

Test Report

Report Number: L21026

Date: Apr 8, 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-44B2-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 3, 2021 through March 8, 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: L21026
Manufacturer: Dialight Corporation
Product Name: PC Window, NEMA 4, 70 CRI CW, 120-277V, 60K
Description: F2 - Flood Light
Model Number: F2x-44B2-Nxxx-xxx

Report Summary

Sample number L21026
Dialight unit model number F2x-44B2-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:	58347 (lumens)	58186 (lumens)
Electrical Power:	503.3 (W)	498.4 (W)
Luminous Efficacy:	115.9 (lumens/W)	116.8 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 503.3 (W)
Power Factor (120VAC): 0.995996
Current ATHD % (120VAC): 4.83227
Input Power (277VAC): 482.9 (W)
Power Factor (277VAC): 0.96666
Current ATHD % (277VAC): 9.5

Color Measurements:

Correlated Color Temperature (CCT): 5174
Color Rendering Index (CRI): 72.1731
Chromaticity Coordinate (x): 0.340
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 L21026.

Dialight unit model number F2x-44B2-Nxxx-xxx

Test Conditions:

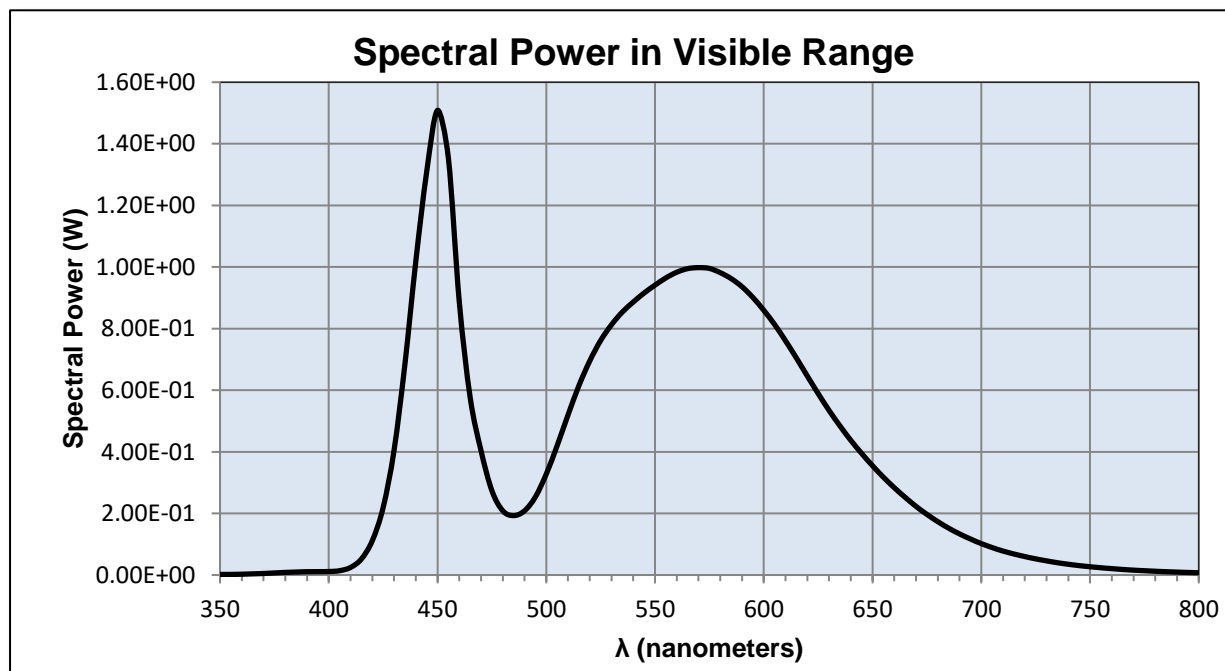
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 4.2041 (A)
Input Power: 503.3 (W)
Input Power Factor: 0.995996
Current ATHD: 4.83227 (%)

Photometric measurements:

Luminous Flux: 58346.84 (lumens)
Luminous Efficacy: 115.9 (lumens/W)
Correlated Color Temperature (CCT): 5174 (K)
CRI -Ra: 72.1731
CRI -R9: -28.8987
DUV: -0.0001
CIE Coordinate (x): 0.340
CIE Coordinate (y): 0.348
CIE Coordinate (u'): 0.210
CIE Coordinate (v'): 0.321
TM30_Rf: 69.7
TM30_Rg: 93.7
TM30_Rcs_hue1: -17.87 %



