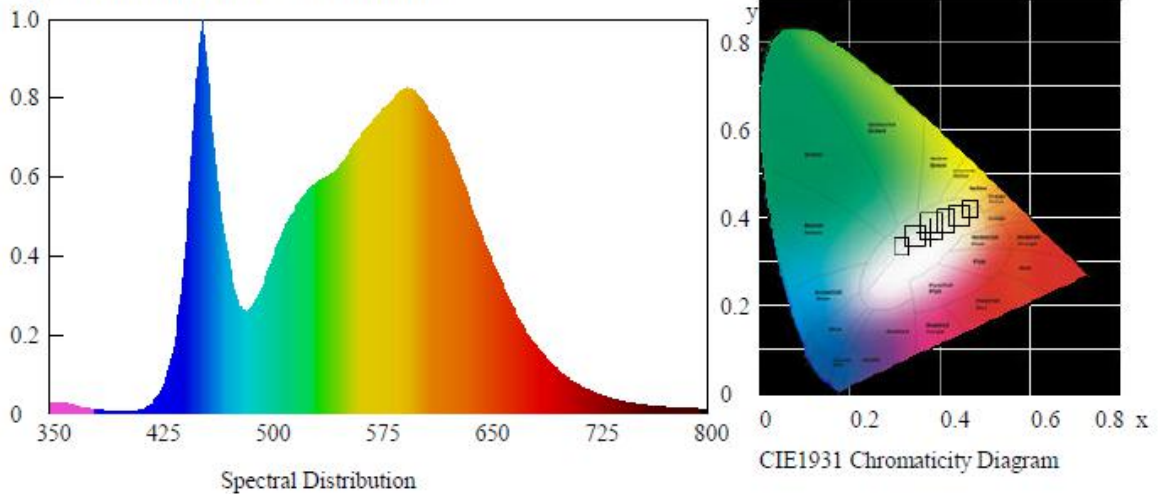
Temperature: 25°C

RH: 58%

Spectrum Range: 350-800 nm

Scan Step: 5 nm

Spectroradiometric Parameters

Chromaticity Coordinates: $x=0.3759$ $y=0.3693$ $u'=0.2251$ $v'=0.4976$

Correlated Color Temperature: 4071 K

Dominant Wavelength: 579.0 nm(E)

Colour Fidelity Index: $R_f=81$ Gamut Index: $R_g=94$

Luminous Flux: 14560.56 lm

Purity: 0.2365

Chromaticity Difference: -0.00221Duv

Peak Wavelength: 455.0 nm

Color Ratio: $K_r=38.4\%$ $K_g=51.9\%$ $K_b=9.7\%$

Bandwidth: 22.1nm

Radiant Flux: 46.826 W

Rendering Index: $R_a=84.4$ $R_1=84$ $R_2=92$ $R_3=95$ $R_4=82$ $R_5=83$ $R_6=87$ $R_7=85$ $R_8=66$ $R_9=15$ $R_{10}=80$ $R_{11}=81$ $R_{12}=62$ $R_{13}=87$ $R_{14}=98$ $R_{15}=78$ $R_e=78$

Electric Parameters

Voltage: 120.08 V

Current: 0.811 A

Power Factor: 0.989

Power: 96.30 W

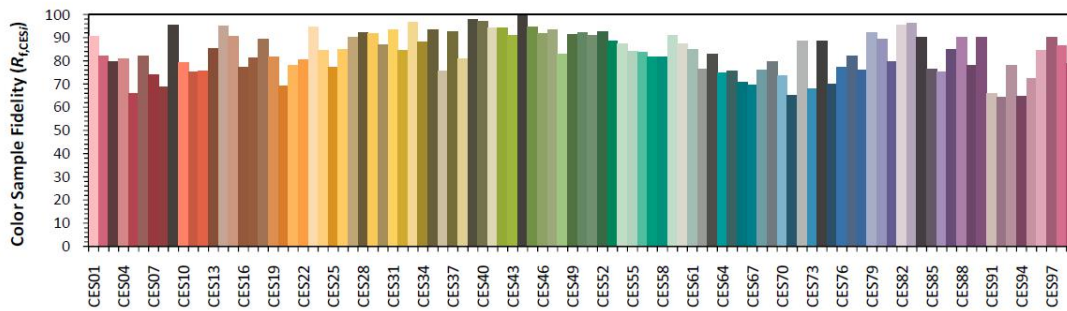
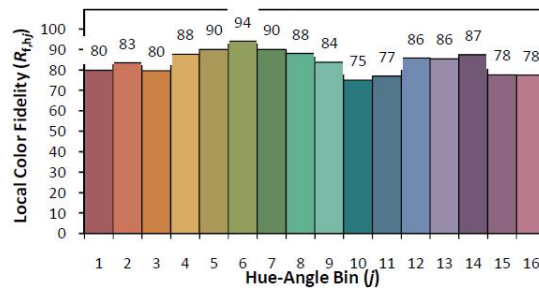
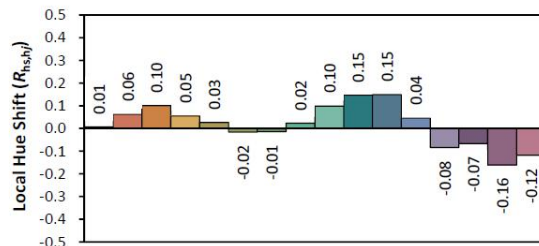
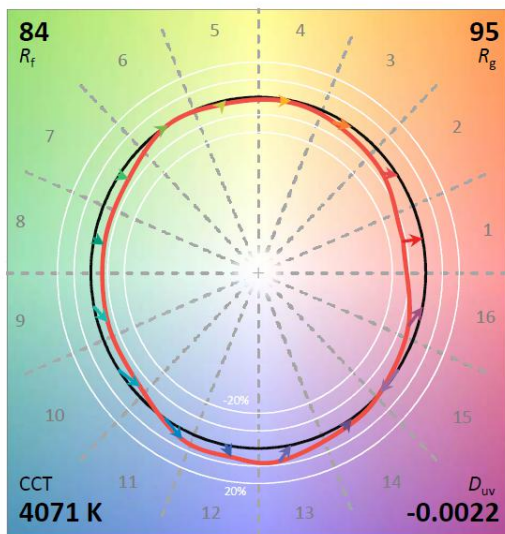
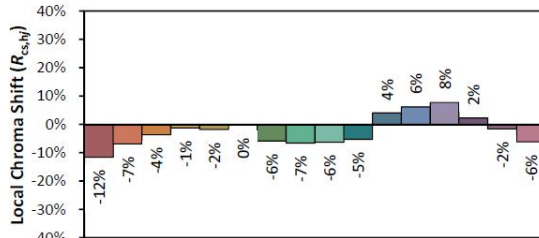
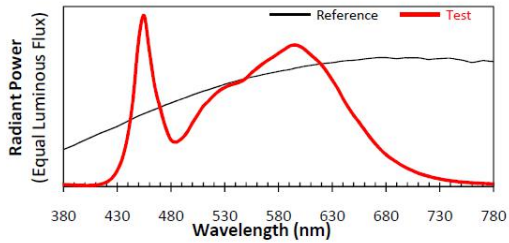
Luminous Efficacy: 151.2 lm/W



