Test Report

Report Number: L17006 Date: Apr 4, 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: ALU7BC29-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: April 3, 2014 through April 4, 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

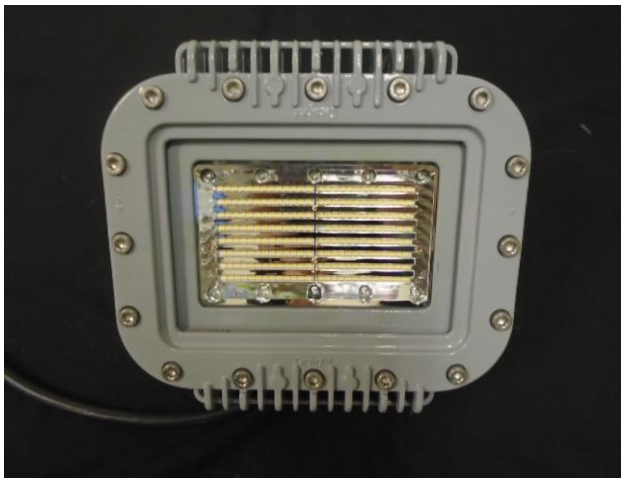
Description of sample:

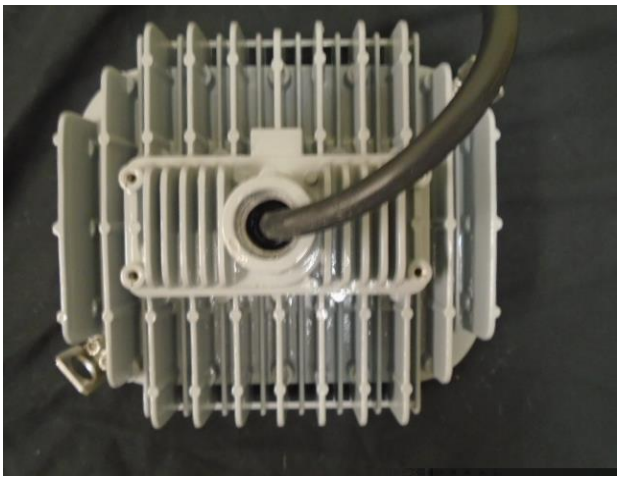
Sample Number:	L17006
Manufacturer:	Dialight Corporation
Product Name:	Vigilant Area Light
Description:	Vigilant Area Light
Model Number:	ALU7BC29-XXXXX-N

Report Summary

Sample number L17006
Dialight unit model number ALU7BC29-XXXXX-N

Photograph(s) of sample:





*Photographs not to scale. For reference only.

Summary of Results:

	Integrating Sphere		Goniophotometer	
Luminous Flux:	8923	(lumens)	9021	(lumens)
Electrical Power:	65.9	(W)	66.0	(W)
Luminous Efficacy:	135.6	(lumens/W)	136.6	(lumens/W)

Electrical Measurements:

Input Power (120VAC):	65.9	(W)
Power Factor (120VAC):	0.995	
Current ATHD % (120VAC):	6.133	
Input Power (277VAC):	63.4	(W)
Power Factor (277VAC):	0.948	
Current ATHD % (277VAC):	12.57	

Color Measurements:

Correlated Color Temperature (CCT):	4795
Color Rendering Index (CRI):	82.9
Chromaticity Coordinate (x):	0.352
Chromaticity Coordinate (y):	0.364
Chromaticity Coordinate (u'):	0.212
Chromaticity Coordinate (v'):	0.328
DUV:	0.0032

Temperature Measurements:

In Situ LED Source Temperature:	44.1	(°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L17006.
Dialight unit model number ALU7BC29-XXXXX-N

Test Conditions:

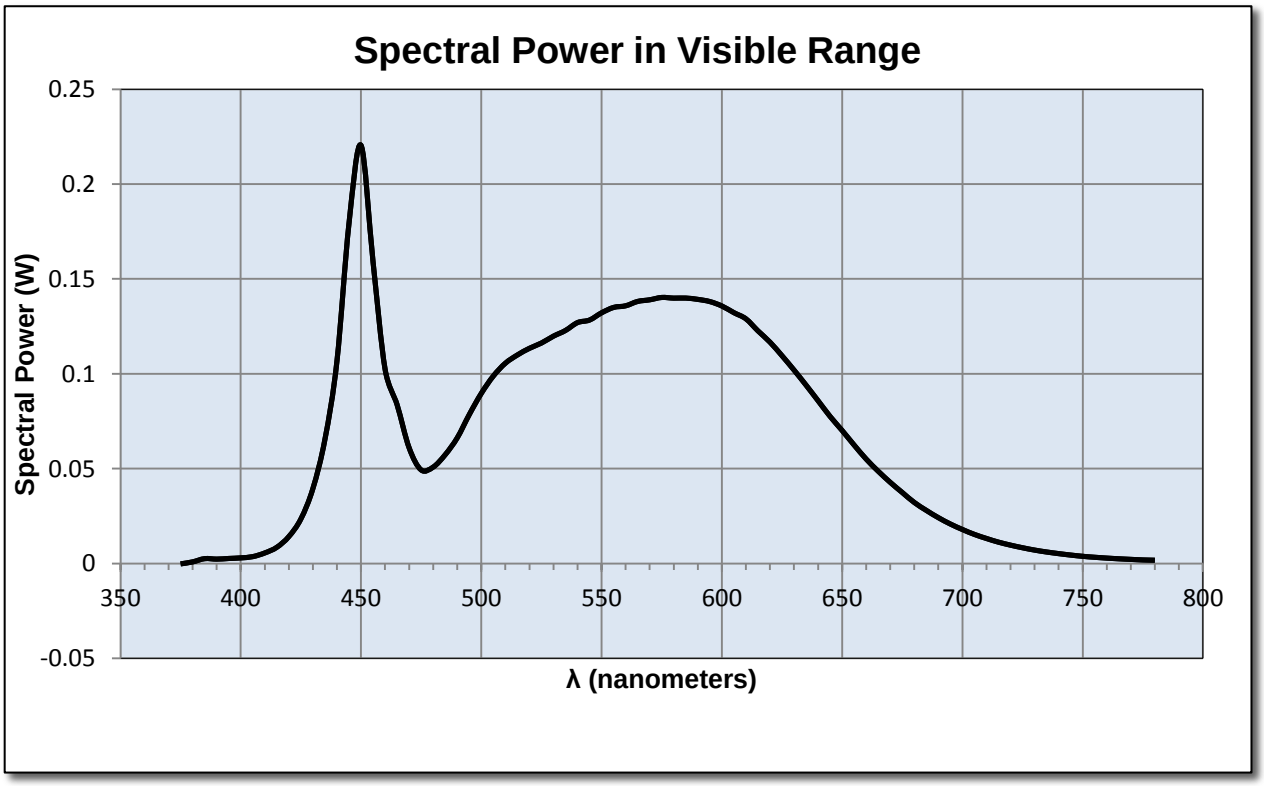
Ambient Temperature:	25 ± 1	(°C)

Electrical Measurements:

Input Voltage:	120	(VAC)
Input Current:	0.55	(A)
Input Power:	65.9	(W)
Input Power Factor:	0.995	
Current ATHD:	6.133	(%)

Photometric measurements:

Luminous Flux:	8923	(lumens)
Luminous Efficacy:	135.6	(lumens/W)
Correlated Color Temperature (CCT):	4795	(K)
CRI -Ra:	82.9	
CRI -R9:	10.7	
DUV:	0.0032	
CIE Coordinate (x):	0.352	
CIE Coordinate (y):	0.364	
CIE Coordinate (u'):	0.212	
CIE Coordinate (v'):	0.328	



