



7036 Snowdrift Road Suite 200  
Allentown, PA 18106  
610-774-1300

## Integrating Sphere Test Report

Relevant Standards  
IES LM-79-2008  
ANSI C78.377-2011, ANSI C82.77-2002  
CIE 13.3-1995, CIE 15-2004

Prepared For  
**LED Waves, LLC**  
Kori Lozinski  
The Esquire Building  
41st Street, 4100 1st Avenue 3rd Floor North  
Brooklyn, NY 11232

Catalog Number  
**Owl Pack 70 Watt**

Order Number  
**10017853**  
Test Number  
**339644**

Test Date

2013-11-23

Prepared By

Handwritten signature of Jeff A. Smith Jr.

Jeff Smith Jr., Project Handler

Approved By

Handwritten signature of Jeffrey M. Lockner.

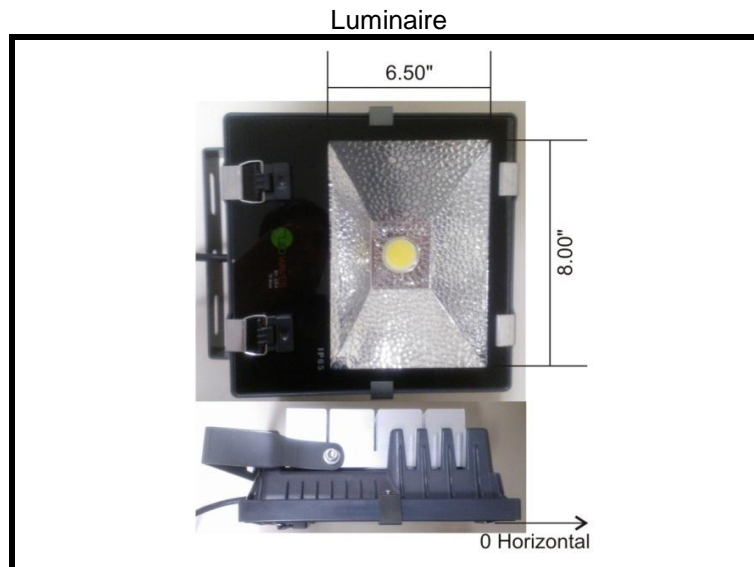
Jeffrey Lockner, Engineer

The results contained in this report pertain only to the tested sample.  
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.



7036 Snowdrift Road Suite 200  
Allentown, PA 18106  
610-774-1300

Luminaire Description: Molded plastic housing, cast aluminum heatsink, patterned specular reflector, clear glass enclosure  
Catalog Number: Owl Pack 70 Watt  
Lamp: One white LED array  
Mounting: Horizontal  
Ballast/Driver: One Inventronics TRC-075S140ST



#### Summary of Results

Radiant Flux:	20960 mW
Luminous Flux:	6896 Lumens
Luminaire Efficacy:	121 Lumens/Watt
CCT:	4989 K
CRI (Ra):	74.2
Chromaticity (x):	0.3460
Chromaticity (y):	0.3595
Chromaticity (u):	0.2090
Chromaticity (v):	0.3257
Duv:	0.0036

#### Test Conditions

Test Temperature:	25.6 °C
Voltage:	120.0 VAC
Current:	0.4803 A
Power:	57.11 W
Power Factor:	0.991
Frequency:	60 Hz
Current THD:	7.25 %

Testing was performed in a 3-meter integrating sphere using the 4 $\pi$  geometry method.

Absorption correction was employed for this measurement.

