



Date of issue 2021-10-11

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:

Northvale, New Jersey, 07647, USA

For Product:

LED Corn Lamp

Model No.:

HIDFA-120S-EX39-8CCT-BYP/3SP

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

Jaky Li

Jason Zhou

Complied by: Jaky Li

Review by: Jason Zhou

Project Engineer

Technical Manager

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



1 General

1.1 Product Information

Manufacturer	RAB Lighting Inc
Manufacturer Address	Northvale, New Jersey, 07647, USA
Brand Name	RAB
Luminaire Type	LED Corn Lamp
Model Number	HIDFA-120S-EX39-8CCT-BYP/3SP
Rated Inputs	AC 100-277V, 50/60Hz
Rated Power	120 W
Color-Tunable Product	Yes, CCT setting: 3000K / 4000K / 5000K
Date of Receipt Samples	2021-08-16
Date of test	2021-08-17 to 2021-08-27
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-120S-EX39-8CCT-BYP/3SP are the same to the product in the report BL210817014-9 and is authorized by original applicant to use their test data.
- Note:All the data in previous report BL210817014-9 is shared in report.



1.4 Equipment list

Device	Manufacture	Model No.	Serial No.	Calibration due date
Goniophotometric System	SENSING	GMS-3000	N.A	2022-03-31
AC Power Source	ALL POWER	APW-110N	992257	2022-03-31
Total Luminous Flux Standard Lamp	SENSING	110V/100W	S1510065	2022-04-07
Total Spectral Radiant Flux Standard Lamp	SENSING	12V/20W	LSD12201731	2022-04-07
Digital Power Meter	YOKOGAWA	WT310	C2QM02030V	2022-03-31
Integral Sphere	SENSING	SPR-600M	N.A	2022-03-31
Digital Power Meter	YOKOGAWA	WT210	91L929742	2022-03-31
Optical Color and Electrical Measurement System	SENSING	SPR-3000	S1101108	2022-03-31
Environment Measurer	XUYAO	HS-1	N/A	2022-04-03
Environment Measurer	XUYAO	HS-1	N/A	2022-04-03
Stop watch	KISLO	K610	N/A	2022-04-22
Digital Anemometer	TECMAN	TD8901	026141	2021-09-09

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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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: HIDFA-120S-EX39-8CCT-BYP/3SP, 3000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.98	60	0.949	112.77	0.990

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
15054.82	133.5	3022

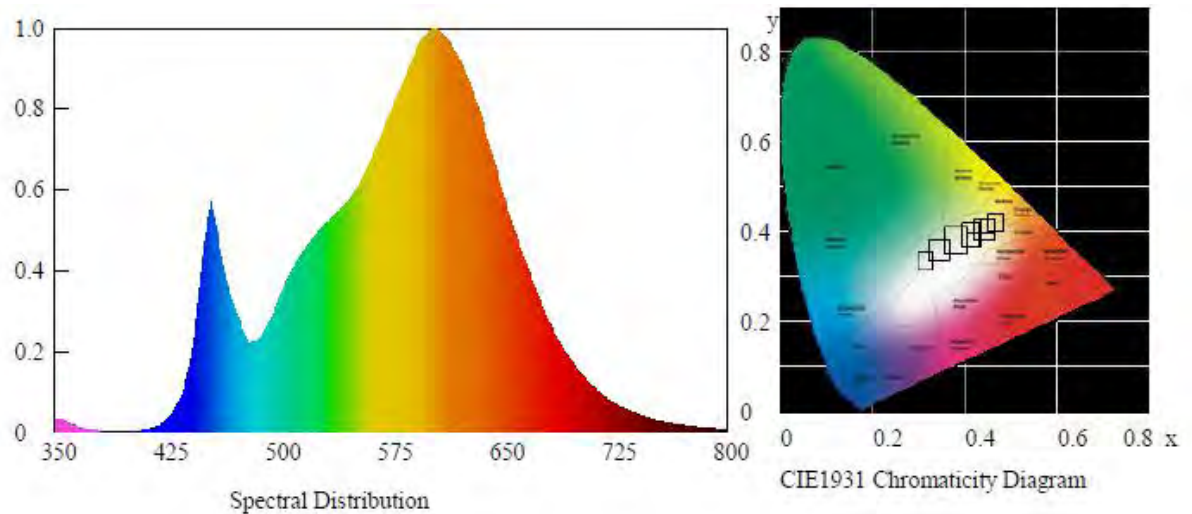
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00114	0.4338	0.4002	0.2502	0.5194

Color Rendering

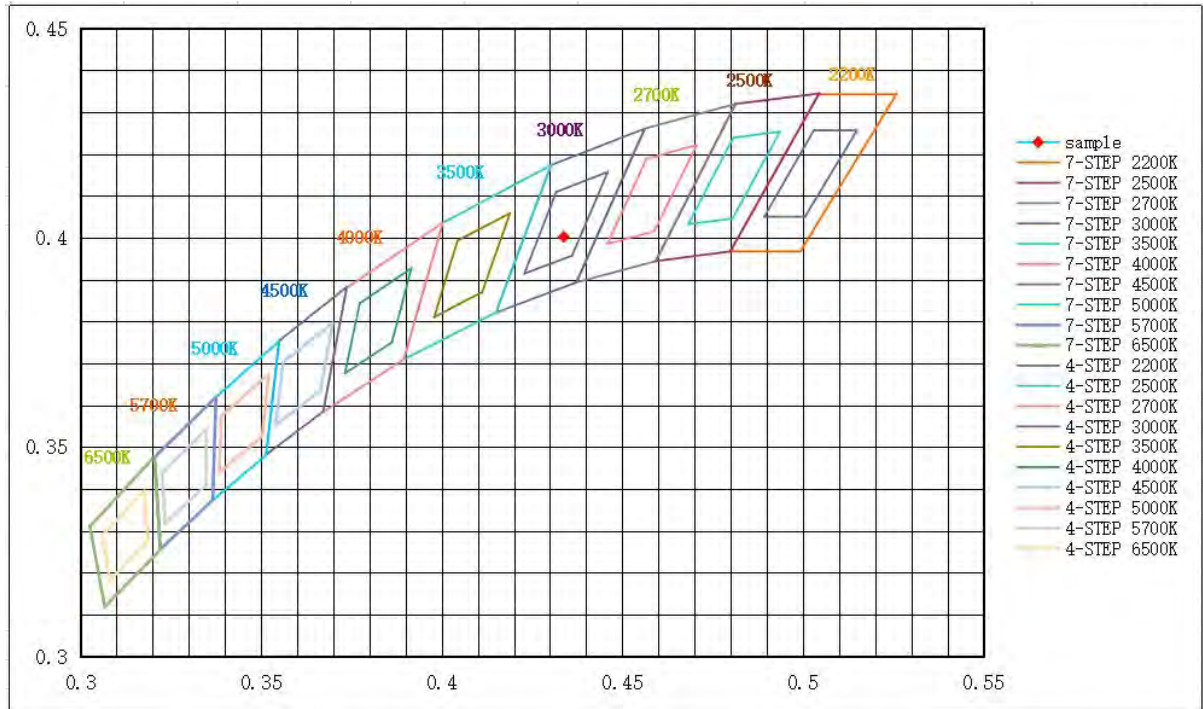
CRI	R9	Rf	Rg	Rcs,h1(%)
85.0	17	86	95	-10

Spectral Distribution





7/4 Step Quadrangle

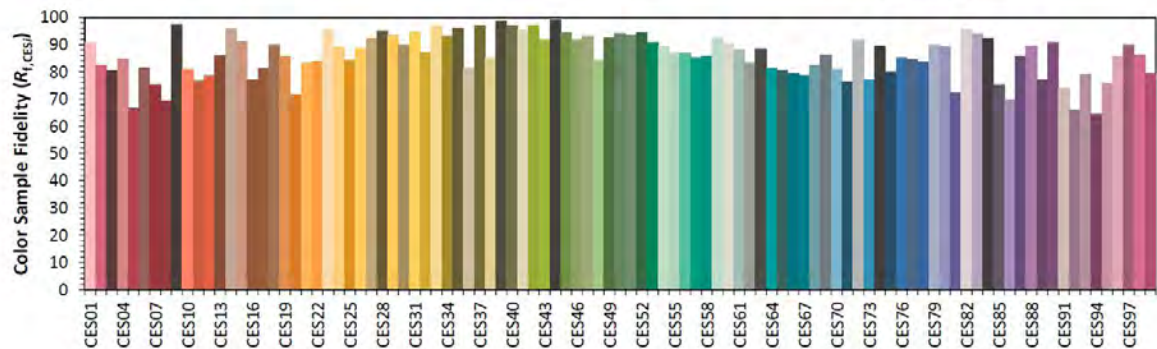
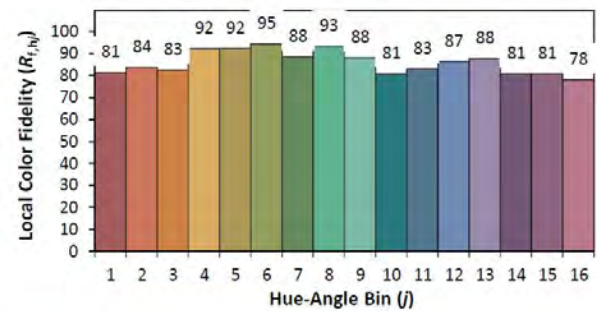
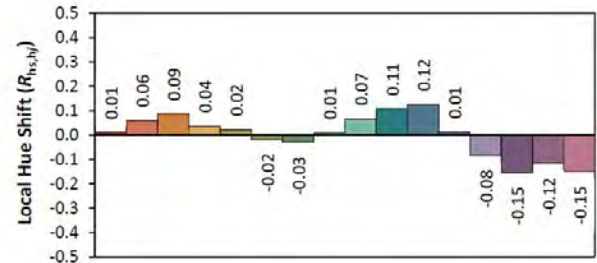
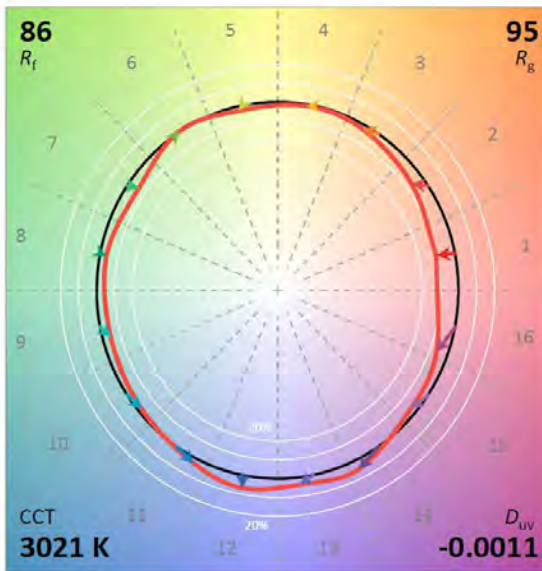
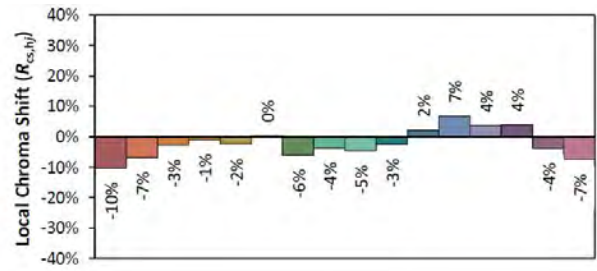
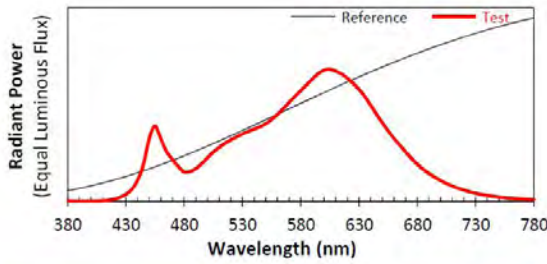




ANSI/IES TM-30-18 Color Rendition Report

Source: BL210817030-9
Date: 2021-10-11

Manufacturer: RAB Lighting Inc
Model: HIDFA-120S-EX39-8CCT-BYP/3SP, 3000K at 120V



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

x 0.4338
 y 0.4002
 u' 0.2502
 v' 0.5194

CIE 13.3-1995 (CRI)	
R_a	85
R_g	17

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



3.1.2 Model Number: HIDFA-120S-EX39-8CCT-BYP/3SP, 4000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.99	60	0.929	110.45	0.991

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
16247.21	147.1	3876

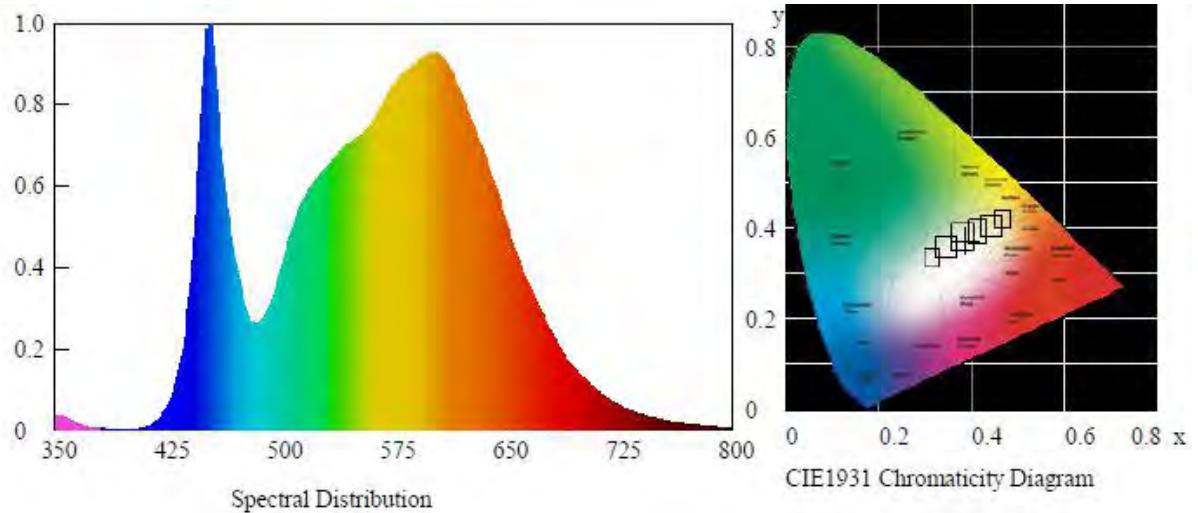
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00227	0.3843	0.3743	0.2287	0.5011

Color Rendering

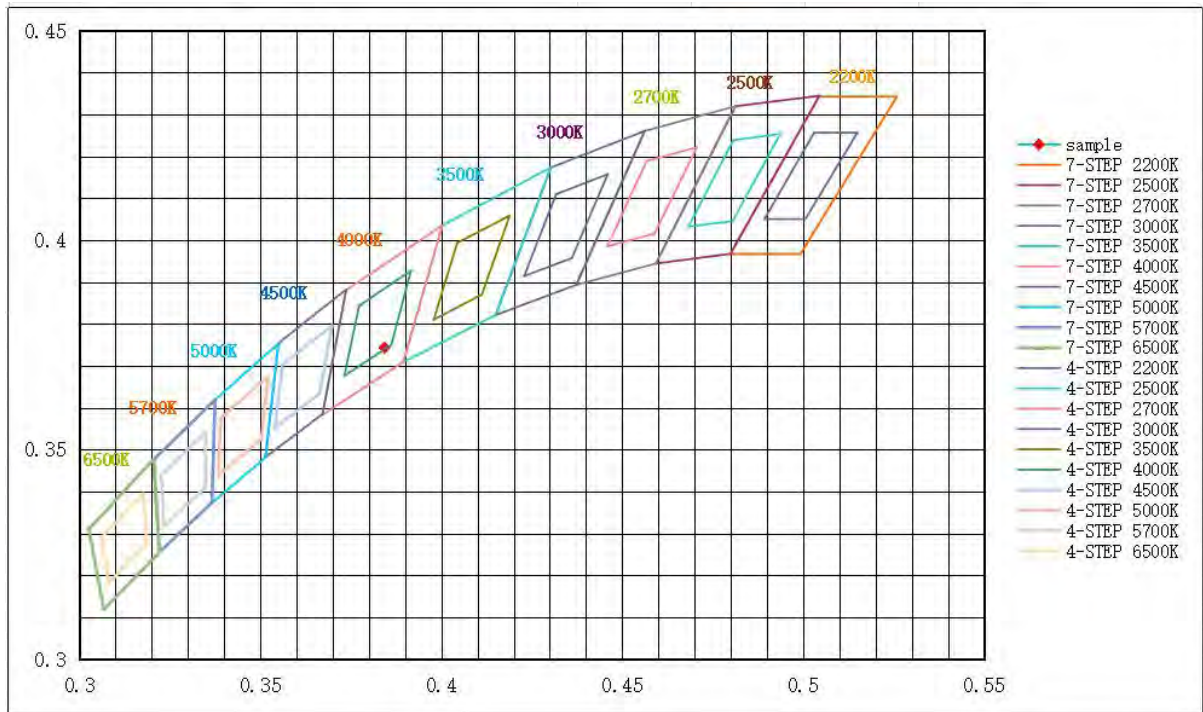
CRI	R9	Rf	Rg	Rcs,h1(%)
85.4	22	85	97	-10

