

Test Report

Report Number: L18056

Date: Jun 27, 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-UNxx-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 20, 2018 through June 26, 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

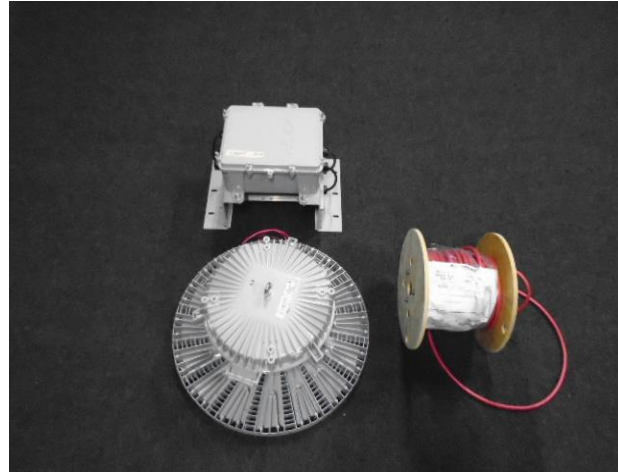
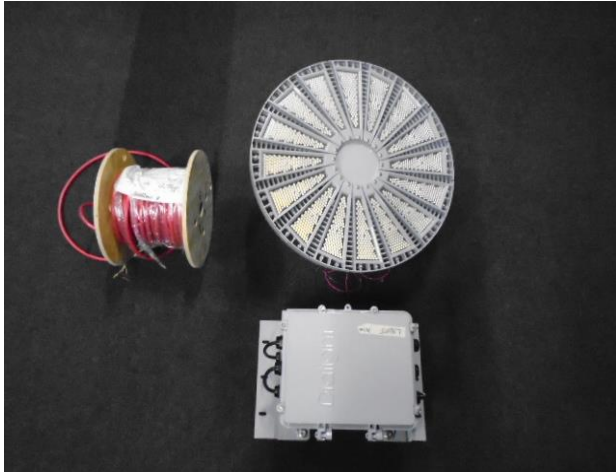
Description of sample:

Sample Number: L18056
Manufacturer: Dialight Corporation
Product Name: H6-U7NC-UNxx-xxxx
Description: High Output High Bay w/250ft cable
Model Number: H6-U7NC-UNxx-xxxx

Report Summary

Sample number L18056
Dialight unit model number H6-U7NC-UNxx-xxxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	58460 (lumens)	59344 (lumens)
Electrical Power:	472.2 (W)	472.2 (W)
Luminous Efficacy:	123.8 (lumens/W)	125.7 (lumens/W)

Electrical Measurements:

Input Power (480): 472.2 (W)
Power Factor (480): 0.983
Current ATHD % (480): 6.304

Color Measurements:

Correlated Color Temperature (CCT): 4787
Color Rendering Index (CRI): 82.1
Chromaticity Coordinate (x): 0.353
Chromaticity Coordinate (y): 0.366
Chromaticity Coordinate (u'): 0.211
Chromaticity Coordinate (v'): 0.328
DUV: 0.0042

Temperature Measurements:

In Situ LED Source Temperature: 54.1 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L18056.

Dialight unit model number H6-U7NC-UNxx-xxxx

Test Conditions:

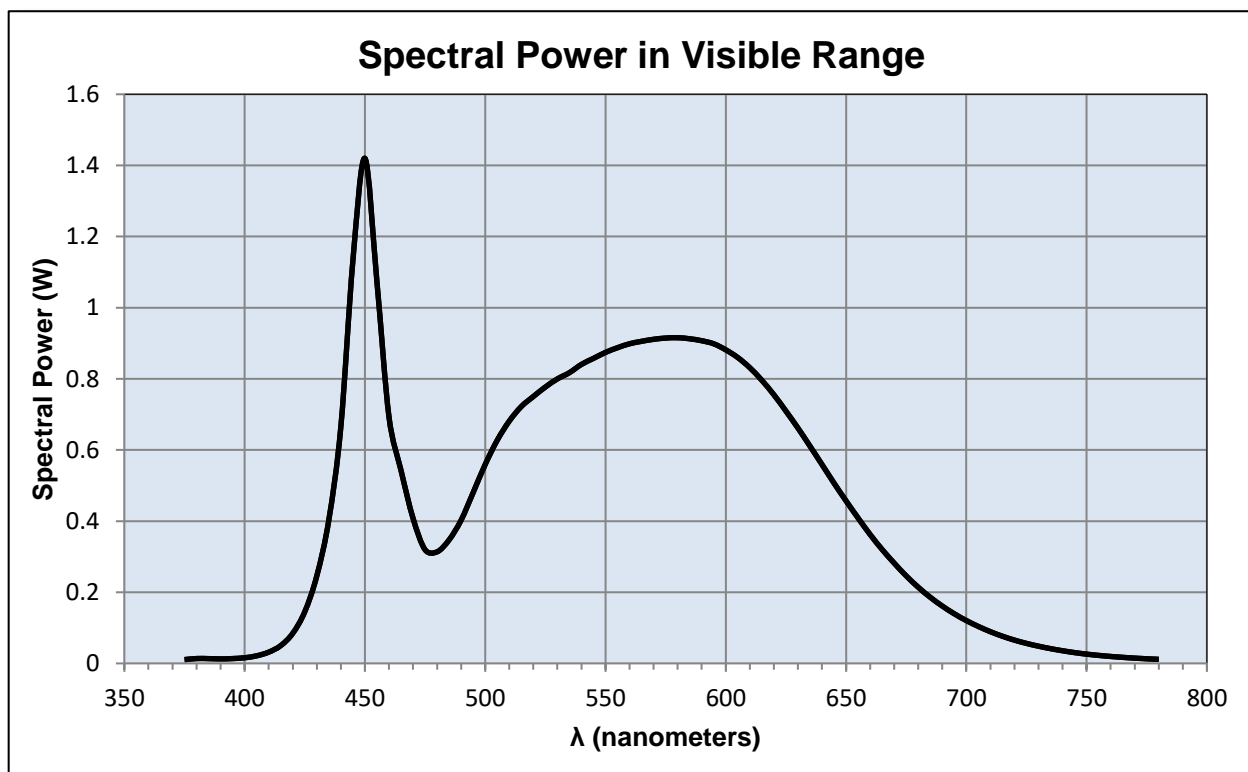
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 480 (VAC)
 Input Current: 1.001 (A)
 Input Power: 472.2 (W)
 Input Power Factor: 0.983
 Current ATHD: 6.304 (%)

Photometric measurements:

Luminous Flux: 58460 (lumens)
 Luminous Efficacy: 123.8 (lumens/W)
 Correlated Color Temperature (CCT): 4787 (K)
 CRI -Ra: 82.1
 CRI -R9: 8.6
 DUV: 0.0042
 CIE Coordinate (x): 0.353
 CIE Coordinate (y): 0.366
 CIE Coordinate (u'): 0.211
 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	0.011	515	0.722	655	0.409
380	0.014	520	0.750	660	0.363
385	0.014	525	0.777	665	0.320
390	0.013	530	0.800	670	0.282
395	0.014	535	0.817	675	0.246
400	0.016	540	0.841	680	0.214
405	0.021	545	0.857	685	0.186
410	0.032	550	0.874	690	0.161
415	0.050	555	0.888	695	0.140
420	0.085	560	0.899	700	0.120
425	0.145	565	0.906	705	0.104
430	0.246	570	0.911	710	0.089
435	0.404	575	0.915	715	0.076
440	0.666	580	0.916	720	0.066
445	1.132	585	0.913	725	0.056
450	1.420	590	0.907	730	0.048
455	1.072	595	0.899	735	0.042
460	0.693	600	0.882	740	0.036
465	0.543	605	0.860	745	0.030
470	0.408	610	0.831	750	0.026
475	0.320	615	0.796	755	0.023
480	0.314	620	0.755	760	0.020
485	0.347	625	0.709	765	0.017
490	0.403	630	0.662	770	0.015
495	0.480	635	0.611	775	0.013
500	0.559	640	0.559	780	0.012
505	0.627	645	0.507		
510	0.681	650	0.457		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L18056.
Dialight unit model number H6-U7NC-UNxx-xxxx