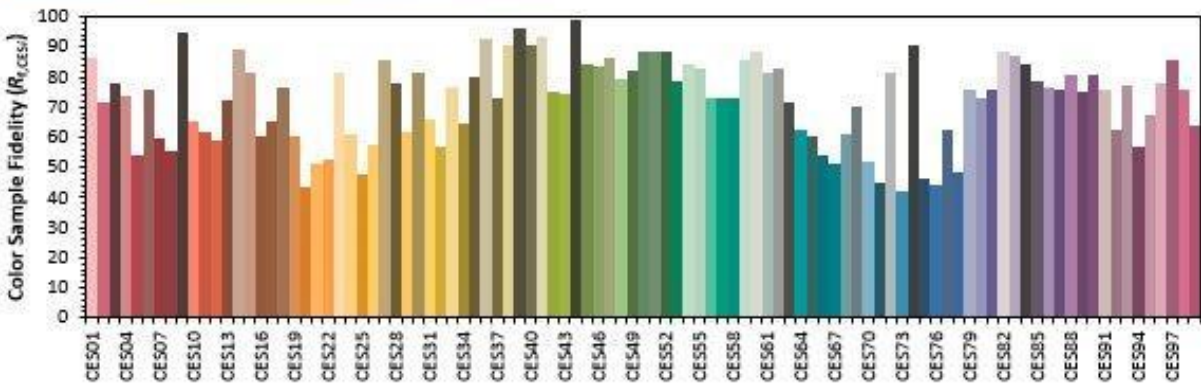
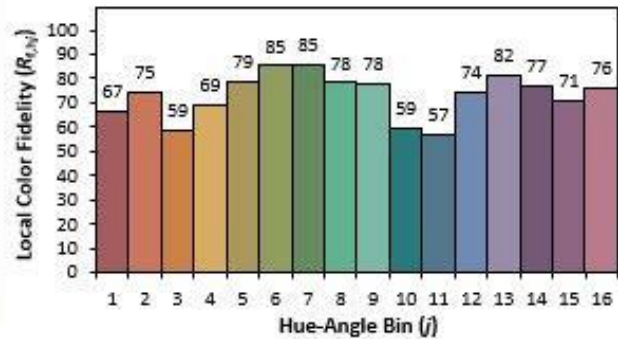
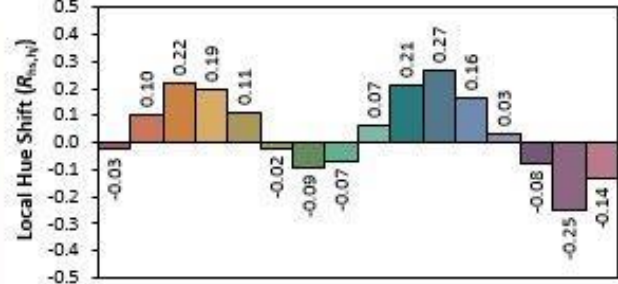
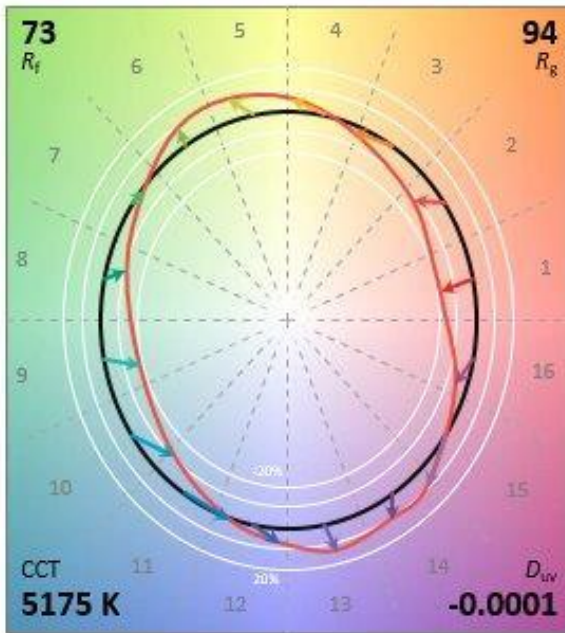
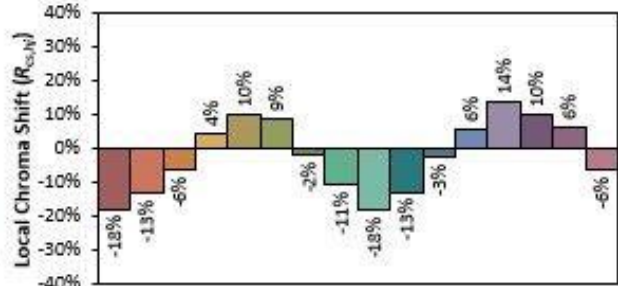
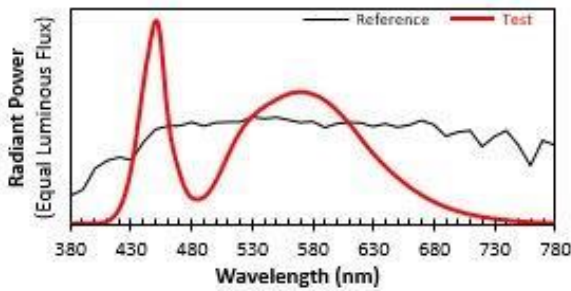
Test Results: Integrating Sphere

