

Test Report

Report Number: L20077

Date: Dec 15, 2020

Issued by:

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

Test of one High Bay

Unit manufacturer: Dialight Corporation
Unit model number: H(C,E,F,W)(D,U)-(2,T)MN-(2,8)Ex-xxx-xx

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: December 2, 2020 through December 4, 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:

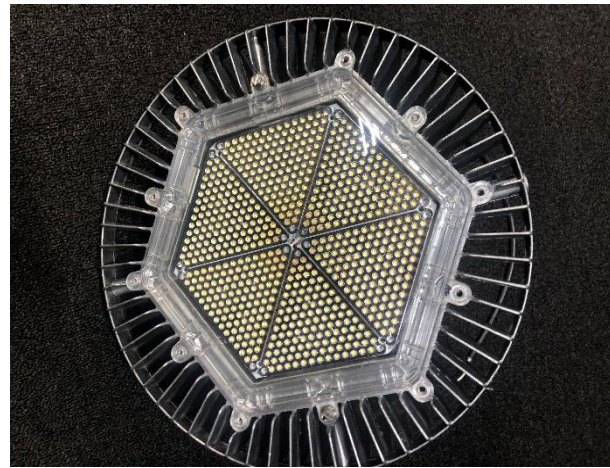
Sample Number: L20077
Manufacturer: Dialight Corporation
Product Name: High Bay
Description: High Bay
Model Number: H(C,E,F,W)(D,U)-(2,T)MN-(2,8)Ex-xxx-xx

Report Summary

Sample number L20077

Dialight unit model number H(C,E,F,W)(D,U)-(2,T)MN-(2,8)Ex-xxx-xx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	26870 (lumens)	26624 (lumens)
Electrical Power:	185.5 (W)	183.8 (W)
Luminous Efficacy:	144.9 (lumens/W)	144.9 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 185.5 (W)
 Power Factor (120VAC): 0.995617
 Current ATHD % (120VAC): 5.10104
 Input Power (277VAC): 179.0 (W)
 Power Factor (277VAC): 0.9569
 Current ATHD % (277VAC): 9.43

Color Measurements:

Correlated Color Temperature (CCT): 4012
 Color Rendering Index (CRI): 83.2423
 Chromaticity Coordinate (x): 0.381
 Chromaticity Coordinate (y): 0.381
 Chromaticity Coordinate (u'): 0.224
 Chromaticity Coordinate (v'): 0.336
 DUV: 0.0016

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20077.
Dialight unit model number H(C,E,F,W)(D,U)-(2,T)MN-(2,8)Ex-xxx-xx

Test Conditions:

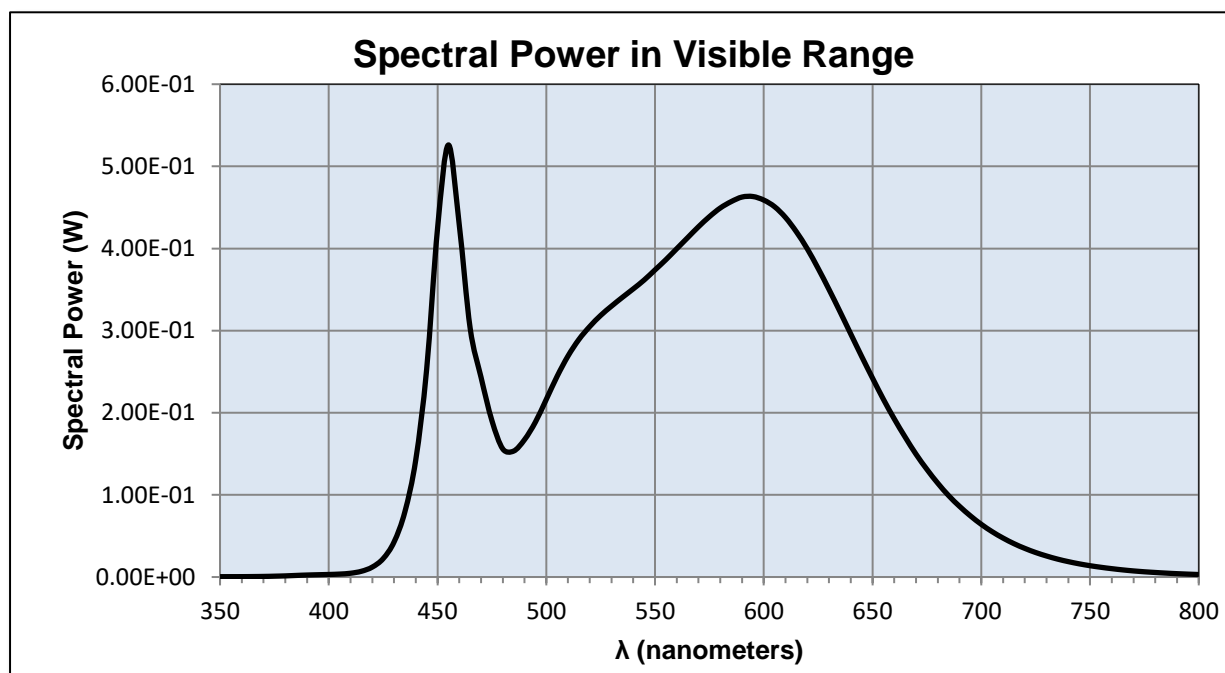
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 119.457 (VAC)
Input Current: 1.55968 (A)
Input Power: 185.5 (W)
Input Power Factor: 0.995617
Current ATHD: 5.10104 (%)

Photometric measurements:

Luminous Flux: 26870.18 (lumens)
Luminous Efficacy: 144.9 (lumens/W)
Correlated Color Temperature (CCT): 4012 (K)
CRI -Ra: 83.2423
CRI -R9: 10.0972
DUV: 0.0016
CIE Coordinate (x): 0.381
CIE Coordinate (y): 0.381
CIE Coordinate (u'): 0.224
CIE Coordinate (v'): 0.336
TM30_Rf: 81.4
TM30_Rg: 93.2
TM30_Rcs_hue1: -11.90 %



