

Test Report

Report Number: L21112

Date: Aug 19, 2021

Issued by:

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

Test of one Oval, Dome Lens, Neutral White Highbay
Unit manufacturer: Dialight Corporation
Unit model number: [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Cx-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 22, 2021 through August 19, 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: L21112
Manufacturer: Dialight Corporation
Product Name: Highbay
Description: Oval, Dome Lens, Neutral White Highbay
Model Number: [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Cx-xxx-xx

Report Summary

Sample number L21112

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]EN-[5,9]Cx-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:	16708 (lumens)	16510 (lumens)
Electrical Power:	102.6 (W)	102.4 (W)
Luminous Efficacy:	162.9 (lumens/W)	161.2 (lumens/W)

Electrical Measurements:

Input Power (480VAC): 102.6 (W)
 Power Factor (480VAC): 0.9483
 Current ATHD % (480VAC): 12.96
 Input Power (347VAC): 101.8 (W)
 Power Factor (347VAC): 0.9880
 Current ATHD % (347VAC): 13.90

Color Measurements:

Correlated Color Temperature (CCT): 4054
 Color Rendering Index (CRI): 80.62
 Chromaticity Coordinate (x): 0.379
 Chromaticity Coordinate (y): 0.380
 Chromaticity Coordinate (u'): 0.223
 Chromaticity Coordinate (v'): 0.503
 DUV: 0.0018

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21112.

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

Test Conditions:

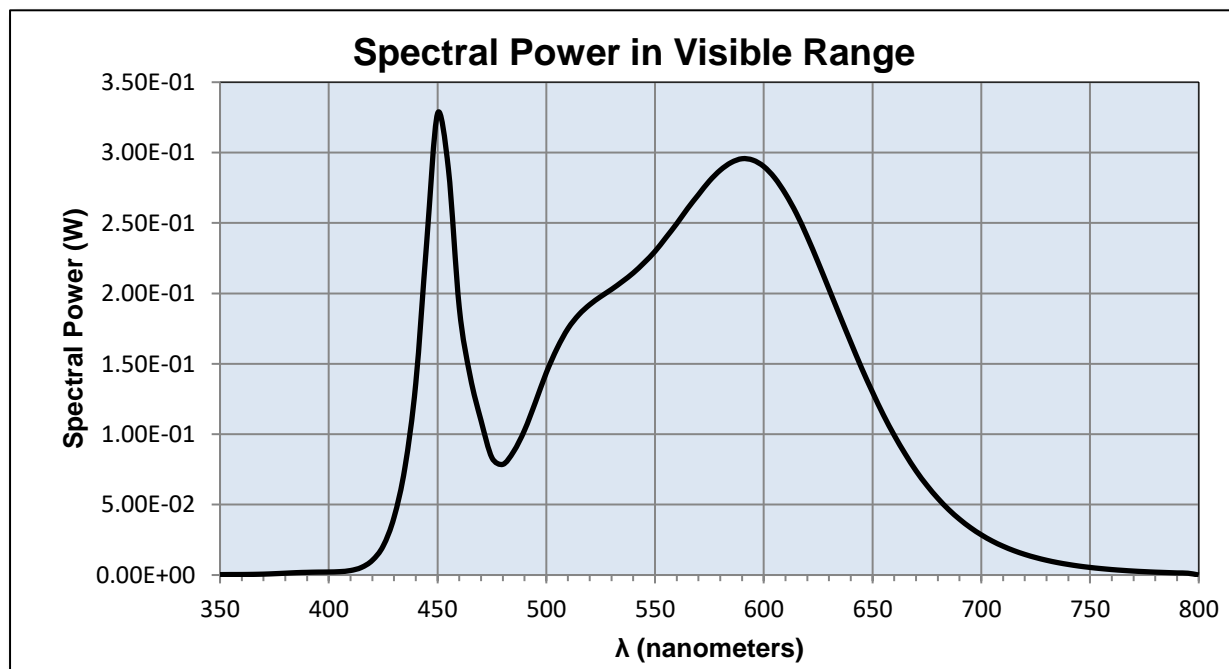
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 480.0 (VAC)
Input Current: 0.225 (A)
Input Power: 102.6 (W)
Input Power Factor: 0.9483
Current ATHD: 12.96 (%)

Photometric measurements:

Luminous Flux: 16708.4 (lumens)
Luminous Efficacy: 162.9 (lumens/W)
Correlated Color Temperature (CCT): 4054 (K)
CRI -Ra: 80.62
CRI -R9: -7.53
DUV: 0.0018
CIE Coordinate (x): 0.379
CIE Coordinate (y): 0.380
CIE Coordinate (u'): 0.223
CIE Coordinate (v'): 0.503
TM30_Rf: 82.6
TM30_Rg: 94.1
TM30_Rcs_hue1: -13.88 %



