

Test Report

Report Number: L15079

Date: Jun 10, 2015

Issued by:

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

Test of one Vigilant Highbay With Glass Lens
Unit manufacturer: Dialight Corporation
Unit model number: HEGNC4PN-xxx

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 10, 2015 through June 10, 2015

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

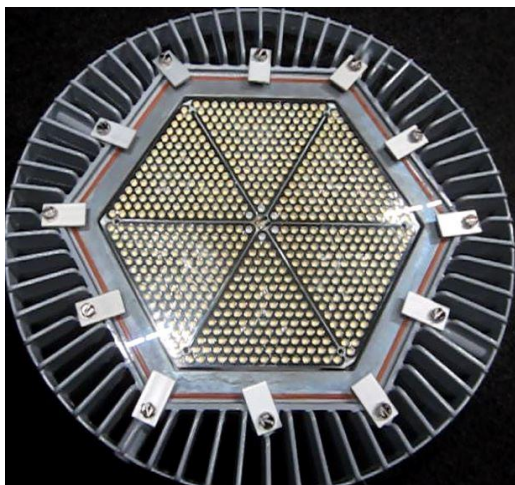
Description of sample:

Sample Number: L15079
Manufacturer: Dialight Corporation
Product Name: Vigilant Highbay With Glass Lens
Description: Vigilant Highbay With Glass Lens
Model Number: HEGNC4PN-xxx

Report Summary

Sample number L15079
Dialight unit model number HEGNC4PN-xxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	27160 (lumens)	27403 (lumens)
Electrical Power:	212.8 (W)	213.5 (W)
Luminous Efficacy:	127.6 (lumens/W)	128.4 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 212.8 (W)
 Power Factor (120VAC): 0.996
 Current ATHD % (120VAC): 5.489
 Input Power (277VAC): 206.2 (W)
 Power Factor (277VAC): 0.953
 Current ATHD % (277VAC): 11.41

Color Measurements:

Correlated Color Temperature (CCT): 5022
 Color Rendering Index (CRI): 79.2
 Chromaticity Coordinate (x): 0.345
 Chromaticity Coordinate (y): 0.352
 Chromaticity Coordinate (u'): 0.211
 Chromaticity Coordinate (v'): 0.323
 DUV: 0.00048

Temperature Measurements:

In Situ LED Source Temperature: 56.8 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L15079.
Dialight unit model number HEGNC4PN-xxx

Test Conditions:

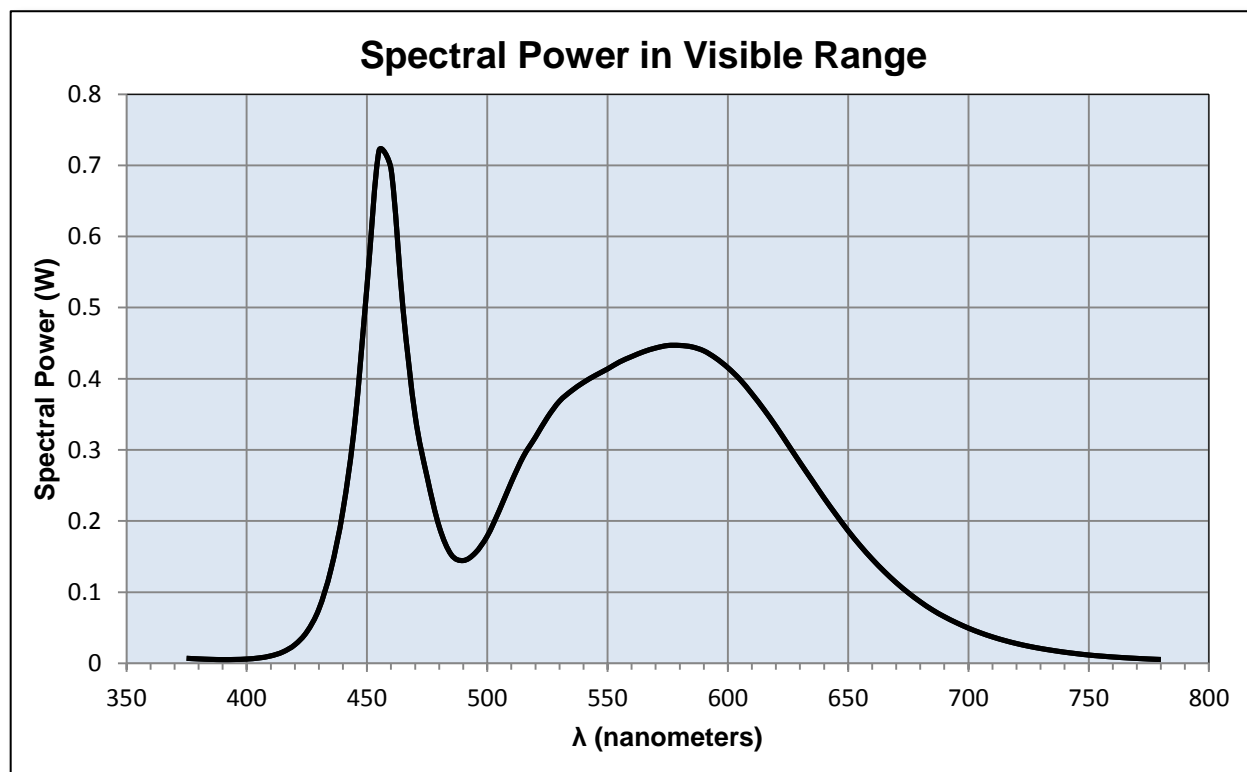
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 1.78 (A)
Input Power: 212.8 (W)
Input Power Factor: 0.996
Current ATHD: 5.489 (%)

