

Test Report

Report Number: L21111

Date: Aug 12, 2021

Issued by:

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

Test of one Highbay

Unit manufacturer: Dialight Corporation

Unit model number: [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]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: July 27, 2021 through July 27, 2021

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: L21111

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

Model Number: [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Ex-xxx-xx

Report Summary

Sample number L21111

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]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:	22800 (lumens)	22844 (lumens)
Electrical Power:	141.0 (W)	141.0 (W)
Luminous Efficacy:	161.7 (lumens/W)	162 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 141.0 (W)
 Power Factor (120VAC): 0.9674
 Current ATHD % (120VAC): 12.29
 Input Power (277VAC): 140.8 (W)
 Power Factor (277VAC): 0.9844
 Current ATHD % (277VAC): 11.50

Color Measurements:

Correlated Color Temperature (CCT): 4066
 Color Rendering Index (CRI): 80.60
 Chromaticity Coordinate (x): 0.379
 Chromaticity Coordinate (y): 0.379
 Chromaticity Coordinate (u'): 0.223
 Chromaticity Coordinate (v'): 0.502
 DUV: 0.0017

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21111.

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Ex-xxx-xx

Test Conditions:

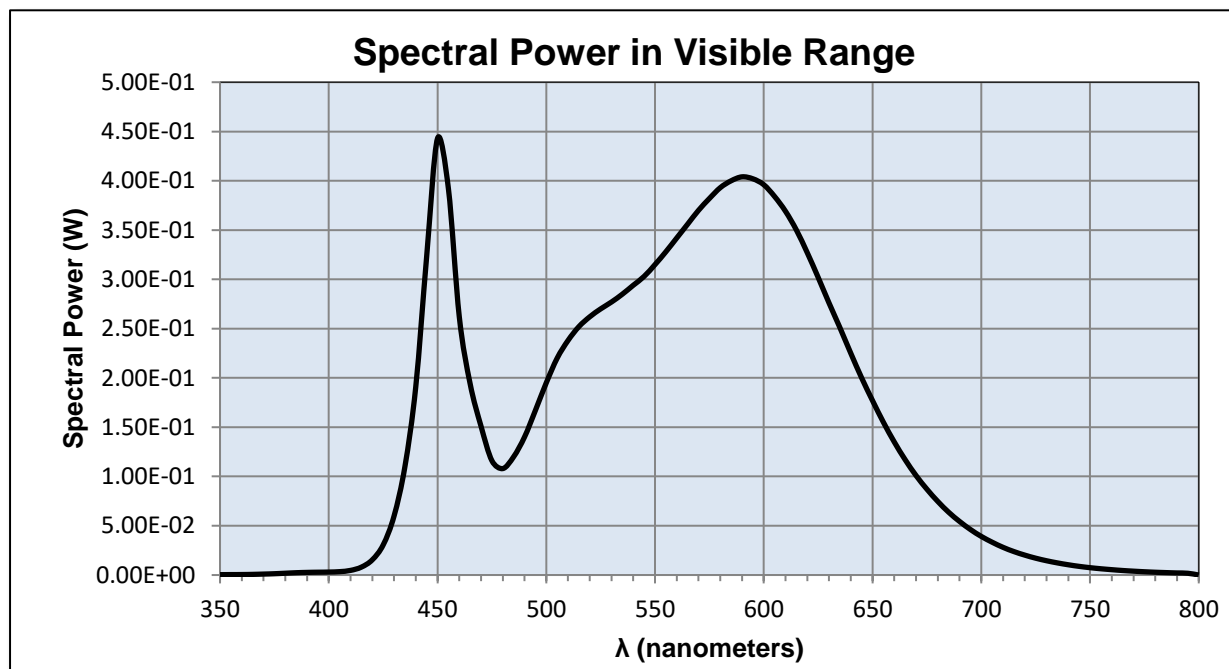
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 480.8 (VAC)
Input Current: 0.303 (A)
Input Power: 141.0 (W)
Input Power Factor: 0.9674
Current ATHD: 12.29 (%)

Photometric measurements:

Luminous Flux: 22800.0 (lumens)
Luminous Efficacy: 161.7 (lumens/W)
Correlated Color Temperature (CCT): 4066 (K)
CRI -Ra: 80.60
CRI -R9: -7.70
DUV: 0.0017
CIE Coordinate (x): 0.379
CIE Coordinate (y): 0.379
CIE Coordinate (u'): 0.223
CIE Coordinate (v'): 0.502
TM30_Rf: 82.6
TM30_Rg: 94.0
TM30_Rcs_hue1: -13.92 %



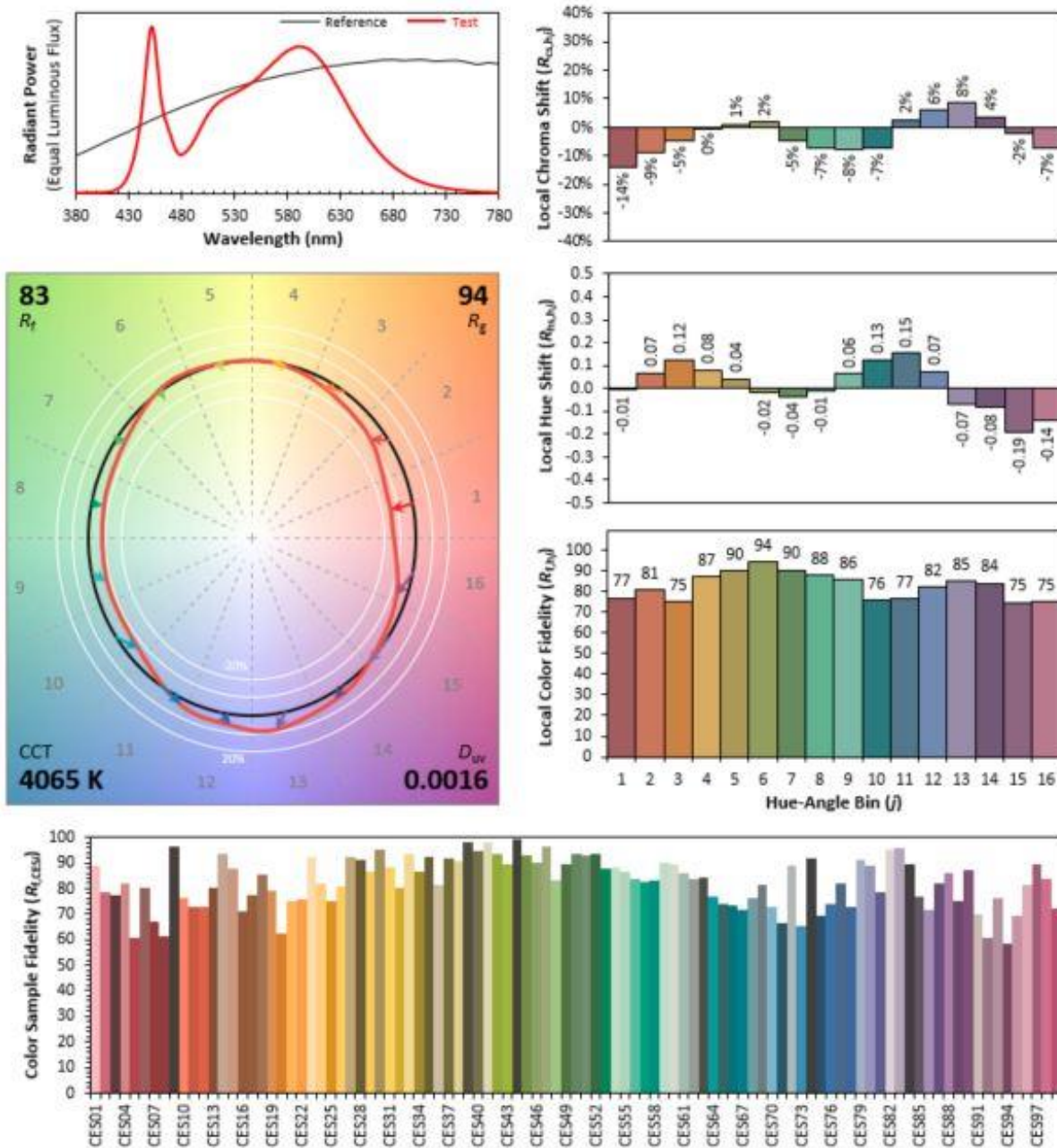
Test Results: Integrating Sphere

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	0.00039	490	0.14000	630	0.27600	770	0.00391
355	0.00044	495	0.16700	635	0.25100	775	0.00332
360	0.00050	500	0.19500	640	0.22500	780	0.00284
365	0.00067	505	0.22000	645	0.20000	785	0.00244
370	0.00096	510	0.23800	650	0.17700	790	0.00209
375	0.00131	515	0.25200	655	0.15500	795	0.00179
380	0.00183	520	0.26200	660	0.13500	800	0.00153
385	0.00235	525	0.27000	665	0.11700		
390	0.00268	530	0.27700	670	0.10100		
395	0.00287	535	0.28500	675	0.08710		
400	0.00302	540	0.29400	680	0.07470		
405	0.00343	545	0.30300	685	0.06370		
410	0.00470	550	0.31500	690	0.05440		
415	0.00802	555	0.32800	695	0.04620		
420	0.01540	560	0.34200	700	0.03920		
425	0.03050	565	0.35600	705	0.03330		
430	0.05980	570	0.37000	710	0.02810		
435	0.11000	575	0.38200	715	0.02380		
440	0.19100	580	0.39300	720	0.02020		
445	0.32300	585	0.40000	725	0.01710		
450	0.44300	590	0.40400	730	0.01450		
455	0.39200	595	0.40200	735	0.01230		
460	0.26200	600	0.39600	740	0.01040		
