

# Test Report

Report Number: L21028

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-77B2-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 15, 2021 through March 16, 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: L21028  
Manufacturer: Dialight Corporation  
Product Name: Glass Window, NEMA 7x6, 70 CRI CW, 120-277V, 60K  
Description: F2 - Flood Light  
Model Number: F2x-77B2-Nxxx-xxx

## Report Summary

Sample number L21028  
Dialight unit model number F2x-77B2-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:	61546 (lumens)	62335 (lumens)
Electrical Power:	504.9 (W)	502.5 (W)
Luminous Efficacy:	121.9 (lumens/W)	124 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 504.9 (W)  
Power Factor (120VAC): 0.996225  
Current ATHD % (120VAC): 4.77211  
Input Power (277VAC): 481.7 (W)  
Power Factor (277VAC): 0.9665  
Current ATHD % (277VAC): 9.503

### Color Measurements:

Correlated Color Temperature (CCT): 5214  
Color Rendering Index (CRI): 71.6475  
Chromaticity Coordinate (x): 0.339  
Chromaticity Coordinate (y): 0.347  
Chromaticity Coordinate (u'): 0.209  
Chromaticity Coordinate (v'): 0.321  
DUV: 0.0001

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21028.

Dialight unit model number F2x-77B2-Nxxx-xxx

### Test Conditions:

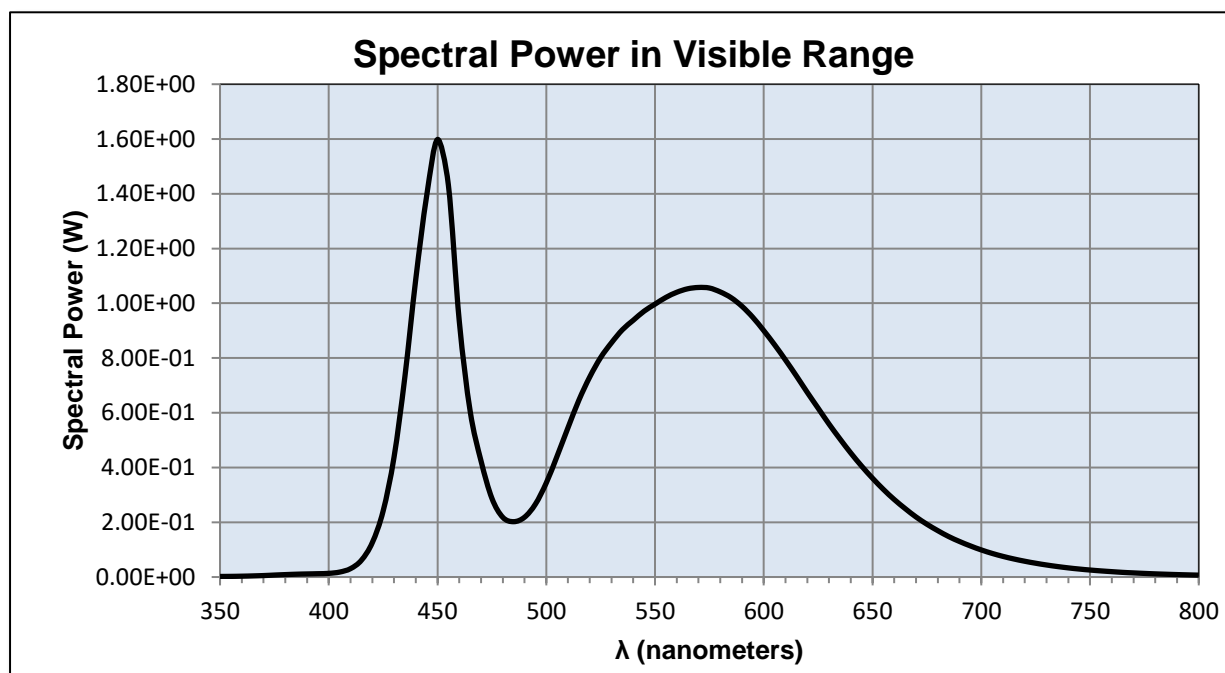
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 4.32432 (A)  
Input Power: 504.9 (W)  
Input Power Factor: 0.996225  
Current ATHD: 4.77211 (%)

