



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

Report No: L101805118



**Report No:** L101805118

**Issue Date: 11/9/2018**

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

**Model Number:** LEP

**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:** 10/31/18 - 11/1/18

**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:	LEP
Driver Model Number:	ERP ESS010W-0350-24

### Photometric & Electrical Test Results

Total Lumens:	409.38
Efficacy:	64.60
Input Voltage (VAC/60Hz):	119.95
Input Current (Amp):	0.0539
Input Power (W):	6.34
Input Power Factor:	0.9799
Current ATHD (%):	12.2%

### Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:50
Total Operating Time (Hours):	1:10

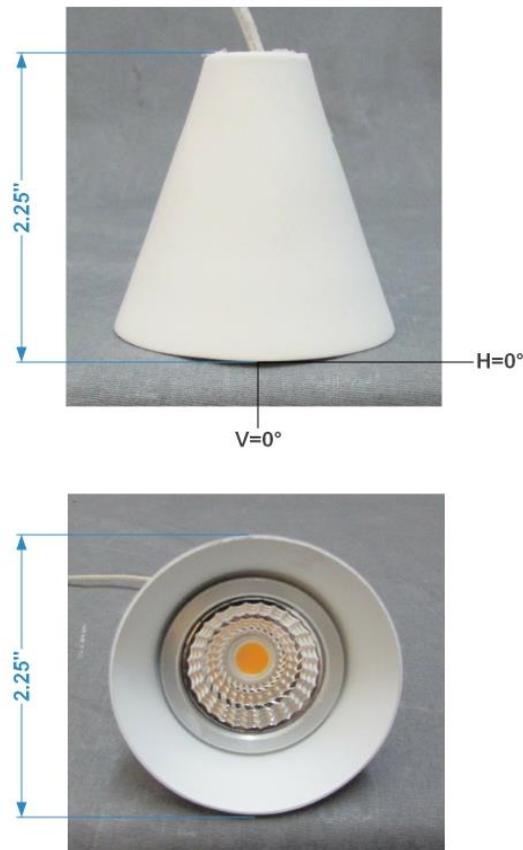


FIG. 1 LUMINAIRE

## 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 : L101805118.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] L101805118  
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
 [ISSUEDATE] 11/9/2018  
 [MANUFAC] LUMENART LTD  
 [LUMCAT] LEP  
 [LUMINAIRE] PENDANT  
 [BALLASTCAT] ERP ESS010W-0350-24  
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
 [INPUT] 119.95VAC, 6.34W  
 [TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	409
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	65
Total Luminaire Watts	6.34
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.96
Spacing Criterion (90-270)	0.96
Spacing Criterion (Diagonal)	1.00
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.19 ft (Diameter)
Luminous Width (90-270)	0.19 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	20678	20678	20678
55	6183	6183	6183
65	5753	5753	5753
75	7269	7269	7269
85	9879	9879	9879

IES INDOOR REPORT  
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CANDELA TABULATION

	<u>0</u>
0	371.70
5	366.45
10	354.11
15	331.94
20	298.25
25	253.35
30	208.47
35	169.45
40	117.90
45	38.55
50	13.45
55	9.35
60	7.71
65	6.41
70	5.57
75	4.96
80	3.89
85	2.27
90	0.00

**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	127.23	N.A.	31.10
0-30	243.53	N.A.	59.50
0-40	347.12	N.A.	84.80
0-60	395.50	N.A.	96.60
0-80	407.09	N.A.	99.40
0-90	409.38	N.A.	100.00
10-90	374.78	N.A.	91.50
20-40	219.89	N.A.	53.70
20-50	259.37	N.A.	63.40
40-70	54.84	N.A.	13.40
60-80	11.59	N.A.	2.80
70-80	5.12	N.A.	1.30
80-90	2.30	N.A.	0.60
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	409.38	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	34.60
10-20	92.63
20-30	116.30
30-40	103.59
40-50	39.48
50-60	8.90
60-70	6.47
70-80	5.12
80-90	2.30
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

