



Integrating Sphere Test Report

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

Prepared For
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Catalog Number
LUXEON ES 3000K 2 BIN GT4-RE-ES-S

Project Number
6012-000172
Test Number
28229

Test Date

2012-02-01

Prepared By

A handwritten signature in black ink, appearing to read 'Kyle Spaziani'.

Kyle Spaziani, Technician

Approved By

A handwritten signature in black ink, appearing to read 'Zachary Mooney'.

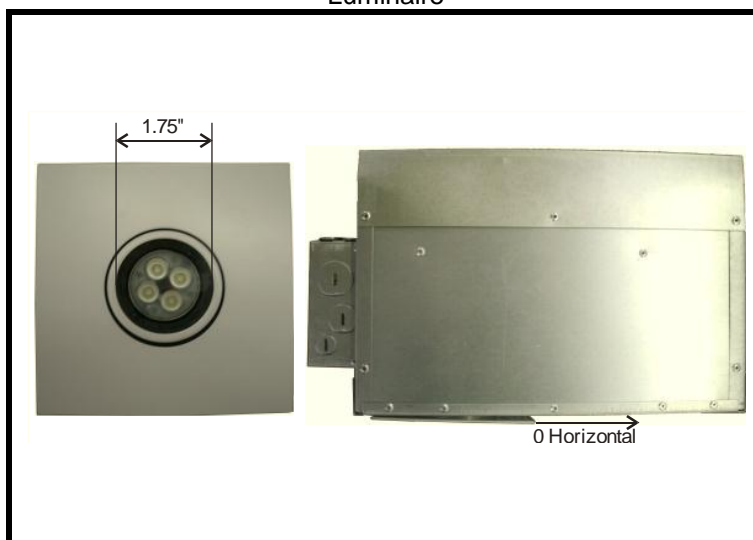
Zachary Mooney, Project Coordinator

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Formed steel housing, cast aluminum heatsink with black aluminum reflector, clear glass enclosure with white enamel steel trim
Catalog Number: LUXEON ES 3000K 2 BIN GT4-RE-ES-S
Lamp: Four white LEDs with frosted plastic optics
Mounting: Recessed
Ballast/Driver: One Lightech LED 36CC 700 PU

Luminaire



Summary of Results

Radiant Flux: 1470 mW
Luminous Flux: 470.3 Lumens
Luminaire Efficacy: 44.2 Lumens/Watt
CCT: 3155 K
CRI (Ra): 84.1
Chromaticity (x): 0.4302
Chromaticity (y): 0.4092
Chromaticity (u): 0.2441
Chromaticity (v): 0.3483
Duv: 0.0027

Test Conditions

Test Temperature: 25.0 °C
Voltage: 120.0 VAC
Current: 0.09118 A
Power: 10.65 W
Power Factor: 0.973
Frequency: 60 Hz
Current THD: 16.6 %

