



Shenzhen Belling Efficiency Testing Lab Co., Ltd



Report No.: BL230227012-9A

Date of issue 2023-04-11

Version 1.0

Total pages 55

Test report of

IES LM-79-08

Approved Method: Electrical and Photometric

Measurements of Solid-State Lighting Products

Applicant:

RAB LIGHTING, INC

Address:

408 W 14th St New York, NY 10014, USA

For Product:

LED Corn Lamp

Model No.:

HID-45-EX39-8CCT-BYP/5SP/480V

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: Sam Chen

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 used 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	408 W 14th St New York, NY 10014, USA
Brand Name	RAB
Luminaire Type	LED Corn Lamp
Model Number	HID-45-EX39-8CCT-BYP/5SP/480V
Rated Inputs	AC 277-480V, 50/60Hz
Rated Power	45W
Color-Tunable Product	Yes, CCT setting: 3000K, 4000K, 5000K
Date of Receipt Samples	2023-02-27
Date of test	2023-02-28 to 2023-03-15
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 Description

- Declaration: RAB LIGHTING,INC declare that their product with model HID-45-EX39-8CCT-BYP/5SP/480V are the same to the product in the report BL230227006-9A and is authorized by original applicant to use their test data.
- Note: All the data in previous report BL230227006-9A is shared in report.



1.4 Equipment list

Device	Manufacture	Model No.	Serial No.	Calibration due date
Goniophotometric System	SENSING	GMS-3000	N.A	2023-04-08
AC Power Source	ALL POWER	APW-105N	970780	2023-04-10
Total Luminous Flux Standard Lamp	SENSING	110V/100W	S13100188	2023-03-30
Total Luminous Flux Standard Lamp	OSRAM	12V/20W	LSD12201737	2023-03-30
Digital Power Meter	YOKOGAWA	WT310	C2QM02030V	2023-04-10
Thermostatic stabilized photometric sphere	SENSING	SPR-600M	N.A	2023-04-08
Digital Power Meter	YOKOGAWA	WT210	91L929742	2023-04-10
Spectral radiometer	SENSING	SPR-3000	S1101108	2023-04-08
Environment Measurer	XUYAO	HS-1	N/A	2023-03-30
Environment Measurer	XUYAO	HS-1	N/A	2023-03-30
Stop watch	KISLO	K610	N/A	2023-04-14
Digital Anemometer	TECMAN	TD8901	026141	2023-09-07

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).

1.5 Report Revision

Original report BL230227012-9 dated at 2023-03-24 was recalled and declared as invalid by Shenzhen Belling Efficiency Testing Laboratory Co.,Ltd. Report BL230227012-9A was issued on to replace report BL230227012-9.

Report Number	Report Date	Contents
BL230227012-9	2023-03-24	Original report
BL230227012-9A	2023-04-11	Updated the product photos. Updated the applicant information. Updated the model number.



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 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 3000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.08	60	0.157	42.67	0.982

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
6135.56	143.8	3041

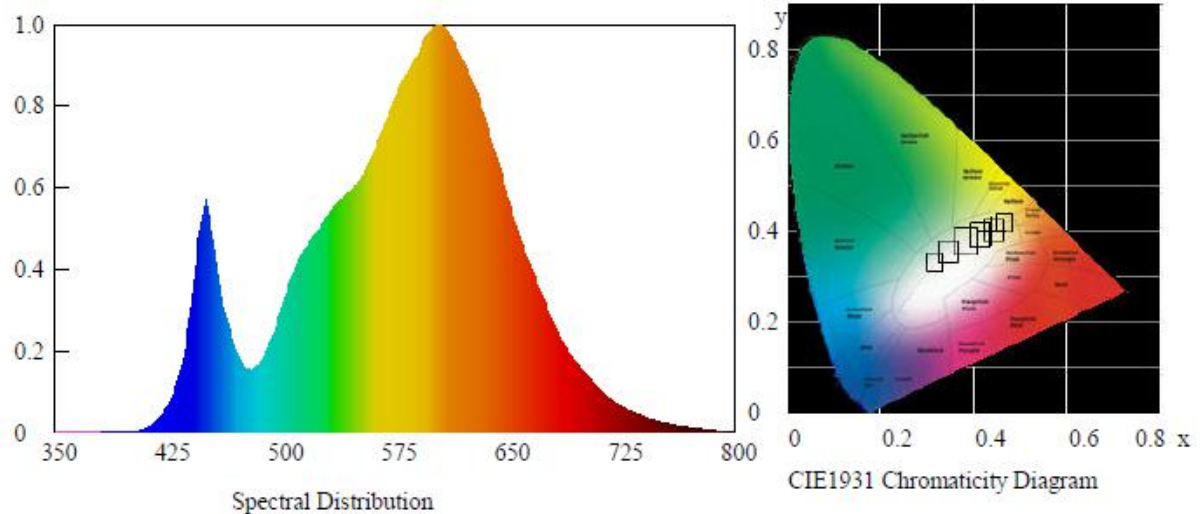
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00102	0.4326	0.4000	0.2495	0.5191

Color Rendering

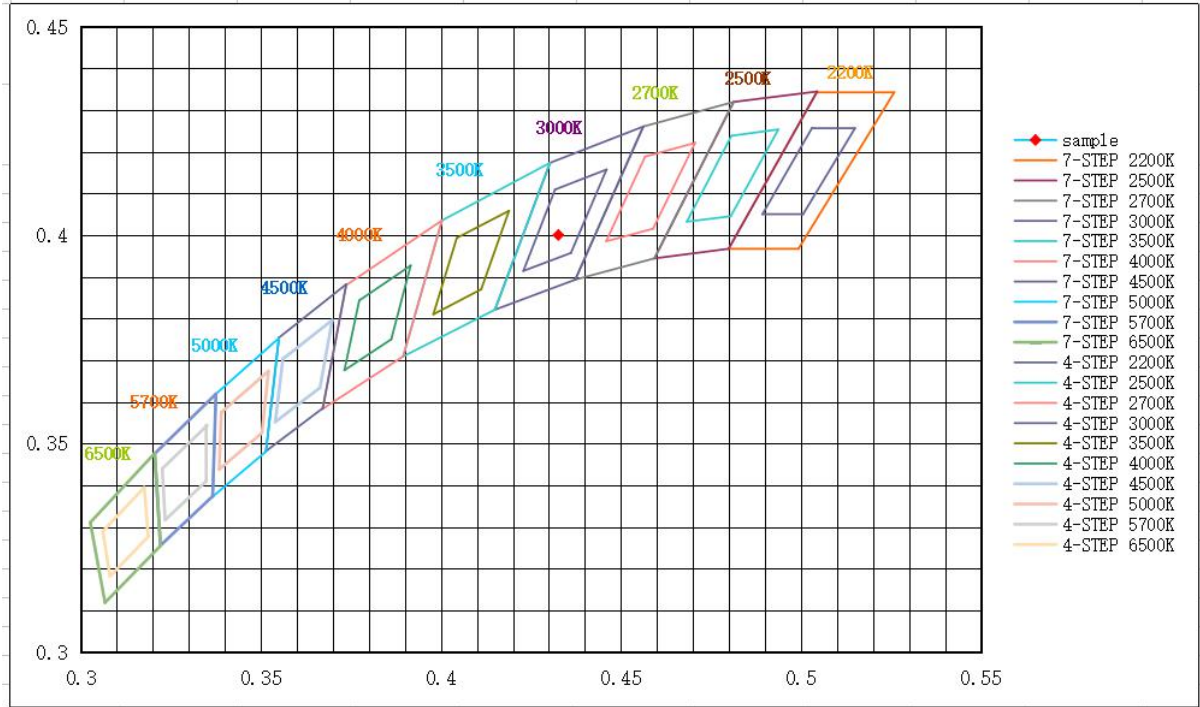
CRI	R9	Rf	Rg	Rcs,h1(%)
82.9	10	84	98	-11

Spectral Distribution





7/4 Step Quadrangle

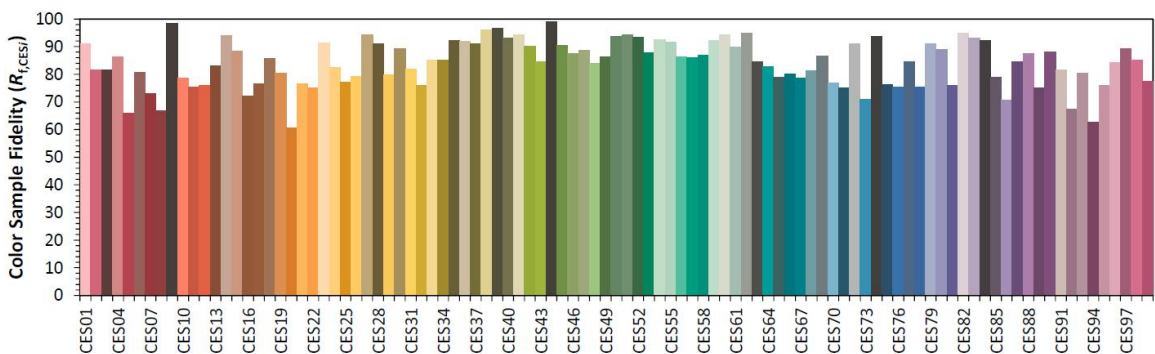
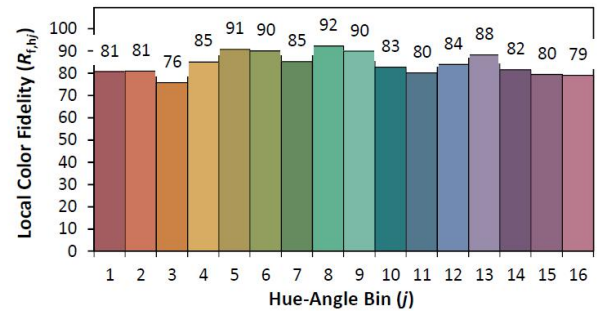
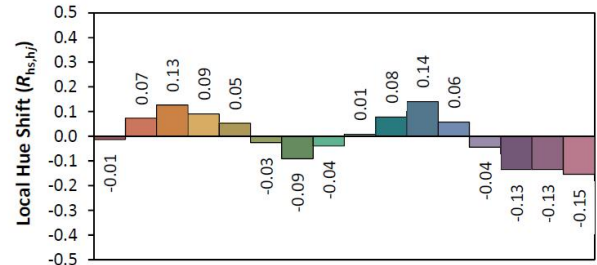
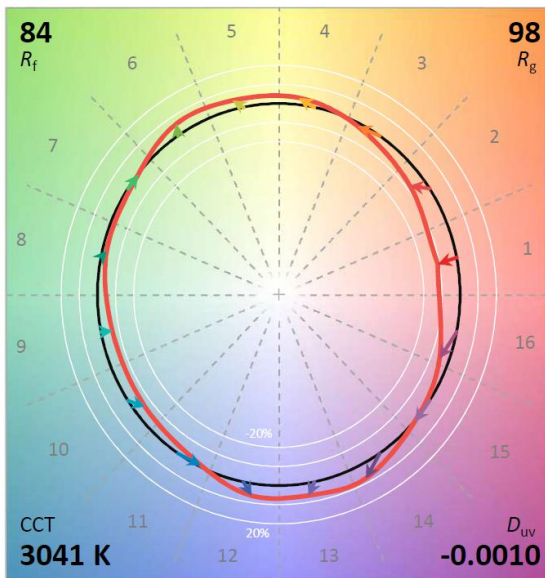
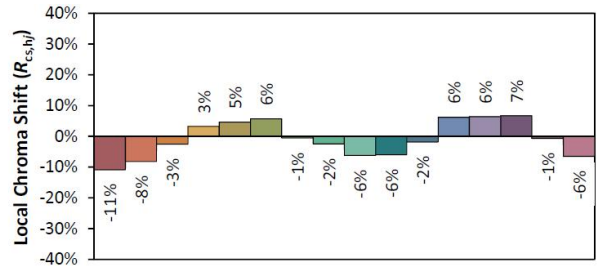
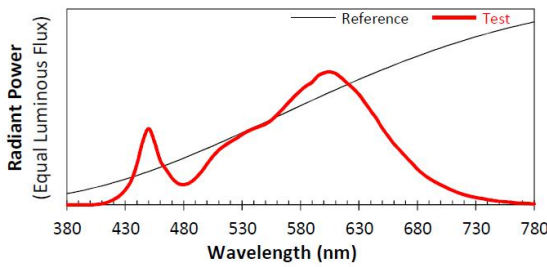




ANSI/IES TM-30-18 Color Rendition Report

Source: BL230227012-9A
Date: 2023-04-11

Manufacturer: RAB LIGHTING, INC
Model: HID-45-EX39-8CCT-BYP/5SP/480V, 3000K at 277V



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

x 0.4326
 y 0.4000
 u' 0.2495
 v' 0.5191

CIE 13.3-1995 (CRI)
 R_a 83
 R_9 9

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



3.1.2 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 3000K at 480V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
479.99	60	0.097	41.72	0.896

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
5829.46	139.7	3044

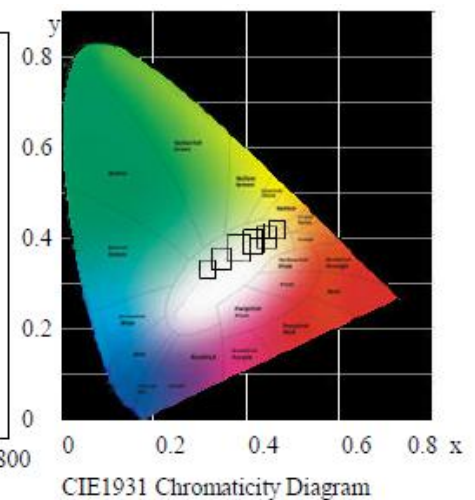
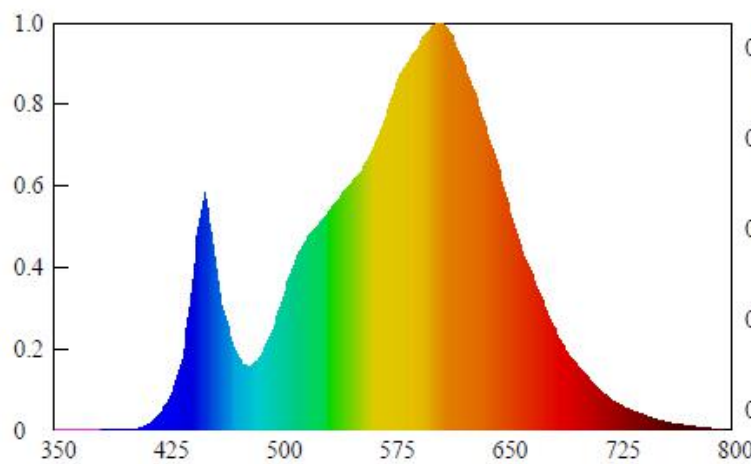
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00105	0.4324	0.3999	0.2494	0.5190

Color Rendering

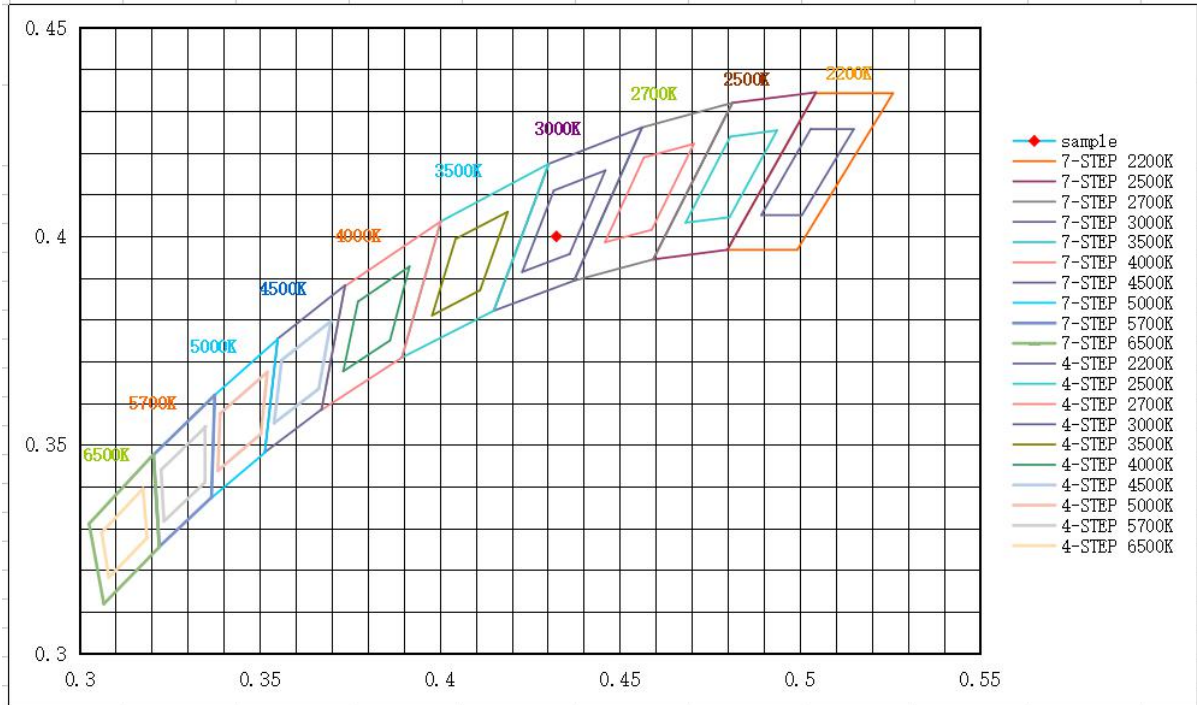
CRI	R9	Rf	Rg	Rcs,h1(%)
82.9	10	84	98	-11

