

Photometric Test Report

Relevant Standards

- ☒ IES LM-79-2008
- ☒ ANSI C82.77:2014

Prepared For

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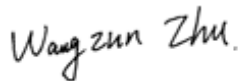
Test Date

2018/11/21

Issue Date

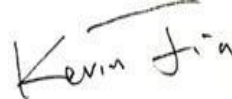
2019/1/23

Prepared By



Wangzun Zhu

Approved By



Kevin Jia

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1.0 Test Summary

DLC Technical Requirements v4.3

Outdoor - High Output Architectural Flood and Spot Luminaires			
Requirement Category	Test Method	Requirements	Test value
Luminaire Output (lm)	IES LM-79-2008	10000	18522
Zonal Lumen Requirement (0°-90°)	IES LM-79-2008	≥85%	99.86%
Minimum Luminaire Efficacy (lm/W)	IES LM-79-2008	120	135.1
Allowable CCTs* (K)	IES LM-79-2008	5700	3894
Minimum CRI	IES LM-79-2008 CIE 13.3-1995	65	74
Power Factor	ANSI C82.77:2014	0.873	0.965
Total Harmonic Distortion (A%)	ANSI C82.77:2014	25.00%	10.43%

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2018/11/21	FXLED125SFN	J1
2	Goniophotometer Test	2018/11/21	FXLED125SFN	J1
3	THD and PF Test	2018/11/21	FXLED125SFN	J1

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3.0 Production Description

Luminaire Description:

FXLED125SFN

Electrical Specification:

120V-277V,50/60Hz

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	FXLED125SFN	Sample ID.	J1
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

The samples were tested according to the IES LM-79-2008.

Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$.

The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere.

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ± 0.2 percent under load.

The sample was measured using 4π geometry and operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.

Test Conditions

Temperature ($^{\circ}\text{C}$)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
25.1	120.05	60	1.147	137.1	0.999

Test Result

CCT (K)	CRI (Ra)	Duv
3894	74.0	6.3E-04

4.0 LM-79 Measurement and Test Results

4.3 Goniophotometer Test

Model No.	FXLED125SFN	Sample ID.	J1
Operate time (Min.)	90	Stabilization time (Min.)	45

Test Method

The samples were tested according to the IES LM-79-2008.

Photometric parameters were measured using a type C goniophotometer and software.

The ambient temperature shall be maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured at a point not more than 1 m from the sample and at the same height as the sample.

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ± 0.2 percent under load.

The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5° vertical intervals and 10° horizontal intervals.

Test Conditions

Temperature ($^{\circ}\text{C}$)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation
25.1	120.05	60	1.147	137.1	0.999	Light Down

Test Result

Flux(lm)	Zonal Lumen Requirement(0° - 90°)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
		Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
18522	99.86%	104.7	118.2	78.3	93.8	135.1

4.3 Goniophotometer Test

ZONAL LUMEN SUMMARY

	Zonal (lm)		Total (lm)	Percent
0-10	939.86	0 - 10	939.86	5.07%
10-20	2697.21	0 - 20	3637.07	19.64%
20-30	4244.56	0 - 30	7881.63	42.55%
30-40	4933.33	0 - 40	12814.95	69.19%
40-50	3817.43	0 - 50	16632.39	89.80%
50-60	1505.62	0 - 60	18138.01	97.93%
60-70	284.62	0 - 70	18422.63	99.47%
70-80	63.03	0 - 80	18485.66	99.81%
80-90	10.06	0 - 90	18495.72	99.86%
90-100	1.01	0 - 100	18496.73	99.87%
100-110	0.88	0 - 110	18497.62	99.87%
110-120	1.90	0 - 120	18499.52	99.88%
120-130	3.22	0 - 130	18502.74	99.90%
130-140	4.33	0 - 140	18507.07	99.92%
140-150	5.11	0 - 150	18512.18	99.95%
150-160	4.93	0 - 160	18517.11	99.98%
160-170	3.39	0 - 170	18520.50	99.99%
170-180	1.21	0 - 180	18521.71	100.00%

