

Test Report

Report Number: L21103

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]-[7,R]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 16, 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: L21103

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

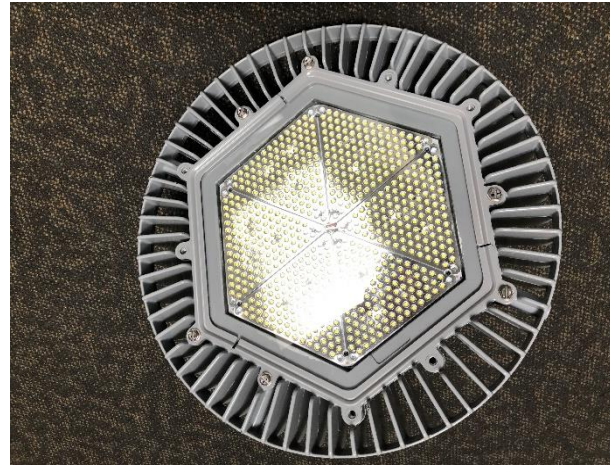
Model Number: [K,V][C,E,F,W][D,U]-[7,R]MN-[2,8]Jx-xxx-xx

Report Summary

Sample number L21103

Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]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:	36900 (lumens)	37328 (lumens)
Electrical Power:	228.9 (W)	228.8 (W)
Luminous Efficacy:	161.2 (lumens/W)	163.2 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 228.9 (W)
 Power Factor (120VAC): 0.9962
 Current ATHD % (120VAC): 4.79
 Input Power (277VAC): 221.3 (W)
 Power Factor (277VAC): 0.9753
 Current ATHD % (277VAC): 8.51

Color Measurements:

Correlated Color Temperature (CCT): 4109
 Color Rendering Index (CRI): 80.30
 Chromaticity Coordinate (x): 0.377
 Chromaticity Coordinate (y): 0.378
 Chromaticity Coordinate (u'): 0.222
 Chromaticity Coordinate (v'): 0.501
 DUV: 0.0015

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21103.

Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]MN-[2,8]Jx-xxx-xx

Test Conditions:

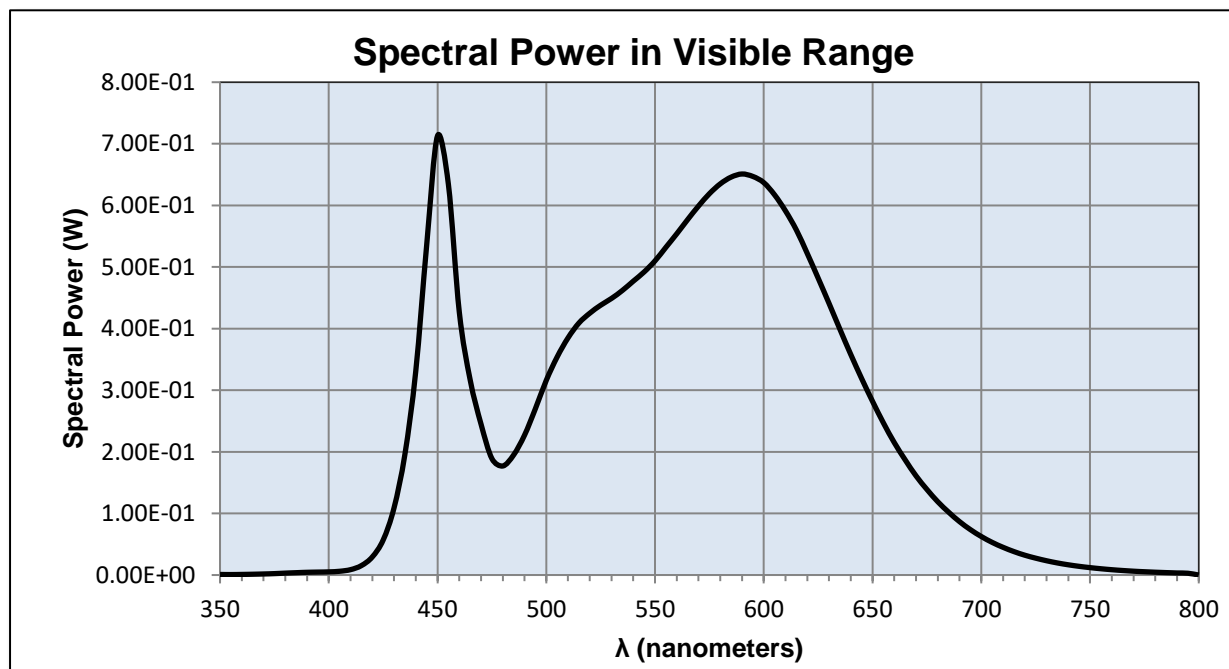
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input Current: 1.913 (A)
Input Power: 228.87 (W)
Input Power Factor: 0.9962
Current ATHD: 4.79 (%)

