



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

Report No: L101805134



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Issue Date: 11/12/2018

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

Model Number: ACP24 5 Light

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: 11/1/18 - 11/2/18

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:	ACP24 5 Light
Driver Model Number:	N/A

Photometric & Electrical Test Results

Total Lumens:	3592.32
Efficacy:	59.71
Input Voltage (VAC/60Hz):	119.96
Input Current (Amp):	0.5057
Input Power (W):	60.16
Input Power Factor:	0.9918
Current ATHD (%):	11.7%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:15
Total Operating Time (Hours):	1:45

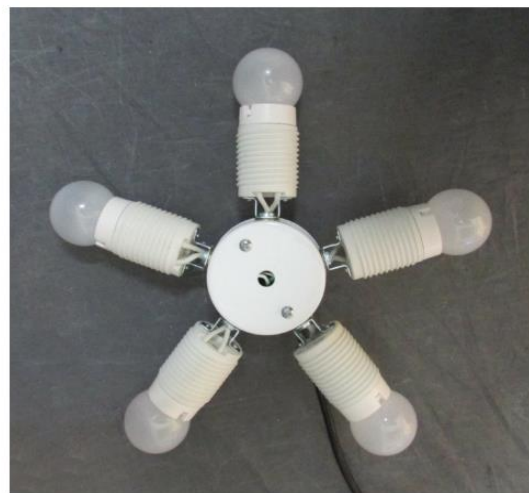
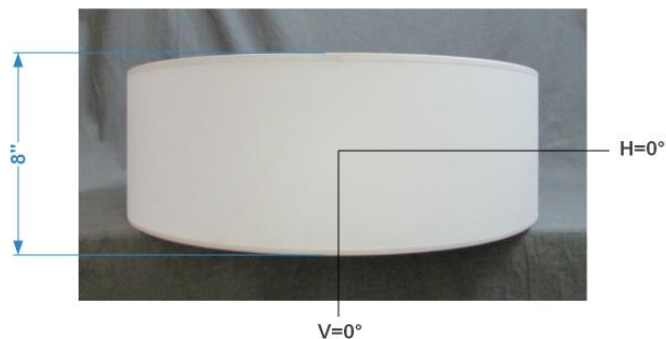


FIG. 1 LUMINAIRE



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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 : L101805134.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L101805134
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 11/12/2018
[MANUFAC] LUMENART LTD
[LUMCAT] ACP24 5 LIGHT
[LUMINAIRE] PENDANT
[BALLASTCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 119.96VAC, 60.16W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3592
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	60
Total Luminaire Watts	60.16
Ballast Factor	1.00
CIE Type	Semi-Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Circular w/ Sides
Luminous Length (0-180)	2.00 ft (Diameter)
Luminous Width (90-270)	2.00 ft (Diameter)
Luminous Height	0.67 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	407	407	407
55	426	426	426
65	441	441	441
75	458	458	458
85	516	516	516

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L101805134.IES

CANDELA TABULATION

	<u>0</u>
0	120.44
5	121.01
10	122.00
15	122.59
20	122.67
25	122.58
30	122.39
35	121.63
40	120.49
45	119.88
50	117.85
55	114.81
60	110.47
65	104.25
70	97.29
75	89.78
80	82.55
85	77.13
90	75.26
95	110.62
100	279.34
105	424.07
110	476.43
115	506.59
120	533.58
125	552.44
130	570.07
135	588.77
140	601.07
145	609.54
150	616.90
155	619.35
160	619.28
165	618.82
170	616.19
175	610.08
180	603.62

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L101805134.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	46.30	N.A.	1.30
0-30	103.02	N.A.	2.90
0-40	179.35	N.A.	5.00
0-60	374.56	N.A.	10.40
0-80	572.80	N.A.	15.90
0-90	657.91	N.A.	18.30
10-90	646.33	N.A.	18.00
20-40	133.05	N.A.	3.70
20-50	225.60	N.A.	6.30
40-70	298.43	N.A.	8.30
60-80	198.24	N.A.	5.50
70-80	95.01	N.A.	2.60
80-90	85.11	N.A.	2.40
90-110	580.45	N.A.	16.20
90-120	1082.22	N.A.	30.10
90-130	1577.32	N.A.	43.90
90-150	2414.37	N.A.	67.20
90-180	2934.41	N.A.	81.70
110-180	2353.96	N.A.	65.50
0-180	3592.32	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	11.58
10-20	34.72
20-30	56.72
30-40	76.33
40-50	92.54
50-60	102.66
60-70	103.23
70-80	95.01
80-90	85.11
90-100	156.86
100-110	423.59
110-120	501.77
120-130	495.10
130-140	454.47
140-150	382.58
150-160	286.36
160-170	175.30
170-180	58.38

