

Photometric Test Report

Relevant Standards

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

Prepared For

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Project Number

DLF2301106

Report Number

DLF2301106-28aMOD78W

Test Date

2023/1/13

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		10718
Minimum Luminaire Efficacy (lm/W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Standard 105	Premium 120	142.1
Power (Input Wattage) (W) (Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		75.4
Total Harmonic Distortion (A%) (THD & PF - section 4.3)	ANSI C82.77:2014	20.00%		21.85%
Power Factor (THD & PF - section 4.3)	ANSI C82.77:2014	0.9		0.862
Allowable CCTs* (K) (Integrating Sphere - Section 4.1)	IES LM-79-2008	7 step	3045±175	2942
		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%		0.17%
Input Voltage (V)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		480
Input Current (A)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		0.182
Power (Input Wattage - W)				
(Goniophotometer - Section 4.2)	IES LM-79-2008	Worst Case		75.4

2.0 Test List

Test Item	Test	Test Date	Model Number	Sample No.
1	Integrating Sphere Test	2023/1/13	ALEDMATY/480	AB1
2	Goniophotometer Test	2023/1/13	ALEDMATY/480	AB1
3	THD and PF Test	2023/1/13	ALEDMATY/480	AB1

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.

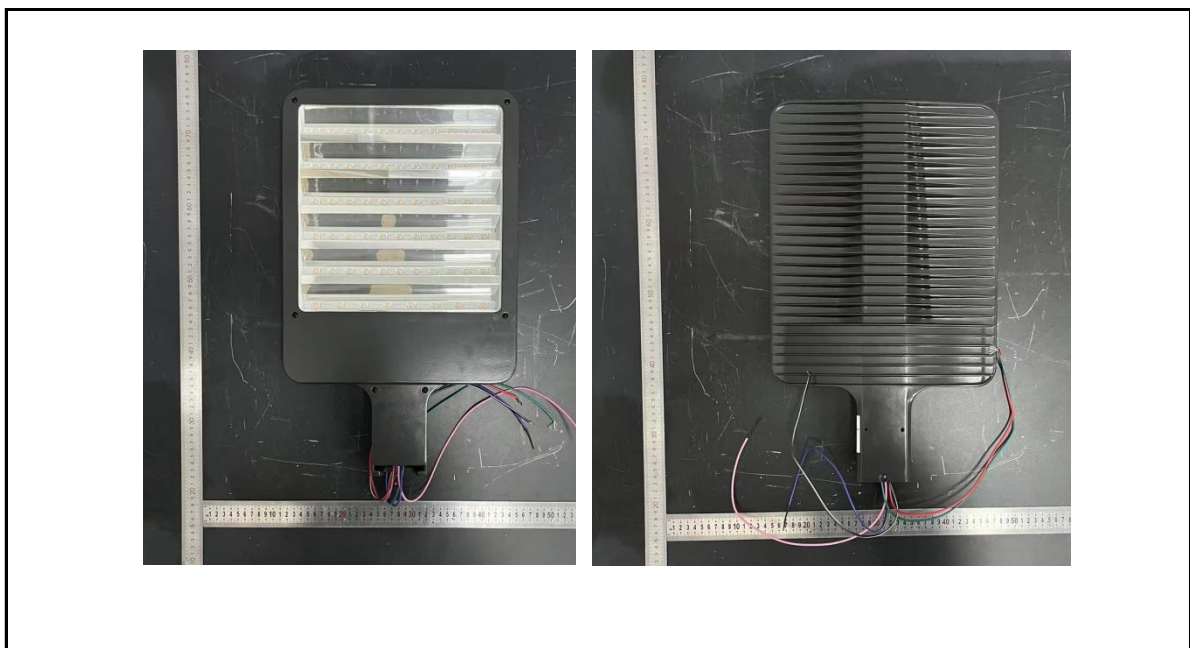
3.0 Production Description

Luminaire Description: ALEDMATY/480

Description: 78W @ 3000K

Electrical Specification: 480V,50/60HZ

Photos of Luminaire Characteristics



4.0 LM-79 Measurement and Test Results

4.1 Integrating Sphere Test

Model No.	ALEDMATY/480	Sample ID.	AB1
Opreate 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 paramters 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
480.00	60	0.182	75.4	0.862

