

# Test Report

Report Number: L15146

Date: Oct 28, 2015

Issued by:

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

Test of one Vigilant HB With Top Hat  
Unit manufacturer: Dialight Corporation  
Unit model number: HEGMC5P-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:** October 21, 2015 through October 27, 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):

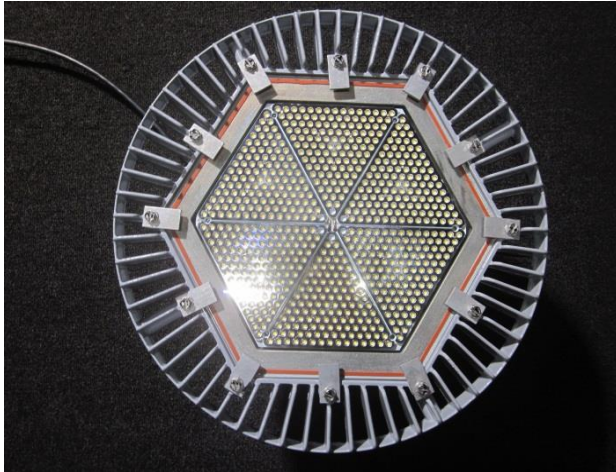
- IES LM-79:2008: Electrical and Photometric Measurements of Solid-State Lighting Products
- ANSI/UL 1598:2008: Underwriters Laboratories Inc. Standard for Safety: Luminaires
- ENERGY STAR Manufacturer's Guide for Qualifying Solid State Lighting Luminaires Version 2.1

**Description of sample:**

Sample Number: L15146  
Manufacturer: Dialight Corporation  
Product Name: Vigilant HB With Top Hat  
Description: Vigilant HB With Top Hat  
Model Number: HEGMC5P-xxxx

**Report Summary**  
Sample number L15146  
Dialight unit model number HEGMC5P-xxxx

**Photograph(s) of sample:**



\*Photographs not to scale. For reference only.

**Summary of Results:**

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	26810 (lumens)	27071 (lumens)
Electrical Power:	239.6 (W)	239.6 (W)
Luminous Efficacy:	111.9 (lumens/W)	113 (lumens/W)

**Electrical Measurements:**

Input Power (347VAC): 239.6 (W)  
 Power Factor (347VAC): 0.994  
 Current ATHD % (347VAC): 6.703  
 Input Power (480VAC): 223.0 (W)  
 Power Factor (480VAC): 0.984  
 Current ATHD % (480VAC): 10.37

**Color Measurements:**

Correlated Color Temperature (CCT): 4982  
 Color Rendering Index (CRI): 79.5  
 Chromaticity Coordinate (x): 0.346  
 Chromaticity Coordinate (y): 0.355  
 Chromaticity Coordinate (u'): 0.211  
 Chromaticity Coordinate (v'): 0.324  
 DUV: 0.0011

**Temperature Measurements:**

In Situ LED Source Temperature: 55.6 (°C)

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L15146.  
Dialight unit model number HEGMC5P-xxxx

