

# Test Report

Report Number: L21012

Date: Jan 25, 2021

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-7FB2-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:** January 12, 2021 through January 13, 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: L21012

Manufacturer: Dialight Corporation

Product Name: Glass Window, Asymmetric Forward Throw (Type IV), 70 CRI CW, 100-277V, 30K

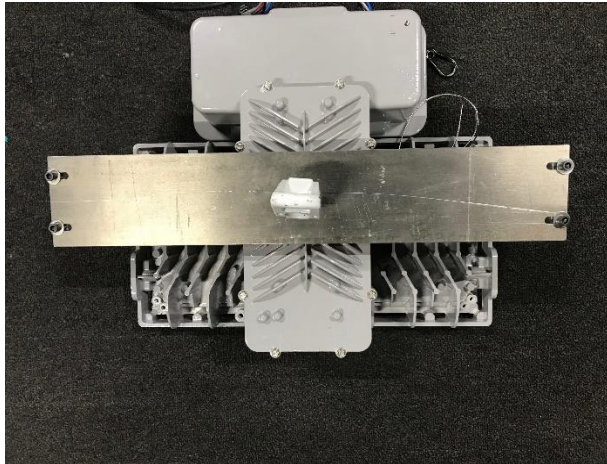
Description: F1 - Flood Light

Model Number: F1x-7FB2-Fxxx-xxx

## Report Summary

Sample number L21012  
Dialight unit model number F1x-7FB2-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:	29516 (lumens)	29147 (lumens)
Electrical Power:	243.7 (W)	240.4 (W)
Luminous Efficacy:	121.1 (lumens/W)	121.3 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 243.7 (W)  
Power Factor (120VAC): 0.995714  
Current ATHD % (120VAC): 4.8842  
Input Power (277VAC): 234.1 (W)  
Power Factor (277VAC): 0.9714  
Current ATHD % (277VAC): 8.5

### Color Measurements:

Correlated Color Temperature (CCT): 5170  
Color Rendering Index (CRI): 71.3546  
Chromaticity Coordinate (x): 0.341  
Chromaticity Coordinate (y): 0.348  
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 L21012.

Dialight unit model number F1x-7FB2-Fxxx-xxx

### Test Conditions:

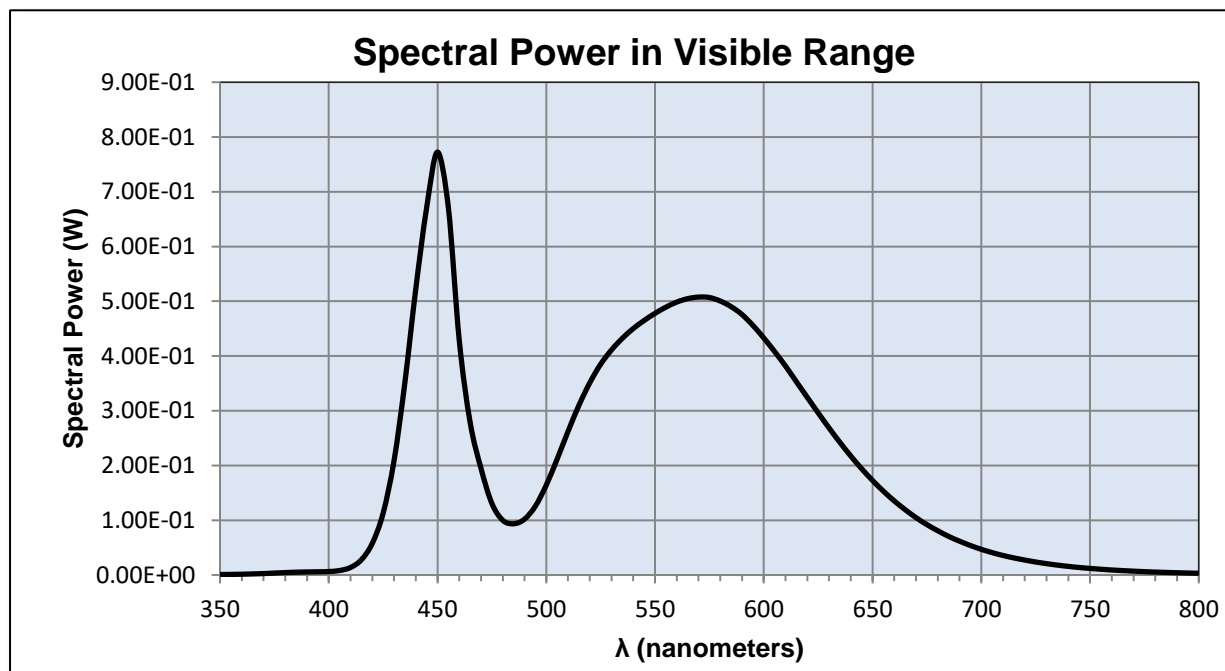
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 2.0457 (A)  
Input Power: 243.7 (W)  
Input Power Factor: 0.995714  
Current ATHD: 4.8842 (%)

