

# Test Report

Report Number: L21080

Date: Jun 11, 2021

Issued by:

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

Test of one IECEx High Bay / Flood  
Unit manufacturer: Dialight Corporation  
Unit model number: HxA/FSA-7[N,6]N2-Cxxx-NGN

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:** May 20, 2021 through May 20, 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: L21080  
Manufacturer: Dialight Corporation  
Product Name: Glass, Narrow, NW, 100-277V, 16k  
Description: IECEx High Bay / Flood  
Model Number: HxA/FSA-7[N,6]N2-Cxxx-NGN

## Report Summary

Sample number L21080  
Dialight unit model number HxA/FSA-7[N,6]N2-Cxxx-NGN

### Photograph(s) of sample:



\*Photographs not to scale. For reference only.

### Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	15582 (lumens)	15922 (lumens)
Electrical Power:	112.8 (W)	113.2 (W)
Luminous Efficacy:	138.1 (lumens/W)	140.7 (lumens/W)

### Electrical Measurements:

Input Power (230VAC): 112.8 (W)  
Power Factor (230VAC): 0.973035  
Current ATHD % (230VAC): 11.6439  
Input Power (110VAC): 114.0 (W)  
Power Factor (110VAC): 0.996  
Current ATHD % (110VAC): 9.56

### Color Measurements:

Correlated Color Temperature (CCT): 4005  
Color Rendering Index (CRI): 84.289  
Chromaticity Coordinate (x): 0.380  
Chromaticity Coordinate (y): 0.376  
Chromaticity Coordinate (u'): 0.225  
Chromaticity Coordinate (v'): 0.334  
DUV: 0.0000

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21080.  
Dialight unit model number HxA/FSA-7[N,6]N2-Cxxx-NGN

### Test Conditions:

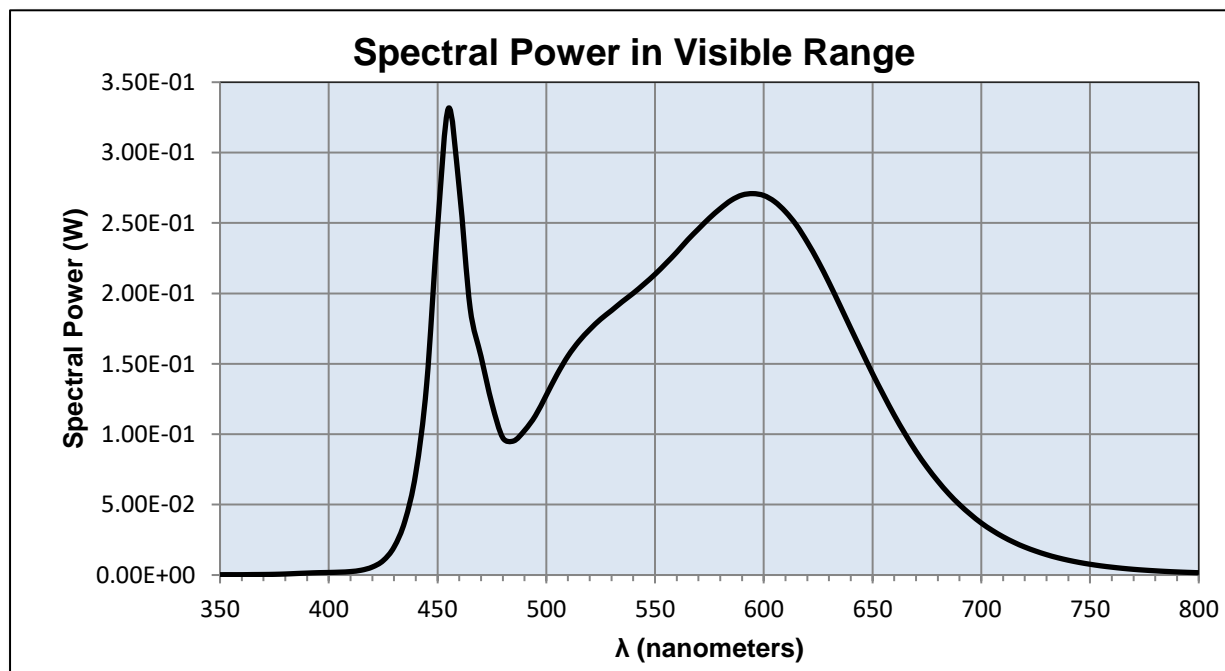
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 230 (VAC)  
Input Current: 0.505546 (A)  
Input Power: 112.8 (W)  
Input Power Factor: 0.973035  
Current ATHD: 11.6439 (%)

