

Test Report

Report Number: L14034

Date: Sep 4, 2014

Issued by:

Dialight Optics Laboratory
1501 Route 34 South, Farmingdale, NJ 07727

Test of one Two Foot Stainless Steel Linear fixture
Unit manufacturer: Dialight Corporation
Unit model number: EL-1C3M-SSCB

Issued to:

Dialight Corporation
1501 Route 34 South, Farmingdale, NJ 07727

Tests performed: Photometric characterization and temperature measurement per the described standards.

Dates of test: August 28, 2014 through September 4, 2014

Standards Used: All tests are performed in accordance with procedures and guidelines prescribed by the American National Standards Institute (ANSI) or Illuminating Engineering Society of North America (IES):

- IES LM-79:2008: Electrical and Photometric Measurements of Solid-State Lighting Products
- ANSI/UL 1598:2008: Underwriters Laboratories Inc. Standard for Safety: Luminaires
- ENERGY STAR Manufacturer's Guide for Qualifying Solid State Lighting Luminaires Version 2.1

Description of sample:

Sample Number: L14034
Manufacturer: Dialight Corporation
Product Name: Two Foot Stainless Steel Linear
Description: Two Foot Stainless Steel Linear fixture
Model Number: EL-1C3M-SSCB

Report Summary

Sample number L14034
Dialight unit model number EL-1C3M-SSCB

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	2661 (lumens)	2638 (lumens)
Electrical Power:	31.8 (W)	31.8 (W)
Luminous Efficacy:	83.76 (lumens/W)	82.96 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 31.8 (W)
 Power Factor (120VAC): 0.98
 Current ATHD % (120VAC): 14.9
 Input Power (277VAC): 31.91 (W)
 Power Factor (277VAC): 0.846
 Current ATHD % (277VAC): 17.51

Color Measurements:

Correlated Color Temperature (CCT): 5149
 Color Rendering Index (CRI): 77.5
 Chromaticity Coordinate (x): 0.341
 Chromaticity Coordinate (y): 0.341
 Chromaticity Coordinate (u'): 0.212
 Chromaticity Coordinate (v'): 0.319
 DUV: 0.0035

Temperature Measurements:

In Situ LED Source Temperature: 59.5 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L14034.

Dialight unit model number EL-1C3M-SSCB

Test Conditions:

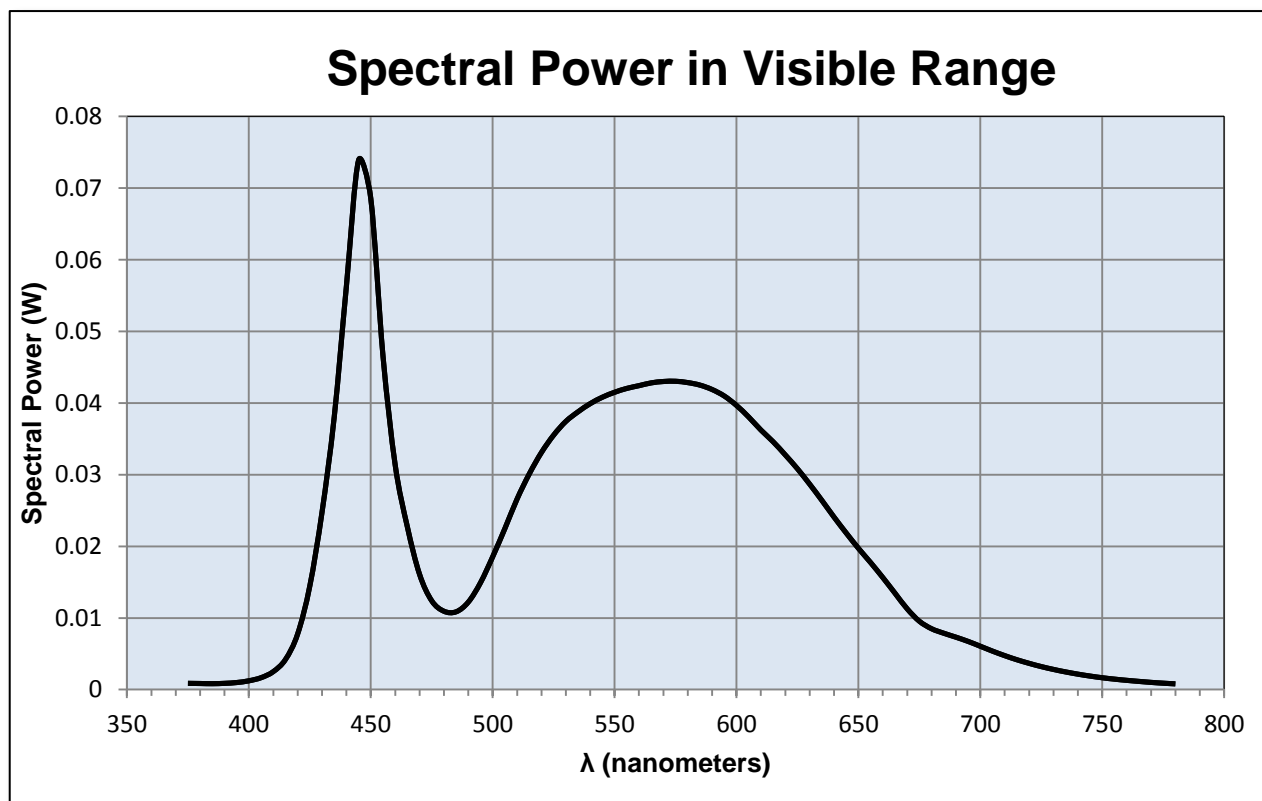
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
 Input Current: 0.27 (A)
 Input Power: 31.77 (W)
 Input Power Factor: 0.98
 Current ATHD: 14.9 (%)

Photometric measurements:

Luminous Flux: 2661 (lumens)
 Luminous Efficacy: 83.76 (lumens/W)
 Correlated Color Temperature (CCT): 5149 (K)
 CRI -Ra: 77.5
 CRI -R9: 2.1
 DUV: 0.0035
 CIE Coordinate (x): 0.341
 CIE Coordinate (y): 0.341
 CIE Coordinate (u'): 0.212
 CIE Coordinate (v'): 0.319



Test Results: Integrating Sphere

Results continued from previous page.

Tabulated Spectral Power in Visible Range:

λ (nm)	(W/nm)	λ (nm)	(W/nm)	λ (nm)	(W/nm)
375	9E-04	515	0.03	655	0.018
380	9E-04	520	0.033	660	0.016
385	8E-04	525	0.036	665	0.013
390	9E-04	530	0.037	670	0.011
395	1E-03	535	0.039	675	0.01
400	0.001	540	0.04	680	0.008
405	0.002	545	0.041	685	0.008
410	0.003	550	0.042	690	0.007
415	0.004	555	0.042	695	0.007
420	0.008	560	0.042	700	0.006
425	0.014	565	0.043	705	0.005
430	0.025	570	0.043	710	0.005
435	0.038	575	0.043	715	0.004
440	0.056	580	0.043	720	0.004
445	0.074	585	0.043	725	0.003
450	0.069	590	0.042	730	0.003
455	0.047	595	0.041	735	0.002
460	0.031	600	0.04	740	0.002
465	0.023	605	0.038	745	0.002
470	0.016	610	0.036	750	0.002
475	0.012	615	0.035	755	0.001
480	0.011	620	0.033	760	0.001
485	0.011	625	0.031	765	0.001
490	0.012	630	0.029	770	0.001
495	0.015	635	0.026	775	9E-04
500	0.019	640	0.024	780	8E-04
505	0.022	645	0.022		
510	0.027	650	0.02		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L14034.
Dialight unit model number EL-1C3M-SSCB

