

Test Report

Report Number: L15050

Date: May 20, 2015

Issued by:

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

Test of one Vigilant Highbay
Unit manufacturer: Dialight Corporation
Unit model number: HEGMCPKN-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: May 18, 2015 through May 20, 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

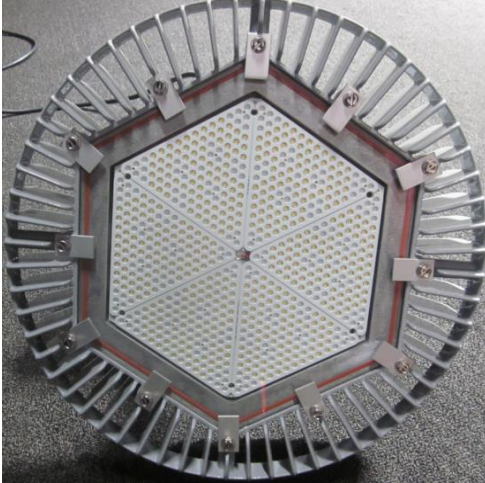
Description of sample:

Sample Number: L15050
Manufacturer: Dialight Corporation
Product Name: Vigilant Highbay
Description: Vigilant Highbay
Model Number: HEGMCPKN-xxx

Report Summary

Sample number L15050
Dialight unit model number HEGMCPKN-xxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	18270 (lumens)	17975 (lumens)
Electrical Power:	142.0 (W)	142.0 (W)
Luminous Efficacy:	128.5 (lumens/W)	126.6 (lumens/W)

Electrical Measurements:

Input Power (480VAC): 142.0 (W)
Power Factor (480VAC): 0.966
Current ATHD % (480VAC): 12.7

Color Measurements:

Correlated Color Temperature (CCT): 5016
Color Rendering Index (CRI): 78.6
Chromaticity Coordinate (x): 0.345
Chromaticity Coordinate (y): 0.354
Chromaticity Coordinate (u'): 0.211
Chromaticity Coordinate (v'): 0.486
DUV: 0.0011

Temperature Measurements:

In Situ LED Source Temperature: 49.5 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L15050.
Dialight unit model number HEGMCPKN-xxx

Test Conditions:

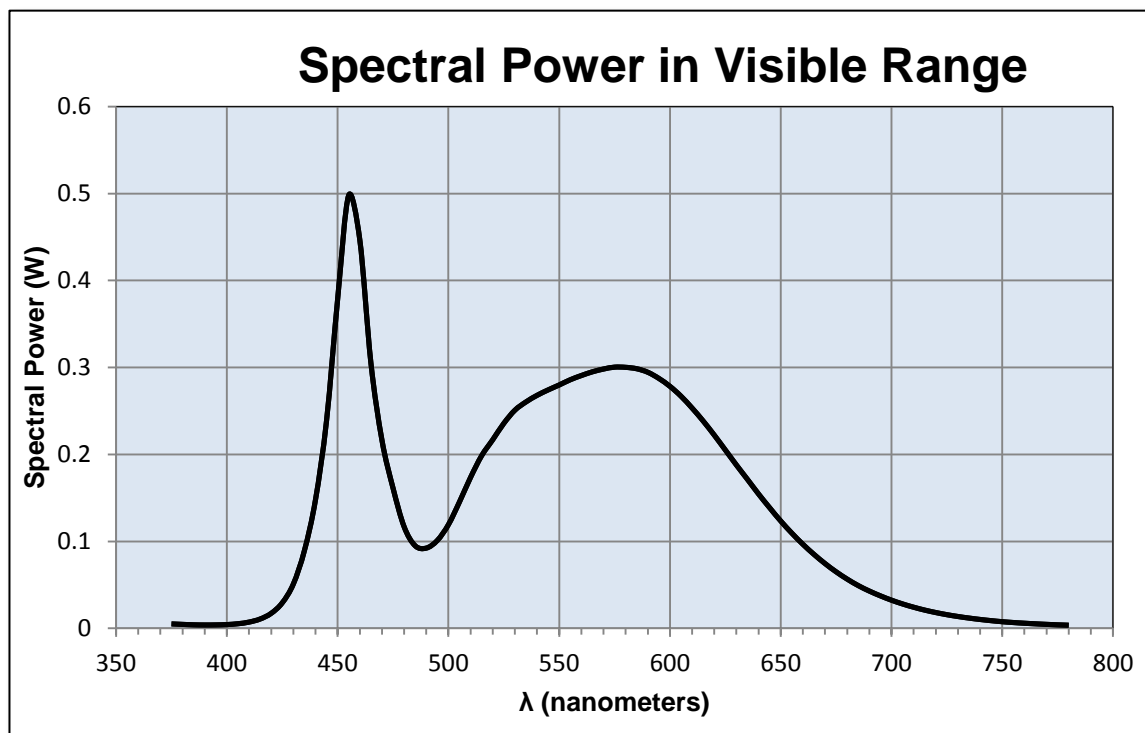
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 480 (VAC)
Input Current: 0.307 (A)
Input Power: 142.0 (W)
Input Power Factor: 0.966
Current ATHD: 12.7 (%)