Test Result

CCT (K)	CRI	R9	Duv
2942	82	3	0.0022

Rf	Rg	IES Rcs,h1
83	98	-12%

4.0 LM-79 Measurement and Test Results

4.2 Goniophotometer Test

Model No.	ALEDMATY/480	Sample ID.	AB1
Operate 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 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

Condition	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
WORST CASE	480.00	60	0.182	75.4	0.862

Test Result

Flux (lm)	Field Angle(10%)		Beam Angle(50%)		Luminous Efficacy (lm/W)
	C0-180	C90-270	C0-180	C90-270	
10718	93.0	153.9	40.2	136.3	142.1

Zonal Lumen Requirement (0° - 90°)	Zonal Lumen Requirement (80° - 90°)	BUG rating
100.00%	0.17%	B2-U0-G1

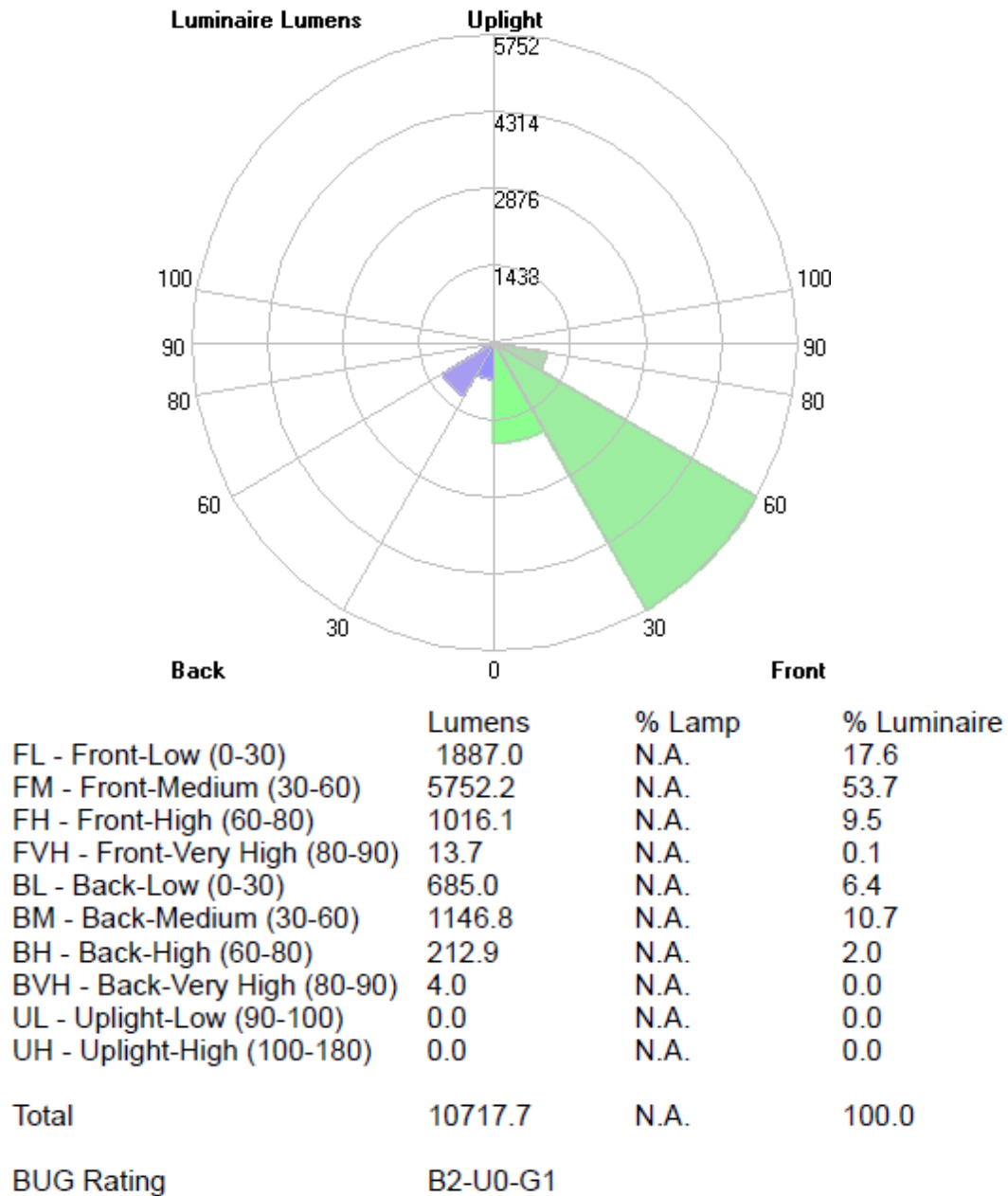
4.2 Goniophotometer Test

Zonal Lumen Summary