ANSI/IES TM-30-18 Color Rendition Report

Source: BL201013005-9
 Date: 2020/10/13

Manufacturer: RAB Lighting Inc
 Model: HID-100-EX39-840-BYP-ADJ



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

x 0.3759
 y 0.3693
 u' 0.2251
 v' 0.4976

CIE 13.3-1995 (CRI)	
R_a	84
R_9	15

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



Zonal Flux Diagram

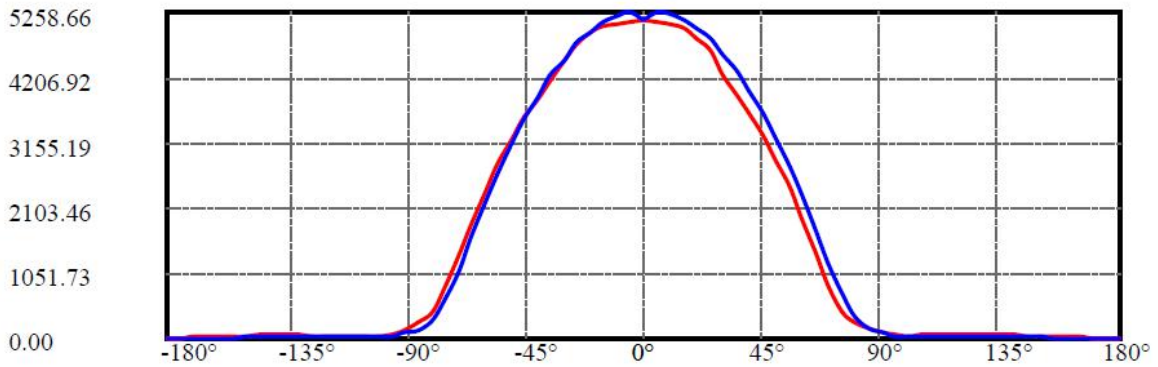
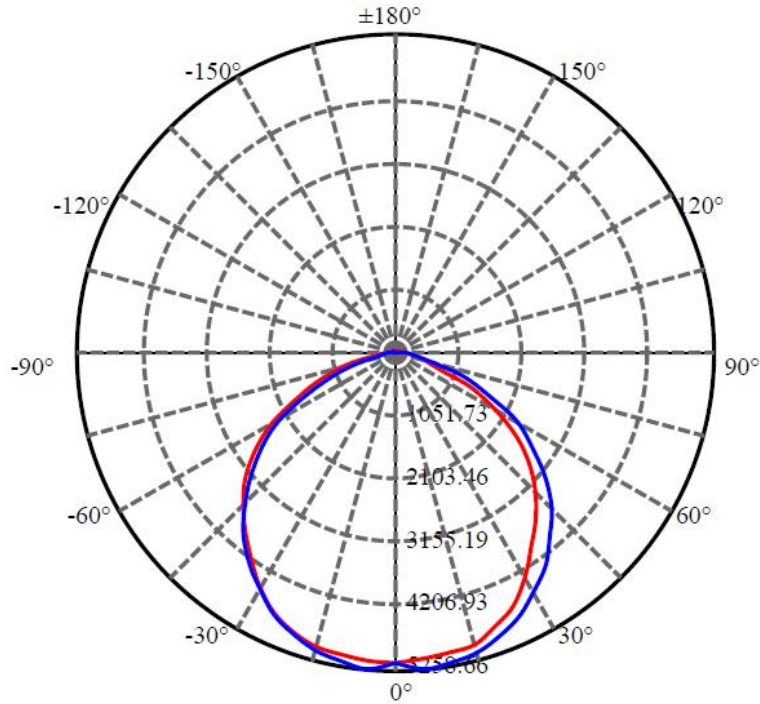
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5140.357	0.000	0	0.00%	0.00%
5.0	5127.768	122.753	122.753	0.00%	0.85%
10.0	5084.654	365.330	488.083	0.00%	3.38%
15.0	5007.694	598.671	1086.754	0.00%	7.52%
20.0	4887.761	815.524	1902.279	0.00%	13.16%
25.0	4723.730	1008.068	2910.347	0.00%	20.14%
30.0	4433.712	1158.882	4069.228	0.00%	28.15%
35.0	4138.021	1262.248	5331.476	0.00%	36.89%
40.0	3819.157	1327.595	6659.071	0.00%	46.07%
45.0	3465.943	1348.895	8007.967	0.00%	55.41%
50.0	3048.646	1316.368	9324.334	0.00%	64.51%
55.0	2610.790	1230.550	10554.884	0.00%	73.03%
60.0	2130.227	1095.873	11650.757	0.00%	80.61%
65.0	1603.249	907.615	12558.372	0.00%	86.89%
70.0	1116.928	688.766	13247.139	0.00%	91.66%
75.0	683.341	470.561	13717.7	0.00%	94.91%
80.0	360.349	279.262	13996.963	0.00%	96.84%
85.0	190.251	149.611	14146.574	0.00%	97.88%
90.0	106.564	81.270	14227.844	0.00%	98.44%
95.0	51.274	43.217	14271.061	0.00%	98.74%
100.0	37.890	24.228	14295.289	0.00%	98.91%
105.0	38.382	20.408	14315.697	0.00%	99.05%
110.0	35.095	19.206	14334.903	0.00%	99.18%
115.0	32.160	17.030	14351.933	0.00%	99.30%
120.0	32.834	15.800	14367.733	0.00%	99.41%
125.0	31.444	14.858	14382.591	0.00%	99.51%
130.0	31.978	13.790	14396.381	0.00%	99.61%
135.0	31.402	12.807	14409.187	0.00%	99.70%
140.0	30.321	11.428	14420.616	0.00%	99.78%
145.0	27.961	9.724	14430.34	0.00%	99.84%
150.0	24.001	7.652	14437.991	0.00%	99.90%
155.0	20.476	5.629	14443.62	0.00%	99.94%
160.0	16.768	3.906	14447.526	0.00%	99.96%
165.0	14.760	2.598	14450.125	0.00%	99.98%
170.0	13.721	1.689	14451.814	0.00%	99.99%
175.0	11.881	0.916	14452.73	0.00%	100.00%
180.0	10.838	0.272	14453.001	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

