

# Test Report

Report Number: L21102

Date: Aug 9, 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]MN-[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 15, 2021 through July 16, 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: L21102

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

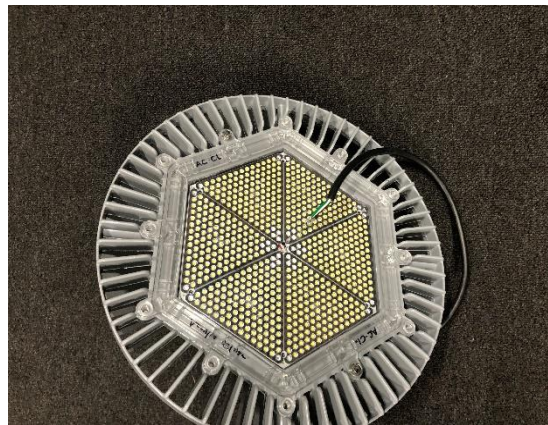
Model Number: [K,V][C,E,F,W][D,U]-[4,V]MN-[2,8]Jx-xxx-xx

## Report Summary

Sample number L21102

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]MN-[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:	36500 (lumens)	36864 (lumens)
Electrical Power:	228.6 (W)	227.8 (W)
Luminous Efficacy:	159.7 (lumens/W)	161.8 (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): 8.51

### Color Measurements:

Correlated Color Temperature (CCT): 4078  
 Color Rendering Index (CRI): 80.30  
 Chromaticity Coordinate (x): 0.378  
 Chromaticity Coordinate (y): 0.379  
 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 L21102.

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

### Test Conditions:

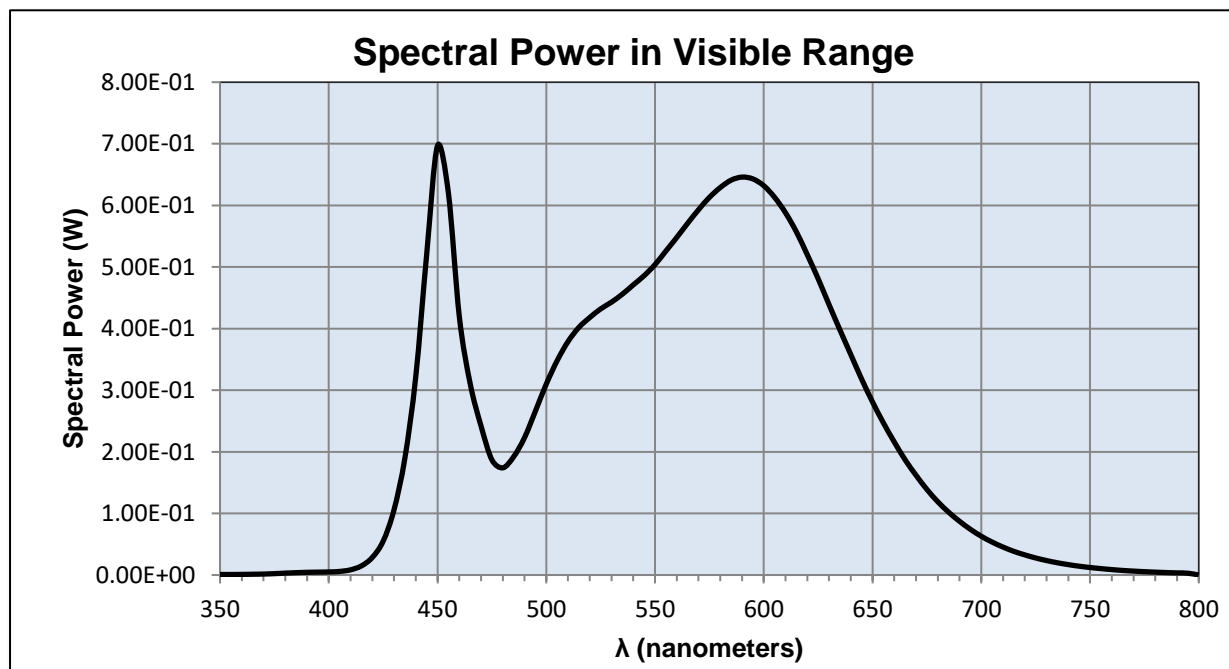
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120.0 (VAC)  
Input Current: 1.911 (A)  
Input Power: 228.6 (W)  
Input Power Factor: 0.9961  
Current ATHD: 4.79 (%)