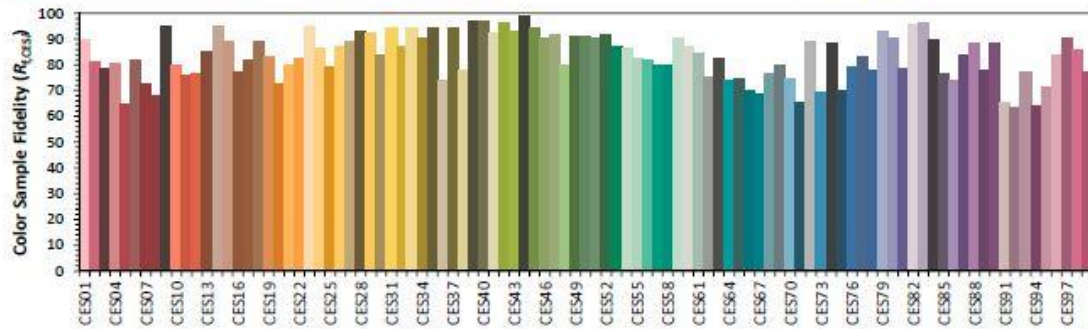
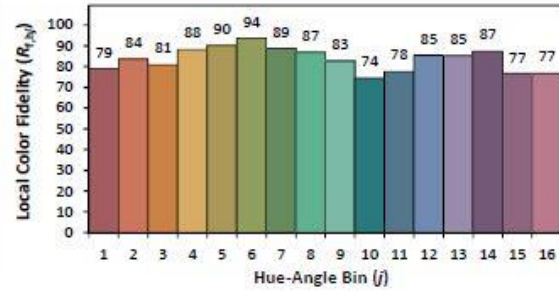
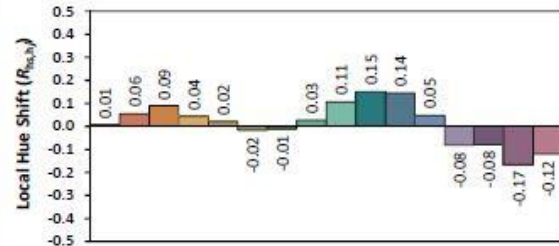
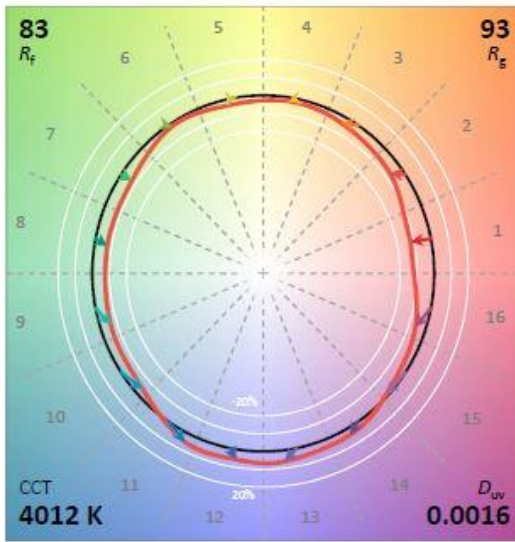
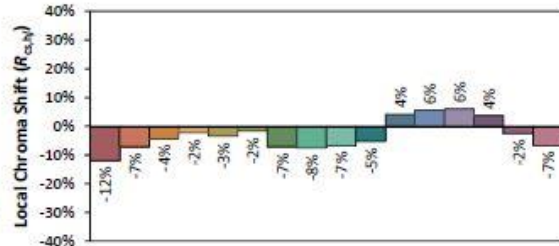
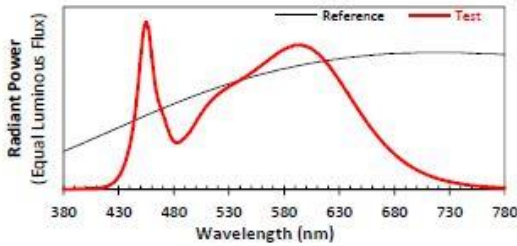
Test Results: Integrating Sphere

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	0.00040	490	0.16722	630	0.35008	770	0.00744
355	0.00045	495	0.18861	635	0.32333	775	0.00640
360	0.00047	500	0.21621	640	0.29585	780	0.00553
365	0.00057	505	0.24442	645	0.26864	785	0.00476
370	0.00073	510	0.26913	650	0.24218	790	0.00408
375	0.00102	515	0.28921	655	0.21642	795	0.00354
380	0.00140	520	0.30501	660	0.19250	800	0.00305
385	0.00195	525	0.31849	665	0.17037		
390	0.00242	530	0.32984	670	0.14956		
395	0.00279	535	0.34054	675	0.13111		
400	0.00312	540	0.35081	680	0.11424		
405	0.00359	545	0.36160	685	0.09910		
410	0.00461	550	0.37392	690	0.08609		
415	0.00701	555	0.38637	695	0.07448		
420	0.01209	560	0.39979	700	0.06418		
425	0.02240	565	0.41319	705	0.05521		
430	0.04261	570	0.42649	710	0.04746		
435	0.07954	575	0.43872	715	0.04067		
440	0.14275	580	0.44928	720	0.03489		
445	0.25286	585	0.45705	725	0.02987		
450	0.42417	590	0.46263	730	0.02560		
455	0.52607	595	0.46327	735	0.02186		
460	0.42842	600	0.45892	740	0.01876		
465	0.30302	605	0.45078	745	0.01607		
470	0.24329	610	0.43772	750	0.01380		
475	0.19047	615	0.42026	755	0.01186		
480	0.15596	620	0.39964	760	0.01019		
485	0.15335	625	0.37572	765	0.00869		

IES TM-30-18 Color Rendition Report



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3810
 y 0.3806
 u' 0.2240
 v' 0.5033

