

# Test Report

Report Number: L20085

Date: Dec 29, 2020

Issued by:

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

Test of one High Bay

Unit manufacturer: Dialight Corporation

Unit model number: H[C,E,F,W][D,U]-[7,R]MN-[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 8, 2020 through December 8, 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: L20085  
Manufacturer: Dialight Corporation  
Product Name: High Bay  
Description: High Bay  
Model Number: H[C,E,F,W][D,U]-[7,R]MN-[2,8]Ex-xxx-xx

## Report Summary

Sample number L20085

Dialight unit model number H[C,E,F,W][D,U]-[7,R]MN-[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:	27483 (lumens)	27134 (lumens)
Electrical Power:	185.4 (W)	183.6 (W)
Luminous Efficacy:	148.2 (lumens/W)	147.8 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 185.4 (W)  
 Power Factor (120VAC): 0.995554  
 Current ATHD % (120VAC): 5.12539  
 Input Power (277VAC): 179.0 (W)  
 Power Factor (277VAC): 0.957  
 Current ATHD % (277VAC): 9.388

### Color Measurements:

Correlated Color Temperature (CCT): 4044  
 Color Rendering Index (CRI): 82.8219  
 Chromaticity Coordinate (x): 0.380  
 Chromaticity Coordinate (y): 0.381  
 Chromaticity Coordinate (u'): 0.223  
 Chromaticity Coordinate (v'): 0.336  
 DUV: 0.0021

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20085.

Dialight unit model number H[C,E,F,W][D,U]-[7,R]MN-[2,8]Ex-xxx-xx

### Test Conditions:

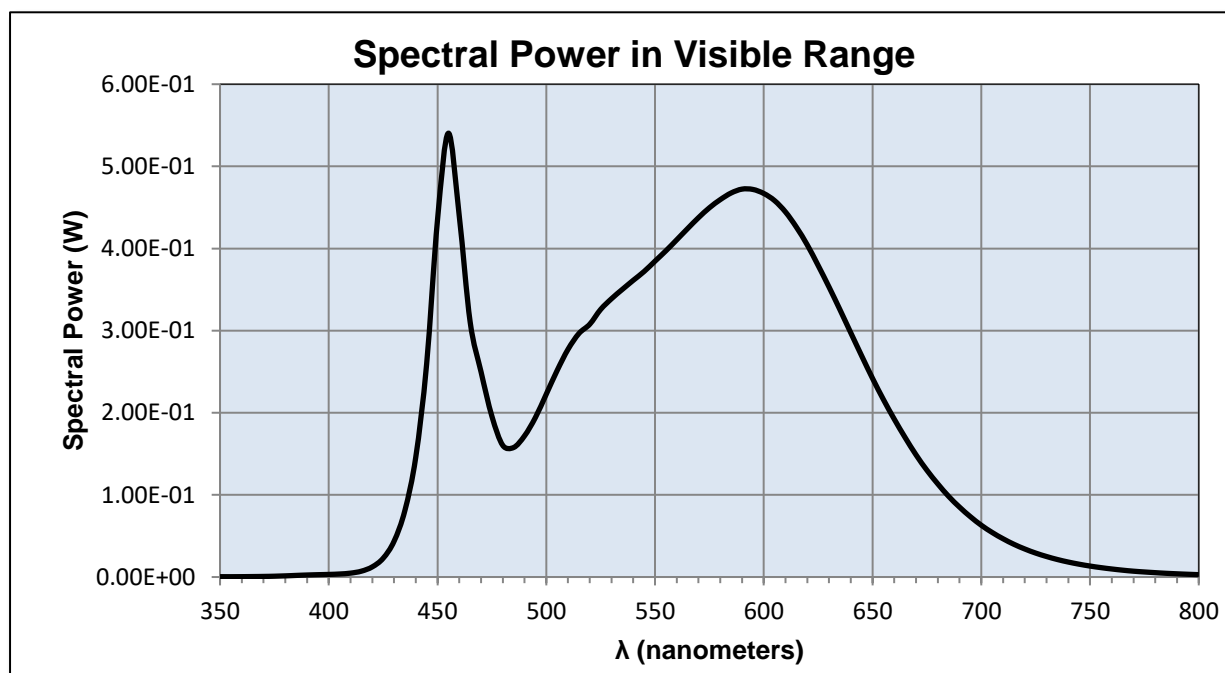
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.5557 (A)  
Input Power: 185.4 (W)  
Input Power Factor: 0.995554  
Current ATHD: 5.12539 (%)