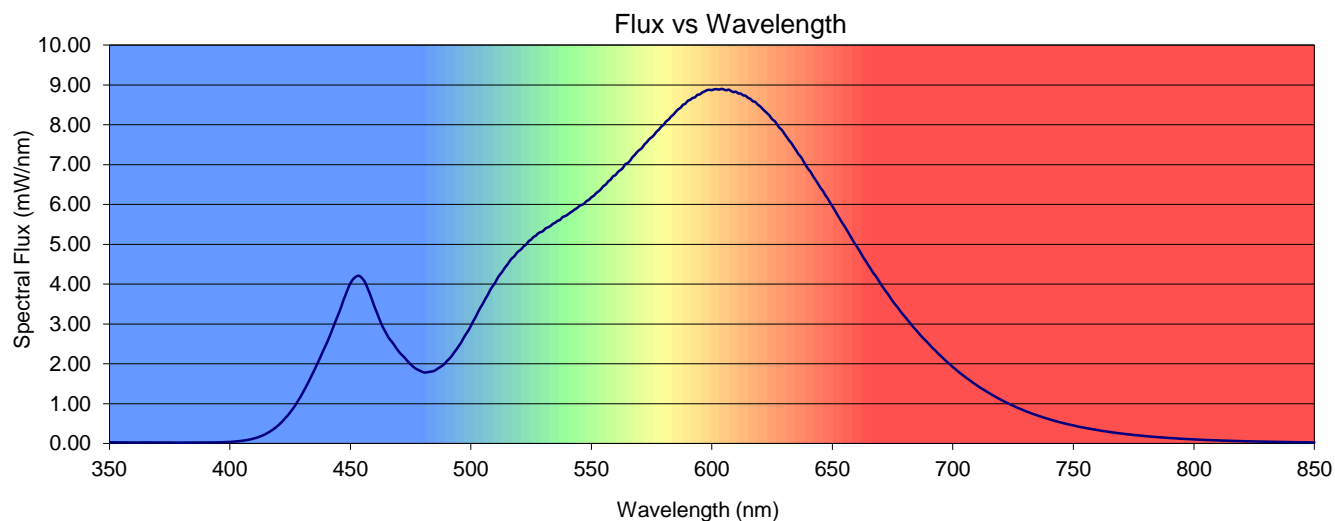
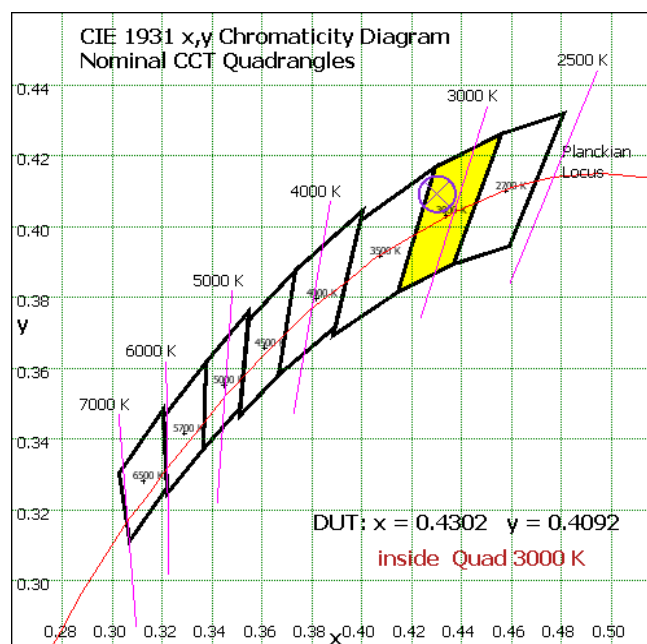
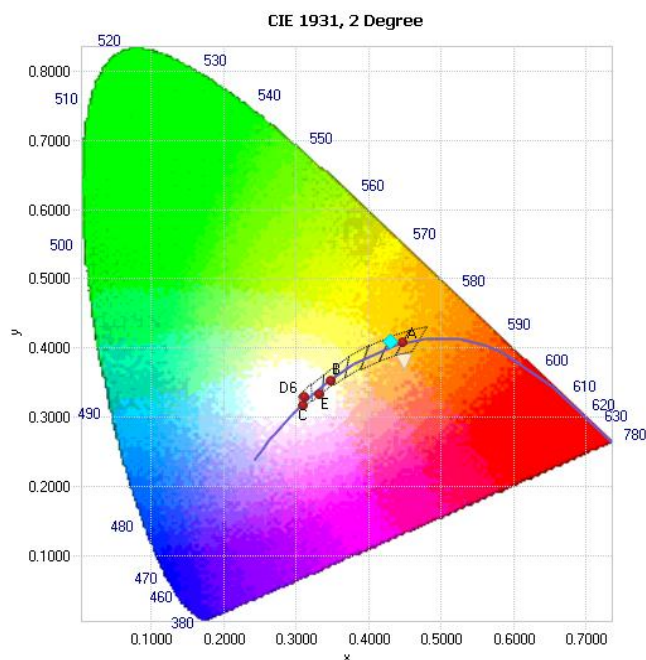


