

Test Report

Report Number: L21037

Date: Apr 9, 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-N4N2-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: February 5, 2021 through February 5, 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

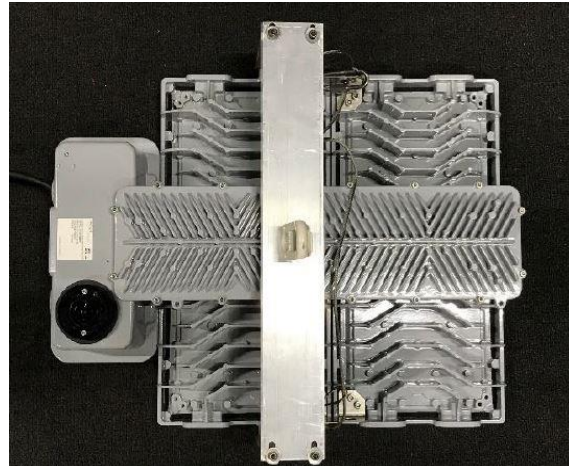
Description of sample:

Sample Number: L21037
Manufacturer: Dialight Corporation
Product Name: No Window, NEMA 4, 80 CRI NW, 120-277V, 60K
Description: F2 - Flood Light
Model Number: F2x-N4N2-Nxxx-xxx

Report Summary

Sample number L21037
Dialight unit model number F2x-N4N2-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:	56881 (lumens)	57171 (lumens)
Electrical Power:	513.6 (W)	500.9 (W)
Luminous Efficacy:	110.8 (lumens/W)	114.1 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 513.6 (W)
 Power Factor (120VAC): 0.996524
 Current ATHD % (120VAC): 4.83854
 Input Power (277VAC): 484.5 (W)
 Power Factor (277VAC): 0.9719
 Current ATHD % (277VAC): 9.6

Color Measurements:

Correlated Color Temperature (CCT): 4139
 Color Rendering Index (CRI): 83.0799
 Chromaticity Coordinate (x): 0.375
 Chromaticity Coordinate (y): 0.376
 Chromaticity Coordinate (u'): 0.222
 Chromaticity Coordinate (v'): 0.334
 DUV: 0.0011

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21037.

Dialight unit model number F2x-N4N2-Nxxx-xxx

Test Conditions:

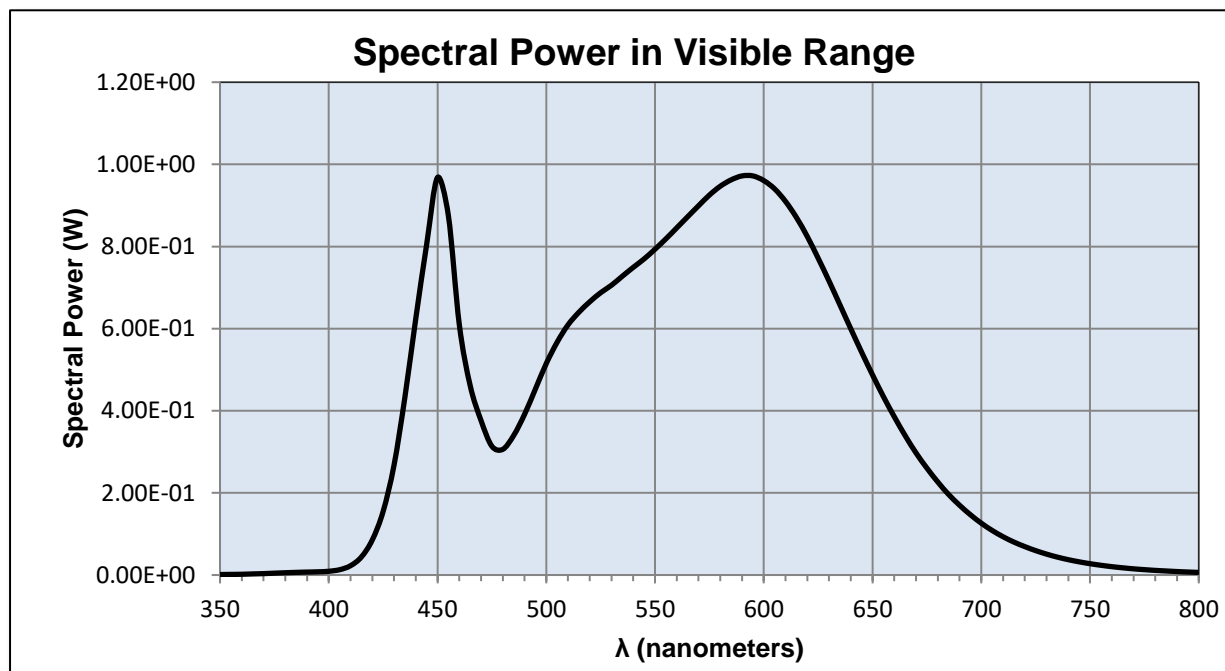
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 4.28849 (A)
Input Power: 513.6 (W)
Input Power Factor: 0.996524
Current ATHD: 4.83854 (%)

