



FOR THE SCOPE OF  
ACCREDITATION UNDER NVLAP LAB  
CODE 100402-0.

# REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100238743

Date: April 6, 2011

REPORT NO. 100238743CRT-004

TEST OF ONE LED LOWBAY

FIXTURE MODEL NO. LBW1C1D

RENDERED TO

DIALIGHT CORPORATION  
1501 ROUTE 34 SOUTH  
FARMINGDALE, NJ 07727

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.

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.

AUTHORIZATION: The testing performed was authorized by signed quote number 500256808.

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 two samples of model number LBW1C1D. The samples were received by Intertek on January 6, 2011, in undamaged condition, and one sample was tested as received. The sample designation was D9859L.

DATES OF TESTS: March 24, 2011 through March 30, 2011.

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SUMMARY

Model No.: LBW1C1D
Description: LED Lowbay

Criteria	Result
Total Lumen Output	5975 Lumens
Total Power	79.47 W
Luminaire Efficacy	75.19
Power Factor	0.994
Current ATHD	4.78 %
Correlated Color Temperature (CCT)	5452 K
Color Rendering Index (CRI)	71.0
Chromaticity Coordinate (x)	0.334
Chromaticity Coordinate (y)	0.354
Chromaticity Coordinate (u')	0.203
Chromaticity Coordinate (v')	0.484

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
Leeds & Northup Standard Resistor	Manganin	Y089	02/17/11	02/17/12
Data Precision Digital Voltmeter	3600	V124	02/17/11	02/17/12
Fluke Multimeter	45	M133	02/17/11	02/17/12
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	RF1024	---	09/18/10	100 hours of use
LSI High Speed Mirror Goniophotometer	6440	--	Before Use	Before Use
Labsphere CDS 1100 CCD Spectroradiometer	CDS1100	--	Before Use	Before Use
Optronics Spectroradiometer	EL750D	E288	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>
LBW1C1D	5

