Date of issue	2023-04-11
Version	1.0
Total pages	61

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.:

HIDFA-110-H-EX39-8CCT-BYP/5SP

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.

Sam Chen

Jason zhou

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	HIDFA-110-H-EX39-8CCT-BYP/5SP
Rated Inputs	AC 100-277V, 50/60Hz
Rated Power	110W
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 HIDFA-110-H-EX39-8CCT-BYP/5SP are the same to the product in the report BL230227004-9 and is authorized by original applicant to use their test data.
- Note: All the data in previous report BL230227004-9 is shared in report.

1.4 Equipment list

Device	Manufacture	Model No.	Serial No.	Calibration due date
Goniophotometeric 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).

2 Test conducted and method

2.1 Ambient Condition

The ambient temperature in which measurements are being taken was maintained at 25°C ±1°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=20K (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: HIDFA-110-H-EX39-8CCT-BYP/5SP, 3000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.09	60	0.911	108.23	0.989

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
15093.61	139.5	3011

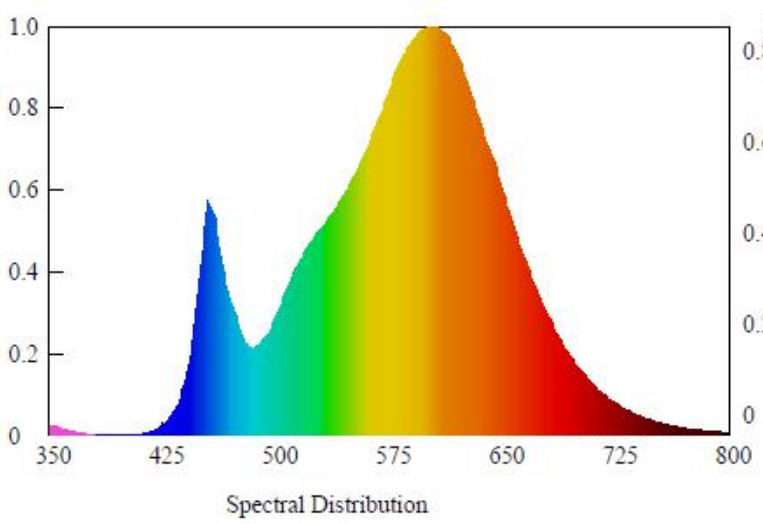
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00009	0.4360	0.4035	0.2502	0.5210

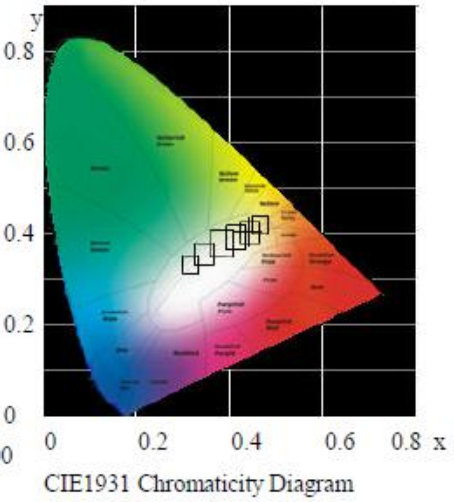
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
82.1	8	83	94	-12

Spectral Distribution

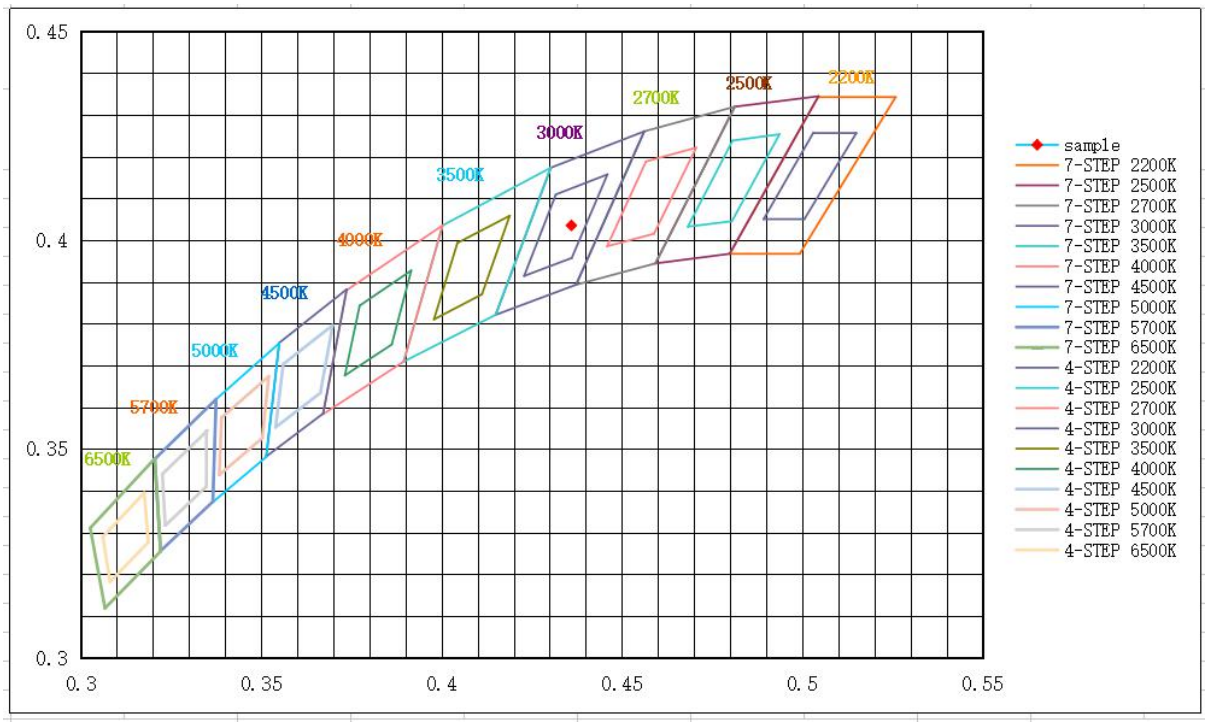


Spectral Distribution



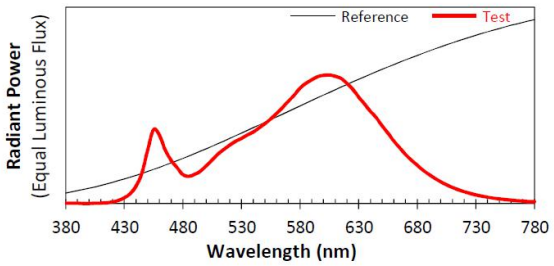
CIE1931 Chromaticity Diagram

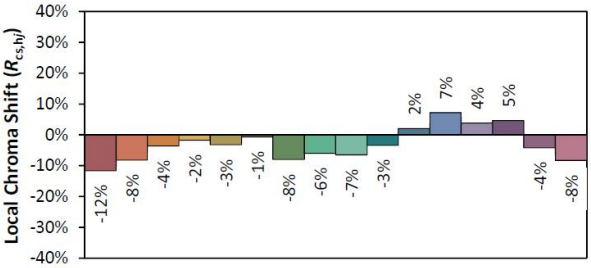
7/4 Step Quadrangle

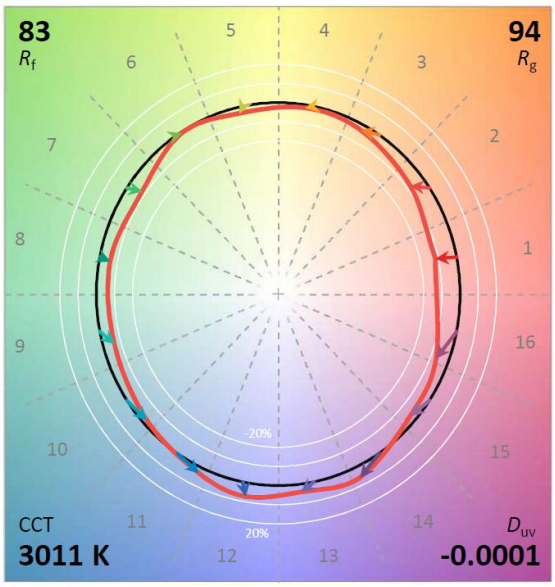


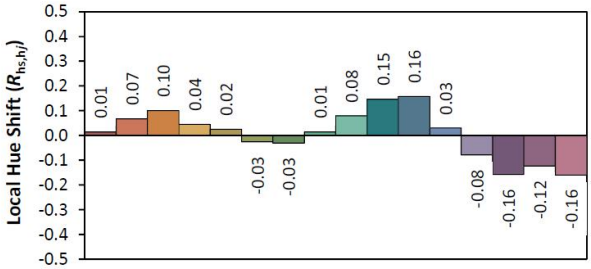
ANSI/IES TM-30-18 Color Rendition Report

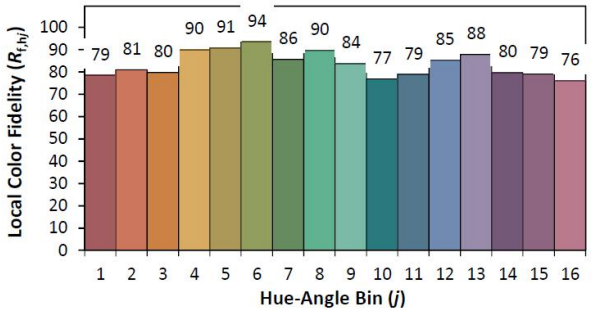
Source:	BL230227018-9	**Manufacturer:**	RAB LIGHTING,INC
Date:	2023-04-11	**Model:**	HIDFA-110-H-EX39-8CCT-BYP/5SP, 3000K at 120V

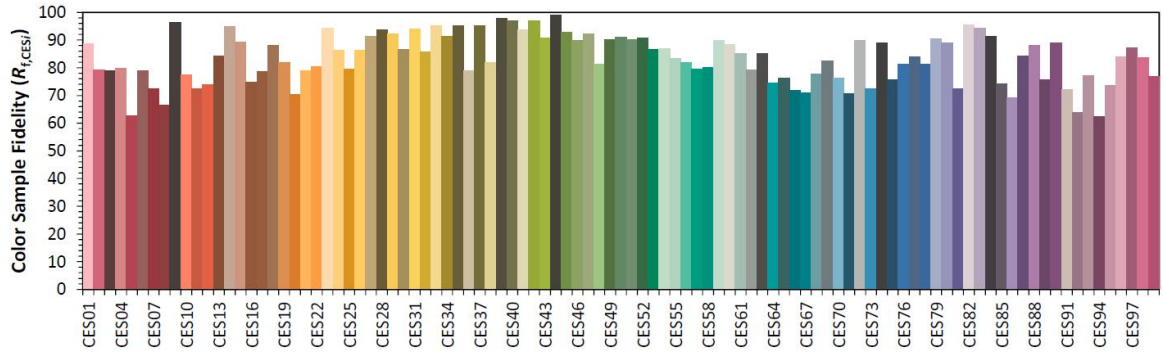












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4360
y	0.4035
u'	0.2502
v'	0.5210

CIE 13.3-1995 (CRI)

R_a	82
R_9	8

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

3.1.2 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 3000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.08	60	0.448	111.97	0.902

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
15414.20	137.7	3017

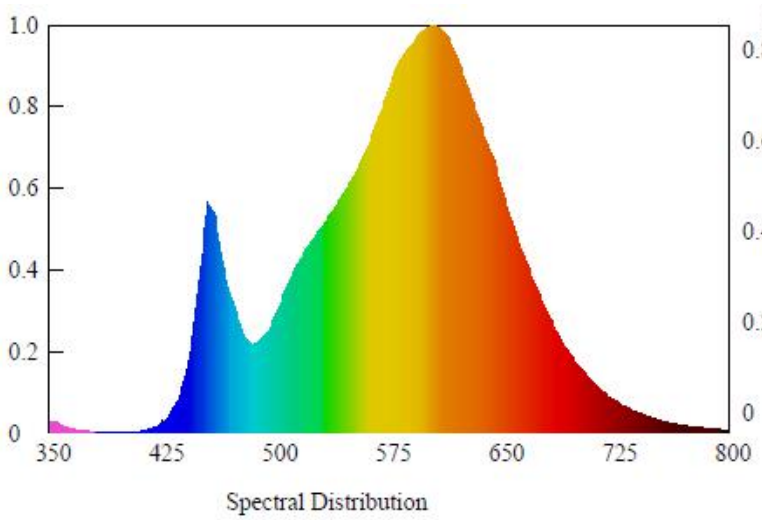
Chromaticity Coordinate

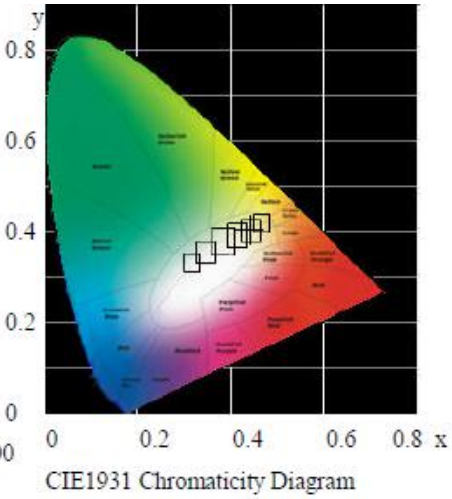
Duv	x	y	u'	v'
-0.0002	0.4355	0.4031	0.2501	0.5208

Color Rendering

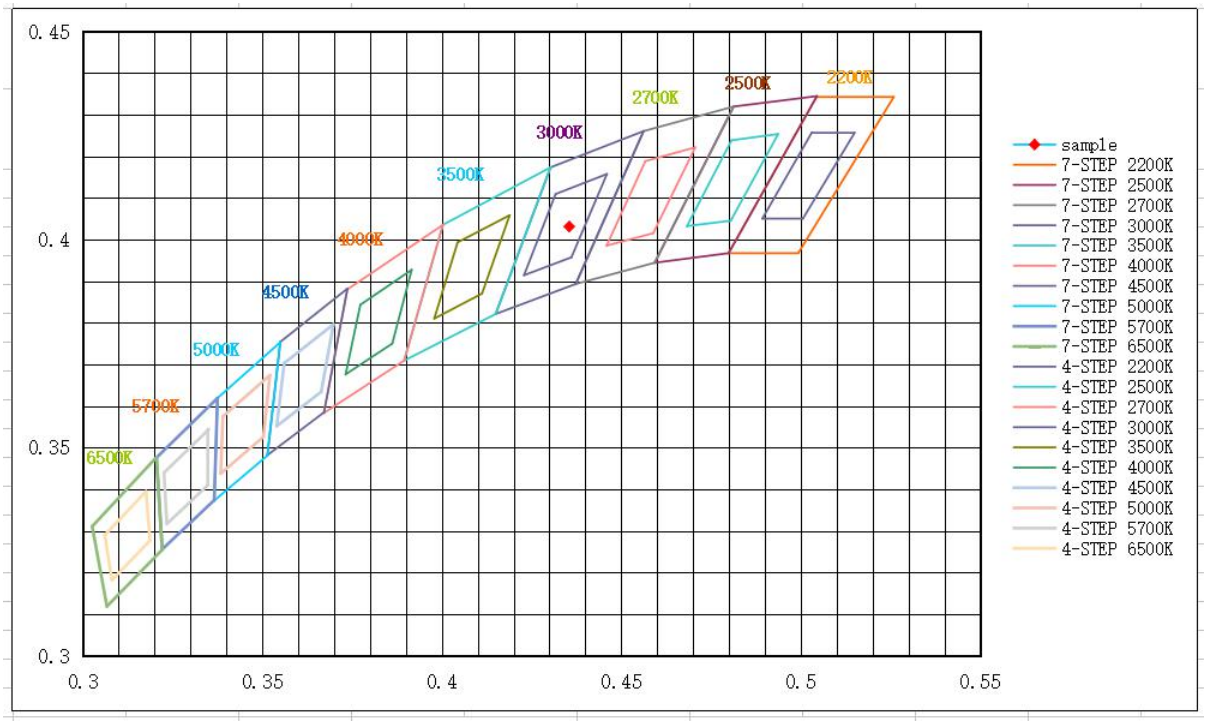
CRI	R9	Rf	Rg	Rcs,h1(%)
82.0	8	83	94	-12

Spectral Distribution



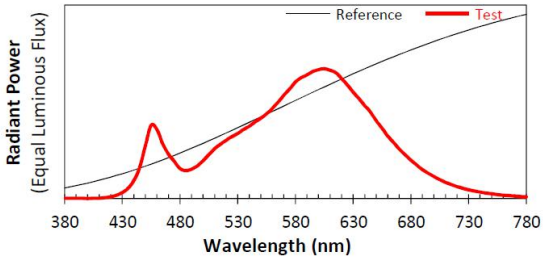


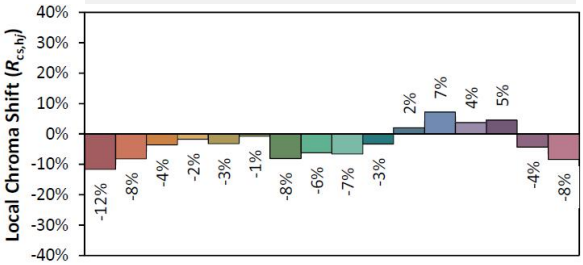
7/4 Step Quadrangle

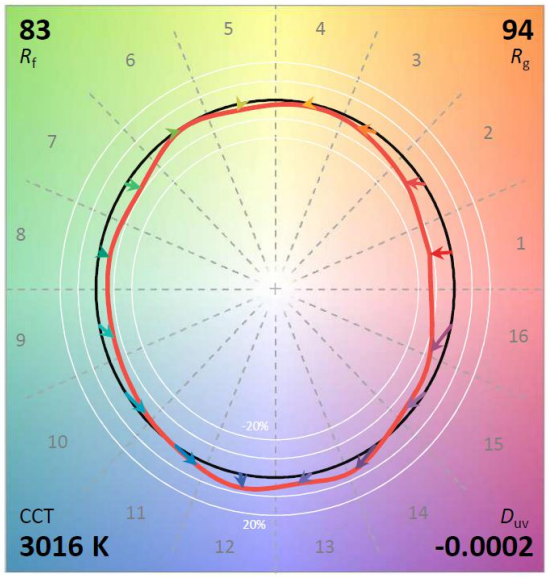


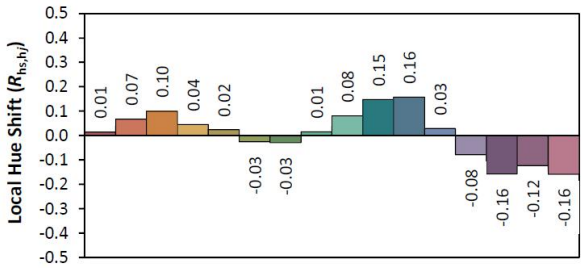
ANSI/IES TM-30-18 Color Rendition Report

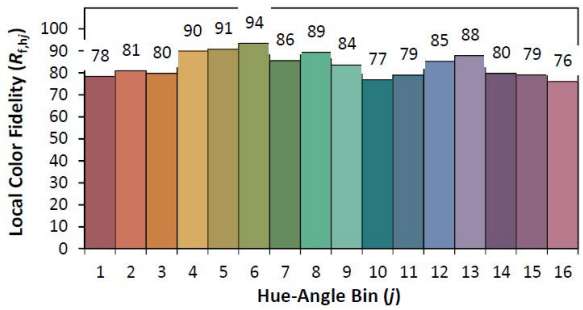
Source:	BL230227018-9	**Manufacturer:**	RAB LIGHTING,INC
Date:	2023-04-11	**Model:**	HIDFA-110-H-EX39-8CCT-BYP/5SP, 3000K at 277V

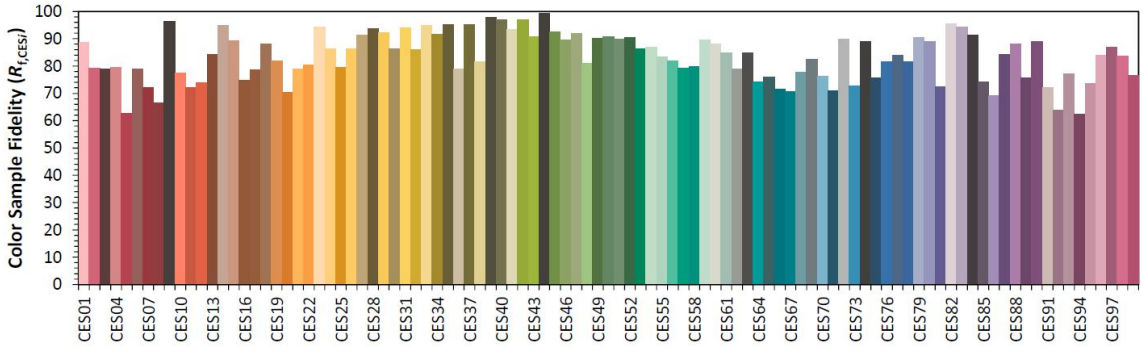












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4355
y	0.4031
u'	0.2501
v'	0.5208