C90/C270: —

Field angle(10%Imax):C0/180Left:78.9 Right:74.0

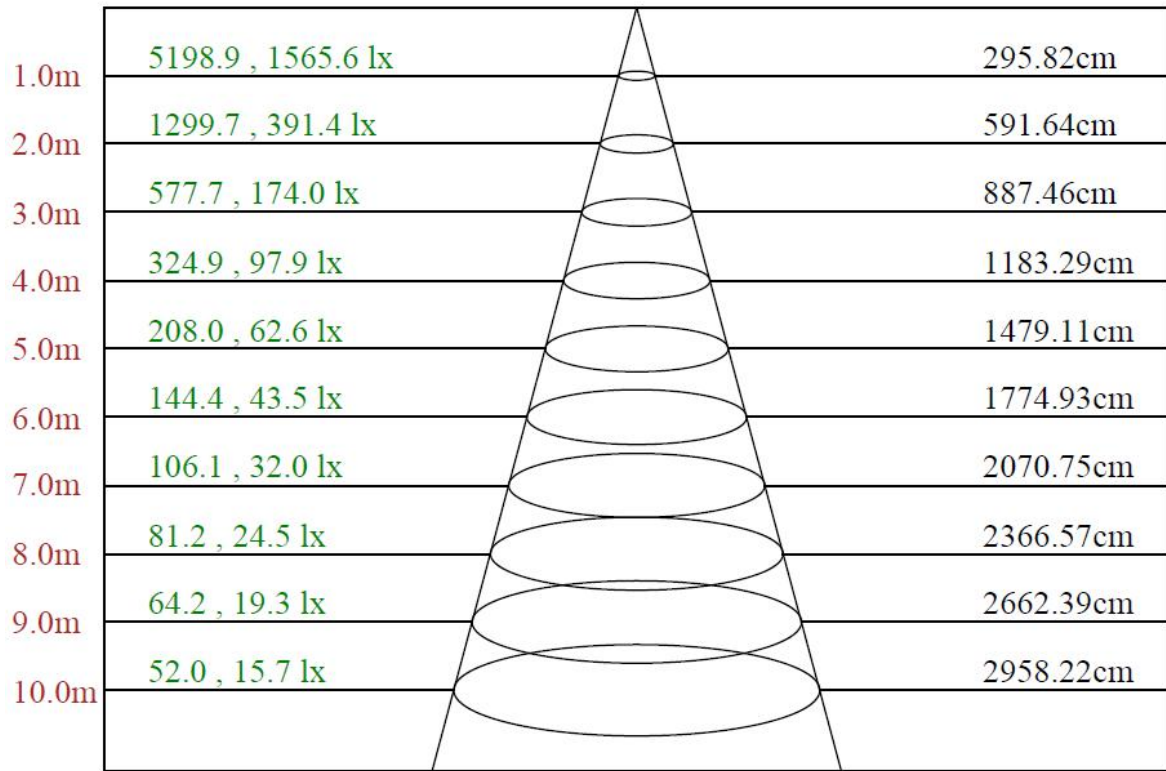
:C90/270Left:76.4 Right:77.8

Beam Angle(50%Imax):C0/180Left:57.7 Right:53.7

:C90/270Left:55.1 Right:56.6



Lux distance Curve



Max , Ave

Beam angle of C90 plane 111.88

**Luminous Intensity Distribution Data**

C/ γ ($^{\circ}$)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	5140.36	5092.38	5049.69	4989.02	4827.23	4631.74	4259.86	3903.49	3612.50
22.5	5140.36	5087.88	5031.71	4966.55	4824.99	4741.85	4223.01	3862.82	3595.88
45.0	5140.36	5063.17	5009.24	4912.62	4793.53	4672.19	4228.63	3916.07	3603.52
67.5	5140.36	5040.70	4975.53	4874.42	4737.35	4607.03	4290.87	3968.20	3627.78
90.0	5140.36	5258.66	5215.96	5135.07	5000.25	4822.74	4580.06	4303.68	3984.61
112.5	5140.36	5186.75	5144.06	5063.17	4937.34	4759.82	4539.62	4276.72	3991.35
135.0	5140.36	5146.31	5105.86	5033.96	4930.59	4762.07	4535.12	4278.96	3964.38
157.5	5140.36	5128.33	5101.37	5038.45	4932.84	4764.32	4490.18	4189.08	3870.01
180.0	5140.36	5101.37	5078.90	5029.46	4926.10	4741.85	4460.97	4150.89	3838.55
202.5	5140.36	5110.35	5083.39	5024.97	4930.59	4771.06	4508.16	4180.10	3838.55
225.0	5140.36	5085.64	5054.18	4986.77	4892.40	4739.60	4539.62	4240.77	3912.70
247.5	5140.36	5065.41	5036.20	4964.30	4860.94	4714.88	4517.15	4290.20	3973.37
270.0	5140.36	5242.93	5184.51	5083.39	4937.34	4757.58	4477.37	4233.57	3892.26
292.5	5140.36	5175.52	5117.10	5015.98	4894.64	4721.62	4479.40	4221.89	3897.20
315.0	5140.36	5135.07	5085.64	4998.00	4890.15	4721.62	4468.61	4165.49	3824.17
337.5	5140.36	5123.84	5081.14	5006.99	4887.90	4649.72	4340.76	4026.40	3679.69
360.0	5140.36	5092.38	5049.69	4989.02	4827.23	4631.74	4259.86	3903.49	3612.50
C/ γ ($^{\circ}$)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3279.05	2874.14	2461.37	1943.21	1367.53	833.86	435.02	260.43	152.12
22.5	3276.35	2860.66	2412.16	1834.68	1341.24	858.58	432.10	258.18	155.94
45.0	3191.42	2751.68	2342.27	1793.56	1328.65	898.35	516.59	259.75	141.11
67.5	3248.49	2771.00	2298.68	1725.70	1267.08	853.64	485.35	249.42	144.03
90.0	3629.58	3236.36	2780.21	2310.59	1739.85	1223.04	733.65	367.83	166.28
112.5	3643.06	3191.42	2717.30	2247.68	1690.42	1160.13	728.93	393.68	191.00
135.0	3568.91	3094.79	2663.37	2245.43	1697.16	1259.00	864.42	469.17	224.93
157.5	3544.19	3173.44	2768.98	2324.07	1784.79	1315.17	868.47	431.65	221.11
180.0	3573.41	3213.89	2818.41	2360.03	1822.99	1339.89	821.05	422.89	257.73
202.5	3564.42	3231.86	2818.41	2391.48	1847.71	1369.10	900.15	455.47	261.10
225.0	3593.63	3184.67	2764.49	2346.54	1843.22	1351.12	972.28	551.64	273.91
247.5	3649.80	3265.57	2802.68	2333.06	1820.75	1292.70	872.51	517.26	260.88
270.0	3522.85	3121.98	2638.20	2187.91	1631.77	1079.91	615.00	298.40	146.06
292.5	3490.72	3037.50	2560.23	2091.28	1512.46	1028.00	581.75	293.68	153.70
