

Photometric Test Report

Relevant Standards

- ☒ IES LM-79-2008
- ☒ ANSI C82.77:2017

Prepared For

RAB Lighting Inc.

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2023/1/11

Issue Date

2023/1/16

Prepared By



Wangzun Zhu

Approved By



Kevin Jia

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1.0 Test Summary

DLC Technical Requirements v5.1

Outdoor - Pole/Arm-Mounted Area and Roadway Luminaires				
Requirement Category	Test Method	Requirements		Test value
Luminaire Output (lm) (Goniophotometer - Section 4.2)	IES LM-79-2008	1000		11365
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	148.0
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		76.8
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%	120V	6.33%
		20.00%	277V	13.59%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9	120V	0.997
		0.9	277V	0.871
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3045±175	2903
		4 step	3045±100	
Minimum CRI (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥70		82
Minimum R9 (Integrating Sphere - Section 4.1)	IES LM-79-2008 CIE 13.3-1995	≥-40		3
Minimum Rf (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥70		83
Minimum Rg (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	≥89		98
Minimum IES Rcs,h1 (Integrating Sphere - Section 4.1)	ANSI/IES TM-30-18	-18%≤IES Rcs,h1≤+23%		-12%
Zonal Lumen Requirement (0°-90°) (Goniophotometer - Section 4.2)	IES LM-79-2008	100%		100.00%
Zonal Lumen Requirement (80°-90°) (Goniophotometer - Section 4.2)	IES LM-79-2008	≤10%		0.30%
Input Voltage (V)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		120
(Goniophotometer - Section 4.2)		Non-Worst Case		277
Input Current (A)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		0.642
(Goniophotometer - Section 4.2)		Non-Worst Case		0.313
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		76.8
(Goniophotometer - Section 4.2)		Non-Worst Case		75.6

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2023/1/11	ALEDM5TY	J1
2	Goniophotometer Test	2023/1/11	ALEDM5TY	J1
3	THD and PF Test	2023/1/11	ALEDM5TY	J1

Remark(If any)

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- 2、 The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

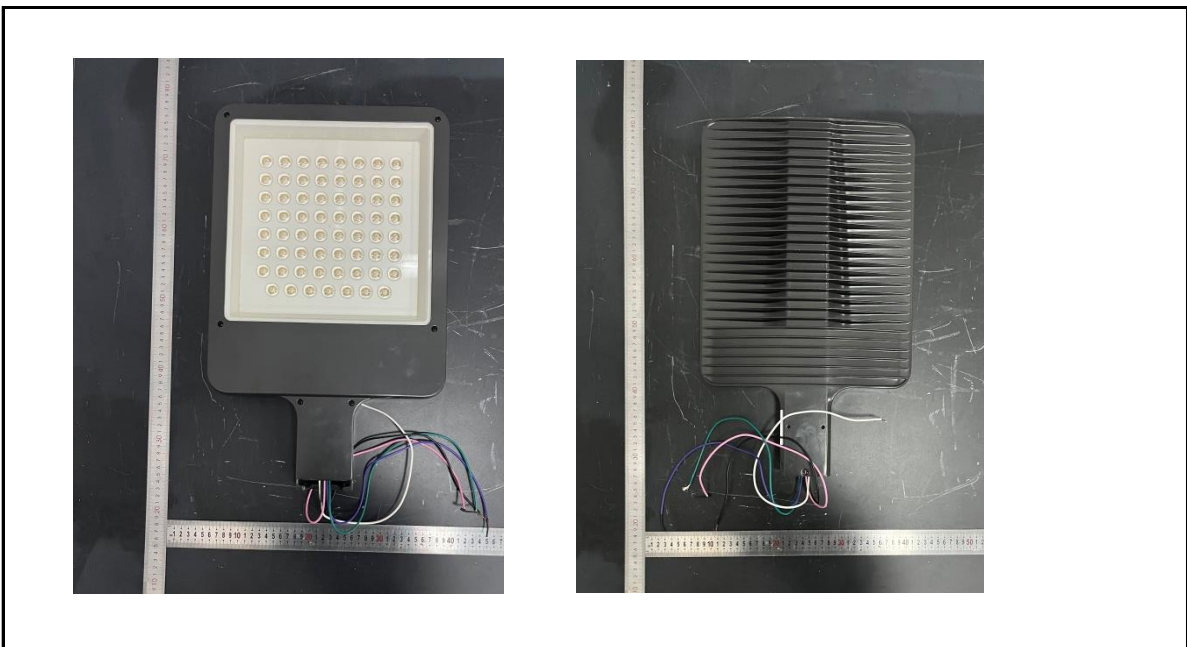
3.0 Production Description

Luminaire Description: ALEDM5TY

Description: 78W @ 3000K

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.	ALEDM5TY	Sample ID.	J1
Operate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	56.0

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 Result

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
120.02	60	0.639	76.5	0.997
276.94	60	0.312	75.2	0.871

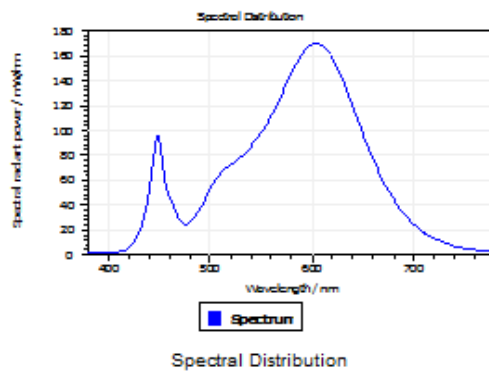
Test Result

CCT (K)	CRI	R9	Duv
2903	82	3	0.0021

Rf	Rg	IES Rcs,h1
83	98	-12%

4.1 Integrating Sphere Test

Results



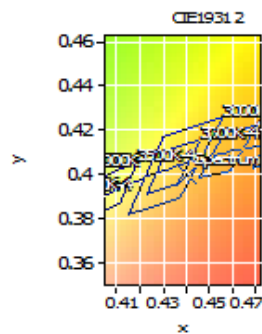
Spectral values

DominantWavelength 584.02 nm
Purity 0.523
PeakWavelength 604.07 nm
Radiant Power 24.65 W
Width50%:

Color Coordinates

Correlated Color Temperat 2903 K
x: 0.4407 u: 0.2548 u': 0.2548
y: 0.3999 v: 0.3469 v': 0.5203

CRI01	80.1	CRI09	3.1
CRI02	90.7	CRI10	79.3
CRI03	95.4	CRI11	79.2
CRI04	79.4	CRI12	74.8
CRI05	80.4	CRI13	82.6
CRI06	88.8	CRI14	98.1
CRI07	81.2	CRI15	72.5
CRI08	56.6	CRI16	70.4
ResultsCRI	81.6		



PlanckDistance 2.1E-003

4.1 Integrating Sphere Test

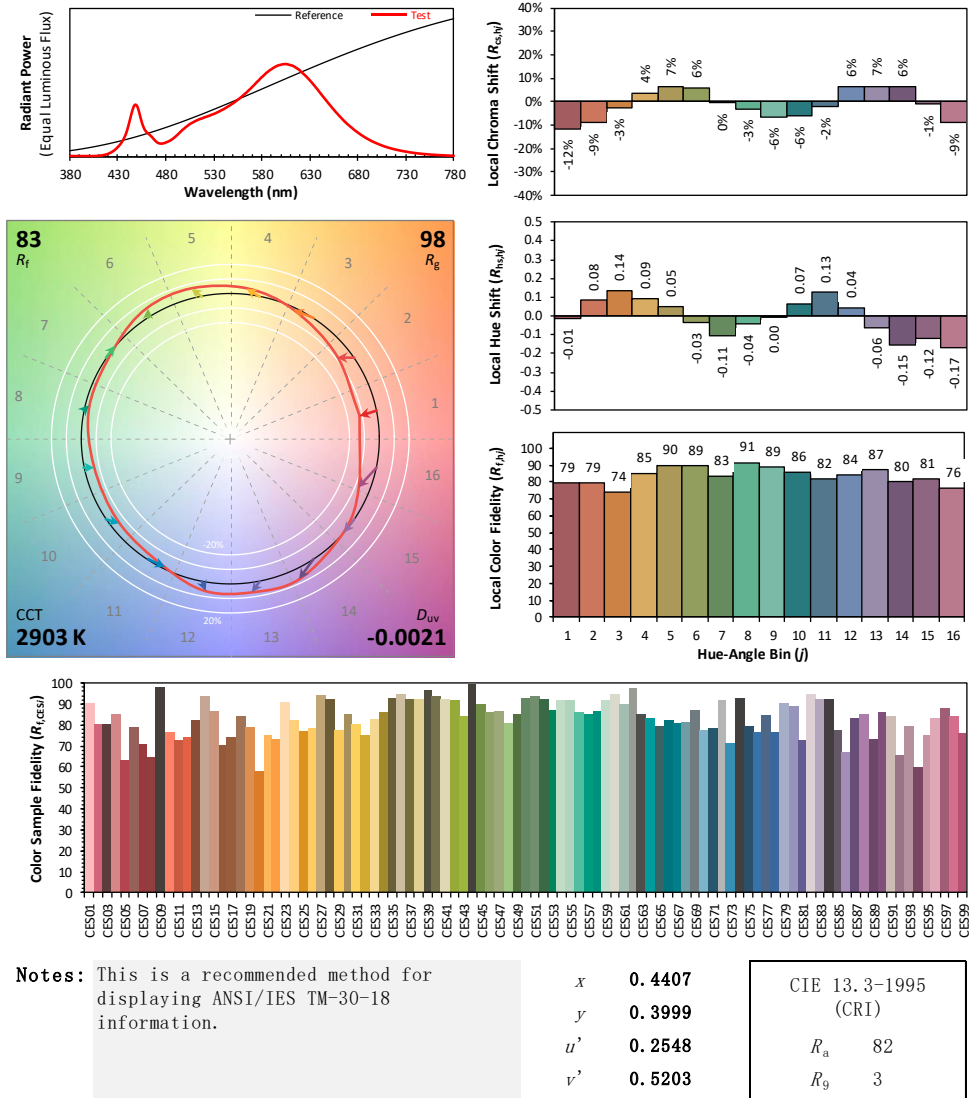
IES TM-30-18 Color Rendition Report

Source: DLF2301106-10a

Manufacturer: RAB Lighting Inc.

Date: 2023/1/11

Model: ALEDM5TY



Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	ALEDM5TY	Sample ID.	J1
Opreate time (Min.)	90	Stabilization time (Min.)	45
Temperature (°C)	25.3	Humidity (%RH)	54.0

Test Method

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

Photometric paramters 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

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	120.01	60	0.642	76.8	0.997
NON-WROST CASE	277.05	60	0.313	75.6	0.872

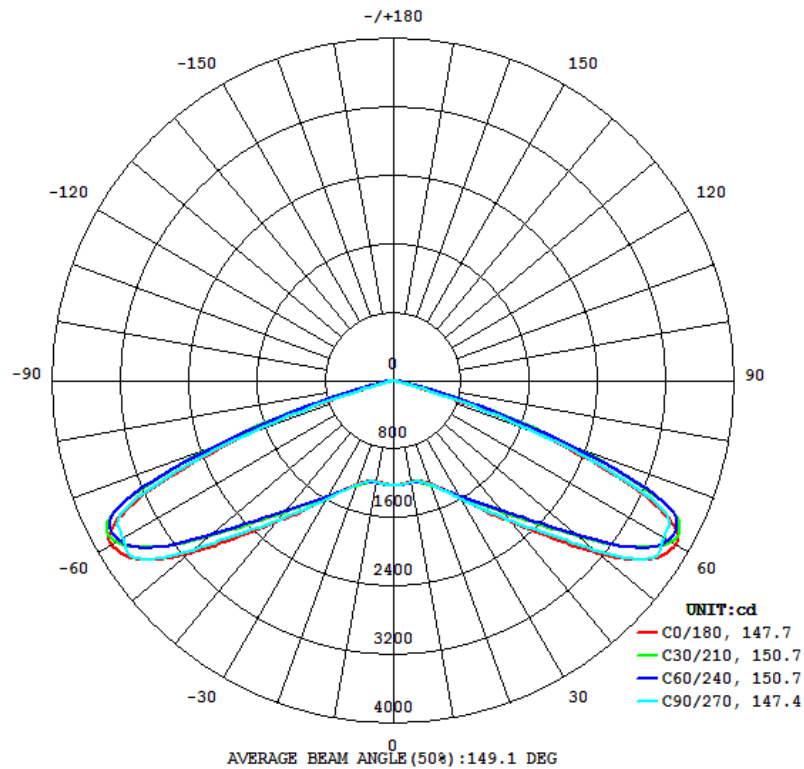
Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
11365	154.7	153.9	147.7	147.4	148.0

