

Test Report

Report Number: L21090

Date: Jul 21, 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]-[4,V]WN-[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 16, 2021 through July 19, 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: L21090

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

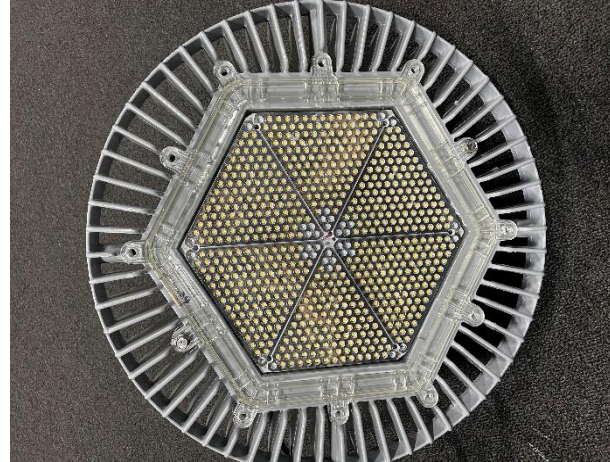
Model Number: [K,V][C,E,F,W][D,U]-[4,V]WN-[2,8]Jx-xxx-xx

Report Summary

Sample number L21090

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]WN-[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:	37283 (lumens)	37578 (lumens)
Electrical Power:	230.4 (W)	229.6 (W)
Luminous Efficacy:	161.8 (lumens/W)	163.7 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 230.4 (W)
 Power Factor (120VAC): 0.995592
 Current ATHD % (120VAC): 5.23793
 Input Power (277VAC): 222.8 (W)
 Power Factor (277VAC): 0.9668
 Current ATHD % (277VAC): 9.82

Color Measurements:

Correlated Color Temperature (CCT): 4087
 Color Rendering Index (CRI): 80.3726
 Chromaticity Coordinate (x): 0.378
 Chromaticity Coordinate (y): 0.378
 Chromaticity Coordinate (u'): 0.223
 Chromaticity Coordinate (v'): 0.502
 DUV: 0.0015

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21090.

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]WN-[2,8]Jx-xxx-xx

Test Conditions:

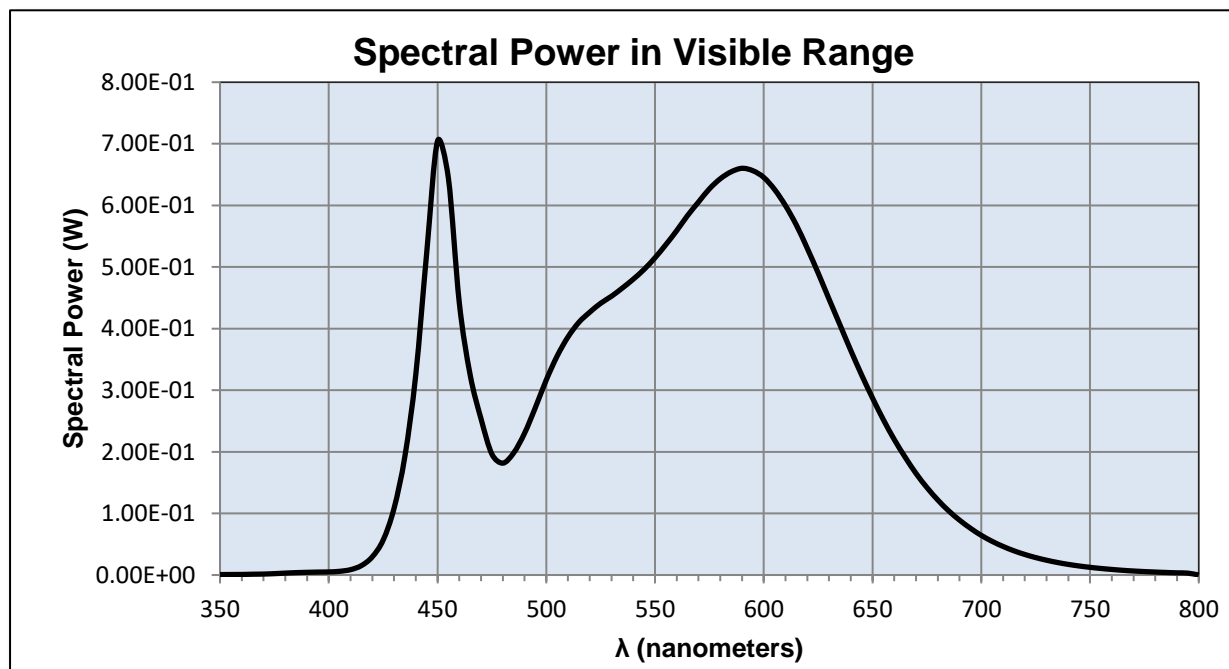
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 1.92 (A)
Input Power: 230.4 (W)
Input Power Factor: 0.9956
Current ATHD: 5.24 (%)