Spectral Distribution





7/4 Step Quadrangle

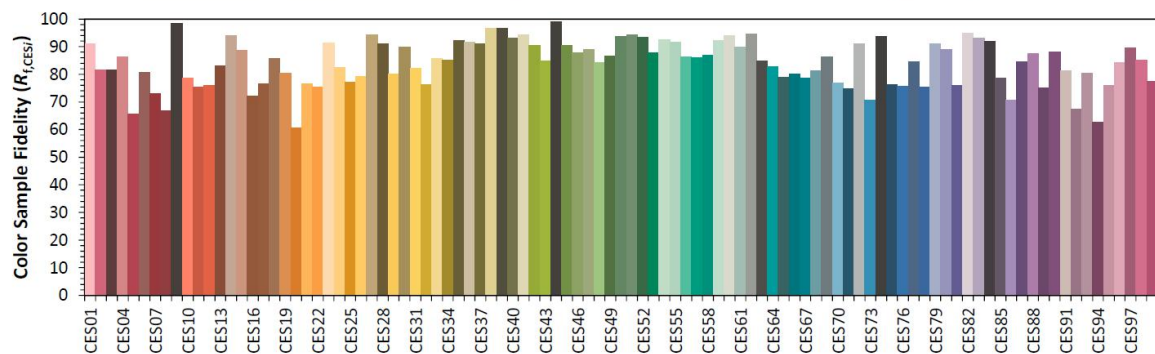
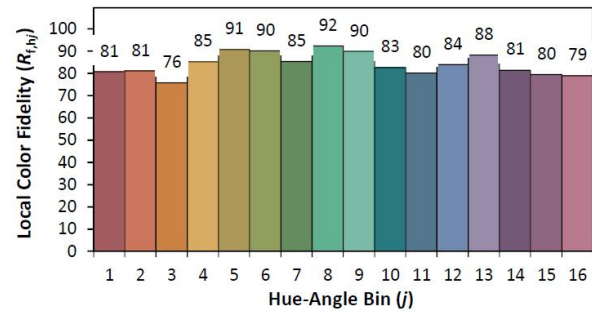
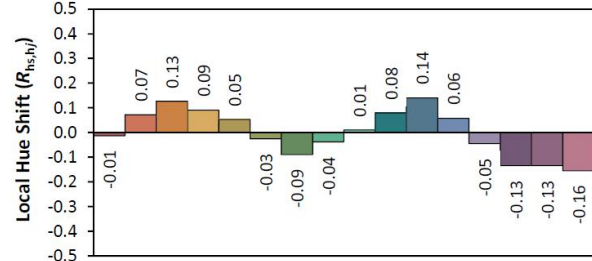
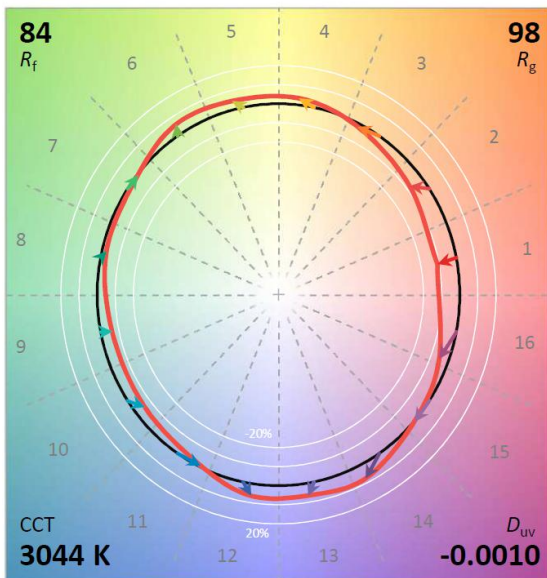
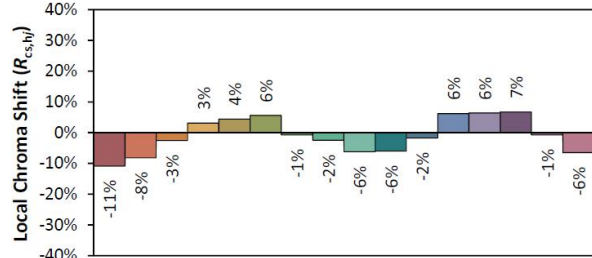
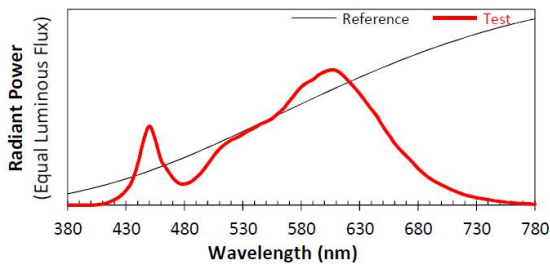




ANSI/IES TM-30-18 Color Rendition Report

Source: BL230227012-9A
Date: 2023-04-11

Manufacturer: RAB LIGHTING, INC
Model: HID-45-EX39-8CCT-BYP/5SP/480V, 3000K at 480V



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

x 0.4324
 y 0.3999
 u' 0.2494
 v' 0.5190

CIE 13.3-1995 (CRI)
 R_a 83
 R_g 9

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



3.1.3 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 4000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.10	60	0.152	41.24	0.980

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
6373.67	154.6	4001

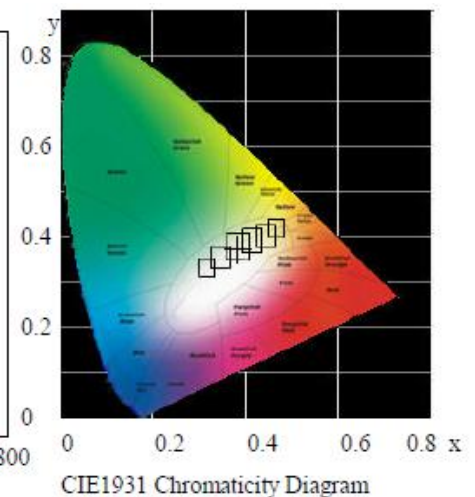
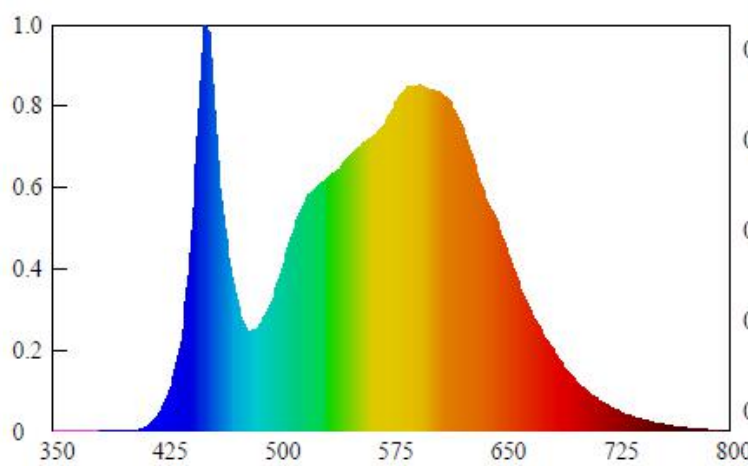
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00217	0.3789	0.3712	0.2263	0.4989

Color Rendering

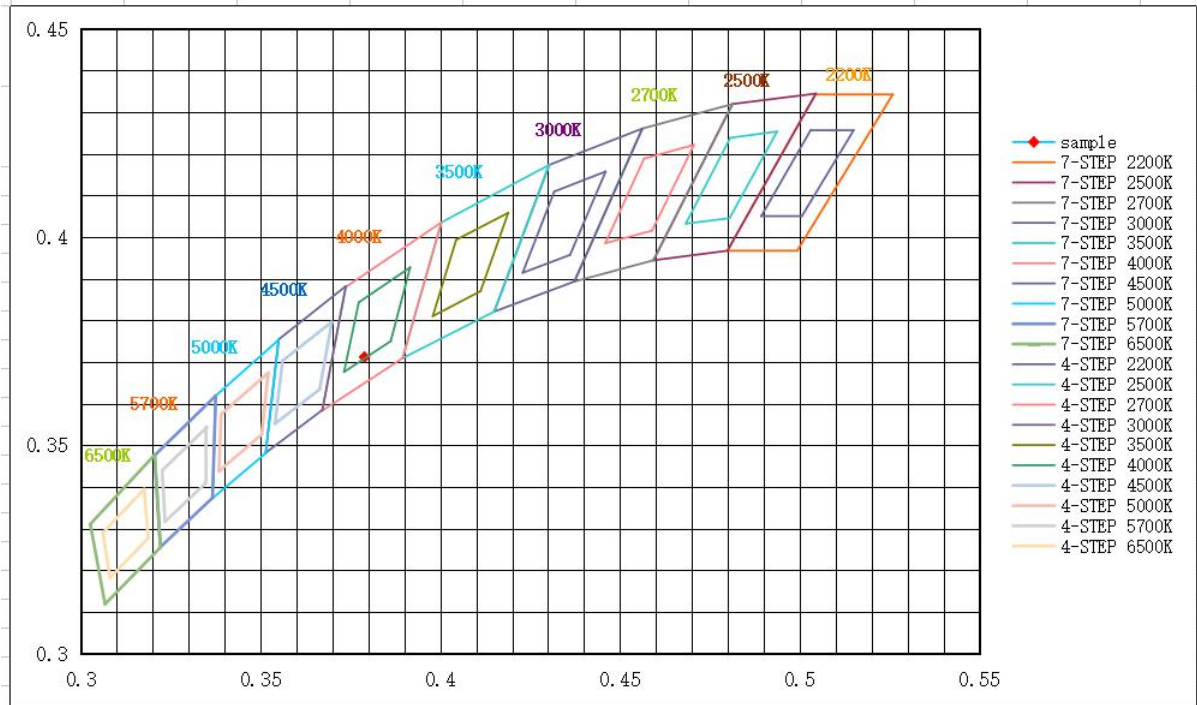
CRI	R9	Rf	Rg	Rcs,h1(%)
84.9	20	85	97	-11

Spectral Distribution





7/4 Step Quadrangle

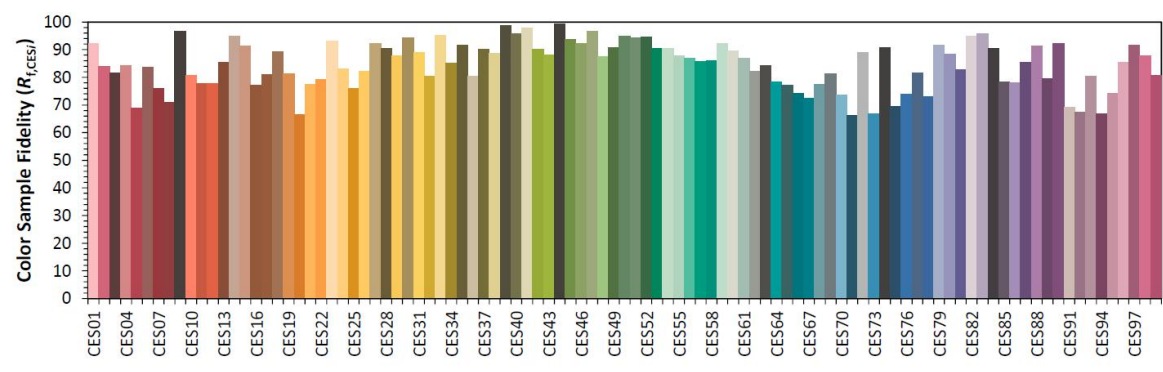
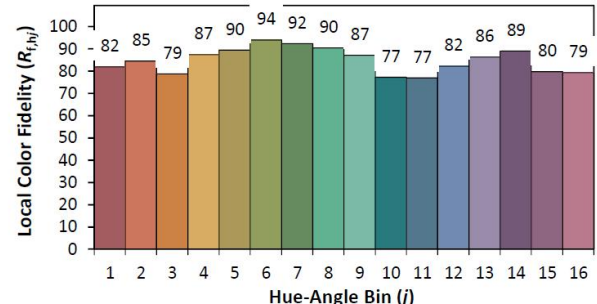
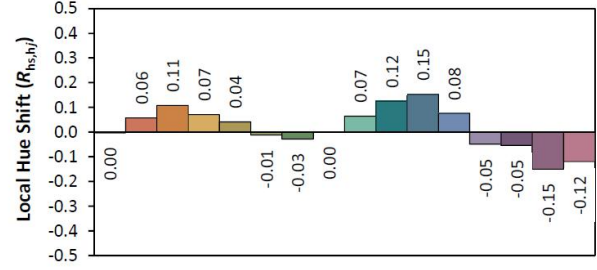
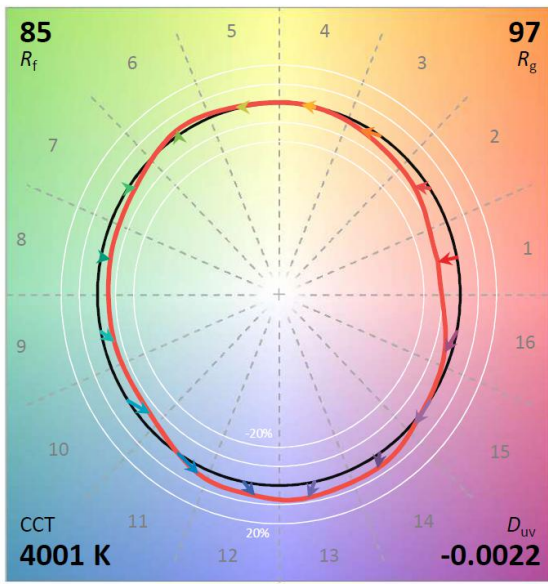
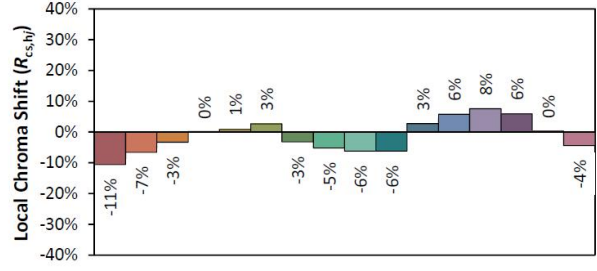
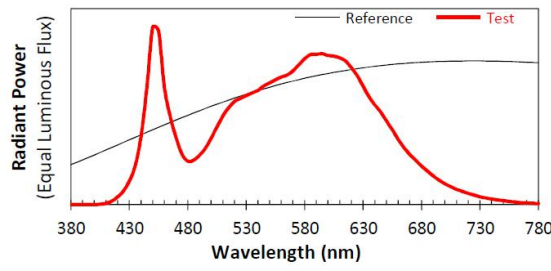




ANSI/IES TM-30-18 Color Rendition Report

Source: BL230227012-9A
Date: 2023-04-11

Manufacturer: RAB LIGHTING, INC
Model: HID-45-EX39-8CCT-BYP/5SP/480V, 4000K at 277V



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

x 0.3789
 y 0.3712
 u' 0.2263
 v' 0.4989

CIE 13.3-1995 (CRI)
 R_a 85
 R_g 20

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



3.1.4 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 4000K at 480V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
480.07	60	0.095	40.80	0.893

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
6091.53	149.3	4003

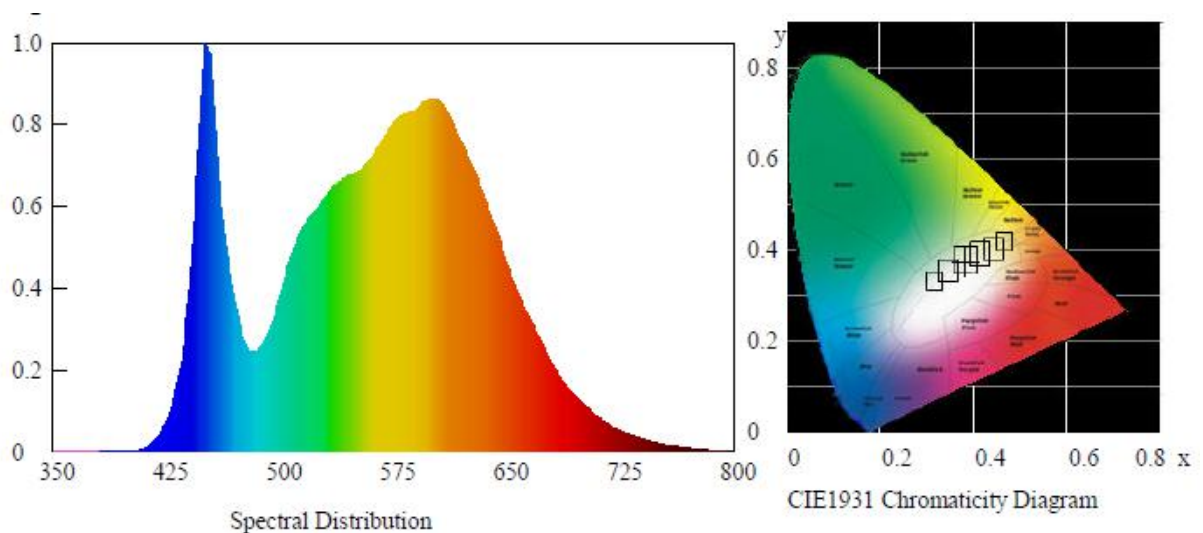
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00203	0.3789	0.3715	0.2262	0.4990

