



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**

**HPL9-5-27**

Order Number

**11745044**

Test Number

**11745044.31**

Test Date

2017-05-22

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:	24.7 °C
Voltage:	12.01 VAC
Current:	0.6177 A
Power:	4.624 W
Power Factor:	0.623
Frequency:	60 Hz
Current THD:	72.7 %

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
24.7 °C	12.01 VAC	0.6177 A	4.624 W	0.623	60 Hz	72.7 %

### Summary of Results

#### Spacing Criteria

0-180: 1.28

90-270: 1.28

Total Lumen Output:

193.1 Lumens

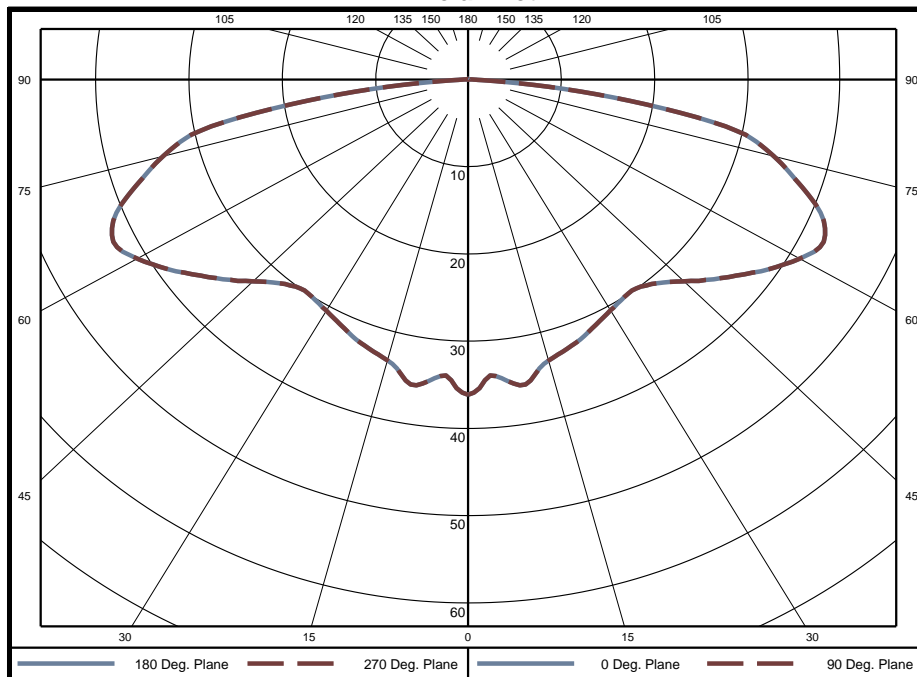
Luminaire Efficacy:

41.8 lm/w

Maximum Candela:

42 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.83	0.4%	60-65	20.43	10.6%	120-125	0.02	0.0%
5-10	2.51	1.3%	65-70	20.72	10.7%	125-130	0.02	0.0%
10-15	4.07	2.1%	70-75	19.03	9.9%	130-135	0.02	0.0%
15-20	5.42	2.8%	75-80	16.33	8.5%	135-140	0.02	0.0%
20-25	6.71	3.5%	80-85	8.57	4.4%	140-145	0.02	0.0%
25-30	7.84	4.1%	85-90	1.26	0.7%	145-150	0.01	0.0%
30-35	8.90	4.6%	90-95	0.18	0.1%	150-155	0.01	0.0%
35-40	10.06	5.2%	95-100	0.06	0.0%	155-160	0.01	0.0%
40-45	11.70	6.1%	100-105	0.04	0.0%	160-165	0.01	0.0%
45-50	13.78	7.1%	105-110	0.03	0.0%	165-170	0.01	0.0%
50-55	16.03	8.3%	110-115	0.02	0.0%	170-175	0.00	0.0%
55-60	18.37	9.5%	115-120	0.02	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	46	24.0%
0-60	106	55.0%
0-90	193	99.7%
90-180	1	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	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14	36.14
	5	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14	34.14
	10	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51	35.51
	15	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36	33.36
	20	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47
	25	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48	31.48
	30	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55	30.55
	35	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96	29.96
	40	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61	30.61
	45	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73	32.73
	50	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42	35.42
	55	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34	38.34
	60	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08	41.08
	65	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25	42.25
	70	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91	38.91
	75	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94	33.94
	80	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90	24.90
	85	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07	7.07
	90	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
	95	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
	100	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
	105	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
	110	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
	115	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
	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
	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
	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
	135	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
	140	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
	145	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
	150	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
	155	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
	160	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
	165	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
	170	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
	175	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
	180	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

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

Horizontal Angle (Degrees)

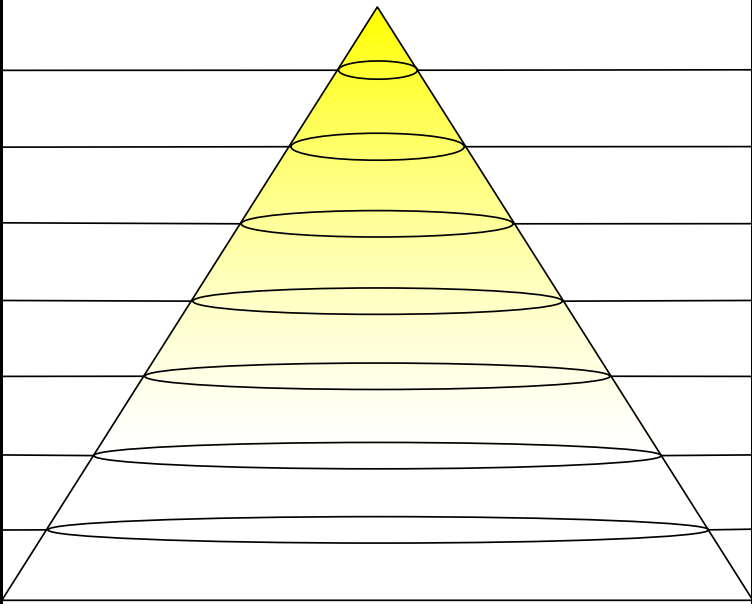
Vertical Angle (Degrees)	0	45	90
	0	881	881
	45	1128	1128
	55	1629	1629
	65	2436	2436
	75	3195	3195
	85	1975	1975



