



UL Verification Services Inc.
7036 Snowdrift Road
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
LF Illumination LLC
Scott Hershman
9200 Deering Avenue
Chatsworth, CA 91311
United States

Catalog Number
8431-16L-9030-N-MW

Order Number
10581561
Test Number
835675

Test Date

2014-12-03

Prepared By

Javier Caban

Javier Caban, Technician

Approved By

Eric M. Gaudreau

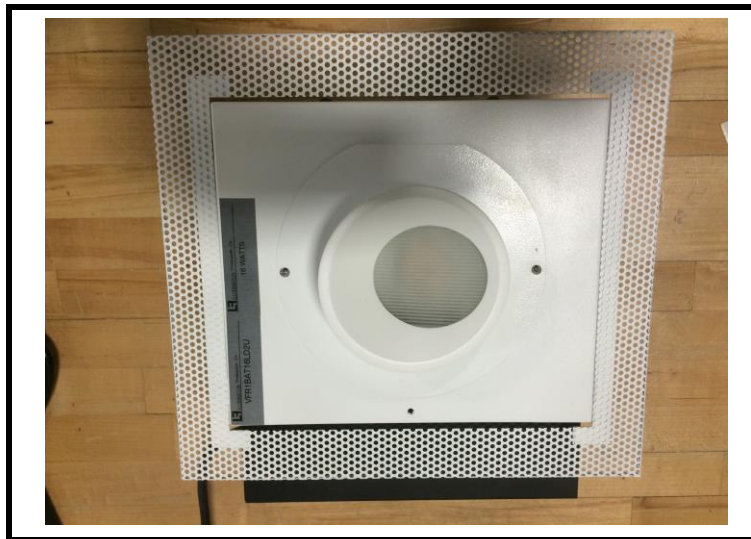
Eric Gaudreau, Engineering Project Handler

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.



Luminaire Description: Black steel housing, black aluminum heatsink, patterned specular reflector above frosted glass enclosure, white aluminum trim
Catalog Number: 8431-16L-9030-N-MW
Lamp: One white LED
Mounting: Recessed
Ballast/Driver: One ERP ESS030W-0500-42

Luminaire



Summary of Results

Radiant Flux:	1955 mW
Luminous Flux:	554.4 Lumens
Luminaire Efficacy:	35.4 Lumens/Watt
CCT:	3001 K
CRI (Ra):	91.9
Chromaticity (x):	0.4328
Chromaticity (y):	0.3959
Chromaticity (u):	0.2514
Chromaticity (v):	0.3450
Duv:	-0.0028

Test Conditions

Test Temperature:	24.4 °C
Voltage:	120.0 VAC
Current:	0.1326 A
Power:	15.64 W
Power Factor:	0.984
Frequency:	60 Hz
Current THD:	14.6 %

Testing was performed in a 2-meter integrating sphere using the 4 π geometry method.

Absorption correction was employed for this measurement.