Photometric measurements:

Luminous Flux: 56880.63 (lumens)
Luminous Efficacy: 110.8 (lumens/W)
Correlated Color Temperature (CCT): 4139 (K)
CRI -Ra: 83.0799
CRI -R9: 7.0257
DUV: 0.0011
CIE Coordinate (x): 0.375
CIE Coordinate (y): 0.376
CIE Coordinate (u'): 0.222
CIE Coordinate (v'): 0.334
TM30_Rf: 83.1
TM30_Rg: 95.8
TM30_Rcs_hue1: -11.84 %



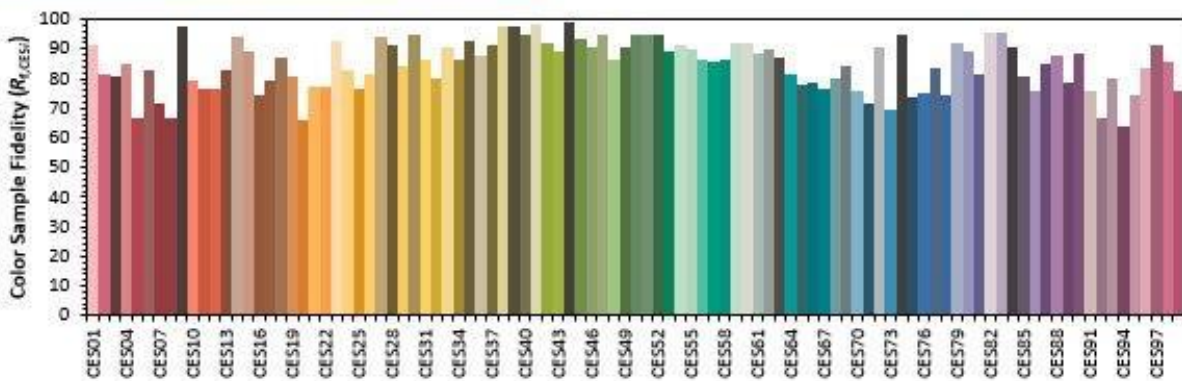
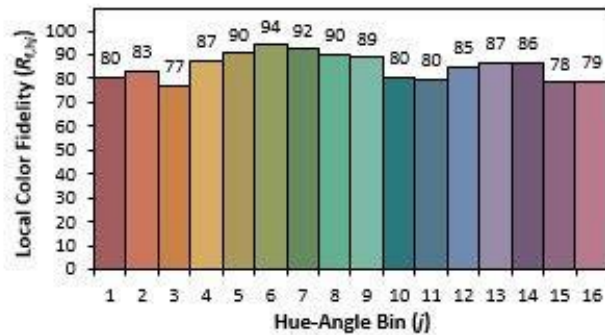
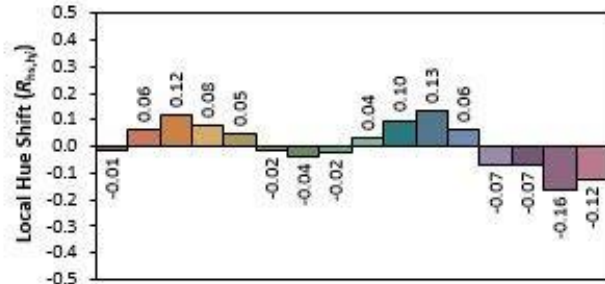
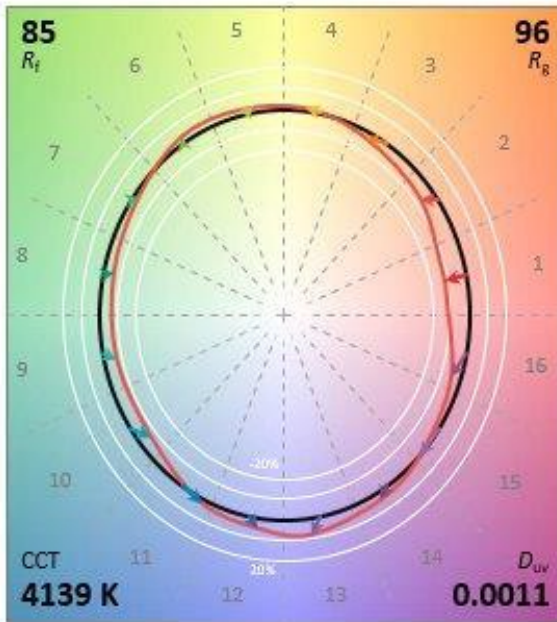
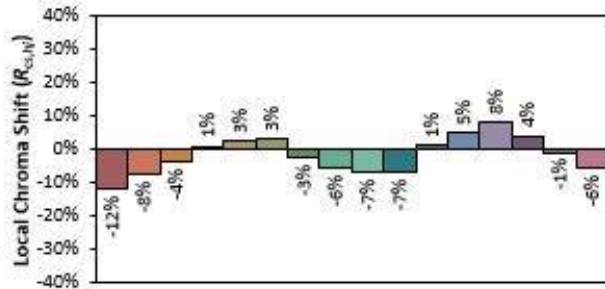
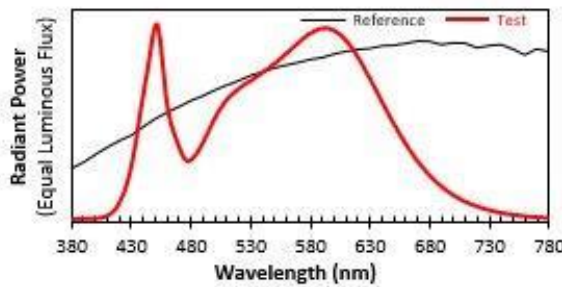
Test Results: Integrating Sphere

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	0.00123	490	0.39107	630	0.71600	770	0.01510
355	0.00155	495	0.45284	635	0.65793	775	0.01308
360	0.00186	500	0.51500	640	0.59972	780	0.01129
365	0.00269	505	0.56699	645	0.54254	785	0.00982
370	0.00343	510	0.60919	650	0.48738	790	0.00851
