

Test Report

Report Number: L21106

Date: Aug 9, 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]-[4,V]EN-[2,8]Jx-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 13, 2021 through July 14, 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: L21106

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

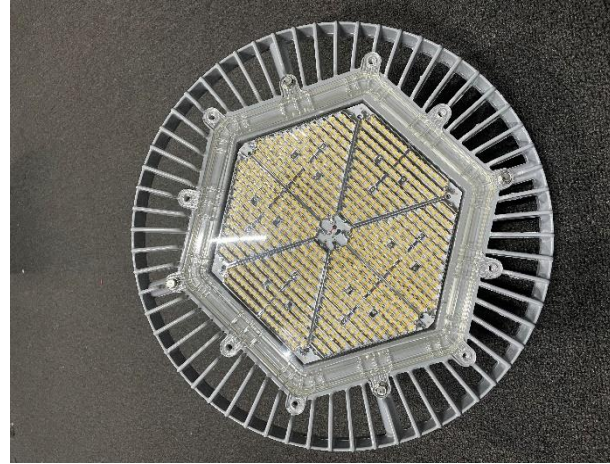
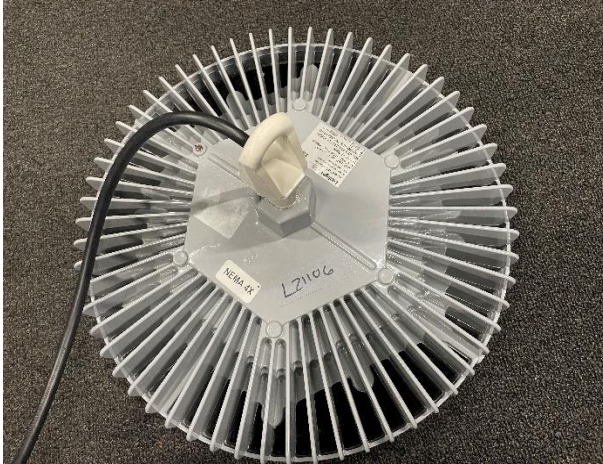
Model Number: [K,V][C,E,F,W][D,U]-[4,V]EN-[2,8]Jx-xxx-xx

Report Summary

Sample number L21106

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]EN-[2,8]Jx-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:	36034 (lumens)	35884 (lumens)
Electrical Power:	230.4 (W)	229.8 (W)
Luminous Efficacy:	156.4 (lumens/W)	156.1 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 230.4 (W)
 Power Factor (120VAC): 0.9956
 Current ATHD % (120VAC): 5.23
 Input Power (277VAC): 222.7 (W)
 Power Factor (277VAC): 0.9669
 Current ATHD % (277VAC): 9.80

Color Measurements:

Correlated Color Temperature (CCT): 4080
 Color Rendering Index (CRI): 80.45
 Chromaticity Coordinate (x): 0.378
 Chromaticity Coordinate (y): 0.378
 Chromaticity Coordinate (u'): 0.223
 Chromaticity Coordinate (v'): 0.502
 DUV: 0.0014

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21106.

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]EN-[2,8]Jx-xxx-xx

Test Conditions:

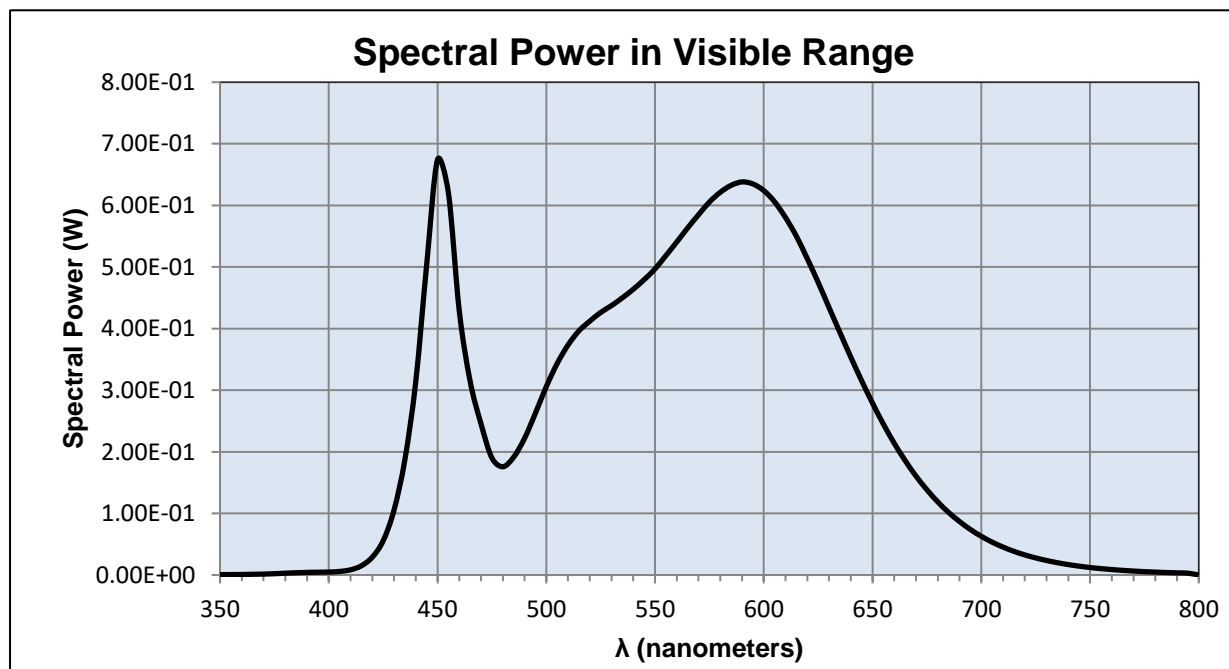
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input Current: 1.926 (A)
Input Power: 230.4 (W)
Input Power Factor: 0.9956
Current ATHD: 5.23 (%)

Photometric measurements:

Luminous Flux: 36033.9 (lumens)
Luminous Efficacy: 156.4 (lumens/W)
Correlated Color Temperature (CCT): 4080 (K)
CRI -Ra: 80.45
CRI -R9: -7.95
DUV: 0.0014
CIE Coordinate (x): 0.378
CIE Coordinate (y): 0.378
CIE Coordinate (u'): 0.223
CIE Coordinate (v'): 0.502
TM30_Rf: 82.5
TM30_Rg: 94.0
TM30_Rcs_hue1: -14.00 %



