



UL Verification Services Inc.  
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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**

**LSW4-M-30**

Order Number

12790877

Test Number

12790877.14

Test Date

2019-04-08

Prepared By

Josh Mitchell, 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 brass housing with circular brass domed faceplate, clear glass lens and PVC sleeve  
**Lamp:** One (1) Cree MHD-E 3000K LED with 30° medium acrylic optic  
**Mounting:** Step/Wall

**Luminaire**



**Luminaire Characteristics**

Luminous Length: 1.25 in.  
Luminous Width: 2.250 in.  
Luminous Height: 0.50 in.

**Summary of Results**

Roadway Classification: Type I, Very Short  
Cutoff Classification: Semicutoff  
BUG Rating: B0 U1 G0

**Test Conditions**

Test Temperature: 25.6 °C  
Voltage: 12.02 VAC  
Current: 0.4871 A  
Power: 5.780 W  
Power Factor: 0.987  
Frequency: 60 Hz  
Current THD: 9.30 %

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
25.6 °C	12.02 VAC	0.4871 A	5.780 W	0.987	60 Hz	9.30 %

### Summary of Results

#### Spacing Criteria

0-180: 0.75

90-270: 0.47

#### Total Lumen Output:

171.6 Lumens

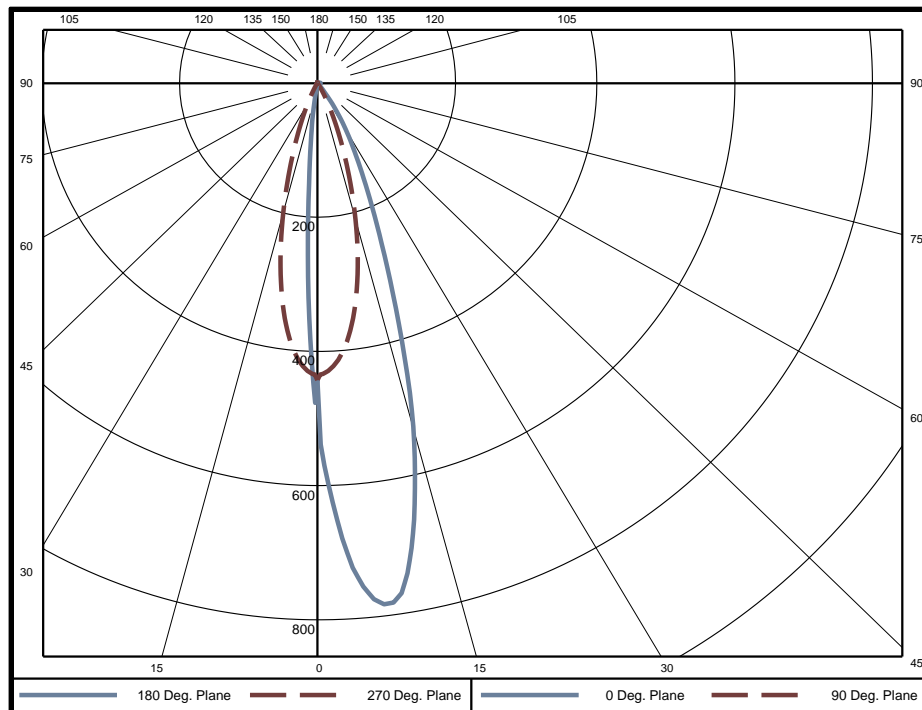
#### Luminaire Efficacy:

29.7 lm/w

#### Maximum Candela:

783 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	10.35	6.0%	60-65	0.61	0.4%	120-125	0.01	0.0%
5-10	27.99	16.3%	65-70	0.62	0.4%	125-130	0.01	0.0%
10-15	36.08	21.0%	70-75	0.62	0.4%	130-135	0.01	0.0%
15-20	32.39	18.9%	75-80	0.63	0.4%	135-140	0.02	0.0%
20-25	23.54	13.7%	80-85	0.67	0.4%	140-145	0.03	0.0%
25-30	15.80	9.2%	85-90	0.75	0.4%	145-150	0.06	0.0%
30-35	9.95	5.8%	90-95	0.81	0.5%	150-155	0.09	0.1%
35-40	4.65	2.7%	95-100	0.78	0.5%	155-160	0.13	0.1%
40-45	1.55	0.9%	100-105	0.59	0.3%	160-165	0.16	0.1%
45-50	0.80	0.5%	105-110	0.26	0.2%	165-170	0.16	0.1%
50-55	0.66	0.4%	110-115	0.04	0.0%	170-175	0.12	0.1%
55-60	0.64	0.4%	115-120	0.01	0.0%	175-180	0.04	0.0%