Color Rendering

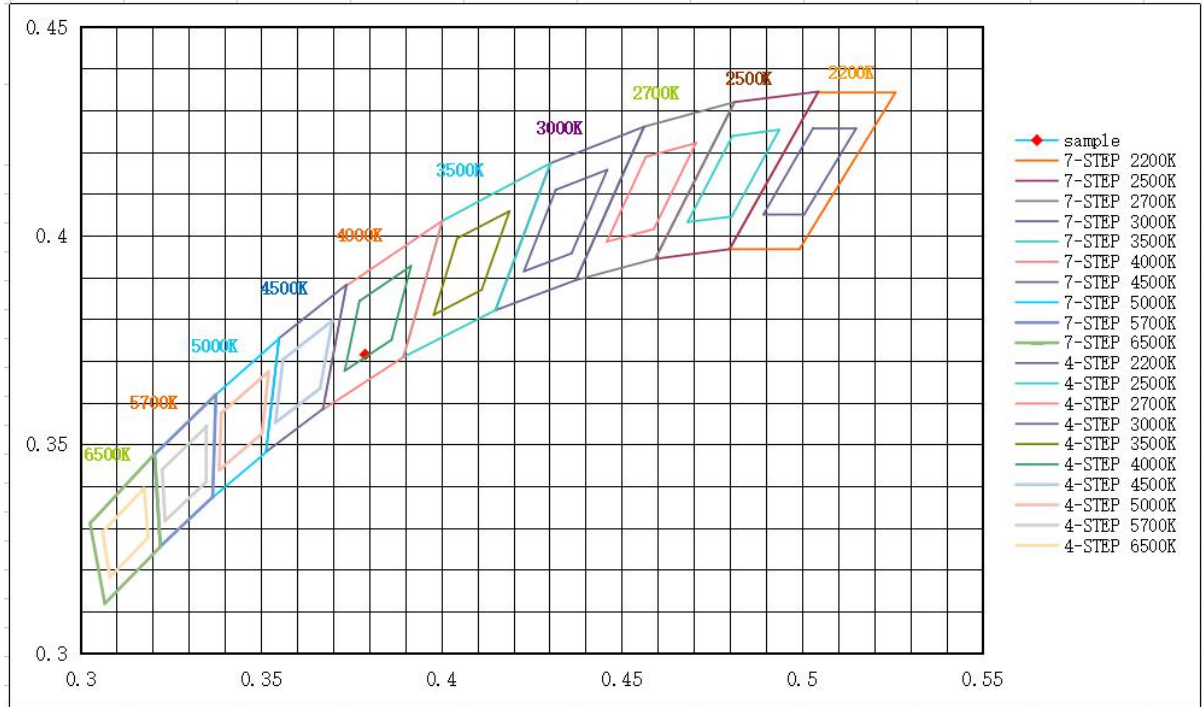
CRI	R9	Rf	Rg	Rcs,h1(%)
84.9	20	85	97	-11

Spectral Distribution





7/4 Step Quadrangle

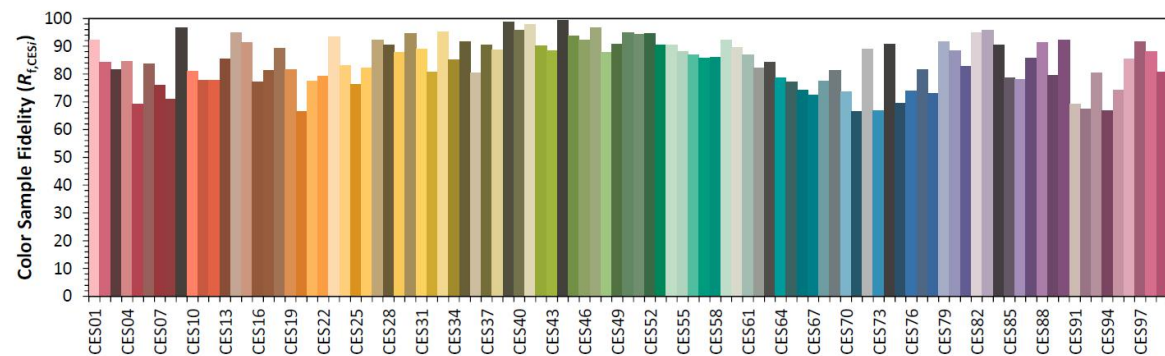
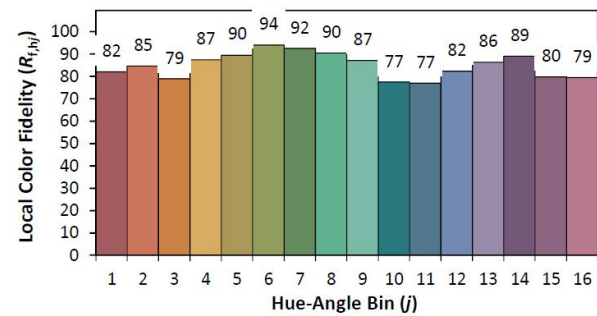
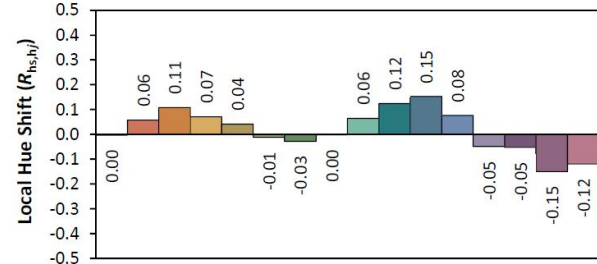
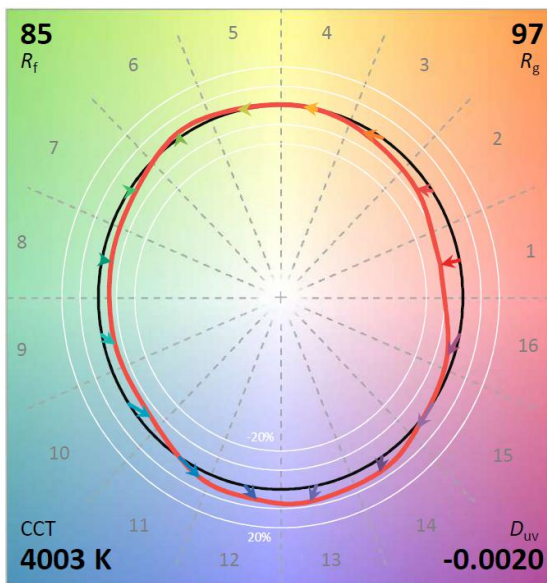
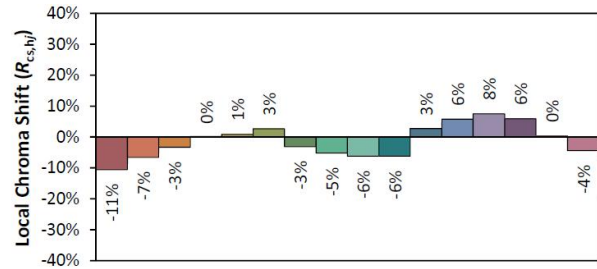
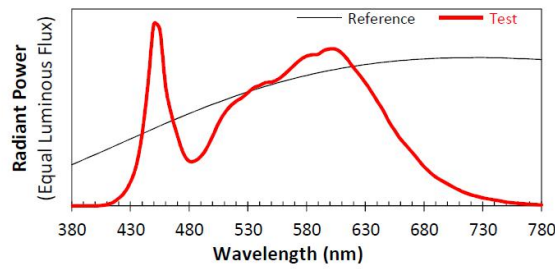




ANSI/IES TM-30-18 Color Rendition Report

Source: BL230227012-9A
Date: 2023-04-11

Manufacturer: RAB LIGHTING,INC
Model: HID-45-EX39-8CCT-BYP/5SP/480V, 4000K at 480V



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

x 0.3789
 y 0.3715
 u' 0.2262
 v' 0.4990

CIE 13.3-1995 (CRI)	
R_a	85
R_9	20

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



3.1.5 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 5000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.09	60	0.156	42.32	0.981

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
6095.72	144.0	4960

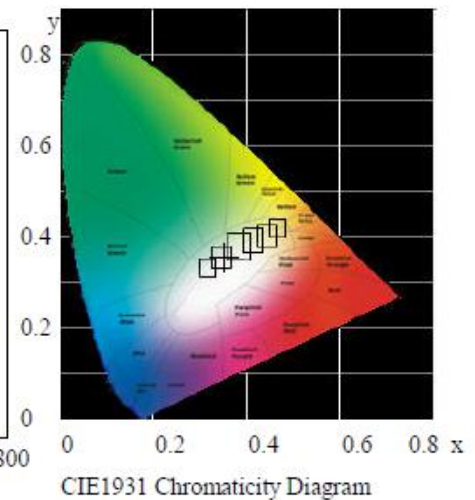
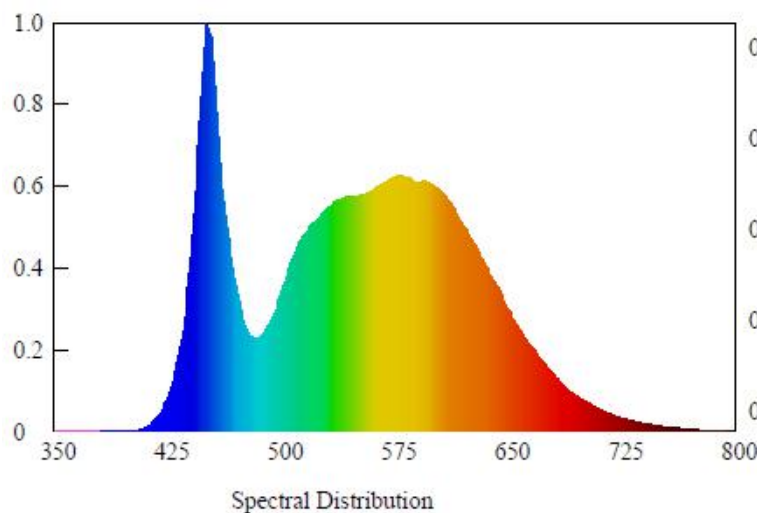
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.0005	0.3464	0.3536	0.2115	0.4858

Color Rendering

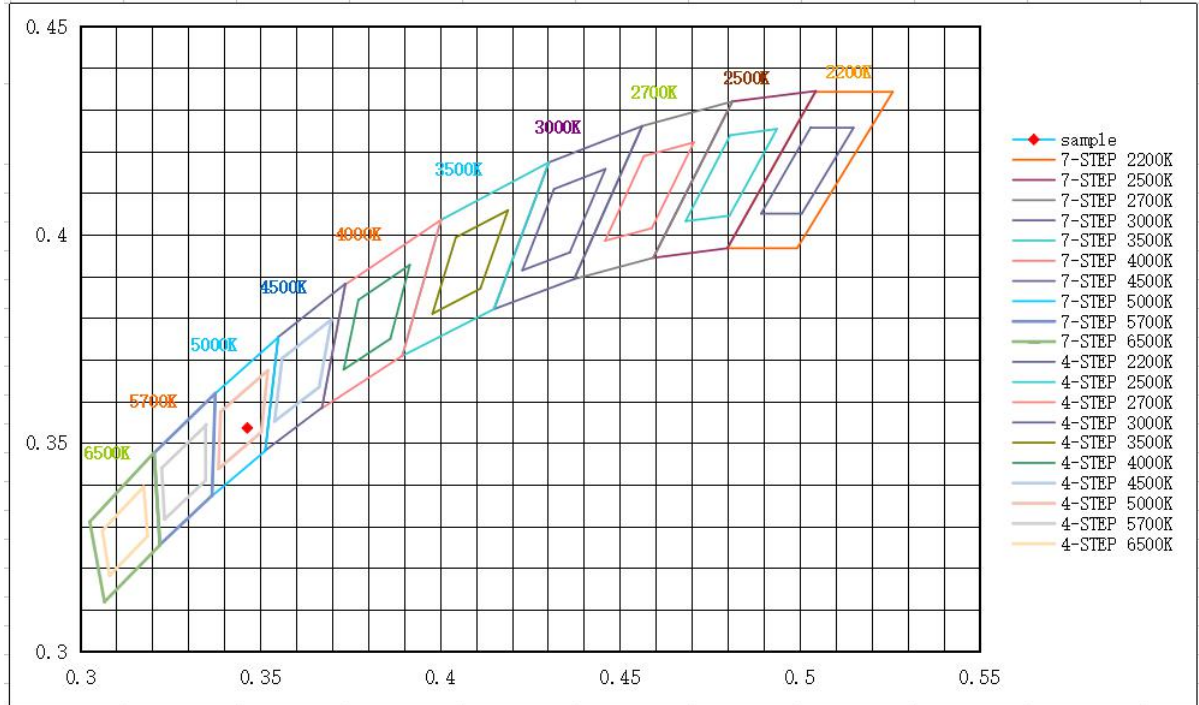
CRI	R9	Rf	Rg	Rcs,h1(%)
83.5	15	83	97	-12

Spectral Distribution





7/4 Step Quadrangle

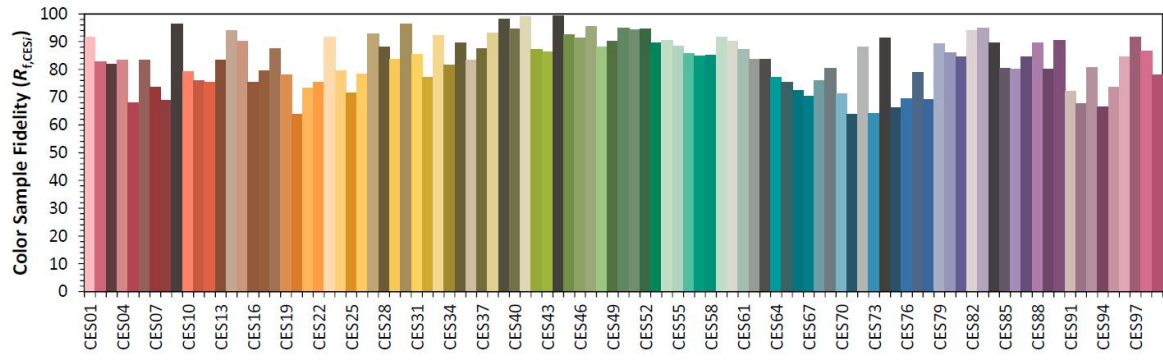
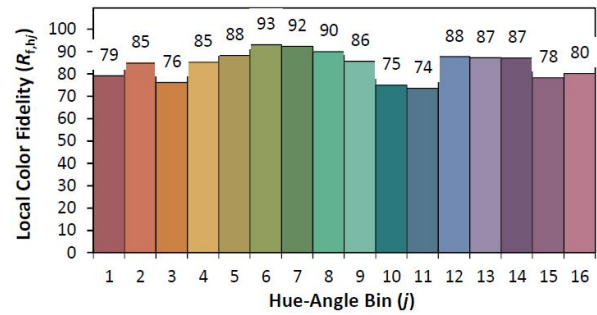
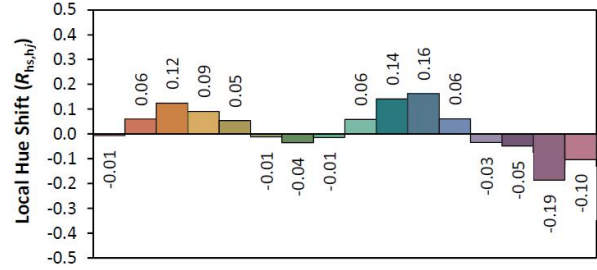
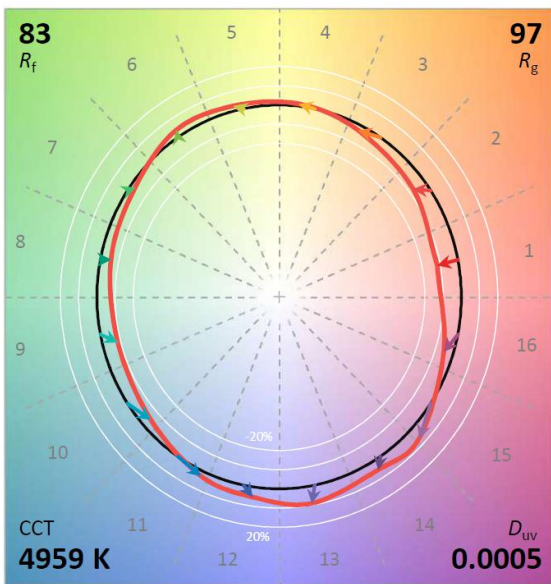
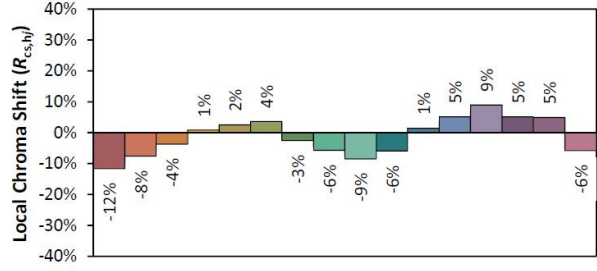
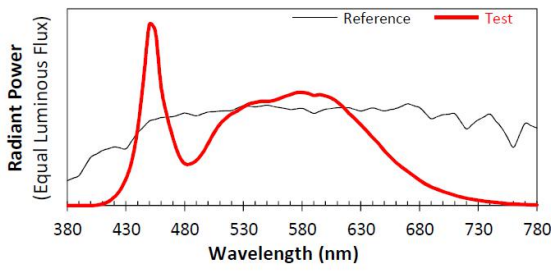




ANSI/IES TM-30-18 Color Rendition Report

Source: BL230227012-9A
Date: 2023-04-11

Manufacturer: RAB LIGHTING, INC
Model: HID-45-EX39-8CCT-BYP/5SP/480V, 5000K at 277V



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

x 0.3464
 y 0.3536
 u' 0.2115
 v' 0.4858

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.



