



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300



Indoor Distribution Test Report

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

Prepared For
LED Waves, LLC

Tiago Zeitoune
The Esquire Building at 41st ST
4100 1st Avenue 3rd Fl North
Brooklyn, NY 11232

Catalog Number
PR15-6-V1-W4000K-D

Order Number
10974084
Test Number
1163212

Test Date

2015-09-29

Prepared By

Kevin Rodriguez, Technician

Approved By

Kyle Spaziani, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: White steel / aluminum housing, frosted plastic lens enclosure
Lamp: 64 white LEDs
Mounting: Recessed
Ballast/Driver: LED20W-7-C0700-LE-1

Luminaire



Luminaire Characteristics

Luminous Diameter: 4.78 in.

Summary of Results

Total Luminaire Output:	771.9 Lumens
Luminaire Efficacy:	71 lm/w
Maximum Candela:	271 Candela

Electrical Data

Test Temperature:	26.0 °C
Voltage:	120.0 VAC
Current:	0.09233 A
Power:	10.87 W
Power Factor:	0.981
Frequency:	60 Hz
Current THD:	12.4 %

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
26.0 °C	120.0 VAC	0.09233 A	10.87 W	0.981	60 Hz	12.4 %

Summary of Results

Spacing Criteria

0-180: 1.25
90-270: 1.25

Total Lumen Output:

771.9 Lumens

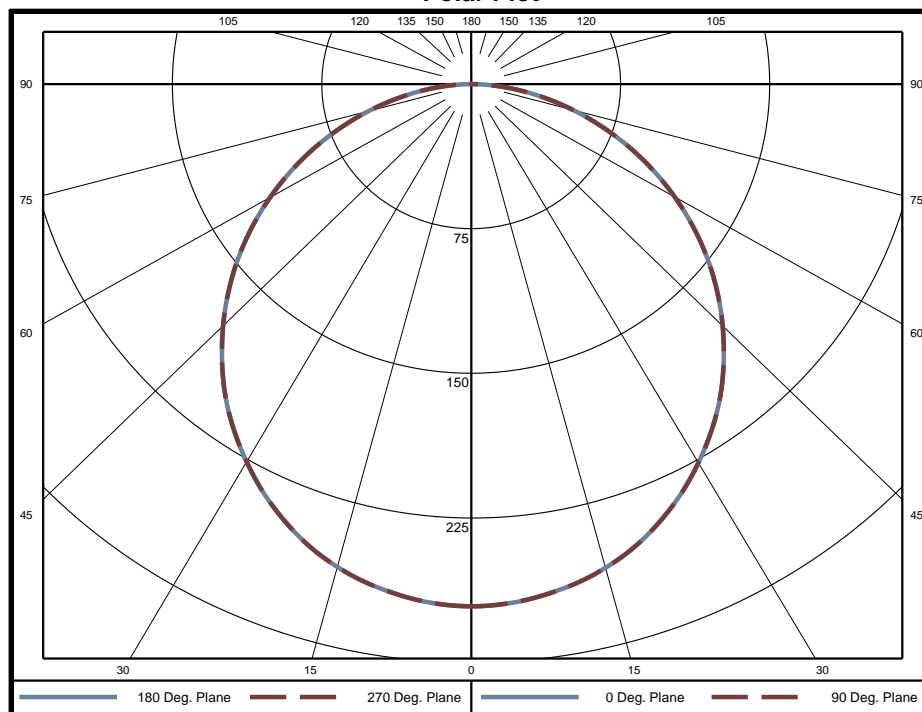
Luminaire Efficacy:

71.0 lm/w

Maximum Candela:

271 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	6.46	0.8%	60-65	51.96	6.7%	120-125	0	0.0%
5-10	19.13	2.5%	65-70	43.24	5.6%	125-130	0	0.0%
10-15	31.16	4.0%	70-75	33.45	4.3%	130-135	0	0.0%
15-20	42.10	5.5%	75-80	23.20	3.0%	135-140	0	0.0%
20-25	51.49	6.7%	80-85	13.12	1.7%	140-145	0	0.0%
25-30	59.08	7.7%	85-90	3.83	0.5%	145-150	0	0.0%
30-35	64.65	8.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	68.10	8.8%	95-100	0	0.0%	155-160	0	0.0%
40-45	69.11	9.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	67.96	8.8%	105-110	0	0.0%	165-170	0	0.0%
50-55	64.64	8.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	59.21	7.7%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	342	44.3%
0-60	603	78.1%
0-90	772	100.0%
90-180	0	0.0%



Candela Tabulation
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	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8	270.8
5	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4	269.4
10	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5	265.5
15	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6	259.6
20	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1	251.1
25	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0	240.0
30	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9	226.9
35	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3	212.3
40	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8	195.8
45	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7	177.7
50	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7	158.7
55	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6	138.6
60	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6	117.6
65	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2	96.2
70	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6	74.6
75	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6	53.6
80	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5	33.5
85	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2
90	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	0.3
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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	0.0

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

	0	45	90
0	23390	23390	23390
45	21700	21700	21700
55	20880	20880	20880
65	19670	19670	19670
75	17870	17870	17870
85	15030	15030	15030



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	919	919	919	919	898	898	898	898	858	858	858	821	821	821	788	788	788	772
1	838	800	766	736	816	782	752	724	749	724	701	719	698	679	691	675	659	643
2	761	696	642	597	740	681	632	590	654	612	576	628	593	563	605	576	550	533
3	693	610	546	495	674	598	539	491	575	524	482	553	510	474	533	497	465	448
4	634	540	472	419	616	530	466	416	510	454	410	492	444	405	475	434	399	382
5	583	482	412	360	566	474	408	358	457	399	354	442	391	350	427	383	347	330
6	538	434	364	314	523	427	361	313	413	354	310	400	347	307	387	341	305	288
7	499	394	325	278	485	387	322	276	375	317	274	364	311	272	353	306	270	255
8	464	359	293	247	452	354	291	247	343	286	245	334	282	243	325	277	242	227
9	434	330	266	223	423	325	264	222	316	260	221	308	256	220	300	253	218	204
10	407	304	243	202	397	300	241	201	292	238	200	285	235	199	278	232	198	185

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	16.9	4.98
6.00	7.52	7.48
8.00	4.23	9.97
10.0	2.71	12.5
12.0	1.88	15.0
14.0	1.38	17.4
16.0	1.06	19.9

Cone of Light Plot