Spectral Distribution





7/4 Step Quadrangle

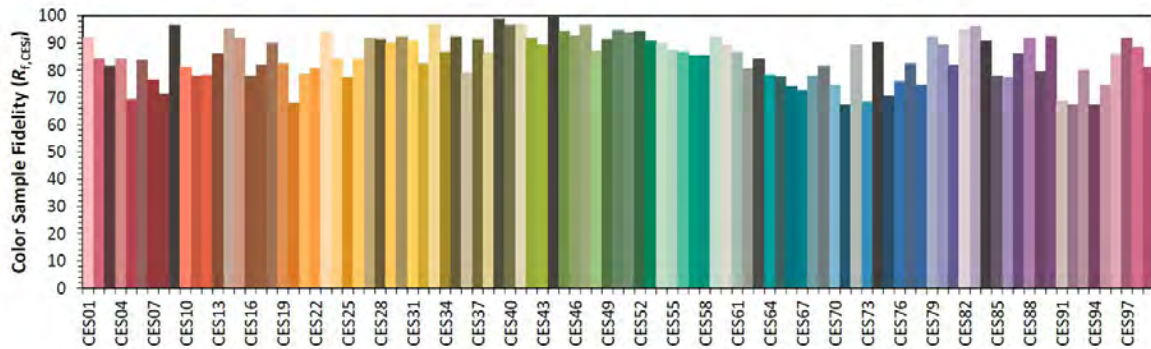
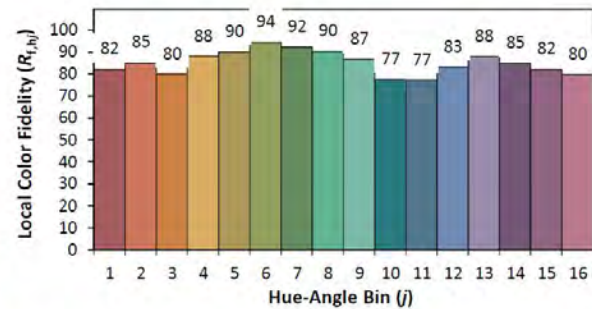
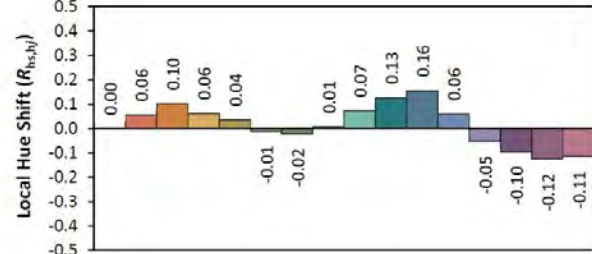
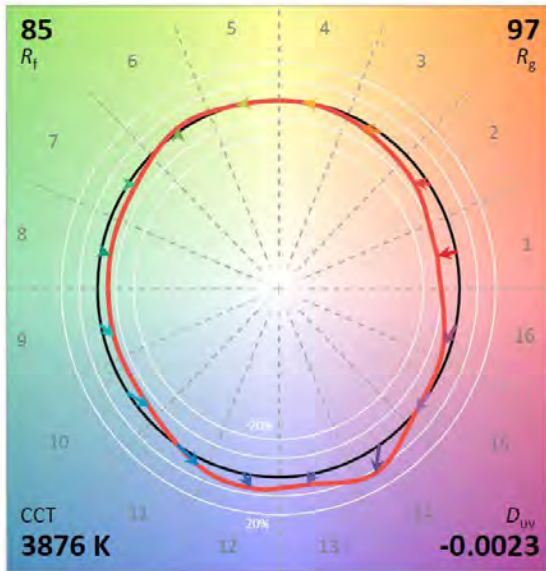
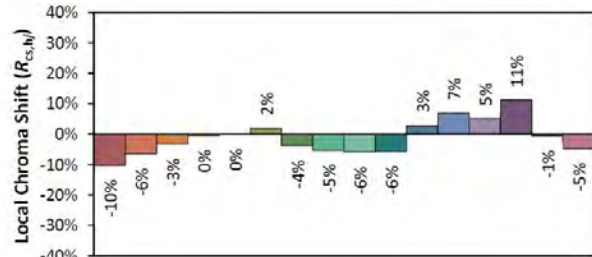
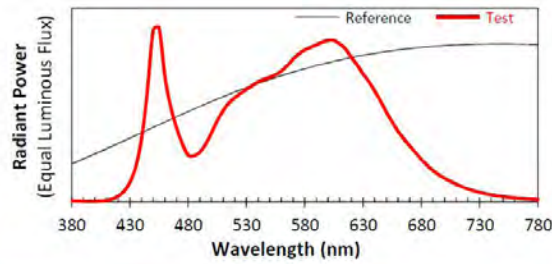




ANSI/IES TM-30-18 Color Rendition Report

Source: BL210817030-9
Date: 2021-10-11

Manufacturer: RAB Lighting Inc
Model: HIDFA-120S-EX39-8CCT-BYP/3SP, 4000K at 120V



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

x 0.3843
 y 0.3743
 u' 0.2287
 v' 0.5011

CIE 13.3-1995 (CRI)
 R_a 85
 R_g 22

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-120S-EX39-8CCT-BYP/3SP, 5000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
119.98	60	0.953	113.23	0.990

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
15852.30	140.0	4888

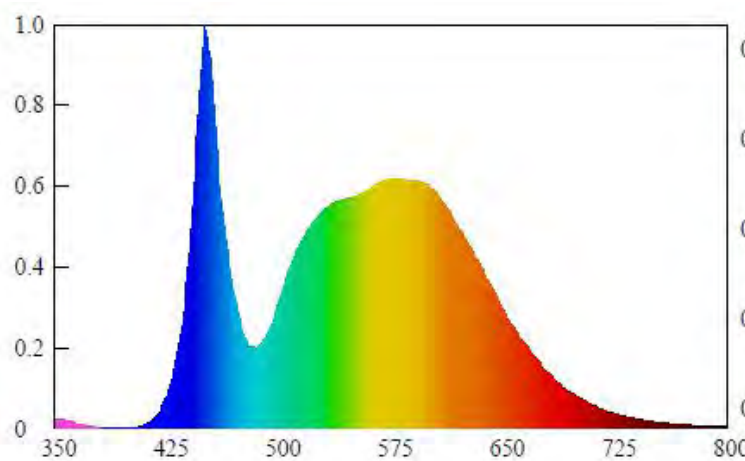
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00019	0.3484	0.3546	0.2125	0.4866

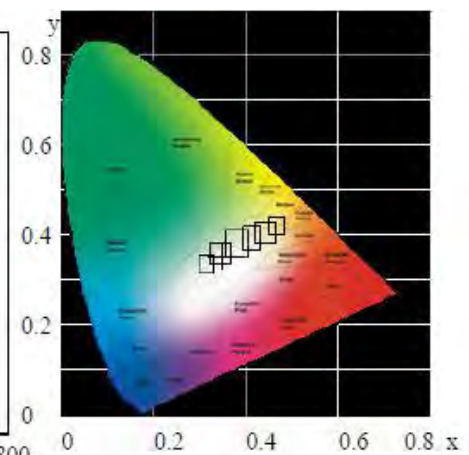
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
82.2	11	82	97	-12

Spectral Distribution



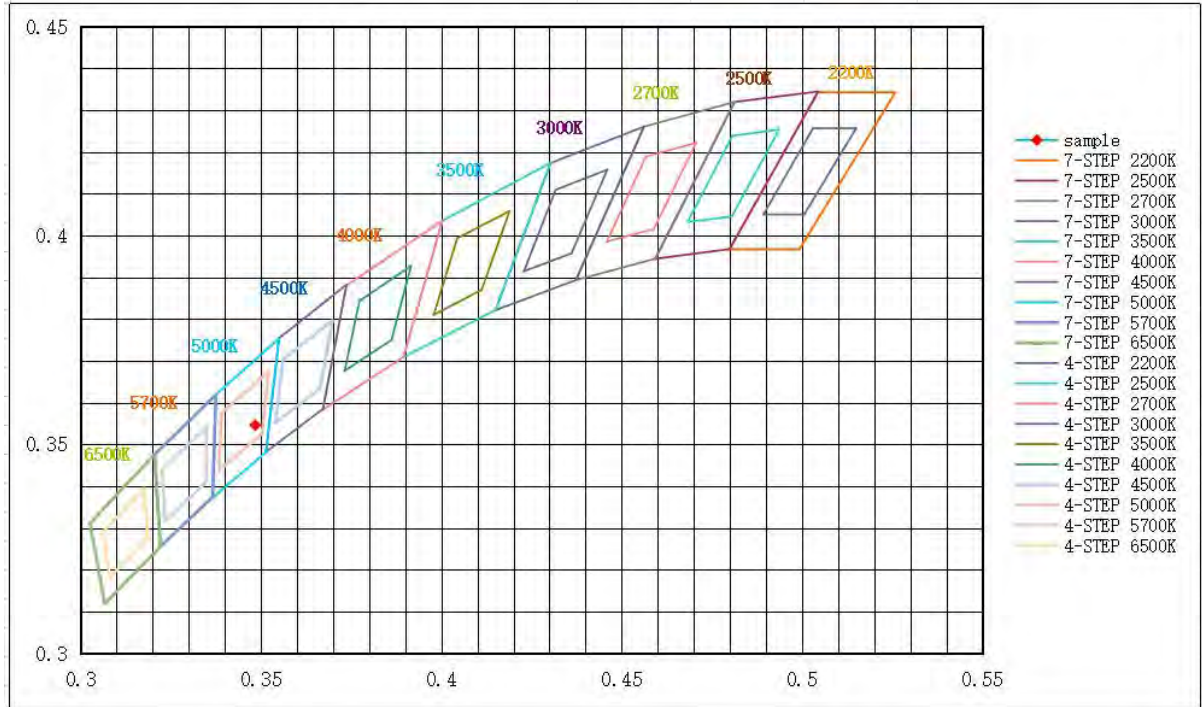
Spectral Distribution



CIE1931 Chromaticity Diagram



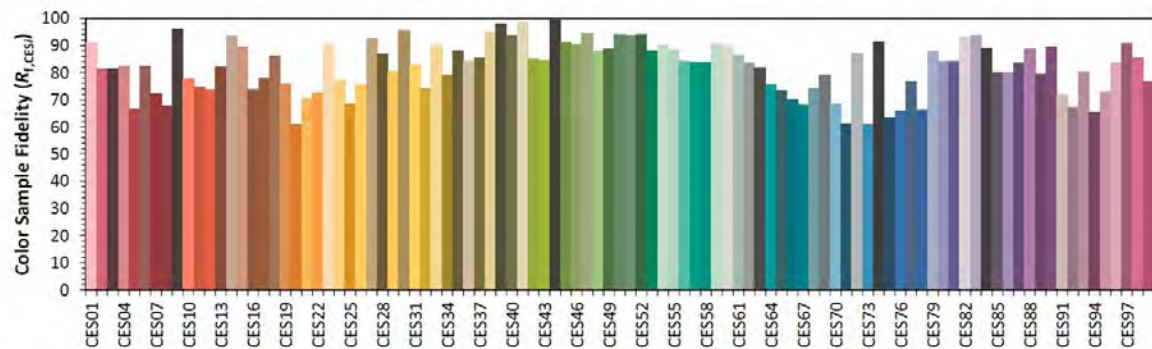
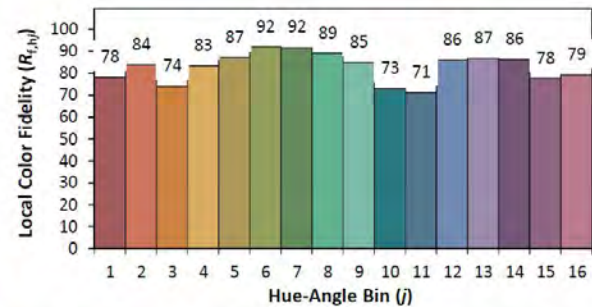
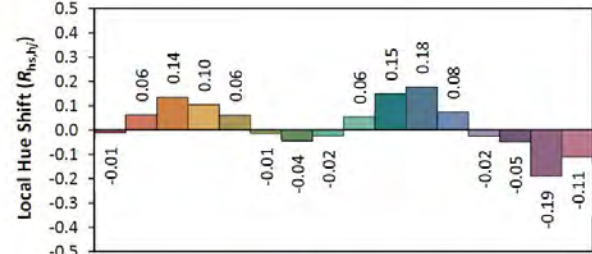
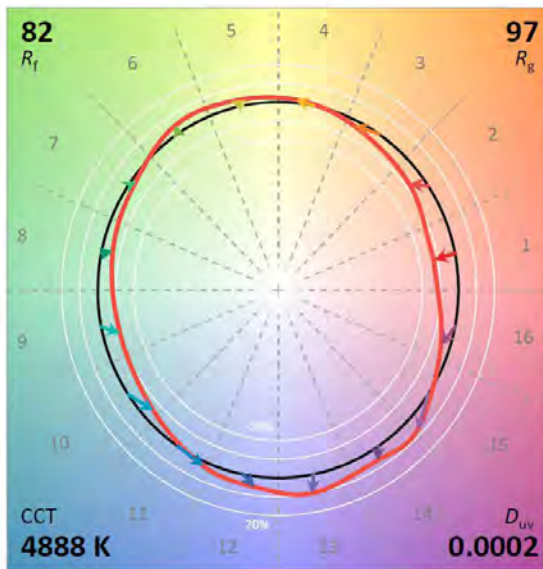
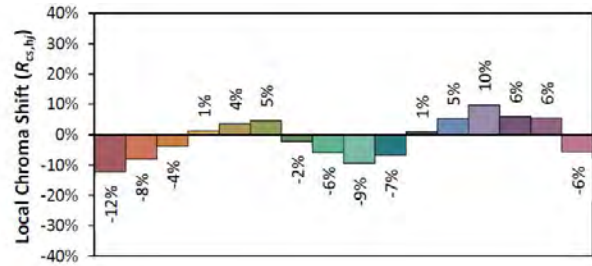
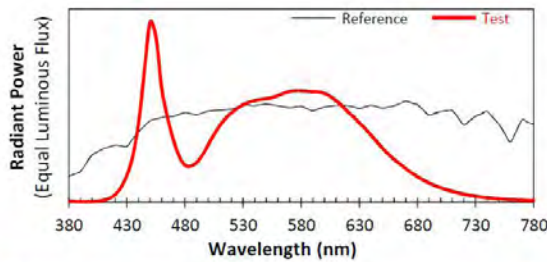
7/4 Step Quadrangle





ANSI/IES TM-30-18 Color Rendition Report

Source:	BL210817030-9	Manufacturer:	RAB Lighting Inc
Date:	2021-10-11	Model:	HIDFA-120S-EX39-8CCT-BYP/3SP, 5000K at 120V



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

x	0.3484
y	0.3546
u'	0.2125
v'	0.4866

CIE 13.3-1995 (CRI)	
R_a	82
R_g	11

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-120S-EX39-8CCT-BYP/3SP, 3000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.02	60	0.449	112.42	0.903

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
14783.28	131.5	3014

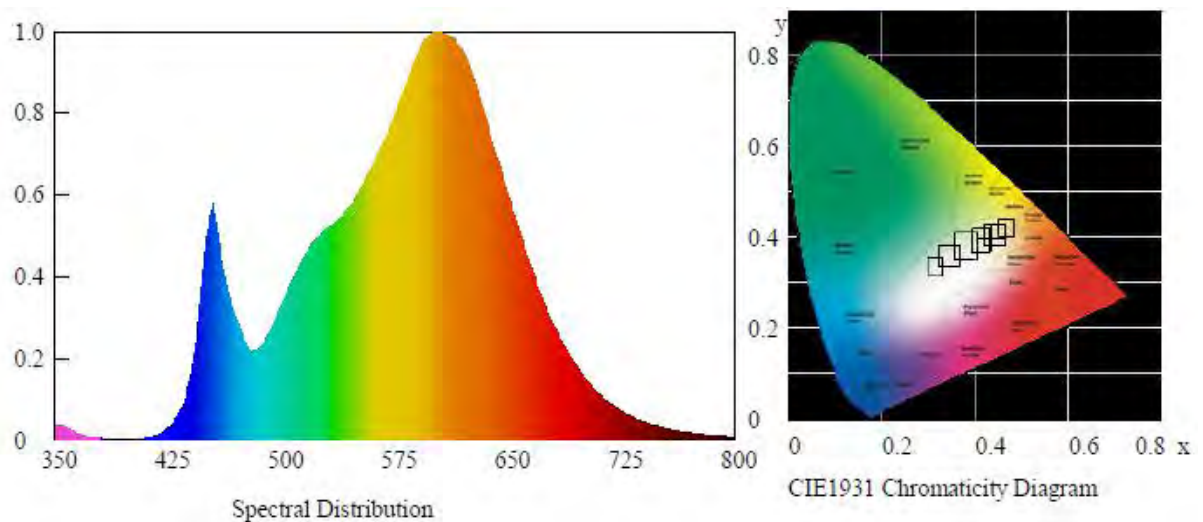
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00092	0.4346	0.4010	0.2504	0.5198

Color Rendering

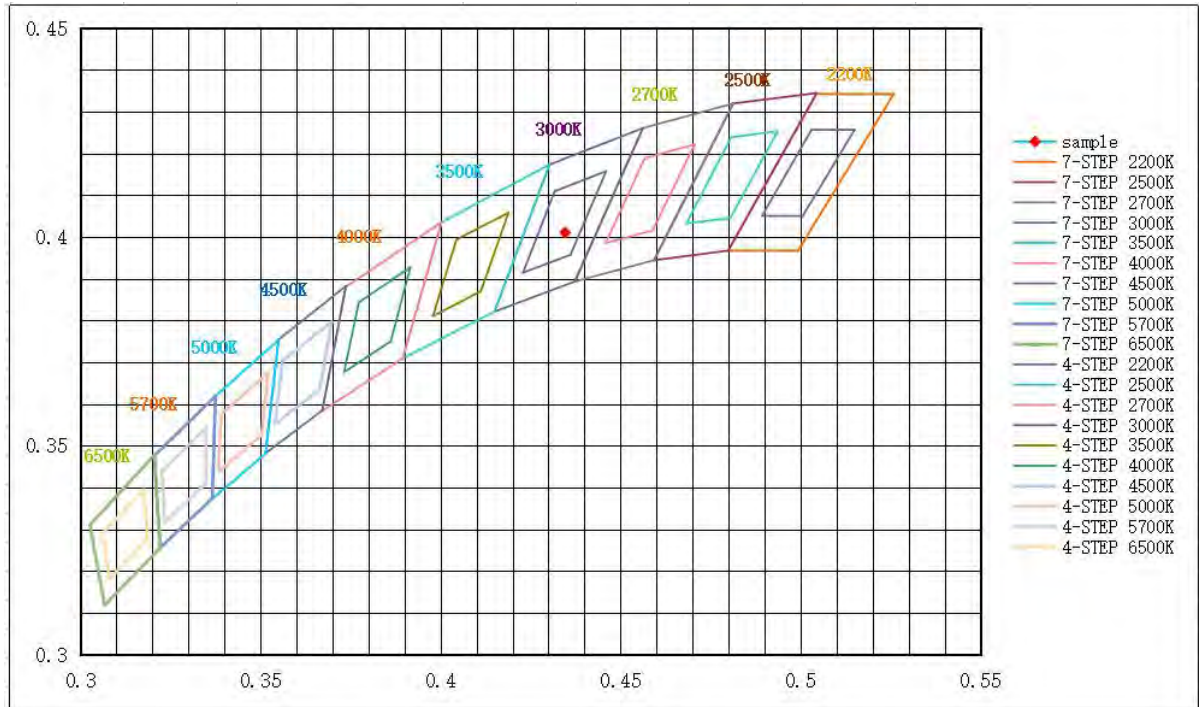
CRI	R9	Rf	Rg	Rcs,h1(%)
85.1	17	86	96	-10

