

# Test Report

Report Number: L21098

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]-[4,V]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: L21098

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

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

## Report Summary

Sample number L21098

Dialight unit model number [K,V][C,E,F,W][D,U]-[4,V]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:	37363 (lumens)	37844 (lumens)
Electrical Power:	228.7 (W)	228.8 (W)
Luminous Efficacy:	163.4 (lumens/W)	165.4 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 228.7 (W)  
 Power Factor (120VAC): 0.9962  
 Current ATHD % (120VAC): 4.76  
 Input Power (277VAC): 221.0 (W)  
 Power Factor (277VAC): 0.9756  
 Current ATHD % (277VAC): 8.49

### Color Measurements:

Correlated Color Temperature (CCT): 4088  
 Color Rendering Index (CRI): 80.40  
 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 L21098.

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

### Test Conditions:

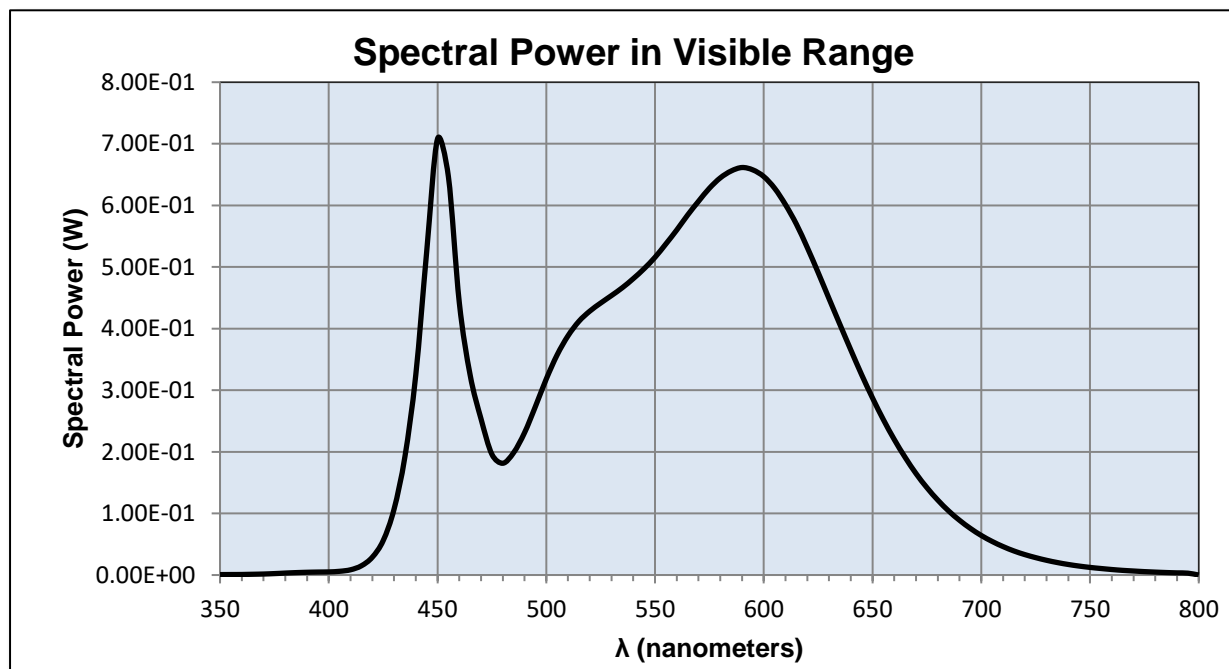
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.94 (A)  
Input Power: 228.7 (W)  
Input Power Factor: 0.9962  
Current ATHD: 4.76 (%)

### Photometric measurements:

Luminous Flux: 37362.86 (lumens)  
Luminous Efficacy: 163.4 (lumens/W)  
Correlated Color Temperature (CCT): 4088 (K)  
CRI -Ra: 80.40  
CRI -R9: -8.4  
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 %



