

Test Report

Report Number: L21082

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-7N-N_6-2-Exxx-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 25, 2021 through May 25, 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

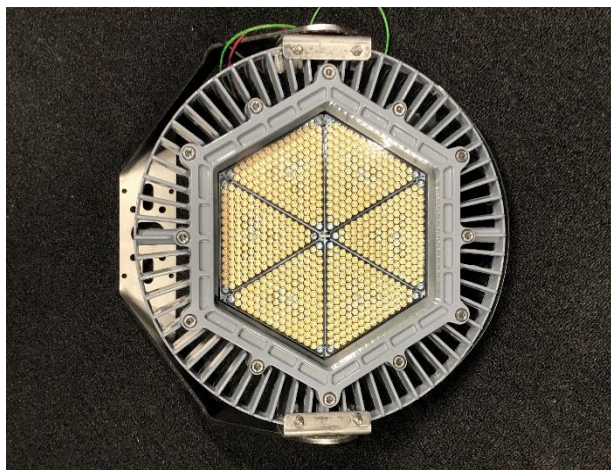
Description of sample:

Sample Number: L21082
Manufacturer: Dialight Corporation
Product Name: Glass, Narrow, NW, 100-277V, 21k
Description: IECEx High Bay / Flood
Model Number: HxA FSA-7N-N_6-2-Exxx-NGN

Report Summary

Sample number L21082
Dialight unit model number HxA FSA-7N-N_6-2-Exxx-NGN

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	20809 (lumens)	21102 (lumens)
Electrical Power:	147.7 (W)	147.7 (W)
Luminous Efficacy:	140.9 (lumens/W)	142.9 (lumens/W)

Electrical Measurements:

Input Power (230VAC): 147.7 (W)
 Power Factor (230VAC): 0.981227
 Current ATHD % (230VAC): 10.6723
 Input Power (110VAC): 152.2 (W)
 Power Factor (110VAC): 0.9952
 Current ATHD % (110VAC): 8.297

Color Measurements:

Correlated Color Temperature (CCT): 4040
 Color Rendering Index (CRI): 83.0296
 Chromaticity Coordinate (x): 0.380
 Chromaticity Coordinate (y): 0.381
 Chromaticity Coordinate (u'): 0.223
 Chromaticity Coordinate (v'): 0.336
 DUV: 0.0020

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21082.
Dialight unit model number HxA FSA-7N-N_6-2-Exxx-NGN

Test Conditions:

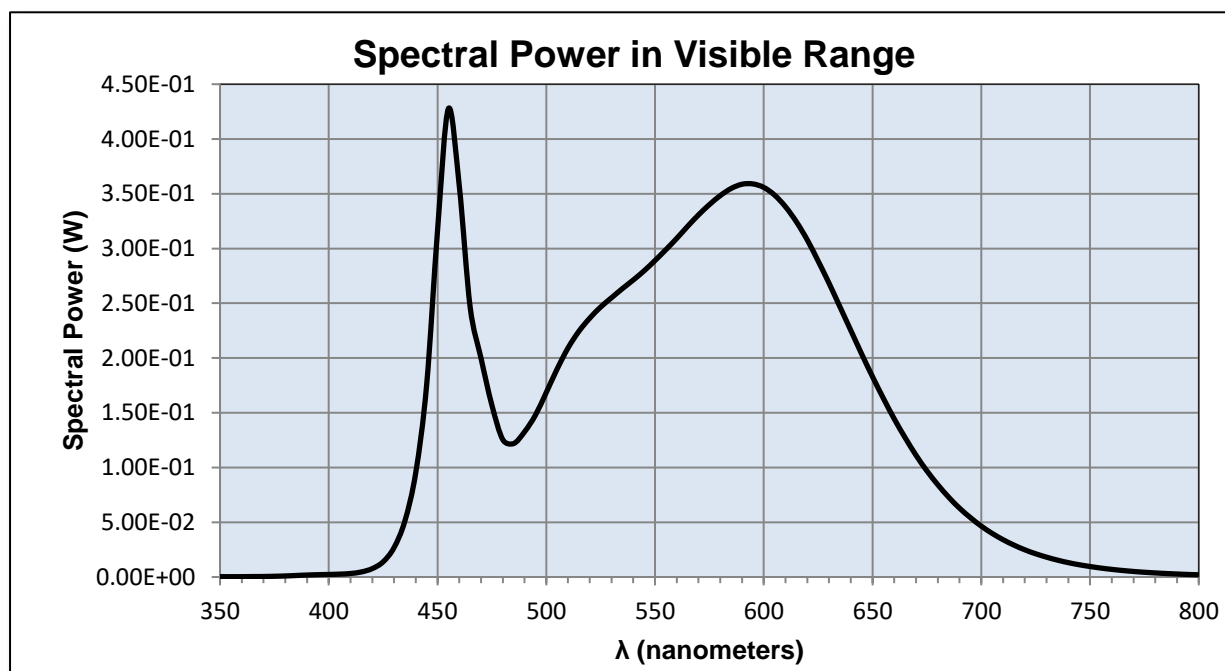
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 230 (VAC)
Input Current: 0.655335 (A)
Input Power: 147.7 (W)
Input Power Factor: 0.981227
Current ATHD: 10.6723 (%)

