

# PHOENIX PRODUCTS LLC

## TEST REPORT

### SCOPE OF WORK

Electrical and Photometric tests as required to the IESNA LM-79 test standard.

### MODEL NUMBER

RCF-125-SP-120-277-CW

### REPORT NUMBER

103740339CHI-008

### ISSUE DATE

### REVISION DATE

None

### DOCUMENT CONTROL NUMBER

TBD

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**TEST REPORT**

**REPORT NO.: 103740339CHI-008**

**REPORT DATE: December 11, 2019**

**TEST OF ONE OUTDOOR FLOODLIGHT**

**MODEL NO. RCF-125-SP-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**

NVLAP Lab Code 600186-0. 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.

**AUTHORIZATION**

The testing performed was authorized by signed quote number Qu-00935344-2.

**STANDARDS USED**

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 RCF-125-SP-120-277-CW. The sample was received by Intertek on November 22, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH11222019112120-002.

**DATE OF TESTS**

December 3, 2019 through December 3, 2019.

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**SUMMARY**

<b>MODEL NO:</b>	RCF-125-SP-120-277-CW
<b>DESCRIPTION:</b>	Outdoor Floodlight

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	15003.4	14838.0
Input Power (W) @ 120 (VAC)	113.12	113.18
Lumen Efficacy (lm/W)	132.6	131.1
Input Power Factor ( ) @ 120 (VAC)	0.997	0.997

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	6.68
Correlated Color Temperature (K)	5057
Color Rendering Index - Ra	73.0
Color Rendering - R9	-25.2
DUV	0.0018
Chromaticity Coordinate (x)	0.344
Chromaticity Coordinate (y)	0.354
Chromaticity Coordinate (u')	0.210
Chromaticity Coordinate (v')	0.486

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**EQUIPMENT LIST**

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/1/2019	7/1/2020
Omega Thermometer	DPI8-C24	146920	10/3/2019	10/3/2020
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
Newport Thermohygrometer	iServer	146957	12/11/2018	12/11/2019
Elgar, AC Power Supply	CW1251	146111	VBV	VBV
Labsphere Spectroradiometer	CDS2600	CHI0539	VBV	VBV
3 Meter Sphere	SPR600	CHI0088	VBV	VBV
Elgar AC Power Supply	CW1251	146112	VBV	VBV
Sorenson DC Power Supply	XFR150-8	146846	VBV	VBV
Newport Humidity Recorder	iTHX-SD	146382	4/17/2019	4/17/2020
Yokogawa Power Meter	WT1600	146769	4/3/2019	4/3/2020
Extech K Temperature Meter	SD200	CHI0207	4/3/2019	4/3/2020

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**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 Spectroradiometer and integrating 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. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a 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 Type C Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for the SSL sample.

IES Files were converted to display a Type B pattern.

Ambient temperature was measured equal to the height of the sample mounted on the goniometer equipment. The SSL sample was operated on the client provided driver at rated input volts in its designated orientation. The SSL sample was allowed to stabilize for at least thirty minutes before measurements were made. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a power analyzer.

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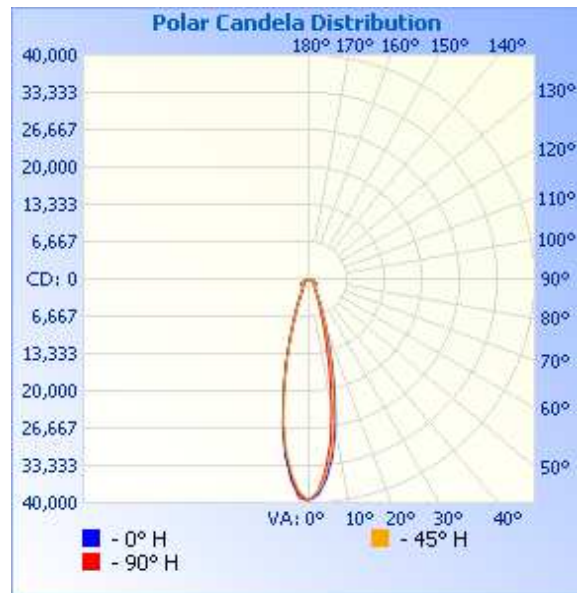
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR	LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)
AH11222019112120-002	Base Up	120.1	945.4	113.18	0.997	14838.0	131.1

