

# Test Report

Report Number: L21113

Date: Aug 13, 2021

Issued by:

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

Test of one 14k/Oval /Dome Lens/Neutral White

Unit manufacturer: Dialight Corporation

Unit model number: [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Bx-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 26, 2021 through July 26, 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: L21113

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: 14k/Oval /Dome Lens/Neutral White

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

## Report Summary

Sample number L21113

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Bx-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:	13038 (lumens)	13055 (lumens)
Electrical Power:	80.9 (W)	80.9 (W)
Luminous Efficacy:	161.2 (lumens/W)	161.5 (lumens/W)

### Electrical Measurements:

Input Power (480VAC): 80.9 (W)  
 Power Factor (480VAC): 0.9279  
 Current ATHD % (480VAC): 13.86  
 Input Power (347VAC): 80.4 (W)  
 Power Factor (347VAC): 0.9800  
 Current ATHD % (347VAC): 14.20

### Color Measurements:

Correlated Color Temperature (CCT): 4101  
 Color Rendering Index (CRI): 82.62  
 Chromaticity Coordinate (x): 0.377  
 Chromaticity Coordinate (y): 0.376  
 Chromaticity Coordinate (u'): 0.223  
 Chromaticity Coordinate (v'): 0.501  
 DUV: 0.0009

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21113.

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

### Test Conditions:

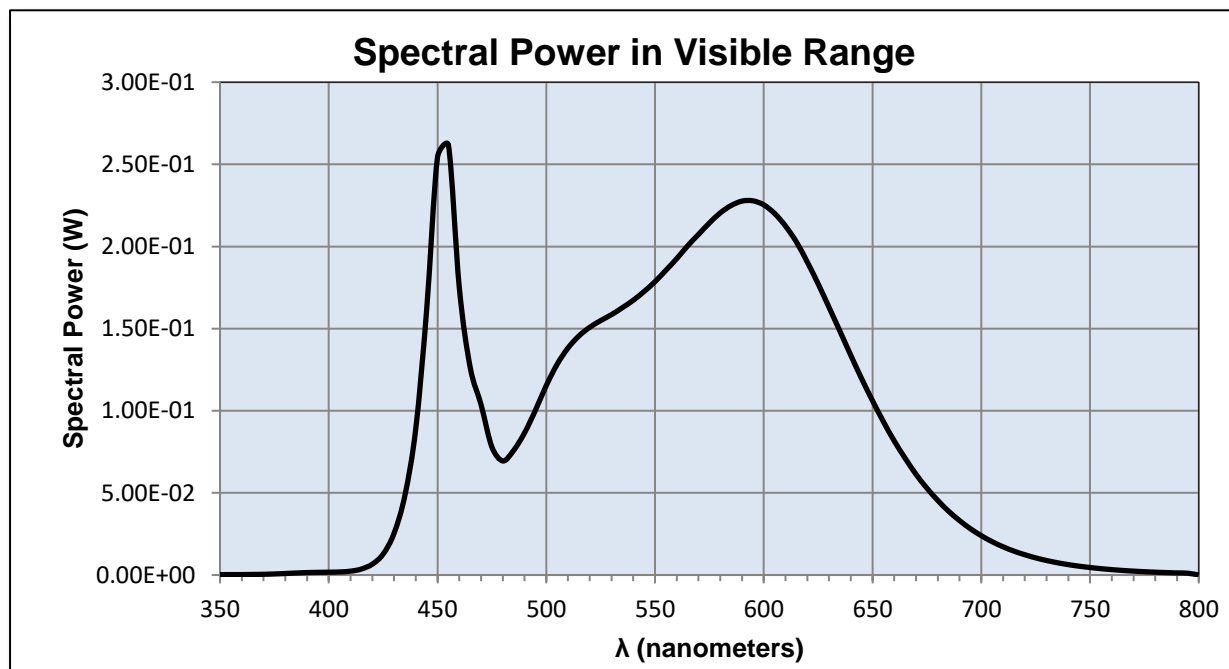
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 480.5 (VAC)  
Input Current: 0.181 (A)  
Input Power: 80.9 (W)  
Input Power Factor: 0.9279  
Current ATHD: 13.86 (%)

### Photometric measurements:

Luminous Flux: 13038.4 (lumens)  
Luminous Efficacy: 161.2 (lumens/W)  
Correlated Color Temperature (CCT): 4101 (K)  
CRI -Ra: 82.62  
CRI -R9: 2.24  
DUV: 0.0009  
CIE Coordinate (x): 0.377  
CIE Coordinate (y): 0.376  
CIE Coordinate (u'): 0.223  
CIE Coordinate (v'): 0.501  
TM30\_Rf: 83.5  
TM30\_Rg: 94.0  
TM30\_Rcs\_hue1: -12.84 %