375	0.00450	515	0.63982	655	0.43458	795	0.00729
380	0.00558	520	0.66532	660	0.38550	800	0.00631
385	0.00646	525	0.68743	665	0.33944		
390	0.00717	530	0.70572	670	0.29738		
395	0.00784	535	0.72777	675	0.26037		
400	0.00916	540	0.74917	680	0.22659		
405	0.01299	545	0.76974	685	0.19610		
410	0.02269	550	0.79340	690	0.17004		
415	0.04394	555	0.81856	695	0.14678		
420	0.08535	560	0.84540	700	0.12627		
425	0.15508	565	0.87243	705	0.10856		
430	0.26766	570	0.89909	710	0.09330		
435	0.43321	575	0.92514	715	0.08027		
440	0.62426	580	0.94671	720	0.06923		
445	0.80487	585	0.96225	725	0.05946		
450	0.96815	590	0.97181	730	0.05095		
455	0.87455	595	0.97185	735	0.04361		
460	0.60999	600	0.96048	740	0.03740		
465	0.46165	605	0.94019	745	0.03213		
470	0.37626	610	0.90971	750	0.02760		
475	0.31355	615	0.87075	755	0.02376		
480	0.30610	620	0.82438	760	0.02040		
485	0.33978	625	0.77150	765	0.01756		