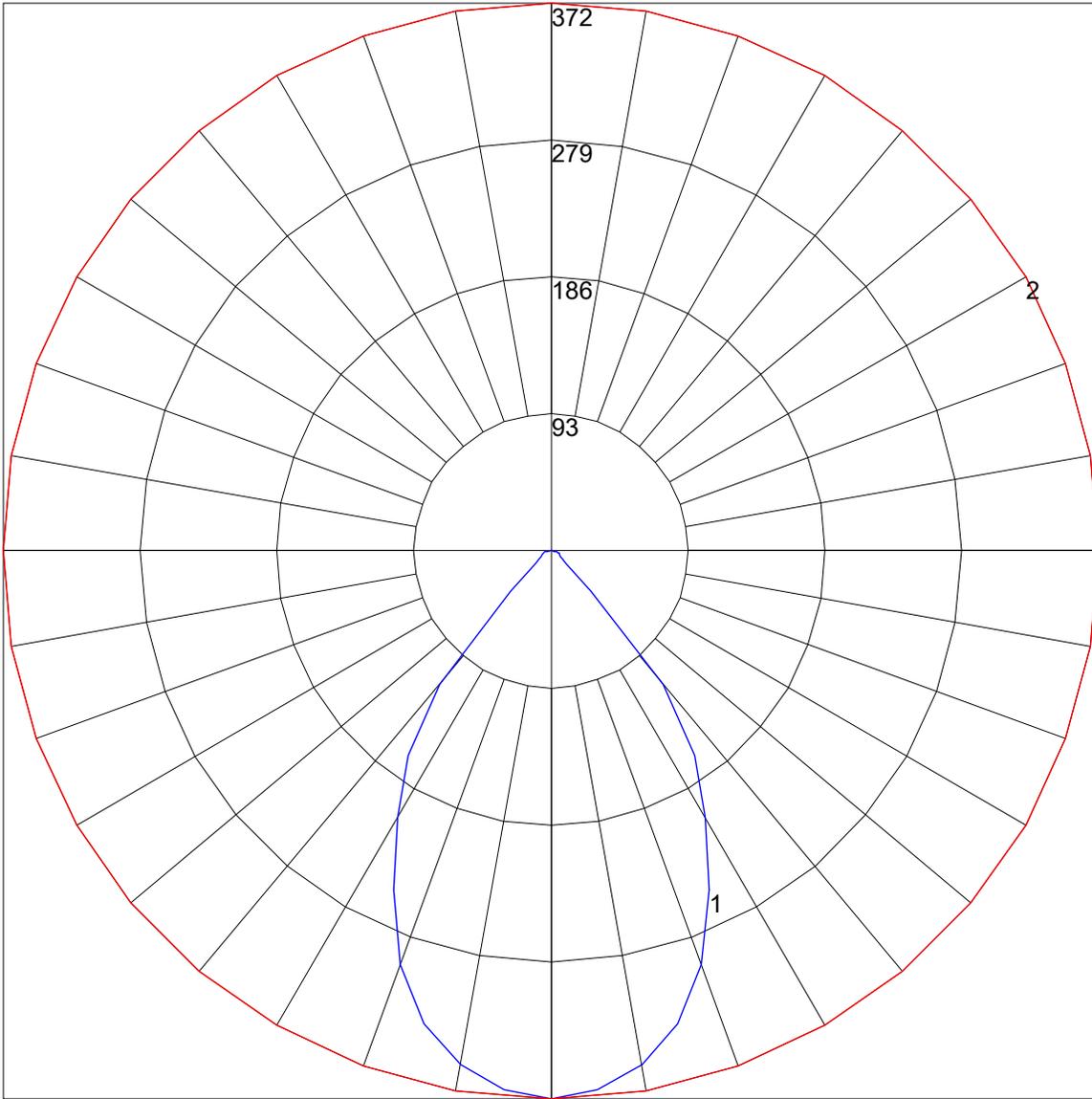
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	100
1	113	110	107	104	110	107	105	103	103	101	99	100	98	96	96	95	94	92	92
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	86	84	84
3	100	93	88	83	98	92	87	82	89	85	81	86	83	80	84	81	79	77	77
4	95	86	80	75	93	85	79	75	83	78	74	81	76	73	79	75	72	71	71
5	89	80	74	69	88	79	73	68	77	72	68	75	71	67	74	70	67	65	65
6	84	74	68	63	83	74	67	63	72	67	62	71	66	62	69	65	62	60	60
7	80	69	63	58	78	69	63	58	67	62	58	66	61	57	65	61	57	56	56
8	75	65	58	54	74	64	58	54	63	58	54	62	57	53	61	57	53	52	52
9	71	61	55	50	70	60	54	50	59	54	50	59	53	50	58	53	50	48	48
10	68	57	51	47	67	57	51	47	56	50	47	55	50	46	54	50	46	45	45

POLAR GRAPH



Maximum Candela = 371.7 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.)