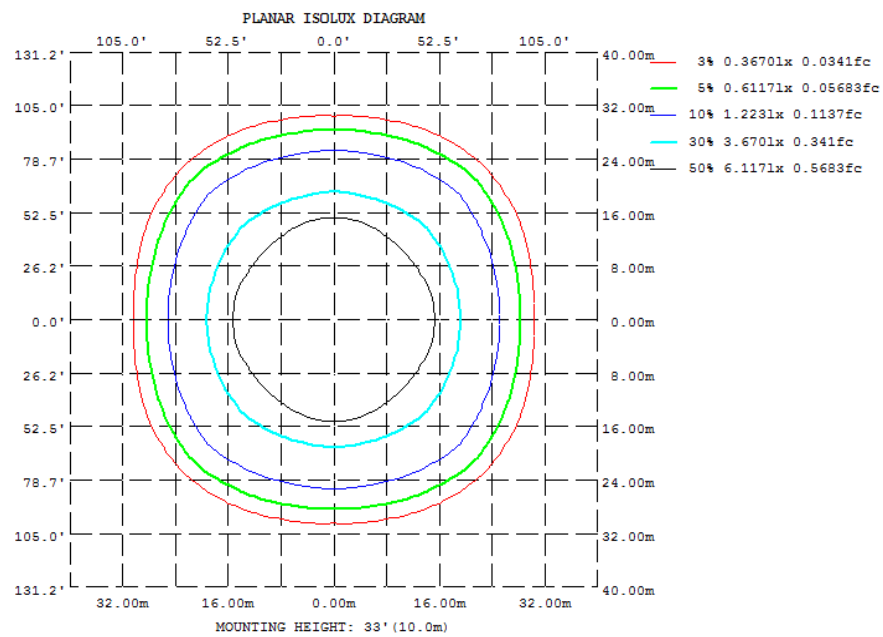
Zonal Lumen Requirement (0° - 90°)	Zonal Lumen Requirement (80° - 90°)	BUG rating
100.00%	0.30%	B3-U0-G2

4.2 Goniophotometer Test

Light Distrubtion Curve



Isolux Plot



4.2 Goniophotometer Test

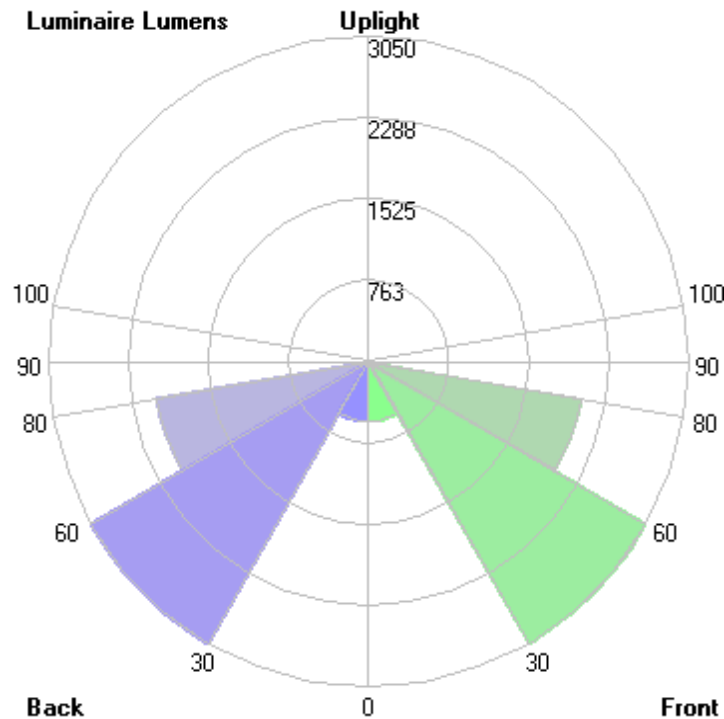
Zonal Lumen Summary

γ	C0	C45	C90	C135	C180	C225	C270	C315
10	1200	1220	1207	1220	1200	1220	1207	1220
20	1287	1309	1301	1309	1287	1309	1301	1309
30	1577	1537	1599	1537	1577	1537	1599	1537
40	2145	1943	2135	1943	2145	1943	2135	1943
50	3138	2707	3062	2707	3138	2707	3062	2707
60	3825	3855	3668	3855	3825	3855	3668	3855
70	1811	2630	1855	2630	1811	2630	1855	2630
80	68.24	117.5	62.22	117.5	68.24	117.5	62.22	117.5
90	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0
DEG	LUMINOUS INTENSITY:cd							

	Zonal (lm)		Total (lm)	Percent
0-10	116.02	0 - 10	116.02	1.02%
10-20	353.08	0 - 20	469.10	4.13%
20-30	660.30	0 - 30	1129.40	9.94%
30-40	1130.65	0 - 40	2260.05	19.89%
40-50	1892.62	0 - 50	4152.67	36.54%
50-60	3077.34	0 - 60	7230.01	63.62%
60-70	3282.64	0 - 70	10512.65	92.50%
70-80	818.11	0 - 80	11330.76	99.70%
80-90	33.81	0 - 90	11364.57	100.00%
90-100	0.00	0 - 100	11364.57	100.00%
100-110	0.00	0 - 110	11364.57	100.00%
110-120	0.00	0 - 120	11364.57	100.00%
120-130	0.00	0 - 130	11364.57	100.00%
130-140	0.00	0 - 140	11364.57	100.00%
140-150	0.00	0 - 150	11364.57	100.00%
150-160	0.00	0 - 160	11364.57	100.00%
160-170	0.00	0 - 170	11364.57	100.00%
170-180	0.00	0 - 180	11364.57	100.00%