4.3 Goniophotometer Test

Axial Candela

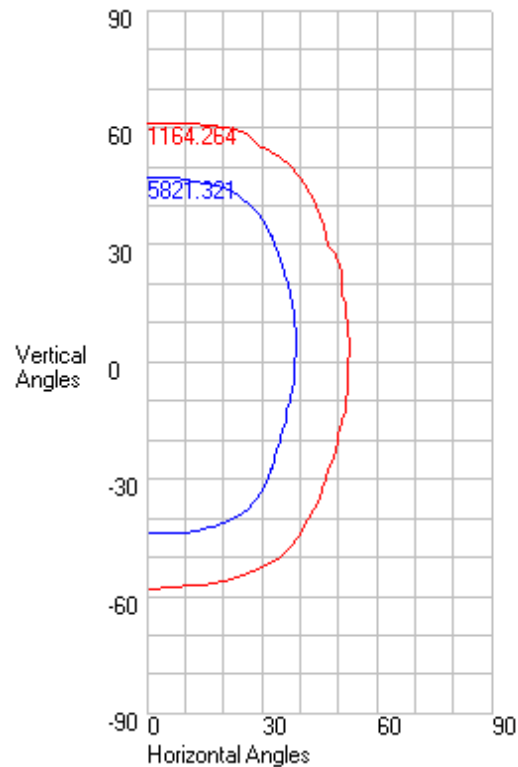
DEG.	HOR.	DEG.	VERT.
90	0.114	90	0.188
85	0.125	85	5.681
75	6.356	75	76.149
65	110.744	65	462.45
55	526.78	55	2335.059
47.5	2551.656	47.5	5583.802
42.5	4657.785	42.5	8076.201
37.5	6168.919	37.5	10052.34
33	7172.413	33	11154.887
29	8003.42	29	11608.262
25.5	8936.455	25.5	11642.642
22.5	9416.628	22.5	11119.454
19.5	9798.606	19.5	10580.433
17	9974.085	17	10525.824
15	10114.468	15	10482.137
13	10025.877	13	10393.932
11	9937.286	11	10305.727
9	9875.895	9	10246.231
7	9841.705	7	10215.444
5	9807.515	5	10184.656
3	9914.406	3	10140.69
1	10021.297	1	10096.725
0	10074.742	0	10074.742
-1	10001.133	-1	10043.271
-3	9853.916	-3	9980.329
-5	9706.699	-5	9917.387
-7	9280.726	-7	9881.963
-9	8854.753	-9	9846.539
-11	8567.408	-11	9837.175
-13	8418.691	-13	9853.871
-15	8269.974	-15	9870.567
-17	8078.36	-17	10060.192
-19.5	7838.842	-19.5	10297.223
-22.5	7517.147	-22.5	10586.448
-25.5	7177.335	-25.5	10807.702
-29	6715.197	-29	10663.755
-33	5996.032	-33	10044.916
-37.5	4941.682	-37.5	8723.109
-42.5	3569.697	-42.5	6507.461
-47.5	2313.213	-47.5	4041.915
-55	749.099	-55	1539.794
-65	101.895	-65	262.222
-75	120.091	-75	42.509
-85	10.967	-85	2.399
-90	0.83	-90	0.191

4.3 Goniophotometer Test

Characteristics

NEMA Type	6 H x 6 V
Maximum Candela	11642.642
Maximum Candela Angle	0 H 25.5 V
Horizontal Beam Angle (50%)	67.3
Vertical Beam Angle (50%)	90.9
Horizontal Field Angle (10%)	101.4
Vertical Field Angle (10%)	119.2
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	13728
Beam Efficiency	N.A.
Field Lumens	17863
Field Efficiency	N.A.
Spill Lumens	660
Luminaire Lumens	18522
Total Efficiency	N.A.
Total Luminaire Watts	137.725
Ballast Factor	1

