

Test Report

Report Number: L21110

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-[2,8]Fx-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 29, 2021 through August 2, 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: L21110

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

Model Number: [K,V][C,E,F,W][D,U]-[L,Z]EN-[2,8]Fx-xxx-xx

Report Summary

Sample number L21110

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[2,8]Fx-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:	26856 (lumens)	26811 (lumens)
Electrical Power:	166.2 (W)	166.1 (W)
Luminous Efficacy:	161.5 (lumens/W)	161.5 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 166.2 (W)
 Power Factor (120VAC): 0.9951
 Current ATHD % (120VAC): 5.08
 Input Power (277VAC): 161.8 (W)
 Power Factor (277VAC): 0.9490
 Current ATHD % (277VAC): 9.49

Color Measurements:

Correlated Color Temperature (CCT): 4075
 Color Rendering Index (CRI): 80.53
 Chromaticity Coordinate (x): 0.378
 Chromaticity Coordinate (y): 0.379
 Chromaticity Coordinate (u'): 0.223
 Chromaticity Coordinate (v'): 0.502
 DUV: 0.0016

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21110.

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[2,8]Fx-xxx-xx

Test Conditions:

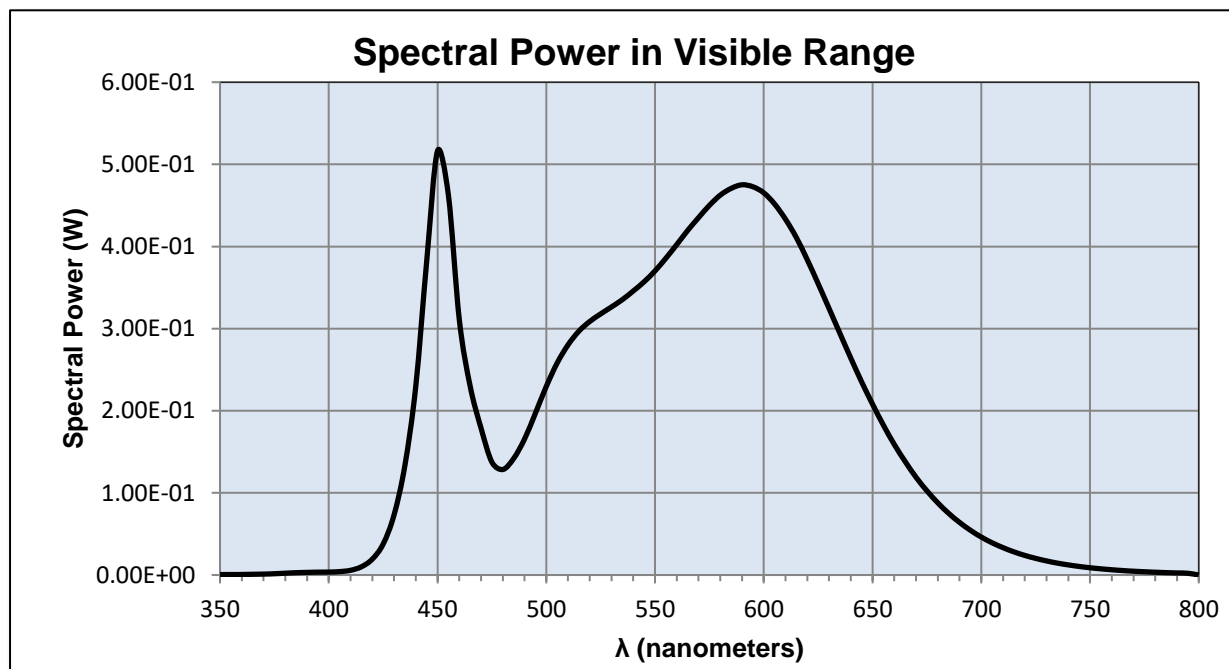
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input Current: 1.405 (A)
Input Power: 166.2 (W)
Input Power Factor: 0.9951
Current ATHD: 5.08 (%)

Photometric measurements:

Luminous Flux: 26855.8 (lumens)
Luminous Efficacy: 161.5 (lumens/W)
Correlated Color Temperature (CCT): 4075 (K)
CRI -Ra: 80.53
CRI -R9: -7.74
DUV: 0.0016
CIE Coordinate (x): 0.378
CIE Coordinate (y): 0.379
CIE Coordinate (u'): 0.223
CIE Coordinate (v'): 0.502
TM30_Rf: 82.5
TM30_Rg: 94.1
TM30_Rcs_hue1: -13.94 %



