

Test Report

Report Number: L20062

Date: Aug 25, 2020

Issued by:

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

Test of one Vigilant High Output High Bay
Unit manufacturer: Dialight Corporation
Unit model number: H7x-7NN2-Rxxx-xxN

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: August 24, 2020 through August 25, 2020

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

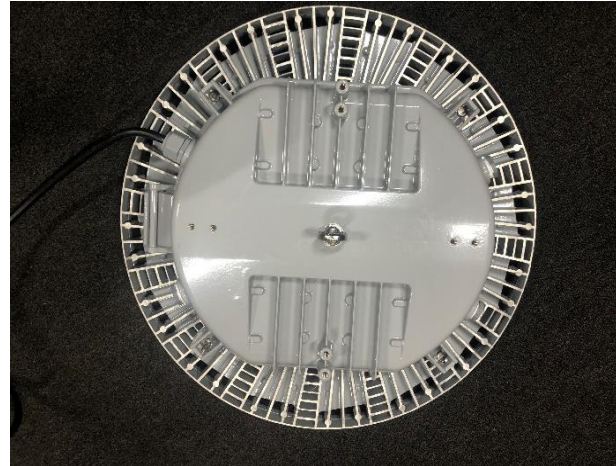
Description of sample:

Sample Number: L20062
Manufacturer: Dialight Corporation
Product Name: H7x-7NN2-Rxxx-xxN
Description: Vigilant High Output High Bay
Model Number: H7x-7NN2-Rxxx-xxN

Report Summary

Sample number L20062
Dialight unit model number H7x-7NN2-Rxxx-xxN

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	67085 (lumens)	69114 (lumens)
Electrical Power:	484.1 (W)	483.2 (W)
Luminous Efficacy:	138.6 (lumens/W)	143 (lumens/W)

Electrical Measurements:

Input Power (277 VAC): 484.1 (W)
Power Factor (277 VAC): 0.966
Current ATHD % (277 VAC): 9.93
Input Power (120VAC): 504.0 (W)
Power Factor (120VAC): 0.997
Current ATHD % (120VAC): 5.028

Color Measurements:

Correlated Color Temperature (CCT): 4046
Color Rendering Index (CRI): 83.13
Chromaticity Coordinate (x): 0.380
Chromaticity Coordinate (y): 0.382
Chromaticity Coordinate (u'): 0.223
Chromaticity Coordinate (v'): 0.336
DUV: 0.0023

Temperature Measurements:

In Situ LED Source Temperature: 1.1 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20062.

Dialight unit model number H7x-7NN2-Rxxx-xxN

Test Conditions:

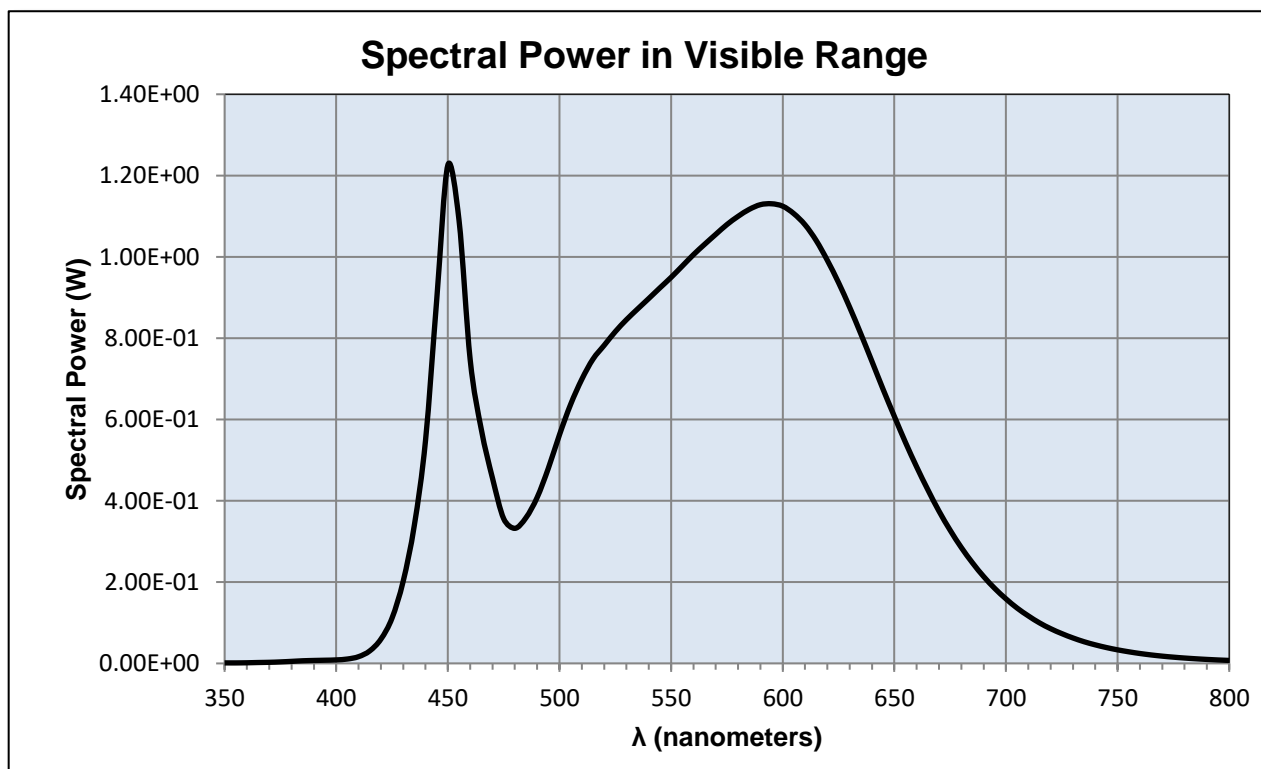
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 277 (VAC)
Input Current: 1.808 (A)
Input Power: 484.1 (W)
Input Power Factor: 0.966
Current ATHD: 9.93 (%)