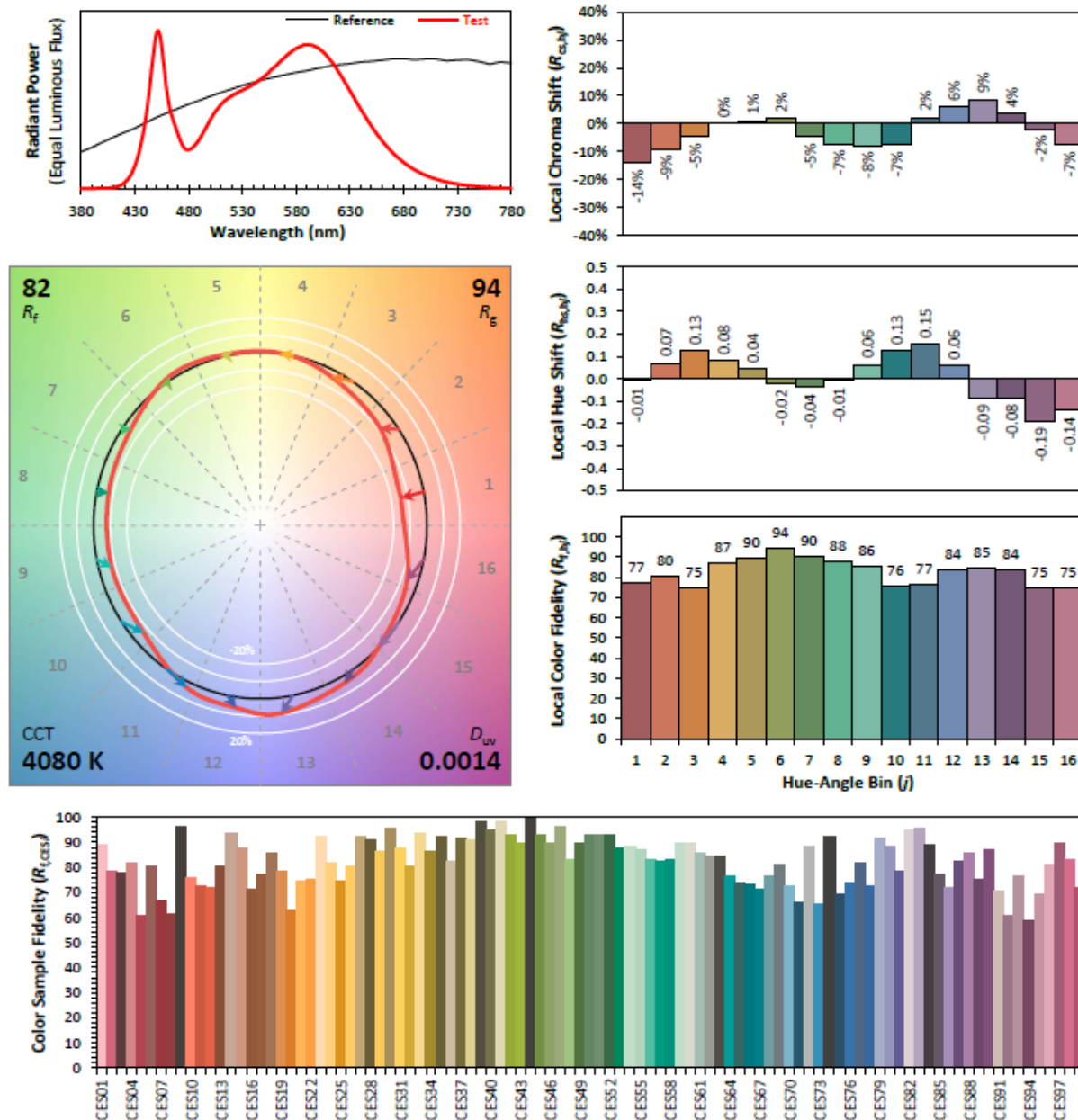
Test Results: Integrating Sphere

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	0.00066	490	0.22177	630	0.43429	770	0.00643
355	0.00077	495	0.26255	635	0.39376	775	0.00549
360	0.00091	500	0.30579	640	0.35380	780	0.00474
365	0.00124	505	0.34332	645	0.31543	785	0.00409
370	0.00153	510	0.37335	650	0.27906	790	0.00350
375	0.00215	515	0.39626	655	0.24494	795	0.00300
380	0.00297	520	0.41205	660	0.21379	800	0.00255
385	0.00369	525	0.42616	665	0.18582		
390	0.00425	530	0.43741	670	0.16056		
395	0.00458	535	0.45005	675	0.13841		
400	0.00485	540	0.46389	680	0.11875		
405	0.00583	545	0.47944	685	0.10152		
410	0.00849	550	0.49694	690	0.08685		
415	0.01500	555	0.51858	695	0.07393		
420	0.02895	560	0.54064	700	0.06293		
425	0.05558	565	0.56343	705	0.05337		
430	0.10548	570	0.58487	710	0.04536		
435	0.18749	575	0.60538	715	0.03845		
440	0.31407	580	0.62129	720	0.03267		
445	0.50330	585	0.63259	725	0.02780		
450	0.67420	590	0.63813	730	0.02358		
455	0.62034	595	0.63483	735	0.01999		
460	0.42856	600	0.62406	740	0.01695		
465	0.31457	605	0.60572	745	0.01438		
470	0.24539	610	0.58025	750	0.01221		
475	0.19006	615	0.54996	755	0.01043		
480	0.17573	620	0.51362	760	0.00886		
485	0.19134	625	0.47518	765	0.00756		

