

# Test Report

Report Number: L21003

Date: Jan 18, 2023

Issued by:

Dialight Optics Laboratory  
1501 Route 34 South, Farmingdale, NJ 07727

Test of one F1 - Flood Light

Unit manufacturer: Dialight Corporation

Unit model number: F1x-76B2-Fxxx-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:** December 22, 2020 through December 22, 2020

**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: L21003

Manufacturer: Dialight Corporation

Product Name: Glass Window, NEMA6, 70 CRI CW, 100-277V, 30K

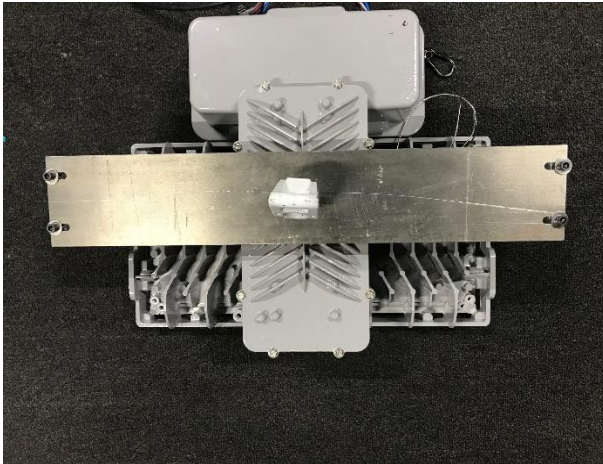
Description: F1 - Flood Light

Model Number: F1x-76B2-Fxxx-xxx

## Report Summary

Sample number L21003  
Dialight unit model number F1x-76B2-Fxxx-xxx

### Photograph(s) of sample:



\*Photographs not to scale. For reference only.

### Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	29719 (lumens)	29620 (lumens)
Electrical Power:	242.3 (W)	239.7 (W)
Luminous Efficacy:	122.7 (lumens/W)	123.6 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 242.3 (W)  
Power Factor (120VAC): 0.9956  
Current ATHD % (120VAC): 5.01  
Input Power (277VAC): 231.9 (W)  
Power Factor (277VAC): 0.9573  
Current ATHD % (277VAC): 0.957

### Color Measurements:

Correlated Color Temperature (CCT): 5159  
Color Rendering Index (CRI): 71.3869  
Chromaticity Coordinate (x): 0.341  
Chromaticity Coordinate (y): 0.349  
Chromaticity Coordinate (u'): 0.210  
Chromaticity Coordinate (v'): 0.322  
DUV: 0.0003

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21003.