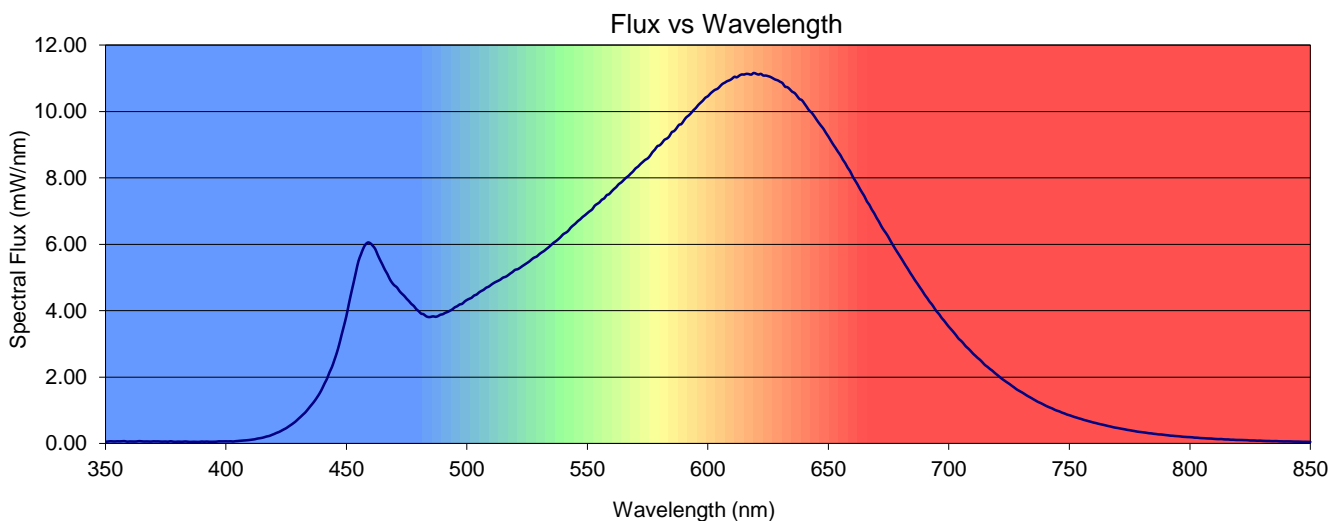
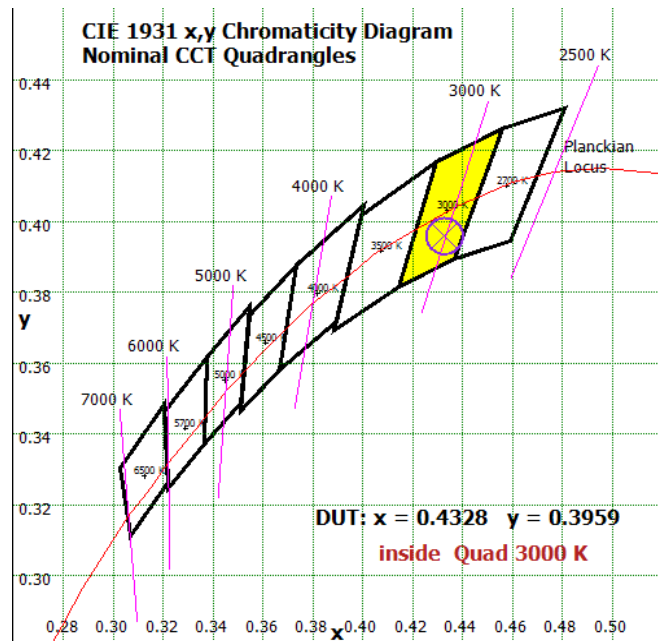
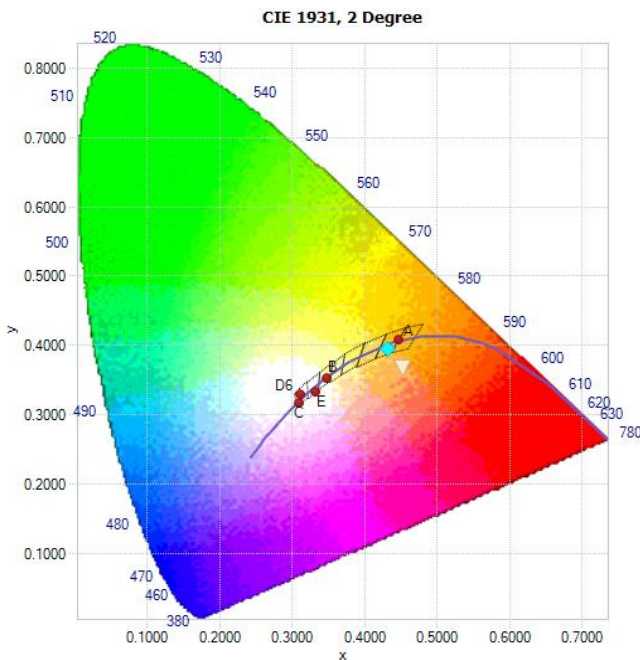


Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.4328	0.3959	0.2514	0.3450	0.2514	0.5175	-0.0028

