

Test Report

Report Number: L21084

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-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 19, 2021 through June 15, 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:

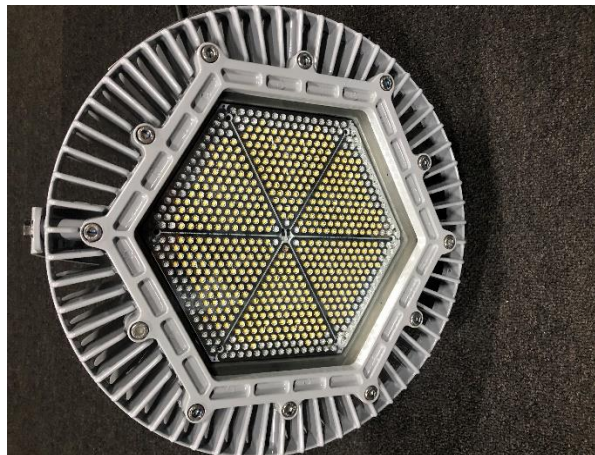
Sample Number: L21084
Manufacturer: Dialight Corporation
Product Name: Glass, Medium, NW, 100-277V, 16k
Description: IECEx High Bay / Flood
Model Number: HxA/FSA-7MN2-Cxxx-NGN

Report Summary

Sample number L21084

Dialight unit model number HxA/FSA-7MN2-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:	14912 (lumens)	15159 (lumens)
Electrical Power:	113.0 (W)	113.1 (W)
Luminous Efficacy:	132 (lumens/W)	134 (lumens/W)

Electrical Measurements:

Input Power (230VAC): 113.0 (W)
 Power Factor (230VAC): 0.973899
 Current ATHD % (230VAC): 11.0288
 Input Power (110VAC): 115.0 (W)
 Power Factor (110VAC): 0.9946
 Current ATHD % (110VAC): 8.481

Color Measurements:

Correlated Color Temperature (CCT): 4112
 Color Rendering Index (CRI): 83.9254
 Chromaticity Coordinate (x): 0.376
 Chromaticity Coordinate (y): 0.377
 Chromaticity Coordinate (u'): 0.222
 Chromaticity Coordinate (v'): 0.334
 DUV: 0.0012

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21084.
Dialight unit model number HxA/FSA-7MN2-Cxxx-NGN

Test Conditions:

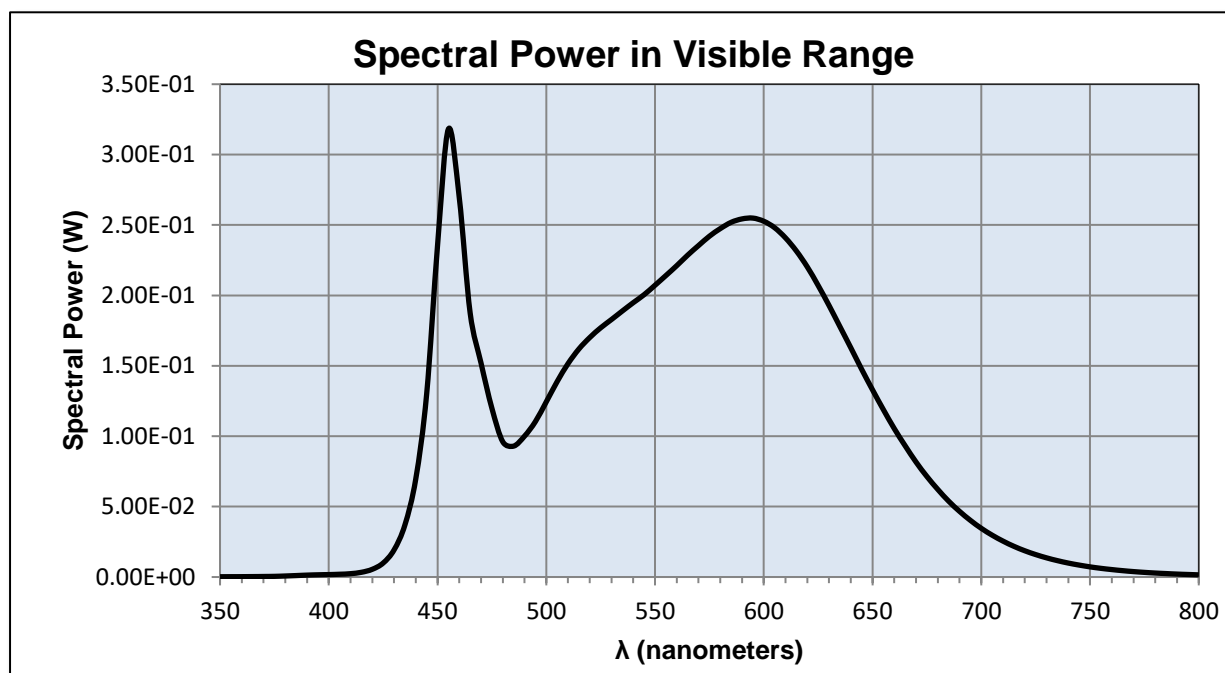
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 230 (VAC)
Input Current: 0.503604 (A)
Input Power: 113.0 (W)
Input Power Factor: 0.973899
Current ATHD: 11.0288 (%)

