

# Test Report

Report Number: L21020

Date: Apr 5, 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-N6B2-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 24, 2021 through February 25, 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

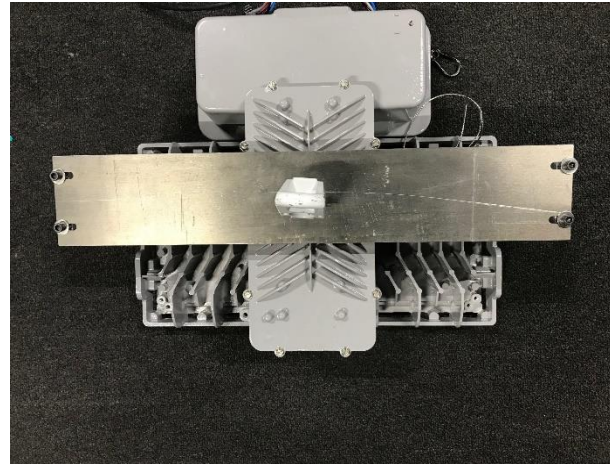
**Description of sample:**

Sample Number: L21020  
Manufacturer: Dialight Corporation  
Product Name: No Window, NEMA 6, 70 CRI CW, 120-277V, 60K  
Description: F2 - Flood Light  
Model Number: F2x-N6B2-Nxxx-xxx

## Report Summary

Sample number L21020  
Dialight unit model number F2x-N6B2-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:	65107 (lumens)	65252 (lumens)
Electrical Power:	504.2 (W)	501.3 (W)
Luminous Efficacy:	129.1 (lumens/W)	130.2 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 504.2 (W)  
 Power Factor (120VAC): 0.996052  
 Current ATHD % (120VAC): 4.81071  
 Input Power (277VAC): 481.4 (W)  
 Power Factor (277VAC): 0.9668  
 Current ATHD % (277VAC): 9.46

### Color Measurements:

Correlated Color Temperature (CCT): 5179  
 Color Rendering Index (CRI): 71.6909  
 Chromaticity Coordinate (x): 0.340  
 Chromaticity Coordinate (y): 0.347  
 Chromaticity Coordinate (u'): 0.210  
 Chromaticity Coordinate (v'): 0.321  
 DUV: -0.0002

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21020.

Dialight unit model number F2x-N6B2-Nxxx-xxx

### Test Conditions:

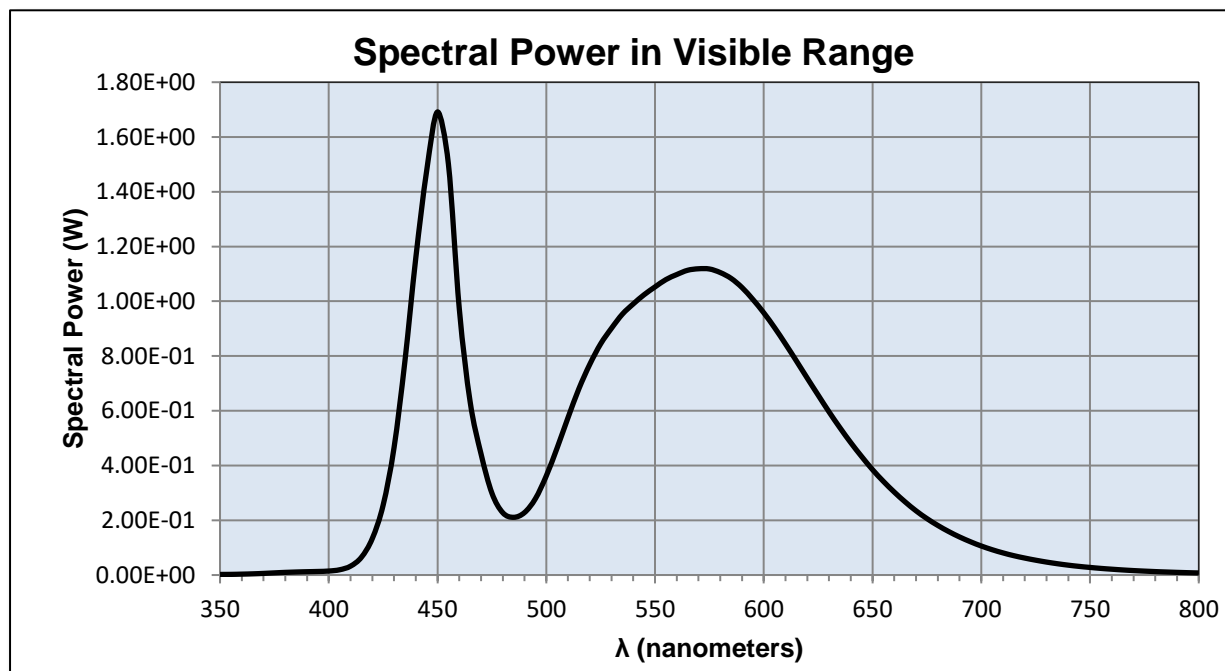
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 4.22945 (A)  
Input Power: 504.2 (W)  
Input Power Factor: 0.996052  
Current ATHD: 4.81071 (%)

