

# Test Report

Report Number: L21092

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]-[L,Z]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 19, 2021 through July 21, 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: L21092

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

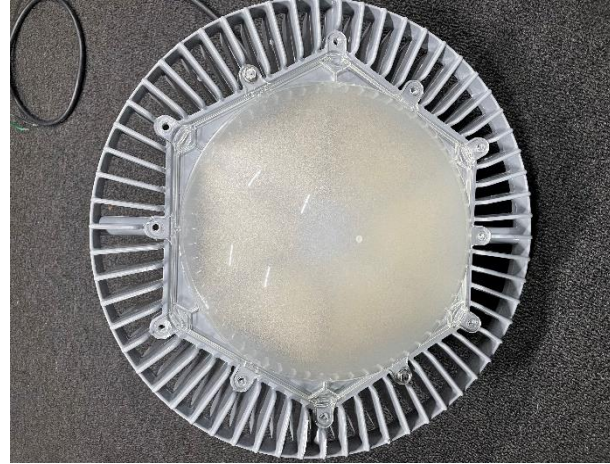
Model Number: [K,V][C,E,F,W][D,U]-[L,Z]WN-[2,8]Jx-xxx-xx

## Report Summary

Sample number L21092

Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]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:	37480 (lumens)	37267 (lumens)
Electrical Power:	230.4 (W)	229.9 (W)
Luminous Efficacy:	162.7 (lumens/W)	162.1 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 230.4 (W)  
 Power Factor (120VAC): 0.995703  
 Current ATHD % (120VAC): 5.21456  
 Input Power (277VAC): 222.5 (W)  
 Power Factor (277VAC): 0.966  
 Current ATHD % (277VAC): 9.859

### Color Measurements:

Correlated Color Temperature (CCT): 4093  
 Color Rendering Index (CRI): 80.373  
 Chromaticity Coordinate (x): 0.377  
 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 L21092.

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

### Test Conditions:

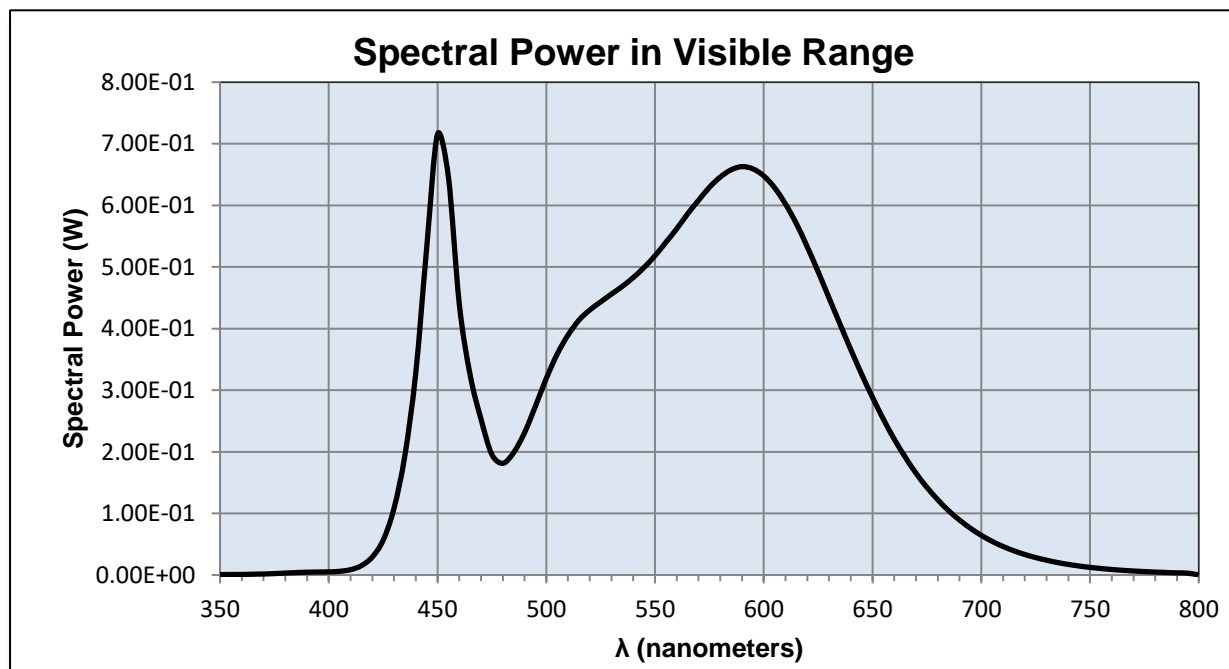
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.95 (A)  
Input Power: 230.4 (W)  
Input Power Factor: 0.9957  
Current ATHD: 5.2 (%)

