

# Test Report

Report Number: L20089

Date: Jan 4, 2021

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]-[L,Z]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:** November 20, 2020 through November 23, 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: L20089

Manufacturer: Dialight Corporation

Product Name: High Bay

Description: High Bay

Model Number: H[C,E,F,W][D,U]-[L,Z]MN-[2,8]Ex-xxx-xx

## Report Summary

Sample number L20089

Dialight unit model number H[C,E,F,W][D,U]-[L,Z]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:	26465 (lumens)	25972 (lumens)
Electrical Power:	185.6 (W)	184.1 (W)
Luminous Efficacy:	142.6 (lumens/W)	141.1 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 185.6 (W)  
 Power Factor (120VAC): 0.995694  
 Current ATHD % (120VAC): 4.94199  
 Input Power (277VAC): 179.1 (W)  
 Power Factor (277VAC): 0.9576  
 Current ATHD % (277VAC): 9.33

### Color Measurements:

Correlated Color Temperature (CCT): 3994  
 Color Rendering Index (CRI): 83.1038  
 Chromaticity Coordinate (x): 0.382  
 Chromaticity Coordinate (y): 0.382  
 Chromaticity Coordinate (u'): 0.224  
 Chromaticity Coordinate (v'): 0.336  
 DUV: 0.0018

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20089.

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

### Test Conditions:

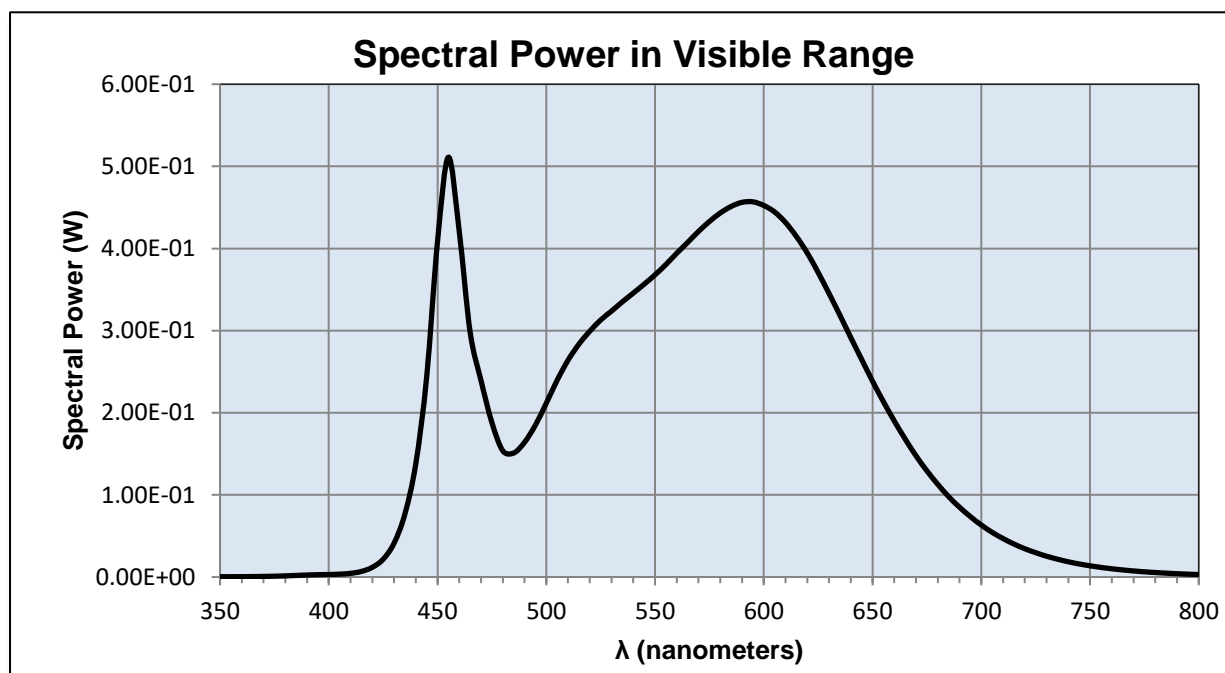
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.55337 (A)  
Input Power: 185.6 (W)  
Input Power Factor: 0.995694  
Current ATHD: 4.94199 (%)