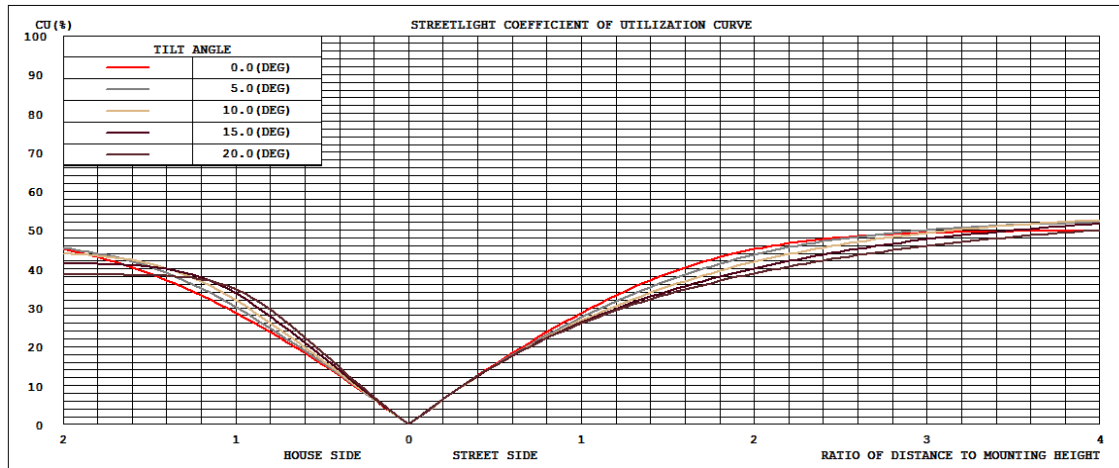
4.2 Goniophotometer Test

LCS/BUG

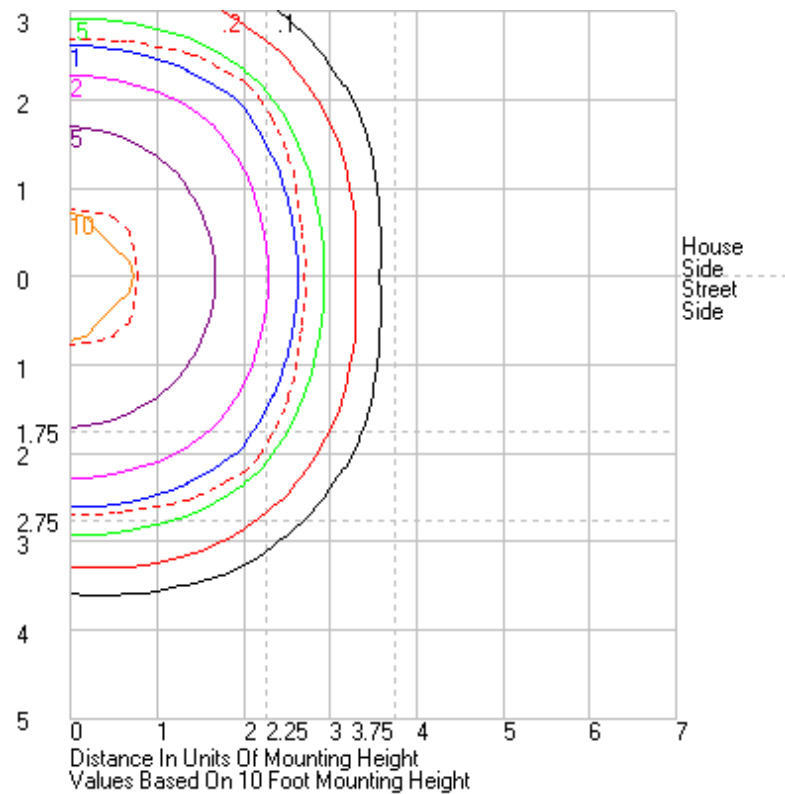


	Lumens	% Lamp	% Luminaire
FL - Front-Low (0-30)	564.7	N.A.	5.0
FM - Front-Medium (30-60)	3050.3	N.A.	26.8
FH - Front-High (60-80)	2050.4	N.A.	18.0
FVH - Front-Very High (80-90)	16.9	N.A.	0.1
BL - Back-Low (0-30)	564.7	N.A.	5.0
BM - Back-Medium (30-60)	3050.3	N.A.	26.8
BH - Back-High (60-80)	2050.4	N.A.	18.0
BVH - Back-Very High (80-90)	16.9	N.A.	0.1
UL - Uplight-Low (90-100)	0.0	N.A.	0.0
UH - Uplight-High (100-180)	0.0	N.A.	0.0
Total	11364.6	N.A.	100.0
BUG Rating	B3-U0-G2		

