

# Test Report

Report Number: L18068

Date: Aug 21, 2018

Issued by:

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

Test of one Linear

Unit manufacturer: Dialight Corporation  
Unit model number: LGx5WW25xxxxN

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 16, 2018 through August 21, 2018

**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: L18068  
Manufacturer: Dialight Corporation  
Product Name: 2ft Top Conduit Linear  
Description: Linear  
Model Number: LGx5WW25xxxxN

## Report Summary

Sample number L18068  
Dialight unit model number LGx5WW25xxxxxN

### Photograph(s) of sample:



\*Photographs not to scale. For reference only.

### Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	3784 (lumens)	3840 (lumens)
Electrical Power:	36.8 (W)	37.1 (W)
Luminous Efficacy:	102.9 (lumens/W)	103.6 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 36.8 (W)  
Power Factor (120VAC): 0.995  
Current ATHD % (120VAC): 6.421  
Input Power (277VAC): 36.2 (W)  
Power Factor (277VAC): 0.949  
Current ATHD % (277VAC): 16.01

### Color Measurements:

Correlated Color Temperature (CCT): 2731  
Color Rendering Index (CRI): 87.4  
Chromaticity Coordinate (x): 0.452  
Chromaticity Coordinate (y): 0.4  
Chromaticity Coordinate (u'): 0.262  
Chromaticity Coordinate (v'): 0.348  
DUV: 0.0034

### Temperature Measurements:

In Situ LED Source Temperature: 40.7 (°C)

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L18068.

Dialight unit model number LGx5WW25xxxxxN

### Test Conditions:

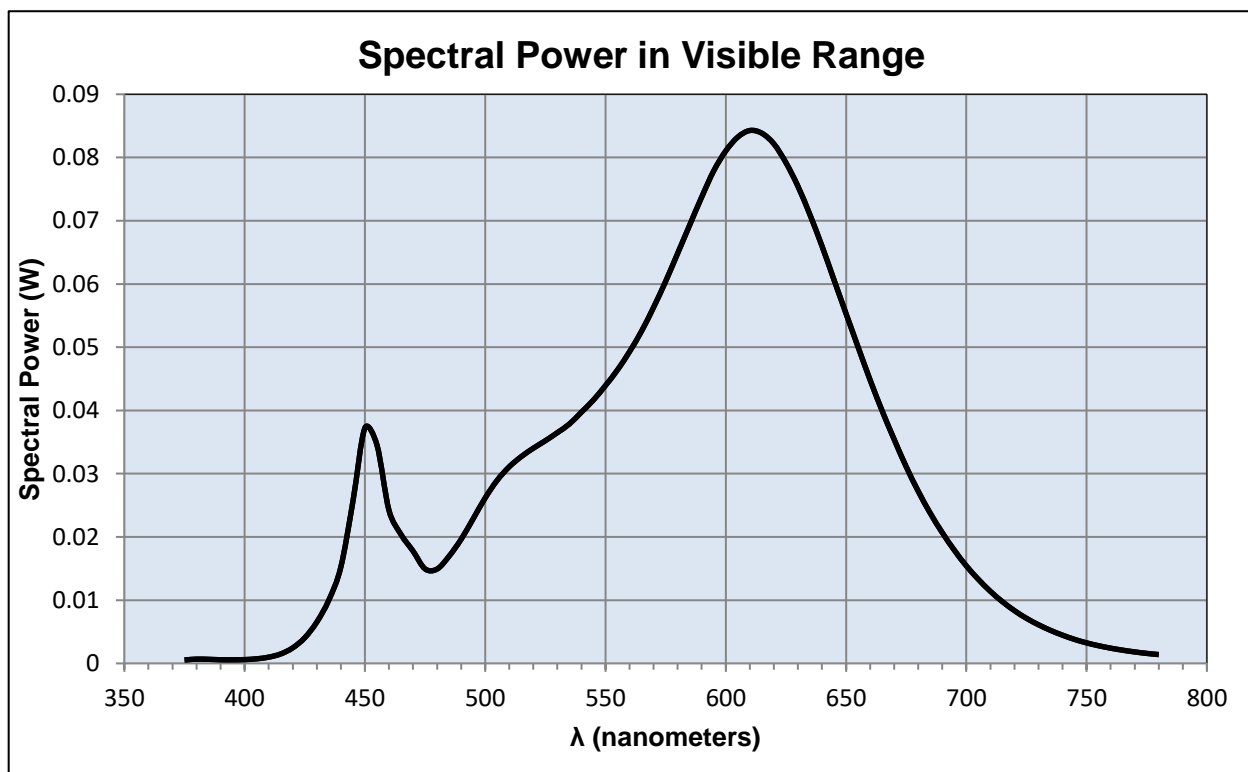
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
 Input Current: 0.308 (A)  
 Input Power: 36.8 (W)  
 Input Power Factor: 0.995  
 Current ATHD: 6.421 (%)