315.0	3373.20	2864.03	2444.51	1965.23	1495.38	1059.69	608.26	288.74	142.69
337.5	3306.01	2905.37	2481.36	1983.20	1461.00	948.68	497.94	247.40	151.45
360.0	3279.05	2874.14	2461.37	1943.21	1367.53	833.86	435.02	260.43	152.12
C/ γ ($^{\circ}$)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	82.47	49.21	45.17	60.00	57.97	58.20	57.52	57.75	57.52
22.5	76.17	42.24	37.75	43.59	34.83	34.15	34.83	32.58	34.83
45.0	73.93	37.08	37.97	36.63	33.93	30.78	28.54	24.72	27.86
67.5	78.65	31.68	42.24	39.55	30.11	27.86	32.13	35.95	31.01
90.0	88.53	47.64	28.99	26.96	25.62	23.59	24.49	24.72	24.04
112.5	117.29	59.77	34.38	33.48	36.18	32.36	27.86	31.68	29.44
135.0	118.19	48.99	35.95	37.75	28.54	33.03	29.89	24.72	27.19
157.5	125.16	48.76	37.75	36.85	36.85	32.58	33.71	28.09	29.66
180.0	137.29	53.25	42.24	35.73	47.86	40.90	48.76	48.09	53.48
202.5	150.10	61.57	37.30	35.50	36.18	27.86	31.23	28.31	30.34
225.0	144.03	74.15	35.05	33.48	32.81	29.66	33.26	27.41	25.62
247.5	143.13	79.32	33.03	38.20	33.03	28.31	27.41	25.17	28.54
270.0	94.60	46.06	38.42	40.00	29.66	26.52	25.39	25.17	26.74
292.5	97.07	46.96	37.30	38.20	32.36	27.86	28.54	28.99	27.41
315.0	91.68	45.61	40.00	32.36	29.21	30.78	31.23	28.31	28.99
337.5	86.73	48.09	42.69	45.84	36.40	30.11	30.56	31.46	28.99
360.0	82.47	49.21	45.17	60.00	57.97	58.20	57.52	57.75	57.52

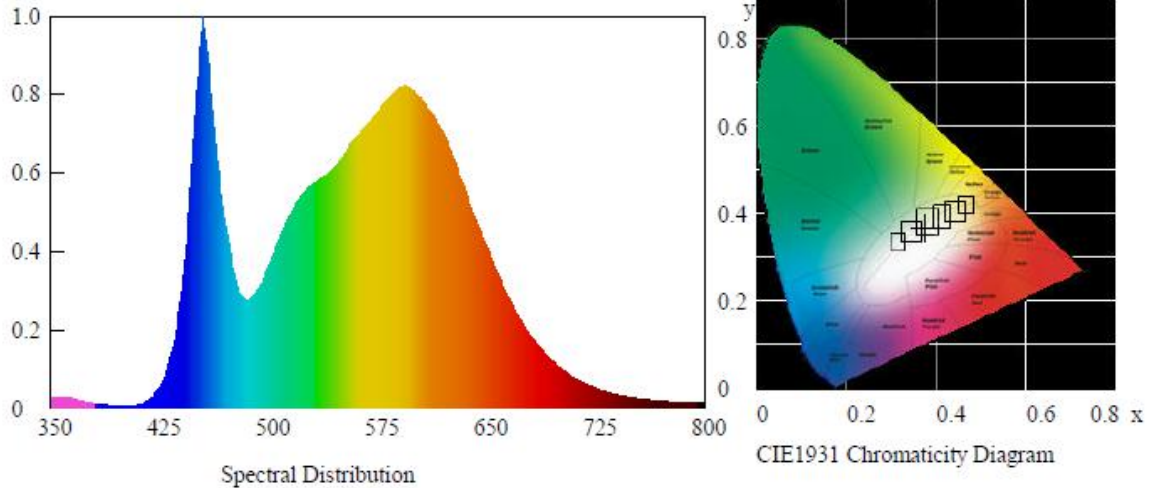


C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	57.97	49.66	42.02	35.95	25.17	21.12	19.32	14.38	10.56
22.5	33.93	35.05	35.05	29.21	22.92	18.20	15.73	13.03	10.34
45.0	29.89	32.36	23.37	20.67	17.30	13.71	12.58	12.58	10.79
67.5	25.84	24.94	20.00	16.85	14.38	12.36	12.13	12.13	10.79
90.0	22.02	20.90	17.98	16.85	15.50	12.81	11.24	11.91	11.24
112.5	24.94	22.92	20.90	17.53	16.18	14.16	12.36	12.58	12.13
135.0	30.34	31.68	27.41	21.35	19.55	17.30	14.38	14.16	13.48
157.5	29.44	27.86	32.13	28.76	25.17	22.02	17.53	15.73	14.16
180.0	54.60	56.18	51.68	41.57	35.05	24.49	20.00	17.98	14.38
202.5	31.23	32.13	36.40	32.13	29.44	21.80	17.75	16.40	13.71
225.0	27.41	25.62	27.19	23.59	20.67	16.85	14.38	13.93	13.03
247.5	29.44	24.94	22.92	18.88	17.30	14.83	12.58	12.36	12.13
270.0	23.37	20.22	18.43	17.08	15.28	12.81	11.68	11.46	11.01
292.5	24.49	23.14	18.43	17.53	15.50	13.26	12.81	12.13	11.01
315.0	29.44	27.41	23.37	20.00	17.30	14.83	14.38	14.16	10.79
337.5	28.09	30.11	30.11	26.07	20.90	17.75	17.30	14.61	10.56
360.0	57.97	49.66	42.02	35.95	25.17	21.12	19.32	14.38	10.56
C/γ(°)	180.0								
0.0	10.84								
22.5	10.84								
45.0	10.84								
67.5	10.84								
90.0	10.84								
112.5	10.84								
135.0	10.84								
157.5	10.84								
180.0	10.84								
202.5	10.84								
225.0	10.84								
247.5	10.84								
270.0	10.84								
292.5	10.84								
315.0	10.84								
337.5	10.84								
360.0	10.84								

