

Test Report

Report Number: L17085

Date: Nov 29, 2017

Issued by:

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

Test of one Vigilant Area Light
Unit manufacturer: Dialight Corporation
Unit model number: ALUBC26-xxxxx-N

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: November 27, 2017 through November 28, 2017

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

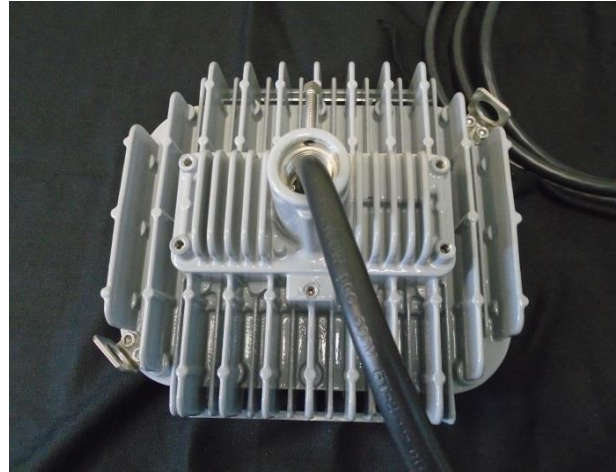
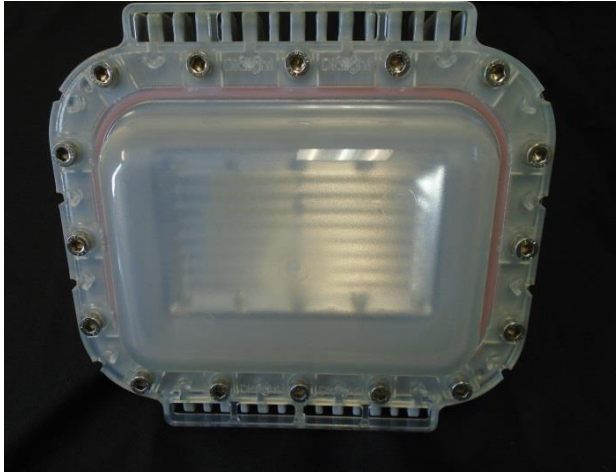
Description of sample:

Sample Number: L17085
Manufacturer: Dialight Corporation
Product Name: Vigilant Area Light
Description: Vigilant Area Light
Model Number: ALUBC26-xxxxx-N

Report Summary

Sample number L17085
Dialight unit model number ALUBC26-xxxxx-N

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	5103 (lumens)	5082 (lumens)
Electrical Power:	40.4 (W)	40.4 (W)
Luminous Efficacy:	126.3 (lumens/W)	125.7 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 40.4 (W)
Power Factor (120VAC): 0.996
Current ATHD % (120VAC): 5.75
Input Power (277VAC): 39.4 (W)
Power Factor (277VAC): 0.957
Current ATHD % (277VAC): 17.62

Color Measurements:

Correlated Color Temperature (CCT): 4891
Color Rendering Index (CRI): 84.6
Chromaticity Coordinate (x): 0.349
Chromaticity Coordinate (y): 0.358
Chromaticity Coordinate (u'): 0.211
Chromaticity Coordinate (v'): 0.326
DUV: 0.002

Temperature Measurements:

In Situ LED Source Temperature: 45.6 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L17085.

Dialight unit model number ALUBC26-xxxxx-N

Test Conditions:

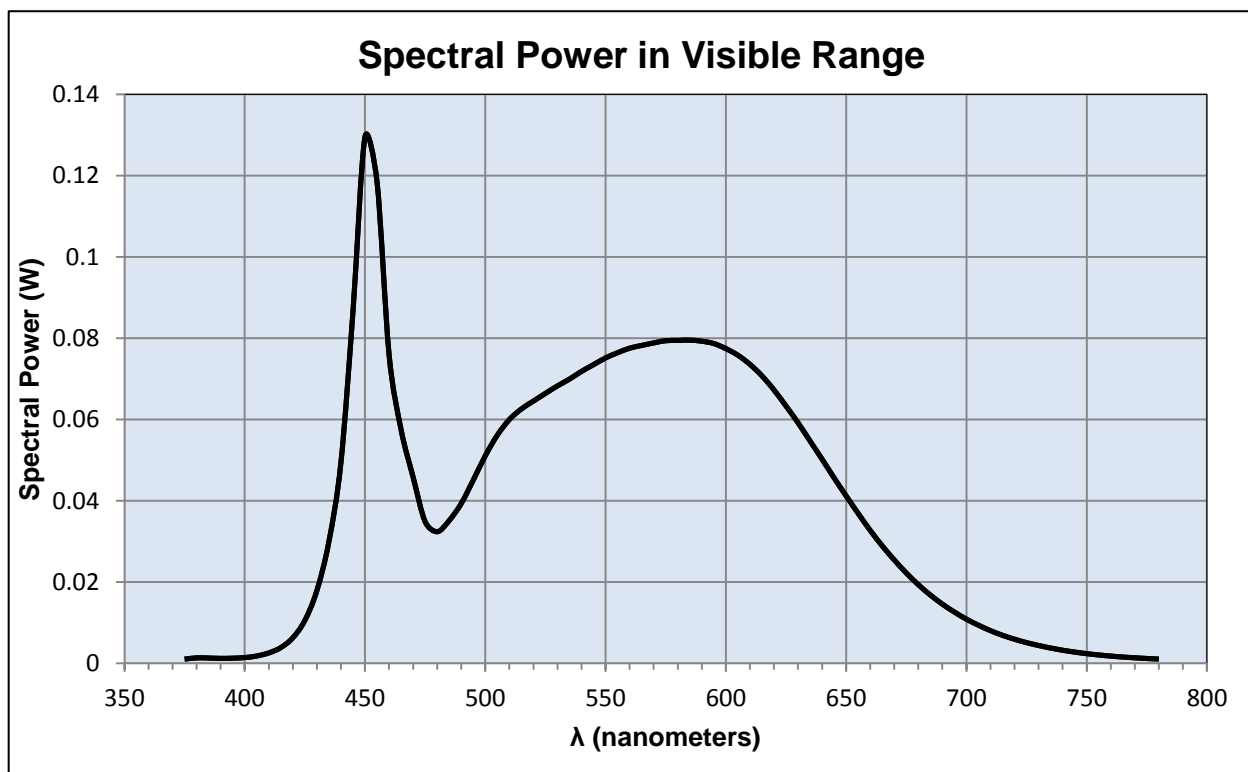
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
 Input Current: 0.337 (A)
 Input Power: 40.4 (W)
 Input Power Factor: 0.996
 Current ATHD: 5.75 (%)

Photometric measurements:

Luminous Flux: 5103 (lumens)
 Luminous Efficacy: 126.3 (lumens/W)
 Correlated Color Temperature (CCT): 4891 (K)
 CRI -Ra: 84.6
 CRI -R9: 18.8
 DUV: 0.002
 CIE Coordinate (x): 0.349
 CIE Coordinate (y): 0.358
 CIE Coordinate (u'): 0.211
 CIE Coordinate (v'): 0.326



Test Results: Integrating Sphere

Results continued from previous page.

Tabulated Spectral Power in Visible Range:

$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)
375	0.001	515	0.063	655	0.037
380	0.001	520	0.065	660	0.033
385	0.001	525	0.066	665	0.029
390	0.001	530	0.068	670	0.025
395	0.001	535	0.070	675	0.022
400	0.001	540	0.072	680	0.019
405	0.002	545	0.073	685	0.017
410	0.003	550	0.075	690	0.015
415	0.004	555	0.076	695	0.013
420	0.006	560	0.078	700	0.011
425	0.011	565	0.078	705	0.009
430	0.018	570	0.079	710	0.008
435	0.030	575	0.079	715	0.007
440	0.049	580	0.079	720	0.006
445	0.087	585	0.080	725	0.005
450	0.129	590	0.079	730	0.004
455	0.118	595	0.079	735	0.004
460	0.076	600	0.077	740	0.003
465	0.058	605	0.076	745	0.003
470	0.046	610	0.074	750	0.002
475	0.035	615	0.071	755	0.002
480	0.032	620	0.067	760	0.002
485	0.035	625	0.063	765	0.002
490	0.039	630	0.059	770	0.001
495	0.045	635	0.055	775	0.001
500	0.051	640	0.050	780	0.001
505	0.056	645	0.046		
510	0.060	650	0.041		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L17085.
Dialight unit model number ALUBC26-xxxx-N

Electrical Measurements:

Input Voltage: 120.2 (VAC)
Input current: 0.338 (A)
Input Power: 40.4 (W)
Power Factor: 0.996

Photometric measurements:

Absolute Luminous Flux: 5082 (lumens)
Luminous Efficacy: 125.7 (lumens/W)

Intensity Summary:

INTENSITY (CANDLEPOWER) SUMMARY						
ANGLE	ALONG	23	45	67.5	ACROSS	OUTPUT LUMENS
0	1885	1885	1885	1885	1885	
5	1884	1884	1884	1884	1884	70
15	1860	1860	1860	1860	1860	400
25	1757	1757	1757	1757	1757	714
35	1571	1571	1571	1571	1571	935
45	1277	1277	1277	1277	1277	1005
55	848	848	848	848	848	866
65	437	437	437	437	437	556
75	188	188	188	188	188	281
85	70	70	70	70	70	111
95	48	48	48	48	48	58
105	36	36	36	36	36	45
115	14	14	14	14	14	23
125	5	5	5	5	5	7
135	5	5	5	5	5	4
145	5	5	5	5	5	3
155	5	5	5	5	5	3
165	5	5	5	5	5	2
175	5	5	5	5	5	1
180	5	5	5	5	5	0

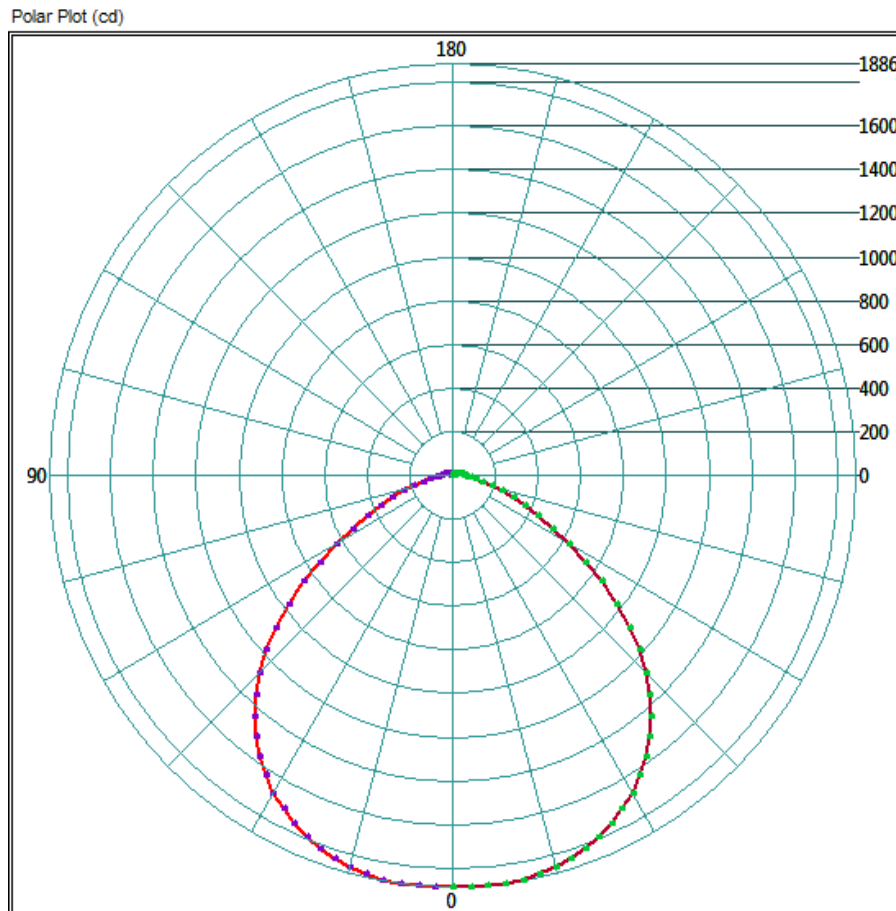
ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	1631.84	32.1%
0-40	2624.48	51.6%
0-60	4308.96	84.8%
60-90	807.84	15.9%
0-90	4968	97.8%
90-180	128.48	2.5%
0-180	5081.76	100.0%

