



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)

Page 1 of 4

REPORT NUMBER: ITL85926  
DATE: 11/06/15  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: NS-LED-e65-SP-12, AR-LED-TR-e65-SP-12, AR-LED-RM-e65-SP-12,  
DS-LED-e65-SP-12, RM-AR-LED-e65-SP-12, SN-LED-e65-SP-12,  
ST-LED-e65-SP-12, SF-LED-e65-SP-12, TF-LED-e65-SP-12,  
WS-LED-e65-SP-12, AW-LED-e65-SP-12, SW-LED-e65-SP-12,  
GD-LED-e65-SP-12, GQ-LED-e65-SP-12, EC-LED-e65-SP-12,  
ED-LED-e65-SP-12, SM-AR-LED-e65-SP-12, PM-LED-e65-SP-12,  
WM-LED-e65-SP-12, UL-AR-LED-e65-SP-12, HP2-LED-e65-SP-12,  
CO2-LED-e65-SP-12, VQ-LED-e65-SP-12, VS-LED-e65-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<sub>a</sub>, 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



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)

Page 2 of 4

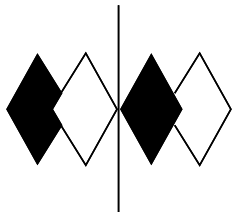
REPORT NUMBER: ITL85926  
DATE: 11/06/15  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: NS-LED-e65-SP-12, AR-LED-TR-e65-SP-12, AR-LED-RM-e65-SP-12, DS-LED-e65-SP-12, RM-AR-LED-e65-SP-12, SN-LED-e65-SP-12, ST-LED-e65-SP-12, SF-LED-e65-SP-12, TF-LED-e65-SP-12, WS-LED-e65-SP-12, AW-LED-e65-SP-12, SW-LED-e65-SP-12, GD-LED-e65-SP-12, GQ-LED-e65-SP-12, EC-LED-e65-SP-12, ED-LED-e65-SP-12, SM-AR-LED-e65-SP-12, PM-LED-e65-SP-12, WM-LED-e65-SP-12, UL-AR-LED-e65-SP-12, HP2-LED-e65-SP-12, CO2-LED-e65-SP-12, VQ-LED-e65-SP-12, VS-LED-e65-SP-12

# RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	454 *
SPECTORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4386
Chromaticity Ordinate y	0.4063
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2507
Chromaticity Ordinate v'	0.5225
Correlated Color Temp CCT (K)	2990
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	1378 *
Scotopic / Photopic Lumen Ratio	1.360
ELECTRICAL	
Input Voltage (Volts AC )	12.0
Input Current (Amps AC )	0.610
Input Power (Watts)	6.60
Input Power Factor (%)	90.2
Input Current THD (%)	46.5
Input Voltage THD (%)	1.5
EFFICACY (lumens/Watt)	68.8

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	82
R1 Light greyish red	80
R2 Dark greyish yellow	89
R3 Strong yellowish green	97
R4 Moderate yellowish green	81
R5 Light bluish green	80
R6 Light blue	87
R7 Light violet	84
R8 Light reddish purple	60
R9 Strong red	8
R10 Strong yellow	75
R11 Strong green	80
R12 Strong blue	69
R13 Light yellowish pink (skin)	82
R14 Moderate olive green (leaf)	98

\*NOTE: The total lumen output shown on this report was obtained from photometric test ITL85919



**itl boulder**  
THE LIGHT CENTER OF THE INDUSTRY SINCE 1955



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

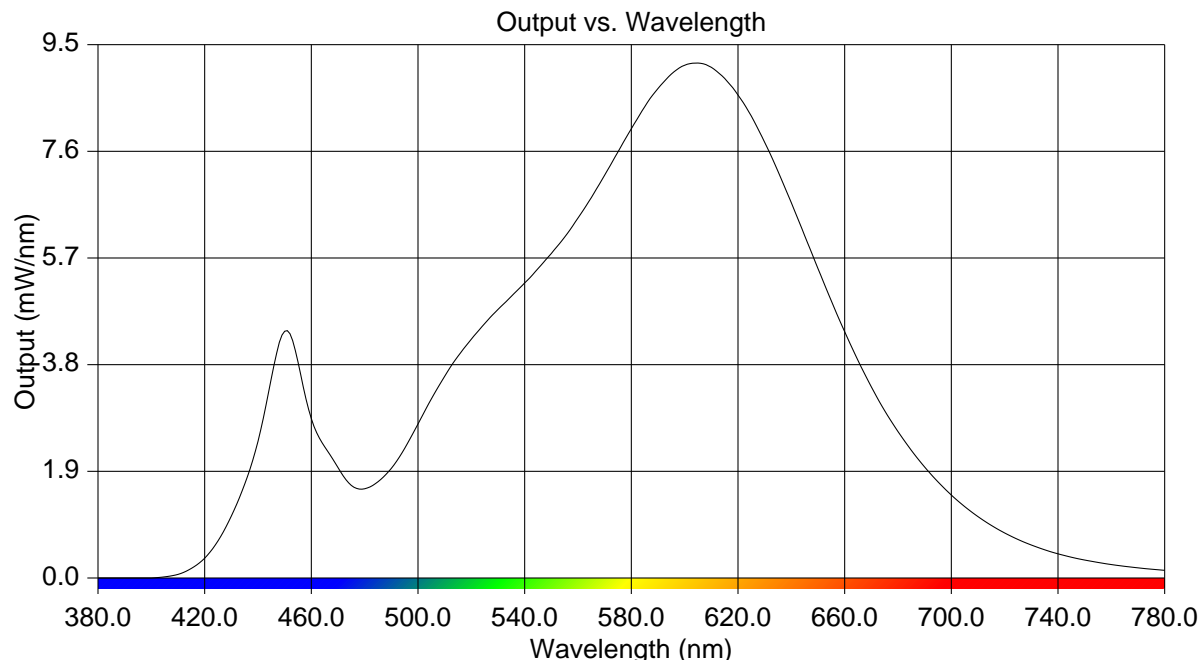
PHONE: (303)442-1255 • FAX: (970)535-3114 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