### Photometric measurements:

Luminous Flux: 61546.14 (lumens)  
Luminous Efficacy: 121.9 (lumens/W)  
Correlated Color Temperature (CCT): 5214 (K)  
CRI -Ra: 71.6475  
CRI -R9: -31.7916  
DUV: 0.0001  
CIE Coordinate (x): 0.339  
CIE Coordinate (y): 0.347  
CIE Coordinate (u'): 0.209  
CIE Coordinate (v'): 0.321  
TM30\_Rf: 69.1  
TM30\_Rg: 93.4  
TM30\_Rcs\_hue1: -18.30 %



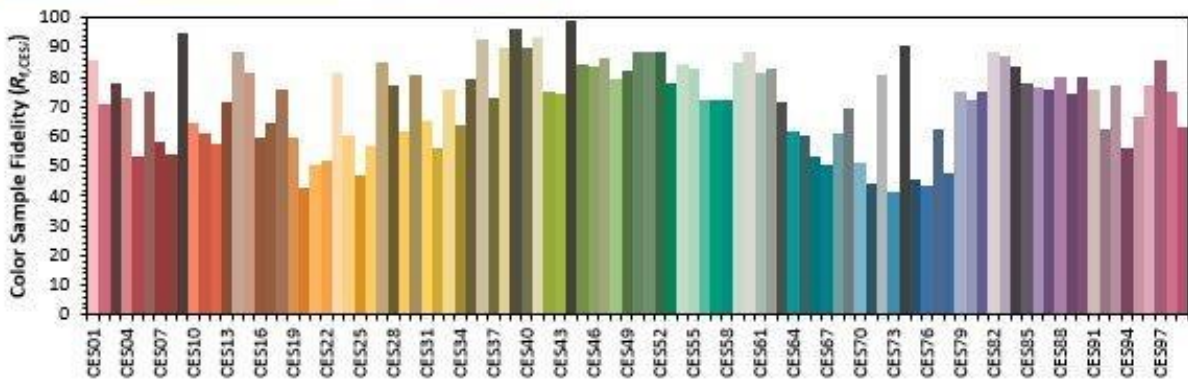
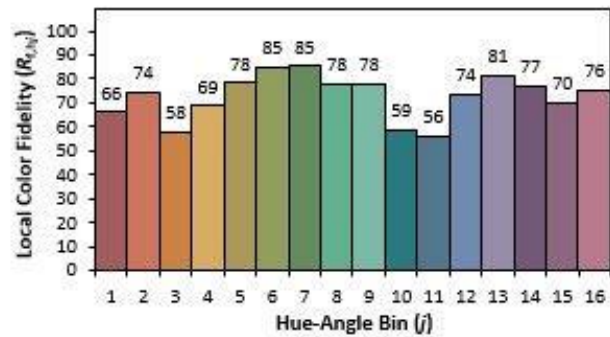
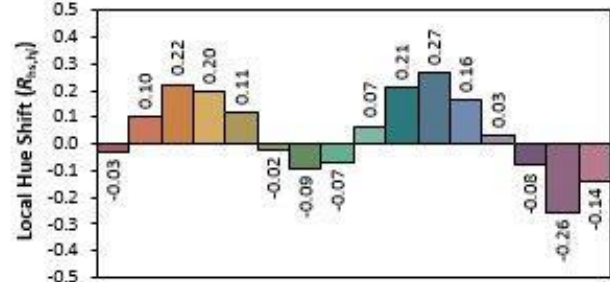
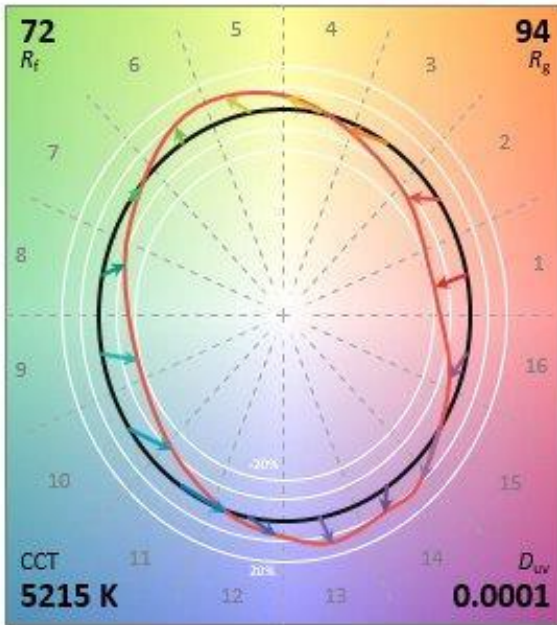
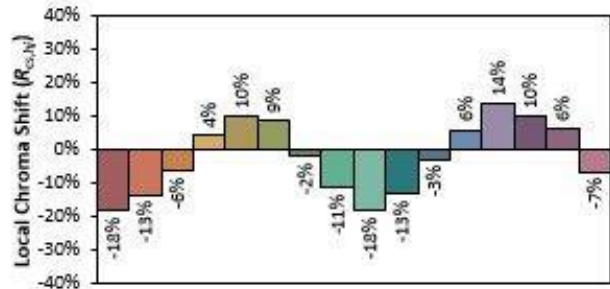
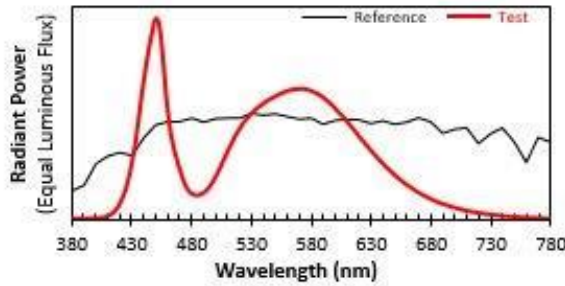
## Test Results: Integrating Sphere