Coefficients of Utilization



Isolines



4.2 Goniophotometer Test

	0	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300	315	330	345	360
0	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44	1223.44
1	1224.38	1224.32	1224.3	1224.37	1223.88	1223.87	1223.79	1223.87	1223.88	1224.37	1224.3	1224.32	1224.38	1224.32	1224.3	1224.37	1223.88	1223.87	1223.79	1223.87	1223.88	1224.37	1224.3	1224.32	1224.38
2	1223.08	1223.42	1223.96	1224.28	1223.91	1223.12	1222.77	1223.12	1223.91	1224.28	1223.96	1223.42	1223.08	1223.42	1223.96	1224.28	1223.91	1223.12	1222.77	1223.12	1223.91	1224.28	1223.96	1223.42	1223.08
3	1220.89	1221.35	1222.03	1222.64	1223.51	1222.77	1222.17	1222.77	1223.51	1222.64	1222.03	1221.35	1220.89	1221.35	1222.03	1222.64	1223.51	1222.77	1222.17	1222.77	1223.51	1222.64	1222.03	1221.35	1220.89
4	1215.91	1216.91	1219.89	1221.85	1222.62	1222.52	1222.09	1222.52	1222.62	1221.85	1219.89	1216.91	1215.91	1216.91	1219.89	1221.85	1222.62	1222.52	1222.09	1222.52	1222.62	1221.85	1219.89	1216.91	1215.91
5	1211.7	1212.76	1216.18	1220.52	1221.32	1221.16	1220.21	1221.16	1221.32	1220.52	1216.18	1212.76	1211.7	1212.76	1216.18	1220.52	1221.32	1221.16	1220.21	1221.16	1221.32	1220.52	1216.18	1212.76	1211.7
6	1210.05	1211.96	1214.87	1218.78	1219.43	1218.8	1216.45	1218.8	1219.43	1218.78	1214.87	1211.96	1210.05	1211.96	1214.87	1218.78	1219.43	1218.8	1216.45	1218.8	1219.43	1218.78	1214.87	1211.96	1210.05
7	1205.46	1208.72	1215.33	1217.84	1217.86	1216.49	1213.24	1216.49	1217.86	1217.84	1215.33	1208.72	1205.46	1208.72	1215.33	1217.84	1217.86	1216.49	1213.24	1216.49	1217.86	1217.84	1215.33	1208.72	1205.46
8	1201.47	1205.86	1214.26	1218.74	1216.6	1213.57	1210.11	1213.57	1216.6	1218.74	1214.26	1205.86	1201.47	1205.86	1214.26	1218.74	1216.6	1213.57	1210.11	1213.57	1216.6	1218.74	1214.26	1205.86	1201.47
9	1200.08	1204.37	1213.42	1219.61	1215.66	1211.76	1207.81	1211.76	1215.66	1219.61	1213.42	1204.37	1200.08	1204.37	1213.42	1219.61	1215.66	1211.76	1207.81	1211.76	1215.66	1219.61	1213.42	1204.37	1200.08
10	1199.82	1204.39	1213.01	1219.88	1215.62	1211.15	1206.79	1211.15	1215.62	1219.88	1213.01	1204.39	1199.82	1204.39	1213.01	1219.88	1215.62	1211.15	1206.79	1211.15	1215.62	1219.88	1213.01	1204.39	1199.82
11	1199.85	1205.38	1214.92	1220.96	1217.52	1210.64	1206.24	1210.64	1217.52	1220.96	1214.92	1205.38	1199.85	1205.38	1214.92	1220.96	1217.52	1210.64	1206.24	1210.64	1217.52	1220.96	1214.92	1205.38	1199.85
12	1200.87	1207.34	1219.02	1224.16	1219.59	1212.25	1207.7	1212.25	1219.59	1224.16	1219.02	1207.34	1200.87	1207.34	1219.02	1224.16	1219.59	1212.25	1207.7	1212.25	1219.59	1224.16	1219.02	1207.34	1200.87
13	1204.08	1211.34	1224.16	1228.45	1223.56	1215.99	1211.91	1215.99	1223.56	1228.45	1224.16	1211.34	1204.08	1211.34	1224.16	1228.45	1223.56	1215.99	1211.91	1215.99	1223.56	1228.45	1224.16	1211.34	1204.08
14	1210.1	1217.46	1230.35	1234.38	1229.61	1221.67	1217.11	1221.67	1229.61	1234.38	1230.35	1217.46	1210.1	1217.46	1230.35	1234.38	1229.61	1221.67	1217.11	1221.67	1229.61	1234.38	1230.35	1217.46	1210.1
15	1218.55	1225.83	1238.9	1241.74	1236.75	1228.79	1225.38	1228.79	1236.75	1241.74	1238.9	1225.83	1218.55	1225.83	1238.9	1241.74	1236.75	1228.79	1225.38	1228.79	1236.75	1241.74	1238.9	1225.83	1218.55
16	1229.26	1236.16	1249.63	1251.43	1245.49	1238.64	1236.05	1238.64	1245.49	1251.43	1249.63	1236.16	1229.26	1236.16	1249.63	1251.43	1245.49	1238.64	1236.05	1238.64	1245.49	1251.43	1249.63	1236.16	1229.26
17	1242.86	1248.03	1262.51	1263.9	1256.68	1250.47	1249.15	1250.47	1256.68	1263.9	1262.51	1248.03	1242.86	1248.03	1262.51	1263.9	1256.68	1250.47	1249.15	1250.47	1256.68	1263.9	1262.51	1248.03	1242.86
18	1256.21	1261.88	1276.79	1277.97	1269.98	1264.11	1264.24	1264.11	1269.98	1277.97	1276.79	1261.88	1256.21	1261.88	1276.79	1277.97	1269.98	1264.11	1264.24	1264.11	1269.98	1277.97	1276.79	1261.88	1256.21
