

Test Report

Report Number: L20084

Date: Nov 30, 2020

Issued by:

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

Test of one Highbay

Unit manufacturer: Dialight Corporation

Unit model number: H[C,E,F,W][D,U]-[7,R]EN-[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: November 13, 2020 through November 16, 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:

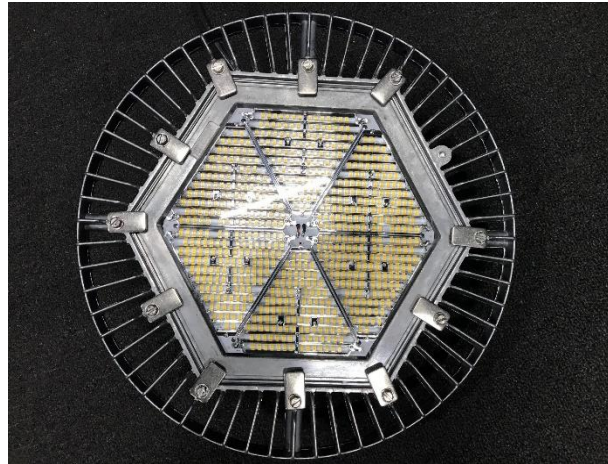
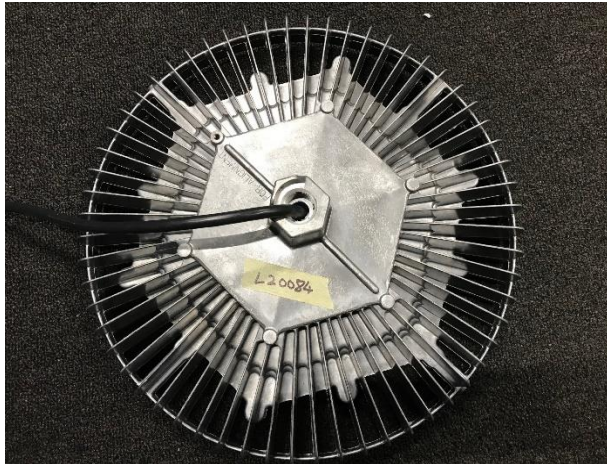
Sample Number: L20084
Manufacturer: Dialight Corporation
Product Name: Highbay
Description: Highbay
Model Number: H[C,E,F,W][D,U]-[7,R]EN-[2,8]Ex-xxx-xx

Report Summary

Sample number L20084

Dialight unit model number H[C,E,F,W][D,U]-[7,R]EN-[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:	25136 (lumens)	25136 (lumens)
Electrical Power:	184.9 (W)	182.9 (W)
Luminous Efficacy:	136 (lumens/W)	137.5 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 184.9 (W)
 Power Factor (120VAC): 0.995734
 Current ATHD % (120VAC): 4.99077
 Input Power (277VAC): 178.4 (W)
 Power Factor (277VAC): 0.956
 Current ATHD % (277VAC): 9.49

Color Measurements:

Correlated Color Temperature (CCT): 4002
 Color Rendering Index (CRI): 83.403
 Chromaticity Coordinate (x): 0.382
 Chromaticity Coordinate (y): 0.382
 Chromaticity Coordinate (u'): 0.224
 Chromaticity Coordinate (v'): 0.336
 DUV: 0.0020

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20084.

Dialight unit model number H[C,E,F,W][D,U]-[7,R]EN-[2,8]Ex-xxx-xx

Test Conditions:

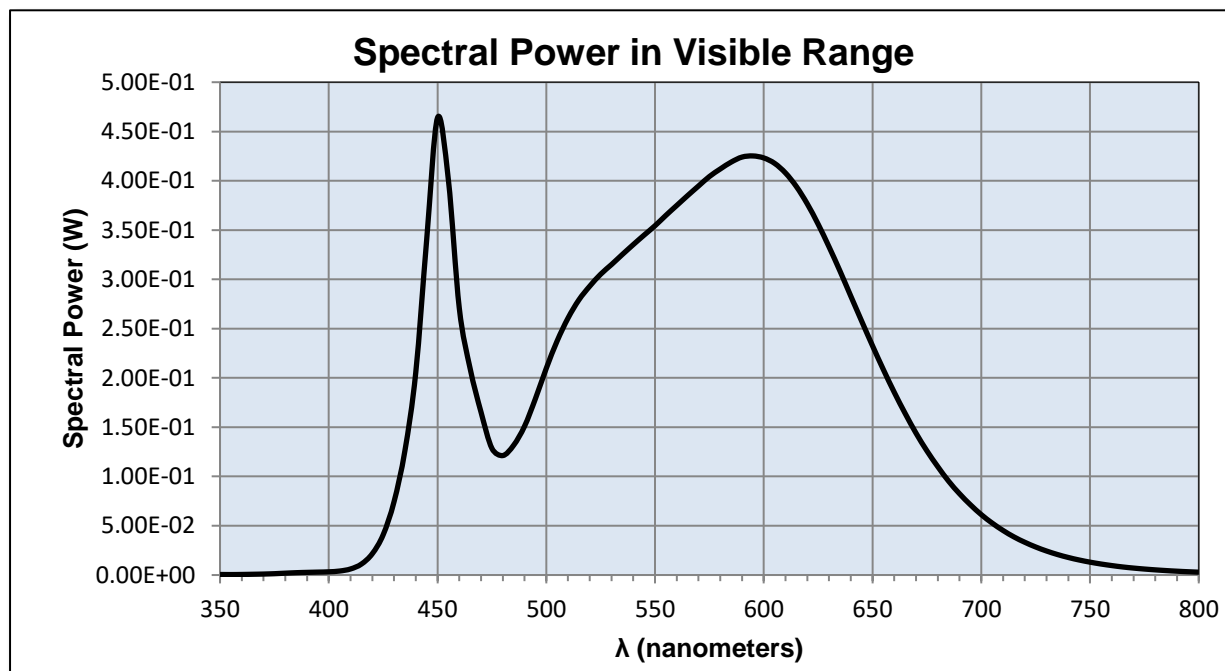
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 119.491 (VAC)
Input Current: 1.55369 (A)
Input Power: 184.9 (W)
Input Power Factor: 0.995734
Current ATHD: 4.99077 (%)

Photometric measurements:

Luminous Flux: 25135.87 (lumens)
Luminous Efficacy: 136.0 (lumens/W)
Correlated Color Temperature (CCT): 4002 (K)
CRI -Ra: 83.403
CRI -R9: 12.8767
DUV: 0.0020
CIE Coordinate (x): 0.382
CIE Coordinate (y): 0.382
CIE Coordinate (u'): 0.224
CIE Coordinate (v'): 0.336
TM30_Rf: 83.0
TM30_Rg: 95.8
TM30_Rcs_hue1: -11.14 %