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	0.00211	490	0.21839	630	0.55879	770	0.01506
355	0.00238	495	0.26613	635	0.50468	775	0.01321
360	0.00304	500	0.34367	640	0.45301	780	0.01158
365	0.00404	505	0.44212	645	0.40512	785	0.01019
370	0.00531	510	0.54579	650	0.36095	790	0.00895
375	0.00715	515	0.64596	655	0.31998	795	0.00784
380	0.00884	520	0.73086	660	0.28303	800	0.00686
385	0.01033	525	0.80168	665	0.24999		
390	0.01127	530	0.85584	670	0.21942		
395	0.01213	535	0.90322	675	0.19292		
400	0.01338	540	0.93784	680	0.16944		
405	0.01811	545	0.97109	685	0.14796		
410	0.03061	550	0.99675	690	0.12976		
415	0.06119	555	1.02130	695	0.11360		
420	0.12541	560	1.04011	700	0.09900		
425	0.24138	565	1.05278	705	0.08630		
430	0.43775	570	1.05760	710	0.07533		
435	0.73222	575	1.05557	715	0.06591		
440	1.08793	580	1.04133	720	0.05758		
445	1.39182	585	1.02017	725	0.05040		
450	1.59818	590	0.98868	730	0.04395		
455	1.43085	595	0.94827	735	0.03834		
460	0.93394	600	0.89989	740	0.03337		
465	0.60627	605	0.84798	745	0.02916		
470	0.42408	610	0.79255	750	0.02555		
475	0.28753	615	0.73447	755	0.02235		
480	0.21816	620	0.67446	760	0.01962		
485	0.20221	625	0.61657	765	0.01704		