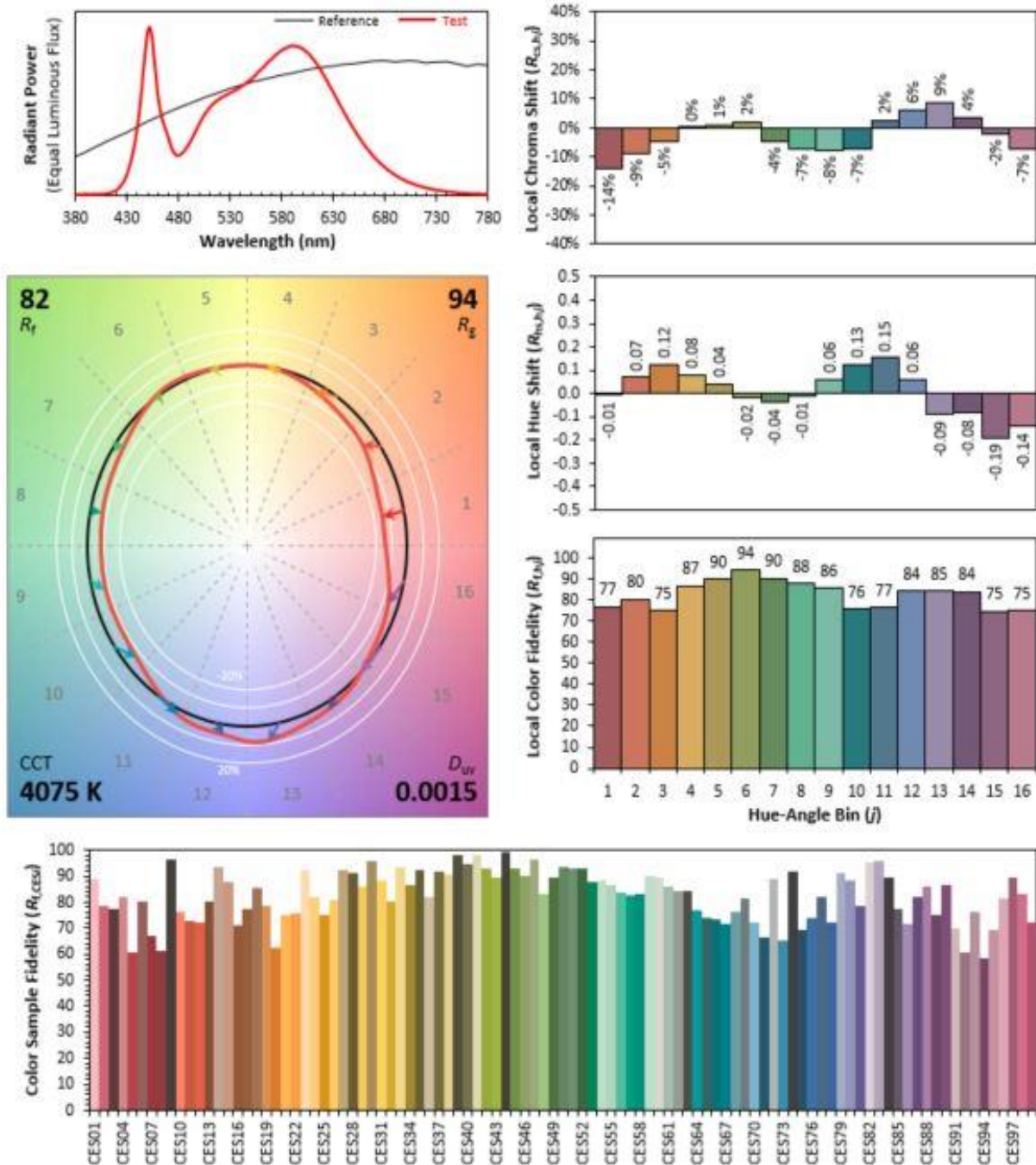
Test Results: Integrating Sphere

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	0.00060	490	0.16551	630	0.32459	770	0.00463
355	0.00059	495	0.19695	635	0.29423	775	0.00397
360	0.00067	500	0.22960	640	0.26414	780	0.00341
365	0.00091	505	0.25809	645	0.23514	785	0.00292
370	0.00113	510	0.28022	650	0.20805	790	0.00251
375	0.00157	515	0.29687	655	0.18250	795	0.00213
380	0.00224	520	0.30872	660	0.15900	800	0.00185
385	0.00284	525	0.31789	665	0.13820		
390	0.00321	530	0.32642	670	0.11909		
395	0.00349	535	0.33534	675	0.10258		
400	0.00360	540	0.34581	680	0.08790		
405	0.00417	545	0.35704	685	0.07511		
410	0.00572	550	0.37032	690	0.06408		
415	0.01003	555	0.38573	695	0.05449		
420	0.01931	560	0.40235	700	0.04625		
425	0.03774	565	0.41949	705	0.03922		
430	0.07314	570	0.43504	710	0.03333		
435	0.13352	575	0.45003	715	0.02820		
440	0.22973	580	0.46251	720	0.02389		
445	0.38128	585	0.47071	725	0.02028		
450	0.51635	590	0.47510	730	0.01716		
455	0.46241	595	0.47272	735	0.01451		
460	0.31108	600	0.46534	740	0.01232		
465	0.22999	605	0.45163	745	0.01044		
470	0.17891	610	0.43313	750	0.00885		
475	0.13743	615	0.41072	755	0.00754		
480	0.12845	620	0.38386	760	0.00641		
