



## REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100233515

Date: November 16, 2010

REPORT NO. 100233515CRT-001

TEST OF LED FIXTURE

FIXTURE MODEL NO. PORT-RD-ST-SA

RENDERED TO

EDGE LIGHTING  
1718 W FULLERTON AVENUE  
CHICAGO, IL 60614

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

LABORATORY NOTE: The laboratory that conducted the testing detailed in this report has been Qualified, Verified, and Recognized for LM-79 Testing for ENERGY STAR for SSL by US DOE's CALiPER program.

AUTHORIZATION: The testing performed was authorized by signed quote number 500260430.

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 Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI NEMA ANSLG C78.377: 2008 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model number PORT-RD-ST-SA. The sample was received by Intertek on September 29, 2010, in undamaged condition, and one sample was tested as received. The sample designation was E7437L.

DATES OF TESTS: November 9, 2010 through November 11, 2010.

## SUMMARY

Model No.:	PORT-RD-ST-SA
Description:	LED Fixture

Criteria	Result
Total Lumen Output	95.0 Lumens
Total Power	3.510 W
Luminaire Efficacy	27.07
Power Factor	0.781
Current ATHD	104.2 %
Correlated Color Temperature (CCT)	3029 K
Color Rendering Index (CRI)	80.0
Chromaticity Coordinate (x)	0.433
Chromaticity Coordinate (y)	0.399
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.519

## EQUIPMENT LIST

Equipment Used	Model Number	Control Number	Last Calibration Date	Calibration Due Date
Xitron Power Analyzer	2503H	E235	04/09/10	04/09/11
Elgar AC Power Supply	CW1251	--	--	--
Yokogawa Power Analyzer	WT1600	E462	06/11/10	06/11/11
Labsphere Diode Array	DAS 1100	N714	Before Use	Before Use
Yokogawa Power Analyzer	WT210	E464	04/19/10	04/19/11
Leeds & Northup Standard Resistor	Manganin	Y089	02/10/10	02/10/11
Data Precision Digital Voltmeter	3600	V124	02/10/10	02/10/11
Fluke Multimeter	45	M133	02/10/10	02/10/11
Fluke Temperature Meter	52	T801	06/11/10	06/11/11
Kikusui DC Power Supply	35-10L	E160	---	---
Sorenson DC Power Supply	DLM150-20E	--	---	---
UDT Optometer	S370	N301	Before Use	Before Use
ITS Two Meter Diameter Integrating Sphere	---	N308	Before Use	Before Use
ITS Ten Foot Diameter Integrating Sphere	---	N307	Before Use	Before Use
NIST Luminous Flux Standard Sources	---	150-14, 8043, 8830	03/17/10	03/17/11
NIST Spectral Flux Standard Source	RF0605	---	11/29/06	100 hours of use
LSI High Speed Mirror Goniophotometer	6440	--	Before Use	Before Use
Labsphere CDS 1100 CCD Spectroradiometer	CDS1100	--	Before Use	Before Use



## TEST METHODS

### Seasoning in Sample Orientation – LED Products

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

### 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.

### Photometric and Electrical Measurements – Integrating Sphere Method

A Labsphere Model DAS 1100 Diode Array Spectroradiometer and Two Meter or Ten Foot 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.

### Estimated Total Operating Time

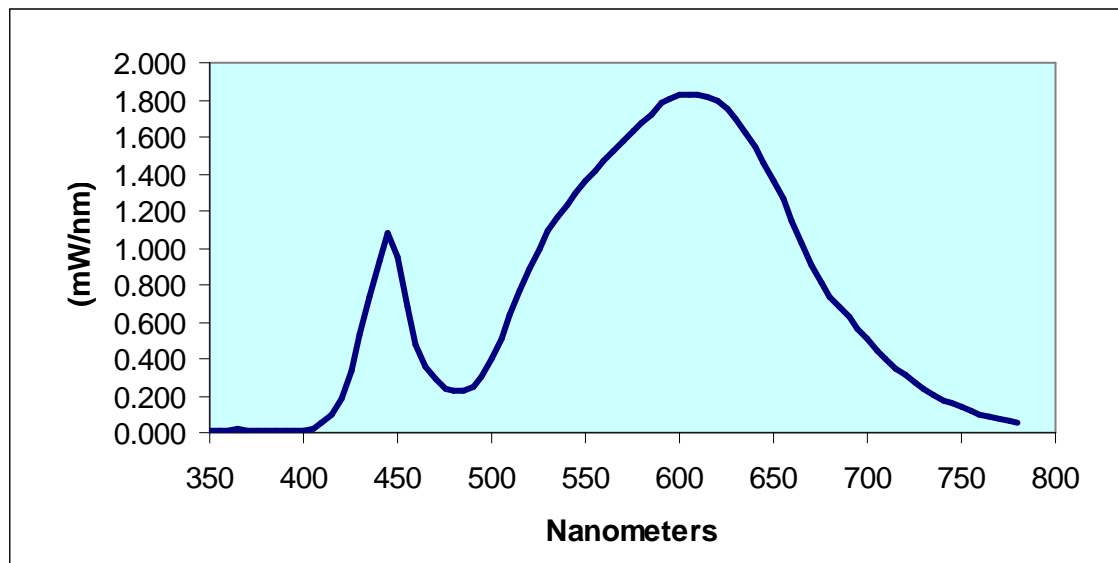
<u>Model No.</u>	<u>Total Hours</u>
PORT-RD-ST-SA	5

