



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-27 (40° OPTIC, 2700K)**

Order Number  
12043087  
Test Number  
12043087.20

Report Date

2018-02-14

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 domed faceplate, clear glass lens and PVC sleeve  
**Lamp:** One (1) Cree XP-L 2700K LED with 40° wide silicone optic  
**Mounting:** Recessed - Wall  
**Ballast/Driver:** Integrated  
**Note:** This report has been pro-rated using data from report number 12043087.01, 12043087.02, 12043087.03, and 12043087.19 to account for differences in color temperature.

#### 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:

76.68 Lumens

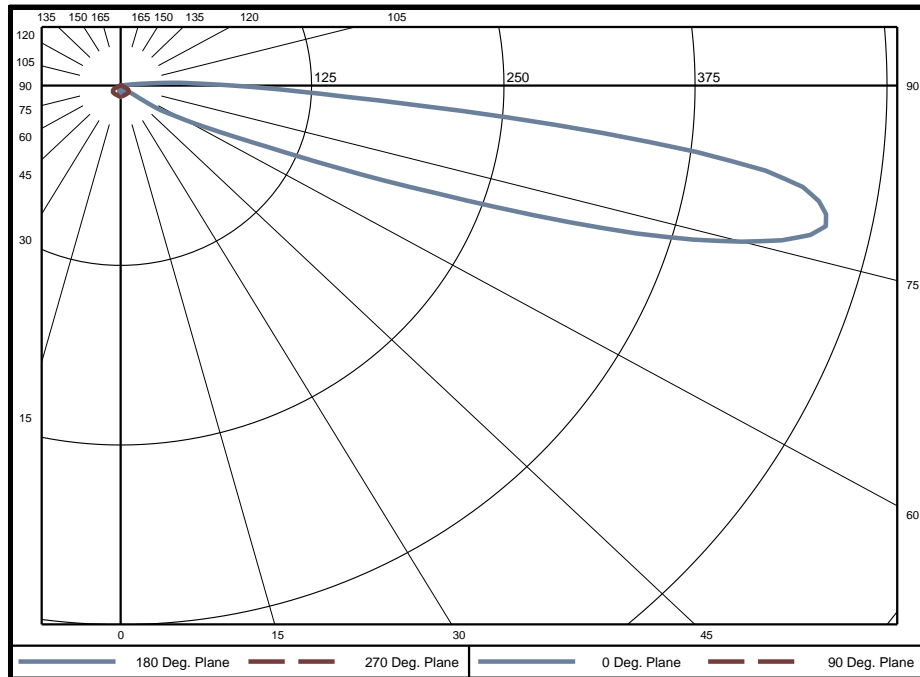
#### Luminaire Efficacy:

24.8 lm/w

#### Maximum Candela:

470 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	3.40	4.4%	120-125	0.02	0.0%
5-10	0.49	0.6%	65-70	6.66	8.7%	125-130	0.01	0.0%
10-15	0.72	0.9%	70-75	13.86	18.1%	130-135	0.01	0.0%
15-20	0.83	1.1%	75-80	19.28	25.1%	135-140	0.00	0.0%
20-25	0.85	1.1%	80-85	14.95	19.5%	140-145	0.00	0.0%
25-30	0.86	1.1%	85-90	5.27	6.9%	145-150	0.00	0.0%
30-35	0.87	1.1%	90-95	1.63	2.1%	150-155	0.00	0.0%
35-40	0.91	1.2%	95-100	0.29	0.4%	155-160	0.00	0.0%
40-45	1.00	1.3%	100-105	0.09	0.1%	160-165	0.00	0.0%
45-50	1.09	1.4%	105-110	0.06	0.1%	165-170	0.00	0.0%
50-55	1.23	1.6%	110-115	0.04	0.1%	170-175	0.00	0.0%
55-60	2.04	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	74	97.1%
90-180	2	2.8%



### 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	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
5	6.4	6.3	6.6	6.9	7.3	7.6	7.6	7.5	7.5	7.5	7.6	7.6	7.3	6.9	6.6	6.3
10	5.7	5.7	6.0	6.6	7.3	7.6	7.0	6.1	5.8	6.1	7.0	7.6	7.3	6.6	6.0	5.7
15	5.0	5.1	5.5	6.1	7.1	7.3	5.5	3.9	3.0	3.9	5.5	7.3	7.1	6.1	5.5	5.1
20	4.0	4.2	4.9	5.7	7.0	6.6	3.5	1.6	1.2	1.6	3.5	6.6	7.0	5.7	4.9	4.2
25	2.9	3.0	4.2	5.4	7.0	5.9	1.8	0.8	0.4	0.8	1.8	5.9	7.0	5.4	4.2	3.0
30	2.6	2.6	3.3	5.1	6.9	5.0	1.0	0.1	0.0	0.1	1.0	5.0	6.9	5.1	3.3	2.6
35	2.7	2.4	2.6	4.7	6.9	4.1	0.5	0.0	0.0	0.0	0.5	4.1	6.9	4.7	2.6	2.4
40	3.7	2.7	2.4	4.2	6.9	3.2	0.1	0.0	0.0	0.0	0.1	3.2	6.9	4.2	2.4	2.7
45	5.0	4.2	2.3	3.7	6.8	2.3	0.0	0.0	0.0	0.0	0.0	2.3	6.8	3.7	2.3	4.2
50	6.6	4.7	2.2	3.0	6.6	1.7	0.0	0.0	0.0	0.0	0.0	1.7	6.6	3.0	2.2	4.7
55	17.1	6.2	2.2	2.3	6.1	1.2	0.0	0.0	0.0	0.0	0.0	1.2	6.1	2.3	2.2	6.2
60	45.3	10.6	2.0	1.6	5.3	0.8	0.0	0.0	0.0	0.0	0.0	0.8	5.3	1.6	2.0	10.6
65	89.2	20.4	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	20.4
70	217.8	36.8	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	36.8
75	419.3	56.3	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	56.3
80	462.3	49.7	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	49.7
85	253.2	8.4	0.4	0.3	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.3	0.4	8.4
90	73.8	2.8	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	2.8
95	16.4	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	1.0
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	0.5
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	0.4
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	0.3
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	0.2
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	0.2
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	0.0	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	0.0	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	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	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	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	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	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	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	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	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	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	0.0