Photometric measurements:

Luminous Flux: 37283.4 (lumens)
Luminous Efficacy: 161.8 (lumens/W)
Correlated Color Temperature (CCT): 4087 (K)
CRI -Ra: 80.3726
CRI -R9: -8.3727
DUV: 0.0015
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: -14.06 %



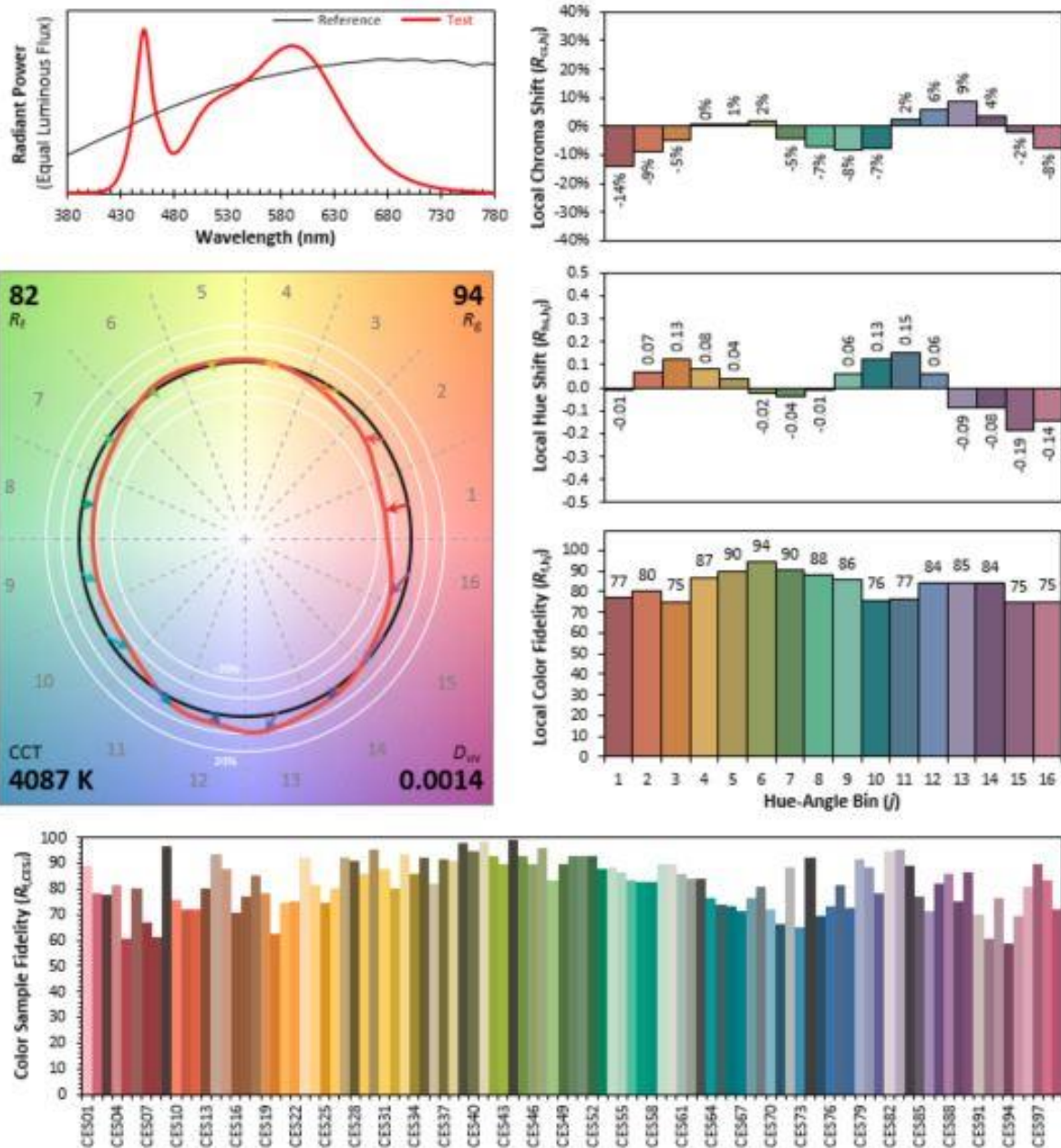
Test Results: Integrating Sphere

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	0.00077	490	0.23000	630	0.44804	770	0.00653
355	0.00084	495	0.27198	635	0.40634	775	0.00562
360	0.00096	500	0.31662	640	0.36458	780	0.00482
365	0.00131	505	0.35546	645	0.32475	785	0.00415
370	0.00158	510	0.38660	650	0.28734	790	0.00353
375	0.00222	515	0.41024	655	0.25209	795	0.00304
380	0.00311	520	0.42668	660	0.21993	800	0.00262
385	0.00390	525	0.44108	665	0.19129		
390	0.00439	530	0.45261	670	0.16494		
395	0.00479	535	0.46596	675	0.14208		
400	0.00503	540	0.48024	680	0.12188		
405	0.00604	545	0.49619	685	0.10421		
410	0.00869	550	0.51505	690	0.08913		
415	0.01529	555	0.53642	695	0.07594		
420	0.02949	560	0.55924	700	0.06443		
425	0.05672	565	0.58373	705	0.05467		
430	0.10820	570	0.60552	710	0.04644		
435	0.19288	575	0.62683	715	0.03933		
440	0.32505	580	0.64327	720	0.03341		
445	0.52211	585	0.65456	725	0.02836		
450	0.70448	590	0.66021	730	0.02405		
455	0.64394	595	0.65635	735	0.02035		
460	0.44206	600	0.64542	740	0.01725		
465	0.32510	605	0.62573	745	0.01468		
