

# Test Report

Report Number: L14063

Date: Sep 30, 2014

Issued by:

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

Test of one Vigilant Highbay Fixture With Glass Lens  
Unit manufacturer: Dialight Corporation  
Unit model number: HEGMC4DN-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:** September 23, 2014 through September 26, 2014

**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

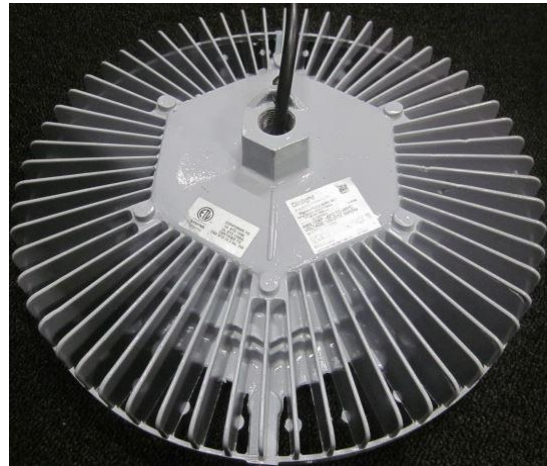
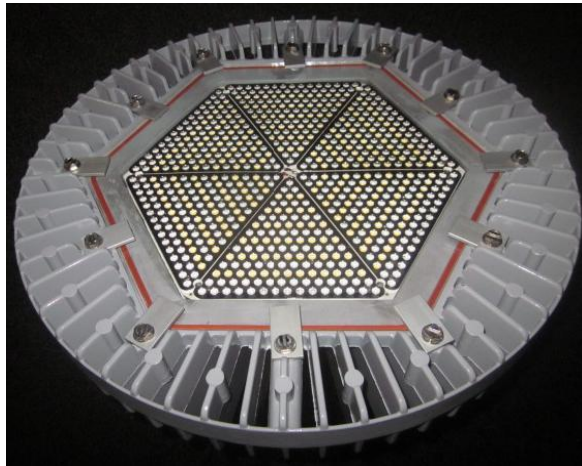
**Description of sample:**

Sample Number: L14063  
Manufacturer: Dialight Corporation  
Product Name: Vigilant Highbay  
Description: Vigilant Highbay Fixture With Glass Lens  
Model Number: HEGMC4DN-xxx

## Report Summary

Sample number L14063  
Dialight unit model number HEGMC4DN-xxx

### Photograph(s) of sample:



\*Photographs not to scale. For reference only.

### Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	11090 (lumens)	10946 (lumens)
Electrical Power:	88.8 (W)	88.9 (W)
Luminous Efficacy:	124.9 (lumens/W)	123.1 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 88.8 (W)  
 Power Factor (120VAC): 0.99  
 Current ATHD % (120VAC): 10.3  
 Input Power (277VAC): 88.1 (W)  
 Power Factor (277VAC): 0.913  
 Current ATHD % (277VAC): 19.4

### Color Measurements:

Correlated Color Temperature (CCT): 4854  
 Color Rendering Index (CRI): 78.1  
 Chromaticity Coordinate (x): 0.35  
 Chromaticity Coordinate (y): 0.359  
 Chromaticity Coordinate (u'): 0.212  
 Chromaticity Coordinate (v'): 0.326  
 DUV: 0.002

### Temperature Measurements:

In Situ LED Source Temperature: 42.2 (°C)

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L14063.