### Photometric measurements:

Luminous Flux: 27483.12 (lumens)  
Luminous Efficacy: 148.2 (lumens/W)  
Correlated Color Temperature (CCT): 4044 (K)  
CRI -Ra: 82.8219  
CRI -R9: 7.9275  
DUV: 0.0021  
CIE Coordinate (x): 0.380  
CIE Coordinate (y): 0.381  
CIE Coordinate (u'): 0.223  
CIE Coordinate (v'): 0.336  
TM30\_Rf: 81.1  
TM30\_Rg: 92.9  
TM30\_Rcs\_hue1: -12.18 %



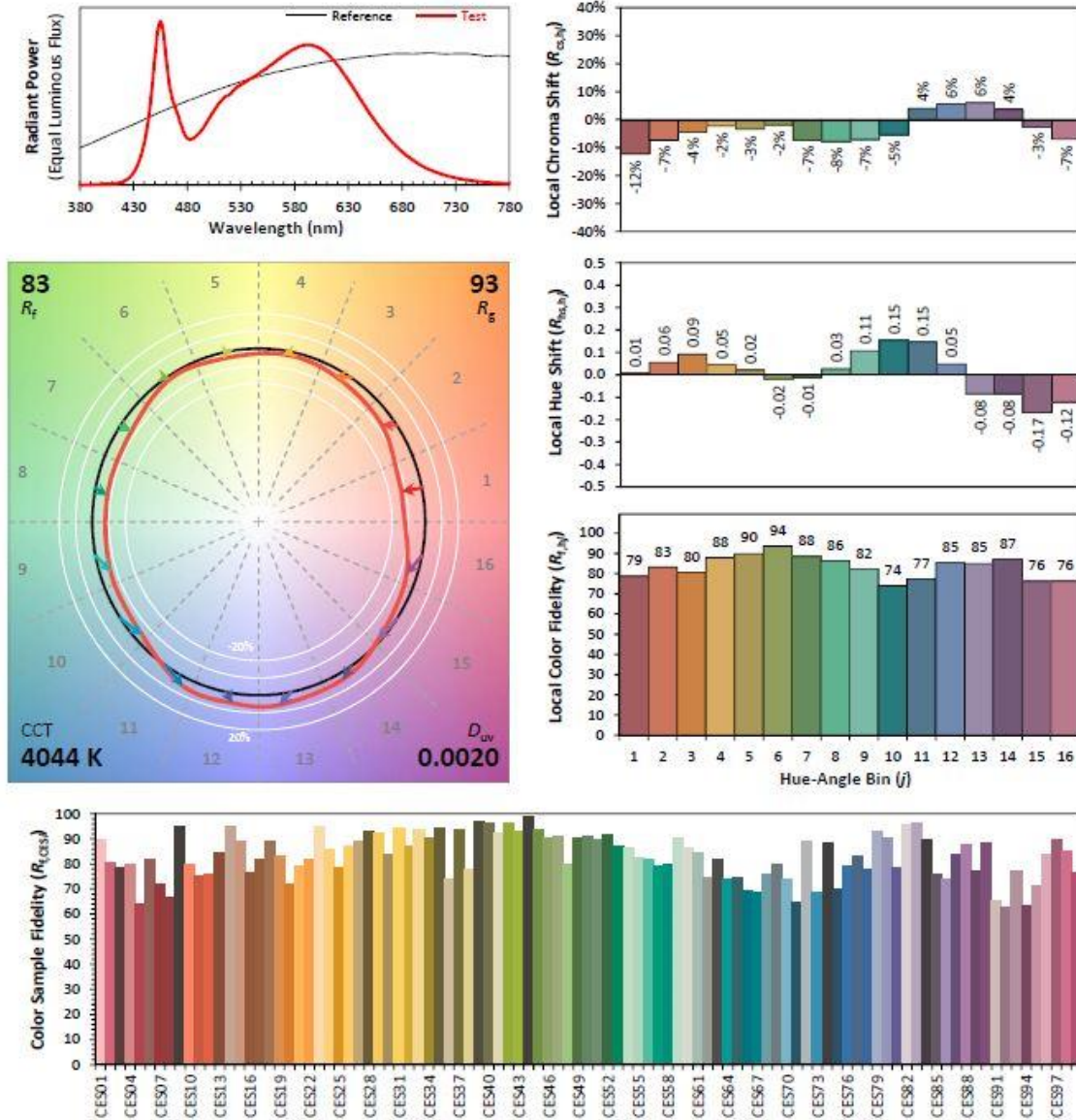
## Test Results: Integrating Sphere

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	0.00041	490	0.17184	630	0.35309	770	0.00711
355	0.00039	495	0.19416	635	0.32558	775	0.00616
360	0.00046	500	0.22265	640	0.29731	780	0.00530
365	0.00058	505	0.25148	645	0.26932	785	0.00454
370	0.00072	510	0.27725	650	0.24190	790	0.00390
375	0.00099	515	0.29646	655	0.21616	795	0.00336
380	0.00143	520	0.30781	660	0.19220	800	0.00289
385	0.00196	525	0.32579	665	0.16976		
390	0.00246	530	0.33887	670	0.14877		
395	0.00284	535	0.35028	675	0.13004		
400	0.00317	540	0.36127	680	0.11344		
405	0.00370	545	0.37201	685	0.09820		
410	0.00474	550	0.38460	690	0.08510		
415	0.00712	555	0.39717	695	0.07343		
420	0.01237	560	0.41063	700	0.06308		
425	0.02284	565	0.42429	705	0.05426		
430	0.04350	570	0.43754	710	0.04660		
435	0.08110	575	0.44955	715	0.03987		
440	0.14597	580	0.45947	720	0.03414		
445	0.25952	585	0.46759	725	0.02919		
450	0.43509	590	0.47229	730	0.02498		
455	0.54038	595	0.47189	735	0.02133		
460	0.43914	600	0.46698	740	0.01823		
