



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**

**HPL5-3-27**

Order Number

**11745044**

Test Number

**11745044.09**

Test Date

2017-05-10

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 5" 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: 3.75 in.

**Summary of Results**

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

**Test Conditions**

Test Temperature: 24.2 °C  
Voltage: 12.00 VAC  
Current: 0.4956 A  
Power: 3.335 W  
Power Factor: 0.561  
Frequency: 60 Hz  
Current THD: 78.3 %

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
24.2 °C	12.00 VAC	0.4956 A	3.335 W	0.561	60 Hz	78.3 %

### Summary of Results

#### Spacing Criteria

0-180: 1.93  
90-270: 1.93

#### Total Lumen Output:

126.5 Lumens

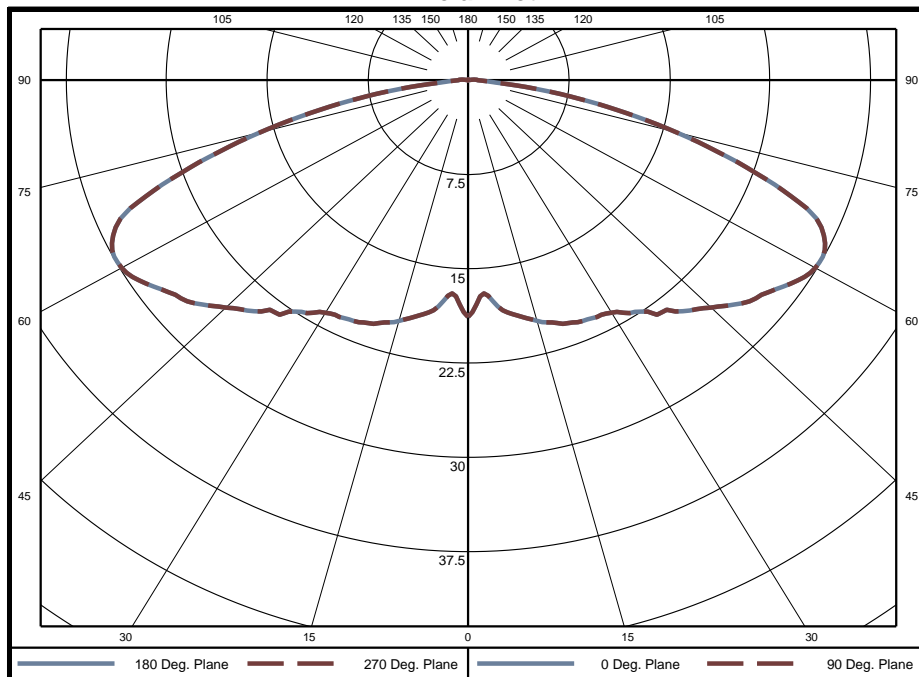
#### Luminaire Efficacy:

37.9 lm/w

#### Maximum Candela:

30 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.42	0.3%	60-65	14.46	11.4%	120-125	0.02	0.0%
5-10	1.31	1.0%	65-70	13.83	10.9%	125-130	0.02	0.0%
10-15	2.30	1.8%	70-75	10.56	8.3%	130-135	0.01	0.0%
15-20	3.33	2.6%	75-80	6.49	5.1%	135-140	0.01	0.0%
20-25	4.37	3.5%	80-85	2.71	2.1%	140-145	0.01	0.0%
25-30	5.35	4.2%	85-90	0.72	0.6%	145-150	0.01	0.0%
30-35	6.46	5.1%	90-95	0.37	0.3%	150-155	0.01	0.0%
35-40	7.76	6.1%	95-100	0.23	0.2%	155-160	0.01	0.0%
40-45	9.18	7.3%	100-105	0.07	0.1%	160-165	0.01	0.0%
45-50	10.70	8.5%	105-110	0.04	0.0%	165-170	0.00	0.0%
50-55	12.14	9.6%	110-115	0.03	0.0%	170-175	0.00	0.0%
55-60	13.56	10.7%	115-120	0.02	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	31	24.7%
0-60	77	60.8%
0-90	126	99.3%
90-180	1	0.7%



### 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	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83	18.83
5	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21	17.21
10	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88	18.88
15	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81	19.81
20	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	20.62
25	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99	20.99
30	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	21.35
35	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47	22.47
40	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01	24.01
45	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58	25.58
50	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35	27.35
55	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62	28.62
60	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84	29.84
65	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21	29.21
70	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30
75	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13	16.13
80	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.26
85	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06	2.06
90	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
95	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57	0.57
100	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.24
105	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
110	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
115	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	0.05
120	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	0.04
125	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	0.04
130	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	0.04
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	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	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	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	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	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	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	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	0.04
175	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	0.03
180	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	0.03

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

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	2642	2642	2642
45	5076	5076	5076
55	7003	7003	7003
65	9701	9701	9701
75	8745	8745	8745
85	3323	3323	3323



