

# Test Report

Report Number: L21078

Date: Jun 8, 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-7MN2-Axxx-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:**

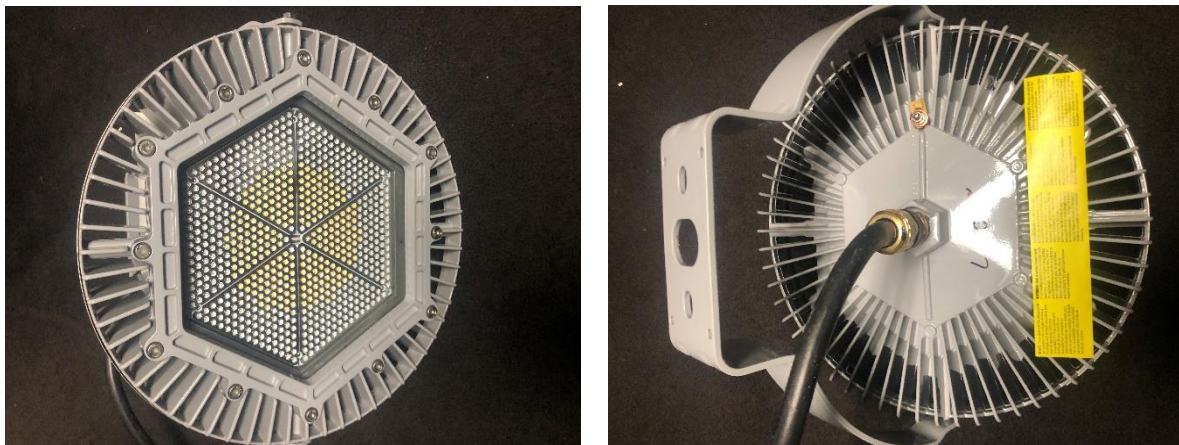
Sample Number: L21078  
Manufacturer: Dialight Corporation  
Product Name: Glass, Medium, NW, 100-277V, 8k  
Description: IECEx High Bay / Flood  
Model Number: HxA/FSA-7MN2-Axxx-NGN

## Report Summary

Sample number L21078

Dialight unit model number HxA/FSA-7MN2-Axxx-NGN

### Photograph(s) of sample:



\*Photographs not to scale. For reference only.

### Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	7878 (lumens)	7974 (lumens)
Electrical Power:	61.6 (W)	61.7 (W)
Luminous Efficacy:	127.8 (lumens/W)	129.3 (lumens/W)

### Electrical Measurements:

Input Power (230VAC): 61.6 (W)  
 Power Factor (230VAC): 0.93279  
 Current ATHD % (230VAC): 15.4836  
 Input Power (110VAC): 61.0 (W)  
 Power Factor (110VAC): 0.99486  
 Current ATHD % (110VAC): 12.2

### Color Measurements:

Correlated Color Temperature (CCT): 4021  
 Color Rendering Index (CRI): 83.5941  
 Chromaticity Coordinate (x): 0.380  
 Chromaticity Coordinate (y): 0.379  
 Chromaticity Coordinate (u'): 0.224  
 Chromaticity Coordinate (v'): 0.335  
 DUV: 0.0010

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21078.  
Dialight unit model number HxA/FSA-7MN2-Axxx-NGN