Photometric measurements:

Luminous Flux: 27160 (lumens)
Luminous Efficacy: 127.6 (lumens/W)
Correlated Color Temperature (CCT): 5022 (K)
CRI -Ra: 79.2
CRI -R9: -6.1
DUV: 0.00048
CIE Coordinate (x): 0.345
CIE Coordinate (y): 0.352
CIE Coordinate (u'): 0.211
CIE Coordinate (v'): 0.323



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	0.007	515	0.291	655	0.166
380	0.006	520	0.318	660	0.147
385	0.006	525	0.346	665	0.129
390	0.005	530	0.368	670	0.113
395	0.005	535	0.383	675	0.099
400	0.006	540	0.395	680	0.087
405	0.008	545	0.405	685	0.075
410	0.01	550	0.414	690	0.066
415	0.016	555	0.424	695	0.057
420	0.026	560	0.431	700	0.05
425	0.044	565	0.438	705	0.043
430	0.076	570	0.443	710	0.037
435	0.132	575	0.447	715	0.032
440	0.215	580	0.447	720	0.028
445	0.34	585	0.445	725	0.024
450	0.53	590	0.439	730	0.021
455	0.721	595	0.429	735	0.018
460	0.695	600	0.416	740	0.016
465	0.497	605	0.399	745	0.014
470	0.348	610	0.379	750	0.012
475	0.262	615	0.357	755	0.01
480	0.192	620	0.333	760	0.009
485	0.153	625	0.308	765	0.008
490	0.145	630	0.282	770	0.007
495	0.155	635	0.257	775	0.006
500	0.179	640	0.232	780	0.005
505	0.215	645	0.209		
510	0.255	650	0.186		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L15079.
Dialight unit model number HEGNC4PN-xxx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 1.78 (A)
Input Power: 213.5 (W)
Power Factor: 0.996

Photometric measurements:

Absolute Luminous Flux: 27403 (lumens)
Luminous Efficacy: 128.4 (lumens/W)

Intensity Summary:

INTENSITY (CANDLEPOWER) SUMMARY						
ANGLE	ALONG	23	45	68	ACROSS	OUTPUT LUMENS
0	34846	34846	34846	34846	34846	
5	32483	32483	32483	32483	32483	1238
15	19344	19344	19344	19344	19344	5008
25	11504	11504	11504	11504	11504	5422
35	8800	8800	8800	8800	8800	5436
45	6819	6819	6819	6819	6819	5473
55	3035	3035	3035	3035	3035	3935
65	128	128	128	128	128	816
75	38	38	38	38	38	59
85	5	5	5	5	5	17
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	0

