



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**  
**LSW16-W-30 (40° OPTIC, 3000K)**

Order Number  
12043087  
Test Number  
12043087.19

Test Date

2018-02-14

Prepared By

Samuel DePue, Technician

Approved By

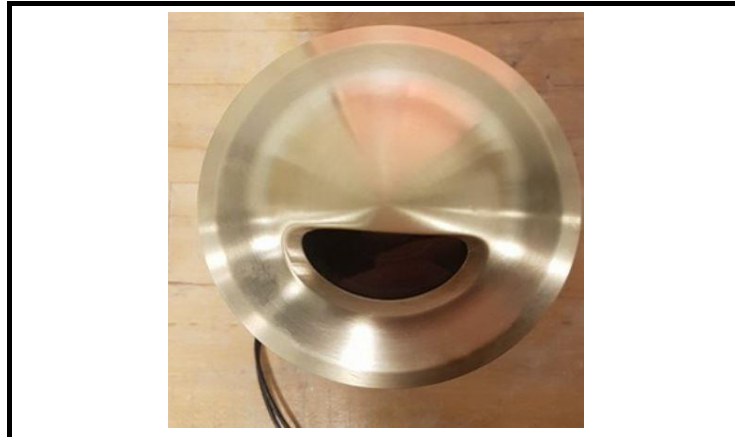
Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.  
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.  
This report must not be used by the client to claim product certification, approval, or endorsement by  
NVLAP, NIST, or any agency of the Federal Government.



**Luminaire Description:** Cylindrical brass housing with circular brass domed faceplate, clear glass lens and PVC sleeve  
**Lamp:** One (1) Cree XP-L 3000K LED with 40° wide silicone optic  
**Mounting:** Recessed - Wall  
**Ballast/Driver:** Integrated

**Luminaire**



**Luminaire Characteristics**

Luminous Length: 0.75 in.  
Luminous Width: 1.750 in.  
Luminous Height: 0.75 in.

**Summary of Results**

Roadway Classification: Type I, Very Short  
Cutoff Classification: Noncutoff  
BUG Rating: B0 U1 G1

**Test Conditions**

Test Temperature: 24.8 °C  
Voltage: 11.99 VAC  
Current: 0.4269 A  
Power: 3.088 W  
Power Factor: 0.603  
Frequency: 60 Hz  
Current THD: 83.2 %

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
24.8 °C	11.99 VAC	0.4269 A	3.088 W	0.603	60 Hz	83.2 %

### Summary of Results

#### Spacing Criteria

0-180: 0.68  
90-270: 1.46

Total Lumen Output:

75.46 Lumens

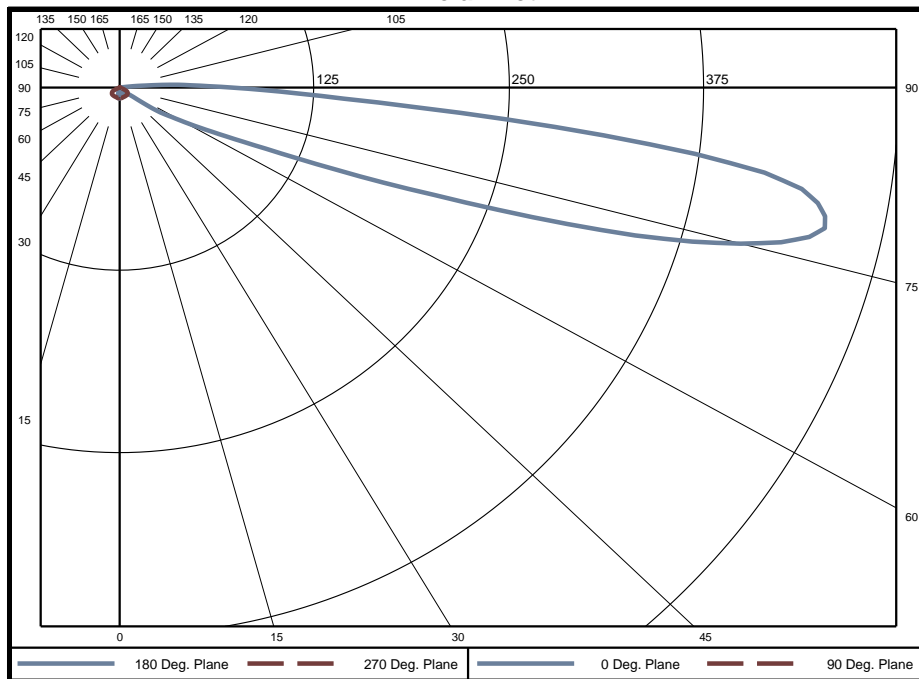
Luminaire Efficacy:

24.4 lm/w

Maximum Candela:

463 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.17	0.2%	60-65	3.34	4.4%	120-125	0.02	0.0%
5-10	0.48	0.6%	65-70	6.55	8.7%	125-130	0.01	0.0%
10-15	0.71	0.9%	70-75	13.64	18.1%	130-135	0.01	0.0%
15-20	0.81	1.1%	75-80	18.97	25.1%	135-140	0.00	0.0%
20-25	0.84	1.1%	80-85	14.72	19.5%	140-145	0.00	0.0%
25-30	0.85	1.1%	85-90	5.19	6.9%	145-150	0.00	0.0%
30-35	0.86	1.1%	90-95	1.61	2.1%	150-155	0.00	0.0%
35-40	0.89	1.2%	95-100	0.28	0.4%	155-160	0.00	0.0%
40-45	0.99	1.3%	100-105	0.09	0.1%	160-165	0.00	0.0%
45-50	1.07	1.4%	105-110	0.06	0.1%	165-170	0.00	0.0%
50-55	1.21	1.6%	110-115	0.04	0.1%	170-175	0.00	0.0%
55-60	2.00	2.7%	115-120	0.03	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	6	7.4%
0-60	11	14.4%
0-90	73	97.1%
90-180	2	2.8%



**Candela Tabulation**  
Horizontal Angle (Degrees)

Vertical 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	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
	5	6.3	6.2	6.5	6.8	7.2	7.4	7.5	7.4	7.4	7.4	7.5	7.4	7.2	6.8	6.5
	10	5.6	5.6	5.9	6.5	7.2	7.5	6.9	6.1	5.7	6.1	6.9	7.5	7.2	6.5	5.9
	15	4.9	5.0	5.4	6.0	7.0	7.2	5.4	3.8	3.0	3.8	5.4	7.2	7.0	6.0	5.4
	20	3.9	4.1	4.8	5.6	6.9	6.5	3.5	1.6	1.2	1.6	3.5	6.5	6.9	5.6	4.8
	25	2.9	3.0	4.1	5.3	6.9	5.8	1.7	0.8	0.4	0.8	1.7	5.8	6.9	5.3	4.1
	30	2.6	2.5	3.2	5.0	6.8	4.9	0.9	0.1	0.0	0.1	0.9	4.9	6.8	5.0	3.2
	35	2.6	2.4	2.6	4.6	6.8	4.0	0.5	0.0	0.0	0.0	0.5	4.0	6.8	4.6	2.6
	40	3.7	2.7	2.4	4.2	6.8	3.1	0.1	0.0	0.0	0.0	0.1	3.1	6.8	4.2	2.4
	45	4.9	4.1	2.3	3.6	6.7	2.3	0.0	0.0	0.0	0.0	0.0	2.3	6.7	3.6	2.3
	50	6.4	4.6	2.1	3.0	6.5	1.7	0.0	0.0	0.0	0.0	0.0	1.7	6.5	3.0	2.1
	55	16.9	6.1	2.1	2.2	6.0	1.2	0.0	0.0	0.0	0.0	0.0	1.2	6.0	2.2	2.1
	60	44.6	10.4	2.0	1.6	5.2	0.8	0.0	0.0	0.0	0.0	0.0	0.8	5.2	1.6	2.0
	65	87.8	20.1	1.9	1.1	3.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4	3.0	1.1	1.9
	70	214.3	36.3	1.4	0.7	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.9	0.7	1.4
	75	412.7	55.4	0.8	0.5	0.5	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.5	0.5	0.8
	80	454.9	48.9	0.5	0.4	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3	0.4	0.5
	85	249.2	8.3	0.4	0.3	0.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.3	0.4
	90	72.7	2.7	0.3	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.3
	95	16.1	1.0	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.2
	100	1.7	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.2
	105	0.9	0.4	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.2
	110	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	115	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	120	0.3	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	125	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	130	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	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>)**

Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
	0	45	90	
	0	8439	8439	8439
	45	4117	1873	7879
	55	14290	1799	7670
	65	78000	1678	4367
	75	397900	740	896
	85	271600	409	369



### 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	89	89	89	89	87	87	87	87	83	83	83	79	79	79	75	75	75	73
1	70	61	53	46	67	59	51	45	54	48	43	51	46	41	47	43	39	37
2	58	46	36	28	55	44	35	27	41	33	26	37	30	25	34	29	23	21
3	51	37	27	18	48	36	26	18	33	24	17	30	22	16	27	21	16	13
4	46	32	21	14	43	30	21	13	28	19	13	25	18	12	23	17	11	9
5	42	28	18	11	39	26	17	10	24	16	10	22	15	10	20	14	9	7
6	38	25	16	9	36	24	15	9	22	14	8	20	13	8	19	12	8	6
7	36	22	14	8	34	22	13	8	20	13	7	18	12	7	17	11	7	5
8	33	20	12	7	32	20	12	7	18	11	6	17	11	6	16	10	6	4
9	31	19	11	6	30	18	11	6	17	10	6	16	10	6	15	9	5	4
10	29	17	10	6	28	17	10	5	16	10	5	15	9	5	14	9	5	3

