

# Test Report

Report Number: L21038

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-N4L2-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 January 29, 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

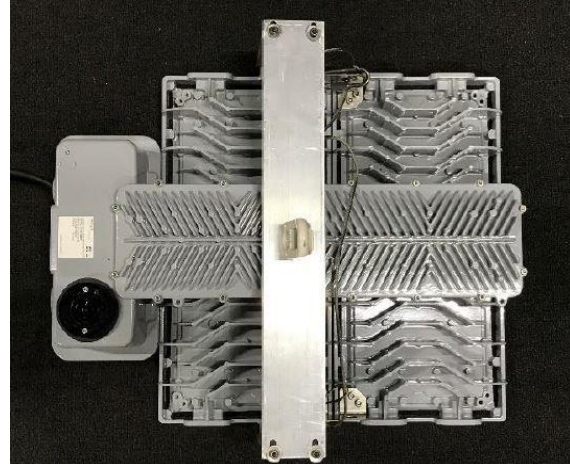
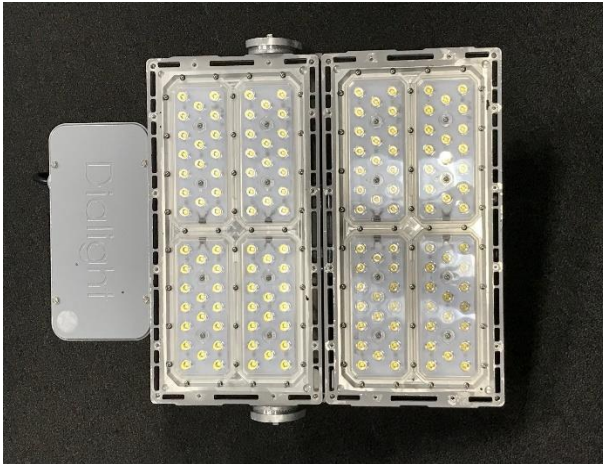
**Description of sample:**

Sample Number: L21038  
Manufacturer: Dialight Corporation  
Product Name: No Window, NEMA 4, 70 CRI NW, 120-277V, 60K  
Description: F2 - Flood Light  
Model Number: F2x-N4L2-Nxxx-xxx

## Report Summary

Sample number L21038  
Dialight unit model number F2x-N4L2-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:	63013 (lumens)	63479 (lumens)
Electrical Power:	508.5 (W)	496.5 (W)
Luminous Efficacy:	123.9 (lumens/W)	127.9 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 508.5 (W)  
 Power Factor (120VAC): 0.996557  
 Current ATHD % (120VAC): 4.82514  
 Input Power (277VAC): 478.8 (W)  
 Power Factor (277VAC): 0.9722  
 Current ATHD % (277VAC): 11.286

### Color Measurements:

Correlated Color Temperature (CCT): 4197  
 Color Rendering Index (CRI): 72.4765  
 Chromaticity Coordinate (x): 0.372  
 Chromaticity Coordinate (y): 0.372  
 Chromaticity Coordinate (u'): 0.222  
 Chromaticity Coordinate (v'): 0.332  
 DUV: 0.0001

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21038.