### Photometric measurements:

Luminous Flux: 29516.45 (lumens)  
Luminous Efficacy: 121.1 (lumens/W)  
Correlated Color Temperature (CCT): 5170 (K)  
CRI -Ra: 71.3546  
CRI -R9: -33.0846  
DUV: 0.0003  
CIE Coordinate (x): 0.341  
CIE Coordinate (y): 0.348  
CIE Coordinate (u'): 0.210  
CIE Coordinate (v'): 0.322  
TM30\_Rf: 69.0  
TM30\_Rg: 93.4  
TM30\_Rcs\_hue1: -18.39 %



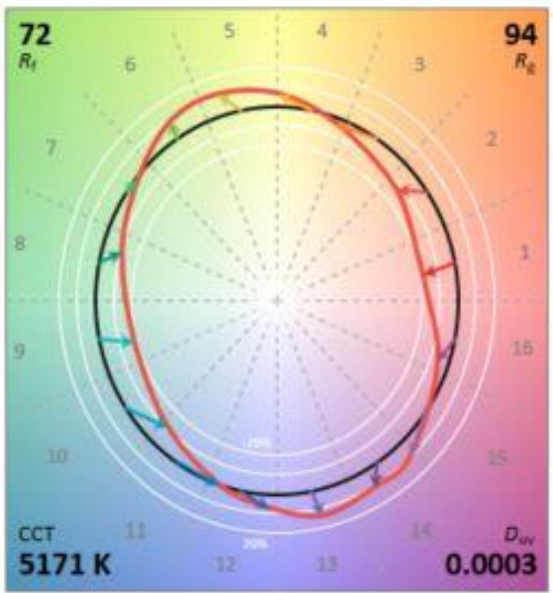
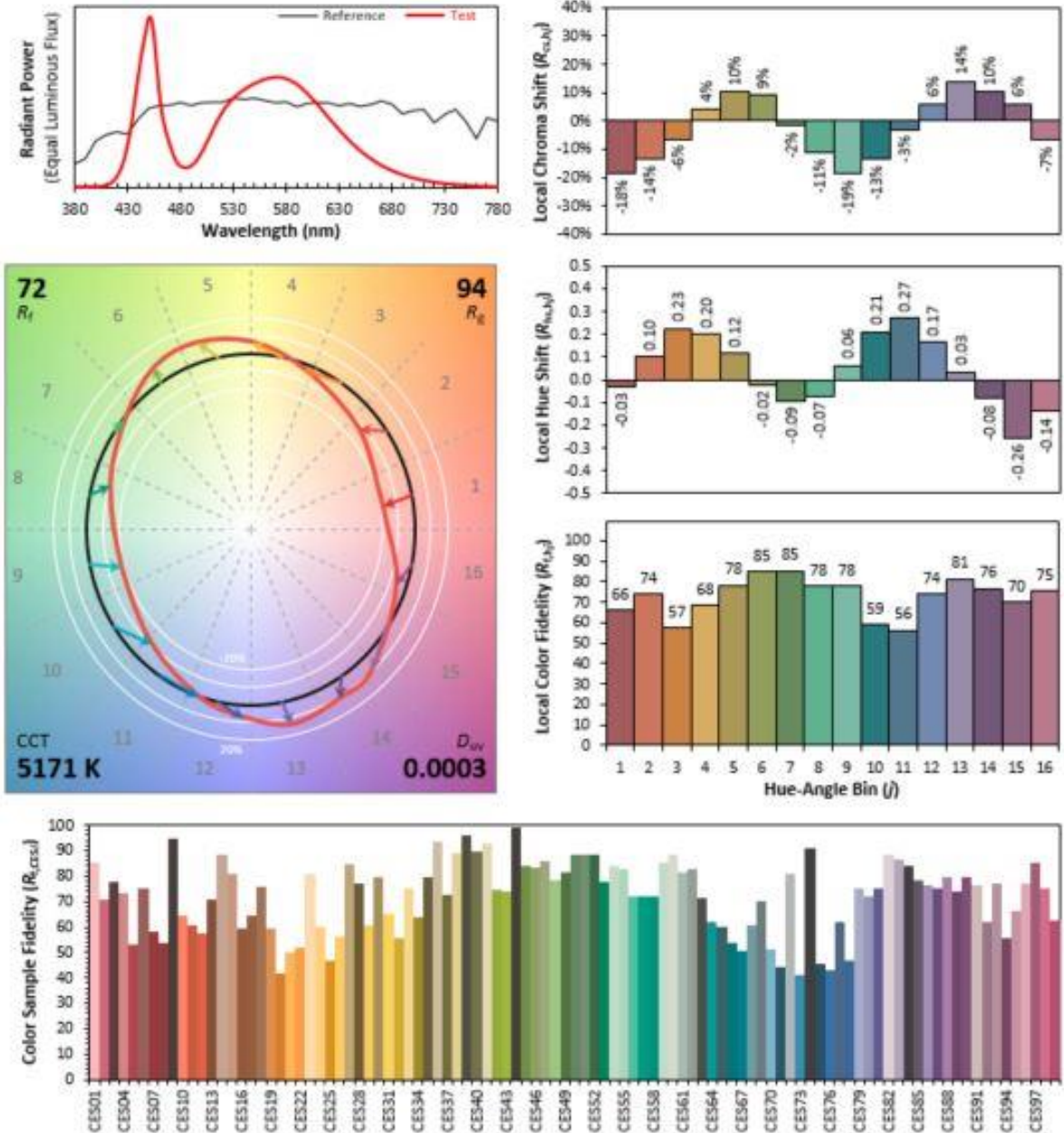
## Test Results: Integrating Sphere

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	0.00096	490	0.10203	630	0.26866	770	0.00705
355	0.00116	495	0.12586	635	0.24224	775	0.00617
360	0.00150	500	0.16426	640	0.21732	780	0.00541
365	0.00203	505	0.21184	645	0.19412	785	0.00475
370	0.00267	510	0.26226	650	0.17279	790	0.00416
375	0.00358	515	0.30975	655	0.15309	795	0.00367
380	0.00446	520	0.35099	660	0.13537	800	0.00320
385	0.00517	525	0.38498	665	0.11936		
390	0.00565	530	0.41110	670	0.10481		
395	0.00591	535	0.43240	675	0.09207		
400	0.00641	540	0.45009	680	0.08088		
405	0.00824	545	0.46487	685	0.07054		
410	0.01377	550	0.47786	690	0.06181		
415	0.02790	555	0.48920	695	0.05393		
420	0.05786	560	0.49848	700	0.04695		
425	0.11319	565	0.50468	705	0.04094		
430	0.20870	570	0.50760	710	0.03570		
435	0.35199	575	0.50679	715	0.03121		
440	0.52241	580	0.50039	720	0.02736		
445	0.67080	585	0.49004	725	0.02381		
450	0.77246	590	0.47569	730	0.02077		
455	0.67026	595	0.45589	735	0.01810		
460	0.42795	600	0.43292	740	0.01575		
465	0.27874	605	0.40802	745	0.01374		
470	0.19450	610	0.38157	750	0.01206		
475	0.13065	615	0.35292	755	0.01054		
480	0.09996	620	0.32454	760	0.00920		
485	0.09362	625	0.29626	765	0.00808		

