

# Test Report

Report Number: L18054

Date: Jun 25, 2018

Issued by:

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

Test of one High Output High Bay  
Unit manufacturer: Dialight Corporation  
Unit model number: H6-U7NC-URxx-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 22, 2018 through June 25, 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

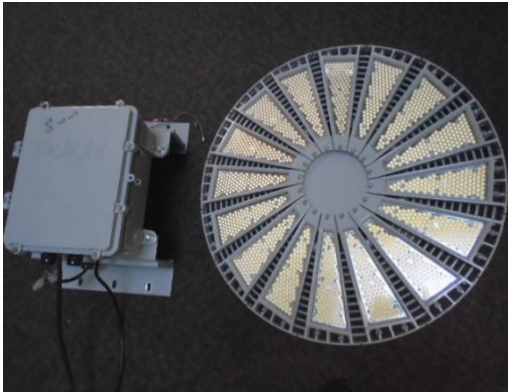
**Description of sample:**

Sample Number: L18054  
Manufacturer: Dialight Corporation  
Product Name: H6-U7NC-URxx-xxxx  
Description: High Output High Bay  
Model Number: H6-U7NC-URxx-xxxx

## Report Summary

Sample number L18054  
Dialight unit model number H6-U7NC-URxx-xxxx

### Photograph(s) of sample:



\*Photographs not to scale. For reference only.

### Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	70420 (lumens)	71041 (lumens)
Electrical Power:	527.6 (W)	527.6 (W)
Luminous Efficacy:	133.5 (lumens/W)	134.6 (lumens/W)

### Electrical Measurements:

Input Power (480): 527.6 (W)  
Power Factor (480): 0.984  
Current ATHD % (480): 5.019

### Color Measurements:

Correlated Color Temperature (CCT): 4937  
Color Rendering Index (CRI): 83.6  
Chromaticity Coordinate (x): 0.348  
Chromaticity Coordinate (y): 0.367  
Chromaticity Coordinate (u'): 0.208  
Chromaticity Coordinate (v'): 0.328  
DUV: 0.0064

### Temperature Measurements:

In Situ LED Source Temperature: 60.2 (°C)

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L18054.

Dialight unit model number H6-U7NC-URxx-xxxx

### Test Conditions:

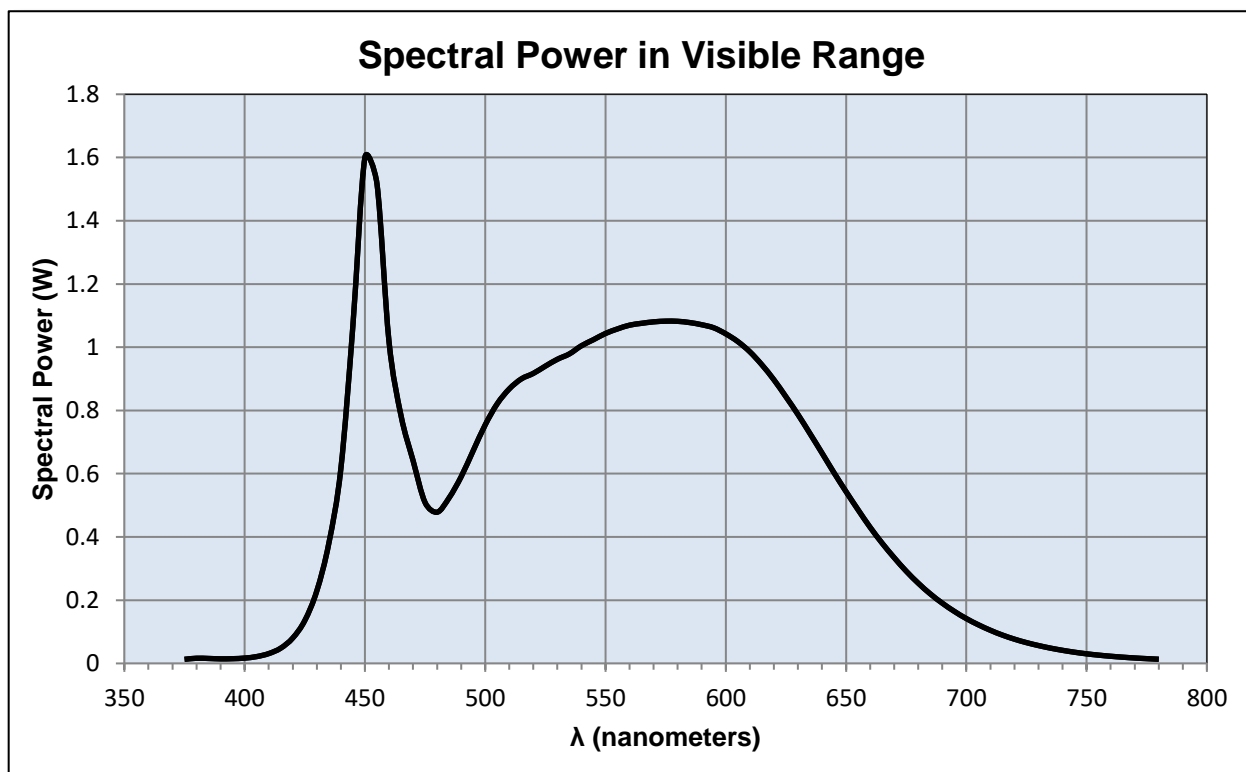
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 480 (VAC)  
 Input Current: 1.113 (A)  
 Input Power: 527.6 (W)  
 Input Power Factor: 0.984  
 Current ATHD: 5.019 (%)

