

# Test Report

Report Number: L21101

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]-[2,T]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 14, 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: L21101

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

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

## Report Summary

Sample number L21101

Dialight unit model number [K,V][C,E,F,W][D,U]-[2,T]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:	36870 (lumens)	37182 (lumens)
Electrical Power:	228.2 (W)	228.2 (W)
Luminous Efficacy:	161.5 (lumens/W)	162.9 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 228.2 (W)  
 Power Factor (120VAC): 0.9961  
 Current ATHD % (120VAC): 4.76  
 Input Power (277VAC): 221.3 (W)  
 Power Factor (277VAC): 0.9711  
 Current ATHD % (277VAC): 8.5

### Color Measurements:

Correlated Color Temperature (CCT): 4102  
 Color Rendering Index (CRI): 80.48  
 Chromaticity Coordinate (x): 0.377  
 Chromaticity Coordinate (y): 0.377  
 Chromaticity Coordinate (u'): 0.223  
 Chromaticity Coordinate (v'): 0.501  
 DUV: 0.0013

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21101.

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

### Test Conditions:

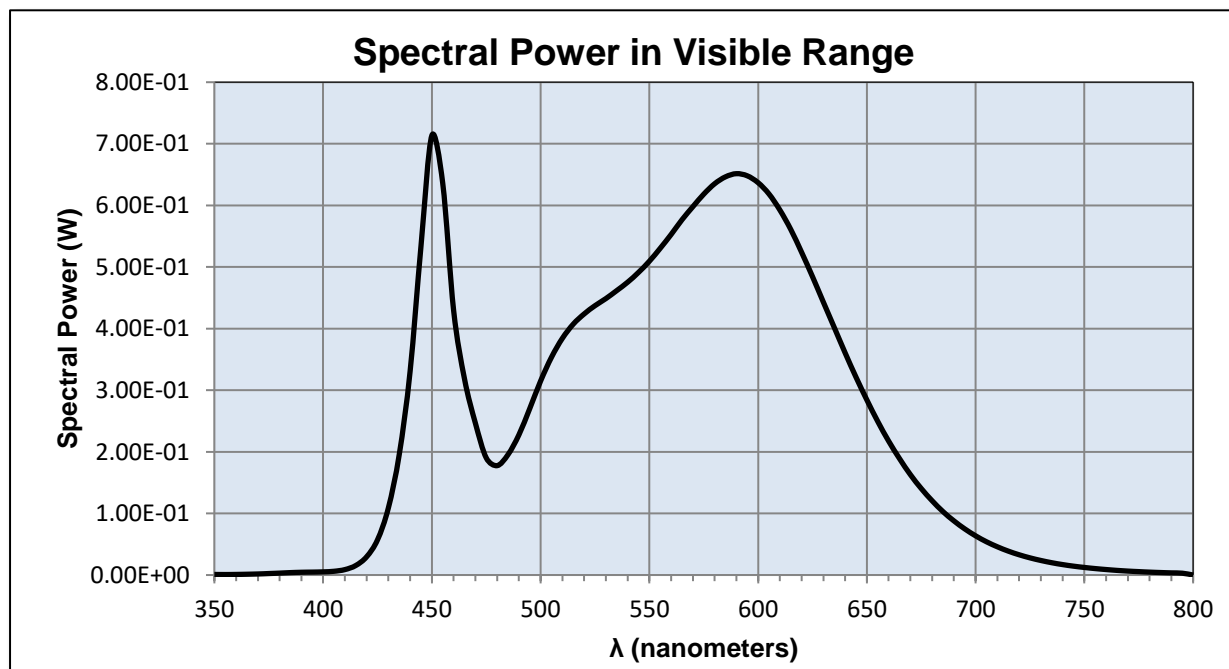
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 120.0 (VAC)  
Input Current: 1.91 (A)  
Input Power: 228.2 (W)  
Input Power Factor: 0.9961  
Current ATHD: 4.76 (%)

### Photometric measurements:

Luminous Flux: 36870.3 (lumens)  
Luminous Efficacy: 161.5 (lumens/W)  
Correlated Color Temperature (CCT): 4102 (K)  
CRI -Ra: 80.48  
CRI -R9: -7.7739  
DUV: 0.0013  
CIE Coordinate (x): 0.377  
CIE Coordinate (y): 0.377  
CIE Coordinate (u'): 0.223  
CIE Coordinate (v'): 0.501  
TM30\_Rf: 82.4  
TM30\_Rg: 94.2  
TM30\_Rcs\_hue1: -13.98 %