Photometric measurements:

Luminous Flux: 14911.87 (lumens)
Luminous Efficacy: 132.0 (lumens/W)
Correlated Color Temperature (CCT): 4112 (K)
CRI -Ra: 83.9254
CRI -R9: 13.4017
DUV: 0.0012
CIE Coordinate (x): 0.376
CIE Coordinate (y): 0.377
CIE Coordinate (u'): 0.222
CIE Coordinate (v'): 0.334
TM30_Rf: 81.1
TM30_Rg: 92.7
TM30_Rcs_hue1: -11.64 %



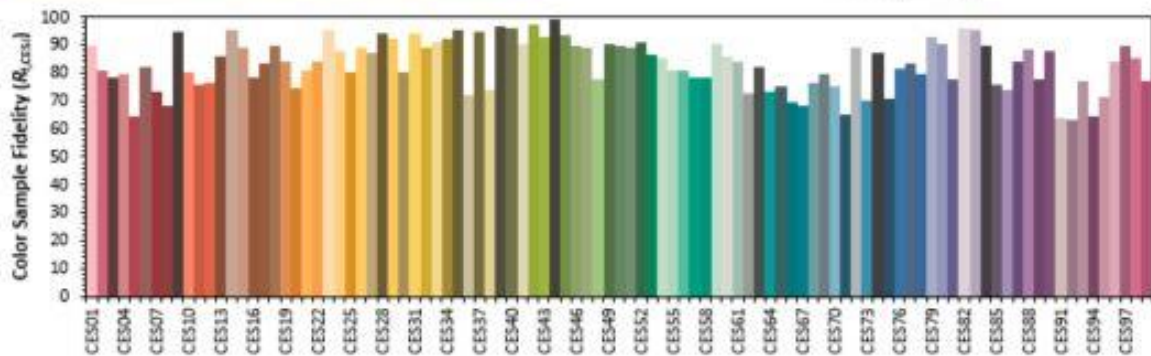
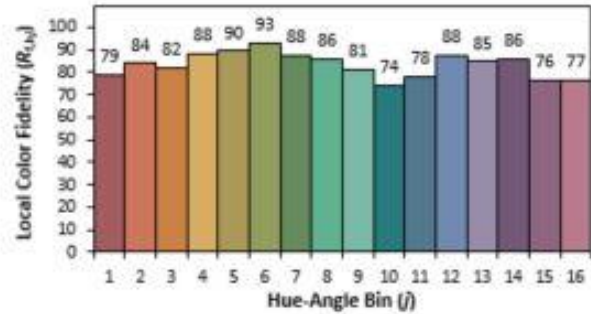
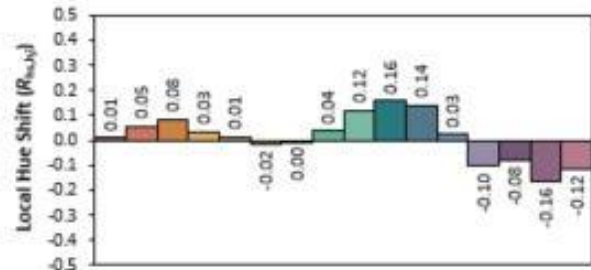
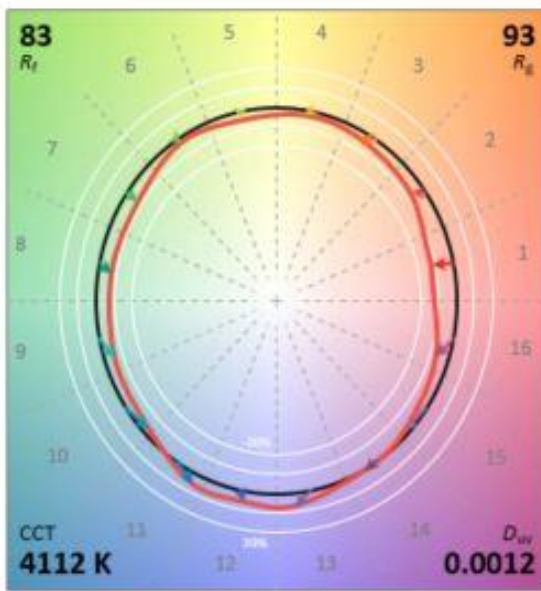
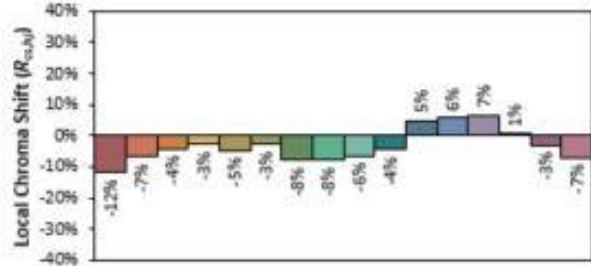
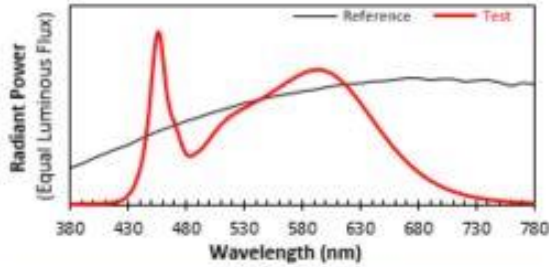
Test Results: Integrating Sphere

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	0.00021	490	0.10004	630	0.19287	770	0.00385
355	0.00023	495	0.11040	635	0.17786	775	0.00331
360	0.00026	500	0.12441	640	0.16286	780	0.00283
365	0.00032	505	0.13879	645	0.14756	785	0.00245
370	0.00039	510	0.15155	650	0.13294	790	0.00209