19	1271.03	1276.53	1292.49	1293.05	1285.06	1280.34	1281.46	1280.34	1285.06	1293.05	1292.49	1276.53	1271.03	1276.53	1292.49	1293.05	1285.06	1280.34	1281.46	1280.34	1285.06	1293.05	1292.49	1276.53	1271.03
20	1287.48	1292.78	1309.31	1309.3	1302.13	1298.72	1301.45	1298.72	1302.13	1309.3	1309.31	1292.78	1287.48	1292.78	1309.31	1309.3	1302.13	1298.72	1301.45	1298.72	1302.13	1309.3	1309.31	1292.78	1287.48
21	1306.11	1310.23	1326.66	1326.65	1321.05	1318.52	1320.39	1318.52	1321.05	1326.65	1326.66	1310.23	1306.11	1310.23	1326.66	1326.65	1321.05	1318.52	1320.39	1318.52	1321.05	1326.65	1326.66	1310.23	1306.11
22	1327.75	1329.09	1345.79	1345.79	1342.12	1338.18	1341.44	1338.18	1342.12	1345.79	1329.09	1327.75	1329.09	1327.75	1329.09	1345.79	1345.79	1342.12	1338.18	1341.44	1338.18	1342.12	1345.79	1329.09	1327.75
23	1351.76	1351.82	1366.21	1365.02	1364.43	1360.77	1365.77	1360.77	1364.43	1365.02	1366.21	1351.82	1351.76	1351.82	1366.21	1365.02	1364.43	1360.77	1365.77	1360.77	1364.43	1365.02	1366.21	1351.82	1351.76
24	1376.79	1376.91	1387.63	1385.73	1387.26	1386.47	1391.69	1386.47	1387.26	1385.73	1387.63	1376.91	1376.79	1376.91	1387.63	1385.73	1387.26	1386.47	1391.69	1386.47	1387.26	1385.73	1387.63	1376.91	1376.79
25	1401.3	1404.24	1411.82	1407.8	1412.04	1414.25	1402.46	1414.25	1412.04	1407.8	1411.82	1404.24	1401.3	1404.24	1411.82	1407.8	1412.04	1414.25	1402.46	1414.25	1407.8	1411.82	1404.24	1401.3	1401.3
26	1428.92	1433.01	1437.17	1431.24	1438	1444.32	1451.06	1444.32	1438	1431.24	1437.17	1433.01	1428.92	1433.01	1437.17	1431.24	1438	1444.32	1451.06	1444.32	1438	1431.24	1437.17	1433.01	1428.92
27	1460.09	1463.45	1465.75	1455.34	1466.32	1476.27	1484.12	1476.27	1466.32	1455.34	1465.75	1463.45	1460.09	1463.45	1465.75	1455.34	1466.32	1476.27	1484.12	1476.27	1466.32	1455.34	1465.75	1463.45	1460.09
28	1494.92	1497.89	1496.35	1481.4	1496.19	1510.75	1519.93	1510.75	1496.19	1481.4	1496.35	1497.89	1494.92	1497.89	1496.35	1481.4	1496.19	1510.75	1519.93	1496.19	1481.4	1496.35	1497.89	1494.92	1490.92
29	1533.47	1535.36	1527.49	1508.49	1527.52	1547.29	1557.97	1547.29	1527.52	1508.49	1527.49	1535.36	1533.47	1535.36	1527.49	1508.49	1527.52	1547.29	1557.97	1547.29	1527.52	1508.49	1527.49	1535.36	1533.47
30	1577.16	1576.1	1561.11	1536.85	1560.3	1586.98	1598.52	1586.98	1560.3	1536.85	1561.11	1576.1	1577.16	1576.1	1561.11	1536.85	1560.3	1586.98	1598.52	1586.98	1560.3	1536.85	1561.11	1576.1	1577.16
31	1622.86	1618.14	1595.28	1566.93	1593.44	1627.04	1640.71	1627.04	1593.44	1566.93	1595.28	1618.14	1622.86	1618.14	1595.28	1566.93	1593.44	1627.04	1640.71	1627.04	1593.44	1566.93	1595.28	1618.14	1622.86
32	1671.68	1664.26	1631.84	1600.22	1629.1	1669.41	1684.02	1669.41	1629.1	1600.22	1631.84	1664.26	1671.68	1664.26	1631.84	1600.22	1629.1	1669.41	1684.02	1669.41	1629.1	1600.22	1631.84	1664.26	1671.68
33	1723.23	1714.78	1671.18	1636.08	1666.34	1713.93	1730.61	1713.93	1666.34	1636.08	1671.18	1714.78	1723.23	1714.78	1671.18	1636.08	1666.34	1713.93	1730.61	1713.93	1666.34	1636.08	1671.18	1714.78	1723.23
34	1776.49	1766.45	1711.6	1673.28	1705.08	1760.24	1780.24	1760.24	1705.08	1673.28	1711.6	1766.45	1776.49	1766.45	1711.6	1673.28	1705.08	1760.24	1780.24	1760.24	1705.08	1673.28	1711.6	1766.45	1776.49
35	1835.22	1821.2	1755.5	1712.89	1746.06	1810.51	1832.61	1810.51	1746.06	1712.89	1755.5	1821.2	1835.22	1821.2	1755.5	1712.89	1746.06	1810.51	1832.61	1810.51	1746.06	1712.89	1755.5	1821.2	1835.22
36	1897.88	1879.43	1800.44	1754.17	1788.11	1863.84	1888.54	1863.84	1788.11	1754.17	1800.44	1879.43	1897.88	1879.43	1800.44	1754.17	1788.11	1863.84	1888.54	1863.84	1788.11	1754.17	1800.44	1879.43	1897.88
37	1962.28	1938.39	1848.07	1797.31	1832.36	1919.43	1943.51	1919.43	1832.36	1797.31	1848.07	1938.39	1962.28	1938.39	1848.07	1797.31	1832.36	1919.43	1943.51	1919.43	1832.36	1797.31	1848.07	1938.39	1962.28
38	2023.8	2000.67	1898.54	1842.8	1879.4	1976.66	2004.56	1976.66	1879.4	1842.8	1898.54	2000.67													

