REPORT

25800 COMMERCENTRE DRIVE, LAKE FOREST, CA 92630

Project No. G104284584 Date: May 28, 2020

REPORT NO. 104284584LAX-010

TEST OF ONE OUTDOOR FLOODLIGHT

MODEL NO. CF-125-WF-120-277-CW
LED MODEL NO. LUXEON 5050
DRIVER MODEL NO. INVENTRONICS EUD-150S105DVA

RENDERED TO

PHOENIX PRODUCTS LLC
8711 W. PORT AVE
MILWAUKEE, WI 53224

STATEMENT OF LIMITATION: This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

TEST: Electrical and Photometric tests as required to the IESNA test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number Qu-01061429.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2015: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one production sample of model number CF-125-WF-120-277-CW. The sample was received by Intertek on April 27, 2020, in undamaged condition and one sample was tested as received. The sample designation was LAN2004271315-001.

DATES OF TESTS: April 30, 2020 through April 30, 2020.

SUMMARY

Model No.:	CF-125-WF-120-277-CW
Description:	Outdoor Floodlight

	Result	
Criteria	Goniometer	Sphere
Total Lumen Output (Lumens)	15806	15369
Total Power (W)	113.2	114.5
Luminaire Efficacy (LPW)	139.6	134.2

Criteria	Result
Power Factor at 120Vac	0.997
Power Factor at 277Vac	0.945
Current ATHD % at 120Vac	6.69
Current ATHD % at 277Vac	9.03
Correlated Color Temperature (CCT - K)	5073
Color Rendering Index (CRI - Ra)	72.8
Color Rendering Index (CRI - R9)	-25.5
DUV	0.001
Chromaticity Coordinate (x)	0.343
Chromaticity Coordinate (y)	0.353
Chromaticity Coordinate (u')	0.210
Chromaticity Coordinate (v')	0.485

EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Date Calibrated	Calibration Due Date	Date Used
Goniophotometer	6440T	000943	VBU	VBU	04/30/20
AC Source	CW1251P	000944	VBU	VBU	04/30/20
Power Analyzer	WT210	000945	10/02/19	10/02/20	04/30/20
Tape Measure	33-428	001491	VBU	VBU	04/30/20
Magnetic Level	581-9	001610	10/11/19	10/11/20	04/30/20
Temp. & RH Meter	971	001867	06/03/19	06/03/20	04/30/20
Thermometer	DPi8-C24	001782	10/15/19	10/15/20	04/30/20
3m Sphere	CSTM-LMS-3M-3020	000830	VBU	VBU	04/30/20
Spectrometer	CDS-3020-T	000834	VBU	VBU	04/30/20
Power Supply (AC 3P / DC)	CSW5550-208-LAN	001339	VBU	VBU	04/30/20
Power Meter	WT330	001319	07/02/19	07/02/20	04/30/20
Temp. & RH Meter	971	001867	06/03/19	06/03/20	04/30/20
Thermometer	52 Series II	001018	01/16/20	01/16/21	04/30/20
DC Power Supply	LPS-100-0833	000836	07/22/19	07/22/20	04/30/20

TEST METHODS

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IESNA LM-79.

Photometric and Electrical Measurements – Integrating Sphere Method

A Labsphere Model CDS-3020 High Sensitivity Multi Channel Spectrometer and Two Meter or Three Meter Sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation. Each SSL unit was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

The calibration of the sphere photometer-spectroradiometer system is traceable to the National Institute of Standards and Technology.

Photometric and Electrical Measurements – Distribution Method

A LSI Type C High Speed Model 6440 Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for each sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize for at least thirty minutes before measurements were made. Electrical measurements including voltage, current, and power were measured using the Xitron or Yokogawa Power Analyzer.

Some graphics were created with Photometrics Plus software.

