



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-EX39-850-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-EX39-850-BYP-ADJ
Rated Inputs	AC 100-277V 50/60Hz
Rated Power	100 W
Nominal CCT	5000K
Date of Receipt Samples	2020-07-06
Date of test	2020-07-07 to 2020-07-16
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-EX39-850-BYP-ADJ are the same to the product in the report BL200717012-9 and is authorized by original applicant to use their test data.
- Note: All the data in previous report BL200717012-9 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-EX39-850-BYP-ADJ	119.87	60	0.814	96.46	0.989
	277.20	60	0.389	95.77	0.889

3.1.2 Photometric data

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)	CRI	R9
HID-100-EX39-850-BYP-ADJ	14565.46	151.0	5064	85.2	19
	14537.89	151.8	5004	84.9	17

3.1.3 Chromaticity Coordinate

Model Number	Duv	x	y	u'	v'
HID-100-EX39-850-BYP-ADJ	+0.00085	0.3435	0.3520	0.2102	0.4846
	+0.00126	0.3453	0.3543	0.2105	0.486



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-EX39-850-BYP-ADJ	120.01	60	0.803	95.22	0.9886
	277.04	60	0.3840	94.49	0.8873

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	14424.40	151.48	81.91%	98.67
277	14354.20	151.91	81.84%	98.67



4 Test Data

HID-100-EX39-850-BYP-ADJ Tested at 120V

Test Condition

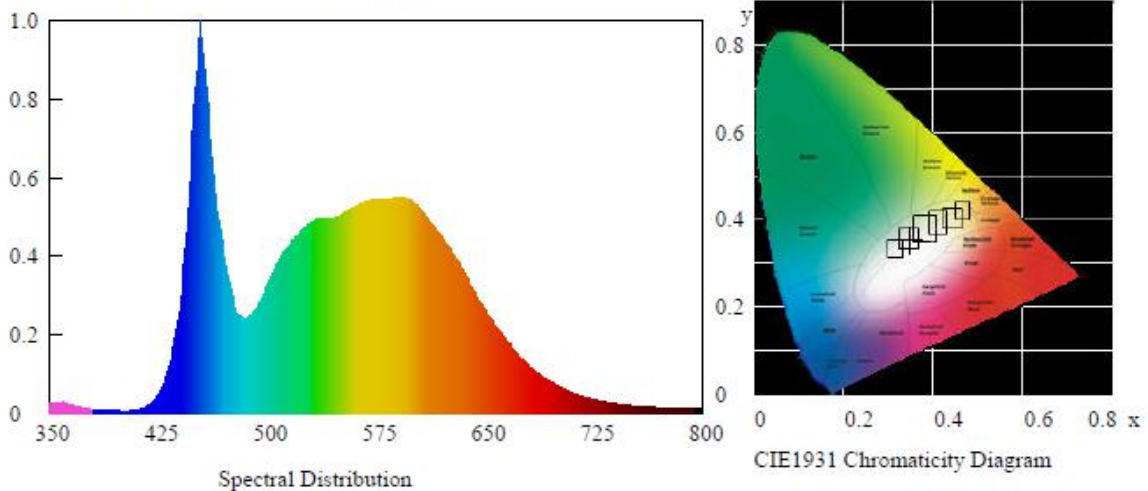
Temperature: 25°C

RH: 58%

Spectrum Range: 350-800 nm

Scan Step: 5 nm

Spectroradiometric Parameters

Chromaticity Coordinates: $x=0.3435$ $y=0.3520$ $u'=0.2102$ $v'=0.4846$

Correlated Color Temperature: 5064 K

Dominant Wavelength: 569.0 nm(E)

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

Luminous Flux: 14565.46 lm

Purity: 0.0860

Chromaticity Difference: $+0.00085\text{Duv}$

Peak Wavelength: 455.0 nm

Color Ratio: $K_r=34.1\%$ $K_g=54.4\%$ $K_b=11.5\%$

Bandwidth: 21.8nm

Radiant Flux: 46.928 W

Rendering Index: $R_a=85.2$ $R_1=85$ $R_2=92$ $R_3=94$ $R_4=83$ $R_5=84$ $R_6=87$ $R_7=87$ $R_8=70$ $R_9=19$ $R_{10}=79$ $R_{11}=83$ $R_{12}=61$ $R_{13}=88$ $R_{14}=97$ $R_{15}=80$ $R_e=79$