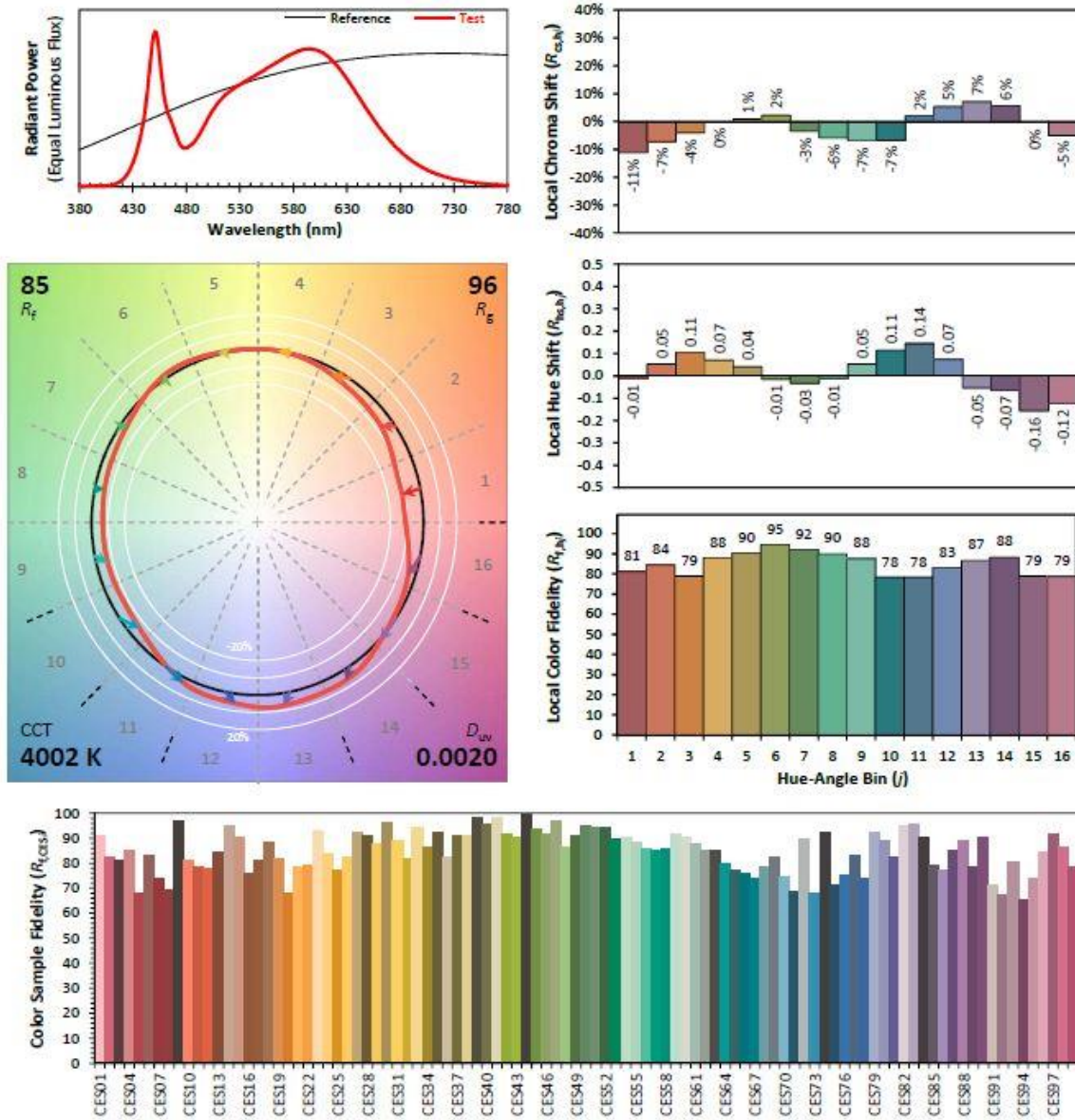
Test Results: Integrating Sphere

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	0.00056	490	0.15090	630	0.33299	770	0.00704
355	0.00048	495	0.17882	635	0.30862	775	0.00607
360	0.00058	500	0.20966	640	0.28298	780	0.00525
365	0.00077	505	0.23751	645	0.25765	785	0.00450
370	0.00100	510	0.26069	650	0.23258	790	0.00388
375	0.00136	515	0.27916	655	0.20837	795	0.00335
380	0.00189	520	0.29308	660	0.18534	800	0.00289
385	0.00237	525	0.30519	665	0.16395		
390	0.00270	530	0.31502	670	0.14396		
395	0.00296	535	0.32527	675	0.12603		
400	0.00325	540	0.33523	680	0.10998		
405	0.00406	545	0.34492	685	0.09516		
410	0.00615	550	0.35442	690	0.08247		
415	0.01112	555	0.36491	695	0.07128		
420	0.02158	560	0.37499	700	0.06131		
425	0.04082	565	0.38501	705	0.05272		
430	0.07436	570	0.39470	710	0.04524		
435	0.12612	575	0.40430	715	0.03871		
440	0.20554	580	0.41196	720	0.03325		
445	0.33978	585	0.41895	725	0.02848		
450	0.46398	590	0.42406	730	0.02436		
455	0.40059	595	0.42519	735	0.02083		
460	0.27075	600	0.42317	740	0.01782		
465	0.20946	605	0.41765	745	0.01525		
470	0.16526	610	0.40787	750	0.01307		
475	0.12853	615	0.39410	755	0.01120		
480	0.12120	620	0.37660	760	0.00961		
485	0.13169	625	0.35595	765	0.00818		