### 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	230	230	230	230	224	224	224	224	214	214	214	205	205	205	197	197	197	193
1	201	188	177	167	196	184	173	164	175	166	158	167	160	153	160	154	148	144
2	177	156	138	124	171	152	136	122	145	131	119	138	126	116	131	122	113	108
3	157	131	111	95	152	128	109	94	122	106	92	116	102	90	110	99	89	84
4	142	113	92	76	136	110	91	75	105	88	74	100	85	73	95	82	72	67
5	129	99	78	62	124	96	77	62	92	74	61	88	72	60	84	70	59	55
6	118	87	67	53	113	85	66	52	82	64	52	78	63	51	75	61	50	46
7	108	78	59	45	105	77	58	45	73	56	44	70	55	44	67	54	43	39
8	100	71	52	39	97	69	51	39	66	50	39	64	49	38	61	48	38	34
9	94	64	47	35	90	63	46	34	61	45	34	58	44	34	56	43	34	30
10	87	59	42	31	85	58	42	31	56	41	31	54	40	30	52	39	30	26

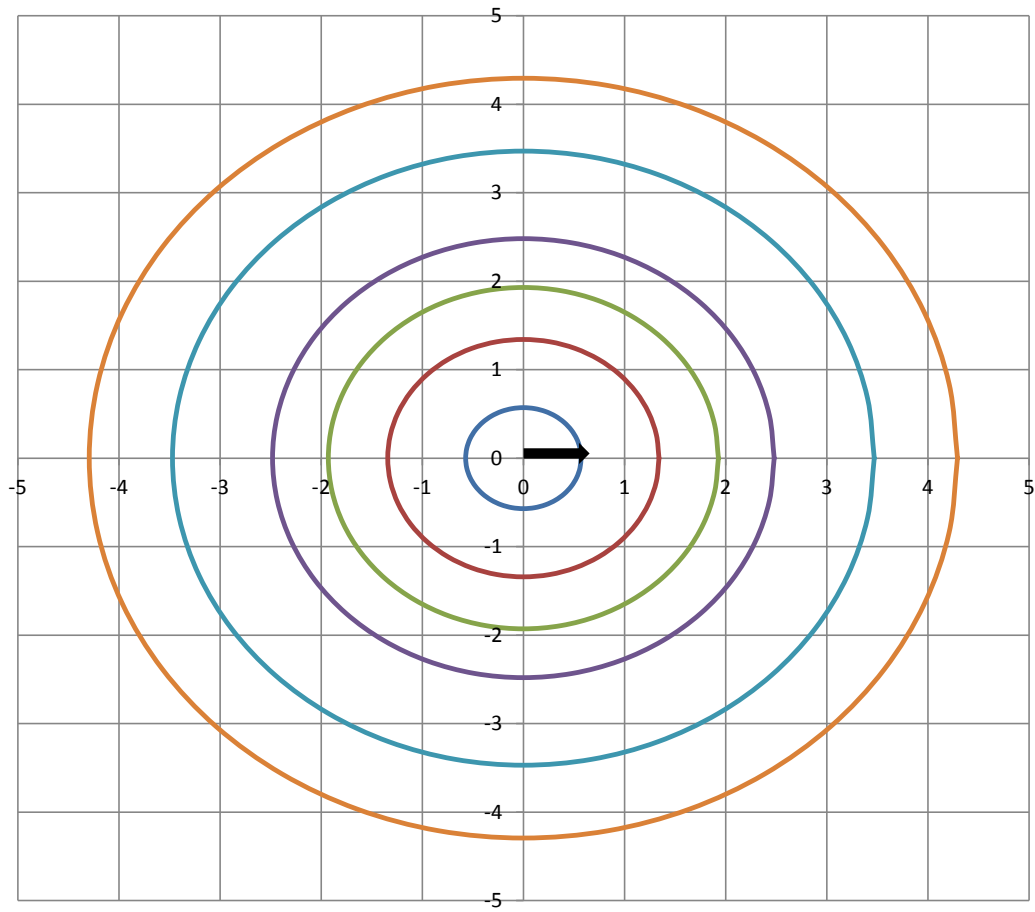
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	36.14 Candela
Central Cone Intensity:	35 Candela
Beam Flux:	187.0 Lumens
Beam Angle (0-180):	163.7 Degrees
Beam Angle (90-270):	163.7 Degrees
Field Angle (0-180):	172.3 Degrees
Field Angle (90-270):	172.3 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		2.26	5.11
6.00		1.00	7.67
8.00		0.565	10.2
10.0		0.361	12.8
12.0		0.251	15.3
14.0		0.184	17.9
16.0		0.141	20.5



## 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)	13.7	7.1%
FM	(30-60)	39.3	20.5%
FH	(60-80)	37.8	19.7%
FVH	(80-90)	4.9	2.6%
BL	(0-30)	13.7	7.1%
BM	(30-60)	39.3	20.5%
BH	(60-80)	37.8	19.7%
BVH	(80-90)	4.9	2.6%
UL	(90-100)	0.2	0.1%
UH	(100-180)	0.3	0.1%
Total		192.1	100.0%
<b>BUG Rating</b>	<b>B0 U1 G0</b>		