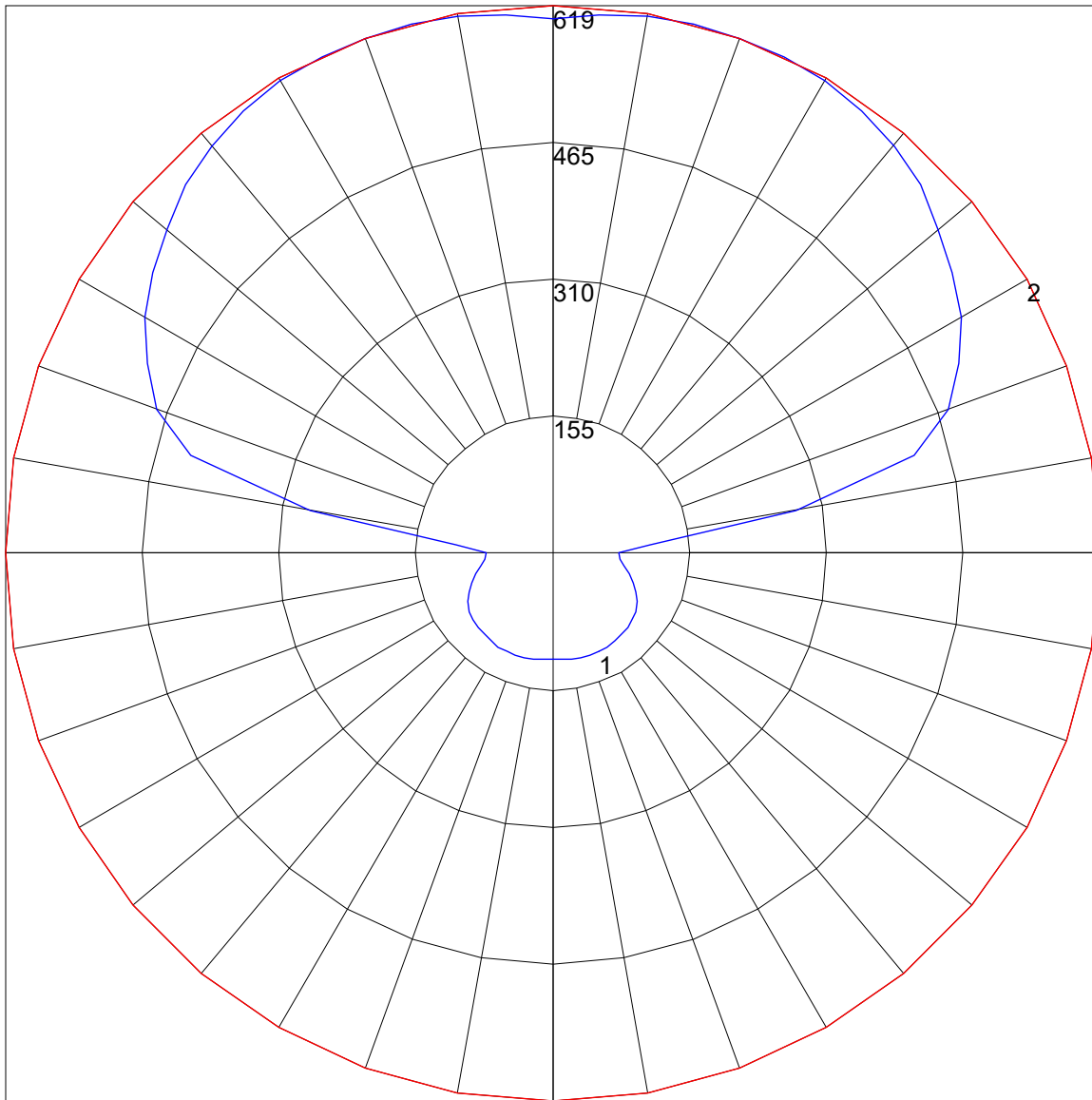
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	100	100	100	100	88	88	88	88	66	66	66	46	46	46	27	27	27	18
1	90	85	81	77	79	75	71	68	56	53	51	38	37	35	22	21	20	13
2	81	73	67	62	71	65	59	55	48	45	41	33	31	29	19	17	16	10
3	74	64	57	51	64	56	50	45	42	38	34	29	26	24	16	15	13	8
4	67	56	48	42	58	50	43	38	37	32	29	25	22	20	14	13	11	6
5	61	50	42	36	53	44	37	32	33	28	24	22	19	17	13	11	9	5
6	56	44	36	31	49	39	32	27	29	24	21	20	17	14	11	10	8	5
7	52	40	32	27	45	35	28	24	26	21	18	18	15	12	10	8	7	4
8	48	36	28	23	42	32	25	21	24	19	16	16	13	11	9	8	6	3
9	44	32	25	20	39	29	22	18	22	17	14	15	12	10	9	7	5	3
10	41	30	23	18	36	26	20	16	20	15	12	14	11	9	8	6	5	3

POLAR GRAPH



Maximum Candela = 619.35 Located At Horizontal Angle = 0, Vertical Angle = 155
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (155) (Through Max. Cd.)