Photometric measurements:

Luminous Flux: 36900.0 (lumens)
Luminous Efficacy: 161.2 (lumens/W)
Correlated Color Temperature (CCT): 4109 (K)
CRI -Ra: 80.30
CRI -R9: -8.72
DUV: 0.0015
CIE Coordinate (x): 0.377
CIE Coordinate (y): 0.378
CIE Coordinate (u'): 0.222
CIE Coordinate (v'): 0.501
TM30_Rf: 82.3
TM30_Rg: 94.1
TM30_Rcs_hue1: -14.09 %



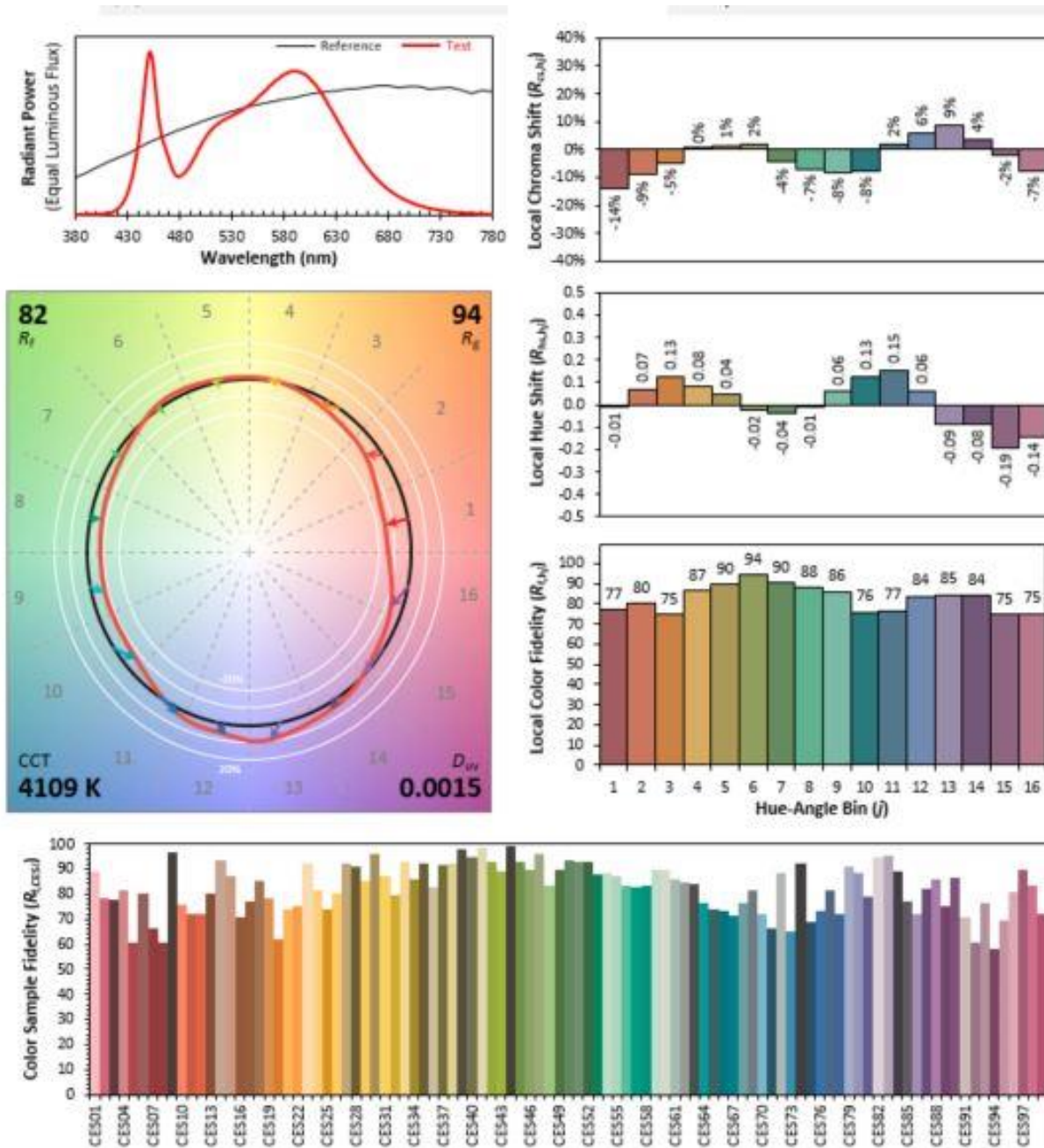
Test Results: Integrating Sphere

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	0.00092	490	0.22700	630	0.44100	770	0.00622
355	0.00077	495	0.27000	635	0.39900	775	0.00535
360	0.00096	500	0.31600	640	0.35800	780	0.00459
365	0.00128	505	0.35400	645	0.31900	785	0.00394
370	0.00171	510	0.38500	650	0.28200	790	0.00334
375	0.00227	515	0.40900	655	0.24700	795	0.00287
380	0.00309	520	0.42500	660	0.21500	800	0.00248
385	0.00381	525	0.43800	665	0.18700		
390	0.00445	530	0.44900	670	0.16100		
395	0.00478	535	0.46200	675	0.13900		
400	0.00512	540	0.47700	680	0.11900		
405	0.00608	545	0.49200	685	0.10200		
410	0.00873	550	0.51000	690	0.08670		
415	0.01530	555	0.53200	695	0.07370		
420	0.02930	560	0.55400	700	0.06260		
425	0.05680	565	0.57700	705	0.05300		
430	0.10900	570	0.59900	710	0.04500		
435	0.19600	575	0.61900	715	0.03810		
440	0.33100	580	0.63500	720	0.03220		
445	0.53500	585	0.64600	725	0.02740		
450	0.71300	590	0.65100	730	0.02320		
455	0.63400	595	0.64700	735	0.01960		