### Photometric measurements:

Luminous Flux: 15582.47 (lumens)  
Luminous Efficacy: 138.1 (lumens/W)  
Correlated Color Temperature (CCT): 4005 (K)  
CRI -Ra: 84.289  
CRI -R9: 15.0585  
DUV: 0.0000  
CIE Coordinate (x): 0.380  
CIE Coordinate (y): 0.376  
CIE Coordinate (u'): 0.225  
CIE Coordinate (v'): 0.334  
TM30\_Rf: 81.5  
TM30\_Rg: 93.2  
TM30\_Rcs\_hue1: -11.46 %



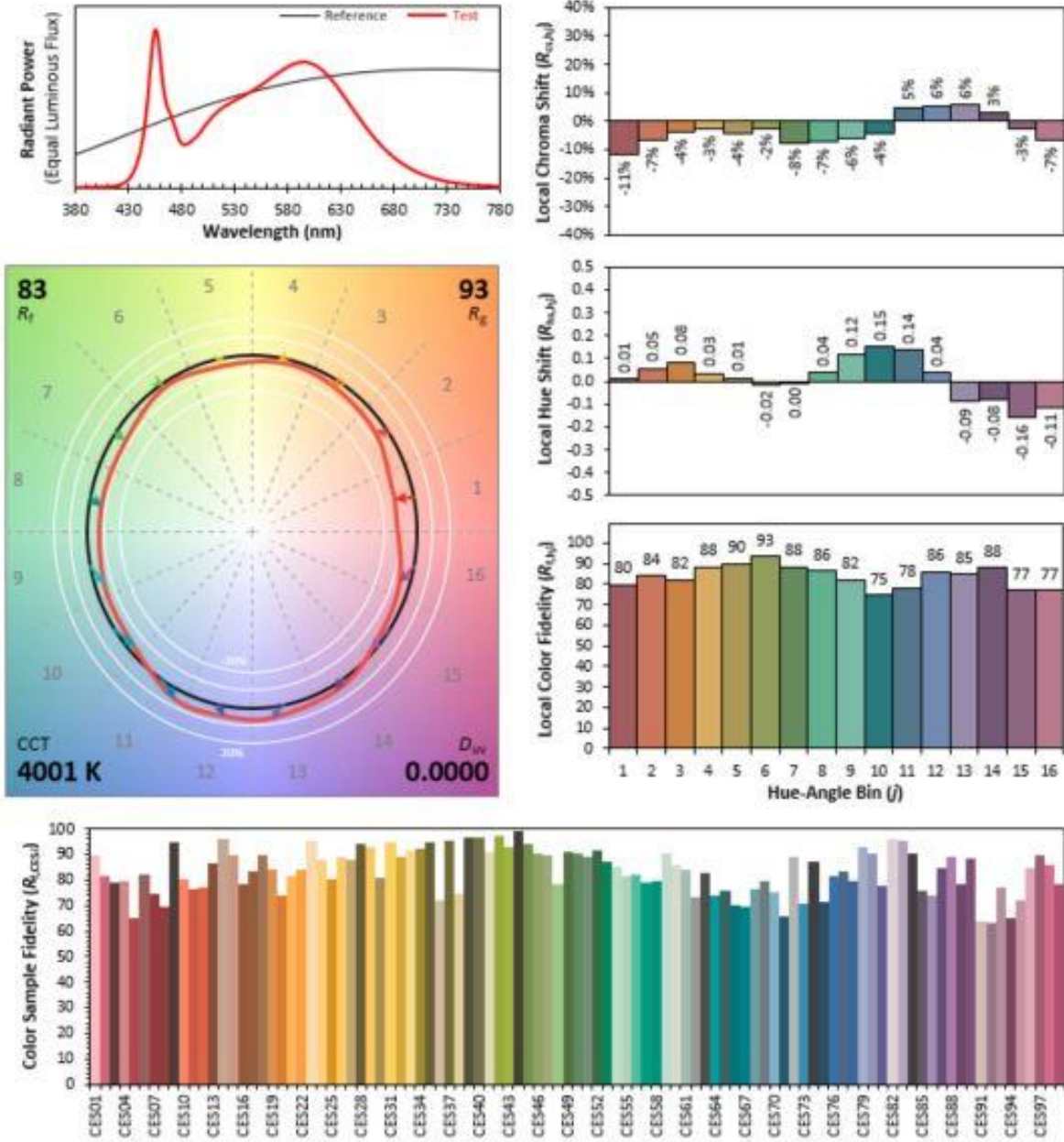
## Test Results: Integrating Sphere

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	0.00023	490	0.10259	630	0.20765	770	0.00405
355	0.00024	495	0.11314	635	0.19155	775	0.00348
360	0.00024	500	0.12772	640	0.17516	780	0.00298
365	0.00033	505	0.14256	645	0.15901	785	0.00255
370	0.00039	510	0.15559	650	0.14306	790	0.00219
375	0.00051	515	0.16596	655	0.12800	795	0.00188
380	0.00073	520	0.17436	660	0.11347	800	0.00162
385	0.00107	525	0.18171	665	0.10014		
390	0.00139	530	0.18784	670	0.08775		
395	0.00165	535	0.19423	675	0.07668		
400	0.00182	540	0.20015	680	0.06676		
405	0.00203	545	0.20668	685	0.05779		
410	0.00245	550	0.21358	690	0.04999		
415	0.00345	555	0.22127	695	0.04311		
420	0.00568	560	0.22930	700	0.03695		
425	0.01022	565	0.23799	705	0.03173		
430	0.01982	570	0.24583	710	0.02718		
435	0.03832	575	0.25349	715	0.02325		
440	0.07235	580	0.26026	720	0.01985		
445	0.13541	585	0.26612	725	0.01701		
