



UL Verification Services Inc.  
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## 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  
**Optolum**  
Karen Baker  
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Tempe, AZ 85018  
United States

Catalog Number  
**SL-358U-D-A059400**

Order Number  
**10472056**  
Test Number  
**735340**

Test Date

2014-08-28

Prepared By

Handwritten signature of Derek Smarr in black ink.

Derek Smarr, Technician

Approved By

Handwritten signature of Zachary Mooney in black ink.

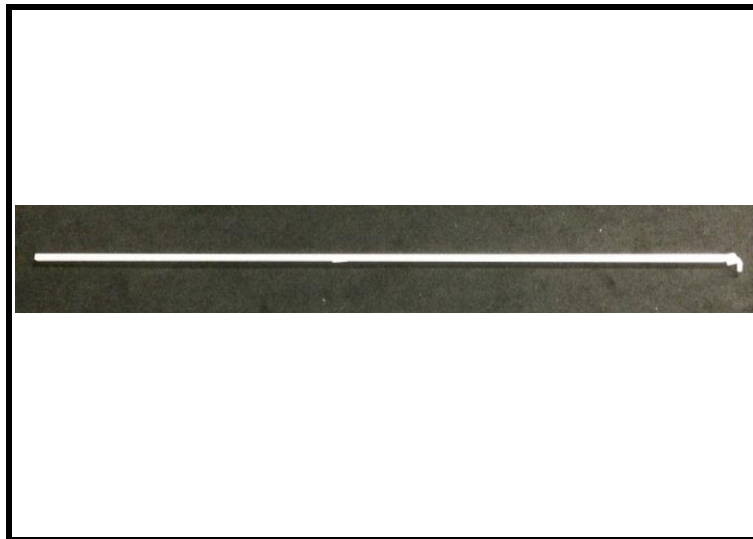
Zachary Mooney, Engineer Project Associate

The results contained in this report pertain only to the tested sample.  
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Luminaire Description: Grey aluminum housing, frosted lens  
Catalog Number: SL-358U-D-A059400  
Lamp: White LEDs  
Mounting: Surface  
Ballast/Driver: One High Perfection Tech. LP1090-24-GG-290

Luminaire



#### Summary of Results

Radiant Flux: 6385 mW  
Luminous Flux: 1994 Lumens  
Luminaire Efficacy: 49.1 Lumens/Watt  
CCT: 3391 K  
CRI (Ra): 83.4  
Chromaticity (x): 0.4099  
Chromaticity (y): 0.3899  
Chromaticity (u): 0.2390  
Chromaticity (v): 0.3411  
Duv: -0.0018

#### Test Conditions

Test Temperature: 24.6 °C  
Voltage: 120.0 VAC  
Current: 0.3463 A  
Power: 40.57 W  
Power Factor: 0.976  
Frequency: 60 Hz  
Current THD: 12.2 %

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

Absorption correction was employed for this measurement.