470	0.25360	610	0.59952	750	0.01249		
475	0.19625	615	0.56796	755	0.01065		
480	0.18162	620	0.53040	760	0.00907		
485	0.19824	625	0.49025	765	0.00764		

IES TM-30-18 Color Rendition Report



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

x 0.3776
 y 0.3780
 u' 0.2228
 v' 0.5017

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 L21090.

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]WN-[2,8]Jx-xxx-xx

Electrical Measurements:

Input Voltage: 120 (VAC)
 Input current: 1.9212 (A)
 Input Power: 229.6 (W)
 Power Factor: 0.9954

Photometric measurements:

Absolute Luminous Flux: 37578.4 (lumens)
 Luminous Efficacy: 163.7 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	14258	14253	14253	14252	14258	
5.00	14219	14208	14221	14285	14217	1443
15.00	13613	13582	13649	13711	13667	3867
25.00	12703	12804	12814	12924	12997	5947
35.00	12010	12052	12364	12862	13203	7877
45.00	12034	12170	12869	13716	14258	10115
55.00	7939	8034	8417	8958	8019	7324
65.00	1227	1216	1266	1278	1027	1165
75.00	155	161	157	148	140	159
85.00	31	28	28	26	22	15
90.00	3	2	3	2	1	

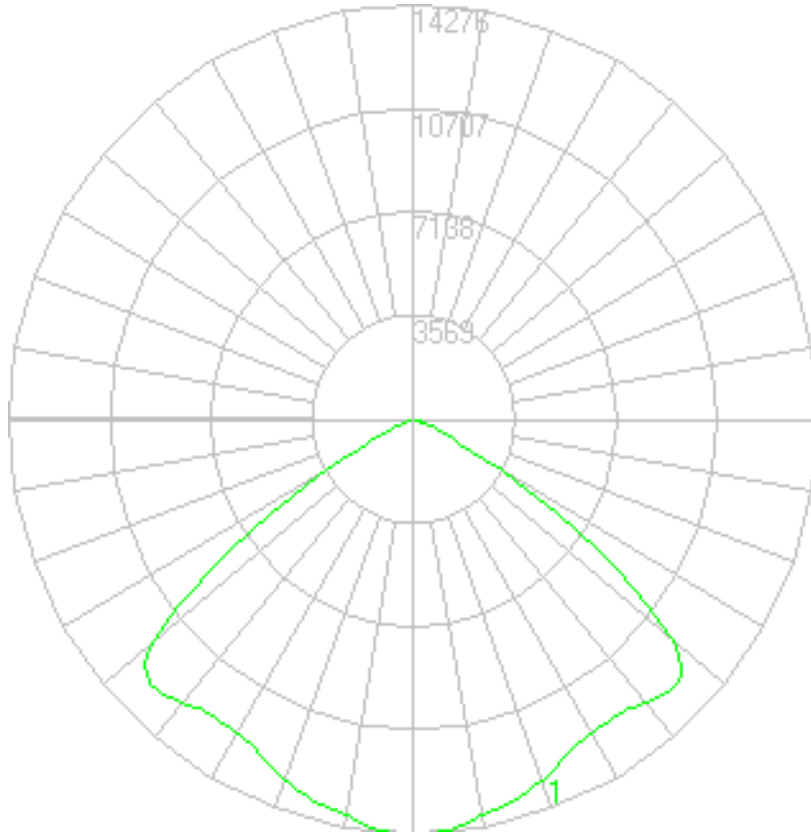
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	11129.44	29.62	29.62
0 to 40	19068.79	50.74	50.74
0 to 60	35998.56	95.80	95.80
0 to 90	37578.41	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37578.41	100.00	100.00