3.1.6 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 5000K at 480V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
479.98	60	0.097	41.68	0.896

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
5850.12	140.4	4959

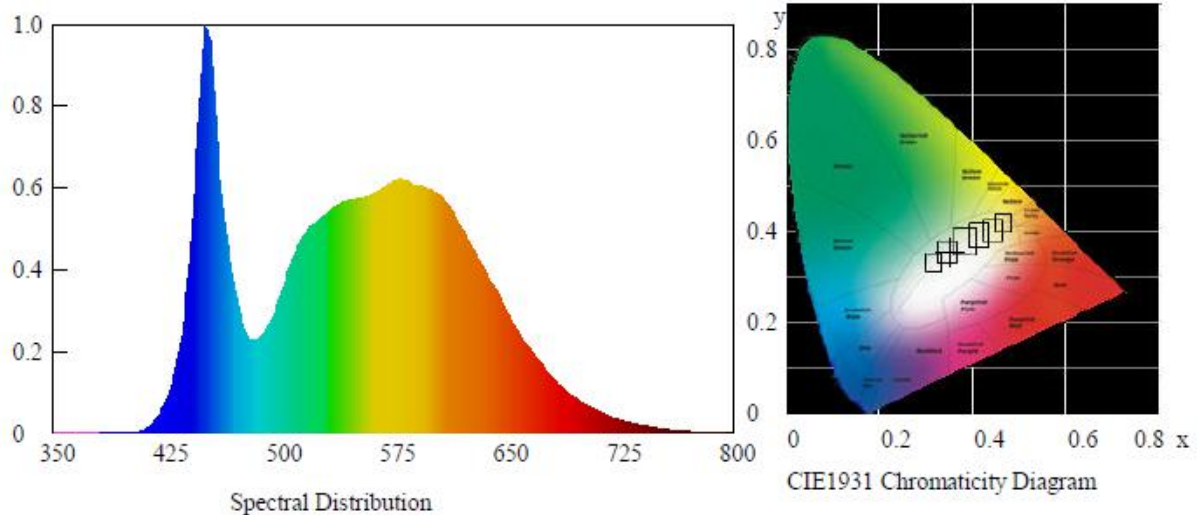
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00049	0.3464	0.3536	0.2115	0.4858

Color Rendering

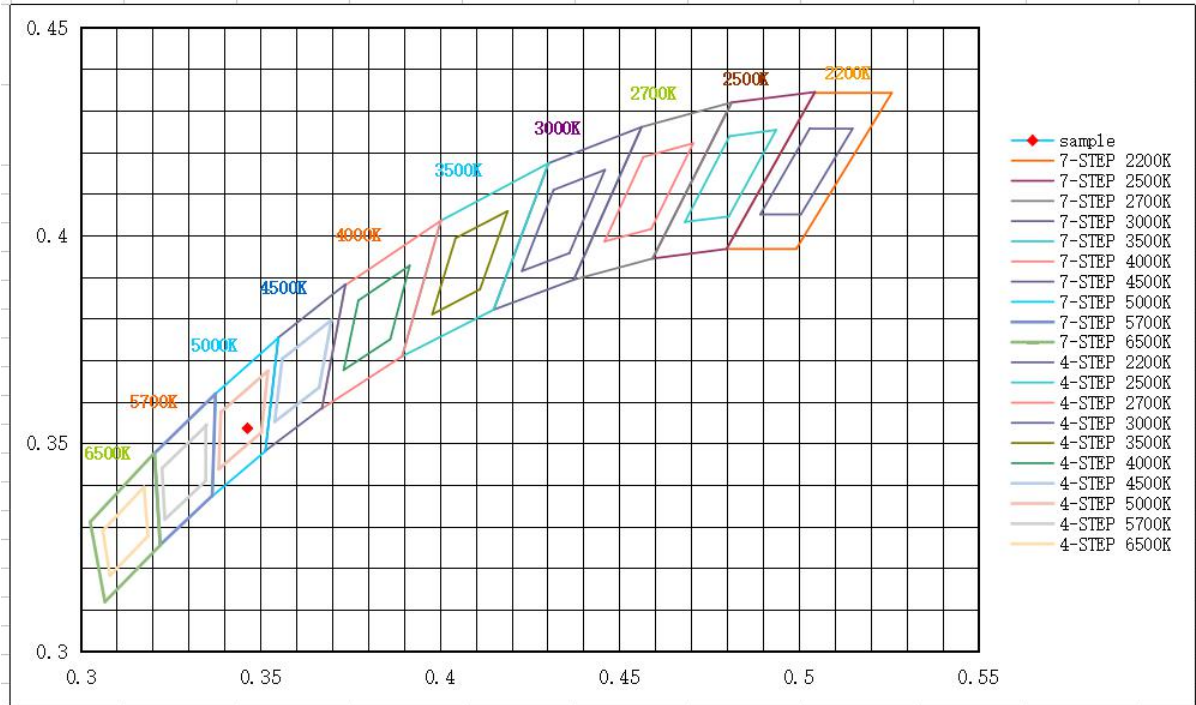
CRI	R9	Rf	Rg	Rcs,h1(%)
83.5	15	83	97	-12

Spectral Distribution





7/4 Step Quadrangle

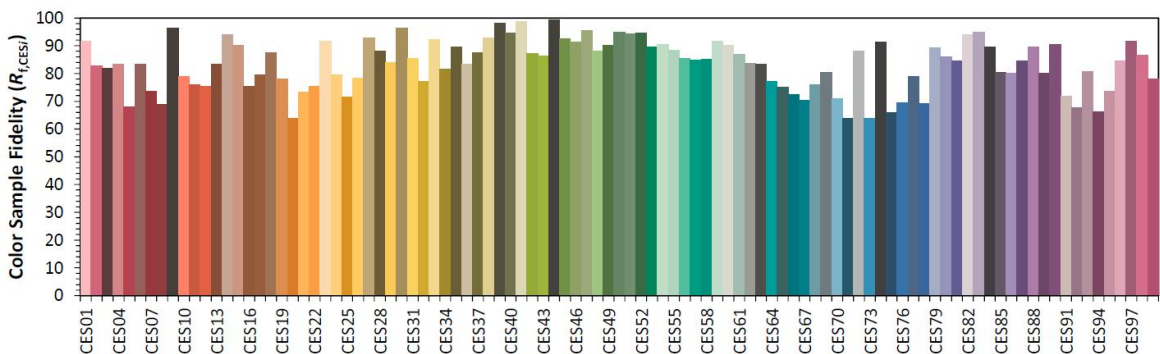
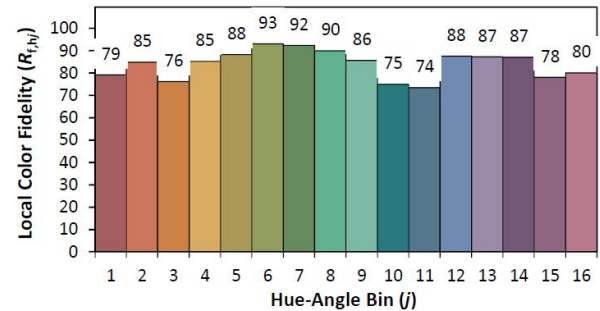
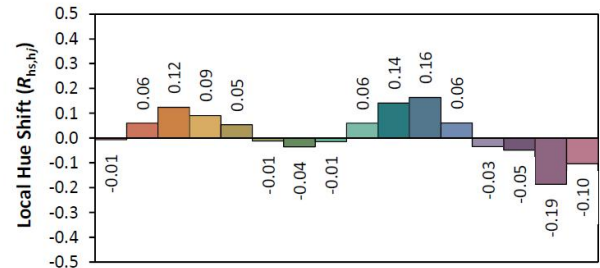
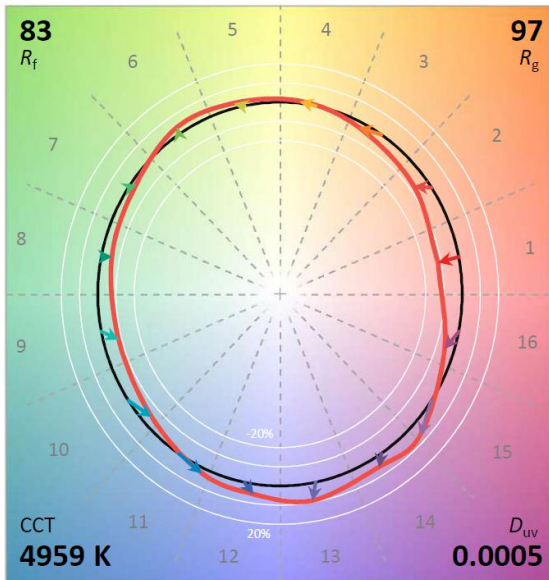
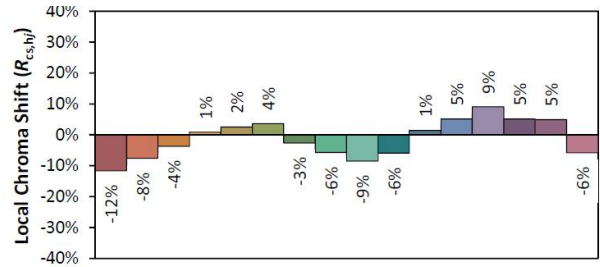
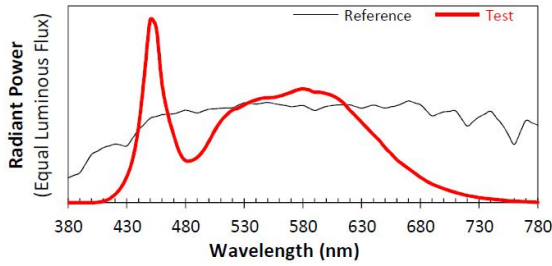




ANSI/IES TM-30-18 Color Rendition Report

Source: BL230227012-9A
Date: 2023-04-11

Manufacturer: RAB LIGHTING, INC
Model: HID-45-EX39-8CCT-BYP/5SP/480V, 5000K at 480V



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

x 0.3464
 y 0.3536
 u' 0.2115
 v' 0.4858

CIE 13.3-1995 (CRI)	
R_a	84
R_g	15

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



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

3.2.1 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 3000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.11	60	0.1570	42.64	0.9816

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
6129.10	143.74	27.40	56.55



Zonal Flux Diagram

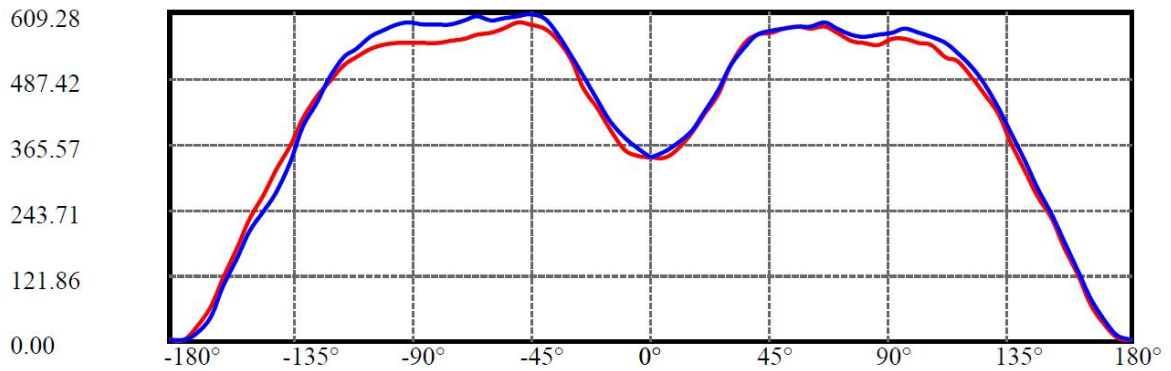
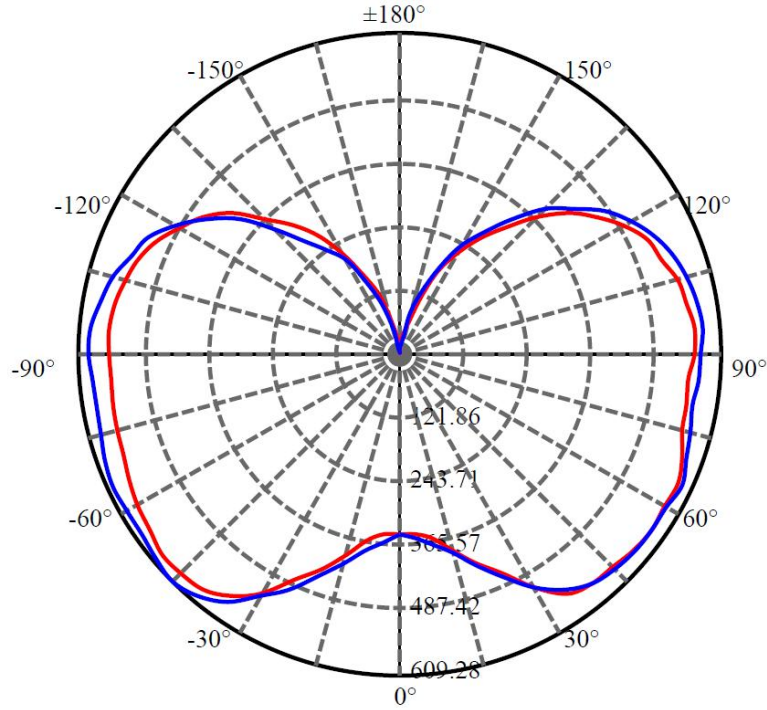
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	340.443	0.000	0	0.00%	0.00%
5.0	344.903	8.193	8.193	0.00%	0.13%
10.0	359.087	25.184	33.377	0.00%	0.54%
15.0	389.956	44.433	77.81	0.00%	1.27%
20.0	426.501	67.288	145.097	0.00%	2.37%
25.0	466.566	93.666	238.764	0.00%	3.90%
30.0	512.677	123.924	362.688	0.00%	5.92%
35.0	551.154	156.657	519.344	0.00%	8.47%
40.0	574.984	187.888	707.232	0.00%	11.54%
45.0	581.282	214.092	921.324	0.00%	15.03%
50.0	583.412	235.344	1156.667	0.00%	18.87%
55.0	581.785	253.353	1410.02	0.00%	23.01%
60.0	582.526	269.127	1679.147	0.00%	27.40%
65.0	581.798	283.049	1962.197	0.00%	32.01%
70.0	573.224	292.459	2254.656	0.00%	36.79%
75.0	564.240	297.315	2551.971	0.00%	41.64%
80.0	561.634	301.252	2853.223	0.00%	46.55%
85.0	560.205	304.830	3158.053	0.00%	51.53%
90.0	564.637	307.990	3466.044	0.00%	56.55%
95.0	565.696	309.494	3775.538	0.00%	61.60%
100.0	559.212	305.664	4081.202	0.00%	66.59%
105.0	550.321	296.880	4378.082	0.00%	71.43%
110.0	534.761	283.623	4661.705	0.00%	76.06%
115.0	517.295	266.387	4928.092	0.00%	80.40%
120.0	489.258	244.695	5172.787	0.00%	84.40%
125.0	455.994	218.492	5391.279	0.00%	87.96%
130.0	412.780	188.900	5580.18	0.00%	91.04%
135.0	361.919	156.539	5736.719	0.00%	93.60%
140.0	311.282	124.649	5861.368	0.00%	95.63%
145.0	264.760	96.108	5957.476	0.00%	97.20%
150.0	219.324	71.285	6028.761	0.00%	98.36%
155.0	168.992	49.142	6077.902	0.00%	99.16%
160.0	115.775	29.867	6107.769	0.00%	99.65%
165.0	63.828	14.802	6122.571	0.00%	99.89%
170.0	25.563	5.303	6127.874	0.00%	99.98%
175.0	5.901	1.126	6128.999	0.00%	100.00%
180.0	2.702	0.103	6129.102	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ——