### Test Conditions:

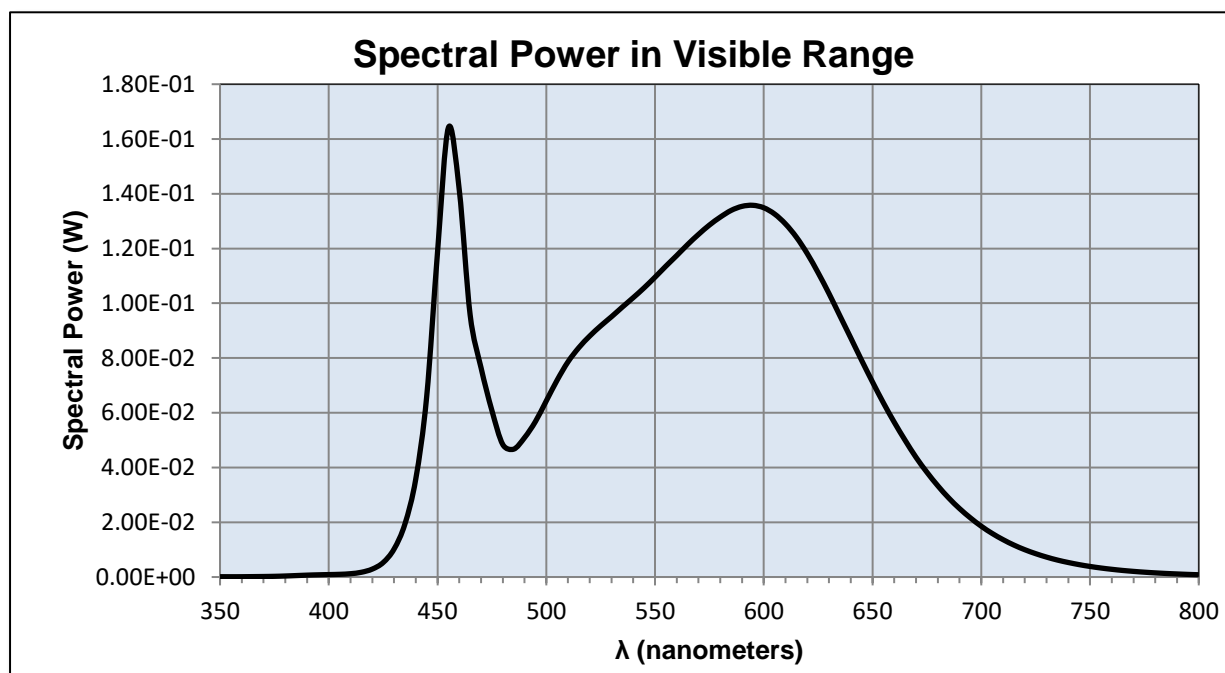
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 230 (VAC)  
Input Current: 0.286833 (A)  
Input Power: 61.6 (W)  
Input Power Factor: 0.93279  
Current ATHD: 15.4836 (%)

### Photometric measurements:

Luminous Flux: 7877.663 (lumens)  
Luminous Efficacy: 127.8 (lumens/W)  
Correlated Color Temperature (CCT): 4021 (K)  
CRI -Ra: 83.5941  
CRI -R9: 12.3203  
DUV: 0.0010  
CIE Coordinate (x): 0.380  
CIE Coordinate (y): 0.379  
CIE Coordinate (u'): 0.224  
CIE Coordinate (v'): 0.335  
TM30\_Rf: 81.0  
TM30\_Rg: 92.8  
TM30\_Rcs\_hue1: -11.79 %



