

# Test Report

Report Number: L21091

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]-[7,R]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 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: L21091

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

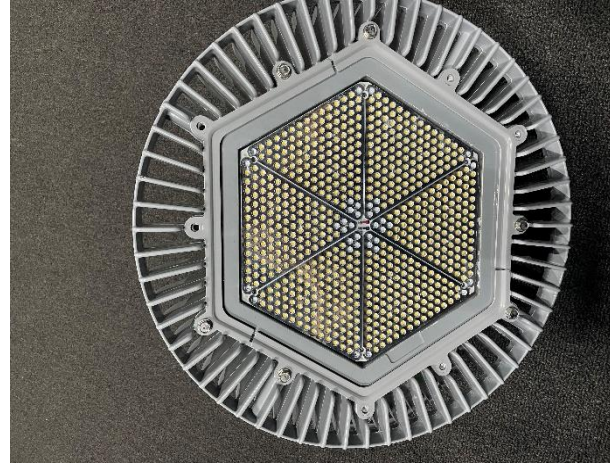
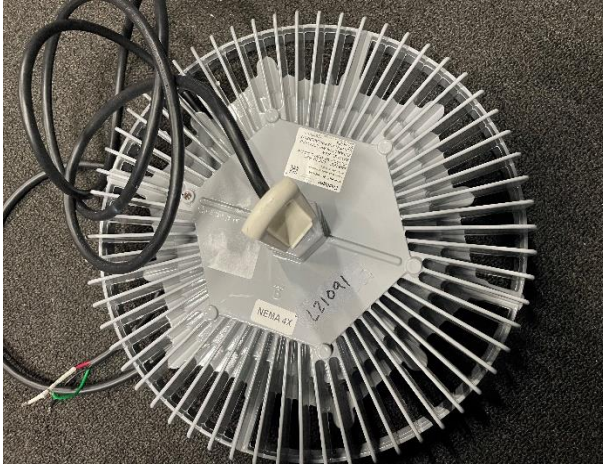
Model Number: [K,V][C,E,F,W][D,U]-[7,R]WN-[2,8]Jx-xxx-xx

## Report Summary

Sample number L21091

Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]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:	37500 (lumens)	37944 (lumens)
Electrical Power:	230.0 (W)	229.9 (W)
Luminous Efficacy:	163 (lumens/W)	165 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 230.0 (W)  
 Power Factor (120VAC): 0.9956  
 Current ATHD % (120VAC): 5.28  
 Input Power (277VAC): 222.4 (W)  
 Power Factor (277VAC): 0.9667  
 Current ATHD % (277VAC): 9.89

### Color Measurements:

Correlated Color Temperature (CCT): 4116  
 Color Rendering Index (CRI): 80.4  
 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 L21091.

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

### Test Conditions:

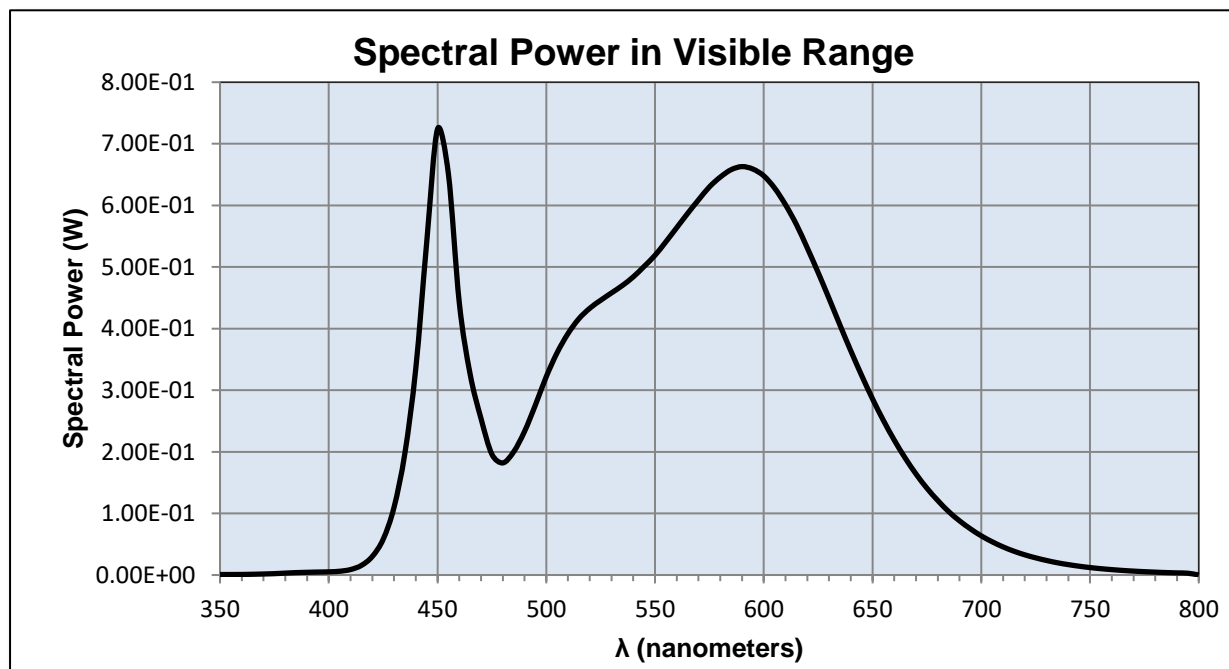
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.93 (A)  
Input Power: 230.0 (W)  
Input Power Factor: 0.9956  
Current ATHD: 5.28 (%)

