

Test Report

Report Number: L21096

Date: Jul 19, 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]RN-[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 9, 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: L21096

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

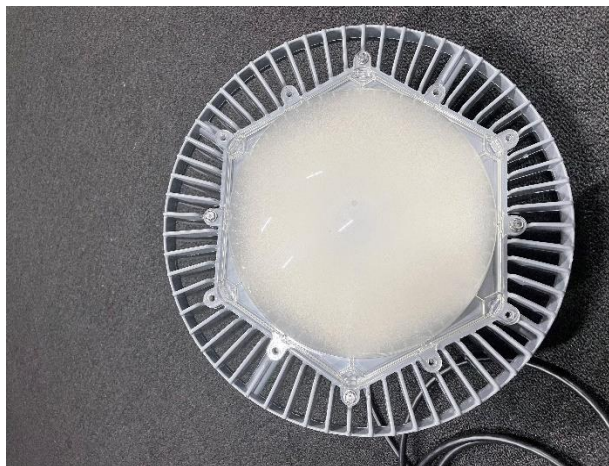
Model Number: [K,V][C,E,F,W][D,U]-[L,Z]RN-[2,8]Jx-xxx-xx

Report Summary

Sample number L21096

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]RN-[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:	39325 (lumens)	38577 (lumens)
Electrical Power:	229.4 (W)	228.8 (W)
Luminous Efficacy:	171.4 (lumens/W)	168.6 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 229.4 (W)
 Power Factor (120VAC): 0.9963
 Current ATHD % (120VAC): 4.72
 Input Power (277VAC): 221.6 (W)
 Power Factor (277VAC): 0.975
 Current ATHD % (277VAC): 8.49

Color Measurements:

Correlated Color Temperature (CCT): 4086
 Color Rendering Index (CRI): 80.38
 Chromaticity Coordinate (x): 0.378
 Chromaticity Coordinate (y): 0.378
 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 L21096.

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

Test Conditions:

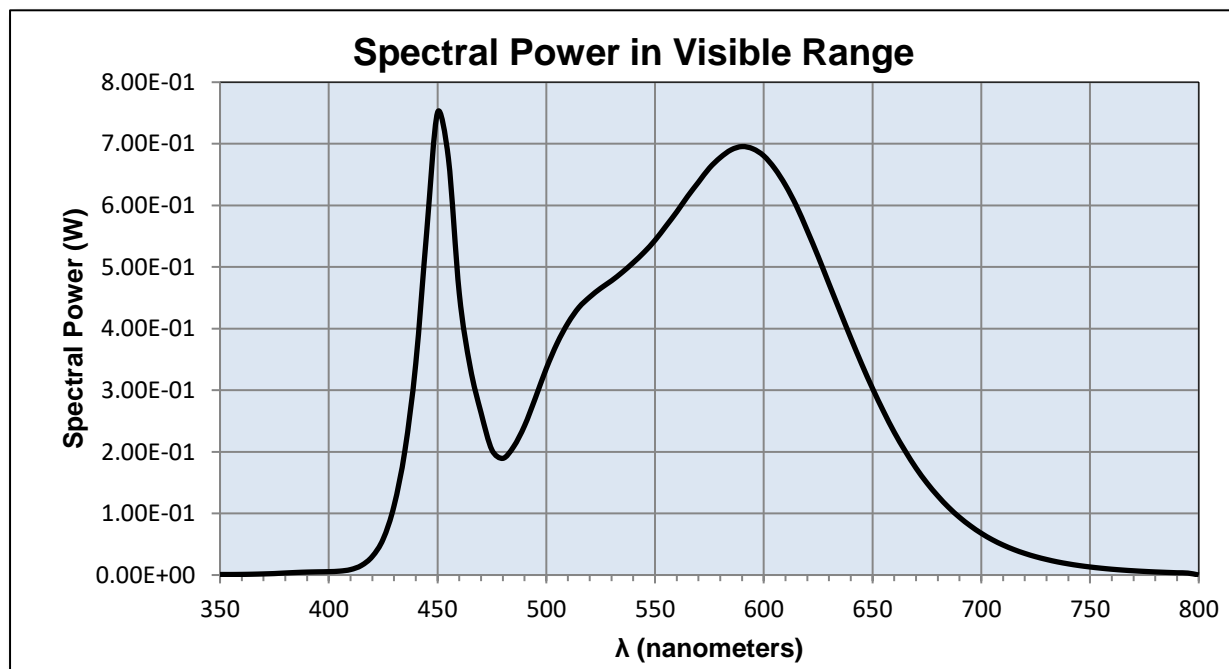
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 1.94 (A)
Input Power: 229.4 (W)
Input Power Factor: 0.9963
Current ATHD: 4.72 (%)