C90/C270: ——

Field angle(10%Imax):C0/180Left:165.8 Right:166.3

:C90/270Left:163.8 Right:167.1

Beam Angle(50%Imax):C0/180Left:142.5 Right:142.3

:C90/270Left:137.7 Right:143.1

**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	340.44	342.11	355.66	384.88	420.87	456.43	509.99	553.18	568.00
22.5	340.44	338.72	352.49	375.77	409.43	446.06	486.70	526.93	547.04
45.0	340.44	337.45	346.56	372.17	405.62	443.09	489.46	527.14	548.95
67.5	340.44	339.36	343.81	374.50	409.01	445.00	491.36	526.50	551.06
90.0	340.44	351.00	365.61	388.47	425.31	465.11	510.42	545.56	566.09
112.5	340.44	346.56	358.62	389.32	427.43	467.44	514.65	559.11	587.05
135.0	340.44	345.29	363.28	389.32	424.68	468.29	513.17	554.87	589.17
157.5	340.44	344.44	358.20	388.90	430.39	471.67	521.42	559.32	593.19
180.0	340.44	342.96	356.93	394.83	431.66	471.04	523.96	559.32	580.49
202.5	340.44	343.59	358.62	393.56	431.45	475.27	516.77	555.51	580.07
225.0	340.44	341.26	356.72	393.56	435.47	468.29	521.00	558.90	588.96
247.5	340.44	339.78	355.03	396.73	430.18	472.31	517.19	559.32	585.15
270.0	340.44	359.47	377.68	410.28	447.75	493.48	530.10	571.17	597.42
292.5	340.44	351.64	369.84	404.35	439.07	482.26	528.20	561.01	581.55
315.0	340.44	346.35	366.88	396.10	431.87	472.94	519.52	554.87	567.57
337.5	340.44	348.46	359.47	386.57	423.83	466.38	508.93	545.77	568.00
360.0	340.44	342.11	355.66	384.88	420.87	456.43	509.99	553.18	568.00
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	571.60	578.58	581.12	580.07	581.12	571.17	555.72	551.27	550.22
22.5	559.32	556.57	555.72	562.49	567.15	565.88	555.08	554.24	550.00
45.0	555.08	555.51	550.85	562.71	558.47	551.70	543.44	540.27	534.55
67.5	562.71	566.94	568.21	573.93	568.63	558.68	549.16	546.62	543.02
90.0	574.35	580.07	582.18	584.30	590.02	580.07	568.63	565.25	568.85
112.5	595.10	596.58	594.46	584.93	573.71	573.29	563.98	557.41	555.51
135.0	597.64	601.02	598.48	597.85	597.21	592.13	581.76	581.12	577.95
157.5	596.37	597.42	598.91	592.98	590.44	589.17	582.18	587.05	585.15
180.0	587.69	589.80	579.43	572.23	566.52	558.90	555.93	552.33	550.85
202.5	580.28	583.03	584.51	592.34	592.77	575.62	569.48	569.48	568.85
225.0	587.90	583.88	576.47	575.20	568.00	550.43	543.02	541.11	541.11
247.5	594.67	588.11	578.37	572.44	566.94	553.81	546.40	545.13	543.44
270.0	607.16	603.14	596.15	594.04	599.97	594.04	584.72	584.93	585.36
292.5	585.15	588.32	585.57	575.41	583.66	571.60	567.57	556.35	557.41
315.0	575.20	585.99	596.15	607.59	609.28	598.91	586.20	584.30	584.93
337.5	570.33	579.64	581.97	591.92	594.88	586.20	574.56	569.27	566.09
360.0	571.60	578.58	581.12	580.07	581.12	571.17	555.72	551.27	550.22
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	559.32	559.11	552.76	547.25	526.93	518.46	488.82	456.43	419.59
22.5	559.32	560.38	552.12	544.50	526.93	506.60	481.20	442.04	400.54
45.0	544.08	544.92	539.21	532.43	516.13	503.64	483.74	447.96	405.83
67.5	552.12	553.60	549.79	543.02	525.23	509.57	487.34	454.74	411.13
90.0	571.17	577.74	570.54	562.28	550.64	532.01	508.09	475.27	429.97
112.5	557.84	561.86	558.05	551.27	541.96	524.18	503.43	475.27	435.47
135.0	578.16	580.07	576.47	564.61	552.12	532.01	504.06	471.67	427.00
157.5	585.15	589.38	582.39	573.71	559.74	534.76	508.30	475.27	428.06
180.0	552.12	554.03	548.73	539.63	527.56	509.36	480.78	455.37	414.30
202.5	570.12	572.23	565.25	554.87	540.05	519.10	488.19	451.56	411.13
225.0	542.59	545.77	538.78	531.16	521.85	501.31	476.54	445.63	403.08
247.5	544.71	547.46	540.90	530.53	518.67	499.62	472.73	447.96	407.10
270.0	591.07	586.84	575.83	564.19	541.75	525.02	489.03	444.36	396.73
292.5	562.49	559.74	554.87	544.50	525.23	514.23	477.81	452.41	405.41
315.0	590.65	588.53	580.49	568.85	548.10	529.47	491.57	451.56	405.62
337.5	573.29	569.48	561.22	552.33	533.28	517.40	486.49	448.39	403.51
360.0	559.32	559.11	552.76	547.25	526.93	518.46	488.82	456.43	419.59



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	367.30	315.65	270.34	225.68	174.02	121.31	69.44	29.64	6.56
22.5	356.08	308.87	257.64	211.91	164.28	111.57	67.11	28.16	7.62
45.0	357.78	310.14	264.42	218.69	168.94	118.34	69.02	30.49	7.83
67.5	356.51	312.90	267.17	221.65	171.27	119.61	67.96	29.00	6.99
90.0	386.99	333.22	284.74	235.41	185.88	129.14	78.97	36.41	12.28
112.5	382.76	339.36	287.92	242.19	187.36	133.58	65.42	31.33	9.32
135.0	378.52	328.35	281.99	234.14	182.28	118.77	66.48	24.98	6.35
157.5	377.68	325.81	272.25	221.02	167.46	114.11	64.78	28.58	3.39
180.0	363.71	316.92	273.10	226.10	172.96	118.55	64.78	26.68	2.54
202.5	363.28	312.69	264.84	216.15	163.65	109.03	61.82	24.13	3.18
225.0	355.66	305.70	262.51	215.09	163.43	113.26	64.36	19.90	4.23
247.5	357.57	309.51	264.63	217.63	168.52	116.44	59.07	16.72	4.66
270.0	334.28	277.54	242.82	205.56	153.91	101.62	47.21	13.97	4.23
292.5	340.63	273.10	221.65	194.13	157.93	107.12	52.08	18.42	3.60
315.0	357.35	304.85	256.16	207.26	154.97	105.64	59.07	25.19	5.08
337.5	354.60	305.91	263.99	216.57	167.03	114.32	63.72	25.40	6.56
360.0	367.30	315.65	270.34	225.68	174.02	121.31	69.44	29.64	6.56
C/γ(°)	180.0								
0.0	2.70								
22.5	2.70								
45.0	2.70								
67.5	2.70								
90.0	2.70								
112.5	2.70								
135.0	2.70								
157.5	2.70								
180.0	2.70								
202.5	2.70								
225.0	2.70								
247.5	2.70								
270.0	2.70								
292.5	2.70								
315.0	2.70								
337.5	2.70								
360.0	2.70								

**3.2.2 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 3000K at 480V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
480.11	60	0.0990	42.78	0.8961

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
5983.88	139.88	26.40	55.33



Zonal Flux Diagram

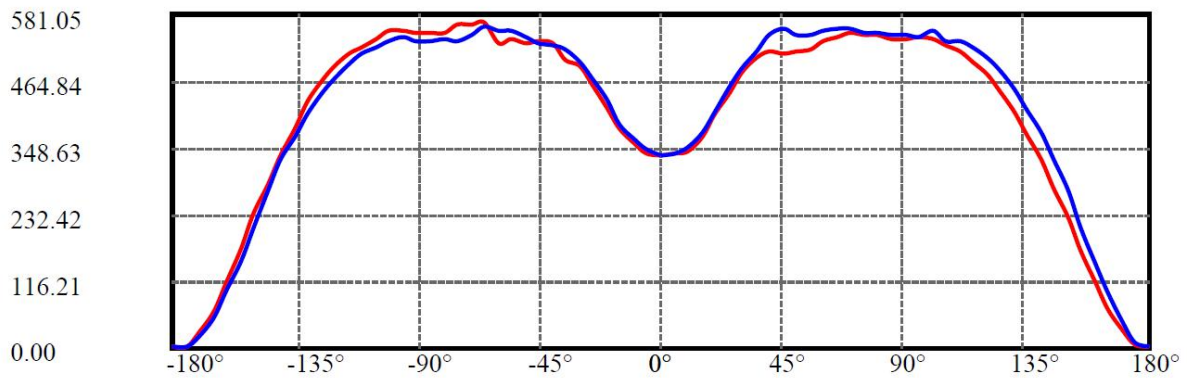
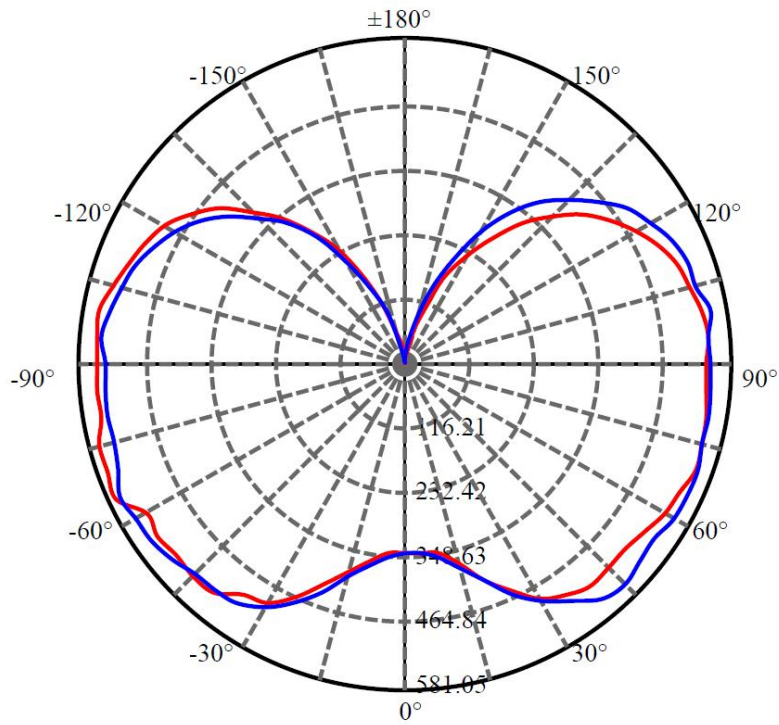
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	336.955	0.000	0	0.00%	0.00%
5.0	339.995	8.093	8.093	0.00%	0.14%
10.0	352.873	24.786	32.879	0.00%	0.55%
15.0	379.673	43.454	76.333	0.00%	1.28%
20.0	417.392	65.689	142.022	0.00%	2.37%
25.0	456.156	91.619	233.641	0.00%	3.90%
30.0	490.856	119.845	353.487	0.00%	5.91%
35.0	516.775	148.381	501.867	0.00%	8.39%
40.0	534.516	175.400	677.267	0.00%	11.32%
45.0	537.993	198.584	875.851	0.00%	14.64%
50.0	536.377	217.092	1092.943	0.00%	18.26%
55.0	541.959	234.466	1327.409	0.00%	22.18%
60.0	549.516	252.291	1579.7	0.00%	26.40%
65.0	559.309	269.557	1849.257	0.00%	30.90%
70.0	555.506	282.278	2131.536	0.00%	35.62%
75.0	550.495	289.091	2420.626	0.00%	40.45%
80.0	549.940	294.446	2715.072	0.00%	45.37%
85.0	544.978	297.516	3012.588	0.00%	50.35%
90.0	545.305	298.528	3311.116	0.00%	55.33%
95.0	547.753	299.288	3610.404	0.00%	60.34%
100.0	546.937	297.453	3907.857	0.00%	65.31%
105.0	534.271	289.301	4197.158	0.00%	70.14%
110.0	525.164	276.919	4474.078	0.00%	74.77%
115.0	510.573	262.255	4736.333	0.00%	79.15%
120.0	488.685	242.921	4979.254	0.00%	83.21%
125.0	462.146	219.782	5199.036	0.00%	86.88%
130.0	426.908	193.310	5392.346	0.00%	90.11%
135.0	386.594	164.380	5556.726	0.00%	92.86%
140.0	343.619	135.205	5691.931	0.00%	95.12%
145.0	293.756	106.341	5798.272	0.00%	96.90%
150.0	238.458	78.372	5876.644	0.00%	98.21%
155.0	176.143	52.468	5929.112	0.00%	99.08%
160.0	121.090	31.174	5960.286	0.00%	99.61%
165.0	72.648	15.967	5976.253	0.00%	99.87%
170.0	30.652	6.128	5982.381	0.00%	99.97%
175.0	7.818	1.376	5983.757	0.00%	100.00%
180.0	2.458	0.123	5983.88	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

C90/C270: —

Field angle(10%Imax):C0/180Left:166.3 Right:166.7
:C90/270Left:164.9 Right:168.9

Beam Angle(50%Imax):C0/180Left:145.1 Right:144.3
:C90/270Left:144.4 Right:149.5

**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	336.96	338.97	341.58	366.65	408.43	443.95	481.03	503.49	514.98
22.5	336.96	340.53	345.76	371.35	402.16	443.95	475.29	498.01	510.02
45.0	336.96	340.80	341.32	369.52	404.78	442.38	477.64	508.19	529.60
67.5	336.96	336.36	344.71	362.21	402.43	434.81	468.50	500.62	518.90
90.0	336.96	337.66	349.67	375.53	410.52	454.39	487.82	515.76	545.79
112.5	336.96	336.36	352.02	374.74	411.04	451.00	488.34	514.98	544.49
135.0	336.96	339.75	351.76	382.84	418.36	458.05	493.30	521.25	545.27
157.5	336.96	339.75	359.08	385.19	423.58	455.70	513.41	540.05	557.29
180.0	336.96	338.71	356.99	383.88	419.40	456.74	490.95	502.97	531.17
202.5	336.96	337.40	355.42	393.81	431.94	473.72	507.93	533.00	548.67
225.0	336.96	340.53	360.64	392.50	430.11	478.68	510.54	536.65	549.19
247.5	336.96	342.36	360.64	385.19	427.23	462.75	480.77	506.88	528.56
270.0	336.96	345.76	364.82	390.15	431.94	469.28	498.01	519.42	525.16
292.5	336.96	345.23	354.64	382.32	422.80	458.57	494.35	518.90	533.78
315.0	336.96	341.84	354.11	380.23	416.27	453.09	485.47	516.81	531.43
337.5	336.96	337.92	352.81	378.66	417.31	461.44	500.36	531.43	537.96
360.0	336.96	338.97	341.58	366.65	408.43	443.95	481.03	503.49	514.98
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	514.20	514.46	519.94	534.30	540.57	549.97	546.58	545.79	539.27
22.5	516.55	516.02	518.64	533.26	542.92	545.53	543.97	540.05	534.04
45.0	532.22	533.52	540.05	555.20	562.51	557.29	556.50	553.89	549.19
67.5	527.78	525.95	522.55	534.30	531.43	539.27	533.26	533.78	529.34
90.0	555.46	545.53	543.97	551.54	554.93	554.67	547.36	546.84	546.32
112.5	550.23	533.26	536.65	564.86	568.51	558.07	557.29	555.98	569.82
135.0	540.83	532.22	542.92	532.22	564.08	555.20	565.38	567.73	554.15
157.5	553.89	542.92	545.79	558.85	562.25	551.28	547.10	548.15	545.53
180.0	535.61	529.60	536.65	530.13	567.99	564.34	562.25	548.15	548.93
202.5	552.85	551.28	552.06	560.68	565.12	557.55	544.49	547.88	545.01
225.0	552.32	548.41	553.63	566.69	565.64	554.15	548.15	552.06	549.45
247.5	541.88	541.62	542.40	531.69	565.90	561.72	530.13	537.44	528.04
270.0	531.17	541.09	550.76	551.80	560.94	543.97	535.87	538.48	534.83
292.5	539.00	560.16	564.60	567.73	581.05	574.52	571.39	568.51	567.99
315.0	536.65	536.13	543.97	550.23	558.07	555.72	554.15	554.67	549.97
337.5	527.25	529.86	556.76	568.78	557.02	564.86	564.08	559.64	527.78
360.0	514.20	514.46	519.94	534.30	540.57	549.97	546.58	545.79	539.27
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	536.65	542.14	536.13	526.21	516.29	498.53	475.55	447.87	412.61
22.5	532.74	536.92	532.48	525.43	512.37	501.40	479.72	455.18	422.27
45.0	545.53	549.19	545.27	536.39	525.95	512.37	489.39	462.75	427.50
67.5	527.51	533.26	527.25	520.20	508.97	494.61	473.98	445.78	413.13
90.0	544.75	541.88	551.02	534.57	534.04	523.34	505.06	482.86	451.26
112.5	564.86	562.51	569.56	550.50	544.23	530.39	507.15	480.25	443.43
135.0	554.15	552.58	557.02	539.53	530.65	518.11	497.74	471.37	432.98
157.5	542.92	542.92	549.97	531.69	529.60	514.46	495.13	469.54	438.73
180.0	549.19	550.76	552.06	537.44	524.38	510.80	492.52	466.41	429.06
202.5	545.27	543.97	549.19	531.17	526.47	512.11	490.69	461.44	423.32
225.0	548.15	546.84	552.58	533.00	529.34	511.58	489.91	461.97	425.15
247.5	542.66	544.75	545.27	532.48	519.42	505.84	486.51	460.66	423.32
270.0	533.78	540.83	532.48	522.55	512.11	494.35	470.06	442.90	409.48
292.5	565.90	571.91	560.94	551.80	535.61	516.02	486.51	457.01	418.36
315.0	548.15	554.67	548.41	539.79	530.91	513.15	491.48	461.97	426.71
337.5	542.66	548.93	541.36	535.61	522.29	512.11	487.56	466.41	433.24
360.0	536.65	542.14	536.13	526.21	516.29	498.53	475.55	447.87	412.61



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	373.44	327.48	277.08	227.72	170.53	115.17	69.47	32.12	8.36
22.5	384.93	343.93	295.10	241.04	176.53	123.52	75.99	35.26	8.10
45.0	389.11	348.11	300.84	242.87	179.41	126.13	78.34	31.34	9.92
67.5	374.74	329.83	279.95	228.76	173.66	116.21	69.73	22.72	8.10
90.0	413.92	376.31	329.83	275.25	209.70	148.07	96.89	45.18	11.49
112.5	404.78	364.04	318.60	266.11	203.96	141.28	88.27	43.09	9.40
135.0	390.15	345.50	292.48	239.47	181.76	123.78	78.08	37.08	9.14
157.5	402.69	362.47	314.42	256.97	186.46	129.53	78.08	34.73	8.10
180.0	382.06	336.88	285.17	233.46	171.57	115.95	66.59	28.47	4.44
202.5	381.53	337.14	288.83	230.07	166.61	113.34	67.11	19.06	7.05
225.0	387.02	346.54	299.01	238.43	173.92	119.61	71.29	24.55	7.31
247.5	378.40	329.04	277.86	228.24	166.09	111.77	63.46	26.90	7.83
270.0	368.74	326.69	274.20	210.74	151.99	102.63	54.84	20.63	4.44
292.5	373.18	325.39	271.07	214.40	152.25	104.72	59.80	25.33	5.22
315.0	387.02	343.93	289.09	235.29	174.18	119.87	67.64	29.51	6.79
337.5	393.81	354.64	306.59	246.52	179.67	125.87	76.78	34.47	9.40
360.0	373.44	327.48	277.08	227.72	170.53	115.17	69.47	32.12	8.36
C/γ(°)	180.0								
0.0	2.46								
22.5	2.46								
45.0	2.46								
67.5	2.46								
90.0	2.46								
112.5	2.46								
135.0	2.46								
157.5	2.46								
180.0	2.46								
202.5	2.46								
225.0	2.46								
247.5	2.46								
270.0	2.46								
292.5	2.46								
315.0	2.46								
337.5	2.46								
360.0	2.46								