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



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

$x$  0.3405  
 $y$  0.3484  
 $u'$  0.2095  
 $v'$  0.4824

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



## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21012.  
Dialight unit model number F1x-7FB2-Fxxx-xxx

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 2.0168 (A)  
Input Power: 240.4 (W)  
Power Factor: 0.9952

### Photometric measurements:

Absolute Luminous Flux: 29147.1 (lumens)  
Luminous Efficacy: 121.3 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	4115	4112	4137	4195	4115	
5.00	5034	4717	4150	3762	3614	433
15.00	9871	7190	4504	3366	3003	1674
25.00	18431	9854	5386	3017	2199	4040
35.00	22592	9384	6240	2810	2083	6292
45.00	34336	10808	6448	2700	1612	10632
55.00	13120	15732	6109	2402	1330	6770
65.00	3903	3591	2932	879	1029	2448
75.00	1452	454	331	309	1184	1016
85.00	161	52	43	44	58	48
90.00	10	6	1	1	2	

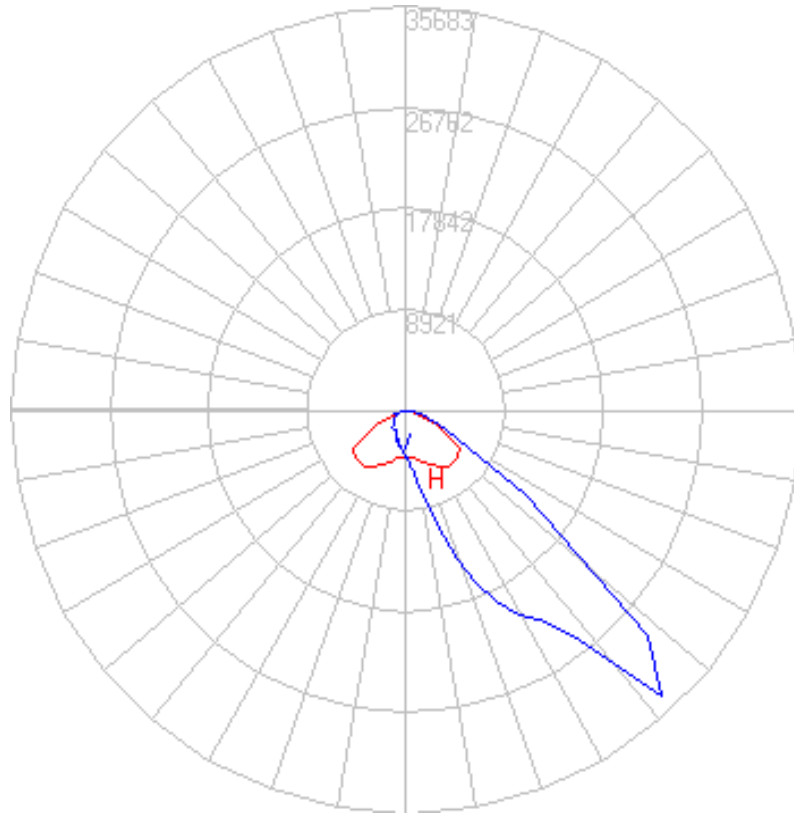
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	5461.16	18.74	18.74
0 to 40	10701.97	36.72	36.72
0 to 60	25766.25	88.40	88.40
0 to 90	29147.11	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	29147.11	100.00	100.00