Spectral Distribution





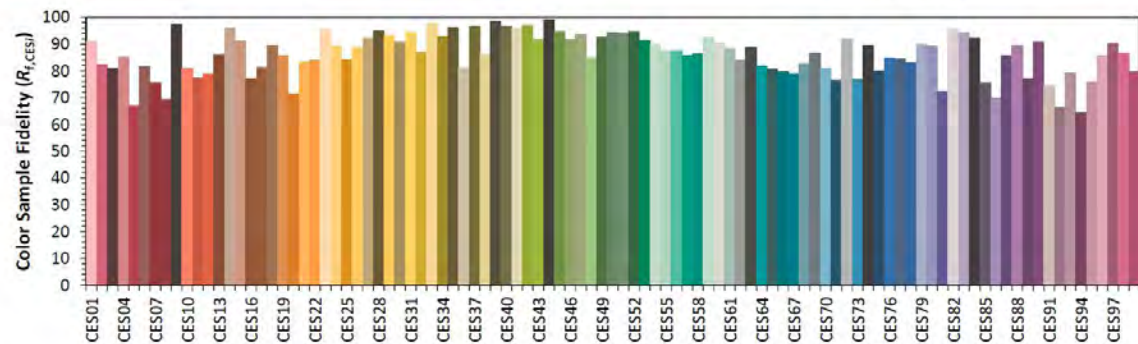
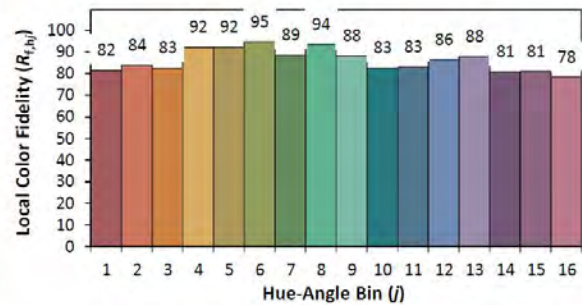
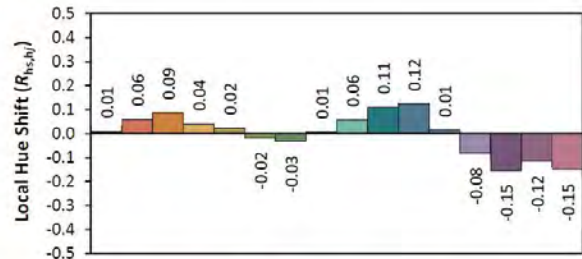
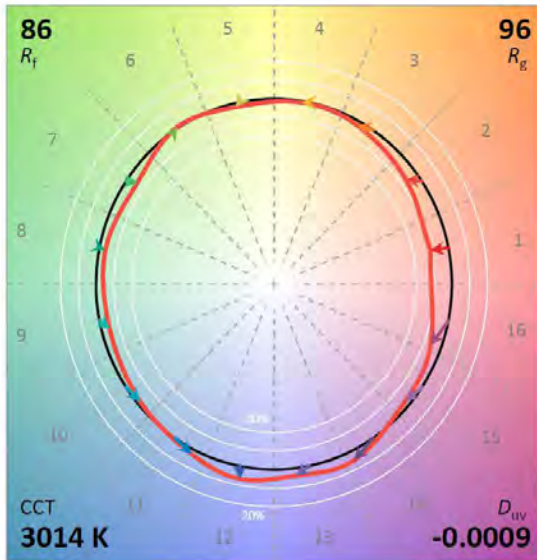
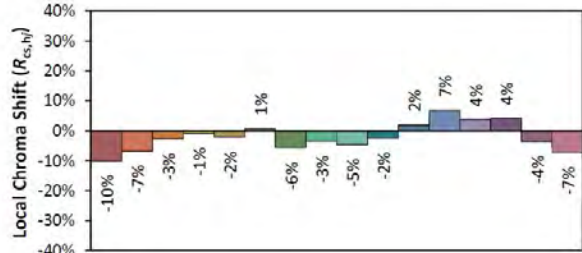
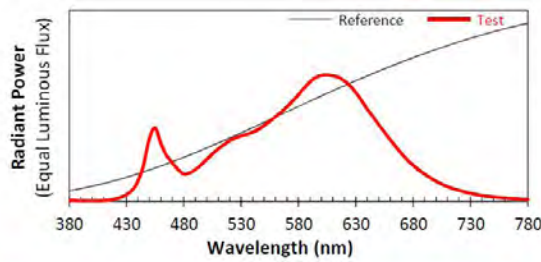
7/4 Step Quadrangle





ANSI/IES TM-30-18 Color Rendition Report

Source:	BL210817030-9	Manufacturer:	RAB Lighting Inc
Date:	2021-10-11	Model:	HIDFA-120S-EX39-8CCT-BYP/3SP, 3000K at 277V



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

x 0.4346
 y 0.4010
 u' 0.2504
 v' 0.5198

CIE 13.3-1995 (CRI)	
R_a	85
R_g	17

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



3.1.5 Model Number: HIDFA-120S-EX39-8CCT-BYP/3SP, 4000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.01	60	0.445	110.85	0.898

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
16139.76	145.6	3874

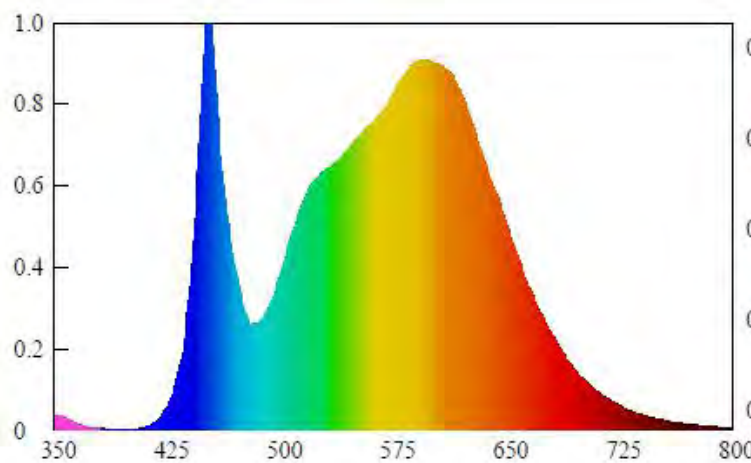
Chromaticity Coordinate

Duv	x	y	u'	v'
-0.00223	0.3844	0.3745	0.2287	0.5012

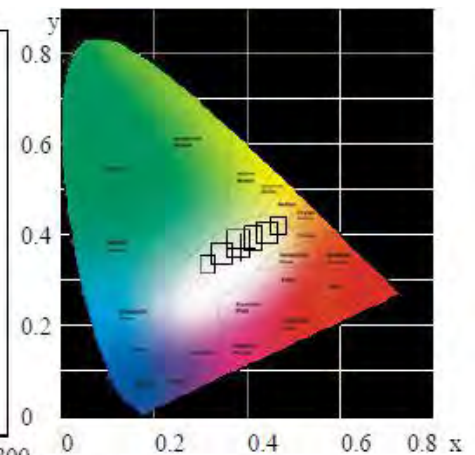
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
85.4	22	85	97	-10

Spectral Distribution



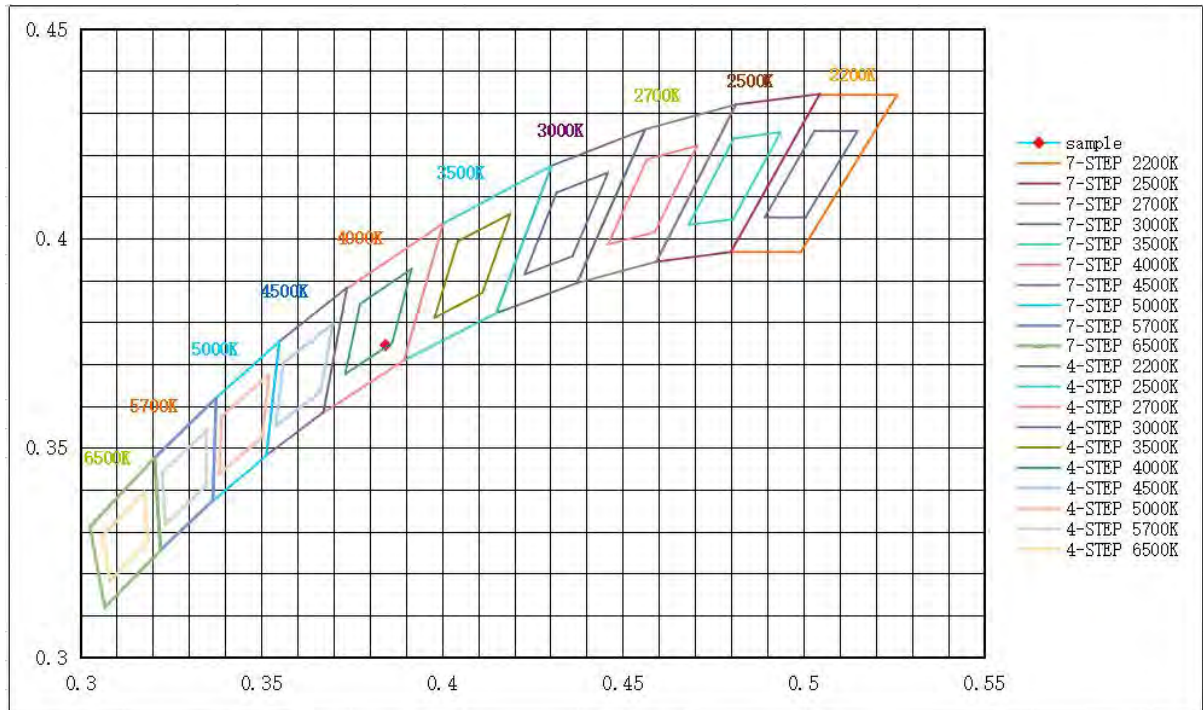
Spectral Distribution



CIE1931 Chromaticity Diagram



7/4 Step Quadrangle

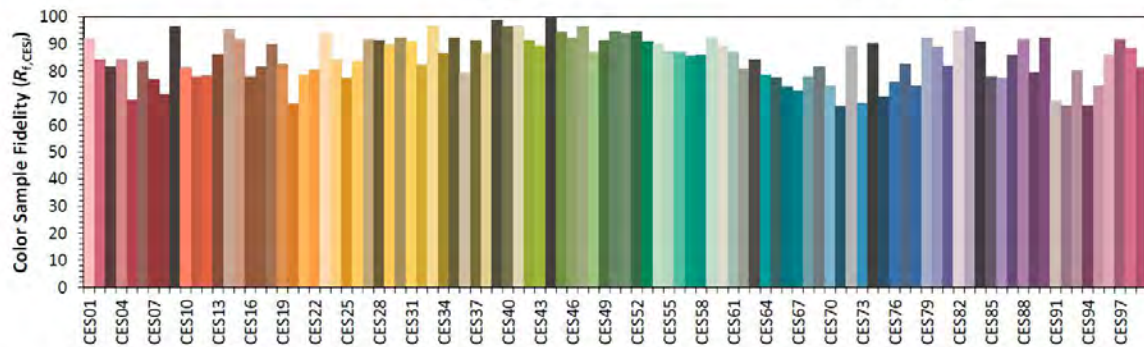
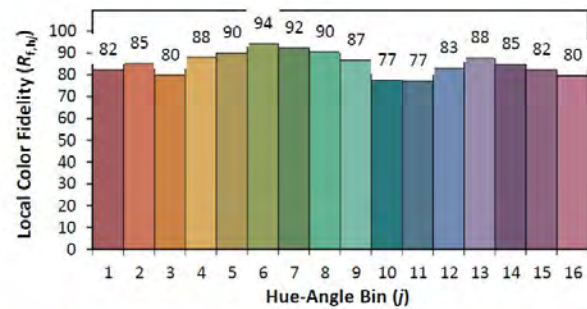
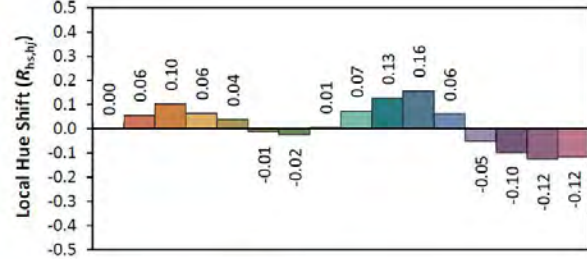
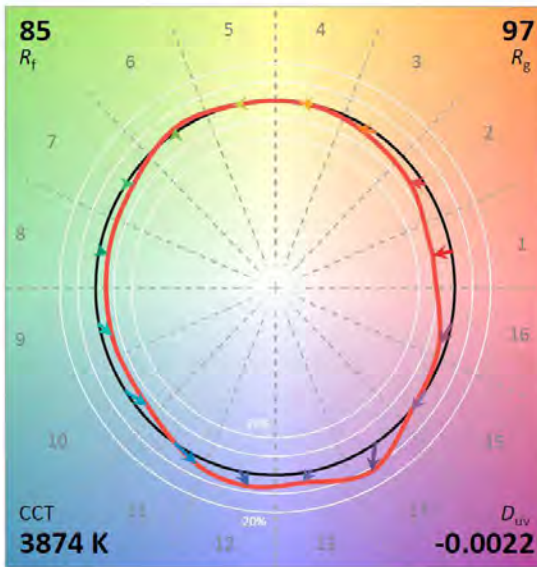
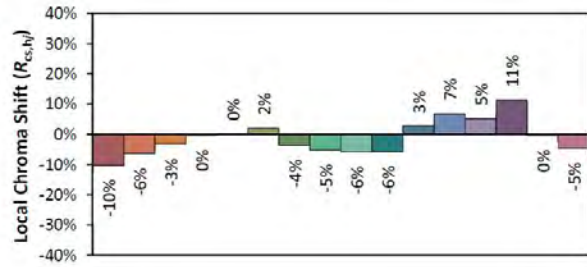
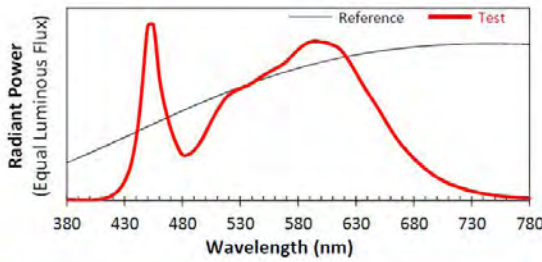




ANSI/IES TM-30-18 Color Rendition Report

Source: BL210817030-9
Date: 2021-10-11

Manufacturer: RAB Lighting Inc
Model: HIDFA-120S-EX39-8CCT-BYP/3SP, 4000K at 277V



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

x 0.3844
 y 0.3744
 u' 0.2287
 v' 0.5012

CIE 13.3-1995 (CRI)
 R_a 85
 R_g 22

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-120S-EX39-8CCT-BYP/3SP, 5000K at 277V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.01	60	0.455	113.74	0.903

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	CCT (K)
15605.16	137.2	4900