Dialight unit model number F1x-76B2-Fxxx-xxx

### Test Conditions:

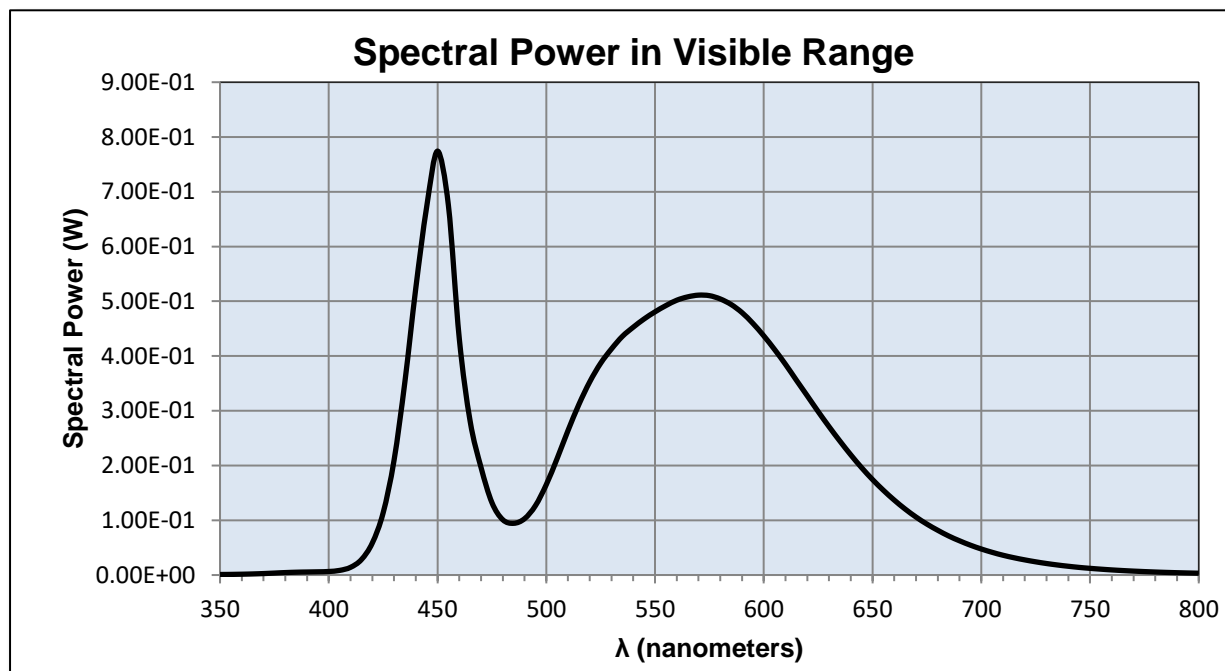
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 2.039 (A)  
Input Power: 242.3 (W)  
Input Power Factor: 0.9956  
Current ATHD: 5.01 (%)

### Photometric measurements:

Luminous Flux: 29718.89 (lumens)  
Luminous Efficacy: 122.7 (lumens/W)  
Correlated Color Temperature (CCT): 5159 (K)  
CRI -Ra: 71.3869  
CRI -R9: -32.9949  
DUV: 0.0003  
CIE Coordinate (x): 0.341  
CIE Coordinate (y): 0.349  
CIE Coordinate (u'): 0.210  
CIE Coordinate (v'): 0.322  
TM30\_Rf: 69.0  
TM30\_Rg: 93.4  
TM30\_Rcs\_hue1: -18.38 %