IES TM-30-18 Color Rendition Report



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

x 0.3779
 y 0.3781
 u' 0.2229
 v' 0.5018

CIE 13.3-1995
(CRI)
 R_a 80
 R_g -8

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21106.

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]EN-[2,8]Jx-xxx-xx

Electrical Measurements:

Input Voltage: 120.0 (VAC)
 Input current: 1.92 (A)
 Input Power: 229.83 (W)
 Power Factor: 0.9954

Photometric measurements:

Absolute Luminous Flux: 35884.1 (lumens)
 Luminous Efficacy: 156.1 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	25193	25238	25243	25246	25193	
5.00	24068	24593	25190	24512	23392	2453
15.00	16880	19708	24393	19362	15933	5155
25.00	12707	14245	22635	13942	12477	6583
35.00	10876	11316	19948	11224	10555	7544
45.00	4802	9069	16310	9049	4016	5467
55.00	448	3674	11779	3501	383	2359
65.00	152	474	6890	404	145	1056
75.00	112	135	2163	125	100	390
85.00	23	30	84	28	15	17
90.00	2	2	4	2	1	

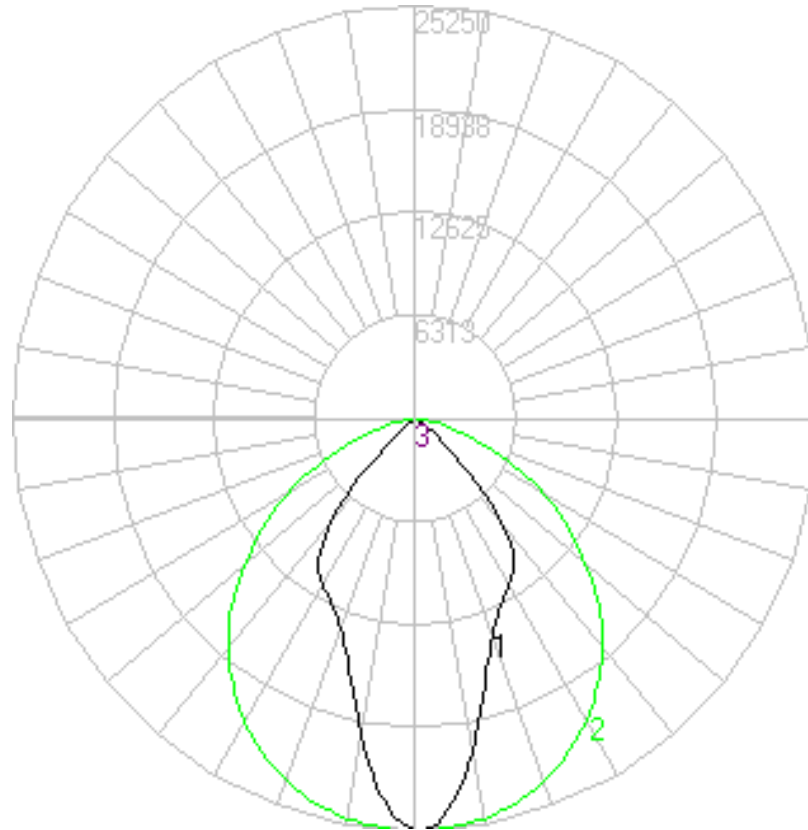
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	15098.25	42.07	42.07
0 to 40	23102.43	64.38	64.38
0 to 60	33705.24	93.93	93.93
0 to 90	35884.13	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	35884.13	100.00	100.00