IES TM-30-18 Color Rendition Report



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

x 0.3752
 y 0.3757
 u' 0.2221
 v' 0.5003

CIE 13.3-1995
(CRI)
 R_a 83
 R_g 7

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21037.
Dialight unit model number F2x-N4N2-Nxxx-xxx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 4.188 (A)
Input Power: 500.9 (W)
Power Factor: 0.996

Photometric measurements:

Absolute Luminous Flux: 57171 (lumens)
Luminous Efficacy: 114.1 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	144704	144933	145772	145241	144704	
5.00	133735	131930	131119	132263	130880	13477
15.00	95455	94573	89847	96225	96763	26972
25.00	31781	28622	25061	29263	29160	13614
35.00	3512	2355	1852	2266	3370	1859
45.00	1690	1122	1077	1120	1658	1131
55.00	1139	880	834	887	1128	927
65.00	855	751	704	767	858	807
75.00	524	450	449	474	533	531
85.00	108	95	97	110	112	59
90.00	3	2	3	6	3	

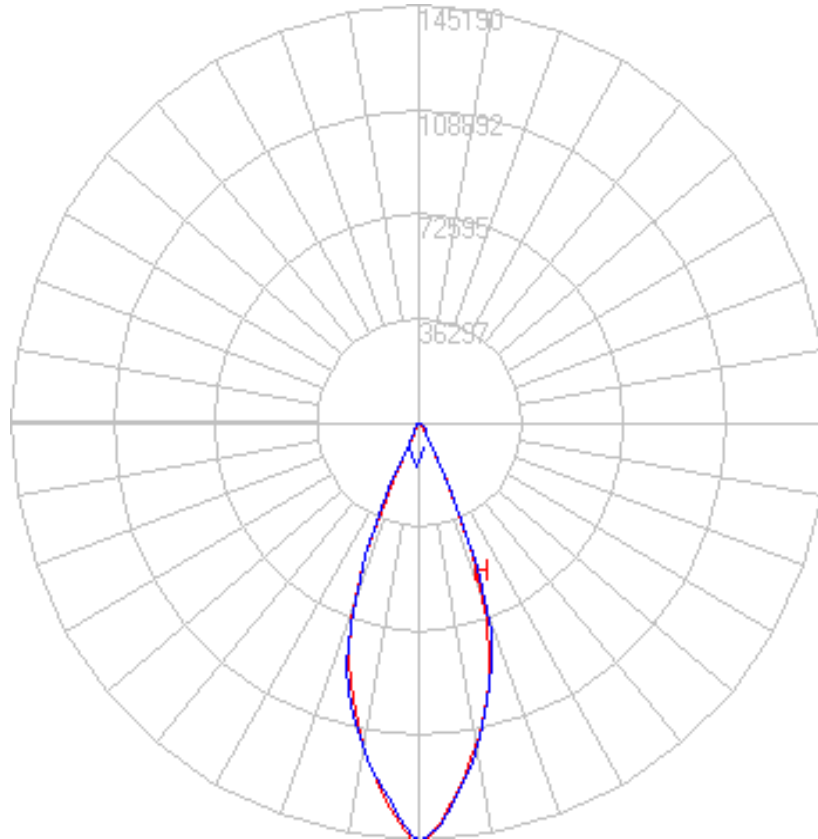
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	52174.60	91.26	91.26
0 to 40	53922.01	94.32	94.32
0 to 60	55788.21	97.58	97.58
0 to 90	57170.96	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	57170.96	100.00	100.00

