

# Test Report

Report Number: L20079

Date: Dec 28, 2020

Issued by:

Dialight Optics Laboratory  
1501 Route 34 South, Farmingdale, NJ 07727

Test of one Highbay

Unit manufacturer: Dialight Corporation

Unit model number: H[C,E,F,W][D,U]-[4,V]NN-[2,8]Ex-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:** December 9, 2020 through December 10, 2020

**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: L20079

Manufacturer: Dialight Corporation

Product Name: Highbay

Description: Highbay

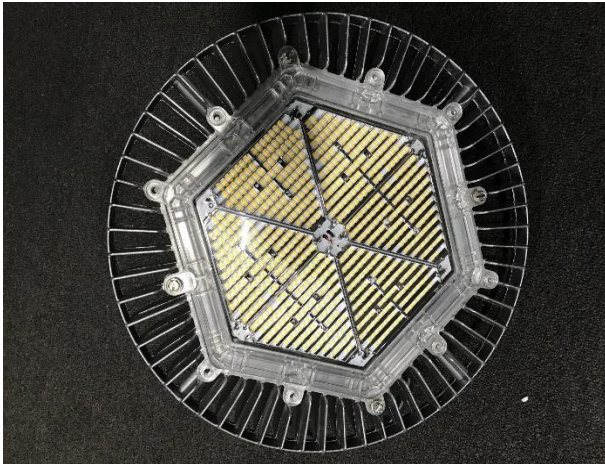
Model Number: H[C,E,F,W][D,U]-[4,V]NN-[2,8]Ex-xxx-xx

## Report Summary

Sample number L20079

Dialight unit model number H[C,E,F,W][D,U]-[4,V]NN-[2,8]Ex-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:	26324 (lumens)	26300 (lumens)
Electrical Power:	185.3 (W)	183.9 (W)
Luminous Efficacy:	142.1 (lumens/W)	143 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 185.3 (W)  
 Power Factor (120VAC): 0.995556  
 Current ATHD % (120VAC): 5.09401  
 Input Power (277VAC): 178.9 (W)  
 Power Factor (277VAC): 0.9608  
 Current ATHD % (277VAC): 9.52

### Color Measurements:

Correlated Color Temperature (CCT): 3983  
 Color Rendering Index (CRI): 83.3873  
 Chromaticity Coordinate (x): 0.382  
 Chromaticity Coordinate (y): 0.381  
 Chromaticity Coordinate (u'): 0.225  
 Chromaticity Coordinate (v'): 0.336  
 DUV: 0.0014

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20079.

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

### Test Conditions:

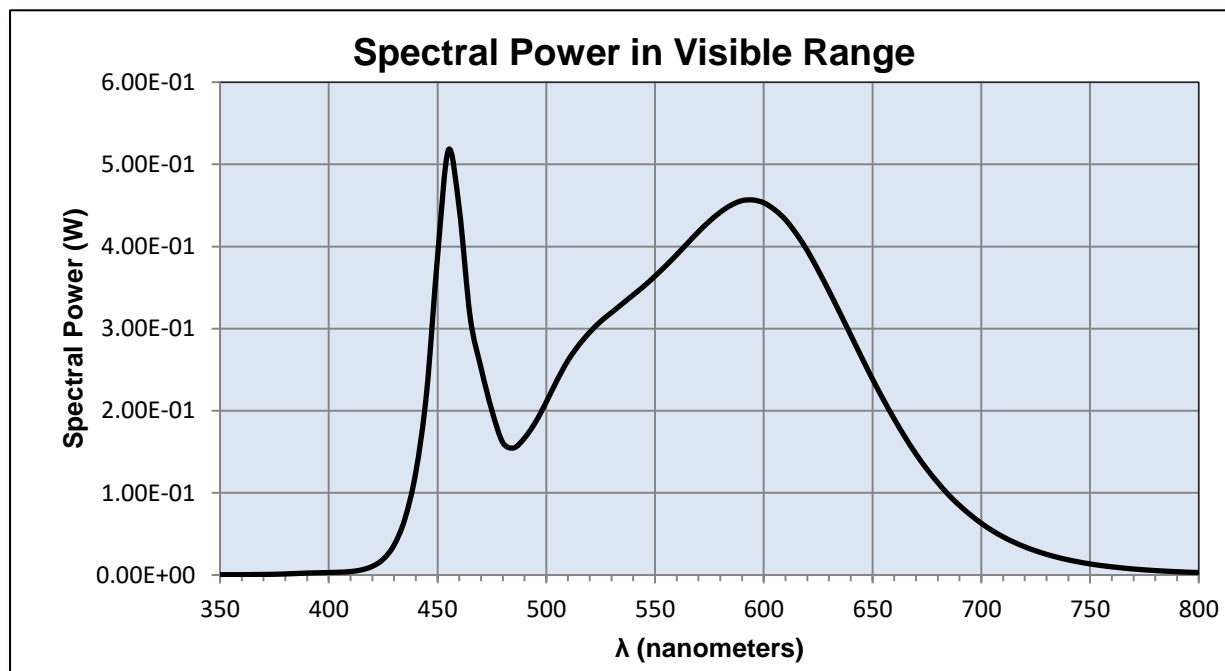
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.55557 (A)  
Input Power: 185.3 (W)  
Input Power Factor: 0.995556  
Current ATHD: 5.09401 (%)

