

Test Report

Report Number: L21039

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-N4C2-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: January 29, 2021 through February 3, 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

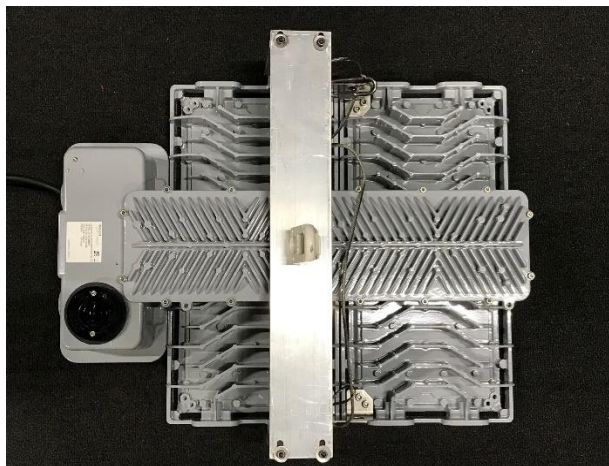
Description of sample:

Sample Number: I21039
Manufacturer: Dialight Corporation
Product Name: No Window, NEMA 4, 80 CRI CW, 120-277V, 60K
Description: F2 - Flood Light
Model Number: F2x-N4C2-Nxxx-xxx

Report Summary

Sample number I21039
Dialight unit model number F2x-N4C2-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:	57710 (lumens)	58042 (lumens)
Electrical Power:	500.1 (W)	496.5 (W)
Luminous Efficacy:	115.4 (lumens/W)	116.9 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 500.1 (W)
Power Factor (120VAC): 0.996446
Current ATHD % (120VAC): 4.9508
Input Power (277VAC): 485.6 (W)
Power Factor (277VAC): 0.9724
Current ATHD % (277VAC): 9.2

Color Measurements:

Correlated Color Temperature (CCT): 5198
Color Rendering Index (CRI): 82.2585
Chromaticity Coordinate (x): 0.340
Chromaticity Coordinate (y): 0.350
Chromaticity Coordinate (u'): 0.209
Chromaticity Coordinate (v'): 0.322
DUV: 0.0013

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number I21039.

Dialight unit model number F2x-N4C2-Nxxx-xxx

Test Conditions:

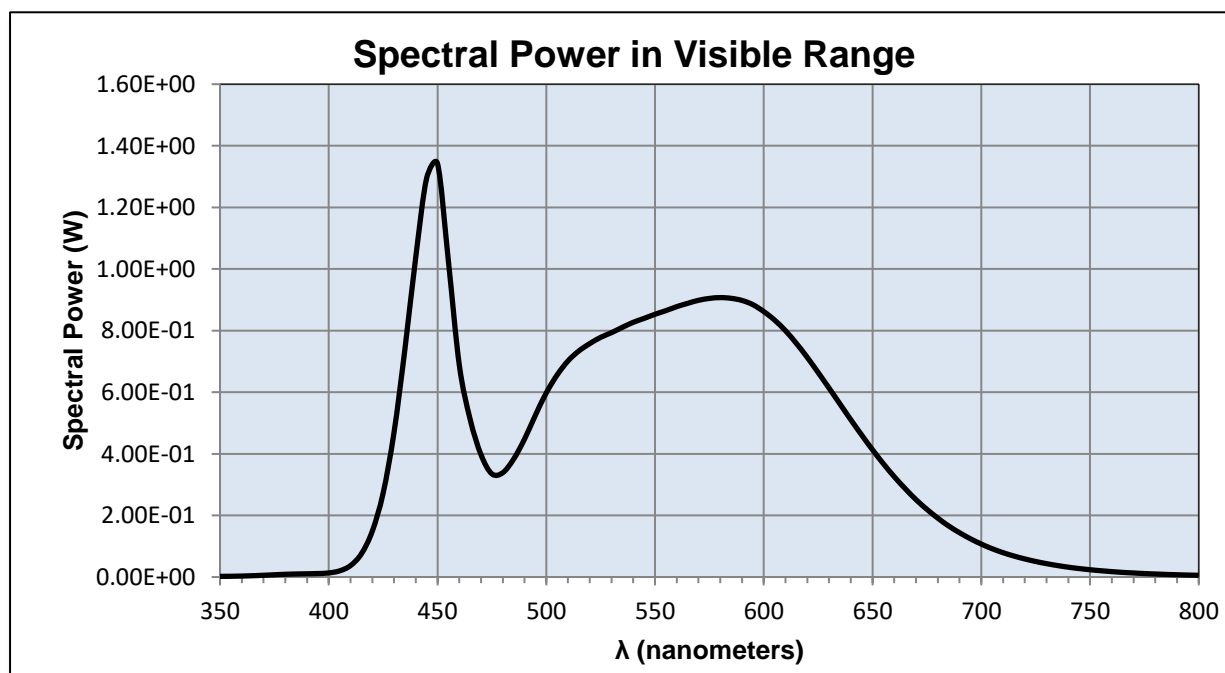
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 4.2458 (A)
Input Power: 500.1 (W)
Input Power Factor: 0.996446
Current ATHD: 4.9508 (%)