### Photometric measurements:

Luminous Flux: 65107.25 (lumens)  
Luminous Efficacy: 129.1 (lumens/W)  
Correlated Color Temperature (CCT): 5179 (K)  
CRI -Ra: 71.6909  
CRI -R9: -31.2482  
DUV: -0.0002  
CIE Coordinate (x): 0.340  
CIE Coordinate (y): 0.347  
CIE Coordinate (u'): 0.210  
CIE Coordinate (v'): 0.321  
TM30\_Rf: 69.1  
TM30\_Rg: 93.6  
TM30\_Rcs\_hue1: -18.22 %



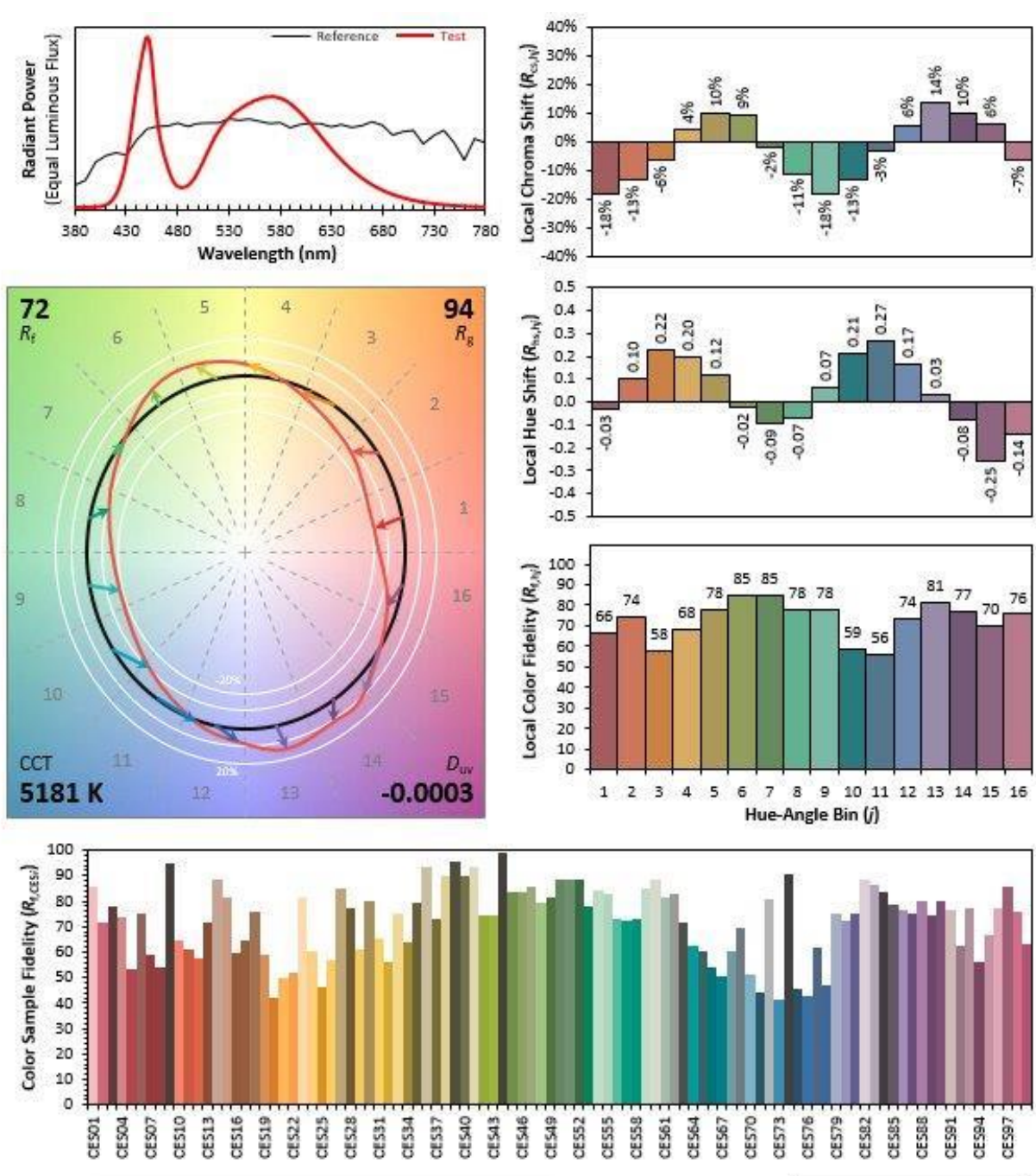
## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)	$\lambda(\text{nm})$	(W/nm)
350	0.00220	490	0.22820	630	0.59595	770	0.01626
355	0.00240	495	0.27880	635	0.53823	775	0.01429
360	0.00325	500	0.36200	640	0.48342	780	0.01255
365	0.00430	505	0.46447	645	0.43281	785	0.01104
370	0.00589	510	0.57499	650	0.38494	790	0.00975
375	0.00787	515	0.68027	655	0.34203	795	0.00854
380	0.00969	520	0.76939	660	0.30288	800	0.00754
385	0.01104	525	0.84429	665	0.26706		
390	0.01215	530	0.90151	670	0.23461		
395	0.01301	535	0.95291	675	0.20623		
400	0.01457	540	0.99026	680	0.18120		
405	0.01921	545	1.02388	685	0.15889		
410	0.03241	550	1.05234	690	0.13909		
415	0.06476	555	1.07902	695	0.12162		
420	0.13316	560	1.09761	700	0.10604		
425	0.25551	565	1.11317	705	0.09254		
430	0.46499	570	1.11863	710	0.08079		
435	0.78103	575	1.11786	715	0.07057		
440	1.15743	580	1.10478	720	0.06194		
445	1.47604	585	1.08332	725	0.05420		
450	1.69148	590	1.05005	730	0.04734		
455	1.50105	595	1.00655	735	0.04128		
460	0.97267	600	0.95783	740	0.03601		
465	0.63259	605	0.90315	745	0.03148		
470	0.44254	610	0.84373	750	0.02770		
475	0.29919	615	0.78190	755	0.02425		
480	0.22755	620	0.71904	760	0.02125		
485	0.21083	625	0.65720	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 0.3402  
y 0.3470  
u' 0.2099  
v' 0.4817