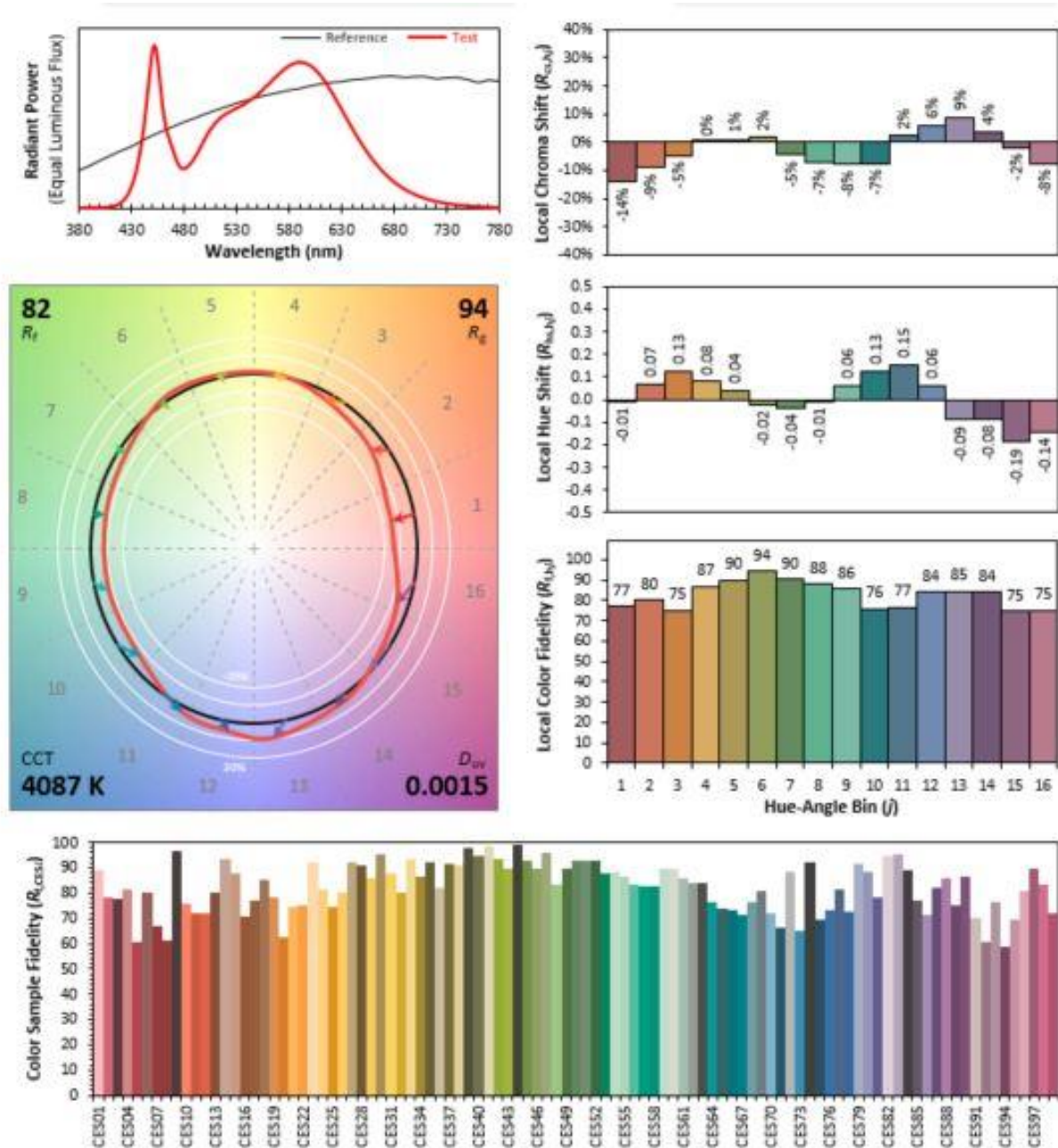
## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$	$\lambda(\text{nm})$	$(\text{W/nm})$
350	0.00071	490	0.23091	630	0.44871	770	0.00652
355	0.00082	495	0.27346	635	0.40682	775	0.00555
360	0.00089	500	0.31818	640	0.36548	780	0.00475
365	0.00126	505	0.35743	645	0.32515	785	0.00406
370	0.00163	510	0.38836	650	0.28743	790	0.00350
375	0.00230	515	0.41179	655	0.25218	795	0.00300
380	0.00317	520	0.42832	660	0.21998	800	0.00256
385	0.00392	525	0.44150	665	0.19099		
390	0.00447	530	0.45374	670	0.16474		
395	0.00485	535	0.46652	675	0.14187		
400	0.00506	540	0.48112	680	0.12169		
405	0.00604	545	0.49734	685	0.10399		
410	0.00853	550	0.51582	690	0.08887		
415	0.01501	555	0.53750	695	0.07566		
420	0.02886	560	0.56013	700	0.06424		
425	0.05579	565	0.58443	705	0.05451		
430	0.10680	570	0.60669	710	0.04623		
435	0.19207	575	0.62783	715	0.03909		
440	0.32462	580	0.64469	720	0.03320		
445	0.52426	585	0.65589	725	0.02825		
450	0.70807	590	0.66150	730	0.02392		
455	0.64661	595	0.65764	735	0.02023		
460	0.44235	600	0.64684	740	0.01711		
465	0.32467	605	0.62776	745	0.01453		
470	0.25350	610	0.60107	750	0.01235		
475	0.19595	615	0.56952	755	0.01059		
480	0.18144	620	0.53170	760	0.00895		
485	0.19874	625	0.49102	765	0.00758		