### Photometric measurements:

Luminous Flux: 37500 (lumens)  
Luminous Efficacy: 163.0 (lumens/W)  
Correlated Color Temperature (CCT): 4116 (K)  
CRI -Ra: 80.4  
CRI -R9: -8.59  
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: 94.1  
TM30\_Rcs\_hue1: -14.10 %



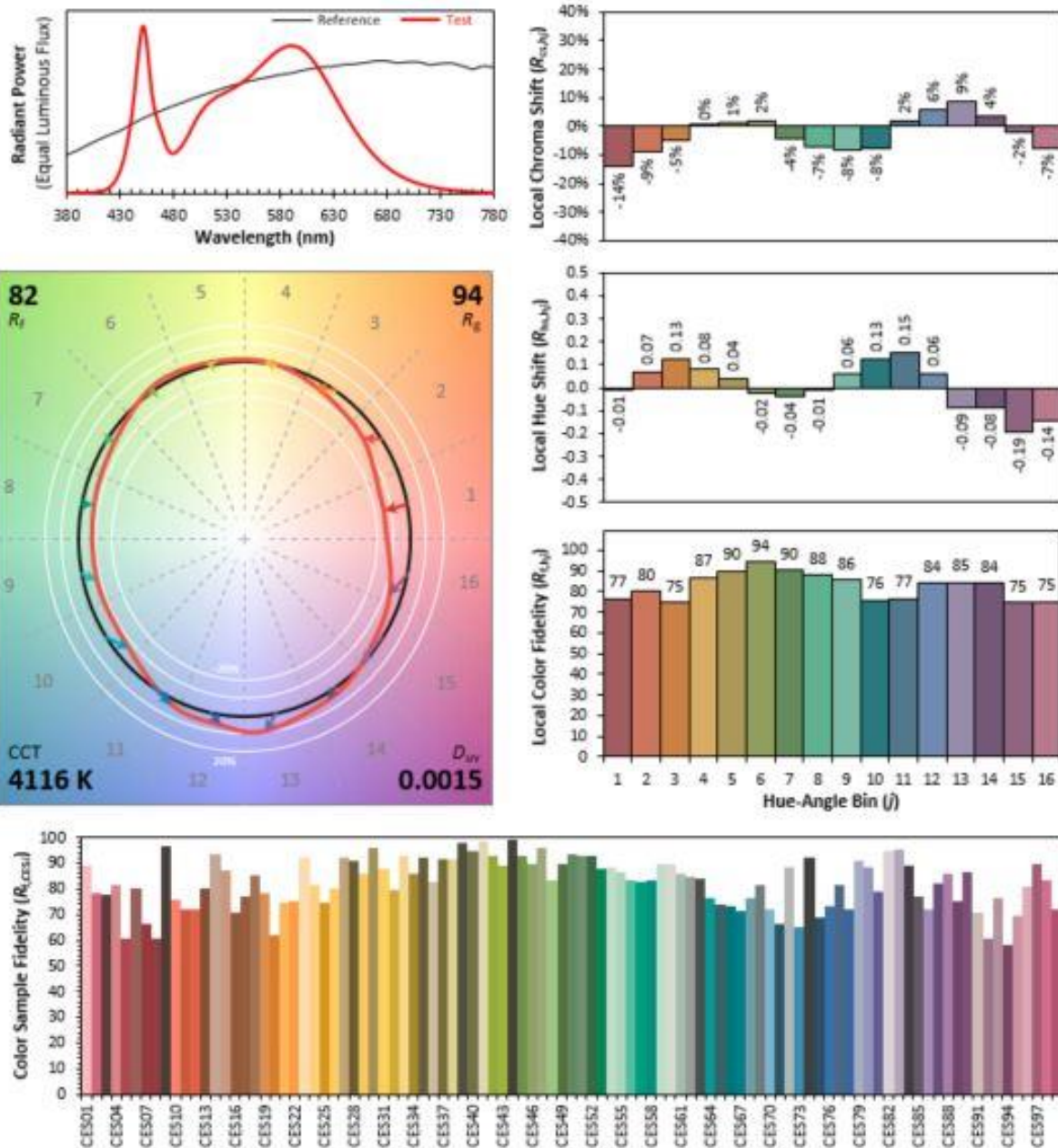
## Test Results: Integrating Sphere

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	0.00086	490	0.23300	630	0.44900	770	0.00637
355	0.00084	495	0.27600	635	0.40600	775	0.00542
360	0.00095	500	0.32200	640	0.36400	780	0.00467
365	0.00126	505	0.36100	645	0.32400	785	0.00399
370	0.00169	510	0.39200	650	0.28600	790	0.00343
375	0.00224	515	0.41600	655	0.25100	795	0.00293
380	0.00310	520	0.43300	660	0.21900	800	0.00253
385	0.00392	525	0.44600	665	0.19000		
390	0.00441	530	0.45800	670	0.16400		
395	0.00483	535	0.47000	675	0.14100		
400	0.00517	540	0.48400	680	0.12100		
405	0.00613	545	0.50100	685	0.10300		
410	0.00890	550	0.51900	690	0.08800		
415	0.01560	555	0.54100	695	0.07500		
420	0.03010	560	0.56400	700	0.06360		
425	0.05800	565	0.58700	705	0.05400		
430	0.11000	570	0.60900	710	0.04570		
435	0.19800	575	0.63000	715	0.03870		
440	0.33500	580	0.64600	720	0.03280		
445	0.53900	585	0.65800	725	0.02790		
450	0.72400	590	0.66300	730	0.02360		
455	0.65100	595	0.65900	735	0.01990		
460	0.44200	600	0.64800	740	0.01690		