Photometric measurements:

Luminous Flux: 57710.09 (lumens)
Luminous Efficacy: 115.4 (lumens/W)
Correlated Color Temperature (CCT): 5198 (K)
CRI -Ra: 82.2585
CRI -R9: 6.4175
DUV: 0.0013
CIE Coordinate (x): 0.340
CIE Coordinate (y): 0.350
CIE Coordinate (u'): 0.209
CIE Coordinate (v'): 0.322
TM30_Rf: 81.2
TM30_Rg: 97.5
TM30_Rcs_hue1: -12.28 %



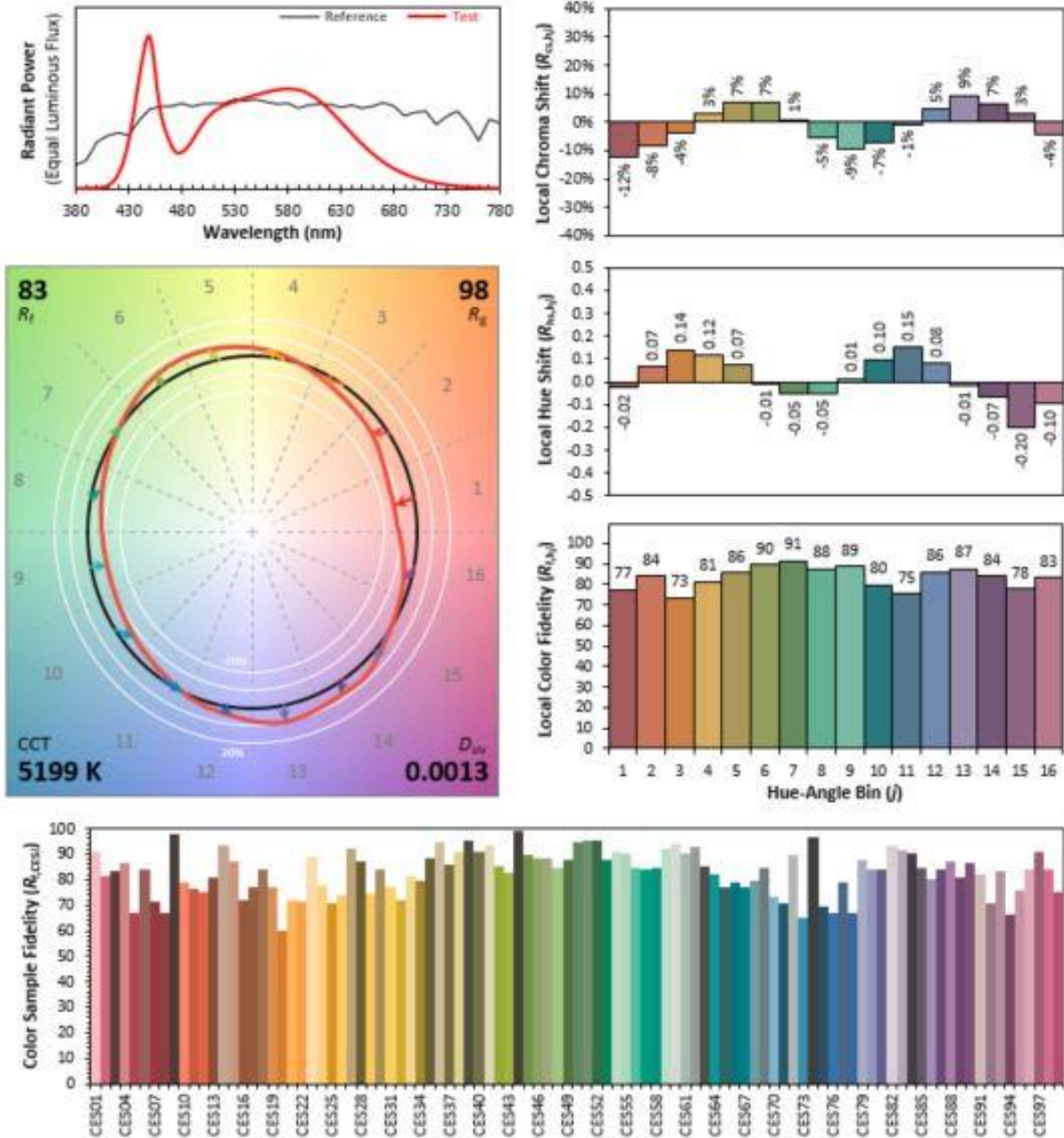
Test Results: Integrating Sphere

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	0.00212	490	0.44774	630	0.61357	770	0.01310
355	0.00250	495	0.52536	635	0.56222	775	0.01129
360	0.00321	500	0.59790	640	0.51075	780	0.00981
365	0.00426	505	0.65615	645	0.46115	785	0.00848
370	0.00570	510	0.70177	650	0.41309	790	0.00736
375	0.00730	515	0.73408	655	0.36782	795	0.00635
380	0.00891	520	0.75796	660	0.32564	800	0.00556
385	0.00985	525	0.77811	665	0.28705		
390	0.01056	530	0.79349	670	0.25118		
395	0.01130	535	0.81074	675	0.21969		
400	0.01332	540	0.82697	680	0.19130		
405	0.02003	545	0.83978	685	0.16573		
410	0.03721	550	0.85313	690	0.14389		
415	0.07535	555	0.86488	695	0.12423		
420	0.14881	560	0.87787	700	0.10703		
425	0.27277	565	0.88857	705	0.09195		
430	0.46976	570	0.89840	710	0.07908		
435	0.73974	575	0.90453	715	0.06815		
440	1.03897	580	0.90724	720	0.05875		
445	1.29512	585	0.90489	725	0.05052		
450	1.34192	590	0.89797	730	0.04343		
455	1.02523	595	0.88424	735	0.03729		
