

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 • WEBSITE: www.itlboulder.com

Page 1 of 4

REPORT NUMBER: ITL85925
DATE: 11/06/15
PREPARED FOR: B-K LIGHTING, INC.
CATALOG NUMBER: NS-LED-e64-SP-12, AR-LED-TR-e64-SP-12, AR-LED-RM-e64-SP-12,
DS-LED-e64-SP-12, RM-AR-LED-e64-SP-12, SN-LED-e64-SP-12,
ST-LED-e64-SP-12, SF-LED-e64-SP-12, TF-LED-e64-SP-12,
WS-LED-e64-SP-12, AW-LED-e64-SP-12, SW-LED-e64-SP-12,
GD-LED-e64-SP-12, GQ-LED-e64-SP-12, EC-LED-e64-SP-12,
ED-LED-e64-SP-12, SM-AR-LED-e64-SP-12, PM-LED-e64-SP-12,
WM-LED-e64-SP-12, UL-AR-LED-e64-SP-12, HP2-LED-e64-SP-12,
CO2-LED-e64-SP-12, VQ-LED-e64-SP-12, VS-LED-e64-SP-12

ADDRESS: 40429 BRICKYARD DRIVE
MADERA, CA 93636-9515

LUMINAIRE: MACHINED CYLINDRICAL METAL HOUSING, 1 BLACK CIRCUIT BOARD WITH 3
LEDS, ONE CLEAR CONICAL PLASTIC OPTIC PER LED WITH FROSTED SURFACE
OPPOSITE LED AND SEMI-HEMISPHERICAL RECESSED CENTER TOWARD LED,
MOLDED BLACK PLASTIC OPTIC MOUNTING FRAME, CLEAR MICRO-PRISMATIC
FLAT GLASS LENS IN MACHINED CYLINDRICAL BLACK PAINTED METAL LENS
FRAME. LENS PRISMS OUT.

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

DRIVER: B-K LIGHTING 528930/400188-M, DRIVER HAS MULTIPLE LEADS, LINE INPUT
AND LED OUTPUT LEADS CONNECTED FOR THIS TEST.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT
VOLTAGE (12VAC, 60Hz) TO THE DRIVER. POTENTIOMETER ON THE LED
CIRCUIT BOARD SET TO POSITION "9" FOR THIS TEST.

INSTRUMENTS:	Associated Power Technologies APT5010 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 (CRI_a,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)

THIS ITL REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM
PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE
FEDERAL GOVERNMENT.

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



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Page 2 of 4

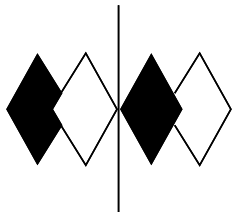
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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	446 *
SPECTORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4608
Chromaticity Ordinate y	0.4110
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2629
Chromaticity Ordinate v'	0.5276
Correlated Color Temp CCT (K)	2689
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	1368 *
Scotopic / Photopic Lumen Ratio	1.229
ELECTRICAL	
Input Voltage (Volts AC)	12.0
Input Current (Amps AC)	0.638
Input Power (Watts)	6.92
Input Power Factor (%)	90.4
Input Current THD (%)	45.5
Input Voltage THD (%)	1.6
EFFICACY (lumens/Watt)	64.5

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	81
R1 Light greyish red	79
R2 Dark greyish yellow	89
R3 Strong yellowish green	97
R4 Moderate yellowish green	80
R5 Light bluish green	80
R6 Light blue	88
R7 Light violet	82
R8 Light reddish purple	56
R9 Strong red	4
R10 Strong yellow	76
R11 Strong green	79
R12 Strong blue	73
R13 Light yellowish pink (skin)	81
R14 Moderate olive green (leaf)	99

*NOTE: The total lumen output shown on this report was obtained from photometric test ITL85918