### 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	150	150	150	150	147	147	147	147	140	140	140	134	134	134	128	128	128	126
1	134	126	119	113	130	123	117	111	117	112	108	112	108	104	107	104	101	98
2	118	105	95	86	115	103	93	85	98	90	82	93	86	80	89	83	78	75
3	105	89	77	67	102	87	75	66	83	73	64	79	70	63	75	68	62	59
4	95	77	63	53	91	75	62	53	71	60	52	68	58	51	65	57	50	47
5	86	67	53	43	83	65	52	43	62	51	42	59	49	42	57	48	41	38
6	78	59	46	36	75	57	45	36	55	44	36	52	43	35	50	41	35	32
7	72	52	40	31	69	51	39	31	49	38	30	47	37	30	45	36	30	27
8	66	47	35	27	64	46	35	26	44	34	26	42	33	26	41	32	26	23
9	62	43	31	23	60	42	31	23	40	30	23	39	29	23	37	29	23	20
10	58	39	28	21	56	38	28	21	37	27	20	36	27	20	34	26	20	18

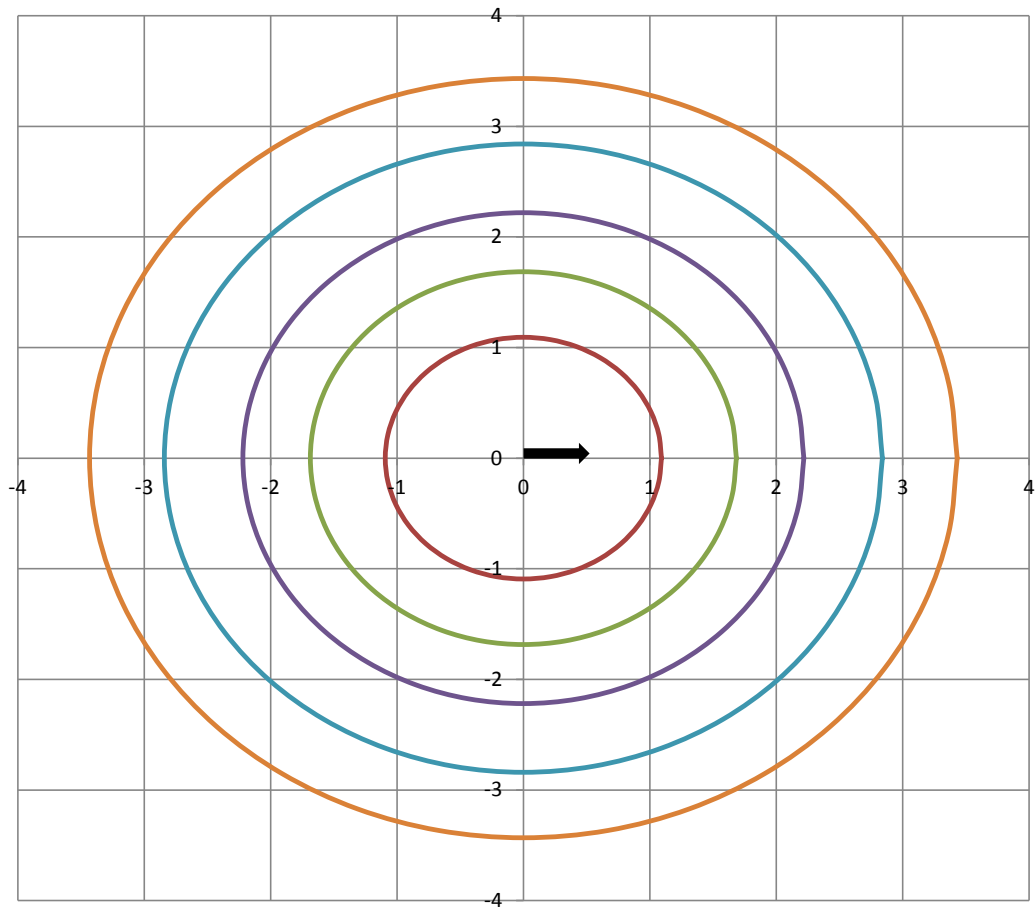
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	18.83 Candela
Central Cone Intensity:	18 Candela
Beam Flux:	121.5 Lumens
Beam Angle (0-180):	158.5 Degrees
Beam Angle (90-270):	158.5 Degrees
Field Angle (0-180):	170.9 Degrees
Field Angle (90-270):	170.9 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		1.18	7.70
6.00		0.523	11.6
8.00		0.294	15.4
10.0		0.188	19.3
12.0		0.131	23.1
14.0		0.0961	27.0
16.0		0.0735	30.8

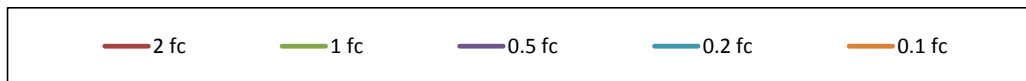


## ISOFootcandle Plot

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)	8.6	6.8%
FM	(30-60)	30.0	23.7%
FH	(60-80)	22.6	17.9%
FVH	(80-90)	1.7	1.4%
BL	(0-30)	8.6	6.8%
BM	(30-60)	30.0	23.7%
BH	(60-80)	22.6	17.9%
BVH	(80-90)	1.7	1.4%
UL	(90-100)	0.6	0.5%
UH	(100-180)	0.3	0.2%
Total		126.7	100.0%
<b>BUG Rating</b>	<b>B0 U1 G0</b>		