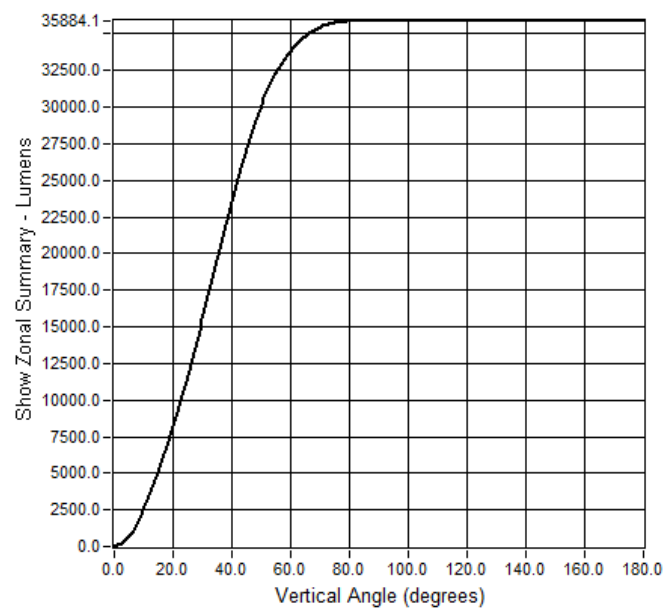
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



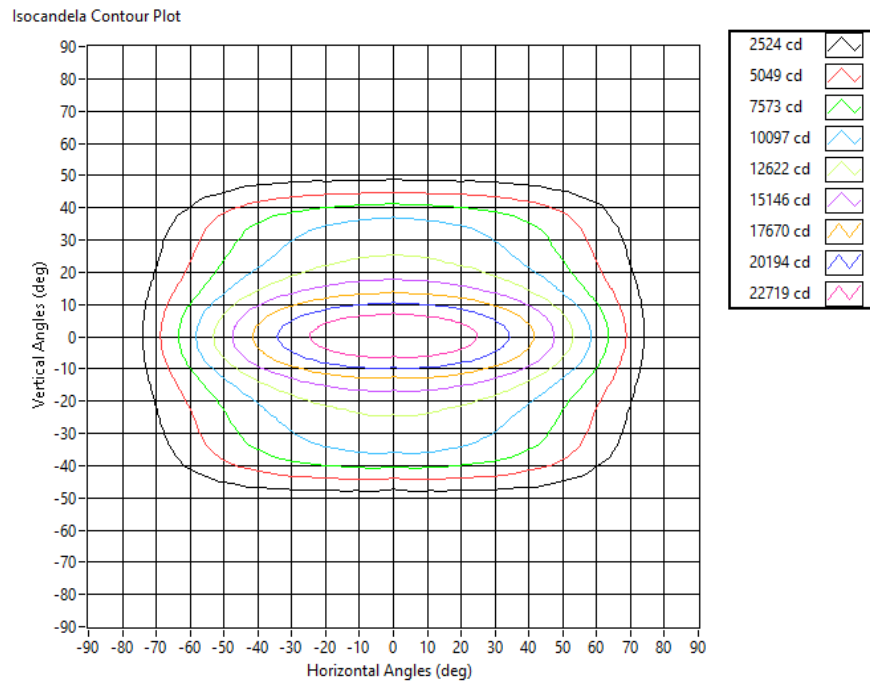
Zonal Flux Graph



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	1.88	5.14	6310.2
4	3.76	10.28	1577.6
6	5.64	15.42	701.1
8	7.52	20.57	394.4
10	9.40	25.71	252.4
12	11.28	30.85	175.3
14	13.16	35.99	128.8
16	15.04	41.13	98.6
18	16.92	46.27	77.9
20	18.80	51.42	63.1

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