### Photometric measurements:

Luminous Flux: 26464.75 (lumens)  
Luminous Efficacy: 142.6 (lumens/W)  
Correlated Color Temperature (CCT): 3994 (K)  
CRI -Ra: 83.1038  
CRI -R9: 9.5058  
DUV: 0.0018  
CIE Coordinate (x): 0.382  
CIE Coordinate (y): 0.382  
CIE Coordinate (u'): 0.224  
CIE Coordinate (v'): 0.336  
TM30\_Rf: 81.3  
TM30\_Rg: 93.1  
TM30\_Rcs\_hue1: -11.98 %



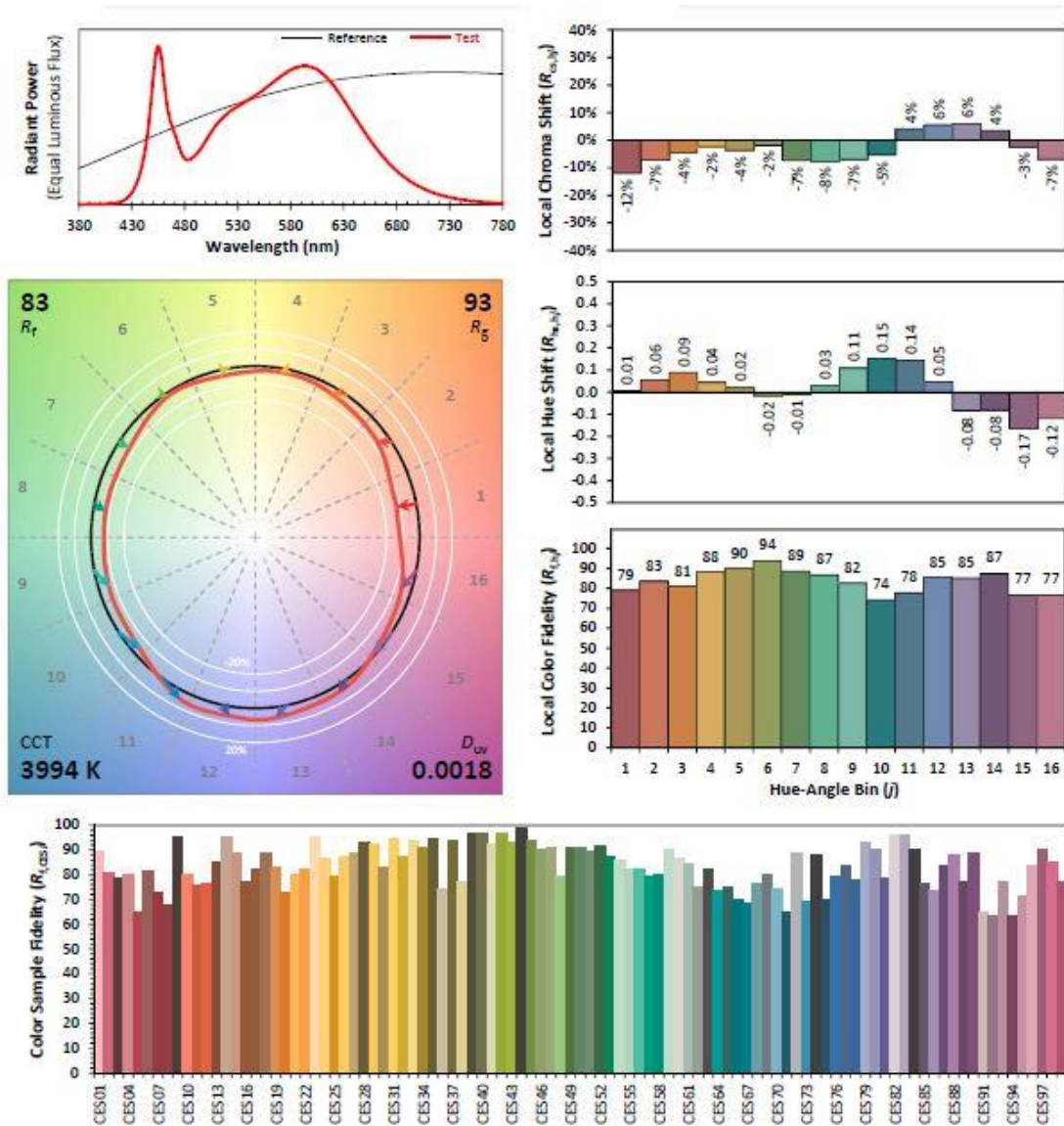
## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)
350	0.00041	490	0.16399	630	0.34524	770	0.00740
355	0.00038	495	0.18496	635	0.31879	775	0.00635
360	0.00046	500	0.21160	640	0.29149	780	0.00547
365	0.00056	505	0.23962	645	0.26498	785	0.00473
370	0.00076	510	0.26395	650	0.23848	790	0.00407
375	0.00100	515	0.28350	655	0.21356	795	0.00351
380	0.00140	520	0.29923	660	0.19002	800	0.00303
385	0.00192	525	0.31288	665	0.16805		
390	0.00246	530	0.32378	670	0.14759		
395	0.00284	535	0.33508	675	0.12931		
400	0.00307	540	0.34566	680	0.11289		
405	0.00353	545	0.35649	685	0.09789		
410	0.00447	550	0.36790	690	0.08498		
415	0.00678	555	0.38051	695	0.07355		
420	0.01180	560	0.39425	700	0.06329		
425	0.02166	565	0.40734	705	0.05442		
430	0.04112	570	0.42078	710	0.04687		
435	0.07679	575	0.43280	715	0.04017		
440	0.13775	580	0.44323	720	0.03448		
445	0.24334	585	0.45117	725	0.02966		
450	0.40853	590	0.45617	730	0.02536		
455	0.51111	595	0.45681	735	0.02174		
460	0.42025	600	0.45233	740	0.01856		
465	0.29804	605	0.44441	745	0.01594		
470	0.23925	610	0.43159	750	0.01367		
475	0.18800	615	0.41459	755	0.01172		
480	0.15369	620	0.39452	760	0.01006		
485	0.15096	625	0.37079	765	0.00862		

