



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

HPL9-3-30

Order Number

11745044

Test Number

11745044.30

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:	25.2 °C
Voltage:	12.00 VAC
Current:	0.4882 A
Power:	3.275 W
Power Factor:	0.559
Frequency:	60 Hz
Current THD:	79.4 %

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
25.2 °C	12.00 VAC	0.4882 A	3.275 W	0.559	60 Hz	79.4 %

Summary of Results

Spacing Criteria

0-180: 1.28
90-270: 1.28

Total Lumen Output:

165.0 Lumens

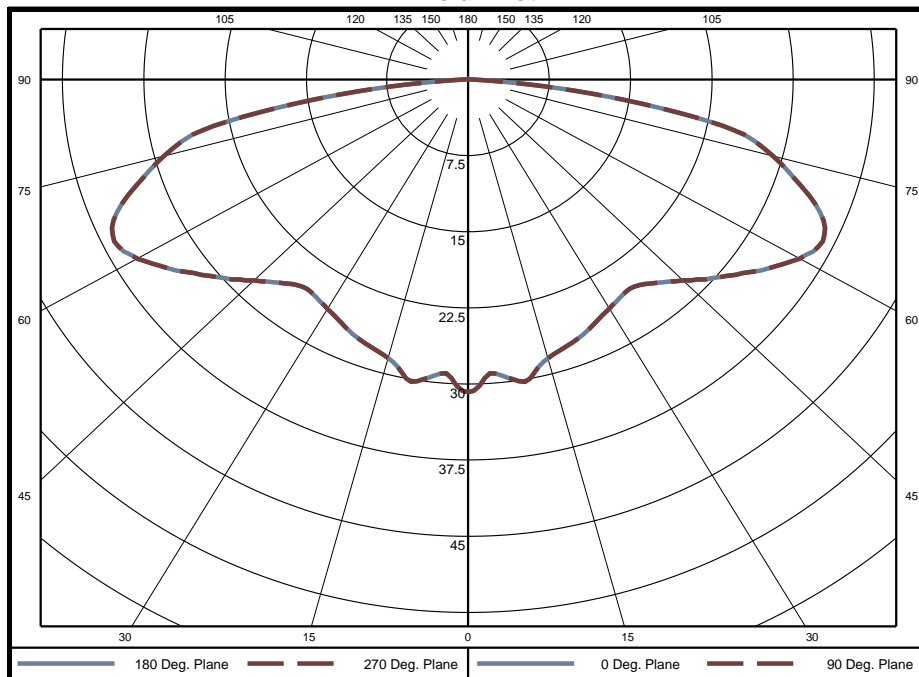
Luminaire Efficacy:

50.4 lm/w

Maximum Candela:

36 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.71	0.4%	60-65	17.51	10.6%	120-125	0.02	0.0%
5-10	2.13	1.3%	65-70	17.80	10.8%	125-130	0.01	0.0%
10-15	3.47	2.1%	70-75	16.34	9.9%	130-135	0.01	0.0%
15-20	4.62	2.8%	75-80	13.94	8.4%	135-140	0.01	0.0%
20-25	5.73	3.5%	80-85	7.20	4.4%	140-145	0.01	0.0%
25-30	6.69	4.1%	85-90	1.06	0.6%	145-150	0.01	0.0%
30-35	7.58	4.6%	90-95	0.15	0.1%	150-155	0.01	0.0%
35-40	8.57	5.2%	95-100	0.05	0.0%	155-160	0.01	0.0%
40-45	10.03	6.1%	100-105	0.03	0.0%	160-165	0.01	0.0%
45-50	11.79	7.1%	105-110	0.03	0.0%	165-170	0.01	0.0%
50-55	13.70	8.3%	110-115	0.02	0.0%	170-175	0.00	0.0%
55-60	15.74	9.5%	115-120	0.02	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	40	23.9%
0-60	91	55.0%
0-90	165	99.8%
90-180	0	0.2%



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	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80	30.80
	5	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09
	10	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25	30.25
	15	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44	28.44
	20	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69	27.69
	25	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89	26.89
	30	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05	26.05
	35	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46	25.46
	40	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23	26.23
	45	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98	27.98
	50	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28
	55	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84	32.84
	60	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30	35.30
	65	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23	36.23
	70	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47	33.47
	75	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09	29.09
	80	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08	21.08
	85	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80	5.80
	90	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
	95	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
	100	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
	105	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
	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	0.04	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	0.03	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	0.04	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	0.04	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/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	751	751
	45	964	964
	55	1395	1395
	65	2089	2089
	75	2738	2738
	85	1620	1620



Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																	
Ceiling Cavity Reflectance	80				70				50			30			10		
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																
0	196	196	196	196	192	192	192	192	183	183	183	175	175	175	168	168	168
1	172	161	151	142	167	157	148	140	150	142	135	143	137	131	137	132	127
2	151	133	118	106	146	130	116	104	124	112	102	118	108	99	112	104	97
3	135	112	95	81	130	109	94	81	104	90	79	99	87	77	94	84	76
4	121	97	79	65	117	94	77	64	90	75	63	85	73	62	81	70	61
5	110	84	67	53	106	82	66	53	78	64	52	75	62	51	71	60	51
6	101	75	57	45	97	73	57	45	70	55	44	67	53	43	64	52	43
7	93	67	50	38	89	65	49	38	63	48	38	60	47	37	57	46	37
8	86	60	44	33	83	59	44	33	57	43	33	54	42	33	52	41	32
9	80	55	40	30	77	54	39	29	52	39	29	50	38	29	48	37	29
10	75	51	36	26	72	50	36	26	48	35	26	46	34	26	45	34	26

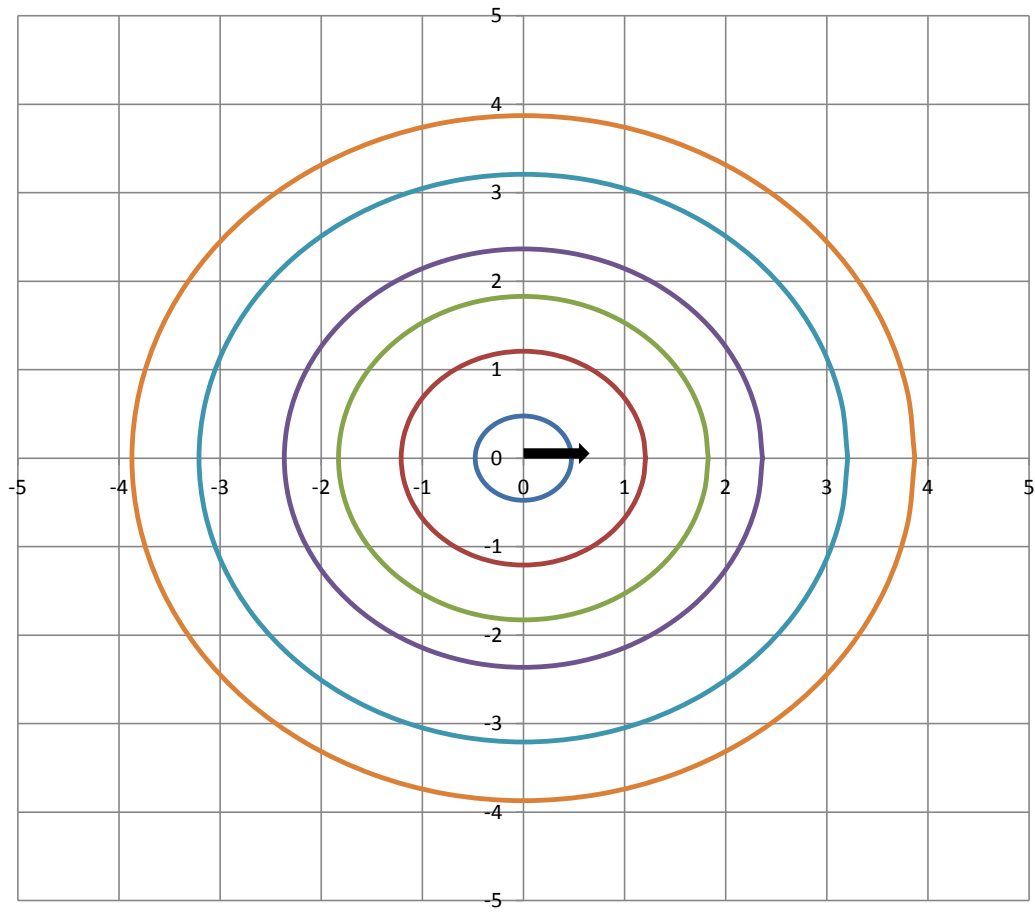
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	30.80 Candela
Central Cone Intensity:	30 Candela
Beam Flux:	159.8 Lumens
Beam Angle (0-180):	163.6 Degrees
Beam Angle (90-270):	163.6 Degrees
Field Angle (0-180):	172.2 Degrees
Field Angle (90-270):	172.2 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		1.93	5.11
6.00		0.856	7.66
8.00		0.481	10.2
10.0		0.308	12.8
12.0		0.214	15.3
14.0		0.157	17.9
16.0		0.120	20.4



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)	11.7	7.1%
FM	(30-60)	33.7	20.4%
FH	(60-80)	32.6	19.8%
FVH	(80-90)	4.2	2.5%
BL	(0-30)	11.7	7.1%
BM	(30-60)	33.7	20.4%
BH	(60-80)	32.6	19.8%
BVH	(80-90)	4.2	2.5%
UL	(90-100)	0.2	0.1%
UH	(100-180)	0.2	0.1%
Total		164.7	100.0%
BUG Rating	B0 U1 G0		