Photometric measurements:

Luminous Flux: 39324.8 (lumens)
Luminous Efficacy: 171.4 (lumens/W)
Correlated Color Temperature (CCT): 4086 (K)
CRI -Ra: 80.38
CRI -R9: -8.39
DUV: 0.0016
CIE Coordinate (x): 0.378
CIE Coordinate (y): 0.378
CIE Coordinate (u'): 0.223
CIE Coordinate (v'): 0.502
TM30_Rf: 82.4
TM30_Rg: 94.0
TM30_Rcs_hue1: -14.04 %



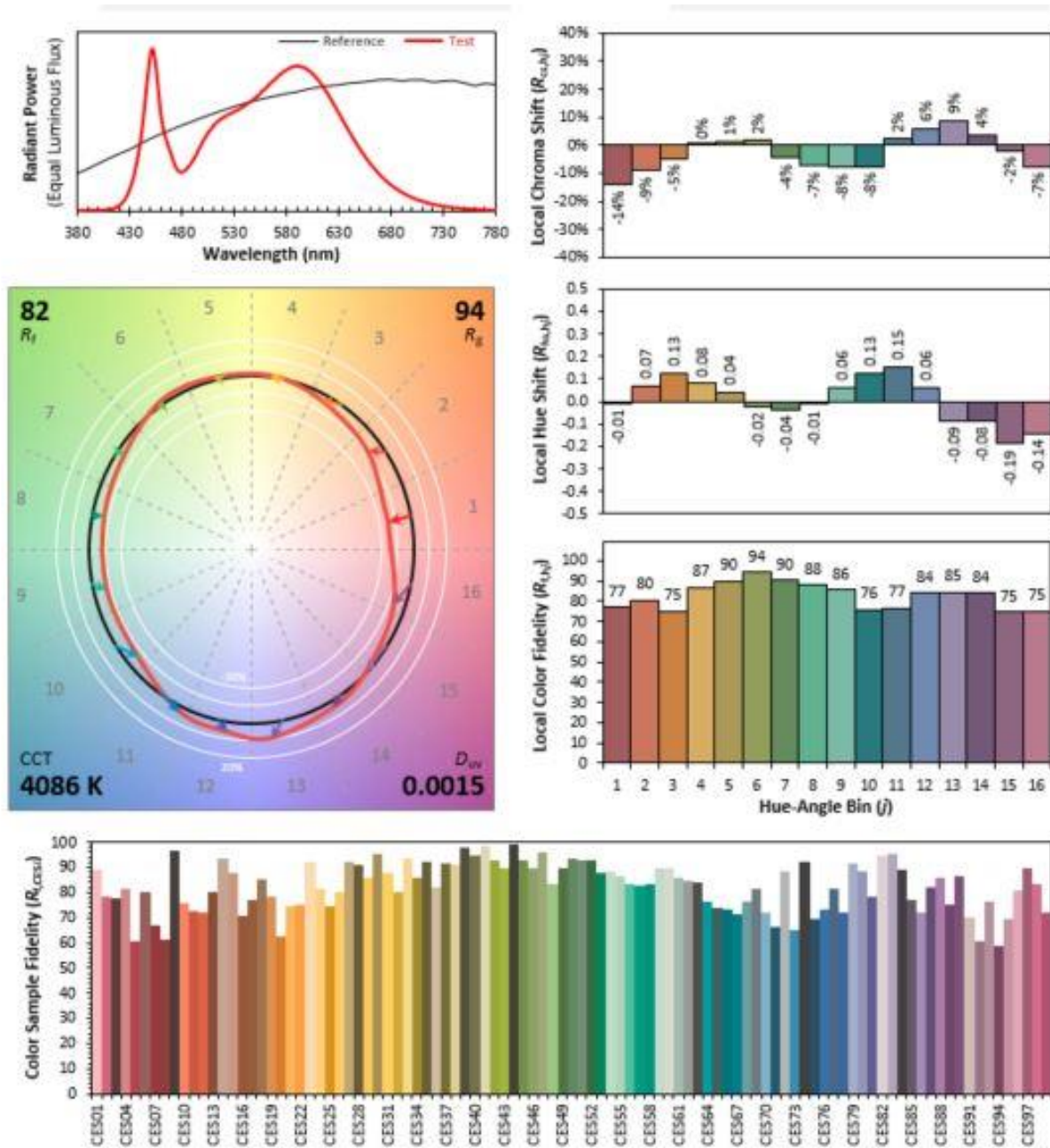
Test Results: Integrating Sphere

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	0.00088	490	0.24216	630	0.47263	770	0.00685
355	0.00086	495	0.28748	635	0.42856	775	0.00587
360	0.00103	500	0.33522	640	0.38484	780	0.00499
365	0.00134	505	0.37628	645	0.34268	785	0.00433
370	0.00179	510	0.40919	650	0.30301	790	0.00368
375	0.00239	515	0.43438	655	0.26603	795	0.00315
380	0.00333	520	0.45129	660	0.23172	800	0.00273
385	0.00414	525	0.46549	665	0.20142		
390	0.00480	530	0.47773	670	0.17367		
395	0.00518	535	0.49166	675	0.14957		
400	0.00547	540	0.50712	680	0.12846		
405	0.00629	545	0.52398	685	0.10976		
410	0.00885	550	0.54342	690	0.09367		
415	0.01554	555	0.56626	695	0.07981		
420	0.03007	560	0.58958	700	0.06777		
425	0.05834	565	0.61478	705	0.05743		
430	0.11231	570	0.63778	710	0.04874		
435	0.20216	575	0.66062	715	0.04132		
440	0.34332	580	0.67767	720	0.03508		
445	0.55584	585	0.69025	725	0.02977		
450	0.75070	590	0.69555	730	0.02525		
455	0.67632	595	0.69191	735	0.02133		