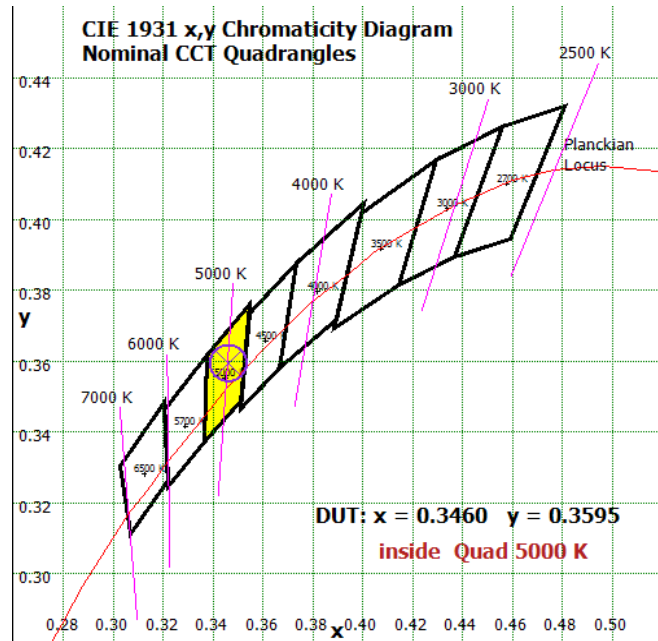
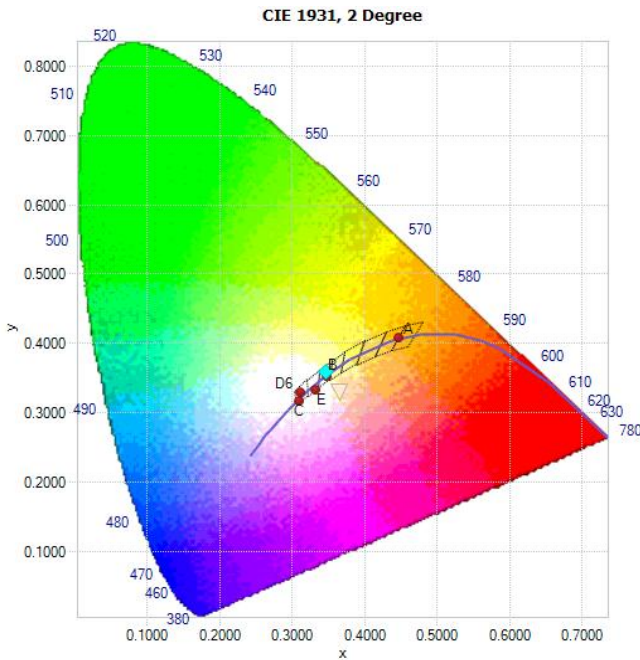


Chromaticity Coordinates

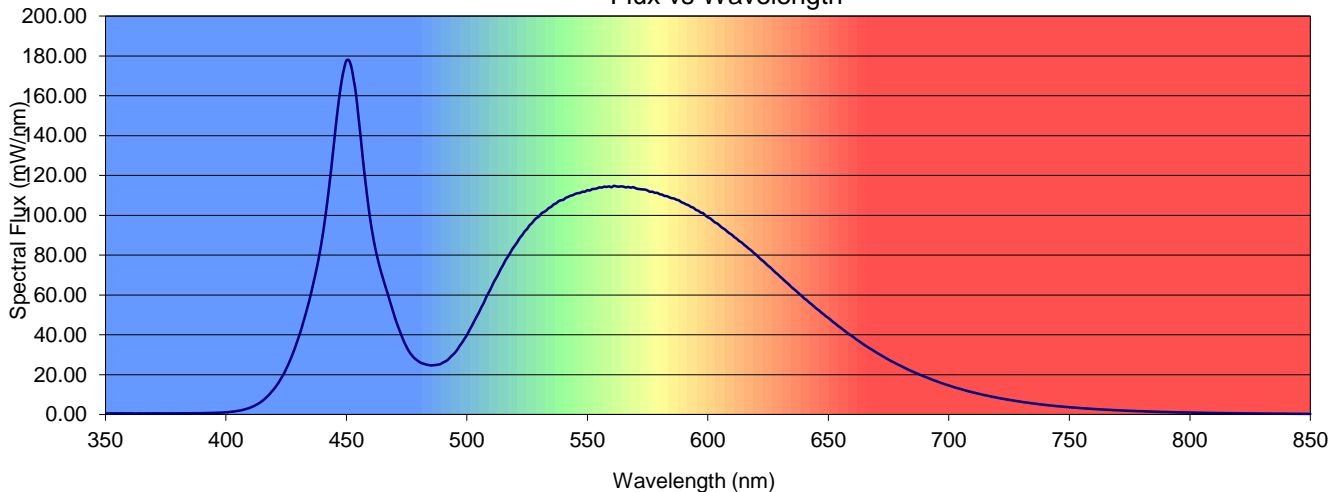
x	y	u	v	u'	v'	Duv
0.3460	0.3595	0.2090	0.3257	0.2090	0.4886	0.0036

