



UL Verification Services Inc.
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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-4-N-30 (4W, 20° NARROW OPTIC, 3000K)

Order Number
13931356
Test Number
13931356.24

Test Date

2021-07-29

Prepared By

Josh Mitchell, Technician

Approved By

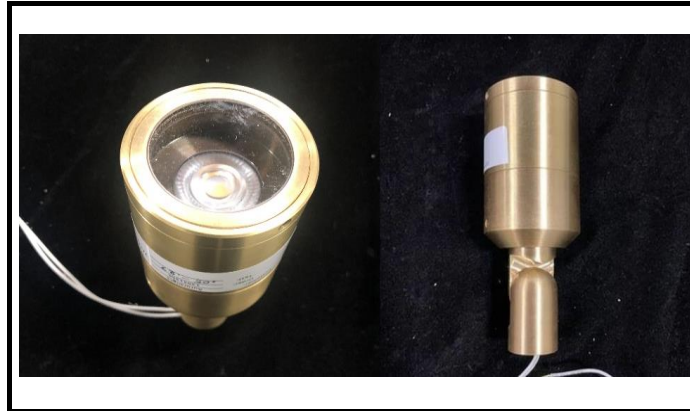
Alexa Lambert, Project Handler

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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 13931356.09

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: 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: 0.34
90-270: 0.34

Total Lumen Output:

282.3 Lumens

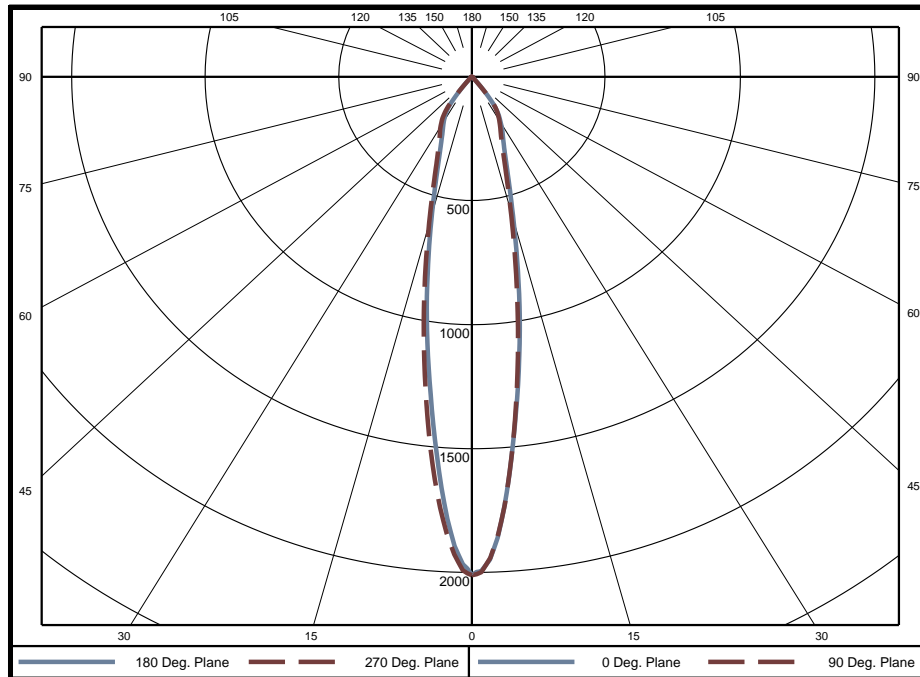
Luminaire Efficacy:

76.2 lm/w

Maximum Candela:

1032 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	21.93	7.8%	60-65	0.61	0.2%	120-125	0	0.0%
5-10	46.43	16.4%	65-70	0.52	0.2%	125-130	0	0.0%
10-15	47.33	16.8%	70-75	0.43	0.2%	130-135	0	0.0%
15-20	39.73	14.1%	75-80	0.30	0.1%	135-140	0	0.0%
20-25	34.28	12.1%	80-85	0.16	0.1%	140-145	0	0.0%
25-30	31.96	11.3%	85-90	0.06	0.0%	145-150	0	0.0%
30-35	29.47	10.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	19.69	7.0%	95-100	0	0.0%	155-160	0	0.0%
40-45	5.39	1.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	2.02	0.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	1.21	0.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.79	0.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	271	95.9%
0-60	280	99.3%
0-90	282	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	1032	1032	1032	1032	1032	1032	1032	1032	1032	1032	1032	1032	1032	1032	1032
	5	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818
	10	522	522	522	522	522	522	522	522	522	522	522	522	522	522	522
	15	307	307	307	307	307	307	307	307	307	307	307	307	307	307	307
	20	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194
	25	141	141	141	141	141	141	141	141	141	141	141	141	141	141	141
	30	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114
	35	86	86	86	86	86	86	86	86	86	86	86	86	86	86	86
	40	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	45	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	50	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	55	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	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)