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



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

x **0.3820**  
y **0.3816**  
 $u'$  **0.2242**  
 $v'$  **0.5039**

CIE 13.3-1995 (CRI)	
$R_a$	83
$R_g$	10

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20089.  
Dialight unit model number H[C,E,F,W][D,U]-[L,Z]MN-[2,8]Ex-xxx-xx

### Electrical Measurements:

Input Voltage: 120.03 (VAC)  
Input current: 1.5418 (A)  
Input Power: 184.1 (W)  
Power Factor: 0.9945

### Photometric measurements:

Absolute Luminous Flux: 25972.3 (lumens)  
Luminous Efficacy: 141.1 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	9044	9039	9033	9030	9044	
5.00	9105	9139	9128	9063	9031	921
15.00	9400	9539	9519	9287	9198	2652
25.00	9706	9936	9950	9551	9472	4477
35.00	9309	9563	9642	9246	9143	5856
45.00	7415	7716	7909	7577	7336	5816
55.00	4351	4663	4892	4637	4350	4031
65.00	1689	1848	2009	1928	1773	1792
75.00	553	584	637	633	589	623
85.00	291	299	316	312	304	237
90.00	252	258	272	269	266	

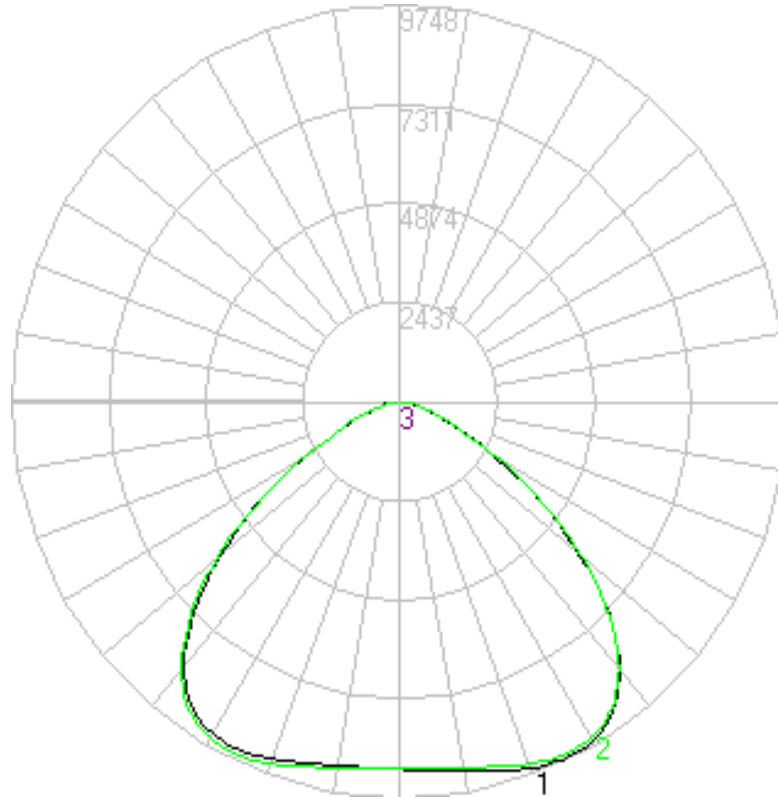
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	7933.22	30.54	30.54
0 to 40	13670.65	52.64	52.64
0 to 60	23228.03	89.43	89.43
0 to 90	25972.28	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	25972.28	100.00	100.00