### Photometric measurements:

Luminous Flux: 37480.04 (lumens)  
Luminous Efficacy: 162.7 (lumens/W)  
Correlated Color Temperature (CCT): 4093 (K)  
CRI -Ra: 80.373  
CRI -R9: -8.3892  
DUV: 0.0015  
CIE Coordinate (x): 0.377  
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 %



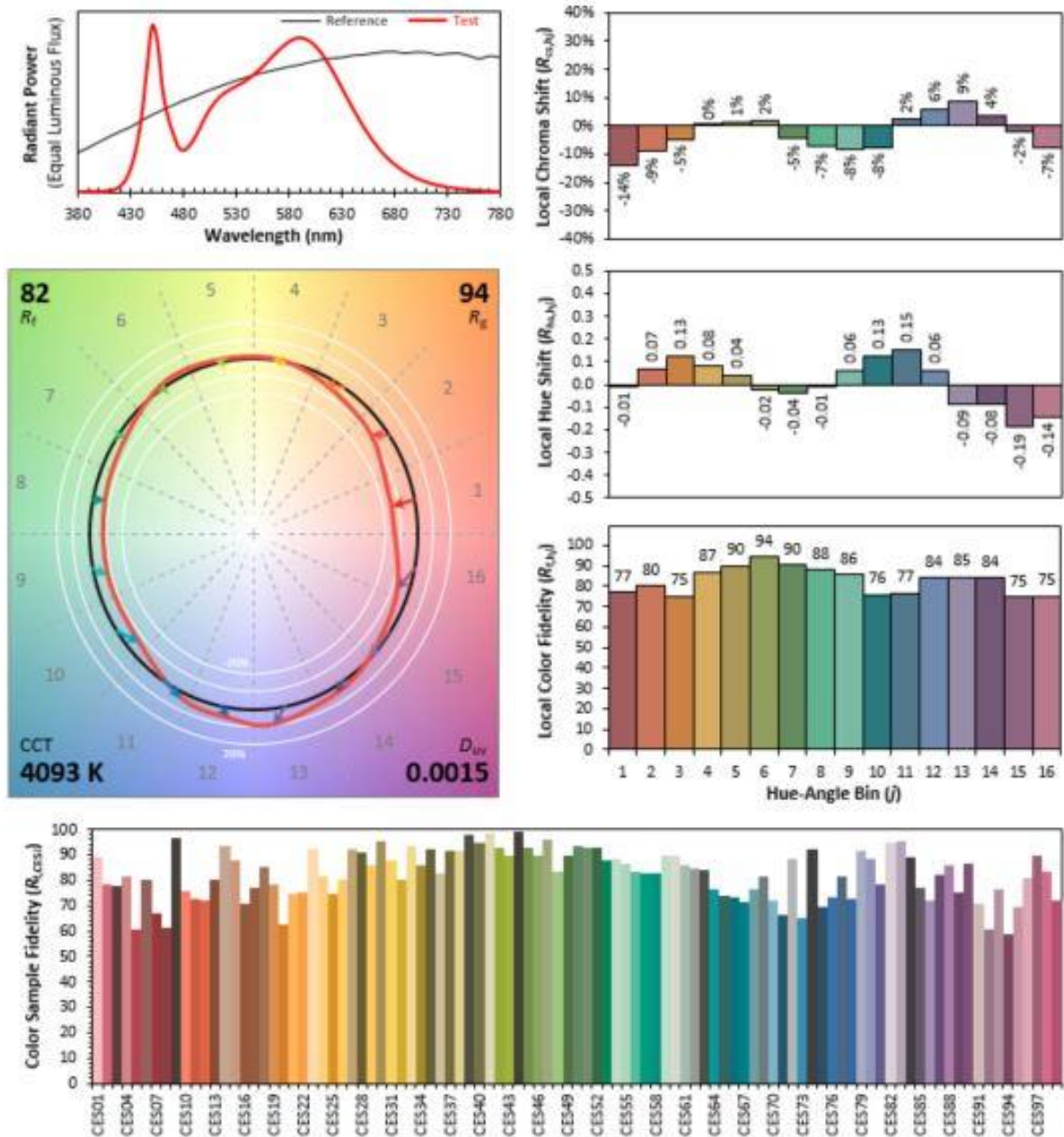
## Test Results: Integrating Sphere

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	0.00078	490	0.23097	630	0.44990	770	0.00652
355	0.00084	495	0.27392	635	0.40768	775	0.00561
360	0.00094	500	0.31909	640	0.36611	780	0.00480
365	0.00131	505	0.35855	645	0.32599	785	0.00412
370	0.00168	510	0.38945	650	0.28839	790	0.00350
375	0.00231	515	0.41357	655	0.25296	795	0.00300
380	0.00317	520	0.43018	660	0.22051	800	0.00261
385	0.00396	525	0.44340	665	0.19153		
390	0.00456	530	0.45616	670	0.16525		
395	0.00488	535	0.46871	675	0.14237		
400	0.00513	540	0.48290	680	0.12225		
405	0.00603	545	0.49940	685	0.10437		
410	0.00868	550	0.51833	690	0.08923		
415	0.01519	555	0.54017	695	0.07593		
420	0.02924	560	0.56212	700	0.06448		
425	0.05658	565	0.58637	705	0.05464		
430	0.10844	570	0.60818	710	0.04634		
435	0.19442	575	0.62932	715	0.03930		
440	0.32819	580	0.64605	720	0.03338		
445	0.53044	585	0.65783	725	0.02834		
450	0.71542	590	0.66295	730	0.02404		
455	0.64618	595	0.65936	735	0.02034		
460	0.43997	600	0.64792	740	0.01722		
465	0.32471	605	0.62857	745	0.01461		
