

# Test Report

Report Number: L21099

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]-[7,R]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: L21099

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

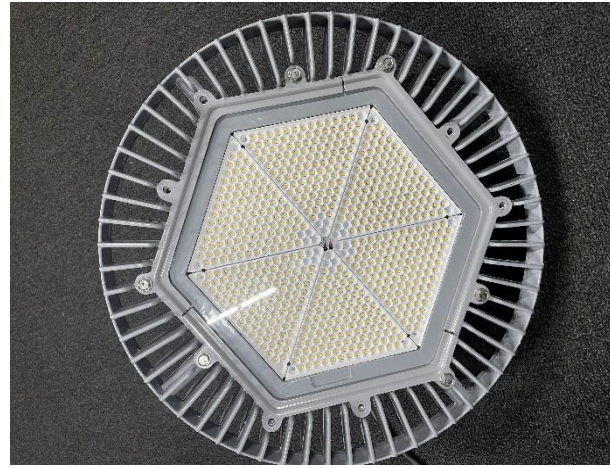
Model Number: [K,V][C,E,F,W][D,U]-[7,R]NN-[2,8]Jx-xxx-xx

## Report Summary

Sample number L21099

Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]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:	37544 (lumens)	38286 (lumens)
Electrical Power:	228.3 (W)	228.7 (W)
Luminous Efficacy:	164.4 (lumens/W)	167.4 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 228.3 (W)  
 Power Factor (120VAC): 0.9961  
 Current ATHD % (120VAC): 4.76  
 Input Power (277VAC): 221.5 (W)  
 Power Factor (277VAC): 0.9711  
 Current ATHD % (277VAC): 8.51

### Color Measurements:

Correlated Color Temperature (CCT): 4120  
 Color Rendering Index (CRI): 80.38  
 Chromaticity Coordinate (x): 0.376  
 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 L21099.

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

### Test Conditions:

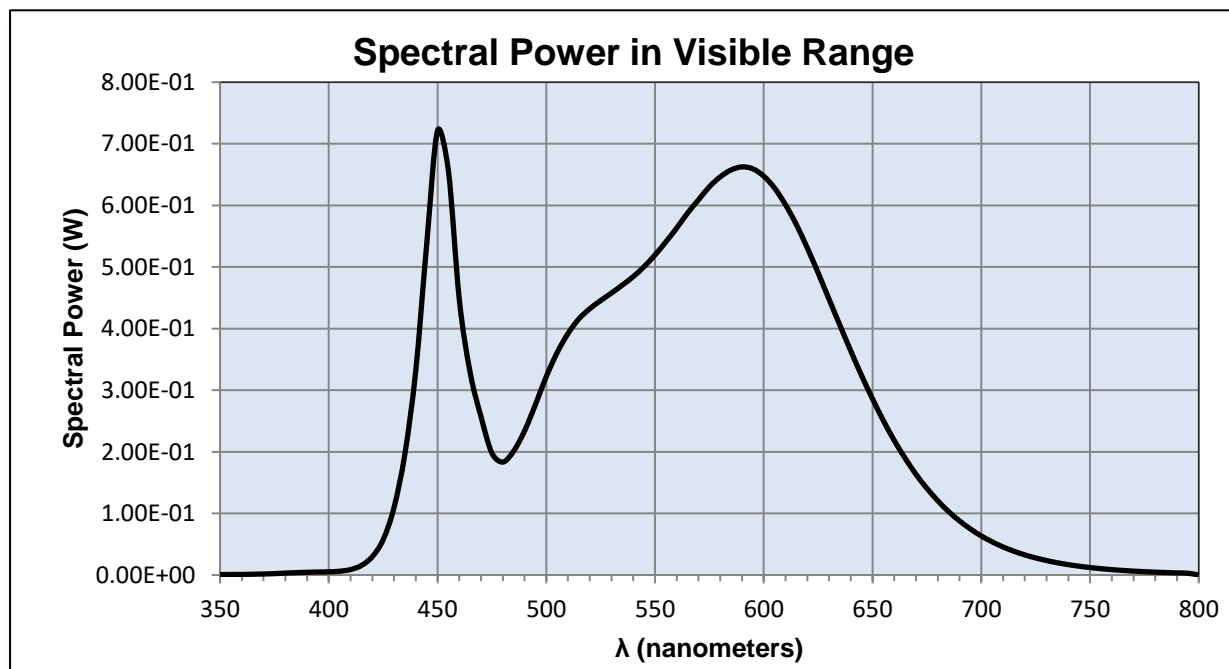
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.91 (A)  
Input Power: 228.3 (W)  
Input Power Factor: 0.996113  
Current ATHD: 4.76 (%)

