



UL Verification Services Inc.  
7036 Snowdrift Road  
Allentown, PA 18106  
610-774-1300

## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-2002

**Prepared For**  
**Auroralight Inc**

2742 Loker Ave W  
#100  
Carlsbad, CA 92010-6619  
United States

**Catalog Number**  
**LMWL-WF-40 (60° OPTIC, 4000K)**

Order Number  
12043087  
Test Number  
12043087.12

Report Date

2018-02-13

Prepared By

Alexa Lambert, Project Handler

Approved By

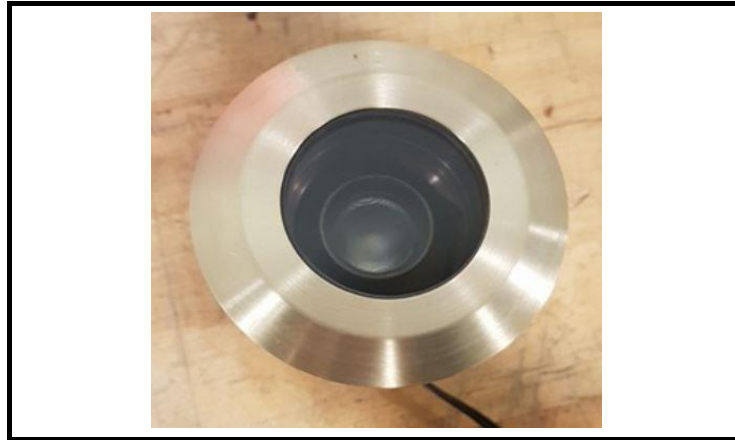
Kevin Rodriguez, Project Handler

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** Cylindrical brass housing with circular brass faceplate, clear glass lens and PVC sleeve  
**Lamp:** One (1) Cree XP-L 4000K LED with 60° wide flood silicone optic  
**Mounting:** Ground recessed  
**Ballast/Driver:** Integrated  
**Note:** This report has been pro-rated using data from report number 12043087.01, 12043087.02, 12043087.03, and 12043087.10 to account for differences in color temperature.

#### Luminaire



#### Luminaire Characteristics

Luminous Diameter: 2.00 in.

#### Summary of Results

Roadway Classification: Type V, Very Short  
Cutoff Classification: Cutoff  
BUG Rating: B0 U1 G0

#### Test Conditions

Test Temperature: 25.1 °C  
Voltage: 11.99 VAC  
Current: 0.4331 A  
Power: 3.139 W  
Power Factor: 0.605  
Frequency: 60 Hz  
Current THD: 80.9 %

Tested in 30 planes left side, 30 planes right side, left and right averaged  
Vertical test increments are 2.5 degrees  
Test distance exceeds five times the greatest luminous opening of luminaire

Laboratory results may not be representative of field performance  
Ballast factors have not been applied



## Distribution - Goniophotometer

### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	11.99 VAC	0.4331 A	3.139 W	0.605	60 Hz	80.9 %

### Summary of Results

#### Spacing Criteria

0-180: 1.04  
90-270: 1.04

#### Total Lumen Output:

147.3 Lumens

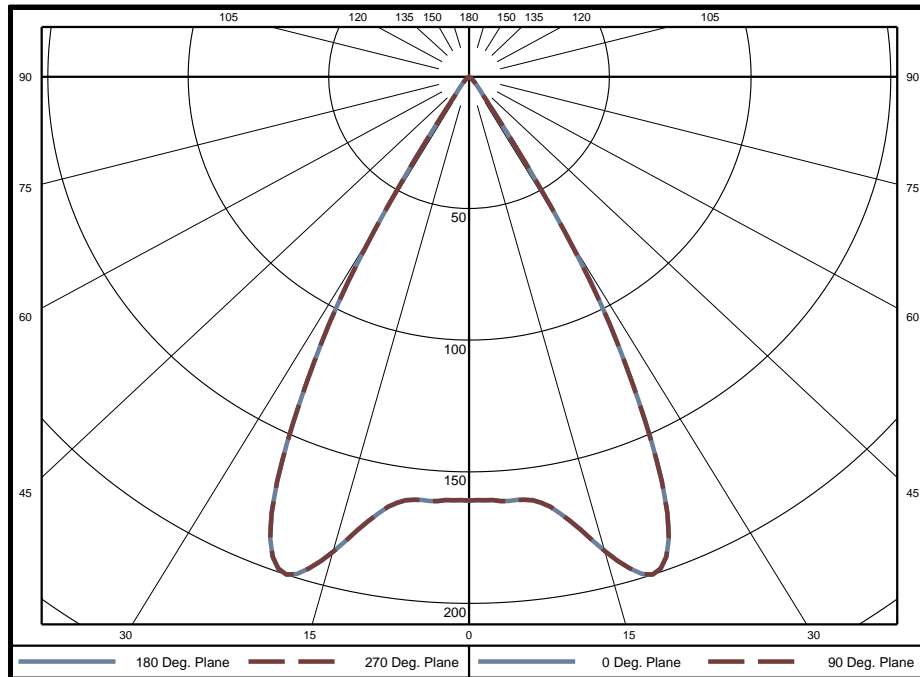
#### Luminaire Efficacy:

46.9 lm/w

#### Maximum Candela:

200 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	3.86	2.6%	60-65	0	0.0%	120-125	0	0.0%
5-10	11.65	7.9%	65-70	0	0.0%	125-130	0	0.0%
10-15	20.85	14.2%	70-75	0	0.0%	130-135	0	0.0%
15-20	32.27	21.9%	75-80	0	0.0%	135-140	0	0.0%
20-25	37.95	25.8%	80-85	0	0.0%	140-145	0	0.0%
25-30	28.26	19.2%	85-90	0	0.0%	145-150	0	0.0%
30-35	8.45	5.7%	90-95	0	0.0%	150-155	0	0.0%
35-40	2.14	1.5%	95-100	0	0.0%	155-160	0	0.0%
40-45	1.20	0.8%	100-105	0	0.0%	160-165	0	0.0%
45-50	0.60	0.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.11	0.1%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.00	0.0%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	145	98.7%
0-60	147	100.0%
0-90	147	100.0%
90-180	0	0.0%



### Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)															
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
	0	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9	160.9
	5	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7	161.7
	10	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7	165.7
	15	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6
	20	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7	198.7
	25	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5	153.5
	30	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5
	35	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3	9.3
	40	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
	45	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
	50	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	55	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	60	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	65	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	75	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	105	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	145	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	155	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	160	0.0	0.0	0.0	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	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	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	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	0.0	0.0	0.0

### Average Luminance (cd/m<sup>2</sup>)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
	0	79380	79380
	45	1602	1602
	55	34	34
	65	0	0
	75	0	0
	85	0	0



### Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	175	175	175	175	171	171	171	171	164	164	164	157	157	157	150	150	150	147
1	168	164	161	158	164	161	158	155	155	153	151	150	148	146	145	143	142	139
2	161	154	149	144	158	152	147	143	147	143	140	143	140	137	139	136	134	132
3	154	145	139	134	151	143	137	133	140	135	130	136	132	128	133	129	126	124
4	147	137	130	124	145	136	129	124	132	127	122	130	125	121	127	123	119	117
5	141	130	122	116	138	128	121	116	126	120	115	123	118	114	121	117	113	111
6	135	123	115	109	133	122	114	109	120	113	108	118	112	108	116	111	107	105
7	129	116	109	103	127	116	108	103	114	107	102	112	106	102	111	105	101	99
8	123	111	103	97	122	110	102	97	108	101	97	107	101	96	106	100	96	94
9	118	105	97	92	117	104	97	92	103	96	92	102	96	91	101	95	91	89
10	113	100	92	87	112	100	92	87	98	92	87	97	91	87	96	91	86	85

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	160.9 Candela
Central Cone Intensity:	161 Candela
Beam Flux:	132.2 Lumens
Beam Angle (0-180):	58.8 Degrees
Beam Angle (90-270):	58.8 Degrees
Field Angle (0-180):	66.9 Degrees
Field Angle (90-270):	66.9 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
6.00		4.47	6.23
10.0		1.61	10.4
14.0		0.821	14.5
18.0		0.497	18.7
22.0		0.332	22.8
26.0		0.238	27.0
30.0		0.179	31.1



**IES "BUG" Rating**  
(Back Light, Uplight, Glare)  
Per IES TM-15-11



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	67.2	45.5%
FM	(30-60)	6.6	4.5%
FH	(60-80)	0.0	0.0%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	67.2	45.5%
BM	(30-60)	6.6	4.5%
BH	(60-80)	0.0	0.0%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		147.6	100.0%
<b>BUG Rating</b>	<b>B0 U1 G0</b>		