ANSI/IES TM-30-18 Color Rendition Report



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

x 0.3818
 y 0.3818
 u' 0.2240
 v' 0.5040

CIE 13.3-1995	
(CRI)	
R_a	83
R_g	13

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20084.
Dialight unit model number H[C,E,F,W][D,U]-[7,R]EN-[2,8]Ex-xxx-xx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 1.5325 (A)
Input Power: 182.9 (W)
Power Factor: 0.9944

Photometric measurements:

Absolute Luminous Flux: 25136 (lumens)
Luminous Efficacy: 137.5 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	17862	17846	17813	17784	17862	
5.00	16487	17021	17765	17216	16633	1715
15.00	11582	13549	17255	13888	11843	3659
25.00	8576	9928	16069	10129	8718	4592
35.00	7340	7691	14256	7759	7510	5248
45.00	3085	6312	11800	6399	3259	3908
55.00	227	2486	8561	2542	251	1658
65.00	49	218	5098	227	53	720
75.00	37	46	1687	49	39	261
85.00	7	9	25	10	8	6
90.00	1	1	2	1	1	

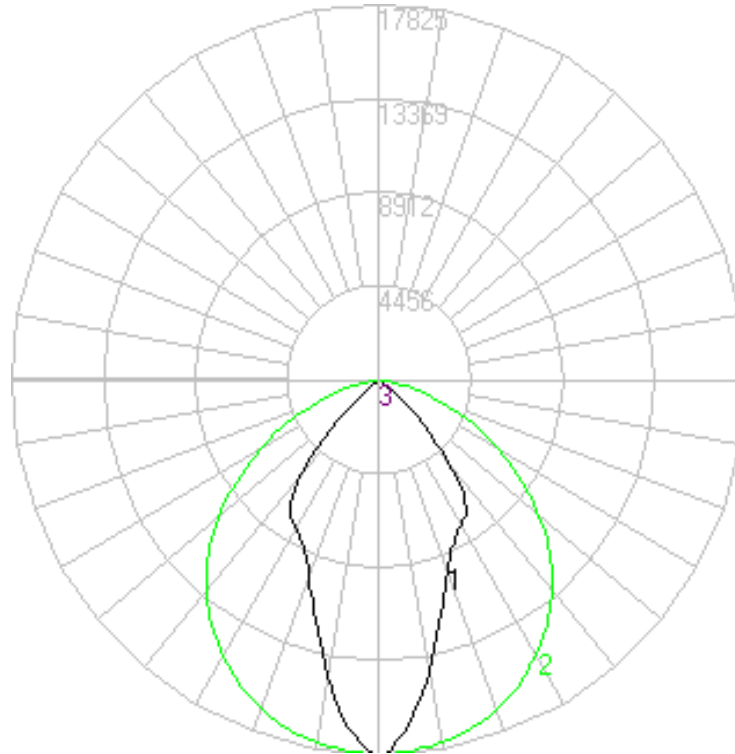
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10598.20	42.16	42.16
0 to 40	16190.83	64.41	64.41
0 to 60	23643.81	94.06	94.06
0 to 90	25136.59	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	25136.59	100.00	100.00