465	0.31058	605	0.45818	745	0.01559		
470	0.24991	610	0.44439	750	0.01335		
475	0.19571	615	0.42596	755	0.01144		
480	0.16025	620	0.40437	760	0.00979		
485	0.15772	625	0.37931	765	0.00834		

IES TM-30-18 Color Rendition Report



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

$x$  0.3799  
 $y$  0.3808  
 $u'$  0.2232  
 $v'$  0.5033

CIE 13.3-1995 (CRI)	
$R_a$	83
$R_g$	8

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20085.  
Dialight unit model number H[C,E,F,W][D,U]-[7,R]MN-[2,8]Ex-xxx-xx

### Electrical Measurements:

Input Voltage: 119.93 (VAC)  
Input current: 1.5393 (A)  
Input Power: 183.6 (W)  
Power Factor: 0.9943

### Photometric measurements:

Absolute Luminous Flux: 27134 (lumens)  
Luminous Efficacy: 147.8 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	10073	10069	10063	10060	10073	
5.00	10134	10173	10160	10104	10062	1026
15.00	10581	10755	10806	10430	10359	2989
25.00	11467	11812	11944	11265	11142	5297
35.00	11483	11833	11917	11396	11199	7213
45.00	8825	9165	9339	8898	8364	6813
55.00	4096	4550	4623	4376	3668	3696
65.00	751	838	893	848	691	767
75.00	31	30	32	31	30	32
85.00	3	3	4	4	4	2
90.00	1	0	1	1	1	

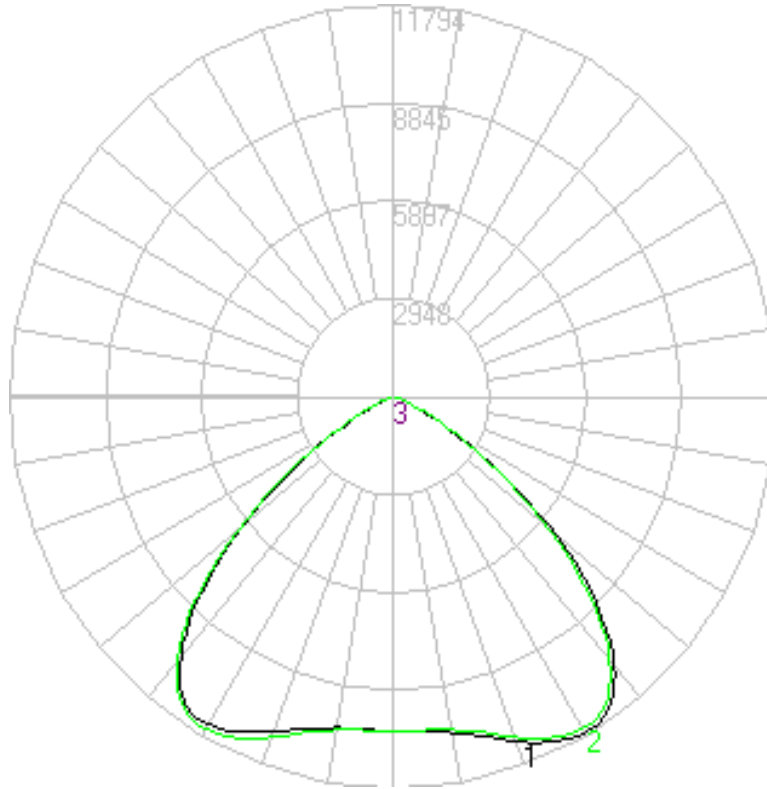
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	9188.00	33.86	33.86
0 to 40	16193.52	59.68	59.68
0 to 60	26250.98	96.75	96.75
0 to 90	27133.98	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	27133.98	100.00	100.00