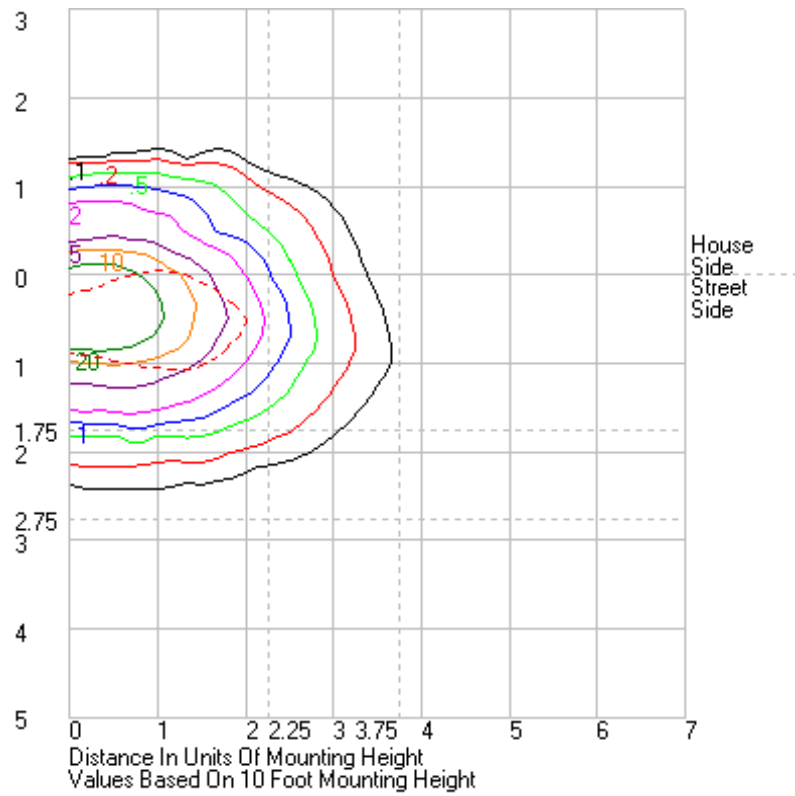
	Zonal (lm)		Total (lm)	Percent
0-10	236.90	0 - 10	236.90	2.21%
10-20	811.94	0 - 20	1048.84	9.79%
20-30	1523.23	0 - 30	2572.07	24.00%
30-40	2302.63	0 - 40	4874.70	45.48%
40-50	2517.71	0 - 50	7392.41	68.97%
50-60	2078.68	0 - 60	9471.09	88.37%
60-70	1031.01	0 - 70	10502.10	97.99%
70-80	197.93	0 - 80	10700.03	99.83%
80-90	17.74	0 - 90	10717.77	100.00%
90-100	0.00	0 - 100	10717.77	100.00%
100-110	0.00	0 - 110	10717.77	100.00%
110-120	0.00	0 - 120	10717.77	100.00%
120-130	0.00	0 - 130	10717.77	100.00%
130-140	0.00	0 - 140	10717.77	100.00%
140-150	0.00	0 - 150	10717.77	100.00%
150-160	0.00	0 - 160	10717.77	100.00%
160-170	0.00	0 - 170	10717.77	100.00%
170-180	0.00	0 - 180	10717.77	100.00%

