

Test Report

Report Number: L18058

Date: Jun 28, 2018

Issued by:

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

Test of one High Output High Bay w/250ft cable
Unit manufacturer: Dialight Corporation
Unit model number: H6-U7NC-UKxx-xxxx

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: June 26, 2018 through June 27, 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

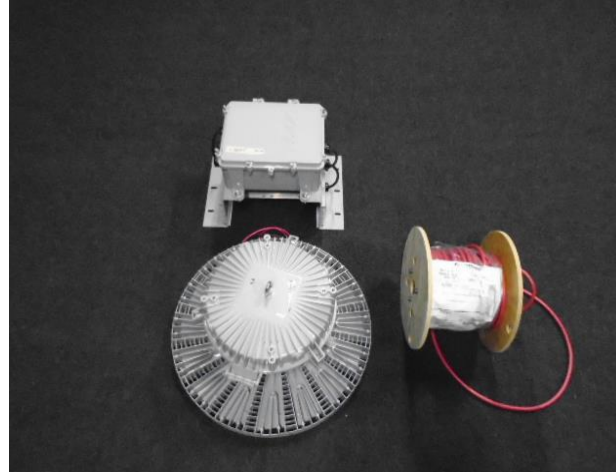
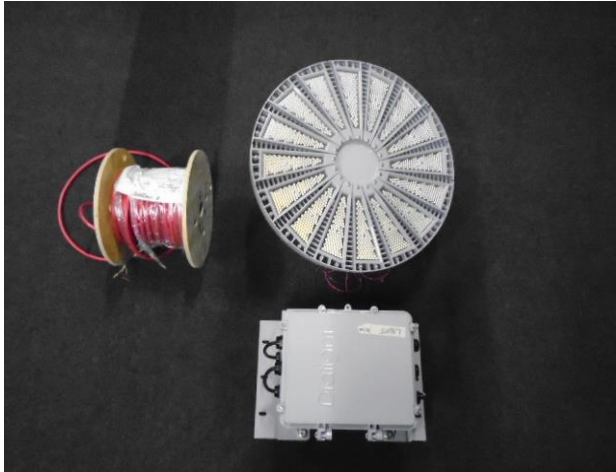
Description of sample:

Sample Number: L18058
Manufacturer: Dialight Corporation
Product Name: H6-U7NC-UKxx-xxxx
Description: High Output High Bay w/250ft cable
Model Number: H6-U7NC-UKxx-xxxx

Report Summary

Sample number L18058
Dialight unit model number H6-U7NC-UKxx-xxxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	43940 (lumens)	44535 (lumens)
Electrical Power:	344.7 (W)	344.7 (W)
Luminous Efficacy:	127.5 (lumens/W)	129.2 (lumens/W)

Electrical Measurements:

Input Power (480VAC): 344.7 (W)
Power Factor (480VAC): 0.975
Current ATHD % (480VAC): 6.859

Color Measurements:

Correlated Color Temperature (CCT): 5123
Color Rendering Index (CRI): 85.9
Chromaticity Coordinate (x): 0.342
Chromaticity Coordinate (y): 0.352
Chromaticity Coordinate (u'): 0.209
Chromaticity Coordinate (v'): 0.323
DUV: 0.0016

Temperature Measurements:

In Situ LED Source Temperature: 54.2 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L18058.

Dialight unit model number H6-U7NC-UKxx-xxxx

Test Conditions:

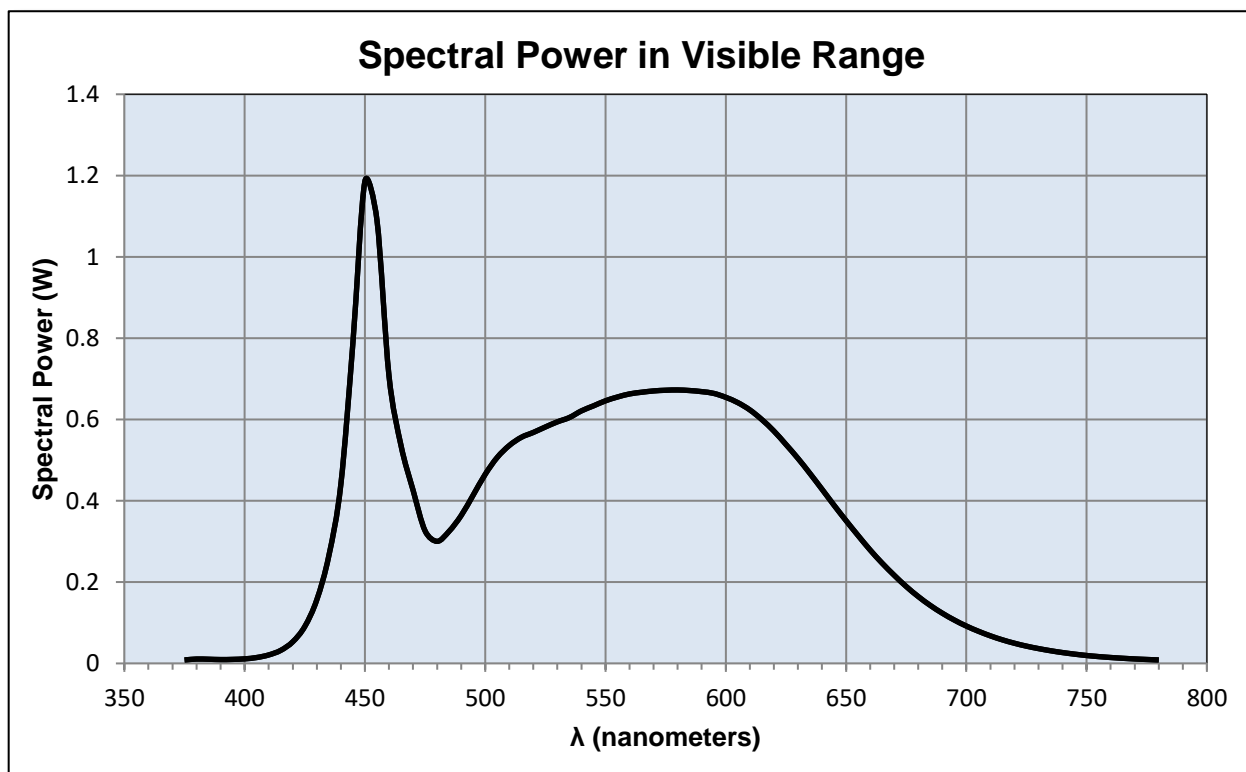
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 480 (VAC)
 Input Current: 0.735 (A)
 Input Power: 344.7 (W)
 Input Power Factor: 0.975
 Current ATHD: 6.859 (%)

Photometric measurements:

Luminous Flux: 43940 (lumens)
 Luminous Efficacy: 127.5 (lumens/W)
 Correlated Color Temperature (CCT): 5123 (K)
 CRI -Ra: 85.9
 CRI -R9: 22.5
 DUV: 0.0016
 CIE Coordinate (x): 0.342
 CIE Coordinate (y): 0.352
 CIE Coordinate (u'): 0.209
 CIE Coordinate (v'): 0.323



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	0.009	515	0.556	655	0.315
380	0.011	520	0.568	660	0.279
385	0.010	525	0.582	665	0.247
390	0.010	530	0.594	670	0.217
395	0.010	535	0.605	675	0.189
400	0.011	540	0.621	680	0.165
405	0.014	545	0.634	685	0.143
410	0.021	550	0.646	690	0.124
415	0.032	555	0.655	695	0.107
420	0.053	560	0.663	700	0.092
425	0.091	565	0.667	705	0.079
430	0.157	570	0.670	710	0.068
435	0.265	575	0.672	715	0.058
440	0.441	580	0.673	720	0.050
445	0.788	585	0.671	725	0.043
450	1.186	590	0.669	730	0.037
455	1.091	595	0.664	735	0.031
460	0.708	600	0.655	740	0.027
465	0.536	605	0.642	745	0.023
470	0.426	610	0.624	750	0.020
475	0.326	615	0.600	755	0.017
480	0.300	620	0.572	760	0.015
485	0.325	625	0.539	765	0.013
490	0.364	630	0.504	770	0.011
495	0.414	635	0.467	775	0.010
500	0.465	640	0.429	780	0.009
505	0.507	645	0.389		
510	0.536	650	0.351		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L18058.
Dialight unit model number H6-U7NC-UKxx-xxxx