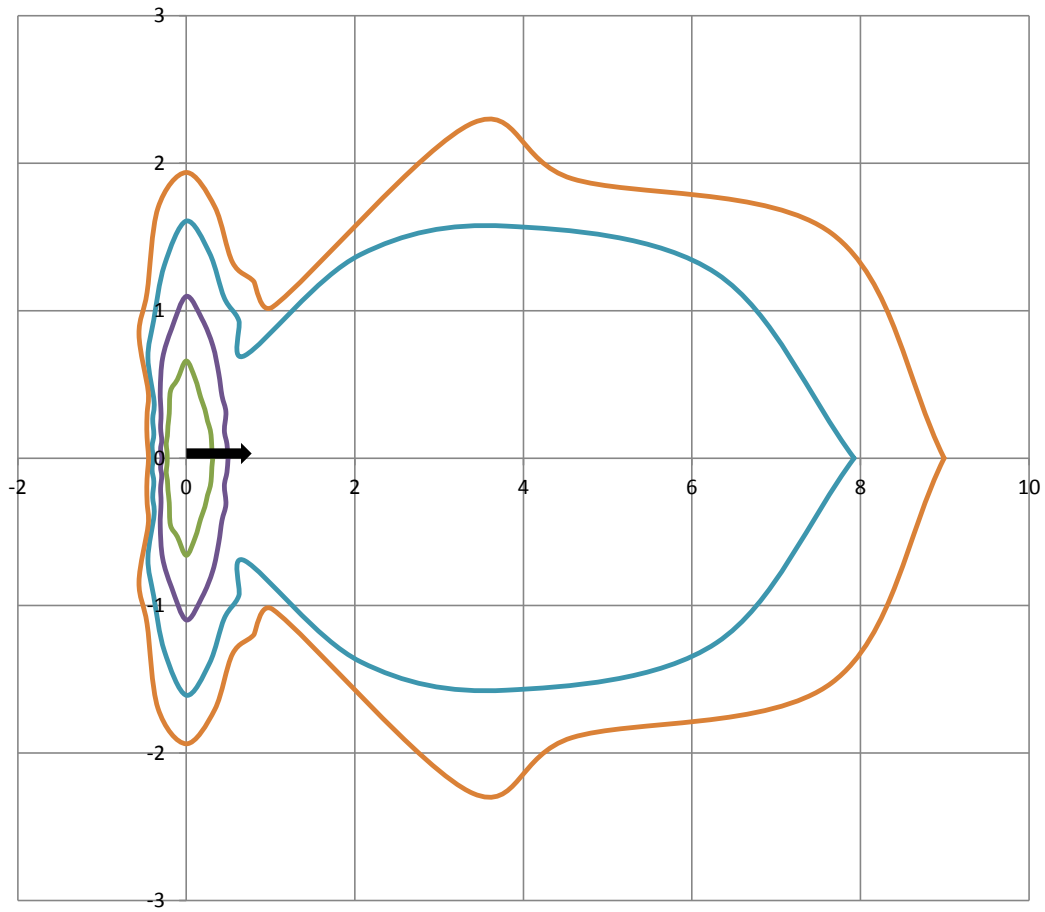
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	7.1 Candela
Central Cone Intensity:	7 Candela
Beam Flux:	71.5 Lumens
Beam Angle (0-180):	111.6 Degrees
Beam Angle (90-270):	128.0 Degrees
Field Angle (0-180):	128.6 Degrees
Field Angle (90-270):	143.5 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		0.447	2.99
6.00		0.198	4.49
8.00		0.112	5.98
10.0		0.0715	7.48
12.0		0.0496	8.98
14.0		0.0365	10.5
16.0		0.0279	12.0



## ISOFootcandle Plot

Mounting Height - 2 Feet



Grid Lines in Units of Mounting Height





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



**Luminaire Classification System (LCS)**

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	2.1	2.6%
FM	(30-60)	5.4	6.9%
FH	(60-80)	44.8	57.0%
FVH	(80-90)	20.9	26.6%
BL	(0-30)	1.8	2.3%
BM	(30-60)	1.7	2.2%
BH	(60-80)	0.3	0.3%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	1.4	1.7%
UH	(100-180)	0.3	0.3%
Total		78.6	100.0%
BUG Rating	B0 U1 G1		