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
91.9	94.0	99.2	94.5	90.1	93.9	95.6	88.3	79.9	60.2	99.0	90.6	83.1	96.2	97.9





Spectral Power Distribution

λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm	λ (nm)	mW/nm
350	0.0535	422	0.346	494	4.04	566	8.00	638	10.4	710	2.71	782	0.323
351	0.0587	423	0.384	495	4.10	567	8.05	639	10.3	711	2.64	783	0.311
352	0.0674	424	0.424	496	4.13	568	8.13	640	10.2	712	2.57	784	0.305
353	0.0638	425	0.461	497	4.19	569	8.20	641	10.1	713	2.52	785	0.293
354	0.0616	426	0.512	498	4.20	570	8.29	642	10.0	714	2.44	786	0.286
355	0.0664	427	0.560	499	4.27	571	8.34	643	9.97	715	2.36	787	0.275
356	0.0639	428	0.612	500	4.32	572	8.41	644	9.87	716	2.31	788	0.272
357	0.0690	429	0.669	501	4.36	573	8.48	645	9.76	717	2.25	789	0.263
358	0.0706	430	0.737	502	4.39	574	8.54	646	9.66	718	2.20	790	0.255
359	0.0564	431	0.803	503	4.46	575	8.58	647	9.57	719	2.13	791	0.247
360	0.0609	432	0.872	504	4.48	576	8.66	648	9.47	720	2.07	792	0.236
361	0.0603	433	0.940	505	4.55	577	8.77	649	9.35	721	2.01	793	0.233
362	0.0588	434	1.03	506	4.59	578	8.85	650	9.24	722	1.95	794	0.226
363	0.0621	435	1.12	507	4.63	579	8.95	651	9.12	723	1.90	795	0.221
364	0.0711	436	1.21	508	4.69	580	8.98	652	9.00	724	1.85	796	0.215
365	0.0662	437	1.30	509	4.72	581	9.05	653	8.90	725	1.80	797	0.204
366	0.0605	438	1.41	510	4.78	582	9.15	654	8.79	726	1.75	798	0.200
367	0.0615	439	1.52	511	4.83	583	9.18	655	8.68	727	1.69	799	0.195
368	0.0601	440	1.66	512	4.87	584	9.25	656	8.55	728	1.64	800	0.192
369	0.0583	441	1.82	513	4.90	585	9.37	657	8.44	729	1.59	801	0.187
370	0.0646	442	1.96	514	4.94	586	9.41	658	8.31	730	1.55	802	0.177
371	0.0627	443	2.15	515	5.00	587	9.49	659	8.20	731	1.51	803	0.175
372	0.0634	444	2.30	516	5.02	588	9.60	660	8.05	732	1.46	804	0.167
373	0.0582	445	2.51	517	5.06	589	9.62	661	7.93	733	1.42	805	0.162
374	0.0567	446	2.73	518	5.12	590	9.72	662	7.81	734	1.38	806	0.160
375	0.0598	447	2.98	519	5.17	591	9.82	663	7.68	735	1.34	807	0.154
376	0.0543	448	3.27	520	5.23	592	9.88	664	7.56	736	1.29	808	0.150
377	0.0661	449	3.55	521	5.25	593	9.95	665	7.44	737	1.25	809	0.148
378	0.0573	450	3.84	522	5.29	594	10.0	666	7.29	738	1.22	810	0.140
379	0.0506	451	4.19	523	5.34	595	10.1	667	7.19	739	1.19	811	0.136
380	0.0561	452	4.53	524	5.39	596	10.2	668	7.05	740	1.15	812	0.133
381	0.0546	453	4.85	525	5.44	597	10.3	669	6.94	741	1.11	813	0.135
382	0.0533	454	5.17	526	5.49	598	10.3	670	6.80	742	1.08	814	0.127
383	0.0605	455	5.49	527	5.55	599	10.4	671	6.68	743	1.05	815	0.122