### Photometric measurements:

Luminous Flux: 26323.99 (lumens)  
Luminous Efficacy: 142.1 (lumens/W)  
Correlated Color Temperature (CCT): 3983 (K)  
CRI -Ra: 83.3873  
CRI -R9: 10.7117  
DUV: 0.0014  
CIE Coordinate (x): 0.382  
CIE Coordinate (y): 0.381  
CIE Coordinate (u'): 0.225  
CIE Coordinate (v'): 0.336  
TM30\_Rf: 81.1  
TM30\_Rg: 92.7  
TM30\_Rcs\_hue1: -11.92 %



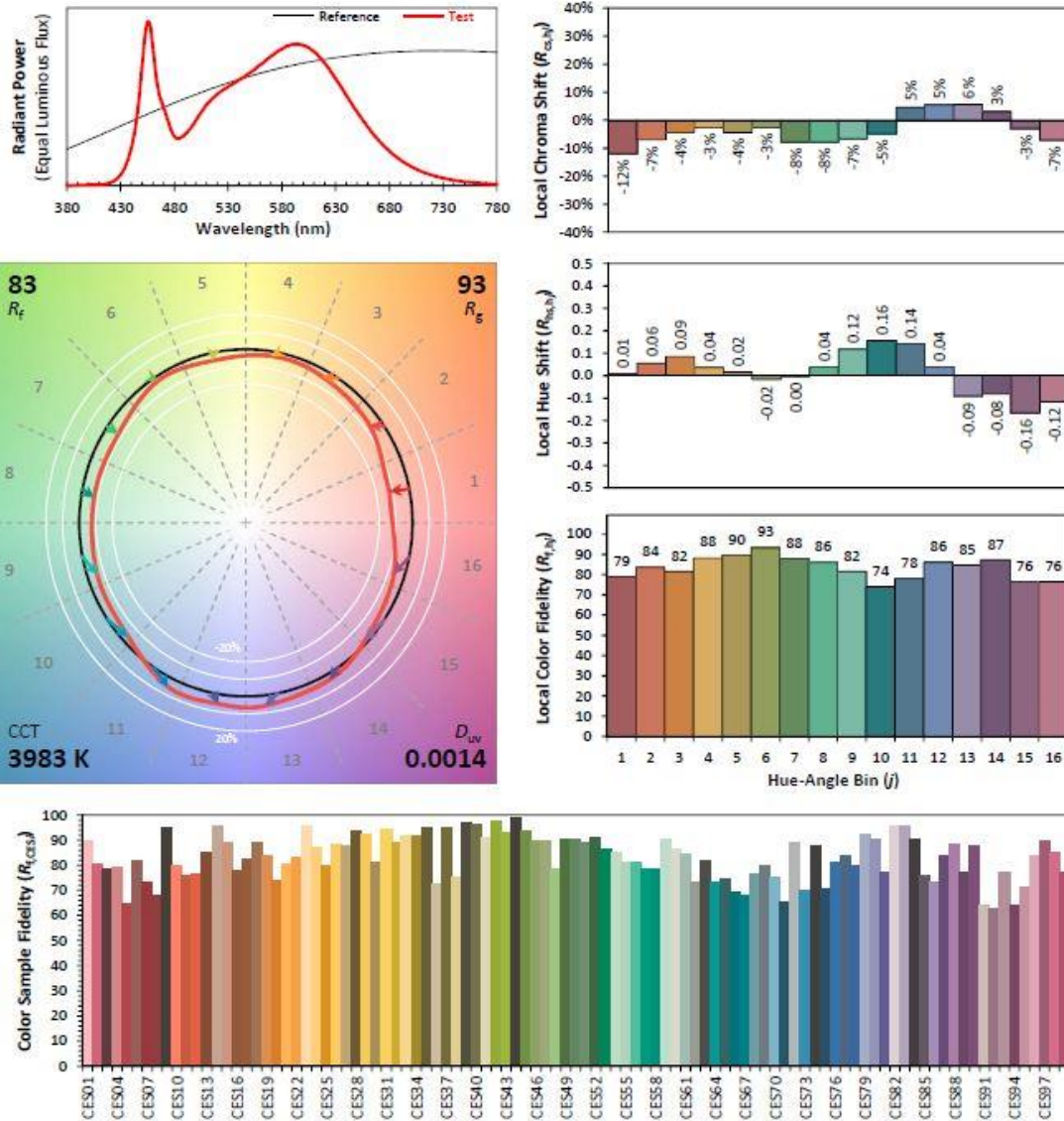
## Test Results: Integrating Sphere

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	0.00042	490	0.16679	630	0.34565	770	0.00732
355	0.00042	495	0.18590	635	0.31913	775	0.00632
360	0.00043	500	0.21059	640	0.29207	780	0.00544
365	0.00057	505	0.23739	645	0.26501	785	0.00468
370	0.00070	510	0.26131	650	0.23859	790	0.00406
375	0.00092	515	0.28007	655	0.21356	795	0.00348
380	0.00132	520	0.29563	660	0.18987	800	0.00302
385	0.00183	525	0.30876	665	0.16767		
390	0.00239	530	0.31956	670	0.14725		
395	0.00271	535	0.33032	675	0.12895		
400	0.00306	540	0.34111	680	0.11256		
405	0.00344	545	0.35193	685	0.09756		
410	0.00426	550	0.36390	690	0.08468		
415	0.00626	555	0.37666	695	0.07325		
420	0.01054	560	0.39009	700	0.06304		
425	0.01921	565	0.40416	705	0.05419		
430	0.03641	570	0.41795	710	0.04655		
435	0.06852	575	0.43070	715	0.03999		
440	0.12495	580	0.44168	720	0.03432		
445	0.22257	585	0.45039	725	0.02946		
450	0.38729	590	0.45577	730	0.02525		
455	0.51740	595	0.45660	735	0.02159		