### Photometric measurements:

Luminous Flux: 70420 (lumens)  
 Luminous Efficacy: 133.5 (lumens/W)  
 Correlated Color Temperature (CCT): 4937 (K)  
 CRI -Ra: 83.6  
 CRI -R9: 10.5  
 DUV: 0.0064  
 CIE Coordinate (x): 0.348  
 CIE Coordinate (y): 0.367  
 CIE Coordinate (u'): 0.208  
 CIE Coordinate (v'): 0.328



## 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	0.013	515	0.900	655	0.486
380	0.016	520	0.917	660	0.431
385	0.016	525	0.940	665	0.380
390	0.014	530	0.962	670	0.335
395	0.015	535	0.979	675	0.292
400	0.017	540	1.005	680	0.254
405	0.022	545	1.024	685	0.220
410	0.031	550	1.044	690	0.191
415	0.048	555	1.058	695	0.165
420	0.080	560	1.070	700	0.142
425	0.136	565	1.076	705	0.122
430	0.229	570	1.080	710	0.105
435	0.380	575	1.082	715	0.090
440	0.616	580	1.082	720	0.077
445	1.068	585	1.078	725	0.066
450	1.600	590	1.071	730	0.057
455	1.517	595	1.061	735	0.048
460	1.019	600	1.042	740	0.041
465	0.784	605	1.018	745	0.035
470	0.642	610	0.986	750	0.030
475	0.509	615	0.945	755	0.026
480	0.478	620	0.897	760	0.023
485	0.524	625	0.843	765	0.020
490	0.590	630	0.787	770	0.017
495	0.673	635	0.727	775	0.015
500	0.754	640	0.666	780	0.013
505	0.821	645	0.603		
510	0.868	650	0.543		

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L18054.  
Dialight unit model number H6-U7NC-URxx-xxxx

### Electrical Measurements:

Input Voltage: 480 (VAC)  
Input current: 1.113 (A)  
Input Power: 527.6 (W)  
Power Factor: 0.984

### Photometric measurements:

Absolute Luminous Flux: 71041 (lumens)  
Luminous Efficacy: 134.6 (lumens/W)

