



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

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

Catalog Number
HSL16/HSL20-LM-4-W-30 (4W, 40° WIDE OPTIC, 3000K)

Order Number
13931356
Test Number
13931356.27

Test Date

2021-07-30

Prepared By

Josh Mitchell, Technician

Approved By

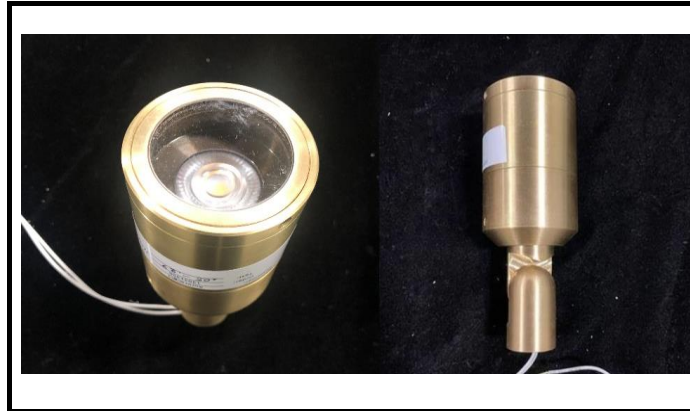
Alexa Lambert, Project Handler

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 13931356.05, 13931356.08, and 13931356.12

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: 25.0 °C
Voltage: 12.21 VAC
Current: 0.3481 A
Power: 3.706 W
Power Factor: 0.872
Frequency: 60 Hz
Current THD: 47.8 %

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
25.0 °C	12.21 VAC	0.3481 A	3.706 W	0.872	60 Hz	47.8 %

Summary of Results

Spacing Criteria

0-180: 0.66
90-270: 0.66

Total Lumen Output:

347.5 Lumens

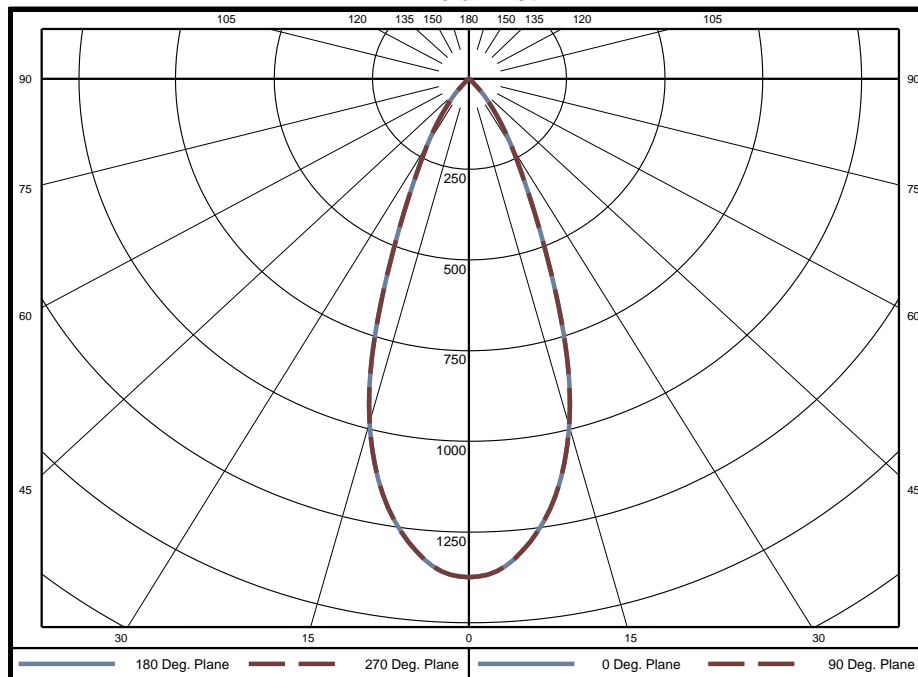
Luminaire Efficacy:

93.8 lm/w

Maximum Candela:

706 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	16.61	4.8%	60-65	0.27	0.1%	120-125	0	0.0%
5-10	46.45	13.4%	65-70	0.23	0.1%	125-130	0	0.0%
10-15	66.87	19.2%	70-75	0.18	0.1%	130-135	0	0.0%
15-20	70.72	20.4%	75-80	0.13	0.0%	135-140	0	0.0%
20-25	55.18	15.9%	80-85	0.07	0.0%	140-145	0	0.0%
25-30	38.07	11.0%	85-90	0.03	0.0%	145-150	0	0.0%
30-35	26.06	7.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	15.72	4.5%	95-100	0	0.0%	155-160	0	0.0%
40-45	7.07	2.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	2.36	0.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.98	0.3%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.47	0.1%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	336	96.6%
0-60	347	99.7%
0-90	347	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	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8
	5	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9	682.9
	10	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3	617.3
	15	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3
	20	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7	346.7
	25	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7	196.7
	30	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3	115.3
	35	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4	65.4
	40	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4	32.4
	45	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1	9.1
	50	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	3.6
	55	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	60	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	65	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	70	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	75	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	80	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
	85	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	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/m²)