460	0.44570	600	0.45317	740	0.01844		
465	0.31428	605	0.44474	745	0.01583		
470	0.25219	610	0.43250	750	0.01354		
475	0.20028	615	0.41535	755	0.01161		
480	0.16125	620	0.39503	760	0.01000		
485	0.15470	625	0.37118	765	0.00855		

**IES TM-30-18 Color Rendition Report**



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

x 0.3822  
y 0.3809  
u' 0.2246  
v' 0.5036

CIE 13.3-1995	
(CRI)	
$R_a$	83
$R_g$	11



## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20079.  
Dialight unit model number H[C,E,F,W][D,U]-[4,V]NN-[2,8]Ex-xxx-xx

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 1.5405 (A)  
Input Power: 183.9 (W)  
Power Factor: 0.9944

### Photometric measurements:

Absolute Luminous Flux: 26299.5 (lumens)  
Luminous Efficacy: 143.0 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	25104	25148	25176	25169	25104	
5.00	24842	24488	24194	24182	24278	2485
15.00	18537	18486	18195	18197	17587	5144
25.00	11152	11280	11105	11029	10730	5098
35.00	8218	8193	8206	8188	8135	5141
45.00	6539	6451	6527	6460	6433	5021
55.00	3792	3626	3616	3680	3322	3219
65.00	440	476	458	475	386	431
75.00	106	108	110	113	106	114
85.00	18	18	20	21	19	11
90.00	1	1	1	2	2	

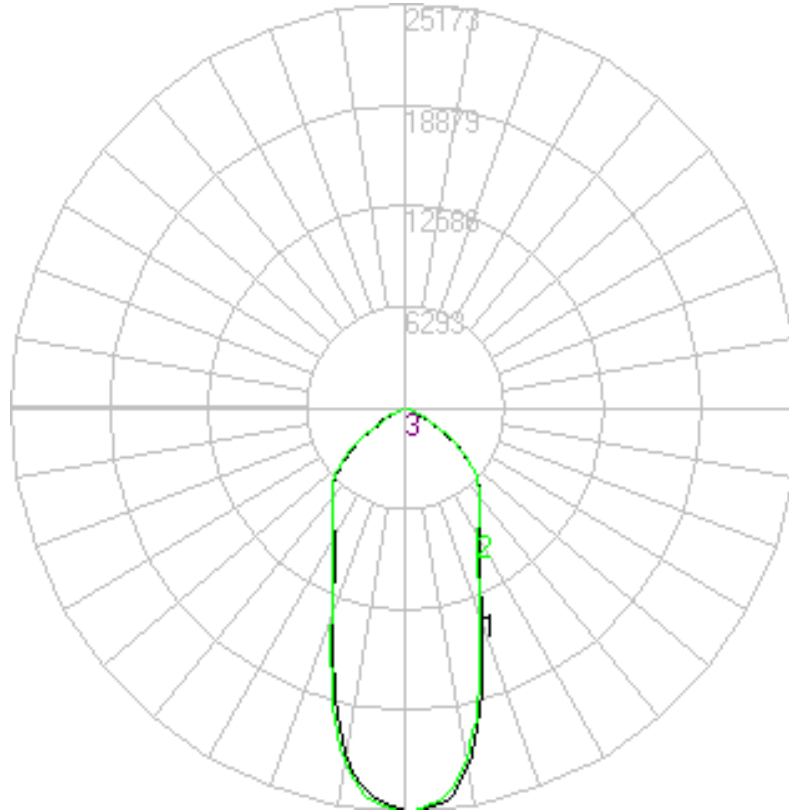
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	12382.59	47.08	47.08
0 to 40	17520.89	66.62	66.62
0 to 60	25594.58	97.32	97.32
0 to 90	26299.49	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	26299.49	100.00	100.00