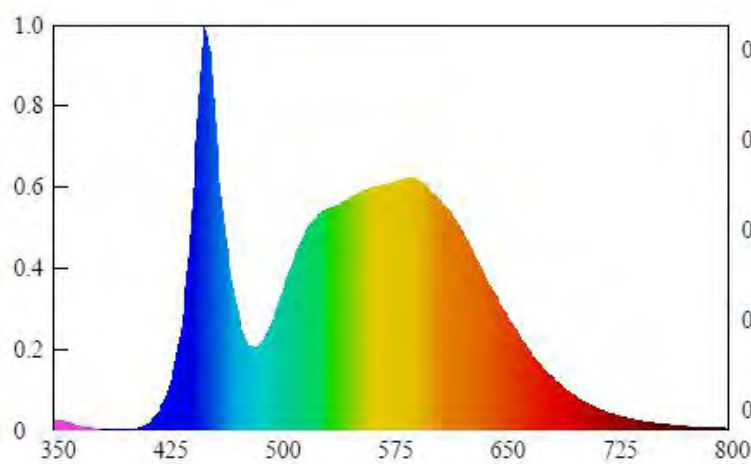
Chromaticity Coordinate

Duv	x	y	u'	v'
+0.00013	0.3480	0.3542	0.2124	0.4864

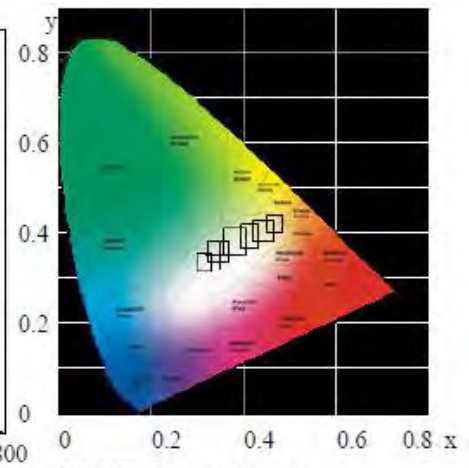
Color Rendering

CRI	R9	Rf	Rg	Rcs,h1(%)
82.3	12	82	97	-12

Spectral Distribution



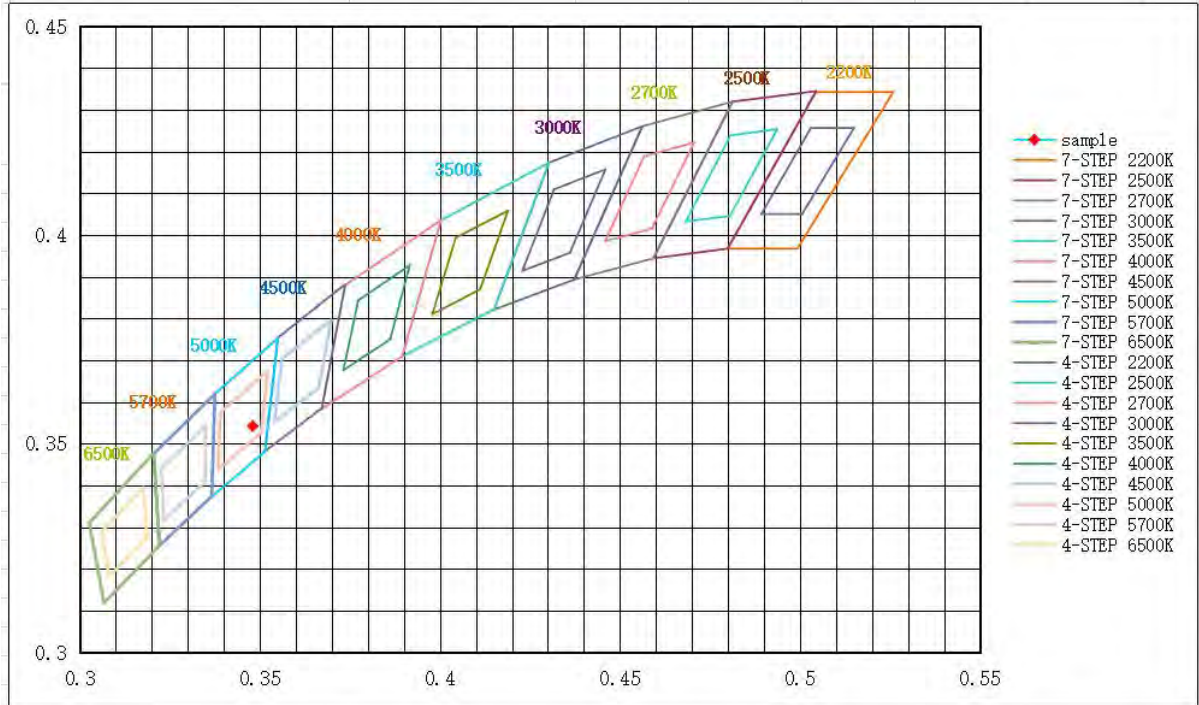
Spectral Distribution



CIE1931 Chromaticity Diagram



7/4 Step Quadrangle

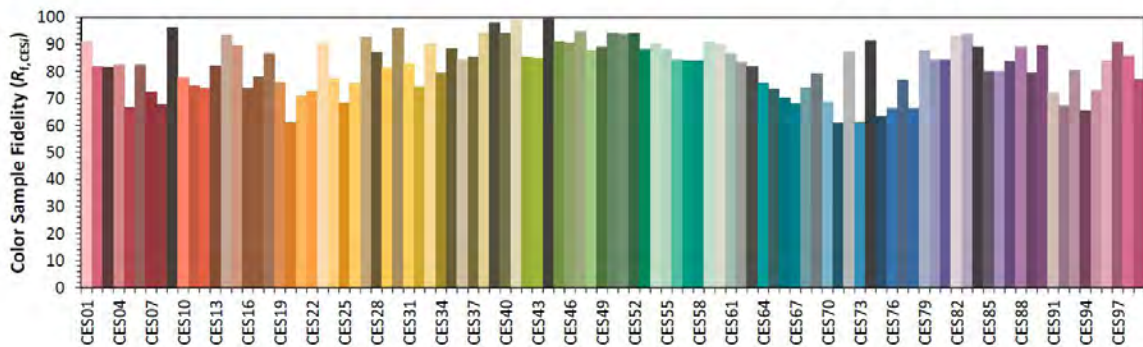
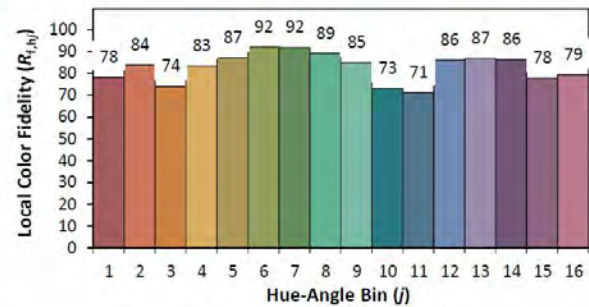
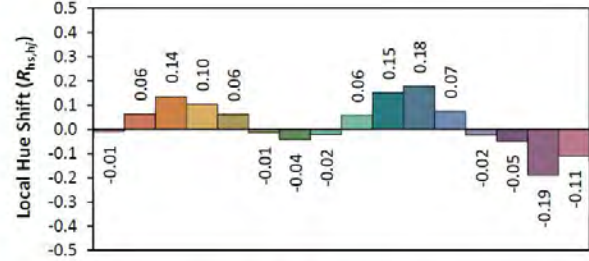
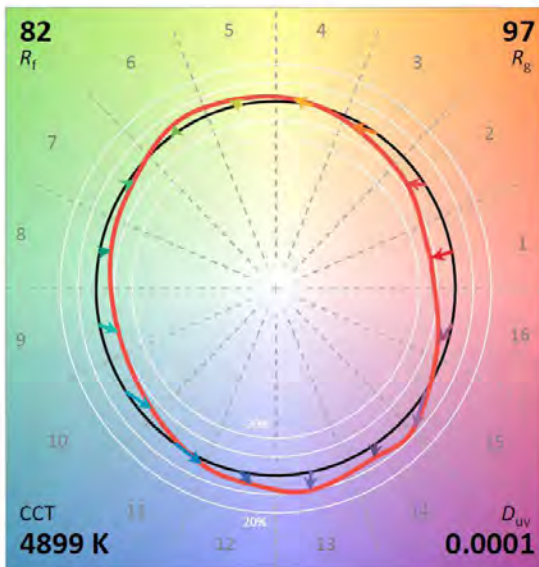
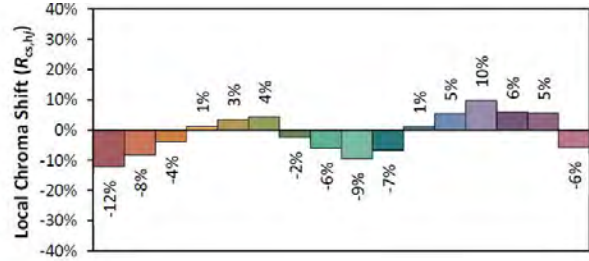
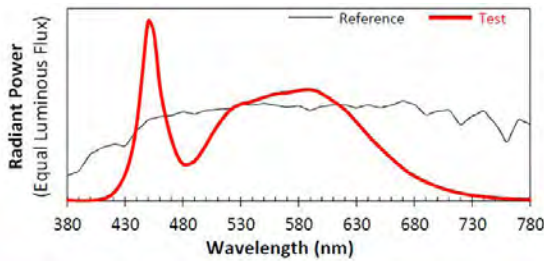




ANSI/IES TM-30-18 Color Rendition Report

Source: BL210817030-9
Date: 2021-10-11

Manufacturer: RAB Lighting Inc
Model: HIDFA-120S-EX39-8CCT-BYP/3SP, 5000K at 277V



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

x 0.3480
 y 0.3542
 u' 0.2124
 v' 0.4864

CIE 13.3-1995 (CRI)	
R_a	82
R_g	11

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-120S-EX39-8CCT-BYP/3SP, 3000K at 120V

Electrical data

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.130	60	0.956	112.740	0.982

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
15056.45	133.55	30.92	60.01



Zonal Flux Diagram

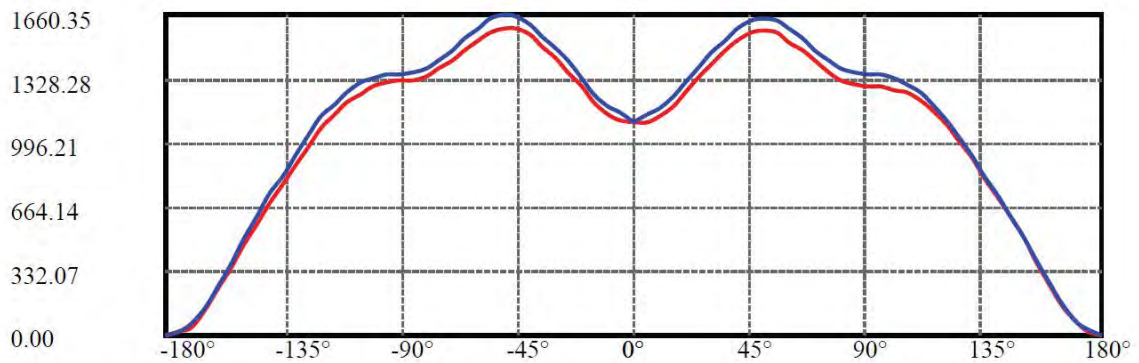
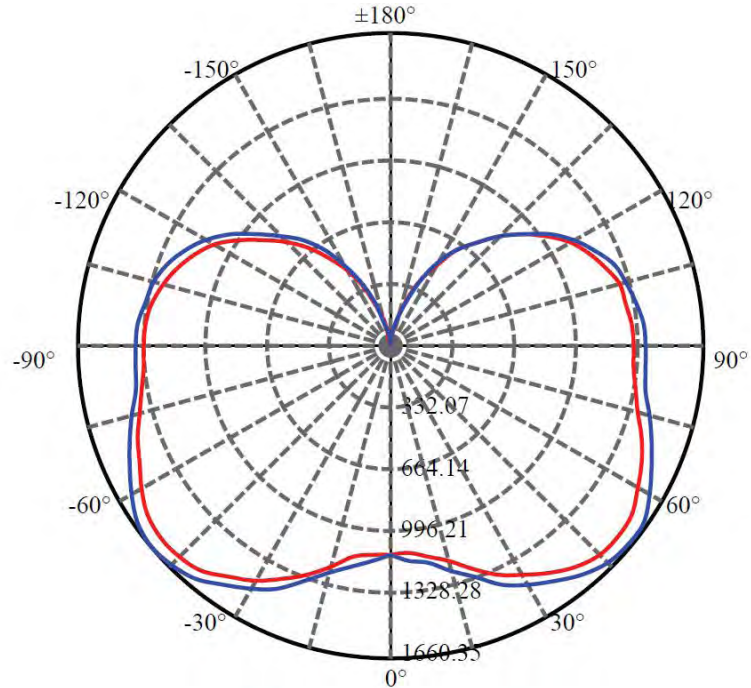
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1106.252	0.000	0	0.00%	0.00%
5.0	1114.311	26.546	26.546	0.00%	0.18%
10.0	1145.701	80.848	107.394	0.00%	0.71%
15.0	1206.449	139.528	246.922	0.00%	1.64%
20.0	1280.400	204.951	451.873	0.00%	3.00%
25.0	1361.418	277.078	728.951	0.00%	4.84%
30.0	1431.959	353.504	1082.455	0.00%	7.19%
35.0	1491.664	430.524	1512.98	0.00%	10.05%
40.0	1551.356	507.705	2020.684	0.00%	13.42%
45.0	1589.966	581.641	2602.326	0.00%	17.28%
50.0	1596.286	643.829	3246.155	0.00%	21.56%
55.0	1577.560	690.100	3936.254	0.00%	26.14%
60.0	1534.007	719.230	4655.484	0.00%	30.92%
65.0	1485.602	734.073	5389.557	0.00%	35.80%
70.0	1430.402	738.351	6127.908	0.00%	40.70%
75.0	1383.143	735.415	6863.323	0.00%	45.58%
80.0	1340.929	728.886	7592.209	0.00%	50.42%
85.0	1319.963	723.028	8315.237	0.00%	55.23%
90.0	1312.692	720.842	9036.079	0.00%	60.01%
95.0	1310.362	718.213	9754.291	0.00%	64.78%
100.0	1289.062	706.326	10460.617	0.00%	69.48%
105.0	1263.579	683.016	11143.633	0.00%	74.01%
110.0	1220.104	649.195	11792.828	0.00%	78.32%
115.0	1162.214	603.218	12396.046	0.00%	82.33%
120.0	1088.185	547.076	12943.122	0.00%	85.96%
125.0	999.226	482.499	13425.621	0.00%	89.17%
130.0	899.058	412.750	13838.371	0.00%	91.91%
135.0	799.777	343.274	14181.646	0.00%	94.19%
140.0	702.157	278.095	14459.741	0.00%	96.04%
145.0	597.471	216.833	14676.574	0.00%	97.48%
150.0	484.613	159.344	14835.919	0.00%	98.54%
155.0	367.224	107.801	14943.72	0.00%	99.25%
160.0	247.763	64.501	15008.22	0.00%	99.68%
165.0	145.664	32.424	15040.644	0.00%	99.90%
170.0	64.209	12.450	15053.094	0.00%	99.98%
175.0	21.468	3.065	15056.159	0.00%	100.00%
180.0	2.544	0.287	15056.446	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

C90/C270: —

Field angle(10%Imax):C0/180Left:163.6 Right:165.0

:C90/270Left:163.9 Right:164.8

Beam Angle(50%Imax):C0/180Left:134.1 Right:136.0

:C90/270Left:134.8 Right:134.6

**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	1106.25	1105.19	1136.90	1185.91	1256.95	1342.20	1407.69	1470.49	1530.62
22.5	1106.25	1097.77	1123.93	1176.64	1249.13	1327.58	1394.92	1457.52	1518.27
45.0	1106.25	1091.39	1117.34	1180.55	1241.71	1317.49	1394.71	1454.84	1507.35
67.5	1106.25	1093.04	1117.34	1178.50	1246.45	1319.55	1395.95	1455.67	1514.77
90.0	1106.25	1147.81	1172.32	1242.13	1306.58	1395.95	1467.61	1528.36	1586.43
112.5	1106.25	1129.90	1163.67	1217.83	1297.11	1377.21	1443.52	1506.74	1564.81
135.0	1106.25	1124.13	1152.55	1215.36	1293.19	1371.03	1438.37	1503.85	1559.04
157.5	1106.25	1112.19	1150.90	1203.00	1280.01	1363.21	1431.57	1484.29	1548.74
180.0	1106.25	1113.42	1142.46	1210.82	1289.28	1363.41	1436.72	1491.70	1555.33
202.5	1106.25	1105.39	1142.46	1206.29	1284.13	1361.56	1429.93	1485.53	1538.24
225.0	1106.25	1100.45	1135.87	1198.47	1280.84	1358.68	1429.72	1486.35	1548.74
247.5	1106.25	1099.63	1130.93	1192.50	1277.34	1351.47	1419.63	1486.35	1539.48
270.0	1106.25	1151.11	1188.17	1249.33	1328.41	1418.81	1486.97	1546.07	1611.76
292.5	1106.25	1133.60	1166.55	1230.39	1307.40	1390.80	1467.20	1528.77	1588.69
315.0	1106.25	1118.16	1151.31	1215.36	1278.78	1363.62	1437.34	1491.91	1558.42
337.5	1106.25	1105.80	1138.55	1200.12	1269.10	1360.12	1429.51	1488.20	1551.01
360.0	1106.25	1105.19	1136.90	1185.91	1256.95	1342.20	1407.69	1470.49	1530.62
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1566.66	1576.54	1563.36	1519.50	1474.20	1419.01	1359.29	1319.55	1298.75
22.5	1561.51	1566.25	1553.89	1514.35	1469.26	1413.04	1366.09	1322.02	1302.25
45.0	1547.51	1553.27	1534.54	1496.65	1448.25	1396.77	1340.35	1300.40	1275.07
67.5	1553.89	1560.28	1547.92	1505.29	1459.37	1408.51	1362.59	1319.96	1299.99
90.0	1630.50	1638.94	1633.17	1585.40	1532.48	1470.08	1427.25	1379.48	1361.77
112.5	1603.93	1615.26	1600.02	1553.69	1504.47	1448.67	1406.25	1362.80	1343.03
135.0	1596.11	1603.11	1584.78	1541.12	1487.38	1432.81	1391.21	1348.18	1328.82
157.5	1578.40	1592.19	1568.31	1524.24	1475.44	1420.66	1374.74	1342.00	1318.93
180.0	1592.81	1590.55	1569.75	1527.33	1475.64	1426.43	1376.80	1340.14	1319.14
202.5	1578.60	1575.72	1549.98	1506.12	1454.02	1402.95	1360.53	1326.55	1299.99
225.0	1580.04	1589.52	1555.95	1509.62	1462.46	1409.33	1362.18	1327.38	1302.87
247.5	1576.54	1586.43	1561.30	1516.83	1468.85	1417.16	1371.03	1329.64	1308.43
270.0	1652.53	1660.35	1634.82	1589.31	1533.51	1473.79	1423.95	1377.83	1357.44
292.5	1626.79	1632.55	1613.20	1568.92	1526.50	1464.52	1421.07	1366.50	1347.97
315.0	1601.25	1602.70	1584.78	1545.04	1501.79	1443.11	1389.36	1350.44	1329.23
337.5	1592.40	1596.93	1585.19	1540.71	1496.03	1439.60	1397.60	1342.00	1325.73
360.0	1566.66	1576.54	1563.36	1519.50	1474.20	1419.01	1359.29	1319.55	1298.75
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1289.49	1289.69	1272.19	1255.51	1212.06	1161.82	1093.86	1012.93	916.56
22.5	1292.37	1295.05	1278.16	1260.45	1219.47	1164.70	1093.24	1006.55	910.38
45.0	1269.51	1267.25	1252.83	1238.01	1192.29	1144.11	1075.74	996.05	897.20
67.5	1291.96	1293.19	1274.45	1252.83	1213.09	1160.37	1086.65	996.87	904.21
90.0	1349.20	1352.09	1326.14	1294.84	1254.89	1192.50	1118.37	1032.29	928.09
112.5	1334.58	1331.70	1309.67	1277.75	1238.01	1178.08	1103.13	1013.96	913.27
135.0	1320.38	1318.93	1292.99	1261.48	1217.41	1158.73	1087.68	997.08	894.53
157.5	1317.08	1310.49	1286.40	1255.51	1212.47	1150.70	1069.36	981.84	883.41
180.0	1315.23	1309.46	1285.99	1251.80	1206.91	1148.84	1071.21	978.34	872.29
202.5	1297.52	1288.46	1268.28	1235.54	1192.91	1132.57	1052.26	960.01	861.58
225.0	1303.70	1291.75	1272.60	1238.01	1195.17	1134.43	1059.88	970.51	865.90
247.5	1302.25	1298.14	1269.72	1242.33	1194.76	1134.22	1057.41	964.75	865.70
270.0	1349.20	1347.76	1325.52	1308.02	1257.57	1200.73	1129.90	1036.82	927.68
292.5	1338.50	1339.53	1317.70	1292.58	1249.74	1186.94	1110.95	1016.43	918.00
315.0	1319.14	1317.29	1298.55	1280.84	1234.09	1172.11	1100.86	1012.52	912.86
337.5	1312.96	1315.02	1293.81	1271.78	1230.80	1174.58	1100.45	1010.67	913.27
360.0	1289.49	1289.69	1272.19	1255.51	1212.06	1161.82	1093.86	1012.93	916.56