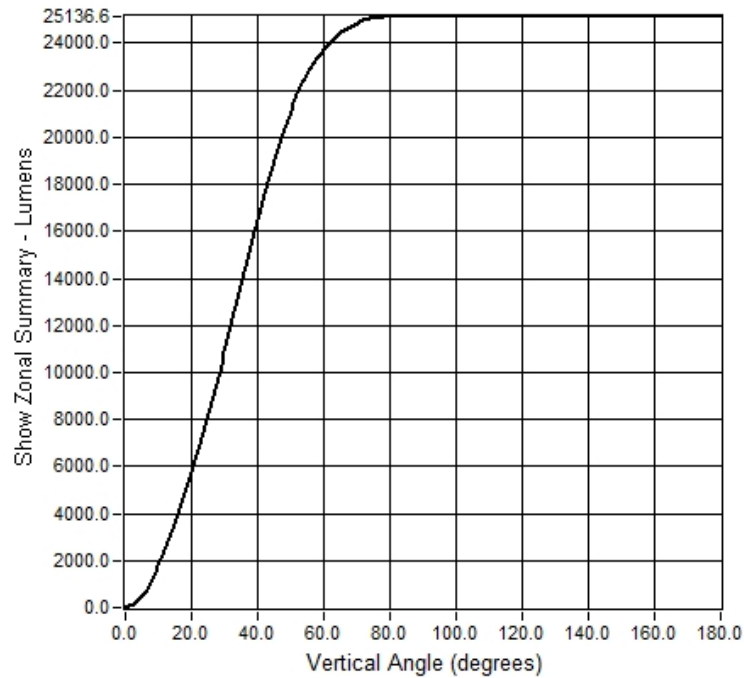
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



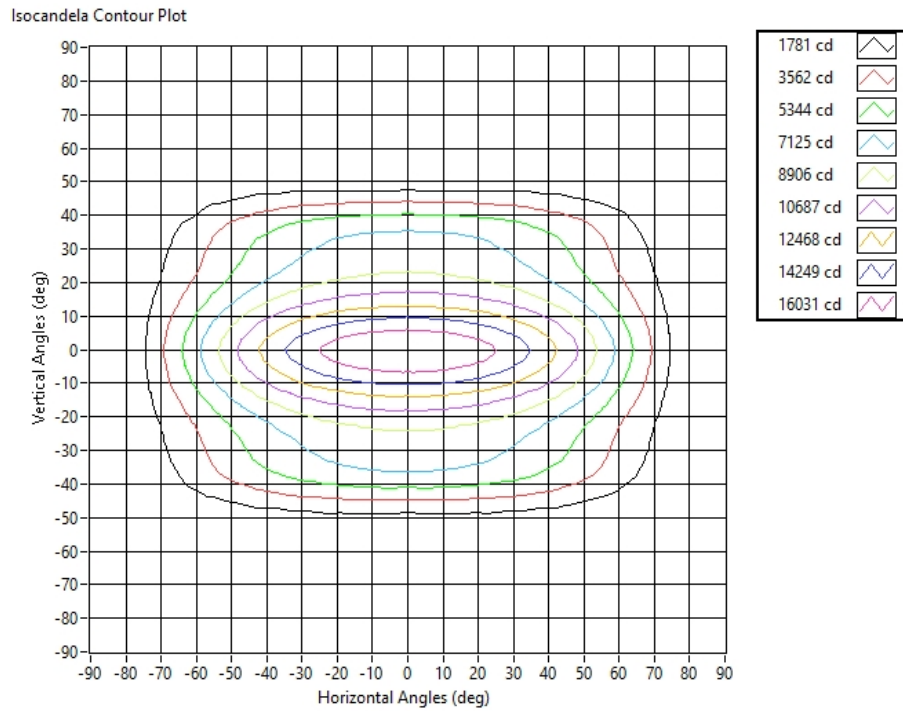
Zonal Flux Graph



Test Results: Goniometer

Results continued from previous page.

Illuminance Plot:



Illuminance-Cone of Light:

Mounting Height (m)	Beam Cone Width (m)	Orthogonal Beam Cone	Projected Illuminance (lux)
6.56168	5.72	413.69	20.0
13.1234	11.43	103.42	20.0
19.685	17.15	45.97	20.0
26.2467	22.87	25.86	20.0
32.8084	28.58	16.55	20.0
39.3701	34.30	11.49	20.0
45.9318	40.02	8.44	20.0
52.4934	45.73	6.46	20.0
59.0551	51.45	5.11	20.0
65.6168	57.16	4.14	20.0

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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 Optical Engineer
 Approved Signatory