

**itl boulder**

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955



INDEPENDENT TESTING LABORATORIES, INC.  
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

PHONE: (303)442-1255 • FAX: (970)535-3114 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

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REPORT NUMBER: ITL86245  
DATE: 01/05/16  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: MN-LED-e69-SP-12-C, SN-MN-LED-e69-SP-12, ST-MN-LED-e69-SP-12, SF-MN-LED-e69-SP-12, TF-MN-LED-e69-SP-12, RM-MN-LED-e69-SP-12, PM-MN-LED-e69-SP-12, WM-MN-LED-e69-SP-12, SM-MN-LED-e69-SP-12, CH-LED-e69-SP-12

ADDRESS: 40429 BRICKYARD DRIVE  
MADERA, CA 93636-9515

LUMINAIRE: MACHINED CYLINDRICAL METAL HOUSING, 1 BLACK CIRCUIT BOARD WITH 3 LEDS, ONE CLEAR PLASTIC LENS WITH ONE CONICAL OPTIC PER LED WITH SEMI-HEMISPHERICAL RECESSED CENTER TOWARD LED, CLEAR MICRO-PRISMATIC FLAT GLASS LENS IN MACHINED CYLINDRICAL BLACK PAINTED METAL LENS FRAME. LENS PRISMS OUT. LUMINAIRE AIMED AT THE HORIZON FOR THIS TEST.

LAMP: THREE WHITE LIGHT EMITTING DIODES (LEDS), AIMED AT THE HORIZON.

DRIVER: B-K LIGHTING 524438/400188-L

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (12VAC, 60Hz) TO THE DRIVER.

INSTRUMENTS:	Associated Power Technologies APT5020 AC Power Source	Calibration Due: N/A
	Yokogawa WT210 Digital Power Meter #9	01/31/16
	Ocean Optics QE65000 Spectroradiometer	09/23/16
	ITL 1.5m Diameter Integrating Sphere S15-2, 4PI Geometry	09/23/16

OBJECT OF TEST: Measure the Absolute Flux in lumens\*, Spectral Power Distribution (SPD), Correlated Color Temperature (CCT), Color Rendering Index (CRIa,1-14), Chromaticity Coordinates (x,y; u',v'), ANSI C78.377 Duv, Total Radiant Flux\*, Scotopic / Photopic Lumen Ratio, and electrical data including ANSI C82.77-2002 Power Factor (PF) and Total Harmonic Distortion (THD) to the test sample.

PROCEDURE: The test sample was provided by the customer and had an unknown number of operating hours. The test sample was mounted inside the integrating sphere and allowed to stabilize. After stabilization occurred, measurements were taken. In order to measure mean performance, multiple data sets were recorded and averaged. Readings were taken with the test sample operating at 12VAC input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. All data are traceable to the National Institute of Standards and Technology.

RESULTS: (continued subsequent pages)

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Checked	<i>N WHITE</i>
Approved	<i>P O'CONNOR</i> Sphere Lab Supervisor



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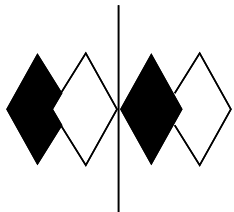
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# RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	504 *
SPECTORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.3961
Chromaticity Ordinate y	0.3947
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2281
Chromaticity Ordinate v'	0.5115
Correlated Color Temp CCT (K)	3740
ANSI C78.377-2008 Duv	0.004
Total Radiant Flux (milliWatts)	1502 *
Scotopic / Photopic Lumen Ratio	1.581
ELECTRICAL	
Input Voltage (Volts AC )	12.0
Input Current (Amps AC )	0.598
Input Power (Watts)	6.48
Input Power Factor (%)	90.3
Input Current THD (%)	45.7
Input Voltage THD (%)	1.3
EFFICACY (lumens/Watt)	77.8

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	80
R1 Light greyish red	78
R2 Dark greyish yellow	85
R3 Strong yellowish green	92
R4 Moderate yellowish green	80
R5 Light bluish green	78
R6 Light blue	80
R7 Light violet	86
R8 Light reddish purple	62
R9 Strong red	2
R10 Strong yellow	65
R11 Strong green	78
R12 Strong blue	58
R13 Light yellowish pink (skin)	79
R14 Moderate olive green (leaf)	95