4.2 Goniophotometer Test

LCS/BUG



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	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	2259.13	
1	2358.82	2364.11	2354.89	2339.78	2319.53	2297.59	2272.41	2247.29	2222.54	2200.77	2183.46	2171.06	2162.49	2171.06	2183.46	2200.77	2222.54	2247.29	2272.41	2297.59	2319.53	2339.78	2354.89	2364.11	2358.82
2	2470.54	2467.24	2450.56	2420.57	2382.31	2335.98	2285.59	2235.06	2185.77	2144.21	2113.26	2093.11	2082.22	2093.11	2113.26	2144.21	2185.77	2235.06	2285.59	2335.98	2382.31	2420.57	2450.56	2467.24	2470.54
3	2596.35	2594.61	2564.2	2515.89	2451.89	2381.47	2304.55	2228.01	2155.85	2096.52	2052.55	2025.86	2017.97	2025.86	2052.55	2096.52	2155.85	2228.01	2304.55	2381.47	2451.89	2515.89	2564.2	2594.61	2596.35
4	2729.13	2722.79	2682.54	2616.86	2530.21	2432.56	2329.57	2227.12	2133.37	2062.43	2016.1	1990.92	1984.47	1990.92	2016.1	2062.43	2133.37	2227.12	2329.57	2432.56	2530.21	2616.86	2682.54	2722.79	2729.13
5	2872.08	2861.73	2813.99	2728.54	2616.24	2489.44	2359.58	2231.35	2120.42	2043.42	2000.79	1973.45	1965.5	1973.45	2000.79	2043.42	2120.42	2231.35	2359.58	2489.44	2616.24	2728.54	2813.99	2861.73	2872.08
6	3013.08	3007.08	2951.45	2849.17	2705.91	2548.42	2390.95	2238.77	2115.04	2040.51	1991.85	1954.74	1942.93	1954.74	1991.85	2040.51	2115.04	2238.77	2390.95	2548.42	2705.91	2849.17	2951.45	3007.08	3013.08
7	3154.48	3141.95	3083.78	2969.85	2802.92	2611.15	2424.97	2248.62	2117.92	2045.62	1982.62	1936.75	1920.39	1936.75	1982.62	2045.62	2117.92	2248.62	2424.97	2611.15	2802.92	2969.85	3083.78	3141.95	3154.48
8	3304.18	3293.35	3228.1	3097.43	2900.15	2673.58	2459.02	2260.61	2127.7	2048.01	1970.88	1914.57	1892.85	1914.57	1970.88	2048.01	2127.7	2260.61	2459.02	2673.58	2900.15	3097.43	3228.1	3293.35	3304.18
9	3455.15	3446.14	3374.28	3222.38	2997.82	2734.96	2490.98	2272.02	2138.87	2047.68	1958.18	1880.57	1847.1	1880.57	1958.18	2047.68	2138.87	2272.02	2490.98	2734.96	2997.82	3222.38	3374.28	3446.14	3455.15
10	3605.9	3596.29	3528.22	3353.67	3096.26	2798.63	2523.88	2285.08	2150.26	2046.7	1932.44	1823.74	1778.68	1823.74	1932.44	2046.7	2150.26	2285.08	2523.88	2798.63	3096.26	3353.67	3528.22	3596.29	3605.9
11	3750.71	3752.22	3685.11	3484.36	3193.81	2862.98	2557.1	2299.18	2160.46	2040.07	1885.12	1741.93	1683.38	1741.93	1885.12	2040.07	2160.46	2299.18	2557.1	2862.98	3193.81	3484.36	3685.11	3752.22	3750.71
12	3895.11	3896.09	3834.36	3610.46	3291.93	2929.9	2593.41	2316.51	2169.23	2024.02	1826.64	1652.14	1580.09	1652.14	1826.64	2024.02	2169.23	2316.51	2593.41	2929.9	3291.93	3610.46	3834.36	3896.09	3895.11
13	4052.7	4058.25	3994.37	3751.32	3385.41	3002.92	2633.5	2337.99	2178.76	1993.74	1741.72	1535.4	1453.21	1535.4	1741.72	1993.74	2178.76	2337.99	2633.5	3002.92	3385.41	3751.32	3994.37	4058.25	4052.7