384	0.0565	456	5.69	528	5.60	600	10.5	672	6.54	744	1.01	816	0.122
385	0.0488	457	5.87	529	5.63	601	10.5	673	6.43	745	0.986	817	0.114
386	0.0504	458	6.00	530	5.70	602	10.6	674	6.32	746	0.963	818	0.115
387	0.0525	459	6.05	531	5.75	603	10.7	675	6.21	747	0.928	819	0.108
388	0.0486	460	6.03	532	5.80	604	10.7	676	6.07	748	0.905	820	0.107
389	0.0500	461	5.95	533	5.86	605	10.8	677	5.95	749	0.873	821	0.106
390	0.0588	462	5.85	534	5.92	606	10.8	678	5.83	750	0.852	822	0.105
391	0.0535	463	5.68	535	5.98	607	10.9	679	5.72	751	0.828	823	0.102
392	0.0584	464	5.53	536	6.05	608	10.9	680	5.61	752	0.801	824	0.0993
393	0.0534	465	5.38	537	6.10	609	10.9	681	5.49	753	0.781	825	0.0911
394	0.0521	466	5.23	538	6.16	610	11.0	682	5.37	754	0.757	826	0.0903
395	0.0526	467	5.11	539	6.23	611	11.0	683	5.26	755	0.738	827	0.0890
396	0.0555	468	4.95	540	6.30	612	11.0	684	5.13	756	0.712	828	0.0835
397	0.0639	469	4.84	541	6.35	613	11.1	685	5.03	757	0.693	829	0.0860
398	0.0643	470	4.76	542	6.40	614	11.1	686	4.91	758	0.672	830	0.0811
399	0.0641	471	4.70	543	6.49	615	11.1	687	4.81	759	0.654	831	0.0777
400	0.0658	472	4.59	544	6.56	616	11.1	688	4.70	760	0.632	832	0.0756
401	0.0631	473	4.52	545	6.62	617	11.1	689	4.59	761	0.616	833	0.0751
402	0.0666	474	4.45	546	6.69	618	11.1	690	4.48	762	0.596	834	0.0721
403	0.0601	475	4.36	547	6.75	619	11.2	691	4.38	763	0.580	835	0.0719
404	0.0698	476	4.29	548	6.82	620	11.1	692	4.27	764	0.564	836	0.0734
405	0.0755	477	4.20	549	6.87	621	11.1	693	4.19	765	0.547	837	0.0669
406	0.0831	478	4.14	550	6.94	622	11.1	694	4.08	766	0.528	838	0.0653
407	0.0885	479	4.05	551	7.00	623	11.1	695	3.97	767	0.514	839	0.0619
408	0.0940	480	3.99	552	7.05	624	11.1	696	3.89	768	0.494	840	0.0631
409	0.101	481	3.91	553	7.16	625	11.1	697	3.78	769	0.479	841	0.0630
410	0.108	482	3.89	554	7.21	626	11.0	698	3.70	770	0.468	842	0.0620
411	0.119	483	3.84	555	7.26	627	11.0	699	3.61	771	0.454	843	0.0575
412	0.128	484	3.81	556	7.34	628	11.0	700	3.51	772	0.440	844	0.0568
413	0.147	485	3.81	557	7.38	629	10.9	701	3.43	773	0.427	845	0.0566
414	0.159	486	3.83	558	7.48	630	10.9	702	3.35	774	0.411	846	0.0539
415	0.171	487	3.82	559	7.51	631	10.9	703	3.26	775	0.401	847	0.0506
416	0.191	488	3.84	560	7.59	632	10.7	704	3.16	776	0.387	848	0.0516
417	0.213	489	3.88	561	7.66	633	10.7	705	3.10	777	0.376	849	0.0496
418	0.228	490	3.89	562	7.72	634	10.7	706	3.02	778	0.361	850	0.0483
419	0.257	491	3.94	563	7.81	635	10.6	707	2.93	779	0.350		
420	0.286	492	3.96	564	7.86	636	10.6	708	2.86	780	0.343		
421	0.320	493	4.00	565	7.93	637	10.5	709	2.79	781	0.333		