460	0.42700	600	0.63700	740	0.01660		
465	0.31700	605	0.61700	745	0.01410		
470	0.24500	610	0.59100	750	0.01200		
475	0.18900	615	0.56000	755	0.01020		
480	0.17700	620	0.52200	760	0.00864		
485	0.19500	625	0.48200	765	0.00735		

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 0.3775
 u' 0.2223
 v' 0.5014

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 L21103.
Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]MN-[2,8]Jx-xxx-xx

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input current: 1.91 (A)
Input Power: 228.75 (W)
Power Factor: 0.9955

Photometric measurements:

Absolute Luminous Flux: 37327.7 (lumens)
Luminous Efficacy: 163.2 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	13617	13619	13609	13634	13617	
5.00	13666	13683	13641	13599	13523	1381
15.00	14167	14206	14076	13925	13939	3985
25.00	15760	15700	15256	14840	14927	7088
35.00	16036	15803	15247	14657	14695	9622
45.00	13077	13110	12528	11895	10990	9458
55.00	6855	7348	6680	6066	4507	5439
65.00	1545	1646	1455	1234	818	1271
75.00	96	100	97	88	75	94
85.00	14	16	15	12	5	7
90.00	1	1	1	1	1	

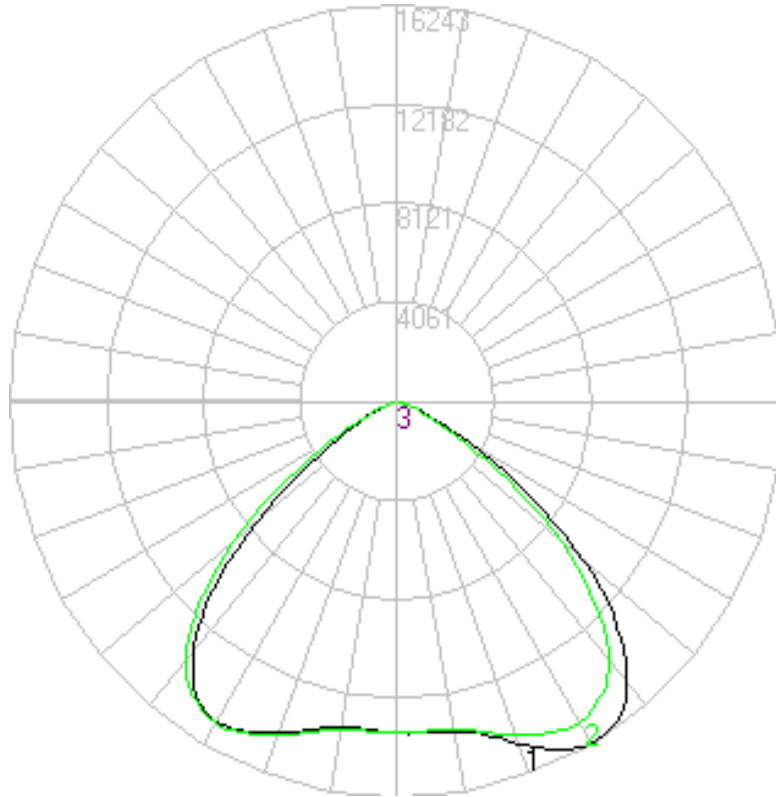
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	12314.05	32.99	32.99
0 to 40	21659.49	58.03	58.03
0 to 60	35902.01	96.18	96.18
0 to 90	37327.67	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37327.67	100.00	100.00