Dialight unit model number F2x-N4L2-Nxxx-xxx

### Test Conditions:

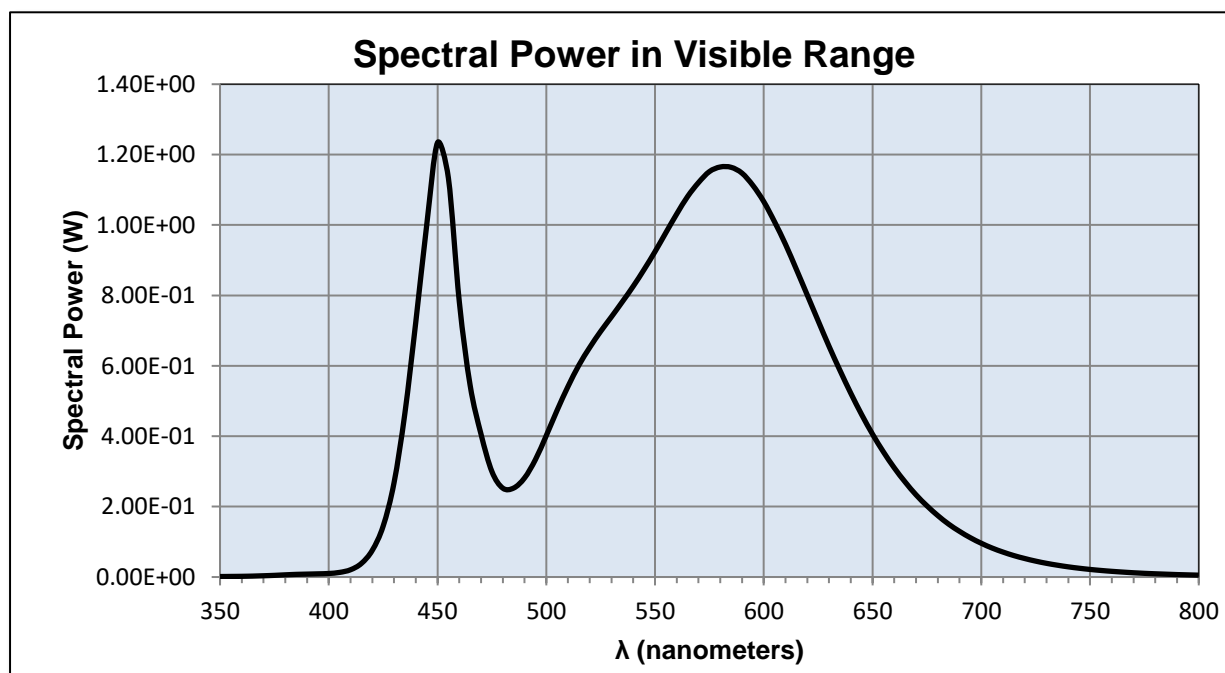
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 4.24659 (A)  
Input Power: 508.5 (W)  
Input Power Factor: 0.996557  
Current ATHD: 4.82514 (%)

### Photometric measurements:

Luminous Flux: 63012.9 (lumens)  
Luminous Efficacy: 123.9 (lumens/W)  
Correlated Color Temperature (CCT): 4197 (K)  
CRI -Ra: 72.4765  
CRI -R9: -38.502  
DUV: 0.0001  
CIE Coordinate (x): 0.372  
CIE Coordinate (y): 0.372  
CIE Coordinate (u'): 0.222  
CIE Coordinate (v'): 0.332  
TM30\_Rf: 72.4  
TM30\_Rg: 91.8  
TM30\_Rcs\_hue1: -18.38 %



