

Test Report

Report Number: L21100

Date: Jul 23, 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]NN-[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 20, 2021 through July 22, 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: L21100

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

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

Report Summary

Sample number L21100

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]NN-[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:	37333 (lumens)	37649 (lumens)
Electrical Power:	228.6 (W)	228.2 (W)
Luminous Efficacy:	163.3 (lumens/W)	165 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 228.6 (W)
 Power Factor (120VAC): 0.9961
 Current ATHD % (120VAC): 4.79
 Input Power (277VAC): 221.1 (W)
 Power Factor (277VAC): 0.9753
 Current ATHD % (277VAC): 8.50

Color Measurements:

Correlated Color Temperature (CCT): 4091
 Color Rendering Index (CRI): 80.3691
 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 L21100.

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

Test Conditions:

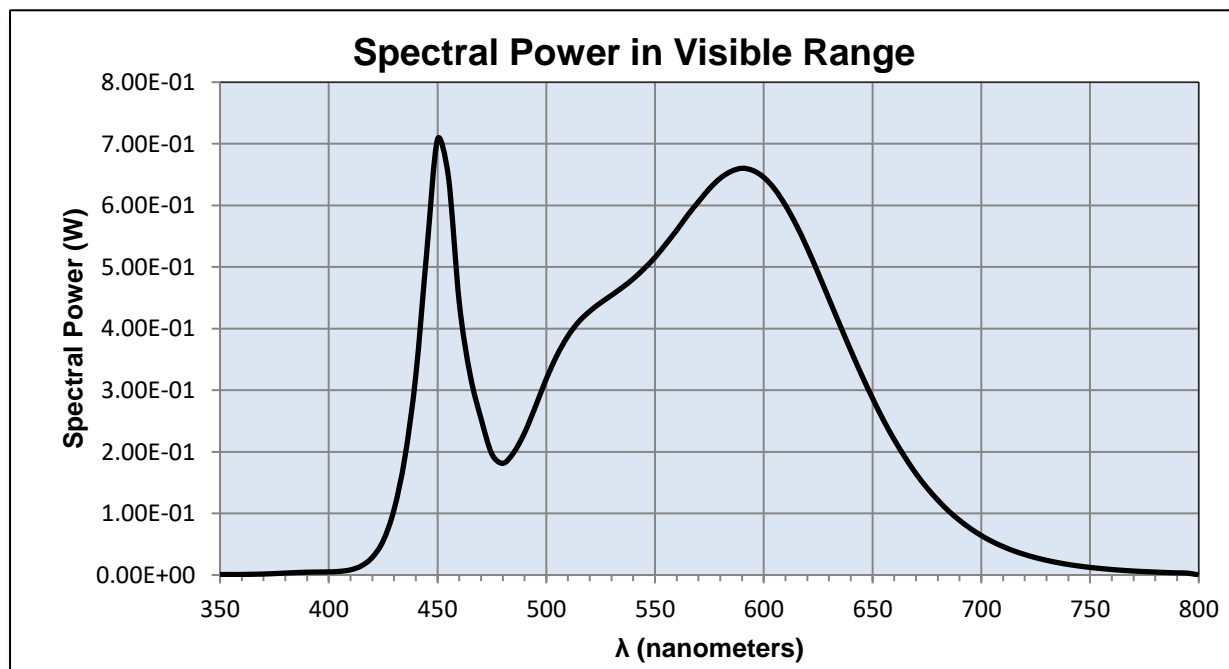
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 1.91 (A)
Input Power: 228.6 (W)
Input Power Factor: 0.9961
Current ATHD: 4.79 (%)

Photometric measurements:

Luminous Flux: 37333.3 (lumens)
Luminous Efficacy: 163.3 (lumens/W)
Correlated Color Temperature (CCT): 4091 (K)
CRI -Ra: 80.37
CRI -R9: -8.5218
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: 93.9
TM30_Rcs_hue1: -14.07 %