**HID-100-EX39-840-BYP-ADJ Tested at 277V****Test Condition**

Temperature: 25°C
Spectrum Range: 350-800 nm

RH: 58%
Scan Step: 5 nm

Spectroradiometric Parameters

Chromaticity Coordinates: $x=0.3742$ $y=0.3673$ $u'=0.2248$ $v'=0.4964$

Correlated Color Temperature: 4106 K

Dominant Wavelength: 579.0 nm(E)

Colour Fidelity Index: $R_f=81$

Gamut Index: $R_g=94$

Luminous Flux: 14025.28 lm

Purity: 0.2255

Chromaticity Difference: -0.00263Duv

Peak Wavelength: 455.0 nm

Color Ratio: $K_r=38.4\%$ $K_g=51.8\%$ $K_b=9.8\%$

Bandwidth: 20.4nm

Radiant Flux: 45.405 W

Rendering Index: $R_a=84.5$

$R_1=84$ $R_2=93$ $R_3=95$ $R_4=81$ $R_5=83$ $R_6=88$ $R_7=85$ $R_8=66$

$R_9=16$ $R_{10}=81$ $R_{11}=80$ $R_{12}=62$ $R_{13}=87$ $R_{14}=98$ $R_{15}=79$ $R_e=79$

Electric Parameters

Voltage: 277.20 V

Current: 0.384 A

Power Factor: 0.888

Power: 94.51 W

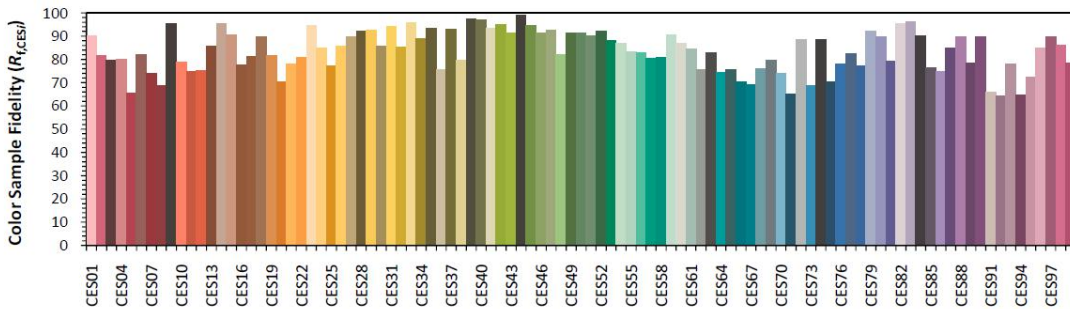
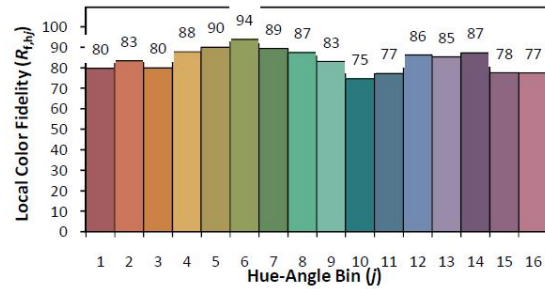
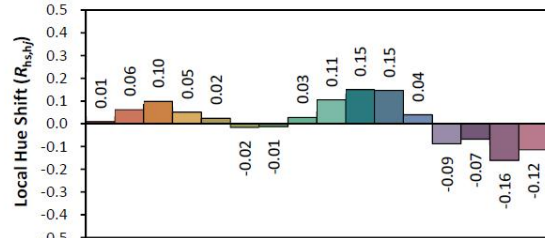
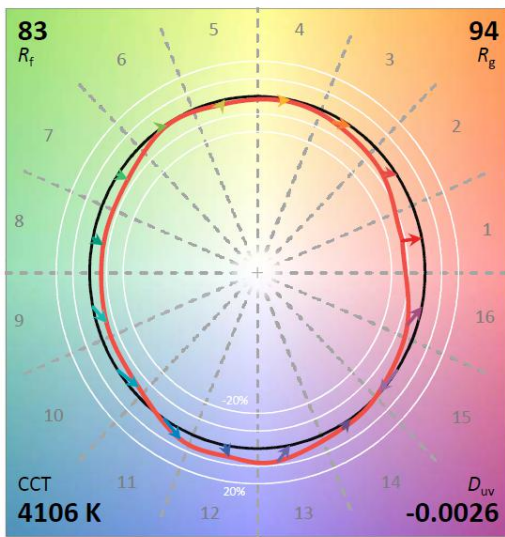
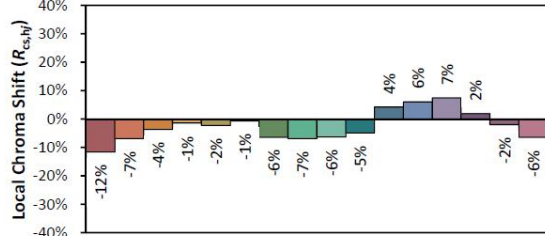
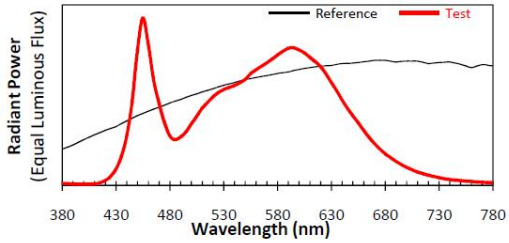
Luminous Efficacy: 148.4 lm/W