CIE 13.3-1995 (CRI)

R_a	82
R_9	8

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

3.1.3 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 4000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.09	60	0.888	105.40	0.989

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
16250.92	154.2	3970

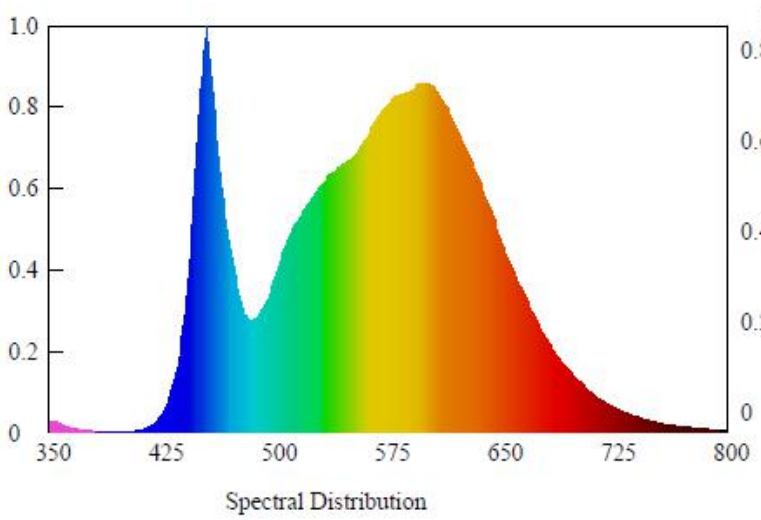
Chromaticity Coordinate

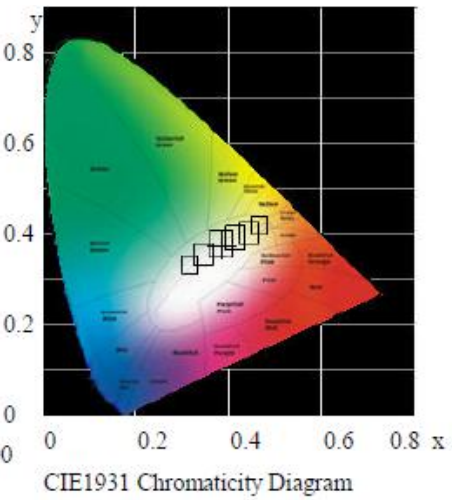
Duv	x	y	u'	v'
-0.00147	0.3807	0.3738	0.2265	0.5003

Color Rendering

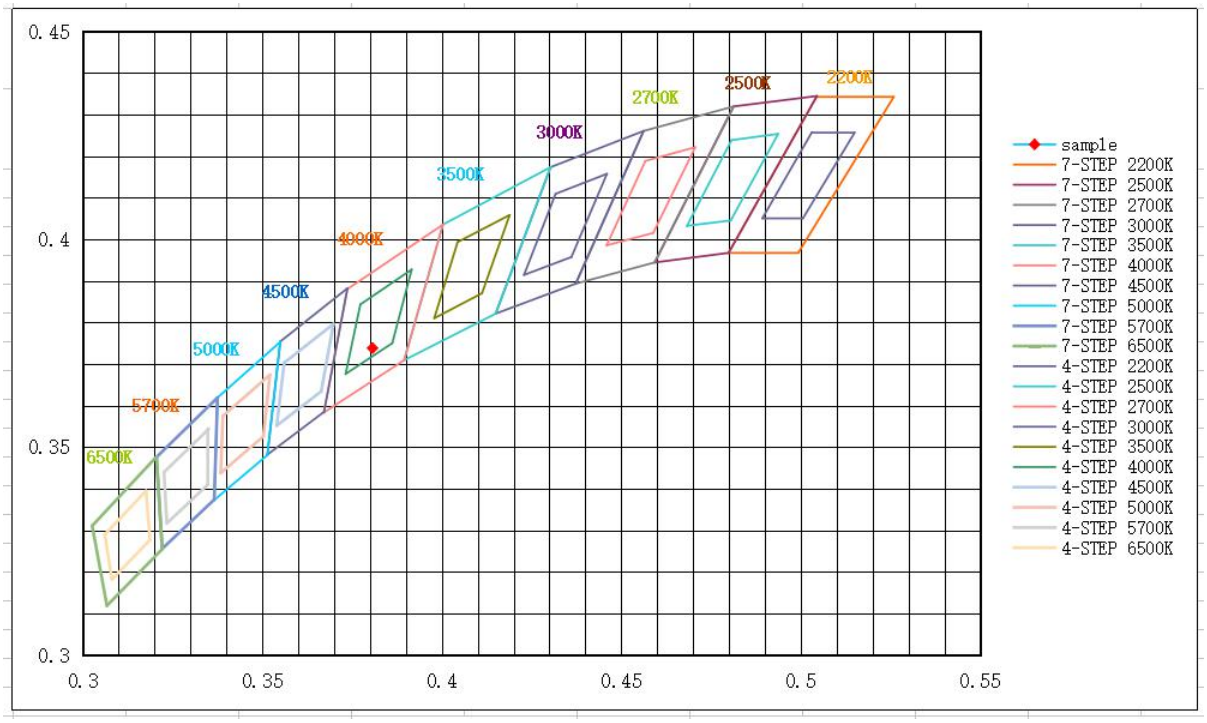
CRI	R9	Rf	Rg	Rcs,h1(%)
85.0	21	84	95	-11

Spectral Distribution



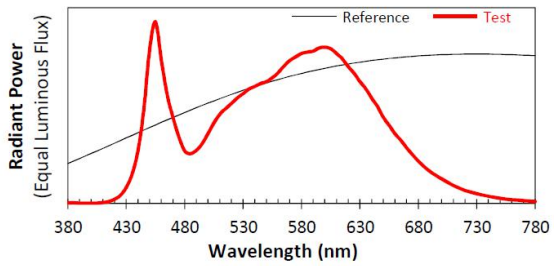


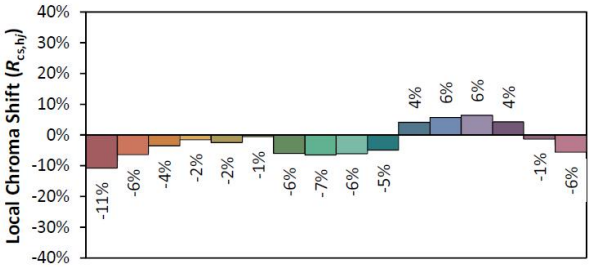
7/4 Step Quadrangle

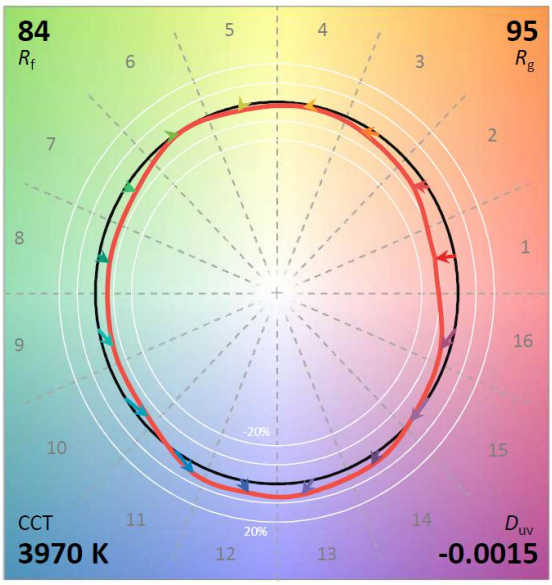


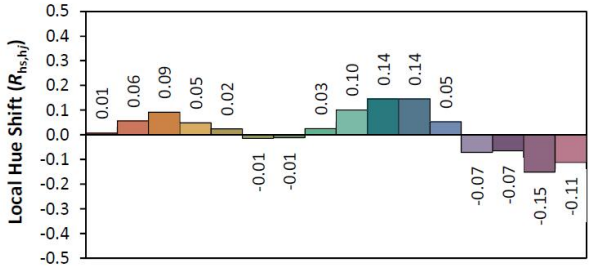
ANSI/IES TM-30-18 Color Rendition Report

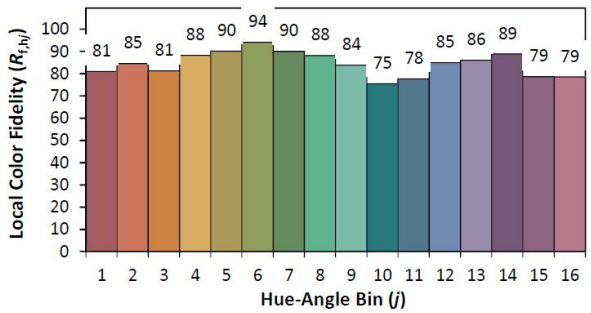
Source:	BL230227018-9	**Manufacturer:**	RAB LIGHTING,INC
Date:	2023-04-11	**Model:**	HIDFA-110-H-EX39-8CCT-BYP/5SP, 4000K at 120V

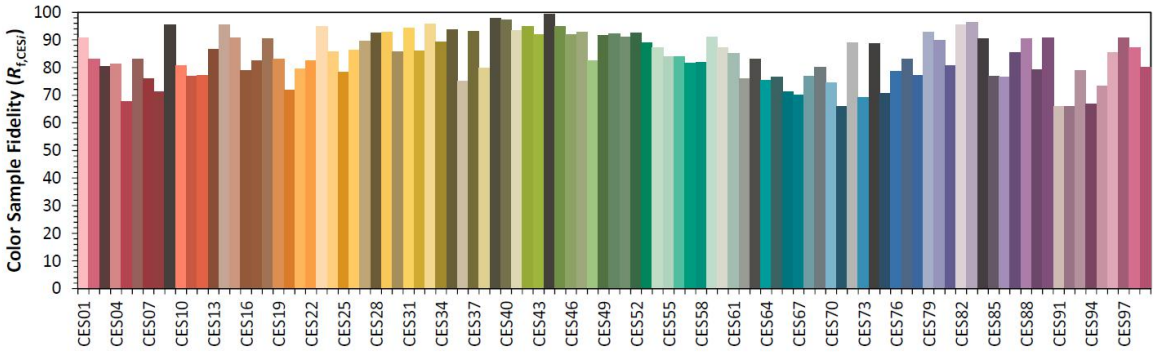












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3807
y	0.3738
u'	0.2265
v'	0.5003

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.

3.1.4 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 4000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.08	60	0.439	109.23	0.899

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
16789.51	153.7	3982

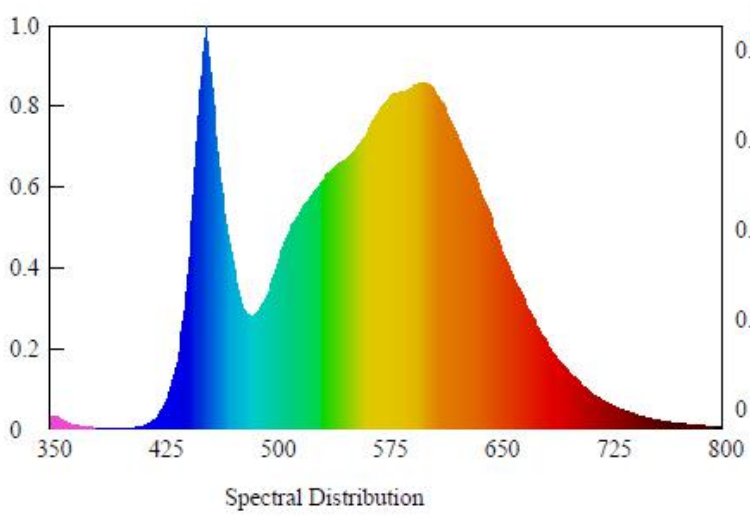
Chromaticity Coordinate

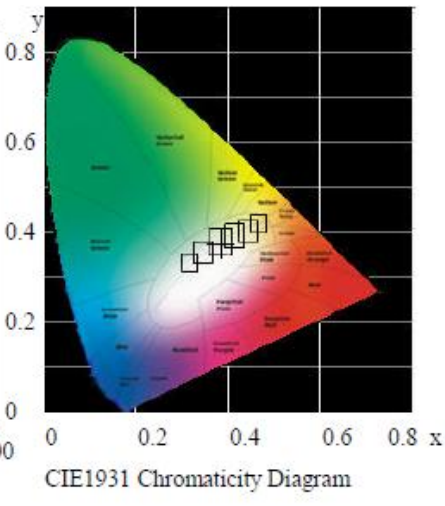
Duv	x	y	u'	v'
-0.00158	0.3802	0.3732	0.2263	0.5000

Color Rendering

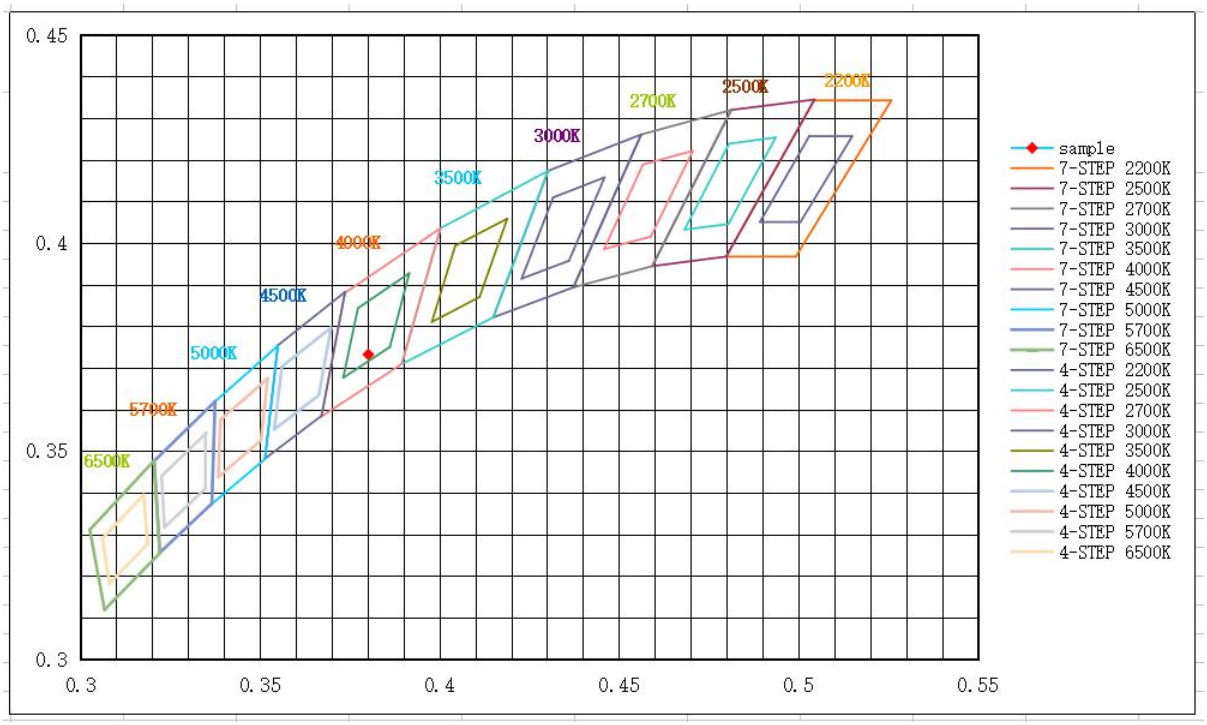
CRI	R9	Rf	Rg	Rcs,h1(%)
85.0	21	84	95	-11

Spectral Distribution



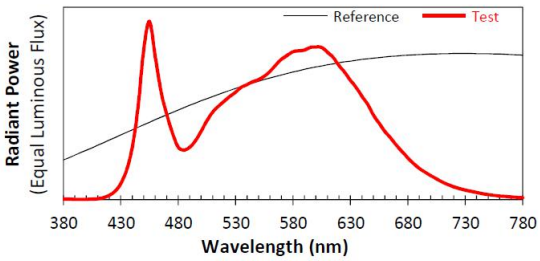


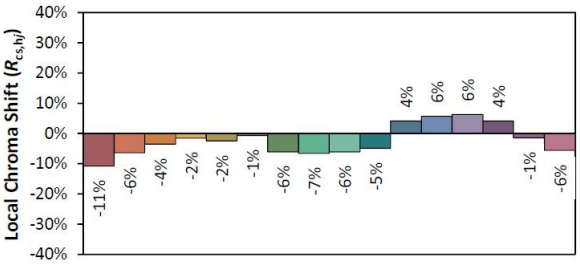
7/4 Step Quadrangle

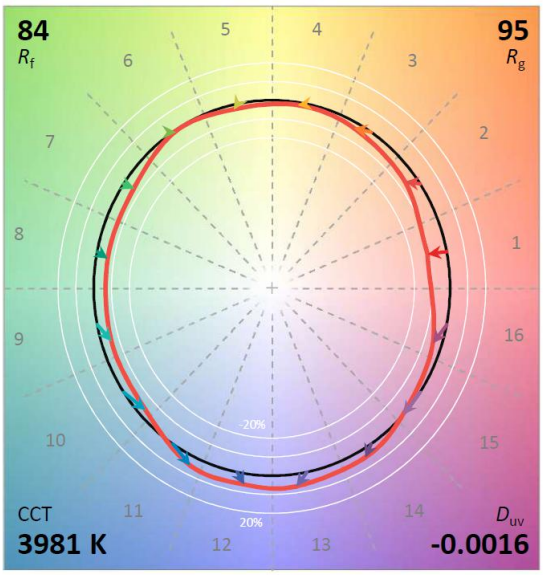


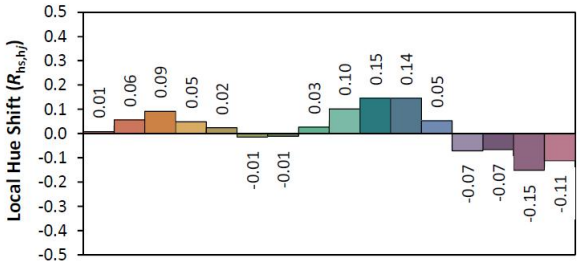
ANSI/IES TM-30-18 Color Rendition Report

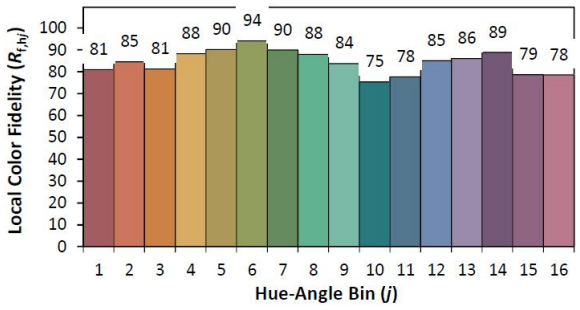
Source:	BL230227018-9	**Manufacturer:**	RAB LIGHTING,INC
Date:	2023-04-11	**Model:**	HIDFA-110-H-EX39-8CCT-BYP/5SP, 4000K at 277V

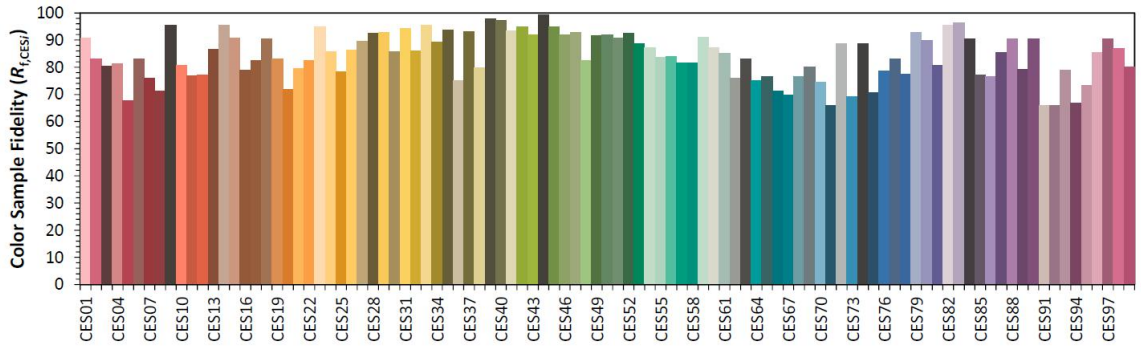












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3802
y	0.3732
u'	0.2263
v'	0.5000

