



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

HPL9-2-30

Order Number

11745044

Test Number

11745044.28

Test Date

2017-05-19

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 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:	25.9 °C
Voltage:	12.01 VAC
Current:	0.2896 A
Power:	2.138 W
Power Factor:	0.615
Frequency:	60 Hz
Current THD:	89.9 %

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
25.9 °C	12.01 VAC	0.2896 A	2.138 W	0.615	60 Hz	89.9 %

Summary of Results

Spacing Criteria

0-180: 1.26
90-270: 1.26

Total Lumen Output:

116.8 Lumens

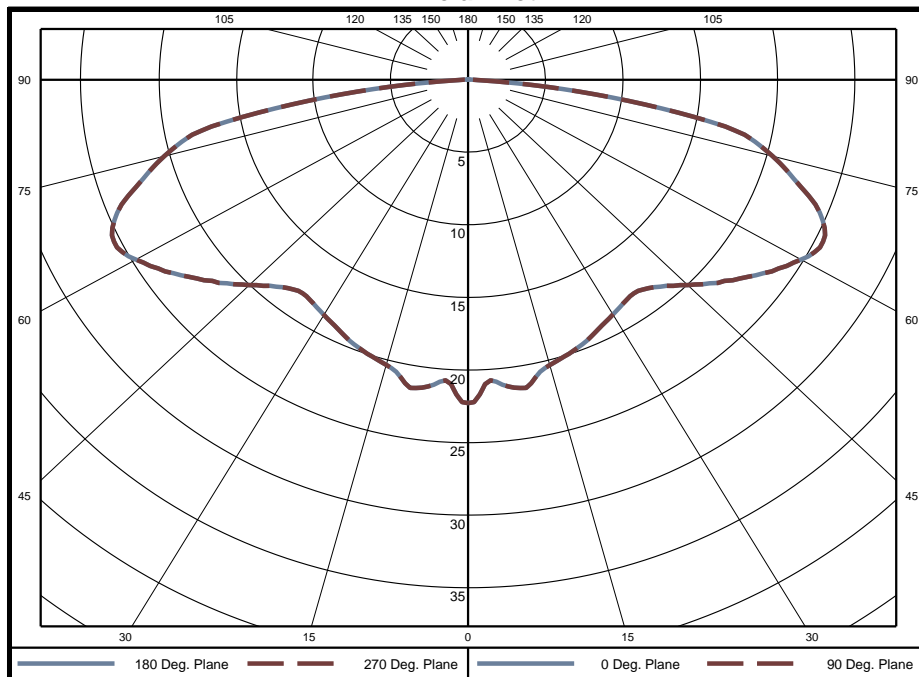
Luminaire Efficacy:

54.6 lm/w

Maximum Candela:

25 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.51	0.4%	60-65	12.29	10.5%	120-125	0.02	0.0%
5-10	1.53	1.3%	65-70	12.43	10.6%	125-130	0.01	0.0%
10-15	2.47	2.1%	70-75	11.40	9.8%	130-135	0.01	0.0%
15-20	3.31	2.8%	75-80	9.77	8.4%	135-140	0.01	0.0%
20-25	4.11	3.5%	80-85	5.10	4.4%	140-145	0.01	0.0%
25-30	4.80	4.1%	85-90	0.74	0.6%	145-150	0.01	0.0%
30-35	5.43	4.6%	90-95	0.12	0.1%	150-155	0.01	0.0%
35-40	6.12	5.2%	95-100	0.04	0.0%	155-160	0.01	0.0%
40-45	7.15	6.1%	100-105	0.03	0.0%	160-165	0.01	0.0%
45-50	8.42	7.2%	105-110	0.02	0.0%	165-170	0.00	0.0%
50-55	9.75	8.3%	110-115	0.02	0.0%	170-175	0.00	0.0%
55-60	11.12	9.5%	115-120	0.02	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	28	24.2%
0-60	65	55.4%
0-90	116	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	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29	22.29
	5	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89	20.89
	10	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56	21.56
	15	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35	20.35
	20	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87	19.87
	25	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27	19.27
	30	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68	18.68
	35	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
	40	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66	18.66
	45	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01	20.01
	50	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57	21.57
	55	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24	23.24
	60	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78	24.78
	65	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39	25.39
	70	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	23.36
	75	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31	20.31
	80	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86	14.86
	85	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17
	90	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
	95	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
	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	0.04	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)

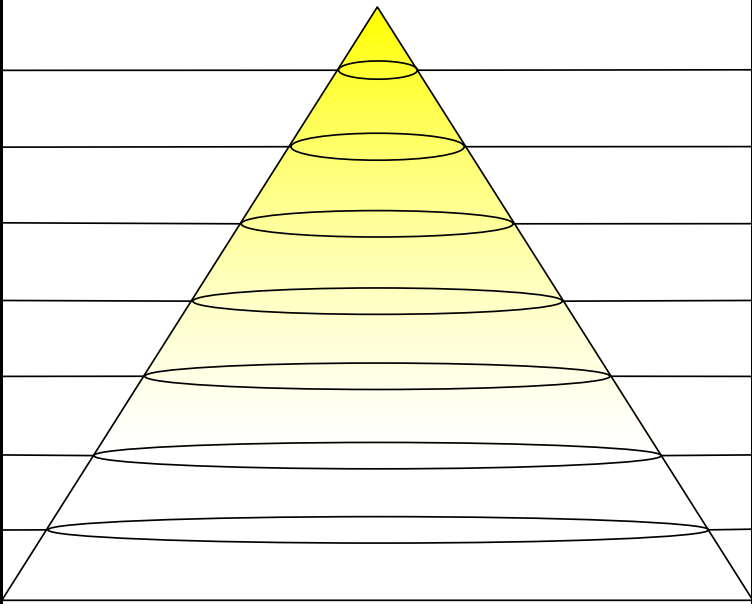
Vertical Angle (Degrees)	0	45	90
	0	543	543
	45	690	690
	55	987	987
	65	1464	1464
	75	1912	1912
	85	1166	1166