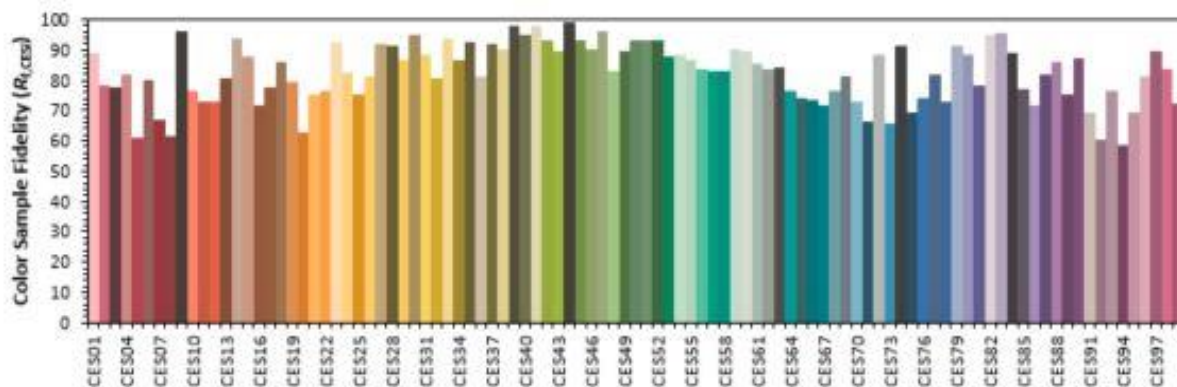
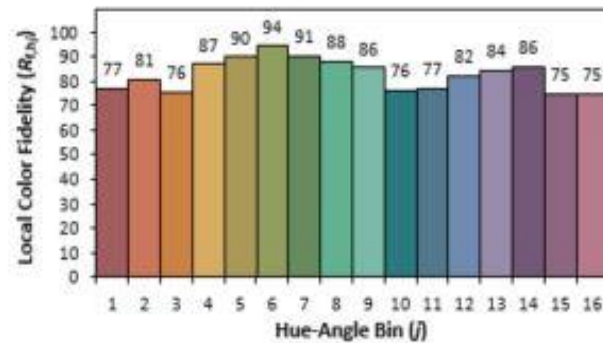
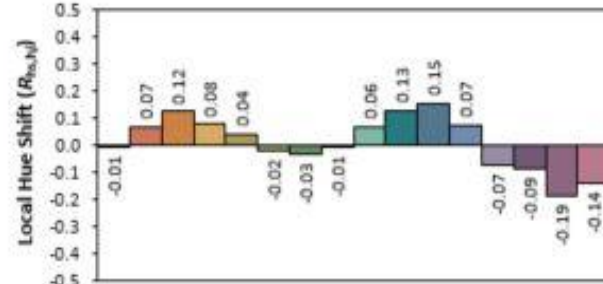
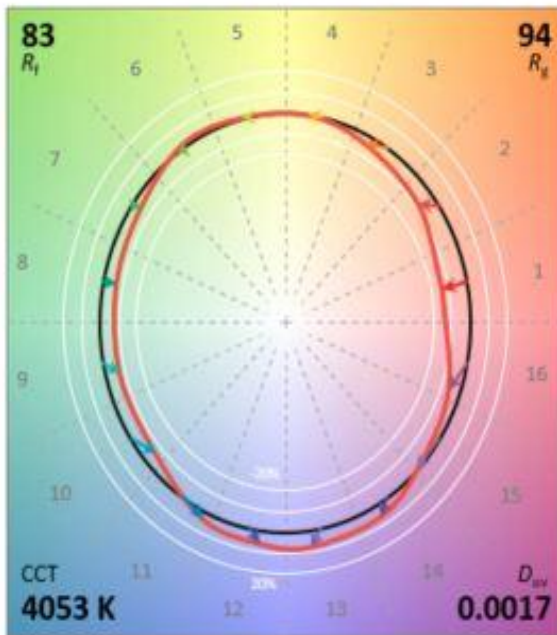
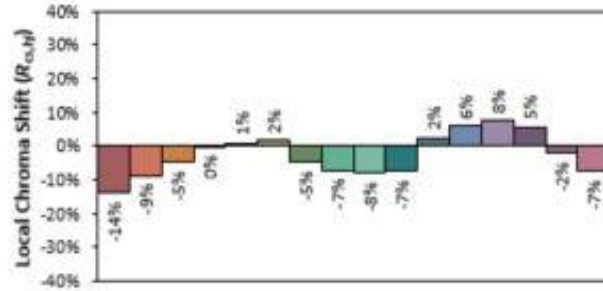
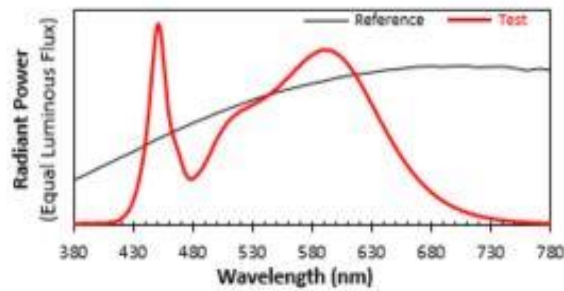
Test Results: Integrating Sphere