Dialight unit model number HEGMC4DN-xxx

### Test Conditions:

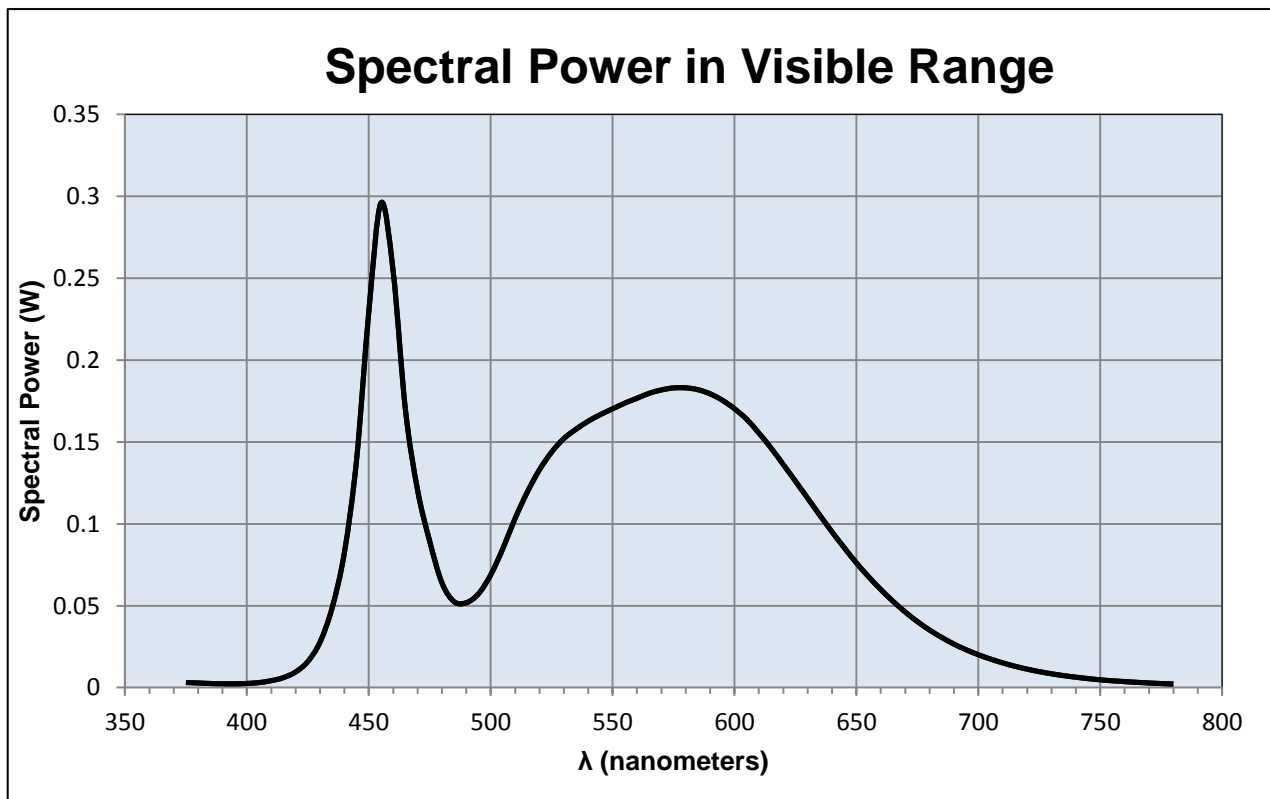
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
 Input Current: 0.747 (A)  
 Input Power: 88.8 (W)  
 Input Power Factor: 0.99  
 Current ATHD: 10.3 (%)

### Photometric measurements:

Luminous Flux: 11090 (lumens)  
 Luminous Efficacy: 124.9 (lumens/W)  
 Correlated Color Temperature (CCT): 4854 (K)  
 CRI -Ra: 78.1  
 CRI -R9: -7.9  
 DUV: 0.002  
 CIE Coordinate (x): 0.35  
 CIE Coordinate (y): 0.359  
 CIE Coordinate (u'): 0.212  
 CIE Coordinate (v'): 0.326



## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)
375	0.003	515	0.119	655	0.068
380	0.003	520	0.133	660	0.06
385	0.003	525	0.144	665	0.053
390	0.002	530	0.152	670	0.046
395	0.002	535	0.158	675	0.04
400	0.003	540	0.163	680	0.035
405	0.003	545	0.167	685	0.031
410	0.004	550	0.17	690	0.027
415	0.006	555	0.174	695	0.023
420	0.01	560	0.177	700	0.02
425	0.016	565	0.18	705	0.017
430	0.028	570	0.182	710	0.015
435	0.049	575	0.183	715	0.013
440	0.083	580	0.183	720	0.011
445	0.139	585	0.182	725	0.01
450	0.229	590	0.179	730	0.008
455	0.296	595	0.176	735	0.007
460	0.254	600	0.17	740	0.006
465	0.17	605	0.164	745	0.006
470	0.121	610	0.155	750	0.005
475	0.089	615	0.146	755	0.004
480	0.064	620	0.136	760	0.004
485	0.052	625	0.126	765	0.003
490	0.052	630	0.116	770	0.003
495	0.057	635	0.105	775	0.002
500	0.069	640	0.095	780	0.002
505	0.085	645	0.085		
510	0.103	650	0.076		