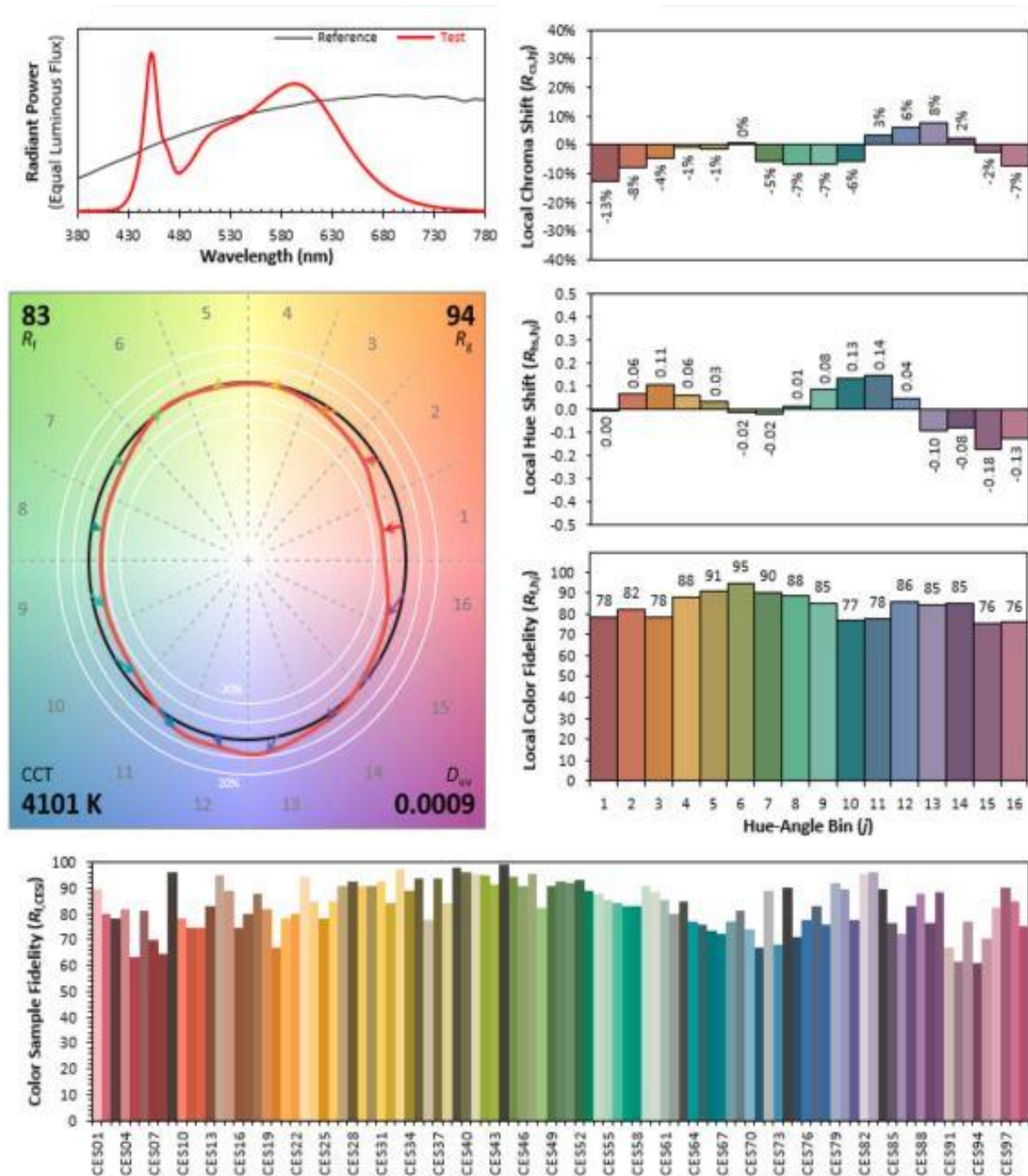
## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$
350	0.00024	490	0.08650	630	0.16295	770	0.00238
355	0.00026	495	0.10026	635	0.14848	775	0.00202
360	0.00027	500	0.11535	640	0.13377	780	0.00173
365	0.00036	505	0.12831	645	0.11952	785	0.00148
370	0.00044	510	0.13824	650	0.10609	790	0.00128
375	0.00064	515	0.14553	655	0.09337	795	0.00109
380	0.00092	520	0.15081	660	0.08158	800	0.00094
385	0.00123	525	0.15488	665	0.07108		
390	0.00148	530	0.15852	670	0.06132		
395	0.00163	535	0.16276	675	0.05288		
400	0.00172	540	0.16729	680	0.04542		
405	0.00188	545	0.17262	685	0.03880		
410	0.00235	550	0.17860	690	0.03316		
415	0.00366	555	0.18550	695	0.02818		
420	0.00660	560	0.19263	700	0.02397		
425	0.01276	565	0.20041	705	0.02030		
430	0.02538	570	0.20736	710	0.01720		
435	0.04849	575	0.21429	715	0.01455		
440	0.08908	580	0.22046	720	0.01236		
445	0.16135	585	0.22493	725	0.01045		
450	0.25441	590	0.22763	730	0.00885		
455	0.26174	595	0.22779	735	0.00748		
460	0.17503	600	0.22533	740	0.00634		
465	0.12653	605	0.22006	745	0.00536		
470	0.10379	610	0.21240	750	0.00458		
475	0.07790	615	0.20274	755	0.00388		
480	0.06945	620	0.19058	760	0.00328		
485	0.07587	625	0.17726	765	0.00278		