ISOCANDELA CURVES



Axial Candela

	0	1	3	5	7	9	11	13	15	17	19.5	22.5	25.5	29	33	37.5	42.5	47.5	55	65	75	85	90
90	0.188	0.185	0.178	0.172	0.165	0.158	0.152	0.145	0.139	0.138	0.138	0.137	0.136	0.135	0.137	0.14	0.143	0.143	0.138	0.128	0.114	0.114	0.114
85	5.681	5.441	4.96	4.479	3.998	3.517	3.036	2.494	2.014	1.745	1.412	1.023	0.647	0.23	0.127	0.128	0.13	0.131	0.131	0.125	0.114	0.115	0.114
75	76.149	75.138	73.117	71.096	67.979	65.297	62.49	59.575	56.235	51.802	46.205	39.456	32.731	24.996	23.247	19.64	12.938	2.992	0.679	0.123	0.114	0.116	0.114
65	462.45	462	461.11	454.48	448	439.61	429.27	416.96	403.25	387.5	364.34	331.27	292.26	230.42	150.43	91.922	70.671	60.28	33.868	1.831	0.118	0.117	0.114
55	2335.0	2345.7	2367.0	2348.4	2330.5	2298.6	2252.4	2208.7	2184.7	2140.4	2055.0	1906.3	1693.9	1192.6	828.64	488.45	220.23	155.22	85.471	21.564	0.122	0.119	0.114
47.5	5583.8	5607.5	5629.1	5615.4	5565.7	5479.4	5356.0	5198.6	5027.1	4846.6	4643.4	4386.0	3911.7	3277.7	2523.9	1575.7	617.09	344.64	142.21	45.807	0.338	0.12	0.114
42.5	8076.2	8109.7	8149.9	8154.2	8122.7	8055.7	7900.0	7634.1	7360.9	7072.3	6669.9	6119.0	5457.3	4703.3	3828.5	2522.9	1223.7	480.19	171.54	66.389	3.009	0.12	0.114
37.5	10052.2	10074.4	10097.2	10096.6	10076.2	10039.8	9791.1	9488.8	9162.5	8751.1	8240.4	7490.8	6789.2	5943.2	4882.0	3478.8	1704.5	696.2	256.65	86.246	5.16	0.121	0.114
33	11154.8	11155.7	11146.1	11124.2	11091.2	10991.8	10774.8	10516.4	10174.2	9804.5	9147.7	8323.2	7510.9	6644.8	5648.6	4206.3	2413.0	853.69	318.61	96.128	6.643	0.122	0.114
29	11608.2	11596.6	11572.9	11555.0	11546.2	11400.8	11176.0	10936.1	10682.2	10280.1	9673.7	8820.0	7942.9	7137.1	6099.5	4750.8	2966.4	1249.8	364.42	100.71	7.605	0.122	0.114
25.5	11642.6	11607.2	11538.2	11477.2	11418.0	11318.2	11205.2	11075.1	10827.8	10440.2	9822.9	9036.2	8247.9	7380.1	6462.1	5143.4	3352.1	1560.3	414.73	104.08	8.179	0.123	0.114
22.5	11119.4	11088.8	11052.2	11047.2	11078.6	11119.9	11153.2	10996.8	10652.9	10305.2	9865.3	9169.5	8384.5	7474.3	6644.0	5445.4	3675.2	1712.0	440.16	106.49	8.482	0.123	0.114
19.5	10580.0	10549.8	10492.0	10459.8	10577.4	10690.0	10778.8	10654.8	10437.9	10116.2	9726.0	9244.2	8487.0	7484.0	6748.2	5714.4	3984.5	1761.4	472.58	108.46	8.618	0.123	0.114
17	10525.8	10487.2	10416.8	10373.2	10401.2	10460.8	10494.8	10445.8	10272.2	10019.8	9726.1	9222.0	8548.3	7648.4	6850.8	5909.7	4225.7	1798.8	494.72	109.76	8.613	0.124	0.114
15	10482.2	10435.8	10352.2	10303.8	10306.8	10348.2	10384.2	10393.2	10254.2	10035.8	9751.9	9242.9	8604.6	7794.4	6933.4	6041.3	4343.5	2003.1	509.21	110.58	8.536	0.124	0.114