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	0.000	515	0.110	655	0.062
380	0.001	520	0.113	660	0.055
385	0.003	525	0.116	665	0.049
390	0.002	530	0.120	670	0.043
395	0.003	535	0.123	675	0.037
400	0.003	540	0.127	680	0.032
405	0.004	545	0.128	685	0.028
410	0.006	550	0.132	690	0.024
415	0.009	555	0.135	695	0.021
420	0.014	560	0.136	700	0.018
425	0.023	565	0.138	705	0.015
430	0.039	570	0.139	710	0.013
435	0.065	575	0.140	715	0.011
440	0.107	580	0.140	720	0.010
445	0.179	585	0.140	725	0.008
450	0.220	590	0.139	730	0.007
455	0.159	595	0.138	735	0.006
460	0.102	600	0.136	740	0.005
465	0.084	605	0.132	745	0.004
470	0.061	610	0.129	750	0.004
475	0.049	615	0.123	755	0.003
480	0.051	620	0.117	760	0.003
485	0.057	625	0.110	765	0.002
490	0.066	630	0.102	770	0.002
495	0.078	635	0.094	775	0.002
500	0.090	640	0.086	780	0.002
505	0.099	645	0.078		
510	0.106	650	0.070		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L17006.
Dialight unit model number ALU7BC29-XXXXX-N

Electrical Measurements:

Input Voltage:	120.1	(VAC)
Input current:	0.552	(A)
Input Power:	66.0	(W)
Power Factor:	0.995	

Photometric measurements:

Absolute Luminous Flux:	9021	(lumens)
Luminous Efficacy:	136.6	(lumens/W)

INTENSITY (CANDLEPOWER) SUMMARY

ANGLE	ALONG	25	45	72.5	ACROSS	OUTPUT LUMENS
0	3525	3525	3525	3525	3525	
5	3554	3540	3523	3513	3514	132
15	3587	3598	3544	3516	3529	764
25	3330	3408	3503	3530	3561	1398
35	2956	3097	3294	3292	3289	1889
45	2462	2685	2845	2556	2385	2075
55	1854	2152	1845	1027	659	1709
65	1077	1147	267	70	79	819
75	308	66	19	10	8	220
85	5	3	2	1	1	15
95	0	0	0	0	0	0
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	

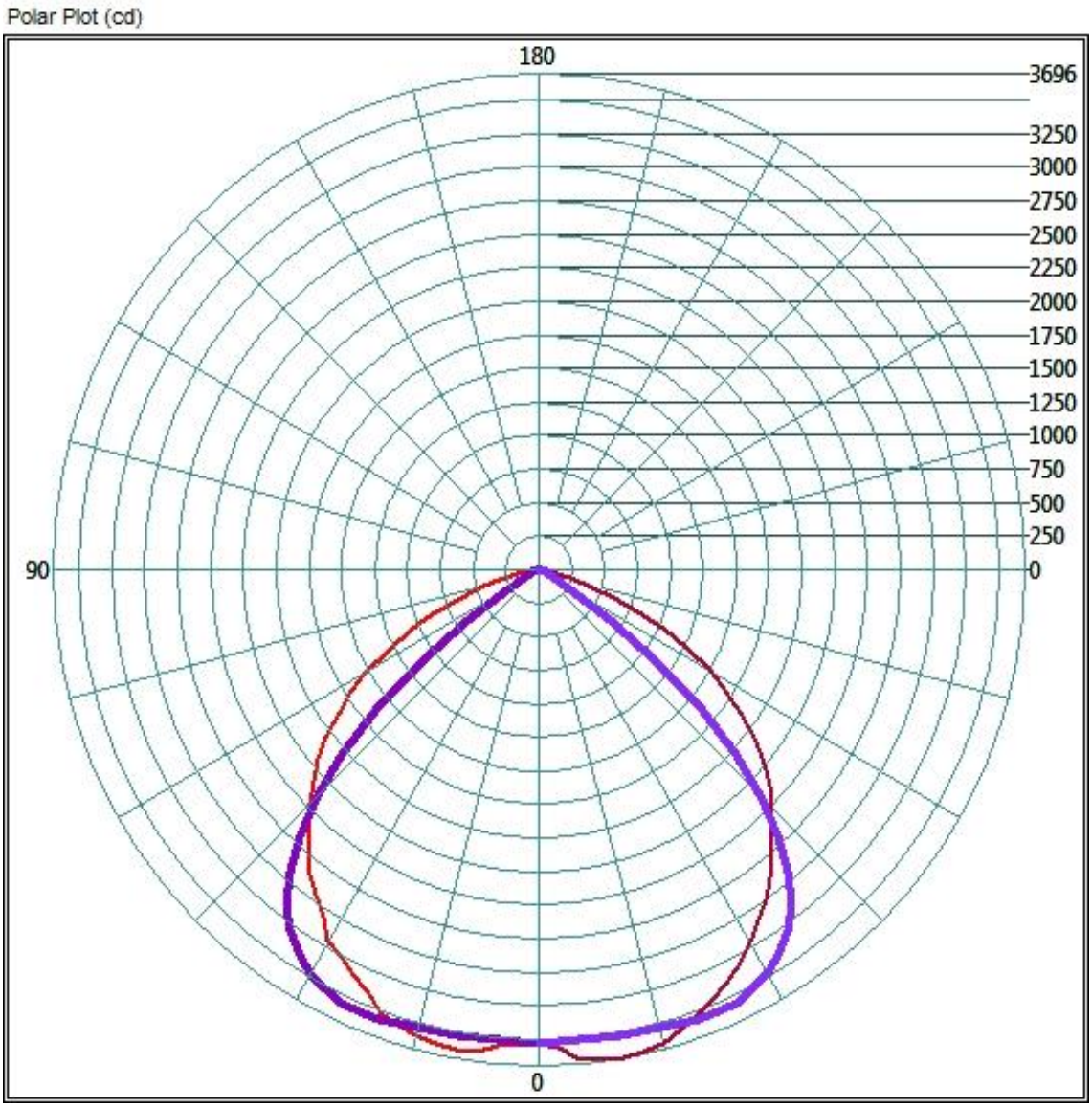
ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	3191.69	35.4%
0-40	5227.02	57.9%
0-60	8479.09	94.0%
60-90	767.01	8.5%
0-90	9020.4	100.0%
90-180	0	0.0%
0-180	9020.4	100.0%