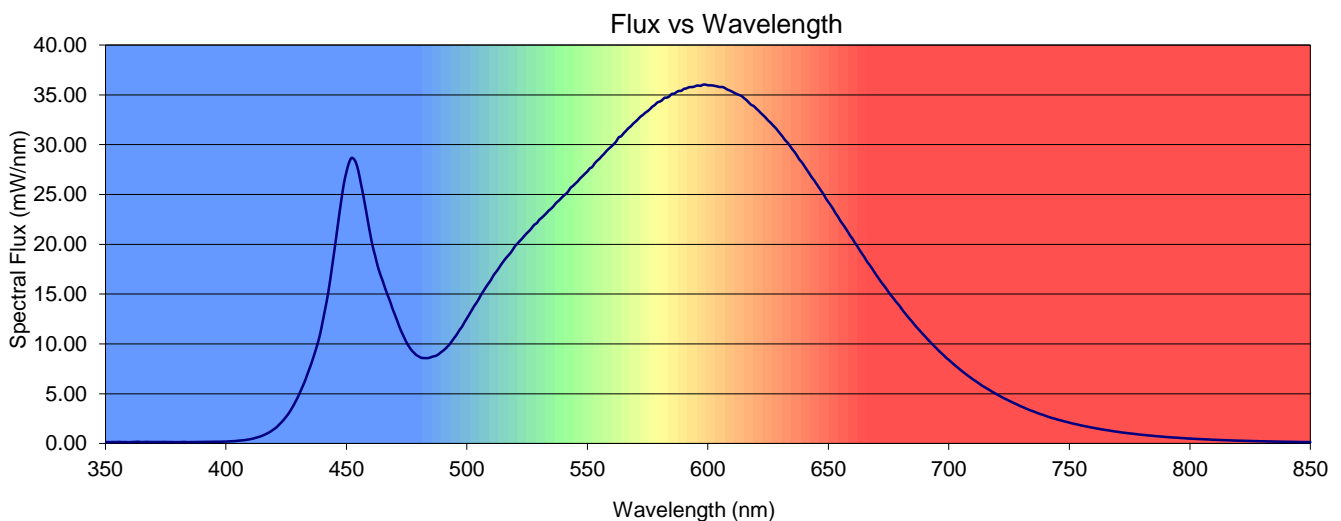
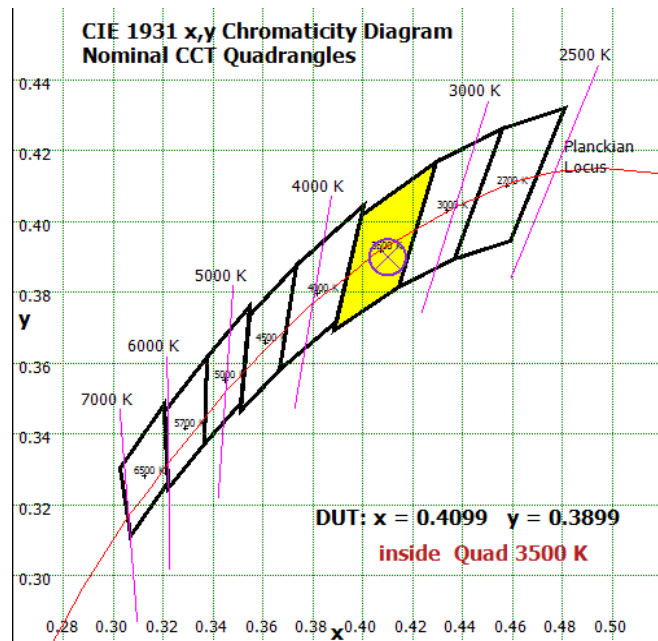
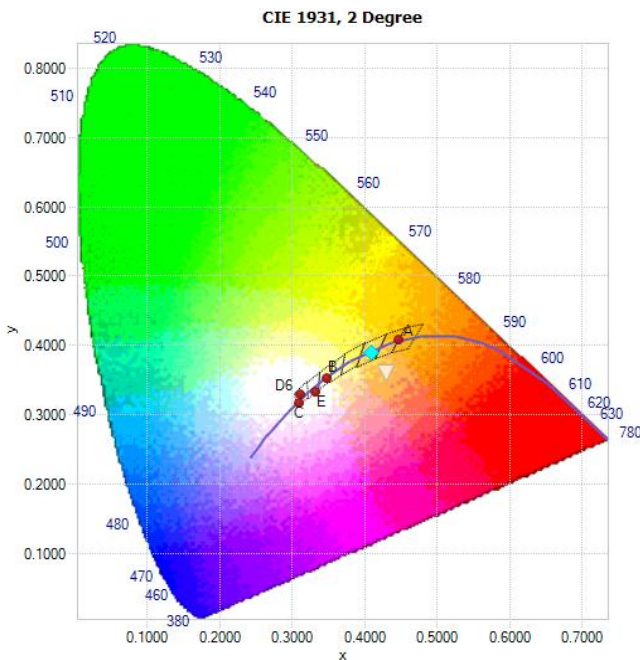


Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.4099	0.3899	0.2390	0.3411	0.2390	0.5116	-0.0018

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
83.4	81.8	89.7	94.7	80.8	81.1	84.9	86.6	67.3	21.9	74.7	77.9	63.7	83.5	96.9





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
350	0.135	422	1.88	494	10.3	566	31.4	638	28.5	710	6.44	782	0.831
351	0.148	423	2.12	495	10.7	567	31.6	639	28.2	711	6.28	783	0.805
352	0.140	424	2.39	496	11.0	568	31.8	640	27.9	712	6.12	784	0.787
353	0.149	425	2.69	497	11.4	569	32.1	641	27.5	713	5.95	785	0.763
354	0.144	426	3.01	498	11.7	570	32.3	642	27.1	714	5.77	786	0.740
355	0.154	427	3.39	499	12.2	571	32.5	643	26.8	715	5.64	787	0.719
356	0.157	428	3.80	500	12.6	572	32.8	644	26.4	716	5.49	788	0.701
357	0.138	429	4.26	501	13.0	573	33.0	645	26.1	717	5.35	789	0.680
358	0.147	430	4.73	502	13.4	574	33.2	646	25.7	718	5.20	790	0.658
359	0.139	431	5.27	503	13.8	575	33.4	647	25.4	719	5.07	791	0.641
360	0.131	432	5.82	504	14.1	576	33.6	648	25.0	720	4.92	792	0.622
361	0.149	433	6.40	505	14.5	577	33.8	649	24.6	721	4.79	793	0.604
362	0.156	434	7.08	506	15.0	578	34.0	650	24.2	722	4.66	794	0.590
363	0.176	435	7.72	507	15.4	579	34.2	651	23.9	723	4.53	795	0.577
364	0.167	436	8.42	508	15.7	580	34.3	652	23.5	724	4.41	796	0.557
365	0.141	437	9.18	509	16.1	581	34.5	653	23.1	725	4.29	797	0.545
366	0.149	438	9.97	510	16.4	582	34.7	654	22.8	726	4.18	798	0.528
367	0.162	439	10.9	511	16.9	583	34.7	655	22.3	727	4.05	799	0.505
368	0.155	440	12.0	512	17.2	584	34.8	656	22.0	728	3.95	800	0.496
369	0.152	441	13.3	513	17.5	585	35.1	657	21.7	729	3.83	801	0.484
370	0.146	442	14.5	514	17.9	586	35.1	658	21.3	730	3.72	802	0.468
371	0.151	443	16.0	515	18.2	587	35.3	659	20.9	731	3.62	803	0.458
372	0.153	444	17.6	516	18.5	588	35.4	660	20.6	732	3.51	804	0.447
373	0.147	445	19.4	517	18.8	589	35.4	661	20.2	733	3.41	805	0.435
374	0.154	446	21.1	518	19.1	590	35.6	662	19.8	734	3.31	806	0.424
375	0.156	447	22.9	519	19.4	591	35.6	663	19.4	735	3.23	807	0.412
376	0.145	448	24.6	520	19.8	592	35.8	664	19.0	736	3.14	808	0.402
377	0.147	449	26.1	521	20.1	593	35.8	665	18.7	737	3.04	809	0.387
378	0.143	450	27.2	522	20.3	594	35.8	666	18.3	738	2.95	810	0.378
379	0.137	451	28.1	523	20.6	595	35.9	667	18.0	739	2.89	811	0.371
380	0.139	452	28.6	524	20.9	596	35.9	668	17.6	740	2.79	812	0.357
381	0.138	453	28.6	525	21.1	597	35.9	669	17.2	741	2.70	813	0.349
382	0.155	454	28.2	526	21.4	598	36.0	670	16.9	742	2.62	814	0.341
383	0.158	455	27.3	527	21.7	599	36.0	671	16.5	743	2.55	815	0.334