460	0.68855	600	0.86197	740	0.03189		
465	0.51215	605	0.83403	745	0.02746		
470	0.39701	610	0.79956	750	0.02366		
475	0.33480	615	0.75839	755	0.02044		
480	0.33873	620	0.71311	760	0.01758		
485	0.38297	625	0.66401	765	0.01508		

IES TM-30-18 Color Rendition Report



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

x 0.3399
y 0.3499
u' 0.2086
v' 0.4831

CIE 13.3-1995
(CRI)
 R_a 82
 R_g 6

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number I21039.
Dialight unit model number F2x-N4C2-Nxxx-xxx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 4.1532 (A)
Input Power: 496.5 (W)
Power Factor: 0.996

Photometric measurements:

Absolute Luminous Flux: 58042.1 (lumens)
Luminous Efficacy: 116.9 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	147712	147511	148412	147901	147712	
5.00	142924	139133	133912	132457	131602	13911
15.00	101570	100968	92324	91757	93346	27367
25.00	42811	34632	21533	19217	20213	13478
35.00	3892	2469	1909	2217	3220	1914
45.00	1863	1202	1122	1131	1634	1181
55.00	1212	931	881	934	1149	970
65.00	911	798	736	776	857	835
75.00	595	492	454	433	491	541
85.00	156	118	85	76	83	63
90.00	23	11	2	2	2	

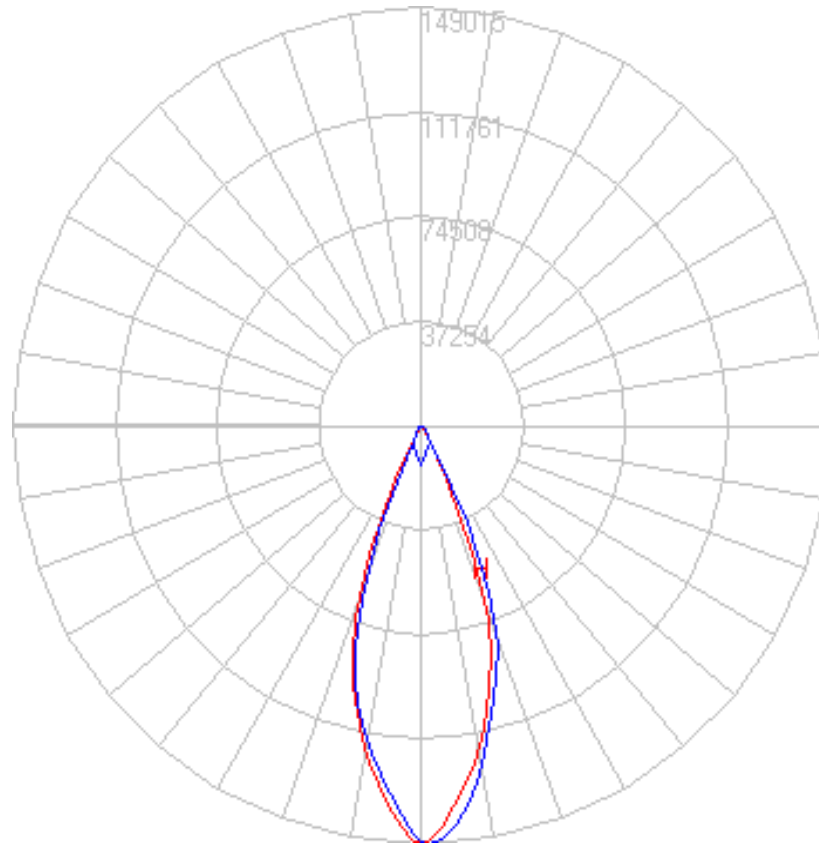
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	52872.37	91.09	91.09
0 to 40	54664.16	94.18	94.18
0 to 60	56615.00	97.54	97.54
0 to 90	58042.05	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	58042.05	100.00	100.00