Chromaticity Coordinates

x	y	u	v	u'	v'	Duv
0.4302	0.4092	0.2441	0.3483	0.2441	0.5224	0.0027

Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
84.1	82.2	89.3	95.9	83.4	81.7	86.2	87.5	66.3	19.0	75.0	82.2	67.5	83.6	97.4





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	0.0325	422	0.570	494	2.36	566	7.09	638	7.08	710	1.46	782	0.174
351	0.0297	423	0.637	495	2.45	567	7.18	639	6.98	711	1.42	783	0.169
352	0.0292	424	0.703	496	2.54	568	7.24	640	6.89	712	1.38	784	0.165
353	0.0297	425	0.781	497	2.65	569	7.32	641	6.82	713	1.34	785	0.160
354	0.0276	426	0.862	498	2.75	570	7.37	642	6.71	714	1.30	786	0.155
355	0.0279	427	0.947	499	2.84	571	7.42	643	6.62	715	1.27	787	0.151
356	0.0284	428	1.04	500	2.95	572	7.50	644	6.52	716	1.23	788	0.146
357	0.0290	429	1.14	501	3.07	573	7.56	645	6.42	717	1.20	789	0.142
358	0.0267	430	1.25	502	3.18	574	7.64	646	6.35	718	1.16	790	0.138
359	0.0247	431	1.36	503	3.30	575	7.68	647	6.24	719	1.13	791	0.134
360	0.0268	432	1.47	504	3.41	576	7.74	648	6.15	720	1.10	792	0.131
361	0.0261	433	1.59	505	3.51	577	7.82	649	6.05	721	1.06	793	0.127
362	0.0255	434	1.71	506	3.63	578	7.88	650	5.96	722	1.03	794	0.123
363	0.0269	435	1.84	507	3.73	579	7.95	651	5.86	723	1.01	795	0.119
364	0.0275	436	1.97	508	3.85	580	8.00	652	5.75	724	0.976	796	0.116
365	0.0271	437	2.09	509	3.94	581	8.08	653	5.65	725	0.949	797	0.112
366	0.0269	438	2.23	510	4.03	582	8.13	654	5.55	726	0.920	798	0.109
367	0.0280	439	2.37	511	4.14	583	8.20	655	5.46	727	0.893	799	0.106
368	0.0254	440	2.49	512	4.23	584	8.25	656	5.36	728	0.869	800	0.103
369	0.0270	441	2.63	513	4.31	585	8.32	657	5.25	729	0.844	801	0.100
370	0.0263	442	2.78	514	4.40	586	8.39	658	5.15	730	0.815	802	0.0974
371	0.0253	443	2.94	515	4.48	587	8.43	659	5.05	731	0.794	803	0.0940
372	0.0248	444	3.09	516	4.57	588	8.50	660	4.96	732	0.770	804	0.0919
373	0.0258	445	3.24	517	4.65	589	8.53	661	4.86	733	0.747	805	0.0896
374	0.0252	446	3.40	518	4.70	590	8.60	662	4.76	734	0.726	806	0.0867
375	0.0251	447	3.58	519	4.78	591	8.62	663	4.65	735	0.707	807	0.0849
376	0.0235	448	3.73	520	4.83	592	8.67	664	4.57	736	0.685	808	0.0818
377	0.0234	449	3.89	521	4.88	593	8.69	665	4.47	737	0.667	809	0.0805
378	0.0219	450	4.02	522	4.96	594	8.75	666	4.38	738	0.646	810	0.0786
379	0.0224	451	4.11	523	5.00	595	8.76	667	4.28	739	0.626	811	0.0757
380	0.0232	452	4.17	524	5.08	596	8.81	668	4.20	740	0.609	812	0.0736
381	0.0233	453	4.21	525	5.12	597	8.84	669	4.11	741	0.590	813	0.0717
382	0.0248	454	4.20	526	5.18	598	8.87	670	4.01	742	0.574	814	0.0700
383	0.0242	455	4.14	527	5.22	599	8.88	671	3.92	743	0.557	815	0.0674
