

Test Report

Report Number: L21024

Date: Apr 6, 2021

Issued by:

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

Test of one F2 - Flood Light
Unit manufacturer: Dialight Corporation
Unit model number: F2x-N4B2-Nxxx-xxx

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: March 11, 2021 through March 11, 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

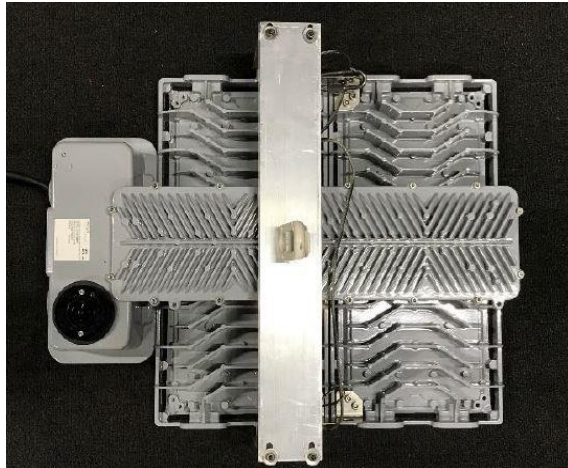
Description of sample:

Sample Number: L21024
Manufacturer: Dialight Corporation
Product Name: No Window, NEMA 4, 70 CRI CW, 120-277V, 60K
Description: F2 - Flood Light
Model Number: F2x-N4B2-Nxxx-xxx

Report Summary

Sample number L21024
Dialight unit model number F2x-N4B2-Nxxx-xxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	64597 (lumens)	65786 (lumens)
Electrical Power:	504.6 (W)	501.6 (W)
Luminous Efficacy:	128 (lumens/W)	131.1 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 504.6 (W)
Power Factor (120VAC): 0.996049
Current ATHD % (120VAC): 4.80682
Input Power (277VAC): 482.2 (W)
Power Factor (277VAC): 0.9669
Current ATHD % (277VAC): 9.4

Color Measurements:

Correlated Color Temperature (CCT): 5163
Color Rendering Index (CRI): 71.6481
Chromaticity Coordinate (x): 0.341
Chromaticity Coordinate (y): 0.348
Chromaticity Coordinate (u'): 0.210
Chromaticity Coordinate (v'): 0.321
DUV: -0.0001

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21024.

Dialight unit model number F2x-N4B2-Nxxx-xxx

Test Conditions:

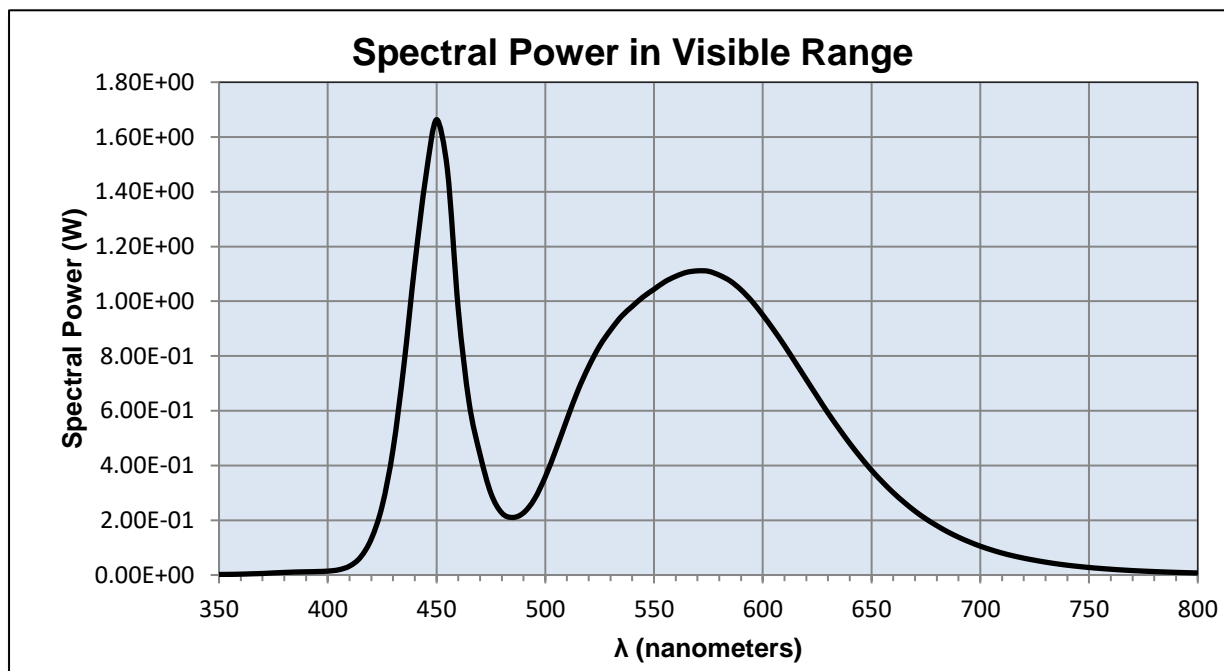
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
 Input Current: 4.21986 (A)
 Input Power: 504.6 (W)
 Input Power Factor: 0.996049
 Current ATHD: 4.80682 (%)