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	816.28	716.40	615.50	502.66	383.63	258.02	158.77	74.13	23.68
22.5	814.22	713.73	609.94	492.16	383.63	260.29	156.50	71.87	25.53
45.0	800.01	703.02	602.74	493.39	378.69	258.23	157.53	72.28	24.30
67.5	810.10	711.46	601.91	494.83	376.02	255.34	153.82	71.46	23.68
90.0	822.46	723.82	616.74	508.84	394.75	264.82	161.86	75.57	26.36
112.5	811.95	715.17	613.03	495.45	374.16	258.23	154.24	70.01	22.86
135.0	789.30	692.11	586.26	480.83	367.78	245.87	143.73	64.87	22.45
157.5	785.18	683.25	586.06	468.68	349.86	235.58	139.00	60.54	19.15
180.0	779.83	680.57	573.08	462.71	346.57	232.28	130.14	46.33	16.47
202.5	766.86	670.69	572.26	457.77	339.57	228.57	131.17	51.89	16.89
225.0	771.18	674.81	569.58	458.59	342.04	232.28	129.32	52.92	18.12
247.5	769.94	673.57	571.23	462.30	344.51	231.46	130.76	57.86	16.89
270.0	825.34	727.73	617.56	497.92	372.10	251.23	143.12	60.75	19.15
292.5	813.81	717.85	606.24	487.01	365.92	243.61	143.12	62.19	21.83
315.0	811.34	714.55	606.65	495.24	374.37	253.29	144.15	65.90	21.83
337.5	808.66	715.79	610.77	495.45	381.99	255.14	153.41	68.78	24.30
360.0	816.28	716.40	615.50	502.66	383.63	258.02	158.77	74.13	23.68
C/γ(°)	180.0								
0.0	2.54								
22.5	2.54								
45.0	2.54								
67.5	2.54								
90.0	2.54								
112.5	2.54								
135.0	2.54								
157.5	2.54								
180.0	2.54								
202.5	2.54								
225.0	2.54								
247.5	2.54								
270.0	2.54								
292.5	2.54								
315.0	2.54								
337.5	2.54								
360.0	2.54								

**3.2.2 Model Number: HIDFA-120S-EX39-8CCT-BYP/3SP, 3000K at 277V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.130	60	0.450	112.310	0.901

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
14703.29	130.92	30.90	60.00



Zonal Flux Diagram

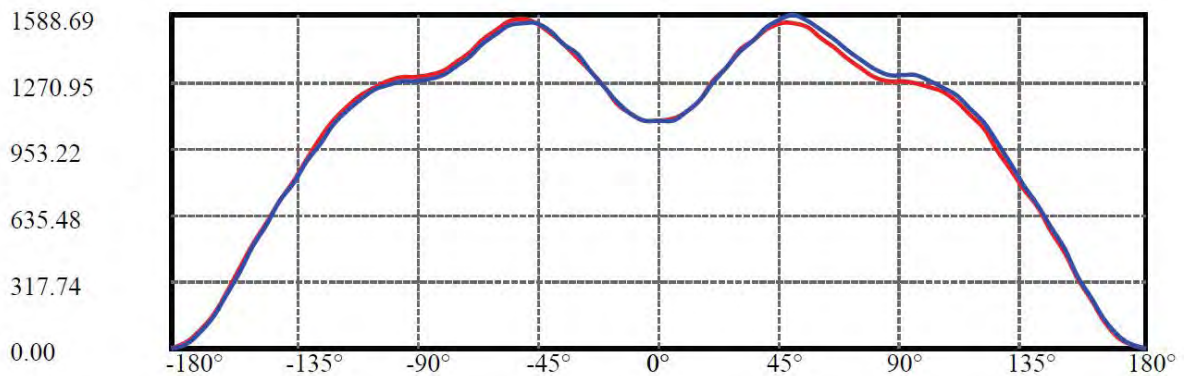
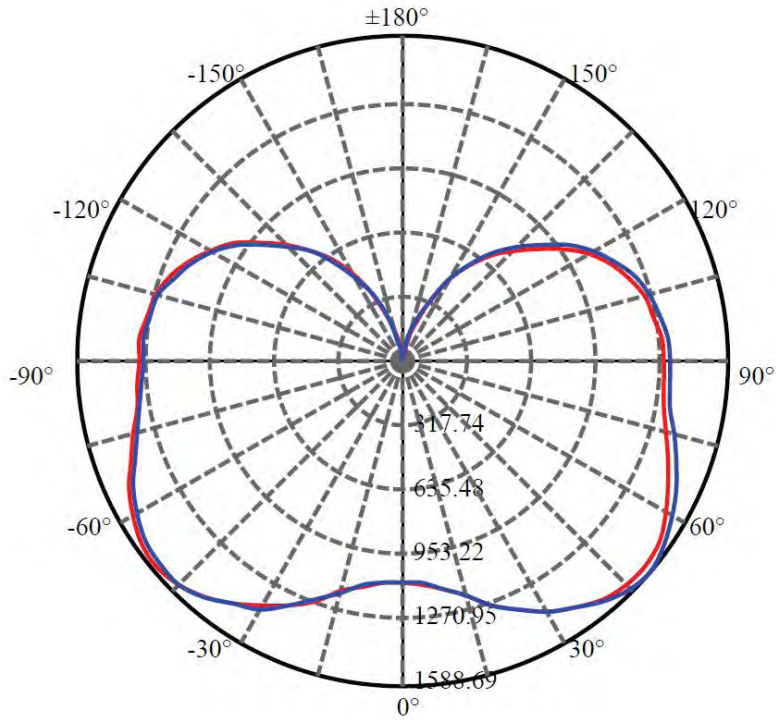
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1081.456	0.000	0	0.00%	0.00%
5.0	1086.486	25.917	25.917	0.00%	0.18%
10.0	1119.330	78.909	104.826	0.00%	0.71%
15.0	1175.753	136.143	240.969	0.00%	1.64%
20.0	1251.198	200.015	440.984	0.00%	3.00%
25.0	1330.272	270.749	711.732	0.00%	4.84%
30.0	1396.875	345.123	1056.855	0.00%	7.19%
35.0	1456.091	420.119	1476.975	0.00%	10.05%
40.0	1512.411	495.272	1972.247	0.00%	13.41%
45.0	1550.133	567.055	2539.301	0.00%	17.27%
50.0	1557.830	628.009	3167.311	0.00%	21.54%
55.0	1540.326	673.642	3840.953	0.00%	26.12%
60.0	1498.331	702.377	4543.33	0.00%	30.90%
65.0	1450.750	716.927	5260.257	0.00%	35.78%
70.0	1396.464	720.933	5981.19	0.00%	40.68%
75.0	1352.396	718.508	6699.698	0.00%	45.57%
80.0	1308.535	711.991	7411.689	0.00%	50.41%
85.0	1290.413	706.196	8117.885	0.00%	55.21%
90.0	1281.340	704.166	8822.051	0.00%	60.00%
95.0	1281.572	701.745	9523.797	0.00%	64.77%
100.0	1259.757	690.540	10214.337	0.00%	69.47%
105.0	1235.471	667.653	10881.99	0.00%	74.01%
110.0	1192.240	634.565	11516.555	0.00%	78.33%
115.0	1135.161	589.313	12105.867	0.00%	82.33%
120.0	1063.127	534.408	12640.275	0.00%	85.97%
125.0	976.150	471.373	13111.648	0.00%	89.17%
130.0	877.848	403.121	13514.769	0.00%	91.92%
135.0	779.636	334.919	13849.688	0.00%	94.19%
140.0	685.671	271.313	14121.001	0.00%	96.04%
145.0	583.662	211.778	14332.779	0.00%	97.48%
150.0	472.798	155.571	14488.351	0.00%	98.54%
155.0	358.061	105.146	14593.496	0.00%	99.25%
160.0	241.740	62.908	14656.404	0.00%	99.68%
165.0	141.675	31.599	14688.003	0.00%	99.90%
170.0	61.700	12.064	14700.067	0.00%	99.98%
175.0	20.541	2.942	14703.009	0.00%	100.00%
180.0	2.956	0.281	14703.29	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

C90/C270: —

Field angle(10%Imax):C0/180Left:165.2 Right:163.3

:C90/270Left:164.5 Right:163.9

Beam Angle(50%Imax):C0/180Left:135.7 Right:133.8

:C90/270Left:134.8 Right:134.3

**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	1081.46	1096.13	1125.78	1185.29	1271.37	1342.82	1416.13	1469.46	1523.42
22.5	1081.46	1095.10	1125.78	1187.56	1273.43	1342.41	1413.25	1470.29	1521.77
45.0	1081.46	1089.95	1128.87	1187.14	1264.16	1345.91	1411.39	1470.08	1524.86
67.5	1081.46	1088.92	1128.25	1180.55	1271.37	1351.68	1411.81	1476.05	1525.47
90.0	1081.46	1089.33	1125.57	1183.44	1266.63	1345.29	1409.13	1468.85	1530.00
112.5	1081.46	1087.89	1120.84	1180.76	1254.69	1334.38	1401.92	1466.17	1520.33
135.0	1081.46	1087.07	1116.31	1174.99	1246.45	1329.02	1391.62	1450.31	1510.44
157.5	1081.46	1082.95	1110.54	1170.46	1241.51	1323.05	1387.92	1452.99	1510.44
180.0	1081.46	1083.15	1115.69	1159.55	1244.80	1320.17	1380.30	1448.46	1501.38
202.5	1081.46	1085.83	1110.13	1160.17	1233.27	1308.02	1379.68	1434.46	1496.23
225.0	1081.46	1079.03	1110.75	1166.35	1232.03	1317.90	1379.68	1436.52	1495.20
247.5	1081.46	1080.89	1113.22	1162.43	1232.45	1311.32	1376.18	1437.34	1493.14
270.0	1081.46	1086.24	1114.04	1176.64	1242.74	1320.58	1399.45	1450.93	1509.21
292.5	1081.46	1081.51	1115.28	1176.64	1244.80	1324.29	1393.89	1453.40	1510.44
315.0	1081.46	1085.42	1122.69	1176.23	1246.24	1332.73	1399.66	1454.64	1512.91
337.5	1081.46	1084.39	1125.57	1183.85	1253.24	1334.79	1398.01	1457.52	1513.33
360.0	1081.46	1096.13	1125.78	1185.29	1271.37	1342.82	1416.13	1469.46	1523.42
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1548.74	1551.83	1528.15	1482.02	1434.25	1381.95	1330.67	1296.28	1277.54
22.5	1552.24	1553.89	1523.83	1481.00	1433.43	1383.39	1342.82	1299.99	1286.60
45.0	1553.27	1552.24	1524.44	1477.49	1425.81	1375.36	1329.64	1289.90	1272.60
67.5	1559.86	1567.48	1544.21	1500.56	1449.08	1394.92	1354.15	1306.99	1292.16
90.0	1571.40	1588.69	1561.92	1523.21	1472.96	1419.84	1371.44	1329.64	1306.58
112.5	1566.45	1574.07	1552.04	1509.21	1463.08	1405.63	1366.09	1317.29	1292.99
135.0	1551.42	1564.60	1549.36	1512.50	1473.17	1415.72	1369.39	1325.11	1304.93
157.5	1548.95	1559.25	1547.92	1508.59	1460.61	1405.63	1368.36	1318.11	1298.96
180.0	1551.21	1566.04	1558.01	1519.09	1472.35	1415.10	1364.24	1318.11	1302.05
202.5	1536.59	1552.66	1540.71	1501.79	1457.31	1402.13	1353.94	1309.26	1288.66
225.0	1536.18	1550.60	1544.21	1500.76	1450.11	1399.04	1356.21	1301.43	1288.46
247.5	1530.83	1539.48	1531.86	1492.73	1449.28	1397.18	1356.62	1311.32	1293.19
270.0	1545.04	1550.39	1537.21	1495.20	1446.81	1388.95	1342.82	1300.81	1279.81
292.5	1552.24	1555.95	1537.83	1494.59	1447.02	1392.86	1353.94	1310.08	1294.22
315.0	1547.71	1542.98	1530.83	1486.76	1435.07	1377.42	1334.38	1297.31	1276.51
337.5	1549.98	1555.13	1532.68	1487.79	1441.66	1388.33	1343.64	1304.93	1291.34
360.0	1548.74	1551.83	1528.15	1482.02	1434.25	1381.95	1330.67	1296.28	1277.54
C/ γ (°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1270.13	1266.22	1246.45	1224.83	1176.02	1118.16	1045.68	951.98	852.52
22.5	1276.72	1278.57	1255.30	1231.21	1184.47	1123.72	1045.47	955.69	859.73
45.0	1264.57	1263.34	1241.71	1224.62	1171.49	1119.60	1040.73	953.22	858.90
67.5	1283.93	1284.55	1262.31	1235.54	1192.29	1127.01	1052.06	964.34	864.05
90.0	1302.67	1297.72	1274.45	1245.21	1201.97	1144.11	1071.42	984.10	878.67
112.5	1290.72	1287.84	1263.75	1236.15	1194.56	1132.78	1059.47	968.87	872.91
135.0	1295.87	1294.43	1275.07	1246.04	1203.62	1147.40	1077.59	991.93	889.79
157.5	1291.13	1293.40	1268.07	1242.33	1199.50	1143.08	1074.09	986.58	888.97
180.0	1289.08	1290.93	1268.69	1241.92	1205.06	1150.49	1080.89	1004.28	902.56
202.5	1278.57	1282.07	1258.39	1234.71	1194.35	1138.55	1071.62	985.96	890.41
225.0	1274.25	1276.72	1257.16	1227.71	1192.91	1135.46	1066.89	991.52	889.79
247.5	1283.52	1283.10	1261.48	1234.09	1194.97	1139.58	1071.83	983.28	886.70
270.0	1268.48	1268.07	1250.77	1233.48	1189.00	1135.87	1065.03	980.19	884.23
292.5	1283.10	1287.43	1265.19	1246.66	1201.76	1147.61	1076.77	985.75	890.00
315.0	1265.39	1265.39	1246.45	1224.62	1180.35	1123.10	1052.47	963.31	863.23
337.5	1283.31	1285.37	1260.86	1238.42	1193.53	1136.08	1058.03	967.42	873.11
360.0	1270.13	1266.22	1246.45	1224.83	1176.02	1118.16	1045.68	951.98	852.52



C/ γ (°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	761.91	671.51	564.64	451.59	334.83	222.81	123.35	46.13	15.65
22.5	762.53	668.84	565.88	447.26	332.98	221.16	122.32	43.45	16.27
45.0	762.33	670.48	563.20	450.76	335.04	224.04	123.14	49.01	15.86
67.5	765.83	670.69	568.76	455.91	337.92	226.52	125.61	53.75	16.27
90.0	780.65	683.66	581.11	469.71	349.86	238.05	136.73	59.72	18.33
112.5	774.48	681.40	580.70	472.39	357.07	240.52	142.91	63.63	21.21
135.0	788.68	692.52	592.85	482.89	364.48	246.70	141.26	67.54	22.65
157.5	788.68	695.19	594.29	488.04	374.57	254.52	154.03	70.01	24.51
180.0	795.89	699.93	603.56	493.80	380.55	260.08	160.00	75.78	24.71
202.5	790.74	695.19	597.79	490.51	382.60	262.76	159.18	75.99	25.12
225.0	784.15	690.87	591.41	490.10	381.78	258.85	162.27	76.40	26.56
247.5	787.65	694.58	597.38	487.83	373.96	258.64	157.53	74.54	24.30
270.0	790.13	697.05	591.41	480.01	367.57	247.31	148.47	64.87	22.86
292.5	795.69	698.08	595.12	480.62	362.22	243.19	143.32	62.81	20.18
315.0	768.50	679.75	574.11	463.53	350.27	235.16	135.70	57.25	18.95
337.5	776.33	680.99	576.38	459.83	343.27	227.54	130.97	46.33	15.24
360.0	761.91	671.51	564.64	451.59	334.83	222.81	123.35	46.13	15.65
C/ γ (°)	180.0								
0.0	2.96								
22.5	2.96								
45.0	2.96								
67.5	2.96								
90.0	2.96								
112.5	2.96								
135.0	2.96								
157.5	2.96								
180.0	2.96								
202.5	2.96								
225.0	2.96								
247.5	2.96								
270.0	2.96								
292.5	2.96								
315.0	2.96								
337.5	2.96								
360.0	2.96								

**3.2.3 Model Number: HIDFA-120S-EX39-8CCT-BYP/3SP, 4000K at 120V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.110	60	0.631	109.987	0.991

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
16118.38	146.55	29.67	58.84