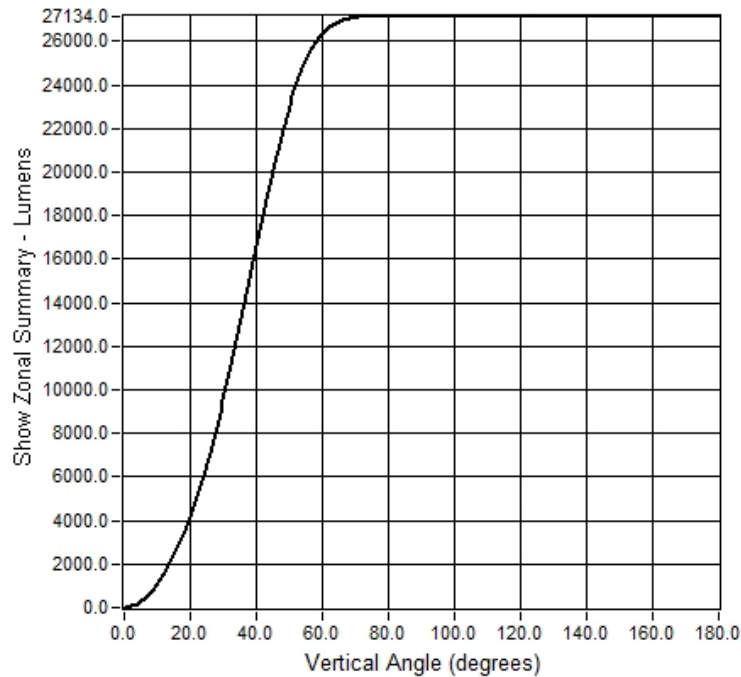
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



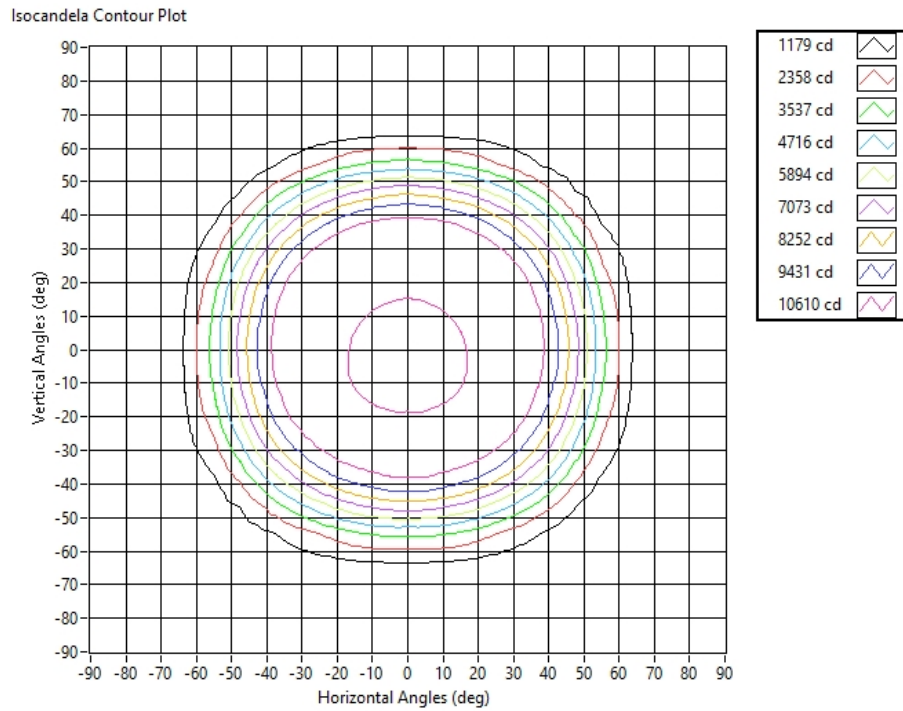
Zonal Flux Graph



## 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	5.39	5.19	2516.2
4	10.78	10.38	629.0
6	16.18	15.57	279.6
8	21.57	20.76	157.3
10	26.96	25.95	100.6
12	32.35	31.14	69.9
14	37.75	36.33	51.4
16	43.14	41.52	39.3
18	48.53	46.71	31.1
20	53.92	51.90	25.2



**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