## RESULTS OF TESTS

### Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
PORT-RD-ST-SA							
350	0.011	460	0.473	570	1.577	680	0.738
355	0.011	465	0.361	575	1.627	685	0.683
360	0.011	470	0.287	580	1.678	690	0.626
365	0.019	475	0.239	585	1.724	695	0.564
370	0.011	480	0.223	590	1.779	700	0.507
375	0.010	485	0.228	595	1.811	705	0.448
380	0.015	490	0.252	600	1.826	710	0.395
385	0.012	495	0.308	605	1.830	715	0.350
390	0.012	500	0.399	610	1.830	720	0.308
395	0.009	505	0.512	615	1.816	725	0.269
400	0.016	510	0.636	620	1.799	730	0.235
405	0.026	515	0.767	625	1.750	735	0.206
410	0.050	520	0.888	630	1.696	740	0.178
415	0.100	525	0.997	635	1.624	745	0.158
420	0.189	530	1.087	640	1.541	750	0.136
425	0.340	535	1.168	645	1.454	755	0.120
430	0.526	540	1.236	650	1.357	760	0.102
435	0.730	545	1.299	655	1.260	765	0.090
440	0.929	550	1.359	660	1.147	770	0.078
445	1.078	555	1.416	665	1.032	775	0.069
450	0.955	560	1.472	670	0.903	780	0.059
455	0.678	565	1.526	675	0.809		

**EDGE LIGHTING**  
**Sample No. E7437L**  
**Model No. PORT-RD-ST-SA**  
**Spectral Data Over Visible Wavelengths**



## RESULTS OF TESTS (cont'd)

### Photometric Measurements at 25°C – Integrating Sphere Method

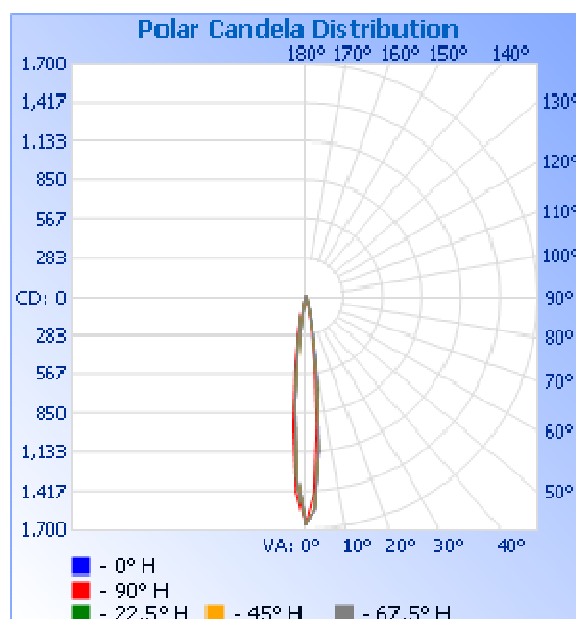
Intertek Sample No.	Current ATHD (%)	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
PORT-RD-ST-SA							
E7437L	104.2	3029	80.0	0.433	0.399	0.250	0.519

### Photometric and Electrical Measurements – 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 (Lumens Per Watt)
PORT-RD-ST-SA							
E7437L	UP	12.00	374.0	3.510	0.781	95.0	27.07