Electric Parameters

Voltage: 119.87 V

Current: 0.814 A

Power Factor: 0.989

Power: 96.46 W

Luminous Efficacy: 151.0 lm/W



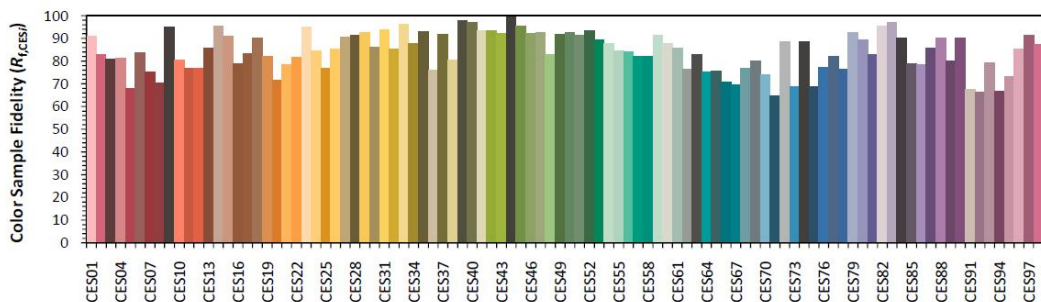
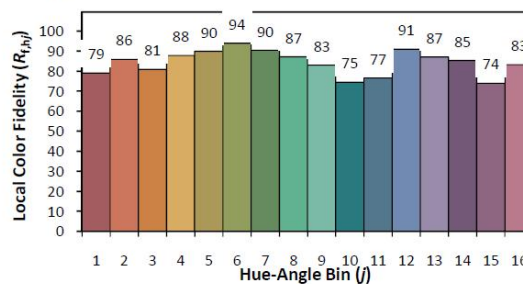
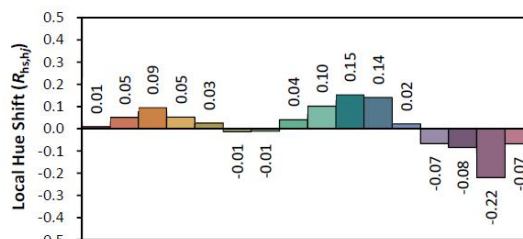
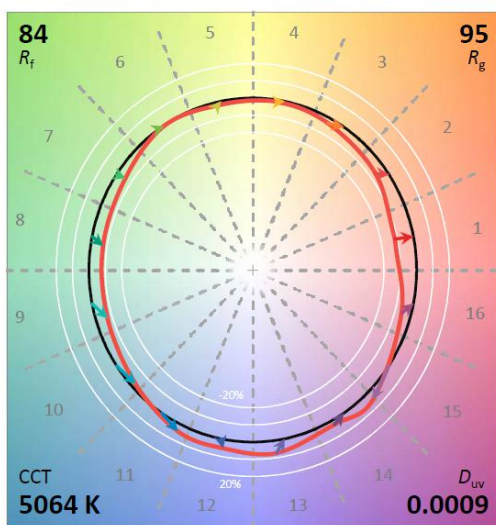
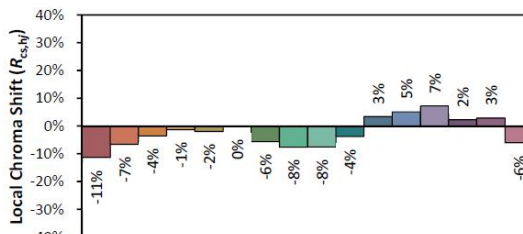
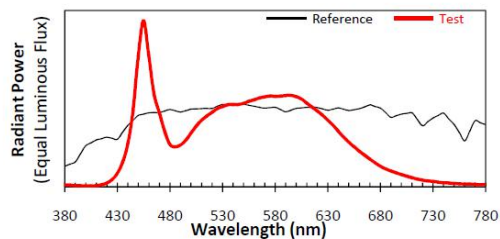
ANSI/IES TM-30-18 Color Rendition Report

Source: BL201013006-9

Manufacturer: RAB Lighting Inc

Date: 2020/10/13

Model: HID-100-EX39-850-BYP-ADJ



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

x 0.3435
 y 0.3520
 u' 0.2102
 v' 0.4846

CIE 13.3-1995
(CRI)

R_a 85
 R_g 19

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

**Zonal Flux Diagram**

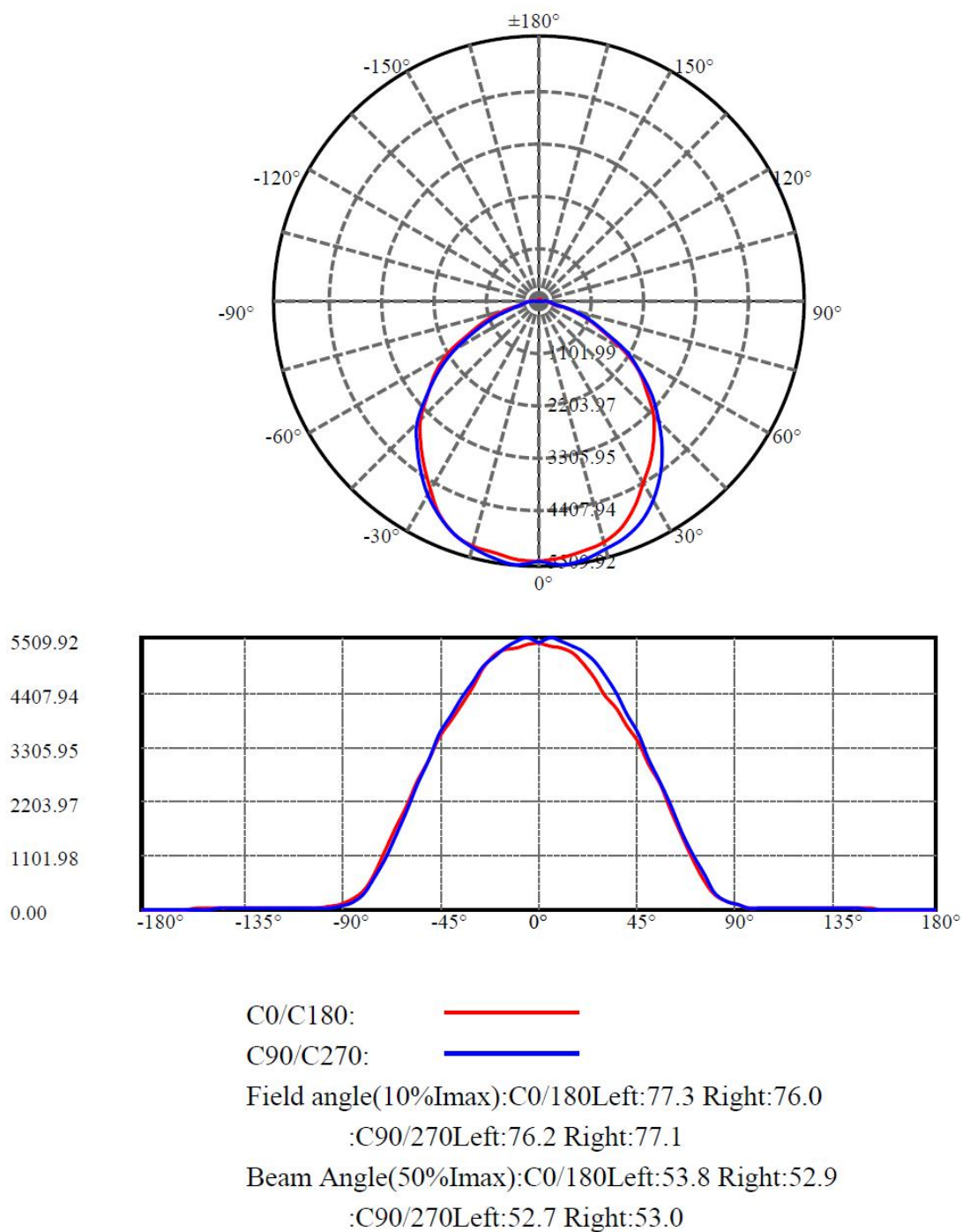
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5401.471	0.000	0	0.00%	0.00%
5.0	5386.364	128.965	128.965	0.00%	0.89%
10.0	5326.700	383.240	512.206	0.00%	3.55%
15.0	5234.406	626.478	1138.683	0.00%	7.89%
20.0	5082.175	850.231	1988.914	0.00%	13.79%
25.0	4824.406	1039.017	3027.932	0.00%	20.99%
30.0	4550.266	1186.373	4214.304	0.00%	29.22%
35.0	4196.476	1288.019	5502.323	0.00%	38.15%
40.0	3854.030	1343.166	6845.489	0.00%	47.46%
45.0	3489.823	1359.774	8205.263	0.00%	56.88%
50.0	3039.846	1319.415	9524.678	0.00%	66.03%
55.0	2560.529	1217.708	10742.386	0.00%	74.47%
60.0	2078.427	1072.282	11814.668	0.00%	81.91%
65.0	1539.624	879.555	12694.223	0.00%	88.01%
70.0	1050.942	655.948	13350.171	0.00%	92.55%
75.0	611.560	434.551	13784.722	0.00%	95.57%
80.0	317.679	248.638	14033.361	0.00%	97.29%
85.0	160.136	129.834	14163.194	0.00%	98.19%
90.0	92.800	69.256	14232.45	0.00%	98.67%
95.0	43.157	37.226	14269.676	0.00%	98.93%
100.0	34.488	21.098	14290.774	0.00%	99.07%
105.0	33.231	18.120	14308.894	0.00%	99.20%
110.0	30.569	16.676	14325.57	0.00%	99.31%
115.0	28.303	14.907	14340.477	0.00%	99.42%
120.0	28.248	13.748	14354.225	0.00%	99.51%
125.0	27.552	12.898	14367.123	0.00%	99.60%
130.0	25.231	11.477	14378.599	0.00%	99.68%
135.0	25.477	10.246	14388.845	0.00%	99.75%
140.0	24.002	9.161	14398.007	0.00%	99.82%
145.0	21.954	7.667	14405.674	0.00%	99.87%
150.0	18.568	5.967	14411.641	0.00%	99.91%
155.0	16.670	4.459	14416.101	0.00%	99.94%
160.0	15.264	3.349	14419.45	0.00%	99.97%
165.0	14.022	2.414	14421.864	0.00%	99.98%
170.0	11.974	1.542	14423.406	0.00%	99.99%
175.0	9.489	0.768	14424.174	0.00%	100.00%
180.0	9.149	0.223	14424.396	0.00%	100.00%