### Test Conditions:

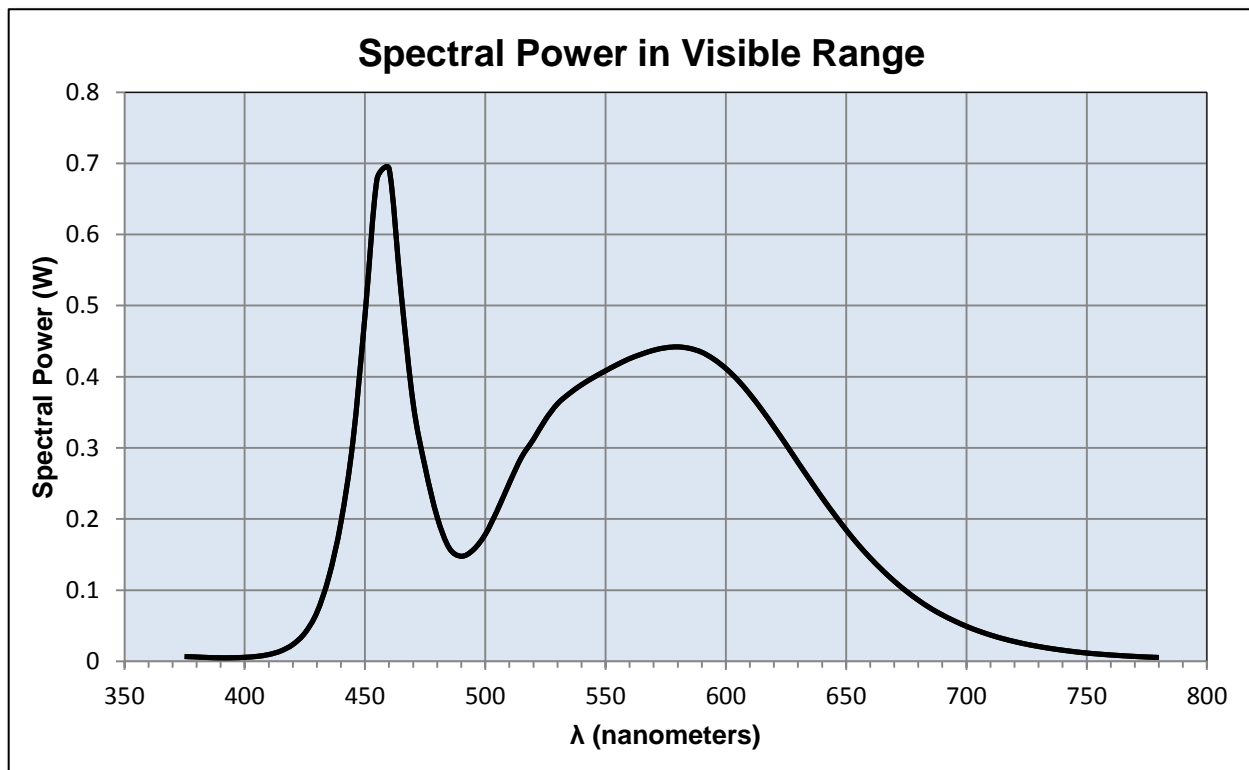
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 347 (VAC)  
Input Current: 0.694 (A)  
Input Power: 239.6 (W)  
Input Power Factor: 0.994  
Current ATHD: 6.703 (%)

### Photometric measurements:

Luminous Flux: 26810 (lumens)  
Luminous Efficacy: 111.9 (lumens/W)  
Correlated Color Temperature (CCT): 4982 (K)  
CRI -Ra: 79.5  
CRI -R9: -5.1  
DUV: 0.0011  
CIE Coordinate (x): 0.346  
CIE Coordinate (y): 0.355  
CIE Coordinate (u'): 0.211  
CIE Coordinate (v'): 0.324



## 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	0.007	515	0.286	655	0.164
380	0.006	520	0.312	660	0.145
385	0.005	525	0.34	665	0.128
390	0.005	530	0.362	670	0.113
395	0.005	535	0.377	675	0.099
400	0.006	540	0.389	680	0.086
405	0.007	545	0.399	685	0.075
410	0.01	550	0.409	690	0.065
415	0.015	555	0.417	695	0.057
420	0.024	560	0.426	700	0.049
425	0.04	565	0.432	705	0.043
430	0.069	570	0.437	710	0.037
435	0.119	575	0.441	715	0.032
440	0.196	580	0.442	720	0.028
445	0.31	585	0.44	725	0.024
450	0.486	590	0.434	730	0.021
455	0.678	595	0.425	735	0.018
460	0.693	600	0.412	740	0.016
465	0.518	605	0.395	745	0.014
470	0.363	610	0.375	750	0.012
475	0.273	615	0.353	755	0.01
480	0.203	620	0.33	760	0.009
485	0.159	625	0.305	765	0.008
490	0.148	630	0.28	770	0.007
495	0.157	635	0.255	775	0.006
500	0.179	640	0.23	780	0.005
505	0.212	645	0.207		
510	0.251	650	0.185		

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L15146.  
Dialight unit model number HEGMC5P-xxxx

### Electrical Measurements:

Input Voltage: 347 (VAC)  
Input current: 0.694 (A)  
Input Power: 239.6 (W)  
Power Factor: 0.994

### Photometric measurements:

Absolute Luminous Flux: 27071 (lumens)  
Luminous Efficacy: 113.0 (lumens/W)