\*NOTE: The total lumen output shown on this report was obtained from photometric test ITL86235



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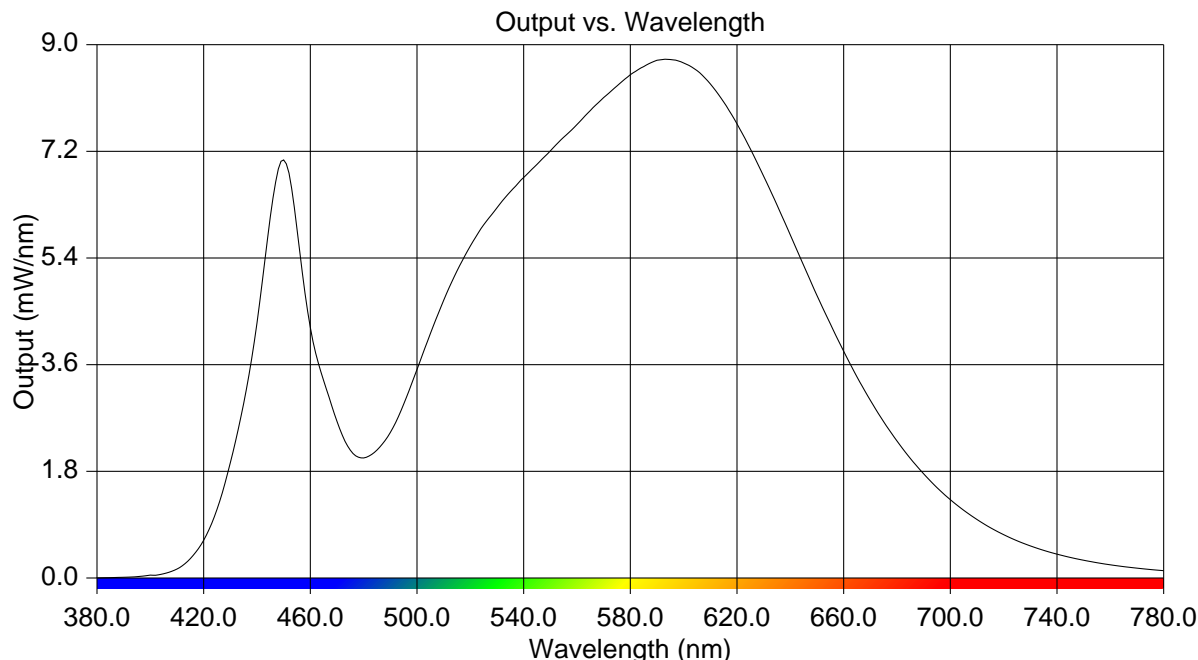
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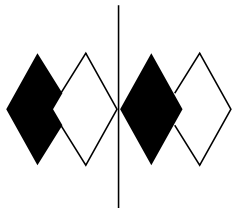
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.002	515	5.182	650	4.766
385	0.006	520	5.603	655	4.289
390	0.012	525	5.960	660	3.827
395	0.023	530	6.248	665	3.393
400	0.049	535	6.519	670	2.999
405	0.072	540	6.759	675	2.637
410	0.151	545	6.980	680	2.312
415	0.327	550	7.207	685	2.018
420	0.637	555	7.438	690	1.758
425	1.158	560	7.653	695	1.525
430	1.945	565	7.888	700	1.322
435	2.944	570	8.107	705	1.143
440	4.304	575	8.303	710	0.987
445	6.098	580	8.493	715	0.849
450	7.055	585	8.630	720	0.731
455	5.888	590	8.737	725	0.629
460	4.228	595	8.749	730	0.542
465	3.330	600	8.691	735	0.467
470	2.643	605	8.563	740	0.402
475	2.157	610	8.338	745	0.347
480	2.026	615	8.033	750	0.300
485	2.159	620	7.664	755	0.258
490	2.456	625	7.242	760	0.222
495	2.933	630	6.779	765	0.192
500	3.519	635	6.295	770	0.166
505	4.122	640	5.788	775	0.143
510	4.686	645	5.275	780	0.124





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## CIE Chromaticity Diagram