### Intensity (Candlepower) Summary at 25°C - Candelas

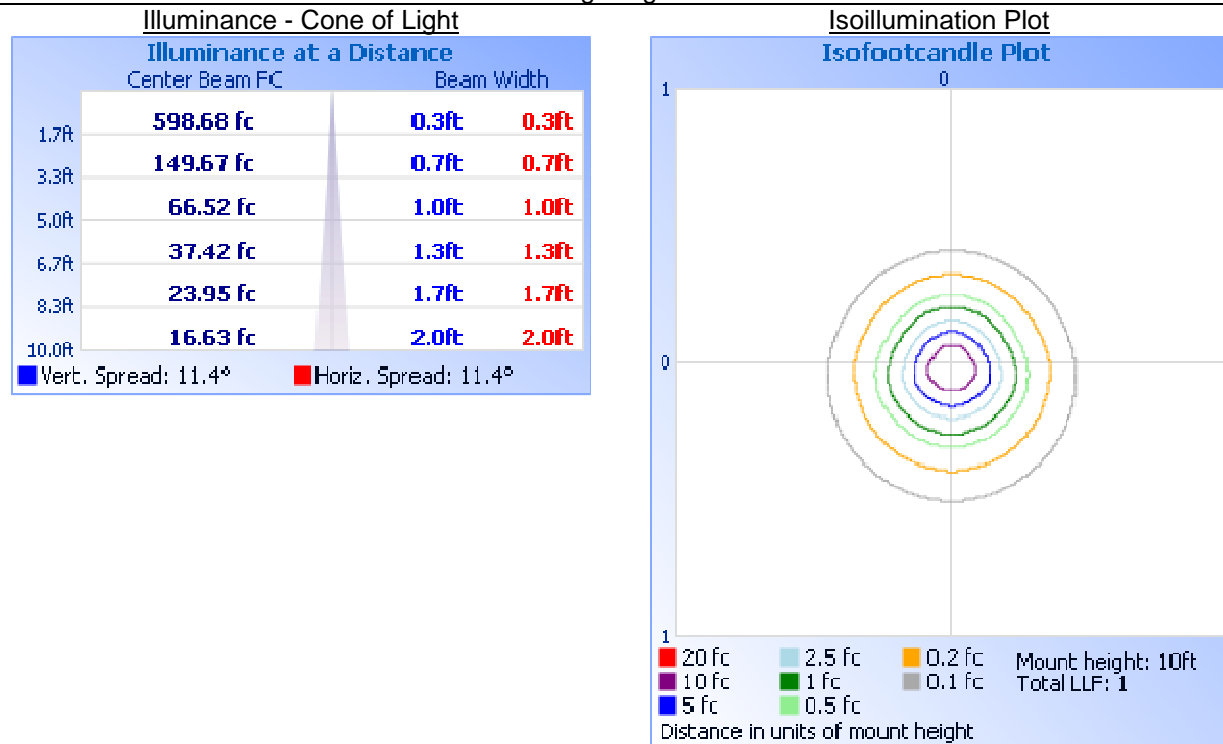
Angle	0	22.5	45	67.5	90
PORT-RD-ST-SA					
0	1663	1663	1663	1663	1663
5	1130	1117	1114	1104	950
10	370	348	329	315	250
15	94	83	75	71	59
20	30	28	26	24	22
25	17	16	15	14	12
30	9	9	8	7	6
35	2	2	2	2	1
40	0	0	0	0	0
45	0	0	0	0	0
50	0	0	0	0	0
55	0	0	0	0	0
60	0	0	0	0	0
65	0	0	0	0	0
70	0	0	0	0	0
75	0	0	0	0	0
80	0	0	0	0	0
85	0	0	0	0	0
90	0	0	0	0	0



## RESULTS OF TESTS (cont'd)

### Illumination Plots

Model No.: PORT-RD-ST-SA  
Mounting Height: 10 ft.



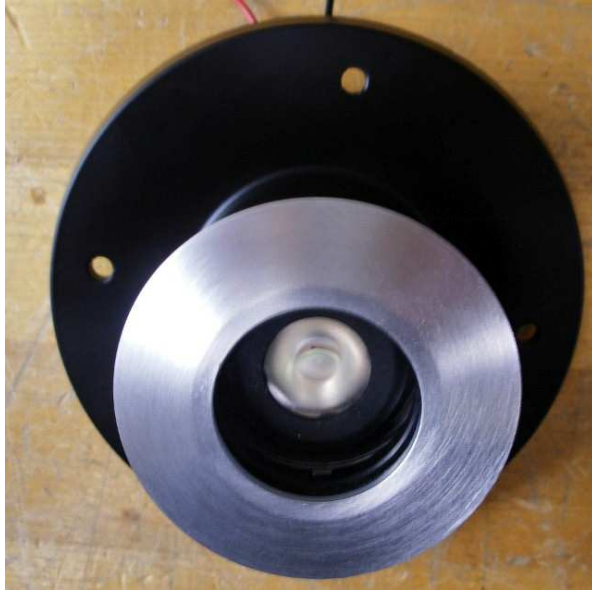
### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens	% Luminaire
PORT-RD-ST-SA		
0-30	93.8	98.8
0-40	95.0	100.0
0-60	95.0	100.0
60-90	0	0.0
0-90	95.0	100.0
90-180	0	0.0
0-180	95.0	100.0

### Reflector Summary

	Efficiency (%)	Lumens	Horizontal Spread (°)	Vertical Spread (°)
PORT-RD-ST-SA				
Field (10%):	77.1	73.2	23.2	23.1
Beam (50%):	37.0	35.1	11.4	11.4
Total:	100.6	95.6		

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:



Steven Mosier  
Technician I  
Lighting Division

Attachment: None

Report Reviewed By:



Jacki Swiernik  
Project Engineer  
Lighting Division