### Photometric measurements:

Luminous Flux: 36500.0 (lumens)  
Luminous Efficacy: 159.7 (lumens/W)  
Correlated Color Temperature (CCT): 4078 (K)  
CRI -Ra: 80.30  
CRI -R9: -8.53  
DUV: 0.0015  
CIE Coordinate (x): 0.378  
CIE Coordinate (y): 0.379  
CIE Coordinate (u'): 0.223  
CIE Coordinate (v'): 0.502  
TM30\_Rf: 82.4  
TM30\_Rg: 94.1  
TM30\_Rcs\_hue1: -14.05 %



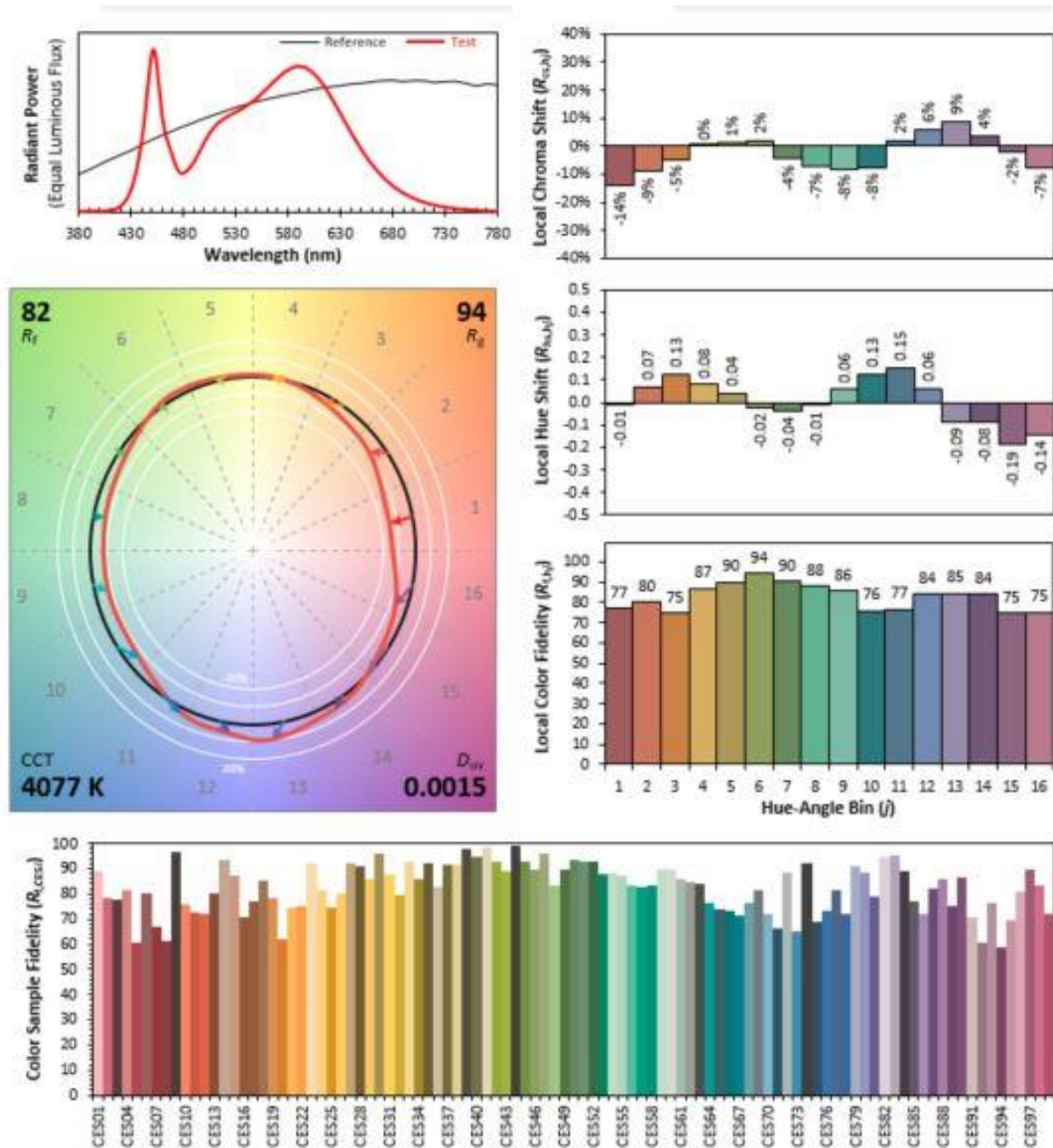
## Test Results: Integrating Sphere

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	0.00092	490	0.22300	630	0.43900	770	0.00638
355	0.00087	495	0.26600	635	0.39800	775	0.00546
360	0.00102	500	0.31000	640	0.35800	780	0.00467
365	0.00128	505	0.34800	645	0.31800	785	0.00401
370	0.00158	510	0.37900	650	0.28100	790	0.00345
375	0.00225	515	0.40200	655	0.24700	795	0.00295
380	0.00310	520	0.41800	660	0.21600	800	0.00256
385	0.00385	525	0.43200	665	0.18700		
390	0.00438	530	0.44300	670	0.16200		
395	0.00471	535	0.45600	675	0.13900		
400	0.00500	540	0.47100	680	0.11900		
405	0.00585	545	0.48600	685	0.10200		
410	0.00844	550	0.50400	690	0.08720		
415	0.01480	555	0.52600	695	0.07420		
420	0.02850	560	0.54800	700	0.06300		
425	0.05500	565	0.57100	705	0.05350		
430	0.10600	570	0.59300	710	0.04540		
435	0.19000	575	0.61300	715	0.03840		
440	0.32200	580	0.62900	720	0.03270		
445	0.52000	585	0.64100	725	0.02770		
450	0.69700	590	0.64600	730	0.02350		
455	0.62000	595	0.64300	735	0.01990		
460	0.42000	600	0.63200	740	0.01690		
