LIGHT LABORATORY INC.
8165 E. Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
f. 714.676.5558

Photometric Test Report

IES FLOOD REPORT
PHOTOMETRIC FILENAME : L021606603.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L021606603
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 3/3/2016
[MANUFAC] VISTA PROFESSIONAL OUTDOOR LIGHTING
[LUMCAT] 1188-WF-C-CX
[LUMINAIRE] 12"DIA. X 12"H. LED Ingrade, WF Distribution
[BALLASTCAT] ERP ESP040W-0900-42
[LAMPPOSITION] 0,0
[LAMPCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 37.44W
[TEST PROCEDURE] IESNA:LM-79-08

Note: Candela values converted from Type-C to Type-B

CHARACTERISTICS

NEMA Type	7 H x 7 V
Maximum Candela	1812
Maximum Candela Angle	0H 0V
Horizontal Beam Angle (50%)	79.3
Vertical Beam Angle (50%)	79.3
Horizontal Field Angle (10%)	133.7
Vertical Field Angle (10%)	133.7
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	2184
Beam Efficiency	N.A.
Field Lumens	3090
Field Efficiency	N.A.
Spill Lumens	158
Luminaire Lumens	3248
Total Efficiency	N.A.
Total Luminaire Watts	37.44
Ballast Factor	1.00

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AXIAL CANDELA

DEG.	HOR.	DEG.	VERT.
90	0	90	0
85	14	85	14
75	57	75	57
65	209	65	209
55	339	55	339
47.5	440	47.5	440
42.5	462	42.5	462
37.5	1235	37.5	1235
33	1713	33	1713
29	1500	29	1500
25.5	1552	25.5	1552
22.5	1633	22.5	1633
19.5	1696	19.5	1696
17	1722	17	1722
15	1735	15	1735
13	1746	13	1746
11	1759	11	1759
9	1771	9	1771
7	1783	7	1783
5	1790	5	1790
3	1799	3	1799
1	1809	1	1809
0	1812	0	1812
-1	1809	-1	1809
-3	1799	-3	1799
-5	1790	-5	1790
-7	1783	-7	1783
-9	1771	-9	1771
-11	1759	-11	1759
-13	1746	-13	1746
-15	1735	-15	1735
-17	1722	-17	1722
-19.5	1696	-19.5	1696
-22.5	1633	-22.5	1633
-25.5	1552	-25.5	1552
-29	1500	-29	1500
-33	1713	-33	1713
-37.5	1235	-37.5	1235
-42.5	462	-42.5	462
-47.5	440	-47.5	440
-55	339	-55	339
-65	209	-65	209
-75	57	-75	57
-85	14	-85	14
-90	0	-90	0

ZONAL LUMEN SUMMARY

Zone	%
0-20	19.3
0-30	40.2
0-40	64.2
0-60	86.5
0-80	98.7
0-90	100
10-90	95.7
20-40	44.9
20-50	59.5
40-70	30.2
60-80	12.2
70-80	4.2
80-90	1.3
90-110	0
90-120	0
90-130	0
90-150	0
90-180	0
110-180	0
0-180	100