384	0.0243	456	4.06	528	5.28	600	8.87	672	3.84	744	0.540	816	0.0657
385	0.0250	457	3.92	529	5.30	601	8.89	673	3.76	745	0.525	817	0.0637
386	0.0249	458	3.77	530	5.33	602	8.89	674	3.67	746	0.509	818	0.0623
387	0.0251	459	3.60	531	5.40	603	8.88	675	3.57	747	0.495	819	0.0611
388	0.0256	460	3.43	532	5.42	604	8.90	676	3.49	748	0.481	820	0.0594
389	0.0249	461	3.28	533	5.46	605	8.88	677	3.42	749	0.466	821	0.0579
390	0.0265	462	3.13	534	5.51	606	8.87	678	3.34	750	0.454	822	0.0557
391	0.0259	463	2.98	535	5.54	607	8.88	679	3.26	751	0.439	823	0.0548
392	0.0265	464	2.86	536	5.59	608	8.85	680	3.19	752	0.426	824	0.0536
393	0.0272	465	2.75	537	5.61	609	8.82	681	3.12	753	0.413	825	0.0517
394	0.0274	466	2.64	538	5.68	610	8.83	682	3.04	754	0.403	826	0.0503
395	0.0296	467	2.57	539	5.70	611	8.79	683	2.97	755	0.391	827	0.0494
396	0.0303	468	2.49	540	5.74	612	8.78	684	2.89	756	0.380	828	0.0483
397	0.0327	469	2.40	541	5.78	613	8.74	685	2.83	757	0.368	829	0.0466
398	0.0351	470	2.32	542	5.82	614	8.73	686	2.76	758	0.358	830	0.0452
399	0.0386	471	2.24	543	5.87	615	8.67	687	2.69	759	0.348	831	0.0443
400	0.0405	472	2.19	544	5.91	616	8.65	688	2.62	760	0.337	832	0.0435
401	0.0438	473	2.12	545	5.96	617	8.59	689	2.57	761	0.327	833	0.0422
402	0.0495	474	2.05	546	5.99	618	8.57	690	2.50	762	0.315	834	0.0410
403	0.0550	475	1.99	547	6.02	619	8.51	691	2.43	763	0.309	835	0.0399
404	0.0608	476	1.93	548	6.08	620	8.46	692	2.37	764	0.300	836	0.0388
405	0.0683	477	1.88	549	6.12	621	8.40	693	2.32	765	0.290	837	0.0378
406	0.0764	478	1.85	550	6.18	622	8.34	694	2.25	766	0.281	838	0.0368
407	0.0856	479	1.82	551	6.22	623	8.28	695	2.19	767	0.273	839	0.0356
408	0.0986	480	1.80	552	6.28	624	8.22	696	2.14	768	0.265	840	0.0352
409	0.110	481	1.78	553	6.33	625	8.14	697	2.08	769	0.257	841	0.0342
410	0.128	482	1.79	554	6.38	626	8.10	698	2.03	770	0.250	842	0.0333
411	0.144	483	1.80	555	6.46	627	8.01	699	1.97	771	0.243	843	0.0324
412	0.164	484	1.81	556	6.50	628	7.93	700	1.92	772	0.235	844	0.0317
413	0.188	485	1.83	557	6.58	629	7.87	701	1.87	773	0.228	845	0.0306
414	0.214	486	1.87	558	6.62	630	7.78	702	1.82	774	0.222	846	0.0303
415	0.245	487	1.91	559	6.70	631	7.70	703	1.77	775	0.214	847	0.0297
416	0.278	488	1.95	560	6.74	632	7.61	704	1.72	776	0.209	848	0.0290
417	0.316	489	1.99	561	6.81	633	7.54	705	1.68	777	0.203	849	0.0275
418	0.357	490	2.07	562	6.86	634	7.44	706	1.63	778	0.197	850	0.0272
419	0.403	491	2.12	563	6.91	635	7.35	707	1.59	779	0.191		
420	0.452	492	2.19	564	7.00	636	7.26	708	1.54	780	0.185		
421	0.509	493	2.28	565	7.04	637	7.19	709	1.50	781	0.181		