

Test Report

Report Number: L21095

Date: Jul 15, 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]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 13, 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: L21095

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

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

Report Summary

Sample number L21095

Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]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:	39523 (lumens)	39357 (lumens)
Electrical Power:	228.8 (W)	229.1 (W)
Luminous Efficacy:	172.7 (lumens/W)	171.8 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 228.8 (W)
 Power Factor (120VAC): 0.9962
 Current ATHD % (120VAC): 4.74
 Input Power (277VAC): 221.1 (W)
 Power Factor (277VAC): 0.9710
 Current ATHD % (277VAC): 8.48

Color Measurements:

Correlated Color Temperature (CCT): 4113
 Color Rendering Index (CRI): 80.39
 Chromaticity Coordinate (x): 0.377
 Chromaticity Coordinate (y): 0.377
 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 L21095.

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

Test Conditions:

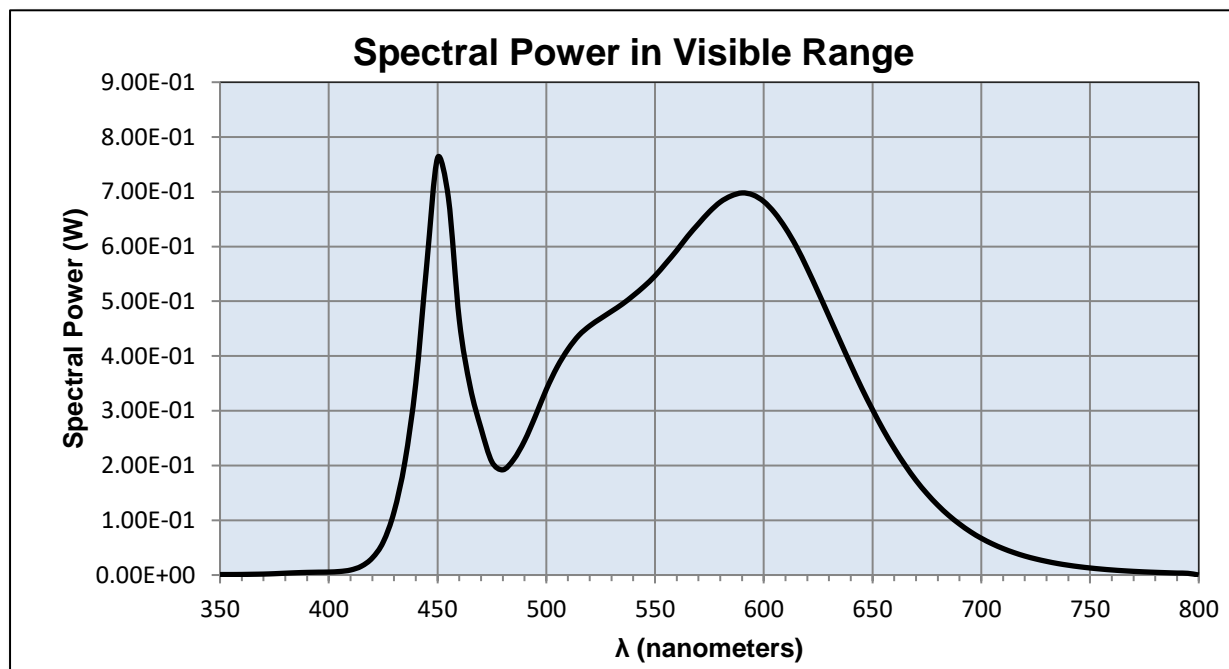
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 1.91 (A)
Input Power: 228.8 (W)
Input Power Factor: 0.9962
Current ATHD: 4.74 (%)

Photometric measurements:

Luminous Flux: 39522.82 (lumens)
Luminous Efficacy: 172.7 (lumens/W)
Correlated Color Temperature (CCT): 4113 (K)
CRI -Ra: 80.39
CRI -R9: -8.4969
DUV: 0.0015
CIE Coordinate (x): 0.377
CIE Coordinate (y): 0.377
CIE Coordinate (u'): 0.222
CIE Coordinate (v'): 0.501
TM30_Rf: 82.4
TM30_Rg: 94.0
TM30_Rcs_hue1: -14.09 %