## IES TM-30-18 Color Rendition Report



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

$x$  0.3776  
 $y$  0.3781  
 $u'$  0.2227  
 $v'$  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 L21098.

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

### Electrical Measurements:

Input Voltage: 120 (VAC)  
 Input current: 1.9094 (A)  
 Input Power: 228.8 (W)  
 Power Factor: 0.9955

### Photometric measurements:

Absolute Luminous Flux: 37844.1 (lumens)  
 Luminous Efficacy: 165.4 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	32320	32063	31678	31421	32320	
5.00	29611	30980	33447	35267	35907	3336
15.00	23994	25144	26819	28306	26535	7320
25.00	14760	15670	16833	17612	16603	7436
35.00	11494	11706	12072	12334	11988	7446
45.00	9114	9354	9529	9625	9213	7195
55.00	5004	5580	6263	6505	5857	5102
65.00	724	901	1146	1337	921	930
75.00	188	197	197	195	174	198
85.00	46	70	79	72	35	32
90.00	9	16	16	17	9	

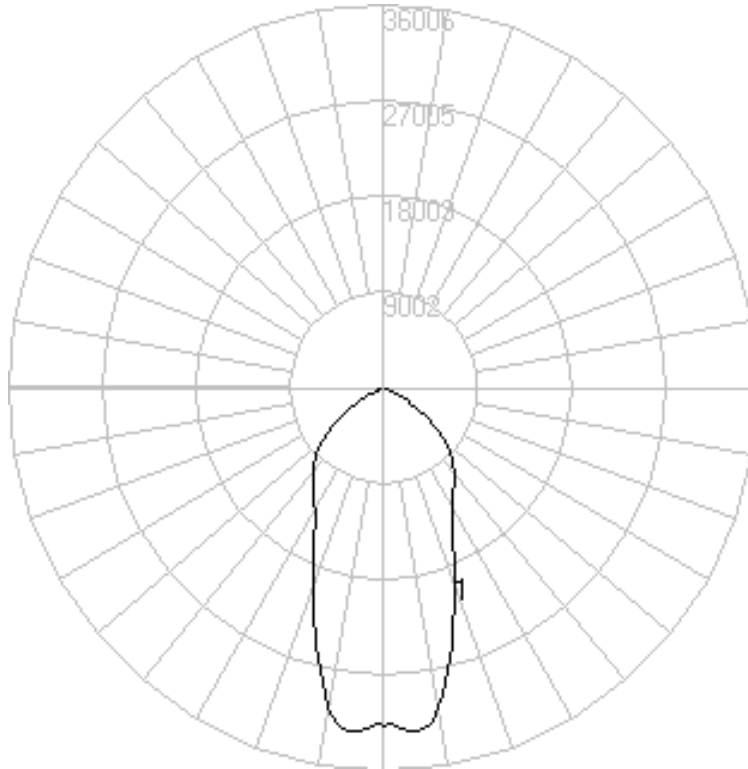
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	17369.98	45.90	45.90
0 to 40	24736.96	65.37	65.37
0 to 60	36537.06	96.55	96.55
0 to 90	37844.12	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37844.12	100.00	100.00