### Photometric measurements:

Luminous Flux: 3784 (lumens)  
 Luminous Efficacy: 102.9 (lumens/W)  
 Correlated Color Temperature (CCT): 2731 (K)  
 CRI -Ra: 87.4  
 CRI -R9: 27.5  
 DUV: 0.0034  
 CIE Coordinate (x): 0.452  
 CIE Coordinate (y): 0.4  
 CIE Coordinate (u'): 0.262  
 CIE Coordinate (v'): 0.348



## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)
375	0.001	515	0.033	655	0.050
380	0.001	520	0.034	660	0.045
385	0.001	525	0.035	665	0.040
390	0.001	530	0.036	670	0.035
395	0.001	535	0.038	675	0.031
400	0.001	540	0.040	680	0.027
405	0.001	545	0.042	685	0.024
410	0.001	550	0.044	690	0.021
415	0.002	555	0.046	695	0.018
420	0.002	560	0.049	700	0.015
425	0.004	565	0.053	705	0.013
430	0.007	570	0.056	710	0.011
435	0.010	575	0.060	715	0.010
440	0.015	580	0.065	720	0.008
445	0.026	585	0.069	725	0.007
450	0.037	590	0.074	730	0.006
455	0.035	595	0.078	735	0.005
460	0.024	600	0.081	740	0.004
465	0.020	605	0.083	745	0.004
470	0.018	610	0.084	750	0.003
475	0.015	615	0.084	755	0.003
480	0.015	620	0.082	760	0.002
485	0.017	625	0.079	765	0.002
490	0.020	630	0.075	770	0.002
495	0.023	635	0.071	775	0.002
500	0.026	640	0.066	780	0.001
505	0.029	645	0.061		
510	0.031	650	0.055		

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L18068.  
Dialight unit model number LGx5WW25xxxxxN

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 0.31 (A)  
Input Power: 37.1 (W)  
Power Factor: 0.994

### Photometric measurements:

Absolute Luminous Flux: 3840 (lumens)  
Luminous Efficacy: 103.6 (lumens/W)

### Intensity Summary:

<u>INTENSITY (CANDLEPOWER) SUMMARY</u>						
ANGLE	ALONG	23	45	67.5	ACROSS	OUTPUT LUMENS
0	1864	1864	1864	1864	1864	
5	1855	1855	1855	1855	1855	69
15	1775	1775	1775	1775	1775	386
25	1589	1589	1589	1589	1589	660
35	1236	1236	1236	1236	1236	780
45	822	822	822	822	822	698
55	527	527	527	527	527	533
65	340	340	340	340	340	388
75	177	177	177	177	177	247
85	15	15	15	15	15	78
95	0	0	0	0	0	1
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