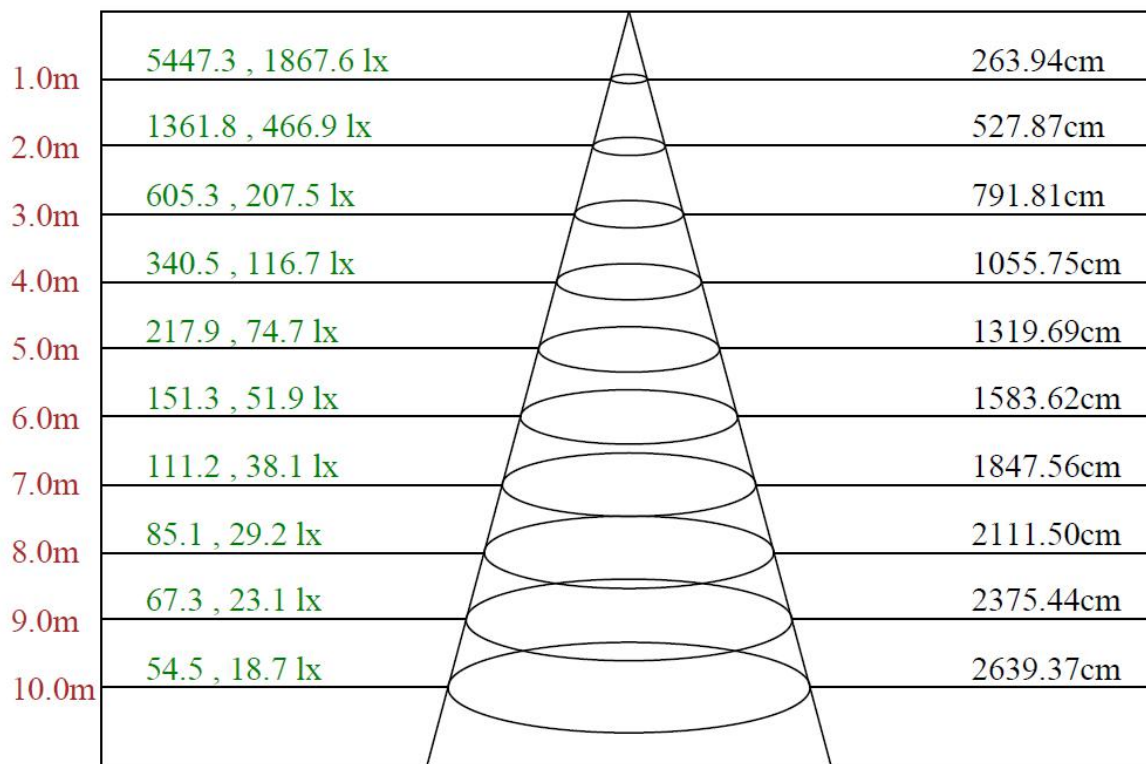
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave

Beam angle of C90 plane 105.69

**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	5401.47	5337.35	5289.29	5201.91	5009.68	4699.48	4349.53	4068.60	3739.62
22.5	5401.47	5319.87	5249.97	5140.75	4968.17	4734.43	4533.46	4138.07	3769.33
45.0	5401.47	5319.87	5243.42	5107.98	4909.19	4682.01	4349.31	4136.32	3808.43
67.5	5401.47	5313.32	5230.31	5105.79	4917.93	4712.59	4618.65	4143.53	3782.65
90.0	5401.47	5509.92	5437.84	5341.72	5243.42	5046.81	4760.65	4389.28	3969.86
112.5	5401.47	5450.94	5391.96	5324.24	5190.99	4937.59	4590.26	4223.26	3862.82
135.0	5401.47	5418.18	5367.93	5295.84	5138.56	4830.55	4485.40	4188.31	3880.30
157.5	5401.47	5396.33	5337.35	5271.82	5125.46	4824.00	4457.00	4138.07	3849.72
180.0	5401.47	5376.67	5317.69	5254.34	5156.04	4880.79	4522.54	4153.36	3823.50
202.5	5401.47	5352.64	5300.21	5221.57	5151.67	4950.70	4640.50	4260.40	3899.96
225.0	5401.47	5332.98	5287.11	5184.44	5099.24	4898.27	4647.05	4328.12	3945.83
247.5	5401.47	5330.80	5282.74	5186.62	5073.03	4869.87	4616.47	4315.01	3969.86
270.0	5401.47	5507.74	5429.10	5317.69	5149.48	4911.38	4627.39	4289.89	3926.39
292.5	5401.47	5446.57	5383.22	5289.29	5112.35	4802.15	4509.43	4162.75	3831.37
315.0	5401.47	5402.88	5354.83	5267.45	5059.92	4725.69	4743.17	4118.63	3819.35
337.5	5401.47	5365.75	5324.24	5239.05	5009.68	4684.19	4353.46	4090.01	3785.49
360.0	5401.47	5337.35	5289.29	5201.91	5009.68	4699.48	4349.53	4068.60	3739.62
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3391.63	2941.19	2532.69	2011.91	1482.61	1035.01	595.49	322.87	164.71
22.5	3366.95	2855.34	2392.45	1911.42	1396.76	970.57	607.72	302.55	152.91
45.0	3449.52	3001.92	2449.03	1919.07	1337.12	815.25	440.17	199.66	112.72
67.5	3416.53	2960.63	2406.21	1871.88	1316.15	812.85	414.62	185.24	103.98
90.0	3548.26	3050.20	2552.13	2108.68	1549.45	1114.74	702.75	342.31	174.32
112.5	3513.31	3074.22	2624.22	2156.74	1625.91	1136.59	659.28	328.98	179.57
135.0	3511.12	3093.89	2606.75	2145.82	1625.91	1077.61	599.20	356.29	193.76
157.5	3502.38	3096.07	2606.75	2154.56	1641.20	1116.93	624.11	382.72	197.91
180.0	3487.09	3039.27	2598.01	2134.90	1636.83	1189.02	690.73	361.97	200.97
202.5	3517.68	3034.90	2512.81	2113.05	1564.75	1140.96	733.55	380.54	186.34
225.0	3563.55	3187.82	2700.68	2187.32	1595.33	1086.34	623.23	301.24	140.90
247.5	3585.39	3183.45	2740.00	2239.75	1667.42	1116.93	629.79	305.61	130.85
270.0	3563.99	3029.44	2522.64	2035.72	1476.93	1025.62	631.75	295.78	141.56
292.5	3471.15	3014.81	2569.17	2119.82	1545.74	1092.24	648.36	308.23	148.11
315.0	3486.66	3055.66	2586.43	2069.80	1614.33	1062.75	587.63	346.24	165.37
337.5	3461.97	3018.74	2568.52	2074.39	1557.54	1021.68	596.58	362.62	168.21
360.0	3391.63	2941.19	2532.69	2011.91	1482.61	1035.01	595.49	322.87	164.71
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	95.03	41.72	37.14	41.51	32.99	27.96	29.05	24.69	27.31
22.5	82.79	39.98	40.85	38.67	32.55	29.49	28.84	27.74	34.08
45.0	68.59	32.33	32.33	32.77	24.69	25.12	23.59	24.47	22.28
67.5	63.35	29.71	32.77	29.49	23.37	22.94	22.94	24.47	8.74
90.0	98.74	44.13	41.72	34.30	28.18	30.36	28.84	26.65	19.88
112.5	104.42	49.15	39.10	37.79	34.95	29.71	27.74	27.52	13.54
135.0	111.41	53.96	35.17	31.68	34.95	31.46	31.89	34.30	35.17
157.5	115.34	56.14	33.64	32.55	39.54	35.61	36.92	38.45	40.63
180.0	111.41	53.30	35.83	35.61	33.64	28.18	26.87	26.21	24.25
202.5	101.80	47.19	35.17	30.36	28.18	28.62	27.74	26.21	28.40
225.0	85.63	44.35	27.52	29.49	26.21	22.50	22.06	22.28	24.03
247.5	81.26	40.85	26.87	29.93	25.56	22.06	21.85	22.28	18.79
270.0	79.52	33.86	36.26	29.05	26.00	27.96	25.56	22.94	18.57
292.5	88.04	38.88	31.46	32.33	30.80	27.96	29.49	22.72	10.27
315.0	97.87	41.94	33.42	32.55	32.33	29.71	32.11	32.77	36.26
337.5	99.61	43.03	32.55	33.64	35.17	33.20	36.48	37.14	41.51
360.0	95.03	41.72	37.14	41.51	32.99	27.96	29.05	24.69	27.31



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	24.47	27.09	26.43	18.35	15.29	16.17	14.20	11.36	9.83
22.5	29.27	23.37	17.69	16.60	12.02	14.42	13.33	11.80	9.83
45.0	18.79	17.04	15.51	13.76	15.73	13.98	12.89	10.92	9.83
67.5	19.66	17.69	16.38	15.51	14.64	13.33	12.89	11.58	9.39
90.0	17.91	20.32	18.57	15.95	16.38	14.20	12.89	12.45	9.18
112.5	20.75	23.81	21.85	18.57	18.57	17.04	15.07	13.33	9.61
135.0	30.58	29.49	27.96	28.40	24.25	20.97	17.69	13.98	9.18
157.5	44.35	37.57	31.24	24.90	19.22	18.57	18.35	14.20	9.18
180.0	24.47	24.69	25.12	17.69	17.26	13.76	13.76	11.58	8.96
202.5	28.18	22.28	19.88	14.64	13.98	11.80	12.89	11.80	8.96
225.0	17.91	15.51	15.95	10.70	11.58	12.02	10.92	10.27	9.83
247.5	15.29	17.04	15.51	13.98	11.58	11.80	10.70	11.58	9.18
270.0	22.94	20.75	17.48	14.85	14.42	12.02	11.80	11.14	9.83
292.5	20.32	24.47	23.16	18.79	17.48	15.29	14.42	11.80	9.61
315.0	32.77	27.74	30.36	29.05	24.69	19.88	16.38	11.36	9.61
337.5	39.98	35.17	28.18	25.34	19.66	19.01	16.17	12.45	9.83
360.0	24.47	27.09	26.43	18.35	15.29	16.17	14.20	11.36	9.83
C/γ(°)	180.0								
0.0	9.15								
22.5	9.15								
45.0	9.15								
67.5	9.15								
90.0	9.15								
112.5	9.15								
135.0	9.15								
157.5	9.15								
180.0	9.15								
202.5	9.15								
225.0	9.15								
247.5	9.15								
270.0	9.15								
292.5	9.15								
315.0	9.15								
337.5	9.15								
360.0	9.15								

