



Lamp Flux and Color Quality Test Report

Test Date: June 21, 2010
LTL Test Number: 19675
Prepared For: Luminaire Testing Laboratory, Inc.
Catalog Number: Par 30 LED lamp
Lamp: Cast aluminum housing with frosted plastic enclosure.
VBU PAR30 LED replacement lamp with eight white LED's

Measured Lamp Electrical Values:

Voltage: 120.0 V
Current: 0.094 A
Watts: 9.523 W
Power Factor: 0.842
Temperature: 24.0 °C



Measured Lamp Photometric Values:

Radiant Flux: 1495 mW
Luminous Flux: 463 Lumens
Lamp Efficacy: 48.6 Lumens per Watt
CCT: 3069 K
CRI (Ra): 84.5
Chromaticity (x): 0.4300
Chromaticity (y): 0.3980
Chromaticity (u'): 0.2487
Chromaticity (v'): 0.5179
Duv: -0.0015

Approved by:

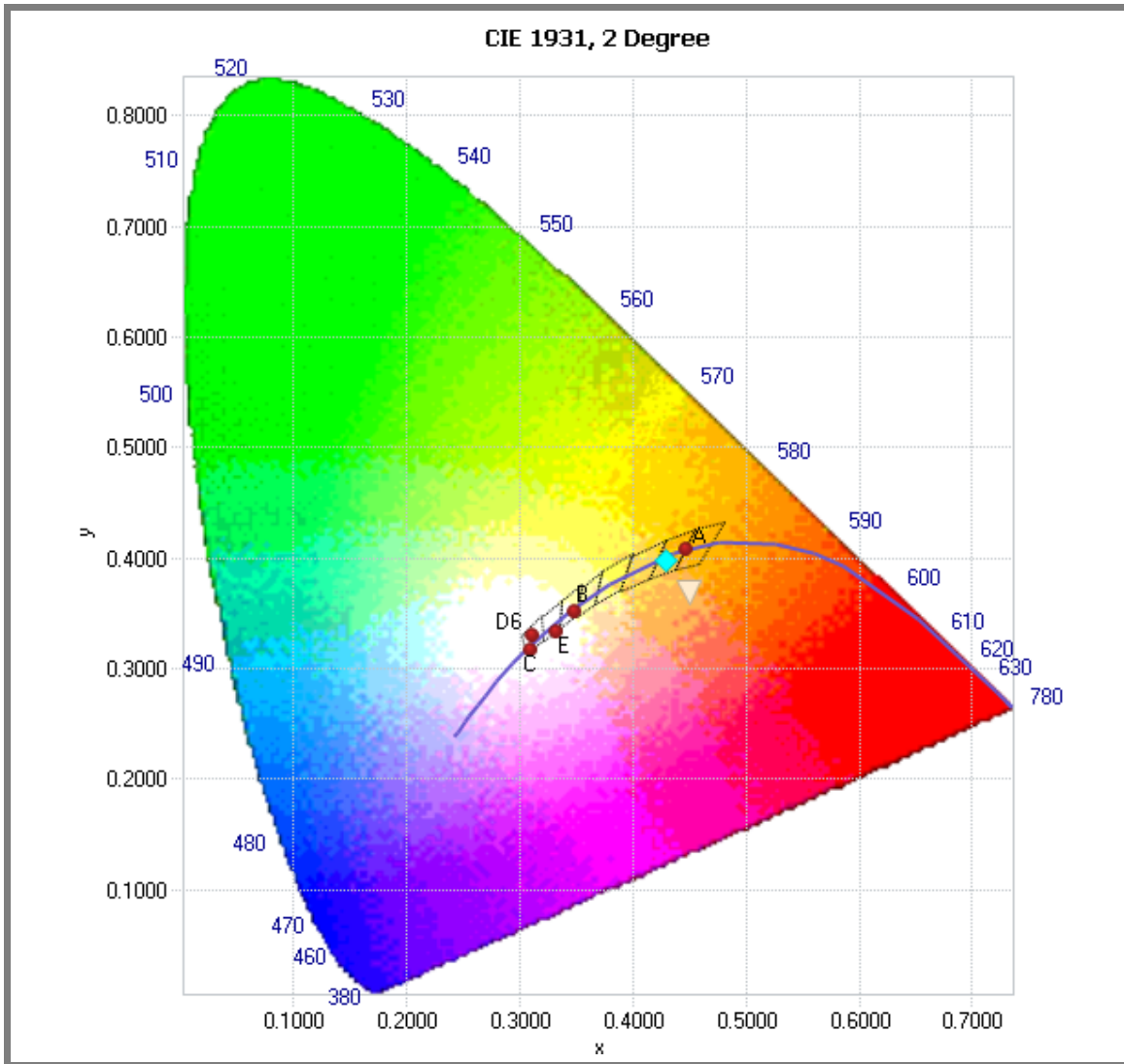
Testing was performed in accordance with IES LM-79-2008