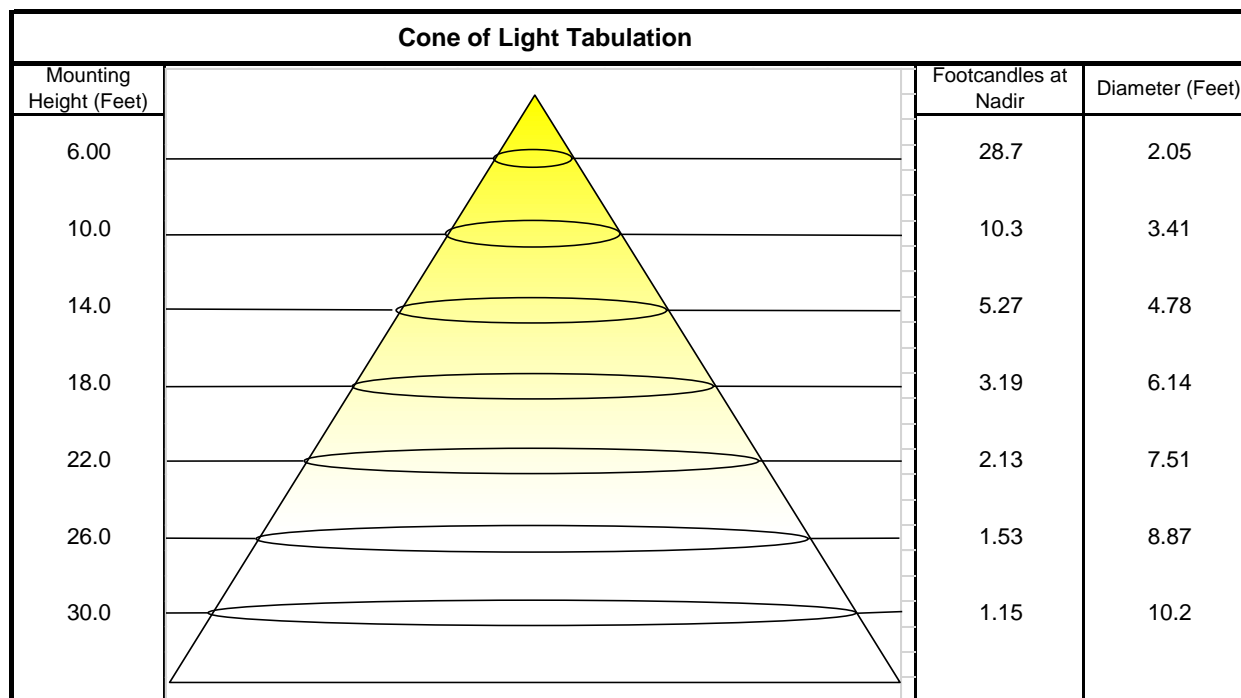
Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
		0	45	90
	0	576500	576500	576500
	45	5412	5412	5412
	55	2010	2010	2010
	65	1485	1485	1485
	75	1500	1500	1500
	85	1239	1239	1239



Utilization of Lumens - Zonal Cavity Method

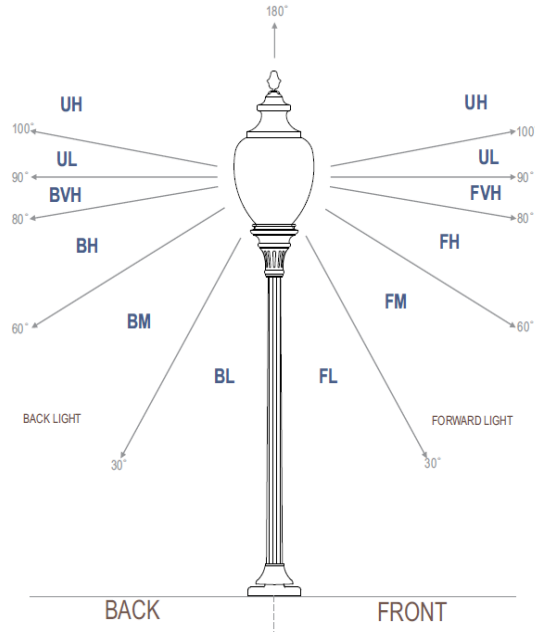
Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	336	336	336	336	328	328	328	328	314	314	314	300	300	300	288	288	288	282
1	322	315	309	303	315	309	303	298	298	293	289	287	284	280	278	275	272	268
2	309	296	286	278	302	291	282	274	282	275	268	274	268	263	267	262	257	253
3	295	279	267	257	290	276	264	255	268	259	251	262	254	247	256	249	244	239
4	283	264	251	240	278	261	249	239	255	245	236	250	241	233	245	237	231	227
5	271	251	237	226	267	248	235	225	244	232	223	239	229	221	235	226	219	216
6	261	239	224	214	257	237	223	213	233	220	211	229	218	210	225	216	209	205
7	250	228	213	203	247	226	212	202	222	210	201	219	208	200	216	207	199	196
8	241	218	203	193	238	216	202	193	213	201	192	210	199	191	208	198	190	187
9	232	208	194	184	229	207	193	184	205	192	183	202	191	183	200	190	182	179
10	223	200	186	176	221	199	185	176	197	184	176	195	183	175	193	182	175	172

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1032 Candela
Central Cone Intensity:	950 Candela
Beam Flux:	69.8 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%
BUG Rating	B1 U0 G0		