



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002

Prepared For
Auroralight Inc

2742 Loker Ave W
#100
Carlsbad, CA 92010-6619
United States

Catalog Number
HSL11-4-N-45 (4W, 15° OPTIC, 4500K)

Order Number
12250114
Test Number
12250114.34

Report Date

2018-05-07

Prepared By

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Approved By

Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Cylindrical metal housing, with adjustable knuckle, clear glass lens and internal LED module

Lamp: One (1) Cree XHP 4500K LED with 15°, narrow optic

Mounting: Flood

Ballast/Driver: Integrated

Note: This report has been pro-rated using data from report numbers 12250114.32, 12250114.01, 12250114.02, 12250114.03, 12250114.04, 12250114.05, and 12250114.06 to account for differences in color temperature.

Luminaire



Luminaire Characteristics

Luminous Diameter: 1.50 in.

Luminous Height: 1.000 in.

Summary of Results

Roadway Classification: Type V, Very Short
Cutoff Classification: Full Cutoff
BUG Rating: B1 U0 G0

Test Conditions

Test Temperature: 24.8 °C
Voltage: 12.02 VAC
Current: 0.3497 A
Power: 4.123 W
Power Factor: 0.981
Frequency: 60 Hz
Current THD: 10.4 %

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
24.8 °C	12.02 VAC	0.3497 A	4.123 W	0.981	60 Hz	10.4 %

Summary of Results

Spacing Criteria

0-180: 0.28

90-270: 0.28

Total Lumen Output:

233.6 Lumens

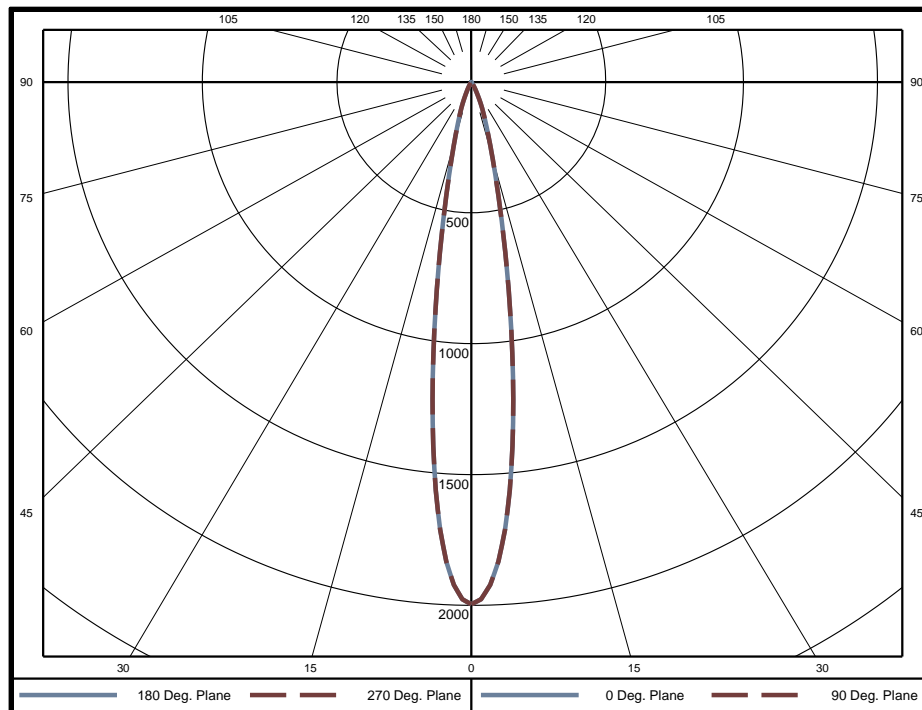
Luminaire Efficacy:

56.7 lm/w

Maximum Candela:

1996 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	42.48	18.2%	60-65	0	0.0%	120-125	0	0.0%
5-10	78.17	33.5%	65-70	0	0.0%	125-130	0	0.0%
10-15	53.35	22.8%	70-75	0	0.0%	130-135	0	0.0%
15-20	30.39	13.0%	75-80	0	0.0%	135-140	0	0.0%
20-25	17.28	7.4%	80-85	0	0.0%	140-145	0	0.0%
25-30	7.71	3.3%	85-90	0	0.0%	145-150	0	0.0%
30-35	2.74	1.2%	90-95	0	0.0%	150-155	0	0.0%
35-40	0.99	0.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	0.39	0.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	0.11	0.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.00	0.0%	110-115	0	0.0%	170-175	0.00	0.0%
55-60	0	0.0%	115-120	0	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	233	99.8%
0-60	234	100.0%
0-90	234	100.0%
90-180	0	0.0%



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	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996
	5	1566	1566	1566	1566	1566	1566	1566	1566	1566	1566	1566	1566	1566	1566	1566
	10	728	728	728	728	728	728	728	728	728	728	728	728	728	728	728
	15	276	276	276	276	276	276	276	276	276	276	276	276	276	276	276
	20	124	124	124	124	124	124	124	124	124	124	124	124	124	124	124
	25	49	49	49	49	49	49	49	49	49	49	49	49	49	49	49
	30	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
	35	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	40	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	55	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	1751000	1751000
	45	726	726
	55	0	0
	65	0	0
	75	0	0
	85	0	0



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	278	278	278	278	272	272	272	272	260	260	260	249	249	249	238	238	238	234
1	270	265	261	258	264	261	257	254	251	249	246	243	241	239	235	233	232	228
2	262	255	249	244	258	251	246	241	244	240	236	237	234	231	231	229	226	223
3	256	246	239	233	252	243	236	231	237	232	227	232	228	224	227	224	221	218
4	249	238	230	224	246	236	229	223	231	225	220	227	222	218	223	219	216	213
5	243	231	223	217	240	230	222	216	226	219	214	223	217	213	219	215	211	209
6	238	225	217	211	235	224	216	210	221	214	209	218	212	208	216	211	207	204
7	233	220	212	206	230	219	211	205	216	209	204	214	208	203	212	207	202	200
8	228	215	207	201	226	214	206	201	212	205	200	210	204	199	208	203	199	197
9	223	210	202	197	222	209	202	197	208	201	196	206	200	195	205	199	195	193
10	219	206	198	193	218	205	198	193	204	197	192	202	196	192	201	196	192	190

Beam and Field Information

CIE Type:	Direct
Center Beam Intensity:	1996 Candela
Central Cone Intensity:	1840 Candela
Beam Flux:	94.4 Lumens
Beam Angle (0-180):	16.6 Degrees
Beam Angle (90-270):	16.6 Degrees
Field Angle (0-180):	33.8 Degrees
Field Angle (90-270):	33.8 Degrees

Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
6.00		55.4	1.71
10.0		20.0	2.85
14.0		10.2	3.98
18.0		6.16	5.12
22.0		4.12	6.26
26.0		2.95	7.40
30.0		2.22	8.54



IES "BUG" Rating
(Back Light, Uplight, Glare)
Per IES TM-15-11



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	115.1	49.2%
FM	(30-60)	1.8	0.8%
FH	(60-80)	0.0	0.0%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	115.1	49.2%
BM	(30-60)	1.8	0.8%
BH	(60-80)	0.0	0.0%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		233.8	100.0%
BUG Rating	B1 U0 G0		