13	10393.9	10348.8	10267.8	10218.0	10191.2	10256.2	10311.2	10323.8	10250.8	10043.2	9750.4	9322.0	8698.4	7900.6	7014.0	6076.7	4449.4	2177.6	520.81	111.21	8.399	0.124	0.114
11	10305.2	10260.2	10180.2	10126.2	10123.2	10198.2	10281.2	10276.2	10194.2	10040.2	9759.4	9432.3	8781.7	7966.9	7090.5	6118.9	4551.6	2321.4	529.53	111.64	8.206	0.124	0.114
9	10246.2	10203.2	10111.2	10023.2	10052.2	10130.2	10246.2	10300.2	10191.2	10034.2	9791.1	9448.6	8850.8	7993.8	7151.8	6167.7	4629.2	2434.2	535.38	111.89	7.961	0.124	0.114
7	10215.2	10185.2	10089.2	10002.2	9964.0	10041.2	10176.2	10312.2	10189.2	10032.2	9811.5	9452.9	8905.9	8031.5	7197.8	6200.8	4681.5	2515.6	538.36	111.95	7.67	0.125	0.114
5	10184.2	10178.2	10050.2	9971.1	9928.5	9934.6	10072.2	10180.2	10166.2	10011.2	9824.1	9458.8	8957.5	8061.4	7219.3	6216.4	4707.9	2565.4	538.51	111.82	7.422	0.125	0.114
3	10140.6	10122.2	9991.2	9908.1	9897.4	9917.9	10001.2	10091.2	10146.8	10004.2	9827.4	9456.3	8976.1	8061.9	7217.2	6213.1	4707.9	2583.6	538.89	111.71	6.996	0.125	0.114
1	10096.2	10046.2	9936.1	9833.1	9861.9	9892.1	9954.3	10044.2	10132.2	9988.3	9811.6	9435.2	8959.1	8031.0	7192.6	6189.1	4681.2	2570.1	530.82	111.07	6.57	0.125	0.114
0	10074.2	10021.2	9914.4	9807.5	9841.7	9875.8	9937.2	10025.8	10114.2	9974.0	9798.6	9416.6	8936.4	8003.4	7172.4	6168.9	4657.7	2551.6	526.78	110.74	6.356	0.125	0.114
-1	10043.2	9983.5	9847.5	9741.3	9808.4	9859.6	9921.4	10000.2	10080.2	9941.9	9770.1	9387.6	8906.3	7978.0	7154.6	6153.6	4646.4	2549.3	529.17	110.73	6.314	0.125	0.114
-3	9980.3	9966.1	9801.2	9707.8	9751.8	9821.2	9895.0	9955.4	9994.1	9866.4	9703.3	9312.0	8817.5	7902.5	7104.2	6105.9	4603.8	2521.6	533.94	110.71	6.229	0.124	0.114
-5	9917.3	9923.9	9790.8	9709.5	9705.2	9753.3	9868.2	9949.2	9928.6	9789.0	9616.4	9213.0	8691.5	7794.7	7035.0	6035.5	4535.4	2464.0	530.21	110.17	6.144	0.124	0.114
-7	9881.9	9878.6	9789.5	9687.0	9652.0	9751.0	9874.0	9984.5	9895.6	9767.4	9548.1	9121.5	8530.3	7655.8	6948.1	5942.6	4442.2	2377.7	526.66	109.65	5.924	0.124	0.114
-9	9846.5	9838.9	9782.1	9658.9	9694.9	9751.5	9865.9	9918.1	9854.5	9738.5	9481.3	9078.1	8427.2	7535.4	6844.7	5827.6	4325.1	2263.8	520.22	108.97	5.754	0.123	0.114
-11	9837.1	9828.2	9809.1	9749.4	9748.8	9797.3	9829.9	9830.1	9784.5	9690.5	9402.3	9021.1	8318.1	7499.1	6758.9	5691.1	4185.2	2123.5	510.83	108.12	5.567	0.123	0.114
-13	9853.8	9843.3	9823.3	9802.6	9808.0	9812.4	9798.8	9778.2	9740.8	9597.8	9333.2	8866.2	8188.5	7432.1	6675.3	5591.1	4023.7	1958.1	498.46	107.11	5.362	0.122	0.114