**3.2.3 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 4000K at 277V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.12	60	0.1530	41.57	0.9805

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
6384.84	153.59	26.67	55.72



Zonal Flux Diagram

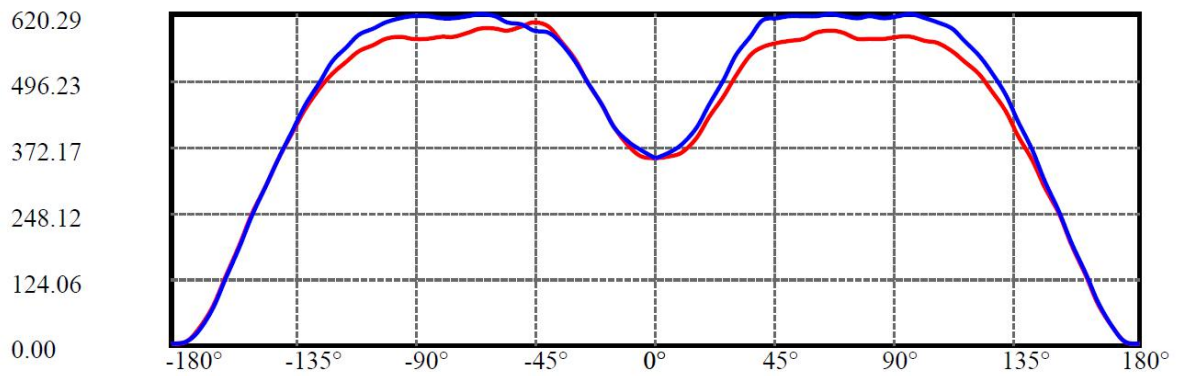
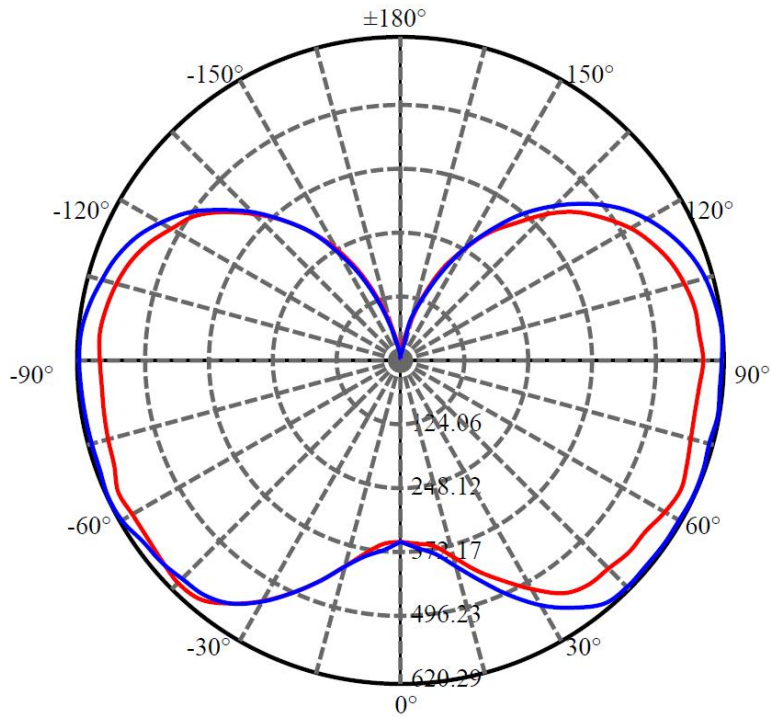
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	349.533	0.000	0	0.00%	0.00%
5.0	354.602	8.418	8.418	0.00%	0.13%
10.0	370.135	25.926	34.344	0.00%	0.54%
15.0	400.052	45.687	80.031	0.00%	1.25%
20.0	440.871	69.304	149.335	0.00%	2.34%
25.0	481.782	96.769	246.104	0.00%	3.85%
30.0	523.342	127.199	373.303	0.00%	5.85%
35.0	558.855	159.361	532.664	0.00%	8.34%
40.0	580.290	190.058	722.722	0.00%	11.32%
45.0	584.921	215.748	938.47	0.00%	14.70%
50.0	585.278	236.456	1174.926	0.00%	18.40%
55.0	587.302	254.958	1429.884	0.00%	22.39%
60.0	593.825	273.014	1702.898	0.00%	26.67%
65.0	598.311	289.811	1992.709	0.00%	31.21%
70.0	593.971	301.894	2294.602	0.00%	35.94%
75.0	587.448	308.804	2603.406	0.00%	40.77%
80.0	586.297	314.061	2917.468	0.00%	45.69%
85.0	585.940	318.525	3235.992	0.00%	50.68%
90.0	588.070	321.453	3557.445	0.00%	55.72%
95.0	587.713	321.938	3879.384	0.00%	60.76%
100.0	582.910	318.086	4197.47	0.00%	65.74%
105.0	574.786	309.767	4507.237	0.00%	70.59%
110.0	561.170	296.921	4804.158	0.00%	75.24%
115.0	541.509	279.205	5083.363	0.00%	79.62%
120.0	516.514	257.207	5340.57	0.00%	83.64%
125.0	484.812	231.454	5572.024	0.00%	87.27%
130.0	444.946	202.160	5774.184	0.00%	90.44%
135.0	399.747	170.683	5944.867	0.00%	93.11%
140.0	350.473	138.909	6083.776	0.00%	95.28%
145.0	299.996	108.526	6192.302	0.00%	96.98%
150.0	245.562	80.337	6272.639	0.00%	98.24%
155.0	187.648	54.823	6327.462	0.00%	99.10%
160.0	126.876	32.988	6360.45	0.00%	99.62%
165.0	74.691	16.612	6377.062	0.00%	99.88%
170.0	31.147	6.278	6383.34	0.00%	99.98%
175.0	7.489	1.382	6384.722	0.00%	100.00%
180.0	2.453	0.119	6384.841	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ———

C90/C270: ———

Field angle(10%Imax):C0/180Left:166.6 Right:166.9
:C90/270Left:165.9 Right:167.1

Beam Angle(50%Imax):C0/180Left:144.8 Right:144.7
:C90/270Left:143.9 Right:144.8

**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	349.53	352.91	361.59	387.20	428.49	467.02	505.55	542.81	560.17
22.5	349.53	349.73	363.28	385.09	423.41	461.30	499.62	529.47	546.40
45.0	349.53	349.94	364.13	395.25	435.68	472.52	515.71	549.16	562.71
67.5	349.53	349.94	368.36	393.13	433.36	475.91	512.74	551.27	572.44
90.0	349.53	361.38	377.68	409.64	451.35	496.02	542.38	577.31	608.43
112.5	349.53	359.68	376.83	409.22	451.56	493.27	538.78	575.83	599.75
135.0	349.53	358.41	375.14	411.55	452.83	493.27	536.45	571.60	597.42
157.5	349.53	355.66	375.14	410.92	451.14	491.15	537.30	572.66	595.10
180.0	349.53	353.76	372.81	407.53	450.72	492.00	535.61	570.33	597.00
202.5	349.53	352.70	367.09	402.66	444.79	486.92	528.83	568.42	595.94
225.0	349.53	348.04	364.13	398.42	440.34	481.84	526.93	563.55	587.05
247.5	349.53	345.50	363.07	394.40	435.68	474.85	515.71	548.10	567.57
270.0	349.53	366.67	382.97	410.07	449.02	494.11	532.64	567.15	586.84
292.5	349.53	359.47	377.04	404.35	447.54	489.24	530.10	566.94	581.97
315.0	349.53	356.08	368.57	392.50	431.24	470.40	508.93	544.71	565.03
337.5	349.53	353.76	364.34	388.90	426.79	468.71	506.18	542.38	560.80
360.0	349.53	352.91	361.59	387.20	428.49	467.02	505.55	542.81	560.17
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	565.67	571.17	574.35	583.88	591.07	586.42	574.98	574.77	575.20
22.5	548.52	552.12	558.68	564.82	573.50	574.98	572.02	570.12	569.90
45.0	568.00	571.39	573.29	578.80	584.72	579.01	570.12	570.33	569.90
67.5	581.97	587.05	587.69	595.10	598.06	595.73	590.86	588.96	588.53
90.0	614.36	615.63	615.21	617.11	620.29	617.96	613.73	616.27	614.15
112.5	600.60	595.52	596.15	597.85	601.02	595.31	585.15	583.66	583.24
135.0	595.94	592.13	597.85	605.26	612.67	608.65	605.89	604.20	604.41
157.5	592.77	584.51	585.57	593.19	593.83	582.82	572.66	570.54	569.48
180.0	603.14	596.15	591.07	594.04	595.10	585.78	579.64	576.47	574.14
202.5	605.26	600.81	601.45	605.68	606.53	608.01	605.47	602.51	602.08
225.0	589.17	587.69	587.47	591.50	595.94	585.15	576.25	574.98	572.23
247.5	573.50	573.71	579.22	590.65	598.48	593.61	588.11	589.59	589.59
270.0	591.29	599.33	604.83	616.69	619.44	614.57	612.03	612.24	615.00
292.5	588.11	591.50	595.10	603.14	608.22	598.48	590.44	589.38	590.65
315.0	574.77	580.07	581.55	586.63	590.23	592.13	588.96	585.99	586.84
337.5	565.67	565.67	567.36	576.89	583.88	584.93	572.87	570.75	569.69
360.0	565.67	571.17	574.35	583.88	591.07	586.42	574.98	574.77	575.20
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	579.01	576.47	571.81	565.88	551.70	533.28	508.72	477.81	439.49
22.5	572.87	570.54	564.19	555.30	543.65	525.66	500.25	463.21	424.04
45.0	572.66	570.12	562.71	558.90	544.29	525.23	500.47	472.94	435.47
67.5	590.44	586.84	580.49	569.48	555.72	533.70	505.33	467.23	428.91
90.0	615.63	618.60	613.30	604.41	591.50	569.69	544.50	512.11	469.56
112.5	583.45	585.36	582.61	574.56	560.59	543.65	520.15	494.54	454.10
135.0	605.68	605.47	602.08	591.50	575.41	553.81	527.35	495.17	452.62
157.5	572.66	574.14	569.69	562.71	550.22	532.01	509.99	481.62	440.34
180.0	575.20	577.31	572.44	563.76	549.37	531.59	508.30	481.41	443.94
202.5	604.83	605.68	602.29	590.44	572.87	551.06	523.75	492.63	450.29
225.0	575.20	576.89	573.71	566.94	554.87	537.72	516.55	488.61	446.90
247.5	593.61	597.00	594.67	587.47	573.71	556.14	532.64	501.95	461.94
270.0	614.57	613.09	606.10	594.46	582.18	557.84	530.95	492.63	450.93
292.5	591.50	589.38	584.30	579.43	566.73	545.98	520.15	491.57	453.89
315.0	588.96	586.63	581.34	572.87	558.05	535.82	508.72	471.04	431.66
337.5	572.87	569.90	564.82	558.47	547.89	530.95	506.39	472.52	435.05
360.0	579.01	576.47	571.81	565.88	551.70	533.28	508.72	477.81	439.49



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	394.83	348.04	298.29	246.21	190.11	129.56	76.85	33.45	7.20
22.5	382.55	335.34	286.01	231.39	177.83	120.04	70.07	33.24	9.10
45.0	389.96	345.50	297.02	242.61	182.28	123.42	72.83	25.40	6.56
67.5	382.97	335.76	286.86	233.51	177.41	116.86	65.63	24.35	6.14
90.0	419.81	364.13	308.24	251.50	193.71	133.16	81.08	35.57	8.47
112.5	409.01	363.28	315.01	260.39	199.00	134.22	81.08	35.35	7.62
135.0	408.16	357.57	303.37	246.63	187.78	127.23	72.83	31.76	4.87
157.5	398.00	348.04	297.23	244.73	187.36	127.23	72.83	30.49	6.14
180.0	399.06	351.21	299.56	247.90	189.26	127.23	74.52	29.22	8.05
202.5	404.99	352.27	299.77	242.40	185.24	122.58	71.13	22.23	7.62
225.0	401.18	353.33	304.64	251.50	191.59	129.99	77.70	31.76	6.99
247.5	417.27	364.34	314.38	259.97	197.94	135.28	81.29	37.05	9.32
270.0	402.66	349.94	298.71	243.03	184.18	121.94	70.50	25.83	8.05
292.5	404.35	355.03	307.39	250.87	191.59	129.99	76.85	33.24	6.14
315.0	389.53	339.15	288.76	233.93	181.01	123.63	73.25	33.45	8.47
337.5	391.65	344.65	294.69	242.40	186.09	127.66	76.64	35.99	9.10
360.0	394.83	348.04	298.29	246.21	190.11	129.56	76.85	33.45	7.20
C/ γ (°)	180.0								
0.0	2.45								
22.5	2.45								
45.0	2.45								
67.5	2.45								
90.0	2.45								
112.5	2.45								
135.0	2.45								
157.5	2.45								
180.0	2.45								
202.5	2.45								
225.0	2.45								
247.5	2.45								
270.0	2.45								
292.5	2.45								
315.0	2.45								
337.5	2.45								
360.0	2.45								

**3.2.4 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 4000K at 480V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
480.11	60	0.0960	40.93	0.8911

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
6091.72	148.83	26.63	55.70



Zonal Flux Diagram

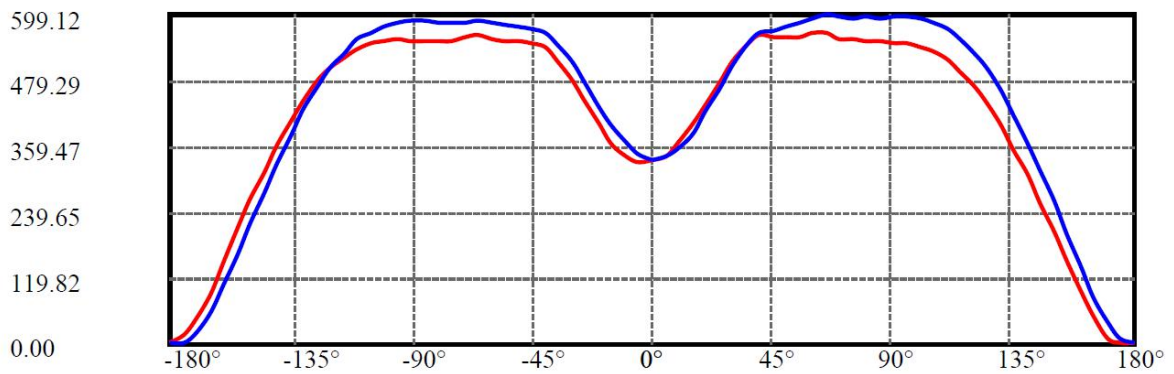
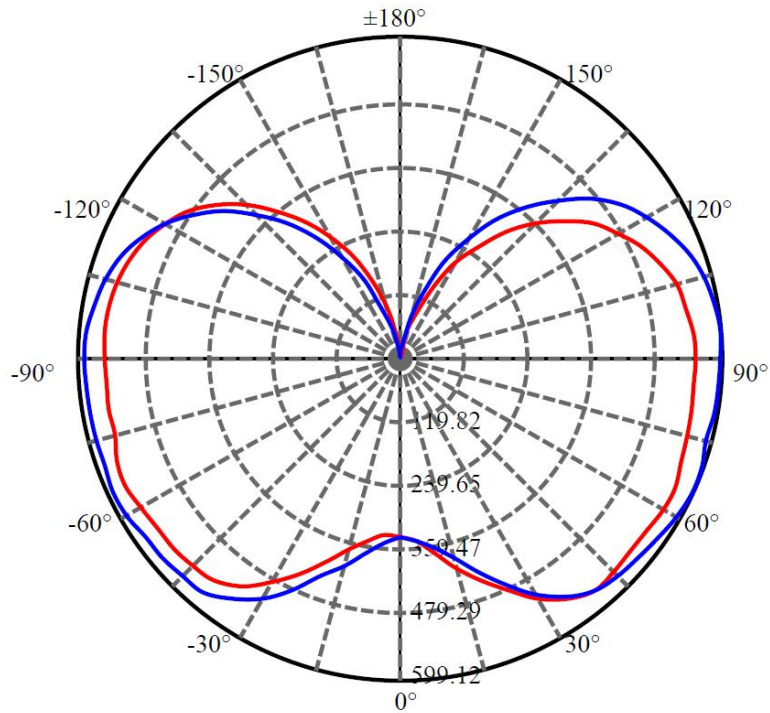
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	333.892	0.000	0	0.00%	0.00%
5.0	337.956	8.032	8.032	0.00%	0.13%
10.0	356.110	24.829	32.861	0.00%	0.54%
15.0	384.862	43.954	76.815	0.00%	1.26%
20.0	420.402	66.365	143.18	0.00%	2.35%
25.0	460.598	92.401	235.58	0.00%	3.87%
30.0	499.009	121.439	357.019	0.00%	5.86%
35.0	531.916	151.811	508.83	0.00%	8.35%
40.0	551.498	180.759	689.59	0.00%	11.32%
45.0	555.640	204.996	894.585	0.00%	14.69%
50.0	557.201	224.866	1119.451	0.00%	18.38%
55.0	559.278	242.760	1362.211	0.00%	22.36%
60.0	565.921	260.087	1622.297	0.00%	26.63%
65.0	570.168	276.185	1898.483	0.00%	31.16%
70.0	566.304	287.762	2186.245	0.00%	35.89%
75.0	561.726	294.849	2481.094	0.00%	40.73%
80.0	561.104	300.438	2781.532	0.00%	45.66%
85.0	560.615	304.798	3086.33	0.00%	50.66%
90.0	560.416	306.947	3393.277	0.00%	55.70%
95.0	561.250	307.121	3700.398	0.00%	60.74%
100.0	556.129	303.619	4004.016	0.00%	65.73%
105.0	548.561	295.584	4299.601	0.00%	70.58%
110.0	536.044	283.498	4583.099	0.00%	75.23%
115.0	516.514	266.515	4849.613	0.00%	79.61%
120.0	492.513	245.296	5094.91	0.00%	83.64%
125.0	463.112	220.890	5315.8	0.00%	87.26%
130.0	424.914	193.086	5508.886	0.00%	90.43%
135.0	381.250	162.897	5671.783	0.00%	93.11%
140.0	334.503	132.527	5804.311	0.00%	95.28%
145.0	286.050	103.535	5907.845	0.00%	96.98%
150.0	233.746	76.544	5984.389	0.00%	98.24%
155.0	178.928	52.224	6036.613	0.00%	99.10%
160.0	121.769	31.538	6068.15	0.00%	99.61%
165.0	71.754	15.949	6084.099	0.00%	99.87%
170.0	30.842	6.086	6090.185	0.00%	99.97%
175.0	8.323	1.401	6091.586	0.00%	100.00%
180.0	2.478	0.129	6091.716	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ——