RESULTS OF TEST

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) - Integrating Sphere Method

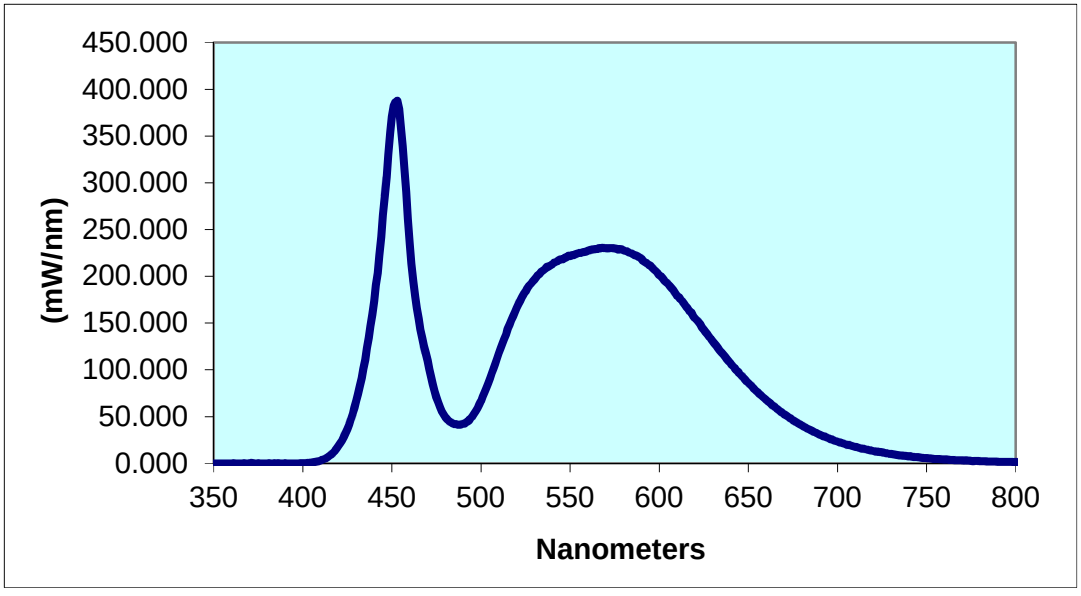
Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Current ATHD (%)	Luminous Flux (Lumens)	Lumen Efficacy (LPW)
LAN2004271315-001	Horizontal	120.0	956.8	114.5	0.997	6.69	15369	134.2
		277.0	425.1	111.2	0.945	9.03		

Correlated Color Temperature (K)	CRI -Ra	CRI -R9	DUV	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
5073	72.8	-25.5	0.001	0.343	0.353	0.210	0.485

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.000	440	173.6	530	196.6	620	155.2	710	17.54
355	0.000	445	265.3	535	206.5	625	143.1	715	15.54
360	0.000	450	370.9	540	212.8	630	130.5	720	13.18
365	0.000	455	360.6	545	218.4	635	118.4	725	11.82
370	0.000	460	234.6	550	221.5	640	107.2	730	10.02
375	0.259	465	154.6	555	225.0	645	96.11	735	8.576
380	0.000	470	109.8	560	227.4	650	86.13	740	7.483
385	0.000	475	70.78	565	229.2	655	76.47	745	6.672
390	0.383	480	49.37	570	230.1	660	68.08	750	5.686
395	0.000	485	42.08	575	229.7	665	60.25	755	4.796
400	0.328	490	42.31	580	227.8	670	52.55	760	4.191
405	0.843	495	50.02	585	224.0	675	46.16	765	3.632
410	2.996	500	66.69	590	219.0	680	40.65	770	3.329
415	8.020	505	90.99	595	211.2	685	35.46	775	2.801
420	18.68	510	117.5	600	201.0	690	30.85	780	2.357
425	36.63	515	143.9	605	191.8	695	26.85		
430	66.54	520	166.3	610	179.4	700	23.12		
435	110.7	525	183.7	615	168.1	705	20.21		

Spectral Data Over Visible Wavelengths



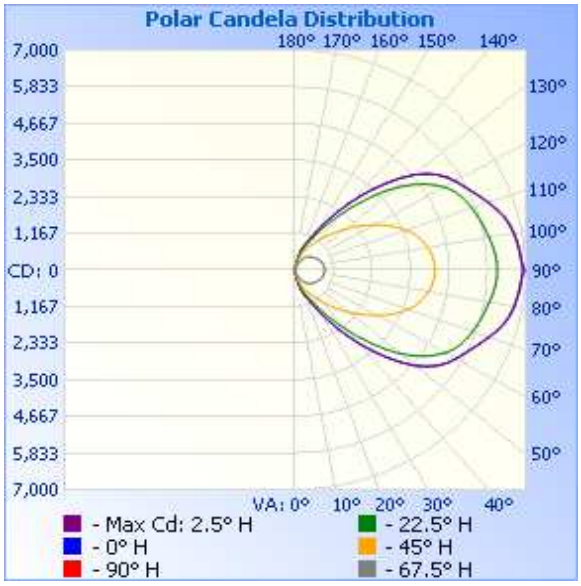
RESULTS OF TEST (cont'd)

