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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-W-30 (4W, 40° OPTIC, 3000K)**

Order Number  
12250114  
Test Number  
12250114.35

Test Date

2018-04-27

Prepared By

Cordaryl Cousar, Technician

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 3000K LED with 40°, wide optic  
**Mounting:** Flood  
**Ballast/Driver:** Integrated

**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: B0 U0 G0

**Test Conditions**

Test Temperature: 24.7 °C  
Voltage: 12.02 VAC  
Current: 0.3498 A  
Power: 4.125 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
24.7 °C	12.02 VAC	0.3498 A	4.125 W	0.981	60 Hz	10.4 %

### Summary of Results

#### Spacing Criteria

0-180: 0.51  
90-270: 0.51

#### Total Lumen Output:

213.2 Lumens

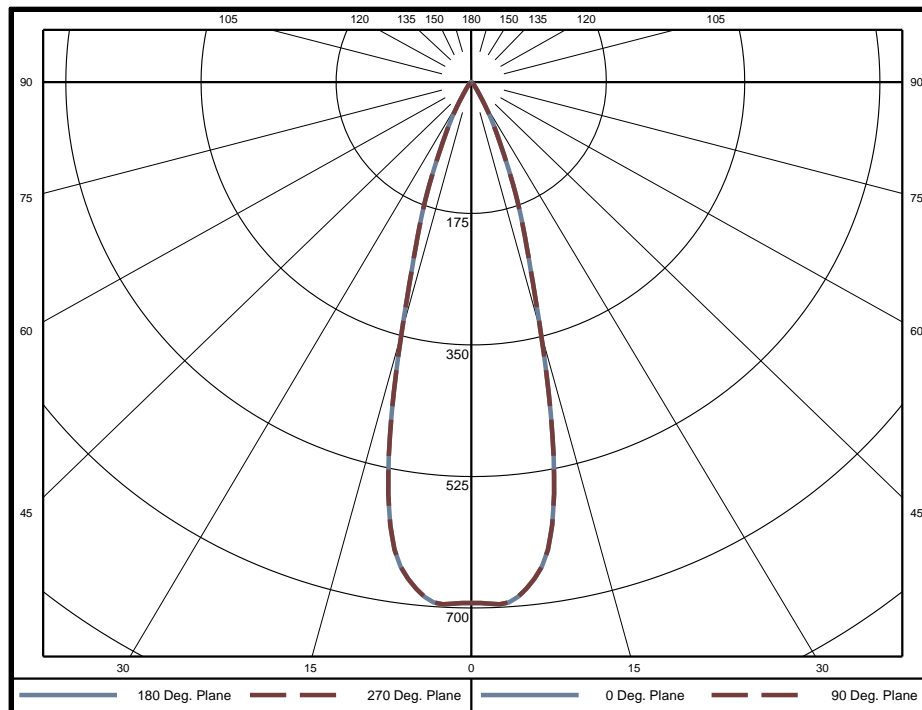
#### Luminaire Efficacy:

51.7 lm/w

#### Maximum Candela:

696 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	16.58	7.8%	60-65	0.19	0.1%	120-125	0	0.0%
5-10	46.45	21.8%	65-70	0.07	0.0%	125-130	0	0.0%
10-15	55.82	26.2%	70-75	0.00	0.0%	130-135	0	0.0%
15-20	40.89	19.2%	75-80	0	0.0%	135-140	0	0.0%
20-25	26.33	12.3%	80-85	0	0.0%	140-145	0	0.0%
25-30	13.95	6.5%	85-90	0	0.0%	145-150	0	0.0%
30-35	5.88	2.8%	90-95	0	0.0%	150-155	0	0.0%
35-40	2.98	1.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	1.81	0.8%	100-105	0	0.0%	160-165	0	0.0%
45-50	1.15	0.5%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.71	0.3%	110-115	0	0.0%	170-175	0.00	0.0%
55-60	0.39	0.2%	115-120	0	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	209	98.0%
0-60	213	99.9%
0-90	213	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	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3	693.3
	5	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8	687.8
	10	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7	598.7
	15	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2	345.2
	20	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6
	25	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3
	30	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8
	35	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5
	40	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	45	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
	50	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
	55	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	60	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	65	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	70	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	608100	608100
	45	3368	3368
	55	1110	1110
	65	248	248
	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	254	254	254	254	248	248	248	248	237	237	237	227	227	227	218	218	218	213
1	245	240	236	232	240	236	232	228	227	224	221	219	217	215	212	210	209	205
2	236	228	222	216	232	225	219	214	218	213	209	212	208	205	206	203	200	197
3	228	218	210	203	224	215	208	202	210	204	199	205	200	196	200	196	193	190
4	221	208	200	193	217	206	198	192	202	195	190	198	192	187	194	189	185	183
5	213	200	191	184	210	198	190	183	195	187	182	192	185	180	189	183	179	176
6	207	193	183	176	204	191	182	176	188	180	175	185	179	174	183	177	173	170
7	200	186	176	170	198	184	175	169	182	174	168	180	173	168	178	171	167	164
8	194	179	170	164	192	178	169	163	176	168	163	174	167	162	173	166	161	159
9	188	173	164	158	187	173	164	158	171	163	157	169	162	157	168	161	156	154
10	183	168	159	153	181	167	159	153	166	158	152	164	157	152	163	156	152	150

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	693.3 Candela
Central Cone Intensity:	694 Candela
Beam Flux:	118.3 Lumens
Beam Angle (0-180):	29.9 Degrees
Beam Angle (90-270):	29.9 Degrees
Field Angle (0-180):	52.2 Degrees
Field Angle (90-270):	52.2 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
6.00		19.3	3.07
10.0		6.93	5.11
14.0		3.54	7.15
18.0		2.14	9.20
22.0		1.43	11.2
26.0		1.03	13.3
30.0		0.770	15.3



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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	100.1	47.0%
FM	(30-60)	6.3	3.0%
FH	(60-80)	0.0	0.0%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	100.1	47.0%
BM	(30-60)	6.3	3.0%
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		212.8	100.0%
<b>BUG Rating</b>	<b>B0 U0 G0</b>		