### Photometric measurements:

Luminous Flux: 37543.6 (lumens)  
Luminous Efficacy: 164.4 (lumens/W)  
Correlated Color Temperature (CCT): 4120 (K)  
CRI -Ra: 80.38  
CRI -R9: -8.6432  
DUV: 0.0015  
CIE Coordinate (x): 0.376  
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: -14.12 %



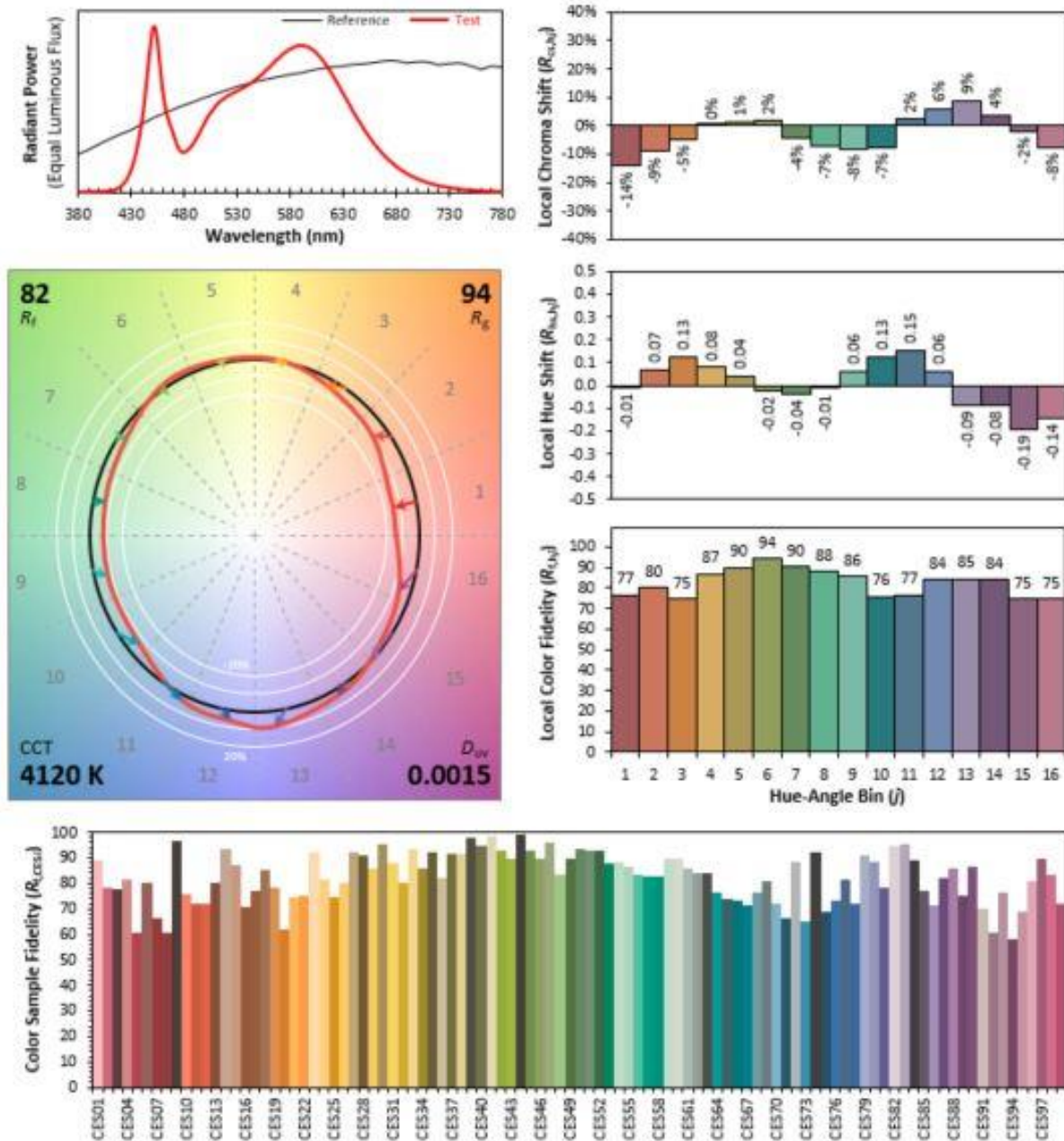
## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$
350	0.00085	490	0.23379	630	0.44775	770	0.00635
355	0.00083	495	0.27651	635	0.40552	775	0.00541
360	0.00094	500	0.32214	640	0.36373	780	0.00464
365	0.00129	505	0.36104	645	0.32366	785	0.00397
370	0.00168	510	0.39208	650	0.28596	790	0.00343
375	0.00225	515	0.41579	655	0.25053	795	0.00291
380	0.00312	520	0.43225	660	0.21830	800	0.00251
385	0.00389	525	0.44556	665	0.18957		
390	0.00446	530	0.45779	670	0.16344		
395	0.00489	535	0.47075	675	0.14074		
400	0.00523	540	0.48444	680	0.12062		
405	0.00616	545	0.50068	685	0.10293		
410	0.00884	550	0.51963	690	0.08787		
415	0.01548	555	0.54087	695	0.07478		
420	0.02979	560	0.56342	700	0.06349		
425	0.05739	565	0.58778	705	0.05387		
430	0.10964	570	0.60907	710	0.04562		
435	0.19681	575	0.63031	715	0.03865		
440	0.33188	580	0.64636	720	0.03271		
445	0.53608	585	0.65762	725	0.02778		
450	0.72141	590	0.66252	730	0.02350		
455	0.65620	595	0.65932	735	0.01989		
460	0.44740	600	0.64756	740	0.01686		
465	0.32878	605	0.62794	745	0.01430		
470	0.25693	610	0.60104	750	0.01214		
475	0.19787	615	0.56874	755	0.01032		
480	0.18335	620	0.53106	760	0.00877		
485	0.20125	625	0.49048	765	0.00747		