## IES TM-30-18 Color Rendition Report



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

$x$  0.3767  
 $y$  0.3763  
 $u'$  0.2228  
 $v'$  0.5008

CIE 13.3-1995  
(CRI)  
 $R_a$  83  
 $R_g$  2



## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21113.

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

### Electrical Measurements:

Input Voltage: 480.0 (VAC)  
Input current: 0.18 (A)  
Input Power: 80.85 (W)  
Power Factor: 0.9283

### Photometric measurements:

Absolute Luminous Flux: 13055.1 (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	7631	7651	7669	7672	7631	
5.00	7578	7631	7543	7383	7252	757
15.00	6341	7280	6818	5838	5774	1780
25.00	4791	6557	5682	4437	4431	2299
35.00	3743	5541	4510	3496	3508	2487
45.00	2574	4365	3496	2081	2188	2115
55.00	1032	3139	2475	697	761	1211
65.00	341	1947	1178	269	289	616
75.00	184	738	319	158	169	278
85.00	123	175	141	109	117	101
90.00	112	125	122	100	110	

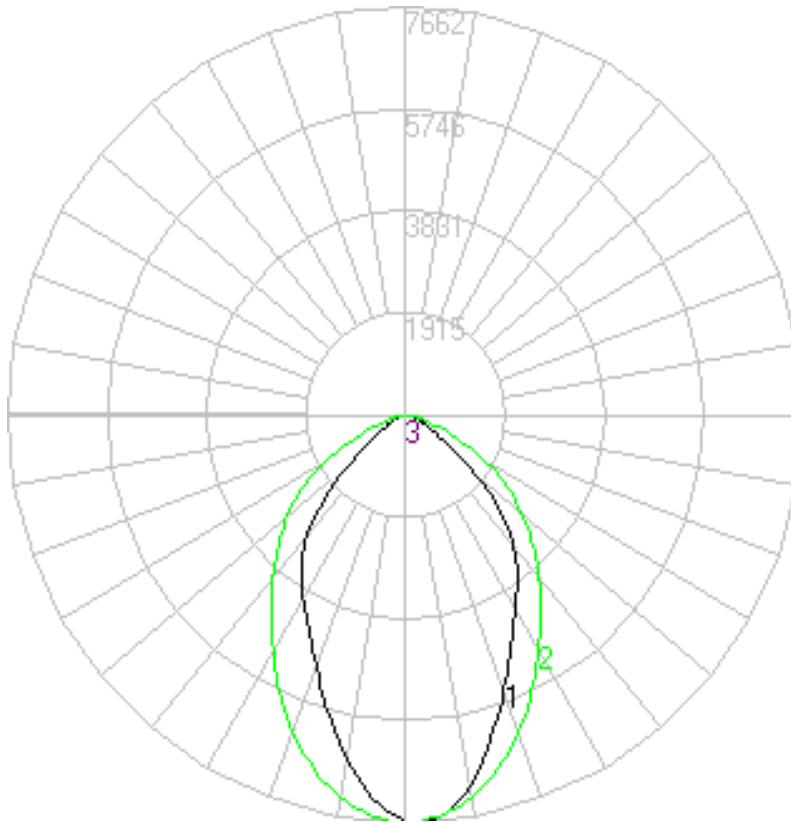
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	4965.89	38.04	38.04
0 to 40	7635.95	58.49	58.49
0 to 60	11633.42	89.11	89.11
0 to 90	13055.07	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	13055.07	100.00	100.00