CIE 13.3-1995 (CRI)

R_a	85
R_9	21

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

3.1.5 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 5000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.08	60	0.916	108.77	0.989

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
16008.88	147.2	5102

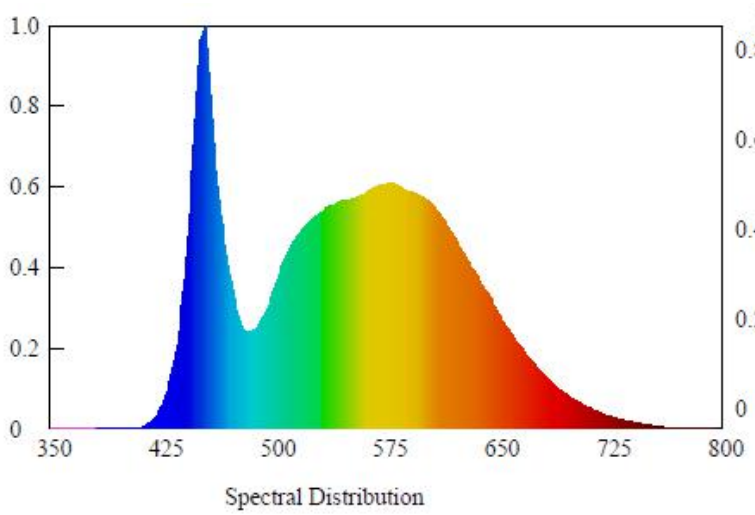
Chromaticity Coordinate

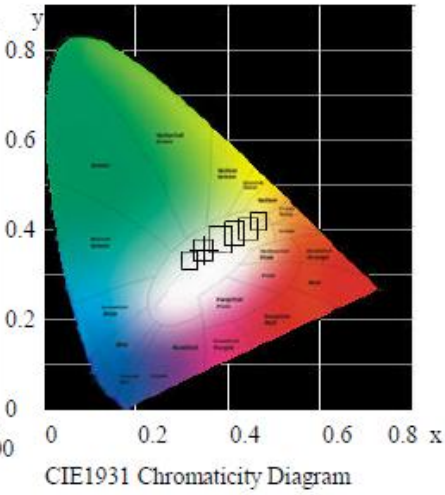
Duv	x	y	u'	v'
+0.00214	0.3426	0.3539	0.2089	0.4854

Color Rendering

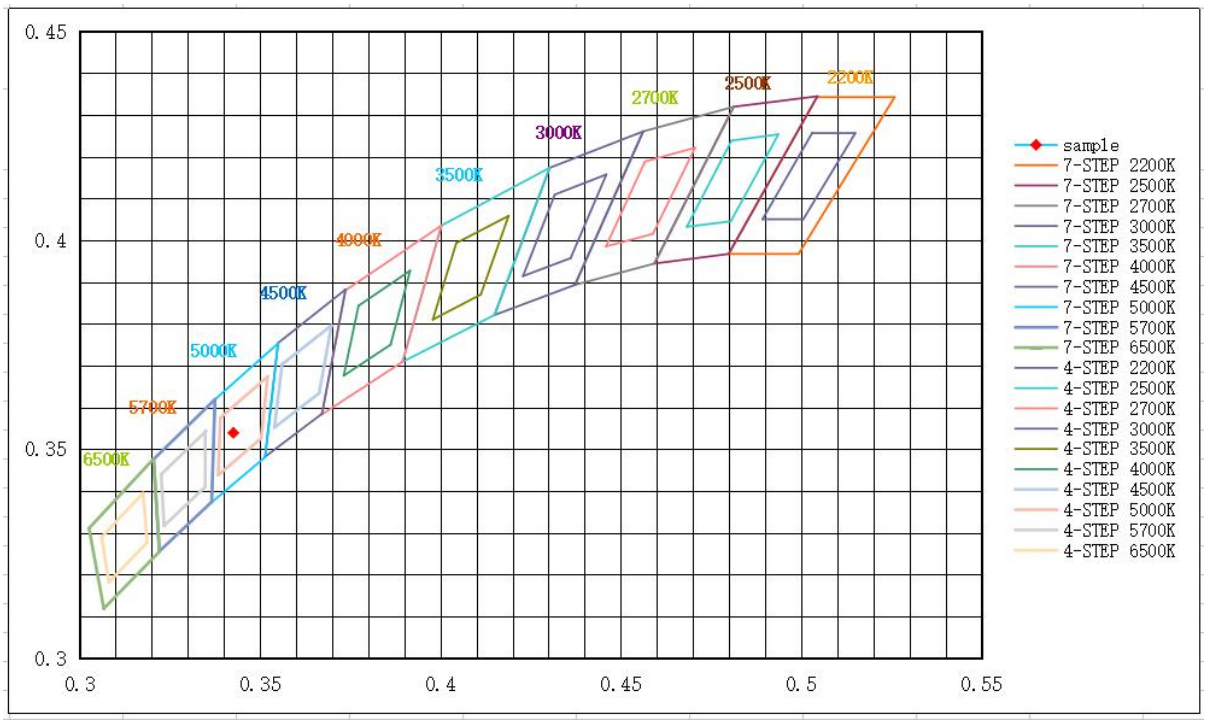
CRI	R9	Rf	Rg	Rcs,h1(%)
83.3	12	83	95	-12

Spectral Distribution



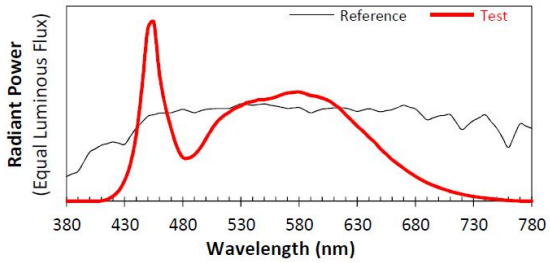


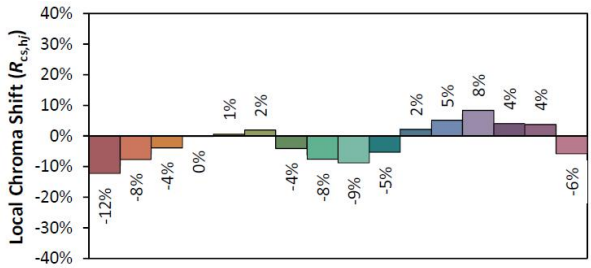
7/4 Step Quadrangle

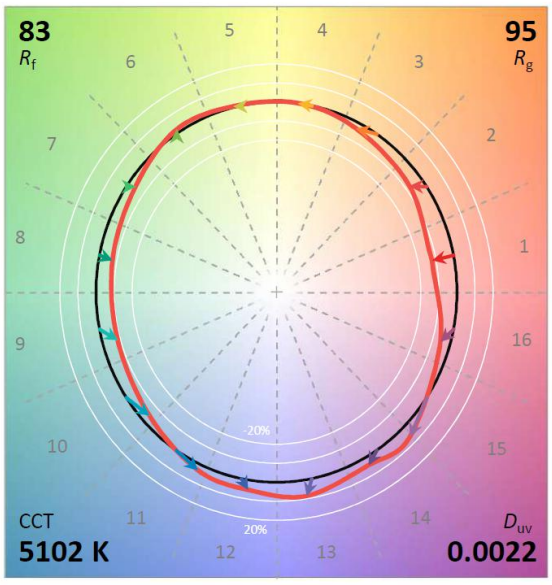


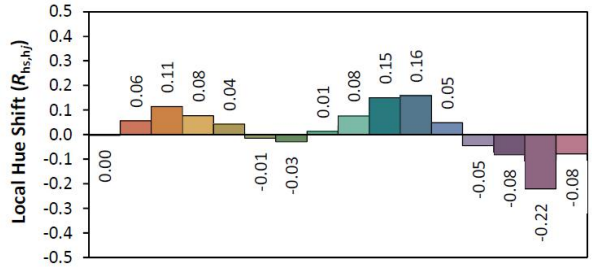
ANSI/IES TM-30-18 Color Rendition Report

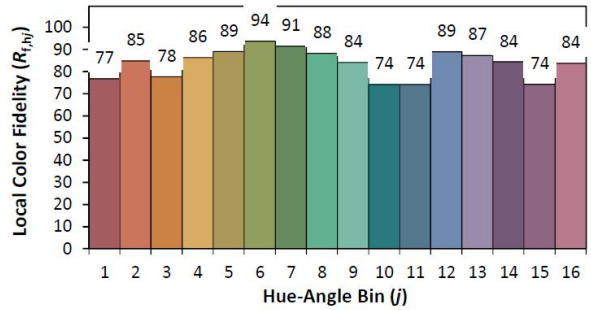
Source:	BL230227018-9	**Manufacturer:**	RAB LIGHTING,INC
Date:	2023-04-11	**Model:**	HIDFA-110-H-EX39-8CCT-BYP/5SP, 5000K at 120V

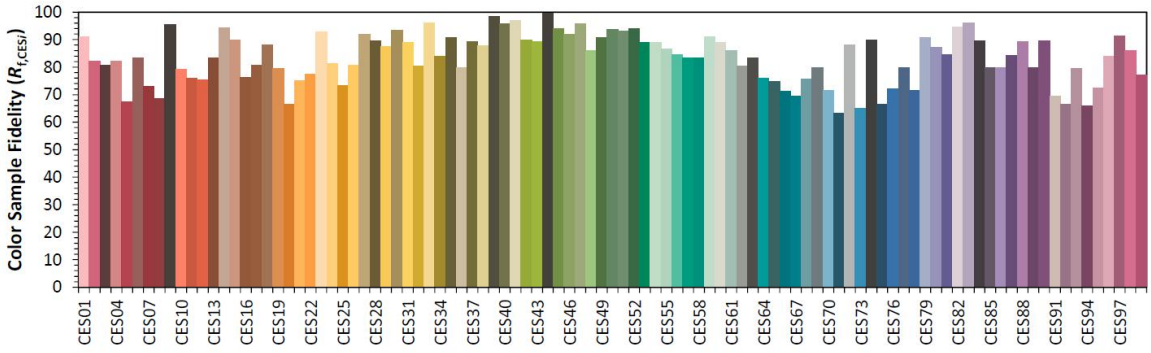












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3426
y	0.3539
u'	0.2089
v'	0.4854

CIE 13.3-1995 (CRI)

R_a	83
R_9	12

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

3.1.6 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 5000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.07	60	0.451	112.76	0.903

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
16626.01	147.4	5112

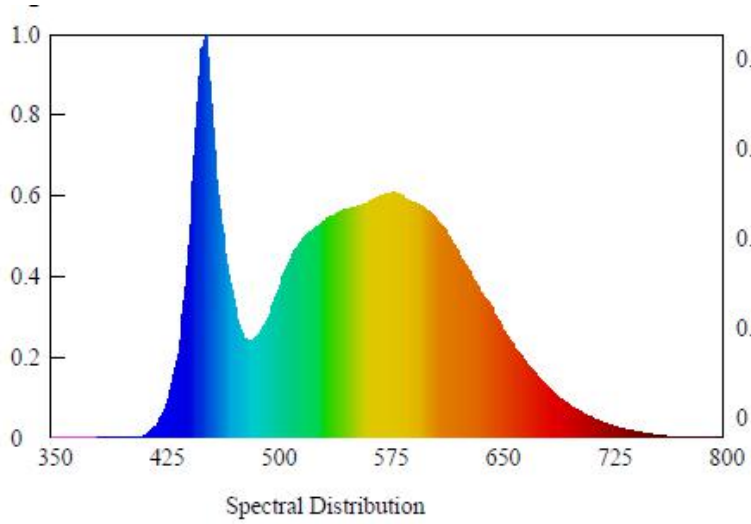
Chromaticity Coordinate

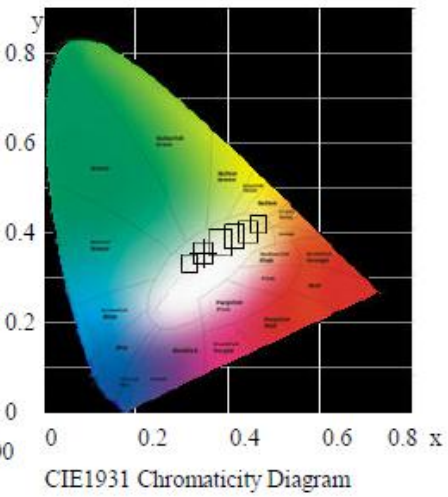
Duv	x	y	u'	v'
+0.00205	0.3424	0.3535	0.2089	0.4852

Color Rendering

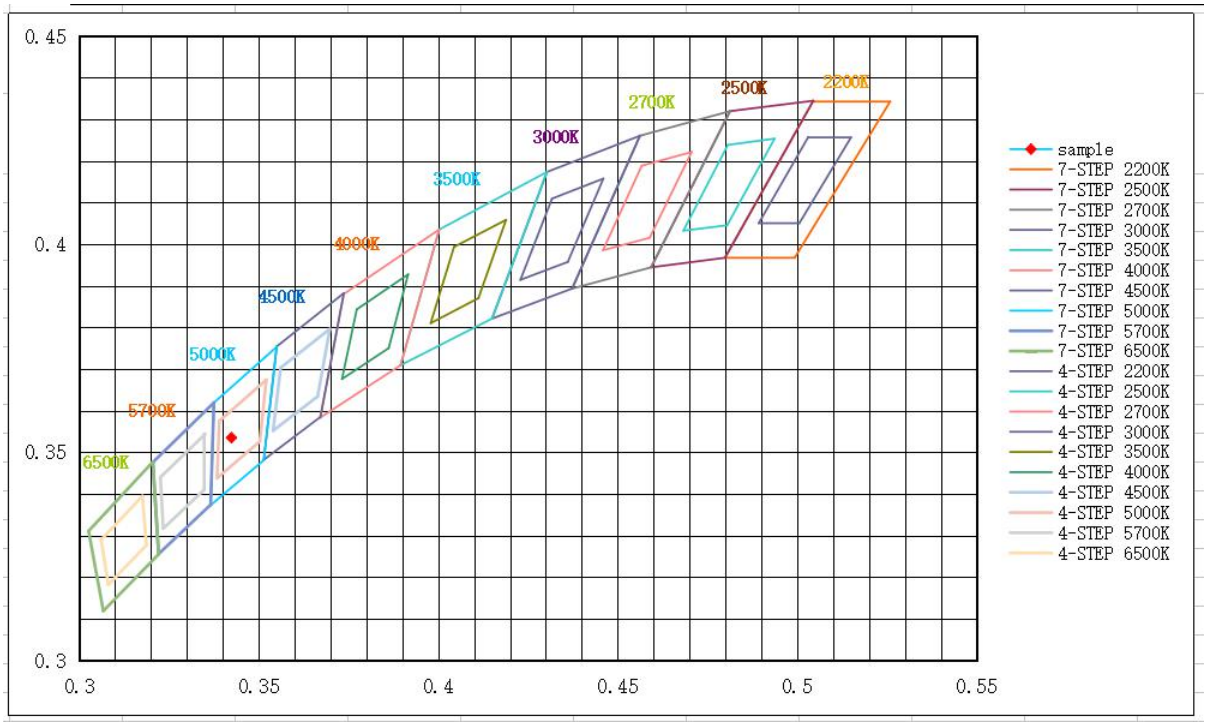
CRI	R9	Rf	Rg	Rcs,h1(%)
83.3	12	83	95	-12

Spectral Distribution



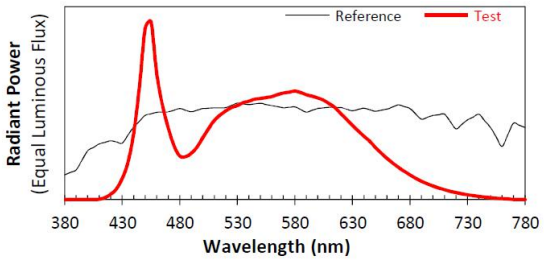


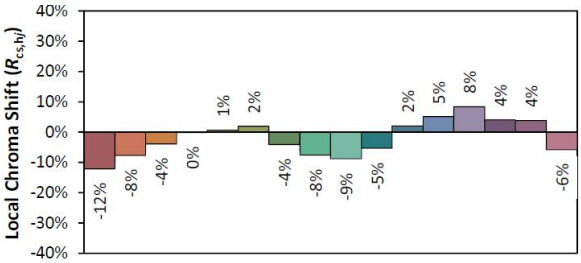
7/4 Step Quadrangle

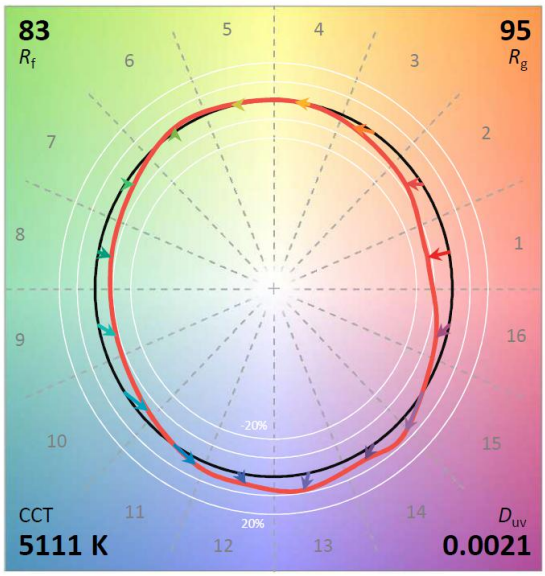


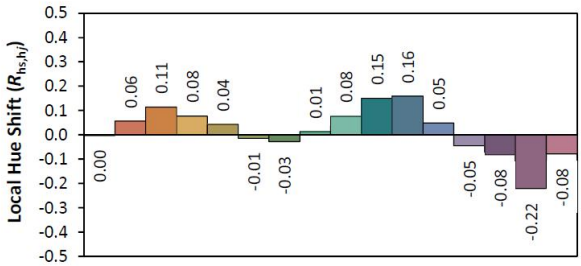
ANSI/IES TM-30-18 Color Rendition Report

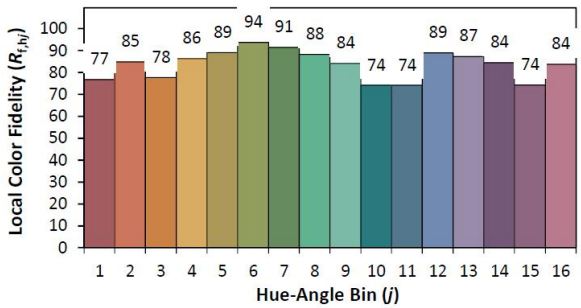
Source:	BL230227018-9	**Manufacturer:**	RAB LIGHTING,INC
Date:	2023-04-11	**Model:**	HIDFA-110-H-EX39-8CCT-BYP/5SP, 5000K at 277V

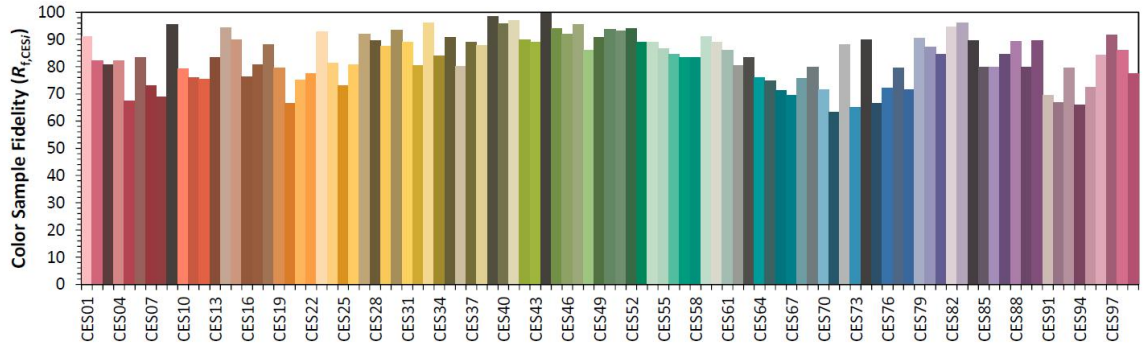












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3424
y	0.3535
u'	0.2089
v'	0.4852

