



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 Avenue West  
Carlsbad  
CA, 92010  
United States

**Catalog Number**

**HPL9-2-27**

Order Number

**11745044**

Test Number

**11745044.27**

Test Date

2017-05-19

Prepared By

Javier Caban, Technician

Approved By

Tiffany Hamm, Project Handler

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** Conical 9" copper shade with clear glass lens, cylindrical copper stem and brass base  
**Lamp:** 64 white LEDs  
**Mounting:** Path/Area  
**Ballast/Driver:** Integrated

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 9.00 in.

**Summary of Results**

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

**Test Conditions**

Test Temperature:	24.3 °C
Voltage:	12.00 VAC
Current:	0.3046 A
Power:	2.209 W
Power Factor:	0.604
Frequency:	60 Hz
Current THD:	85.9 %

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
24.3 °C	12.00 VAC	0.3046 A	2.209 W	0.604	60 Hz	85.9 %

### Summary of Results

#### Spacing Criteria

0-180: 1.26

90-270: 1.26

Total Lumen Output:

128.8 Lumens

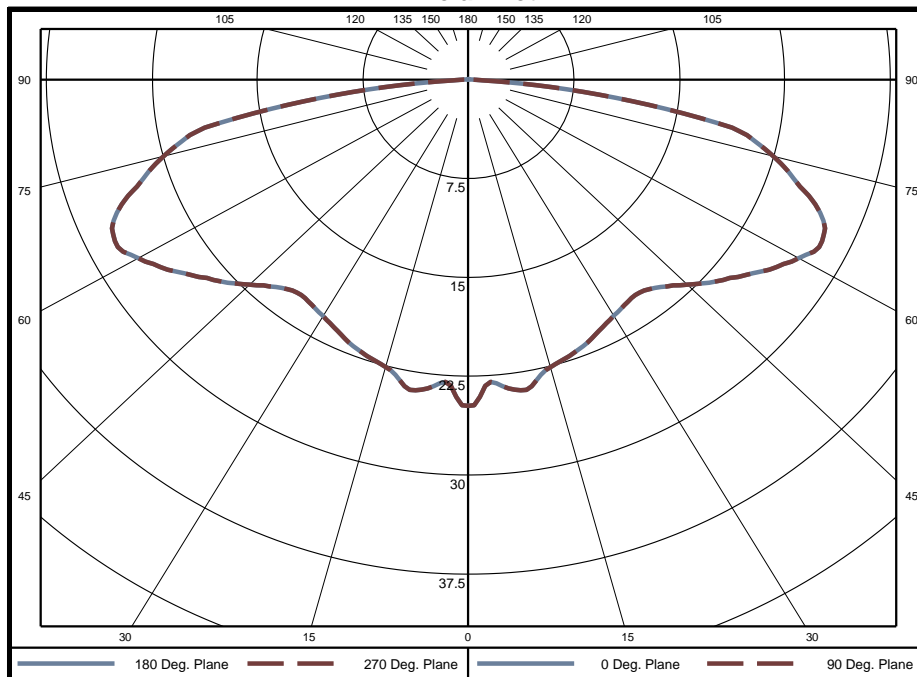
Luminaire Efficacy:

58.3 lm/w

Maximum Candela:

28 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.56	0.4%	60-65	13.48	10.5%	120-125	0.01	0.0%
5-10	1.69	1.3%	65-70	13.70	10.6%	125-130	0.01	0.0%
10-15	2.75	2.1%	70-75	12.56	9.8%	130-135	0.01	0.0%
15-20	3.67	2.8%	75-80	10.86	8.4%	135-140	0.01	0.0%
20-25	4.55	3.5%	80-85	5.79	4.5%	140-145	0.01	0.0%
25-30	5.31	4.1%	85-90	0.84	0.7%	145-150	0.01	0.0%
30-35	6.02	4.7%	90-95	0.13	0.1%	150-155	0.01	0.0%
35-40	6.78	5.3%	95-100	0.04	0.0%	155-160	0.01	0.0%
40-45	7.87	6.1%	100-105	0.03	0.0%	160-165	0.01	0.0%
45-50	9.23	7.2%	105-110	0.02	0.0%	165-170	0.00	0.0%
50-55	10.64	8.3%	110-115	0.02	0.0%	170-175	0.00	0.0%
55-60	12.14	9.4%	115-120	0.02	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	31	24.3%
0-60	71	55.3%
0-90	128	99.7%
90-180	0	0.3%



### 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	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74	24.74
	5	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12	23.12
	10	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89	23.89
	15	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58	22.58
	20	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03	22.03
	25	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35	21.35
	30	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67	20.67
	35	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22	20.22
	40	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62	20.62
	45	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99	21.99
	50	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64	23.64
	55	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37	25.37
	60	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09	27.09
	65	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85	27.85
	70	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73	25.73
	75	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42	22.42
	80	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69	16.69
	85	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91	4.91
	90	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
	95	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
	100	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
	105	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	110	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	115	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	120	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	125	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	130	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	135	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	140	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03
	145	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	150	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	155	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	160	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	165	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	170	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	175	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04
	180	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04

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

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	603	603
	45	758	758
	55	1078	1078
	65	1606	1606
	75	2110	2110
	85	1373	1373