CIE 13.3-1995 (CRI)	
$R_a$	72
$R_g$	-31

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21020.  
Dialight unit model number F2x-N6B2-Nxxx-xxx

### Electrical Measurements:

Input Voltage: 120.03 (VAC)  
Input current: 4.1978 (A)  
Input Power: 501.3 (W)  
Power Factor: 0.9957

### Photometric measurements:

Absolute Luminous Flux: 65251.7 (lumens)  
Luminous Efficacy: 130.2 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	39307	39307	39307	39307	39307	
5.00	39620	39100	38870	38644	38488	3956
15.00	33263	32843	31545	31434	31105	9097
25.00	28212	27902	27271	27170	27234	12784
35.00	25119	24789	24008	23897	23790	15310
45.00	19846	19213	18441	18050	17894	14526
55.00	10834	9593	8551	8050	7265	8012
65.00	1849	1732	1590	1491	1433	1615
75.00	765	697	684	634	643	732
85.00	189	163	133	132	117	82
90.00	0	0	0	0	0	

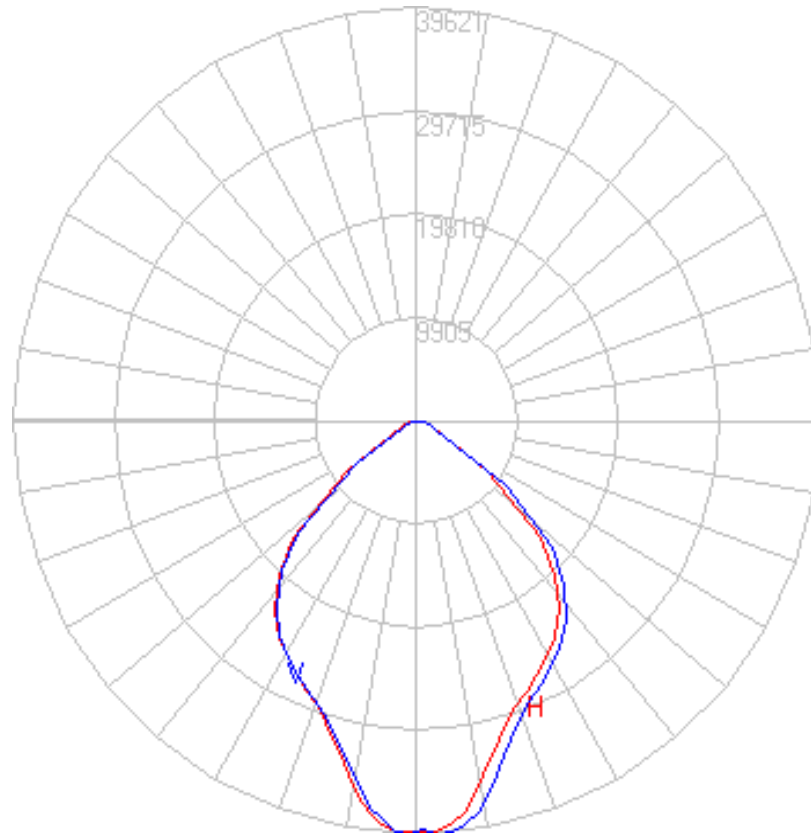
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	25370.92	38.88	38.88
0 to 40	40525.95	62.11	62.11
0 to 60	62581.89	95.91	95.91
0 to 90	65251.74	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	65251.74	100.00	100.00