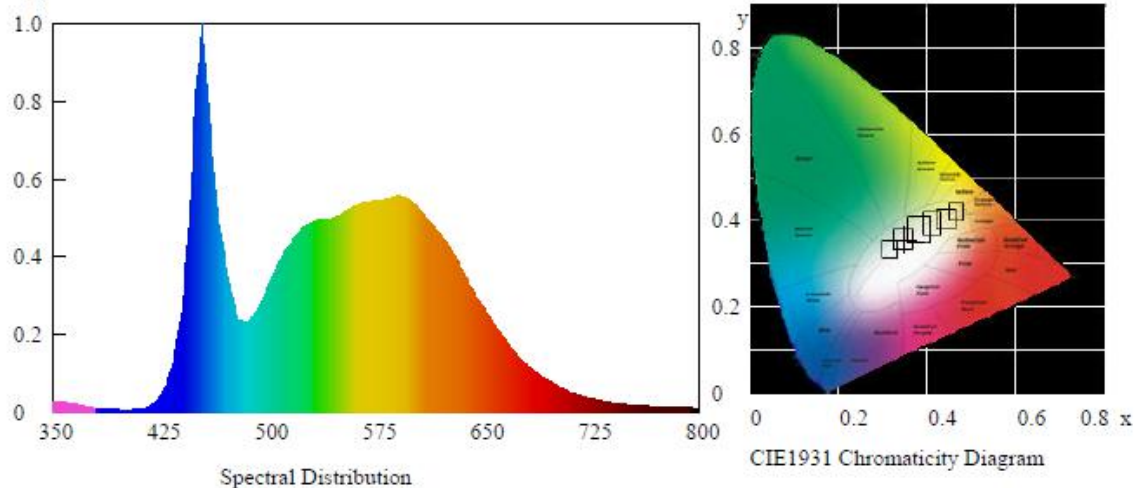
**HID-100-EX39-850-BYP-ADJ Tested at 277V****Test Condition**

Temperature: 25°C

RH: 58%

Spectrum Range: 350-800 nm

Scan Step: 5 nm

Spectroradiometric ParametersChromaticity Coordinates: $x=0.3453$ $y=0.3543$ $u'=0.2105$ $v'=0.486$

Correlated Color Temperature: 5004 K

Dominant Wavelength: 570.0 nm(E)

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

Luminous Flux: 14537.89 lm

Purity: 0.0989

Chromaticity Difference: +0.00126Duv

Peak Wavelength: 455.0 nm

Color Ratio: $K_r=34.2\%$ $K_g=54.5\%$ $K_b=11.3\%$

Bandwidth: 23.3nm

Radiant Flux: 49.234 W

Rendering Index: $R_a=84.9$ $R_1=84$ $R_2=91$ $R_3=94$ $R_4=83$ $R_5=84$ $R_6=86$ $R_7=87$ $R_8=69$ $R_9=17$ $R_{10}=78$ $R_{11}=83$ $R_{12}=60$ $R_{13}=87$ $R_{14}=97$ $R_{15}=80$ $R_e=79$ **Electric Parameters**

Voltage: 277.20 V

Current: 0.389 A

Power Factor: 0.889

Power: 95.77 W

Luminous Efficacy: 151.8 lm/W



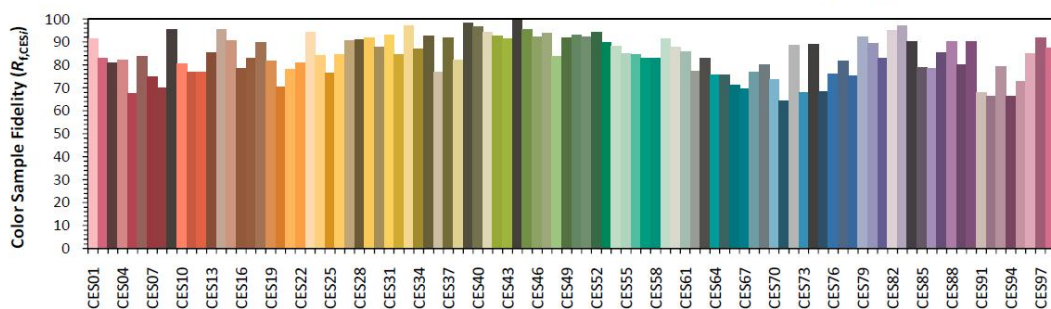
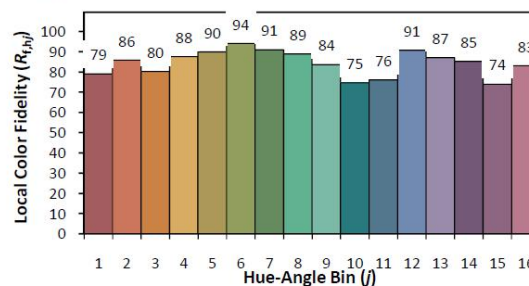
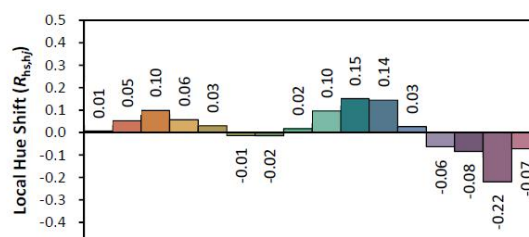
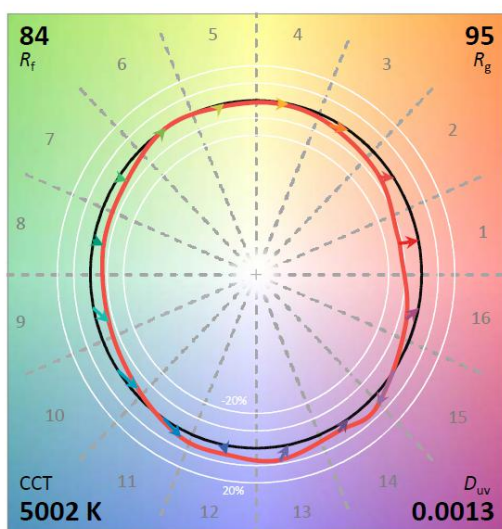
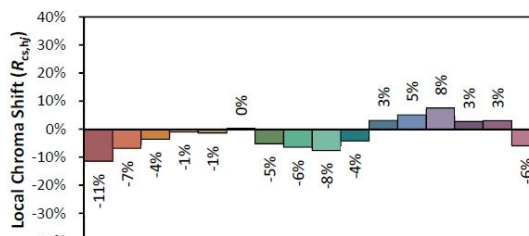
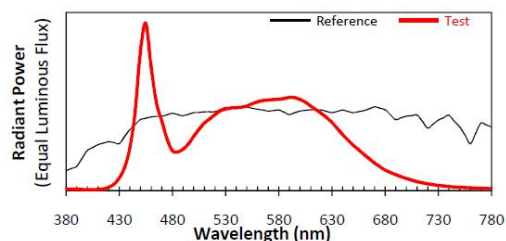
ANSI/IES TM-30-18 Color Rendition Report