## IES TM-30-18 Color Rendition Report



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

$x$  0.3762  
 $y$  0.3772  
 $u'$  0.2222  
 $v'$  0.5011

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 L21099.  
Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]NN-[2,8]Jx-xxx-xx

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 1.909 (A)  
Input Power: 228.7 (W)  
Power Factor: 0.9954

### Photometric measurements:

Absolute Luminous Flux: 38286.3 (lumens)  
Luminous Efficacy: 167.4 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	32890	32648	32186	31846	32890	
5.00	29995	31417	33928	35737	36379	3381
15.00	24215	25460	27126	28691	26567	7378
25.00	14896	15848	17107	17818	16644	7500
35.00	11588	11740	12216	12392	12030	7491
45.00	9459	9632	9916	9914	9575	7459
55.00	5259	5923	6529	6925	6118	5363
65.00	650	837	1113	1281	820	857
75.00	141	143	142	144	129	146
85.00	16	22	23	22	8	9
90.00	1	1	1	1	1	

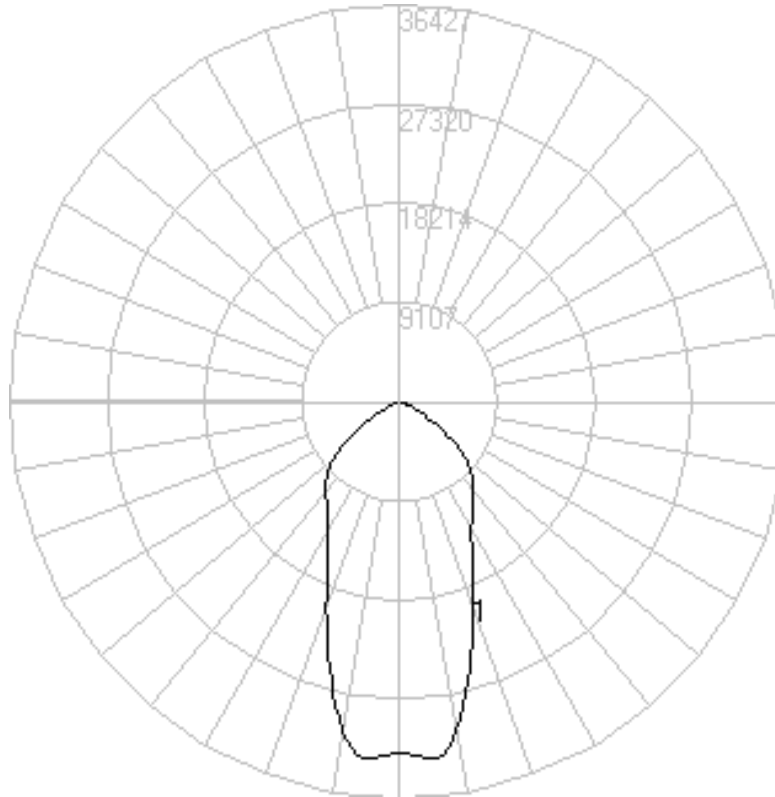
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	17513.63	45.74	45.74
0 to 40	24936.66	65.13	65.13
0 to 60	37145.28	97.02	97.02
0 to 90	38286.34	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	38286.34	100.00	100.00