Photometric measurements:

Luminous Flux: 20808.88 (lumens)
Luminous Efficacy: 140.9 (lumens/W)
Correlated Color Temperature (CCT): 4040 (K)
CRI -Ra: 83.0296
CRI -R9: 8.4789
DUV: 0.0020
CIE Coordinate (x): 0.380
CIE Coordinate (y): 0.381
CIE Coordinate (u'): 0.223
CIE Coordinate (v'): 0.336
TM30_Rf: 80.8
TM30_Rg: 92.5
TM30_Rcs_hue1: -12.18 %



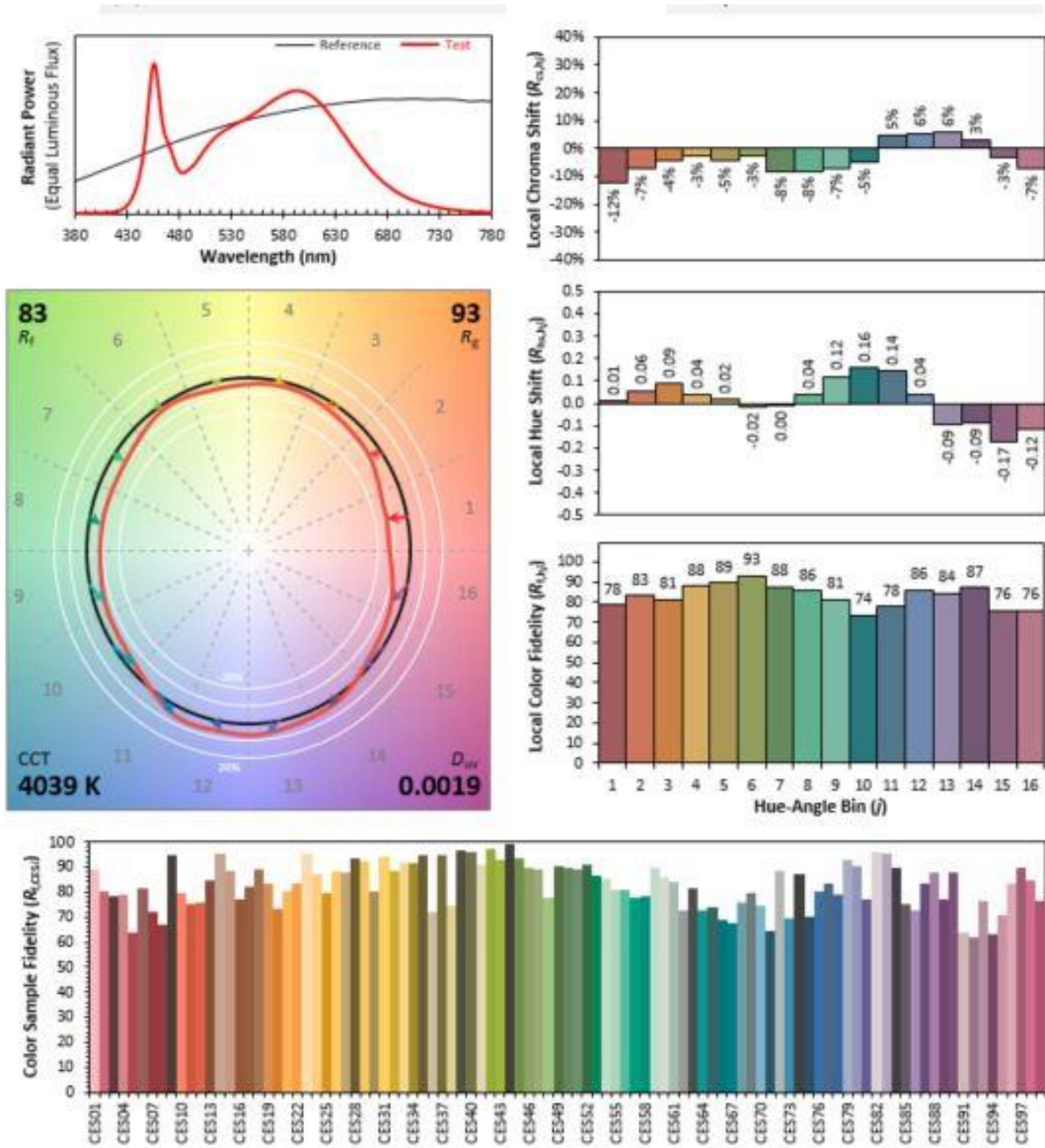
Test Results: Integrating Sphere

Results continued from previous page.