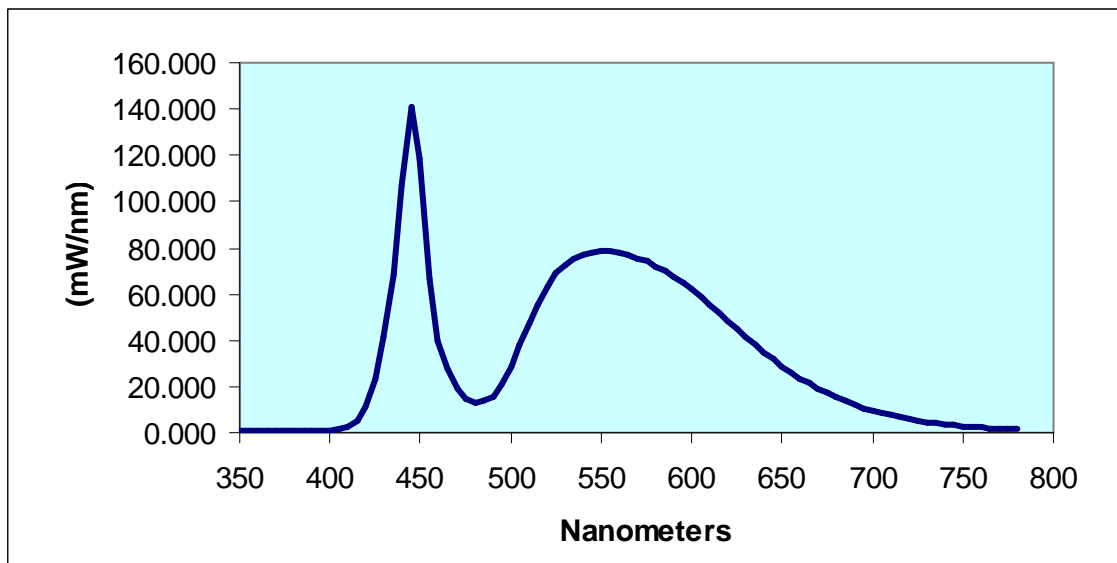


**RESULTS OF TESTS**

**Spectral Distribution over Visible Wavelengths**

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
LBW1C1D							
350	0.587	460	40.008	570	75.657	680	15.313
355	0.620	465	27.944	575	74.115	685	13.693
360	0.647	470	19.167	580	72.111	690	12.154
365	0.726	475	14.527	585	70.175	695	10.791
370	0.719	480	13.253	590	67.724	700	9.587
375	0.629	485	13.524	595	65.291	705	8.478
380	0.615	490	15.836	600	62.161	710	7.519
385	0.622	495	21.039	605	59.068	715	6.675
390	0.670	500	28.818	610	55.416	720	5.829
395	0.795	505	37.770	615	52.216	725	5.201
400	0.990	510	47.203	620	48.753	730	4.624
405	1.528	515	55.755	625	45.092	735	4.042
410	2.570	520	62.980	630	41.553	740	3.590
415	5.211	525	68.830	635	38.079	745	3.155
420	11.190	530	72.727	640	34.874	750	2.829
425	22.978	535	75.512	645	31.733	755	2.487
430	41.906	540	77.261	650	28.906	760	2.216
435	68.548	545	78.137	655	26.091	765	1.939
440	107.224	550	78.540	660	23.559	770	1.727
445	140.721	555	78.603	665	21.228	775	1.534
450	118.714	560	78.031	670	18.956	780	1.369
455	66.981	565	77.048	675	17.036		

**DIALIGHT**  
**Sample No. D9859L**  
**Model No. LBW1C1D**  
**Spectral Data Over Visible Wavelengths**



## RESULTS OF TESTS (cont'd)

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

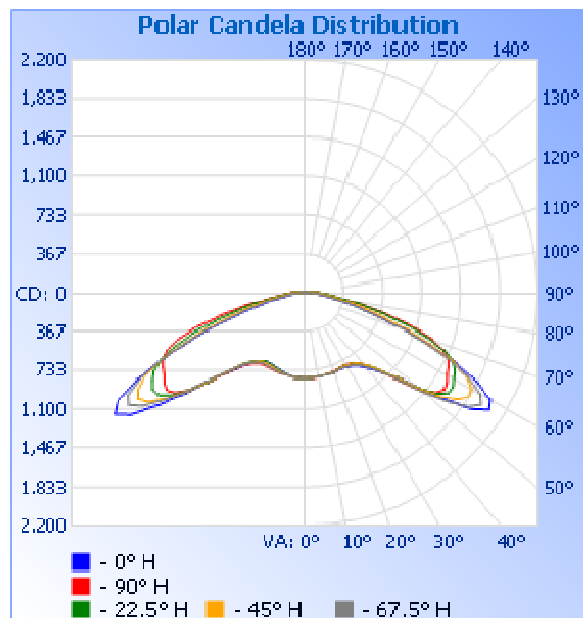
Intertek Sample No.	Current ATHD (%)	Correlated Color Temperature (K)	CRI	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
LBW1C1D							
D9859L	4.78	5452	71.0	0.334	0.354	0.203	0.484