Photometric measurements:

Luminous Flux: 64596.87 (lumens)
 Luminous Efficacy: 128.0 (lumens/W)
 Correlated Color Temperature (CCT): 5163 (K)
 CRI -Ra: 71.6481
 CRI -R9: -31.5462
 DUV: -0.0001
 CIE Coordinate (x): 0.341
 CIE Coordinate (y): 0.348
 CIE Coordinate (u'): 0.210
 CIE Coordinate (v'): 0.321
 TM30_Rf: 69.2
 TM30_Rg: 93.5
 TM30_Rcs_hue1: -18.25 %



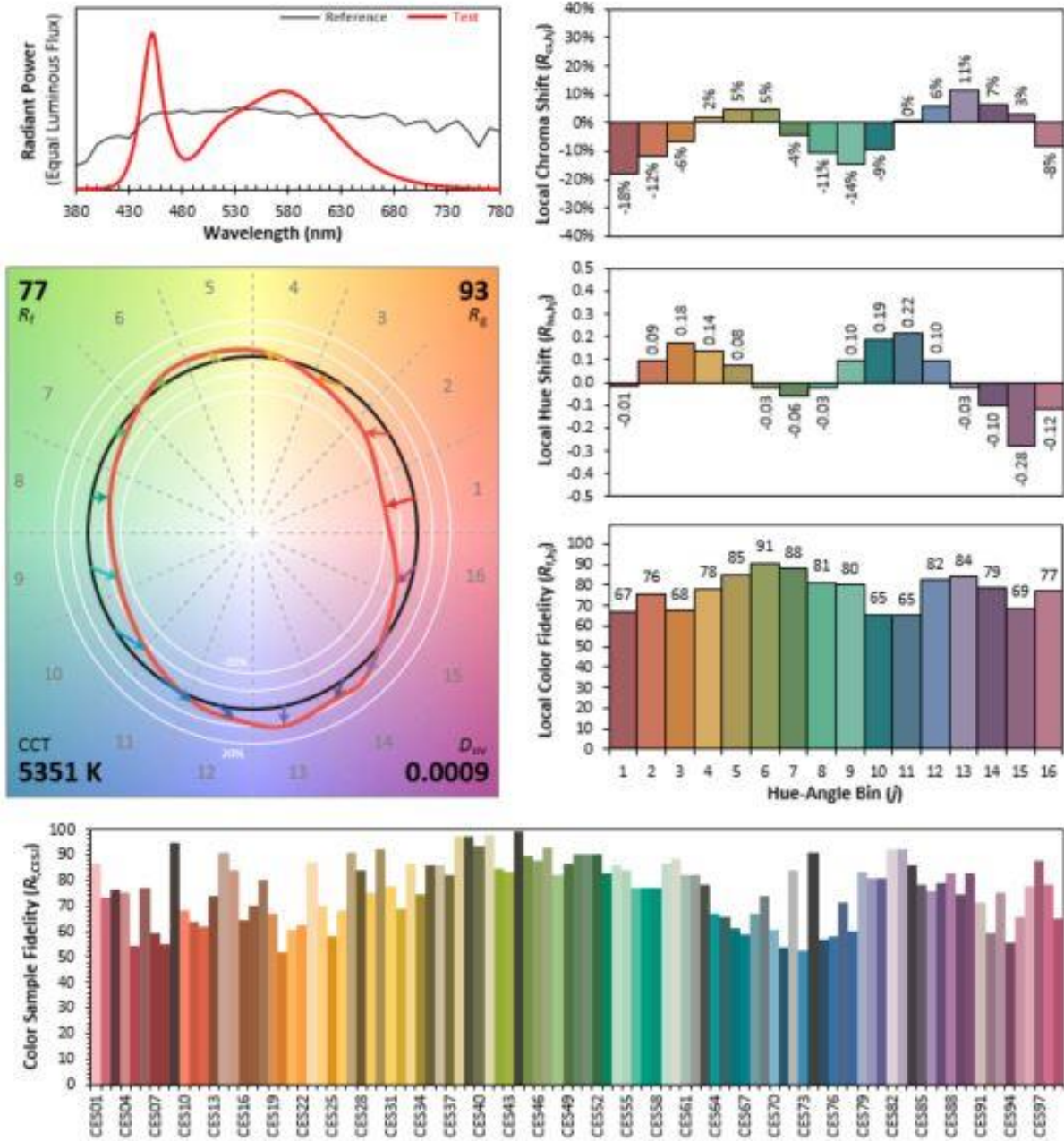
Test Results: Integrating Sphere

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	0.00209	490	0.22707	630	0.59173	770	0.01623
355	0.00240	495	0.27707	635	0.53496	775	0.01427
360	0.00314	500	0.35849	640	0.48056	780	0.01261
365	0.00442	505	0.46001	645	0.43013	785	0.01105
370	0.00566	510	0.56945	650	0.38270	790	0.00974
375	0.00764	515	0.67373	655	0.34005	795	0.00853
380	0.00938	520	0.76193	660	0.30060	800	0.00751
385	0.01094	525	0.83684	665	0.26559		
390	0.01184	530	0.89461	670	0.23331		
395	0.01269	535	0.94460	675	0.20520		
400	0.01426	540	0.98128	680	0.18040		
405	0.01920	545	1.01583	685	0.15785		
410	0.03258	550	1.04371	690	0.13813		
415	0.06458	555	1.07127	695	0.12094		
420	0.13168	560	1.09116	700	0.10542		
425	0.25236	565	1.10562	705	0.09213		
430	0.45873	570	1.11100	710	0.08037		
435	0.76655	575	1.10945	715	0.07031		
440	1.13326	580	1.09530	720	0.06161		
445	1.45058	585	1.07416	725	0.05398		
450	1.66321	590	1.04168	730	0.04708		
455	1.48020	595	1.00005	735	0.04110		