Test Date: June 21, 2010

LTL Test Number: 19675

Chromaticity Coordinates						
x	y	u	v	u'	v'	Duv
0.4300	0.3980	0.2487	0.3453	0.2487	0.5179	-0.0015

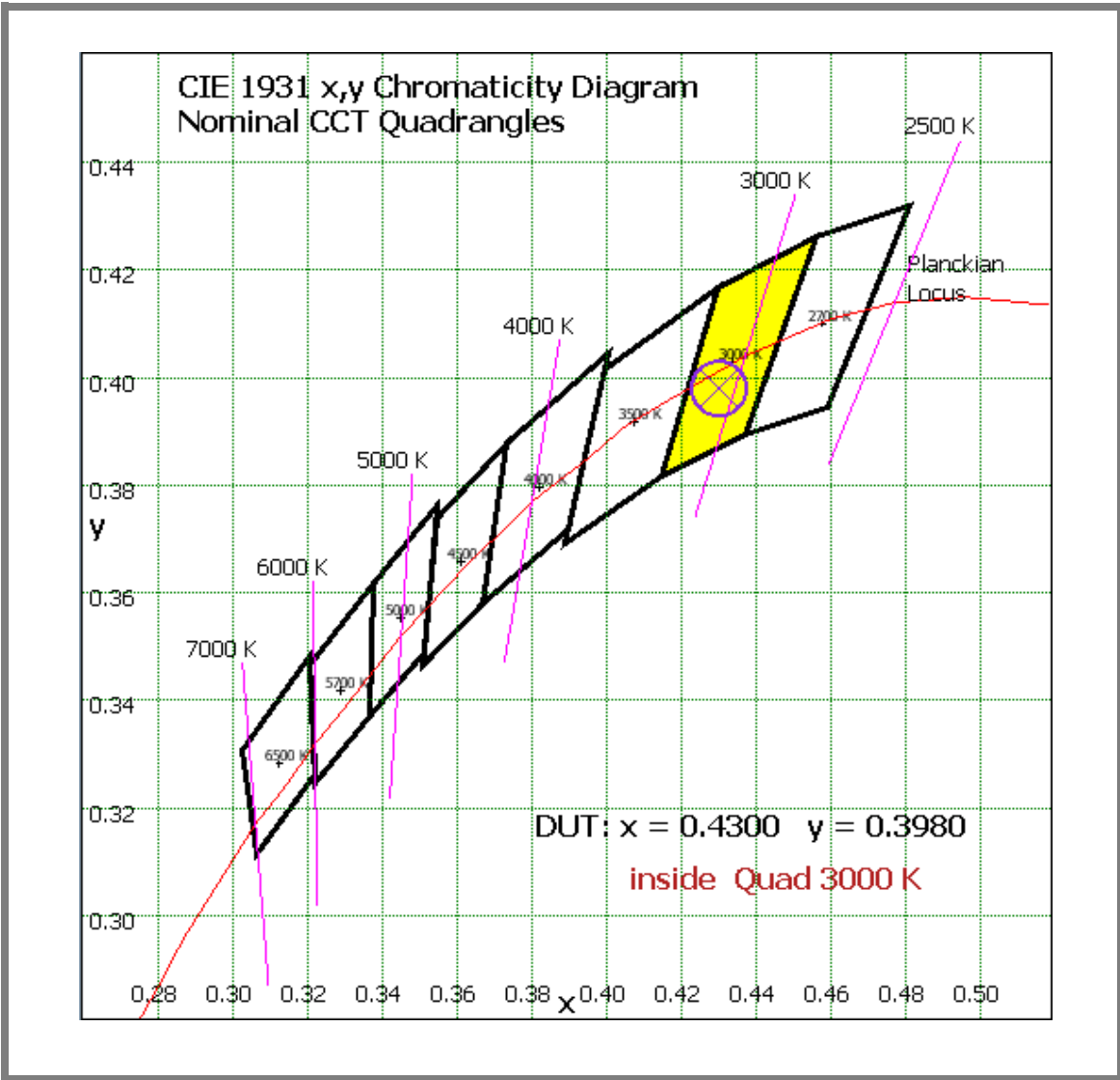