Photometric measurements:

Luminous Flux: 67085 (lumens)
Luminous Efficacy: 138.6 (lumens/W)
Correlated Color Temperature (CCT): 4046 (K)
CRI -Ra: 83.13
CRI -R9: 11.18
DUV: 0.0023
CIE Coordinate (x): 0.380
CIE Coordinate (y): 0.382
CIE Coordinate (u'): 0.223
CIE Coordinate (v'): 0.336



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)	$\lambda(\text{nm})$	(W/nm)
350	0.00133	490	0.40831	630	0.87596	770	0.01790
355	0.00127	495	0.47976	635	0.81053	775	0.01541
360	0.00161	500	0.56245	640	0.74240	780	0.01329
365	0.00222	505	0.63725	645	0.67371	785	0.01144
370	0.00274	510	0.69880	650	0.60773	790	0.00988
375	0.00376	515	0.74849	655	0.54348	795	0.00850
380	0.00508	520	0.78231	660	0.48330	800	0.00738
385	0.00649	525	0.81607	665	0.42721		
390	0.00732	530	0.84551	670	0.37461		
395	0.00787	535	0.87189	675	0.32759		
400	0.00866	540	0.89767	680	0.28509		
405	0.01082	545	0.92386	685	0.24735		
410	0.01659	550	0.94966	690	0.21370		
415	0.03074	555	0.97741	695	0.18432		
420	0.05955	560	1.00540	700	0.15884		
425	0.11151	565	1.03092	705	0.13613		
430	0.20248	570	1.05541	710	0.11695		
435	0.34015	575	1.07950	715	0.09978		
440	0.54864	580	1.09973	720	0.08546		
445	0.89325	585	1.11689	725	0.07334		
450	1.22568	590	1.12843	730	0.06264		
455	1.09007	595	1.13070	735	0.05337		
460	0.74728	600	1.12474	740	0.04569		
465	0.57523	605	1.10628	745	0.03907		
470	0.45563	610	1.07891	750	0.03341		
475	0.35612	615	1.04015	755	0.02861		
480	0.33231	620	0.99144	760	0.02444		
485	0.35846	625	0.93669	765	0.02089		

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20062.
Dialight unit model number H7x-7NN2-Rxxx-xxN

Electrical Measurements:

Input Voltage: 277 (VAC)
Input current: 1.806 (A)
Input Power: 483.2 (W)
Power Factor: 0.965

Photometric measurements:

Absolute Luminous Flux: 69114 (lumens)
Luminous Efficacy: 143.0 (lumens/W)

Intensity Summary:

<u>INTENSITY (CANDLEPOWER) SUMMARY</u>						
ANGLE	ALONG	23	45	67.5	ACROSS	OUTPUT LUMENS
0	100867	100867	100867	100867	100867	
5	93062	93062	93062	93062	93062	3556
15	59355	59355	59355	59355	59355	14828
25	37141	37141	37141	37141	37141	17463
35	23853	23853	23853	23853	23853	15855
45	12416	12416	12416	12416	12416	12246
55	1824	1824	1824	1824	1824	4075
65	844	844	844	844	844	1017
75	0	0	0	0	0	74
85	0	0	0	0	0	0
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	1	1	1	1	1	0
180	0	0	0	0	0	0