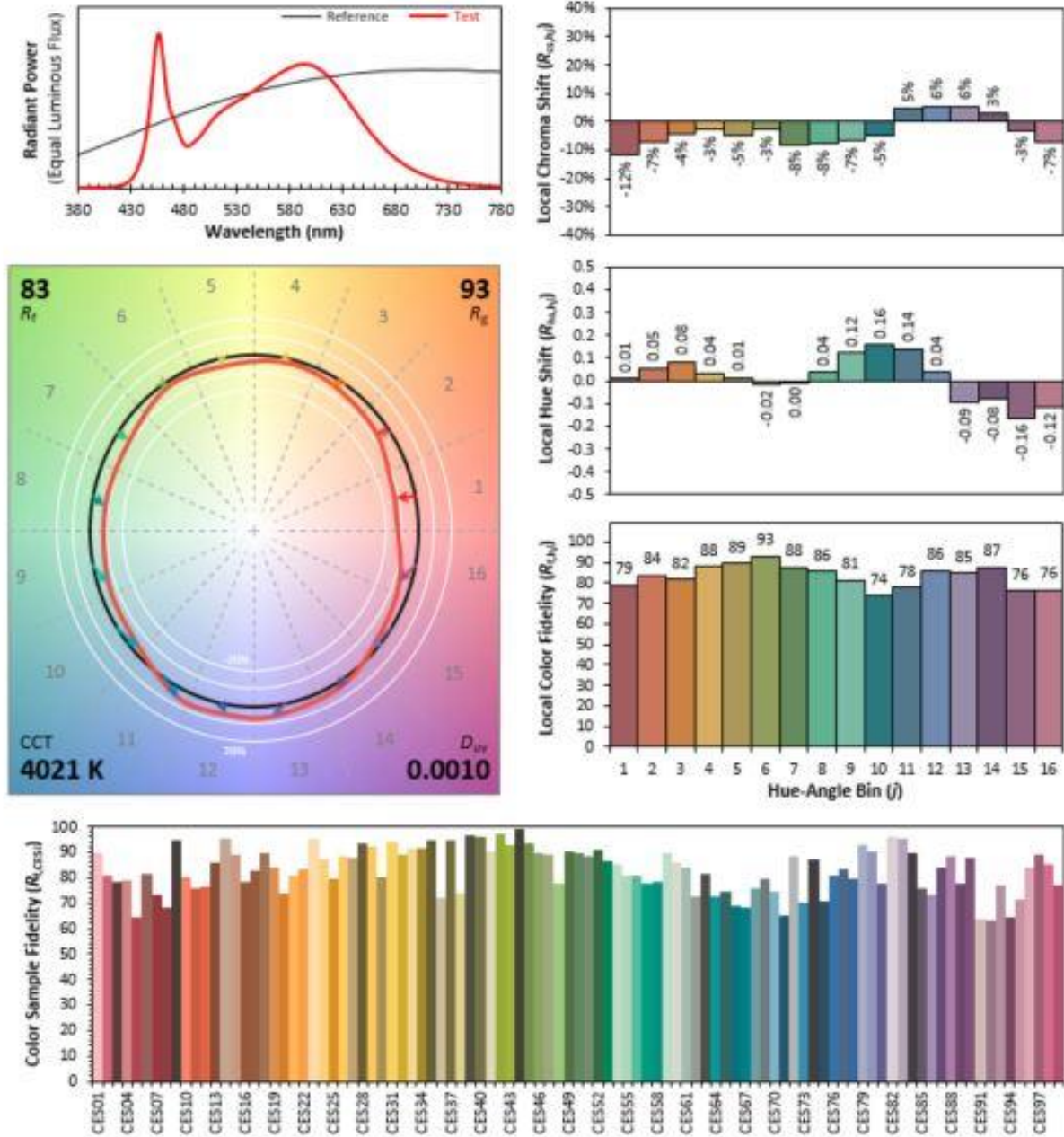
## Test Results: Integrating Sphere

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	0.00011	490	0.05089	630	0.10352	770	0.00206
355	0.00011	495	0.05677	635	0.09541	775	0.00177
360	0.00011	500	0.06432	640	0.08731	780	0.00152
365	0.00016	505	0.07192	645	0.07915	785	0.00130
370	0.00019	510	0.07862	650	0.07123	790	0.00112
375	0.00026	515	0.08379	655	0.06362	795	0.00097
380	0.00037	520	0.08803	660	0.05652	800	0.00083
385	0.00053	525	0.09172	665	0.04992		
390	0.00069	530	0.09509	670	0.04373		
395	0.00081	535	0.09862	675	0.03828		
400	0.00089	540	0.10205	680	0.03335		
405	0.00099	545	0.10563	685	0.02890		
410	0.00121	550	0.10951	690	0.02501		
415	0.00174	555	0.11355	695	0.02160		
420	0.00290	560	0.11744	700	0.01856		
425	0.00529	565	0.12144	705	0.01593		
430	0.01020	570	0.12515	710	0.01366		
435	0.01936	575	0.12855	715	0.01167		
440	0.03581	580	0.13145	720	0.00998		
445	0.06577	585	0.13391	725	0.00854		
450	0.11866	590	0.13539	730	0.00728		
455	0.16414	595	0.13577	735	0.00620		
460	0.14129	600	0.13487	740	0.00531		
465	0.09572	605	0.13258	745	0.00453		
470	0.07648	610	0.12895	750	0.00387		
475	0.06083	615	0.12414	755	0.00330		
480	0.04839	620	0.11813	760	0.00282		
485	0.04670	625	0.11112	765	0.00241		