Test Date: June 21, 2010

LTL Test Number: 19675

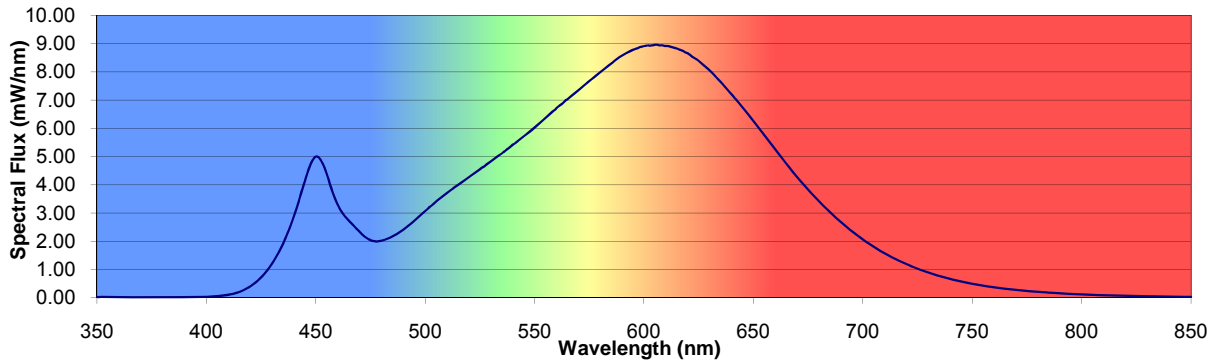
Chromaticity Coordinates							
x	y	u	v	u'	v'	Duv	
0.4300	0.3980	0.2487	0.3453	0.2487	0.5179	-0.0015	