465	0.32600	605	0.62800	745	0.01430		
470	0.25400	610	0.60100	750	0.01210		
475	0.19600	615	0.56900	755	0.01030		
480	0.18200	620	0.53100	760	0.00877		
485	0.20000	625	0.49100	765	0.00745		

## IES TM-30-18 Color Rendition Report



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

$x$  0.3764  
 $y$  0.3773  
 $u'$  0.2222  
 $v'$  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 L21091.  
Dialight unit model number [K,V][C,E,F,W][D,U]-[7,R]WN-[2,8]Jx-xxx-xx

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 1.9244 (A)  
Input Power: 229.9 (W)  
Power Factor: 0.9954

### Photometric measurements:

Absolute Luminous Flux: 37943.5 (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	13939	13938	13934	13939	13939	
5.00	13842	13850	13877	13901	13862	1406
15.00	13620	13619	13611	13638	13684	3867
25.00	12941	13158	12929	13027	13202	6044
35.00	12054	12473	12230	12617	13270	7902
45.00	12266	12593	13170	13880	14596	10339
55.00	8166	8311	9125	9284	8284	7608
65.00	1102	1186	1331	1284	907	1095
75.00	128	136	136	133	113	133
85.00	13	14	14	13	7	6
90.00	1	1	1	1	1	

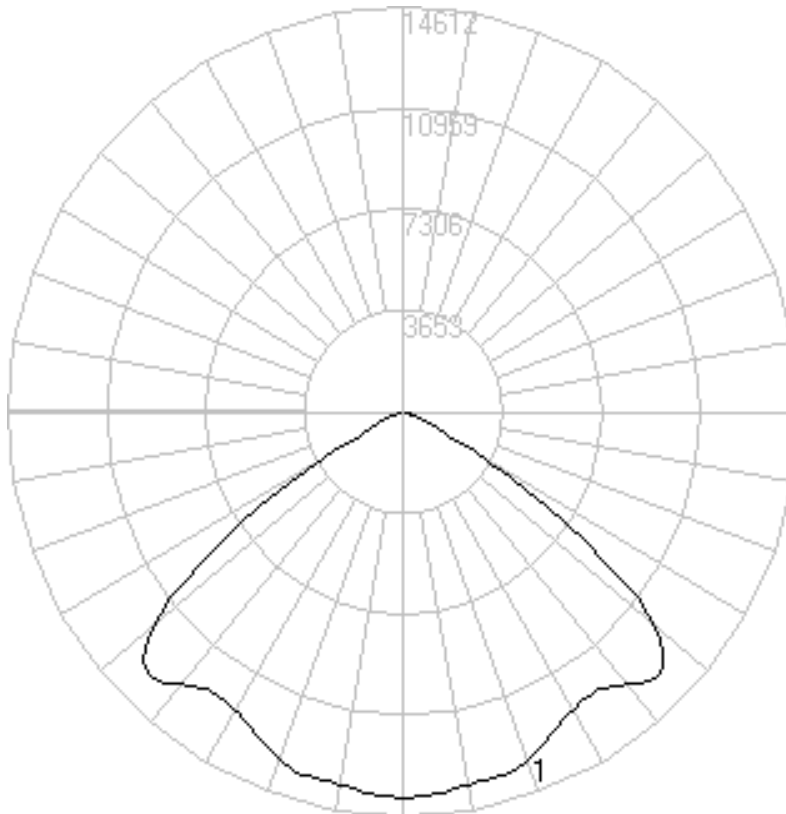
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	11197.34	29.51	29.51
0 to 40	19167.16	50.52	50.52
0 to 60	36465.31	96.10	96.10
0 to 90	37943.47	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37943.47	100.00	100.00