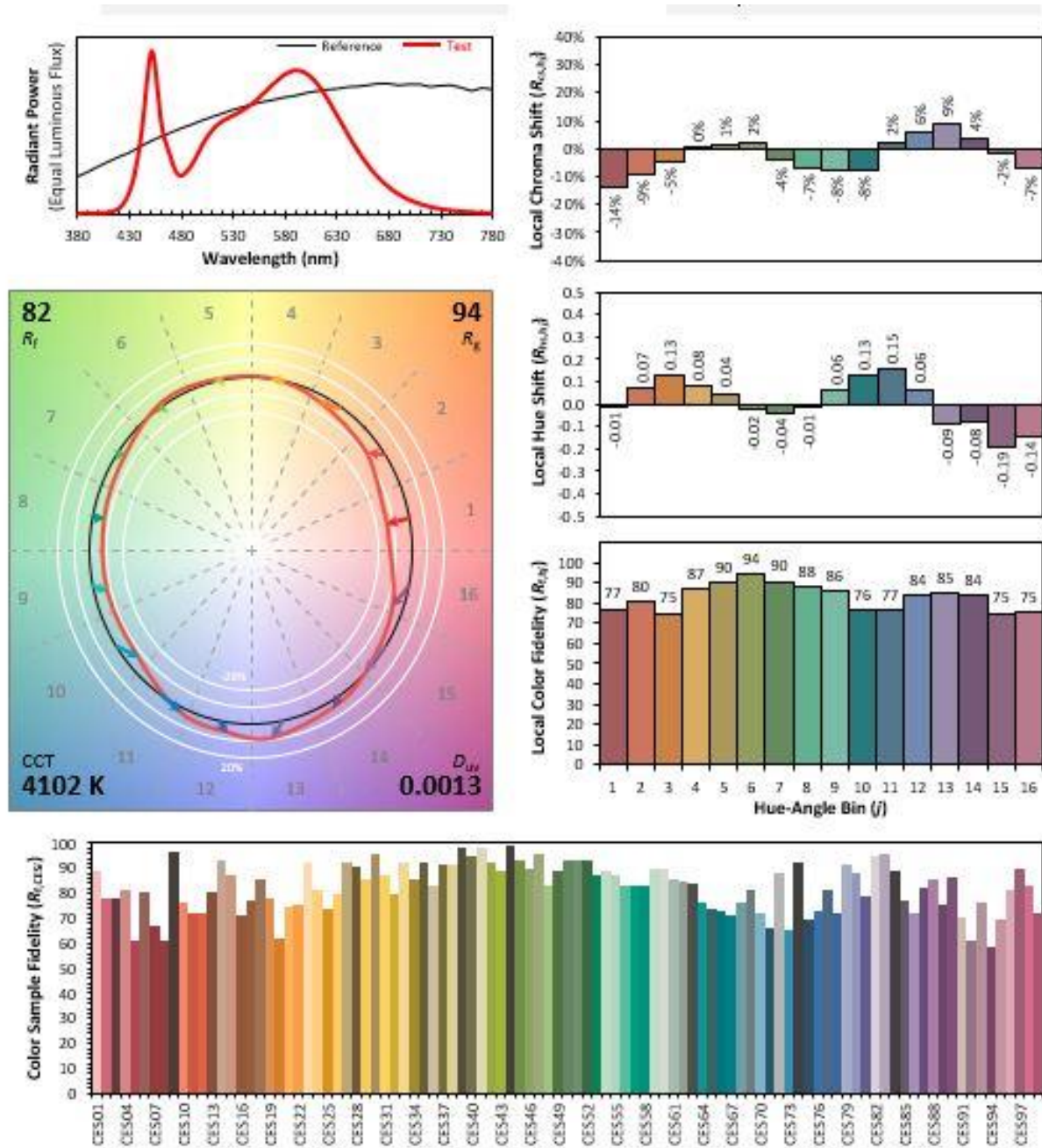
## Test Results: Integrating Sphere

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	0.00093	490	0.22750	630	0.44295	770	0.00640
355	0.00082	495	0.27020	635	0.40190	775	0.00551
360	0.00098	500	0.31506	640	0.36063	780	0.00470
365	0.00129	505	0.35358	645	0.32117	785	0.00406
370	0.00172	510	0.38428	650	0.28424	790	0.00347
375	0.00239	515	0.40730	655	0.24934	795	0.00298
380	0.00312	520	0.42380	660	0.21748	800	0.00257
385	0.00393	525	0.43724	665	0.18901		
390	0.00450	530	0.44878	670	0.16295		
395	0.00477	535	0.46176	675	0.14047		
400	0.00513	540	0.47533	680	0.12057		
405	0.00608	545	0.49123	685	0.10293		
410	0.00882	550	0.50939	690	0.08794		
415	0.01542	555	0.53046	695	0.07488		
420	0.02960	560	0.55284	700	0.06363		
425	0.05711	565	0.57675	705	0.05398		
430	0.10898	570	0.59793	710	0.04583		
435	0.19578	575	0.61826	715	0.03880		
440	0.33085	580	0.63514	720	0.03287		
445	0.53408	585	0.64642	725	0.02788		
450	0.71365	590	0.65152	730	0.02362		
455	0.63556	595	0.64807	735	0.01998		
460	0.42935	600	0.63687	740	0.01695		
465	0.31828	605	0.61854	745	0.01442		
470	0.24663	610	0.59250	750	0.01228		
475	0.19016	615	0.56103	755	0.01045		
480	0.17757	620	0.52379	760	0.00890		
485	0.19546	625	0.48440	765	0.00754		