ANSI/IES TM-30-18 Color Rendition Report

Source: BL201013005-9
 Date: 2020/10/13

Manufacturer: RAB Lighting Inc
 Model: HID-100-EX39-840-BYP-ADJ



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

x 0.3742
 y 0.3673
 u' 0.2248
 v' 0.4964

CIE 13.3-1995 (CRI)	
R_a	84
R_g	16

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



Zonal Flux Diagram

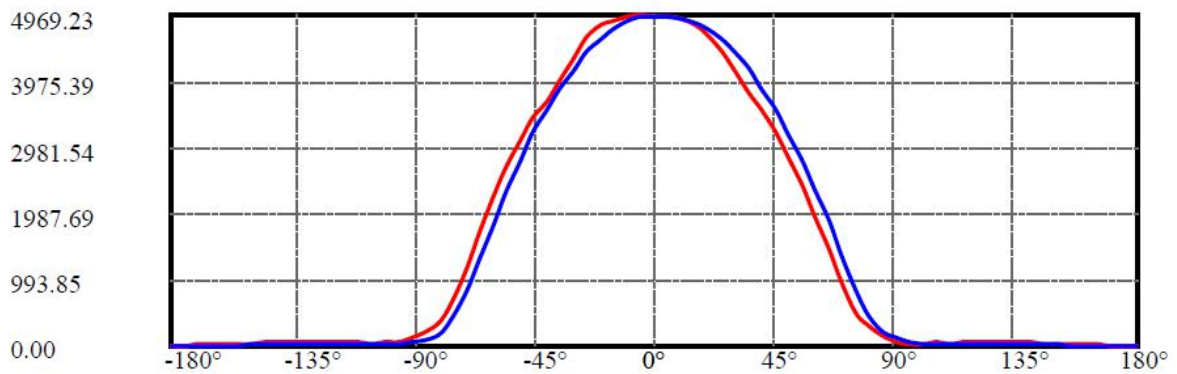
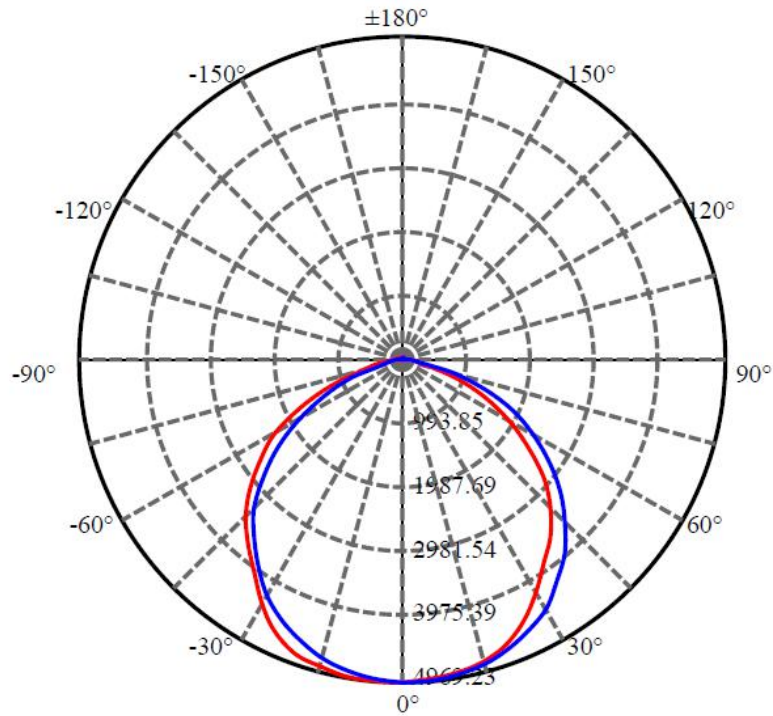
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4953.583	0.000	0	0.00%	0.00%
5.0	4939.995	118.275	118.275	0.00%	0.85%
10.0	4898.286	351.946	470.221	0.00%	3.38%
15.0	4821.795	576.589	1046.81	0.00%	7.52%
20.0	4703.456	785.014	1831.824	0.00%	13.16%
25.0	4540.983	969.571	2801.395	0.00%	20.13%
30.0	4283.866	1116.792	3918.187	0.00%	28.16%
35.0	3982.601	1217.295	5135.482	0.00%	36.90%
40.0	3677.483	1278.027	6413.509	0.00%	46.09%
45.0	3339.663	1299.282	7712.791	0.00%	55.43%
50.0	2936.702	1268.231	8981.022	0.00%	64.54%
55.0	2519.259	1186.308	10167.33	0.00%	73.06%
60.0	2046.347	1055.327	11222.657	0.00%	80.65%
65.0	1539.638	871.760	12094.417	0.00%	86.91%
70.0	1087.831	665.292	12759.709	0.00%	91.69%
75.0	655.048	455.561	13215.269	0.00%	94.97%
80.0	342.185	266.832	13482.101	0.00%	96.88%
85.0	179.393	141.725	13623.827	0.00%	97.90%
90.0	98.551	76.103	13699.93	0.00%	98.45%
95.0	47.502	39.990	13739.92	0.00%	98.74%
100.0	37.109	22.991	13762.911	0.00%	98.90%
105.0	36.181	19.610	13782.521	0.00%	99.04%
110.0	33.853	18.306	13800.827	0.00%	99.18%
115.0	31.857	16.638	13817.465	0.00%	99.29%
120.0	30.984	15.277	13832.742	0.00%	99.40%
125.0	30.804	14.282	13847.024	0.00%	99.51%
130.0	31.455	13.537	13860.561	0.00%	99.60%
135.0	30.167	12.452	13873.013	0.00%	99.69%
140.0	29.931	11.128	13884.141	0.00%	99.77%
145.0	26.869	9.477	13893.617	0.00%	99.84%
150.0	23.557	7.426	13901.043	0.00%	99.90%
155.0	19.815	5.489	13906.532	0.00%	99.93%
160.0	15.922	3.748	13910.28	0.00%	99.96%
165.0	14.425	2.501	13912.781	0.00%	99.98%
170.0	13.635	1.665	13914.445	0.00%	99.99%
175.0	11.681	0.906	13915.351	0.00%	100.00%
180.0	9.194	0.250	13915.601	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