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
74.2	71.6	78.8	82.7	73.7	71.1	69.4	84.7	61.9	-14.3	48.1	68.8	39.8	72.7	90.1



Flux vs Wavelength





Spectral Power Distribution

$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm	$\lambda$ (nm)	mW/nm
350	0.556	422	16.3	494	29.8	566	114	638	60.5	710	11.1	782	1.54		
351	0.540	423	18.3	495	31.0	567	114	639	59.5	711	10.8	783	1.50		
352	0.568	424	20.3	496	32.5	568	114	640	58.3	712	10.5	784	1.47		
353	0.554	425	22.9	497	34.4	569	114	641	57.4	713	10.2	785	1.43		
354	0.579	426	25.4	498	36.1	570	114	642	56.3	714	9.96	786	1.39		
355	0.581	427	28.3	499	38.0	571	113	643	55.4	715	9.71	787	1.35		
356	0.572	428	31.3	500	39.8	572	113	644	54.3	716	9.44	788	1.31		
357	0.582	429	34.6	501	42.2	573	113	645	53.2	717	9.17	789	1.29		
358	0.554	430	38.1	502	44.4	574	113	646	52.4	718	8.93	790	1.26		
359	0.562	431	41.7	503	46.7	575	112	647	51.2	719	8.69	791	1.23		
360	0.559	432	45.9	504	49.0	576	112	648	50.3	720	8.45	792	1.19		
361	0.570	433	50.0	505	51.2	577	112	649	49.3	721	8.22	793	1.16		
362	0.495	434	54.5	506	53.8	578	111	650	48.5	722	7.99	794	1.13		
363	0.541	435	59.1	507	56.0	579	111	651	47.5	723	7.78	795	1.10		
364	0.550	436	64.4	508	58.8	580	111	652	46.5	724	7.55	796	1.05		
365	0.560	437	69.6	509	61.1	581	110	653	45.5	725	7.35	797	1.04		
366	0.542	438	75.2	510	63.4	582	110	654	44.5	726	7.16	798	1.02		
367	0.585	439	81.6	511	66.1	583	110	655	43.7	727	6.95	799	0.991		
368	0.573	440	88.8	512	68.2	584	109	656	42.7	728	6.76	800	0.969		
369	0.571	441	96.9	513	70.4	585	109	657	41.8	729	6.59	801	0.945		
370	0.577	442	106	514	72.9	586	108	658	40.9	730	6.40	802	0.926		
371	0.586	443	116	515	75.0	587	108	659	40.0	731	6.20	803	0.896		
372	0.589	444	127	516	77.4	588	107	660	39.2	732	6.04	804	0.881		
373	0.577	445	138	517	79.2	589	107	661	38.3	733	5.87	805	0.875		
374	0.555	446	149	518	81.2	590	106	662	37.4	734	5.71	806	0.839		
375	0.578	447	159	519	83.3	591	105	663	36.6	735	5.55	807	0.821		
376	0.563	448	167	520	84.9	592	105	664	35.7	736	5.39	808	0.804		
377	0.583	449	173	521	86.7	593	104	665	34.9	737	5.24	809	0.780		
378	0.569	450	178	522	88.7	594	104	666	34.1	738	5.08	810	0.763		
379	0.564	451	178	523	90.1	595	103	667	33.3	739	4.95	811	0.732		
380	0.572	452	175	524	92.0	596	102	668	32.6	740	4.82	812	0.722		
381	0.608	453	168	525	93.1	597	101	669	31.9	741	4.68	813	0.699		
382	0.603	454	161	526	95.0	598	101	670	31.1	742	4.54	814	0.691		
383	0.616	455	150	527	96.1	599	99.9	671	30.3	743	4.43	815	0.673		