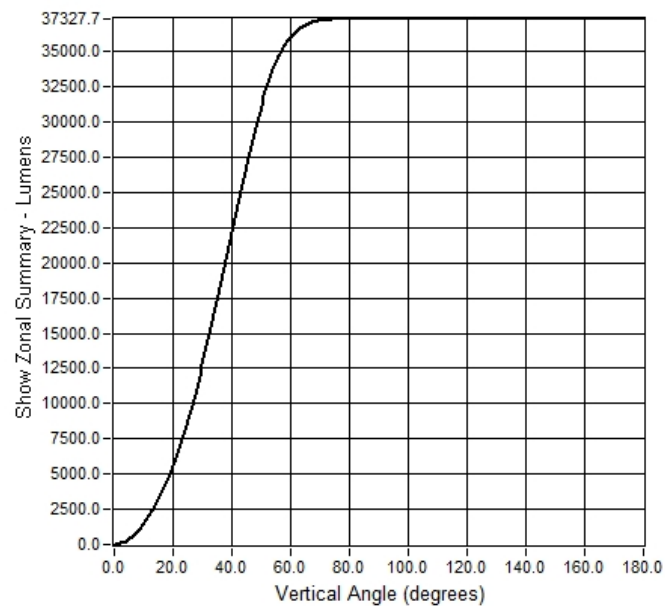
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



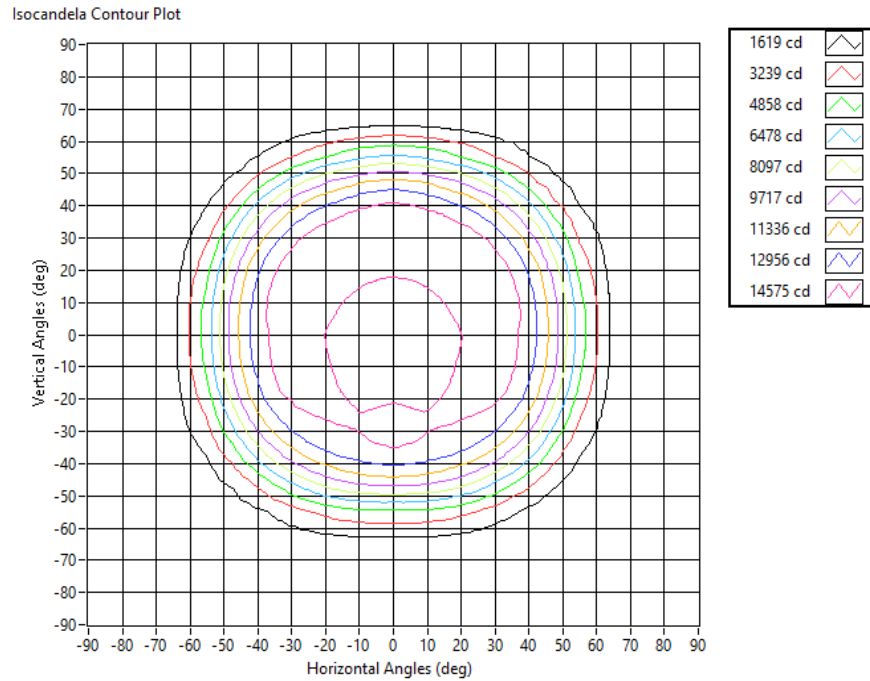
Zonal Flux Graph



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	5.48	5.25	3405.3
4	10.97	10.51	851.3
6	16.45	15.76	378.4
8	21.94	21.02	212.8
10	27.42	26.27	136.2
12	32.90	31.52	94.6
14	38.39	36.78	69.5
16	43.87	42.03	53.2
18	49.35	47.28	42.0
20	54.84	52.54	34.1

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