### 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)
LBW1C1D							
D9859L	UP	120.0	666.7	79.47	0.994	5975	75.19

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

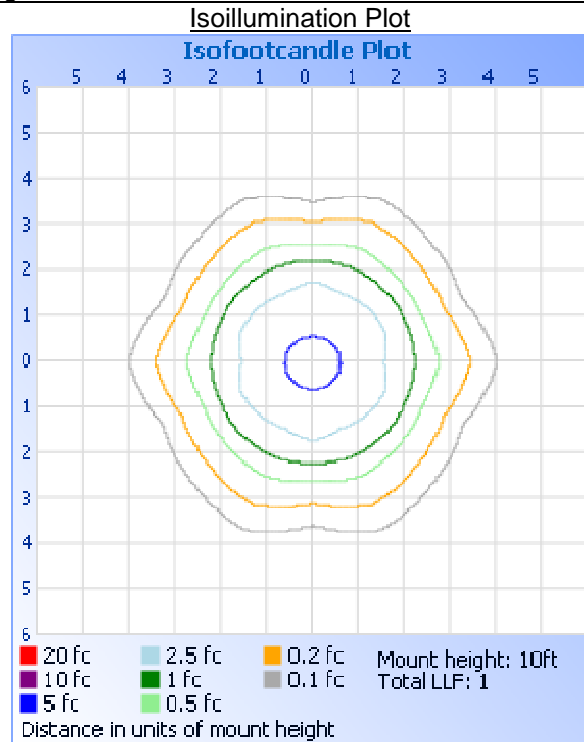
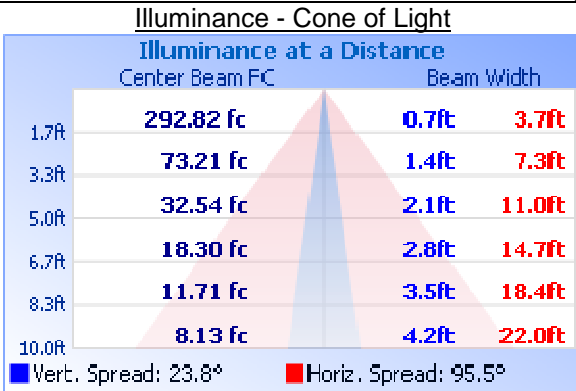
Angle	0	22.5	45	67.5	90
LBW1C1D					
0	813	813	813	813	813
5	808	808	809	809	812
10	807	805	805	805	807
15	802	799	799	798	797
20	801	797	797	797	789
25	797	788	790	794	784
30	807	794	794	806	787
35	842	824	821	837	819
40	931	897	895	921	901
45	1079	1068	1071	1095	1102
50	1402	1410	1411	1462	1432
55	1914	1648	1760	1880	1601
60	2023	1616	1811	1905	1543
65	1559	1530	1542	1489	1485
70	965	1217	1021	914	1266
75	472	764	578	458	808
80	236	386	308	240	374
85	136	214	175	138	203
90	80	132	106	82	126
95	44	70	57	44	69
100	27	41	34	26	41
105	15	22	17	14	21
110	5	8	6	5	7
115	0	1	0	0	1
120	0	0	0	0	0
125	0	1	0	0	1



## RESULTS OF TESTS (cont'd)

### Illumination Plots

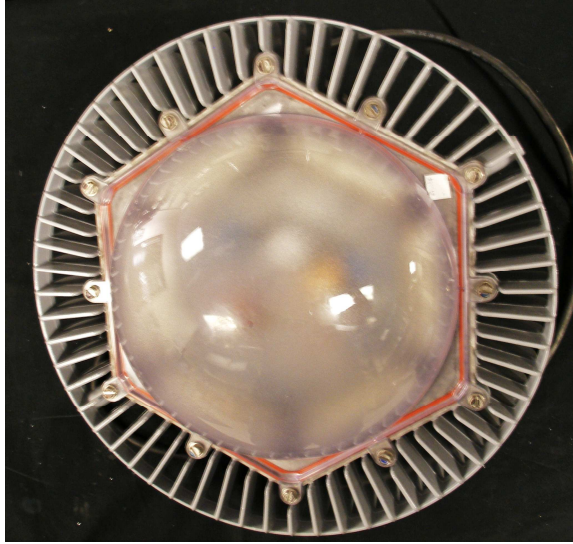
Model No.: LBW1C1D  
Mounting Height: 10 ft.



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

Zone	Lumens	% Luminaire
LBW1C1D		
0-30	663.3	11.1
0-40	1182	19.8
0-60	3589	60.1
60-90	2301	38.5
0-90	5889	98.6
90-180	85.5	1.4
0-180	5975	100.0

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:

Steven Mosier  
Technician I  
Lighting Division

Attachment: None

Report Reviewed By:

Jacki Swiernik  
Project Engineer  
Lighting Division