375	0.00049	515	0.16194	655	0.11885	795	0.00180
380	0.00073	520	0.17009	660	0.10541	800	0.00155
385	0.00104	525	0.17697	665	0.09321		
390	0.00136	530	0.18290	670	0.08167		
395	0.00159	535	0.18896	675	0.07142		
400	0.00174	540	0.19486	680	0.06224		
405	0.00198	545	0.20054	685	0.05387		
410	0.00237	550	0.20723	690	0.04664		
415	0.00337	555	0.21412	695	0.04023		
420	0.00548	560	0.22115	700	0.03460		
425	0.00993	565	0.22859	705	0.02973		
430	0.01922	570	0.23540	710	0.02551		
435	0.03701	575	0.24203	715	0.02180		
440	0.06967	580	0.24744	720	0.01865		
445	0.12989	585	0.25191	725	0.01595		
450	0.23535	590	0.25433	730	0.01363		
455	0.31818	595	0.25492	735	0.01163		
460	0.26928	600	0.25268	740	0.00992		
465	0.18755	605	0.24806	745	0.00849		
470	0.15200	610	0.24083	750	0.00721		
475	0.11984	615	0.23152	755	0.00617		
480	0.09604	620	0.22027	760	0.00529		
485	0.09299	625	0.20708	765	0.00452		