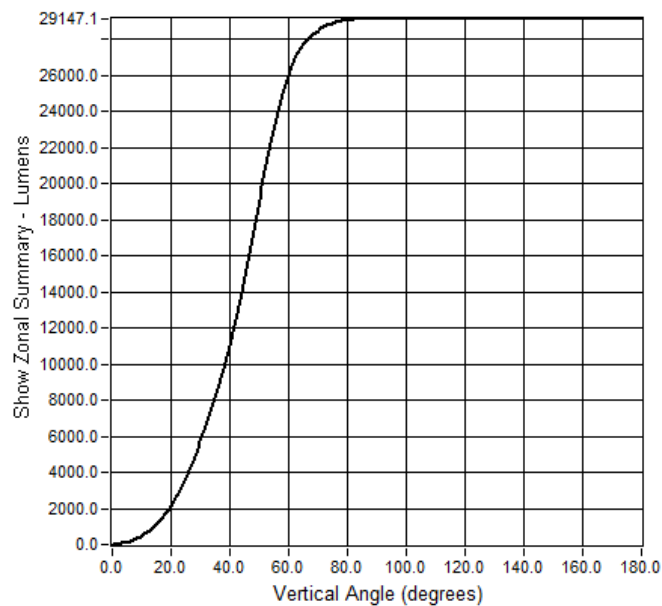
## Test Results: Goniometer

Results continued from previous page.

### Polar Plot:



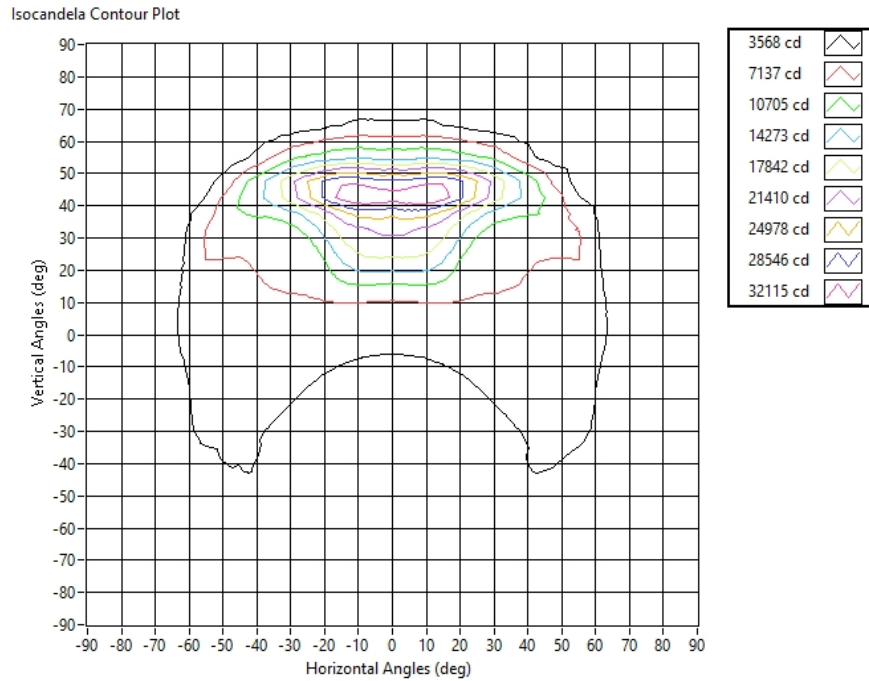
Zonal Flux Graph



## 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	6.92	9.32	1037.1
4	13.85	18.64	259.3
6	20.77	27.96	115.2
8	27.69	37.28	64.8
10	34.61	46.61	41.5
12	41.54	55.93	28.8
14	48.46	65.25	21.2
16	55.38	74.57	16.2
18	62.30	83.89	12.8
20	69.23	93.21	10.4



**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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 Dialight Optics Laboratory  
 Optical Engineer  
 Approved Signatory