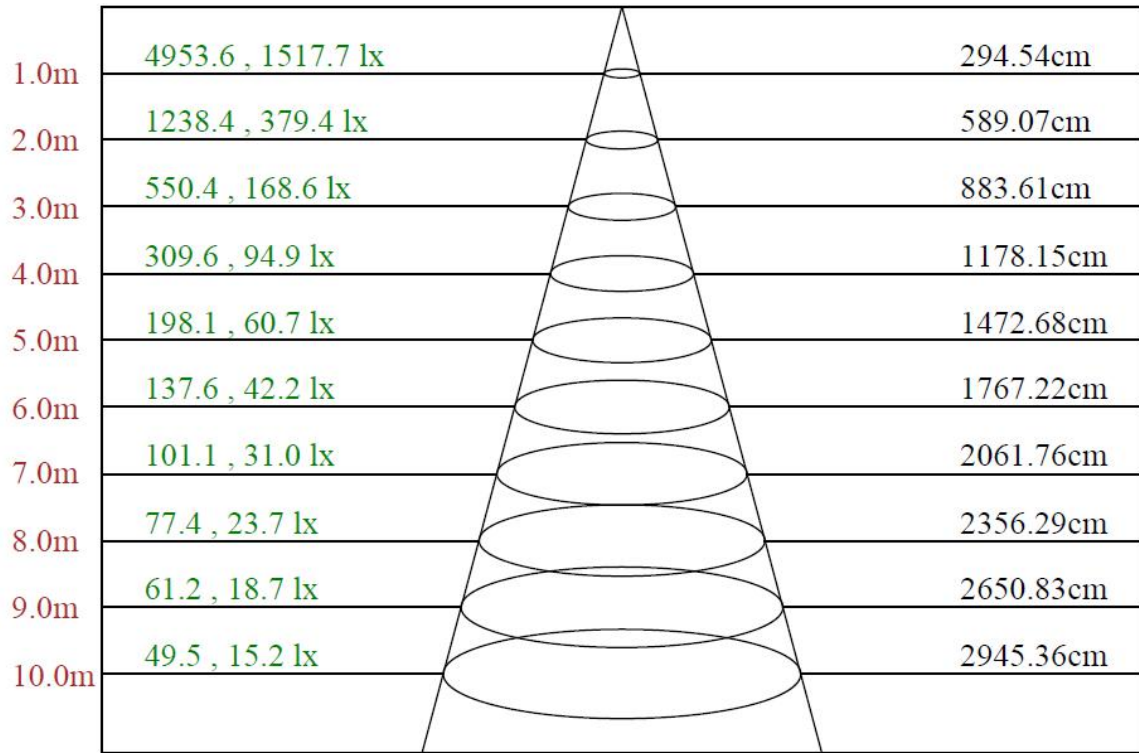
C90/C270: —

Field angle(10%Imax):C0/180Left:78.0 Right:75.0
:C90/270Left:74.3 Right:79.5

Beam Angle(50%Imax):C0/180Left:57.3 Right:54.2
:C90/270Left:53.2 Right:58.5



Lux distance Curve



Max , Ave Beam angle of C157.5 plane 111.64

**Luminous Intensity Distribution Data**

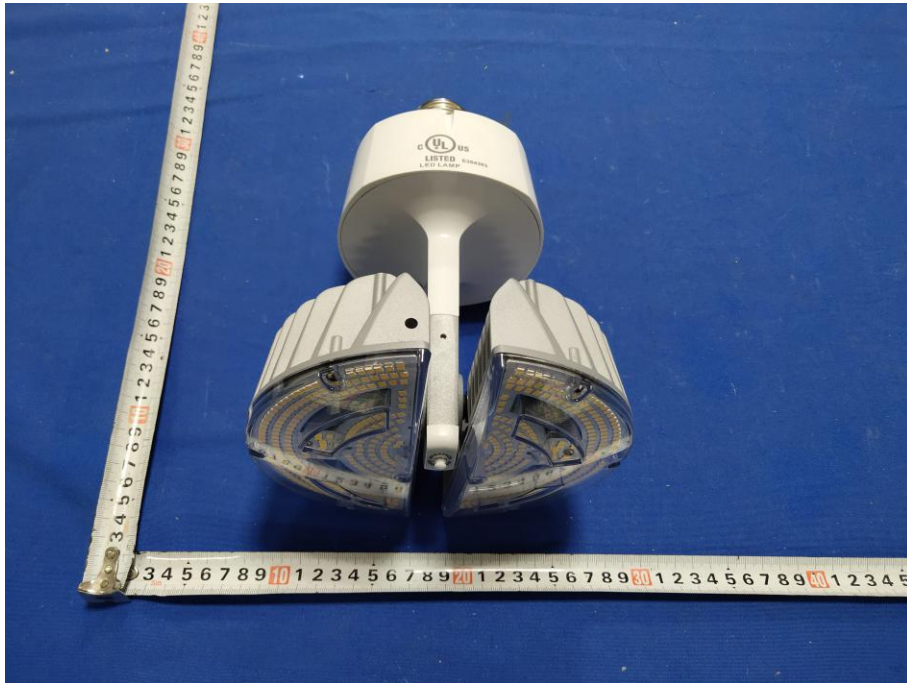
C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	4953.58	4940.41	4898.29	4811.82	4665.49	4420.72	4122.74	3801.25	3548.06
22.5	4953.58	4933.76	4889.42	4816.25	4685.44	4421.61	4170.85	3839.39	3538.08
45.0	4953.58	4904.94	4851.73	4771.91	4656.62	4585.67	4255.32	3913.66	3619.89
67.5	4953.58	4916.02	4862.81	4769.69	4636.67	4641.10	4281.04	3982.17	3687.52
90.0	4953.58	4953.71	4920.46	4849.51	4743.09	4594.54	4408.30	4162.20	3869.54
112.5	4953.58	4955.93	4929.33	4853.94	4743.09	4616.71	4426.04	4195.46	3905.02
135.0	4953.58	4964.80	4935.98	4876.11	4778.56	4649.97	4448.21	4177.72	3867.33
157.5	4953.58	4969.23	4938.19	4891.63	4807.38	4652.19	4388.35	4071.30	3747.60
180.0	4953.58	4960.37	4940.41	4887.20	4800.73	4621.15	4335.14	3991.48	3676.65
202.5	4953.58	4951.50	4929.33	4871.68	4796.30	4618.93	4339.57	3984.83	3672.22
225.0	4953.58	4927.11	4896.07	4836.21	4743.09	4618.93	4372.83	4022.52	3729.86
247.5	4953.58	4929.33	4896.07	4825.12	4718.70	4574.59	4372.83	4086.82	3769.77
270.0	4953.58	4924.89	4862.81	4749.74	4592.32	4405.20	4148.46	3854.47	3547.84
292.5	4953.58	4927.11	4853.94	4745.30	4592.32	4399.21	4158.43	3908.34	3590.85
315.0	4953.58	4935.98	4873.90	4783.00	4636.67	4422.05	4184.82	3890.83	3554.49
337.5	4953.58	4944.85	4893.85	4809.60	4658.84	4413.18	4128.94	3839.17	3515.02
360.0	4953.58	4940.41	4898.29	4811.82	4665.49	4420.72	4122.74	3801.25	3548.06
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3218.82	2851.44	2409.57	1932.00	1436.25	945.60	495.97	304.19	154.31
22.5	3241.43	2857.20	2432.18	1934.00	1449.33	1011.67	552.95	286.67	178.04
45.0	3242.32	2776.94	2412.23	1941.09	1441.79	1060.01	651.17	331.90	165.62
67.5	3331.00	2887.80	2415.78	1941.53	1393.02	958.46	599.73	315.72	167.61
90.0	3536.97	3193.32	2792.02	2344.16	1894.09	1368.63	841.84	460.05	217.06
112.5	3592.40	3188.89	2747.68	2293.17	1787.67	1288.81	831.20	444.53	216.61
135.0	3510.37	3073.60	2614.65	2197.83	1752.19	1306.55	872.88	467.81	226.37
157.5	3421.68	3064.73	2687.82	2259.91	1745.54	1253.34	782.20	384.89	200.21
180.0	3417.25	3078.03	2676.73	2255.48	1698.98	1180.17	679.99	371.15	207.30
202.5	3408.38	3064.73	2647.91	2213.35	1625.82	1173.52	706.38	362.06	212.84
225.0	3399.51	2958.31	2565.87	2149.06	1570.39	1173.52	753.60	397.97	196.44
247.5	3423.90	3013.73	2554.79	2069.24	1539.35	1111.44	721.67	378.68	204.42
270.0	3203.74	2775.61	2310.91	1816.93	1296.35	845.39	442.09	196.22	97.11
292.5	3194.21	2741.03	2319.11	1768.60	1260.43	795.50	454.95	239.89	133.03
