

Test Report

Report Number: L21104

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]-[L,Z]MN-[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 15, 2021 through July 15, 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: L21104

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

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

Report Summary

Sample number L21104

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]MN-[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:	36455 (lumens)	36416 (lumens)
Electrical Power:	228.6 (W)	228.7 (W)
Luminous Efficacy:	159.5 (lumens/W)	159.2 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 228.57 (W)
 Power Factor (120VAC): 0.9963
 Current ATHD % (120VAC): 4.77
 Input Power (277VAC): 220.80 (W)
 Power Factor (277VAC): 0.9750
 Current ATHD % (277VAC): 8.50

Color Measurements:

Correlated Color Temperature (CCT): 4079
 Color Rendering Index (CRI): 80.30
 Chromaticity Coordinate (x): 0.378
 Chromaticity Coordinate (y): 0.379
 Chromaticity Coordinate (u'): 0.223
 Chromaticity Coordinate (v'): 0.502

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21104.

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

Test Conditions:

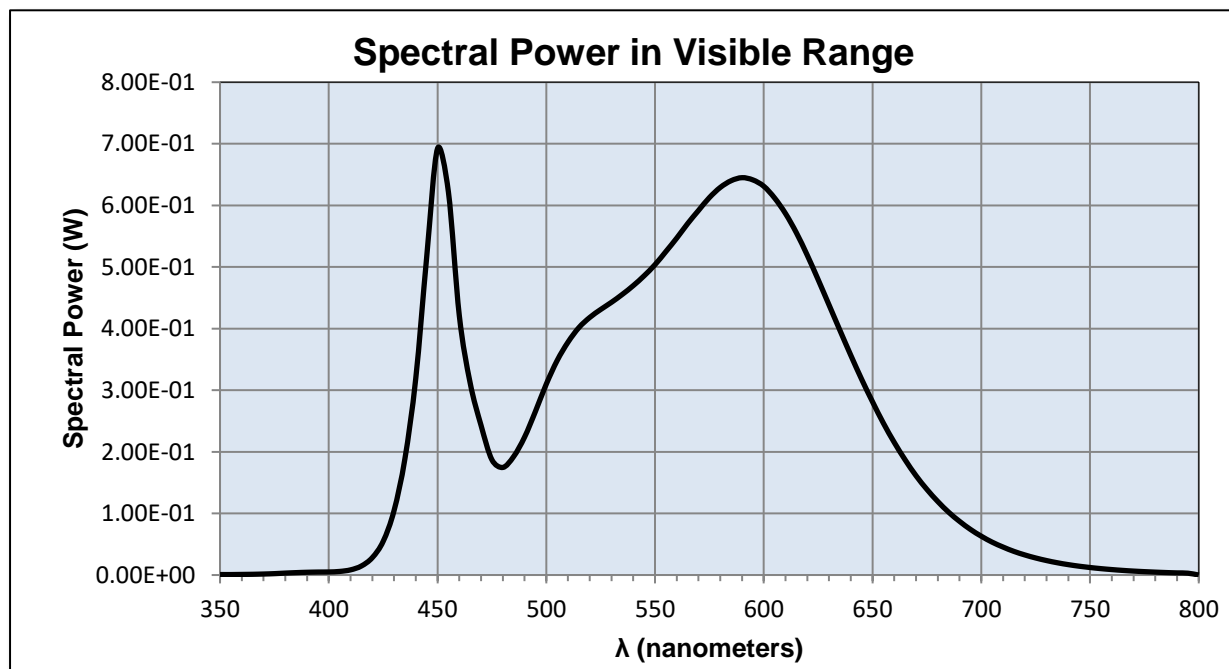
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input Current: 1.937 (A)
Input Power: 228.57 (W)
Input Power Factor: 0.9963
Current ATHD: 4.77 (%)

Photometric measurements:

Luminous Flux: 36454.7 (lumens)
Luminous Efficacy: 159.5 (lumens/W)
Correlated Color Temperature (CCT): 4079 (K)
CRI -Ra: 80.30
CRI -R9: -8.64
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: 82.4
TM30_Rg: 94.0
TM30_Rcs_hue1: -14.06 %