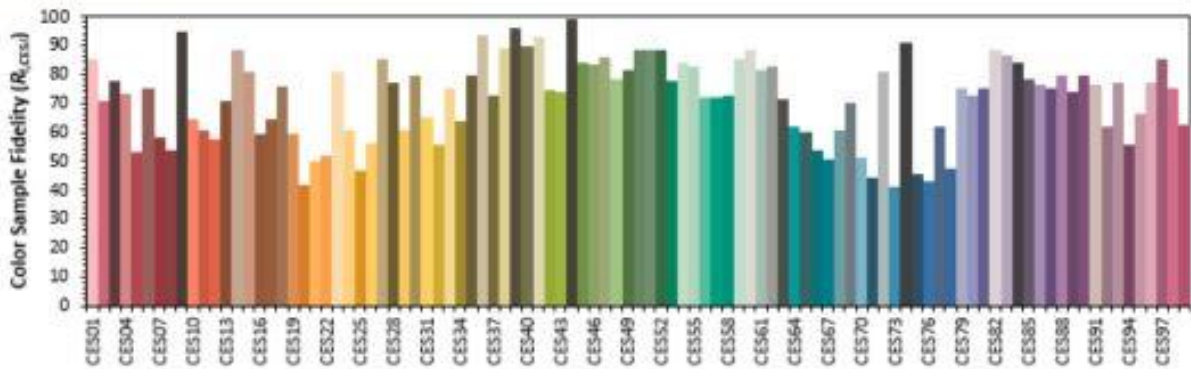
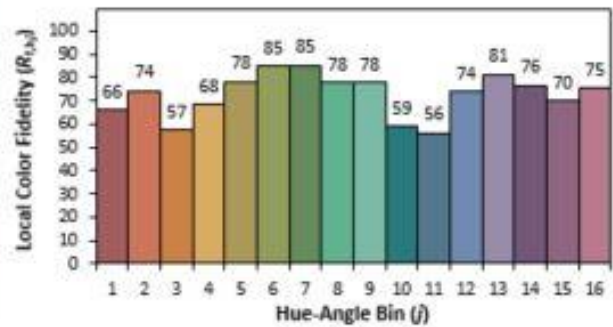
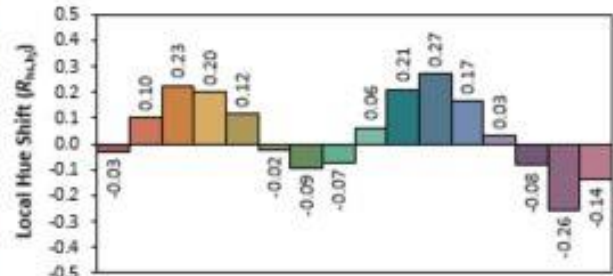
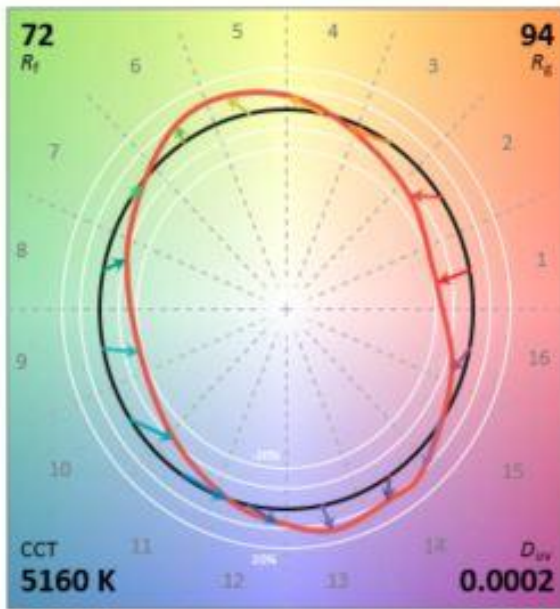
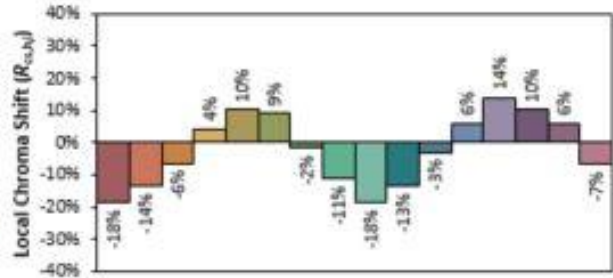
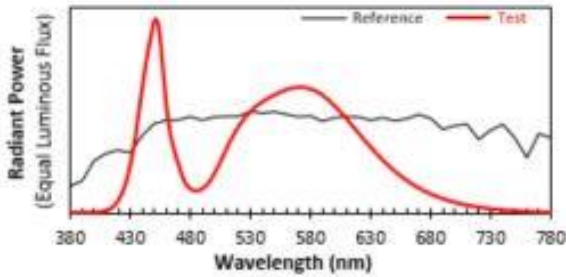
## Test Results: Integrating Sphere