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



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

x 0.3393  
y 0.3470  
u' 0.2093  
v' 0.4816

CIE 13.3-1995 (CRI)	
R <sub>a</sub>	72
R <sub>g</sub>	-32



## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21028.  
Dialight unit model number F2x-77B2-Nxxx-xxx

### Electrical Measurements:

Input Voltage: 119.77 (VAC)  
Input current: 4.2166 (A)  
Input Power: 502.5 (W)  
Power Factor: 0.9958

### Photometric measurements:

Absolute Luminous Flux: 62334.7 (lumens)  
Luminous Efficacy: 124.0 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	41176	41240	41253	41504	41176	
5.00	41593	42220	41595	39607	37013	4064
15.00	31720	37173	39210	31146	25062	8840
25.00	23155	29040	34995	23853	20149	11349
35.00	18656	22863	31707	20276	15642	12610
45.00	13074	19873	26440	15911	9222	11420
55.00	6668	6582	19488	4042	2261	5880
65.00	1608	1838	5037	1462	1087	1871
75.00	664	679	702	459	295	560
85.00	85	110	98	41	13	36
90.00	11	14	9	2	2	

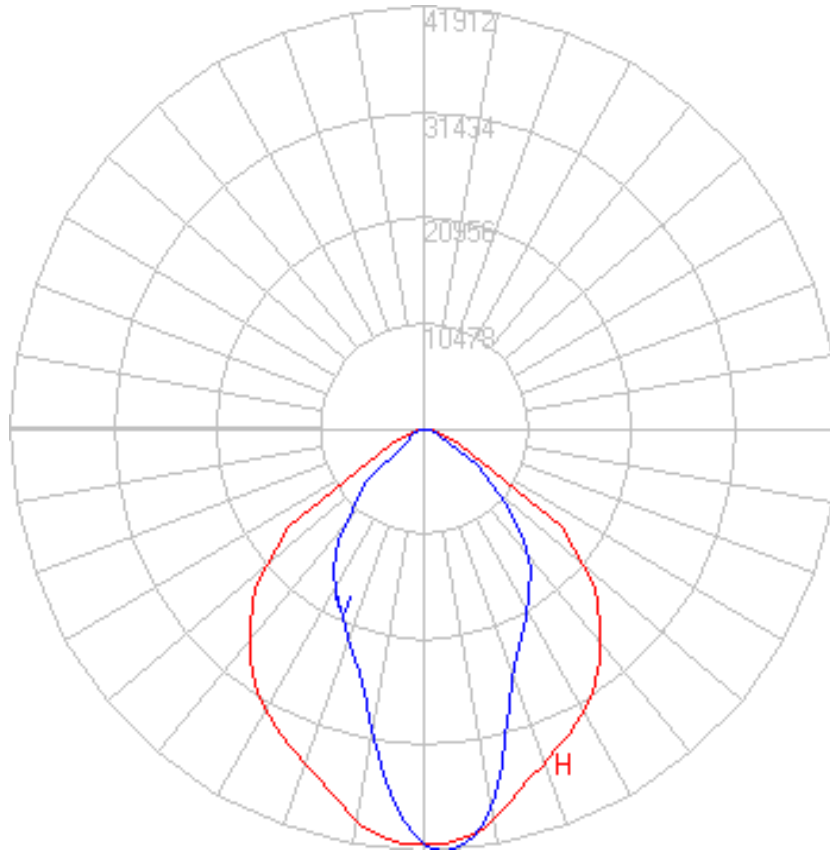
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	25421.76	40.78	40.78
0 to 40	39635.54	63.59	63.59
0 to 60	59663.50	95.71	95.71
0 to 90	62183.36	99.76	99.76
90 to 180	151.33	0.24	0.24
0 to 180	62334.69	100.00	100.00