IES TM-30-18 Color Rendition Report



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

x 0.3764
 y 0.3766
 u' 0.2225
 v' 0.5009

CIE 13.3-1995	
(CRI)	
R_a	84
R_g	13

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21084.
Dialight unit model number HxA/FSA-7MN2-Cxxx-NGN

Electrical Measurements:

Input Voltage: 230 (VAC)
Input current: 0.5074 (A)
Input Power: 113.1 (W)
Power Factor: 0.9685

Photometric measurements:

Absolute Luminous Flux: 15159.3 (lumens)
Luminous Efficacy: 134.0 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	Lumens
0.00	5917	
5.00	6090	617
15.00	6687	1895
25.00	7313	3385
35.00	7135	4482
45.00	5221	4043
55.00	2304	2067
65.00	413	410
75.00	32	33
85.00	9	5
90.00	1	

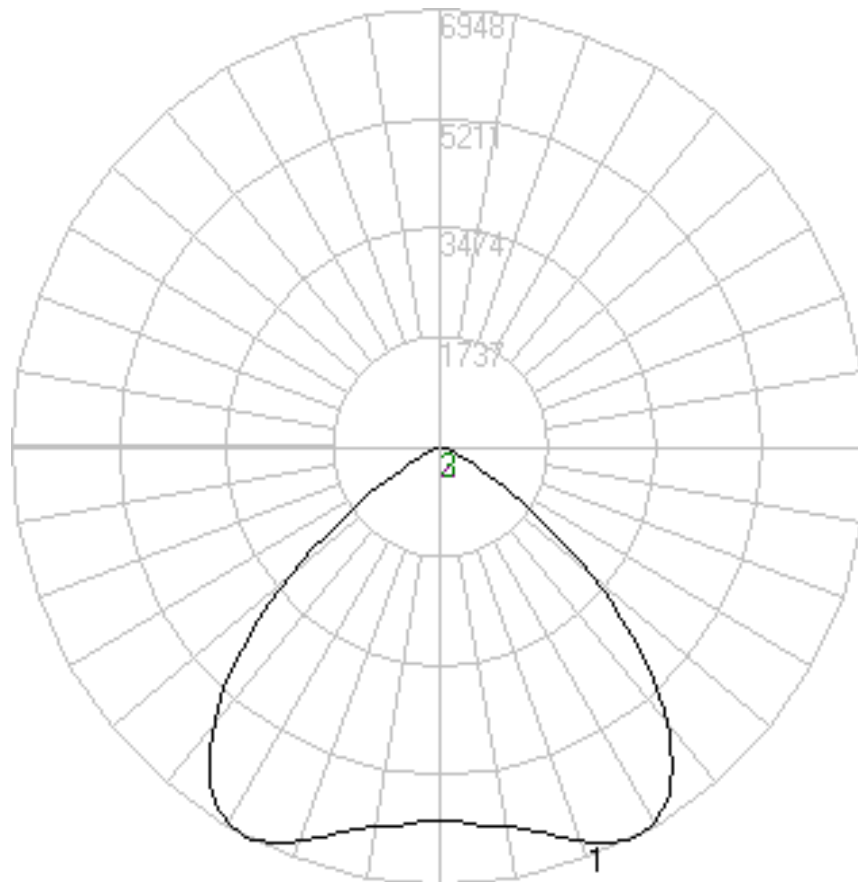
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	5574.07	36.69	36.69
0 to 40	9597.53	63.17	63.17
0 to 60	14767.62	97.20	97.20
0 to 90	15193.10	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	15193.10	100.00	100.00