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	0.00193	490	0.20847	630	0.53458	770	0.01584
355	0.00202	495	0.25356	635	0.48444	775	0.01396
360	0.00269	500	0.32788	640	0.43738	780	0.01228
365	0.00379	505	0.42013	645	0.39482	785	0.01081
370	0.00499	510	0.51966	650	0.35484	790	0.00952
375	0.00674	515	0.61478	655	0.31770	795	0.00834
380	0.00842	520	0.69512	660	0.28352	800	0.00738
385	0.00974	525	0.76149	665	0.25223		
390	0.01076	530	0.81270	670	0.22289		
395	0.01107	535	0.85403	675	0.19696		
400	0.01140	540	0.88633	680	0.17338		
405	0.01406	545	0.91564	685	0.15215		
410	0.02457	550	0.94123	690	0.13356		
415	0.05200	555	0.96471	695	0.11708		
420	0.11139	560	0.98315	700	0.10217		
425	0.21925	565	0.99471	705	0.08918		
430	0.40444	570	0.99801	710	0.07778		
435	0.68436	575	0.99541	715	0.06829		
440	1.01747	580	0.98169	720	0.05993		
445	1.30821	585	0.96240	725	0.05252		
450	1.50856	590	0.93598	730	0.04592		
455	1.35264	595	0.90118	735	0.03995		
460	0.88655	600	0.85943	740	0.03494		
465	0.57693	605	0.81310	745	0.03054		
470	0.40363	610	0.76044	750	0.02690		
475	0.27383	615	0.70451	755	0.02360		
480	0.20845	620	0.64637	760	0.02072		
485	0.19294	625	0.58929	765	0.01805		

IES TM-30-18 Color Rendition Report



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

x 0.3403
 y 0.3475
 u' 0.2098
 v' 0.4820

CIE 13.3-1995	
(CRI)	
R_a	72
R_g	-29

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21026.
Dialight unit model number F2x-44B2-Nxxx-xxx

Electrical Measurements:

Input Voltage: 119.58 (VAC)
Input current: 4.2231 (A)
Input Power: 498.4 (W)
Power Factor: 0.9958

Photometric measurements:

Absolute Luminous Flux: 58186.2 (lumens)
Luminous Efficacy: 116.8 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	146189	146189	146189	146189	146189	
5.00	131721	132466	134004	135880	135784	13655
15.00	87929	89270	89609	95877	94003	25852
25.00	22867	22832	24692	30186	31592	12374
35.00	3778	2879	2475	2984	4054	2192
45.00	2067	1568	1558	1596	2187	1487
55.00	1437	1234	1219	1252	1499	1239
65.00	1039	967	977	1009	1110	1033
75.00	591	575	618	628	665	656
85.00	309	311	327	327	328	254
90.00	290	290	290	290	290	

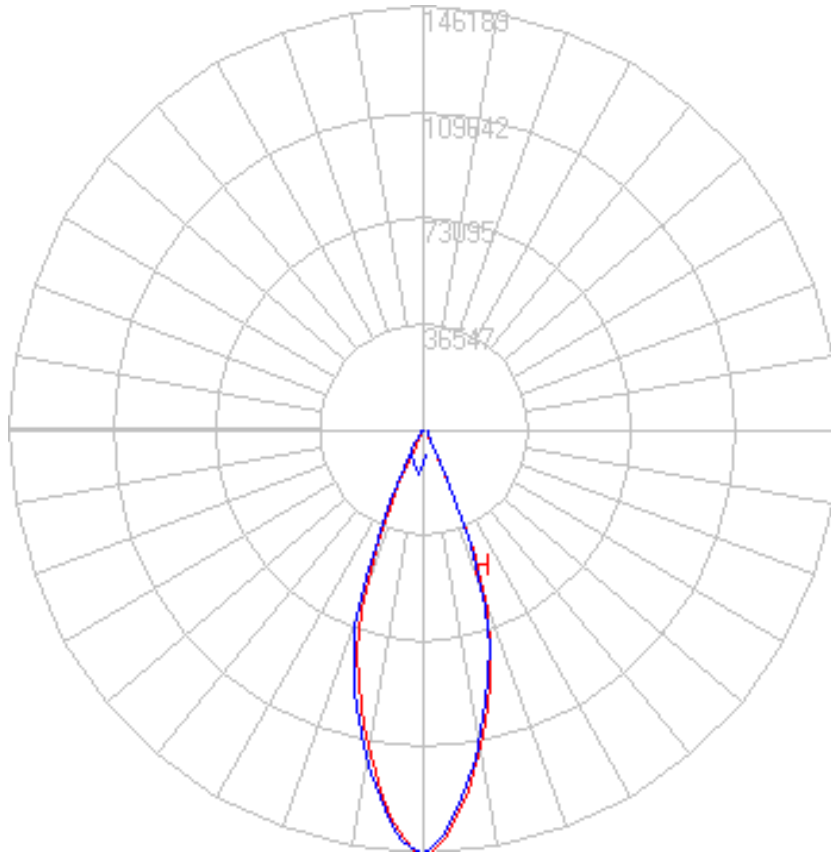
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	49783.80	85.56	85.56
0 to 40	51832.99	89.08	89.08
0 to 60	54361.11	93.43	93.43
0 to 90	56364.10	96.87	96.87
90 to 180	1822.12	3.13	3.13
0 to 180	58186.22	100.00	100.00