### Intensity Summary:

<u>INTENSITY (CANDLEPOWER) SUMMARY</u>						
ANGLE	ALONG	23	45	67.5	ACROSS	OUTPUT LUMENS
0	100214	100214	100214	100214	100214	
5	93165	93165	93165	93165	93165	3553
15	61087	61087	61087	61087	61087	15109
25	38695	38695	38695	38695	38695	17973
35	26007	26007	26007	26007	26007	17139
45	12431	12431	12431	12431	12431	12673
55	1479	1479	1479	1479	1479	3981
65	233	233	233	233	233	442
75	83	83	83	83	83	115
85	26	26	26	26	26	54
95	0	0	0	0	0	2
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

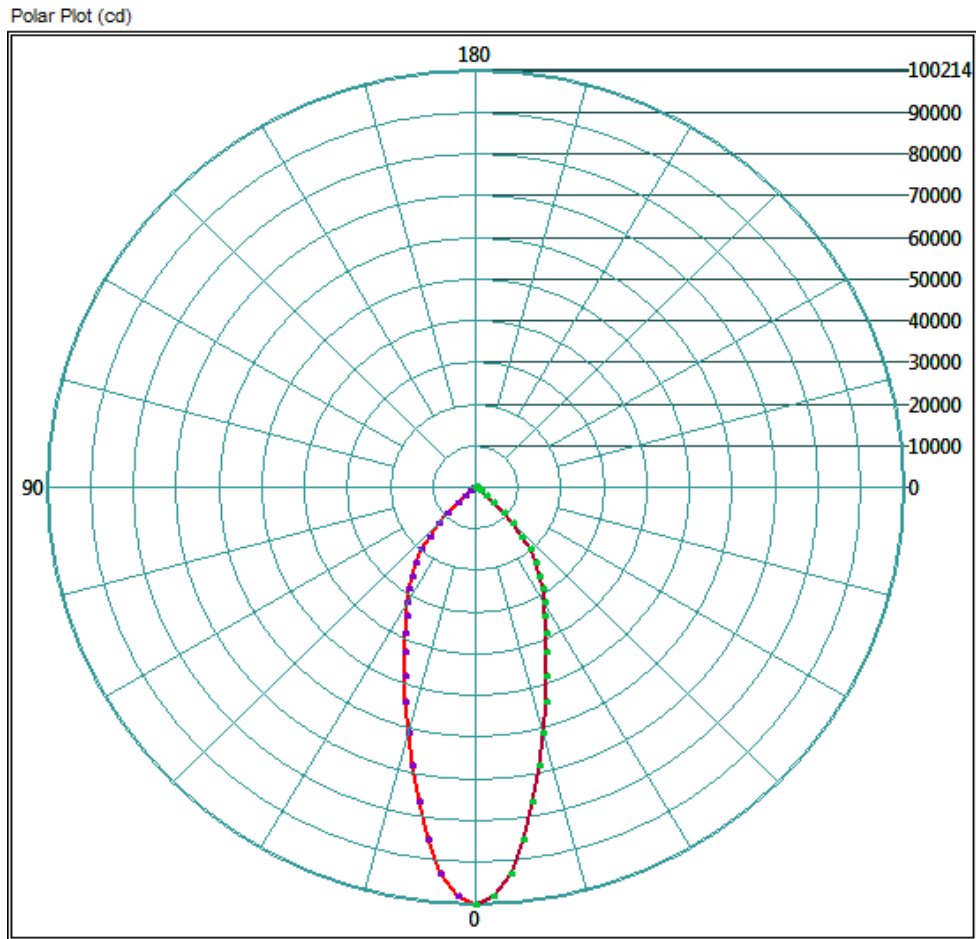
### ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	45430.56	63.9%
0-40	61061.44	86.0%
0-60	70712.96	99.5%
60-90	449.28	0.6%
0-90	71040.96	100.0%
90-180	0	0.0%
0-180	71040.96	100.0%

## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:

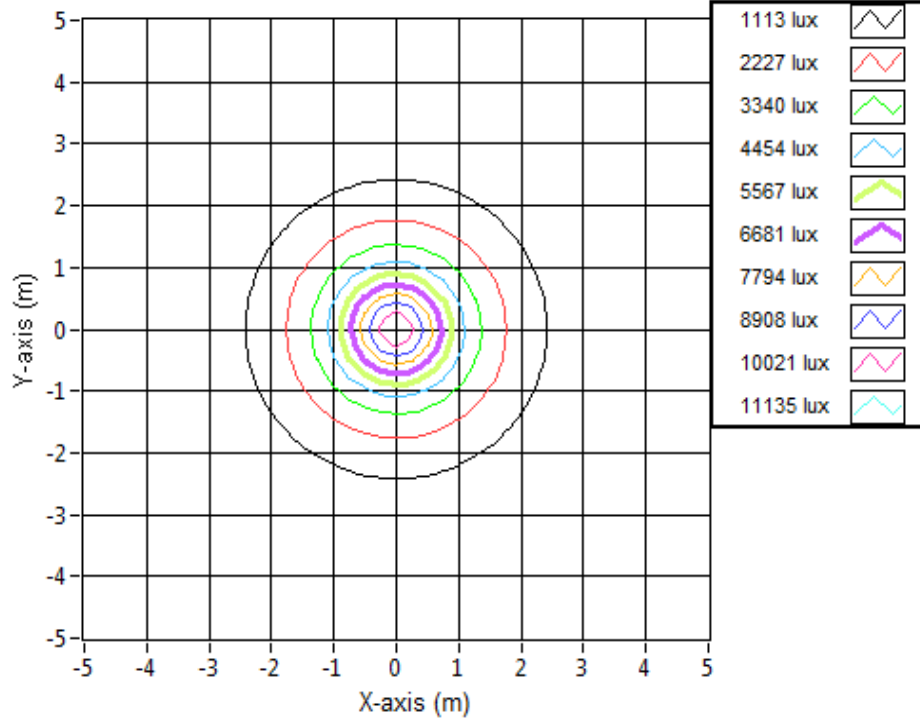


## Test Results: Goniometer

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	2.12	2.12	10787.0
6.096	4.24	4.24	2696.7
9.144	6.37	6.37	1198.6
12.192	8.49	8.49	674.2
15.24	10.61	10.61	431.5
18.288	12.73	12.73	299.6
21.336	14.85	14.85	220.1
24.384	16.97	16.97	168.5
27.432	19.10	19.10	133.2
30.49	21.22	21.22	107.8

## Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L18054.  
Dialight unit model number H6-U7NC-URxx-xxxx

LED identified as Seoul part number SAW8C22B-IZ.

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:

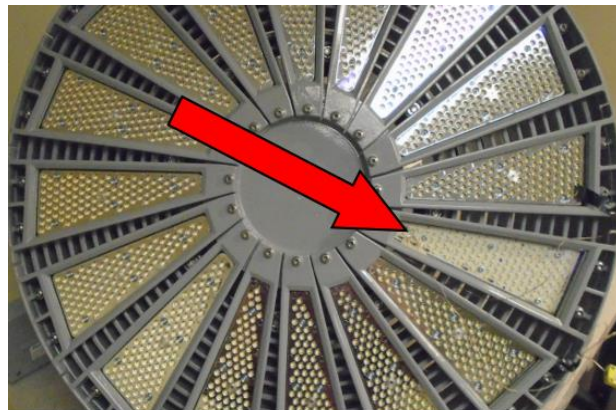
Maximum Power at Indicated Current: 0.318 (W)  
Maximum Source Temperature: 119.6 (°C)

### Test Conditions:

Temperature Measurement Location: See Photographs Below  
Ambient Temperature:  $25^{\circ} \pm 5^{\circ}$  (°C)  
Ambient temperature at time of measurement: 25.2 (°C)  
Relative humidity at time of measurement: 35%

### Results:

**Measured LED source temperature: 60.2 (°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
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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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