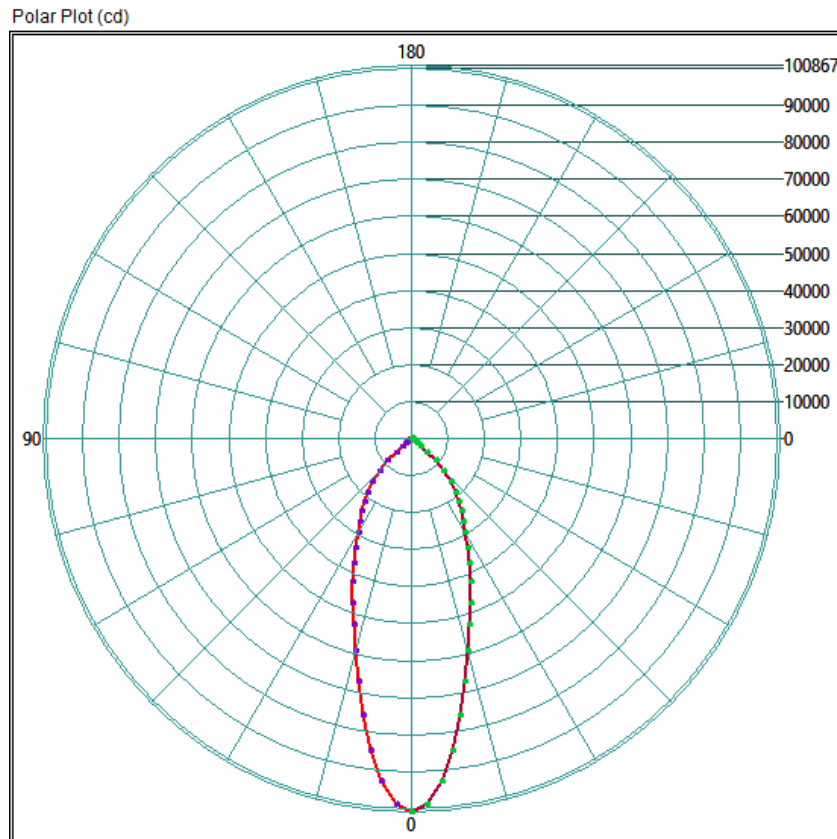
ZONAL LUMEN AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	44059.2	63.7%
0-40	58605.92	84.8%
0-60	68567.68	99.2%
60-90	804.16	1.2%
0-90	69113.76	100.0%
90-180	0	0.0%
0-180	69113.76	100.0%

Test Results: Goniometer

Results continued from previous page.

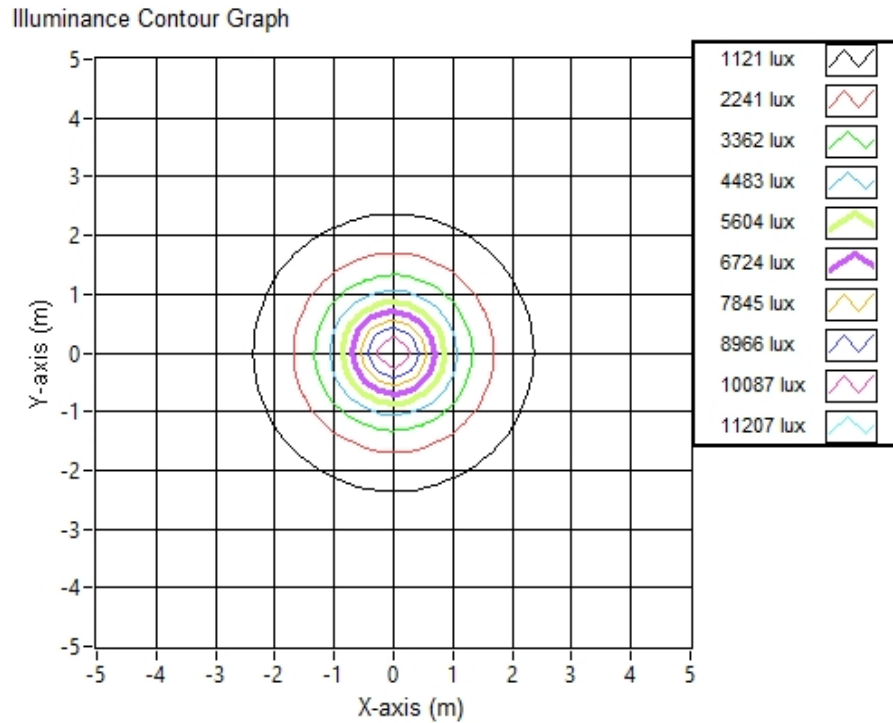
Polar Plot:



Test Results: Goniometer

Results continued from previous page.