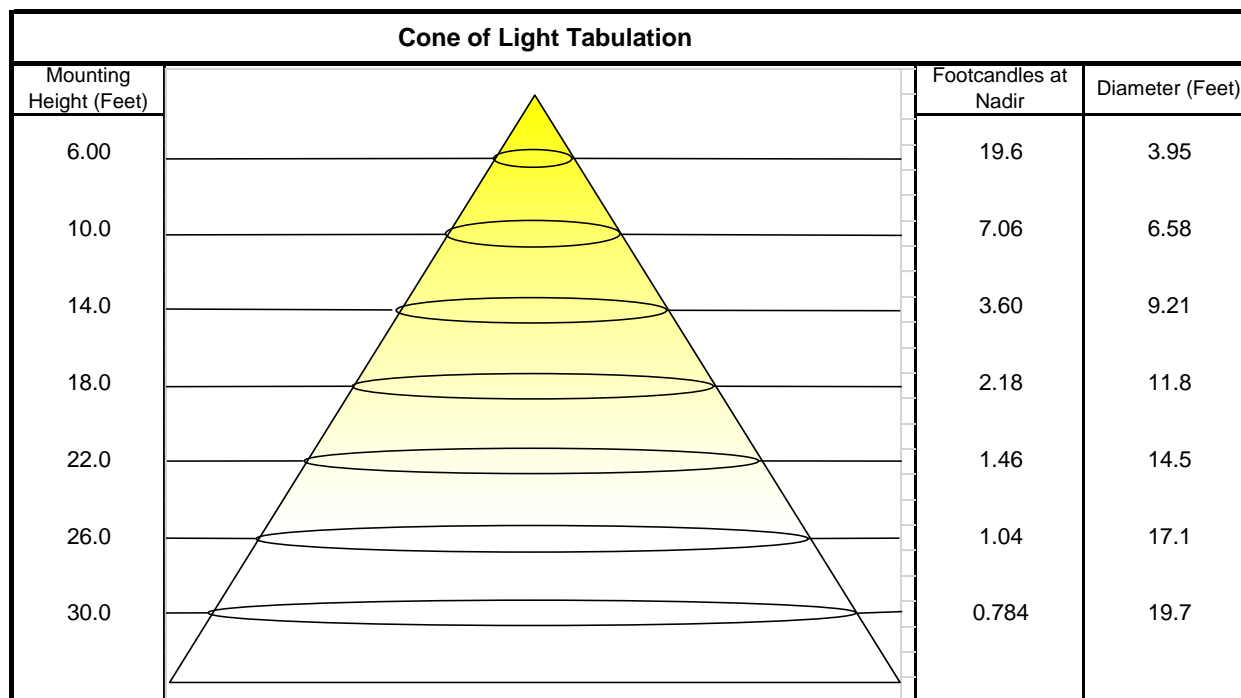
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
	0	394100	394100
	45	7185	7185
	55	1397	1397
	65	647	647
	75	646	646
	85	556	556



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	414	414	414	414	404	404	404	404	386	386	386	370	370	370	355	355	355	347
1	397	388	381	374	388	381	374	368	367	361	356	354	350	346	342	339	336	330
2	380	365	353	343	373	360	348	339	349	339	332	338	331	325	329	323	318	312
3	364	345	330	318	358	340	327	315	331	320	310	323	314	306	316	308	301	296
4	349	327	310	297	344	323	307	296	316	303	292	309	298	289	303	293	286	281
5	335	310	293	280	330	307	291	278	301	287	276	295	283	274	290	280	271	267
6	322	295	277	264	317	292	276	263	287	273	262	283	270	260	278	267	258	254
7	309	281	263	250	305	279	262	250	275	260	249	271	257	247	267	255	246	242
8	297	268	250	238	293	267	250	238	263	248	237	260	246	236	257	244	235	231
9	286	257	239	227	282	255	238	227	252	237	226	249	235	225	246	234	225	221
10	275	246	229	217	272	245	228	217	242	227	216	239	225	216	237	224	215	211

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	705.8 Candela
Central Cone Intensity:	698 Candela
Beam Flux:	198.6 Lumens
Beam Angle (0-180):	39.7 Degrees
Beam Angle (90-270):	39.7 Degrees
Field Angle (0-180):	68.8 Degrees
Field Angle (90-270):	68.8 Degrees





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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	286.3	42.3%
FM	(30-60)	51.6	7.6%
FH	(60-80)	0.8	0.1%
FVH	(80-90)	0.1	0.0%
BL	(0-30)	286.3	42.3%
BM	(30-60)	51.6	7.6%
BH	(60-80)	0.8	0.1%
BVH	(80-90)	0.1	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		677.4	100.0%
BUG Rating	B1 U0 G0		