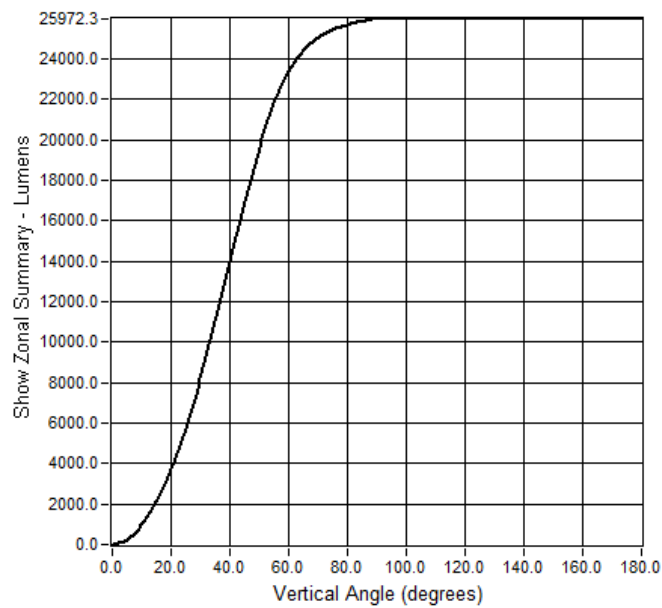
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



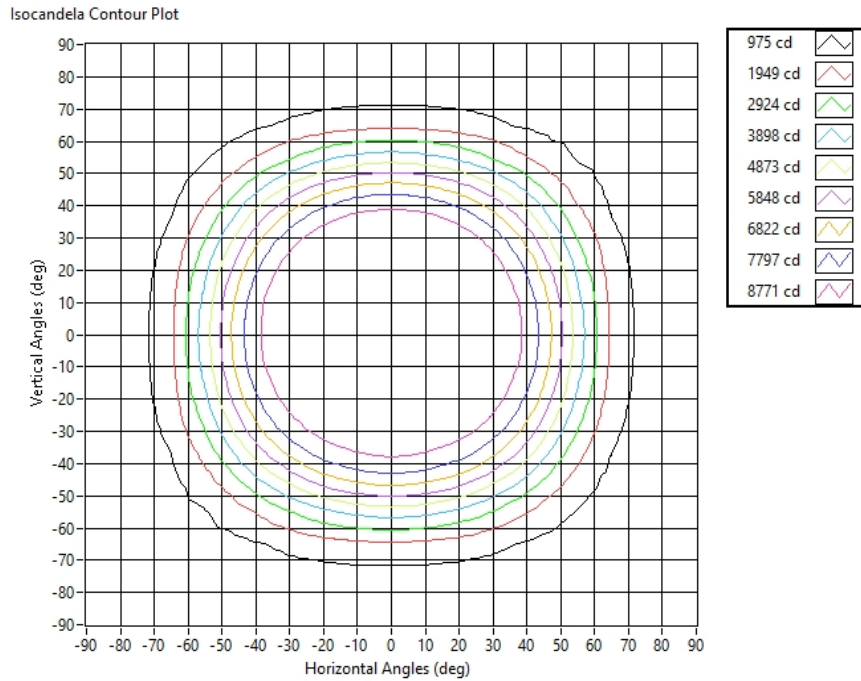
Zonal Flux Graph



## 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	5.61	5.57	2258.7
4	11.23	11.13	564.7
6	16.84	16.70	251.0
8	22.46	22.27	141.2
10	28.07	27.84	90.3
12	33.69	33.40	62.7
14	39.30	38.97	46.1
16	44.92	44.54	35.3
18	50.53	50.10	27.9
20	56.15	55.67	22.6



**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.

Test Report Issued By:

Richard Huegi  
 Dialight Optics Laboratory  
 Senior Optical Engineering Technician  
 Lighting Division

Test Report Reviewed and Approved By:

Vishnu Shastry  
 Dialight Optics Laboratory  
 Optical Engineer  
 Approved Signatory