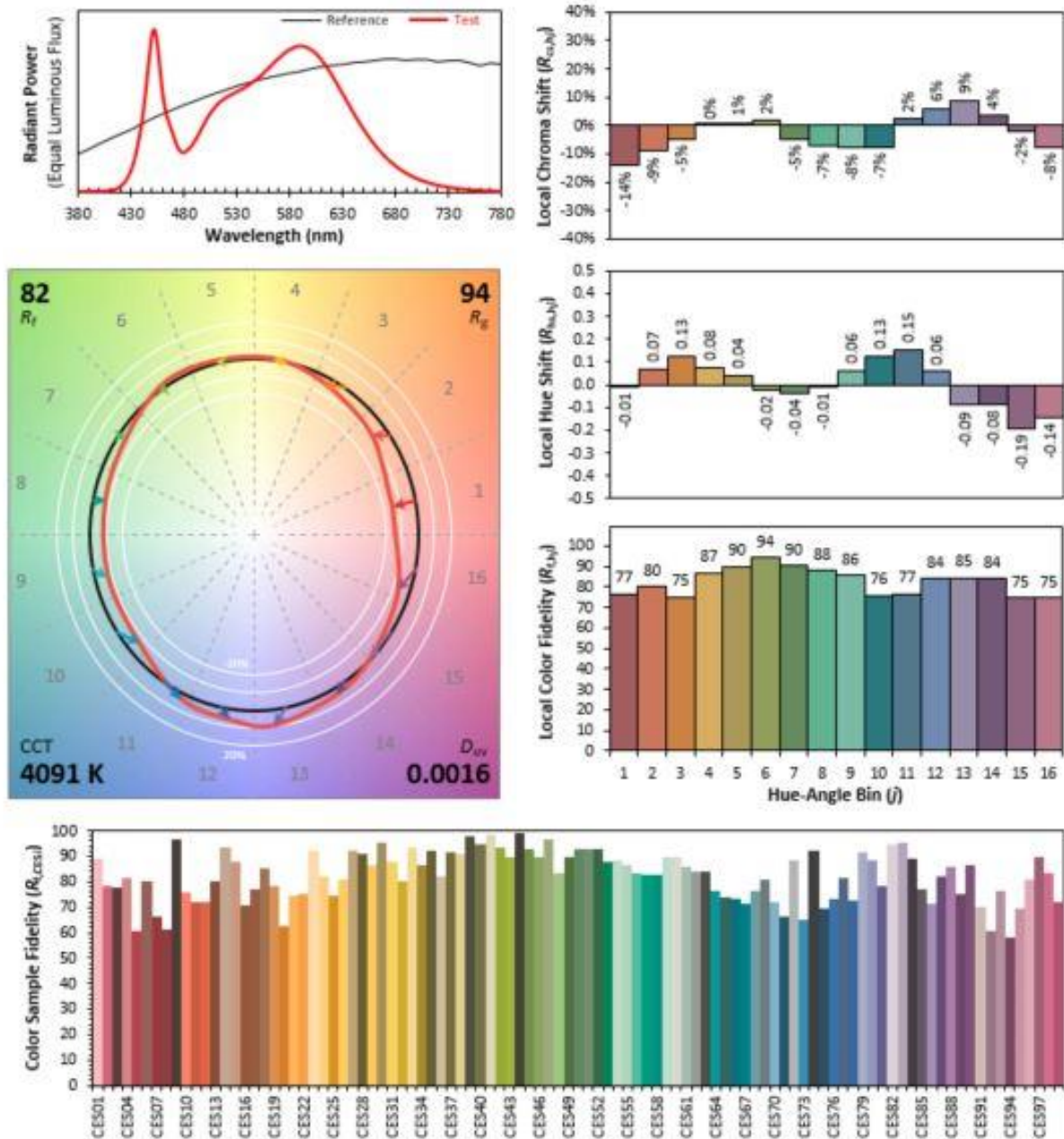
Test Results: Integrating Sphere

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	0.00080	490	0.23067	630	0.44798	770	0.00648
355	0.00086	495	0.27325	635	0.40602	775	0.00555
360	0.00090	500	0.31832	640	0.36457	780	0.00478
365	0.00122	505	0.35722	645	0.32466	785	0.00407
370	0.00164	510	0.38821	650	0.28705	790	0.00350
375	0.00232	515	0.41150	655	0.25161	795	0.00300
380	0.00317	520	0.42819	660	0.21966	800	0.00259
385	0.00397	525	0.44192	665	0.19084		
390	0.00459	530	0.45413	670	0.16452		
395	0.00488	535	0.46692	675	0.14170		
400	0.00510	540	0.48087	680	0.12170		
405	0.00591	545	0.49737	685	0.10385		
410	0.00849	550	0.51565	690	0.08875		
415	0.01485	555	0.53739	695	0.07555		
420	0.02866	560	0.55987	700	0.06416		
425	0.05548	565	0.58412	705	0.05442		
430	0.10617	570	0.60602	710	0.04621		
435	0.19108	575	0.62711	715	0.03914		
440	0.32342	580	0.64413	720	0.03327		
445	0.52240	585	0.65527	725	0.02817		
450	0.70730	590	0.66024	730	0.02388		
455	0.64642	595	0.65669	735	0.02023		
460	0.44169	600	0.64561	740	0.01714		
465	0.32501	605	0.62655	745	0.01456		
470	0.25407	610	0.59992	750	0.01238		
475	0.19623	615	0.56780	755	0.01053		
480	0.18133	620	0.53065	760	0.00896		