470	0.25300	610	0.60212	750	0.01241		
475	0.19543	615	0.57031	755	0.01057		
480	0.18128	620	0.53280	760	0.00898		
485	0.19882	625	0.49237	765	0.00766		

## IES TM-30-18 Color Rendition Report



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

$x$  0.3774  
 $y$  0.3780  
 $u'$  0.2226  
 $v'$  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 L21092.  
Dialight unit model number [K,V][C,E,F,W][D,U]-[L,Z]WN-[2,8]Jx-xxx-xx

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 1.924 (A)  
Input Power: 229.9 (W)  
Power Factor: 0.9954

### Photometric measurements:

Absolute Luminous Flux: 37266.5 (lumens)  
Luminous Efficacy: 162.1 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	12689	12693	12696	12694	12689	
5.00	12676	12664	12649	12639	12593	1283
15.00	12378	12337	12270	12242	12177	3481
25.00	12040	11935	11757	11684	11609	5468
35.00	12152	11973	11549	11267	11165	7309
45.00	12219	12019	11391	10928	10603	8847
55.00	8620	8485	8147	8067	7301	7234
65.00	2949	2838	2832	2975	2519	2769
75.00	794	770	788	824	742	823
85.00	385	388	391	397	384	306
90.00	340	347	350	351	342	

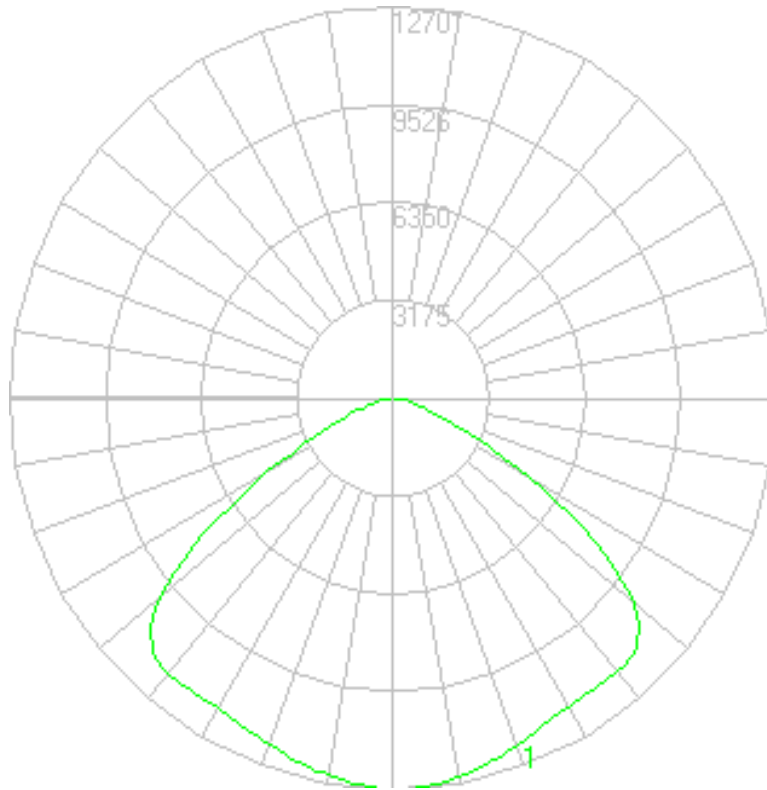
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10137.14	27.20	27.20
0 to 40	17455.68	46.84	46.84
0 to 60	33126.71	88.89	88.89
0 to 90	37266.49	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37266.49	100.00	100.00