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	0.00103	490	0.10285	630	0.27100	770	0.00716
355	0.00116	495	0.12658	635	0.24461	775	0.00627
360	0.00151	500	0.16510	640	0.21948	780	0.00551
365	0.00198	505	0.21290	645	0.19601	785	0.00480
370	0.00268	510	0.26402	650	0.17440	790	0.00423
375	0.00356	515	0.31153	655	0.15475	795	0.00374
380	0.00447	520	0.35287	660	0.13680	800	0.00328
385	0.00516	525	0.38678	665	0.12049		
390	0.00556	530	0.41307	670	0.10591		
395	0.00587	535	0.43590	675	0.09305		
400	0.00646	540	0.45265	680	0.08170		
405	0.00844	545	0.46768	685	0.07134		
410	0.01408	550	0.48066	690	0.06250		
415	0.02814	555	0.49207	695	0.05455		
420	0.05833	560	0.50188	700	0.04758		
425	0.11363	565	0.50798	705	0.04145		
430	0.20939	570	0.51113	710	0.03612		
435	0.35313	575	0.51019	715	0.03157		
440	0.52353	580	0.50415	720	0.02765		
445	0.67197	585	0.49402	725	0.02413		
450	0.77422	590	0.47917	730	0.02105		
455	0.67491	595	0.45961	735	0.01832		
460	0.43178	600	0.43682	740	0.01599		
465	0.28091	605	0.41169	745	0.01393		
470	0.19653	610	0.38467	750	0.01221		
475	0.13234	615	0.35575	755	0.01071		
480	0.10100	620	0.32733	760	0.00936		
485	0.09444	625	0.29856	765	0.00815		

IES TM-30-18 Color Rendition Report



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

$x$  0.3408  
 $y$  0.3486  
 $u'$  0.2097  
 $v'$  0.4825

CIE 13.3-1995  
(CRI)  
 $R_a$  71  
 $R_p$  -33



## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21003.  
Dialight unit model number F1x-76B2-Fxxx-xxx

### Electrical Measurements:

Input Voltage: 119.74 (VAC)  
Input current: 2.0107 (A)  
Input Power: 239.7 (W)  
Power Factor: 0.9953

### Photometric measurements:

Absolute Luminous Flux: 29620 (lumens)  
Luminous Efficacy: 123.6 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	16760	16795	16670	16756	16760	
5.00	16546	16571	16368	16465	16483	1675
15.00	14367	14538	13993	14218	14181	4044
25.00	12526	12531	12232	12322	12438	5757
35.00	11127	11149	10818	10984	11020	6935
45.00	8592	8599	8409	8583	8605	6639
55.00	4168	4164	4243	4628	4532	3901
65.00	756	799	784	851	774	777
75.00	251	248	277	278	266	277
85.00	20	19	26	29	27	13
90.00	1	1	1	2	2	

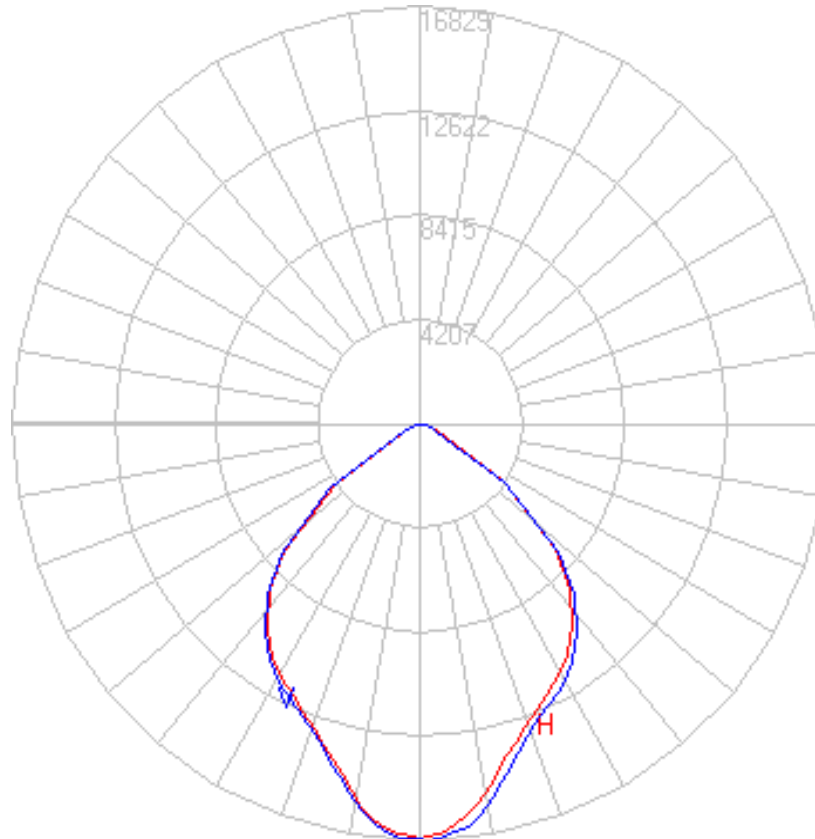
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	11267.15	38.04	38.04
0 to 40	18146.10	61.26	61.26
0 to 60	28405.02	95.90	95.90
0 to 90	29620.18	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	29620.18	100.00	100.00