C90/C270: ——

Field angle(10%Imax):C0/180Left:169.1 Right:164.4
:C90/270Left:165.1 Right:167.8

Beam Angle(50%Imax):C0/180Left:148.1 Right:142.5
:C90/270Left:142.7 Right:146.4

**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	333.89	342.11	366.88	402.45	436.74	476.12	513.59	545.13	562.71
22.5	333.89	342.75	363.92	397.79	429.33	469.34	505.12	536.03	556.35
45.0	333.89	339.57	361.38	390.17	427.22	465.11	504.91	532.64	545.77
67.5	333.89	335.76	357.35	384.88	421.08	461.94	497.50	524.39	538.15
90.0	333.89	341.48	356.93	384.66	423.41	463.84	505.33	542.59	564.61
112.5	333.89	337.03	350.58	378.74	417.90	458.97	501.74	541.54	562.49
135.0	333.89	331.74	346.98	372.17	407.32	444.79	483.11	518.88	542.59
157.5	333.89	333.43	344.65	367.73	403.72	444.79	482.47	516.13	542.59
180.0	333.89	331.31	343.59	366.25	401.18	441.61	480.78	514.86	539.00
202.5	333.89	330.68	343.59	367.94	401.81	440.98	478.87	510.20	528.83
225.0	333.89	331.53	341.90	370.90	408.80	448.60	488.61	524.81	547.67
247.5	333.89	330.26	346.35	373.02	409.43	449.23	492.00	526.08	555.93
270.0	333.89	346.13	367.73	399.06	432.09	476.97	514.01	545.13	567.15
292.5	333.89	344.23	367.52	398.00	436.11	476.97	517.40	550.00	561.22
315.0	333.89	344.23	368.57	402.87	433.78	475.27	508.51	540.90	555.72
337.5	333.89	345.08	369.84	401.18	436.53	475.06	510.20	541.32	553.18
360.0	333.89	342.11	366.88	402.45	436.74	476.12	513.59	545.13	562.71
C/ γ ($^{\circ}$)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	559.74	556.35	557.84	564.19	565.25	556.14	552.76	548.95	549.37
22.5	562.92	560.38	562.07	565.67	570.33	569.06	568.42	566.52	568.21
45.0	546.62	548.10	551.70	562.07	561.65	551.70	549.79	546.62	545.77
67.5	541.75	547.04	557.20	570.54	575.83	567.79	566.30	569.27	571.60
90.0	571.17	576.89	582.39	592.34	599.12	595.52	590.44	594.04	592.56
112.5	568.63	570.12	570.12	573.08	579.43	574.35	563.76	564.82	560.80
135.0	556.14	560.17	558.05	562.71	563.55	567.36	562.92	562.71	561.86
157.5	548.73	547.89	546.62	552.54	559.32	561.86	554.87	552.76	550.43
180.0	546.62	550.43	550.43	555.93	562.71	559.74	549.79	549.37	549.16
202.5	536.24	536.03	537.72	545.98	551.49	553.60	550.43	550.64	551.49
225.0	550.22	552.12	551.27	553.60	557.41	555.51	548.10	546.83	543.02
247.5	562.28	566.52	566.30	567.15	571.17	572.87	565.67	564.19	560.80
270.0	574.56	578.16	579.43	584.09	588.32	584.51	584.09	585.78	587.47
292.5	561.01	562.07	565.25	573.50	576.04	566.94	564.61	561.22	562.07
315.0	555.72	556.78	561.01	570.75	580.91	573.93	570.33	571.39	572.66
337.5	547.89	546.19	551.06	560.59	560.17	550.00	545.35	542.59	542.59
360.0	559.74	556.35	557.84	564.19	565.25	556.14	552.76	548.95	549.37
C/ γ ($^{\circ}$)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	547.67	546.62	538.57	532.22	517.19	494.33	469.13	437.59	398.00
22.5	565.46	565.25	556.57	542.59	529.89	506.60	474.64	439.71	399.91
45.0	545.13	543.02	536.88	530.10	517.61	495.17	471.46	439.49	397.79
67.5	573.29	572.87	565.25	559.32	541.75	516.55	487.97	456.64	415.57
90.0	593.83	595.94	592.98	584.09	572.23	553.18	528.62	500.89	462.15
112.5	562.92	566.09	562.92	558.05	547.04	533.28	513.59	490.30	454.31
135.0	562.71	564.82	563.55	556.14	544.92	528.62	504.91	477.39	440.98
157.5	550.22	554.24	552.33	547.04	538.15	522.69	505.12	479.72	442.67
180.0	549.79	553.18	550.43	545.56	535.61	522.06	502.16	478.45	444.36
202.5	552.12	554.66	552.12	544.92	534.34	518.67	496.87	469.77	433.14
225.0	544.71	546.83	544.29	540.48	529.05	514.44	497.08	474.85	440.77
247.5	560.59	561.65	559.53	550.43	536.45	520.15	497.50	468.50	431.24
270.0	586.84	585.57	576.04	567.15	553.39	530.10	503.64	468.29	427.00
292.5	560.59	559.74	551.91	545.35	530.95	507.66	481.62	451.56	411.34
315.0	570.33	570.12	562.92	549.37	536.88	511.47	479.72	443.52	405.20
337.5	540.48	539.42	531.80	524.18	511.26	489.24	466.17	433.14	394.19
360.0	547.67	546.62	538.57	532.22	517.19	494.33	469.13	437.59	398.00



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	353.54	307.18	257.64	206.41	151.58	98.23	51.02	11.01	2.33
22.5	354.81	304.85	254.68	201.54	149.89	95.05	48.27	9.74	4.45
45.0	353.97	313.53	266.11	213.40	155.39	103.10	55.25	13.97	3.60
67.5	368.36	316.07	266.32	212.34	158.14	102.89	59.49	20.32	3.81
90.0	416.63	366.46	315.01	261.24	202.18	141.21	85.32	40.44	10.16
112.5	412.19	364.13	317.77	265.48	210.01	146.50	92.73	45.73	11.43
135.0	399.69	353.33	305.28	253.41	200.48	142.90	89.34	44.67	14.40
157.5	400.12	353.33	305.91	255.10	200.69	145.65	91.67	47.63	16.72
180.0	404.14	359.47	312.05	264.63	212.13	149.04	93.78	47.85	17.36
202.5	392.92	347.40	298.71	247.27	195.19	137.82	87.01	45.30	13.97
225.0	398.21	353.54	307.18	258.07	200.48	140.78	90.19	44.25	14.40
247.5	389.32	345.29	299.14	250.44	196.46	136.55	85.95	40.44	8.89
270.0	378.52	328.35	275.85	219.11	163.86	107.12	60.34	23.08	3.81
292.5	365.61	322.85	275.43	220.38	160.47	104.79	55.89	22.02	2.75
315.0	360.11	311.63	259.76	204.08	153.91	97.17	50.60	19.27	2.12
337.5	351.85	304.64	259.97	207.05	152.00	99.50	51.23	17.78	2.96
360.0	353.54	307.18	257.64	206.41	151.58	98.23	51.02	11.01	2.33

C/γ(°)	180.0
0.0	2.48
22.5	2.48
45.0	2.48
67.5	2.48
90.0	2.48
112.5	2.48
135.0	2.48
157.5	2.48
180.0	2.48
202.5	2.48
225.0	2.48
247.5	2.48
270.0	2.48
292.5	2.48
315.0	2.48
337.5	2.48
360.0	2.48

**3.2.5 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 5000K at 277V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.00	60	0.1550	42.35	0.9806

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
6120.00	144.51	26.13	55.10



Zonal Flux Diagram

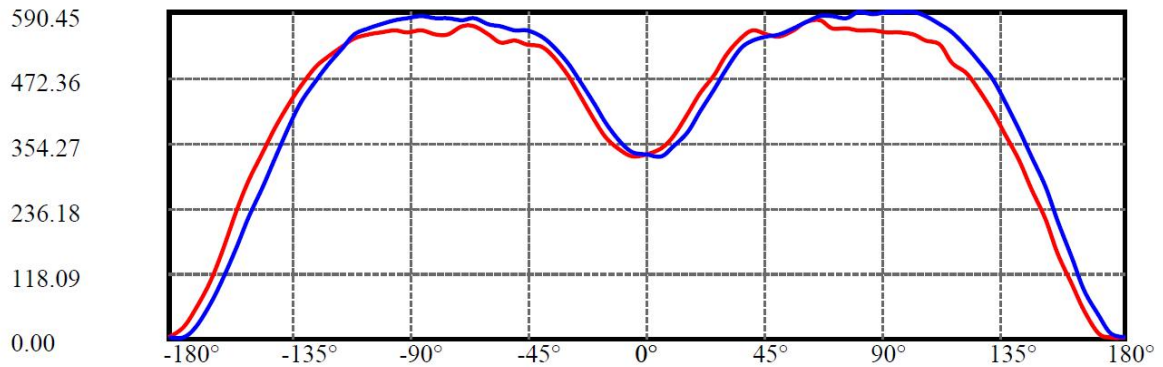
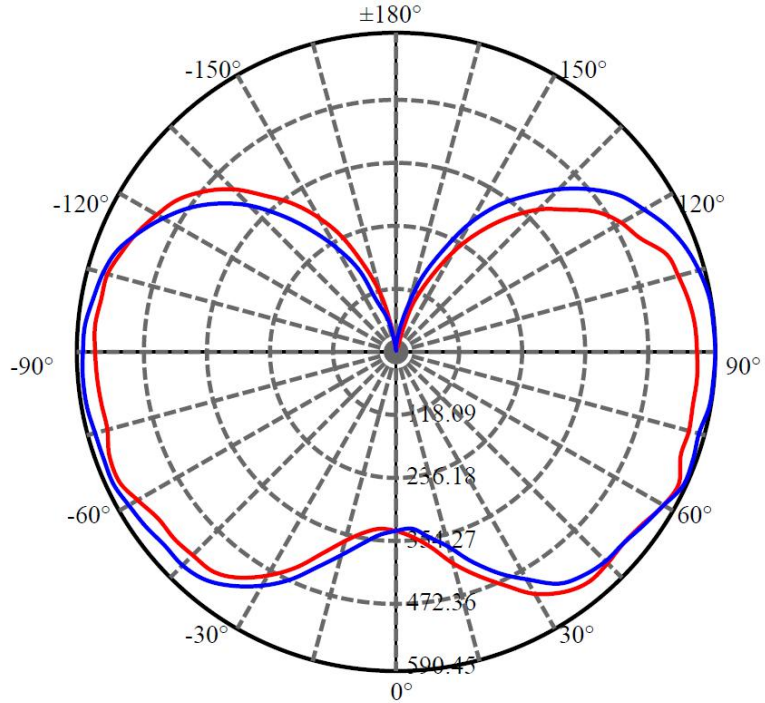
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	332.066	0.000	0	0.00%	0.00%
5.0	336.326	7.990	7.99	0.00%	0.13%
10.0	355.028	24.732	32.722	0.00%	0.53%
15.0	382.641	43.758	76.48	0.00%	1.25%
20.0	419.219	66.084	142.565	0.00%	2.33%
25.0	459.318	92.142	234.707	0.00%	3.84%
30.0	495.273	120.804	355.511	0.00%	5.81%
35.0	524.822	150.216	505.727	0.00%	8.26%
40.0	541.141	177.848	683.575	0.00%	11.17%
45.0	543.646	200.857	884.432	0.00%	14.45%
50.0	544.838	219.944	1104.376	0.00%	18.05%
55.0	549.483	237.942	1342.318	0.00%	21.93%
60.0	560.777	256.633	1598.952	0.00%	26.13%
65.0	568.849	274.614	1873.566	0.00%	30.61%
70.0	566.194	287.400	2160.966	0.00%	35.31%
75.0	562.998	295.153	2456.119	0.00%	40.13%
80.0	563.486	301.416	2757.534	0.00%	45.06%
85.0	563.757	306.299	3063.833	0.00%	50.06%
90.0	563.134	308.551	3372.384	0.00%	55.10%
95.0	563.716	308.540	3680.925	0.00%	60.15%
100.0	560.208	305.397	3986.322	0.00%	65.14%
105.0	552.679	297.778	4284.1	0.00%	70.00%
110.0	542.414	286.240	4570.339	0.00%	74.68%
115.0	521.694	269.439	4839.778	0.00%	79.08%
120.0	499.403	248.231	5088.009	0.00%	83.14%
125.0	472.752	224.711	5312.719	0.00%	86.81%
130.0	437.000	197.810	5510.53	0.00%	90.04%
135.0	397.307	168.584	5679.113	0.00%	92.80%
140.0	351.087	138.571	5817.685	0.00%	95.06%
145.0	301.224	108.833	5926.518	0.00%	96.84%
150.0	246.404	80.642	6007.16	0.00%	98.16%
155.0	187.644	54.929	6062.089	0.00%	99.05%
160.0	127.014	33.002	6095.091	0.00%	99.59%
165.0	75.688	16.706	6111.796	0.00%	99.87%
170.0	33.815	6.496	6118.292	0.00%	99.97%
175.0	9.778	1.559	6119.851	0.00%	100.00%
180.0	2.511	0.147	6119.998	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

C90/C270: —

Field angle(10%Imax):C0/180Left:169.8 Right:164.3

:C90/270Left:165.2 Right:168.4

Beam Angle(50%Imax):C0/180Left:149.9 Right:143.5

:C90/270Left:143.2 Right:148.1

**Luminous Intensity Distribution Data**

<i>C/γ</i> (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	332.07	343.87	367.49	406.06	442.24	478.43	515.05	543.43	555.78
22.5	332.07	342.79	367.92	405.62	435.31	472.14	511.14	538.66	556.86
45.0	332.07	341.92	364.24	392.84	432.71	473.44	507.89	535.20	543.21
67.5	332.07	337.80	359.69	388.29	423.61	469.11	500.09	523.50	536.50
90.0	332.07	329.57	349.29	372.90	410.82	450.69	487.96	523.93	540.18
112.5	332.07	331.52	344.30	370.30	404.54	449.82	488.39	520.90	542.56
135.0	332.07	329.14	344.30	361.85	401.07	437.91	474.09	507.24	528.48
157.5	332.07	333.04	342.35	360.99	398.26	439.21	478.43	507.68	532.16
180.0	332.07	328.48	340.19	363.59	396.96	439.64	477.56	508.33	528.48
202.5	332.07	334.55	346.47	365.54	402.81	440.94	475.61	505.73	521.33
225.0	332.07	330.00	347.99	373.99	411.26	454.16	490.99	520.90	540.40
247.5	332.07	332.17	345.17	374.42	413.42	452.64	494.89	527.40	552.10
270.0	332.07	339.10	357.09	387.42	424.47	466.73	497.49	528.05	547.98
292.5	332.07	341.05	365.97	394.36	437.04	472.58	508.76	538.23	543.65
315.0	332.07	342.79	368.35	399.56	433.57	473.66	507.46	533.46	546.03
337.5	332.07	343.44	369.65	404.54	439.42	477.99	508.54	534.55	542.56
360.0	332.07	343.87	367.49	406.06	442.24	478.43	515.05	543.43	555.78
<i>C/γ</i> (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	550.58	548.20	557.51	570.30	575.28	562.06	559.68	557.30	557.73
22.5	559.46	558.81	565.96	573.76	578.10	578.10	581.13	576.58	576.58
45.0	542.13	543.21	548.20	571.38	565.96	557.08	553.18	554.91	552.53
67.5	538.01	539.31	546.03	562.28	572.46	565.75	569.00	574.20	578.32
90.0	545.60	551.45	559.68	570.30	584.82	582.43	581.13	588.93	588.28
112.5	549.71	547.76	549.28	553.18	573.55	567.91	558.81	560.33	559.68
135.0	543.21	551.23	552.10	558.60	557.30	564.66	562.50	562.71	562.50
157.5	537.15	536.93	536.93	544.30	557.73	562.28	555.35	551.23	553.40
180.0	533.46	537.36	536.06	549.50	565.31	564.66	551.01	551.88	555.78
202.5	527.83	525.23	525.23	539.75	546.03	557.30	555.13	559.68	559.03
225.0	539.75	538.23	541.26	546.25	563.36	563.15	555.35	554.05	551.01
247.5	557.08	560.98	562.50	565.75	575.28	575.06	570.73	568.78	565.75
270.0	556.65	557.51	564.01	568.78	578.32	575.28	578.10	579.18	581.57
292.5	539.96	542.13	550.36	573.33	569.86	559.46	559.90	558.81	559.25
315.0	544.08	544.08	551.45	563.80	576.15	573.76	570.95	570.30	572.25
337.5	533.68	534.98	545.16	561.20	562.06	550.15	546.03	546.90	546.46
360.0	550.58	548.20	557.51	570.30	575.28	562.06	559.68	557.30	557.73
<i>C/γ</i> (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	555.35	555.13	548.41	540.18	531.08	499.23	478.86	449.39	409.74
22.5	575.50	576.58	568.78	554.26	542.78	519.81	485.58	456.98	415.16
45.0	550.58	549.50	544.30	537.36	529.56	500.96	479.29	451.77	413.86
67.5	578.32	579.62	575.93	569.43	556.65	530.43	502.48	473.88	436.61
90.0	590.45	590.45	589.80	581.57	569.00	552.75	529.56	503.34	468.46
112.5	559.46	561.85	561.20	556.86	546.03	533.25	517.43	496.19	462.18
135.0	564.01	564.01	565.53	557.51	548.63	532.81	513.31	487.96	453.94
157.5	553.83	556.65	556.21	551.23	542.56	528.70	512.66	487.96	456.54
180.0	554.91	557.08	555.35	551.88	542.13	528.91	509.19	490.56	460.23
202.5	559.90	560.33	560.76	553.18	543.00	527.61	510.06	483.84	449.17
225.0	552.53	554.05	552.53	549.50	538.01	524.80	510.71	488.18	456.33
247.5	565.75	565.53	563.15	556.21	543.65	529.35	507.03	480.59	447.01
270.0	577.88	577.45	569.21	561.20	550.15	524.58	495.98	465.43	427.94
292.5	556.65	554.70	549.50	541.91	532.60	501.83	480.16	452.43	414.29
315.0	570.51	571.16	564.45	551.23	540.61	517.86	485.58	454.16	414.07
337.5	544.51	545.38	538.23	529.35	522.20	494.24	472.58	441.37	406.49
360.0	555.35	555.13	548.41	540.18	531.08	499.23	478.86	449.39	409.74