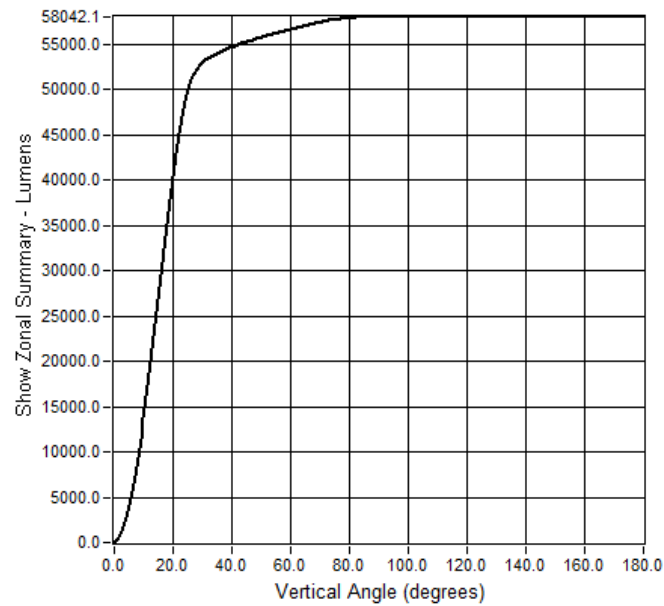
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



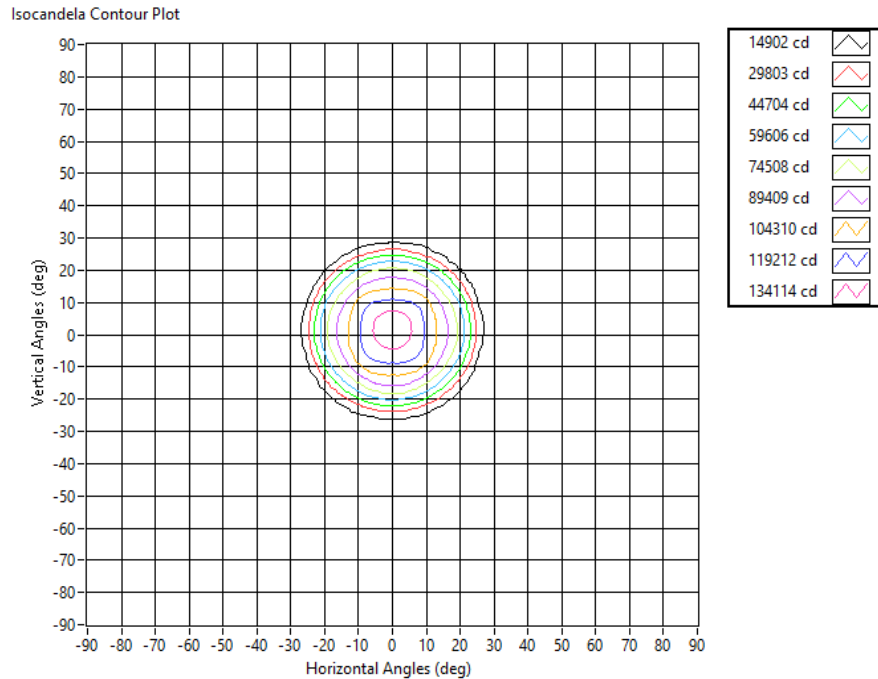
Zonal Flux Graph



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	1.48	1.43	36996.5
4	2.96	2.86	9249.1
6	4.43	4.29	4110.7
8	5.91	5.73	2312.3
10	7.39	7.16	1479.9
12	8.87	8.59	1027.7
14	10.35	10.02	755.0
16	11.82	11.45	578.1
18	13.30	12.88	456.7
20	14.78	14.31	370.0

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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 Optical Engineer
 Approved Signatory