Electrical Measurements:

Input Voltage: 480 (VAC)
Input current: 0.735 (A)
Input Power: 344.7 (W)
Power Factor: 0.975

Photometric measurements:

Absolute Luminous Flux: 44535 (lumens)
Luminous Efficacy: 129.2 (lumens/W)

Intensity Summary:

<u>INTENSITY (CANDLEPOWER) SUMMARY</u>						
ANGLE	ALONG	23	45	67.5	ACROSS	OUTPUT LUMENS
0	63411	63411	63411	63411	63411	
5	58744	58744	58744	58744	58744	2243
15	37309	37309	37309	37309	37309	9329
25	23259	23259	23259	23259	23259	10936
35	15392	15392	15392	15392	15392	10107
45	8521	8521	8521	8521	8521	8138
55	1350	1350	1350	1350	1350	2941
65	671	671	671	671	671	706
75	46	46	46	46	46	111
85	9	9	9	9	9	24
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

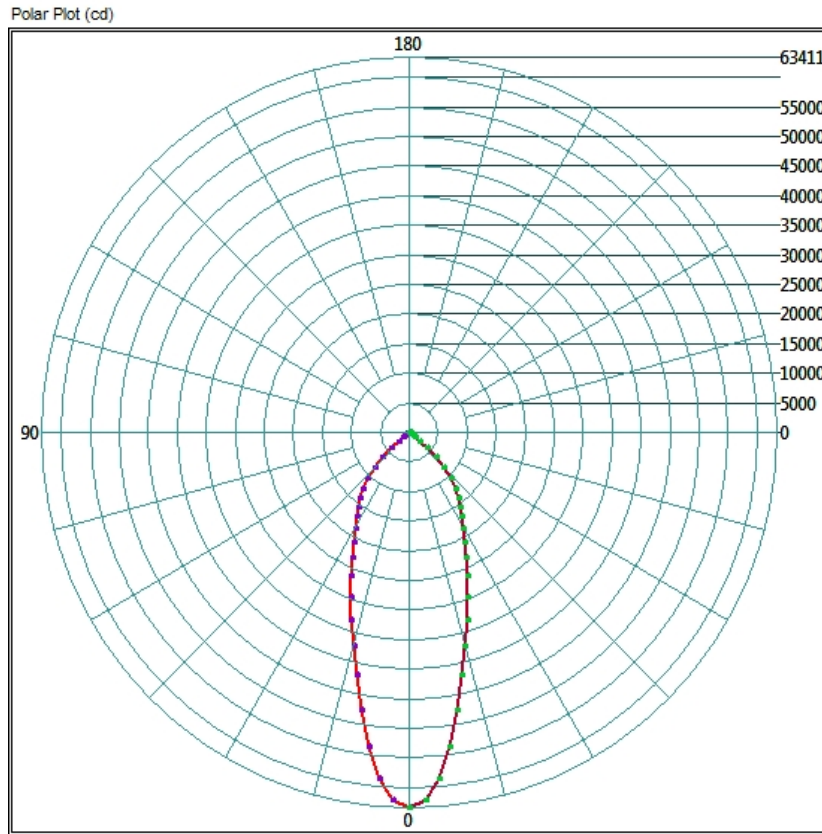
ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	27702.72	62.2%
0-40	37131.84	83.4%
0-60	44059.68	98.9%
60-90	644.32	1.4%
0-90	44535.04	100.0%
90-180	0	0.0%
0-180	44535.04	100.0%