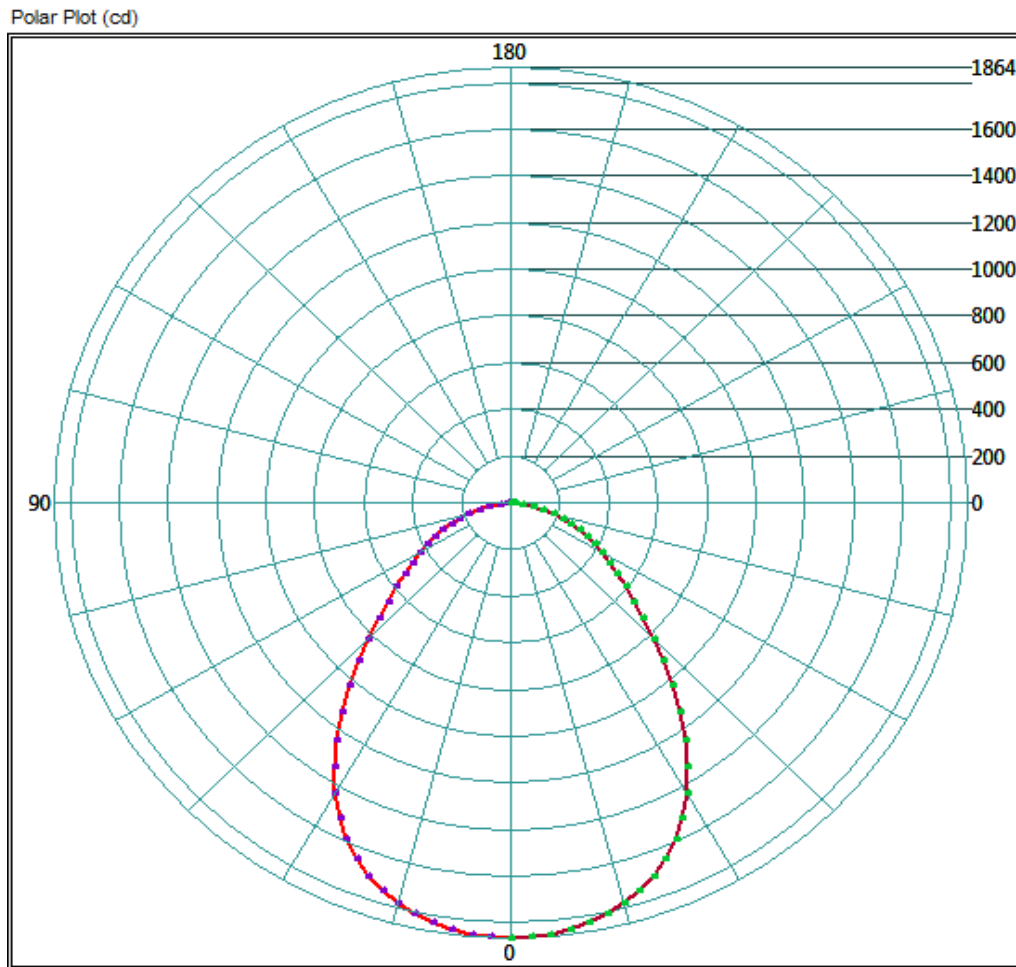
### ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	1503.52	39.2%
0-40	2263.2	58.9%
0-60	3335.68	86.9%
60-90	604.8	15.8%
0-90	3839.52	100.0%
90-180	0	0.0%
0-180	3839.52	100.0%

## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:

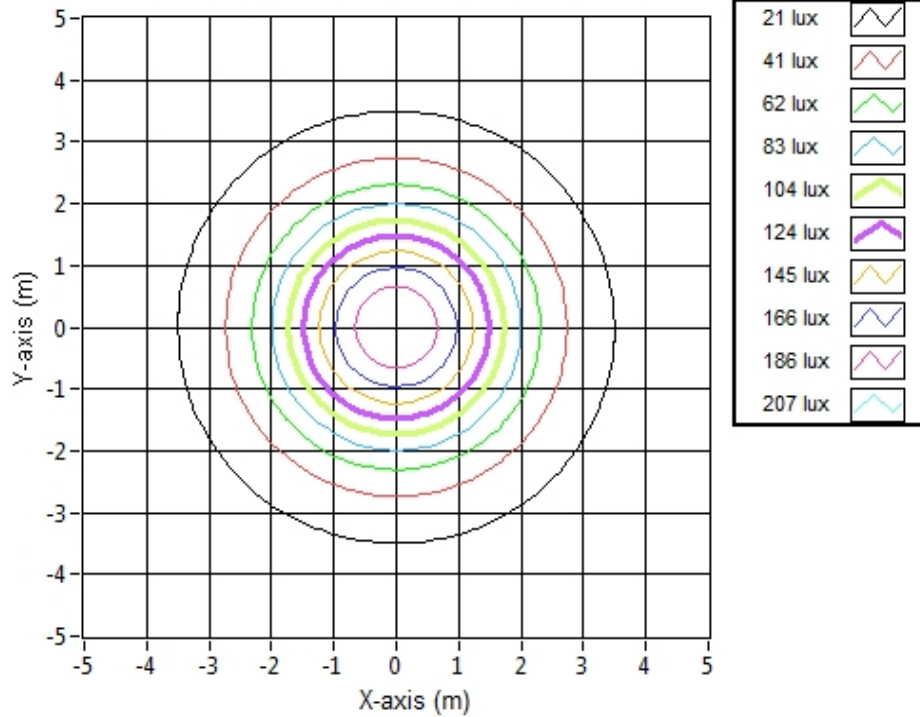


## Test Results: Goniometer

Results continued from previous page.