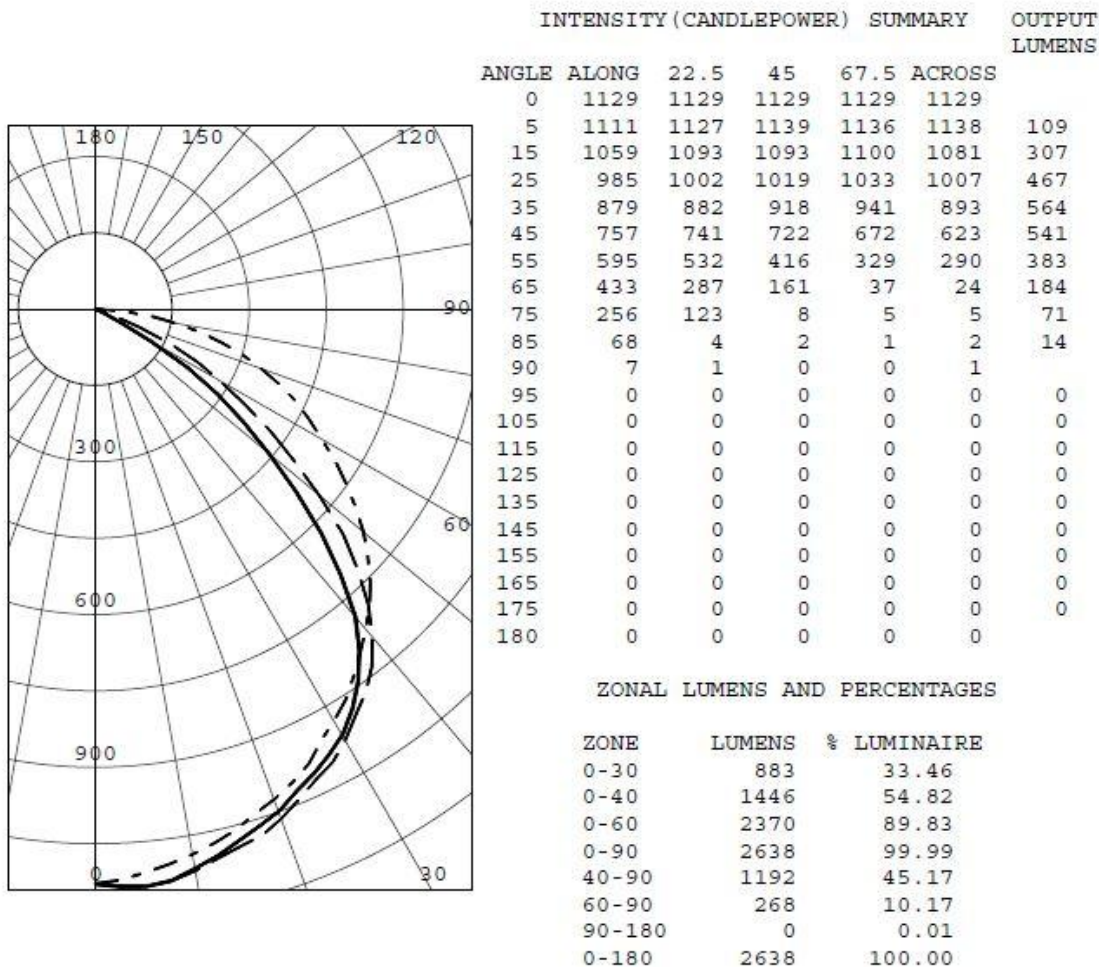
Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 0.272 (A)
Input Power: 31.8 (W)
Power Factor: 0.977

Photometric measurements:

Absolute Luminous Flux: 2638 (lumens)
Luminous Efficacy: 82.96 (lumens/W)