-15	9870.5	9858.6	9857.1	9862.0	9840.8	9792.0	9777.6	9755.8	9676.9	9533.8	9289.8	8750.6	8042.1	7334.2	6556.3	5522.2	3878.8	1769.0	483.08	105.93	5.141	0.122	0.114
-17	10060.2	10040.2	10014.2	9987.8	9915.3	9810.4	9776.8	9793.8	9686.8	9498.5	9245.9	8720.4	7983.2	7205.6	6432.5	5382.3	3753.0	1557.5	464.69	104.6	4.905	0.121	0.114
-19.5	10297.2	10267.2	10220.2	10190.2	10119.2	10079.2	10072.2	10012.2	9858.4	9598.7	9261.2	8761.8	7995.3	7076.6	6274.8	5174.9	3514.6	1505.3	437.46	102.7	4.592	0.121	0.114
-22.5	10586.2	10571.2	10556.2	10564.2	10545.2	10514.2	10511.2	10365.2	10076.2	9787.2	9422.9	8728.0	7933.8	7034.5	6103.7	4886.4	3200.3	1452.7	398.62	100.11	4.19	0.12	0.114
-25.5	10807.2	10803.2	10790.2	10773.2	10735.2	10628.2	10529.2	10441.2	10252.2	9917.5	9339.2	8573.2	7785.5	6892.1	5903.7	4559.2	2861.8	1316.7	361.87	97.184	3.764	0.119	0.114
-29	10663.2	10663.2	10659.2	10651.2	10640.2	10538.2	10381.2	10225.2	10075.2	9732.5	9153.5	8304.9	7451.2	6624.0	5542.4	4160.3	2443.4	1049.2	303.55	93.349	3.24	0.118	0.114
-33	10044.2	10045.2	10030.2	9995.3	9941.1	9863.3	9766.0	9633.9	9408.5	9151.3	8519.0	7712.1	6933.9	6118.9	5075.5	3578.2	1964.6	707.85	260.32	88.443	2.613	0.117	0.114
-37.5	8723.1	8738.9	8746.7	8725.9	8680.2	8613.3	8472.7	8295.8	8090.7	7792.1	7402.1	6689.3	6043.5	5253.5	4180.2	2814.4	1332.7	557.46	205.85	78.164	1.878	0.116	0.114
-42.5	6507.4	6535.0	6560.9	6547.7	6495.5	6404.7	6276.8	6126.0	5960.8	5778.0	5495.3	5023.8	4415.1	3713.4	3007.7	1883.6	909.41	364.01	133.83	56.472	1.035	0.115	0.114
-47.5	4041.9	4061.0	4076.1	4059.4	4010.1	3927.6	3811.5	3717.8	3601.8	3459.4	3320.1	3152.5	2819.6	2339.5	1757.8	1126.1	451.6	257.52	115.58	33.748	0.172	0.114	0.114
-55	1539.7	1541.3	1544.4	1522.5	1501.2	1471.2	1432.5	1401.5	1394.1	1370.3	1315.5	1210.4	1054.6	737.52	533.41	340.21	165.21	121.01	78.246	9.996	0.105	0.112	0.114
-65	262.22	260.95	258.4	253.66	249.01	243.68	237.67	230.99	225.06	218.38	207.6	190.76	169.24	136.88	98.187	66.81	54.244	45.507	21.933	0.977	0.098	0.109	0.114
-75	42.509	41.706	40.101	38.496	36.373	34.467	32.513	30.522	28.397	25.921	22.814	19.093	15.411	11.206	12.054	11.2	7.332	0.608	0.107	0.096	0.092	0.107	0.114
-85	2.399	2.274	2.024	1.774	1.524	1.273	1.023	0.756	0.515	0.454	0.38	0.293	0.209	0.116	0.093	0.093	0.093	0.092	0.09	0.087	0.086	0.105	0.114
-90	0.191	0.186	0.174	0.163	0.151	0.139	0.128	0.116	0.105	0.103	0.101	0.099	0.097	0.094	0.093	0.093	0.093	0.091	0.086	0.083	0.083	0.104	0.114