Tabulated Spectral Power in Visible Range:

λ (nm)	(W/nm)	λ (nm)	(W/nm)	λ (nm)	(W/nm)	λ (nm)	(W/nm)
350	0.00033	490	0.13255	630	0.26829	770	0.00508
355	0.00030	495	0.14778	635	0.24680	775	0.00435
360	0.00034	500	0.16853	640	0.22526	780	0.00374
365	0.00044	505	0.18999	645	0.20368	785	0.00321
370	0.00049	510	0.20917	650	0.18293	790	0.00277
375	0.00070	515	0.22437	655	0.16315	795	0.00237
380	0.00097	520	0.23639	660	0.14433	800	0.00204
385	0.00140	525	0.24654	665	0.12719		
390	0.00182	530	0.25502	670	0.11122		
395	0.00214	535	0.26336	675	0.09696		
400	0.00236	540	0.27121	680	0.08432		
405	0.00264	545	0.27963	685	0.07291		
410	0.00323	550	0.28902	690	0.06287		
415	0.00464	555	0.29893	695	0.05425		
420	0.00769	560	0.30926	700	0.04649		
425	0.01391	565	0.32026	705	0.03985		
430	0.02686	570	0.33068	710	0.03412		
435	0.05127	575	0.34007	715	0.02916		
440	0.09543	580	0.34829	720	0.02487		
445	0.17549	585	0.35483	725	0.02125		
450	0.31628	590	0.35867	730	0.01816		
455	0.42770	595	0.35895	735	0.01544		
460	0.35696	600	0.35576	740	0.01315		
465	0.24649	605	0.34869	745	0.01121		
470	0.19980	610	0.33806	750	0.00962		
475	0.15691	615	0.32433	755	0.00817		
480	0.12546	620	0.30783	760	0.00698		
485	0.12189	625	0.28857	765	0.00595		

IES TM-30-18 Color Rendition Report



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

x 0.3800
 y 0.3807
 u' 0.2233
 v' 0.5032

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 L21082.
Dialight unit model number HxA FSA-7N-N_6-2-Exxx-NGN

Electrical Measurements:

Input Voltage: 230 (VAC)
Input current: 0.6566 (A)
Input Power: 147.7 (W)
Power Factor: 0.9771

Photometric measurements:

Absolute Luminous Flux: 21101.5 (lumens)
Luminous Efficacy: 142.9 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	Lumens
0.00	20430	
5.00	19985	2030
15.00	15579	4416
25.00	9306	4307
35.00	6900	4335
45.00	5267	4079
55.00	2881	2585
65.00	340	337
75.00	74	79
85.00	31	18
90.00	3	

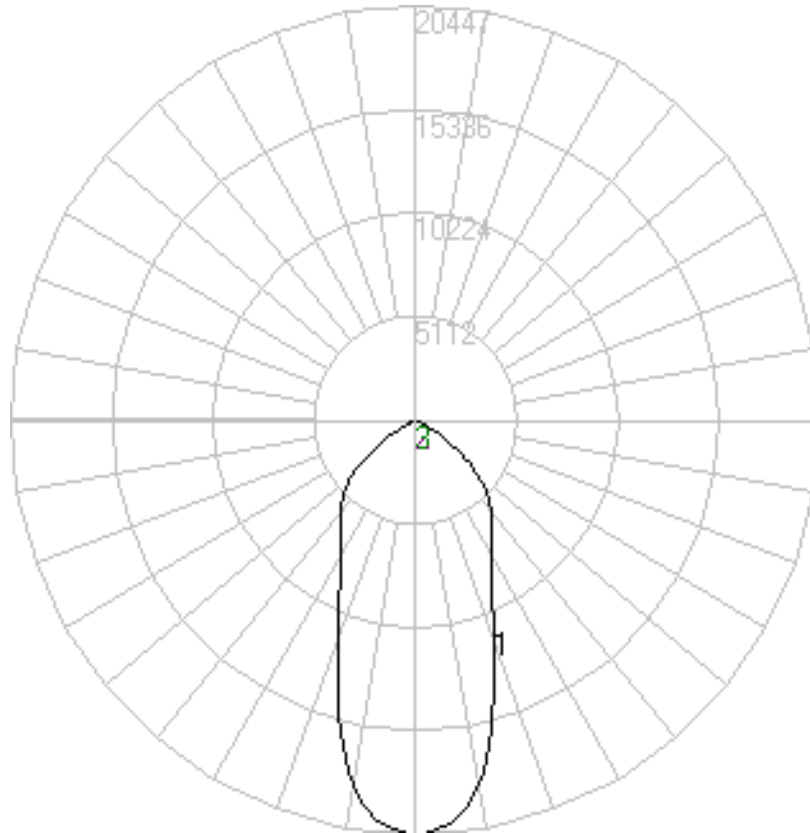
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10212.04	48.39	48.39
0 to 40	14390.93	68.20	68.20
0 to 60	20602.02	97.63	97.63
0 to 90	21101.49	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	21101.49	100.00	100.00