14	4200.44	4217.75	4154.31	3891.93	3479.26	3080.65	2676.89	2363.63	2186.44	1951.01	1648.44	1400.21	1292.08	1400.21	1648.44	1951.01	2186.44	2363.63	2676.89	3080.65	3479.26	3891.93	4154.31	4217.75	4200.44
15	4342.11	4364.11	4311.2	4036.17	3607.58	3162.31	2724.4	2393.9	2194.63	1896.27	1541.55	1253.47	1135.85	1253.47	1541.55	1896.27	2194.63	2393.9	2724.4	3162.31	3607.58	4036.17	4311.2	4364.11	4342.11
16	4473.37	4520.14	4471.17	4192.22	3734.31	3250.99	2774.9	2429.81	2199.67	1828.18	1406.89	1080.98	961.55	1080.98	1406.89	1828.18	2199.67	2429.81	2774.9	3250.99	3734.31	4192.22	4471.17	4520.14	4473.37
17	4589.67	4645.36	4620.83	4342.34	3869.23	3342.81	2830.34	2469.15	2202.16	1754.02	1275.98	932.358	830.081	932.358	1275.98	1754.02	2202.16	2469.15	2830.34	3342.81	3869.23	4342.34	4620.83	4645.36	4589.67
18	4699.2	4774.94	4768.81	4498.13	4013.64	3442.56	2888.05	2511.54	2197.89	1665.61	1127.57	791.077	698.618	791.077	1127.57	1665.61	2197.89	2511.54	2888.05	3442.56	4013.64	4498.13	4768.81	4774.94	4699.2
19	4812.52	4902.39	4907.34	4654.09	4159.68	3546.03	2948.17	2556.11	2183.26	1565.51	987.022	670.575	580.118	670.575	987.022	1565.51	2183.26	2556.11	2948.17	3546.03	4159.68	4654.09	4907.34	4902.39	4812.52
20	4920.69	5023.23	5046.85	4811.11	4313.14	3656.41	3012.24	2601.68	2158.77	1463.22	859.825	572.559	500.868	572.559	859.825	1463.22	2158.77	2601.68	3012.24	3656.41	4313.14	4811.11	5046.85	5023.23	4920.69
21	5033.73	5152.75	5199.71	4975.28	4471.88	3771.57	3077.37	2646.6	2123.4	1348.11	748.058	490.973	440.948	490.973	748.058	1348.11	2123.4	2646.6	3077.37	3771.57	4471.88	4975.28	5199.71	5152.75	5033.73
22	5128.44	5270.14	5353.16	5136.59	4633.85	3887.79	3143.37	2688.13	2078.37	1233.92	656.649	441.949	409.694	441.949	656.649	1233.92	2078.37	2688.13	3143.37	3887.79	4633.85	5136.59	5353.16	5270.14	5128.44
23	5205.03	5389.86	5518.36	5307.62	4801.92	4010.68	3212.54	2727.48	2026.06	1119.22	569.353	414.584	401.375	414.584	569.353	1119.22	2026.06	2727.48	3212.54	4010.68	4801.92	5307.62	5518.36	5389.86	5205.03
24	5284.35	5505.03	5688.21	5480.46	4963.5	4127.09	3280.07	2762.5	1965.78	1006.24	508.542	411.603	414.141	411.603	508.542	1006.24	1965.78	2762.5	3280.07	4127.09	4963.5	5480.46	5688.21	5505.03	5284.35
25	5354.68	5610.84	5850.85	5666.2	5125.2	4244.12	3349.68	2794.28	1898.84	901.499	472.529	426.327	436.796	426.327	472.529	901.499	1898.84	2794.28	3349.68	4244.12	5125.2	5666.2	5850.85	5610.84	5354.68
26	5394.99	5712.53	6015.8	5862.01	5286.5	4359.06	3418.06	2820.08	1824.27	806.337	458.04	453.604	467.733	453.604	458.04	806.337	1824.27	2820.08	3418.06	4359.06	5286.5	5862.01	6015.8	5712.53	5394.99