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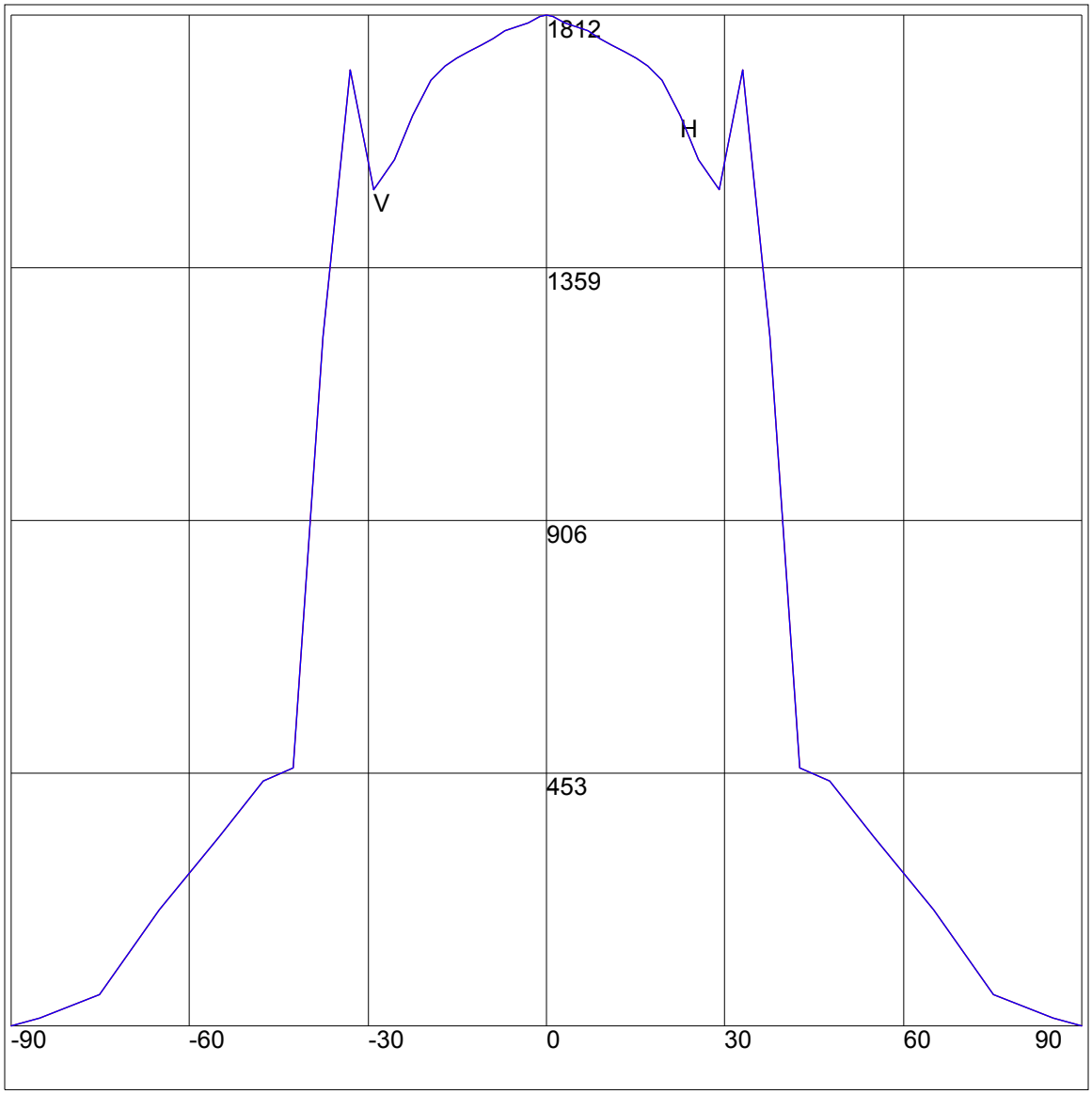
AXIAL CANDELA DISPLAY



Maximum Candela = 1812 Located At Horizontal Angle = 0, Vertical Angle = 0
H - Horizontal Axial Candela
V - Vertical Axial Candela