CIE 13.3-1995 (CRI)	
R_a	83
R_g	10

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20077.
Dialight unit model number H(C,E,F,W)(D,U)-(2,T)MN-(2,8)Ex-xxx-xx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 1.5152 (A)
Input Power: 183.8 (W)
Power Factor: 0.9941

Photometric measurements:

Absolute Luminous Flux: 26624 (lumens)
Luminous Efficacy: 144.9 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	9795	9810	9819	9834	9795	
5.00	9954	9918	9859	9859	9958	1006
15.00	10104	9965	10019	10147	10349	2879
25.00	10721	10431	10448	11002	11384	5042
35.00	10477	10336	10686	11250	11516	6852
45.00	7403	7665	8375	9121	9159	6444
55.00	3194	3425	4069	4885	4817	3634
65.00	601	717	924	1204	1035	861
75.00	52	62	73	85	70	69
85.00	9	12	16	20	15	8
90.00	1	1	3	4	2	

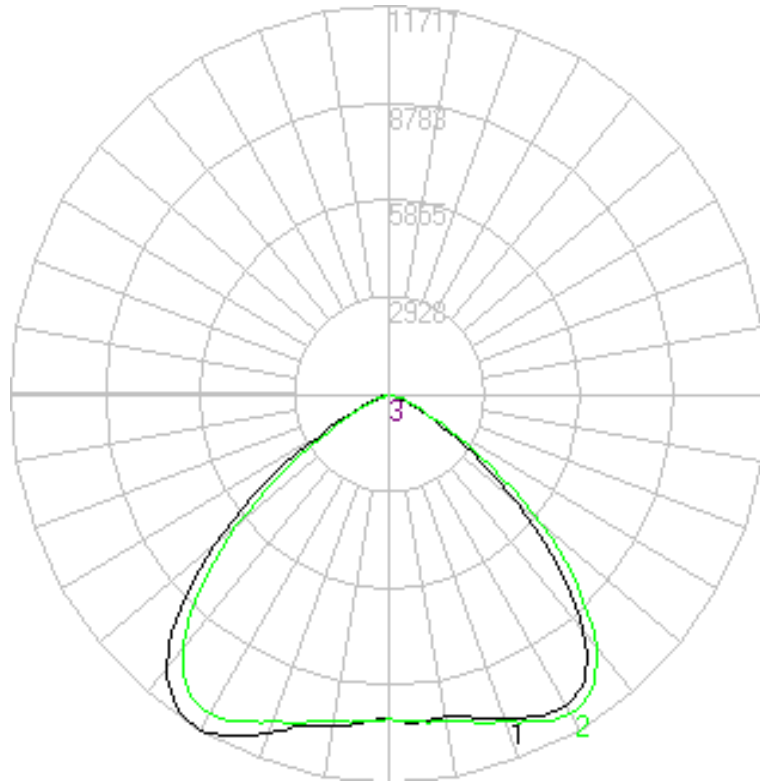
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	8984.02	33.74	33.74
0 to 40	15772.24	59.24	59.24
0 to 60	25612.77	96.20	96.20
0 to 90	26624.01	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	26624.01	100.00	100.00