Zone	Lumens	% of Luminaire
0-40	161	93.7%
0-60	164	95.8%
0-90	168	98.1%
90-180	3	1.9%



**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	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9	442.9
	5	753.4	681.5	618.3	518.4	401.5	300.2	214.7	166.2	200.0	166.2	214.7	300.2	401.5	518.4	618.3
	10	742.0	736.1	650.2	503.0	312.5	159.8	73.7	46.2	55.0	46.2	73.7	159.8	312.5	503.0	650.2
	15	530.0	569.1	513.9	392.0	198.4	62.8	15.3	2.2	2.2	2.2	15.3	62.8	198.4	392.0	513.9
	20	292.3	345.4	328.6	256.6	101.3	17.2	1.8	1.2	1.2	1.2	1.8	17.2	101.3	256.6	328.6
	25	156.5	189.7	193.3	155.2	40.8	4.1	1.0	0.7	0.7	0.7	1.0	4.1	40.8	155.2	193.3
	30	85.3	106.7	114.1	91.5	12.2	1.5	0.7	0.5	0.6	0.5	0.7	1.5	12.2	91.5	114.1
	35	36.8	53.6	63.3	44.0	3.9	0.8	0.5	0.5	0.5	0.5	0.8	3.9	44.0	63.3	53.6
	40	10.4	15.4	21.0	11.9	1.8	0.6	0.5	0.5	0.5	0.5	0.6	1.8	11.9	21.0	15.4
	45	5.2	5.4	5.5	3.6	1.0	0.4	0.4	0.4	0.5	0.4	0.4	1.0	3.6	5.5	5.4
	50	4.0	3.6	3.4	2.5	0.8	0.3	0.3	0.3	0.3	0.3	0.3	0.8	2.5	3.4	3.6
	55	3.9	3.2	2.9	2.1	0.6	0.3	0.2	0.2	0.2	0.2	0.3	0.6	2.1	2.9	3.2
	60	3.8	3.0	2.7	2.0	0.5	0.2	0.1	0.1	0.1	0.1	0.2	0.5	2.0	2.7	3.0
	65	3.6	2.8	2.6	1.9	0.5	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.5	1.9	2.6
	70	3.6	2.8	2.5	1.8	0.5	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.5	1.8	2.5
	75	3.6	2.9	2.5	1.7	0.4	0.1	0.0	0.0	0.0	0.0	0.1	0.4	1.7	2.5	2.9
	80	3.7	3.0	2.5	1.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.6	2.5	3.0
	85	4.1	3.4	2.7	1.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.8	2.7	3.4
	90	4.5	3.7	3.1	2.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.1	3.1	3.7
	95	4.7	3.9	3.3	2.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	2.2	3.3	3.9
	100	4.2	3.6	3.0	1.9	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.9	3.0	3.6
	105	2.5	2.4	1.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.9	2.4
	110	0.4	0.5	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.5
	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	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
	140	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
	145	0.0	0.0	0.0	0.1	0.1	0.2	0.3	0.3	0.2	0.3	0.3	0.2	0.1	0.0	0.0
	150	0.0	0.0	0.1	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.3	0.1	0.1	0.0
	155	0.1	0.1	0.2	0.3	0.5	0.6	0.8	0.9	0.8	0.9	0.8	0.6	0.5	0.3	0.2
	160	0.4	0.4	0.5	0.6	0.8	1.0	1.1	1.2	1.2	1.2	1.1	1.0	0.8	0.6	0.5
	165	0.9	0.8	0.9	1.1	1.2	1.3	1.4	1.5	1.4	1.5	1.4	1.3	1.2	1.1	0.9
	170	1.6	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.5	1.6	1.6	1.5	1.5	1.5	1.5
	175	1.8	1.7	1.7	1.7	1.7	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.7	1.7	1.7
	180	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6

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

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
	0	244100	244100
	45	2881	3000
	55	2373	1689
	65	2508	1715
	75	3063	2003
	85	4674	2881



### 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	204	204	204	204	198	198	198	198	189	189	189	180	180	180	172	172	172	168
1	195	190	186	182	190	186	183	179	179	176	173	172	169	167	165	164	162	159
2	187	179	173	167	183	176	170	165	170	165	161	164	161	157	159	156	154	151
3	179	169	162	156	175	167	160	154	162	156	151	157	153	149	153	149	146	143
4	172	161	152	146	169	159	151	145	155	148	143	151	146	141	147	143	139	137
5	165	153	144	138	162	151	143	137	148	141	136	145	139	135	142	137	133	131
6	159	146	137	131	157	145	137	131	142	135	130	139	133	128	137	132	127	125
7	153	140	131	125	151	139	130	125	136	129	124	134	128	123	132	126	122	120
8	148	134	126	120	146	133	125	119	131	124	119	129	123	118	127	122	117	115
9	143	129	120	115	141	128	120	114	126	119	114	125	118	113	123	117	113	111
10	138	124	116	110	136	123	115	110	122	115	110	120	114	109	119	113	109	107