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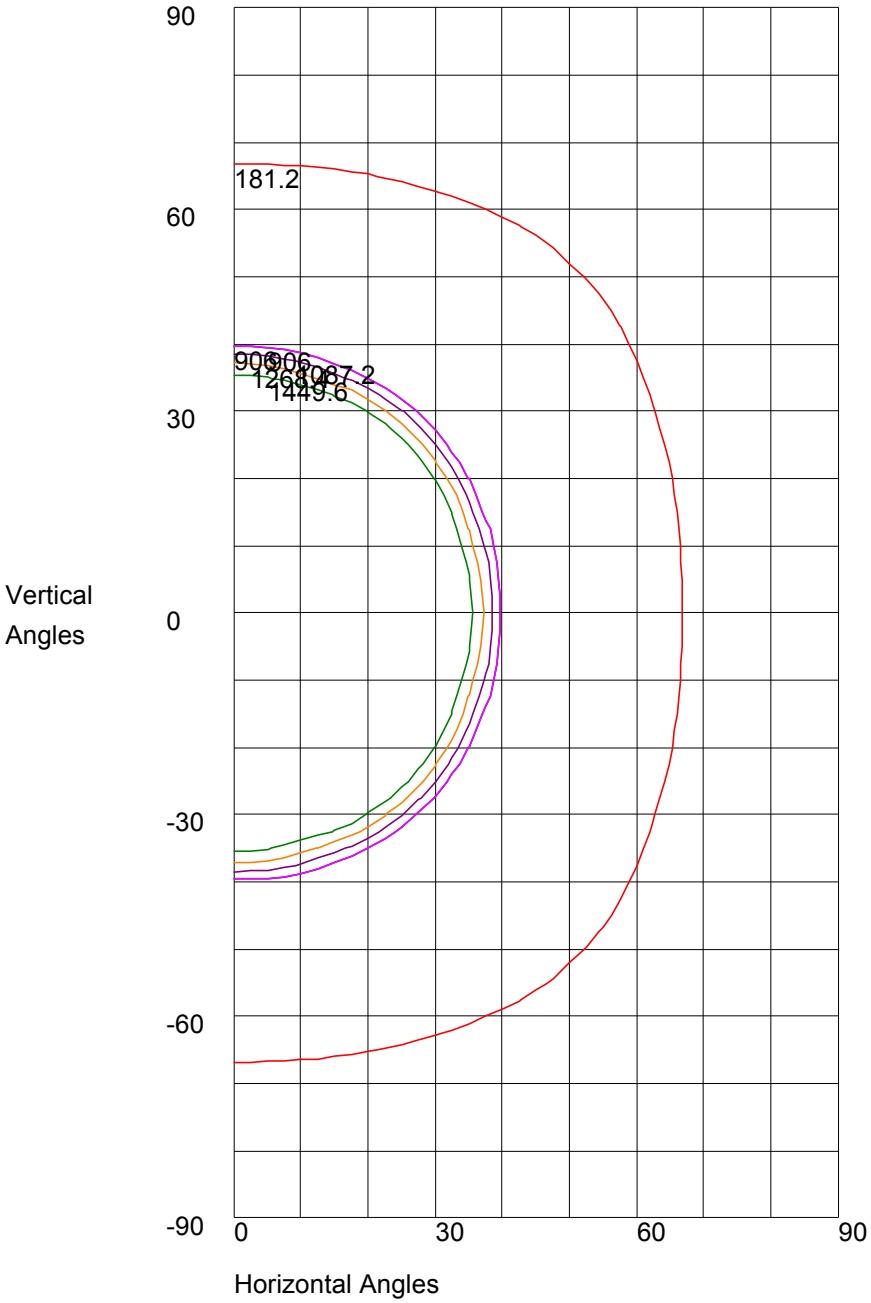
ISOCANDELA CURVES



Maximum Candela = 1812 Located At Horizontal Angle = 0, Vertical Angle = 0
50% Maximum Candela = 906
10% Maximum Candela = 181.2

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Report No: L021606603
Date: 3/3/2016

NVLAP LAB CODE 200927-0

Report No: **L021606603**

Report Prepared For: Vista Professional Outdoor Lighting
1625 Surveyor Ave., Simi Valley CA 93063

Model Number: **1188-WF-C-CX**

Test: Electrical and Photometric tests

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Catalog number is 1188-B-WF-30-C-MV-CX-ND. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 2/22/16

Date of Tests: 2/29/16 - 2/29/16

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

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Test Summary	
Manufacturer:	Vista Professional Outdoor Lighting
Model Number:	1188-WF-C-CX
Driver Model Number:	ERP ESP040W-0900-42
Total Lumens:	3247.82
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.31
Input Power (W):	37.44
Input Power Factor:	0.99
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	87
Color Rendering Index (CRI):	84
Correlated Color Temperature (K):	2930
Chromaticity Coordinate x:	0.4422
Chromaticity Coordinate y:	0.4062
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:00
Off State Power(W):	0.00

FIG. 1 LUMINAIRE

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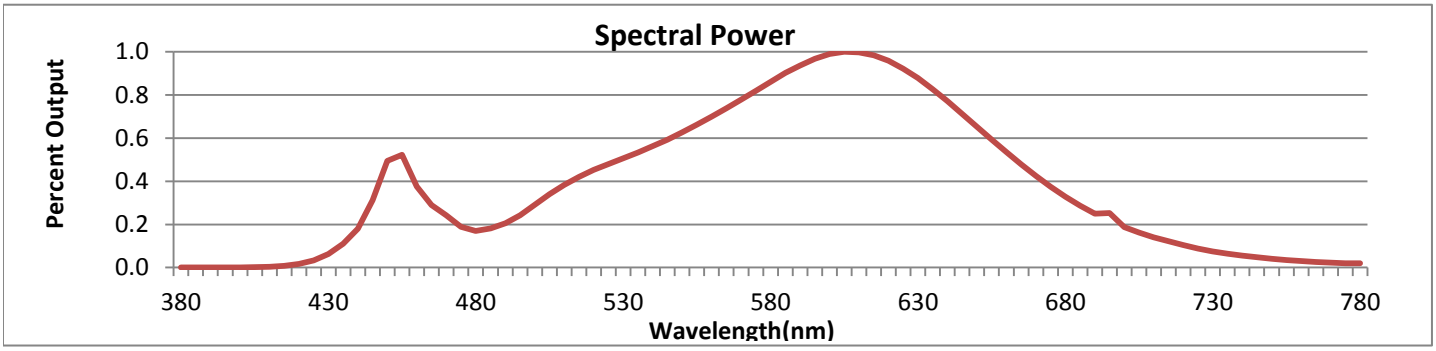