485	0.14186	625	0.35476	765	0.00543		

IES TM-30-18 Color Rendition Report



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

x 0.3782
 y 0.3786
 u' 0.2229
 v' 0.5021

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 L21110.

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[2,8]Fx-xxx-xx

Electrical Measurements:

Input Voltage: 120.0 (VAC)
 Input current: 1.39 (A)
 Input Power: 166.06 (W)
 Power Factor: 0.9938

Photometric measurements:

Absolute Luminous Flux: 26810.5 (lumens)
 Luminous Efficacy: 161.5 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	15624	15619	15614	15611	15624	
5.00	15196	15524	15497	15245	15136	1550
15.00	12409	14722	14139	12204	12348	3648
25.00	9497	13197	11766	9289	9480	4727
35.00	7548	11162	9273	7344	7541	5143
45.00	5161	8828	7159	4401	5040	4443
55.00	2072	6413	5050	1423	1865	2549
65.00	708	4015	2319	548	653	1276
75.00	383	1631	615	348	374	593
85.00	260	390	284	265	257	219
90.00	237	274	244	247	239	

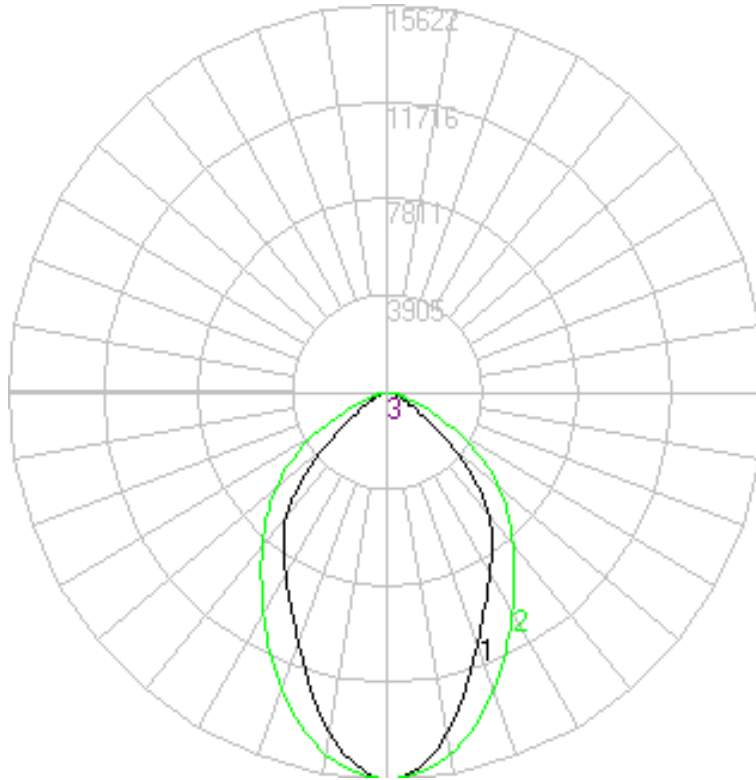
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10143.06	37.83	37.83
0 to 40	15627.29	58.29	58.29
0 to 60	23852.40	88.97	88.97
0 to 90	26810.46	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	26810.46	100.00	100.00