Photometric measurements:

Luminous Flux: 18270 (lumens)
Luminous Efficacy: 128.5 (lumens/W)
Correlated Color Temperature (CCT): 5016 (K)
CRI -Ra: 78.6
CRI -R9: -8.9
DUV: 0.0011
CIE Coordinate (x): 0.345
CIE Coordinate (y): 0.354
CIE Coordinate (u'): 0.211
CIE Coordinate (v'): 0.486



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	0.005	515	0.199	655	0.109
380	0.005	520	0.217	660	0.097
385	0.004	525	0.236	665	0.085
390	0.004	530	0.251	670	0.074
395	0.004	535	0.26	675	0.065
400	0.004	540	0.268	680	0.057
405	0.005	545	0.274	685	0.049
410	0.007	550	0.28	690	0.043
415	0.011	555	0.286	695	0.037
420	0.017	560	0.291	700	0.032
425	0.029	565	0.295	705	0.028
430	0.051	570	0.298	710	0.024
435	0.089	575	0.3	715	0.021
440	0.148	580	0.3	720	0.018
445	0.239	585	0.299	725	0.016
450	0.379	590	0.294	730	0.014
455	0.498	595	0.287	735	0.012
460	0.447	600	0.278	740	0.01
465	0.306	605	0.267	745	0.009
470	0.216	610	0.253	750	0.008
475	0.161	615	0.238	755	0.007
480	0.117	620	0.222	760	0.006
485	0.095	625	0.205	765	0.005
490	0.092	630	0.188	770	0.005
495	0.101	635	0.171	775	0.004
500	0.119	640	0.154	780	0.004
505	0.145	645	0.139		
510	0.174	650	0.123		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L15050.
Dialight unit model number HEGMCPKN-xxx

Electrical Measurements:

Input Voltage: 480 (VAC)
Input current: 0.306 (A)
Input Power: 142.0 (W)
Power Factor: 0.998

Photometric measurements:

Absolute Luminous Flux: 17975 (lumens)
Luminous Efficacy: 126.6 (lumens/W)

Intensity Summary:

INTENSITY (CANDLEPOWER) SUMMARY						
ANGLE	ALONG	23	45	68	ACROSS	OUTPUT LUMENS
0	7930	7930	7930	7930	7930	
5	7918	7918	7918	7918	7918	296
15	7807	7807	7807	7807	7807	1677
25	7496	7496	7496	7496	7496	3027
35	6739	6739	6739	6739	6739	4008
45	5003	5003	5003	5003	5003	4132
55	2308	2308	2308	2308	2308	2819
65	905	905	905	905	905	1220
75	426	426	426	426	426	636
85	26	26	26	26	26	160
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