465	0.19400	605	0.38400	745	0.00879		
470	0.15100	610	0.36900	750	0.00745		
475	0.11600	615	0.35000	755	0.00636		
480	0.10800	620	0.32700	760	0.00542		
485	0.12000	625	0.30200	765	0.00458		

IES TM-30-18 Color Rendition Report



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

x 0.3787
 y 0.3792
 u' 0.2230
 v' 0.5024

CIE 13.3-1995
(CRI)

R_a 81
 R_g -8

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21111.
Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Ex-xxx-xx

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input current: 0.30 (A)
Input Power: 141.02 (W)
Power Factor: 0.9663

Photometric measurements:

Absolute Luminous Flux: 22844.1 (lumens)
Luminous Efficacy: 162.0 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	13303	13301	13306	13298	13303	
5.00	13015	12944	13182	13239	12821	1320
15.00	10728	10340	11959	12569	10389	3106
25.00	8209	7843	9925	11266	8002	4025
35.00	6495	6177	7849	9522	6375	4376
45.00	4446	3712	6066	7550	4210	3772
55.00	1771	1234	4248	5464	1553	2159
65.00	593	468	1943	3433	551	1080
75.00	324	289	532	1376	316	502
85.00	220	220	236	318	221	184
90.00	201	203	202	224	206	

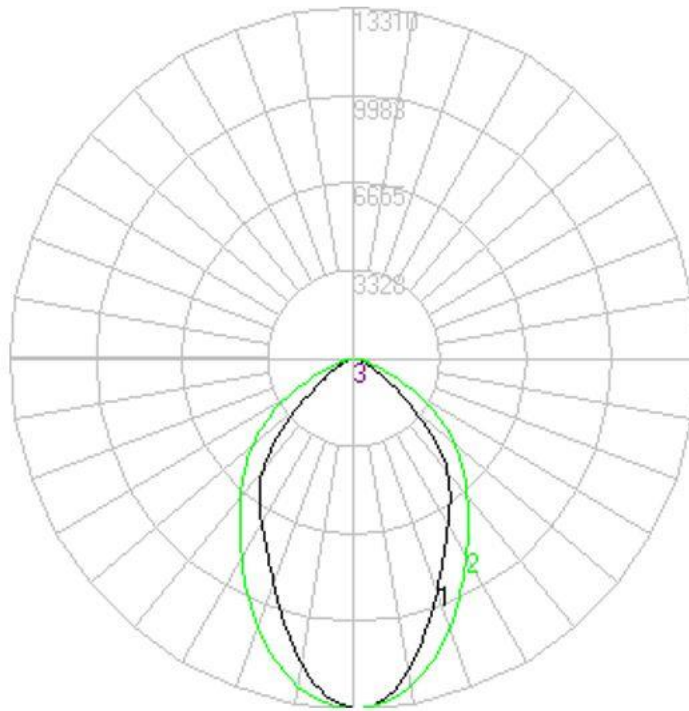
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	8641.96	37.83	37.83
0 to 40	13314.42	58.28	58.28
0 to 60	20323.25	88.96	88.96
0 to 90	22844.12	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	22844.12	100.00	100.00