465	0.31100	605	0.61300	745	0.01430		
470	0.24200	610	0.58800	750	0.01220		
475	0.18700	615	0.55700	755	0.01040		
480	0.17400	620	0.52000	760	0.00881		
485	0.19200	625	0.48100	765	0.00745		

## IES TM-30-18 Color Rendition Report



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

$x$  0.3781  
 $y$  0.3785  
 $u'$  0.2229  
 $v'$  0.5020

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 L21102.  
Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]MN-[2,8]Jx-xxx-xx

### Electrical Measurements:

Input Voltage: 120.1 (VAC)  
Input current: 1.91 (A)  
Input Power: 227.83 (W)  
Power Factor: 0.9955

### Photometric measurements:

Absolute Luminous Flux: 36864.1 (lumens)  
Luminous Efficacy: 161.8 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	13712	13722	13724	13710	13712	
5.00	13925	13909	13890	13846	13784	1406
15.00	14220	14272	13971	13858	13757	3970
25.00	15229	15453	15034	14697	14500	6914
35.00	15470	15737	15322	14736	14078	9397
45.00	12600	12871	12462	11726	10505	9179
55.00	6934	7192	7131	5983	4326	5434
65.00	1568	1774	1630	1368	791	1324
75.00	145	156	143	136	102	139
85.00	30	32	32	30	16	15
90.00	4	5	5	4	1	

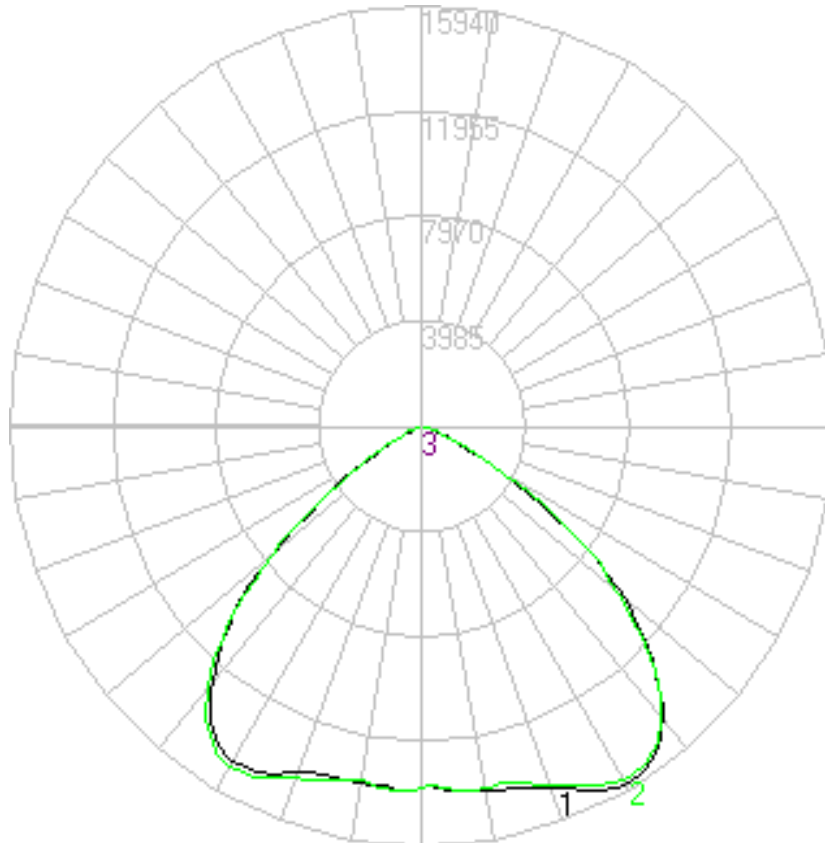
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	12210.42	33.12	33.12
0 to 40	21427.66	58.13	58.13
0 to 60	35350.81	95.89	95.89
0 to 90	36864.14	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	36864.14	100.00	100.00