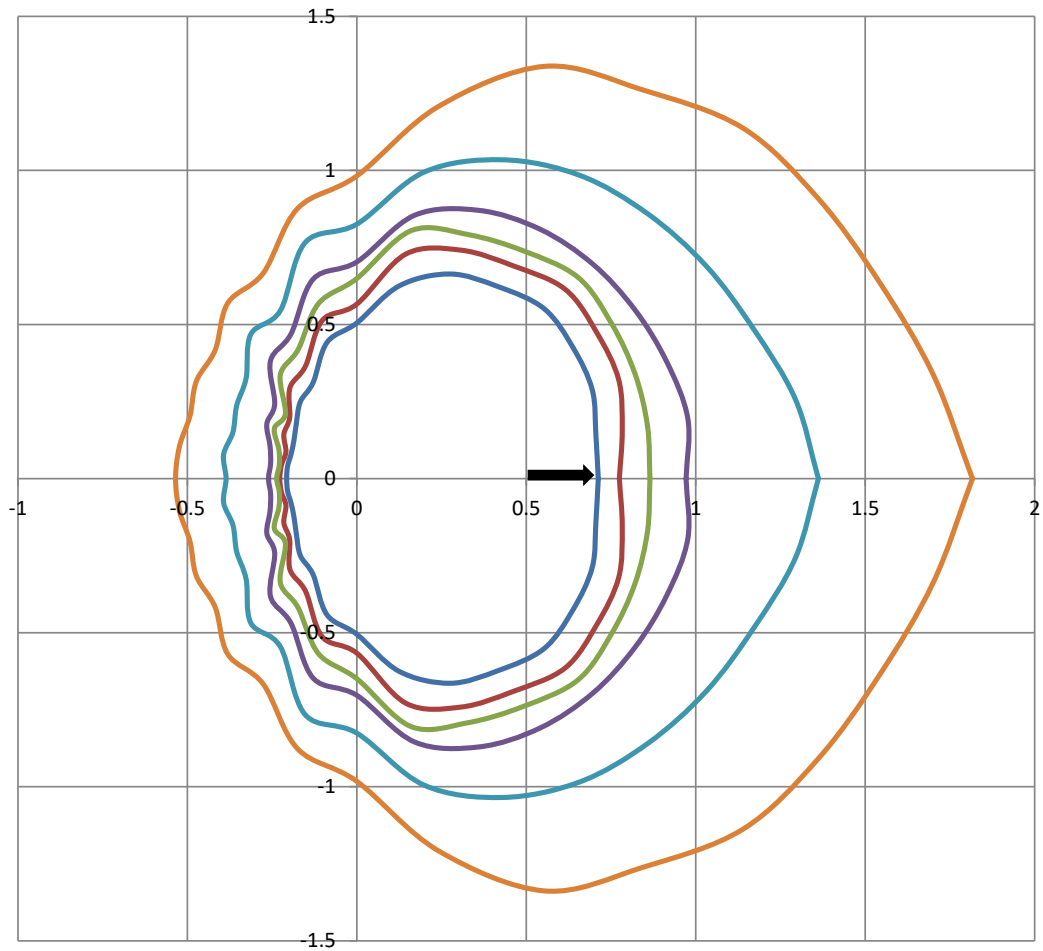
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	442.9 Candela
Central Cone Intensity:	436 Candela
Beam Flux:	109.7 Lumens
Beam Angle (0-180):	26.8 Degrees
Beam Angle (90-270):	28.0 Degrees
Field Angle (0-180):	44.6 Degrees
Field Angle (90-270):	49.2 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		27.7	2.18
6.00		12.3	3.27
8.00		6.92	4.37
10.0		4.43	5.46
12.0		3.08	6.55
14.0		2.26	7.64
16.0		1.73	8.73



## ISOFootcandle Plot

Mounting Height - 2 Feet



Grid Lines in Units of Mounting Height

5 fc    2 fc    1 fc    0.5 fc    0.2 fc    0.1 fc



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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	130.1	75.3%
FM	(30-60)	18.1	10.5%
FH	(60-80)	2.4	1.4%
FVH	(80-90)	1.4	0.8%
BL	(0-30)	16.8	9.7%
BM	(30-60)	0.6	0.3%
BH	(60-80)	0.1	0.1%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	1.6	0.9%
UH	(100-180)	1.8	1.0%
Total		172.9	100.0%
<b>BUG Rating</b>	<b>B0 U1 G0</b>		