450	0.24661	590	0.26986	730	0.01447		
455	0.33143	595	0.27086	735	0.01233		
460	0.27411	600	0.26955	740	0.01051		
465	0.18947	605	0.26520	745	0.00896		
470	0.15528	610	0.25801	750	0.00764		
475	0.12178	615	0.24853	755	0.00652		
480	0.09747	620	0.23643	760	0.00558		
485	0.09523	625	0.22279	765	0.00475		

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



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

$x$  0.3803  
 $y$  0.3766  
 $u'$  0.2251  
 $v'$  0.5015

CIE 13.3-1995 (CRI)	
$R_a$	84
$R_g$	15

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21080.  
Dialight unit model number HxA/FSA-7[N,6]N2-Cxxx-NGN

### Electrical Measurements:

Input Voltage: 230 (VAC)  
Input current: 0.50896 (A)  
Input Power: 113.2 (W)  
Power Factor: 0.9671

### Photometric measurements:

Absolute Luminous Flux: 15921.9 (lumens)  
Luminous Efficacy: 140.7 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	Lumens
0.00	16263	
5.00	15794	1605
15.00	11848	3359
25.00	7209	3337
35.00	5280	3317
45.00	4084	3162
55.00	2234	2004
65.00	215	213
75.00	45	48
85.00	9	5
90.00	0	

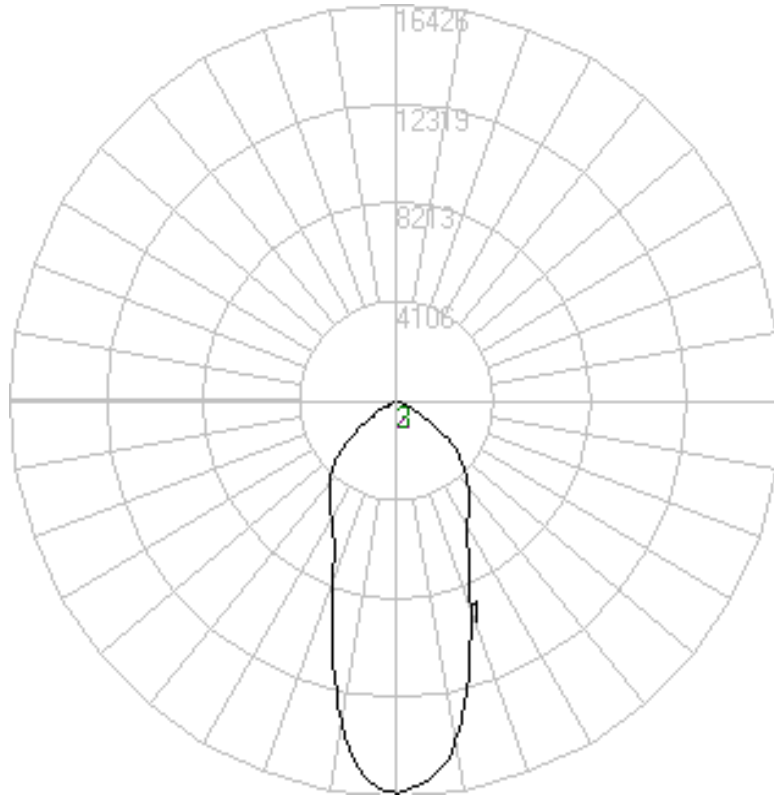
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	7717.46	48.47	48.47
0 to 40	10898.02	68.45	68.45
0 to 60	15608.84	98.03	98.03
0 to 90	15921.85	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	15921.85	100.00	100.00