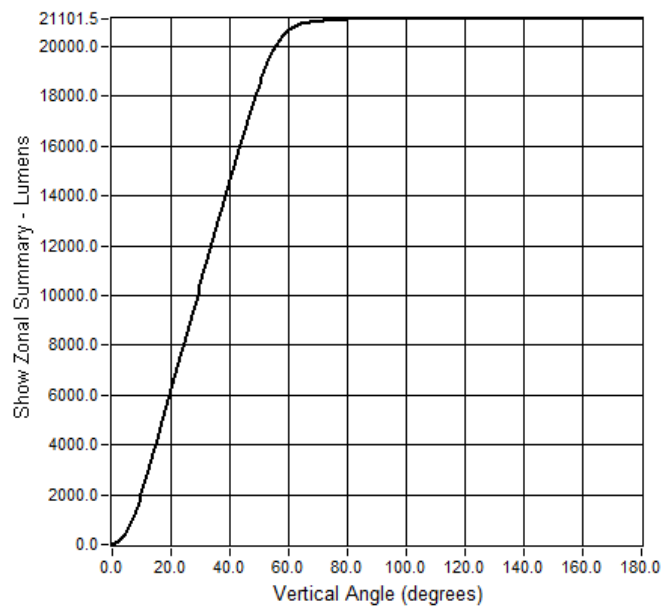
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



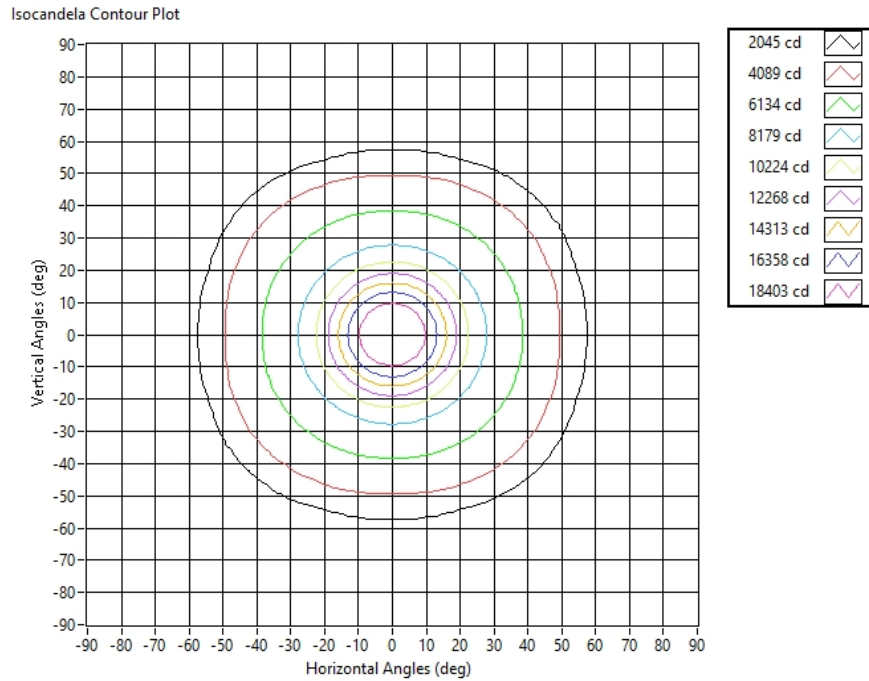
Zonal Flux Graph



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	1.66	1.66	5111.8
4	3.32	3.32	1278.0
6	4.98	4.98	568.0
8	6.65	6.65	319.5
10	8.31	8.31	204.5
12	9.97	9.97	142.0
14	11.63	11.63	104.3
16	13.29	13.29	79.9
18	14.95	14.95	63.1
20	16.62	16.62	51.1

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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 Optical Engineer
 Approved Signatory