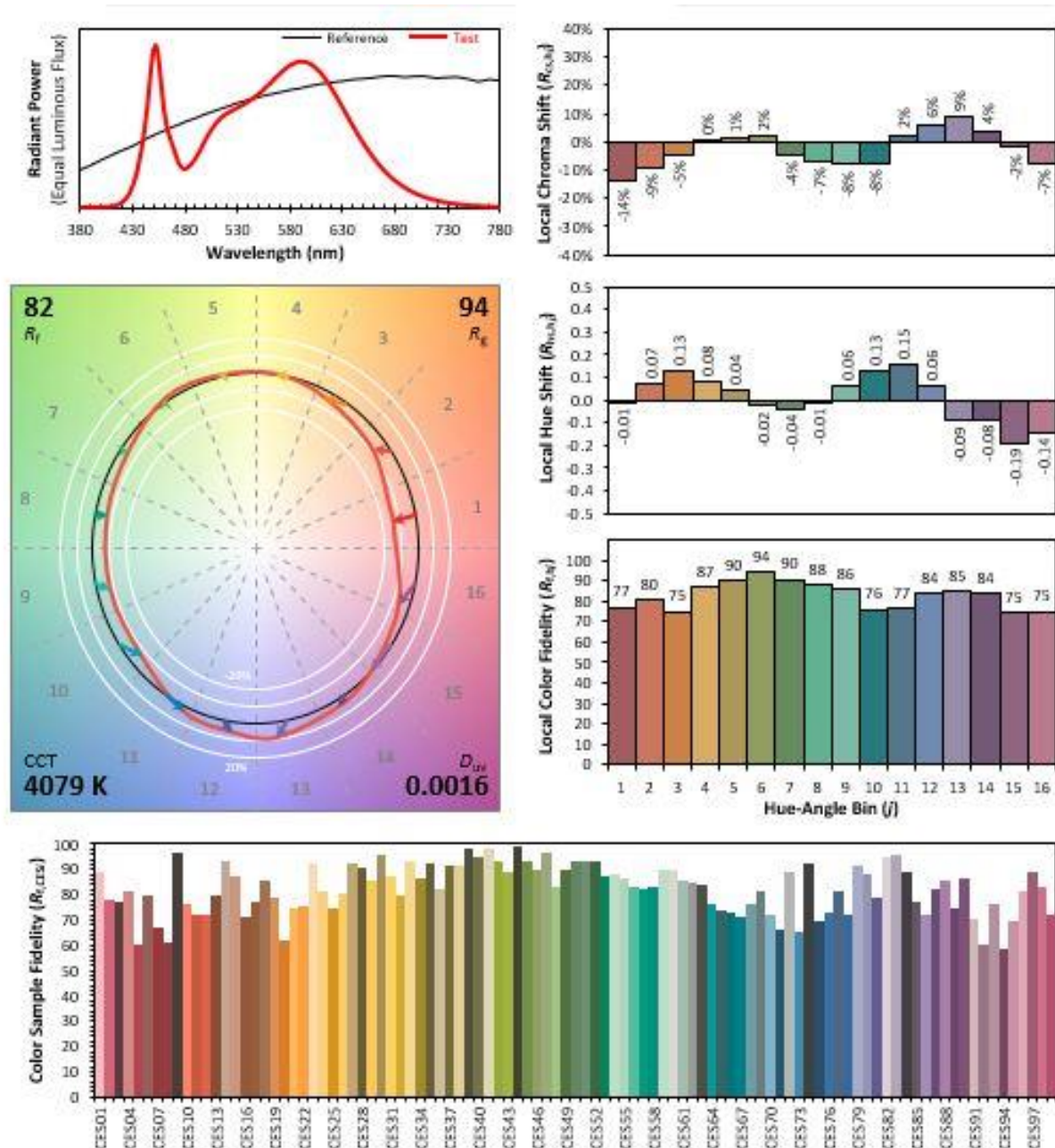
Test Results: Integrating Sphere

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	0.00083	490	0.22369	630	0.43844	770	0.00639
355	0.00077	495	0.26545	635	0.39729	775	0.00550
360	0.00100	500	0.30989	640	0.35674	780	0.00470
365	0.00121	505	0.34820	645	0.31775	785	0.00402
370	0.00164	510	0.37812	650	0.28121	790	0.00344
375	0.00224	515	0.40165	655	0.24650	795	0.00297
380	0.00313	520	0.41817	660	0.21523	800	0.00253
385	0.00390	525	0.43100	665	0.18690		
390	0.00447	530	0.44279	670	0.16128		
395	0.00483	535	0.45570	675	0.13907		
400	0.00498	540	0.46981	680	0.11937		
405	0.00584	545	0.48577	685	0.10198		
410	0.00840	550	0.50385	690	0.08717		
415	0.01468	555	0.52513	695	0.07409		
420	0.02818	560	0.54701	700	0.06304		
425	0.05463	565	0.57048	705	0.05338		
430	0.10451	570	0.59183	710	0.04542		
435	0.18874	575	0.61267	715	0.03839		
440	0.31926	580	0.62916	720	0.03264		
445	0.51540	585	0.64013	725	0.02768		
450	0.69232	590	0.64502	730	0.02350		
455	0.62187	595	0.64139	735	0.01989		
460	0.42141	600	0.63113	740	0.01687		
465	0.31193	605	0.61192	745	0.01433		
470	0.24304	610	0.58671	750	0.01221		
475	0.18710	615	0.55552	755	0.01038		
480	0.17460	620	0.51912	760	0.00885		