### Intensity Summary:

<u>INTENSITY (CANDLEPOWER) SUMMARY</u>						
ANGLE	ALONG	23	45	68	ACROSS	OUTPUT LUMENS
0	10233	10233	10233	10233	10233	
5	10262	10262	10262	10262	10262	383
15	10683	10683	10683	10683	10683	2244
25	11789	11789	11789	11789	11789	4525
35	11537	11537	11537	11537	11537	6728
45	8396	8396	8396	8396	8396	7002
55	3560	3560	3560	3560	3560	4574
65	691	691	691	691	691	1428
75	35	35	35	35	35	169
85	6	6	6	6	6	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

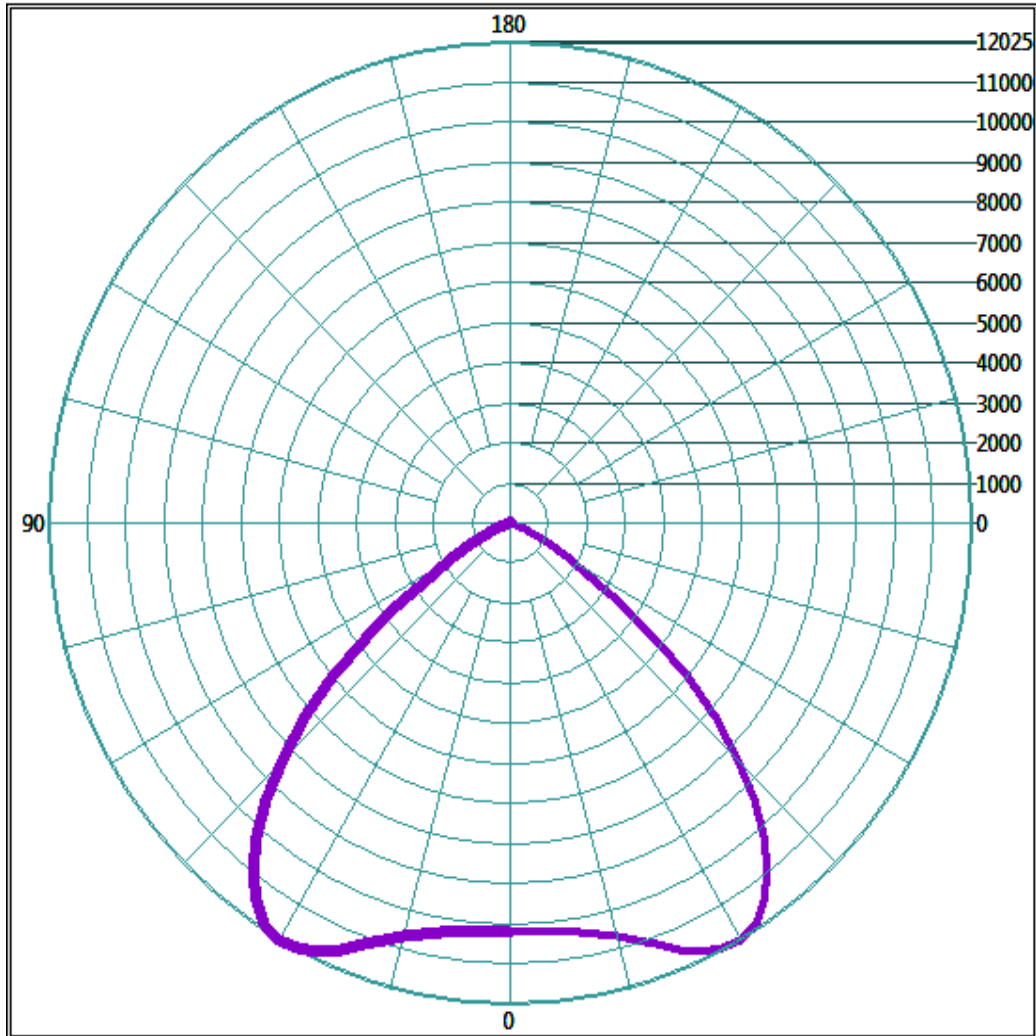
ZONE	LUMENS	% LUMINAIRE
0-30	10316.48	38.1%
0-40	17518.88	64.7%
0-60	26443.84	97.7%
60-90	1032.48	3.8%
0-90	27070.56	100.0%
90-180	0	0.0%
0-180	27070.56	100.0%

## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:

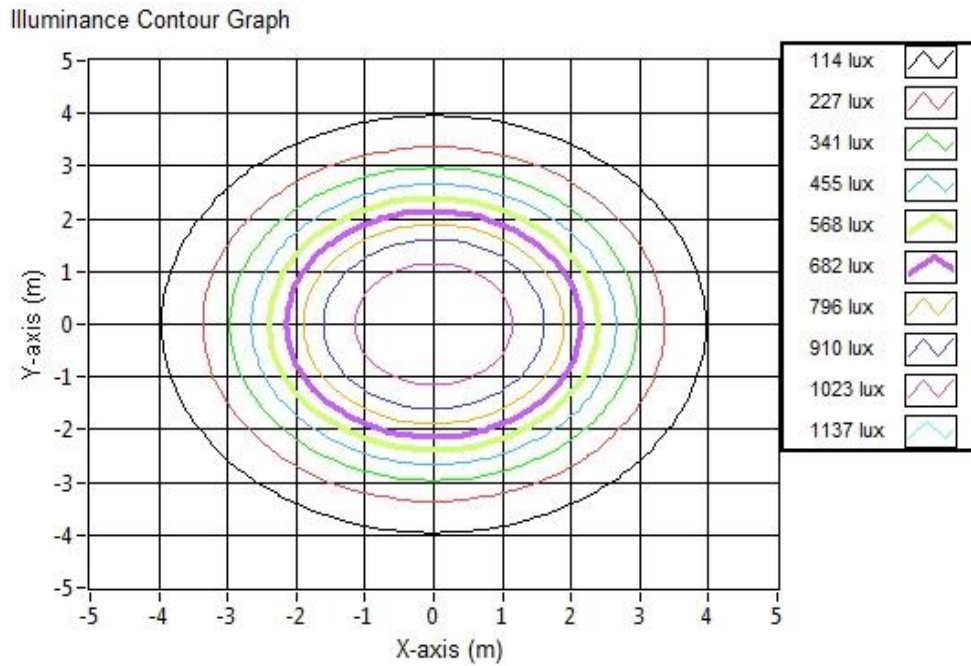
Polar Plot (cd)



## Test Results: Goniometer

Results continued from previous page.

### Illuminance Plot:



### Illuminance-Cone of Light:

Mounting Height (m)	Beam Cone Width (m)	Orthogonal Beam Cone Width (m)	Projected Illuminance (lux)
3.048	7.75	7.75	1101.4
6.096	15.50	15.50	275.4
9.144	23.25	23.25	122.4
12.192	31.01	31.01	68.8
15.24	38.76	38.76	44.1
18.288	46.51	46.51	30.6
21.336	54.26	54.26	22.5
24.384	62.01	62.01	17.2
27.432	69.76	69.76	13.6
30.48	77.52	77.52	11.0

## Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L15146.  
Dialight unit model number HEGMC5P-xxxx

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:

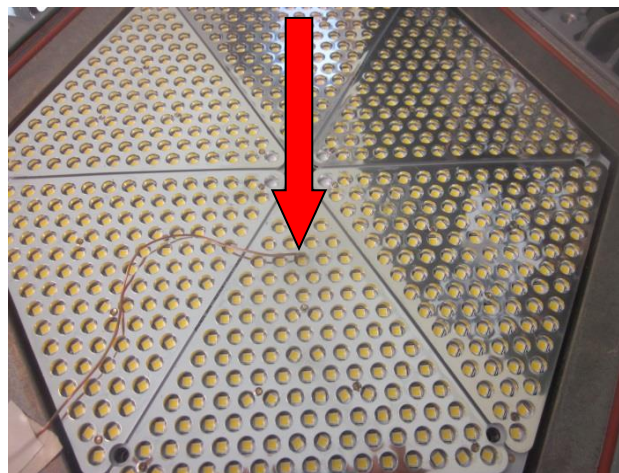
Maximum Power at Indicated Current: 0.35 (W)  
Maximum Source Temperature: 113.7 (°C)

### Test Conditions:

Temperature Measurement Location: See Photographs Below  
Ambient Temperature:  $25^{\circ} \pm 1^{\circ}$  (°C)  
Ambient temperature at time of measurement: 25.9 (°C)  
Relative humidity at time of measurement: 18%

### Results:

**Measured LED source temperature: 55.6 (°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
Xitron Power Analyzer	XT2640

**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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Approved Signatory