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	0.00031	490	0.10281	630	0.20306	770	0.00279
355	0.00035	495	0.12267	635	0.18401	775	0.00240
360	0.00037	500	0.14363	640	0.16525	780	0.00205
365	0.00047	505	0.16108	645	0.14693	785	0.00177
370	0.00064	510	0.17509	650	0.12987	790	0.00150
375	0.00094	515	0.18491	655	0.11373	795	0.00128
380	0.00129	520	0.19206	660	0.09920	800	0.00110
385	0.00168	525	0.19772	665	0.08603		
390	0.00191	530	0.20286	670	0.07404		
395	0.00208	535	0.20849	675	0.06368		
400	0.00215	540	0.21456	680	0.05454		
405	0.00240	545	0.22180	685	0.04650		
410	0.00320	550	0.22987	690	0.03963		
415	0.00538	555	0.23961	695	0.03367		
420	0.01040	560	0.24958	700	0.02856		
425	0.02058	565	0.26037	705	0.02415		
430	0.04096	570	0.27020	710	0.02047		
435	0.07626	575	0.27982	715	0.01730		
440	0.13609	580	0.28752	720	0.01466		
445	0.23582	585	0.29295	725	0.01241		
450	0.32768	590	0.29566	730	0.01049		
455	0.28838	595	0.29467	735	0.00885		
460	0.18979	600	0.29015	740	0.00752		
465	0.14130	605	0.28208	745	0.00635		
470	0.10975	610	0.27068	750	0.00539		
475	0.08335	615	0.25676	755	0.00458		
480	0.07858	620	0.24020	760	0.00388		
485	0.08774	625	0.22201	765	0.00330		

IES TM-30-18 Color Rendition Report



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

x 0.3793
 y 0.3798
 u' 0.2232
 v' 0.5027

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 L21112.

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

Electrical Measurements:

Input Voltage: 480.0 (VAC)
Input current: 0.23 (A)
Input Power: 102.40 (W)
Power Factor: 0.9464

Photometric measurements:

Absolute Luminous Flux: 16509.5 (lumens)
Luminous Efficacy: 161.2 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	9273	9271	9243	9235	9273	
5.00	8986	9196	9225	9122	9043	922
15.00	7352	8699	8539	7470	7479	2189
25.00	5699	7764	7222	5737	5802	2863
35.00	4561	6544	5749	4575	4646	3132
45.00	3130	5171	4426	2917	3165	2735
55.00	1331	3764	3174	1093	1284	1634
65.00	543	2373	1613	478	528	886
75.00	325	999	513	312	324	456
85.00	222	309	256	227	221	185
90.00	196	230	214	201	197	

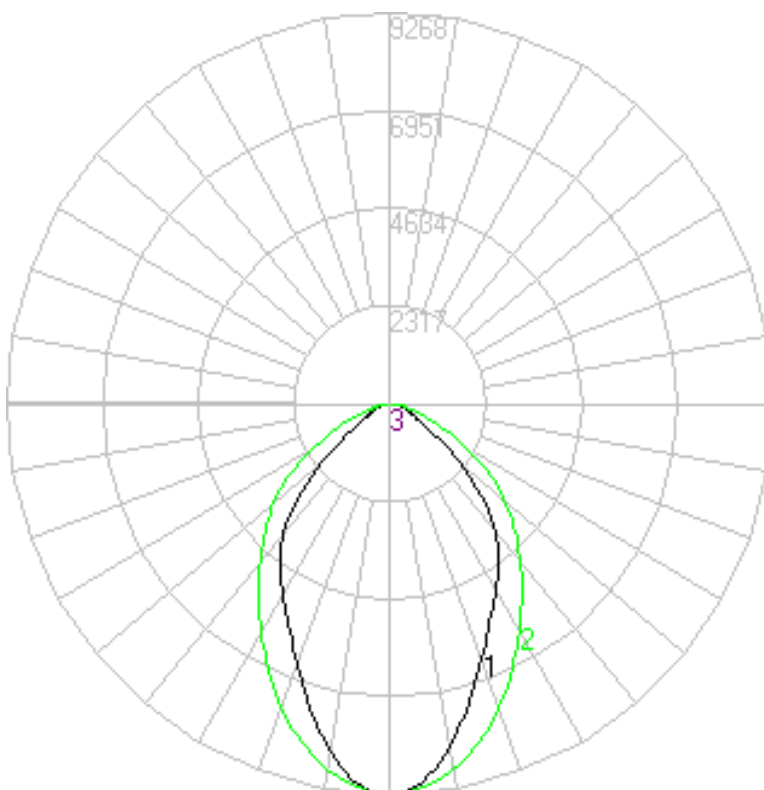
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	6077.10	36.81	36.81
0 to 40	9390.98	56.88	56.88
0 to 60	14455.32	87.56	87.56
0 to 90	16509.48	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	16509.48	100.00	100.00