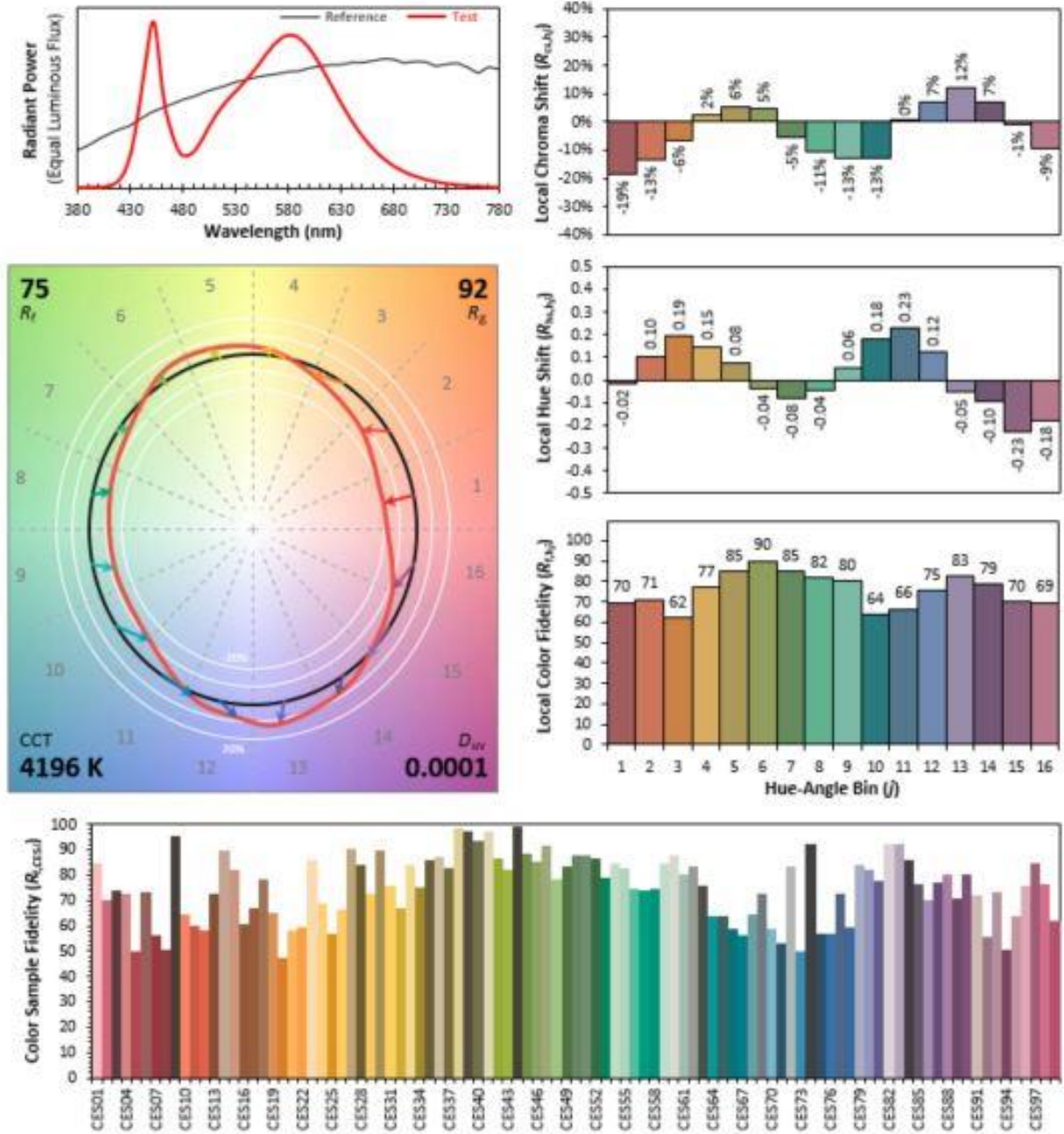
## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)
350	0.00141	490	0.28132	630	0.65551	770	0.01213
355	0.00169	495	0.33340	635	0.58730	775	0.01053
360	0.00203	500	0.40169	640	0.52219	780	0.00922
365	0.00264	505	0.47395	645	0.46155	785	0.00806
370	0.00363	510	0.54149	650	0.40590	790	0.00697
375	0.00476	515	0.60174	655	0.35560	795	0.00611
380	0.00623	520	0.65231	660	0.31011	800	0.00527
385	0.00752	525	0.69779	665	0.26986		
390	0.00829	530	0.73947	670	0.23357		
395	0.00905	535	0.78228	675	0.20245		
400	0.01003	540	0.82612	680	0.17470		
405	0.01314	545	0.87378	685	0.15031		
410	0.02063	550	0.92441	690	0.12971		
415	0.03862	555	0.97840	695	0.11153		
420	0.07579	560	1.03169	700	0.09593		
425	0.14468	565	1.08113	705	0.08234		
430	0.26776	570	1.12052	710	0.07087		
435	0.46580	575	1.15179	715	0.06090		
440	0.72391	580	1.16488	720	0.05254		
445	0.99837	585	1.16385	725	0.04521		
450	1.23398	590	1.14721	730	0.03891		
455	1.13319	595	1.11250	735	0.03362		
460	0.78242	600	1.06649	740	0.02891		
465	0.54453	605	1.00858	745	0.02497		
470	0.40580	610	0.94492	750	0.02158		
475	0.29964	615	0.87382	755	0.01871		
480	0.25243	620	0.80109	760	0.01621		
485	0.25278	625	0.72787	765	0.01406		