Test Results: Goniometer

Results continued from previous page.

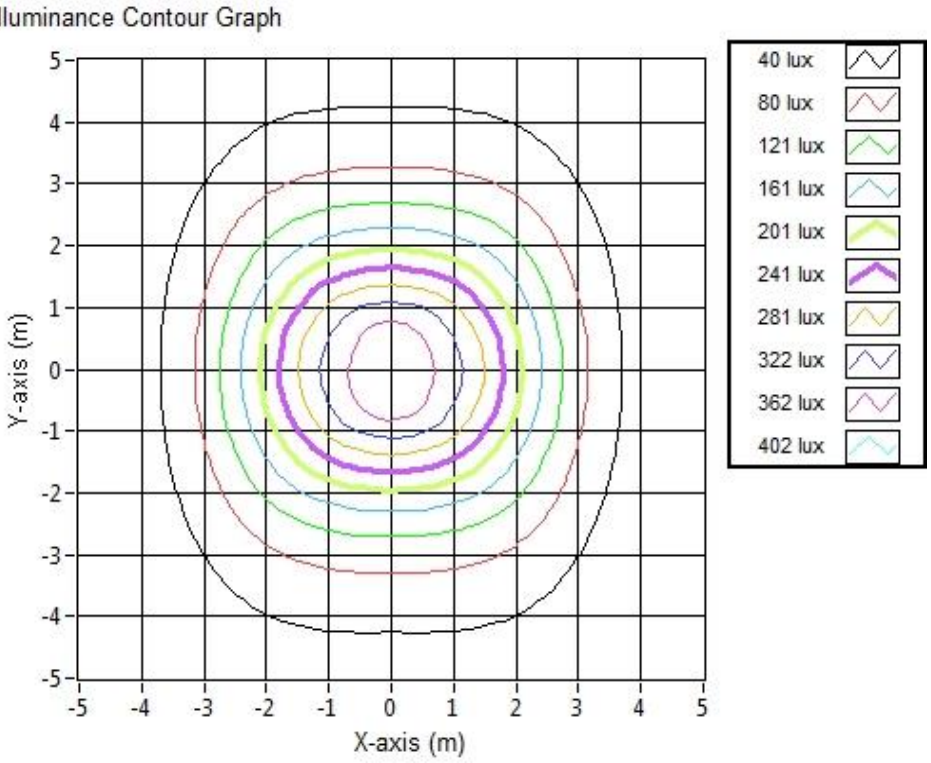
Polar Plot:



Test Results: Goniometer

Results continued from previous page.