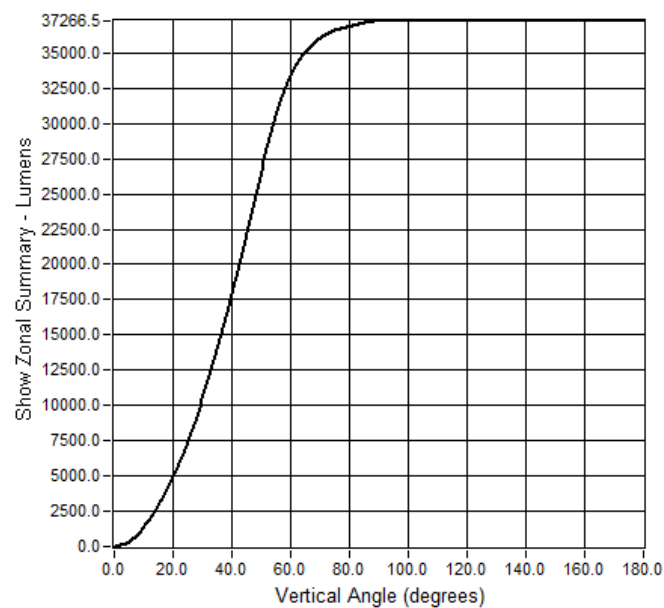
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



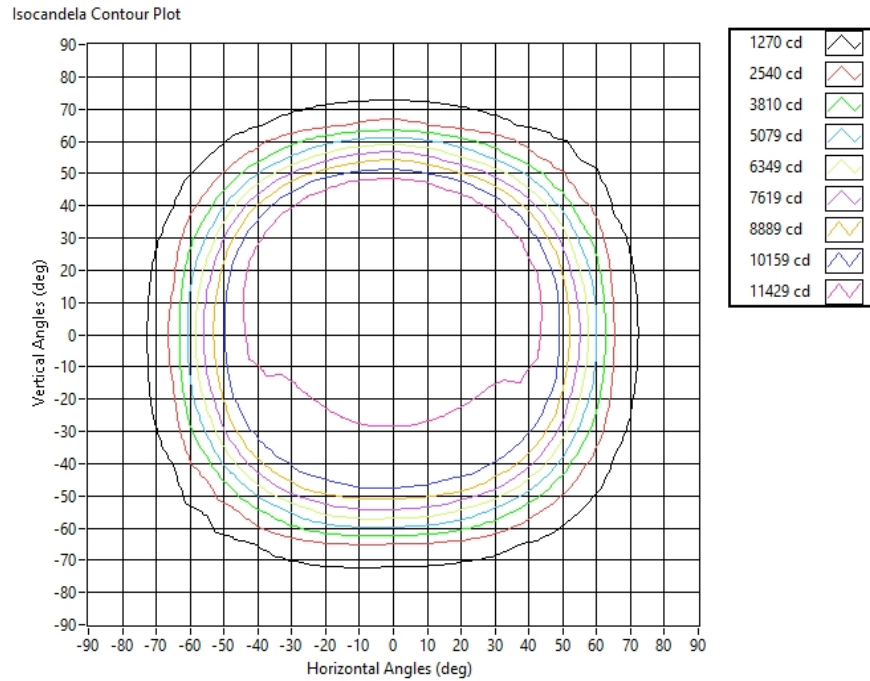
Zonal Flux Graph



## 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	6.24	6.48	3173.5
4	12.47	12.97	793.4
6	18.71	19.45	352.6
8	24.94	25.93	198.3
10	31.18	32.41	126.9
12	37.41	38.90	88.2
14	43.65	45.38	64.8
16	49.88	51.86	49.6
18	56.12	58.35	39.2
20	62.35	64.83	31.7



**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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Approved Signatory