Source: BL201013006-9

Manufacturer: RAB Lighting Inc

Date: 2020/10/13

Model: HID-100-EX39-850-BYP-ADJ



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

x 0.3453
 y 0.3543
 u' 0.2105
 v' 0.4860

CIE 13.3-1995
(CRI)

R_a 85
 R_g 17

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

**Zonal Flux Diagram**

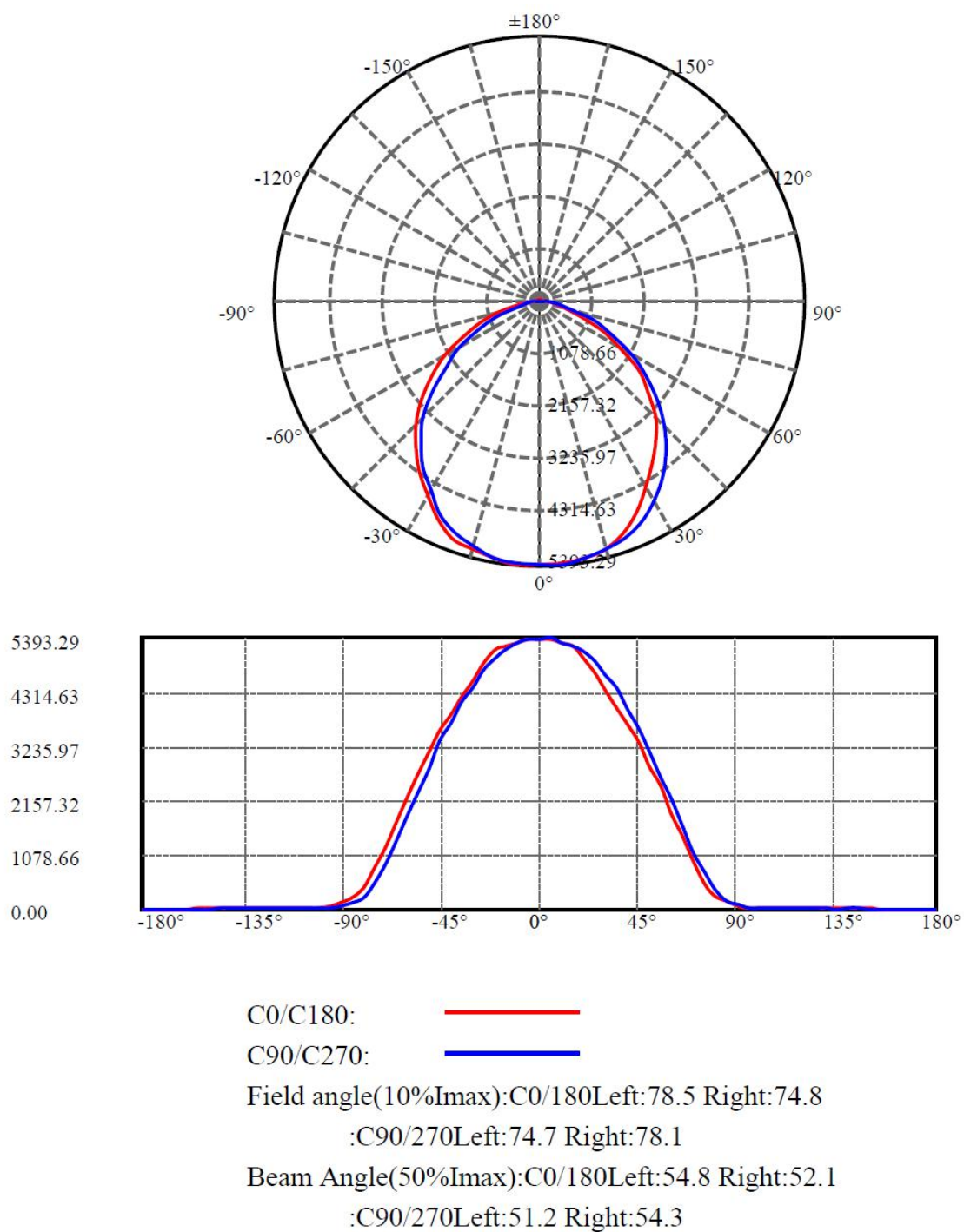
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5375.397	0.000	0	0.00%	0.00%
5.0	5366.925	128.421	128.421	0.00%	0.89%
10.0	5307.399	381.854	510.276	0.00%	3.55%
15.0	5210.547	623.917	1134.193	0.00%	7.90%
20.0	5054.446	845.980	1980.173	0.00%	13.80%
25.0	4804.824	1034.055	3014.228	0.00%	21.00%
30.0	4491.512	1176.459	4190.687	0.00%	29.19%
35.0	4176.161	1276.375	5467.062	0.00%	38.09%
40.0	3835.264	1336.646	6803.708	0.00%	47.40%
45.0	3475.220	1353.595	8157.303	0.00%	56.83%
50.0	3023.596	1313.181	9470.484	0.00%	65.98%
55.0	2545.678	1210.945	10681.43	0.00%	74.41%
60.0	2066.760	1066.152	11747.582	0.00%	81.84%
65.0	1531.675	874.786	12622.368	0.00%	87.93%
70.0	1048.609	653.344	13275.712	0.00%	92.49%
75.0	616.952	435.351	13711.063	0.00%	95.52%
80.0	320.166	250.747	13961.81	0.00%	97.27%
85.0	162.664	131.197	14093.006	0.00%	98.18%
90.0	92.856	69.963	14162.97	0.00%	98.67%
95.0	44.666	37.654	14200.624	0.00%	98.93%
100.0	33.357	21.201	14221.825	0.00%	99.08%
105.0	33.052	17.769	14239.594	0.00%	99.20%
110.0	30.582	16.633	14256.227	0.00%	99.32%
115.0	27.945	14.819	14271.046	0.00%	99.42%
120.0	27.918	13.580	14284.627	0.00%	99.52%
125.0	27.612	12.836	14297.462	0.00%	99.60%
130.0	24.629	11.359	14308.821	0.00%	99.68%
135.0	25.476	10.124	14318.946	0.00%	99.75%
140.0	23.616	9.090	14328.035	0.00%	99.82%
145.0	22.021	7.614	14335.65	0.00%	99.87%
150.0	17.830	5.868	14341.518	0.00%	99.91%
155.0	16.901	4.395	14345.913	0.00%	99.94%
160.0	15.319	3.379	14349.292	0.00%	99.97%
165.0	13.890	2.407	14351.7	0.00%	99.98%
170.0	11.767	1.522	14353.222	0.00%	99.99%
175.0	9.491	0.760	14353.982	0.00%	100.00%
180.0	9.011	0.221	14354.203	0.00%	100.00%