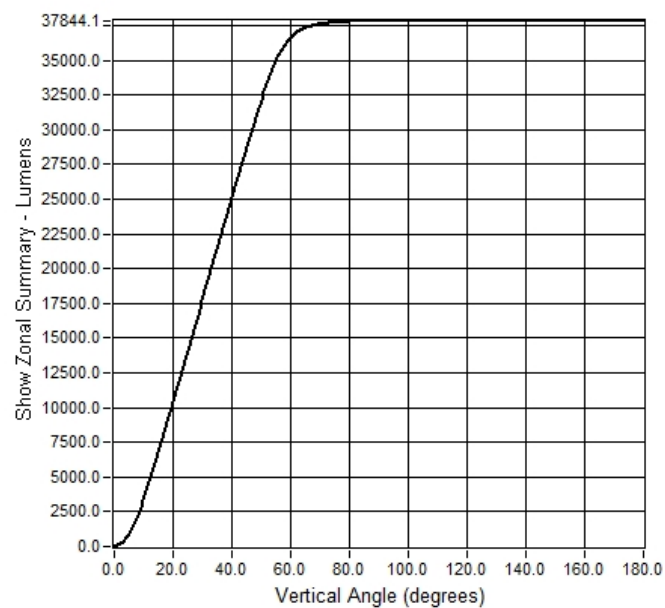
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



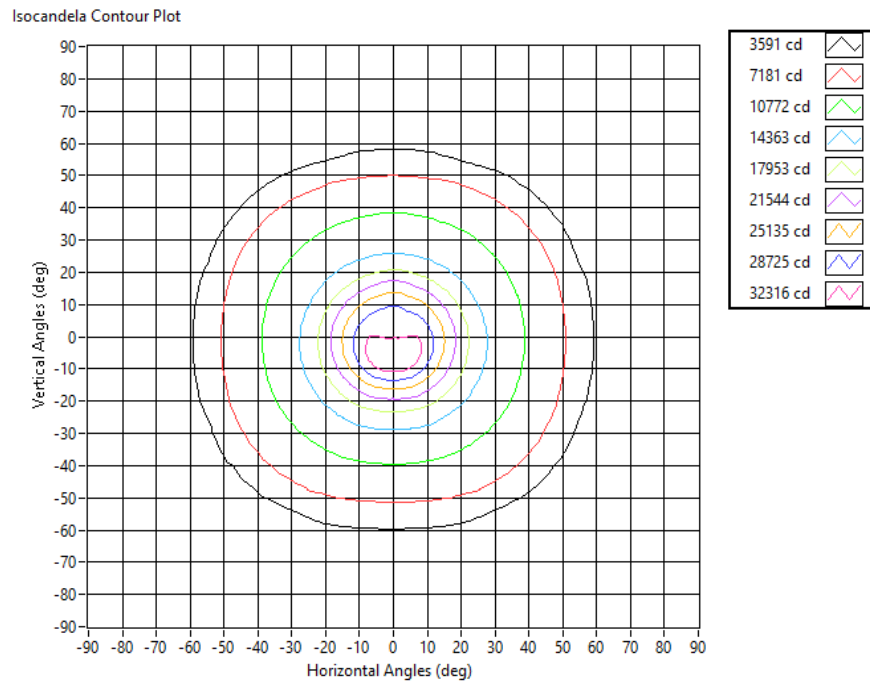
Zonal Flux Graph



## 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	1.90	1.80	7949.4
4	3.81	3.59	1987.3
6	5.71	5.39	883.3
8	7.61	7.18	496.8
10	9.51	8.98	318.0
12	11.42	10.77	220.8
14	13.32	12.57	162.2
16	15.22	14.36	124.2
18	17.12	16.16	98.1
20	19.03	17.95	79.5



# 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