Photometric and Electrical Measurements at Ambient Temperature (25°C +/- 1°C) – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage {Vac}	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (LPW)
LAN2004271315-001	Horizontal	120.1	946.0	113.2	0.997	15806	139.6

Intensity (Candlepower) Summary at 25°C - Candelas

Angle	0	22.5	45	67.5	90
0	0	0	0	0	0
5	77	68	42	14	0
10	252	224	144	49	0
15	607	494	284	101	0
20	832	764	520	166	0
25	1136	1000	723	243	0
30	1631	1369	881	340	0
35	2294	1888	1086	458	0
40	3081	2546	1359	542	0
45	3924	3328	1687	599	0
50	4728	4125	2052	650	0
55	5297	4780	2459	699	0
60	5646	5267	2885	746	0
65	5930	5563	3297	786	0
70	6267	5728	3639	829	0
75	6579	5864	3912	859	0
80	6752	5980	4098	882	0
85	6854	6093	4210	899	0
90	6909	6133	4244	896	0
95	6854	6093	4210	899	0
100	6752	5980	4098	882	0
105	6579	5864	3912	859	0
110	6267	5728	3639	829	0
115	5930	5563	3297	786	0
120	5646	5267	2885	746	0
125	5297	4780	2459	699	0
130	4728	4125	2052	650	0
135	3924	3328	1687	599	0
140	3081	2546	1359	542	0
145	2294	1888	1086	458	0
150	1631	1369	881	340	0
155	1136	1000	723	243	0
160	832	764	520	166	0
165	607	494	284	101	0
170	252	224	144	49	0
175	77	68	42	14	0
180	0	0	0	0	0



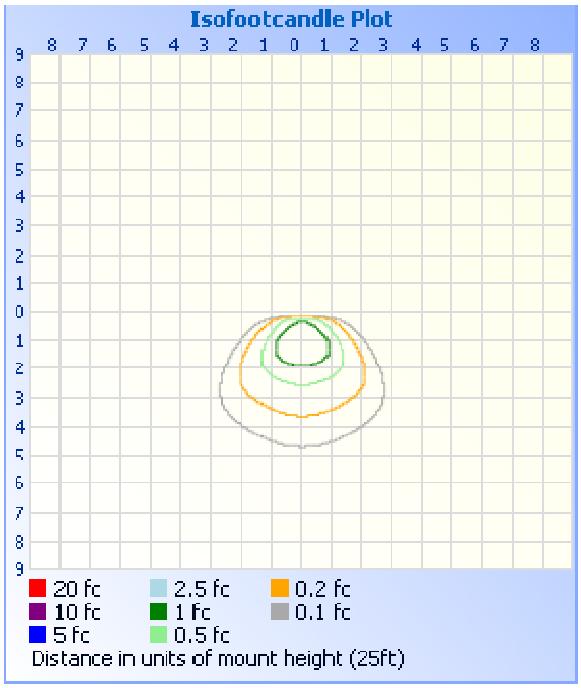
RESULTS OF TEST (cont'd)

Illumination Plots

Mounting Height: 25 ft.

Illuminance - Cone of Light

Isoillumination Plot



Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
0-30	200.4	1.3
0-40	568.4	3.6
0-60	2496	15.8
60-90	5408	34.2
0-90	7903	50.0
90-180	7903	50.0
0-180	15806	100.0

Zonal Lumens and Percentages at 25°C

Zone	Lumens	% Luminaire
0-10	3.6	0.0
10-20	44.5	0.3
20-30	152.4	1.0
30-40	368.0	2.3
40-50	738.5	4.7
50-60	1189	7.5
60-70	1567	9.9
70-80	1843	11.7
80-90	1998	12.6
90-100	1998	12.6
100-110	1843	11.7
110-120	1567	9.9
120-130	1189	7.5
130-140	738.3	4.7
140-150	367.9	2.3
150-160	152.3	1.0
160-170	44.5	0.3
170-180	3.6	0.0

PICTURES (not to scale)

CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:

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Report Reviewed By:

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Lighting Division

Attachment: None