460	0.96954	600	0.94990	740	0.03583		
465	0.62889	605	0.89566	745	0.03140		
470	0.44050	610	0.83766	750	0.02750		
475	0.29854	615	0.77621	755	0.02416		
480	0.22682	620	0.71430	760	0.02119		
485	0.21029	625	0.65261	765	0.01857		

IES TM-30-18 Color Rendition Report



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

x 0.3360
y 0.3458
u' 0.2075
v' 0.4804

CIE 13.3-1995
(CRI)
 R_a 76
 R_g -28

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21024.
Dialight unit model number F2x-N4B2-Nxxx-xxx

Electrical Measurements:

Input Voltage: 120.03 (VAC)
Input current: 4.2006 (A)
Input Power: 501.6 (W)
Power Factor: 0.9958

Photometric measurements:

Absolute Luminous Flux: 65785.5 (lumens)
Luminous Efficacy: 131.1 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	173005	173005	173005	173005	173005	
5.00	162663	161974	159062	160964	159345	16391
15.00	110513	114854	108937	112492	109409	31397
25.00	36738	34031	27823	27447	25564	14178
35.00	3687	2814	2306	2701	3430	2011
45.00	1835	1401	1332	1357	1726	1258
55.00	1270	1099	1043	1088	1228	1063
65.00	988	945	888	934	970	951
75.00	622	564	557	548	594	623
85.00	139	124	115	110	112	68
90.00	9	8	6	4	2	

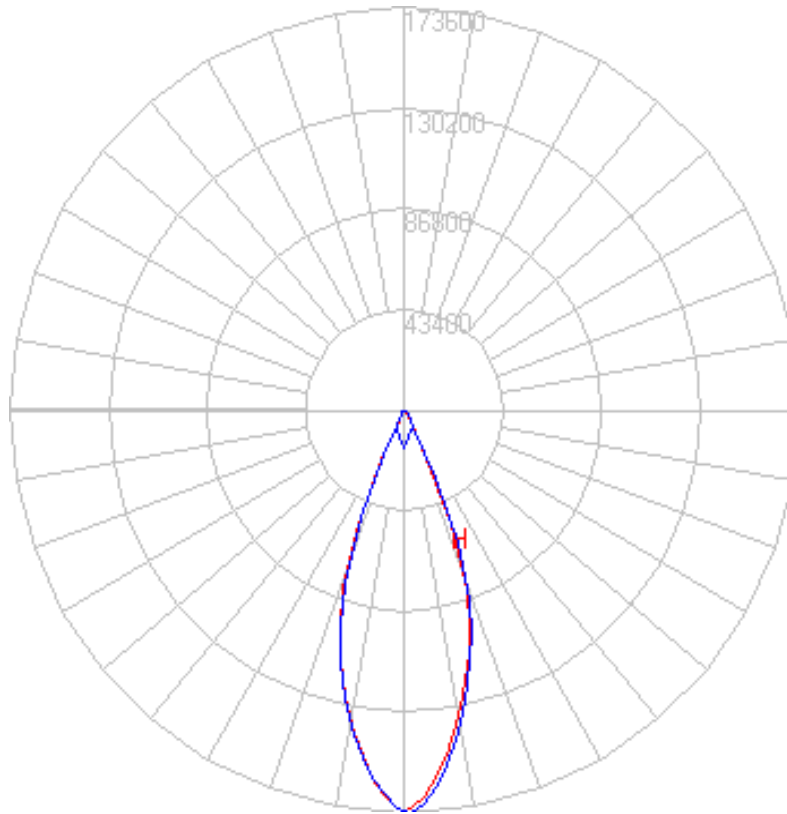
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	59791.72	90.89	90.89
0 to 40	61733.49	93.84	93.84
0 to 60	63922.71	97.17	97.17
0 to 90	65573.13	99.68	99.68
90 to 180	212.41	0.32	0.32
0 to 180	65785.54	100.00	100.00