### Illuminance Plot:

Illuminance Contour Graph



### Illuminance-Cone of Light:

Mounting Height (m)	Beam Cone Width (m)	Orthogonal Beam Cone Width (m)	Projected Illuminance (lux)
3.048	5.52	5.52	200.7
6.096	11.04	11.04	50.2
9.144	16.56	16.56	22.3
12.192	22.08	22.08	12.5
15.24	27.60	27.60	8.0
18.288	33.12	33.12	5.6
21.336	38.64	38.64	4.1
24.384	44.16	44.16	3.1
27.432	49.68	49.68	2.5
30.48	55.20	55.20	2.0

## Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L18068.

Dialight unit model number LGx5WW25xxxxxN

LED identified as Seoul part number SAW8C22B.

LED drive current (as indicated by customer): 52 (mA)

### LED Specifications:

LED specifications are taken from LED manufacturer datasheet:

Maximum Forward Current (If): 250 (mA)  
Maximum Rated Power Dissipation: 1.5 (W)  
Maximum Junction Temp. (Tj): 125 (°C)  
Thermal Resistance (Rth): 17 (°C/W)

Derived Specifications:

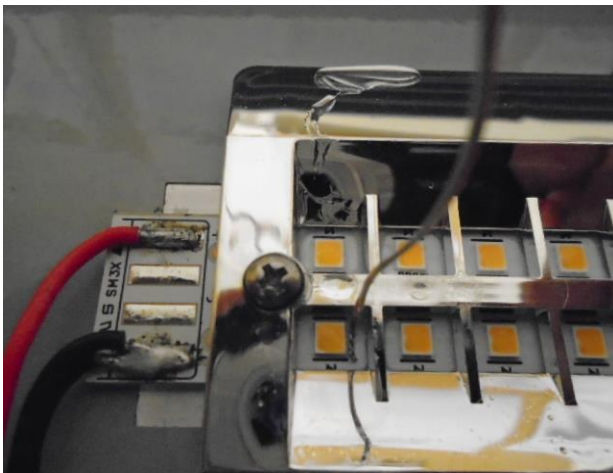
Maximum Power at Indicated Current: 0.312 (W)  
Maximum Source Temperature: 119.7 (°C)

### Test Conditions:

Temperature Measurement Location: See Photographs Below  
Ambient Temperature:  $25^{\circ} \pm 5^{\circ}$  (°C)  
Ambient temperature at time of measurement: 23.8 (°C)  
Relative humidity at time of measurement: 40%

### Results:

**Measured LED source temperature: 40.7 (°C)**





**Equipment Used:**

Equipment Name	Model Number
Omega TC	Dpi8
Fluke 8808A Digit Multimeter	8808A
YOKOGAWA Digital Power Meter	11/26/3981
LSI High Speed Mirror Goniometer	6240T
Instrument System Spectrometer	CAS140B-151
Instrument System 1.5 Meter Sphere	ISP1500
Delta Elektronika DC Power Supply	SM.300-5
Instek AC Power Supply	APS-9501
Sorensen DC Power Supply	XHR150-7
TPI Digital Thermometer	TPI 343
Fluke 52II Thermometer	068158
Fluke 971 Humidity Meter	971
Volttech Power Analyzer	PM1000+
Volttech Universal Breakout Box	PM1000+
BK Precision	1715A
Step-Up Transformer	
Omega TC	Dpi8-C24
Agilent True RMS OLED Multimeter	U1273A
ITL Osram Calibraton lamps for Goniometer	J9a8
ITL Osram Calibraton lamps for Goniometer	J9a8
ITL Osram Calibraton lamps for Goniometer	J9a8
Adaptive Power Systems AC Power Supply	FC-210
Xitron Power Analyzer	XT2640
GwINSTEK DC Power Supply	GEP172679
Osram Sylvania Calibration Lamp for Sphere	STD-20WF-3

**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. This report shall not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This report shall not be reproduced, except in full, without the express written permission of Dialight Optics Laboratory.

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