Electrical Measurements:

Input Voltage: 480 (VAC)
Input current: 1 (A)
Input Power: 472.2 (W)
Power Factor: 0.977

Photometric measurements:

Absolute Luminous Flux: 59344 (lumens)
Luminous Efficacy: 125.7 (lumens/W)

Intensity Summary:

<u>INTENSITY (CANDLEPOWER) SUMMARY</u>						
ANGLE	ALONG	23	45	67.5	ACROSS	OUTPUT LUMENS
0	80688	80688	80688	80688	80688	
5	75441	75441	75441	75441	75441	2872
15	49928	49928	49928	49928	49928	12348
25	31215	31215	31215	31215	31215	14652
35	20732	20732	20732	20732	20732	13627
45	10958	10958	10958	10958	10958	10658
55	1996	1996	1996	1996	1996	3967
65	870	870	870	870	870	1013
75	77	77	77	77	77	159
85	23	23	23	23	23	47
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

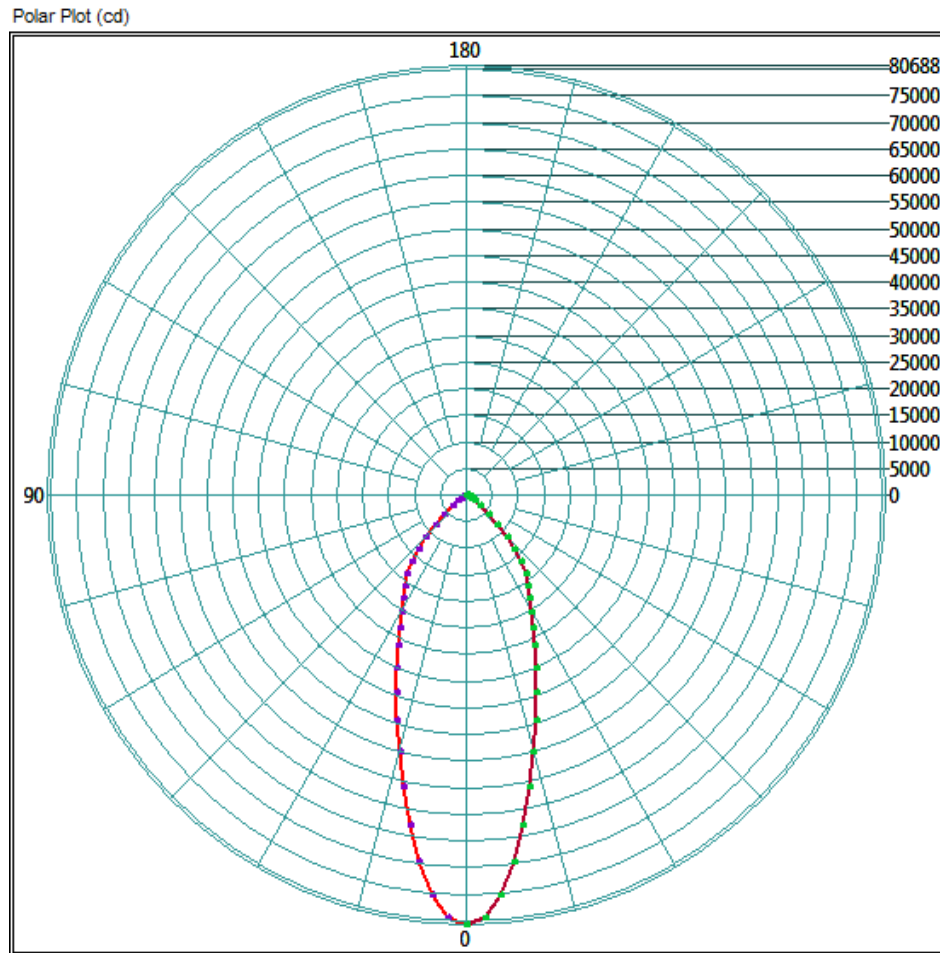
ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	36871.52	62.1%
0-40	49484.16	83.4%
0-60	58673.6	98.9%
60-90	919.84	1.6%
0-90	59344	100.0%
90-180	0	0.0%
0-180	59344	100.0%