**IES TM-30-18 Color Rendition Report**



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

x 0.3722  
y 0.3716  
u' 0.2217  
v' 0.4981

CIE 13.3-1995  
(CRI)  
R<sub>a</sub> 72  
R<sub>p</sub> -39

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21038.  
Dialight unit model number F2x-N4L2-Nxxx-xxx

### Electrical Measurements:

Input Voltage: 120.02 (VAC)  
Input current: 4.1532 (A)  
Input Power: 496.5 (W)  
Power Factor: 0.996

### Photometric measurements:

Absolute Luminous Flux: 63479 (lumens)  
Luminous Efficacy: 127.9 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	157024	157205	157867	157383	157024	
5.00	148359	144808	142567	143792	141112	14720
15.00	110022	104313	95499	102459	103557	29630
25.00	36572	31417	28088	35083	31436	15310
35.00	3914	2506	2043	2610	3758	2068
45.00	1930	1237	1194	1251	1875	1277
55.00	1303	976	921	972	1280	1046
65.00	976	832	763	836	953	900
75.00	596	496	485	521	586	589
85.00	124	105	110	132	127	68
90.00	4	3	6	16	7	

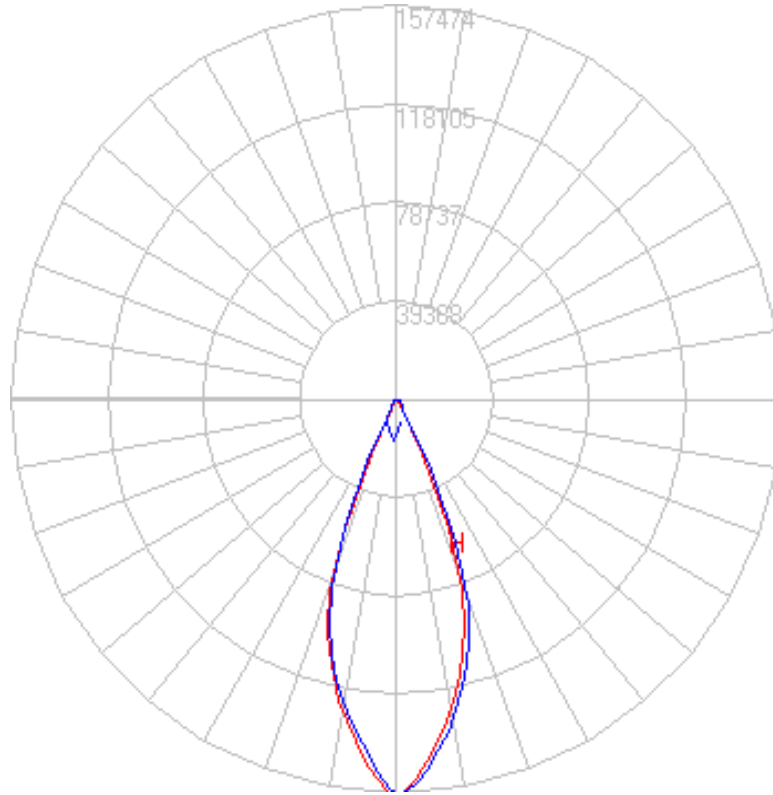
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	57901.81	91.21	91.21
0 to 40	59844.65	94.27	94.27
0 to 60	61939.24	97.57	97.57
0 to 90	63479.02	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	63479.02	100.00	100.00

