



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
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REPORT NUMBER: ITL88147-SPHERE
DATE: 08/26/16
PREPARED FOR: BOYD LIGHTING COMPANY
CATALOG NUMBER: C-10621

ADDRESS: 1455 VAPOR TRAIL
COLORADO SPRINGS, CO 80916

LUMINAIRE: FABRICATED BROWN PAINTED METAL MOUNTING BASE AND SUPPORT ROD,
FABRICATED BROWN PAINTED METAL 0.75" WIDE RING HOUSING, 117 LEDS,
3-PIECE TRANSLUCENT WHITE FROSTED PLASTIC DIFFUSER. DIFFUSER FROSTED
SIDE OUT.

LAMP: ONE HUNDRED SEVENTEEN WHITE LIGHT EMITTING DIODES (LEDS), VERTICAL
BASE-UP POSITION.

DRIVER: OSRAM OT40W/PRG1400C/UNV/DIM-1, DRIVER HAS MULTIPLE LEADS, ONLY LINE
INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST. CLIENT STATES
DRIVER PROGRAMMED FOR 675mA OUTPUT.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT
VOLTAGE (120VAC, 60Hz) TO THE DRIVER. LED INFORMATION PROVIDED BY
CLIENT.

		Calibration Due:
INSTRUMENTS:	Associated Power Technologies APT5040 AC Power Source	N/A
	Yokogawa WT210 Digital Power Meter #6	12/07/16
	Ocean Optics QE65000 Spectroradiometer	04/19/17
	ITL 2.0m Diameter Integrating Sphere S20-2, 4PI Geometry	04/19/17

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 120VAC 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	<u>N WHITE</u>
Approved	<u>P O'CONNOR</u> Sphere Lab Supervisor



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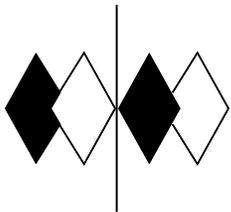
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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	1277 *
SPECTRORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4601
Chromaticity Ordinate y	0.4102
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2629
Chromaticity Ordinate v'	0.5272
Correlated Color Temp CCT (K)	2693
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	4357 *
Scotopic / Photopic Lumen Ratio	1.345
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.256
Input Power (Watts)	30.6
Input Power Factor (%)	99.6
Input Current THD (%)	6.3
Input Voltage THD (%)	0.1
EFFICACY (lumens/Watt)	41.7

COLOR RENDERING INDICES		CRI
Ra (Average 1-8)		90
R1	Light greyish red	90
R2	Dark greyish yellow	97
R3	Strong yellowish green	96
R4	Moderate yellowish green	89
R5	Light bluish green	91
R6	Light blue	97
R7	Light violet	87
R8	Light reddish purple	73
R9	Strong red	45
R10	Strong yellow	93
R11	Strong green	91
R12	Strong blue	86
R13	Light yellowish pink (skin)	92
R14	Moderate olive green (leaf)	99

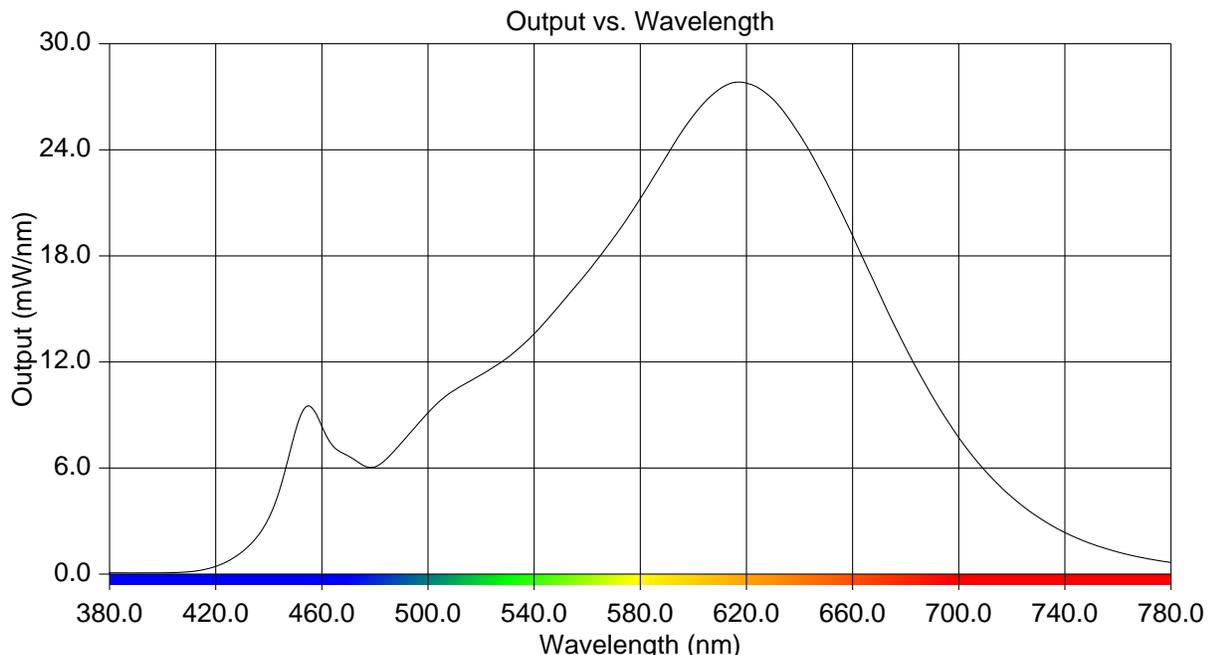
*NOTE: The total lumen output shown on this report was obtained from photometric test ITL88147-GONIOPHOTOMETRY

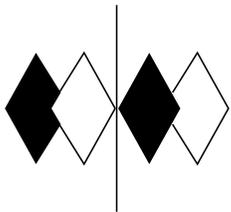


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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.071	515	10.851	650	22.217
385	0.070	520	11.276	655	20.707
390	0.066	525	11.734	660	19.136
395	0.069	530	12.242	665	17.511
400	0.072	535	12.876	670	15.898
405	0.088	540	13.595	675	14.306
410	0.131	545	14.408	680	12.808
415	0.235	550	15.282	685	11.392
420	0.435	555	16.175	690	10.070
425	0.764	560	17.070	695	8.846
430	1.267	565	18.027	700	7.724
435	2.002	570	19.034	705	6.724
440	3.168	575	20.101	710	5.838
445	5.227	580	21.244	715	5.050
450	8.071	585	22.459	720	4.357
455	9.528	590	23.673	725	3.746
460	8.359	595	24.883	730	3.217
465	7.117	600	25.936	735	2.751
470	6.679	605	26.817	740	2.349
475	6.199	610	27.451	745	2.009
480	6.058	615	27.808	750	1.714
485	6.607	620	27.774	755	1.465
490	7.427	625	27.458	760	1.245
495	8.283	630	26.867	765	1.060
500	9.129	635	25.966	770	0.903
505	9.862	640	24.868	775	0.769
510	10.411	645	23.606	780	0.654





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CIE Chromaticity Diagram