CIE 13.3-1995 (CRI)

R_a	83
R_9	12

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: HIDFA-110-H-EX39-8CCT-BYP/5SP, 3000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.12	60	0.9100	108.12	0.9888

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
15139.73,	140.03	79.06	98.77

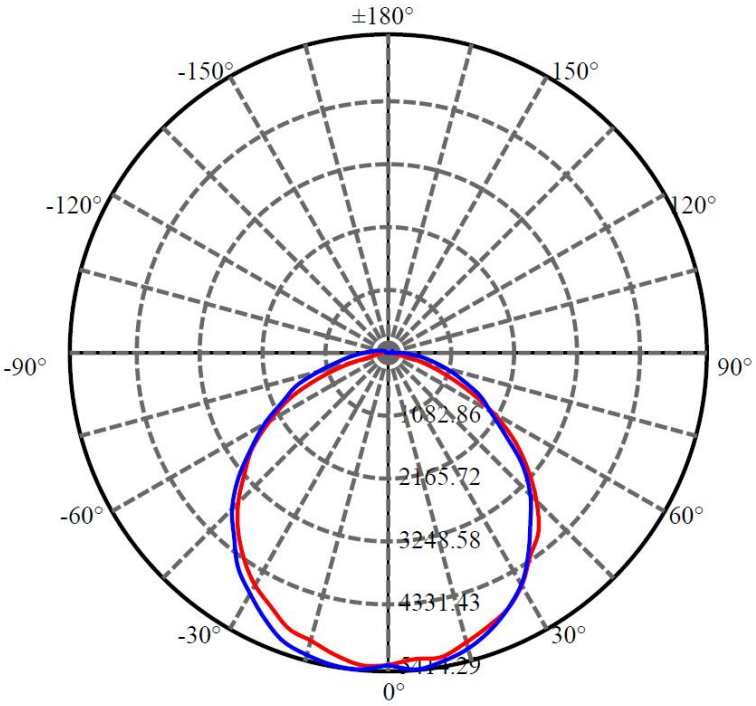
Zonal Flux Diagram

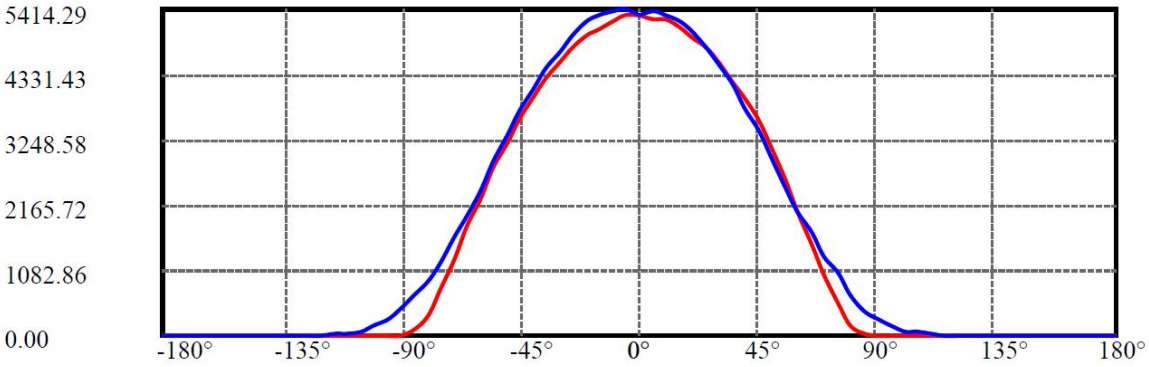
Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5326.622	0.000	0	0.00%	0.00%
5.0	5321.142	127.291	127.291	0.00%	0.84%
10.0	5256.970	378.412	505.703	0.00%	3.34%
15.0	5149.531	617.307	1123.01	0.00%	7.42%
20.0	5007.426	837.076	1960.086	0.00%	12.95%
25.0	4803.530	1028.988	2989.074	0.00%	19.74%
30.0	4566.555	1185.792	4174.866	0.00%	27.58%
35.0	4280.664	1302.815	5477.681	0.00%	36.18%
40.0	3940.591	1371.654	6849.335	0.00%	45.24%
45.0	3557.383	1388.311	8237.646	0.00%	54.41%
50.0	3131.384	1351.563	9589.209	0.00%	63.34%
55.0	2665.043	1260.336	10849.545	0.00%	71.66%
60.0	2178.141	1119.488	11969.034	0.00%	79.06%
65.0	1709.590	945.115	12914.149	0.00%	85.30%
70.0	1261.006	752.174	13666.323	0.00%	90.27%
75.0	862.383	555.020	14221.343	0.00%	93.93%
80.0	536.785	374.378	14595.721	0.00%	96.41%
85.0	304.732	228.660	14824.381	0.00%	97.92%
90.0	166.689	129.079	14953.46	0.00%	98.77%
95.0	91.852	70.791	15024.251	0.00%	99.24%
100.0	51.497	38.951	15063.202	0.00%	99.49%
105.0	35.156	23.186	15086.388	0.00%	99.65%
110.0	21.131	14.712	15101.101	0.00%	99.74%
115.0	9.977	7.877	15108.977	0.00%	99.80%
120.0	6.523	4.011	15112.988	0.00%	99.82%
125.0	7.092	3.147	15116.135	0.00%	99.84%
130.0	7.939	3.268	15119.404	0.00%	99.87%
135.0	8.389	3.299	15122.703	0.00%	99.89%
140.0	8.931	3.207	15125.91	0.00%	99.91%
145.0	9.196	3.024	15128.934	0.00%	99.93%
150.0	9.553	2.761	15131.695	0.00%	99.95%
155.0	9.672	2.433	15134.128	0.00%	99.96%
160.0	9.593	2.021	15136.149	0.00%	99.98%
165.0	9.395	1.565	15137.713	0.00%	99.99%
170.0	9.342	1.111	15138.825	0.00%	99.99%
175.0	9.408	0.671	15139.496	0.00%	100.00%
180.0	9.938	0.231	15139.727	0.00%	100.00%

Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





C0/C180:

C90/C270:

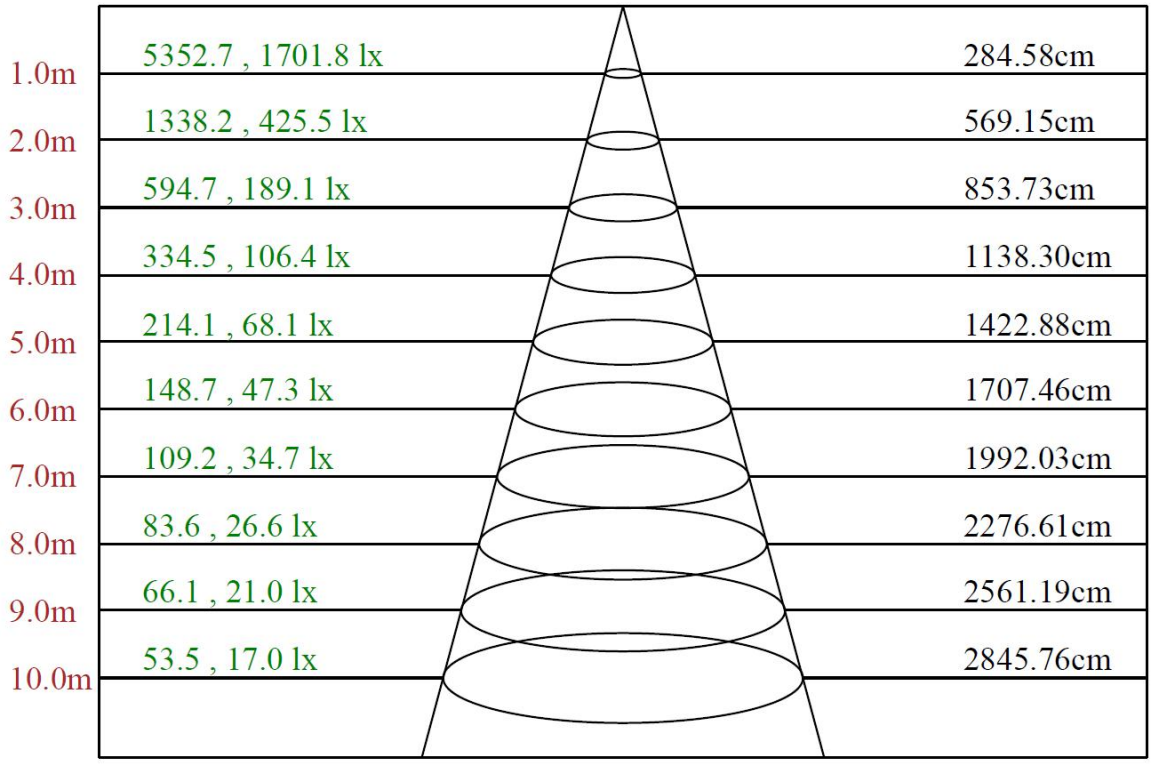
Field angle(10%Imax):C0/180Left:77.7 Right:75.1

:C90/270Left:87.7 Right:82.5

Beam Angle(50%Imax):C0/180Left:56.4 Right:54.4

:C90/270Left:56.9 Right:52.6

Lux distance Curve



Max , Ave Beam angle of C270 plane 109.80

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	5326.62	5242.81	5253.40	5103.09	4944.31	4779.18	4537.84	4218.60	3947.41
22.5	5326.62	5270.33	5196.24	5069.22	4912.56	4719.91	4493.39	4202.93	3863.78
45.0	5326.62	5272.45	5183.54	5060.75	4904.09	4686.04	4434.11	4128.62	3768.94
67.5	5326.62	5272.45	5194.12	5067.10	4887.15	4652.16	4368.48	4047.96	3676.21
90.0	5326.62	5386.77	5321.14	5200.47	5035.34	4787.65	4518.79	4156.78	3777.83
112.5	5326.62	5348.66	5255.52	5130.61	4969.72	4743.20	4482.80	4154.66	3775.71
135.0	5326.62	5314.79	5238.58	5117.91	4961.25	4741.08	4482.80	4180.07	3841.34
157.5	5326.62	5283.04	5204.71	5100.97	4931.61	4734.73	4514.56	4243.58	3887.92
180.0	5326.62	5325.38	5206.82	5064.98	4976.07	4762.25	4535.73	4279.57	3962.01
202.5	5326.62	5312.67	5247.05	5166.60	5037.46	4838.46	4624.64	4364.25	4048.81
225.0	5326.62	5304.21	5253.40	5172.95	5043.81	4863.87	4656.40	4400.24	4105.97
247.5	5326.62	5310.56	5285.15	5213.17	5071.33	4904.09	4700.85	4431.99	4114.44
270.0	5326.62	5414.29	5382.54	5304.21	5213.17	4984.54	4724.14	4448.93	4103.43
292.5	5326.62	5391.00	5329.61	5240.70	5107.32	4937.96	4715.67	4436.23	4089.67
315.0	5326.62	5363.48	5299.97	5215.29	5086.15	4889.27	4675.45	4404.47	4081.62
337.5	5326.62	5325.38	5259.75	5164.48	5037.46	4832.11	4599.24	4391.77	4004.35
360.0	5326.62	5242.81	5253.40	5103.09	4944.31	4779.18	4537.84	4218.60	3947.41

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3556.39	3124.09	2604.79	2061.56	1526.59	1000.93	540.69	180.79	27.52
22.5	3459.85	3001.52	2487.50	1941.74	1391.52	906.30	502.16	240.28	81.93
45.0	3342.57	2913.45	2429.92	1891.14	1415.87	1010.88	663.48	404.14	209.59
67.5	3286.47	2844.22	2367.05	1911.04	1555.59	1166.69	877.30	564.82	312.47
90.0	3394.65	2975.48	2454.69	2048.22	1707.38	1317.85	1046.87	676.60	401.81
112.5	3369.25	2975.48	2484.33	2014.35	1643.87	1279.74	975.95	633.41	370.69
135.0	3439.11	2994.53	2547.84	2073.63	1571.89	1131.55	786.48	511.26	286.86
157.5	3525.91	3117.32	2668.51	2168.89	1639.64	1148.49	670.25	343.59	138.88
180.0	3602.12	3210.47	2801.88	2302.27	1809.00	1277.63	767.42	331.31	87.22
202.5	3682.57	3284.56	2863.28	2382.71	1874.63	1343.25	854.64	461.72	212.55
225.0	3743.96	3318.44	2856.93	2378.48	1936.02	1453.34	1055.34	693.11	434.63
247.5	3733.37	3307.85	2882.33	2458.92	1997.41	1597.30	1224.70	918.58	623.25
270.0	3732.10	3324.36	2880.42	2433.52	1978.57	1646.62	1198.45	915.40	672.16
292.5	3695.48	3251.12	2830.67	2364.51	1932.63	1524.89	1110.80	838.77	565.88
315.0	3697.81	3230.16	2762.72	2238.97	1757.34	1286.73	887.25	564.61	325.18
337.5	3656.53	3229.10	2717.84	2180.32	1615.50	1083.92	636.38	310.14	125.12
360.0	3556.39	3124.09	2604.79	2061.56	1526.59	1000.93	540.69	180.79	27.52

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	3.39	3.39	2.96	3.39	4.45	4.87	5.50	6.35	6.99
22.5	20.32	6.99	3.60	3.60	4.66	5.50	6.56	7.20	7.20
45.0	95.48	36.41	24.77	24.98	4.66	5.72	6.77	8.05	8.68
67.5	178.89	92.94	63.93	54.83	24.35	5.72	6.35	7.41	8.05
90.0	252.35	170.21	80.02	69.44	39.38	10.16	6.56	7.41	8.89
112.5	226.31	138.03	71.56	57.58	38.11	6.56	6.14	7.20	8.05
135.0	127.02	59.91	28.58	24.77	5.93	5.08	6.56	8.05	8.47
157.5	40.65	11.43	4.87	3.81	4.66	5.08	6.35	6.99	7.41
180.0	10.80	4.66	4.02	3.60	3.81	4.45	5.50	6.14	6.77
202.5	78.75	21.81	8.05	4.45	4.23	5.08	5.72	7.20	7.83
225.0	241.98	109.24	50.39	35.78	39.17	6.35	6.14	6.99	8.47
247.5	402.02	260.82	147.77	83.83	49.75	33.24	8.26	6.35	7.62
270.0	428.70	256.80	174.66	81.29	45.09	29.22	8.89	6.56	8.68
292.5	351.43	218.27	123.85	74.31	39.80	22.02	6.14	6.77	7.83
315.0	171.48	69.86	30.70	33.03	25.62	5.08	6.35	7.20	8.26
337.5	37.47	8.89	4.23	3.81	4.45	5.50	6.56	7.62	7.83
360.0	3.39	3.39	2.96	3.39	4.45	4.87	5.50	6.35	6.99

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	7.62	8.26	8.68	9.10	9.32	9.53	9.53	9.53	9.53
22.5	8.05	8.47	8.89	9.32	9.53	9.74	9.53	9.32	9.74
45.0	9.10	8.89	8.89	9.32	9.32	9.53	9.32	9.32	9.53
67.5	8.68	9.32	9.53	9.74	9.53	9.53	9.32	9.32	9.53
90.0	9.32	9.74	9.95	10.59	10.16	9.53	9.10	9.10	9.32
112.5	8.47	8.89	9.10	9.53	9.74	9.53	9.10	9.32	9.32
135.0	9.10	9.10	9.10	9.53	9.53	9.53	9.53	9.32	9.10
157.5	7.83	8.47	8.89	9.32	9.53	9.53	9.53	9.10	9.32
180.0	7.62	8.47	8.89	9.32	9.74	9.74	9.53	9.53	9.32
202.5	7.62	8.26	8.89	9.53	9.74	9.53	9.53	9.32	9.10
225.0	8.47	9.32	9.53	9.32	9.53	9.32	9.32	9.32	9.10
247.5	8.05	8.89	9.10	9.32	9.74	9.32	9.10	9.32	9.32
270.0	9.32	10.37	10.16	10.59	10.59	10.16	9.53	9.32	9.53
292.5	8.26	8.89	9.32	9.74	9.74	9.74	9.32	9.32	9.53
315.0	8.89	9.10	9.53	9.32	9.53	9.53	9.53	9.53	9.53
337.5	7.83	8.47	8.68	9.32	9.53	9.74	9.53	9.53	9.74
360.0	7.62	8.26	8.68	9.10	9.32	9.53	9.53	9.53	9.53

C/γ(°)	180.0
0.0	9.94
22.5	9.94
45.0	9.94
67.5	9.94
90.0	9.94
112.5	9.94
135.0	9.94
157.5	9.94
180.0	9.94
202.5	9.94
225.0	9.94
247.5	9.94
270.0	9.94
292.5	9.94
315.0	9.94
337.5	9.94
360.0	9.94

3.2.2 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 3000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.07	60	0.4480	111.85	0.9013

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
15424.37	137.90	79.28	98.95

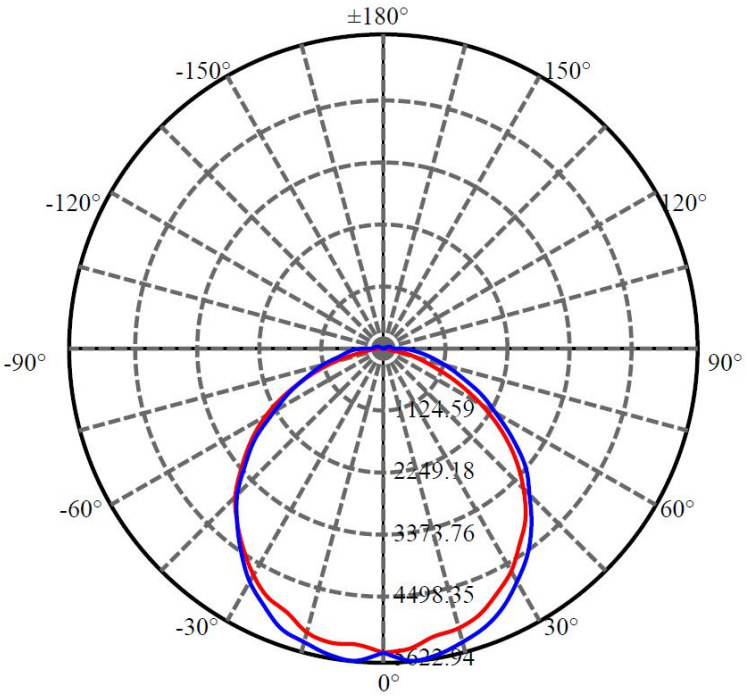
Zonal Flux Diagram

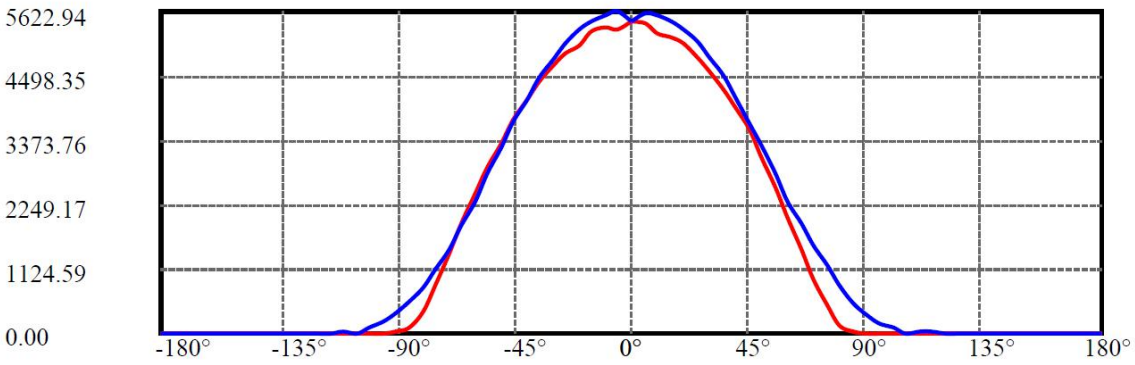
Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5450.590	0.000	0	0.00%	0.00%
5.0	5430.844	130.084	130.084	0.00%	0.84%
10.0	5369.091	386.348	516.432	0.00%	3.35%
15.0	5264.739	630.792	1147.224	0.00%	7.44%
20.0	5110.422	855.059	2002.283	0.00%	12.98%
25.0	4912.702	1051.241	3053.523	0.00%	19.80%
30.0	4665.688	1212.153	4265.677	0.00%	27.66%
35.0	4388.506	1333.293	5598.97	0.00%	36.30%
40.0	4028.312	1404.282	7003.252	0.00%	45.40%
45.0	3631.279	1418.235	8421.488	0.00%	54.60%
50.0	3193.377	1379.022	9800.509	0.00%	63.54%
55.0	2721.865	1286.171	11086.68	0.00%	71.88%
60.0	2220.227	1142.351	12229.031	0.00%	79.28%
65.0	1732.145	960.829	13189.86	0.00%	85.51%
70.0	1282.374	763.296	13953.155	0.00%	90.46%
75.0	877.680	564.603	14517.759	0.00%	94.12%
80.0	547.009	381.207	14898.966	0.00%	96.59%
85.0	311.716	233.336	15132.302	0.00%	98.11%
90.0	163.346	130.076	15262.378	0.00%	98.95%
95.0	86.844	68.504	15330.882	0.00%	99.39%
100.0	45.625	35.995	15366.877	0.00%	99.63%
105.0	8.694	14.534	15381.411	0.00%	99.72%
110.0	17.066	6.733	15388.144	0.00%	99.77%
115.0	8.145	6.383	15394.528	0.00%	99.81%
120.0	6.122	3.468	15397.996	0.00%	99.83%
125.0	6.939	3.019	15401.015	0.00%	99.85%
130.0	7.649	3.172	15404.187	0.00%	99.87%
135.0	8.239	3.210	15407.397	0.00%	99.89%
140.0	8.761	3.148	15410.545	0.00%	99.91%
145.0	9.203	2.997	15413.542	0.00%	99.93%
150.0	9.498	2.754	15416.296	0.00%	99.95%
155.0	9.672	2.426	15418.721	0.00%	99.96%
160.0	9.618	2.023	15420.745	0.00%	99.98%
165.0	9.538	1.579	15422.323	0.00%	99.99%
170.0	9.458	1.127	15423.45	0.00%	99.99%
175.0	9.551	0.680	15424.13	0.00%	100.00%
180.0	10.098	0.235	15424.365	0.00%	100.00%

Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





C0/C180:

C90/C270:

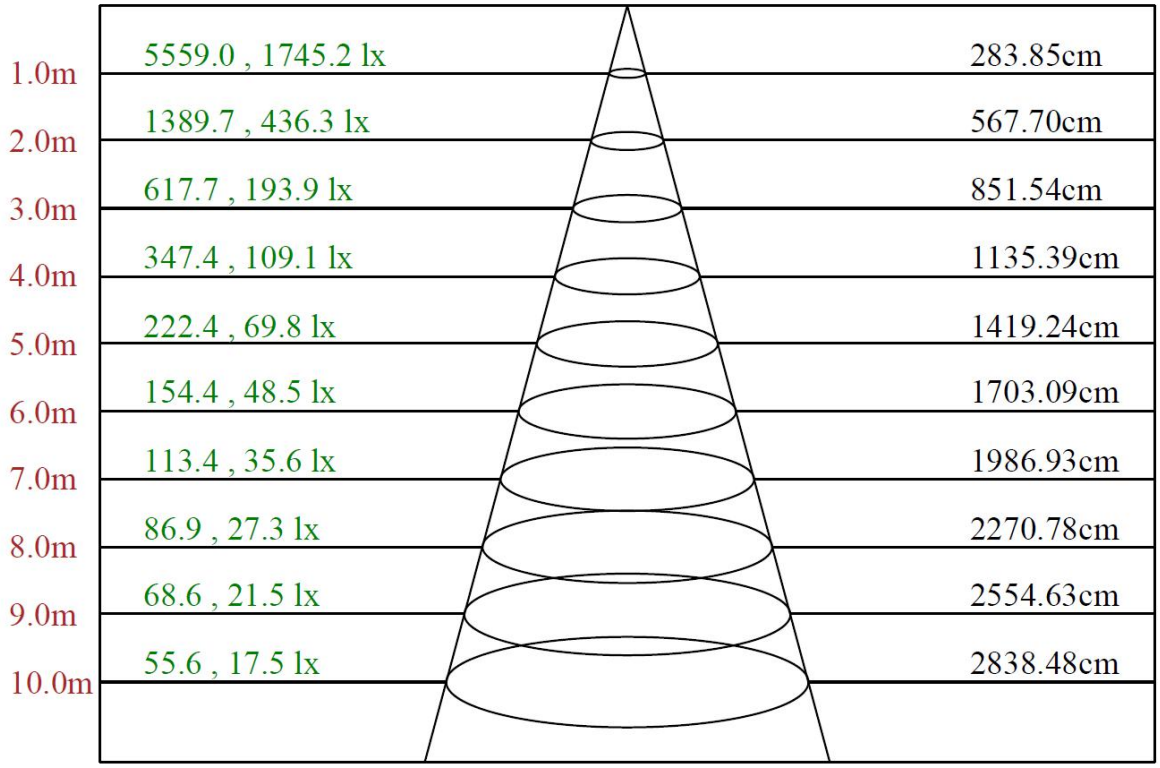
Field angle(10%Imax):C0/180Left:78.3 Right:74.3

:C90/270Left:85.0 Right:84.5

Beam Angle(50%Imax):C0/180Left:56.8 Right:53.4

:C90/270Left:54.7 Right:54.7

Lux distance Curve



Max , Ave Beam angle of C270 plane 109.66

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	5450.59	5402.18	5250.00	5179.28	5052.82	4812.77	4572.72	4266.87	3953.52
22.5	5450.59	5361.46	5256.43	5142.84	4990.67	4795.63	4538.43	4270.73	3917.95
45.0	5450.59	5331.45	5262.86	5155.70	4999.24	4799.91	4540.57	4250.37	3880.65
67.5	5450.59	5333.59	5273.58	5162.13	5007.81	4782.77	4510.57	4212.22	3843.57
90.0	5450.59	5597.22	5554.35	5457.90	5305.73	5089.26	4817.06	4501.99	4118.34
112.5	5450.59	5537.21	5470.76	5357.17	5200.71	5001.38	4759.19	4439.84	4077.62
135.0	5450.59	5472.91	5410.75	5292.87	5155.70	4971.38	4727.04	4444.12	4120.49
157.5	5450.59	5406.46	5344.31	5239.29	5097.83	4909.22	4677.74	4409.83	4103.34
180.0	5450.59	5316.45	5340.02	5256.43	5035.67	4904.93	4667.03	4392.69	4088.34
202.5	5450.59	5378.60	5344.31	5243.57	5102.12	4928.51	4690.60	4420.55	4088.34
225.0	5450.59	5376.46	5314.30	5220.00	5082.83	4898.50	4677.74	4403.40	4107.63
247.5	5450.59	5361.46	5322.88	5235.00	5082.83	4894.22	4667.03	4388.40	4030.47
270.0	5450.59	5622.94	5565.07	5460.05	5318.59	5063.54	4793.48	4456.98	4092.20
292.5	5450.59	5522.20	5455.76	5346.45	5192.14	4986.38	4733.47	4431.26	4026.40
315.0	5450.59	5464.33	5395.75	5265.01	5106.40	4913.51	4667.03	4658.45	4024.90
337.5	5450.59	5408.61	5344.31	5222.14	5035.67	4851.35	4611.30	4268.37	3979.24
360.0	5450.59	5402.18	5250.00	5179.28	5052.82	4812.77	4572.72	4266.87	3953.52

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3558.73	3085.49	2561.45	2017.27	1460.01	938.76	482.03	148.75	21.43
22.5	3518.01	3040.05	2524.59	1979.33	1415.65	923.33	507.96	245.19	84.23
45.0	3463.35	3039.41	2549.45	2014.06	1519.81	1083.22	717.36	451.81	242.41
67.5	3451.78	3020.55	2561.45	2080.28	1668.13	1290.91	980.56	650.71	373.79
90.0	3681.11	3299.60	2776.64	2313.69	1921.47	1529.24	1182.03	829.03	529.61
112.5	3668.25	3254.60	2815.22	2290.11	1846.45	1509.95	1122.02	806.74	505.18
135.0	3713.26	3276.03	2808.79	2328.69	1807.87	1327.77	956.77	623.91	365.22
157.5	3713.26	3303.89	2873.09	2371.56	1840.02	1336.35	827.53	425.44	193.75
180.0	3734.69	3329.61	2894.52	2429.43	1927.90	1387.78	834.39	392.65	114.24
202.5	3734.69	3331.75	2900.95	2420.85	1870.03	1357.78	865.89	476.67	214.12
225.0	3730.41	3284.60	2808.79	2335.12	1880.74	1404.93	1068.43	649.85	401.23
247.5	3638.25	3203.16	2783.07	2326.55	1876.46	1516.38	1113.44	832.46	563.90
270.0	3701.26	3237.66	2787.14	2291.61	1871.74	1464.94	1113.66	809.52	564.33
292.5	3603.10	3144.64	2714.06	2211.88	1756.43	1375.35	1000.71	707.93	475.38
315.0	3592.16	3108.21	2586.96	2086.93	1582.61	1120.09	741.80	461.45	254.41
337.5	3598.17	3134.79	2603.68	2026.27	1469.02	951.20	528.32	240.05	84.23
360.0	3558.73	3085.49	2561.45	2017.27	1460.01	938.76	482.03	148.75	21.43

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	3.22	3.00	3.43	3.64	4.29	5.14	5.79	6.64	7.29
22.5	22.72	7.50	3.64	3.86	4.50	5.57	6.22	7.07	7.29
45.0	112.31	50.80	26.15	14.57	5.36	5.57	6.22	7.29	8.36
67.5	223.12	136.10	70.09	7.29	28.72	6.86	6.43	7.29	7.72
90.0	311.85	191.40	108.67	6.64	43.08	20.36	6.64	7.93	8.57
112.5	280.56	160.32	79.30	5.79	38.79	12.65	6.22	6.86	7.72
135.0	169.32	70.09	33.65	19.50	12.86	5.36	5.79	6.64	7.72
157.5	63.87	15.65	6.00	3.86	3.86	4.50	5.79	6.43	6.43
180.0	24.43	4.93	4.07	3.64	3.86	4.29	5.14	5.79	6.43
202.5	79.30	21.43	7.93	4.29	4.07	4.72	5.57	6.43	6.86
225.0	211.54	95.81	38.15	28.29	21.65	5.36	5.79	6.64	7.93
247.5	342.07	218.40	117.45	6.00	28.51	16.72	6.43	7.07	7.72
270.0	357.29	205.33	113.81	4.72	35.79	13.29	6.86	7.50	9.22
292.5	276.70	150.03	84.66	7.07	26.58	9.00	6.43	7.29	7.72
315.0	114.24	52.08	29.15	16.08	6.64	5.57	6.43	7.29	8.15
337.5	21.00	6.64	3.86	3.86	4.50	5.36	6.22	6.86	7.29
360.0	3.22	3.00	3.43	3.64	4.29	5.14	5.79	6.64	7.29

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	7.93	8.57	9.00	9.22	9.43	9.65	9.65	9.65	9.65
22.5	7.93	8.36	9.00	9.22	9.43	9.65	9.65	9.43	9.65
45.0	8.79	9.00	9.22	9.65	9.65	9.65	9.65	9.43	9.65
67.5	8.36	9.22	9.65	9.65	9.86	9.86	9.65	9.22	9.86
90.0	8.79	9.00	10.07	10.29	10.29	10.07	9.43	9.43	9.43
112.5	8.15	8.79	9.22	9.65	10.07	9.65	9.65	9.65	9.65
135.0	8.79	9.00	9.22	9.43	9.43	9.65	9.65	9.43	9.43
157.5	7.50	8.15	8.36	9.00	9.65	9.43	9.22	9.22	9.22
180.0	7.29	7.93	8.57	9.00	9.22	9.43	9.43	9.22	9.65
202.5	7.29	8.15	8.57	9.00	9.22	9.22	9.43	9.43	9.22
225.0	8.79	9.22	9.43	9.43	9.43	9.43	9.22	9.22	9.43
247.5	8.15	8.79	9.65	9.65	9.65	9.65	9.65	9.65	9.43
270.0	9.22	9.65	10.07	10.72	10.29	9.86	9.86	9.43	9.86
292.5	8.15	9.22	9.22	9.65	10.07	9.86	9.43	9.65	9.65
315.0	8.79	9.00	9.22	9.43	9.65	9.43	9.65	9.65	9.43
337.5	7.93	8.15	8.79	9.00	9.43	9.43	9.43	9.65	9.65
360.0	7.93	8.57	9.00	9.22	9.43	9.65	9.65	9.65	9.65

C/γ(°)	180.0
0.0	10.10
22.5	10.10
45.0	10.10
67.5	10.10
90.0	10.10
112.5	10.10
135.0	10.10
157.5	10.10
180.0	10.10
202.5	10.10
225.0	10.10
247.5	10.10
270.0	10.10
292.5	10.10
315.0	10.10
337.5	10.10
360.0	10.10

3.2.3 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 4000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.09	60	0.8860	105.25	0.9889

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
16292.24	154.80	79.29	98.97

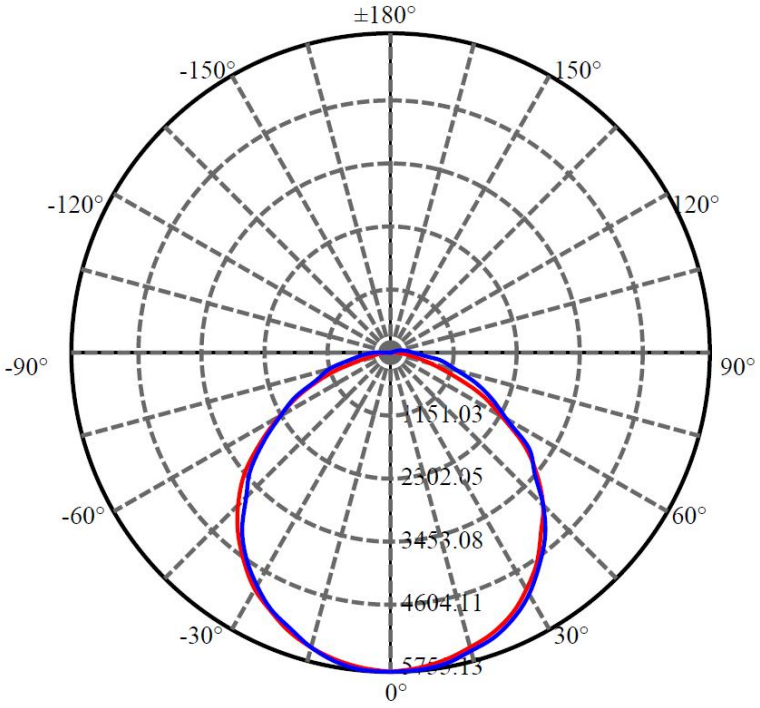
Zonal Flux Diagram

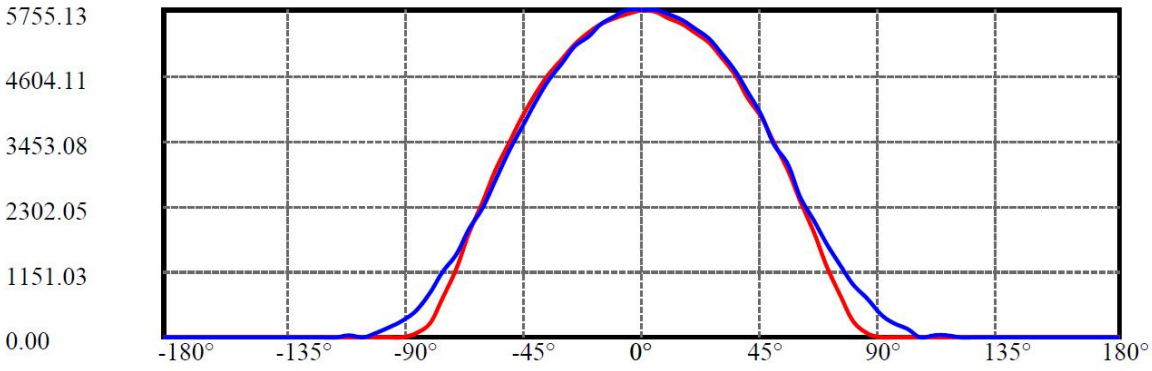
Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5749.653	0.000	0	0.00%	0.00%
5.0	5719.937	137.116	137.116	0.00%	0.84%
10.0	5651.266	406.784	543.899	0.00%	3.34%
15.0	5534.830	663.552	1207.451	0.00%	7.41%
20.0	5378.567	899.417	2106.868	0.00%	12.93%
25.0	5175.729	1106.951	3213.819	0.00%	19.73%
30.0	4927.243	1278.540	4492.359	0.00%	27.57%
35.0	4621.333	1406.095	5898.453	0.00%	36.20%
40.0	4244.953	1479.273	7377.726	0.00%	45.28%
45.0	3843.631	1497.667	8875.393	0.00%	54.48%
50.0	3387.968	1461.250	10336.643	0.00%	63.45%
55.0	2895.799	1366.300	11702.943	0.00%	71.83%
60.0	2361.660	1215.247	12918.19	0.00%	79.29%
65.0	1842.050	1021.930	13940.12	0.00%	85.56%
70.0	1360.030	810.787	14750.907	0.00%	90.54%
75.0	920.535	596.103	15347.01	0.00%	94.20%
80.0	570.922	399.072	15746.083	0.00%	96.65%
85.0	325.268	243.516	15989.599	0.00%	98.14%
90.0	167.682	134.973	16124.572	0.00%	98.97%
95.0	89.855	70.515	16195.088	0.00%	99.40%
100.0	47.408	37.298	16232.385	0.00%	99.63%
105.0	8.944	15.078	16247.464	0.00%	99.73%
110.0	17.188	6.831	16254.294	0.00%	99.77%
115.0	8.164	6.419	16260.713	0.00%	99.81%
120.0	6.523	3.570	16264.284	0.00%	99.83%
125.0	7.436	3.227	16267.51	0.00%	99.85%
130.0	8.071	3.372	16270.882	0.00%	99.87%
135.0	8.773	3.404	16274.286	0.00%	99.89%
140.0	9.289	3.344	16277.63	0.00%	99.91%
145.0	9.712	3.170	16280.8	0.00%	99.93%
150.0	10.069	2.913	16283.713	0.00%	99.95%
155.0	10.241	2.570	16286.283	0.00%	99.96%
160.0	10.162	2.140	16288.423	0.00%	99.98%
165.0	10.096	1.669	16290.093	0.00%	99.99%
170.0	9.924	1.188	16291.28	0.00%	99.99%
175.0	10.069	0.715	16291.995	0.00%	100.00%
180.0	10.660	0.248	16292.243	0.00%	100.00%

Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





C0/C180:

C90/C270:

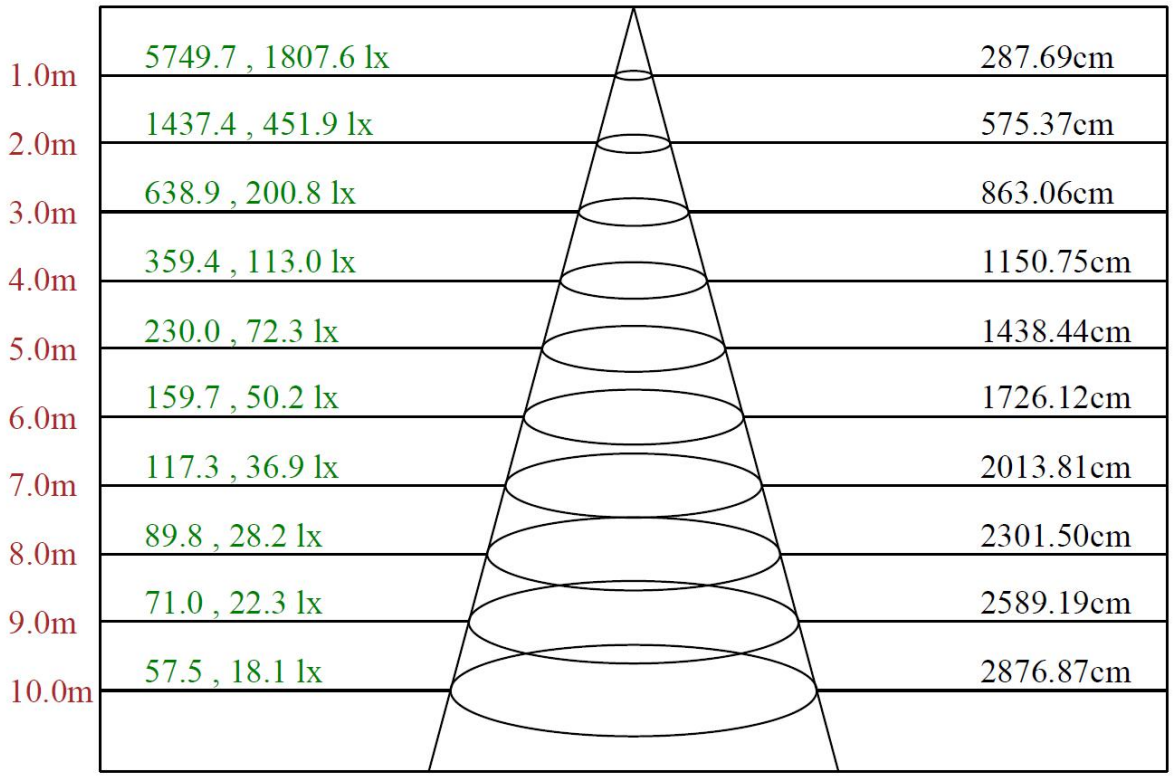
Field angle(10%Imax):C0/180Left:76.3 Right:76.6