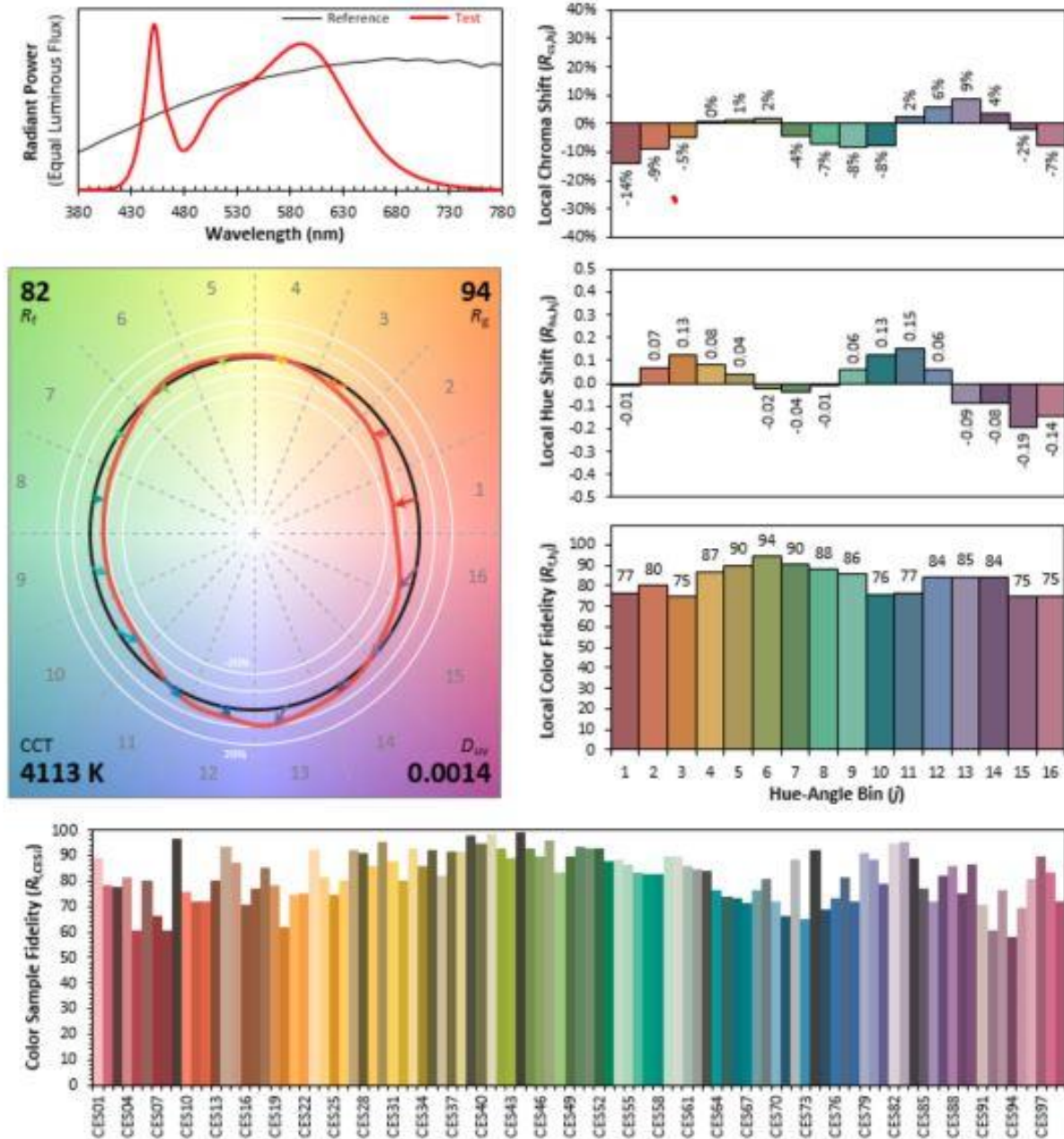
Test Results: Integrating Sphere

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	0.00093	490	0.24508	630	0.47248	770	0.00672
355	0.00093	495	0.29016	635	0.42805	775	0.00575
360	0.00105	500	0.33867	640	0.38398	780	0.00493
365	0.00141	505	0.37987	645	0.34150	785	0.00425
370	0.00172	510	0.41247	650	0.30206	790	0.00361
375	0.00243	515	0.43773	655	0.26472	795	0.00310
380	0.00332	520	0.45503	660	0.23107	800	0.00267
385	0.00418	525	0.46859	665	0.20045		
390	0.00481	530	0.48157	670	0.17281		
395	0.00518	535	0.49491	675	0.14881		
400	0.00546	540	0.51036	680	0.12758		
405	0.00644	545	0.52719	685	0.10904		
410	0.00916	550	0.54633	690	0.09311		
415	0.01611	555	0.56919	695	0.07907		
420	0.03111	560	0.59290	700	0.06720		
425	0.05998	565	0.61859	705	0.05706		
430	0.11525	570	0.64146	710	0.04841		
435	0.20686	575	0.66335	715	0.04097		
440	0.34983	580	0.68116	720	0.03466		
445	0.56486	585	0.69236	725	0.02946		
450	0.76159	590	0.69779	730	0.02495		
455	0.68871	595	0.69421	735	0.02107		
460	0.46592	600	0.68216	740	0.01788		
465	0.34411	605	0.66140	745	0.01516		
470	0.26791	610	0.63349	750	0.01288		
475	0.20655	615	0.59971	755	0.01092		
480	0.19210	620	0.55976	760	0.00928		