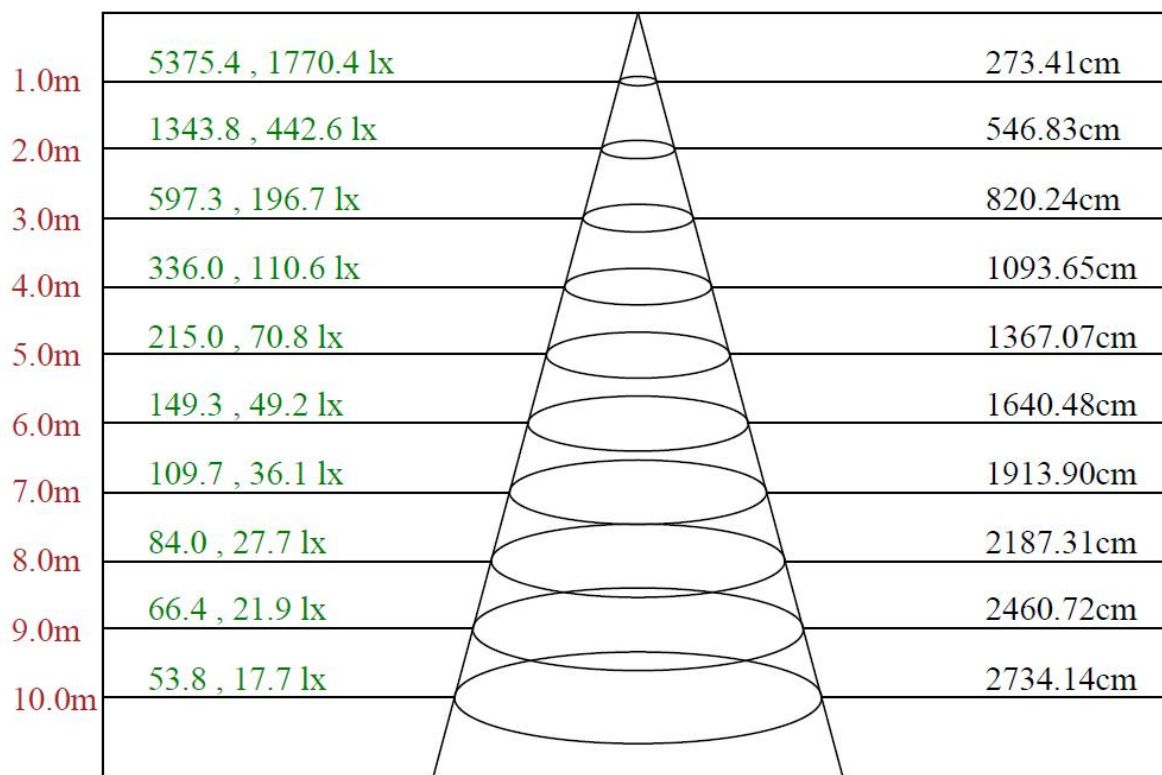
Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





Lux distance Curve



Max , Ave

Beam angle of C135 plane 107.63

**Luminous Intensity Distribution Data**

C/ $\gamma(^{\circ})$	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	5375.40	5355.55	5306.71	5226.78	4995.89	4689.52	4350.06	3995.07	3678.26
22.5	5375.40	5353.33	5302.27	5195.70	5040.29	4796.08	4426.21	4080.99	3752.19
45.0	5375.40	5359.99	5295.61	5180.16	4995.89	4753.90	4423.55	4162.24	3818.13
67.5	5375.40	5362.21	5286.72	5164.62	4987.01	4742.80	4420.44	4176.23	3850.32
90.0	5375.40	5386.63	5308.93	5226.78	5115.78	4938.17	4671.76	4372.04	3990.19
112.5	5375.40	5386.63	5317.81	5253.42	5151.30	4898.21	4578.51	4265.48	3916.92
135.0	5375.40	5393.29	5320.03	5264.52	5144.64	4876.01	4525.23	4227.74	3934.68
157.5	5375.40	5386.63	5320.03	5246.76	5140.20	4864.91	4531.89	4218.86	3921.36
180.0	5375.40	5373.31	5306.71	5231.22	5155.74	4902.65	4567.41	4232.18	3885.84
202.5	5375.40	5355.55	5297.83	5209.02	5120.22	4929.29	4660.66	4314.32	3934.68
225.0	5375.40	5357.77	5291.16	5204.58	5066.93	4878.23	4620.69	4301.00	3959.10
247.5	5375.40	5357.77	5291.16	5200.14	5082.48	4902.65	4649.56	4318.76	3948.00
270.0	5375.40	5351.11	5286.72	5169.06	4998.11	4771.66	4428.43	4108.74	3727.77
292.5	5375.40	5371.09	5313.37	5195.70	4975.91	4678.42	4362.50	4005.50	3667.83
315.0	5375.40	5364.43	5337.79	5193.48	4942.61	4631.80	4326.98	4023.71	3684.70
337.5	5375.40	5355.55	5335.57	5206.80	4958.15	4622.91	4320.31	4015.72	3694.25
360.0	5375.40	5355.55	5306.71	5226.78	4995.89	4689.52	4350.06	3995.07	3678.26