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	139	139	139	139	136	136	136	136	130	130	130	124	124	124	119	119	119	116
1	122	114	107	101	118	111	105	99	106	101	96	101	97	93	97	93	90	87
2	107	95	84	75	104	92	82	74	88	79	72	83	76	70	80	74	69	66
3	95	80	68	58	92	78	66	57	74	64	56	70	62	55	67	60	54	51
4	86	69	56	46	83	67	55	46	64	53	45	61	52	44	58	50	44	41
5	78	60	47	38	75	58	47	38	56	45	37	53	44	37	51	43	36	33
6	71	53	41	32	69	52	40	32	49	39	31	47	38	31	45	37	31	28
7	66	47	36	27	63	46	35	27	44	34	27	43	33	27	41	33	26	24
8	61	43	32	24	59	42	31	24	40	31	24	39	30	23	37	29	23	21
9	57	39	28	21	55	38	28	21	37	27	21	36	27	21	34	26	20	18
10	53	36	26	19	51	35	25	19	34	25	19	33	24	18	32	24	18	16

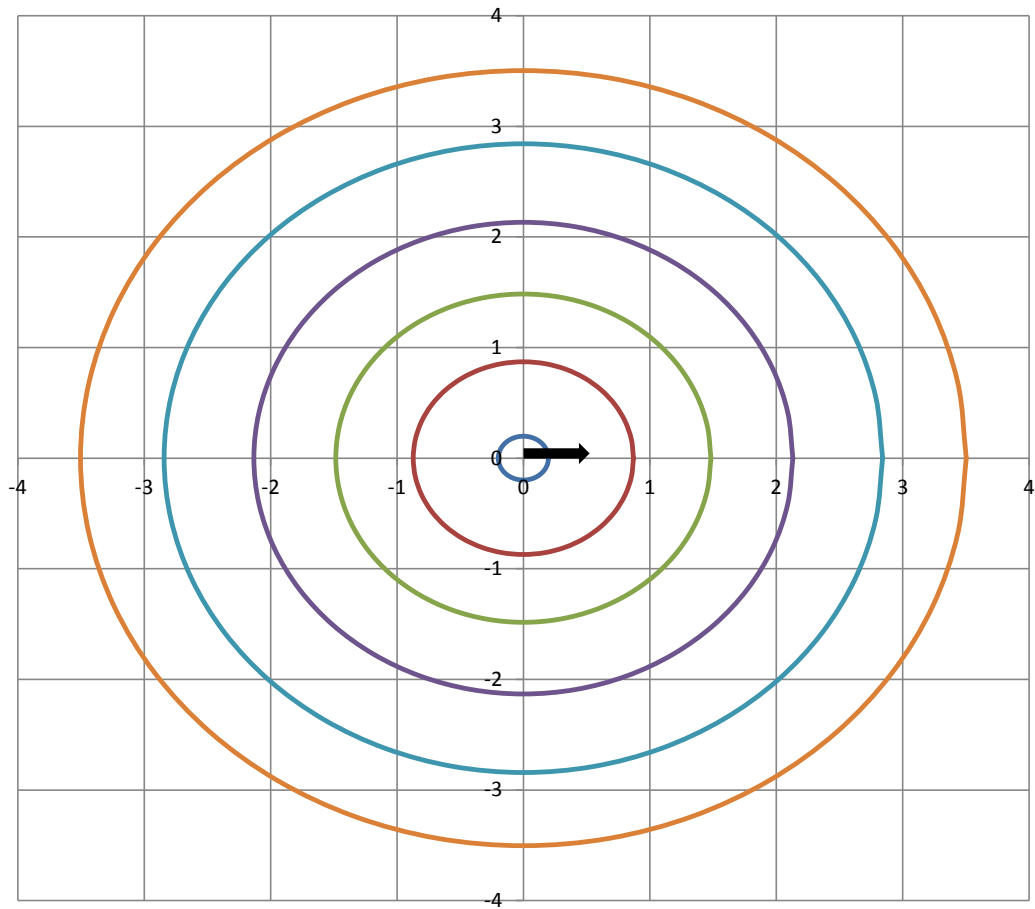
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	22.29 Candela
Central Cone Intensity:	21 Candela
Beam Flux:	112.9 Lumens
Beam Angle (0-180):	163.3 Degrees
Beam Angle (90-270):	163.3 Degrees
Field Angle (0-180):	172.2 Degrees
Field Angle (90-270):	172.2 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		1.39	5.05
6.00		0.619	7.58
8.00		0.348	10.1
10.0		0.223	12.6
12.0		0.155	15.2
14.0		0.114	17.7
16.0		0.0871	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)	8.4	7.2%
FM	(30-60)	24.0	20.5%
FH	(60-80)	23.0	19.6%
FVH	(80-90)	3.0	2.6%
BL	(0-30)	8.4	7.2%
BM	(30-60)	24.0	20.5%
BH	(60-80)	23.0	19.6%
BVH	(80-90)	3.0	2.6%
UL	(90-100)	0.2	0.1%
UH	(100-180)	0.2	0.2%
Total		117.1	100.0%
BUG Rating	B0 U1 G0		