485	0.21098	625	0.51673	765	0.00787		

IES TM-30-18 Color Rendition Report



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

x 0.3765
 y 0.3773
 u' 0.2223
 v' 0.5012

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 L21095.
Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]RN-[2,8]Jx-xxx-xx

Electrical Measurements:

Input Voltage: 120.08 (VAC)
Input current: 1.9163 (A)
Input Power: 229.1 (W)
Power Factor: 0.9955

Photometric measurements:

Absolute Luminous Flux: 39357.3 (lumens)
Luminous Efficacy: 171.8 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	15197	15203	15210	15202	15197	
5.00	15154	15167	15163	15174	15133	1537
15.00	14861	14861	14882	14887	14865	4215
25.00	13995	14043	14075	14086	14031	6496
35.00	12451	12508	12567	12599	12490	7854
45.00	10409	10469	10532	10570	10436	8101
55.00	8036	8148	8235	8242	8075	7279
65.00	3420	4064	4154	3646	3448	3603
75.00	519	544	575	588	535	574
85.00	27	34	45	55	33	20
90.00	2	2	2	2	2	

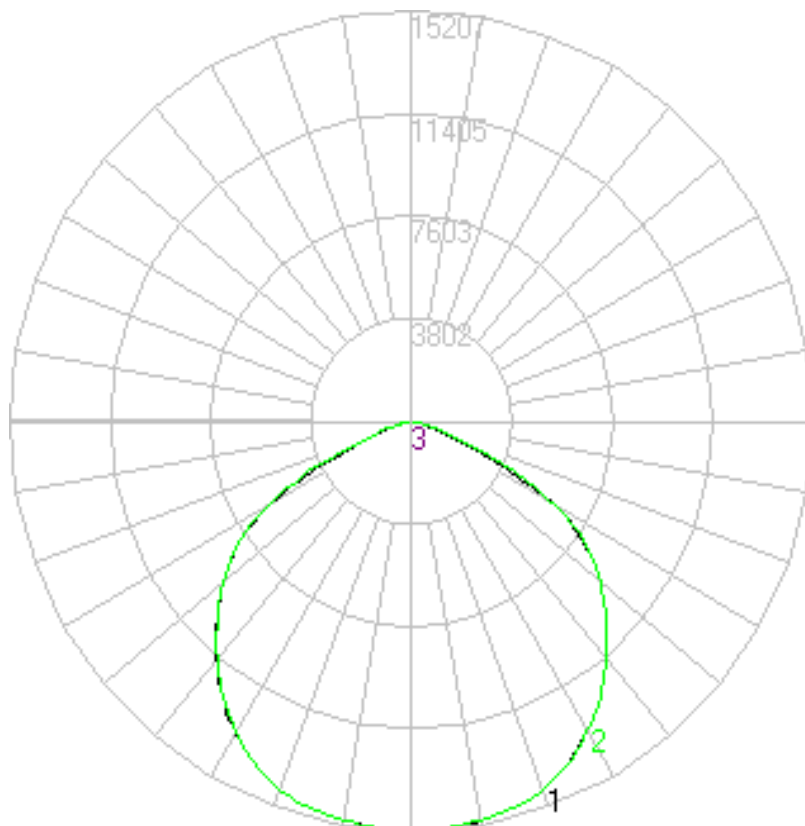
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	12099.11	30.74	30.74
0 to 40	19891.41	50.54	50.54
0 to 60	35059.03	89.08	89.08
0 to 90	39357.28	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	39357.28	100.00	100.00