Test Results: Goniometer

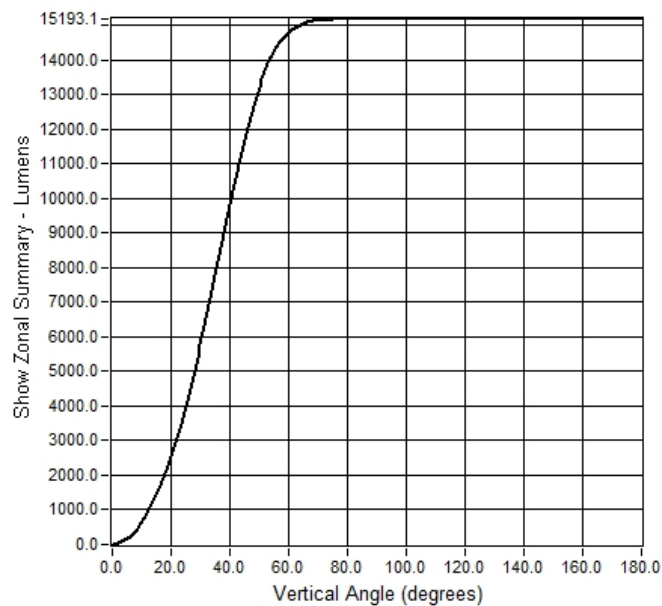
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Polar Plot:



f

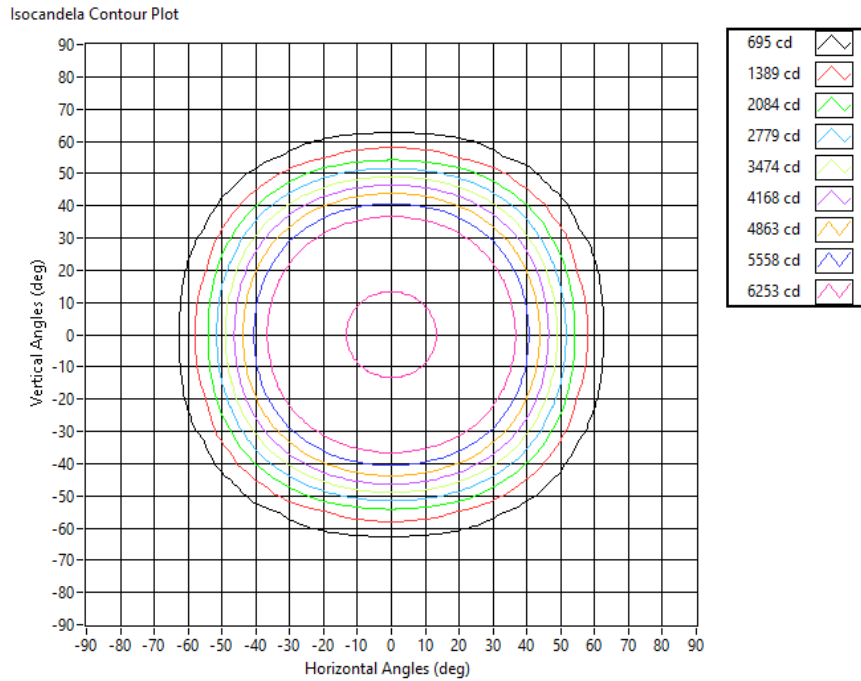
Zonal Flux Graph



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	4.81	4.81	1481.1
4	9.62	9.62	370.3
6	14.42	14.42	164.6
8	19.23	19.23	92.6
10	24.04	24.04	59.2
12	28.85	28.85	41.1
14	33.66	33.66	30.2
16	38.46	38.46	23.1
18	43.27	43.27	18.3
20	48.08	48.08	14.8

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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 Lighting Division

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Vishnu Shastry
 Dialight Optics Laboratory
 Optical Engineer
 Approved Signatory