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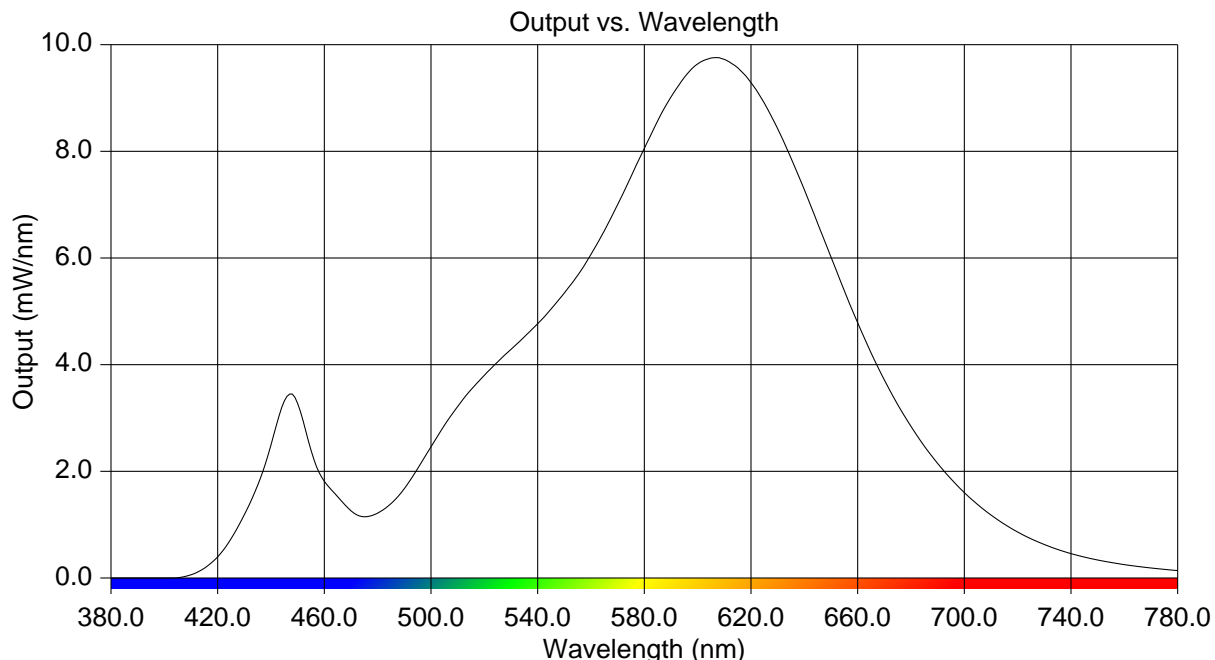
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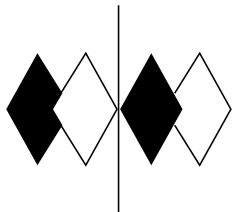
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.000	515	3.530	650	6.017
385	0.000	520	3.801	655	5.387
390	0.000	525	4.052	660	4.786
395	0.000	530	4.287	665	4.223
400	0.000	535	4.521	670	3.714
405	0.003	540	4.768	675	3.253
410	0.060	545	5.043	680	2.843
415	0.183	550	5.343	685	2.472
420	0.396	555	5.674	690	2.147
425	0.735	560	6.069	695	1.858
430	1.186	565	6.510	700	1.601
435	1.738	570	7.003	705	1.377
440	2.495	575	7.525	710	1.180
445	3.320	580	8.054	715	1.010
450	3.271	585	8.570	720	0.862
455	2.397	590	9.019	725	0.735
460	1.814	595	9.386	730	0.628
465	1.524	600	9.639	735	0.535
470	1.260	605	9.749	740	0.457
475	1.147	610	9.724	745	0.393
480	1.216	615	9.568	750	0.337
485	1.395	620	9.287	755	0.291
490	1.675	625	8.904	760	0.251
495	2.052	630	8.424	765	0.217
500	2.459	635	7.873	770	0.188
505	2.860	640	7.282	775	0.162
510	3.215	645	6.648	780	0.139





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CIE Chromaticity Diagram