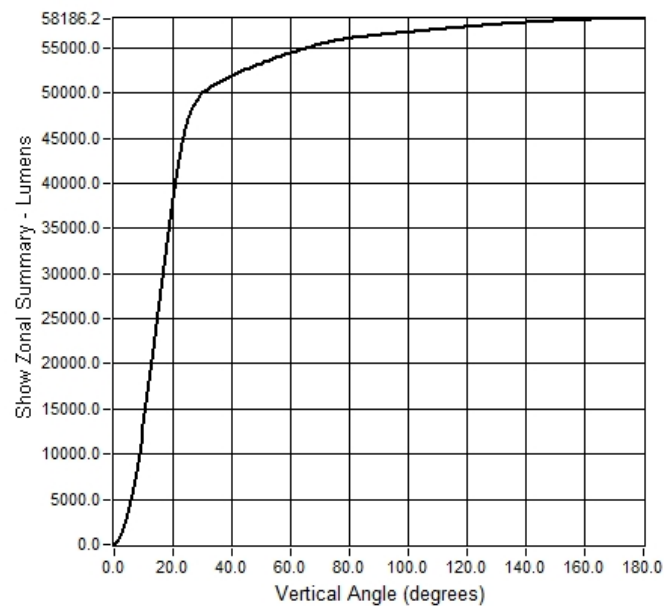
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



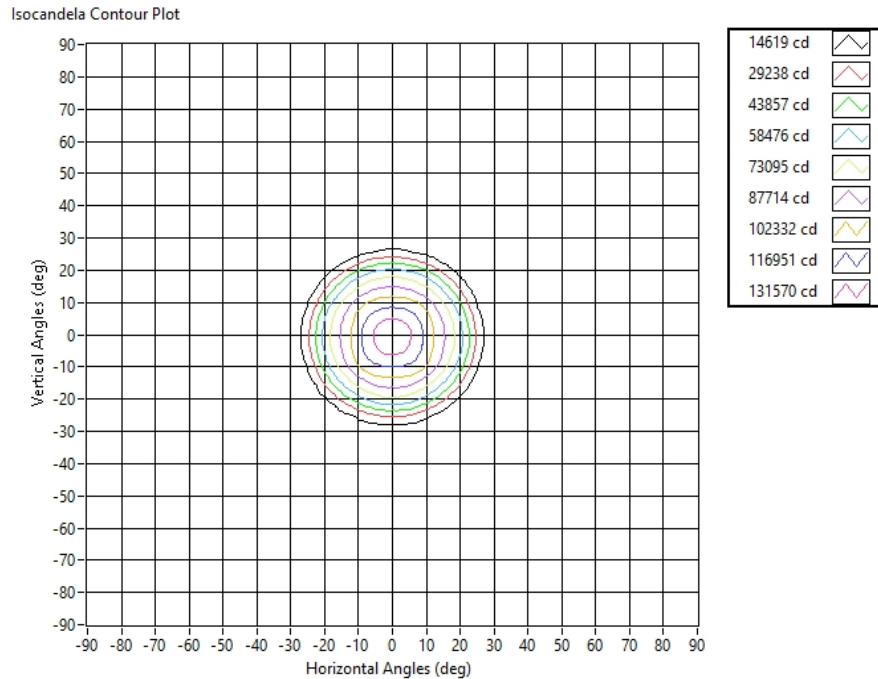
Zonal Flux Graph



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	1.39	1.35	36547.3
4	2.79	2.69	9136.8
6	4.18	4.04	4060.8
8	5.58	5.38	2284.2
10	6.97	6.73	1461.9
12	8.37	8.07	1015.2
14	9.76	9.42	745.9
16	11.16	10.77	571.1
18	12.55	12.11	451.2
20	13.95	13.46	365.5

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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 Dialight Optics Laboratory
 Optical Engineer
 Approved Signatory