460	0.45691	600	0.68048	740	0.01812		
465	0.33797	605	0.66004	745	0.01535		
470	0.26348	610	0.63270	750	0.01307		
475	0.20305	615	0.59915	755	0.01112		
480	0.18939	620	0.55914	760	0.00944		
485	0.20843	625	0.51711	765	0.00806		

IES TM-30-18 Color Rendition Report



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

x 0.3778
 y 0.3784
 u' 0.2227
 v' 0.5019

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 L21096.

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

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 1.9134 (A)
Input Power: 228.8 (W)
Power Factor: 0.9955

Photometric measurements:

Absolute Luminous Flux: 38576.8 (lumens)
Luminous Efficacy: 168.6 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	13466	13468	13456	13462	13466	
5.00	13436	13438	13437	13440	13408	1362
15.00	13116	13141	13144	13140	13109	3720
25.00	12374	12431	12442	12446	12424	5746
35.00	11136	11202	11239	11262	11236	7038
45.00	9655	9695	9796	9788	9754	7532
55.00	7720	7829	7992	7940	7832	7025
65.00	4259	4603	4711	4488	4302	4368
75.00	1344	1432	1448	1438	1366	1467
85.00	498	504	522	556	523	385
90.00	361	364	378	398	381	

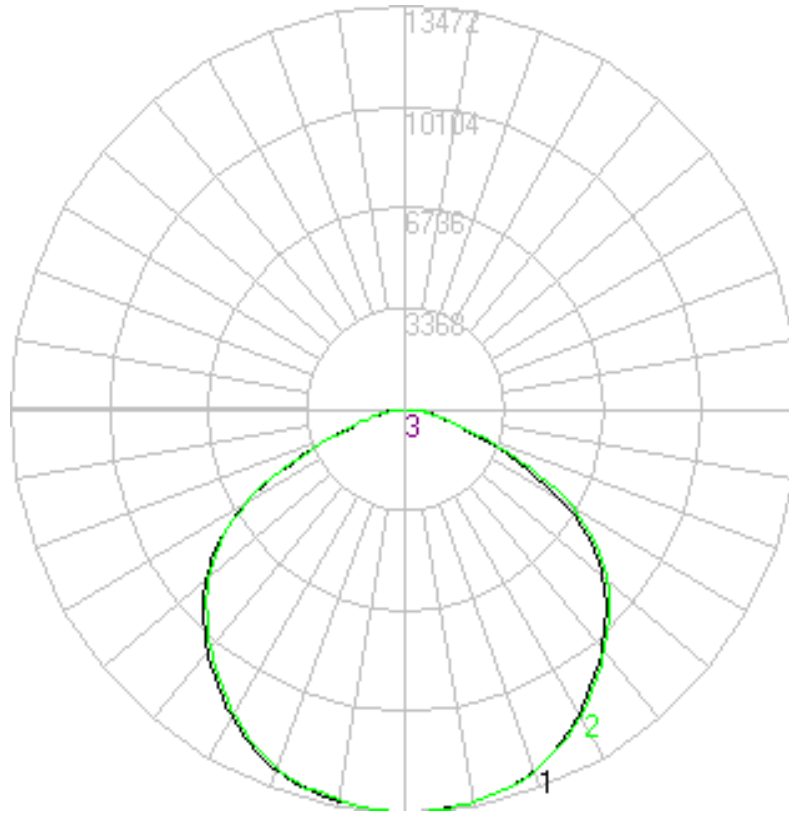
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10703.13	27.75	27.75
0 to 40	17698.86	45.88	45.88
0 to 60	32083.77	83.17	83.17
0 to 90	38576.78	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	38576.78	100.00	100.00