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L14063.  
Dialight unit model number HEGMC4DN-xxx

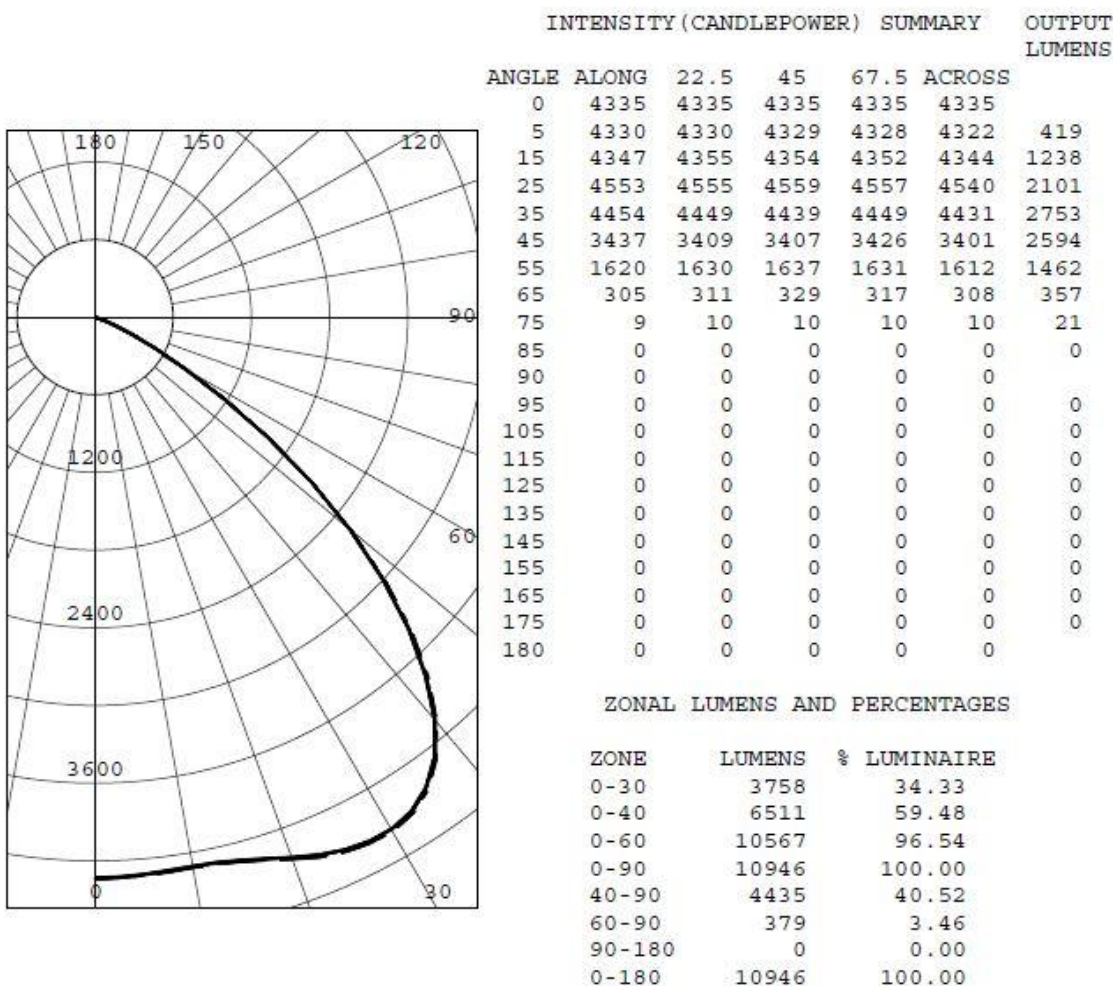
### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 0.749 (A)  
Input Power: 88.9 (W)  
Power Factor: 0.99

