

itl boulder

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL60554 PAGE: 1 OF 4

DATE: 7/8/2008

PREPARED FOR: AQUATIC LIFE, LLC

BALLAST: AQUATIC LIFE SUPPLIED HID BALLAST # TE08004

LAMP: AQUATIC LIFE SUPPLIED 150W HID LAMP # TE08030

INSTRUMENTATION: Yokogawa WT210 Digital Power Meter
Optronic Laboratories OL770 Spectroradiometer
ITL 1.5 Meter Diameter Integrating Sphere
Elgar CW2501 Voltage Regulator

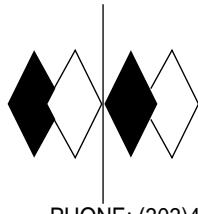
OBJECT OF TEST: Measure the Correlated Color Temperature (CCT), Color Rendering Index (CRI), and Spectral Power Distribution (SPD) of the lamp.

PROCEDURE: The lamp was provided by customer and had an unknown number of burn hours. The lamp was seasoned for at least 100 hours before being transferred to the integrating sphere. The lamp was allowed to restabilize for two hours in the sphere before measurements were recorded. CRI and electrical data were then recorded. In order to measure the mean performance, twenty data sets were recorded and averaged within the spectroradiometer. Readings were taken with the lamp operating in a 25 +/-1 degree Celsius free air ambient. All data are traceable to the National Institute of Standards and Technology (NIST).

RESULTS: Photometric and Electrical:

SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Correlated Color Temp CCT (K)	9659
Chromaticity Ordinate x	0.2936
Chromaticity Ordinate y	0.2682
Color Rendering Index (CRI)	88
ELECTRICAL	
Input Voltage (Volts AC RMS)	120.0
Input Current (Amps AC RMS)	1.38
Input Power (Watts)	164.64

Checked: <u>N Gully</u>
Approved: <u>R Bergin</u>



itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

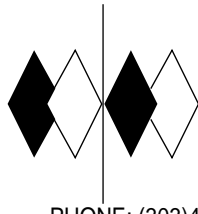
PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NO: ITL60554

PAGE: 2 OF 4

DATE: 7/8/2008

Wave-length	Percent of Integrated Radiant Flux	Wave-length	Percent of Integrated Radiant Flux	Wave-length	Percent of Integrated Radiant Flux	Wave-length	Percent of Integrated Radiant Flux
350	0.0171	404	0.3791	458	0.4426	512	0.2620
351	0.0174	405	0.4094	459	0.4367	513	0.2460
352	0.0193	406	0.3681	460	0.3911	514	0.2384
353	0.0210	407	0.3114	461	0.3538	515	0.2655
354	0.0218	408	0.3115	462	0.3204	516	0.2815
355	0.0214	409	0.3486	463	0.2826	517	0.2502
356	0.0227	410	0.4352	464	0.2780	518	0.2230
357	0.0247	411	0.5115	465	0.2706	519	0.2307
358	0.0279	412	0.5176	466	0.2624	520	0.2312
359	0.0306	413	0.4730	467	0.2876	521	0.2263
360	0.0327	414	0.4240	468	0.3251	522	0.2273
361	0.0355	415	0.3734	469	0.3428	523	0.2215
362	0.0388	416	0.3961	470	0.3165	524	0.2094
363	0.0450	417	0.4635	471	0.2776	525	0.2309
364	0.0644	418	0.5639	472	0.2800	526	0.2712
365	0.0825	419	0.6508	473	0.3101	527	0.2871
366	0.0831	420	0.6968	474	0.2987	528	0.2652
367	0.0724	421	0.7485	475	0.2719	529	0.2695
368	0.0708	422	0.7667	476	0.2659	530	0.2990
369	0.0733	423	0.6732	477	0.2990	531	0.3312
370	0.0764	424	0.5180	478	0.3217	532	0.3075
371	0.0823	425	0.4470	479	0.3106	533	0.3037
372	0.0906	426	0.4189	480	0.2924	534	0.3241
373	0.1027	427	0.3942	481	0.3060	535	0.3271
374	0.1124	428	0.3641	482	0.3247	536	0.2826
375	0.1229	429	0.3463	483	0.2993	537	0.2275
376	0.1347	430	0.3650	484	0.2462	538	0.2078
377	0.1506	431	0.4065	485	0.2197	539	0.1980
378	0.1561	432	0.4382	486	0.2201	540	0.2064
379	0.1485	433	0.4042	487	0.2450	541	0.2375
380	0.1446	434	0.3738	488	0.2762	542	0.2602
381	0.1501	435	0.4287	489	0.2804	543	0.2278
382	0.1585	436	0.4667	490	0.2577	544	0.2053
383	0.1695	437	0.4138	491	0.2506	545	0.3508
384	0.1768	438	0.3269	492	0.2489	546	0.4656
385	0.1722	439	0.3063	493	0.2508	547	0.3954
386	0.1799	440	0.3546	494	0.2589	548	0.2239
387	0.1958	441	0.3918	495	0.2574	549	0.1797
388	0.1966	442	0.3753	496	0.2373	550	0.1748
389	0.1924	443	0.3241	497	0.2090	551	0.1637
390	0.2052	444	0.2954	498	0.1957	552	0.1482
391	0.2099	445	0.2881	499	0.2035	553	0.1579
392	0.2142	446	0.3125	500	0.2321	554	0.1907
393	0.2406	447	0.3547	501	0.2744	555	0.2021
394	0.2630	448	0.3821	502	0.2868	556	0.1834
395	0.2592	449	0.4111	503	0.2826	557	0.1703
396	0.2648	450	0.5998	504	0.2890	558	0.1726
397	0.2770	451	0.9681	505	0.2865	559	0.1700
398	0.2602	452	1.1917	506	0.2529	560	0.1739
399	0.2393	453	1.1018	507	0.2321	561	0.2004
400	0.2429	454	0.8584	508	0.2109	562	0.2397
401	0.2616	455	0.6239	509	0.2086	563	0.3023
402	0.2911	456	0.4513	510	0.2454	564	0.3542
403	0.3181	457	0.4138	511	0.2779	565	0.3262



itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

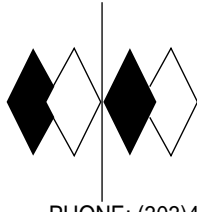
PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NO: ITL60554

PAGE: 3 OF 4

DATE: 7/8/2008

Wave-length	Percent of Integrated Radiant Flux	Wave-length	Percent of Integrated Radiant Flux	Wave-length	Percent of Integrated Radiant Flux	Wave-length	Percent of Integrated Radiant Flux
566	0.2405	620	0.2214	674	0.1852	728	0.1073
567	0.1932	621	0.2188	675	0.1897	729	0.1029
568	0.1981	622	0.2076	676	0.1925	730	0.0958
569	0.2509	623	0.1914	677	0.1880	731	0.0891
570	0.2901	624	0.1992	678	0.1749	732	0.0832
571	0.2790	625	0.2774	679	0.1634	733	0.0789
572	0.2401	626	0.3171	680	0.1573	734	0.0755
573	0.2286	627	0.2781	681	0.1679	735	0.0745
574	0.2481	628	0.2195	682	0.2102	736	0.0817
575	0.2894	629	0.1973	683	0.2441	737	0.0901
576	0.3112	630	0.1854	684	0.2724	738	0.0921
577	0.2981	631	0.1777	685	0.2664	739	0.0944
578	0.2922	632	0.1824	686	0.2432	740	0.1004
579	0.2964	633	0.1917	687	0.2090	741	0.1032
580	0.2906	634	0.1929	688	0.1936	742	0.1015
581	0.2414	635	0.1855	689	0.1851	743	0.1000
582	0.2007	636	0.1771	690	0.1822	744	0.0983
583	0.1849	637	0.1800	691	0.1788	745	0.0968
584	0.2164	638	0.1873	692	0.1724	746	0.0938
585	0.2636	639	0.1838	693	0.1644	747	0.0883
586	0.2683	640	0.1759	694	0.1662	748	0.0832
587	0.2210	641	0.1976	695	0.1768	749	0.0788
588	0.1953	642	0.2139	696	0.1952	750	0.0748
589	0.1956	643	0.2061	697	0.2057	751	0.0723
590	0.2069	644	0.1826	698	0.2211	752	0.0774
591	0.2124	645	0.1794	699	0.2214	753	0.0920
592	0.2124	646	0.1760	700	0.2068	754	0.1113
593	0.2306	647	0.1684	701	0.1842	755	0.1215
594	0.2436	648	0.1666	702	0.1669	756	0.1199
595	0.2390	649	0.1628	703	0.1487	757	0.1137
596	0.2598	650	0.1504	704	0.1355	758	0.1106
597	0.3243	651	0.1416	705	0.1248	759	0.1101
598	0.3860	652	0.1431	706	0.1168	760	0.1090
599	0.3741	653	0.1452	707	0.1099	761	0.1065
600	0.3544	654	0.1492	708	0.1040	762	0.1063
601	0.3262	655	0.1569	709	0.0987	763	0.1112
602	0.2965	656	0.1740	710	0.0973	764	0.1243
603	0.2507	657	0.2176	711	0.1037	765	0.1371
604	0.2275	658	0.2493	712	0.1070	766	0.1406
605	0.2183	659	0.2356	713	0.1012	767	0.1304
606	0.2156	660	0.2002	714	0.0963	768	0.1186
607	0.2330	661	0.1742	715	0.1082	769	0.1113
608	0.2870	662	0.1619	716	0.1226	770	0.1097
609	0.3150	663	0.1652	717	0.1237	771	0.1115
610	0.3171	664	0.1712	718	0.1107	772	0.1124
611	0.3210	665	0.1977	719	0.1058	773	0.1125
612	0.3150	666	0.2285	720	0.1077	774	0.1096
613	0.2696	667	0.2313	721	0.1136	775	0.1031
614	0.2454	668	0.1998	722	0.1193	776	0.0951
615	0.2472	669	0.1755	723	0.1204	777	0.0902
616	0.2850	670	0.1627	724	0.1166	778	0.0883
617	0.2935	671	0.1699	725	0.1137	779	0.0900
618	0.2610	672	0.1855	726	0.1104	780	0.0926
619	0.2296	673	0.1905	727	0.1087		



itl boulder
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL60554

PAGE: 4 OF 4

DATE: 7/8/2008

PREPARED FOR: AQUATIC LIFE, LLC

Output vs. Wavelength