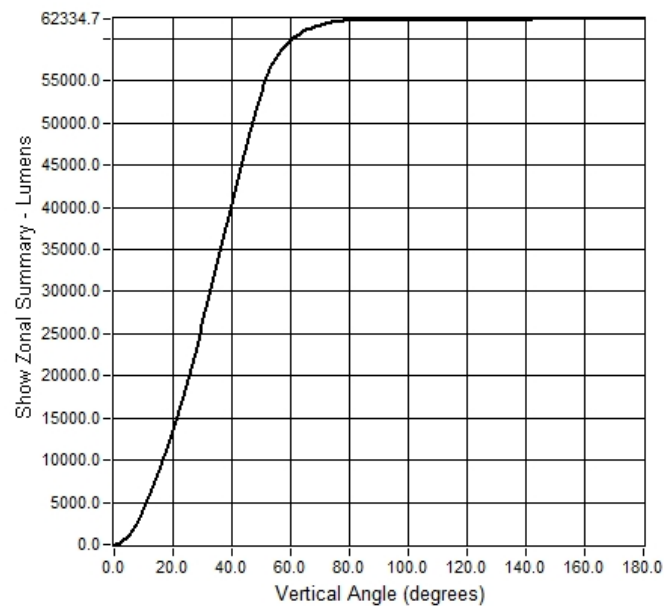
## Test Results: Goniometer

Results continued from previous page.

**Polar Plot:**



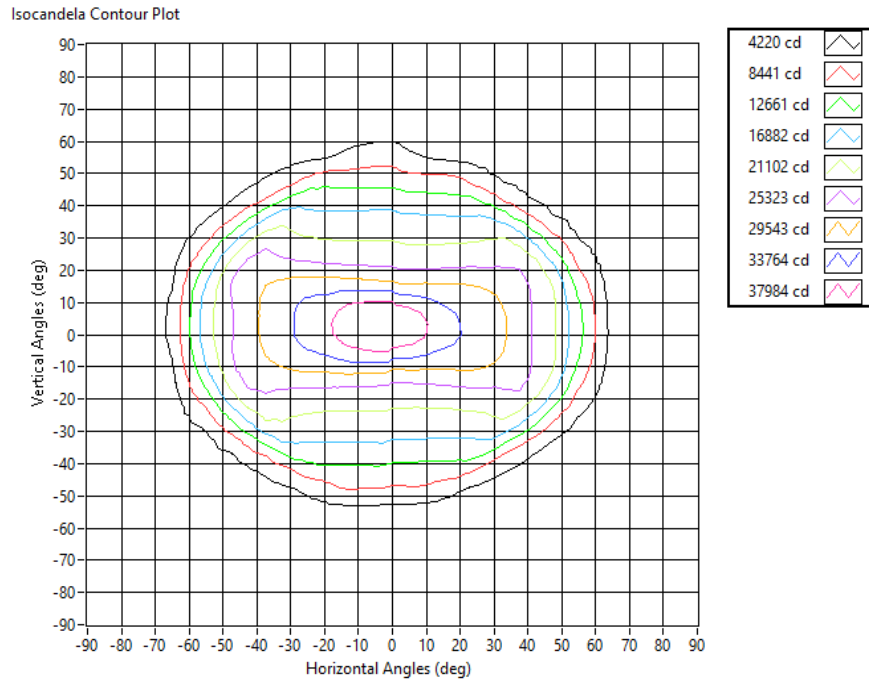
Zonal Flux Graph



## 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	2.04	5.24	10322.9
4	4.08	10.47	2580.7
6	6.11	15.71	1147.0
8	8.15	20.95	645.2
10	10.19	26.18	412.9
12	12.23	31.42	286.7
14	14.27	36.66	210.7
16	16.30	41.89	161.3
18	18.34	47.13	127.4
20	20.38	52.37	103.2



**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