485	0.19238	625	0.47953	765	0.00751		

IES TM-30-18 Color Rendition Report



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

x 0.3781
 y 0.3786
 u' 0.2228
 v' 0.5020

CIE 13.3-1995
(CRI)
 R_a 80
 R_g -9

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21104.

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

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input current: 1.91 (A)
Input Power: 228.70 (W)
Power Factor: 0.9955

Photometric measurements:

Absolute Luminous Flux: 36415.7 (lumens)
Luminous Efficacy: 159.2 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	12564	12560	12570	12588	12564	
5.00	12654	12656	12615	12561	12506	1277
15.00	13000	13031	12888	12668	12572	3632
25.00	13532	13625	13366	12931	12722	6107
35.00	13387	13536	13149	12573	12082	8083
45.00	11368	11538	11083	10450	9511	8254
55.00	7262	7479	7082	6509	5360	5902
65.00	2952	3150	2987	2680	2056	2647
75.00	903	976	942	881	710	903
85.00	426	443	438	428	393	327
90.00	361	371	370	364	341	

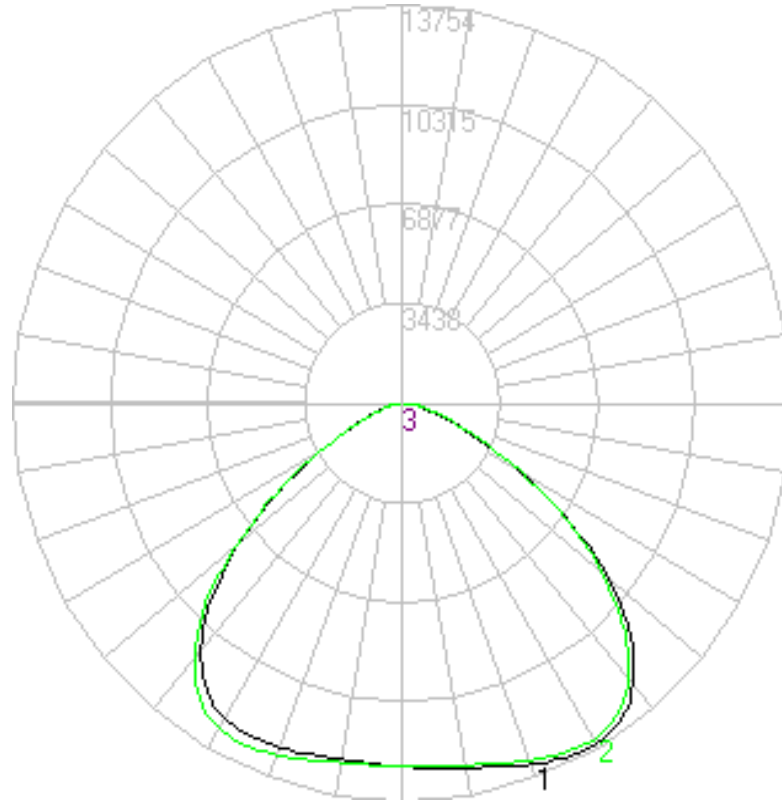
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10934.14	30.03	30.03
0 to 40	18894.20	51.88	51.88
0 to 60	32517.20	89.29	89.29
0 to 90	36415.68	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	36415.68	100.00	100.00