485	0.19867	625	0.49018	765	0.00762		

IES TM-30-18 Color Rendition Report



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

x 0.3775
 y 0.3782
 u' 0.2226
 v' 0.5018

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 L21100.

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

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 1.9054 (A)
Input Power: 228.2 (W)
Power Factor: 0.9955

Photometric measurements:

Absolute Luminous Flux: 37649 (lumens)
Luminous Efficacy: 165.0 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	27448	27336	27184	27088	27448	
5.00	25917	26377	27176	27802	27685	2733
15.00	20563	21419	22704	23759	22646	6233
25.00	14435	15112	15982	16693	15693	7123
35.00	10911	11195	11660	11999	11487	7134
45.00	8702	8923	9223	9411	9104	6977
55.00	5524	5935	6434	6732	6193	5427
65.00	1839	2142	2486	2672	2087	2124
75.00	586	656	708	712	602	667
85.00	354	378	390	389	369	296
90.00	324	344	351	352	347	

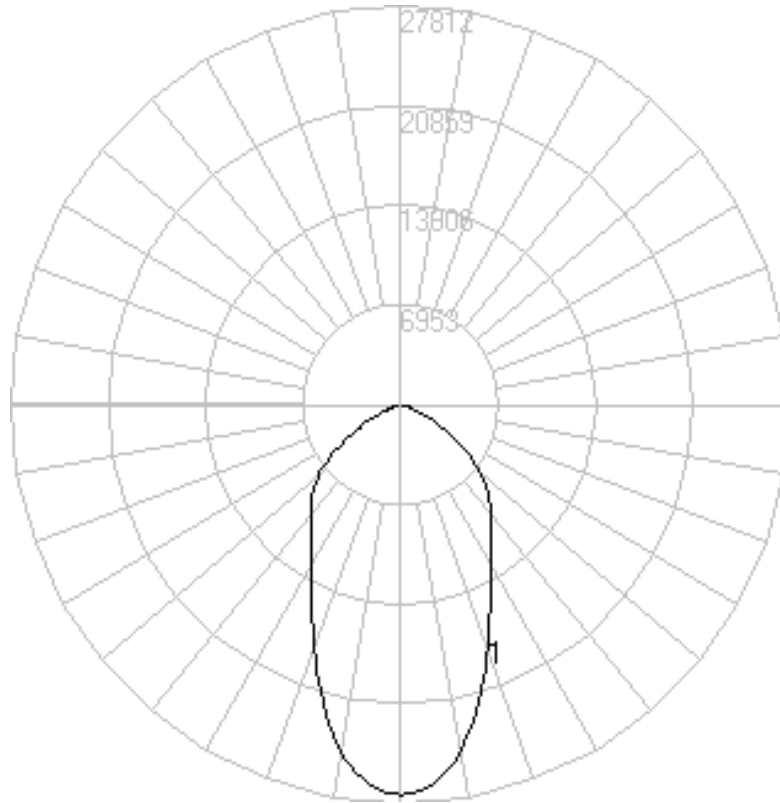
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	15440.26	41.01	41.01
0 to 40	22499.48	59.76	59.76
0 to 60	34463.01	91.54	91.54
0 to 90	37649.02	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37649.02	100.00	100.00