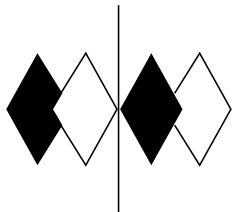
Page 3 of 4

REPORT NUMBER: ITL85926  
DATE: 11/06/15  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: NS-LED-e65-SP-12, AR-LED-TR-e65-SP-12, AR-LED-RM-e65-SP-12, DS-LED-e65-SP-12, RM-AR-LED-e65-SP-12, SN-LED-e65-SP-12, ST-LED-e65-SP-12, SF-LED-e65-SP-12, TF-LED-e65-SP-12, WS-LED-e65-SP-12, AW-LED-e65-SP-12, SW-LED-e65-SP-12, GD-LED-e65-SP-12, GQ-LED-e65-SP-12, EC-LED-e65-SP-12, ED-LED-e65-SP-12, SM-AR-LED-e65-SP-12, PM-LED-e65-SP-12, WM-LED-e65-SP-12, UL-AR-LED-e65-SP-12, HP2-LED-e65-SP-12, CO2-LED-e65-SP-12, VQ-LED-e65-SP-12, VS-LED-e65-SP-12

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.000	515	3.951	650	5.510
385	0.000	520	4.254	655	4.936
390	0.000	525	4.531	660	4.388
395	0.000	530	4.784	665	3.875
400	0.000	535	5.017	670	3.405
405	0.021	540	5.256	675	2.980
410	0.064	545	5.511	680	2.608
415	0.170	550	5.780	685	2.274
420	0.352	555	6.073	690	1.976
425	0.661	560	6.412	695	1.712
430	1.103	565	6.775	700	1.478
435	1.670	570	7.176	705	1.272
440	2.433	575	7.590	710	1.093
445	3.558	580	8.002	715	0.937
450	4.395	585	8.392	720	0.802
455	3.848	590	8.719	725	0.686
460	2.839	595	8.976	730	0.587
465	2.338	600	9.133	735	0.503
470	1.967	605	9.173	740	0.431
475	1.649	610	9.097	745	0.370
480	1.589	615	8.899	750	0.320
485	1.715	620	8.602	755	0.277
490	1.953	625	8.228	760	0.240
495	2.308	630	7.760	765	0.208
500	2.743	635	7.243	770	0.181
505	3.189	640	6.685	775	0.157
510	3.593	645	6.098	780	0.136





**itl boulder**

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

**NVLAP**  
NVLAP LAB CODE: 200925-0

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)

Page 4 of 4

REPORT NUMBER: ITL85926  
DATE: 11/06/15

PREPARED FOR: B-K LIGHTING, INC.

CATALOG NUMBER: NS-LED-e65-SP-12, AR-LED-TR-e65-SP-12, AR-LED-RM-e65-SP-12,  
DS-LED-e65-SP-12, RM-AR-LED-e65-SP-12, SN-LED-e65-SP-12,  
ST-LED-e65-SP-12, SF-LED-e65-SP-12, TF-LED-e65-SP-12,  
WS-LED-e65-SP-12, AW-LED-e65-SP-12, SW-LED-e65-SP-12,  
GD-LED-e65-SP-12, GQ-LED-e65-SP-12, EC-LED-e65-SP-12,  
ED-LED-e65-SP-12, SM-AR-LED-e65-SP-12, PM-LED-e65-SP-12,  
WM-LED-e65-SP-12, UL-AR-LED-e65-SP-12, HP2-LED-e65-SP-12,  
CO2-LED-e65-SP-12, VQ-LED-e65-SP-12, VS-LED-e65-SP-12

## CIE Chromaticity Diagram