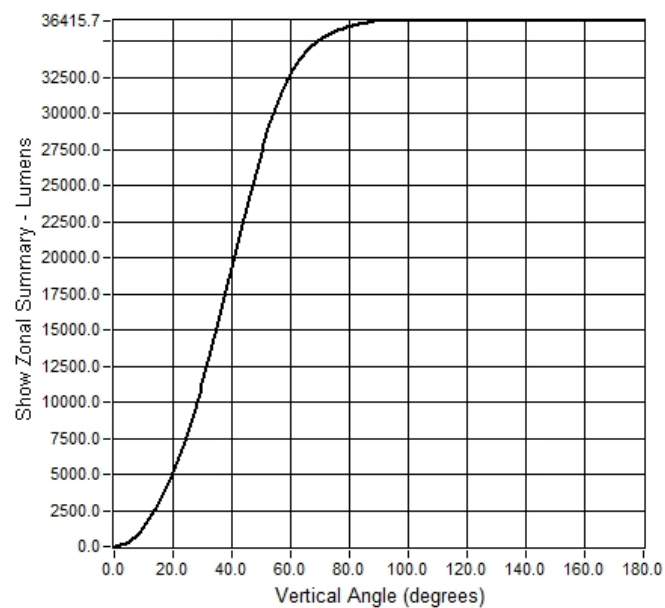
Test Results: Goniometer

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Polar Plot:



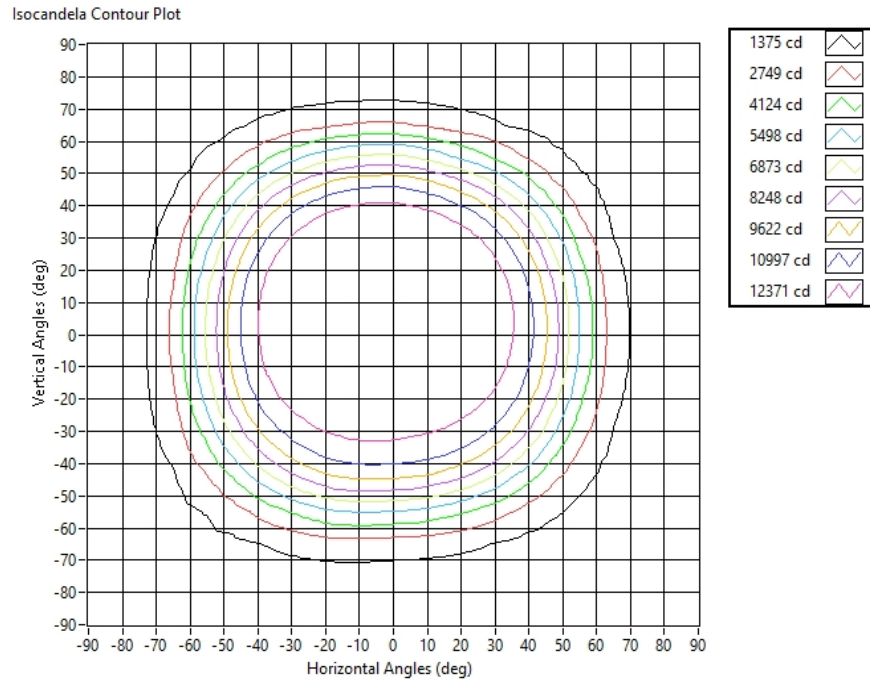
Zonal Flux Graph



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	5.54	5.73	3142.6
4	11.09	11.47	785.6
6	16.63	17.20	349.2
8	22.18	22.93	196.4
10	27.72	28.66	125.7
12	33.27	34.40	87.3
14	38.81	40.13	64.1
16	44.36	45.86	49.1
18	49.90	51.59	38.8
20	55.45	57.33	31.4

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