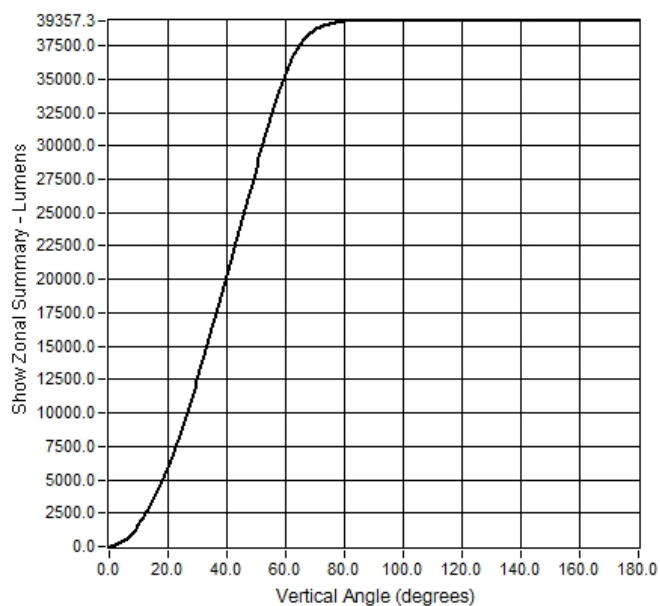
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



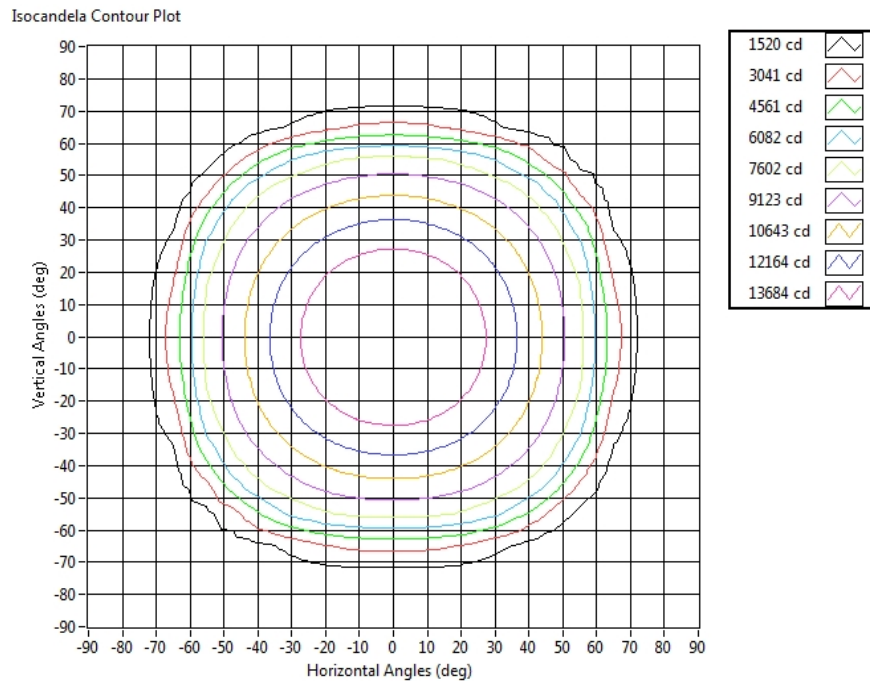
Zonal Flux Graph



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	6.05	6.02	3801.1
4	12.10	12.04	950.3
6	18.14	18.06	422.3
8	24.19	24.08	237.6
10	30.24	30.10	152.0
12	36.29	36.12	105.6
14	42.34	42.14	77.6
16	48.38	48.16	59.4
18	54.43	54.18	46.9
20	60.48	60.20	38.0

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