



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: ITL88148-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 900mA 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	<i>N WHITE</i>
Approved	<i>P O'CONNOR</i> Sphere Lab Supervisor



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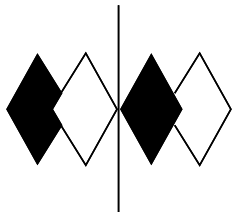
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RESULTS:

PHOTOMETRIC	
Total Integrated Flux (lumens)	1608 *
SPECTORADIOMETRIC	
Observer	CIE 1931 2 degree
Chromaticity Ordinate x	0.4599
Chromaticity Ordinate y	0.4099
Observer	CIE 1976 2 degree
Chromaticity Ordinate u'	0.2628
Chromaticity Ordinate v'	0.5271
Correlated Color Temp CCT (K)	2694
ANSI C78.377-2008 Duv	0.000
Total Radiant Flux (milliWatts)	5480 *
Scotopic / Photopic Lumen Ratio	1.342
ELECTRICAL	
Input Voltage (Volts AC)	120.0
Input Current (Amps AC)	0.352
Input Power (Watts)	42.1
Input Power Factor (%)	99.7
Input Current THD (%)	6.2
Input Voltage THD (%)	0.1
EFFICACY (lumens/Watt)	38.2

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	44
R10 Strong yellow	93
R11 Strong green	90
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 ITL88148-GONIOPHOTOMETRY



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NVLAP LAB CODE: 200925-0

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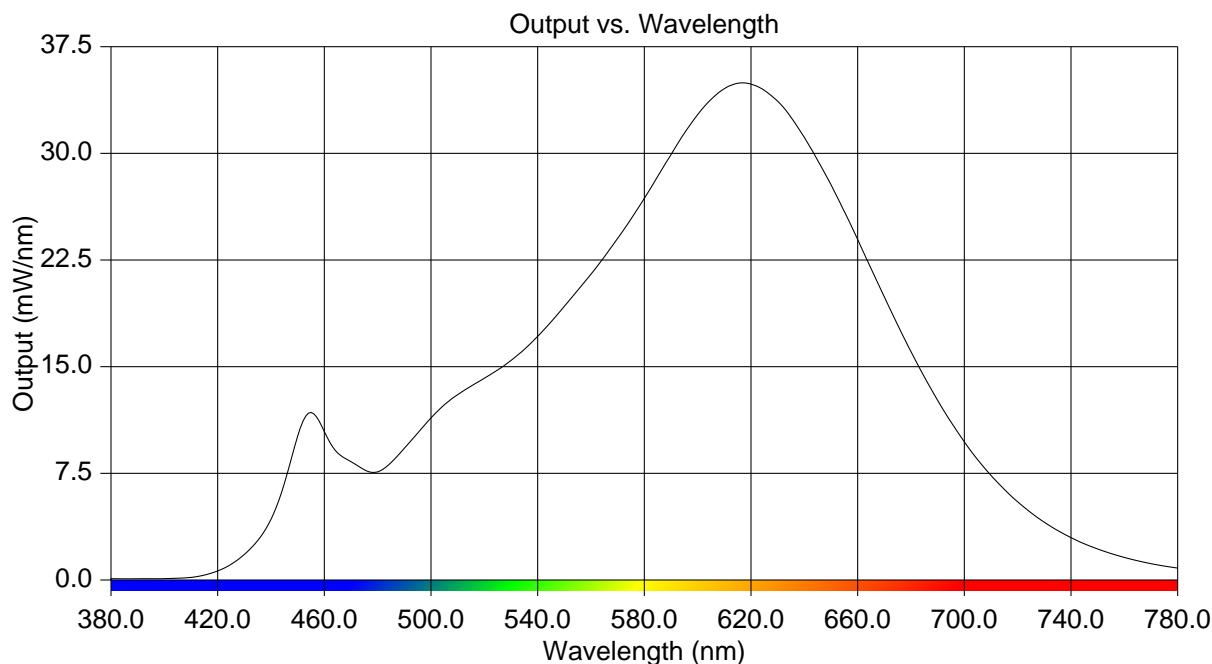
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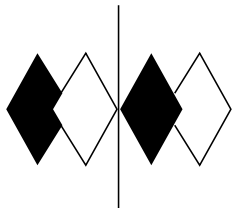
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RESULTS:

Wavelength	mW per nm	Wavelength	mW per nm	Wavelength	mW per nm
380	0.090	515	13.630	650	27.795
385	0.083	520	14.187	655	25.910
390	0.087	525	14.766	660	23.943
395	0.089	530	15.435	665	21.906
400	0.095	535	16.217	670	19.905
405	0.124	540	17.135	675	17.933
410	0.182	545	18.146	680	16.056
415	0.345	550	19.246	685	14.283
420	0.635	555	20.365	690	12.629
425	1.098	560	21.507	695	11.109
430	1.795	565	22.725	700	9.714
435	2.769	570	24.024	705	8.459
440	4.265	575	25.382	710	7.353
445	6.780	580	26.835	715	6.371
450	10.115	585	28.379	720	5.499
455	11.782	590	29.908	725	4.728
460	10.437	595	31.414	730	4.060
465	8.928	600	32.724	735	3.480
470	8.319	605	33.790	740	2.979
475	7.750	610	34.546	745	2.545
480	7.600	615	34.927	750	2.181
485	8.248	620	34.866	755	1.861
490	9.263	625	34.429	760	1.588
495	10.328	630	33.665	765	1.351
500	11.397	635	32.533	770	1.147
505	12.319	640	31.121	775	0.980
510	13.029	645	29.505	780	0.839





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CIE Chromaticity Diagram