### Photometric measurements:

Absolute Luminous Flux: 10946 (lumens)  
Luminous Efficacy: 123.1 (lumens/W)

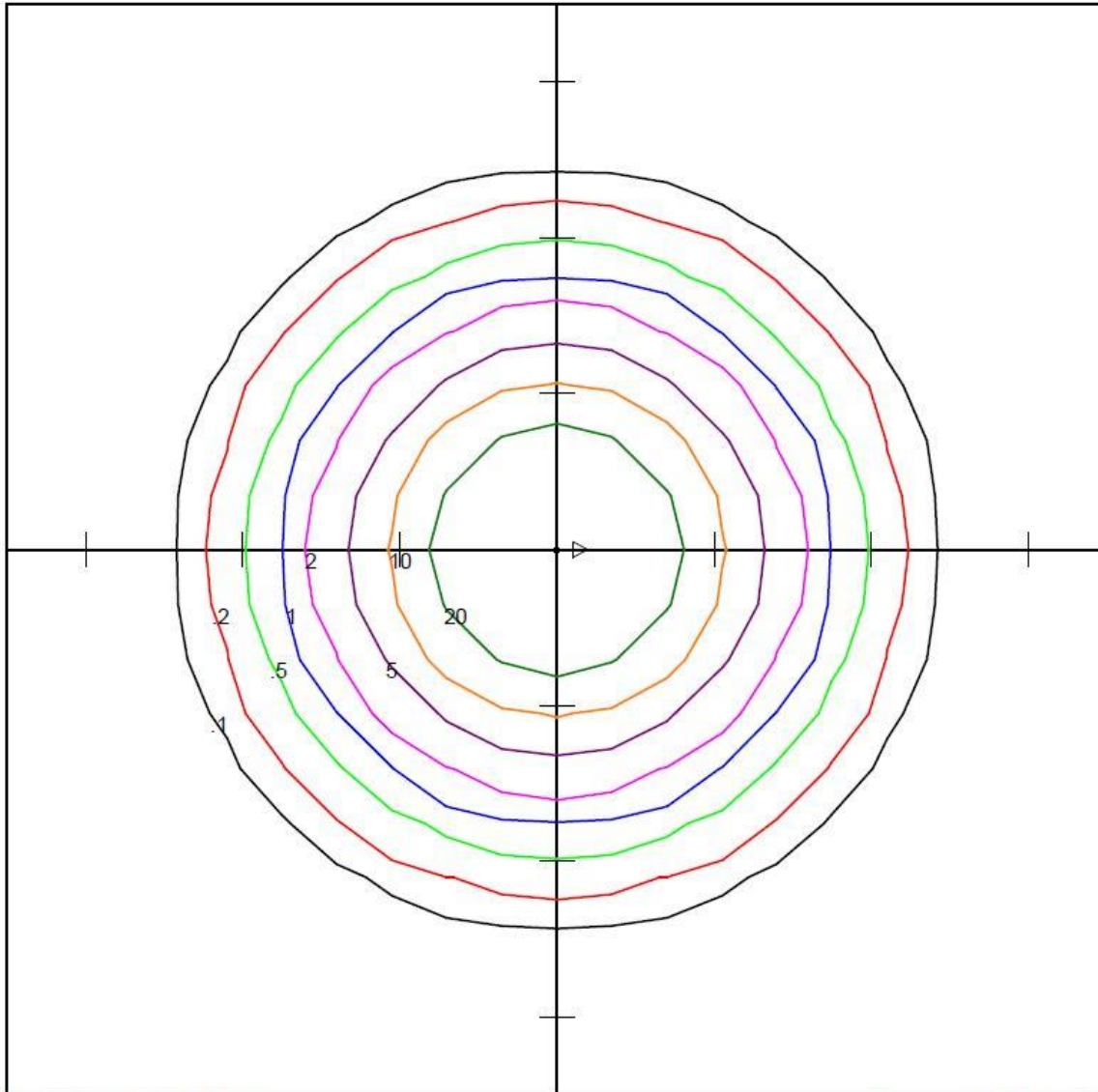
### Intensity Summary:



### Test Results: Goniometer

Results continued from previous page.