LUMEN TABULATION

	0	1	3	5	7	9	11	13	15	17	20	23	26	29	33	38	43	48	55	65	75	85	90	Total
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
85	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0	0	0	0
75	0.8	1.6	1.6	1.5	1.4	1.4	1.3	1.2	1.2	1.4	1.5	1.3	1.2	1.1	0.8	0.7	0.5	0.7	0.6	0.2	0	0	0	0
65	4.26 *	8.49 *	8.38 *	8.19 *	7.98 *	7.71 *	7.41 *	7.13 *	6.84 *	8.05 *	8.8	7.6	7	5.7	4.2	2.5	1.3	1.3	1	0.4	0.1	0	0	0
55	9.04 *	18.01 *	17.80 *	17.45 *	17.01 *	16.45 *	15.84 *	15.21 *	14.55 *	17.16 *	18.96 *	16.75 *	15.99 *	13.76 *	10.52 *	6.3	2.8	1.9	1	0.4	0.1	0	0	0
47.5	10.39 *	20.64 *	20.36 *	19.96 *	19.46 *	18.85 *	18.17 *	17.44 *	16.67 *	19.65 *	21.66 *	19.18 *	18.87 *	17.03 *	13.42 *	8.41 *	3.8	2.1	0.9	0.3	0.1	0	0	0
42.5	13.77 *	27.30 *	26.87 *	26.33 *	25.70 *	24.94 *	24.06 *	23.12 *	22.09 *	26.01 *	28.54 *	25.34 *	25.38 *	23.46 *	19.04 *	12.52 *	5.9	3.2	1.2	0.4	0.1	0	0	0
37.5	14.49 *	28.68 *	28.20 *	27.64 *	26.99 *	26.21 *	25.30 *	24.31 *	23.20 *	27.29 *	29.98 *	26.81 *	27.23 *	25.57 *	21.33 *	14.71 *	7.27 *	4	1.4	0.4	0.1	0	0	0
33	13.82 *	27.35 *	26.91 *	26.43 *	25.83 *	25.04 *	24.17 *	23.23 *	22.21 *	26.17 *	28.83 *	25.89 *	26.52 *	25.25 *	21.54 *	15.61 *	8.21 *	4.6	1.4	0.3	0.1	0	0	0
29	12.35 *	24.42 *	24.03 *	23.60 *	23.04 *	22.33 *	21.58 *	20.81 *	19.98 *	23.61 *	26.12 *	23.60 *	24.31 *	23.37 *	20.36 *	15.32 *	8.53 *	5	1.4	0.3	0.1	0	0	0
25.5	10.36 *	20.51 *	20.22 *	19.88 *	19.45 *	18.94 *	18.38 *	17.75 *	17.07 *	20.28 *	22.61 *	20.57 *	21.25 *	20.61 *	18.36 *	14.22 *	8.17 *	4.9	1.4	0.3	0.1	0	0	0
22.5	9.89 *	19.60 *	19.37 *	19.12 *	18.81 *	18.44 *	17.96 *	17.37 *	16.72 *	19.97 *	22.52 *	20.64 *	21.39 *	20.93 *	19.04 *	15.13 *	8.79 *	5.3	1.5	0.3	0.1	0	0	0
19.5	8.02 *	15.90 *	15.71 *	15.49 *	15.22 *	14.93 *	14.60 *	14.18 *	13.68 *	16.38 *	18.59 *	17.16 *	17.89 *	17.67 *	16.33 *	13.21 *	7.70 *	4.6	1.4	0.2	0.1	0	0	0
17	6.39 *	12.68 *	12.53 *	12.32 *	12.06 *	11.80 *	11.53 *	11.23 *	10.87 *	13.05 *	14.80 *	13.69 *	14.39 *	14.33 *	13.34 *	10.88 *	6.41 *	3.88 *	1.1	0.2	0	0	0	0
15	6.35 *	12.61 *	12.47 *	12.26 *	12.02 *	11.74 *	11.47 *	11.19 *	10.87 *	13.07 *	14.81 *	13.73 *	14.50 *	14.49 *	13.51 *	11.08 *	6.64 *	4.09 *	1.2	0.2	0	0	0	0
13	6.29 *	12.51 *	12.37 *	12.18 *	11.94 *	11.67 *	11.40 *	11.16 *	10.87 *	13.09 *	14.87 *	13.82 *	14.61 *	14.61 *	13.62 *	11.22 *	6.85 *	4.26 *	1.2	0.2	0	0	0	0
11	6.25 *	12.41 *	12.27 *	12.08 *	11.86 *	11.60 *	11.35 *	11.11 *	10.85 *	13.10 *	14.93 *	13.89 *	14.68 *	14.68 *	13.70 *	11.35 *	7.01 *	4.38 *	1.2	0.2	0	0	0	0
9	6.22 *	12.36 *	12.20 *	12.01 *	11.79 *	11.55 *	11.32 *	11.07 *	10.82 *	13.10 *	14.95 *	13.93 *	14.73 *	14.73 *	13.76 *	11.43 *	7.12 *	4.46 *	1.2	0.2	0	0	0	0
7	6.21 *	12.33 *	12.17 *	11.98 *	11.75 *	11.51 *	11.28 *	11.04 *	10.79 *	13.08 *	14.95 *	13.94 *	14.76 *	14.75 *	13.79 *	11.47 *	7.18 *	4.50 *	1.2	0.2	0	0	0	0
5	6.19 *	12.30 *	12.14 *	11.92 *	11.68 *	11.44 *	11.22 *	11.01 *	10.76 *	13.05 *	14.92 *	13.93 *	14.76 *	14.73 *	13.76 *	11.46 *	7.18 *	4.51 *	1.2	0.2	0	0	0	0
3	6.16 *	12.23 *	12.07 *	11.85 *	11.58 *	11.33 *	11.13 *	10.95 *	10.72 *	12.98 *	14.84 *	13.88 *	14.70 *	14.67 *	13.70 *	11.39 *	7.14 *	4.47 *	1.2	0.2	0	0	0	0
1	3.06 *	6.07 *	5.99 *	5.88 *	5.73 *	5.61 *	5.52 *	5.45 *	5.34 *	6.46 *	7.39 *	6.91 *	7.32 *	7.30 *	6.81 *	5.66 *	3.54 *	2.21 *	0.6	0.1	0	0	0	0
0																								

