



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

Report No: L101805104



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Issue Date: 11/8/2018

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

Model Number: PWT2IN41

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:	PWT2IN41
Driver Model Number:	ERP ESS010W-0250-42

Photometric & Electrical Test Results

Total Lumens:	872.71
Efficacy:	83.89
Input Voltage (VAC/60Hz):	119.99
Input Current (Amp):	0.0876
Input Power (W):	10.40
Input Power Factor:	0.9899
Current ATHD (%):	12.0%

Test Condition

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

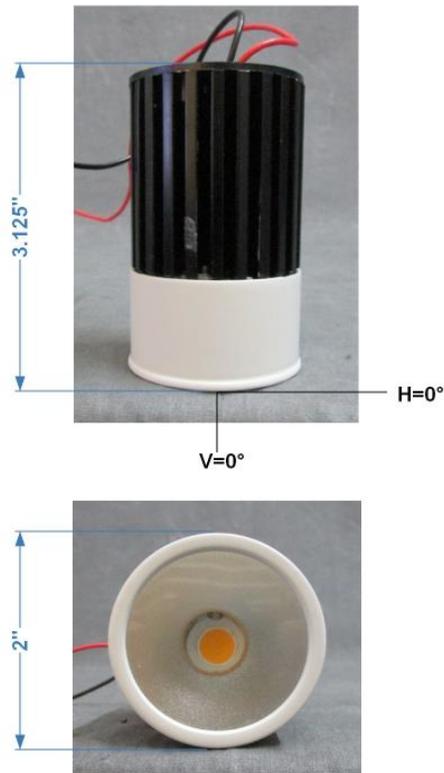


FIG. 1 LUMINAIRE

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 : Keyur Patel

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 : L101805104.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L101805104
 [TESTLAB] LIGHT LABORATORY, INC. (WWW.LIGHTLABORATORY.COM)
 [ISSUEDATE] 11/8/2018
 [MANUFAC] LUMENART LTD
 [LUMCAT] PWT2IN41
 [LUMINAIRE] 2" COB LIGHT ENGINE
 [BALLASTCAT] ERP ESS010W-0250-42
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 119.99VAC, 10.40W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	873
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	84
Total Luminaire Watts	10.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.70
Spacing Criterion (90-270)	0.70
Spacing Criterion (Diagonal)	0.80
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.14 ft (Diameter)
Luminous Width (90-270)	0.14 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	79530	79529	79529
55	26795	26795	26795
65	24795	24795	24795
75	26991	26991	26991
85	48092	48092	48092

IES INDOOR REPORT
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CANDELA TABULATION

	<u>0</u>
0.0	1119
1.0	1118
3.0	1104
5.0	1073
7.0	1029
9.0	974
11.0	912
13.0	848
15.0	784
17.0	721
19.5	649
22.5	570
25.5	500
29.0	429
33.0	371
37.5	271
42.5	117
47.5	44
55.0	22
65.0	15
75.0	10
85.0	6
90.0	0

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	304.52	N.A.	34.90
0-30	529.57	N.A.	60.70
0-40	711.32	N.A.	81.50
0-60	832.02	N.A.	95.30
0-80	862.44	N.A.	98.80
0-90	872.71	N.A.	100.00
10-90	791.82	N.A.	90.70
20-40	406.80	N.A.	46.60
20-50	506.35	N.A.	58.00
40-70	138.25	N.A.	15.80
60-80	30.41	N.A.	3.50
70-80	12.86	N.A.	1.50
80-90	10.27	N.A.	1.20
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	872.71	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	80.89
10-20	223.63
20-30	225.05
30-40	181.75
40-50	99.55
50-60	21.15
60-70	17.55
70-80	12.86
80-90	10.27
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