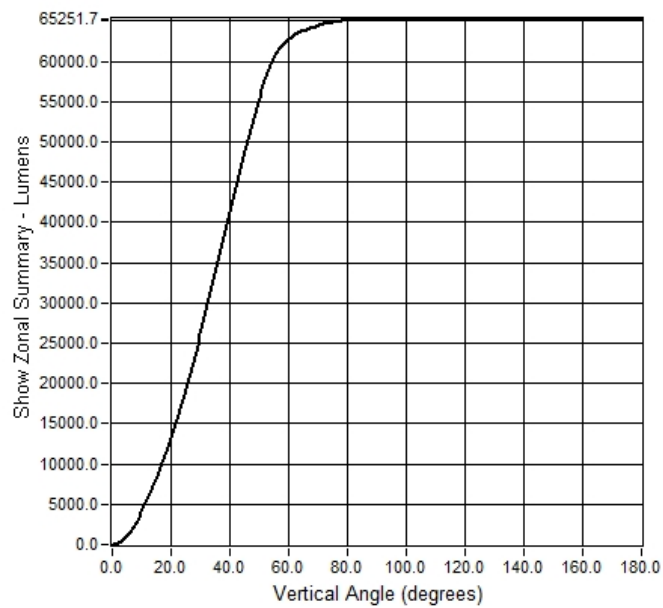
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



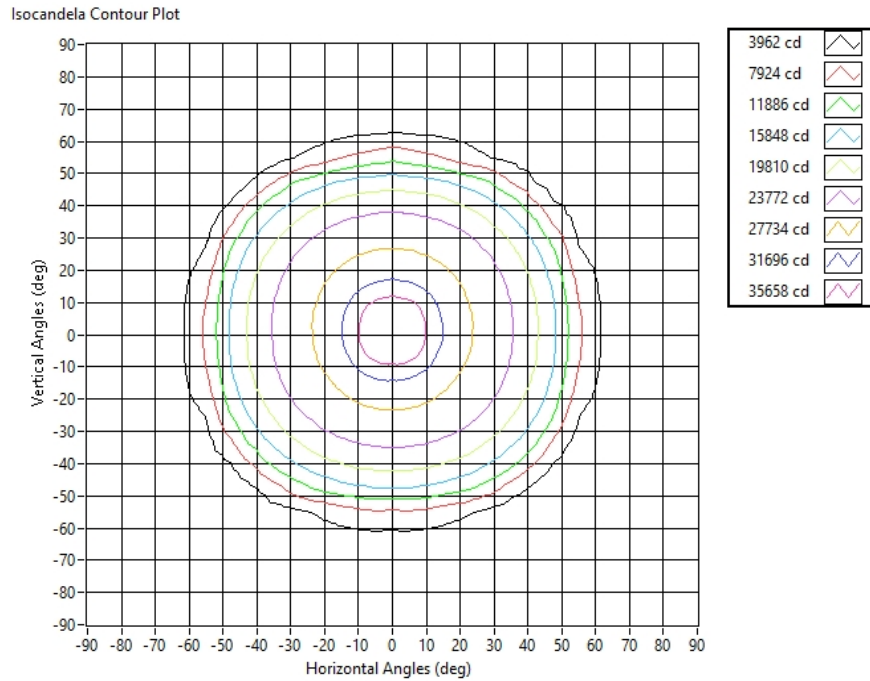
Zonal Flux Graph



## 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	3.88	3.84	9826.8
4	7.76	7.67	2456.7
6	11.64	11.51	1091.9
8	15.53	15.34	614.2
10	19.41	19.18	393.1
12	23.29	23.01	273.0
14	27.17	26.85	200.5
16	31.05	30.68	153.5
18	34.93	34.52	121.3
20	38.82	38.35	98.3



**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.

Test Report Issued By:

Richard Huegi  
 Dialight Optics Laboratory  
 Senior Optical Engineering Technician  
 Lighting Division

Test Report Reviewed and Approved By:

Vishnu Shastry  
 Dialight Optics Laboratory  
 Optical Engineer  
 Approved Signatory