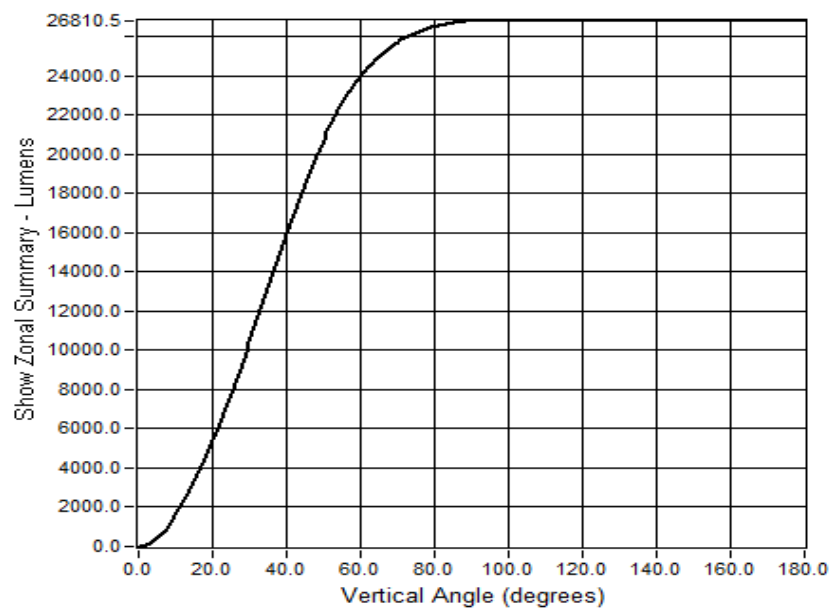
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



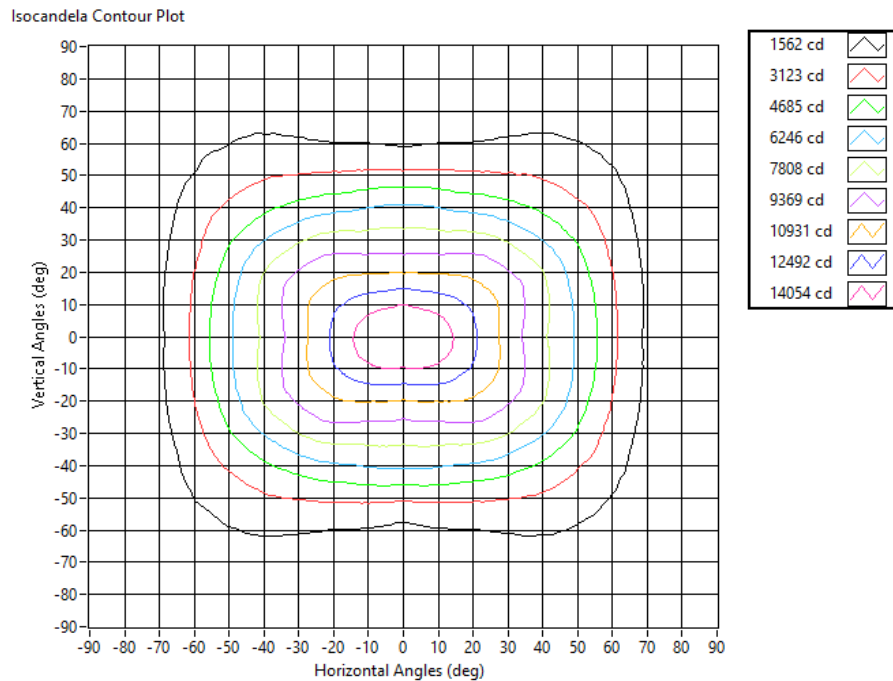
Zonal Flux Graph



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	2.64	3.59	3903.8
4	5.28	7.18	976.0
6	7.93	10.77	433.8
8	10.57	14.36	244.0
10	13.21	17.94	156.2
12	15.85	21.53	108.4
14	18.50	25.12	79.7
16	21.14	28.71	61.0
18	23.78	32.30	48.2
20	26.42	35.89	39.0

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 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