



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

HPL4-3-30

Order Number

11745044

Test Number

11745044.06

Test Date

2017-05-04

Prepared By

Alexa Lambert, Project Handler

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 4" 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: 24.3 °C
Voltage: 12.01 VAC
Current: 0.4880 A
Power: 3.285 W
Power Factor: 0.561
Frequency: 60 Hz
Current THD: 78.6 %

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	12.01 VAC	0.4880 A	3.285 W	0.561	60 Hz	78.6 %

Summary of Results

Spacing Criteria

0-180: 2.00

90-270: 2.00

Total Lumen Output:

119.9 Lumens

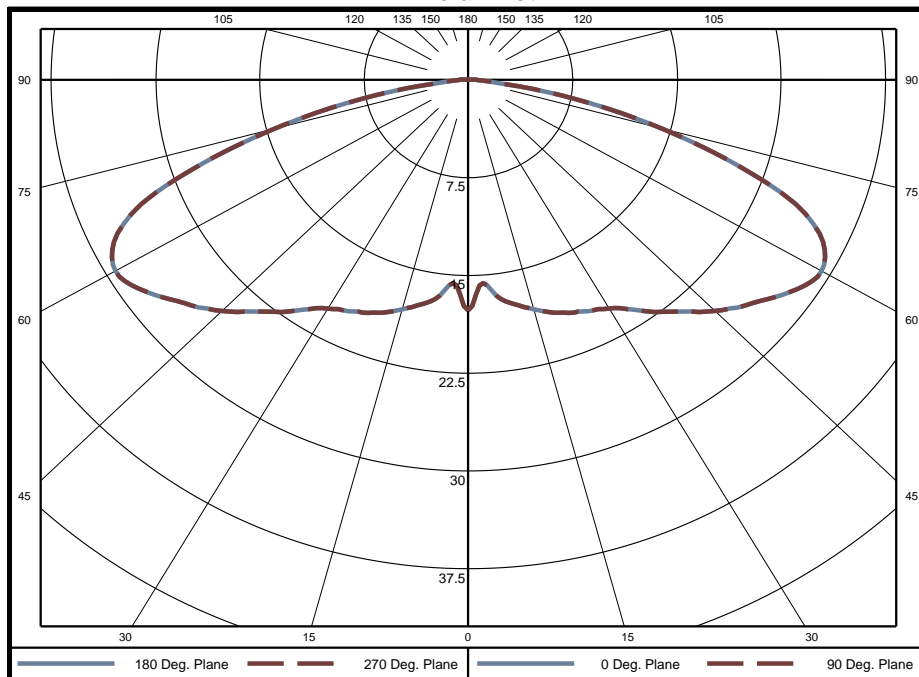
Luminaire Efficacy:

36.5 lm/w

Maximum Candela:

29 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.38	0.3%	60-65	13.99	11.7%	120-125	0.02	0.0%
5-10	1.20	1.0%	65-70	12.96	10.8%	125-130	0.02	0.0%
10-15	2.11	1.8%	70-75	9.65	8.0%	130-135	0.02	0.0%
15-20	3.07	2.6%	75-80	5.64	4.7%	135-140	0.01	0.0%
20-25	4.05	3.4%	80-85	2.08	1.7%	140-145	0.01	0.0%
25-30	5.04	4.2%	85-90	0.62	0.5%	145-150	0.01	0.0%
30-35	6.14	5.1%	90-95	0.32	0.3%	150-155	0.01	0.0%
35-40	7.48	6.2%	95-100	0.17	0.1%	155-160	0.01	0.0%
40-45	8.93	7.4%	100-105	0.06	0.1%	160-165	0.01	0.0%
45-50	10.46	8.7%	105-110	0.04	0.0%	165-170	0.00	0.0%
50-55	11.95	10.0%	110-115	0.03	0.0%	170-175	0.00	0.0%
55-60	13.38	11.2%	115-120	0.02	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	29	24.6%
0-60	74	61.9%
0-90	119	99.4%
90-180	1	0.6%