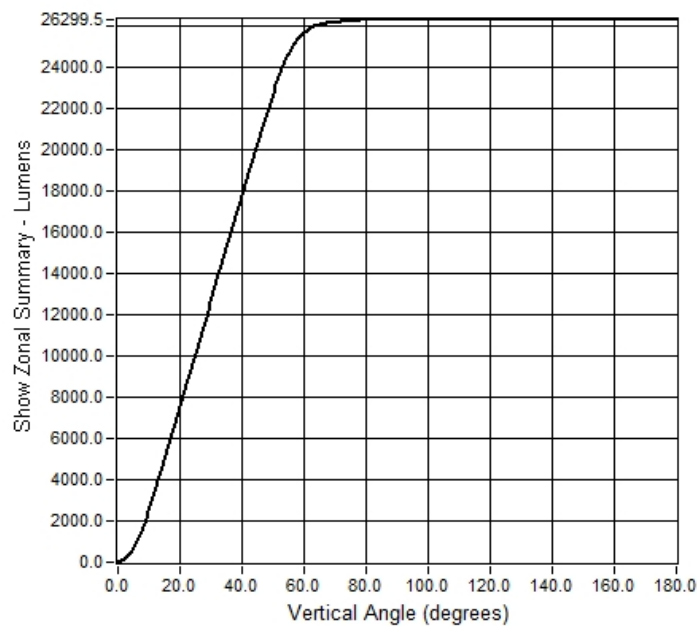
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



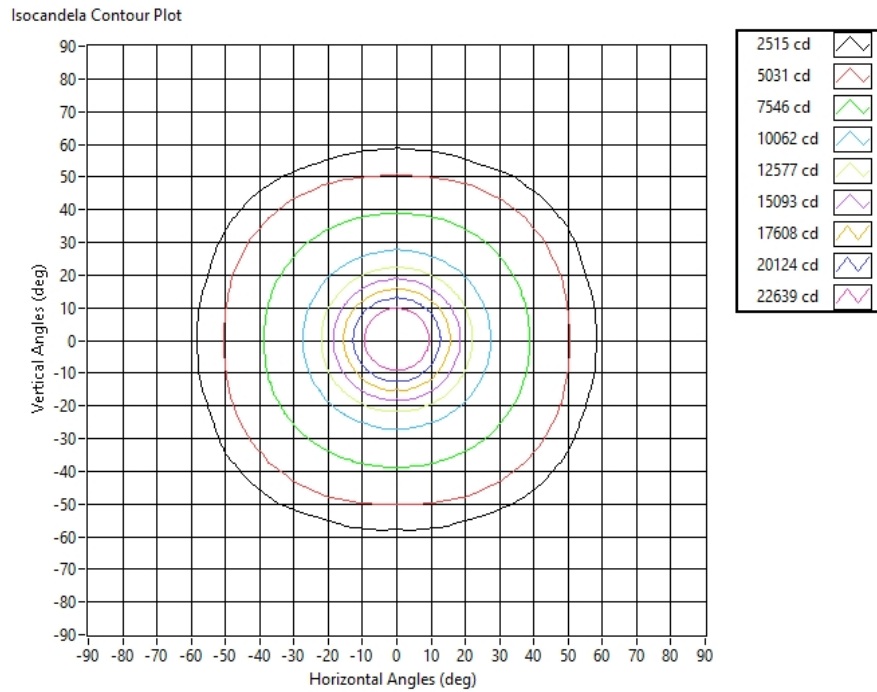
Zonal Flux Graph



## 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	1.62	1.55	6288.7
4	3.23	3.09	1572.2
6	4.85	4.64	698.7
8	6.46	6.19	393.0
10	8.08	7.73	251.5
12	9.69	9.28	174.7
14	11.31	10.83	128.3
16	12.92	12.37	98.3
18	14.54	13.92	77.6
20	16.15	15.47	62.9



**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. This report shall not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. This report shall not be reproduced, except in full, without the express written permission of Dialight Optics Laboratory.

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 Approved Signatory