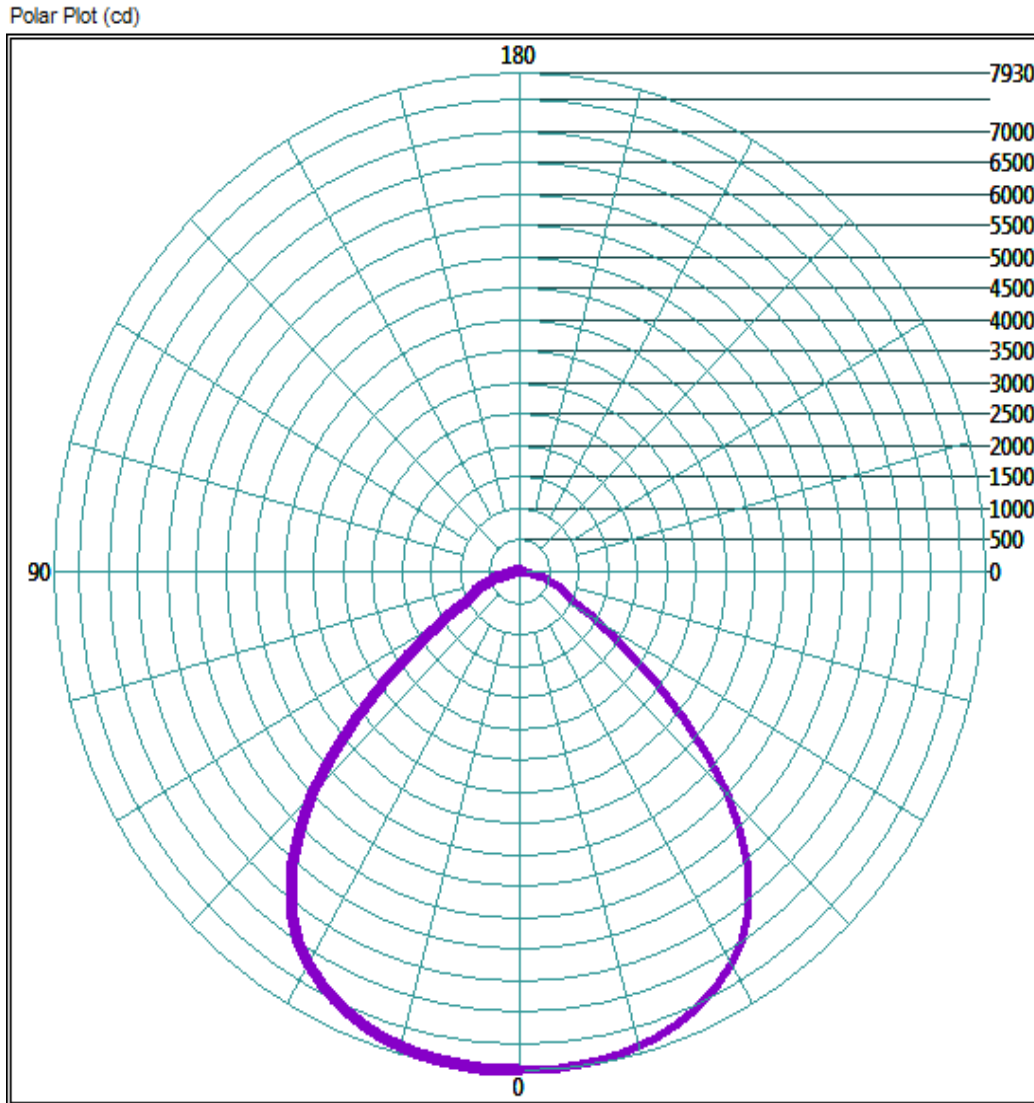
ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	6918.56	38.5%
0-40	11141.28	62.0%
0-60	16691.2	92.9%
60-90	1608.64	8.9%
0-90	17975.84	100.0%
90-180	0	0.0%
0-180	17975.84	100.0%