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	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67	17.67
	5	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81	15.81
	10	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35	17.35
	15	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21	18.21
	20	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00	19.00
	25	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58	19.58
	30	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24	20.24
	35	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59	21.59
	40	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18	23.18
	45	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05	25.05
	50	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63	26.63
	55	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29	28.29
	60	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29	29.29
	65	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84	27.84
	70	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54	22.54
	75	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43	14.43
	80	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87
	85	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.74
	90	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
	95	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47
	100	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
	105	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
	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
	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
	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	0.03	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	0.03	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
	150	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
	155	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
	160	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
	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	0.03	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

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

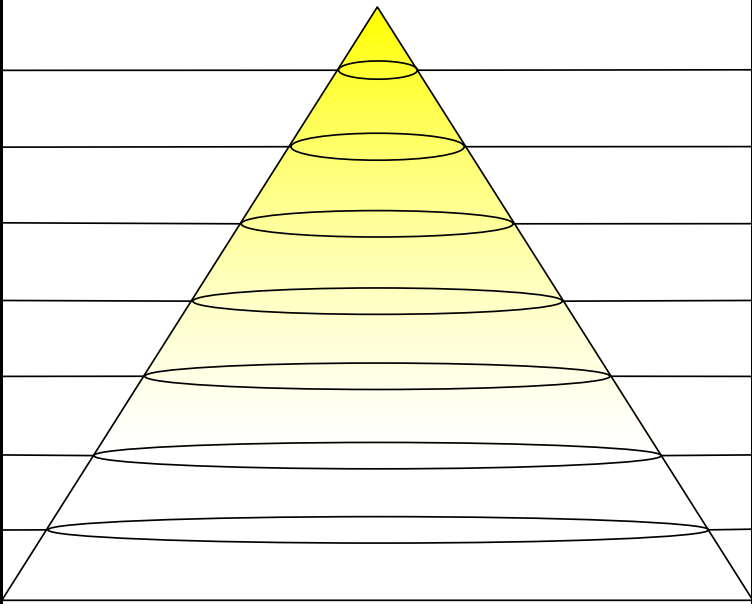
Vertical Angle (Degrees)	0	45	90
	0	2479	2479
	45	4971	4971
	55	6922	6922
	65	9244	9244
	75	7825	7825
	85	2797	2797



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	143	143	143	143	139	139	139	139	133	133	133	127	127	127	122	122	122	119
1	127	120	114	108	124	117	111	106	112	107	103	107	103	99	102	99	96	93
2	112	100	90	82	109	98	89	81	93	85	79	89	82	77	85	80	75	72
3	100	85	73	64	97	83	72	63	79	69	62	75	67	60	72	65	59	56
4	90	73	60	51	87	71	59	50	68	57	49	65	56	49	62	54	48	45
5	81	63	51	41	79	62	50	41	59	49	40	56	47	40	54	46	39	36
6	74	56	43	35	72	55	43	34	52	42	34	50	41	33	48	39	33	30
7	68	50	38	29	66	49	37	29	47	36	29	45	35	28	43	34	28	25
8	63	45	33	25	61	44	33	25	42	32	25	40	31	25	39	30	24	22
9	58	40	29	22	57	40	29	22	38	28	22	37	28	22	35	27	21	19
10	54	37	26	19	53	36	26	19	35	26	19	34	25	19	32	25	19	17