384	0.140	456	26.1	528	22.0	600	36.0	672	16.2	744	2.49	816	0.323
385	0.139	457	24.9	529	22.1	601	36.0	673	15.9	745	2.41	817	0.316
386	0.145	458	23.6	530	22.4	602	35.9	674	15.5	746	2.35	818	0.304
387	0.145	459	22.2	531	22.7	603	35.9	675	15.2	747	2.28	819	0.296
388	0.154	460	20.9	532	22.9	604	35.8	676	14.9	748	2.22	820	0.289
389	0.152	461	19.7	533	23.1	605	35.8	677	14.6	749	2.16	821	0.282
390	0.157	462	18.8	534	23.4	606	35.8	678	14.3	750	2.09	822	0.278
391	0.163	463	17.8	535	23.6	607	35.7	679	14.0	751	2.03	823	0.268
392	0.164	464	17.0	536	23.8	608	35.5	680	13.7	752	1.98	824	0.262
393	0.164	465	16.4	537	24.1	609	35.4	681	13.3	753	1.93	825	0.258
394	0.172	466	15.6	538	24.3	610	35.3	682	13.0	754	1.87	826	0.249
395	0.173	467	15.0	539	24.6	611	35.2	683	12.7	755	1.81	827	0.243
396	0.174	468	14.4	540	24.8	612	35.1	684	12.4	756	1.76	828	0.238
397	0.179	469	13.6	541	25.0	613	35.0	685	12.2	757	1.71	829	0.228
398	0.178	470	13.0	542	25.3	614	34.9	686	11.9	758	1.66	830	0.224
399	0.190	471	12.4	543	25.7	615	34.7	687	11.6	759	1.61	831	0.221
400	0.189	472	11.7	544	25.9	616	34.5	688	11.3	760	1.58	832	0.208
401	0.207	473	11.1	545	26.1	617	34.2	689	11.0	761	1.53	833	0.208
402	0.221	474	10.6	546	26.3	618	34.0	690	10.8	762	1.48	834	0.206
403	0.237	475	10.1	547	26.6	619	33.9	691	10.5	763	1.44	835	0.197
404	0.251	476	9.73	548	26.8	620	33.6	692	10.3	764	1.40	836	0.193
405	0.279	477	9.37	549	27.1	621	33.4	693	10.0	765	1.36	837	0.187
406	0.303	478	9.13	550	27.3	622	33.2	694	9.76	766	1.33	838	0.180
407	0.321	479	8.89	551	27.6	623	32.9	695	9.53	767	1.29	839	0.180
408	0.352	480	8.75	552	27.8	624	32.7	696	9.27	768	1.24	840	0.171
409	0.391	481	8.61	553	28.1	625	32.4	697	9.05	769	1.21	841	0.171
410	0.430	482	8.58	554	28.4	626	32.2	698	8.82	770	1.18	842	0.168
411	0.478	483	8.57	555	28.6	627	31.9	699	8.58	771	1.14	843	0.162
412	0.543	484	8.58	556	28.9	628	31.7	700	8.39	772	1.10	844	0.159
413	0.618	485	8.65	557	29.1	629	31.4	701	8.18	773	1.07	845	0.154
414	0.683	486	8.74	558	29.4	630	31.1	702	7.96	774	1.05	846	0.147
415	0.776	487	8.80	559	29.6	631	30.8	703	7.75	775	1.02	847	0.149
416	0.882	488	8.92	560	29.8	632	30.5	704	7.56	776	0.992	848	0.143
417	0.999	489	9.11	561	30.1	633	30.2	705	7.35	777	0.963	849	0.143
418	1.13	490	9.30	562	30.3	634	29.9	706	7.17	778	0.932	850	0.137
419	1.28	491	9.49	563	30.7	635	29.6	707	6.98	779	0.903		
420	1.45	492	9.74	564	30.8	636	29.3	708	6.80	780	0.881		
421	1.63	493	10.0	565	31.1	637	28.9	709	6.62	781	0.855		