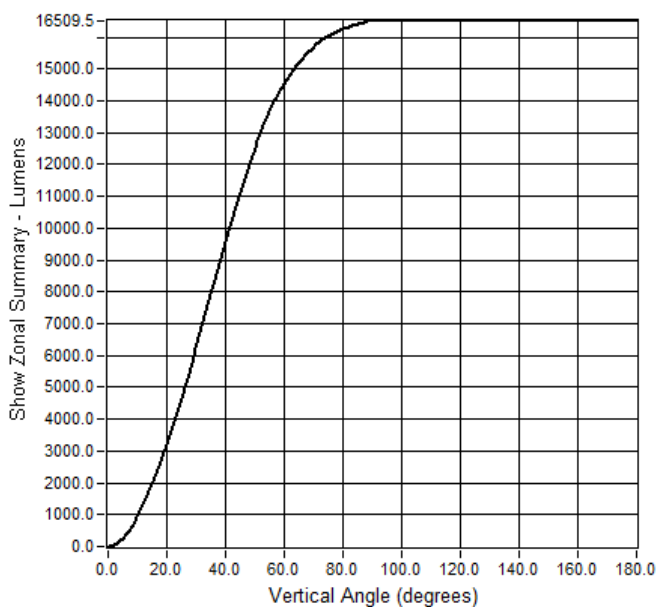
Test Results: Goniometer

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Polar Plot:



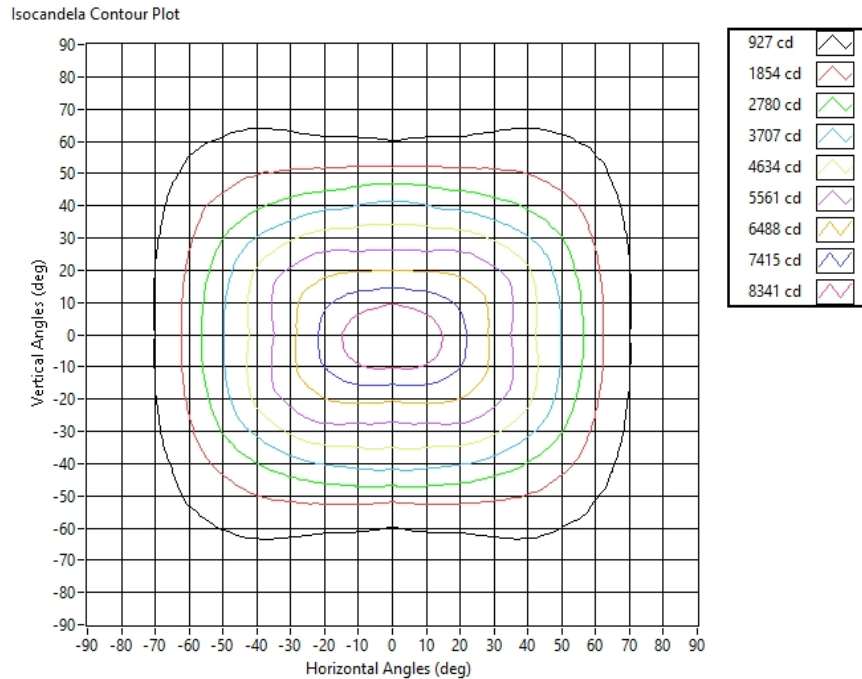
Zonal Flux Graph



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	2.82	3.71	2313.1
4	5.65	7.42	578.3
6	8.47	11.12	257.0
8	11.29	14.83	144.6
10	14.12	18.54	92.5
12	16.94	22.25	64.3
14	19.76	25.96	47.2
16	22.59	29.67	36.1
18	25.41	33.37	28.6
20	28.23	37.08	23.1

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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Optical Engineer
Approved Signatory