



8165 E Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Report No: L101805106



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Issue Date: 11/7/2018

Report Prepared For: LumenArt Ltd
3333 W. 47th Street Chicago, IL 60632

Model Number: APD54

Test: Photometric/Electrical Test

Standards Used: Appropriate part or all test guidelines were used for test performed:

IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products

ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Received in working and undamaged condition. No modifications were necessary.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 10/30/18

Date of Tests: 10/30/18 - 10/31/18

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S4	1/9/19
BK PRECISION	1747	PS-DC04	1/10/19
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/19
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

General Information

Manufacturer:	LumenArt Ltd
Model Number:	APD54
Driver Model Number:	ERP ESS010W-0250-42

Photometric & Electrical Test Results

Total Lumens:	917.18
Efficacy:	87.75
Input Voltage (VAC/60Hz):	119.97
Input Current (Amp):	0.0882
Input Power (W):	10.45
Input Power Factor:	0.9884
Current ATHD (%):	12.9%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:05

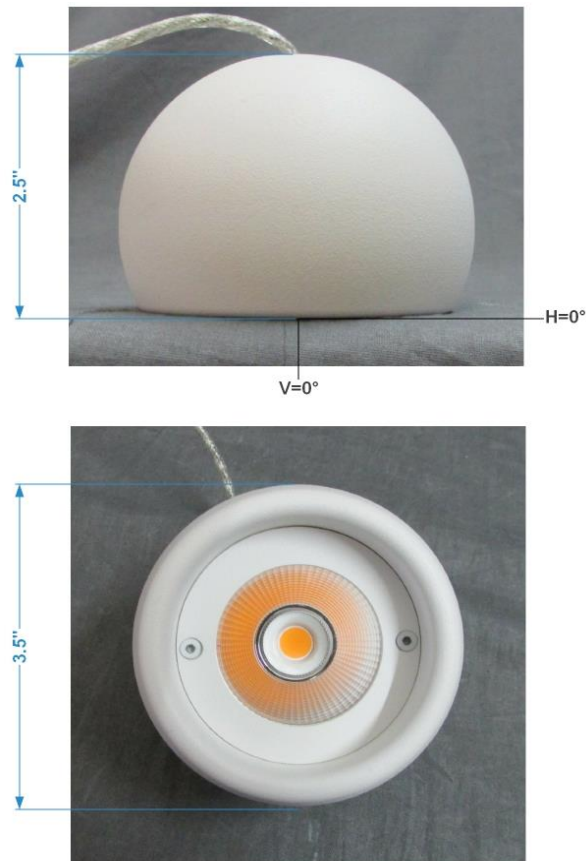


FIG. 1 LUMINAIRE



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Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Joseph Shin

Test Report Released by:

Jeff Ahn
Engineering Manager

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 8*



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L101805106.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L101805106
[TESTLAB] LIGHT LABORATORY, INC. (WWW.LIGHTLABORATORY.COM)
[ISSUEDATE] 11/6/2018
[MANUFAC] LUMENART LTD
[LUMCAT] APD54
[LUMINAIRE] PENDANT NARROW BEAM
[BALLASTCAT] ERP ESS010W-0250-42
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 119.97VAC, 10.45W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	917
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	88
Total Luminaire Watts	10.45
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.26
Spacing Criterion (90-270)	0.26
Spacing Criterion (Diagonal)	0.28
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.15 ft (Diameter)
Luminous Width (90-270)	0.15 ft (Diameter)
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	40449	40449	40449
55	16975	16975	16975
65	14399	14399	14399
75	7054	7054	7054
85	6982	6982	6982

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CANDELA TABULATION

	0
0.0	5084
1.0	4989
2.0	4809
3.0	4497
4.0	4067
5.0	3581
6.0	3099
7.0	2633
8.0	2194
9.0	1803
10.0	1482
12.0	1059
14.0	791
16.0	624
18.0	521
20.0	463
22.5	422
25.0	400
27.5	386
30.0	376
35.0	300
40.0	124
45.0	47
50.0	31
55.0	16
60.0	12
65.0	10
70.0	7
75.0	3
80.0	2
85.0	1
90.0	0

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	480.86	N.A.	52.40
0-30	668.09	N.A.	72.80
0-40	838.37	N.A.	91.40
0-60	902.49	N.A.	98.40
0-80	916.09	N.A.	99.90
0-90	917.18	N.A.	100.00
10-90	647.12	N.A.	70.60
20-40	357.52	N.A.	39.00
20-50	404.94	N.A.	44.20
40-70	73.77	N.A.	8.00
60-80	13.60	N.A.	1.50
70-80	3.95	N.A.	0.40
80-90	1.09	N.A.	0.10
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	917.18	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	270.06
10-20	210.80
20-30	187.23
30-40	170.29
40-50	47.42
50-60	16.69
60-70	9.65
70-80	3.95
80-90	1.09
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