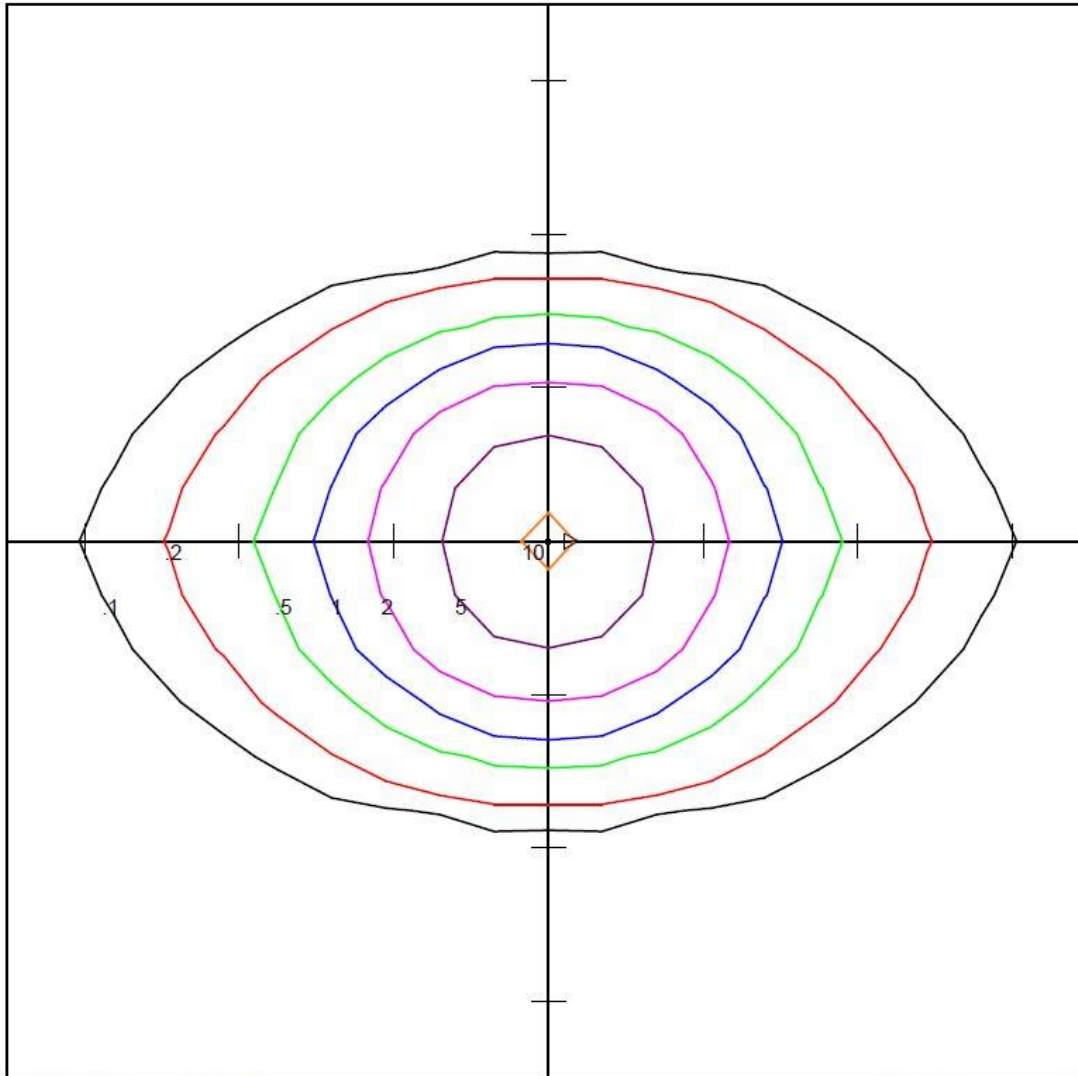
Intensity Summary:



Test Results: Goniometer

Results continued from previous page.