C/ $\gamma(^{\circ})$	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3333.04	2851.72	2457.43	1915.50	1440.62	956.42	517.95	284.17	151.19
22.5	3353.24	2820.86	2381.28	1834.47	1362.92	931.11	563.46	271.74	137.65
45.0	3478.68	3027.11	2511.60	1968.12	1353.15	882.49	462.23	209.80	106.57
67.5	3493.33	3052.64	2545.12	2024.95	1410.87	904.91	473.10	212.24	102.57
90.0	3592.79	3133.23	2624.82	2198.57	1630.22	1152.90	750.62	406.28	183.16
112.5	3555.05	3144.33	2655.91	2276.27	1763.43	1277.22	845.19	416.27	203.14
135.0	3595.01	3179.85	2724.73	2254.07	1783.41	1306.09	759.50	434.03	214.91
157.5	3572.81	3204.27	2720.29	2234.09	1767.87	1266.12	745.95	441.58	236.00
180.0	3541.73	3146.55	2669.23	2231.87	1716.80	1243.92	802.34	427.15	227.78
202.5	3543.95	3071.06	2538.24	2149.72	1614.68	1161.78	770.15	413.38	206.47
225.0	3579.47	3177.63	2664.79	2145.28	1576.94	1095.18	601.20	287.73	139.42
247.5	3546.17	3124.35	2644.81	2129.74	1559.18	1097.40	581.22	270.85	123.88
270.0	3336.81	2809.09	2307.79	1890.19	1336.94	901.81	515.51	249.98	126.55
292.5	3342.14	2868.15	2433.67	1934.60	1400.00	919.57	481.32	249.76	140.09
315.0	3380.10	2885.69	2418.58	1962.79	1396.67	822.33	505.52	264.19	146.31
337.5	3359.23	2881.02	2432.56	1917.94	1393.11	858.51	495.97	283.51	156.96
360.0	3333.04	2851.72	2457.43	1915.50	1440.62	956.42	517.95	284.17	151.19

C/ $\gamma(^{\circ})$	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	83.48	39.07	34.86	36.41	32.41	26.86	28.20	24.87	25.98
22.5	74.60	38.63	35.97	31.97	28.42	27.09	26.20	25.53	30.19
45.0	68.16	31.53	29.08	29.08	24.20	22.65	21.98	23.53	21.09
67.5	65.49	28.64	27.31	29.08	23.76	22.87	21.98	24.64	6.66
90.0	102.35	44.85	29.53	30.19	26.20	25.98	24.42	21.54	22.87
112.5	115.00	52.62	30.86	29.31	31.08	27.31	28.86	25.98	18.21
135.0	125.66	60.39	32.19	28.86	31.30	29.31	28.42	32.86	31.97
157.5	129.88	61.94	33.52	31.53	36.19	32.41	34.86	37.96	36.63
180.0	124.77	59.72	33.30	36.19	35.74	28.86	28.42	27.75	23.31
202.5	111.45	53.28	39.52	37.52	31.30	31.75	28.64	26.86	31.30
225.0	89.69	43.96	30.19	33.75	28.64	23.98	23.76	23.76	24.42
247.5	79.92	39.07	28.86	30.19	24.87	22.87	22.65	22.20	15.76
270.0	69.27	40.85	40.63	33.30	30.19	29.08	28.64	27.97	17.32
292.5	75.04	39.07	36.85	38.63	32.64	29.31	27.97	23.31	12.88
315.0	83.92	40.63	35.30	35.74	34.63	32.19	33.75	35.52	32.41
337.5	87.03	40.41	35.74	37.08	37.74	34.63	37.96	37.52	43.07
360.0	83.48	39.07	34.86	36.41	32.41	26.86	28.20	24.87	25.98



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	24.64	26.86	24.20	17.10	13.77	15.10	12.88	9.99	8.88
22.5	25.53	21.09	16.43	15.32	10.66	12.88	12.88	10.66	9.10
45.0	17.54	15.54	13.99	10.21	12.66	11.55	11.10	9.99	9.32
67.5	18.21	16.87	14.88	11.55	11.99	11.32	11.32	10.21	9.77
90.0	15.54	19.76	19.54	15.32	14.21	13.32	11.10	11.32	9.55
112.5	19.54	21.31	24.20	18.43	18.43	15.99	14.43	13.10	9.77
135.0	33.52	28.86	26.42	28.86	27.31	21.76	17.10	15.32	10.21
157.5	41.74	38.19	32.64	24.87	22.42	19.54	17.76	14.21	9.32
180.0	25.98	23.98	27.09	19.32	19.09	14.43	15.32	12.88	9.55
202.5	31.97	25.53	21.54	15.10	15.32	12.66	13.77	12.43	9.32
225.0	19.32	17.10	17.10	12.21	15.76	14.88	12.88	12.21	10.21
247.5	15.99	18.65	16.43	15.99	14.88	13.77	12.88	12.21	10.21
270.0	22.42	19.76	17.10	15.54	15.10	13.10	12.66	11.10	9.32
292.5	22.42	24.64	21.09	18.43	17.98	15.99	14.65	10.88	9.32
315.0	31.30	27.31	30.64	25.53	22.42	19.98	15.99	10.43	9.10
337.5	41.96	32.41	29.08	21.54	18.43	18.87	15.54	11.32	8.88
360.0	24.64	26.86	24.20	17.10	13.77	15.10	12.88	9.99	8.88
C/γ(°)	180.0								
0.0	9.01								
22.5	9.01								
45.0	9.01								
67.5	9.01								
90.0	9.01								
112.5	9.01								
135.0	9.01								
157.5	9.01								
180.0	9.01								
202.5	9.01								
225.0	9.01								
247.5	9.01								
270.0	9.01								
292.5	9.01								
315.0	9.01								
337.5	9.01								
360.0	9.01								



Photo Document



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