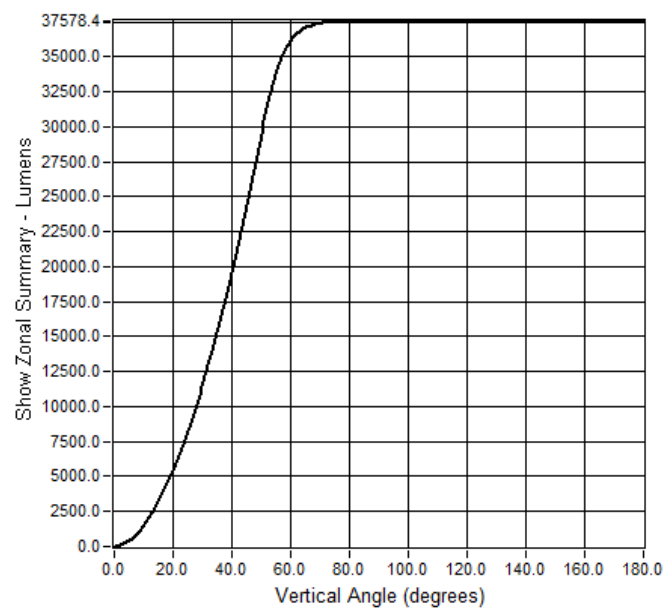
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



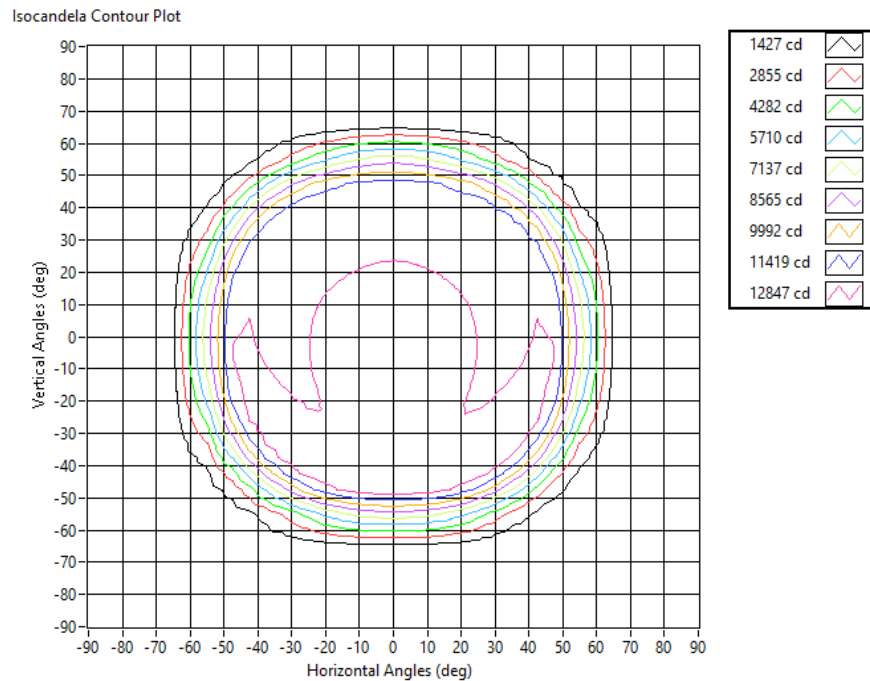
Zonal Flux Graph



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	5.73	5.74	3563.8
4	11.47	11.49	890.9
6	17.20	17.23	396.0
8	22.93	22.98	222.7
10	28.67	28.72	142.6
12	34.40	34.47	99.0
14	40.13	40.21	72.7
16	45.87	45.96	55.7
18	51.60	51.70	44.0
20	57.33	57.45	35.6

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