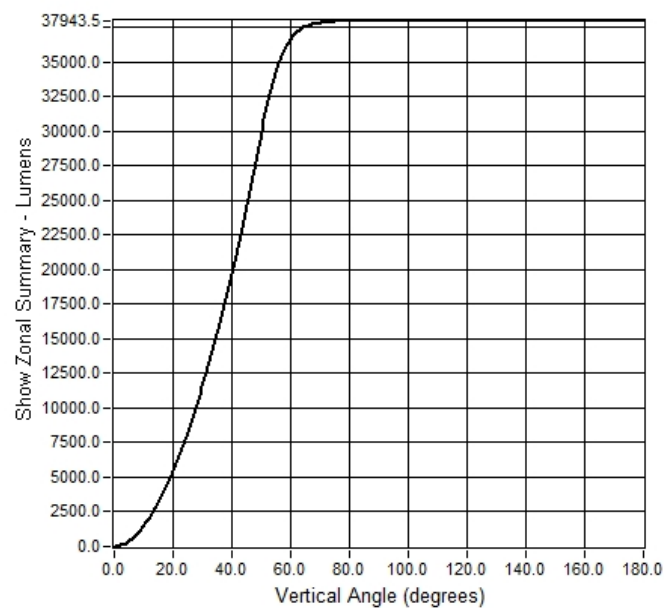
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



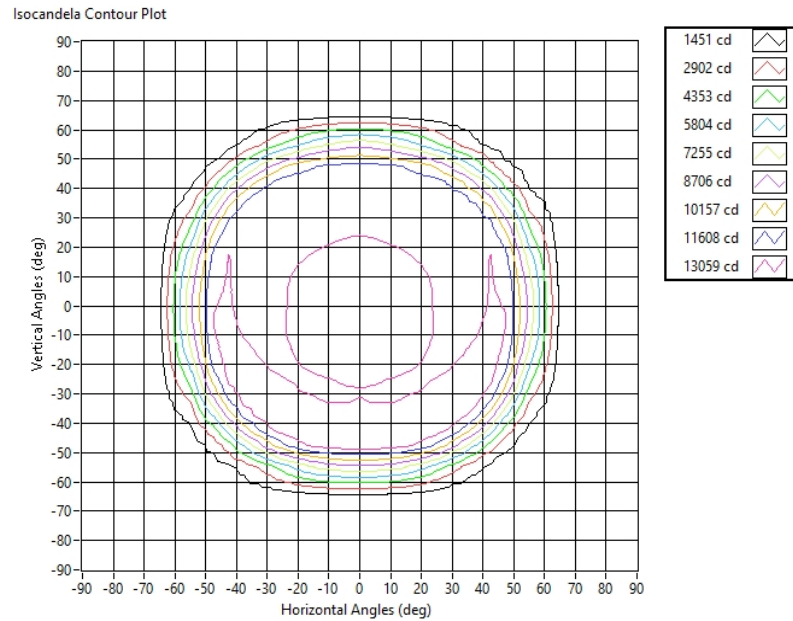
Zonal Flux Graph



## 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	6.09	6.07	3484.2
4	12.18	12.14	871.0
6	18.26	18.21	387.1
8	24.35	24.28	217.8
10	30.44	30.35	139.4
12	36.53	36.42	96.8
14	42.61	42.49	71.1
16	48.70	48.56	54.4
18	54.79	54.63	43.0
20	60.88	60.70	34.8



**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 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