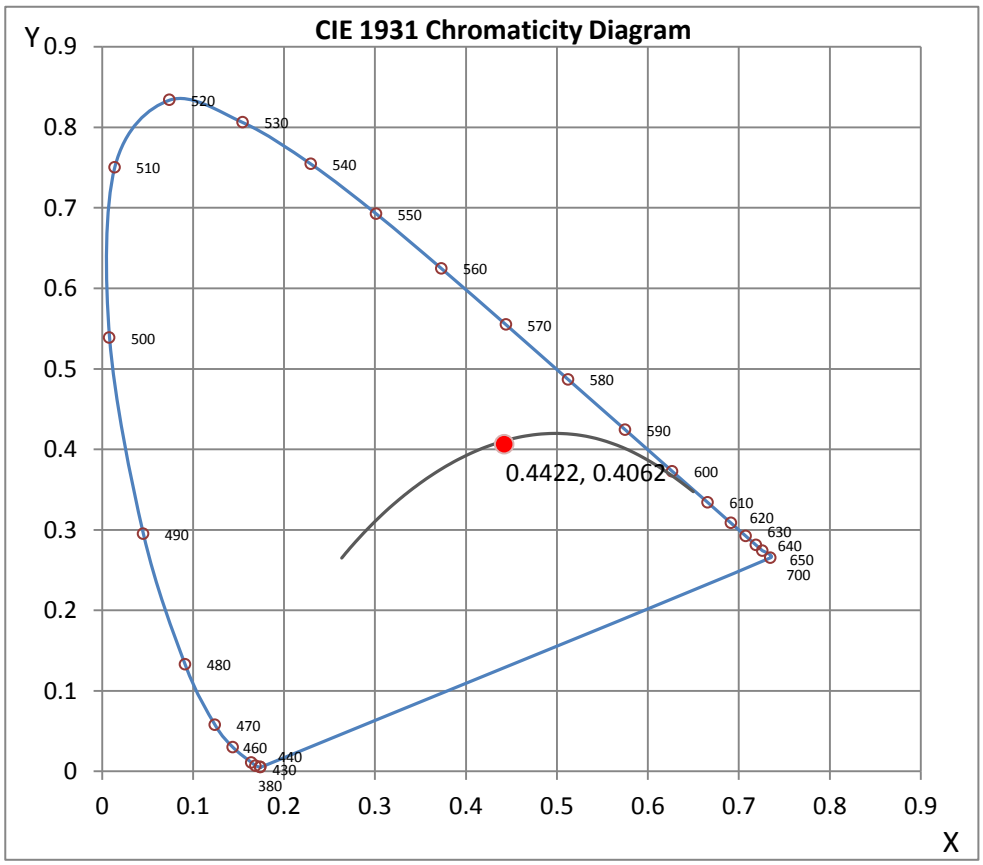
Wavelength	W/m²nm	440	0.0063	510	0.0133	580	0.0298	650	0.0227	720	0.0036
380	0.0000	450	0.0171	520	0.0157	590	0.0325	660	0.0186	730	0.0026
390	0.0000	460	0.0130	530	0.0175	600	0.0343	670	0.0147	740	0.0019
400	0.0000	470	0.0084	540	0.0195	610	0.0346	680	0.0114	750	0.0014
410	0.0001	480	0.0059	550	0.0217	620	0.0332	690	0.0087	760	0.0010
420	0.0006	490	0.0071	560	0.0242	630	0.0304	700	0.0065	770	0.0008
430	0.0022	500	0.0101	570	0.0270	640	0.0267	710	0.0049	780	0.0007

CRI & CCT

x	0.4422
y	0.4062
u'	0.2530
v'	0.5230
CRI	83.50
CCT	2930
Duv	0.00015

R Values

R1	82.08
R2	90.83
R3	97.00
R4	81.36
R5	81.43
R6	88.07
R7	84.67
R8	62.89
R9	16.47
R10	78.32
R11	79.93
R12	68.31
R13	84.02
R14	98.43



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Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : JEFF AHN

Test Report Released by:

Jeff Ahn
Engineering Manager

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 8*

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