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

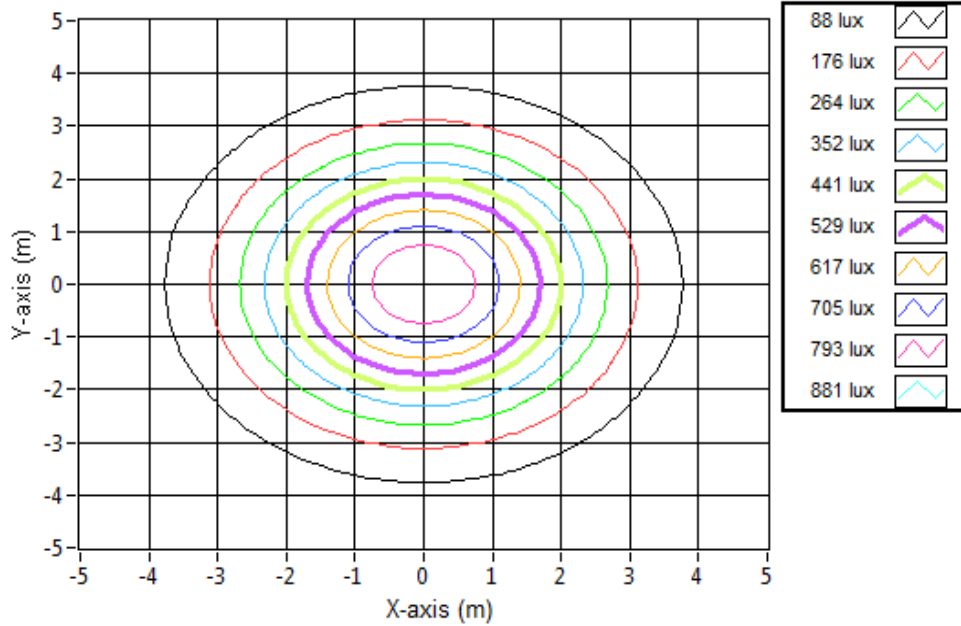


Test Results: Goniometer

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	7.00	7.00	853.6
6.096	14.00	14.00	213.4
9.144	21.01	21.01	94.8
12.192	28.01	28.01	53.4
15.24	35.01	35.01	34.1
18.288	42.01	42.01	23.7
21.336	49.01	49.01	17.4
24.384	56.02	56.02	13.3
27.432	63.02	63.02	10.5
30.48	70.02	70.02	8.5

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L15050.
Dialight unit model number HEGMCPKN-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:

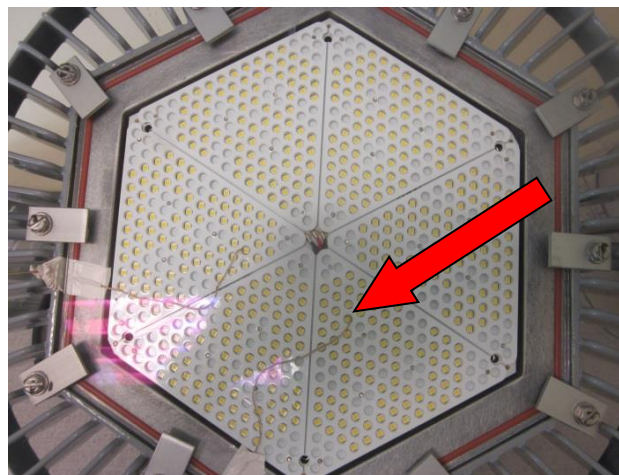
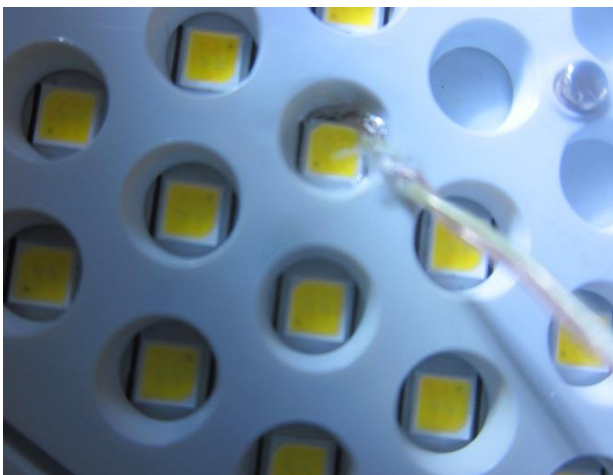
Maximum Power at Indicated Current: 0.35 (W)
Maximum Source Temperature: 113.7 (°C)

Test Conditions:

Temperature Measurement Location: See Photographs Below
Ambient Temperature: $25^{\circ} \pm 1^{\circ}$ (°C)
Ambient temperature at time of measurement: 25.5 (°C)
Relative humidity at time of measurement: 45%

Results:

Measured LED source temperature: 49.5 (°C)



Equipment Used:

Equipment Name	Model Number
Omega TC	Dpi8
Fluke 8808A Digit Multimeter	8808A
YOKOGAWA Digital Power Meter	760401
LSI Standard Lamps	#30279
LSI High Speed Mirror Goniometer	6240T
Instrument System Spectrometer	CAS140B-151
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3
Instrument System Sphere Lamps (Osram Sylvania)	STD-20WF-3
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	445703
Extech Hygro-Thermometer	445703
Fluke 52II Thermometer	52II Thermometer
Volttech Power Analyzer	PM1000+
Tenma AC Power Source	72-7675
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

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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