#### Iso-illuminance Plot:



DIALIGHT COPORATION  
HEGMC4DN-xxx  
MOD: HEGMC4DN-xxx  
LED

Horizontal Footcandles  
Scale: 1 Inch = 10 Ft.  
Light Loss Factor = 1.00  
Lumens Per Lamp = N.A. (absolute photometry)  
Luminaire Lumens = 10960  
Mounting Height = 10.00 Ft  
Maximum Calculated Value = 43.35 Fc  
Arrangement: Single

## Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L14063.

Dialight unit model number HEGMC4DN-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:

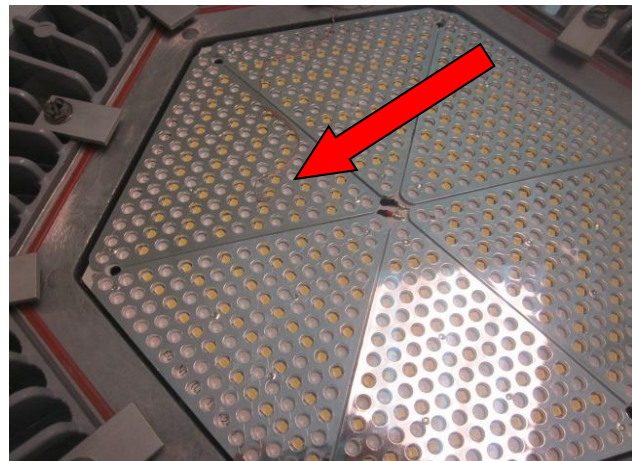
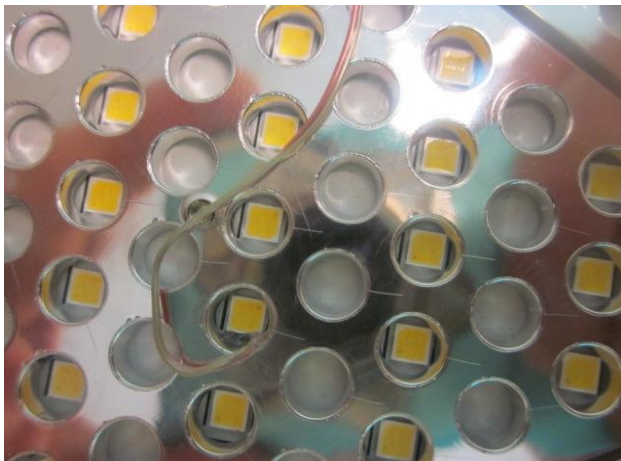
Maximum Power at Indicated Current: 0.35 (W)  
Maximum Source Temperature: 113.7 (°C)

### Test Conditions:

Temperature Measurement Location: See Photographs Below  
Ambient Temperature:  $25^{\circ} \pm 1^{\circ}$  (°C)  
Ambient temperature at time of measurement: 24.5 (°C)  
Relative humidity at time of measurement: 40%

### Results:

Measured LED source temperature: 42.2 (°C)



**Equipment Used:**

Equipment Name	Model Number	Calibration Due Date
Omega TC	Dpi8	3/7/2015
Fluke 8808A Digit Multimeter	8808A	4/7/2015
YOKOGAWA Digital Power Meter	760401	4/7/2015
LSI Standard Lamps	#30279	4/17/2015
LSI High Speed Mirror Goniometer	6240T	-
Instrument System Spectrometer	CAS140B-151	-
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3	4/17/2015
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3	4/17/2015
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3	4/17/2015
Instrument System 1.5 Meter Sphere	ISP1500	-
Volttech Power Analyzer	PM1000+	4/17/2015
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	445703	-
Extech Hygro-Thermometer	445703	-
Fluke 52II Thermometer	52II Thermometer	3/6/2015
Volttech Power Analyzer	PM1000+	4/17/2015
Tenma AC Power Source	72-7675	-
BK Precision	1715A	-
TDK-Lambda	GEN1500W	-
Fluke 8808A Digit Multimeter	8808A	4/14/2015
TPI Digital Thermometer 343	343	4/17/2015
TPI Digital Thermometer 343	343	4/17/2015

**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.

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Dialight Optics Laboratory  
Optical Engineering Manager  
Approved Signatory