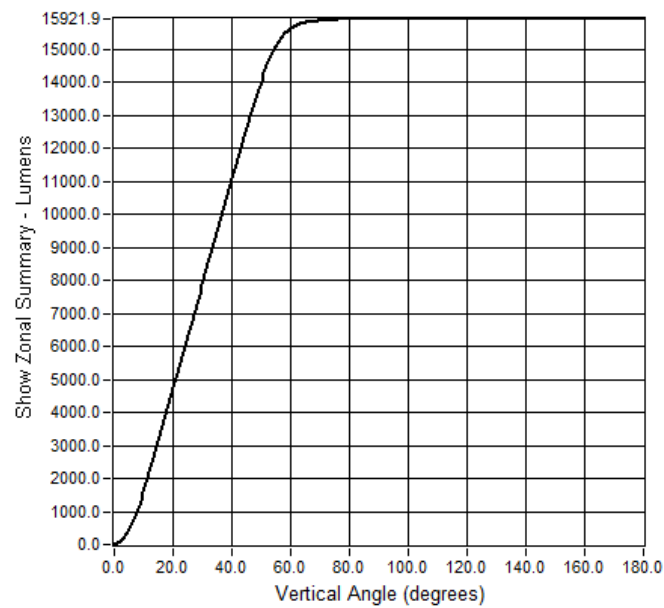
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



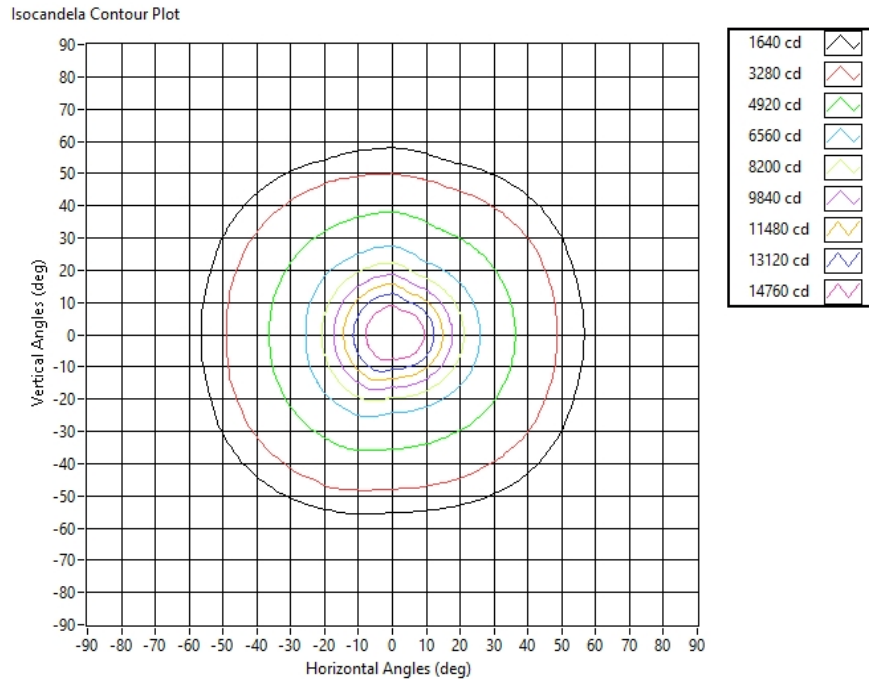
Zonal Flux Graph



## 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	1.54	1.53	4070.4
4	3.08	3.06	1017.6
6	4.63	4.60	452.3
8	6.17	6.13	254.4
10	7.71	7.66	162.8
12	9.25	9.19	113.1
14	10.80	10.73	83.1
16	12.34	12.26	63.6
18	13.88	13.79	50.3
20	15.42	15.32	40.7



**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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