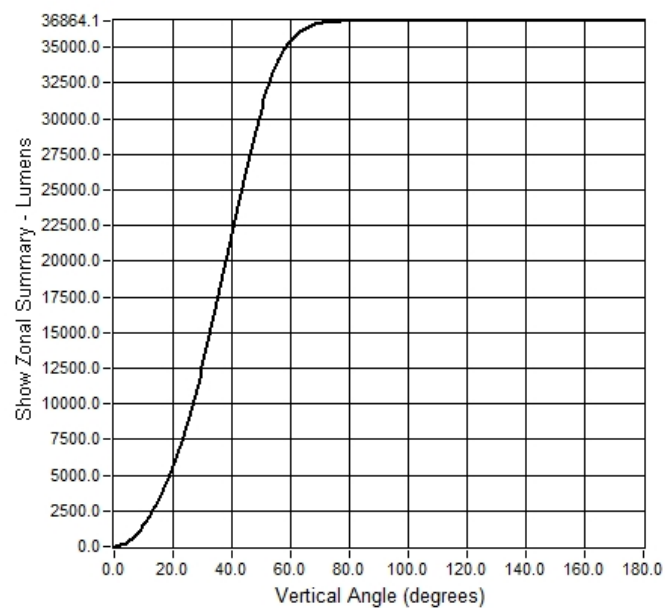
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



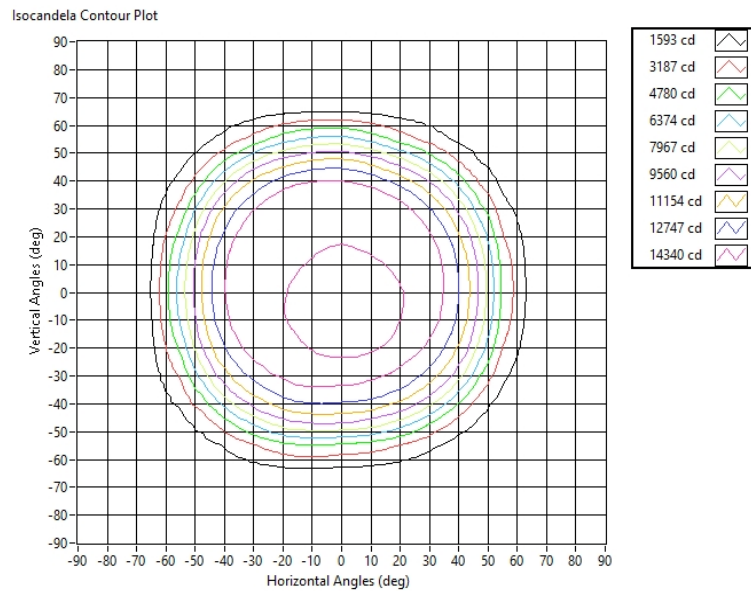
Zonal Flux Graph



## 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	5.51	5.46	3429.7
4	11.02	10.93	857.4
6	16.53	16.39	381.1
8	22.04	21.85	214.4
10	27.54	27.32	137.2
12	33.05	32.78	95.3
14	38.56	38.24	70.0
16	44.07	43.70	53.6
18	49.58	49.17	42.3
20	55.09	54.63	34.3



# 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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## Test Report Issued By:

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Dialight Optics Laboratory  
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Lighting Division

## Test Report Reviewed and Approved By:

Vishnu Shastry  
Dialight Optics Laboratory  
Optical Engineer  
Approved Signatory