Test Date: June 21, 2010
 LTL Test Number: 19675

Spectral Power Distribution									
λ(nm)	mW	λ(nm)	mW	λ(nm)	mW	λ(nm)	mW	λ(nm)	mW
350	0.03	400	0.03	450	4.99	500	3.06	550	6.02
351	0.02	401	0.04	451	4.99	501	3.14	551	6.09
352	0.03	402	0.04	452	4.91	502	3.21	552	6.16
353	0.03	403	0.05	453	4.77	503	3.27	553	6.23
354	0.02	404	0.05	454	4.61	504	3.34	554	6.30
355	0.03	405	0.06	455	4.39	505	3.41	555	6.37
356	0.03	406	0.06	456	4.14	506	3.47	556	6.43
357	0.03	407	0.07	457	3.89	507	3.54	557	6.51
358	0.03	408	0.08	458	3.67	508	3.59	558	6.57
359	0.02	409	0.09	459	3.47	509	3.65	559	6.64
360	0.02	410	0.10	460	3.30	510	3.71	560	6.71
361	0.02	411	0.12	461	3.14	511	3.77	561	6.78
362	0.02	412	0.14	462	3.03	512	3.83	562	6.84
363	0.02	413	0.16	463	2.92	513	3.89	563	6.89
364	0.02	414	0.18	464	2.82	514	3.94	564	6.97
365	0.02	415	0.20	465	2.73	515	4.00	565	7.03
366	0.02	416	0.23	466	2.66	516	4.05	566	7.09
367	0.02	417	0.27	467	2.58	517	4.11	567	7.16
368	0.02	418	0.31	468	2.50	518	4.15	568	7.22
369	0.02	419	0.35	469	2.42	519	4.21	569	7.28
370	0.02	420	0.40	470	2.33	520	4.27	570	7.35
371	0.02	421	0.45	471	2.26	521	4.33	571	7.41
372	0.02	422	0.50	472	2.18	522	4.38	572	7.47
373	0.02	423	0.57	473	2.13	523	4.44	573	7.54
374	0.02	424	0.64	474	2.08	524	4.49	574	7.60
375	0.02	425	0.72	475	2.04	525	4.55	575	7.67
376	0.02	426	0.80	476	2.01	526	4.61	576	7.74
377	0.02	427	0.89	477	2.00	527	4.65	577	7.80
378	0.02	428	0.98	478	1.99	528	4.71	578	7.85
379	0.02	429	1.09	479	2.00	529	4.77	579	7.92
380	0.02	430	1.21	480	2.02	530	4.83	580	7.99
382	0.02	432	1.46	482	2.06	532	4.95	582	8.11
383	0.02	433	1.60	483	2.09	533	5.00	583	8.16
384	0.02	434	1.75	484	2.13	534	5.05	584	8.23
385	0.02	435	1.90	485	2.17	535	5.11	585	8.29
386	0.02	436	2.08	486	2.21	536	5.17	586	8.35
387	0.02	437	2.26	487	2.26	537	5.22	587	8.41
388	0.02	438	2.46	488	2.30	538	5.29	588	8.47
389	0.02	439	2.67	489	2.35	539	5.35	589	8.53
390	0.02	440	2.88	490	2.42	540	5.42	590	8.58
391	0.02	441	3.12	491	2.47	541	5.46	591	8.62
392	0.02	442	3.35	492	2.53	542	5.53	592	8.66
393	0.02	443	3.62	493	2.59	543	5.59	593	8.70
394	0.02	444	3.88	494	2.66	544	5.65	594	8.74
395	0.03	445	4.12	495	2.73	545	5.72	595	8.78
396	0.03	446	4.38	496	2.80	546	5.78	596	8.81
397	0.03	447	4.60	497	2.86	547	5.83	597	8.83
398	0.03	448	4.79	498	2.93	548	5.89	598	8.87
399	0.03	449	4.92	499	3.00	549	5.96	599	8.89





Test Date: June 21, 2010

LTL Test Number: 19675

Spectral Power Distribution

Table with 10 columns (λ(nm), mW) and 50 rows of spectral data.



Test Date: June 21, 2010

LTL Test Number: 19675

Color Rendering Index Detail								
R1	R2	R3	R4	R5	R6	R7	R8	Ra (CRI)
83.0	91.4	96.6	82.2	82.8	88.6	85.5	65.9	84.5

Color Rendering Index Detail (Expanded)								
R9	R10	R11	R12	R13	R14			
22.3	79.5	80.6	74.0	85.0	98.3			

Testing was performed in the LTL two-meter integrating sphere (Labsphere model SLMS7650) using a Labsphere model CDS1100 spectrometer and LightMtrX software.

Testing was performed using the 4π geometry method of measurement.

Absorption correction was employed for this measurement.

Electrical power was supplied to the device under test using a regulated power supply.

The device under test was allowed to reach stability according to appropriate IES standards prior to measurement.