51	3251.86	3170.54	2934.33	2817.39	2903.69	3089.59	3191.18	3089.59	2903.69	2817.39	2934.33	3170.54	3251.86	3170.54	2934.33	2817.39	2903.69	3089.59	3191.18	3089.59	2903.69	2817.39	2934.33	3170.54	3251.86
52	3361.89	3279.91	3047.58	2935.16	3025.75	3213.46	3319.86	3213.46	3025.75	2935.16	3047.58	3279.91	3361.89	3279.91	3047.58	2935.16	3025.75	3213.46	3319.86	3213.46	3025.75	2935.16	3047.58	3279.91	3361.89
53	3462.82	3383.74	3161.91	3058.36	3148.06	3334.14	3441.42	3334.14	3148.06	3058.36	3161.91	3383.74	3462.82	3383.74	3161.91	3058.36	3148.06	3334.14	3441.42	3334.14	3148.06	3058.36	3161.91	3383.74	3462.82
54	3554.24	3481.29	3274.78	3188.17	3270.44	3444.37	3547.93	3444.37	3270.44	3188.17	3274.78	3481.29	3554.24	3481.29	3274.78	3188.17	3270.44	3444.37	3547.93	3444.37	3270.44	3188.17	3274.78	3481.29	3554.24
55	3634.88	3567.15	3383.22	3320.28	3386.42	3538.18	3630.79	3538.18	3386.42	3320.28	3383.22	3567.15	3634.88	3567.15	3383.22	3320.28	3386.42	3538.18	3630.79	3538.18	3386.42	3320.28	3383.22	3567.15	3634.88
56	3700.07	3644.09	3484.42	3451.65	3490.37	3608.89	3683.17	3608.89	3490.37	3451.65	3484.42	3644.09	3700.07	3644.09	3484.42	3451.65	3490.37	3608.89	3683.17	3608.89	3490.37	3451.65	3484.42	3644.09	3700.07
57	3748.3	3707.88	3574.16	3575.26	3576.66	3651.67	3707.09	3651.67	3576.66	3575.26	3574.16	3707.88	3748.3	3707.88	3574.16	3575.26	3576.66	3651.67	3707.09	3651.67	3576.66	3575.26	3574.16	3707.88	3748.3
58	3781.56	3755.63	3653.33	3687.94	3645.57	3668.12	3702.38	3668.12	3645.57	3687.94	3653.33	3755.63	3781.56	3755.63	3653.33	3687.94	3645.57	3668.12	3702.38	3668.12	3645.57	3687.94	3653.33	3755.63	3781.56
59	3804.49	3784.88	3715.94	3783.1	3691.55	3664.66	3683.25	3664.66	3691.55	3783.1	3715.94	3784.88	3804.49	3784.88	3715.94	3783.1	3691.55	3664.66	3683.25	3664.66	3691.55	3783.1	3715.94	3784.88	3804.49
60	3824.71	3798.72	3760.94	3855.43	3718.86	3653.94	3667.73	3653.94	3718.86	3855.43	3760.94	3798.72	3824.71	3798.72	3760.94	3855.43	3718.86	3653.94	3667.73	3653.94	3718.86	3855.43	3760.94	3798.72	3824.71
61	3816.68	3799.93	3788.3	3906.6	3736.16	3644.73	3652.24	3644.73	3736.16	3906.6	3788.3	3799.93	3816.68	3799.93	3788.3	3906.6	3736.16	3644.73	3652.24	3644.73	3736.16	3906.6	3788.3	3799.93	3816.68
62	3764.84	3764.49	3795.1	3932.52	3744.04	3628.69	3647.73	3628.69	3744.04	3932.52	3795.1	3764.49	3764.84	3764.49	3795.1	3932.52	3744.04	3628.69	3647.73	3628.69	3744.04	3932.52	3795.1	3764.49	3764.84
63	3684.32	3686.17	3776.79	3926.63	3738.45	3604.41	3642.08	3604.41	3738.45	3926.63	3776.79	3686.17	3684.32	3686.17	3776.79	3926.63	3738.45	3604.41	3642.08	3604.41	3738.45	3926.63	3776.79	3686.17	3684.32
64	3541.16	3563.95	3728.37	3881.36	3693.36	3550.67	3561.33	3550.67	3693.36	3881.36	3728.37	3563.95	3541.16	3563.95	3728.37	3881.36	3693.36	3550.67	3561.33	3550.67	3693.36	3881.36	3728.37	3563.95	3541.16
65	3360.77	3388.7	3618.24	3784.22	3608.66	3412.11	3417.53	3412.11	3608.66	3784.22	3618.24	3388.7	3360.77	3388.7	3618.24	3784.22	3608.66	3412.11	3417.53	3412.11	3608.66	3784.22	3618.24	3388.7	3360.77
66	3124.4	3170.7	3436.81	3642.15	3455.26	3215.54	3206.23	3215.54	3455.26	3642.15	3436.81	3170.7	3124.4	3170.7	3436.81	3642.15	3455.26	3215.54	3206.23	3215.54	3455.26	3642.15	3436.81	3170.7	3124.4
67	2834.01	2904.92	3202.74	3473.14	3235.98	2963.71	2908.84	2963.71	3235.98	3473.14	3202.74	2904.92	2834.01	2904.92	3202.74	3473.14	3235.98	2963.71	2908.84	2963.71	3235.98	3473.14	3202.74	2904.92	2834.01
68	2522.78	2606.38	2911.55	3262.53	2945.77	2636.22	2566.87	2636.22	2945.77	3262.53	2911.55	2606.38	2522.78	2606.38	2911.55	3262.53	2945.77	2636.22	2566.87	2636.22	2945.77	3262.53	2911.55	2606.38	2522.78
69	2165.07	2285.58	2589.44	2990.51	2617.03	2289.99	2225.64	2289.99	2617.03	2990.51	2589.44	2285.58	2165.07	2285.58	2589.44	2990.51	2617.03	2289.99	2225.64	2289.99	2617.03	2990.51	2589.44	2285.58	2165.07
70	1810.59	1954.41	2242.23	2630.37	2248.26	1943.7	1854.76	1943.7	2248.26	2630.37	2242.23	1954.41	1810.59	1954.41	2242.23	2630.37	2248.26	1943.7	1854.76	1943.7	2248.26	2630.37	2242.23	1954.41	1810.59
71	1471.17	1602.36	1895.39	2196.55	1879.27	1598.48	1488	1598.48	1879.27	2196.55	1895.39	1602.36	1471.17	1602.36	1895.39	2196.55	1879.27	1598.48	1488	1598.48	1879.27	2196.55	1895.39	1602.36	1471.17
72	1078.37	1264.59	1559.6	1751.55	1529.08	1264.83	1137.28	1264.83	1529.08	1751.55	1559.6	1264.59	1078.37	1264.59	1559.6	1751.55	1529.08	1264.83	1137.28	1264.83	1529.08	1751.55	1559.6	1264.59	1078.37
73	798.35	978.21	1246.87	1331.5	1193.54	976.97	828.12	976.97	1193.54	1331.5	1246.87	978.21	798.35	978.21	1246.87	1331.5	1193.54	976.97	828.12	976.97	1193.54	1331.5	1246.87	978.21	798.35
74	583.73	720.82	925.67	974.98	923.55	713.44	546.99	713.44	923.55	974.98	925.67	720.82	583.73	720.82	925.67	974.98	923.55	713.44	546.99	713.44	923.55	974.98	925.67	720.82	583.73
75	387.04	502.15	690.3	716.43	687	487.88	364.1	487.88	687	716.43	690.3	502.15	387.04	502.15	690.3	716.43	687	487.88	364.1	487.88	687	716.43	690.3	502.15	387.04
76	253.81	368.43	497.15	516.66	478.47	364.47	228.81	364.47	478.47	516.66	497.15	368.43	253.81	368.43	497.15	516.66	478.47	364.47	228.81	364.47	478.47	516.66	497.15	368.43	253.81
77	144.65	260.26	342.8	364.12	343.91	253	117.89	253	343.91	364.12	342.8	260.26	144.65	260.26	342.8	364.12	343.91	253	117.89	253	343.91	364.12	342.8	260.26	144.65
78	99.71	183.83	243.82	262.58	243.38	167.03	86.63	167.03	243.38	262.58	243.82	183.83	99.71	183.83	243.82	262.58	243.38	167.03	86.63	167.03	243.38	262.58	243.82	183.83	99.71
79	81.81	123.69	166.18	179.38	178.64	116.22	72.79	116.22	178.64	179.38	166.18	123.69	81.81	123.69	166.18	179.38	178.64	116.22	72.79	116.22	178.64	179.38	166.18	123.69	81.81
80	68.24	86.34	117.49	117.45	134.9	89.89	62.22	89.89	134.9	117.45	117.49	86.34	68.24	86.34	117.49	117.45	134.9	89.89	62.22	89.89	134.9	117.45	117.49	86.34	68.24
81	57.37	67.15	89.53	82.72	105.23	69	52.11	69	105.23	82.72	89.53	67.15	57.37	67.15	89.53	82.72	105.23	69	52.11	69	105.23	82.72	89.53	67.15	57.37
82	46.69	51.52	68.63	61.7	78.89	54.15	42.91	54.15	78.89	61.7	68.63	51.52	46.69	51.52	68.63	61.7	78.89	54.15	42.91	54.15	78.89	61.7	68.63	51.52	46.69
83	36.99	39.25	49.16	43.75	56.29	40.21	33.74	40.21	56.29	43.75	49.16	39.25	36.99	39.25	49.16	43.75	56.29	40.21	33.74	40.21	56.29	43.75	49.16	39.25	36.99
84	28.01	28.15	33.68	31.39	38.97	28.8	25.03	28.8	38.97	31.39	33.68	28.15	28.01	28.15	33.68	31.39	38.97	28.8	25.03	28.8	38.97	31.39	33.68	28.15	28.01
85	19.37	18.39	21.99	22.02	25.42	19.58	17.76	19.58	25.42	22.02	21.99	18.39	19.37	18.39	21.99	22.02	25.42	19.58	17.76	19.58	25.42	22.02	21.99	18.39	19.37
86	9.26	11.38	12.73	14.07	15.3	12.7	11.71	12.7	15.3	14.07	12.73	11.38	9.26	11.38	12.73	14.07	15.3	12.7	11.71	12.7	15.3	14.07	12.73	11.38	9.26
87	5.74	6.69	6.93	7.51	7.58	7.79	7.43	7.79	7.58	7.51	6.93	6.69	5.74	6.69	6.93	7.51	7.58	7.79	7.43	7.79	7.58	7.51	6.93	6.69	5.74
88	3.91	3.97	3.82	4.11	4.04	4.24	3.93	4.24	4.04	4.11	3.82	3.97	3.91	3.97	3.82	4.11	4.04	4.24	3.93	4.24	4.04	4.11	3.82	3.97	3.91
89	2.26	1.91	1.85	1.78	1.85	2.37	2.19	2.37	1.85	1.78	1.85	1.91	2.26	1.91	1.85	1.78	1.85	2.37	2.19	2.37	1.85	1.78	1.85	1.91	2.26
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	0
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0																					