Zonal Flux Diagram

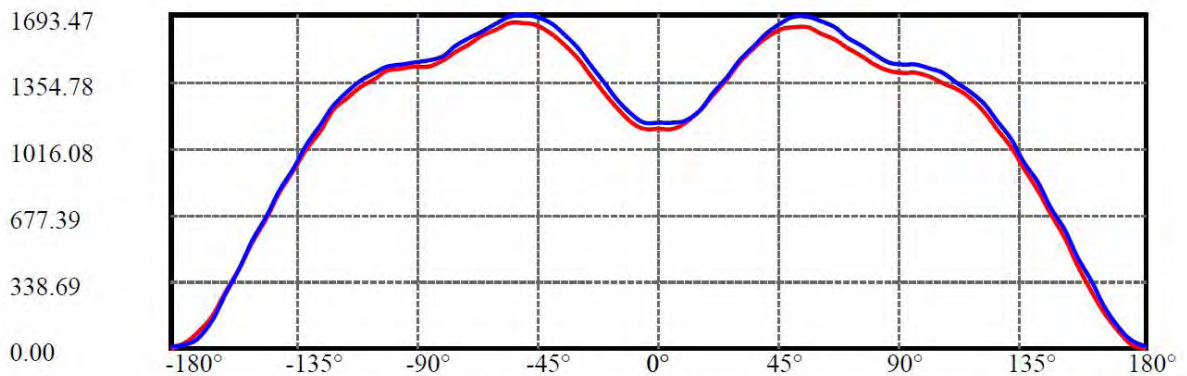
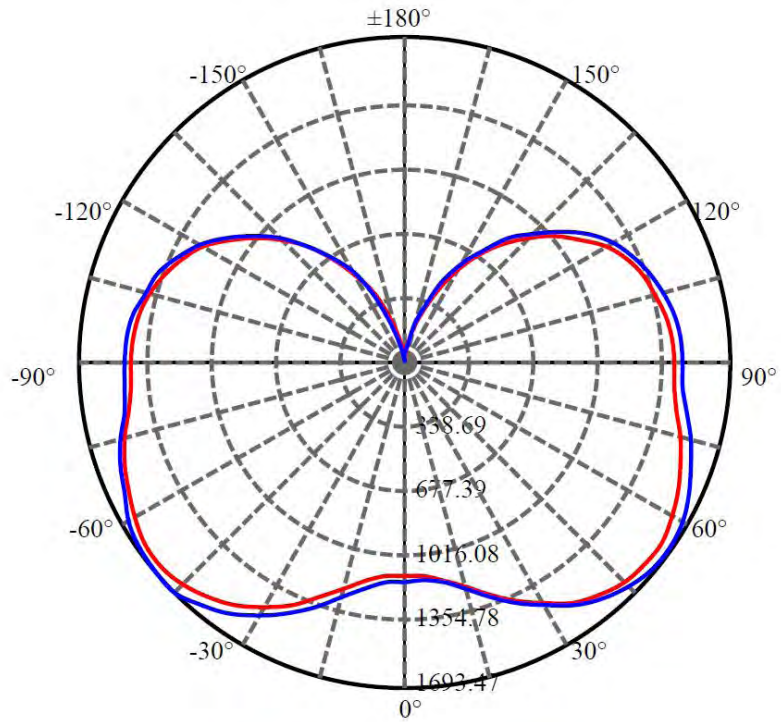
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1114.773	0.000	0	0.00%	0.00%
5.0	1120.239	26.719	26.719	0.00%	0.17%
10.0	1148.950	81.176	107.895	0.00%	0.67%
15.0	1211.873	140.042	247.937	0.00%	1.54%
20.0	1292.943	206.432	454.369	0.00%	2.82%
25.0	1378.467	280.182	734.551	0.00%	4.56%
30.0	1461.267	359.371	1093.922	0.00%	6.79%
35.0	1531.792	440.749	1534.671	0.00%	9.52%
40.0	1592.249	521.223	2055.893	0.00%	12.75%
45.0	1631.818	596.962	2652.856	0.00%	16.46%
50.0	1646.689	662.470	3315.326	0.00%	20.57%
55.0	1639.106	714.441	4029.767	0.00%	25.00%
60.0	1616.377	752.496	4782.263	0.00%	29.67%
65.0	1581.188	777.334	5559.597	0.00%	34.49%
70.0	1537.019	789.550	6349.147	0.00%	39.39%
75.0	1493.290	792.074	7141.221	0.00%	44.30%
80.0	1447.335	786.830	7928.05	0.00%	49.19%
85.0	1421.404	779.505	8707.556	0.00%	54.02%
90.0	1415.993	776.902	9484.457	0.00%	58.84%
95.0	1410.398	773.888	10258.345	0.00%	63.64%
100.0	1397.184	762.887	11021.232	0.00%	68.38%
105.0	1367.830	739.841	11761.073	0.00%	72.97%
110.0	1327.838	704.604	12465.677	0.00%	77.34%
115.0	1274.005	658.803	13124.481	0.00%	81.43%
120.0	1207.420	603.239	13727.72	0.00%	85.17%
125.0	1120.810	538.164	14265.883	0.00%	88.51%
130.0	1016.992	464.829	14730.713	0.00%	91.39%
135.0	909.457	389.267	15119.98	0.00%	93.81%
140.0	798.775	316.293	15436.273	0.00%	95.77%
145.0	680.841	246.863	15683.135	0.00%	97.30%
150.0	547.559	180.890	15864.026	0.00%	98.42%
155.0	419.816	122.422	15986.448	0.00%	99.18%
160.0	290.343	74.483	16060.931	0.00%	99.64%
165.0	172.704	38.162	16099.092	0.00%	99.88%
170.0	79.782	14.977	16114.069	0.00%	99.97%
175.0	29.447	3.907	16117.977	0.00%	100.00%
180.0	4.343	0.404	16118.381	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ———

C90/C270: ———

Field angle(10%Imax):C0/180Left:165.3 Right:165.5
:C90/270Left:164.1 Right:167.0

Beam Angle(50%Imax):C0/180Left:138.4 Right:138.7
:C90/270Left:137.9 Right:139.7

**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	1113.37	1118.97	1144.59	1205.25	1287.99	1367.20	1449.07	1521.21	1579.81
22.5	1106.60	1111.31	1133.69	1186.70	1266.79	1347.18	1429.34	1492.35	1550.07
45.0	1102.48	1105.72	1132.22	1188.76	1266.20	1348.06	1429.63	1499.12	1558.61
67.5	1099.24	1104.84	1126.63	1189.05	1265.91	1340.11	1419.62	1481.46	1541.82
90.0	1141.35	1141.64	1159.90	1214.38	1293.00	1378.98	1462.02	1537.11	1602.48
112.5	1124.27	1126.04	1147.24	1205.54	1282.69	1364.55	1450.24	1524.74	1588.35
135.0	1116.32	1120.74	1146.65	1207.60	1291.82	1375.15	1465.56	1545.36	1604.25
157.5	1114.55	1118.97	1148.71	1209.96	1293.00	1375.45	1460.55	1525.63	1586.58
180.0	1113.37	1118.68	1148.42	1217.91	1298.89	1386.93	1469.68	1542.71	1596.89
202.5	1106.60	1114.26	1146.65	1208.78	1289.47	1373.68	1459.37	1527.39	1593.65
225.0	1102.48	1108.07	1139.88	1206.13	1287.40	1378.10	1461.43	1536.82	1594.53
247.5	1099.24	1105.13	1138.40	1204.07	1283.87	1368.97	1452.01	1521.80	1591.59
270.0	1141.35	1150.48	1190.53	1263.85	1351.30	1442.88	1520.62	1595.42	1649.01
292.5	1124.27	1133.40	1171.97	1240.58	1325.39	1423.15	1499.71	1569.50	1631.93
315.0	1116.32	1125.15	1159.02	1229.39	1307.72	1402.25	1489.11	1564.79	1621.03
337.5	1114.55	1120.44	1148.71	1212.02	1295.65	1382.81	1462.32	1523.27	1585.40
360.0	1113.37	1118.97	1144.59	1205.25	1287.99	1367.20	1449.07	1521.21	1579.81
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1617.50	1633.40	1629.87	1601.30	1567.15	1523.27	1483.81	1436.70	1412.85
22.5	1591.88	1604.84	1598.95	1573.33	1533.87	1486.76	1444.35	1399.60	1375.45
45.0	1601.30	1625.45	1618.09	1588.94	1548.89	1506.19	1465.26	1421.39	1390.47
67.5	1580.99	1591.29	1578.34	1560.96	1530.04	1478.22	1432.58	1388.99	1365.44
90.0	1653.13	1681.69	1681.69	1663.14	1631.63	1579.22	1535.93	1490.00	1446.71
112.5	1638.11	1660.20	1654.01	1638.11	1607.19	1563.02	1523.27	1475.57	1445.83
135.0	1648.42	1670.21	1667.26	1644.00	1605.43	1565.67	1523.57	1475.57	1442.59
157.5	1630.75	1642.24	1632.22	1612.20	1581.28	1536.23	1490.59	1449.36	1421.68
180.0	1636.64	1654.01	1648.12	1624.27	1586.88	1544.18	1502.07	1457.31	1433.46
202.5	1627.22	1634.87	1629.87	1608.08	1573.33	1528.57	1479.98	1442.29	1416.38
225.0	1637.23	1659.31	1647.83	1619.86	1590.11	1557.13	1507.66	1460.84	1440.53
247.5	1621.62	1630.46	1624.57	1605.13	1576.57	1532.99	1485.29	1442.88	1415.20
270.0	1687.29	1693.47	1680.81	1653.42	1612.49	1575.10	1531.22	1481.75	1464.38
292.5	1659.31	1665.79	1650.19	1630.46	1589.82	1545.36	1498.54	1452.89	1433.16
315.0	1656.96	1668.74	1663.73	1642.24	1596.59	1553.90	1513.55	1462.61	1441.70
337.5	1620.74	1631.05	1620.15	1596.59	1567.74	1516.50	1474.98	1419.62	1396.65
360.0	1617.50	1633.40	1629.87	1601.30	1567.15	1523.27	1483.81	1436.70	1412.85
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1401.95	1395.47	1380.46	1351.30	1318.03	1267.67	1203.48	1115.14	1015.91
22.5	1374.27	1368.09	1361.02	1333.64	1294.77	1237.35	1178.75	1102.77	999.71
45.0	1381.04	1374.86	1365.73	1337.76	1302.13	1256.19	1191.41	1107.78	1008.84
67.5	1361.32	1357.49	1345.71	1321.86	1282.69	1224.98	1165.79	1087.46	982.34
90.0	1442.59	1437.58	1424.63	1394.30	1351.60	1303.31	1245.59	1159.90	1057.72
112.5	1441.12	1437.58	1427.57	1400.77	1362.20	1307.43	1245.59	1162.26	1054.19
135.0	1434.93	1433.16	1413.73	1385.76	1343.35	1295.94	1227.33	1134.58	1034.16
157.5	1417.85	1413.73	1398.71	1374.27	1332.75	1279.16	1213.49	1128.10	1020.03
180.0	1426.98	1423.15	1404.60	1370.44	1326.57	1274.45	1205.25	1108.96	1006.48
202.5	1413.14	1409.61	1391.35	1364.55	1320.09	1262.67	1190.23	1104.25	1001.18
225.0	1434.05	1428.75	1412.26	1380.46	1339.82	1290.35	1214.67	1119.56	1017.67
247.5	1412.55	1405.48	1392.23	1361.90	1320.68	1264.44	1194.35	1107.78	997.36
270.0	1456.13	1445.53	1432.58	1395.18	1360.73	1300.66	1225.86	1134.58	1029.75
292.5	1429.93	1424.33	1411.08	1380.16	1334.22	1277.69	1208.78	1123.39	1013.26
315.0	1433.46	1424.33	1412.26	1380.46	1347.48	1292.12	1219.97	1128.98	1032.10
337.5	1394.59	1387.23	1381.04	1352.48	1308.31	1249.71	1188.17	1107.49	1001.18
360.0	1401.95	1395.47	1380.46	1351.30	1318.03	1267.67	1203.48	1115.14	1015.91



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	911.96	796.82	679.04	557.42	423.74	285.93	174.32	79.80	25.03
22.5	891.35	787.11	675.21	530.92	412.84	284.16	168.43	81.57	29.74
45.0	907.54	793.29	676.98	554.18	421.68	291.52	174.32	80.68	30.04
67.5	876.92	779.45	661.96	531.81	406.07	280.63	167.26	78.62	30.92
90.0	951.71	840.11	714.08	595.41	461.13	332.75	211.13	107.48	43.58
112.5	947.59	835.10	724.97	583.34	454.95	325.97	198.18	99.24	37.99
135.0	929.92	816.85	693.76	569.79	438.75	308.89	186.69	92.76	37.40
157.5	908.43	803.89	693.17	550.95	426.68	295.06	179.92	85.69	31.80
180.0	907.25	788.58	664.61	535.63	414.31	287.40	171.67	80.39	32.39
202.5	891.05	785.05	672.85	532.39	406.66	280.92	165.20	78.03	28.27
225.0	906.95	790.64	668.44	537.99	411.37	287.69	174.03	77.74	26.21
247.5	889.88	784.75	673.44	531.51	414.02	285.63	169.02	78.33	29.15
270.0	919.03	794.76	670.50	541.82	406.36	268.26	147.23	50.94	16.20
292.5	901.95	796.53	671.09	526.80	395.17	266.49	151.36	62.72	19.73
315.0	918.14	798.89	676.39	551.24	417.26	280.63	161.66	69.20	25.62
337.5	891.64	788.58	676.98	529.74	406.07	283.57	162.84	73.32	27.09
360.0	911.96	796.82	679.04	557.42	423.74	285.93	174.32	79.80	25.03
C/γ(°)	180.0								
0.0	3.53								
22.5	2.65								
45.0	2.65								
67.5	2.65								
90.0	6.18								
112.5	7.66								
135.0	5.89								
157.5	3.53								
180.0	3.53								
202.5	2.65								
225.0	2.65								
247.5	2.65								
270.0	6.18								
292.5	7.66								
315.0	5.89								
337.5	3.53								
360.0	3.53								

**3.2.4 Model Number: HIDFA-120S-EX39-8CCT-BYP/3SP, 4000K at 277V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.110	60	0.443	110.310	0.898

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
15967.60	144.75	29.21	58.14



Zonal Flux Diagram

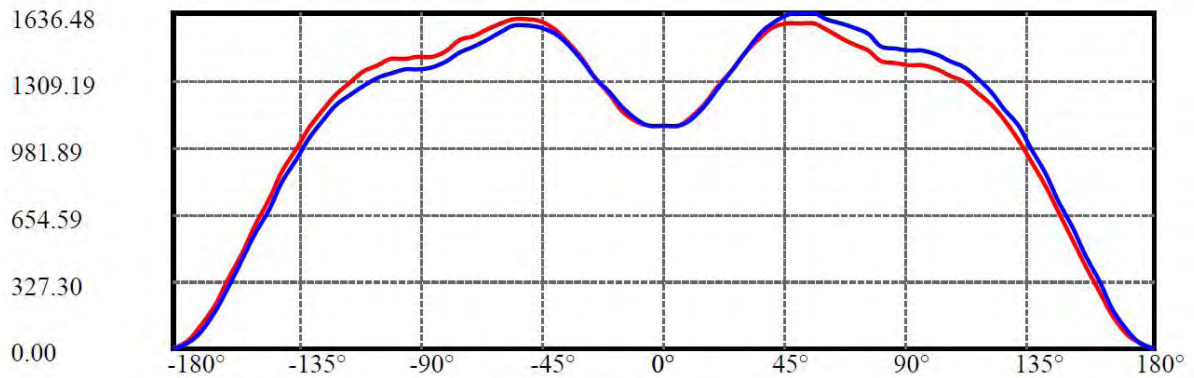
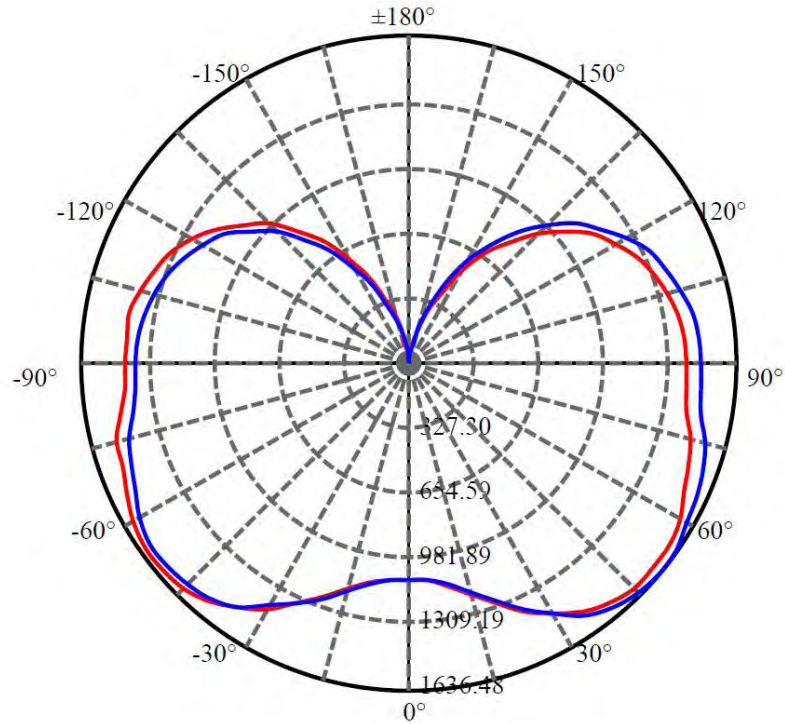
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1088.029	0.000	0	0.00%	0.00%
5.0	1093.004	26.074	26.074	0.00%	0.16%
10.0	1122.688	79.262	105.336	0.00%	0.66%
15.0	1184.045	136.834	242.17	0.00%	1.52%
20.0	1263.717	201.730	443.9	0.00%	2.78%
25.0	1346.871	273.802	717.702	0.00%	4.49%
30.0	1434.927	352.039	1069.741	0.00%	6.70%
35.0	1506.013	433.074	1502.815	0.00%	9.41%
40.0	1557.789	511.172	2013.987	0.00%	12.61%
45.0	1588.744	582.606	2596.593	0.00%	16.26%
50.0	1598.233	643.975	3240.568	0.00%	20.29%
55.0	1590.107	693.251	3933.819	0.00%	24.64%
60.0	1566.983	729.752	4663.572	0.00%	29.21%
65.0	1536.562	754.478	5418.05	0.00%	33.93%
70.0	1507.948	770.889	6188.939	0.00%	38.76%
75.0	1475.279	779.767	6968.707	0.00%	43.64%
80.0	1427.630	776.738	7745.444	0.00%	48.51%
85.0	1406.239	770.030	8515.474	0.00%	53.33%
90.0	1401.540	768.792	9284.266	0.00%	58.14%
95.0	1396.547	766.138	10050.404	0.00%	62.94%
100.0	1386.431	756.202	10806.606	0.00%	67.68%
105.0	1360.488	734.999	11541.605	0.00%	72.28%
110.0	1323.858	701.645	12243.25	0.00%	76.68%
115.0	1275.214	658.102	12901.351	0.00%	80.80%
120.0	1213.452	604.999	13506.351	0.00%	84.59%
125.0	1137.815	543.489	14049.84	0.00%	87.99%
130.0	1047.124	475.079	14524.918	0.00%	90.96%
135.0	944.863	402.510	14927.428	0.00%	93.49%
140.0	832.098	329.019	15256.447	0.00%	95.55%
145.0	707.247	256.828	15513.275	0.00%	97.15%
150.0	566.070	187.505	15700.78	0.00%	98.33%
155.0	437.367	126.986	15827.765	0.00%	99.12%
160.0	308.628	78.241	15906.007	0.00%	99.61%
165.0	184.532	40.643	15946.65	0.00%	99.87%
170.0	87.908	16.161	15962.811	0.00%	99.97%
175.0	33.203	4.333	15967.143	0.00%	100.00%
180.0	4.791	0.454	15967.598	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ———