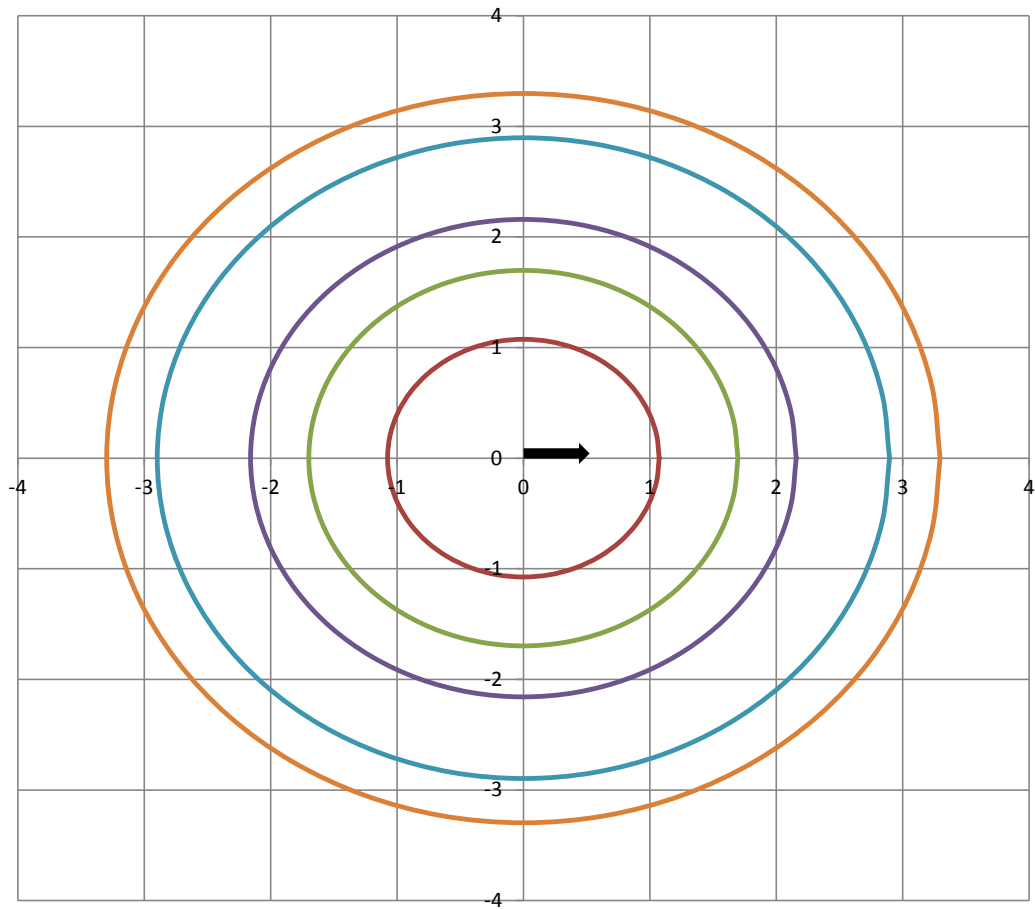
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	17.67 Candela
Central Cone Intensity:	16 Candela
Beam Flux:	115.2 Lumens
Beam Angle (0-180):	157.2 Degrees
Beam Angle (90-270):	157.2 Degrees
Field Angle (0-180):	169.8 Degrees
Field Angle (90-270):	169.8 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		1.10	8.02
6.00		0.491	12.0
8.00		0.276	16.0
10.0		0.177	20.0
12.0		0.123	24.1
14.0		0.0901	28.1
16.0		0.0690	32.1

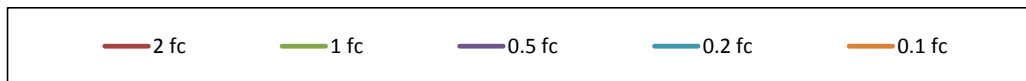


ISOFootcandle Plot

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)	7.9	6.6%
FM	(30-60)	29.2	24.3%
FH	(60-80)	21.2	17.6%
FVH	(80-90)	1.4	1.2%
BL	(0-30)	7.9	6.6%
BM	(30-60)	29.2	24.3%
BH	(60-80)	21.2	17.6%
BVH	(80-90)	1.4	1.2%
UL	(90-100)	0.5	0.4%
UH	(100-180)	0.3	0.2%
Total		120.4	100.0%
BUG Rating	B0 U1 G0		