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161	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
163	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
172	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
177	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	ALEDM5TY	Sample ID.	J1
Temperature (°C)	25.3	Humidity (%RH)	56.0

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

Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD
120.02	60	0.639	76.5	0.997	6.33%
276.94	60	0.312	75.2	0.871	13.59%

5.0 Equipment Information

Test Equipment			
Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
DLF107	Integrating Sphere System	2022/12/26	2023/12/25
DLF108	Auxiliary Lamp	2022/12/26	2023/12/25
DLF122	Measurement Standard Lamp Standard Lamp Type: 220 V, 0.4720 A, Tungsten, Omni-derectional	2022/12/26	2023/12/25
DLF116	AC Power Source	2022/12/26	2023/12/25
DLF113	Power Meter	2022/12/26	2023/12/25
DLF112	Temperature Recorder	2022/12/26	2023/12/25
DLF114	Temperature & Humidity Datalogger	2022/12/26	2023/12/25
DLF101	Goniophotometer	2022/12/26	2023/12/25
DLF125	Standard Lamp Standard Lamp Type: 76.58 V, 6.7875 A, Tungsten, Omni-derectional	2022/12/26	2023/12/25
DLF104	AC Power Source	2022/12/26	2023/12/25
DLF507	DC Power Source	2022/12/26	2023/12/25
DLF102	Power Meter	2022/12/26	2023/12/25
DLF111	Temperature & Humidity Datalogger	2022/12/26	2023/12/25
DLF119	Power Meter	2022/12/26	2023/12/25
DLF031	Temperature data logger	2022/12/26	2023/12/25
DLF022	Digital power meter	2022/12/26	2023/12/25
DLF003	Temperature & Humidity Datalogger	2022/12/26	2023/12/25

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