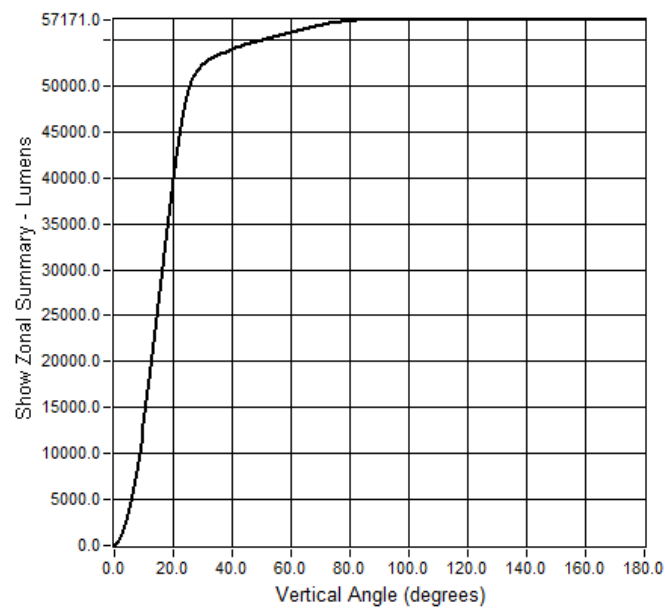
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



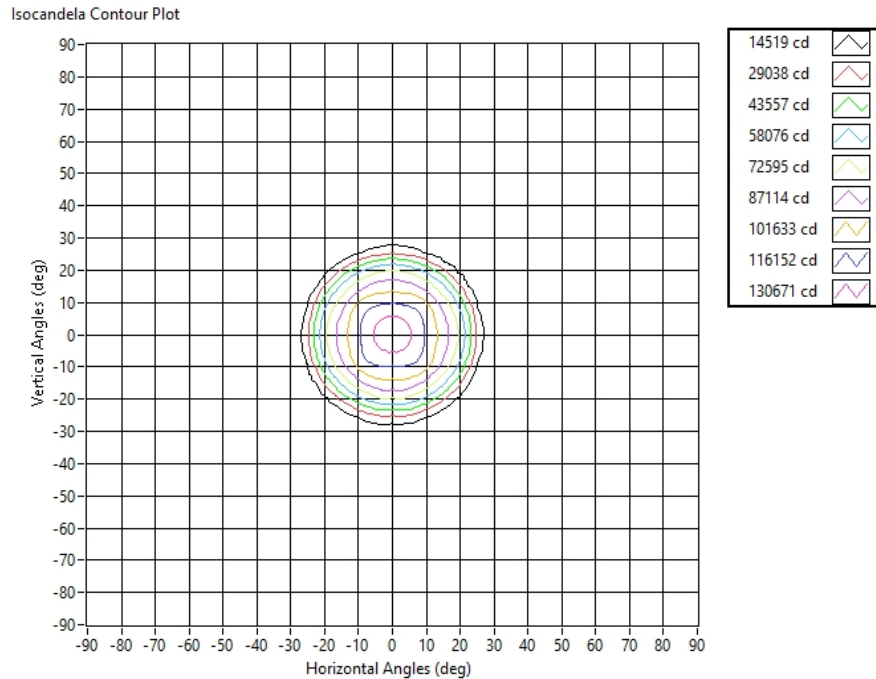
Zonal Flux Graph



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	1.46	1.41	36297.4
4	2.92	2.83	9074.3
6	4.37	4.24	4033.0
8	5.83	5.66	2268.6
10	7.29	7.07	1451.9
12	8.75	8.49	1008.3
14	10.21	9.90	740.8
16	11.66	11.32	567.1
18	13.12	12.73	448.1
20	14.58	14.15	363.0

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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Vishnu Shastry
 Dialight Optics Laboratory
 Optical Engineer
 Approved Signatory