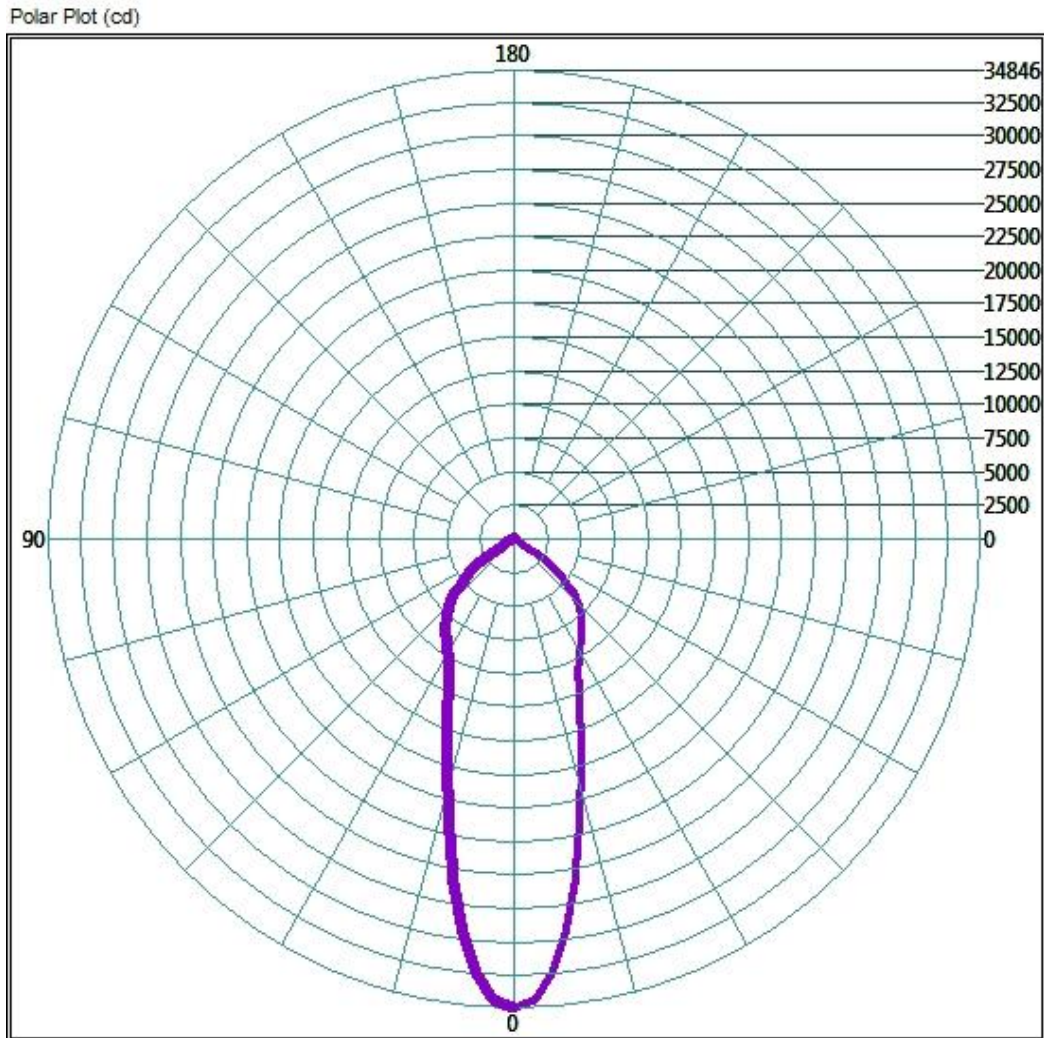
ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	14352	52.4%
0-40	19885.28	72.6%
0-60	27189.92	99.2%
60-90	452.48	1.7%
0-90	27403.84	100.0%
90-180	0	0.0%
0-180	27403.84	100.0%