INTENSITY SUMMARY - CANDELAS

Angle	-90	-67.5	-45	-22.5	0
90	26	21	20	18	14
85	26	87	151	181	178
80	26	176	336	413	410
75	26	277	575	661	640
70	26	380	720	844	878
65	26	456	804	1102	1250
60	26	517	935	1358	1456
55	26	571	1103	1470	1571
50	26	614	1239	1481	1596
45	26	656	1317	1419	1503
40	26	695	1364	1484	1524
35	26	731	1379	1651	1775
30	26	763	1330	1744	2567
25	26	789	1307	2077	4413
20	26	808	1297	2625	8178
15	26	818	1322	3463	15756
10	26	827	1348	4284	26690
5	26	842	1348	4807	35723
0	26	845	1379	5555	39536
-5	26	842	1348	4807	35723
-10	26	827	1348	4284	26690
-15	26	818	1322	3463	15756
-20	26	808	1297	2625	8178
-25	26	789	1307	2077	4413
-30	26	763	1330	1744	2567
-35	26	731	1379	1651	1775
-40	26	695	1364	1484	1524
-45	26	656	1317	1419	1503
-50	26	614	1239	1481	1596
-55	26	571	1103	1470	1571
-60	26	517	935	1358	1456
-65	26	456	804	1102	1250
-70	26	380	720	844	878
-75	26	277	575	661	640
-80	26	176	336	413	410
-85	26	87	151	181	178
-90	26	21	20	18	14



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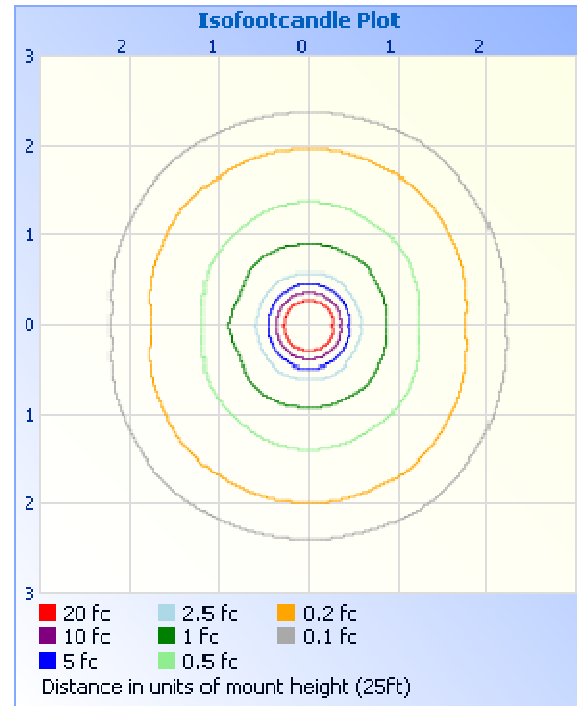
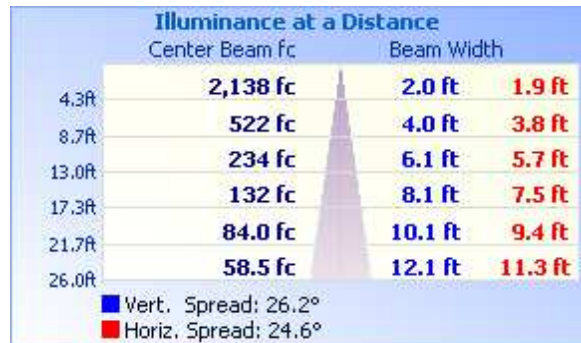
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RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