27	5426.25	5783.23	6173.77	6055.5	5442.64	4470.39	3483.94	2839.27	1739.82	723.603	483.762	484.951	501.108	484.951	483.762	723.603	1739.82	2839.27	3483.94	4470.39	5442.64	6055.5	6173.77	5783.23	5426.25
28	5453.47	5842.27	6315.21	6252.19	5604.32	4583.18	3548.42	2851.16	1651.7	655.222	486.165	519.749	531.711	519.749	486.165	655.222	1651.7	2851.16	3548.42	4583.18	5604.32	6252.19	6315.21	5842.27	5453.47
29	5468.09	5885.56	6439.84	6447.67	5763.38	4690.76	3608.71	2854.57	1552.49	600.716	517.824	554.208	554.913	554.208	517.824	600.716	1552.49	2854.57	3608.71	4690.76	5763.38	6447.67	6439.84	5885.56	5468.09
30	5485.9	5922.17	6540.4	6633.17	5924.03	4797.71	3666.47	2849.26	1450.99	569.386	554.131	576.841	565	576.841	554.131	569.386	1450.99	2849.26	3666.47	4797.71	5924.03	6633.17	6540.4	5922.17	5485.9
31	5494.5	5951.92	6628.38	6816.71	6086.09	4902.8	3720.02	2834.12	1347.46	556.243	592.944	590.789	569.321	590.789	592.944	556.243	1347.46	2834.12	3720.02	4902.8	6086.09	6816.71	6628.38	5951.92	5494.5
32	5479.36	5958.48	6697.43	6985.46	6247.91	5003.7	3766.41	2810.52	1241.33	559.82	628.207	597.003	565.656	597.003	628.207	559.82	1241.33	2810.52	3766.41	5003.7	6247.91	6985.46	6697.43	5958.48	5479.36
33	5432.64	5939.54	6754.76	7151.07	6413.8	5105.25	3811.65	2777.2	1140.51	579.691	655.276	595.4	552.731	595.4	655.276	579.691	1140.51	2777.2	3811.65	5105.25	6413.8	7151.07	6754.76	5939.54	5432.64
34	5387.69	5896.93	6788.93	7292.72	6568.09	5199.47	3852.68	2735.77	1042.93	607.69	672.675	585.451	535.945	585.451	672.675	607.69	1042.93	2735.77	3852.68	5199.47	6568.09	7292.72	6788.93	5896.93	5387.69
35	5311.4	5850.69	6807.23	7408.01	6714.93	5291.28	3893.97	2686.25	955.243	639.961	680.945	572.854	517.02	572.854	680.945	639.961	955.243	2686.25	3893.97	5291.28	6714.93	7408.01	6807.23	5850.69	5311.4
36	5182.32	5768.65	6798.22	7510.95	6858.23	5381.44	3935.21	2629.86	876.376	675.596	681.011	555.526	494.321	555.526	681.011	675.596	876.376	2629.86	3935.21	5381.44	6858.23	7510.95	6798.22	5768.65	5182.32
37	5022.86	5645.67	6777.59	7592.86	6987.82	5465.29	3977.09	2568.11	809.417	708.398	675.224	534.933	472.015	534.933	675.224	708.398	809.417	2568.11	3977.09	5465.29	6987.82	7592.86	6777.59	5645.67	5022.86
38	4816.25	5491.52	6726.45	7651.02	7105.17	5550.96	4024.11	2500.73	756.7	735.183	666.292	516.549	450.957	516.5											

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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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

4.0 LM-79 Measurement and Test Results

4.3 THD and PF Test

Model No.	ALEDMATY/480	Sample ID.	AB1
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
480.00	60	0.182	75.4	0.862	21.85%

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*****