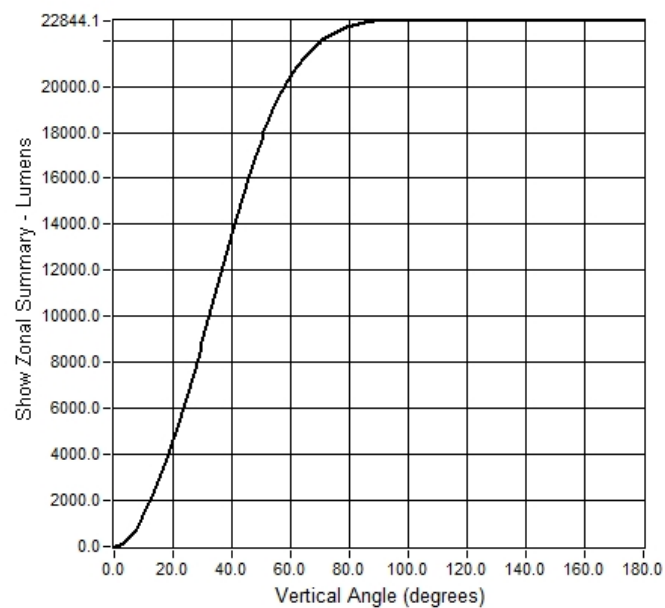
Test Results: Goniometer

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Polar Plot:



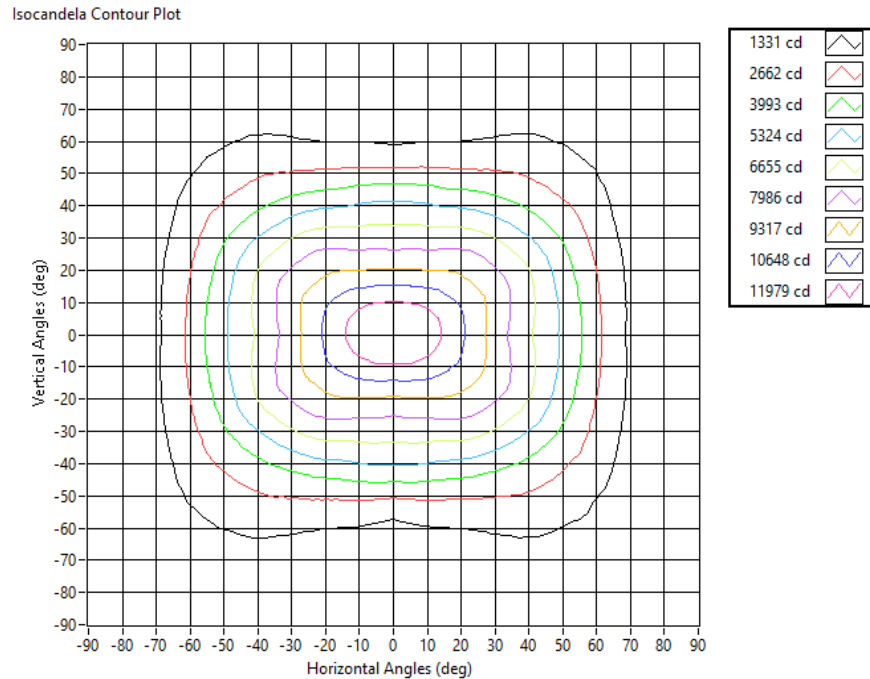
Zonal Flux Graph



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	2.64	3.36	3326.1
4	5.28	6.72	831.5
6	7.92	10.09	369.6
8	10.56	13.45	207.9
10	13.20	16.81	133.0
12	15.84	20.17	92.4
14	18.48	23.53	67.9
16	21.12	26.90	52.0
18	23.76	30.26	41.1
20	26.40	33.62	33.3

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
Fuke 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
Fuke 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 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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Optical Engineer
Approved Signatory