Illuminance Plot:



Illuminance-Cone of Light:

Mounting Height (m)	Beam Cone Width (m)	Orthogonal Beam Cone Width (m)	Projected Illuminance (lux)
3.048	9.19	7.06	379.5
6.096	18.38	14.12	94.9
9.144	27.57	21.18	42.2
12.192	36.75	28.24	23.7
15.24	45.94	35.30	15.2
18.188	54.83	42.13	10.7
21.336	64.32	49.43	7.7
24.384	73.51	56.49	5.9
27.432	82.70	63.55	4.7
30.48	91.89	70.61	3.8

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L17006.
Dialight unit model number ALU7BC29-XXXXX-N

LED identified as Seoul part number SAW8C22B.

LED drive current (as indicated by customer):	53	(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:

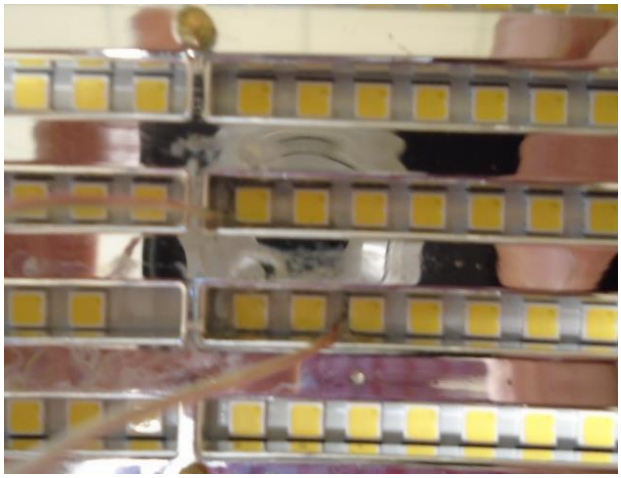
Maximum Power at Indicated Current:	0.318	(W)
Maximum Source Temperature:	119.6	(°C)

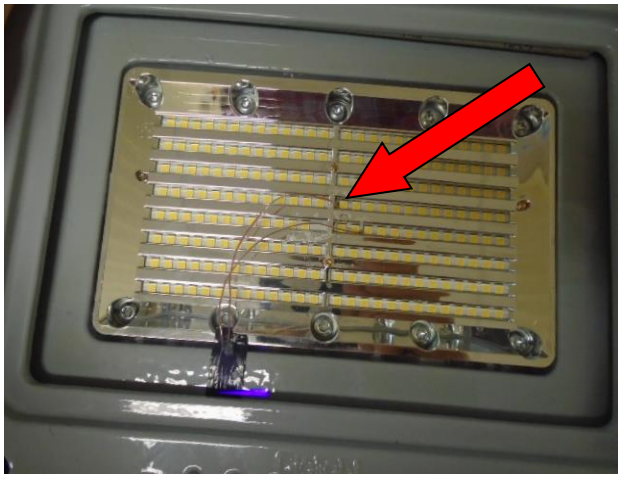
Test Conditions:

Temperature Measurement Location:	See Photographs Below	
Ambient Temperature:	25° ± 5‘	(°C)
Ambient temperature at time of measurement:	24	(°C)
Relative humidity at time of measurement:	29%	

Results:

Measured LED source temperature:	44.1	(°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
Volttech Power Analyzer	PM1000+
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
Fluke 971 Humidity Meter	971
Extech Hygro-Thermometer	4/16/3120
Fluke 52II Thermometer	52II Thermometer
Volttech Power Analyzer	PM1000+
BK Precison	1715A
TDK-Lambda	GEN1500W
Fluke 8808A Digit Multimeter	8808A
TPI Digitial Thermometer 343	TPI 343
TPI Digitial Thermometer 343	TPI 343
Step-Up Transformer	
Omega TC	Dpi8-C24
Agilent True RMS OLED Multimeter	U1273A
Adaptive Power Systems AC Power Supply	FC-210
Xitron Power Analyzer	XT2640

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.

Test Report Issued By:

Richard Huegi
Dialight Optics Laboratory
Senior Optical Engineering Technician
Lighting Division

Test Report Reviewed and Approved By:

Vishnu Shastry
Dialight Optics Laboratory
Optical Engineer
Approved Signatory