Illuminance Plot:



Illuminance-Cone of Light:

Mounting Height (m)	Beam Cone Width (m)	Orthogonal Beam Cone	Projected Illuminance (lux)
3.048	2.05	2.05	10857.2
6.096	4.09	4.09	2714.3
9.141	6.13	6.13	1207.1
12.192	8.18	8.18	678.6
15.24	10.23	10.23	434.3
18.288	12.27	12.27	301.6
21.336	14.32	14.32	221.6
24.384	16.36	16.36	169.6
27.432	18.41	18.41	134.0
30.48	20.45	20.45	108.6

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L20062.

Dialight unit model number H7x-7NN2-Rxxx-xxN

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LED drive current (as indicated by customer): SAW8C (mA)

LED Specifications:

LED specifications are taken from LED manufacturer datasheet:

Maximum Forward Current (If): #REF! (mA)

Maximum Rated Power Dissipation: #REF! (W)

Maximum Junction Temp. (Tj): #REF! (°C)

Thermal Resistance (Rth): #REF! (°C/W)

Derived Specifications:

Maximum Power at Indicated Current: ##### (W)

Maximum Source Temperature: #REF! (°C)

Test Conditions:

Temperature Measurement Location: See Photographs Below

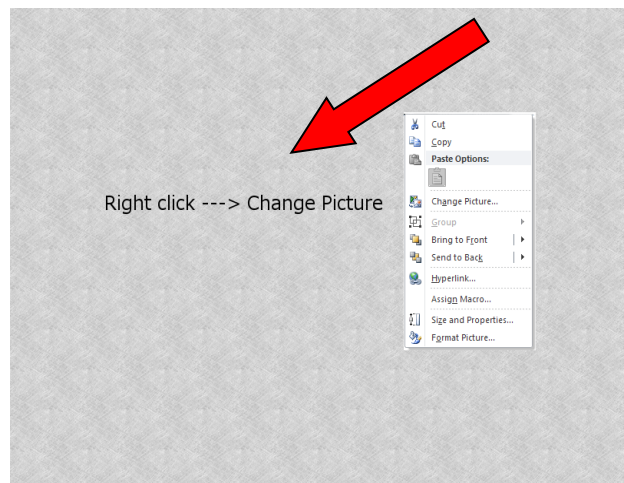
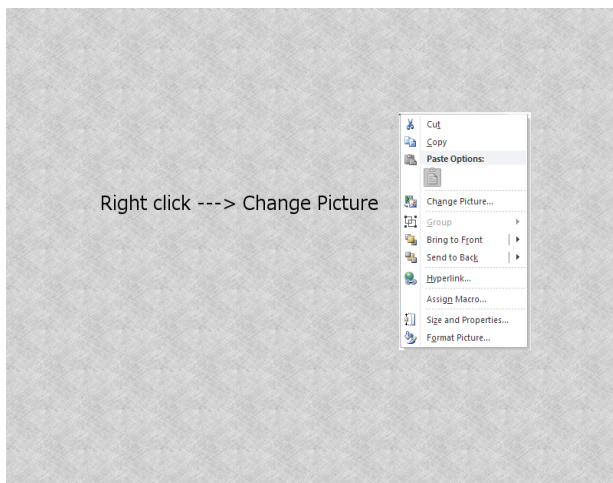
Ambient Temperature: $25^{\circ} \pm 5^{\circ}$ (°C)

Ambient temperature at time of measurement: 23.9 (°C)

Relative humidity at time of measurement: 49%

Results:

Measured LED source temperature: 1.1 (°C)



Equipment Used:

Equipment Name	Model Number
Omega TC	DPi8
YOKOGAWA Digital Power Meter	11/26/3981
LSI High Speed Mirror Goniometer	6240T
Elgar AC Power Supply	CW1251P
Sorensen DC Power Supply	XHR150-7
Dialight Confirmation Sample	HB1N4N
Dialight Confirmation Sample	HB1N4J
Fluke 8808A Digit Multimeter	8808A
Step-Up Transformer	
ITL Osram Calibraton lamps for Goniometer	J9a8
ITL Osram Calibraton lamps for Goniometer	J9a8
ITL Osram Calibraton lamps for Goniometer	J9a8
Fluke 971 Humdity Meter	8/28/1902
GwINSTEK DC Power Supply	GEP172679
Dialight Confirmation Sample	1/0/1900
Labsphere calibration lamp for 2M sphere	SCL-1400
Labshere 2M sphere	Illumia Plus 2600-1
Labshere Controller	PM-150-140
Labshere Spectrameter- CDS 2600 Spectrometer	CDS-2600
Xitron Power Analyzer	9/1/1907
LED Bulb for Electrical Confirmation Test-Gold Sample	Monte Carlo
LED Bulb for Electrical Confirmation Test-Gold Sample	Monte Carlo
LED Bulb for Electrical Confirmation Test-Gold Sample	Monte Carlo

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 Engineer
Approved Signatory