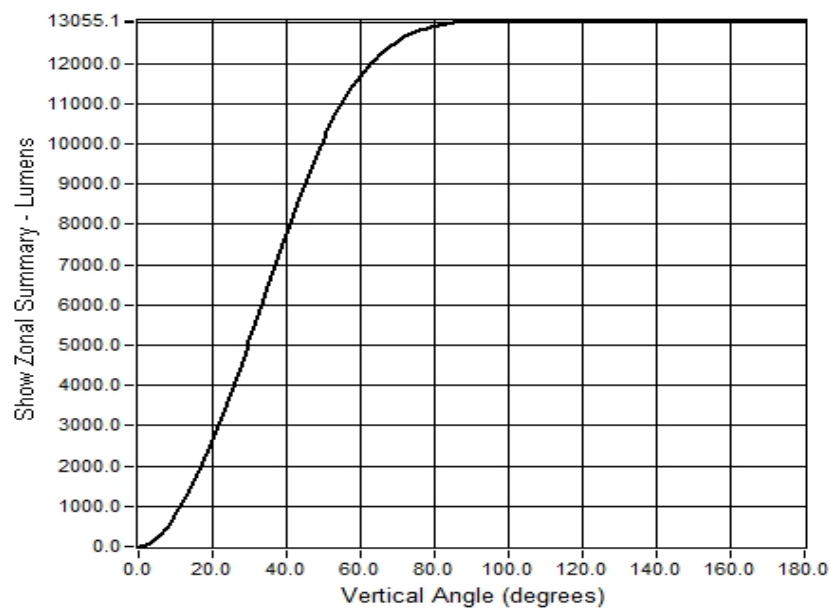
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



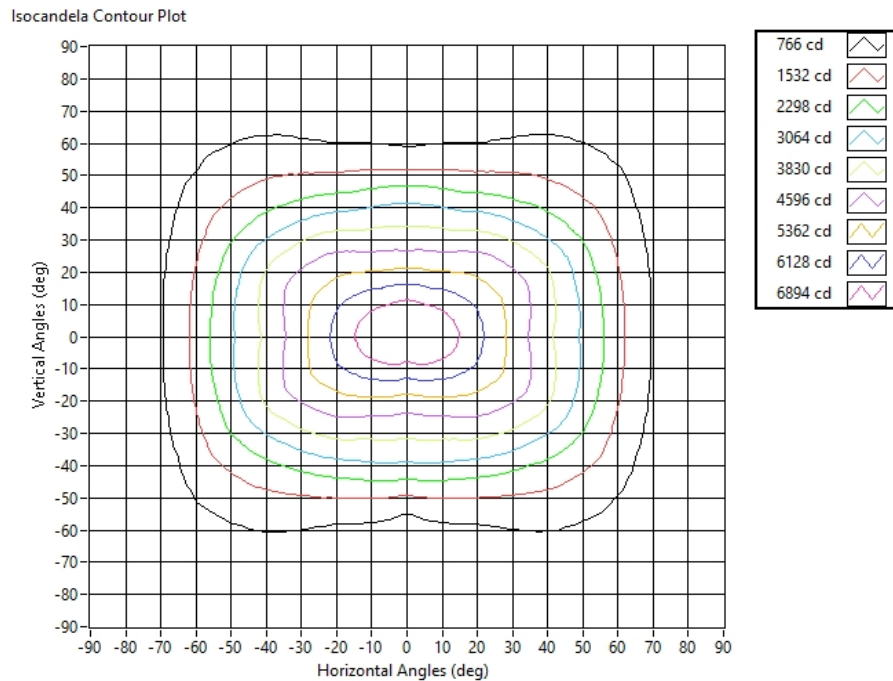
Zonal Flux Graph



## 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	2.62	3.54	1914.2
4	5.25	7.09	478.6
6	7.87	10.63	212.7
8	10.50	14.17	119.6
10	13.12	17.72	76.6
12	15.75	21.26	53.2
14	18.37	24.80	39.1
16	20.99	28.35	29.9
18	23.62	31.89	23.6
20	26.24	35.43	19.1



# 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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## Test Report Issued By:

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Lighting Division

## Test Report Reviewed and Approved By:

Vishnu Shastry  
Dialight Optics Laboratory  
Optical Engineer  
Approved Signatory