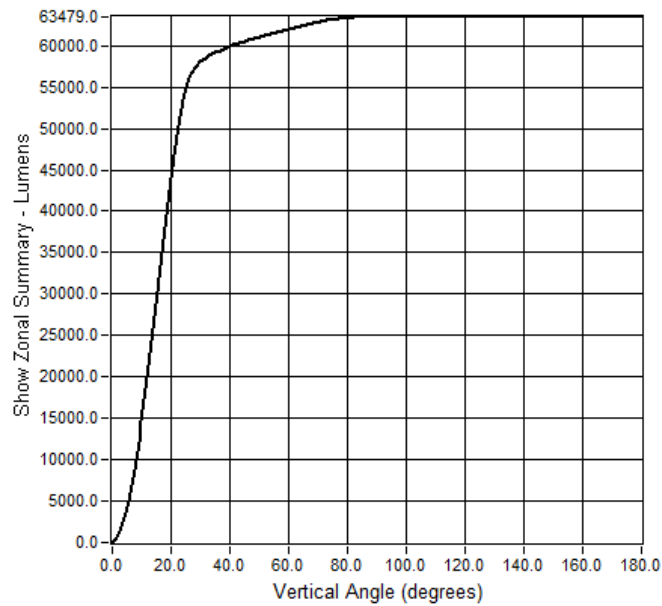
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



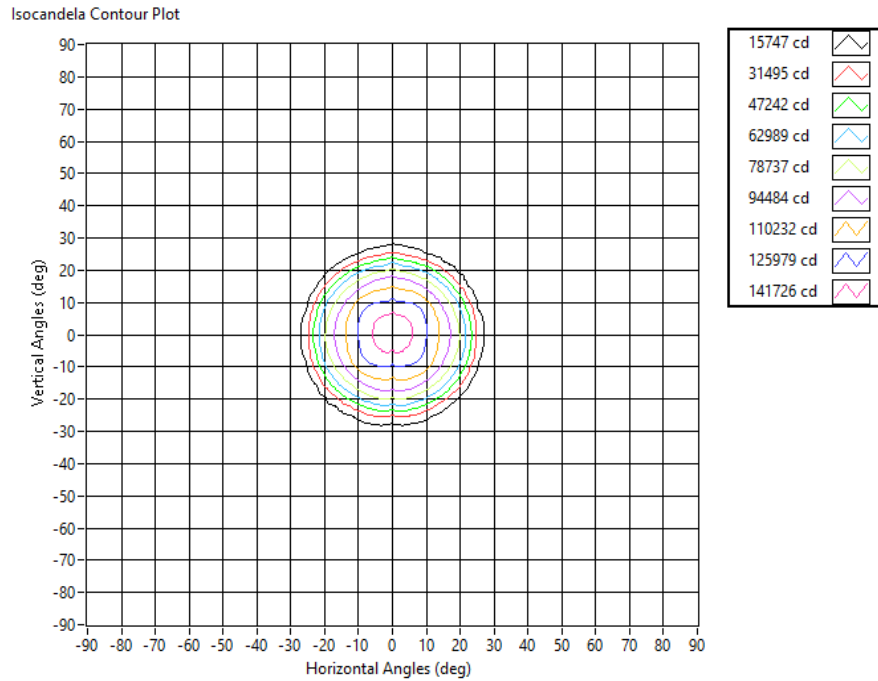
Zonal Flux Graph



## 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	1.44	1.39	39368.4
4	2.88	2.78	9842.1
6	4.32	4.16	4374.3
8	5.77	5.55	2460.5
10	7.21	6.94	1574.7
12	8.65	8.33	1093.6
14	10.09	9.72	803.4
16	11.53	11.11	615.1
18	12.97	12.49	486.0
20	14.41	13.88	393.7



**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