-1	3.05 *	6.05 *	5.96 *	5.84 *	5.70 *	5.58 *	5.50 *	5.44 *	5.33 *	6.44 *	7.36 *	6.89 *	7.30 *	7.27 *	6.79 *	5.64 *	3.52 *	2.20 *	0.6	0.1	0	0	0
-3	6.09 *	12.05 *	11.86 *	11.63 *	11.36 *	11.13 *	10.96 *	10.82 *	10.59 *	12.82 *	14.65 *	13.70 *	14.52 *	14.49 *	13.54 *	11.24 *	7.03 *	4.39 *	1.1	0.2	0	0	0
-5	6.05 *	12.01 *	11.81 *	11.57 *	11.31 *	11.09 *	10.92 *	10.75 *	10.50 *	12.71 *	14.52 *	13.58 *	14.39 *	14.39 *	13.45 *	11.16 *	6.97 *	4.36 *	1.1	0.2	0	0	0
-7	6.02 *	11.96 *	11.77 *	11.52 *	11.27 *	11.06 *	10.89 *	10.69 *	10.43 *	12.62 *	14.39 *	13.42 *	14.21 *	14.24 *	13.32 *	11.03 *	6.87 *	4.29 *	1.1	0.2	0	0	0
-9	6.00 *	11.93 *	11.74 *	11.49 *	11.24 *	11.02 *	10.83 *	10.63 *	10.38 *	12.55 *	14.29 *	13.29 *	14.03 *	14.06 *	13.14 *	10.84 *	6.71 *	4.19 *	1.1	0.2	0	0	0
-11	5.99 *	11.92 *	11.73 *	11.48 *	11.23 *	10.98 *	10.77 *	10.57 *	10.33 *	12.47 *	14.18 *	13.17 *	13.88 *	13.90 *	12.94 *	10.61 *	6.51 *	4.05 *	1.1	0.2	0	0	0
-13	5.99 *	11.90 *	11.73 *	11.50 *	11.24 *	10.96 *	10.73 *	10.52 *	10.28 *	12.37 *	14.04 *	13.02 *	13.73 *	13.74 *	12.73 *	10.35 *	6.26 *	3.87 *	1.1	0.2	0	0	0
-15	5.99 *	11.90 *	11.74 *	11.51 *	11.22 *	10.94 *	10.70 *	10.47 *	10.20 *	12.27 *	13.90 *	12.85 *	13.55 *	13.55 *	12.53 *	10.10 *	5.99 *	3.66 *	1.1	0.2	0	0	0
-17	6.05 *	11.98 *	11.80 *	11.54 *	11.20 *	10.89 *	10.67 *	10.44 *	10.14 *	12.19 *	13.82 *	12.74 *	13.37 *	13.30 *	12.27 *	9.84 *	5.71 *	3.4	1	0.2	0	0	0
-20	7.72 *	15.23 *	14.95 *	14.58 *	14.14 *	13.75 *	13.47 *	13.16 *	12.71 *	15.23 *	17.28 *	15.91 *	16.54 *	16.28 *	14.90 *	11.85 *	6.78 *	4	1.2	0.2	0	0	0
-23	9.50 *	18.72 *	18.36 *	17.95 *	17.50 *	17.07 *	16.65 *	16.13 *	15.51 *	18.52 *	20.85 *	19.06 *	19.67 *	19.11 *	17.18 *	13.44 *	7.65 *	4.5	1.3	0.3	0.1	0	0
-26	9.73 *	19.19 *	18.82 *	18.42 *	17.97 *	17.51 *	17.02 *	16.44 *	15.79 *	18.74 *	20.84 *	18.88 *	19.40 *	18.64 *	16.38 *	12.46 *	7.01 *	4.1	1.2	0.3	0.1	0	0
-29	11.40 *	22.49 *	22.05 *	21.57 *	21.03 *	20.42 *	19.79 *	19.15 *	18.40 *	21.73 *	23.94 *	21.50 *	21.98 *	20.93 *	17.96 *	13.20 *	7.16 *	4.1	1.2	0.3	0.1	0	0
-33	12.57 *	24.81 *	24.34 *	23.82 *	23.23 *	22.58 *	21.89 *	21.14 *	20.29 *	23.91 *	26.20 *	23.35 *	23.71 *	22.33 *	18.71 *	13.18 *	6.72 *	3.7	1.2	0.3	0.1	0	0
-38	12.82 *	25.36 *	24.91 *	24.37 *	23.77 *	23.14 *	22.46 *	21.69 *	20.79 *	24.49 *	26.78 *	23.75 *	23.89 *	22.13 *	18.04 *	12.06 *	5.8	3.1	1.1	0.3	0.1	0	0
-43	11.58 *	22.99 *	22.67 *	22.23 *	21.70 *	21.09 *	20.43 *	19.73 *	18.93 *	22.36 *	24.48 *	21.53 *	21.28 *	19.39 *	15.38 *	9.78 *	4.5	2.4	0.9	0.4	0.1	0	0
-48	8.03 *	16.01 *	15.85 *	15.57 *	15.19 *	14.71 *	14.20 *	13.69 *	13.11 *	15.50 *	17.12 *	15.08 *	14.64 *	13.03 *	10.11 *	6.2	2.7	1.5	0.7	0.3	0.1	0	0
-55	6.38 *	12.72 *	12.59 *	12.34 *	12.00 *	11.57 *	11.12 *	10.72 *	10.26 *	12.13 *	13.48 *	11.93 *	11.32 *	9.64 *	7.4	4.4	1.9	1.5	0.9	0.4	0.1	0	0
-65	2.7	5.4	5.3	5.2	5.1	4.9	4.7	4.5	4.4	5.2	5.7	4.9	4.5	3.6	2.8	1.7	1	1.1	0.9	0.4	0.1	0	0
-75	0.5	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.8	0.9	0.8	0.8	0.7	0.6	0.5	0.4	0.6	0.5	0.2	0	0	0
-85	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0	0	0
-90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	305	604	595	583	570	555	540	524	505	602	674	612	628	604	531	404	230	140	44	9.9	2	0	9261