### 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	153	153	153	153	150	150	150	150	143	143	143	137	137	137	131	131	131	128
1	134	126	118	111	130	123	116	109	117	111	106	112	107	102	107	103	99	96
2	118	104	93	83	114	102	91	82	97	87	80	92	84	78	88	81	76	72
3	105	88	75	64	102	86	73	63	81	71	62	78	68	61	74	66	59	56
4	95	76	62	51	91	74	61	51	70	59	50	67	57	49	64	55	48	45
5	86	66	52	42	83	64	51	42	61	50	41	59	48	40	56	47	40	37
6	79	59	45	35	76	57	44	35	55	43	35	52	42	34	50	41	34	31
7	72	52	39	30	70	51	39	30	49	38	30	47	37	29	45	36	29	26
8	67	47	35	26	65	46	35	26	45	34	26	43	33	26	41	32	26	23
9	63	43	31	23	61	42	31	23	41	30	23	39	30	23	38	29	23	20
10	59	40	28	21	57	39	28	21	38	28	21	36	27	20	35	26	20	18

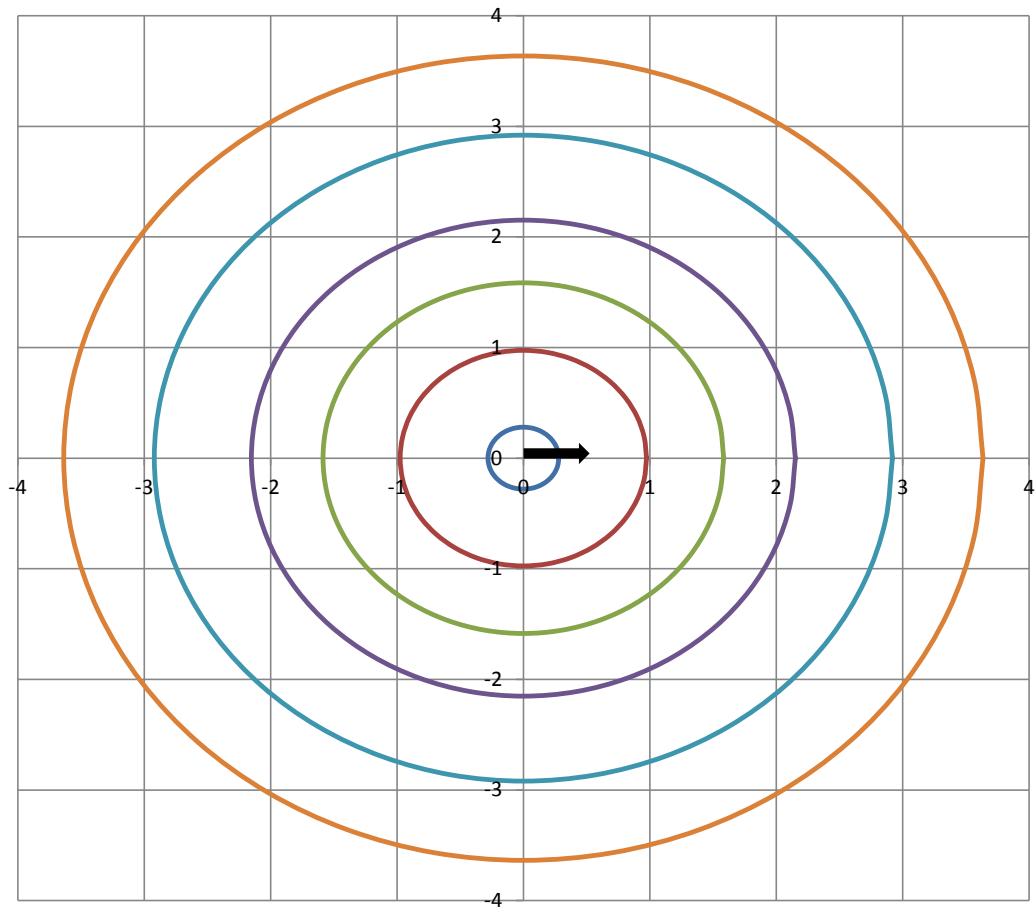
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	24.74 Candela
Central Cone Intensity:	24 Candela
Beam Flux:	124.6 Lumens
Beam Angle (0-180):	163.5 Degrees
Beam Angle (90-270):	163.5 Degrees
Field Angle (0-180):	172.4 Degrees
Field Angle (90-270):	172.4 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		1.55	5.05
6.00		0.687	7.57
8.00		0.387	10.1
10.0		0.247	12.6
12.0		0.172	15.1
14.0		0.126	17.7
16.0		0.0967	20.2



## 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)	9.3	7.2%
FM	(30-60)	26.4	20.5%
FH	(60-80)	25.2	19.6%
FVH	(80-90)	3.4	2.6%
BL	(0-30)	9.3	7.2%
BM	(30-60)	26.4	20.5%
BH	(60-80)	25.2	19.6%
BVH	(80-90)	3.4	2.6%
UL	(90-100)	0.2	0.1%
UH	(100-180)	0.2	0.2%
Total		128.8	100.0%
<b>BUG Rating</b>	<b>B0 U1 G0</b>		