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



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

$x$  0.3802  
 $y$  0.3787  
 $u'$  0.2242  
 $v'$  0.5024

CIE 13.3-1995 (CRI)	
$R_a$	84
$R_g$	12

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21078.  
Dialight unit model number HxA/FSA-7MN2-Axxx-NGN

### Electrical Measurements:

Input Voltage: 230 (VAC)  
Input current: 0.29299 (A)  
Input Power: 61.7 (W)  
Power Factor: 0.9154

### Photometric measurements:

Absolute Luminous Flux: 7974.2 (lumens)  
Luminous Efficacy: 129.3 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	Lumens
0.00	2969	
5.00	3033	307
15.00	3215	911
25.00	3488	1614
35.00	3383	2125
45.00	2407	1864
55.00	1020	915
65.00	181	179
75.00	9	10
85.00	1	0
90.00	0	

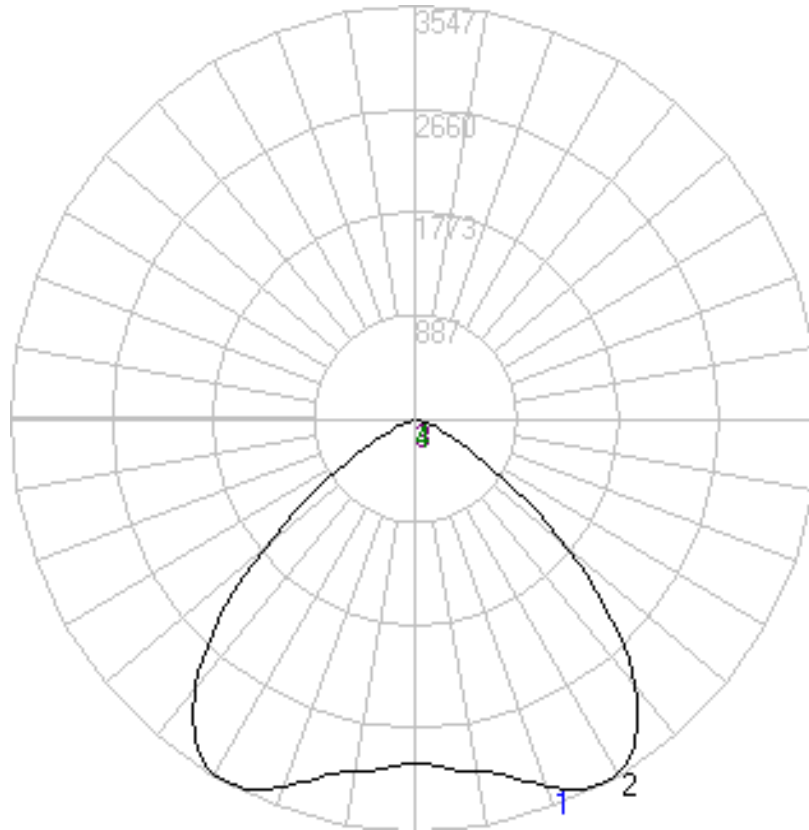
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	2819.24	35.35	35.35
0 to 40	4903.34	61.49	61.49
0 to 60	7729.29	96.93	96.93
0 to 90	7974.15	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	7974.15	100.00	100.00