315.0	3117.05	2677.40	2314.45	1762.61	1347.79	962.23	565.81	268.49	138.13
337.5	3175.58	2784.48	2406.46	1862.60	1395.23	970.43	528.34	264.72	155.20
360.0	3218.82	2851.44	2409.57	1932.00	1436.25	945.60	495.97	304.19	154.31
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	71.84	32.37	43.90	47.67	41.02	47.67	49.44	50.99	54.54
22.5	86.02	34.14	35.25	35.92	27.94	29.27	29.49	26.38	30.60
45.0	96.00	40.57	32.15	33.70	29.49	29.93	28.82	23.72	27.27
67.5	104.43	41.90	33.92	36.58	29.71	26.61	25.50	26.83	29.93
90.0	110.86	70.50	31.48	41.02	34.14	25.50	25.05	23.50	24.17
112.5	119.28	71.61	34.14	35.25	35.25	28.82	25.50	27.05	26.38
135.0	120.39	66.96	45.01	34.14	29.27	27.71	30.82	28.60	24.83
157.5	125.05	59.20	50.55	35.92	37.03	32.59	29.04	29.49	29.04
180.0	127.26	57.65	47.67	40.13	53.88	54.10	55.65	56.09	55.65
202.5	121.50	53.88	43.01	35.47	37.91	32.81	33.26	32.15	33.70
225.0	112.41	52.32	33.92	37.47	33.26	31.71	28.60	25.94	26.16
247.5	114.85	52.77	32.81	40.35	35.92	27.05	28.60	31.93	35.03
270.0	58.98	26.83	27.49	25.05	21.73	23.50	23.95	25.05	21.73
292.5	76.93	33.48	30.82	32.15	34.59	25.94	29.27	31.93	26.16
315.0	64.08	32.81	36.58	29.27	29.93	33.26	23.95	25.50	28.16
337.5	66.96	33.04	35.03	38.80	30.60	33.26	28.82	27.71	29.93
360.0	71.84	32.37	43.90	47.67	41.02	47.67	49.44	50.99	54.54



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	55.21	53.43	42.35	36.58	25.94	19.95	18.18	15.08	11.97
22.5	29.49	34.37	31.04	29.49	23.28	17.96	16.41	14.63	11.31
45.0	26.16	25.72	24.61	21.28	17.74	14.63	13.52	13.52	10.86
67.5	24.61	23.06	19.73	17.52	15.52	12.86	12.19	11.97	10.64
90.0	23.95	20.84	18.40	16.85	15.30	13.52	11.53	11.75	10.42
112.5	24.61	23.06	20.18	17.07	15.96	13.52	12.19	12.19	10.64
135.0	27.94	28.82	25.05	21.06	18.18	15.08	13.52	13.52	11.75
157.5	26.61	27.71	27.71	27.27	23.06	18.18	16.41	15.74	12.64
180.0	54.99	53.88	46.34	39.02	31.26	21.73	19.95	17.96	12.42
202.5	32.37	33.04	35.03	33.04	26.83	20.40	17.52	15.08	12.42
225.0	25.72	29.49	29.49	21.73	19.29	15.74	13.08	11.97	11.75
247.5	28.16	24.17	23.50	18.18	16.19	12.86	11.53	11.75	11.53
270.0	21.51	18.85	16.63	15.74	13.30	11.97	11.75	11.53	11.31
292.5	22.39	22.39	17.74	16.19	14.63	12.86	12.64	12.86	12.19
315.0	30.60	29.27	21.95	19.51	17.52	15.08	13.97	13.97	12.64
337.5	28.38	30.82	30.15	26.38	23.06	18.40	16.41	14.63	12.42
360.0	55.21	53.43	42.35	36.58	25.94	19.95	18.18	15.08	11.97
C/γ(°)	180.0								
0.0	9.19								
22.5	9.19								
45.0	9.19								
67.5	9.19								
90.0	9.19								
112.5	9.19								
135.0	9.19								
157.5	9.19								
180.0	9.19								
202.5	9.19								
225.0	9.19								
247.5	9.19								
270.0	9.19								
292.5	9.19								
315.0	9.19								
337.5	9.19								
360.0	9.19								



Photo Document



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