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## Photometric Test Report

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

**Prepared For**  
**Auroralight Inc**

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

**Catalog Number**  
**HSL16/HSL20-LM-8-N-30 (8W, 20° NARROW OPTIC, 3000K)**

Order Number  
13931356  
Test Number  
13931356.14

Test Date

2021-07-29

Prepared By

Josh Mitchell, Technician

Approved By

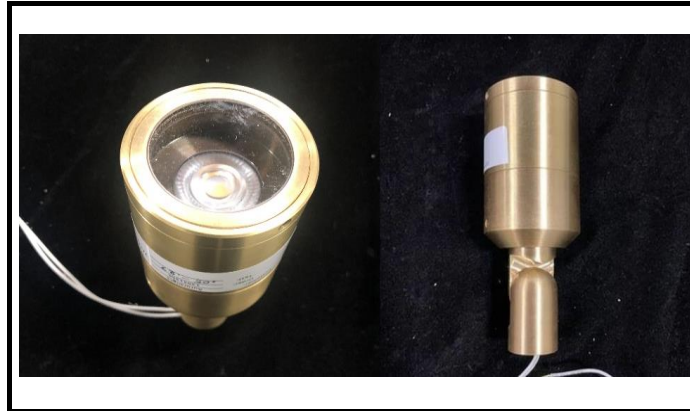
Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** Cylindrical brass body with adjustable knuckle  
**Lamp:** One white LED  
**Mounting:** Flood  
**Ballast/Driver:** Integral  
**Note:** Report extrapolated using data from Test Numbers 13931356.07, 13931356.08, and 13931356.09

#### Luminaire



#### Luminaire Characteristics

Luminous Diameter: 1.88 in.

#### Summary of Results

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

#### Test Conditions

Test Temperature: 24.1 °C  
Voltage: 12.20 VAC  
Current: 0.7024 A  
Power: 7.824 W  
Power Factor: 0.905  
Frequency: 60 Hz  
Current THD: 41.9 %

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
24.1 °C	12.20 VAC	0.7024 A	7.824 W	0.905	60 Hz	41.9 %

### Summary of Results

#### Spacing Criteria

0-180: 0.34  
90-270: 0.34

#### Total Lumen Output:

511.5 Lumens

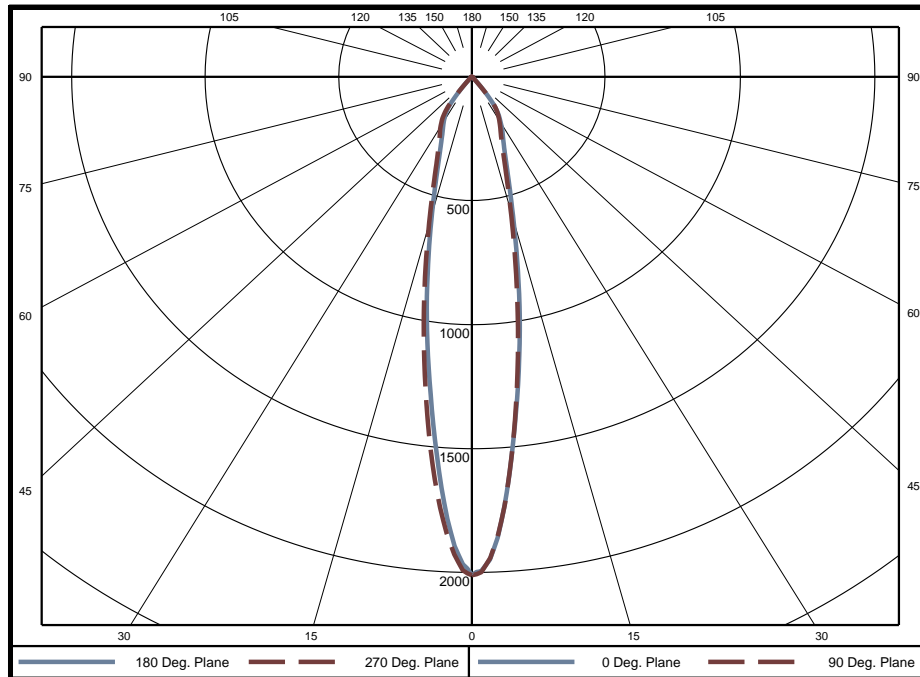
#### Luminaire Efficacy:

65.4 lm/w

#### Maximum Candela:

1871 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	39.73	7.8%	60-65	1.10	0.2%	120-125	0	0.0%
5-10	84.13	16.4%	65-70	0.95	0.2%	125-130	0	0.0%
10-15	85.75	16.8%	70-75	0.78	0.2%	130-135	0	0.0%
15-20	71.98	14.1%	75-80	0.53	0.1%	135-140	0	0.0%
20-25	62.11	12.1%	80-85	0.30	0.1%	140-145	0	0.0%
25-30	57.91	11.3%	85-90	0.11	0.0%	145-150	0	0.0%
30-35	53.39	10.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	35.67	7.0%	95-100	0	0.0%	155-160	0	0.0%
40-45	9.76	1.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	3.67	0.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	2.19	0.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	1.44	0.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	491	95.9%
0-60	508	99.3%
0-90	512	100.0%
90-180	0	0.0%



### Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal 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	1871	1871	1871	1871	1871	1871	1871	1871	1871	1871	1871	1871	1871	1871	1871	1871
5	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483	1483
10	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945	945
15	556	556	556	556	556	556	556	556	556	556	556	556	556	556	556	556
20	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351	351
25	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256	256
30	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206	206
35	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156
40	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54	54
45	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
50	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
55	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
60	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
65	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
70	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
85	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
95	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
105	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
115	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
125	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
135	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
145	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
155	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
165	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
175	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

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

Horizontal Angle (Degrees)

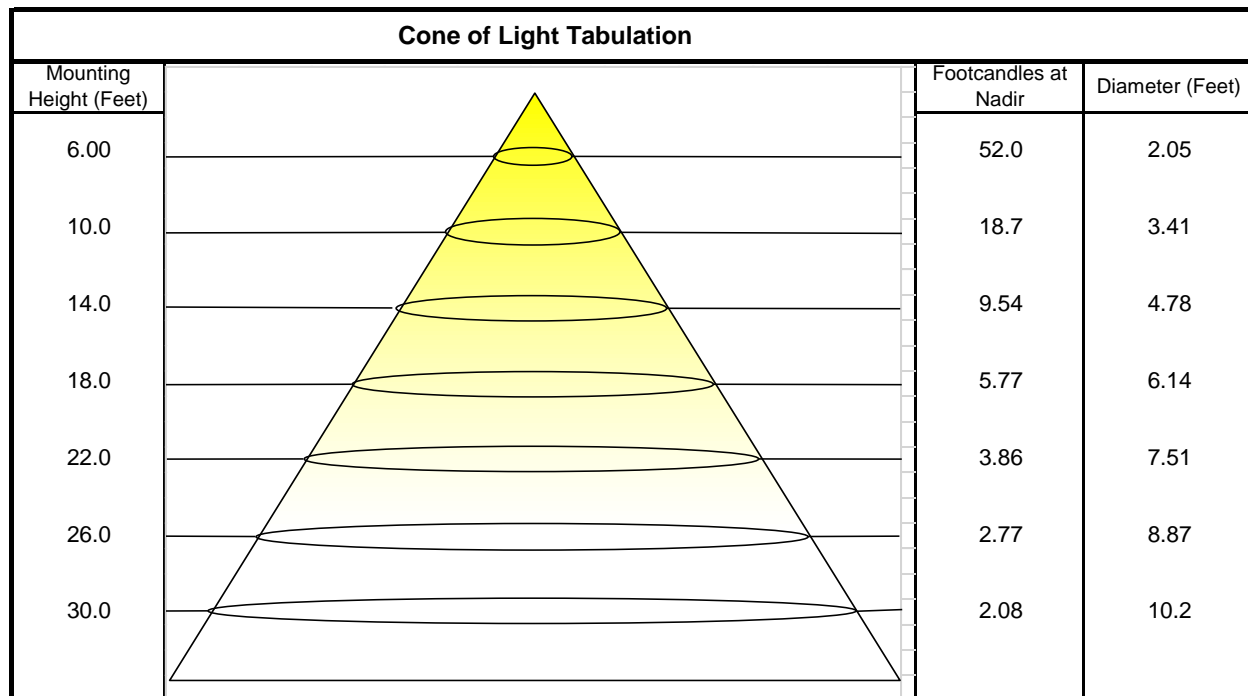
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	1045000	1045000	1045000
45	9806	9806	9806
55	3643	3643	3643
65	2692	2692	2692
75	2717	2717	2717
85	2246	2246	2246