C90/C270: ———

Field angle(10%Imax):C0/180Left:167.5 Right:165.0
:C90/270Left:165.8 Right:166.5

Beam Angle(50%Imax):C0/180Left:142.2 Right:139.6
:C90/270Left:139.6 Right:141.4

**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	1082.83	1091.09	1130.59	1196.63	1279.18	1366.44	1444.56	1518.86	1563.37
22.5	1091.38	1102.29	1140.62	1211.37	1282.12	1381.47	1467.26	1525.64	1566.91
45.0	1089.32	1099.34	1141.50	1211.96	1295.98	1382.06	1464.91	1534.78	1581.95
67.5	1093.45	1103.77	1146.51	1219.04	1294.51	1396.51	1472.57	1530.35	1576.93
90.0	1086.37	1091.68	1120.27	1188.38	1267.97	1357.30	1448.10	1534.19	1589.02
112.5	1092.27	1096.98	1127.94	1189.85	1274.46	1361.43	1458.42	1530.35	1588.14
135.0	1076.35	1081.36	1105.83	1171.57	1255.00	1349.93	1438.37	1518.27	1579.88
157.5	1092.27	1095.22	1119.68	1178.35	1258.83	1343.74	1443.97	1509.72	1565.44
180.0	1082.83	1084.60	1107.30	1160.66	1241.44	1323.10	1417.15	1490.26	1552.76
202.5	1091.38	1093.45	1111.72	1165.38	1245.27	1318.39	1413.02	1485.25	1537.72
225.0	1089.32	1090.20	1109.07	1156.24	1234.37	1308.66	1390.32	1464.61	1530.94
247.5	1093.45	1092.86	1112.90	1162.43	1238.20	1308.07	1394.45	1472.28	1525.34
270.0	1086.37	1091.38	1117.33	1175.99	1249.40	1318.68	1399.75	1483.48	1532.71
292.5	1092.27	1096.10	1124.40	1183.07	1264.73	1334.01	1429.23	1486.13	1533.60
315.0	1076.35	1080.77	1114.38	1176.88	1262.37	1344.62	1425.70	1506.18	1556.30
337.5	1092.27	1096.98	1132.95	1196.92	1275.64	1355.53	1451.05	1505.88	1543.62
360.0	1082.83	1091.09	1130.59	1196.63	1279.18	1366.44	1444.56	1518.86	1563.37
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1587.84	1589.32	1584.60	1559.24	1516.20	1487.31	1454.59	1405.35	1395.04
22.5	1590.49	1594.62	1583.71	1556.89	1526.82	1488.20	1443.68	1413.02	1402.70
45.0	1607.00	1614.96	1600.52	1564.55	1528.00	1511.78	1474.34	1425.11	1423.04
67.5	1593.44	1594.03	1577.82	1553.64	1530.35	1492.62	1446.33	1418.92	1407.12
90.0	1621.74	1636.48	1631.47	1603.47	1581.95	1561.60	1534.19	1477.29	1460.48
112.5	1625.28	1630.59	1621.74	1607.00	1585.78	1555.12	1520.92	1466.67	1450.17
135.0	1620.57	1629.11	1627.94	1612.31	1584.01	1559.24	1532.12	1479.94	1455.77
157.5	1597.57	1609.07	1598.16	1572.81	1547.45	1521.21	1493.21	1438.08	1415.08
180.0	1590.79	1607.00	1608.48	1588.73	1551.87	1523.28	1506.47	1456.36	1425.99
202.5	1570.45	1583.71	1577.52	1558.07	1529.76	1498.51	1470.51	1419.80	1389.43
225.0	1569.27	1588.43	1586.37	1568.09	1536.25	1503.82	1479.65	1430.41	1395.33
247.5	1560.42	1575.16	1570.45	1552.46	1525.05	1498.22	1464.02	1409.48	1374.69
270.0	1563.37	1579.88	1573.69	1546.86	1507.36	1476.70	1448.10	1397.98	1368.80
292.5	1569.86	1581.95	1567.79	1543.03	1514.43	1488.20	1448.40	1404.76	1379.71
315.0	1581.65	1585.48	1576.05	1554.82	1519.15	1491.14	1461.96	1410.96	1389.14
337.5	1570.15	1571.92	1555.41	1529.76	1500.58	1470.21	1425.99	1387.96	1367.32
360.0	1587.84	1589.32	1584.60	1559.24	1516.20	1487.31	1454.59	1405.35	1395.04
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1386.19	1379.41	1363.49	1336.07	1301.88	1254.71	1187.49	1118.51	1018.27
22.5	1391.50	1389.73	1377.35	1353.47	1311.31	1252.35	1191.62	1115.85	1019.45
45.0	1408.01	1402.41	1383.54	1356.12	1317.21	1265.91	1202.53	1124.40	1027.41
67.5	1399.46	1395.92	1380.59	1355.83	1314.55	1254.12	1196.92	1119.98	1021.81
90.0	1454.59	1449.58	1437.19	1405.65	1367.91	1323.40	1254.12	1170.98	1084.01
112.5	1443.68	1438.96	1427.17	1397.98	1363.20	1311.31	1247.63	1173.93	1075.46
135.0	1453.70	1448.69	1443.38	1413.02	1376.17	1331.06	1264.44	1179.83	1089.02
157.5	1412.43	1407.42	1397.98	1374.10	1336.96	1290.67	1229.65	1150.34	1062.49
180.0	1422.75	1416.56	1414.20	1387.08	1352.88	1305.41	1244.09	1166.26	1077.82
202.5	1385.01	1383.83	1373.52	1351.70	1314.26	1270.33	1211.67	1137.08	1049.23
225.0	1396.81	1391.20	1390.32	1360.25	1324.87	1282.42	1222.87	1147.99	1066.91
247.5	1377.05	1369.09	1362.61	1339.91	1306.00	1260.31	1198.40	1130.89	1046.87
270.0	1364.67	1357.30	1346.39	1321.33	1284.78	1243.80	1185.43	1119.10	1029.18
292.5	1380.30	1377.94	1369.09	1346.39	1310.72	1255.59	1199.58	1122.34	1033.60
315.0	1383.24	1374.99	1364.38	1338.43	1304.82	1262.08	1196.34	1121.16	1033.01
337.5	1365.26	1361.72	1351.70	1330.47	1294.21	1239.97	1182.48	1106.42	1019.45
360.0	1386.19	1379.41	1363.49	1336.07	1301.88	1254.71	1187.49	1118.51	1018.27



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	917.45	795.39	668.33	529.77	408.02	279.48	160.38	70.46	27.71
22.5	913.02	804.53	670.69	525.06	397.40	271.52	153.01	67.51	23.29
45.0	920.69	788.02	657.13	527.71	402.41	269.46	153.89	63.68	23.29
67.5	918.33	809.55	669.51	524.47	397.11	261.20	148.58	64.56	19.46
90.0	977.88	856.13	721.10	584.61	460.49	322.52	194.28	93.45	31.25
112.5	968.74	862.02	745.87	591.98	456.95	328.12	196.34	86.67	26.53
135.0	989.97	869.98	731.72	592.86	460.20	332.54	202.83	96.70	36.56
157.5	956.95	854.65	741.74	587.55	457.54	332.25	198.41	96.11	39.80
180.0	980.83	861.73	733.78	601.41	466.39	334.02	214.33	107.61	35.97
202.5	954.89	849.64	739.09	594.92	459.61	339.62	208.14	109.08	45.99
225.0	975.52	866.15	731.72	598.46	471.69	343.45	218.45	113.21	45.99
247.5	950.46	848.46	748.23	598.76	469.34	344.93	217.27	115.86	49.23
270.0	926.88	809.25	685.43	558.07	432.19	299.82	179.24	83.73	32.72
292.5	927.76	824.58	700.17	550.41	423.94	299.82	172.17	81.96	33.31
315.0	923.64	808.07	686.02	554.54	424.82	293.92	172.46	78.71	30.96
337.5	914.79	805.42	685.43	536.55	409.78	285.38	162.74	77.24	29.19
360.0	917.45	795.39	668.33	529.77	408.02	279.48	160.38	70.46	27.71
C/γ(°)	180.0								
0.0	4.13								
22.5	6.19								
45.0	7.08								
67.5	8.84								
90.0	3.24								
112.5	2.95								
135.0	2.65								
157.5	3.24								
180.0	4.13								
202.5	6.19								
225.0	7.08								
247.5	8.84								
270.0	3.24								
292.5	2.95								
315.0	2.65								
337.5	3.24								
360.0	4.13								

**3.2.5 Model Number: HIDFA-120S-EX39-8CCT-BYP/3SP, 5000K at 120V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
120.100	60	0.951	113.120	0.990

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
15814.24	139.80	29.21	58.15



Zonal Flux Diagram

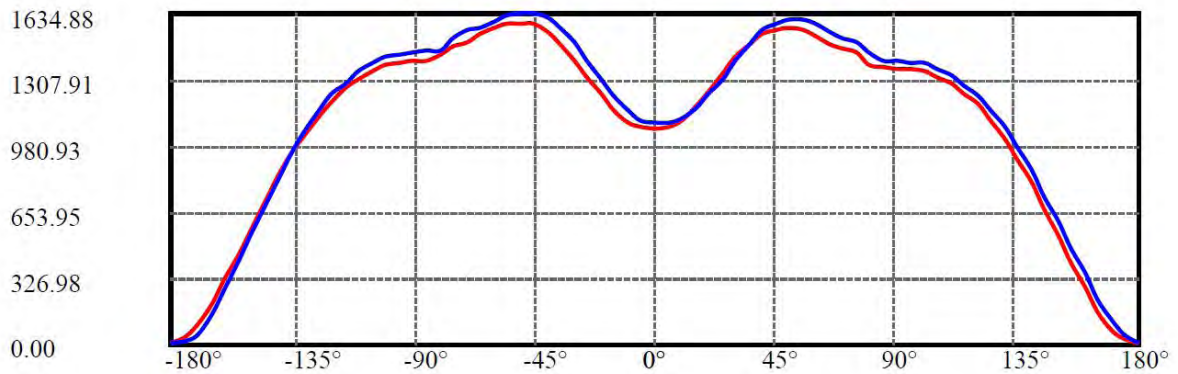
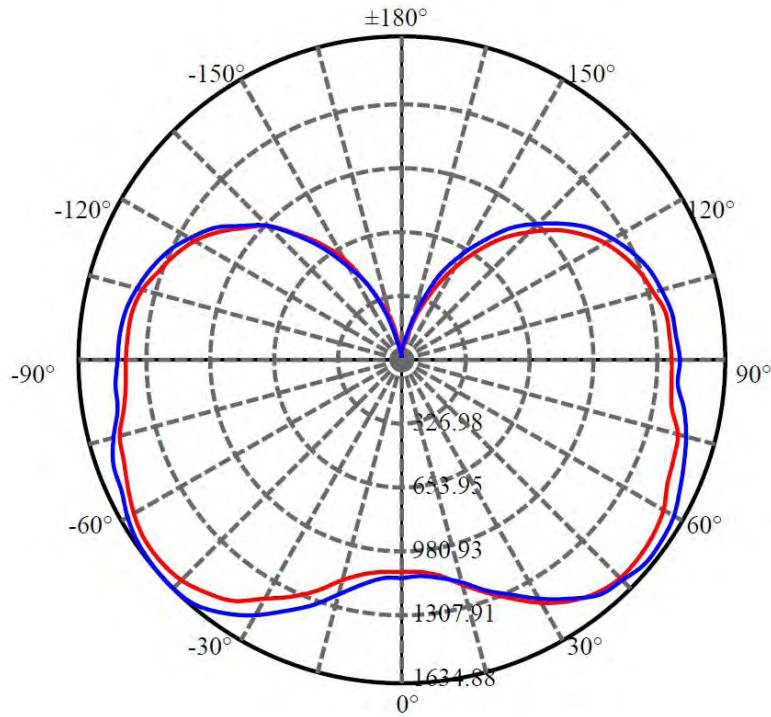
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1077.363	0.000	0	0.00%	0.00%
5.0	1083.477	25.832	25.832	0.00%	0.16%
10.0	1111.901	78.536	104.368	0.00%	0.66%
15.0	1173.172	135.549	239.917	0.00%	1.52%
20.0	1251.115	199.795	439.712	0.00%	2.78%
25.0	1334.714	271.206	710.918	0.00%	4.50%
30.0	1421.471	348.798	1059.715	0.00%	6.70%
35.0	1492.364	429.083	1488.798	0.00%	9.41%
40.0	1543.610	506.529	1995.327	0.00%	12.62%
45.0	1574.328	577.311	2572.639	0.00%	16.27%
50.0	1583.252	638.035	3210.674	0.00%	20.30%
55.0	1575.081	686.727	3897.4	0.00%	24.64%
60.0	1550.954	722.574	4619.974	0.00%	29.21%
65.0	1521.540	746.929	5366.903	0.00%	33.94%
70.0	1493.502	763.428	6130.331	0.00%	38.76%
75.0	1460.929	772.241	6902.572	0.00%	43.65%
80.0	1413.741	769.182	7671.754	0.00%	48.51%
85.0	1392.570	762.542	8434.296	0.00%	53.33%
90.0	1387.705	761.261	9195.557	0.00%	58.15%
95.0	1382.068	758.385	9953.942	0.00%	62.94%
100.0	1374.136	748.927	10702.869	0.00%	67.68%
105.0	1346.043	727.844	11430.713	0.00%	72.28%
110.0	1311.175	694.554	12125.267	0.00%	76.67%
115.0	1261.857	651.508	12776.775	0.00%	80.79%
120.0	1201.228	598.781	13375.555	0.00%	84.58%
125.0	1126.920	538.145	13913.7	0.00%	87.98%
130.0	1037.942	470.713	14384.413	0.00%	90.96%
135.0	936.661	398.997	14783.41	0.00%	93.48%
140.0	824.786	326.146	15109.557	0.00%	95.54%
145.0	701.491	254.648	15364.204	0.00%	97.15%
150.0	560.770	185.877	15550.081	0.00%	98.33%
155.0	432.315	125.676	15675.757	0.00%	99.12%
160.0	305.861	77.421	15753.178	0.00%	99.61%
165.0	182.419	40.241	15793.419	0.00%	99.87%
170.0	87.620	16.018	15809.438	0.00%	99.97%
175.0	33.619	4.337	15813.775	0.00%	100.00%
180.0	5.362	0.466	15814.241	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: ———

C90/C270: ———

Field angle(10%Imax):C0/180Left:167.1 Right:165.4

:C90/270Left:164.6 Right:168.0

Beam Angle(50%Imax):C0/180Left:141.5 Right:140.2

:C90/270Left:140.0 Right:141.8

**Luminous Intensity Distribution Data**

$C/\gamma(^{\circ})$	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1070.53	1079.35	1111.66	1173.65	1249.15	1337.29	1417.19	1481.53	1531.77
22.5	1077.58	1083.75	1109.31	1168.66	1242.98	1317.90	1406.62	1466.84	1507.38
45.0	1067.30	1073.76	1098.44	1154.85	1227.71	1301.44	1380.47	1451.86	1504.15
67.5	1064.36	1069.06	1099.03	1153.67	1230.64	1306.14	1393.69	1448.63	1490.93
90.0	1099.91	1099.91	1116.95	1168.07	1241.22	1313.49	1399.86	1478.30	1549.10
112.5	1088.45	1089.34	1105.20	1155.73	1236.22	1310.55	1400.15	1480.06	1535.00
135.0	1076.41	1081.70	1099.62	1153.67	1233.29	1317.01	1400.15	1483.88	1545.28
157.5	1074.35	1077.58	1099.03	1153.67	1234.17	1309.08	1411.02	1480.65	1532.06
180.0	1070.53	1074.65	1097.56	1155.73	1236.81	1318.48	1398.69	1484.47	1541.76
202.5	1077.58	1081.99	1106.96	1167.77	1246.21	1321.42	1428.06	1497.10	1547.04
225.0	1067.30	1074.65	1101.09	1161.90	1240.63	1332.88	1416.02	1494.46	1548.81
247.5	1064.36	1072.59	1104.02	1168.07	1246.21	1334.93	1432.47	1500.33	1550.57
270.0	1099.91	1111.07	1155.14	1231.23	1314.08	1404.56	1491.23	1567.61	1614.61
292.5	1088.45	1096.09	1138.10	1217.13	1295.86	1400.45	1477.71	1539.70	1587.00
315.0	1076.41	1086.69	1129.00	1197.74	1276.77	1373.13	1451.27	1524.42	1568.49
337.5	1074.35	1083.46	1119.30	1189.22	1265.90	1356.67	1438.93	1497.98	1543.81
360.0	1070.53	1079.35	1111.66	1173.65	1249.15	1337.29	1417.19	1481.53	1531.77
$C/\gamma(^{\circ})$	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1554.39	1558.79	1549.10	1523.54	1483.88	1463.02	1439.23	1385.46	1369.60
22.5	1530.30	1537.64	1525.30	1498.86	1469.19	1438.93	1401.62	1363.73	1345.80
45.0	1530.89	1539.41	1530.00	1507.38	1469.78	1438.35	1411.61	1362.84	1341.69
67.5	1522.66	1527.65	1512.38	1492.11	1464.20	1431.00	1391.05	1345.22	1324.07
90.0	1582.00	1600.22	1602.57	1582.88	1548.22	1516.78	1492.40	1444.51	1402.50
112.5	1578.77	1601.10	1595.81	1572.01	1544.40	1518.25	1486.82	1438.64	1402.80
135.0	1577.30	1595.52	1591.11	1569.08	1537.35	1513.26	1485.64	1441.58	1407.20
157.5	1566.43	1583.47	1574.37	1549.39	1522.95	1493.58	1459.79	1408.38	1378.71
180.0	1581.42	1585.53	1585.82	1563.20	1532.06	1497.40	1476.83	1427.18	1398.69
202.5	1581.42	1594.34	1587.00	1561.73	1538.23	1504.15	1470.95	1422.48	1402.80
225.0	1583.18	1597.57	1597.87	1568.78	1533.82	1511.50	1488.58	1441.87	1425.13
247.5	1583.47	1587.00	1571.43	1550.86	1535.88	1505.03	1465.08	1419.84	1401.92
270.0	1634.00	1634.88	1621.37	1593.46	1565.85	1549.69	1512.38	1457.15	1452.15
292.5	1611.68	1615.79	1606.39	1579.65	1555.27	1525.60	1480.06	1446.86	1435.41
315.0	1597.28	1600.22	1590.82	1570.55	1535.59	1510.03	1478.01	1426.89	1414.84
337.5	1574.07	1572.90	1559.97	1531.77	1507.97	1479.47	1434.82	1387.23	1377.83
360.0	1554.39	1558.79	1549.10	1523.54	1483.88	1463.02	1439.23	1385.46	1369.60
$C/\gamma(^{\circ})$	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1360.79	1361.08	1353.44	1320.54	1287.93	1242.69	1183.64	1109.02	1016.48
22.5	1342.87	1339.93	1333.47	1311.73	1275.30	1226.24	1170.12	1096.39	1012.07
45.0	1332.88	1326.12	1322.30	1290.57	1264.13	1220.07	1159.25	1091.98	1009.13
67.5	1325.24	1322.30	1312.61	1290.87	1256.20	1208.90	1155.44	1084.05	995.91
90.0	1405.44	1393.40	1389.87	1360.49	1326.71	1283.23	1225.06	1153.67	1074.35
112.5	1401.33	1393.98	1387.23	1362.26	1328.77	1278.82	1215.37	1143.39	1055.55
135.0	1405.74	1394.87	1389.28	1361.96	1323.18	1281.76	1224.47	1145.15	1058.19
157.5	1376.65	1369.89	1364.02	1340.22	1309.96	1260.61	1194.80	1125.76	1039.10
180.0	1398.69	1388.99	1381.94	1353.44	1311.14	1267.07	1203.03	1125.76	1040.57
202.5	1395.16	1390.75	1381.06	1349.33	1315.25	1268.83	1204.20	1124.59	1040.86
225.0	1419.84	1410.14	1400.15	1369.01	1330.23	1284.11	1218.60	1145.15	1054.08
247.5	1393.40	1388.99	1378.71	1352.86	1316.72	1265.02	1202.73	1126.94	1035.28
270.0	1438.93	1431.29	1419.54	1387.52	1350.80	1294.39	1233.87	1157.49	1056.43
292.5	1428.36	1427.18	1416.02	1387.82	1348.45	1289.11	1228.59	1150.44	1055.26
315.0	1404.56	1400.74	1394.57	1360.49	1329.94	1270.60	1207.43	1135.16	1039.69
337.5	1373.42	1373.42	1361.96	1337.58	1304.09	1248.27	1193.04	1115.78	1024.12
360.0	1360.79	1361.08	1353.44	1320.54	1287.93	1242.69	1183.64	1109.02	1016.48