:C90/270Left:83.3 Right:86.7

Beam Angle(50%Imax):C0/180Left:55.5 Right:55.6

:C90/270Left:53.9 Right:56.4

Lux distance Curve



Max , Ave Beam angle of C90 plane 110.39

Luminous Intensity Distribution Data

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	5749.65	5704.32	5621.76	5509.56	5369.83	5166.60	4925.26	4628.88	4216.27
22.5	5749.65	5708.56	5634.46	5526.49	5369.83	5164.48	4927.38	4628.88	4214.36
45.0	5749.65	5710.68	5653.52	5537.08	5382.54	5170.83	4946.43	4650.05	4216.48
67.5	5749.65	5733.96	5655.63	5541.31	5391.00	5187.77	4935.84	4614.06	4215.42
90.0	5749.65	5755.13	5689.51	5577.30	5443.93	5270.33	5018.41	4692.39	4330.38
112.5	5749.65	5755.13	5702.21	5596.36	5441.81	5240.70	4995.12	4679.68	4304.97
135.0	5749.65	5733.96	5670.45	5562.48	5405.82	5213.17	4959.13	4658.51	4317.67
157.5	5749.65	5700.09	5636.58	5528.61	5374.07	5170.83	4935.84	4637.34	4285.92
180.0	5749.65	5691.62	5621.76	5505.32	5344.43	5149.66	4912.56	4618.29	4281.68
202.5	5749.65	5704.32	5636.58	5513.79	5350.78	5136.96	4906.21	4628.88	4268.98
225.0	5749.65	5706.44	5638.70	5518.03	5369.83	5168.72	4914.67	4616.17	4264.75
247.5	5749.65	5736.08	5661.98	5554.02	5401.59	5192.00	4933.73	4605.59	4235.11
270.0	5749.65	5740.31	5659.87	5494.74	5304.21	5111.56	4823.64	4516.67	4158.05
292.5	5749.65	5727.61	5664.10	5545.55	5376.19	5149.66	4880.80	4546.31	4169.90
315.0	5749.65	5717.03	5647.16	5530.73	5376.19	5160.25	4895.62	4584.42	4214.57
337.5	5749.65	5693.74	5625.99	5515.91	5355.02	5158.13	4925.26	4635.23	4224.74
360.0	5749.65	5704.32	5621.76	5509.56	5369.83	5166.60	4925.26	4628.88	4216.27

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3873.31	3449.06	2941.18	2382.92	1814.93	1253.70	716.19	286.22	60.34
22.5	3886.86	3433.18	2928.27	2380.17	1774.49	1220.25	737.78	379.79	165.76
45.0	3874.79	3391.69	2864.55	2349.69	1847.95	1341.98	912.23	588.11	345.92
67.5	3794.77	3324.36	2904.56	2372.55	1901.51	1493.14	1102.55	795.16	544.08
90.0	3892.15	3403.12	3028.40	2471.63	2027.05	1650.22	1235.28	915.61	662.63
112.5	3866.75	3396.77	2939.49	2435.64	1959.31	1557.07	1133.67	831.14	552.76
135.0	3902.74	3413.70	2895.03	2353.07	1836.52	1353.84	915.40	581.12	330.04
157.5	3892.15	3453.93	2937.37	2367.89	1800.53	1201.41	711.53	345.50	150.31
180.0	3877.33	3432.76	2931.02	2391.18	1815.35	1224.70	690.79	259.97	56.74
202.5	3873.10	3428.52	2901.38	2336.14	1749.72	1212.00	700.10	351.85	144.59
225.0	3841.34	3367.13	2880.21	2365.78	1802.65	1309.38	929.37	596.15	337.24
247.5	3811.70	3373.48	2892.92	2365.78	1910.62	1561.31	1150.60	786.69	493.90
270.0	3697.60	3284.14	2762.08	2284.91	1909.35	1447.83	1135.57	782.03	470.40
292.5	3745.02	3322.67	2811.83	2287.45	1827.84	1464.13	1083.07	726.99	436.53
315.0	3805.14	3324.79	2817.55	2314.12	1753.32	1254.97	868.62	560.80	316.28
337.5	3863.36	3408.20	2896.94	2327.67	1741.68	1214.54	705.82	347.62	136.76
360.0	3873.31	3449.06	2941.18	2382.92	1814.93	1253.70	716.19	286.22	60.34

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	4.23	3.60	3.60	3.81	4.45	5.29	5.93	6.56	6.99
22.5	54.62	13.13	5.50	3.81	4.45	5.29	6.35	7.62	7.62
45.0	171.69	74.31	35.78	24.35	13.76	5.72	6.77	7.62	8.68
67.5	315.23	173.38	97.38	5.50	30.70	11.43	6.77	7.83	8.26
90.0	405.41	248.75	154.97	10.37	38.11	19.69	8.05	7.83	8.89
112.5	327.93	193.50	105.00	5.72	29.22	13.97	6.56	7.41	8.26
135.0	161.11	69.86	33.03	22.02	13.34	5.72	6.14	7.41	8.47
157.5	45.52	11.86	5.29	4.02	4.45	5.29	6.35	7.20	7.41
180.0	5.93	4.45	3.81	3.81	4.02	5.08	5.93	6.56	6.99
202.5	42.76	12.91	5.72	4.02	4.45	5.50	6.14	6.99	7.41
225.0	152.00	71.77	34.30	16.94	9.10	5.72	6.35	7.41	8.26
247.5	277.75	162.16	80.24	5.93	35.57	11.86	6.56	7.62	8.05
270.0	290.03	180.37	86.80	5.93	38.53	11.22	6.99	8.47	8.89
292.5	254.26	146.92	73.46	7.20	34.51	7.41	6.99	7.83	8.68
315.0	138.67	60.76	29.00	15.45	5.93	5.72	6.35	7.62	8.89
337.5	35.78	9.95	4.66	4.23	4.45	5.72	6.14	6.99	7.41
360.0	4.23	3.60	3.60	3.81	4.45	5.29	5.93	6.56	6.99

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	8.05	8.47	9.10	9.74	9.74	10.16	10.16	10.16	10.16
22.5	8.26	8.89	9.32	9.74	10.16	9.95	10.16	9.95	10.37
45.0	9.53	9.74	9.95	9.95	10.16	10.16	9.95	10.16	10.37
67.5	8.89	9.53	10.16	10.59	10.59	10.37	10.37	10.16	10.37
90.0	9.32	9.74	10.80	11.22	11.01	10.80	10.16	9.53	9.74
112.5	8.68	9.53	9.74	10.37	10.59	10.59	9.95	9.74	9.74
135.0	9.53	9.53	9.53	9.95	10.16	10.16	10.16	9.74	9.95
157.5	8.05	8.68	9.10	9.53	9.74	9.95	9.95	9.53	9.74
180.0	8.05	8.26	8.89	9.53	9.74	9.95	9.95	9.74	9.74
202.5	8.26	8.47	9.32	9.53	9.95	9.95	9.95	9.74	9.74
225.0	9.32	9.53	9.74	9.74	10.16	10.16	9.95	9.95	9.74
247.5	8.68	9.53	9.95	10.59	10.59	10.16	10.16	9.95	9.95
270.0	9.32	10.37	10.80	11.22	11.01	10.16	10.37	10.16	10.16
292.5	8.89	9.53	9.95	10.16	10.37	9.95	10.37	10.16	10.59
315.0	9.32	9.95	9.74	9.74	9.95	10.16	9.95	9.95	10.37
337.5	8.26	8.89	9.32	9.53	9.95	9.95	9.95	10.16	10.37
360.0	8.05	8.47	9.10	9.74	9.74	10.16	10.16	10.16	10.16

C/γ(°)	180.0
0.0	10.66
22.5	10.66
45.0	10.66
67.5	10.66
90.0	10.66
112.5	10.66
135.0	10.66
157.5	10.66
180.0	10.66
202.5	10.66
225.0	10.66
247.5	10.66
270.0	10.66
292.5	10.66
315.0	10.66
337.5	10.66
360.0	10.66

3.2.4 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 4000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.17	60	0.4380	108.95	0.8978

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
16793.02	154.14	79.28	98.95

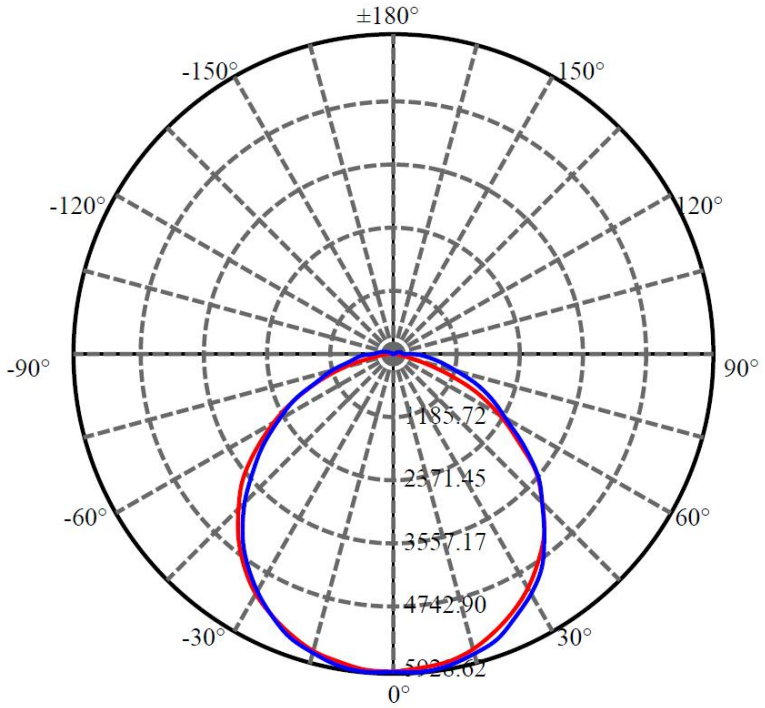
Zonal Flux Diagram

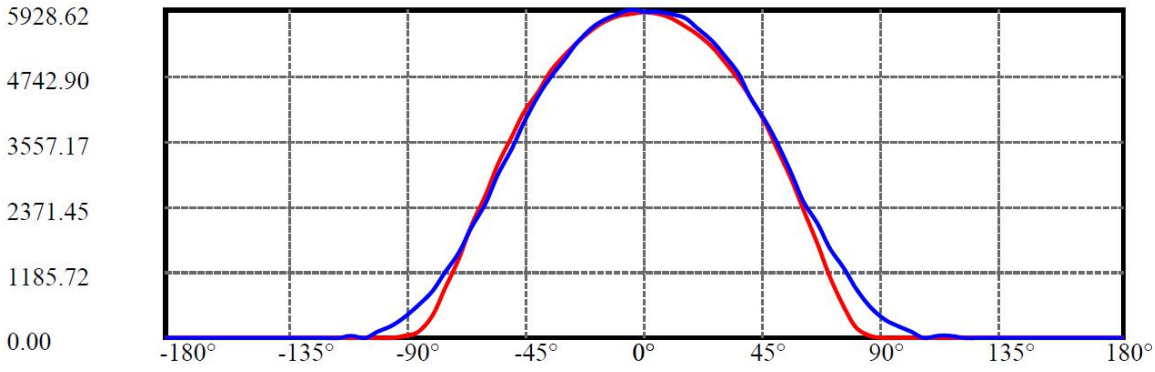
Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5905.341	0.000	0	0.00%	0.00%
5.0	5887.268	140.977	140.977	0.00%	0.84%
10.0	5820.789	418.834	559.811	0.00%	3.33%
15.0	5707.331	683.840	1243.652	0.00%	7.41%
20.0	5547.154	927.528	2171.179	0.00%	12.93%
25.0	5331.885	1141.010	3312.19	0.00%	19.72%
30.0	5071.598	1316.569	4628.759	0.00%	27.56%
35.0	4757.003	1447.330	6076.089	0.00%	36.18%
40.0	4419.246	1530.988	7607.077	0.00%	45.30%
45.0	3958.765	1551.257	9158.334	0.00%	54.54%
50.0	3484.674	1504.056	10662.389	0.00%	63.49%
55.0	2971.560	1403.800	12066.19	0.00%	71.85%
60.0	2426.031	1247.638	13313.828	0.00%	79.28%
65.0	1892.555	1049.856	14363.684	0.00%	85.53%
70.0	1393.535	832.059	15195.743	0.00%	90.49%
75.0	956.845	614.351	15810.094	0.00%	94.15%
80.0	592.221	414.487	16224.581	0.00%	96.62%
85.0	336.357	252.317	16476.898	0.00%	98.12%
90.0	176.259	140.359	16617.257	0.00%	98.95%
95.0	94.287	74.078	16691.334	0.00%	99.39%
100.0	49.414	39.047	16730.381	0.00%	99.63%
105.0	9.645	15.802	16746.184	0.00%	99.72%
110.0	18.491	7.354	16753.538	0.00%	99.76%
115.0	8.729	6.892	16760.43	0.00%	99.81%
120.0	6.766	3.767	16764.197	0.00%	99.83%
125.0	7.629	3.327	16767.524	0.00%	99.85%
130.0	8.388	3.483	16771.007	0.00%	99.87%
135.0	9.003	3.514	16774.521	0.00%	99.89%
140.0	9.540	3.433	16777.954	0.00%	99.91%
145.0	10.050	3.268	16781.223	0.00%	99.93%
150.0	10.378	3.008	16784.231	0.00%	99.95%
155.0	10.587	2.653	16786.884	0.00%	99.96%
160.0	10.534	2.215	16789.099	0.00%	99.98%
165.0	10.286	1.716	16790.815	0.00%	99.99%
170.0	10.220	1.216	16792.032	0.00%	99.99%
175.0	10.377	0.737	16792.768	0.00%	100.00%
180.0	10.974	0.255	16793.024	0.00%	100.00%

Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





C0/C180:

C90/C270:

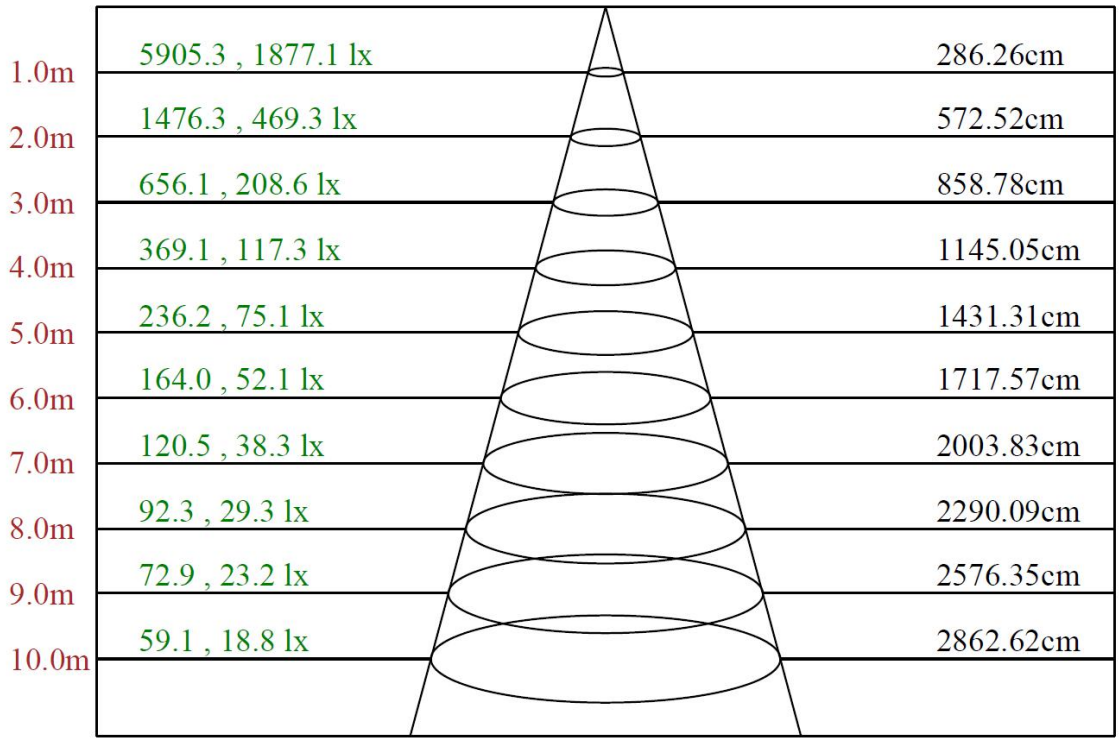
Field angle(10%Imax):C0/180Left:78.2 Right:74.6

:C90/270Left:85.1 Right:84.6

Beam Angle(50%Imax):C0/180Left:56.7 Right:54.3

:C90/270Left:54.9 Right:55.0

Lux distance Curve



Max , Ave Beam angle of C270 plane 110.12

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	5905.34	5851.15	5775.77	5650.14	5474.26	5258.60	4996.88	4689.09	4358.26
22.5	5905.34	5851.15	5763.21	5639.68	5470.08	5254.41	4994.78	4676.52	4389.67
45.0	5905.34	5859.53	5779.96	5658.52	5497.30	5271.16	4992.69	4663.96	4594.86
67.5	5905.34	5867.90	5800.90	5677.36	5501.48	5258.60	4978.03	4626.27	4171.91
90.0	5905.34	5905.59	5863.71	5765.30	5610.36	5388.42	5112.04	4783.31	4362.45
112.5	5905.34	5926.53	5855.34	5742.27	5576.86	5373.76	5114.13	4789.59	4400.14
135.0	5905.34	5907.68	5840.68	5727.62	5570.58	5382.14	5128.79	4821.00	4460.86
157.5	5905.34	5884.65	5815.56	5702.49	5549.64	5352.82	5105.75	4827.28	4473.42
180.0	5905.34	5865.81	5807.18	5698.30	5555.92	5340.26	5118.32	4823.09	4471.33
202.5	5905.34	5884.65	5840.68	5733.90	5595.71	5392.61	5147.63	4858.68	4504.83
225.0	5905.34	5897.21	5840.68	5740.18	5593.61	5396.79	5149.72	4860.78	4511.11
247.5	5905.34	5890.93	5851.15	5754.83	5591.52	5392.61	5149.72	4850.31	4462.95
270.0	5905.34	5928.62	5865.81	5761.12	5601.99	5338.17	5057.60	4714.21	4364.55
292.5	5905.34	5901.40	5830.21	5710.86	5551.74	5329.79	5057.60	4710.02	4460.86
315.0	5905.34	5899.31	5807.18	5685.74	5518.23	5300.48	5026.19	4720.49	4366.64
337.5	5905.34	5874.18	5794.62	5668.99	5495.20	5279.54	5015.72	4697.46	4354.08
360.0	5905.34	5851.15	5775.77	5650.14	5474.26	5258.60	4996.88	4689.09	4358.26