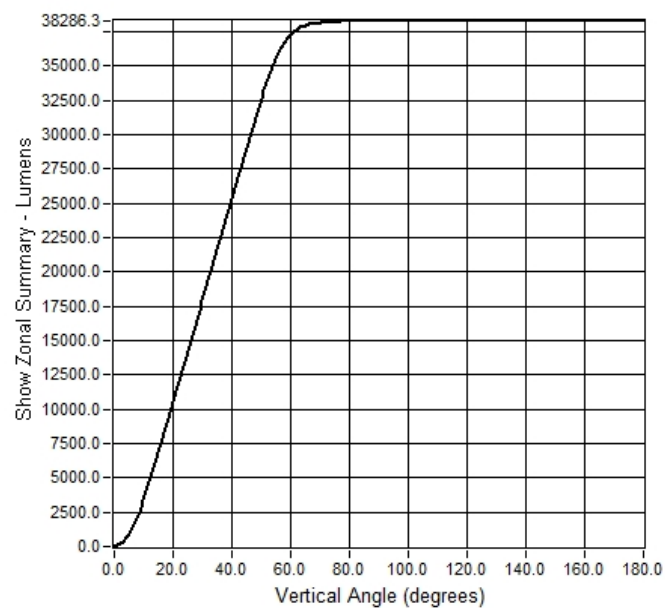
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



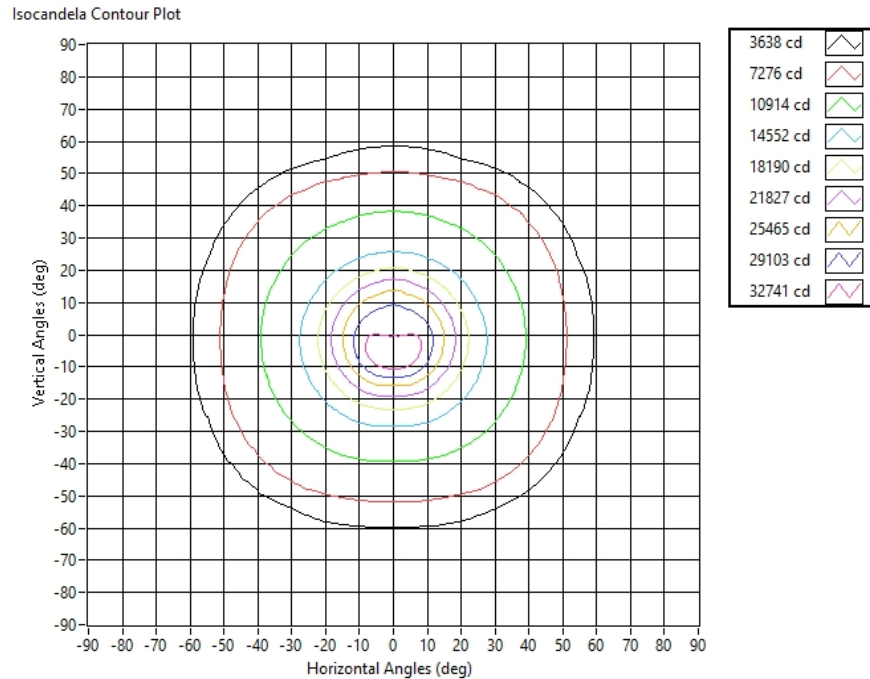
Zonal Flux Graph



## 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	1.76	1.80	8080.2
4	3.51	3.60	2020.1
6	5.27	5.40	897.8
8	7.03	7.20	505.0
10	8.78	9.01	323.2
12	10.54	10.81	224.5
14	12.30	12.61	164.9
16	14.05	14.41	126.3
18	15.81	16.21	99.8
20	17.57	18.01	80.8



**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 Spectrometer- 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