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

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	8575	8575	8575
45	4184	1903	8006
55	14520	1828	7794
65	79260	1706	4437
75	404300	752	911
85	276000	416	375



### 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	91	91	91	91	88	88	88	88	84	84	84	80	80	80	76	76	76	74
1	71	62	54	47	68	60	52	46	55	49	44	51	46	42	48	44	40	37
2	59	47	37	28	56	45	35	27	41	33	26	38	31	25	35	29	24	21
3	52	38	27	19	49	36	26	18	33	24	17	30	23	17	28	21	16	13
4	46	32	22	14	44	31	21	13	28	20	13	26	18	12	23	17	12	9
5	42	28	18	11	40	27	18	11	25	16	10	23	15	10	21	14	9	7
6	39	25	16	9	37	24	15	9	22	14	9	21	14	8	19	13	8	6
7	36	23	14	8	34	22	14	8	20	13	7	19	12	7	17	11	7	5
8	34	21	13	7	32	20	12	7	19	12	7	17	11	6	16	10	6	4
9	32	19	11	6	30	18	11	6	17	11	6	16	10	6	15	10	5	4
10	30	18	10	6	29	17	10	6	16	10	5	15	9	5	14	9	5	3

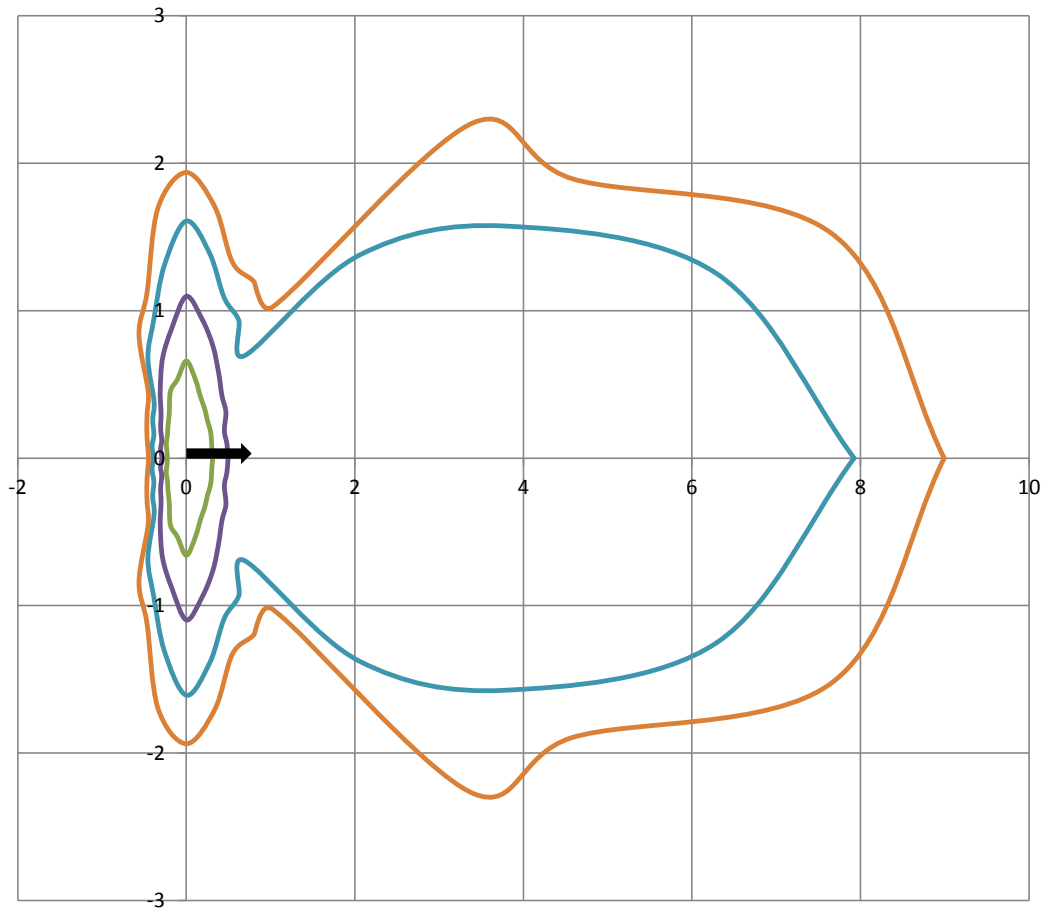
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	7.3 Candela
Central Cone Intensity:	7 Candela
Beam Flux:	72.7 Lumens
Beam Angle (0-180):	111.6 Degrees
Beam Angle (90-270):	128.0 Degrees
Field Angle (0-180):	128.6 Degrees
Field Angle (90-270):	143.5 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		0.454	2.99
6.00		0.202	4.49
8.00		0.113	5.98
10.0		0.0726	7.48
12.0		0.0504	8.98
14.0		0.0370	10.5
16.0		0.0284	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)	5.5	6.9%
FH	(60-80)	45.5	57.0%
FVH	(80-90)	21.2	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		79.8	100.0%
BUG Rating	B0 U1 G1		