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

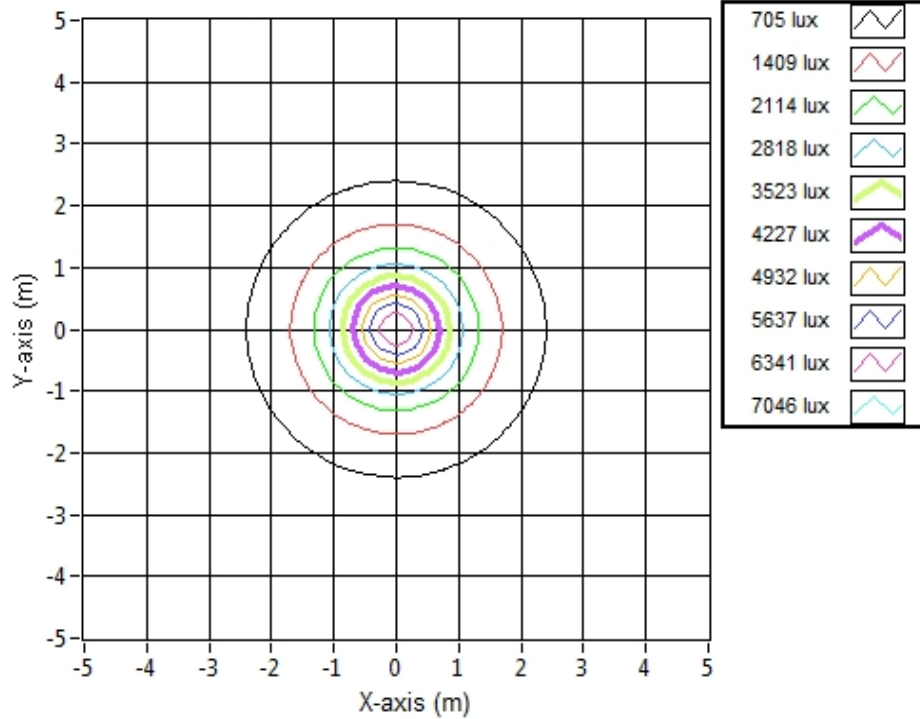


Test Results: Goniometer

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	2.04	2.04	6825.5
6.096	4.08	4.08	1706.4
9.144	6.12	6.12	758.4
12.192	8.16	8.16	426.6
15.24	10.20	10.20	273.0
18.288	12.24	12.24	189.6
21.336	14.28	14.28	139.3
24.384	16.32	16.32	106.6
27.432	18.36	18.36	84.3
30.48	20.40	20.40	68.3

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L18058.
Dialight unit model number H6-U7NC-UKxx-xxxx

LED identified as Seoul part number SAW8C22B.

LED drive current (as indicated by customer): 47 (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:

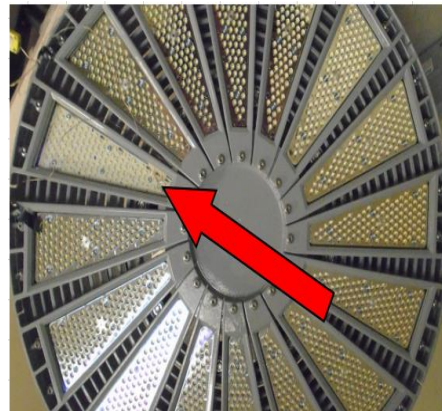
Maximum Power at Indicated Current: 0.282 (W)
Maximum Source Temperature: 120.2 (°C)

Test Conditions:

Temperature Measurement Location: See Photographs Below
Ambient Temperature: $25^{\circ} \pm 5^{\circ}$ (°C)
Ambient temperature at time of measurement: 24.9 (°C)
Relative humidity at time of measurement: 39%

Results:

Measured LED source temperature: 54.2 (°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.

Test Report Issued By:

Richard Huegi
Dialight Optics Laboratory
Senior Optical Engineering Technician
Lighting Division

Test Report Reviewed and Approved By:

Yinan Zhang
Dialight Optics Laboratory
Optical Engineer