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3913.96	3431.33	2875.64	2313.03	1699.55	1094.64	551.93	173.79	33.92
22.5	3876.90	3391.76	2807.80	2227.19	1627.52	1075.80	590.04	286.85	101.34
45.0	3844.23	3342.35	2818.69	2255.66	1694.52	1213.36	810.93	512.15	278.27
67.5	3808.43	3360.35	2818.06	2290.42	1843.81	1437.40	1086.27	717.34	402.43
90.0	3924.85	3522.83	2965.88	2459.18	2055.07	1636.31	1265.71	884.01	566.79
112.5	3970.91	3520.74	3049.63	2480.12	1992.26	1615.37	1211.27	862.02	543.97
135.0	4044.19	3556.34	3037.07	2509.43	1948.29	1424.84	1047.95	657.88	378.77
157.5	4058.85	3598.21	3114.54	2553.40	1946.20	1385.06	864.12	443.47	196.40
180.0	4073.51	3629.62	3143.85	2589.00	2040.42	1445.78	885.89	419.60	113.69
202.5	4107.01	3635.90	3158.51	2612.03	2000.64	1424.84	1015.08	493.72	221.32
225.0	4115.38	3623.34	3089.42	2547.12	2057.17	1527.43	1064.70	687.82	426.93
247.5	4021.16	3554.24	3085.23	2586.90	2082.29	1659.34	1228.02	918.35	612.65
270.0	3918.98	3414.58	2951.85	2439.29	1980.95	1541.04	1174.63	855.53	595.27
292.5	3839.21	3368.52	2906.63	2374.38	1886.52	1480.95	1081.87	761.73	512.77
315.0	3888.62	3363.08	2836.27	2290.84	1744.77	1242.89	832.92	520.94	292.92
337.5	3934.06	3441.59	2885.90	2288.53	1680.91	1091.50	598.20	280.36	104.27
360.0	3913.96	3431.33	2875.64	2313.03	1699.55	1094.64	551.93	173.79	33.92

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	3.56	3.56	3.56	3.98	4.40	5.44	6.28	7.12	7.54
22.5	28.90	9.21	3.98	3.98	4.82	5.86	6.91	7.54	7.96
45.0	128.98	54.86	30.15	17.38	5.65	5.86	7.12	7.96	9.00
67.5	253.56	152.43	76.84	7.75	32.66	6.91	7.12	7.96	8.59
90.0	333.33	202.68	114.32	7.96	44.60	20.10	7.33	8.38	9.63
112.5	295.02	168.76	84.80	5.86	42.50	13.82	6.91	7.75	8.59
135.0	176.72	72.87	34.55	20.94	13.82	5.65	6.70	7.75	8.79
157.5	64.70	16.75	6.07	4.40	4.82	5.24	6.28	6.91	7.33
180.0	21.36	5.24	4.61	3.98	4.40	4.82	5.86	6.28	7.54
202.5	80.82	21.57	8.38	4.82	4.61	5.03	6.07	7.33	7.54
225.0	222.57	103.23	39.57	30.99	21.78	6.07	6.49	7.12	8.59
247.5	373.75	242.67	133.38	6.70	33.29	19.26	7.12	7.75	8.38
270.0	373.95	218.38	120.39	5.65	37.48	14.45	7.54	8.38	9.63
292.5	304.44	165.41	91.71	6.28	28.90	9.63	6.91	8.17	8.38
315.0	131.07	62.19	34.13	19.68	7.33	5.86	6.91	8.17	9.00
337.5	27.43	8.79	4.19	3.98	4.82	5.65	6.70	7.54	7.75
360.0	3.56	3.56	3.56	3.98	4.40	5.44	6.28	7.12	7.54

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	8.38	9.00	9.63	10.05	10.26	10.26	10.05	10.05	10.47
22.5	8.59	9.00	9.42	9.84	10.47	10.26	10.47	10.26	10.47
45.0	9.63	9.84	10.05	10.26	10.26	10.47	10.47	10.26	10.68
67.5	9.00	10.05	10.26	10.68	10.89	10.68	10.26	10.47	10.47
90.0	9.63	10.05	11.10	11.31	11.31	11.10	10.26	10.26	10.26
112.5	8.79	9.63	10.26	10.68	11.10	10.68	10.26	10.26	10.26
135.0	9.84	10.05	10.26	10.47	10.47	10.68	10.26	10.05	10.05
157.5	8.17	8.79	9.42	9.84	10.05	10.47	10.26	10.05	10.05
180.0	7.96	8.59	9.21	9.84	10.26	10.47	10.05	10.26	10.26
202.5	8.38	8.79	9.21	9.63	10.05	10.26	10.05	10.05	10.26
225.0	9.84	10.26	10.26	10.26	10.47	10.47	10.26	10.26	10.26
247.5	8.79	9.42	10.26	10.68	10.68	10.68	10.47	10.05	10.47
270.0	9.84	10.26	11.31	11.52	11.31	10.89	10.47	10.47	10.68
292.5	9.00	9.84	10.68	10.89	10.68	10.47	10.47	10.05	10.47
315.0	9.63	9.84	10.05	10.26	10.68	10.47	10.26	10.26	10.47
337.5	8.59	9.21	9.42	9.84	10.47	10.26	10.26	10.47	10.47
360.0	8.38	9.00	9.63	10.05	10.26	10.26	10.05	10.05	10.47

C/γ(°)	180.0
0.0	10.97
22.5	10.97
45.0	10.97
67.5	10.97
90.0	10.97
112.5	10.97
135.0	10.97
157.5	10.97
180.0	10.97
202.5	10.97
225.0	10.97
247.5	10.97
270.0	10.97
292.5	10.97
315.0	10.97
337.5	10.97
360.0	10.97

3.2.5 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 5000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.12	60	0.9140	108.64	0.9891

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
15983.26	147.12	79.21	98.94

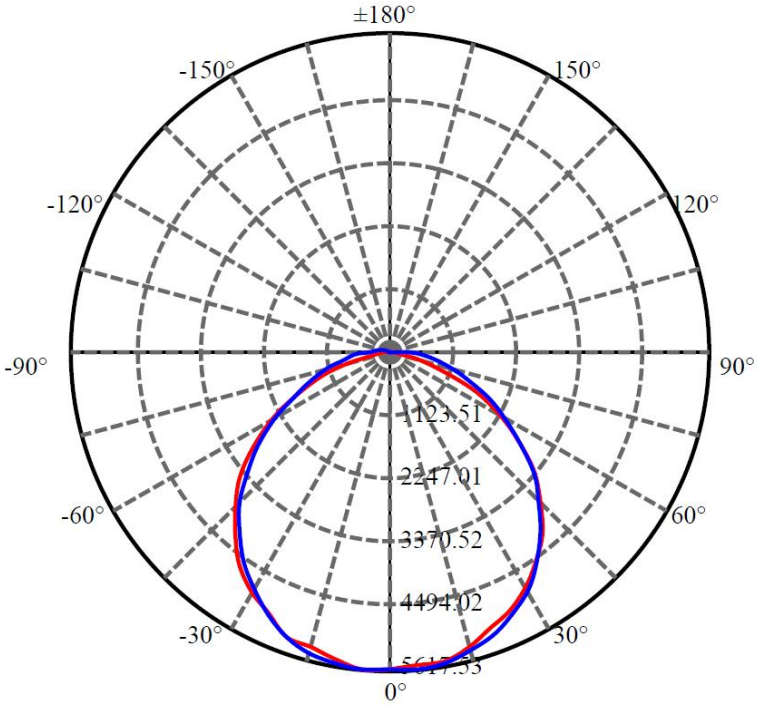
Zonal Flux Diagram

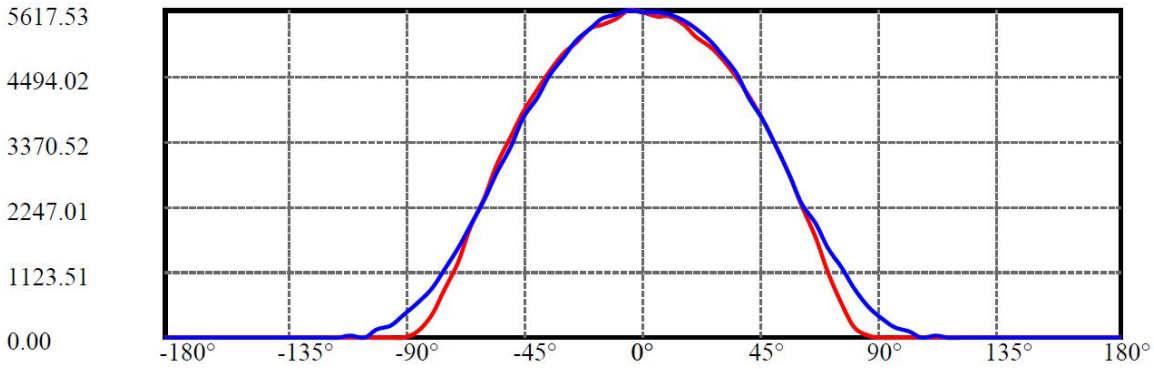
Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5598.099	0.000	0	0.00%	0.00%
5.0	5584.712	133.687	133.687	0.00%	0.84%
10.0	5522.921	397.355	531.042	0.00%	3.32%
15.0	5414.821	648.819	1179.862	0.00%	7.38%
20.0	5267.555	880.378	2060.24	0.00%	12.89%
25.0	5061.277	1083.304	3143.543	0.00%	19.67%
30.0	4824.171	1251.012	4394.555	0.00%	27.49%
35.0	4526.993	1377.024	5771.58	0.00%	36.11%
40.0	4175.713	1451.981	7223.56	0.00%	45.19%
45.0	3770.422	1471.291	8694.852	0.00%	54.40%
50.0	3324.007	1433.533	10128.385	0.00%	63.37%
55.0	2837.078	1339.625	11468.01	0.00%	71.75%
60.0	2319.743	1191.985	12659.994	0.00%	79.21%
65.0	1809.210	1003.756	13663.751	0.00%	85.49%
70.0	1330.127	794.900	14458.651	0.00%	90.46%
75.0	908.072	585.029	15043.68	0.00%	94.12%
80.0	565.629	394.321	15438.001	0.00%	96.59%
85.0	321.748	241.122	15679.123	0.00%	98.10%
90.0	168.753	134.303	15813.426	0.00%	98.94%
95.0	91.442	71.244	15884.67	0.00%	99.38%
100.0	48.427	38.006	15922.675	0.00%	99.62%
105.0	9.540	15.510	15938.186	0.00%	99.72%
110.0	17.638	7.104	15945.289	0.00%	99.76%
115.0	8.521	6.624	15951.913	0.00%	99.80%
120.0	6.483	3.648	15955.561	0.00%	99.83%
125.0	7.343	3.196	15958.757	0.00%	99.85%
130.0	8.151	3.369	15962.125	0.00%	99.87%
135.0	8.706	3.406	15965.532	0.00%	99.89%
140.0	9.143	3.305	15968.837	0.00%	99.91%
145.0	9.685	3.141	15971.978	0.00%	99.93%
150.0	9.924	2.888	15974.866	0.00%	99.95%
155.0	10.082	2.532	15977.397	0.00%	99.96%
160.0	10.029	2.109	15979.507	0.00%	99.98%
165.0	9.857	1.639	15981.146	0.00%	99.99%
170.0	9.765	1.164	15982.31	0.00%	99.99%
175.0	9.871	0.702	15983.012	0.00%	100.00%
180.0	10.523	0.244	15983.256	0.00%	100.00%

Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





C0/C180:

C90/C270:

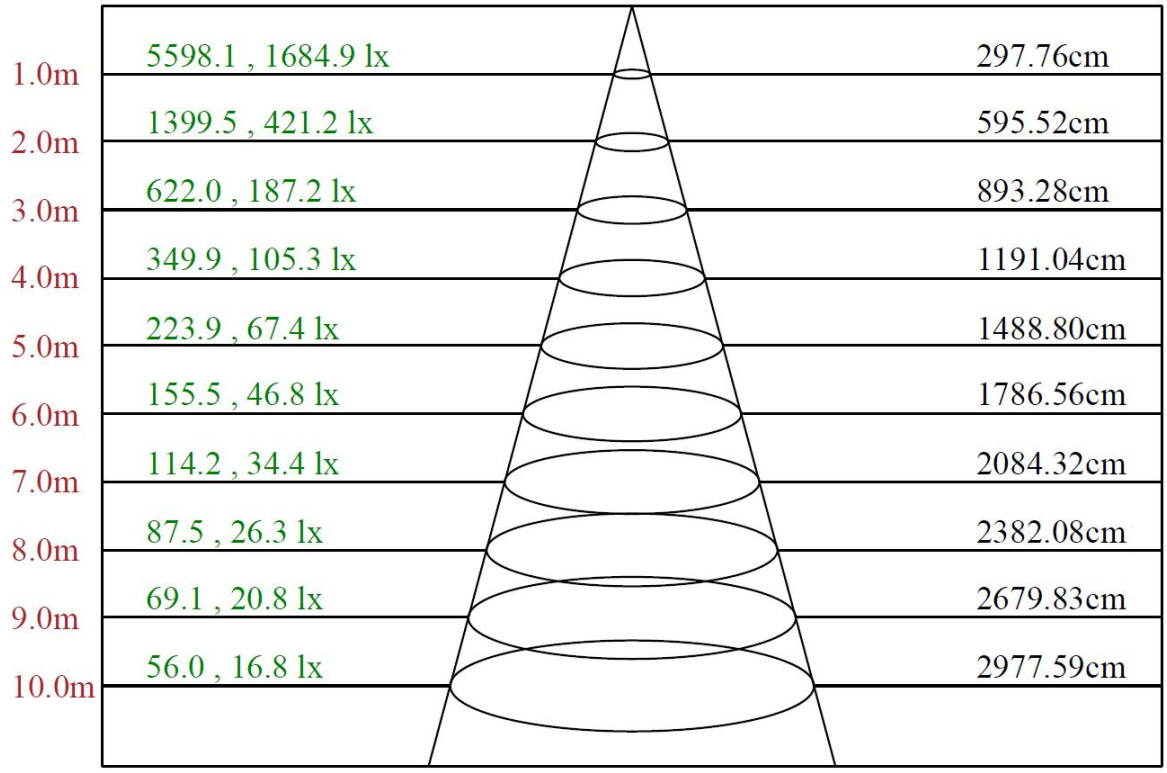
Field angle(10%Imax):C0/180Left:77.8 Right:74.9

:C90/270Left:85.9 Right:84.3

Beam Angle(50%Imax):C0/180Left:56.4 Right:54.9

:C90/270Left:55.4 Right:54.8

Lux distance Curve



Max , Ave Beam angle of C180 plane 112.22

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	5598.10	5518.03	5526.49	5371.95	5170.83	4999.35	4768.60	4465.86	4155.09
22.5	5598.10	5549.78	5473.57	5357.13	5196.24	4980.30	4770.72	4451.05	4116.56
45.0	5598.10	5566.72	5490.50	5367.72	5221.64	5003.59	4747.43	4434.11	4081.20
67.5	5598.10	5575.19	5511.68	5391.00	5215.29	4984.54	4719.91	4396.00	4016.84
90.0	5598.10	5587.89	5547.66	5452.40	5302.09	5084.04	4834.23	4520.91	4116.56
112.5	5598.10	5615.41	5541.31	5437.58	5280.92	5092.50	4840.58	4537.84	4163.13
135.0	5598.10	5598.47	5537.08	5431.23	5280.92	5086.15	4859.63	4569.60	4226.64
157.5	5598.10	5579.42	5522.26	5410.06	5263.98	5081.92	4851.16	4588.65	4230.88
180.0	5598.10	5617.53	5486.27	5380.42	5314.79	5058.63	4872.33	4586.54	4249.93
202.5	5598.10	5587.89	5539.20	5446.05	5316.91	5115.79	4908.32	4622.52	4298.62
225.0	5598.10	5596.36	5545.55	5452.40	5327.49	5139.08	4912.56	4647.93	4304.97
247.5	5598.10	5594.24	5556.13	5475.69	5325.38	5136.96	4916.79	4633.11	4271.10
270.0	5598.10	5611.18	5560.37	5465.10	5316.91	5077.69	4813.06	4491.27	4133.07
292.5	5598.10	5590.01	5530.73	5422.76	5266.10	5075.57	4813.06	4495.50	4133.70
315.0	5598.10	5596.36	5505.32	5395.24	5242.81	5039.58	4794.00	4506.09	4157.41
337.5	5598.10	5570.95	5492.62	5380.42	5238.58	5024.76	4764.37	4484.92	4155.72
360.0	5598.10	5518.03	5526.49	5371.95	5170.83	4999.35	4768.60	4465.86	4155.09

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3728.29	3311.87	2801.25	2277.71	1705.69	1101.91	555.93	182.91	41.71
22.5	3698.87	3252.39	2729.06	2160.85	1601.11	1041.58	588.75	287.49	103.95
45.0	3658.85	3173.42	2683.96	2153.86	1624.82	1169.23	777.58	506.60	272.46
67.5	3606.35	3178.93	2662.79	2162.54	1750.99	1356.80	1032.26	668.13	384.88
90.0	3718.56	3326.91	2789.18	2317.08	1938.14	1531.67	1190.83	825.22	521.21
112.5	3760.90	3329.02	2875.98	2336.14	1868.28	1510.50	1129.43	790.71	489.88
135.0	3832.87	3367.13	2850.57	2342.49	1809.00	1309.38	912.65	594.88	332.59
157.5	3847.69	3398.88	2926.79	2376.36	1775.13	1256.45	771.23	392.29	171.27
180.0	3856.16	3436.99	2967.01	2395.41	1872.51	1298.80	804.26	368.79	94.63
202.5	3890.03	3447.58	2990.30	2469.51	1864.04	1317.85	842.79	456.85	205.56
225.0	3928.14	3464.51	2950.07	2433.52	1965.66	1455.46	1059.57	649.50	403.93
247.5	3856.16	3420.05	2967.01	2501.27	2016.47	1595.18	1190.83	890.84	592.34
270.0	3751.16	3283.51	2843.17	2360.48	1911.46	1532.30	1140.87	837.92	601.02
292.5	3693.57	3230.79	2798.92	2319.41	1834.83	1448.68	1059.78	773.77	516.77
315.0	3729.56	3259.37	2747.26	2237.70	1720.93	1251.80	841.94	531.80	302.95
337.5	3769.58	3302.77	2809.93	2271.57	1688.33	1104.45	630.45	292.36	112.84
360.0	3728.29	3311.87	2801.25	2277.71	1705.69	1101.91	555.93	182.91	41.71

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	3.81	3.39	3.39	3.60	4.23	5.29	5.93	6.56	7.41
22.5	30.27	9.74	4.02	3.81	4.45	5.72	6.56	7.41	7.83
45.0	125.75	52.29	30.27	18.00	5.29	5.72	6.77	7.62	9.10
67.5	243.03	148.40	74.10	6.99	29.64	6.77	6.99	7.62	8.26
90.0	313.53	191.80	101.19	7.83	42.13	17.15	6.99	8.26	9.10
112.5	268.02	155.39	77.70	5.93	39.80	11.64	6.56	7.62	8.26
135.0	153.70	64.78	30.91	20.11	11.64	5.93	6.14	7.20	8.47
157.5	53.98	12.91	5.72	4.23	4.45	5.50	6.14	6.99	7.20
180.0	13.97	5.08	4.23	4.02	4.23	4.87	5.93	6.35	6.77
202.5	70.50	19.69	7.62	4.66	4.45	5.29	6.14	6.99	7.41
225.0	210.43	100.14	40.01	30.06	19.90	5.50	6.14	7.20	8.47
247.5	358.84	238.59	140.36	6.14	33.87	20.11	6.99	7.20	8.05
270.0	375.56	220.59	124.48	5.72	36.84	15.67	6.99	8.26	9.53
292.5	304.64	165.13	91.88	7.20	28.58	10.16	6.56	7.62	8.26
315.0	141.42	65.84	34.72	20.54	8.26	5.72	6.56	7.41	8.68
337.5	32.60	9.32	4.23	3.81	4.45	5.29	6.35	7.20	7.62
360.0	3.81	3.39	3.39	3.60	4.23	5.29	5.93	6.56	7.41