5.0 THD and PF Test

Model No.	FXLED125SFN	Sample ID.	J1
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Test Method

The samples were tested according to the ANSI C82.77:2002.

The total harmonic distortion shall be measured to the 40th order.

The ambient temperature condition was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample measurements were made using a digital power meter and power supply. The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
25.1	276.93	60	0.496	132.5	0.965	10.43%
25.1	120.05	60	1.147	137.1	0.999	2.15%

6.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2017/12/28	2018/12/27
DLF108	Auxiliary Lamp	2017/12/28	2018/12/27
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2017/12/28	2018/12/27
DLF116	AC Power Source	2017/12/28	2018/12/27
DLF113	Power Meter	2017/12/28	2018/12/27
DLF112	Temperature Recorder	2017/12/28	2018/12/27
DLF114	Temperature & Humidity Datalogger	2017/12/28	2018/12/27
DLF101	Goniophotometer	2017/12/28	2018/12/27
DLF125	Standard Lamp Standard Lamp Type: 76.58 V, 6.7875 A, Tungsten, Omni-derectional	2017/12/28	2018/12/27
DLF104	AC Power Source	2017/12/28	2018/12/27
DLF507	DC Power Source	2017/12/28	2018/12/27
DLF102	Power Meter	2017/12/28	2018/12/27
DLF111	Temperature & Humidity Datalogger	2017/12/28	2018/12/27
DLF119	Power Meter	2017/12/28	2018/12/27
DLF031	Temperature data logger	2017/12/28	2018/12/27
DLF022	Digital power meter	2017/12/28	2018/12/27
DLF003	Temperature & Humidity Datalogger	2017/12/28	2018/12/27

***** End of Test Report*****