Iso-illuminance Plot:



DIALIGHT COPORATION
EL-1C3M-SSCB
MOD: EL-1C3M-SSCB
LED

Horizontal Footcandles
Scale: 1 Inch = 10 Ft.
Light Loss Factor = 1.00
Lumens Per Lamp = N.A. (absolute photometry)
Luminaire Lumens = 2642
Mounting Height = 10.00 Ft
Maximum Calculated Value = 11.29 Fc
Arrangement: Single

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L14034.

Dialight unit model number EL-1C3M-SSCB

LED identified as Nichia part number Nichia 219B.

LED drive current (as indicated by customer): 350 (mA)

LED Specifications:

LED specifications are taken from LED manufacturer datasheet:

Maximum Forward Current (If): 1500 (mA)
Maximum Rated Power Dissipation: 5.1 (W)
Maximum Junction Temp. (Tj): 150 (°C)
Thermal Resistance (Rth): 11 (°C/W)

Derived Specifications:

Maximum Power at Indicated Current: 1.19 (W)
Maximum Source Temperature: 136.9 (°C) (Tj - [power dissipation * Rth])

Test Conditions:

Temperature Measurement Location: See Photographs Below

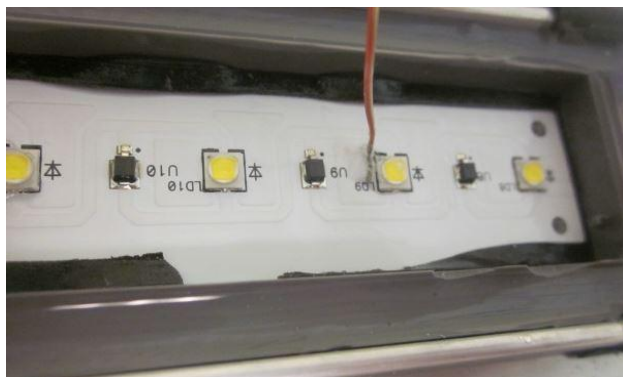
Ambient Temperature: $25^{\circ} \pm 1^{\circ}$ (°C)

Ambient temperature at time of measurement: 24 (°C)

Relative humidity at time of measurement: 48%

Results:

Measured LED source temperature: 59.5 (°C)



Equipment Used:

Equipment Name	Model Number	Calibration Due Date
Omega TC	Dpi8	3/7/2015
Fluke 8808A Digit Multimeter	8808A	4/7/2015
YOKOGAWA Digital Power Meter	760401	4/7/2015
LSI Standard Lamps	#30279	4/17/2015
LSI High Speed Mirror Goniometer	6240T	-
Instrument System Spectrometer	CAS140B-151	-
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3	4/17/2015
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3	4/17/2015
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3	4/17/2015
Instrument System 1.5 Meter Sphere	ISP1500	-
Volttech Power Analyzer	PM1000+	4/17/2015
Delta Elektronika DC Power Supply	SM.300-5	-
Elgar AC Power Supply	CW1251P	-
Instek AC Power Supply	APS-9501	-
Sorensen DC Power Supply	XHR150-7	-
Extech Hygro-Thermometer	445703	-
Extech Hygro-Thermometer	445703	-
Fluke 52II Thermometer	52II Thermometer	3/6/2015
Volttech Power Analyzer	PM1000+	4/17/2015
Tenma AC Power Source	72-7675	-
BK Precision	1715A	-
TDK-Lambda	GEN1500W	-
Fluke 8808A Digit Multimeter	8808A	4/14/2015
TPI Digital Thermometer 343	343	4/17/2015
TPI Digital Thermometer 343	343	4/17/2015

Additional Notes:

Samples are received and tested in new and undamaged condition, unless otherwise noted.

The results shown in this report are representative only of the test samples submitted. This data has been issued to the assignee for further evaluation.

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Test Report Issued By:

Richard Huegi
Dialight Optics Laboratory
Senior Optical Engineering Technician
Lighting Division

Test Report Reviewed and Approved By:

Cecil Thomas
Dialight Optics Laboratory
Optical Engineering Manager
Approved Signatory