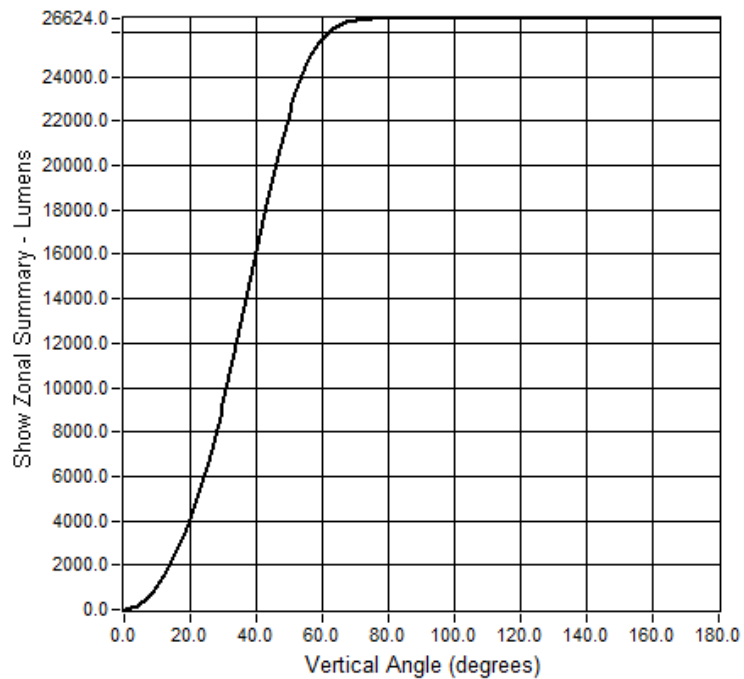
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



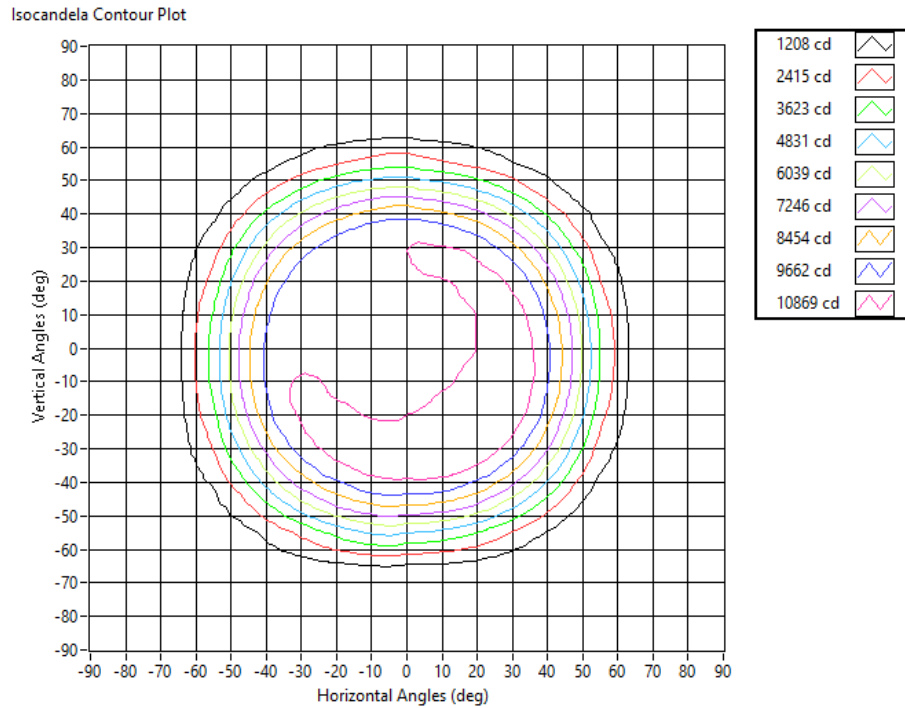
Zonal Flux Graph



Test Results: Goniometer

Results continued from previous page.

Illuminance Plot:



Illuminance-Cone of Light:

Mounting Height (ft)	Beam Cone Width (ft)	Orthogonal Beam Cone Width (ft)	Projected Illuminance (fc)
2	5.19	5.18	2455.0
4	10.38	10.37	613.8
6	15.57	15.55	272.8
8	20.76	20.74	153.4
10	25.95	25.92	98.2
12	31.14	31.11	68.2
14	36.33	36.29	50.1
16	41.52	41.48	38.4
18	46.71	46.66	30.3
20	51.90	51.84	24.6

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 Humidity 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 Spectrometer- 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. 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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Senior Optical Engineering Technician
Lighting Division

Test Report Reviewed and Approved By:

Vishnu Shastry
Dialight Optics Laboratory
Optical Engineer
Approved Signatory