## IES TM-30-18 Color Rendition Report



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

$x$  0.3769

$y$  0.3771

$u'$  0.2226

$v'$  0.5012

CIE 13.3-1995  
(CRI)

$R_a$  80

$R_s$  -8

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21101.

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

### Electrical Measurements:

Input Voltage: 120 (VAC)  
 Input current: 1.91 (A)  
 Input Power: 228.2 (W)  
 Power Factor: 0.9955

### Photometric measurements:

Absolute Luminous Flux: 37182.2 (lumens)  
 Luminous Efficacy: 162.9 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	13764	13769	13764	13786	13764	
5.00	14026	14012	13957	13934	13869	1414
15.00	14299	14342	14033	13975	13850	3994
25.00	15314	15584	15121	14815	14565	6956
35.00	15610	15844	15417	14837	14252	9482
45.00	12694	13053	12643	11943	10604	9282
55.00	6907	7286	6895	6081	4433	5452
65.00	1530	1728	1571	1321	782	1290
75.00	127	134	124	124	92	123
85.00	25	27	26	24	16	13
90.00	3	4	3	3	1	

#### Zonal Lumen Summary

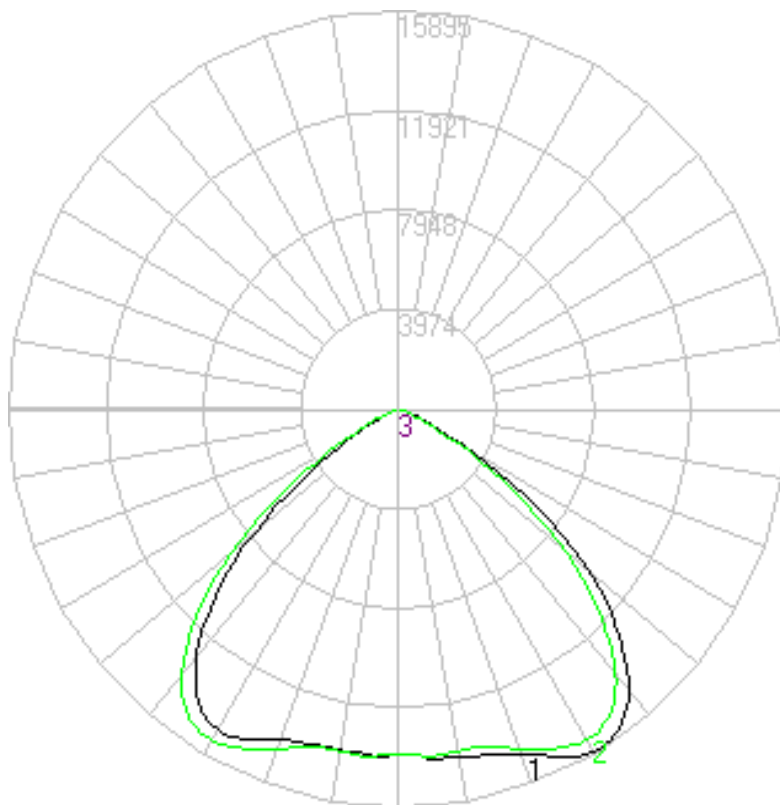
Zone	Lumens	% Lamp	% Fixture
0 to 30	12286.05	33.04	33.04
0 to 40	21585.27	58.05	58.05
0 to 60	35688.38	95.98	95.98
0 to 90	37182.17	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	37182.17	100.00	100.00