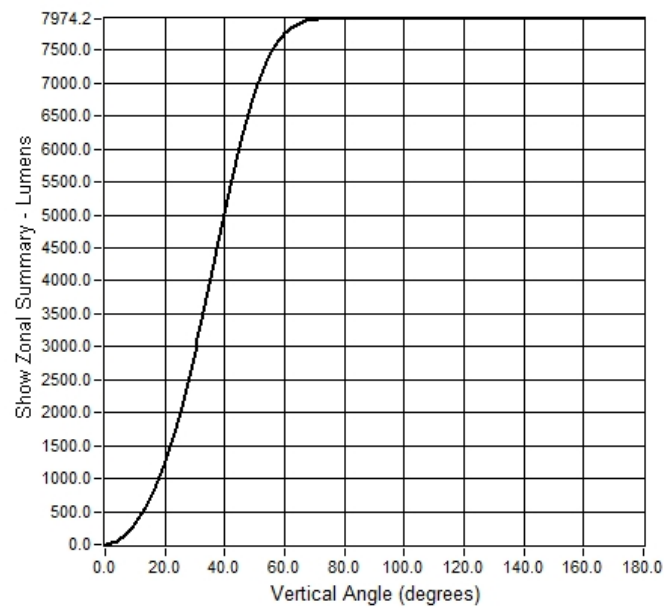
## Test Results: Goniometer

Results continued from previous page.

**Polar Plot:**



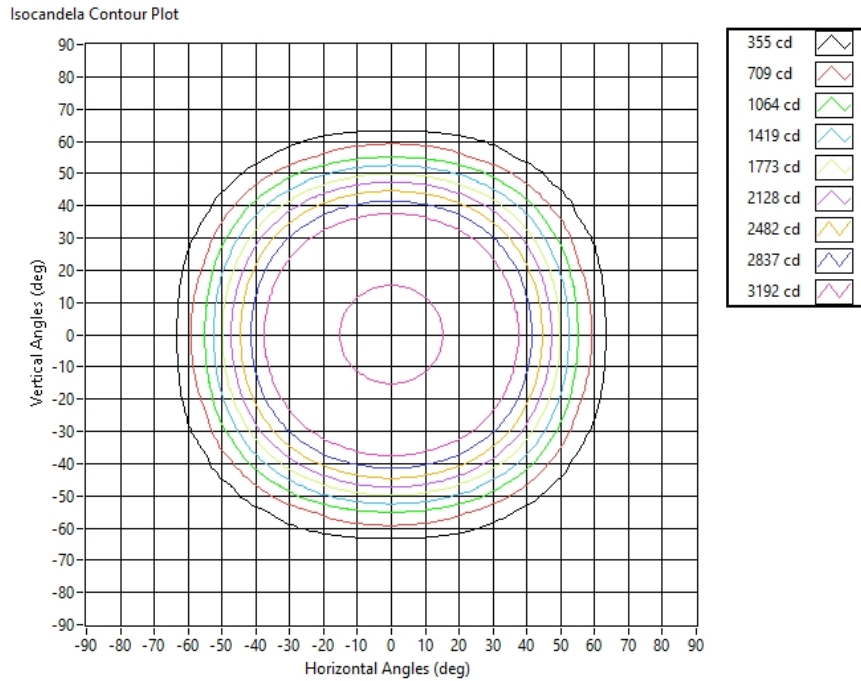
Zonal Flux Graph



## 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	4.96	4.96	742.6
4	9.93	9.93	185.6
6	14.89	14.89	82.5
8	19.86	19.86	46.4
10	24.82	24.82	29.7
12	29.79	29.79	20.6
14	34.75	34.75	15.2
16	39.71	39.71	11.6
18	44.68	44.68	9.2
20	49.64	49.64	7.4



**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. 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