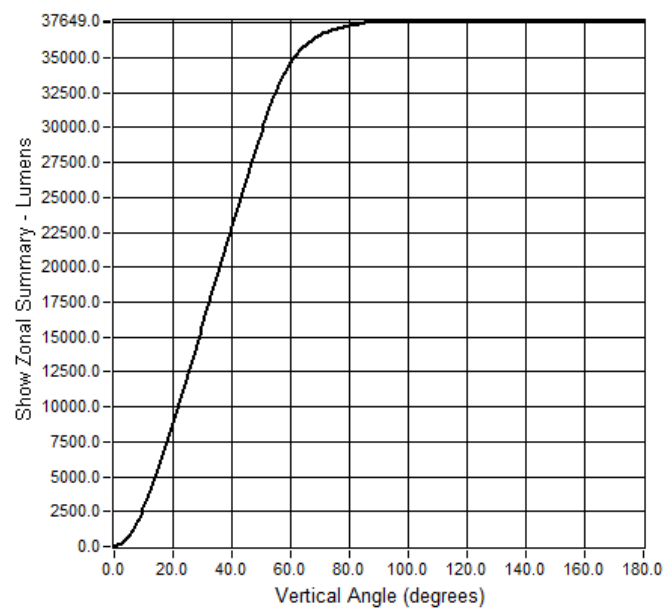
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



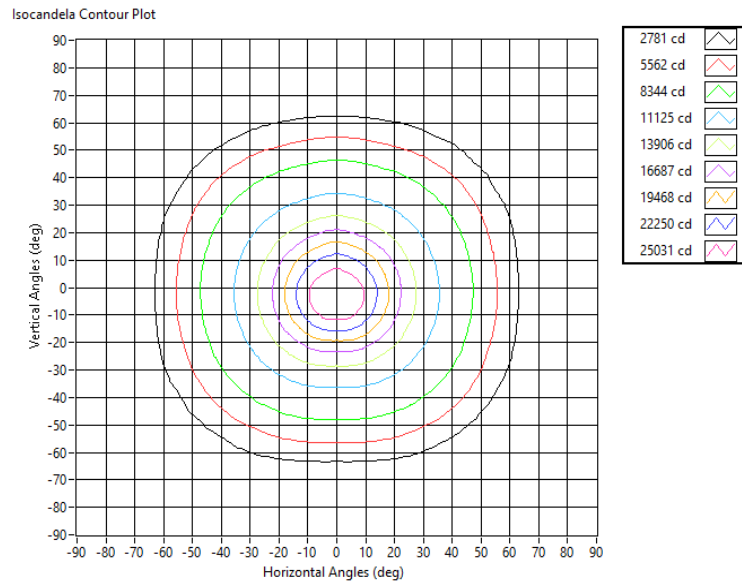
Zonal Flux Graph



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	2.14	2.21	6809.8
4	4.27	4.43	1702.4
6	6.41	6.64	756.6
8	8.54	8.86	425.6
10	10.68	11.07	272.4
12	12.81	13.29	189.2
14	14.95	15.50	139.0
16	17.09	17.71	106.4
18	19.22	19.93	84.1
20	21.36	22.14	68.1

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