MOUNTING HEIGHT: 10ft	
ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	9216.5	62.1
0-40	10397.7	70.1
0-60	12774.0	86.1
60-90	2064.0	13.9
70-100	14838.0	100.0
90-120	0.0	0.0
0-90	0.0	0.0
90-180	0.0	0.0
0-180	0.0	0.0

ZONE	LUMENS	% LUMINAIRE
0-10	3032.9	20.4
10-20	4156.5	28.0
20-30	2027.2	13.7
30-40	1181.2	8.0
40-50	1135.9	7.7
50-60	1240.4	8.4
60-70	1100.1	7.4
70-80	717.9	4.8
80-90	246.0	1.7

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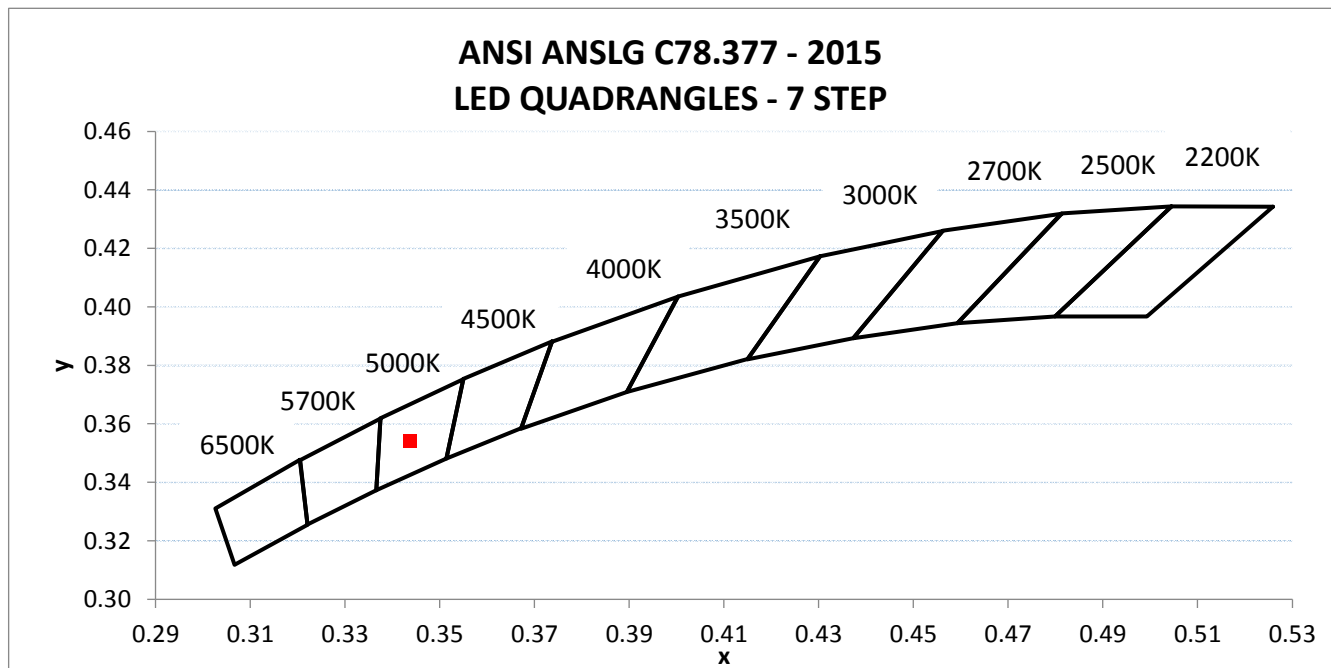
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR ( )	INPUT CURRENT ATHD (%)
AH11222019112120-002	Base Up	120.00	945.90	113.12	0.997	6.68

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
15003.4	132.6	5057	73.0	-25.2	0.0018