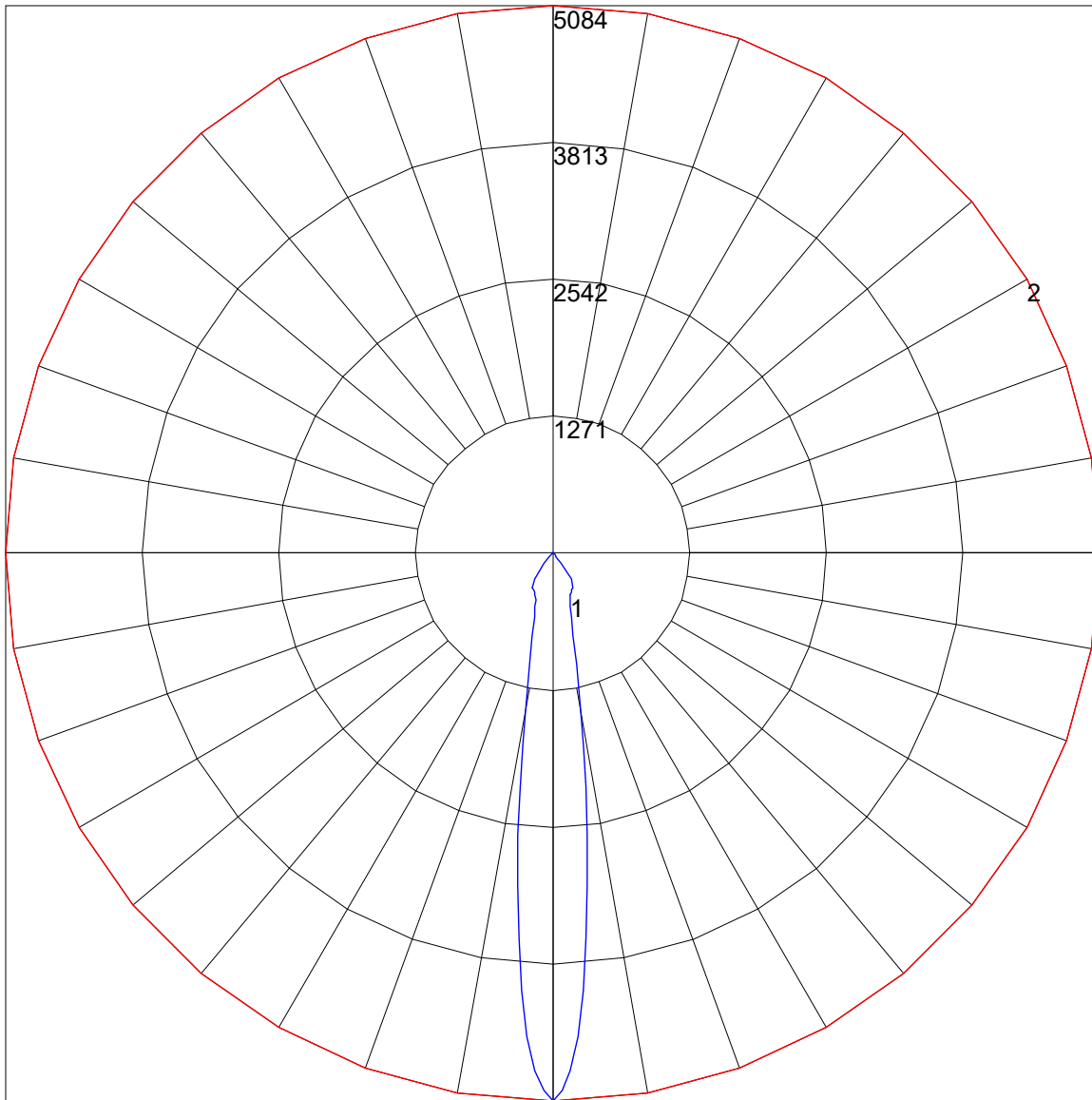
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	112	109	107	105	105	104	102	101	100	99	98	97	96	94
2	109	104	101	98	107	103	99	96	99	97	94	97	94	92	94	92	90	89
3	104	98	94	90	102	97	93	89	94	91	88	92	89	87	90	87	85	84
4	100	93	88	84	98	92	87	83	90	86	82	88	84	82	86	83	81	79
5	95	88	83	79	94	87	82	78	85	81	78	84	80	77	82	79	76	75
6	92	84	78	74	90	83	78	74	81	77	74	80	76	73	79	75	73	71
7	88	80	74	71	87	79	74	70	78	73	70	77	73	70	76	72	69	68
8	85	76	71	67	83	76	71	67	75	70	67	74	70	67	73	69	66	65
9	81	73	68	64	80	73	68	64	72	67	64	71	67	64	70	66	64	62
10	79	70	65	62	78	70	65	62	69	65	62	68	64	61	68	64	61	60

POLAR GRAPH



Maximum Candela = 5084 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)