C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	8.05	8.47	9.10	9.53	9.74	9.95	9.53	9.74	9.74
22.5	8.05	8.68	9.10	9.53	9.95	9.95	9.74	9.95	10.16
45.0	9.32	9.74	9.74	9.74	9.74	10.16	9.95	9.74	10.16
67.5	8.89	9.53	9.95	10.16	10.16	10.16	9.95	9.95	9.95
90.0	9.53	9.95	10.80	10.80	11.01	10.37	9.95	9.95	9.53
112.5	8.68	9.32	9.74	10.16	10.37	10.37	9.95	9.74	9.95
135.0	9.32	9.32	9.53	9.74	9.95	9.95	9.95	9.74	9.95
157.5	8.05	8.68	9.10	9.32	9.74	9.95	9.74	9.74	9.53
180.0	7.83	8.26	9.10	9.53	9.95	9.95	10.16	9.74	9.74
202.5	7.83	8.68	9.10	9.32	9.74	9.74	9.95	9.53	9.53
225.0	9.32	9.53	9.95	9.74	9.74	9.95	9.74	9.53	9.74
247.5	8.68	8.89	9.74	10.37	10.16	10.16	9.95	9.53	9.74
270.0	9.53	9.95	11.22	11.22	11.01	10.37	9.95	9.95	10.16
292.5	8.68	9.32	10.16	10.37	10.37	9.95	9.74	9.95	9.95
315.0	9.32	9.32	9.74	9.74	9.95	9.74	9.74	9.74	9.95
337.5	8.26	8.68	8.89	9.53	9.74	9.74	9.74	9.74	10.16
360.0	8.05	8.47	9.10	9.53	9.74	9.95	9.53	9.74	9.74

C/γ(°)	180.0
0.0	10.52
22.5	10.52
45.0	10.52
67.5	10.52
90.0	10.52
112.5	10.52
135.0	10.52
157.5	10.52
180.0	10.52
202.5	10.52
225.0	10.52
247.5	10.52
270.0	10.52
292.5	10.52
315.0	10.52
337.5	10.52
360.0	10.52

3.2.6 Model Number: HIDFA-110-H-EX39-8CCT-BYP/5SP, 5000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.11	60	0.4500	112.51	0.9019

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
16498.16	146.64	79.20	98.94

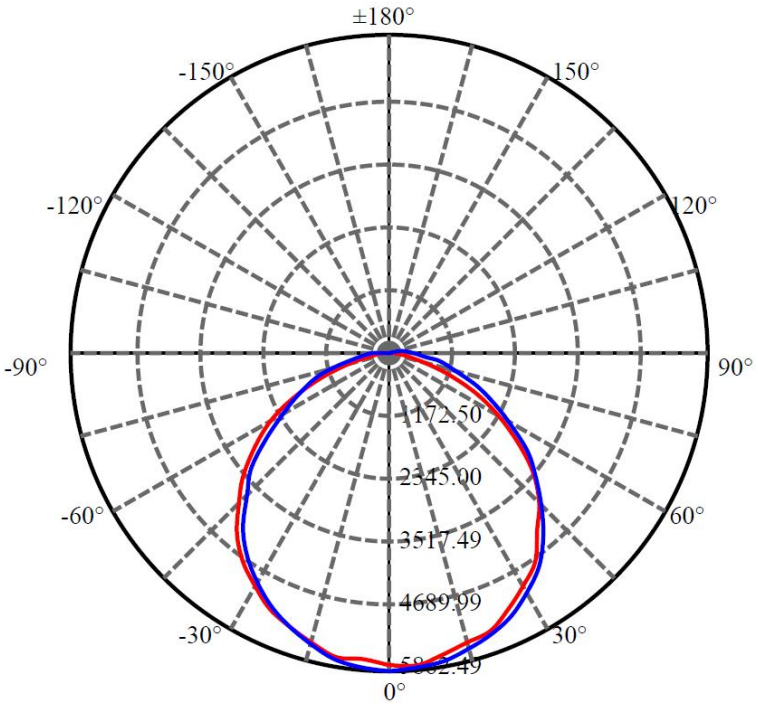
Zonal Flux Diagram

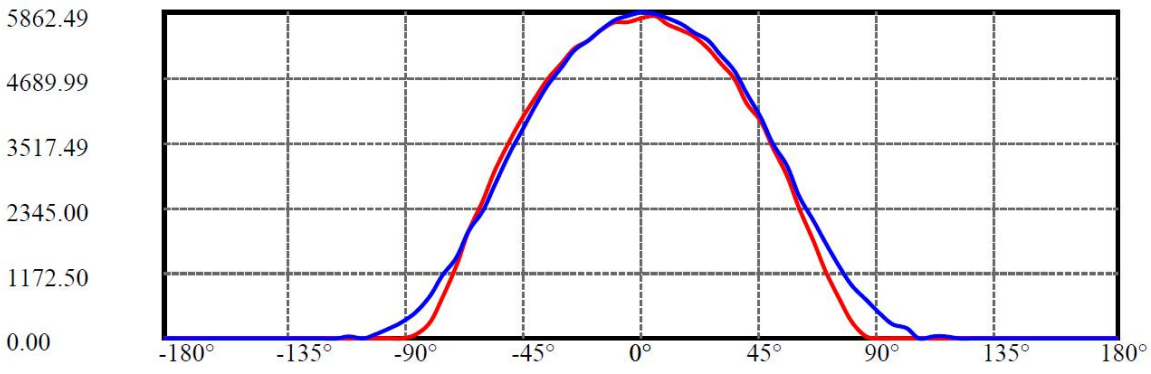
Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5791.695	0.000	0	0.00%	0.00%
5.0	5759.851	138.095	138.095	0.00%	0.84%
10.0	5692.215	409.676	547.772	0.00%	3.32%
15.0	5575.102	668.370	1216.141	0.00%	7.37%
20.0	5421.276	906.256	2122.397	0.00%	12.86%
25.0	5221.395	1116.220	3238.617	0.00%	19.63%
30.0	4975.984	1290.487	4529.104	0.00%	27.45%
35.0	4669.385	1420.348	5949.452	0.00%	36.06%
40.0	4332.692	1501.928	7451.38	0.00%	45.16%
45.0	3885.912	1521.741	8973.121	0.00%	54.39%
50.0	3430.790	1478.447	10451.568	0.00%	63.35%
55.0	2930.771	1383.215	11834.783	0.00%	71.73%
60.0	2395.039	1231.046	13065.829	0.00%	79.20%
65.0	1870.438	1036.945	14102.775	0.00%	85.48%
70.0	1378.827	822.735	14925.51	0.00%	90.47%
75.0	940.443	606.220	15531.73	0.00%	94.14%
80.0	579.906	406.803	15938.533	0.00%	96.61%
85.0	329.851	247.203	16185.736	0.00%	98.11%
90.0	173.051	137.698	16323.434	0.00%	98.94%
95.0	94.940	73.378	16396.812	0.00%	99.39%
100.0	50.885	39.624	16436.436	0.00%	99.63%
105.0	9.093	16.048	16452.485	0.00%	99.72%
110.0	17.659	6.992	16459.477	0.00%	99.77%
115.0	8.474	6.617	16466.094	0.00%	99.81%
120.0	6.658	3.679	16469.773	0.00%	99.83%
125.0	7.566	3.288	16473.061	0.00%	99.85%
130.0	8.224	3.433	16476.494	0.00%	99.87%
135.0	8.882	3.457	16479.951	0.00%	99.89%
140.0	9.448	3.394	16483.345	0.00%	99.91%
145.0	9.882	3.225	16486.57	0.00%	99.93%
150.0	10.145	2.949	16489.519	0.00%	99.95%
155.0	10.382	2.598	16492.117	0.00%	99.96%
160.0	10.369	2.176	16494.293	0.00%	99.98%
165.0	10.145	1.691	16495.984	0.00%	99.99%
170.0	10.053	1.198	16497.182	0.00%	99.99%
175.0	10.237	0.726	16497.908	0.00%	100.00%
180.0	10.790	0.251	16498.16	0.00%	100.00%

Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]





C0/C180:

C90/C270:

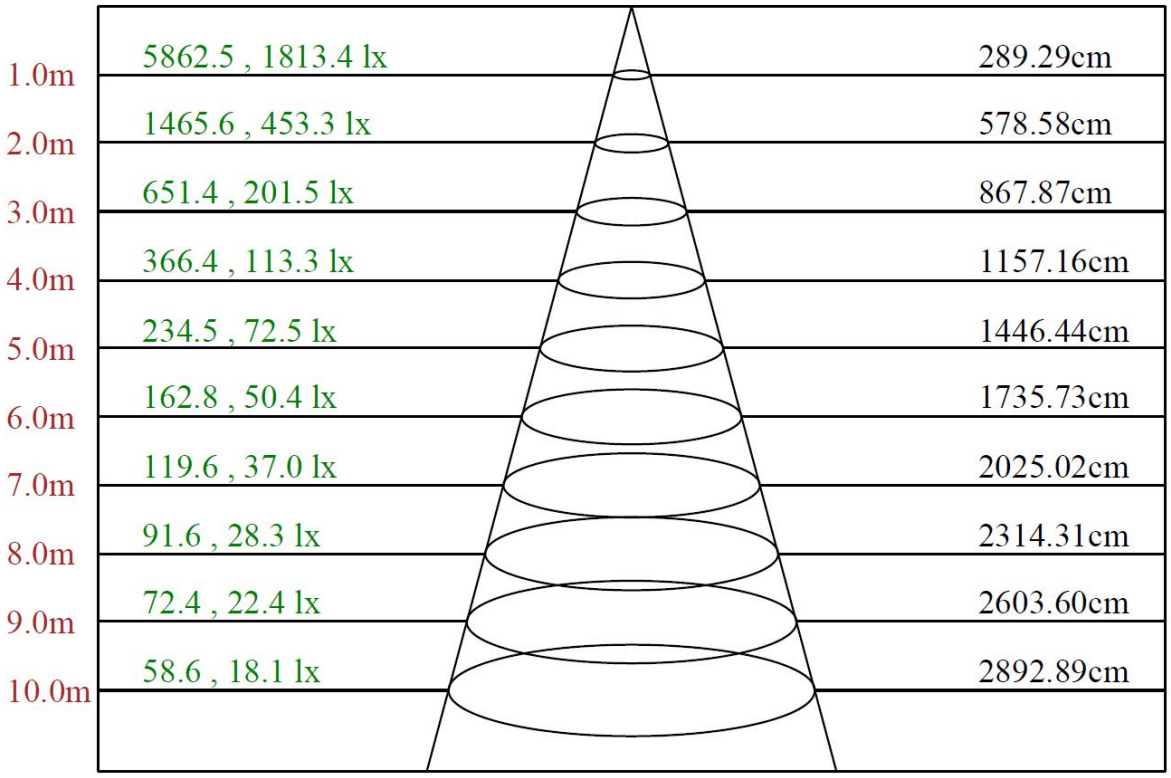
Field angle(10%Imax):C0/180Left:76.7 Right:76.3

:C90/270Left:82.9 Right:87.0

Beam Angle(50%Imax):C0/180Left:56.2 Right:55.2

:C90/270Left:53.6 Right:56.6

Lux distance Curve



Max , Ave Beam angle of C90 plane 110.68

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	5750.90	5784.59	5633.00	5525.63	5424.57	5199.29	4963.48	4675.04	4230.80
22.5	5776.17	5740.38	5696.16	5571.94	5411.93	5214.03	4992.96	4672.94	4378.18
45.0	5780.38	5750.90	5702.48	5586.68	5439.30	5237.19	4992.96	4710.84	4382.39
67.5	5816.17	5788.80	5710.90	5597.21	5443.51	5245.61	5005.59	4687.68	4599.25
90.0	5862.49	5816.17	5761.43	5641.42	5512.99	5342.46	5106.65	4790.84	4409.76
112.5	5803.54	5797.22	5744.59	5645.63	5496.15	5296.14	5049.80	4738.21	4384.50
135.0	5788.80	5765.64	5702.48	5607.74	5449.83	5258.24	5011.91	4717.15	4378.18
157.5	5755.11	5734.06	5662.48	5559.31	5409.83	5224.55	4974.01	4689.78	4333.97
180.0	5750.90	5673.00	5679.32	5534.05	5350.88	5201.39	4959.27	4672.94	4342.39
202.5	5776.17	5740.38	5658.27	5550.89	5403.51	5159.29	4952.96	4653.99	4319.23
225.0	5780.38	5746.69	5673.00	5544.57	5405.62	5209.82	4957.17	4658.20	4289.76
247.5	5816.17	5780.38	5710.90	5595.10	5439.30	5230.87	4974.01	4643.46	4260.28
270.0	5862.49	5801.43	5708.80	5548.78	5350.88	5152.97	4883.48	4555.04	4177.54
292.5	5803.54	5765.64	5691.95	5576.16	5407.72	5186.66	4904.53	4561.35	4196.70
315.0	5788.80	5750.90	5681.43	5574.05	5414.04	5184.55	4931.90	4622.41	4192.49
337.5	5755.11	5721.43	5658.27	5542.47	5380.35	5199.29	4955.06	4660.31	4447.66
360.0	5750.90	5784.59	5633.00	5525.63	5424.57	5199.29	4963.48	4675.04	4230.80

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	3895.62	3437.49	2918.72	2329.84	1764.33	1186.18	690.36	275.39	52.85
22.5	3907.84	3461.70	2944.61	2373.84	1754.85	1205.97	730.57	369.92	165.70
45.0	3947.84	3450.75	2915.14	2386.47	1869.60	1356.93	928.69	598.57	344.44
67.5	3875.83	3408.01	2965.67	2449.42	1970.02	1544.10	1128.92	819.00	568.25
90.0	3971.84	3502.34	3106.52	2548.59	2102.24	1719.06	1274.82	943.22	690.78
112.5	3948.68	3466.54	3018.09	2521.22	2015.92	1607.47	1175.87	883.22	576.25
135.0	3961.31	3493.91	2965.46	2432.79	1929.60	1430.62	1049.54	619.20	365.71
157.5	3967.63	3521.28	3024.41	2472.79	1876.97	1279.03	781.10	386.97	160.64
180.0	3925.52	3523.39	3015.99	2485.43	1925.39	1316.93	725.73	280.02	69.06
202.5	3921.31	3468.65	2946.51	2407.53	1826.44	1255.87	742.58	378.55	150.12
225.0	3849.73	3394.96	2910.72	2386.47	1820.12	1335.88	947.01	610.36	355.18
247.5	3820.25	3399.17	2902.30	2373.84	1925.39	1552.73	1161.13	786.58	479.61
270.0	3718.98	3311.38	2776.60	2285.41	1912.76	1454.20	1135.02	769.10	458.98
292.5	3769.72	3330.74	2806.08	2294.68	1825.59	1432.09	1076.70	714.78	425.08
315.0	3810.36	3329.48	2809.24	2276.36	1717.17	1229.77	840.69	522.98	293.91
337.5	3882.15	3392.85	2866.29	2295.94	1690.64	1154.39	658.36	320.65	121.06
360.0	3895.62	3437.49	2918.72	2329.84	1764.33	1186.18	690.36	275.39	52.85

C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	4.21	3.58	3.58	3.79	4.63	5.26	6.11	6.95	7.37
22.5	53.48	12.84	5.90	4.00	4.42	5.69	6.53	7.79	8.00
45.0	174.12	75.79	36.00	24.42	14.53	5.90	6.74	7.58	8.63
67.5	330.34	182.54	104.43	5.69	30.74	13.48	6.74	7.79	8.42
90.0	432.66	267.18	182.33	10.74	40.00	22.74	9.05	7.79	8.84
112.5	345.71	225.49	116.43	5.90	32.00	16.42	6.74	7.58	8.21
135.0	190.33	78.11	36.42	22.53	15.79	5.69	6.53	7.37	8.21
157.5	52.85	14.32	5.47	4.00	4.21	5.26	6.32	7.16	7.58
180.0	6.11	4.63	3.79	3.58	4.00	4.63	5.47	6.53	6.95
202.5	46.11	14.32	5.69	4.00	4.42	5.47	6.11	6.95	7.37
225.0	159.38	76.85	36.00	18.32	8.63	5.90	6.53	7.79	8.84
247.5	280.23	169.06	83.37	6.32	34.32	10.53	6.74	7.79	8.42
270.0	288.02	185.07	87.59	5.90	40.21	10.53	7.37	8.84	9.26
292.5	243.17	142.54	74.95	6.11	34.32	6.53	6.74	8.21	8.63
315.0	130.54	57.90	27.58	16.00	5.47	5.90	6.32	7.79	9.05
337.5	31.58	8.84	4.63	4.21	4.84	5.69	6.53	7.16	7.79
360.0	4.21	3.58	3.58	3.79	4.63	5.26	6.11	6.95	7.37

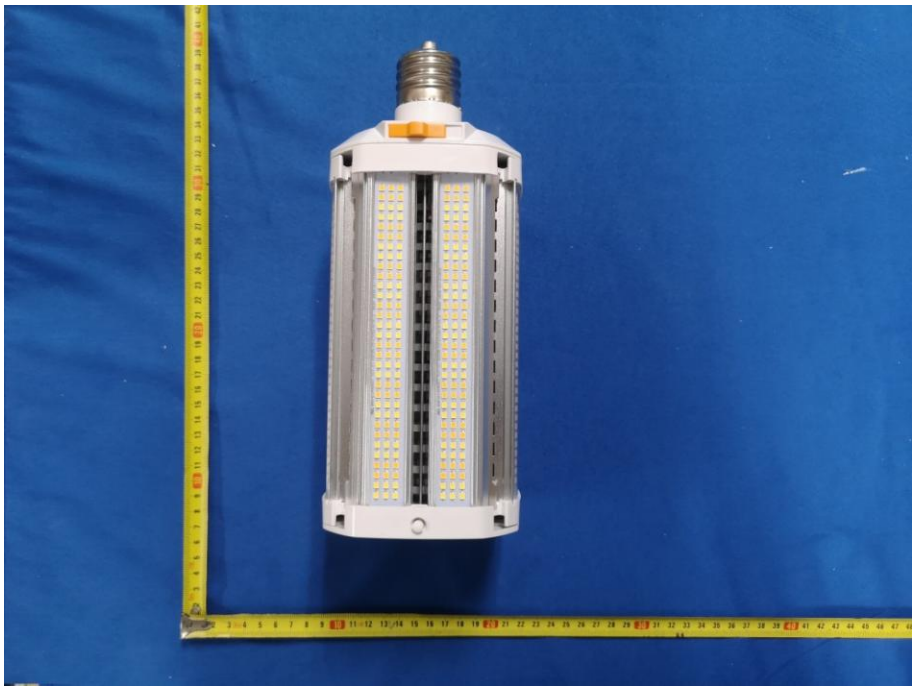
C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	8.42	8.63	9.47	9.69	10.11	10.32	10.53	10.11	10.32
22.5	8.42	9.05	9.26	9.69	10.32	10.32	10.11	10.11	10.53
45.0	9.90	10.11	10.32	10.32	10.32	10.32	10.32	10.11	10.74
67.5	8.84	9.69	10.11	10.74	10.74	10.74	10.32	10.11	10.32
90.0	9.26	9.90	11.16	11.37	11.16	10.95	9.90	9.90	10.11
112.5	8.63	9.05	10.11	10.32	10.53	10.74	9.90	9.90	9.90
135.0	9.47	9.69	9.90	10.11	10.11	10.11	10.11	10.11	9.90
157.5	8.00	8.63	9.26	9.47	9.69	10.11	9.90	9.90	9.90
180.0	7.79	8.42	9.26	9.47	10.11	10.11	10.11	9.90	9.90
202.5	8.21	8.84	9.26	9.69	9.90	10.11	9.90	9.69	10.11
225.0	9.69	9.69	9.69	10.11	10.32	10.32	10.11	10.11	10.11
247.5	8.84	9.69	10.11	10.53	10.74	10.53	10.11	10.11	10.11
270.0	9.69	10.74	10.95	11.16	11.16	10.32	10.32	10.11	10.74
292.5	9.05	9.69	9.90	10.32	10.53	10.53	10.32	10.53	10.32
315.0	9.47	10.11	9.90	9.90	10.32	10.11	10.11	10.11	10.53
337.5	8.42	9.26	9.47	9.47	10.11	10.32	10.32	10.11	10.32
360.0	8.42	8.63	9.47	9.69	10.11	10.32	10.53	10.11	10.32

C/γ(°)	180.0
0.0	10.53
22.5	10.95
45.0	10.95
67.5	10.95
90.0	10.95
112.5	10.74
135.0	10.53
157.5	10.74
180.0	10.53
202.5	10.95
225.0	10.95
247.5	10.95
270.0	10.95
292.5	10.74
315.0	10.53
337.5	10.74
360.0	10.53

4 Additional Test

Model Number	CCT(K)	Test Voltage (V)	Frequency (Hz)	Power Factor	THD
HIDFA-110-H-EX39-8 CCT-BYP/5SP	3000	120	60	0.989	9.8%
		277	60	0.902	16.7%
	4000	277	60	0.899	16.2%
	5000	277	60	0.903	15.3%

Photo Document



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