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	370.30	323.93	271.93	216.90	155.79	100.54	50.92	11.70	2.82
22.5	372.04	323.72	269.33	212.56	155.14	98.81	50.70	10.62	4.77
45.0	373.12	333.25	283.20	228.60	163.16	106.17	58.50	16.03	3.90
67.5	393.06	337.59	282.98	225.78	169.44	109.64	64.35	23.19	5.42
90.0	427.94	379.19	328.48	274.53	212.35	146.69	89.71	45.07	11.48
112.5	425.99	378.97	334.99	282.12	222.31	153.19	99.67	51.79	14.08
135.0	415.59	373.55	322.85	269.33	213.65	156.44	96.86	50.92	17.55
157.5	418.41	374.42	326.75	272.80	217.33	156.23	99.02	53.95	20.80
180.0	424.26	380.27	335.64	286.45	231.63	158.39	103.57	55.69	21.67
202.5	411.47	369.65	319.17	262.40	207.58	149.73	94.04	50.27	15.60
225.0	422.31	374.85	326.53	273.88	214.95	148.86	95.56	48.10	17.55
247.5	408.66	363.15	318.52	266.51	206.06	141.49	89.49	43.77	9.32
270.0	383.95	328.05	276.48	221.23	164.46	104.87	60.89	22.75	3.47
292.5	372.47	333.04	282.77	225.13	157.53	105.31	56.99	21.02	2.82
315.0	370.95	322.63	269.33	210.61	155.79	96.64	50.27	18.85	2.17
337.5	366.40	321.12	270.63	213.65	155.14	99.24	50.49	17.33	3.03
360.0	370.30	323.93	271.93	216.90	155.79	100.54	50.92	11.70	2.82
C/γ(°)	180.0								
0.0	2.51								
22.5	2.51								
45.0	2.51								
67.5	2.51								
90.0	2.51								
112.5	2.51								
135.0	2.51								
157.5	2.51								
180.0	2.51								
202.5	2.51								
225.0	2.51								
247.5	2.51								
270.0	2.51								
292.5	2.51								
315.0	2.51								
337.5	2.51								
360.0	2.51								

**3.2.6 Model Number: HID-45-EX39-8CCT-BYP/5SP/480V, 5000K at 480V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
480.15	60	0.0970	41.60	0.8926

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
5869.55	141.09	26.15	55.15



Zonal Flux Diagram

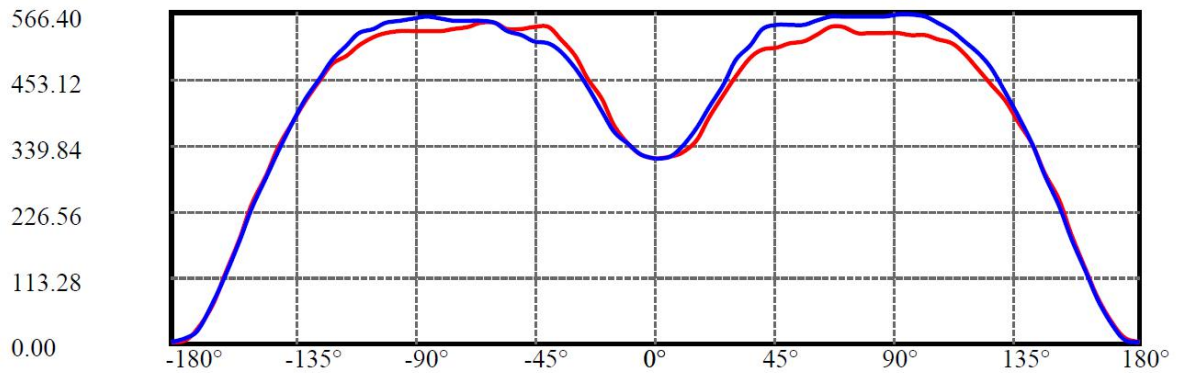
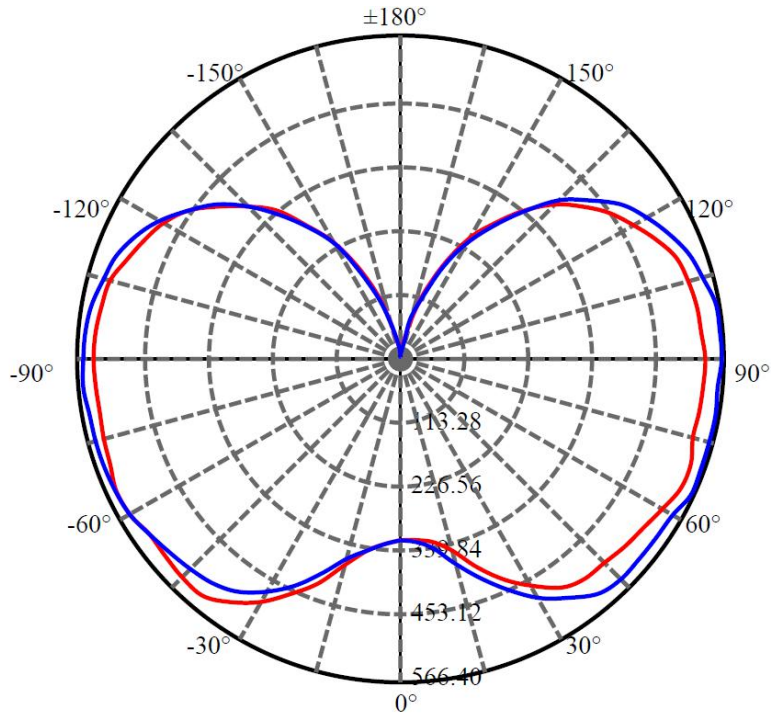
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	316.949	0.000	0	0.00%	0.00%
5.0	321.564	7.633	7.633	0.00%	0.13%
10.0	335.770	23.515	31.148	0.00%	0.53%
15.0	362.774	41.437	72.585	0.00%	1.24%
20.0	401.261	62.967	135.553	0.00%	2.31%
25.0	439.857	88.218	223.77	0.00%	3.81%
30.0	474.431	115.704	339.474	0.00%	5.78%
35.0	503.696	144.036	483.51	0.00%	8.24%
40.0	521.531	171.051	654.562	0.00%	11.15%
45.0	523.658	193.525	848.087	0.00%	14.45%
50.0	523.969	211.688	1059.775	0.00%	18.06%
55.0	528.844	228.917	1288.692	0.00%	21.96%
60.0	537.457	246.473	1535.164	0.00%	26.15%
65.0	545.271	263.213	1798.378	0.00%	30.64%
70.0	545.231	276.122	2074.5	0.00%	35.34%
75.0	540.640	283.829	2358.329	0.00%	40.18%
80.0	540.369	289.248	2647.577	0.00%	45.11%
85.0	540.342	293.655	2941.232	0.00%	50.11%
90.0	540.613	295.974	3237.206	0.00%	55.15%
95.0	539.245	295.673	3532.879	0.00%	60.19%
100.0	537.214	292.500	3825.379	0.00%	65.17%
105.0	529.928	285.537	4110.916	0.00%	70.04%
110.0	518.376	274.010	4384.926	0.00%	74.71%
115.0	500.866	258.079	4643.004	0.00%	79.10%
120.0	479.333	238.288	4881.292	0.00%	83.16%
125.0	452.127	215.304	5096.597	0.00%	86.83%
130.0	417.743	189.138	5285.735	0.00%	90.05%
135.0	381.110	161.420	5447.155	0.00%	92.80%
140.0	336.759	132.919	5580.074	0.00%	95.07%
145.0	288.629	104.341	5684.416	0.00%	96.85%
150.0	236.464	77.324	5761.739	0.00%	98.16%
155.0	179.951	52.698	5814.437	0.00%	99.06%
160.0	120.663	31.529	5845.966	0.00%	99.60%
165.0	72.520	15.921	5861.887	0.00%	99.87%
170.0	30.944	6.137	5868.024	0.00%	99.97%
175.0	8.098	1.397	5869.421	0.00%	100.00%
180.0	2.409	0.126	5869.547	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ———

C90/C270: ———

Field angle(10%Imax):C0/180Left:166.6 Right:167.8

:C90/270Left:166.4 Right:167.2

Beam Angle(50%Imax):C0/180Left:146.3 Right:146.8

:C90/270Left:145.3 Right:145.7

**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	316.95	318.52	326.75	347.34	385.90	426.21	457.19	487.53	501.83
22.5	316.95	319.17	326.97	352.32	389.15	422.09	455.46	478.64	493.59
45.0	316.95	318.52	333.04	357.30	403.02	436.39	469.54	497.71	507.24
67.5	316.95	322.20	338.67	363.15	396.52	436.61	473.44	502.04	517.21
90.0	316.95	321.12	338.67	368.57	405.19	444.84	484.49	511.14	538.88
112.5	316.95	322.85	339.32	369.44	407.14	449.82	485.58	516.56	534.11
135.0	316.95	324.15	341.92	372.47	413.42	450.47	487.31	515.91	539.53
157.5	316.95	325.23	342.79	373.77	413.86	452.21	488.83	518.95	533.90
180.0	316.95	325.23	341.92	373.34	417.97	453.94	491.43	519.60	541.48
202.5	316.95	322.20	340.19	371.39	409.96	448.74	485.58	523.28	542.78
225.0	316.95	318.52	332.17	367.92	407.14	447.01	483.84	517.00	537.80
247.5	316.95	318.30	330.65	358.82	401.51	438.99	476.04	502.04	521.11
270.0	316.95	324.58	340.19	361.64	399.12	438.34	471.49	498.79	513.09
292.5	316.95	321.77	337.80	362.07	398.47	440.72	472.36	500.09	516.56
315.0	316.95	321.98	328.05	352.75	385.90	424.04	454.81	485.14	504.64
337.5	316.95	320.68	333.25	352.10	385.90	427.29	453.51	484.71	500.74
360.0	316.95	318.52	326.75	347.34	385.90	426.21	457.19	487.53	501.83
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	506.16	512.44	518.51	527.40	540.40	542.13	530.00	530.65	531.08
22.5	490.78	494.89	502.91	507.24	525.66	531.08	531.73	531.73	529.78
45.0	508.76	509.84	517.43	526.75	535.41	536.71	528.26	532.81	530.86
67.5	527.18	531.51	533.90	542.78	545.38	546.03	546.46	545.16	543.21
90.0	544.73	544.30	546.25	551.88	560.33	560.33	560.11	558.81	559.25
112.5	530.86	528.48	532.16	543.86	548.63	544.95	534.55	534.33	534.76
135.0	534.98	530.86	537.15	545.38	556.00	559.46	558.38	556.65	556.43
157.5	530.65	522.63	530.86	543.21	545.16	539.96	530.00	529.78	529.13
180.0	541.91	537.58	536.50	547.33	550.36	543.21	539.31	536.06	534.76
202.5	549.06	543.65	551.01	557.08	561.41	564.45	566.40	562.93	562.93
225.0	533.25	531.95	535.63	544.51	551.23	546.03	532.60	533.25	533.03
247.5	523.93	518.73	522.20	532.16	543.00	542.35	539.10	543.65	543.21
270.0	518.30	526.75	535.85	547.11	550.80	551.23	552.10	554.70	558.81
292.5	520.25	520.90	523.93	535.41	543.86	538.66	533.25	534.76	535.85
315.0	513.53	522.63	526.96	530.43	535.41	539.75	541.91	536.06	537.58
337.5	504.21	506.38	510.28	516.78	531.30	537.36	526.10	524.58	524.80
360.0	506.16	512.44	518.51	527.40	540.40	542.13	530.00	530.65	531.08
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	532.38	528.05	526.96	522.41	512.88	495.33	469.33	444.19	416.46
22.5	529.35	525.45	522.63	517.21	507.89	490.99	470.19	436.61	402.59
45.0	531.08	526.75	523.71	519.81	509.63	489.04	463.48	443.76	414.51
67.5	542.56	536.93	533.68	525.23	513.75	493.38	468.03	434.87	405.19
90.0	561.41	562.28	559.68	550.15	536.06	517.21	496.84	470.19	430.11
112.5	535.63	536.06	533.25	526.96	512.66	496.84	480.81	456.11	420.14
135.0	555.78	554.91	554.48	542.13	528.48	509.63	488.61	462.39	422.74
157.5	530.65	531.08	528.91	522.63	509.19	493.38	476.48	449.82	412.77
180.0	536.06	536.28	532.60	525.01	510.06	494.24	477.34	451.56	416.02
202.5	562.93	562.93	561.85	549.93	534.33	513.53	491.43	464.78	426.64
225.0	534.55	536.50	533.90	526.96	515.05	500.09	484.28	458.49	421.87
247.5	547.11	550.58	550.36	544.95	532.81	520.03	501.18	474.74	439.42
270.0	556.21	553.61	549.28	538.66	530.86	511.14	486.66	452.21	418.19
292.5	534.33	531.95	531.08	526.10	516.35	498.14	471.93	450.69	421.44
315.0	534.76	533.46	532.16	524.80	515.05	497.93	474.53	440.94	406.06
337.5	525.01	521.11	520.90	515.91	508.98	492.94	468.24	442.67	409.74
360.0	532.38	528.05	526.96	522.41	512.88	495.33	469.33	444.19	416.46



<i>C/γ</i> (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	381.14	339.54	292.30	244.85	185.48	126.76	78.44	35.97	9.32
22.5	369.65	327.83	275.83	224.48	175.51	117.22	71.29	34.45	10.83
45.0	378.54	335.64	288.40	236.40	175.94	119.39	72.59	26.65	7.37
67.5	367.27	321.55	274.97	225.78	168.58	111.37	65.65	25.14	6.07
90.0	390.45	339.75	288.18	234.45	180.93	122.86	75.62	32.50	8.45
112.5	384.17	344.30	297.28	244.63	185.91	123.94	73.45	32.07	7.58
135.0	385.90	336.94	287.53	232.28	176.81	116.14	67.17	29.25	4.55
157.5	377.89	332.82	286.02	233.36	175.29	117.44	66.95	27.74	5.42
180.0	380.05	337.37	287.97	237.70	178.98	118.09	68.47	27.30	8.02
202.5	388.72	339.75	288.83	232.71	178.33	116.14	67.39	21.67	8.45
225.0	384.39	343.22	297.28	244.85	185.69	123.94	74.32	31.42	6.72
247.5	401.72	352.75	305.52	251.35	191.76	130.44	80.39	37.49	10.83
270.0	379.19	331.30	283.85	232.50	175.08	116.36	68.69	25.35	8.88
292.5	385.25	341.05	294.68	243.98	186.13	124.37	77.57	34.02	6.93
315.0	369.22	329.14	280.17	227.30	177.03	121.34	73.45	36.19	9.32
337.5	374.20	335.20	289.27	236.83	181.79	124.81	78.87	37.92	10.83
360.0	381.14	339.54	292.30	244.85	185.48	126.76	78.44	35.97	9.32
<i>C/γ</i> (°)	180.0								
0.0	2.41								
22.5	2.41								
45.0	2.41								
67.5	2.41								
90.0	2.41								
112.5	2.41								
135.0	2.41								
157.5	2.41								
180.0	2.41								
202.5	2.41								
225.0	2.41								
247.5	2.41								
270.0	2.41								
292.5	2.41								
315.0	2.41								
337.5	2.41								
360.0	2.41								



4 Additional Test

Model Number	CCT(K)	Test Voltage (V)	Frequency (Hz)	Power Factor	THD
HID-45-EX39-8CCT-B YP/5SP/480V	3000	277	60	0.982	9.7%
		480	60	0.896	13.5%
	4000	480	60	0.893	12.4%
	5000	480	60	0.896	12.7%



Photo Document



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