## Test Results: Goniometer

Results continued from previous page.

**Polar Plot:**



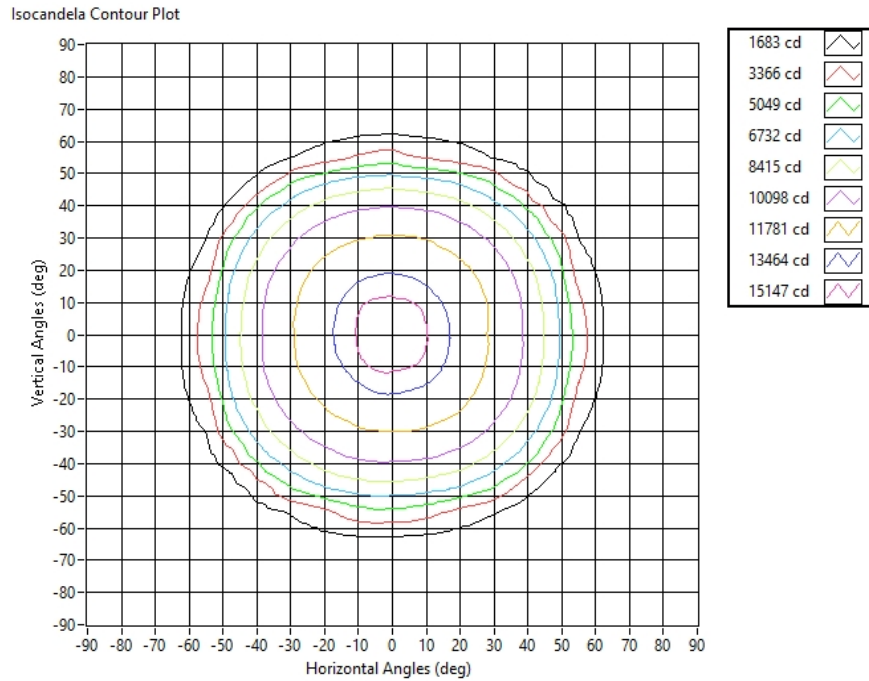
**Characteristics**

NEMA Type	6 H x 6 V
Maximum Candela	16829.493
Maximum Candela Angle	-1 H -3 V
Horizontal Beam Angle (50%)	89.6
Vertical Beam Angle (50%)	90.9
Horizontal Field Angle (10%)	124.9
Vertical Field Angle (10%)	124.9
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	21365
Beam Efficiency	N.A.
Field Lumens	28657
Field Efficiency	N.A.
Spill Lumens	1124
Luminaire Lumens	29781
Total Efficiency	N.A.
Total Luminaire Watts	239.6
Ballast Factor	1.00

## 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	4.05	4.14	4193.3
4	8.10	8.27	1048.3
6	12.16	12.41	465.9
8	16.21	16.54	262.1
10	20.26	20.68	167.7
12	24.31	24.81	116.5
14	28.36	28.95	85.6
16	32.41	33.08	65.5
18	36.47	37.22	51.8
20	40.52	41.35	41.9



**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