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

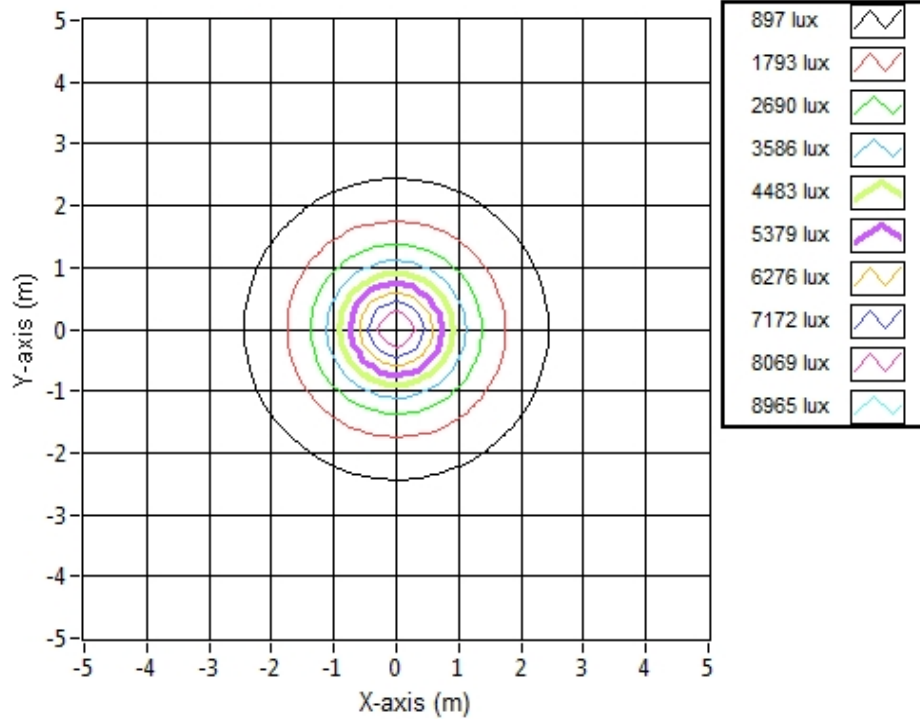


Test Results: Goniometer

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	2.17	2.17	8685.1
6.096	4.33	4.33	2171.3
9.144	6.50	6.50	965.0
12.192	8.66	8.66	542.8
15.24	10.83	10.83	347.4
18.288	12.99	12.99	241.3
21.336	15.16	15.16	177.2
24.384	17.32	17.32	135.7
27.432	19.49	19.49	107.2
30.48	21.65	21.65	86.9

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L18056.
Dialight unit model number H6-U7NC-UNxx-xxxx

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:

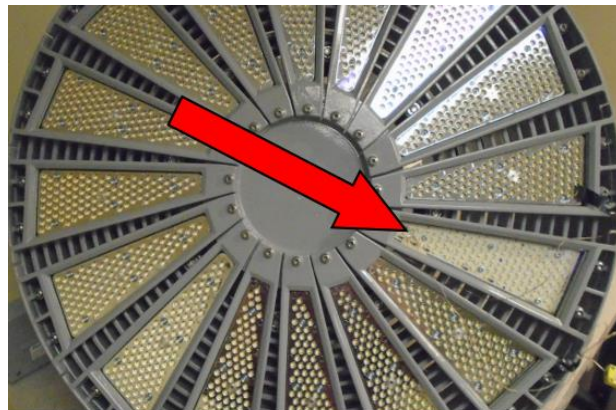
Maximum Power at Indicated Current: 0.318 (W)
Maximum Source Temperature: 119.6 (°C)

Test Conditions:

Temperature Measurement Location: See Photographs Below
Ambient Temperature: $25^{\circ} \pm 5^{\circ}$ (°C)
Ambient temperature at time of measurement: 24.8 (°C)
Relative humidity at time of measurement: 39%

Results:

Measured LED source temperature: 54.1 (°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
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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