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.344	0.354	0.210	0.486





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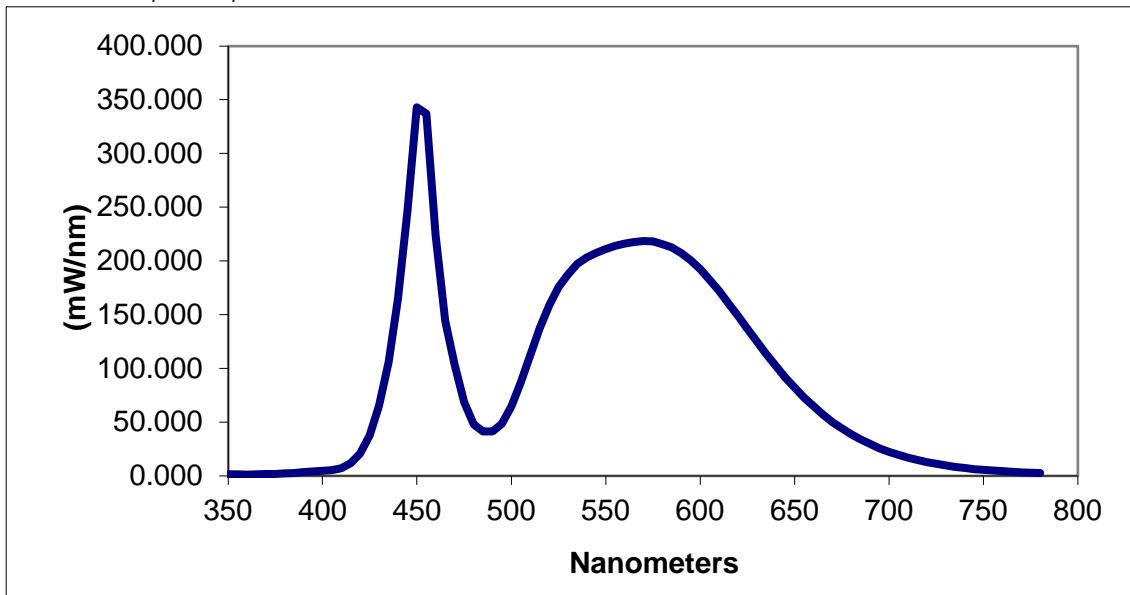
REPORT DATE: December 11, 2019

RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

SPECTRAL DISTRIBUTION OVER VISIBLE WAVELENGTHS*							
nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	1.400	460	223.380	570	218.359	680	38.703
355	1.499	465	144.176	575	218.001	685	33.909
360	1.274	470	103.739	580	215.586	690	29.665
365	1.431	475	68.763	585	212.500	695	25.672
370	1.677	480	47.958	590	207.090	700	22.380
375	1.880	485	41.331	595	200.667	705	19.489
380	2.253	490	41.391	600	192.345	710	16.941
385	2.729	495	48.561	605	182.412	715	14.769
390	3.393	500	64.877	610	171.943	720	12.884
395	4.163	505	86.815	615	160.474	725	11.295
400	4.707	510	112.549	620	148.849	730	9.764
405	5.455	515	137.318	625	136.836	735	8.422
410	7.233	520	158.532	630	124.984	740	7.343
415	11.753	525	175.563	635	113.359	745	6.350
420	20.914	530	187.503	640	102.389	750	5.638
425	37.671	535	197.265	645	91.657	755	4.943
430	65.211	540	203.321	650	82.263	760	4.292
435	105.719	545	207.468	655	73.000	765	3.782
440	164.386	550	211.022	660	64.703	770	3.300
445	246.364	555	213.936	665	57.148	775	2.872
450	343.111	560	216.032	670	50.063	780	2.512
455	336.820	565	217.486	675	44.190		

\*Without correction of sample absorption.



End Of Test Results

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**PICTURES**



**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:

*Tim Quigley*

Timothy Quigley  
Project Engineer  
Lighting Division

Report Reviewed By:

*Jeff Davis*

Jeff Davis  
N.A. Technical Lead  
Lighting Division

Attachments: IES File

**REVISION HISTORY**

JOB NUMBER	DATE OF REVISION	PROJECT HANDLER	REVIEWED BY	REVISION NOTE
None				