### Utilization of Lumens - Zonal Cavity Method

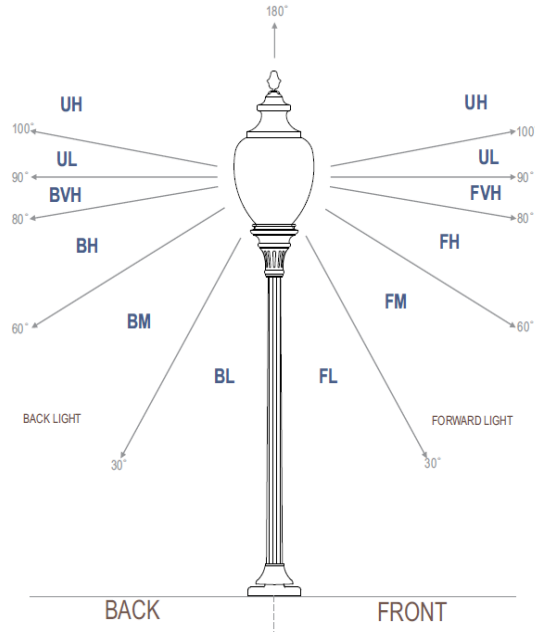
Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	609	609	609	609	595	595	595	595	568	568	568	544	544	544	522	522	522	511
1	584	571	559	549	571	560	550	540	539	531	524	520	514	508	503	498	494	485
2	559	537	518	503	548	528	511	497	512	498	486	497	486	476	483	474	466	458
3	535	506	484	466	526	499	479	462	486	469	455	474	460	448	463	451	441	434
4	513	479	454	435	504	474	451	433	463	443	428	453	436	423	444	430	418	411
5	492	455	429	409	484	450	426	408	441	420	404	433	415	401	426	410	397	391
6	472	433	406	387	465	429	404	386	421	399	383	415	395	381	408	391	378	372
7	454	412	386	367	447	409	384	366	403	381	364	397	377	363	392	374	361	354
8	436	394	368	350	431	391	366	349	386	364	347	381	361	346	377	358	345	339
9	420	377	351	334	415	375	350	333	371	348	332	366	346	331	362	344	330	324
10	405	362	337	320	400	360	336	319	356	334	318	353	332	318	349	330	317	311

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1871 Candela
Central Cone Intensity:	1722 Candela
Beam Flux:	126.4 Lumens
Beam Angle (0-180):	20.2 Degrees
Beam Angle (90-270):	20.2 Degrees
Field Angle (0-180):	64.0 Degrees
Field Angle (90-270):	64.0 Degrees





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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	216.1	39.3%
FM	(30-60)	57.0	10.4%
FH	(60-80)	1.8	0.3%
FVH	(80-90)	0.2	0.0%
BL	(0-30)	216.1	39.3%
BM	(30-60)	57.0	10.4%
BH	(60-80)	1.8	0.3%
BVH	(80-90)	0.2	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		550.2	100.0%
<b>BUG Rating</b>	<b>B1 U0 G0</b>		