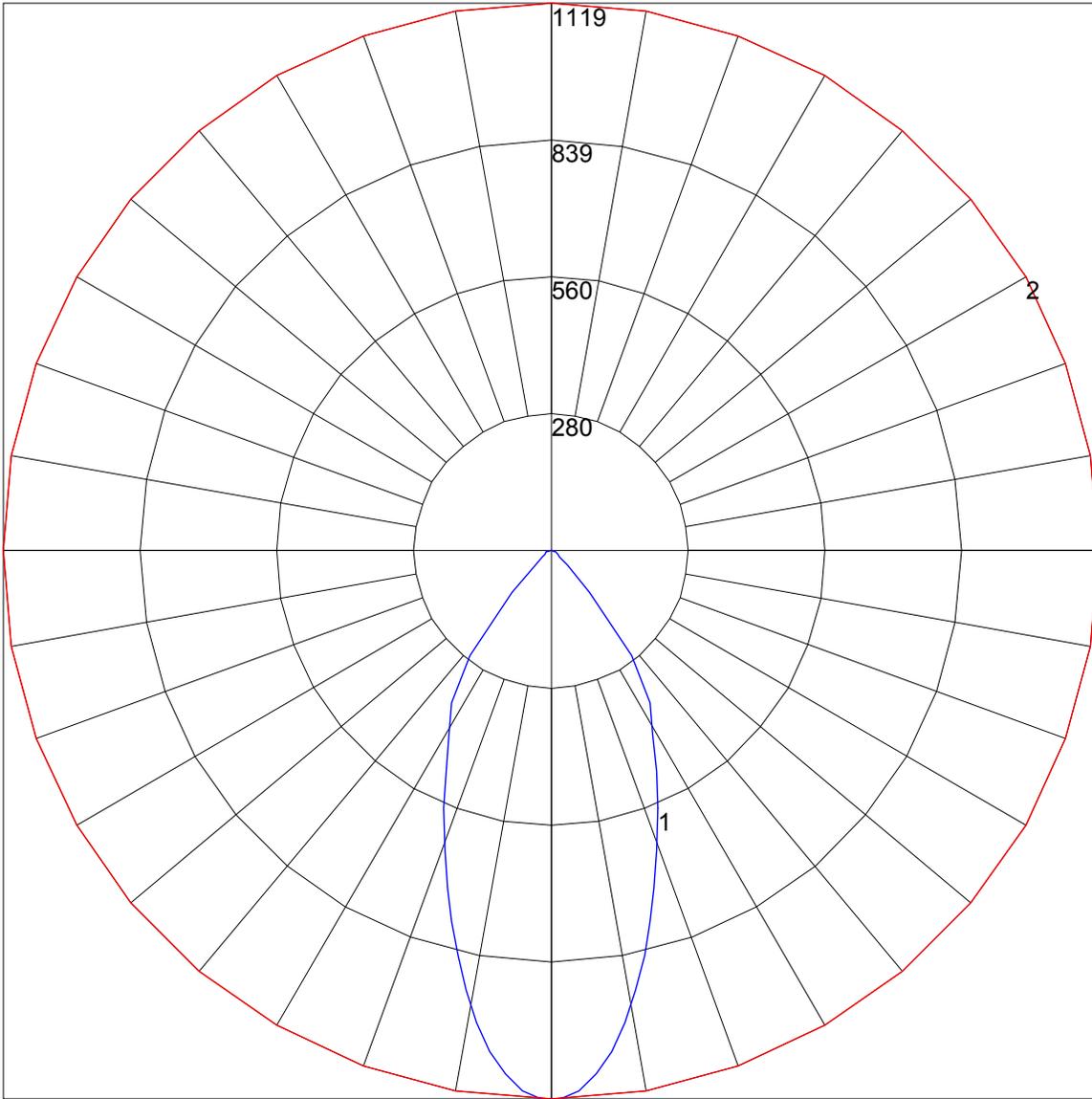
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	109	106	103	110	107	104	102	103	101	99	99	97	96	96	94	93	91
2	106	100	96	92	104	99	94	91	95	92	89	92	89	87	89	87	85	83
3	100	93	87	83	98	91	86	82	88	84	80	86	82	79	84	81	78	76
4	94	86	80	75	92	85	79	74	82	77	74	80	76	73	78	75	72	70
5	89	80	73	69	87	79	73	68	77	72	68	75	71	67	74	70	66	65
6	84	74	68	63	83	74	67	63	72	67	62	71	66	62	69	65	62	60
7	80	70	63	58	78	69	63	58	68	62	58	66	61	58	65	61	57	56
8	76	65	59	54	74	65	58	54	64	58	54	62	57	54	61	57	53	52
9	72	61	55	51	71	61	55	51	60	54	50	59	54	50	58	53	50	49
10	68	58	52	47	67	57	51	47	57	51	47	56	51	47	55	50	47	46

POLAR GRAPH



Maximum Candela = 1119 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.)