384	0.646	456	138	528	97.6	600	99.0	672	29.6	744	4.30	816	0.661		
385	0.611	457	126	529	98.7	601	98.4	673	29.0	745	4.18	817	0.651		
386	0.640	458	116	530	99.5	602	97.4	674	28.2	746	4.08	818	0.630		
387	0.658	459	106	531	101	603	96.4	675	27.5	747	3.97	819	0.621		
388	0.666	460	97.2	532	102	604	95.8	676	26.9	748	3.86	820	0.605		
389	0.661	461	89.7	533	102	605	94.7	677	26.3	749	3.77	821	0.583		
390	0.688	462	83.4	534	104	606	93.7	678	25.6	750	3.67	822	0.575		
391	0.710	463	78.1	535	104	607	93.0	679	25.0	751	3.57	823	0.569		
392	0.721	464	73.2	536	105	608	91.9	680	24.4	752	3.47	824	0.544		
393	0.762	465	69.1	537	106	609	90.9	681	23.8	753	3.38	825	0.539		
394	0.798	466	65.0	538	107	610	90.2	682	23.2	754	3.29	826	0.518		
395	0.817	467	61.2	539	108	611	89.0	683	22.6	755	3.19	827	0.506		
396	0.877	468	57.2	540	108	612	88.2	684	22.0	756	3.11	828	0.506		
397	0.909	469	53.1	541	109	613	87.1	685	21.5	757	3.03	829	0.495		
398	0.948	470	49.2	542	109	614	86.4	686	21.0	758	2.94	830	0.485		
399	1.03	471	45.6	543	110	615	85.2	687	20.5	759	2.86	831	0.465		
400	1.09	472	42.4	544	110	616	84.3	688	20.0	760	2.79	832	0.457		
401	1.20	473	39.2	545	111	617	83.2	689	19.5	761	2.71	833	0.446		
402	1.34	474	36.3	546	111	618	82.4	690	19.0	762	2.63	834	0.435		
403	1.46	475	33.9	547	111	619	81.2	691	18.5	763	2.57	835	0.424		
404	1.63	476	31.7	548	112	620	80.2	692	18.0	764	2.50	836	0.411		
405	1.83	477	30.0	549	112	621	79.0	693	17.5	765	2.43	837	0.412		
406	2.04	478	28.6	550	113	622	77.9	694	17.1	766	2.37	838	0.401		
407	2.33	479	27.5	551	112	623	76.9	695	16.7	767	2.31	839	0.400		
408	2.64	480	26.6	552	113	624	75.8	696	16.2	768	2.24	840	0.384		
409	3.00	481	25.9	553	113	625	74.6	697	15.8	769	2.18	841	0.380		
410	3.42	482	25.5	554	114	626	73.7	698	15.3	770	2.13	842	0.364		
411	3.93	483	25.1	555	114	627	72.5	699	14.9	771	2.07	843	0.357		
412	4.48	484	24.9	556	114	628	71.3	700	14.6	772	2.01	844	0.358		
413	5.14	485	24.7	557	114	629	70.3	701	14.2	773	1.96	845	0.342		
414	5.87	486	24.8	558	114	630	69.2	702	13.8	774	1.91	846	0.344		
415	6.71	487	24.8	559	115	631	68.1	703	13.4	775	1.84	847	0.332		
416	7.74	488	25.0	560	114	632	67.0	704	13.1	776	1.80	848	0.321		
417	8.83	489	25.3	561	115	633	65.9	705	12.7	777	1.77	849	0.318		
418	10.0	490	26.0	562	114	634	64.8	706	12.4	778	1.72	850	0.316		
419	11.5	491	26.6	563	114	635	63.7	707	12.1	779	1.67				
420	12.9	492	27.4	564	115	636	62.6	708	11.7	780	1.63				
421	14.5	493	28.6	565	114	637	61.6	709	11.4	781	1.60				