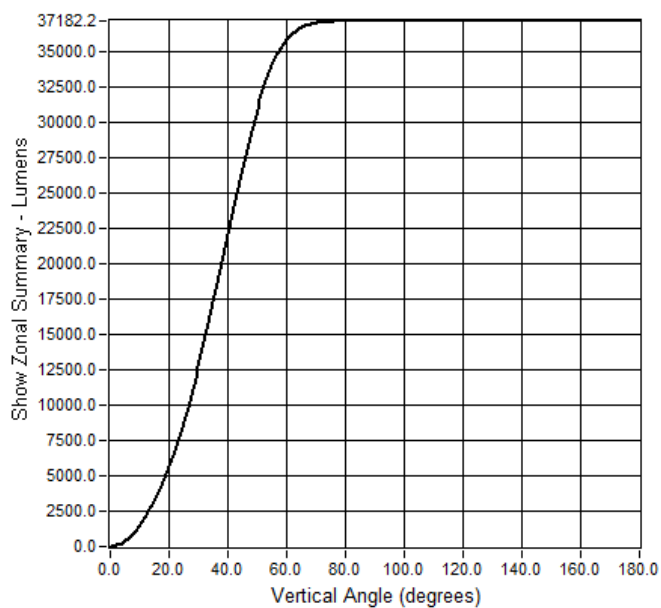
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



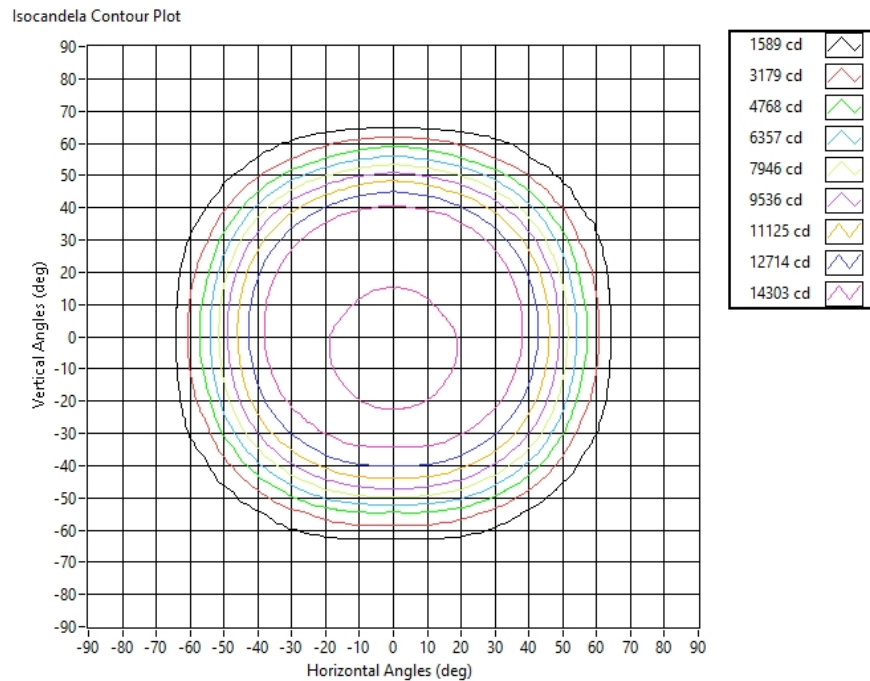
Zonal Flux Graph



## 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	5.50	5.45	3443.1
4	11.00	10.91	860.8
6	16.50	16.36	382.6
8	22.00	21.82	215.2
10	27.51	27.27	137.7
12	33.01	32.72	95.6
14	38.51	38.18	70.3
16	44.01	43.63	53.8
18	49.51	49.08	42.5
20	55.01	54.54	34.4



# 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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## Test Report Issued By:

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Dialight Optics Laboratory  
Senior Optical Engineering Technician  
Lighting Division

## Test Report Reviewed and Approved By:

Vishnu Shastry  
Dialight Optics Laboratory  
Optical Engineer  
Approved Signatory