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	913.65	799.08	670.70	540.55	411.00	281.15	165.40	71.68	25.56
22.5	902.79	802.61	684.21	535.27	404.53	280.85	164.52	78.44	31.73
45.0	911.01	796.73	668.64	540.26	418.34	286.44	166.28	80.79	32.90
67.5	894.56	799.37	680.98	534.68	410.70	292.02	170.10	82.85	33.20
90.0	976.82	864.89	731.22	607.83	480.04	350.77	227.09	121.04	49.06
112.5	961.25	853.72	748.55	603.42	469.46	344.02	217.40	114.57	46.12
135.0	968.59	858.42	730.04	597.84	468.29	339.02	213.87	109.87	46.12
157.5	937.16	838.45	729.16	587.27	455.65	335.50	207.70	107.82	42.30
180.0	951.26	829.63	707.72	572.28	442.14	324.04	200.95	101.35	42.30
202.5	939.21	831.98	716.24	569.05	443.61	320.51	192.43	94.89	37.60
225.0	948.32	826.99	697.43	562.00	440.08	315.52	191.54	95.48	36.72
247.5	934.51	830.81	714.47	567.58	437.73	317.87	189.19	92.83	33.49
270.0	952.43	816.12	688.62	552.31	419.52	276.45	153.06	54.64	17.63
292.5	944.50	830.81	691.85	536.15	403.07	276.15	152.77	60.81	20.27
315.0	933.34	807.60	678.93	540.26	411.29	276.15	151.88	63.75	23.50
337.5	917.18	809.36	685.09	525.57	401.60	277.33	154.53	71.10	19.39
360.0	913.65	799.08	670.70	540.55	411.00	281.15	165.40	71.68	25.56
C/γ(°)	180.0								
0.0	5.29								
22.5	3.82								
45.0	3.53								
67.5	2.94								
90.0	6.76								
112.5	7.93								
135.0	8.23								
157.5	4.41								
180.0	5.29								
202.5	3.82								
225.0	3.53								
247.5	2.94								
270.0	6.76								
292.5	7.93								
315.0	8.23								
337.5	4.41								
360.0	5.29								

**3.2.6 Model Number: HIDFA-120S-EX39-8CCT-BYP/3SP, 5000K at 277V****Electrical data**

Input Voltage(V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
277.120	60	0.453	113.160	0.902

Photometric data

Luminous Flux (lm)	Efficacy (lm/W)	Zonal Lumen in 0-60°(%lm)	Zonal Lumen in 0-90°(%lm)
15469.37	136.70	29.21	58.16



Zonal Flux Diagram

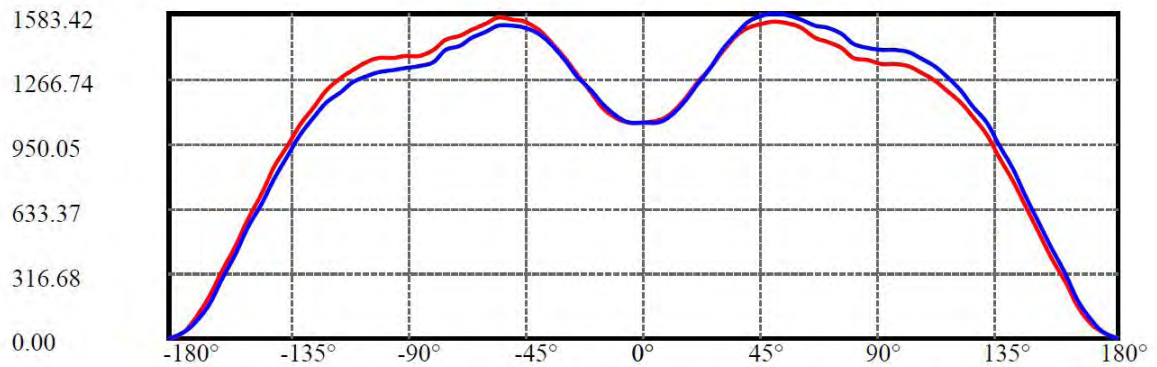
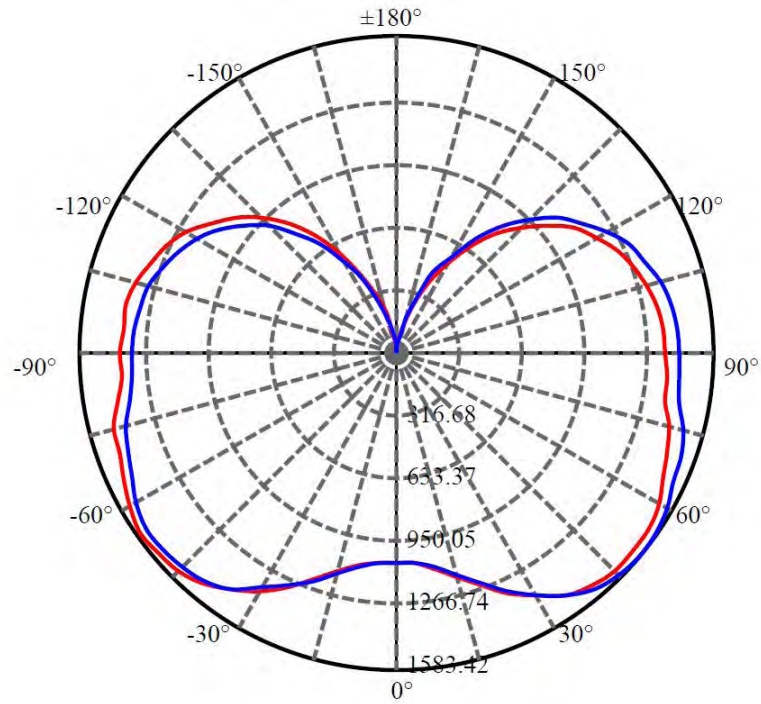
Zonal flux distribution table

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1053.722	0.000	0	0.00%	0.00%
5.0	1058.631	25.253	25.253	0.00%	0.16%
10.0	1087.246	76.765	102.017	0.00%	0.66%
15.0	1147.634	132.572	234.589	0.00%	1.52%
20.0	1224.428	195.491	430.08	0.00%	2.78%
25.0	1304.952	265.285	695.365	0.00%	4.50%
30.0	1389.993	341.047	1036.413	0.00%	6.70%
35.0	1459.788	419.650	1456.063	0.00%	9.41%
40.0	1509.663	495.430	1951.494	0.00%	12.62%
45.0	1539.242	564.529	2516.023	0.00%	16.26%
50.0	1548.452	623.914	3139.937	0.00%	20.30%
55.0	1541.062	671.763	3811.7	0.00%	24.64%
60.0	1518.570	707.225	4518.925	0.00%	29.21%
65.0	1488.992	731.144	5250.069	0.00%	33.94%
70.0	1461.288	747.030	5997.099	0.00%	38.77%
75.0	1429.817	755.688	6752.788	0.00%	43.65%
80.0	1383.816	752.850	7505.638	0.00%	48.52%
85.0	1362.502	746.241	8251.878	0.00%	53.34%
90.0	1357.683	744.808	8996.686	0.00%	58.16%
95.0	1352.470	742.061	9738.747	0.00%	62.96%
100.0	1343.741	732.625	10471.373	0.00%	67.69%
105.0	1317.590	712.098	11183.471	0.00%	72.29%
110.0	1282.657	679.663	11863.134	0.00%	76.69%
115.0	1235.335	637.572	12500.705	0.00%	80.81%
120.0	1175.339	586.039	13086.744	0.00%	84.60%
125.0	1101.080	526.188	13612.932	0.00%	88.00%
130.0	1014.576	460.014	14072.946	0.00%	90.97%
135.0	914.880	389.875	14462.821	0.00%	93.49%
140.0	805.724	318.584	14781.405	0.00%	95.55%
145.0	684.696	248.665	15030.07	0.00%	97.16%
150.0	547.300	181.420	15211.49	0.00%	98.33%
155.0	422.203	122.691	15334.182	0.00%	99.13%
160.0	298.962	75.637	15409.819	0.00%	99.62%
165.0	178.364	39.338	15449.157	0.00%	99.87%
170.0	84.755	15.608	15464.765	0.00%	99.97%
175.0	31.863	4.172	15468.937	0.00%	100.00%
180.0	4.713	0.437	15469.374	0.00%	100.00%



Luminous Intensity Distribution Diagram

Light Distribution Curve [Unit:cd]



C0/C180: —

C90/C270: —

Field angle(10%Imax):C0/180Left:167.4 Right:165.0

:C90/270Left:165.7 Right:166.6

Beam Angle(50%Imax):C0/180Left:142.3 Right:139.6

:C90/270Left:139.5 Right:141.4



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	1049.90	1057.61	1095.31	1158.43	1237.55	1321.52	1396.06	1471.75	1516.30
22.5	1058.19	1066.75	1104.17	1173.57	1244.97	1338.37	1419.48	1478.89	1519.16
45.0	1055.33	1063.90	1104.74	1174.71	1256.11	1341.51	1418.05	1486.60	1532.87
67.5	1059.04	1068.75	1110.45	1183.85	1252.69	1352.93	1427.48	1487.74	1528.87
90.0	1050.76	1056.47	1083.89	1150.44	1228.69	1315.52	1402.92	1482.60	1539.72
112.5	1056.47	1063.61	1089.03	1154.72	1233.84	1316.66	1411.20	1482.03	1536.30
135.0	1042.76	1046.19	1072.75	1135.30	1216.13	1304.38	1394.92	1470.32	1532.87
157.5	1057.33	1060.18	1085.89	1140.73	1218.70	1303.52	1400.63	1463.18	1516.59
180.0	1049.90	1051.62	1073.32	1125.30	1204.13	1285.53	1370.64	1444.90	1504.88
202.5	1058.19	1060.18	1078.75	1129.59	1208.70	1280.10	1370.36	1442.05	1490.31
225.0	1055.33	1055.04	1073.04	1123.30	1196.42	1266.97	1348.08	1419.77	1484.89
247.5	1059.04	1059.90	1076.46	1127.30	1198.42	1267.54	1352.65	1428.91	1479.75
270.0	1050.76	1054.76	1082.46	1138.73	1212.70	1277.82	1355.79	1434.91	1486.60
292.5	1056.47	1062.47	1091.32	1144.73	1220.70	1291.24	1382.92	1441.76	1485.74
315.0	1042.76	1046.76	1078.18	1142.44	1224.12	1301.81	1382.35	1461.75	1507.16
337.5	1057.33	1063.90	1096.17	1159.01	1236.98	1313.81	1406.34	1459.47	1492.60
360.0	1049.90	1057.61	1095.31	1158.43	1237.55	1321.52	1396.06	1471.75	1516.30
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	1537.44	1544.29	1536.58	1514.30	1469.18	1442.33	1412.34	1365.50	1352.36
22.5	1541.44	1545.44	1537.15	1508.59	1480.60	1441.76	1403.20	1370.93	1358.08
45.0	1556.00	1564.57	1552.86	1518.87	1481.46	1465.75	1429.76	1379.78	1375.78
67.5	1546.01	1544.86	1528.87	1507.45	1484.32	1445.19	1401.20	1373.78	1363.79
90.0	1569.14	1583.42	1576.85	1556.00	1527.44	1510.02	1487.17	1433.48	1413.20
112.5	1574.57	1576.00	1570.28	1554.86	1534.30	1509.73	1473.18	1421.20	1404.34
135.0	1570.00	1575.43	1577.71	1561.14	1535.44	1509.16	1481.75	1433.76	1411.20
157.5	1548.29	1557.72	1548.01	1521.73	1503.45	1478.60	1444.90	1393.78	1372.07
180.0	1542.29	1558.00	1559.72	1539.15	1503.17	1474.60	1460.32	1409.77	1381.50
202.5	1521.16	1534.30	1529.16	1510.31	1482.60	1451.18	1426.05	1376.35	1345.79
225.0	1521.73	1538.30	1540.01	1517.73	1489.46	1458.61	1433.76	1389.49	1353.51
247.5	1515.16	1530.30	1523.73	1506.88	1477.75	1450.04	1420.05	1366.64	1332.37
270.0	1512.88	1529.16	1523.44	1496.60	1461.18	1428.91	1401.49	1350.94	1326.94
292.5	1518.30	1530.58	1517.16	1496.03	1466.32	1442.90	1403.77	1362.07	1337.80
315.0	1533.73	1537.44	1527.16	1504.88	1471.18	1445.19	1416.34	1367.22	1345.79
337.5	1519.73	1525.44	1508.31	1482.60	1456.04	1426.62	1381.78	1346.37	1325.52
360.0	1537.44	1544.29	1536.58	1514.30	1469.18	1442.33	1412.34	1365.50	1352.36
C/γ(°)	90.0	95.0	100.0	105.0	110.0	115.0	120.0	125.0	130.0
0.0	1342.08	1332.94	1322.95	1295.24	1259.25	1213.27	1149.87	1083.03	991.64
22.5	1348.94	1348.65	1332.66	1310.95	1272.39	1214.99	1153.29	1080.75	993.07
45.0	1366.36	1358.65	1339.80	1312.95	1275.53	1227.84	1165.86	1090.17	997.06
67.5	1354.08	1353.22	1340.65	1311.52	1276.11	1218.13	1161.86	1082.18	993.35
90.0	1410.34	1404.92	1394.35	1364.36	1325.23	1277.53	1212.70	1132.16	1050.19
112.5	1397.20	1394.63	1380.92	1357.22	1314.38	1268.68	1208.99	1133.30	1039.05
135.0	1409.77	1400.92	1398.92	1367.50	1334.94	1289.53	1224.41	1139.58	1056.19
157.5	1363.50	1365.22	1355.22	1329.52	1295.53	1248.97	1191.28	1116.16	1027.63
180.0	1378.93	1370.93	1370.36	1345.79	1310.66	1267.82	1207.27	1128.45	1044.48
202.5	1343.80	1338.37	1332.09	1307.81	1275.82	1234.41	1174.71	1098.74	1016.20
225.0	1352.93	1345.79	1345.51	1317.80	1286.10	1243.55	1189.28	1114.74	1032.77
247.5	1332.94	1326.94	1322.09	1294.96	1264.68	1219.56	1161.86	1093.60	1011.92
270.0	1321.52	1312.66	1302.67	1279.25	1245.83	1202.70	1147.01	1080.75	995.92
292.5	1337.51	1334.37	1328.09	1302.95	1266.40	1212.13	1157.01	1085.32	996.21
315.0	1338.37	1331.23	1320.38	1294.96	1263.82	1224.12	1155.29	1086.18	999.92
337.5	1324.66	1320.09	1313.24	1288.67	1255.83	1202.13	1144.73	1072.18	987.64
360.0	1342.08	1332.94	1322.95	1295.24	1259.25	1213.27	1149.87	1083.03	991.64



C/γ(°)	135.0	140.0	145.0	150.0	155.0	160.0	165.0	170.0	175.0
0.0	886.53	770.58	651.19	513.53	391.29	271.33	155.94	69.12	26.28
22.5	884.82	778.00	651.19	510.10	385.00	259.62	148.80	66.26	23.71
45.0	891.67	764.01	635.48	509.53	391.57	261.90	145.95	59.98	22.28
67.5	888.82	781.43	647.76	508.39	382.43	259.33	145.38	62.83	17.99
90.0	945.66	827.70	701.46	563.79	439.84	312.74	190.22	89.97	29.99
112.5	938.80	838.55	721.74	569.22	439.55	321.03	188.50	83.11	25.42
135.0	960.22	839.69	707.74	573.79	448.12	319.31	195.36	92.82	34.84
157.5	926.23	824.84	721.45	571.22	440.98	319.31	194.22	92.25	38.27
180.0	948.80	836.84	710.31	578.93	449.26	326.17	205.93	103.11	34.27
202.5	925.09	823.41	713.45	574.08	446.41	327.88	200.21	103.96	43.98
225.0	944.23	837.98	707.74	580.93	455.26	331.02	213.07	111.96	43.98
247.5	917.95	821.70	718.31	576.93	453.83	337.02	209.64	110.82	47.13
270.0	895.10	781.14	662.62	539.52	417.85	286.47	170.22	81.68	31.99
292.5	897.67	796.28	676.32	534.09	407.28	290.75	164.51	79.11	31.70
315.0	896.82	784.29	665.19	536.95	408.71	281.04	167.37	75.97	29.70
337.5	889.68	785.14	663.19	515.81	397.86	278.47	158.51	73.12	28.28
360.0	886.53	770.58	651.19	513.53	391.29	271.33	155.94	69.12	26.28
C/γ(°)	180.0								
0.0	3.71								
22.5	7.14								
45.0	6.57								
67.5	8.57								
90.0	3.14								
112.5	2.86								
135.0	2.57								
157.5	3.14								
180.0	3.71								
202.5	7.14								
225.0	6.57								
247.5	8.57								
270.0	3.14								
292.5	2.86								
315.0	2.57								
337.5	3.14								
360.0	3.71								



4 Additional Test

Model Number	Test Voltage (V)	Frequency(Hz)	Power Factor	THD
HIDFA-120S-EX39-8CCT-B YP/3SP	120	60	0.990	11.9%
	277	60	0.912	13.4%



Photo Document



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