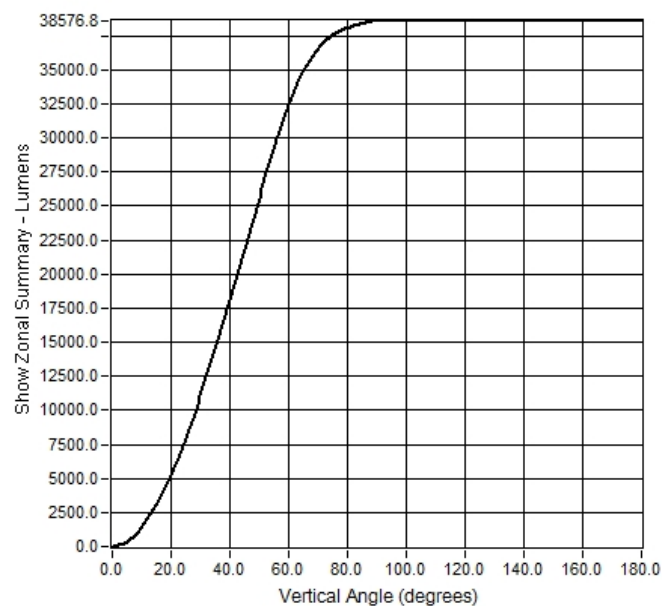
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



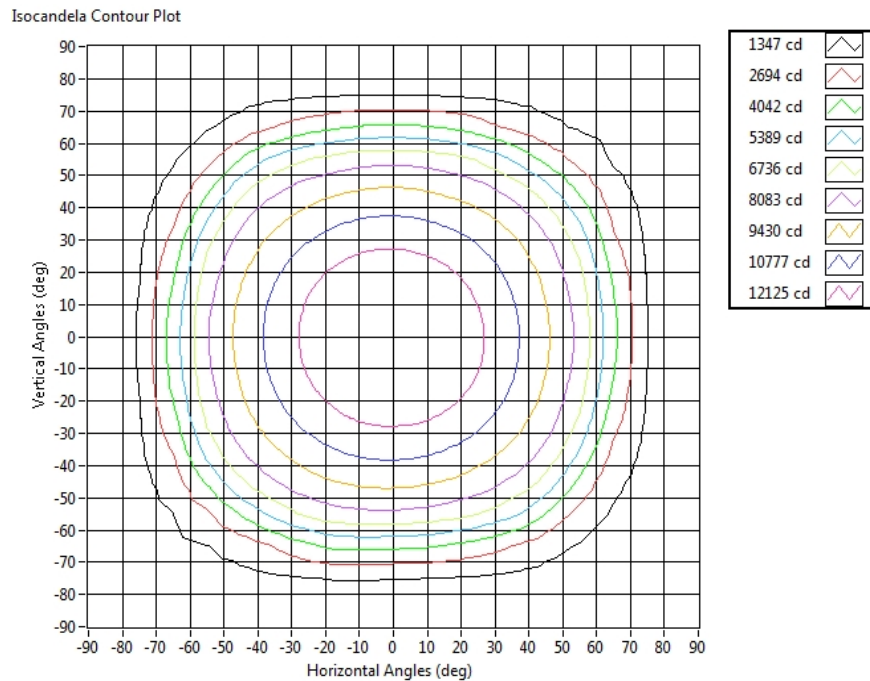
Zonal Flux Graph



Test Results: Goniometer

Results continued from previous page.

Illuminance Plot:



Illuminance-Cone of Light:

Beam Angle Information			
Mounting Height (ft)	Beam Cone Width (ft)	Orthogonal Beam Cone Width (ft)	Projected Illuminance (fc)
2	6.50	6.62	3365.1
4	12.99	13.24	841.3
6	19.49	19.86	373.9
8	25.98	26.47	210.3
10	32.48	33.09	134.6
12	38.97	39.71	93.5
14	45.47	46.33	68.7
16	51.97	52.95	52.6
18	58.46	59.57	41.5
20	64.96	66.18	33.7

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