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

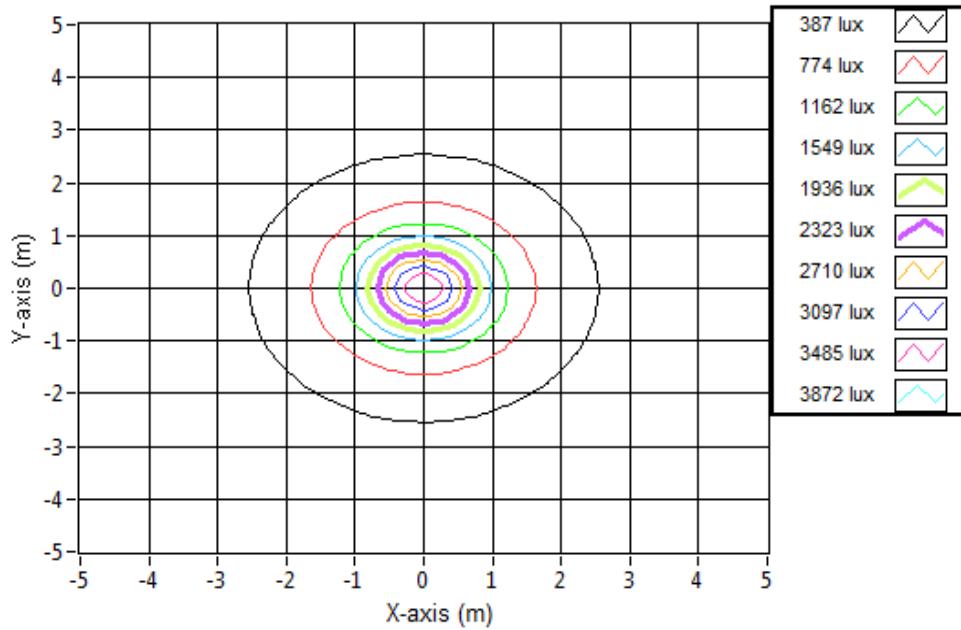


Test Results: Goniometer

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	1.85	1.85	3750.7
6.096	3.69	3.69	937.7
9.144	5.54	5.54	416.7
12.192	7.38	7.38	234.4
15.24	9.23	9.23	150.0
18.288	11.08	11.08	104.2
21.336	12.92	12.92	76.5
24.384	14.77	14.77	58.6
27.432	16.61	16.61	46.3
30.48	18.46	18.46	37.5

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L15079.

Dialight unit model number HEGNC4PN-xxx

LED identified as Nichia part number NT2W757DT.

LED drive current (as indicated by customer): 100 (mA)

LED Specifications:

LED specifications are taken from LED manufacturer datasheet:

Maximum Forward Current (If): 300 (mA)
Maximum Rated Power Dissipation: 1.05 (W)
Maximum Junction Temp. (Tj): 120 (°C)
Thermal Resistance (Rth): 18 (°C/W)

Derived Specifications:

Maximum Power at Indicated Current: 0.35 (W)
Maximum Source Temperature: 113.7 (°C)

Test Conditions:

Temperature Measurement Location: See Photographs Below

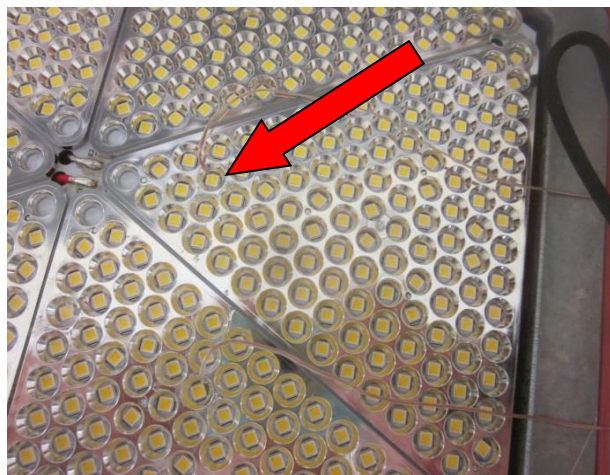
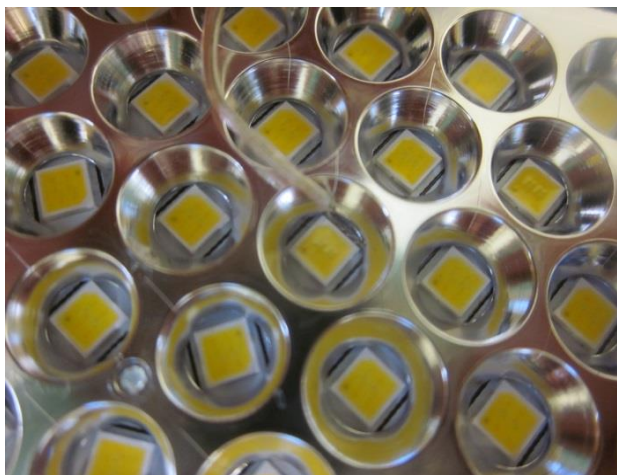
Ambient Temperature: $25^{\circ} \pm 1^{\circ}$ (°C)

Ambient temperature at time of measurement: 25.6 (°C)

Relative humidity at time of measurement: 20%

Results:

Measured LED source temperature: 56.8 (°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
Extech Hygro-Thermometer	4/16/3120
Extech Hygro-Thermometer	4/16/3120
Fluke 52II Thermometer	52II Thermometer
Volttech Power Analyzer	PM1000+
BK Precision	1715A
TDK-Lambda	GEN1500W
Fluke 8808A Digit Multimeter	8808A
TPI Digital Thermometer 343	TPI 343
TPI Digital 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

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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