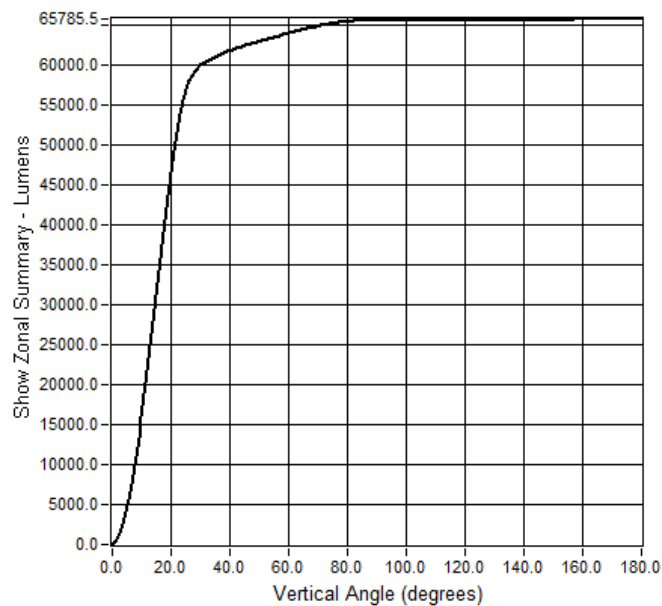
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



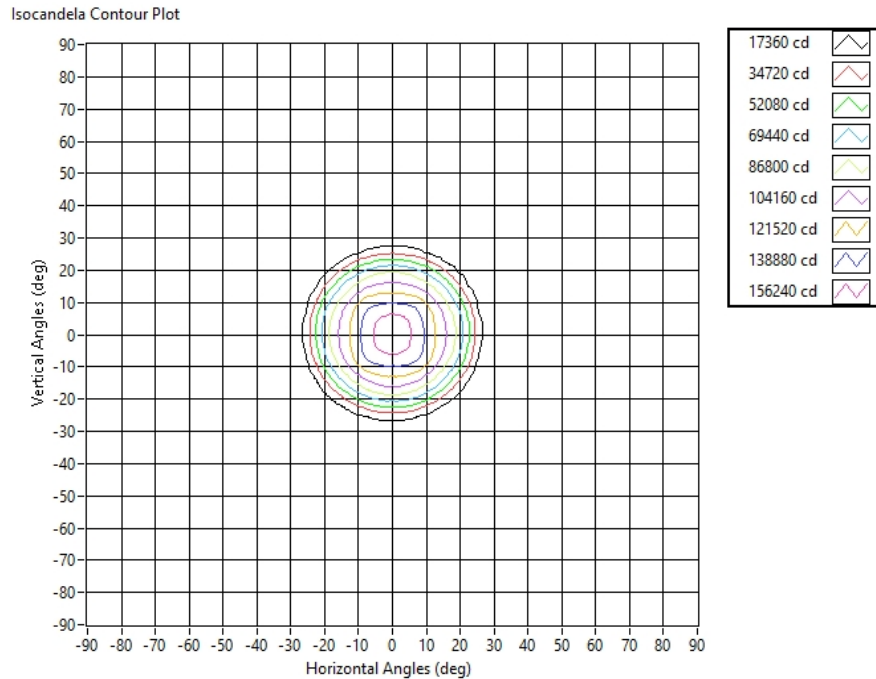
Zonal Flux Graph



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	1.37	1.31	43251.2
4	2.74	2.62	10812.8
6	4.11	3.93	4805.7
8	5.49	5.25	2703.2
10	6.86	6.56	1730.0
12	8.23	7.87	1201.4
14	9.60	9.18	882.7
16	10.97	10.49	675.8
18	12.34	11.80	534.0
20	13.71	13.11	432.5

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