



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)  
REPORT NUMBER: ITL86264  
DATE: 01/12/16  
Page 1 of 4

PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: MD-LED-e71-1

ADDRESS: 40429 BRICKYARD DRIVE  
MADERA, CA 93636-9515

LUMINAIRE: CYLINDRICAL PLASTIC HOUSING WITH CAST BLACK PAINTED METAL TRIM. ONE LED MODULE CONSISTING OF: MACHINED CYLINDRICAL METAL HOUSING, MACHINED METAL CIRCUIT BOARD MOUNTING BASE, 1 BLACK CIRCUIT BOARD WITH 1 LED, CLEAR PLASTIC OPTIC ABOVE LED WITH RECESSED TOP CENTER, CLEAR FROSTED GLASS LENS IN CAST BLACK PAINTED METAL FACEPLATE WITH 1 APERTURE, LENS FROSTED SIDE IN.

LAMP: ONE WHITE LIGHT EMITTING DIODE (LED), VERTICAL BASE-DOWN POSITION.

DRIVER: B-K LIGHTING 518801/400187-F

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)

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

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

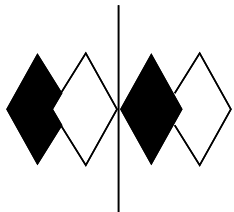
REPORT NUMBER: ITL86264  
DATE: 01/12/16  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: MD-LED-e71-1

RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	12.1 *
SPECTORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4362
Chromaticity Ordinate y	0.4068
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2490
Chromaticity Ordinate v'	0.5223
Correlated Color Temp CCT (K)	3033
ANSI C78.377-2008 Duv	0.001
Total Radiant Flux (milliWatts)	37 *
Scotopic / Photopic Lumen Ratio	1.370
ELECTRICAL	
Input Voltage (Volts AC )	12.0
Input Current (Amps AC )	0.352
Input Power (Watts)	2.73
Input Power Factor (%)	64.6
Input Current THD (%)	91.1
Input Voltage THD (%)	1.1
EFFICACY (lumens/Watt)	4.4

COLOR RENDERING INDICES	CRI
Ra (Average 1-8)	82
R1 Light greyish red	79
R2 Dark greyish yellow	89
R3 Strong yellowish green	96
R4 Moderate yellowish green	80
R5 Light bluish green	80
R6 Light blue	86
R7 Light violet	84
R8 Light reddish purple	59
R9 Strong red	5
R10 Strong yellow	74
R11 Strong green	79
R12 Strong blue	68
R13 Light yellowish pink (skin)	81
R14 Moderate olive green (leaf)	98

\*NOTE: Proper calibration of integrating spheres for measuring total flux output of non-directional samples will produce reliable, repeatable results within the calibration tolerances of the equipment used. However, measurement of test samples with significant self absorption and/or directional output, even when these effects are compensated for, are likely to have a greater variation in results compared to the flux output calculated from a goniophotometric exploration since these artifacts do not affect the goniophotometric results.



**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

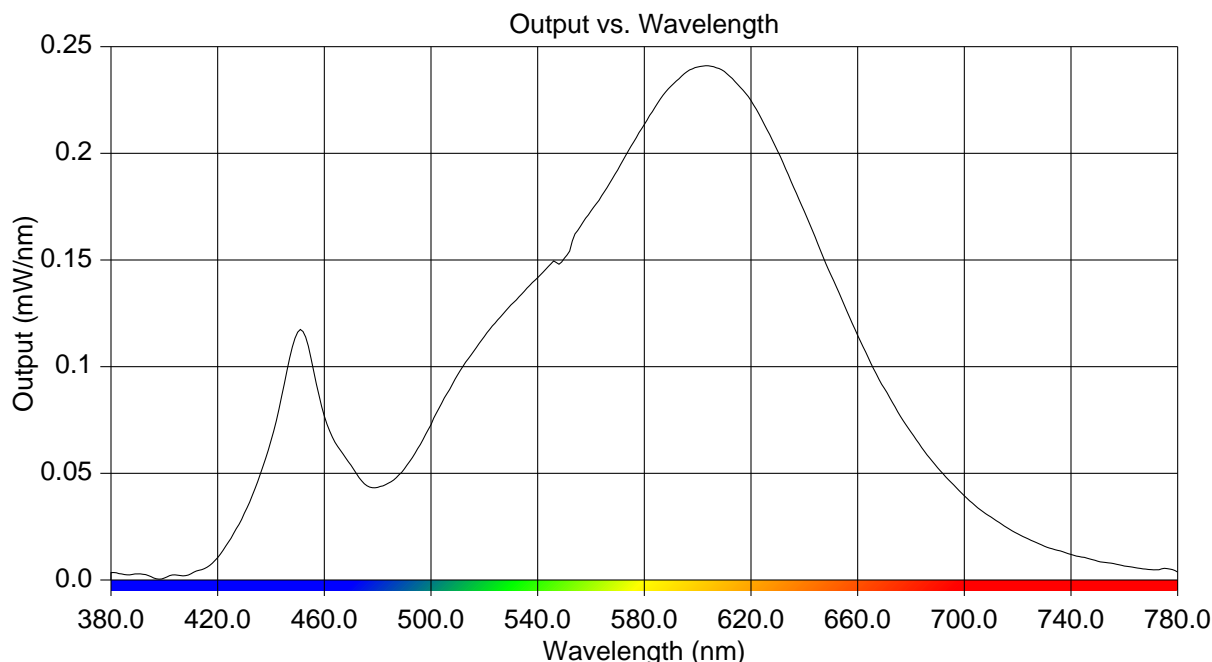
PHONE: (303)442-1255 • FAX: (970)535-3114 • E-MAIL: [itl@itlboulder.com](mailto:itl@itlboulder.com) • WEBSITE: [www.itlboulder.com](http://www.itlboulder.com)

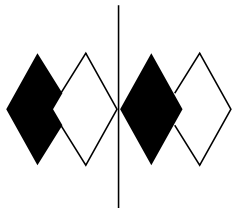
REPORT NUMBER: ITL86264  
DATE: 01/12/16  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: MD-LED-e71-1

Page 3 of 4

RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.003	515	0.105	650	0.143
385	0.003	520	0.114	655	0.129
390	0.003	525	0.122	660	0.115
395	0.002	530	0.129	665	0.101
400	0.001	535	0.135	670	0.090
405	0.002	540	0.142	675	0.079
410	0.003	545	0.148	680	0.069
415	0.005	550	0.151	685	0.060
420	0.010	555	0.164	690	0.053
425	0.020	560	0.173	695	0.046
430	0.031	565	0.182	700	0.039
435	0.046	570	0.192	705	0.034
440	0.065	575	0.203	710	0.030
445	0.092	580	0.214	715	0.025
450	0.116	585	0.224	720	0.022
455	0.104	590	0.231	725	0.019
460	0.077	595	0.237	730	0.016
465	0.063	600	0.240	735	0.014
470	0.054	605	0.241	740	0.012
475	0.045	610	0.238	745	0.011
480	0.043	615	0.232	750	0.009
485	0.046	620	0.225	755	0.008
490	0.052	625	0.214	760	0.007
495	0.062	630	0.201	765	0.006
500	0.073	635	0.187	770	0.005
505	0.085	640	0.173	775	0.005
510	0.096	645	0.158	780	0.004





**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)  
REPORT NUMBER: ITL86264  
DATE: 01/12/16  
PREPARED FOR: B-K LIGHTING, INC.  
CATALOG NUMBER: MD-LED-e71-1

Page 4 of 4

## CIE Chromaticity Diagram