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

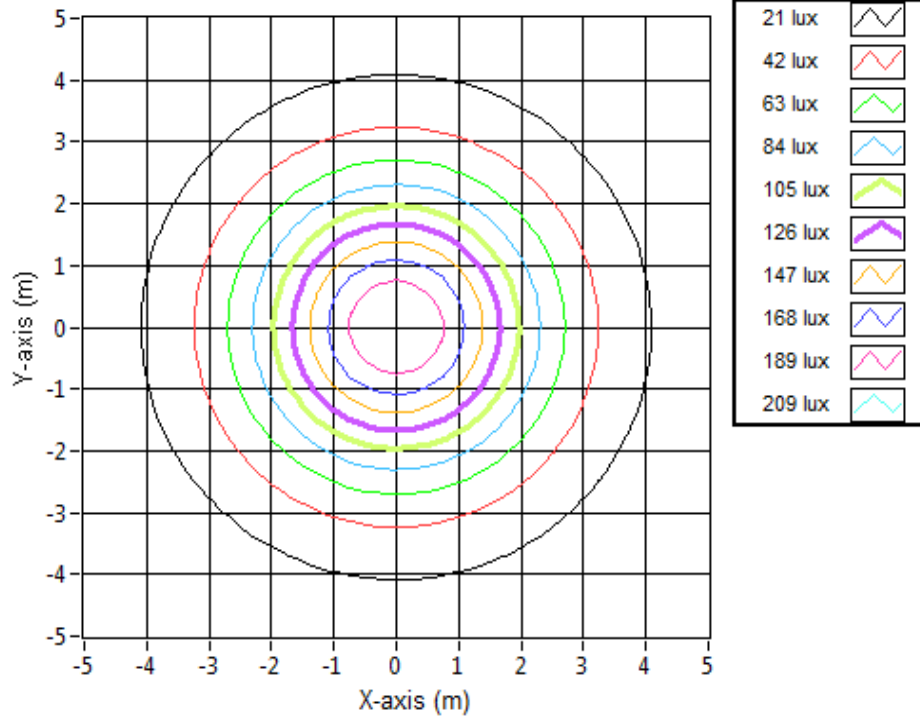


Test Results: Goniometer

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	8.08	8.08	202.9
6.096	16.16	16.16	50.7
9.144	24.24	24.24	22.5
12.192	32.31	32.31	12.7
15.24	40.39	40.39	8.1
18.288	48.47	48.47	5.6
21.336	56.55	56.55	4.1
24.384	64.63	64.63	3.2
27.432	72.71	72.71	2.5
30.48	80.79	80.79	2.0

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L17085.
Dialight unit model number ALUBC26-xxxxx-N

LED identified as Seoul part number SAW8C22B.

LED drive current (as indicated by customer): 38 (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:

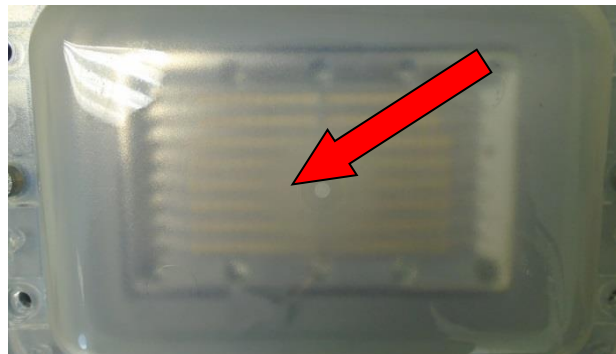
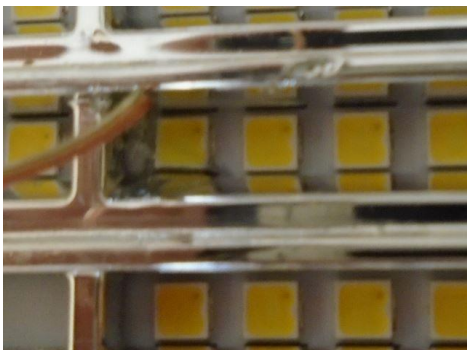
Maximum Power at Indicated Current: 0.228 (W)
Maximum Source Temperature: 121.1 (°C)

Test Conditions:

Temperature Measurement Location: See Photographs Below
Ambient Temperature: $25^{\circ} \pm 5^{\circ}$ (°C)
Ambient temperature at time of measurement: 24.1 (°C)
Relative humidity at time of measurement: 20%

Results:

Measured LED source temperature: 45.6 (°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
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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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Optical Engineer
Approved Signatory