

Test Report

Report Number: L21013

Date: Jan 28, 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-4FN2-Bxxx-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 14, 2021 through January 28, 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

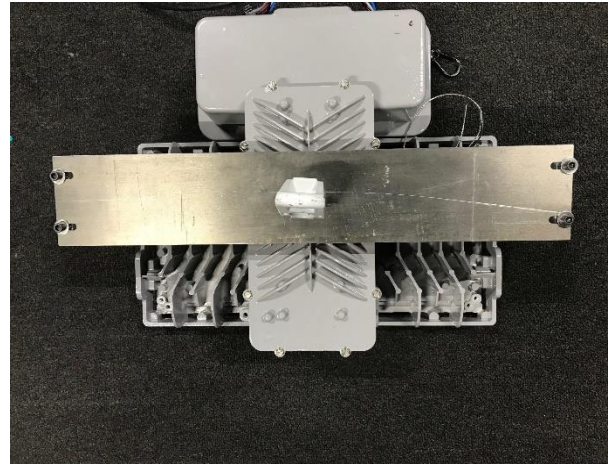
Description of sample:

Sample Number: L21013
Manufacturer: Dialight Corporation
Product Name: PC Window, Asymmetric Forward Throw (Type IV), 80 CRI NW, 100-277V, 12K
Description: F1 - Flood Light
Model Number: F1x-4FN2-Bxxx-xxx

Report Summary

Sample number L21013
Dialight unit model number F1x-4FN2-Bxxx-xxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	10539 (lumens)	10246 (lumens)
Electrical Power:	84.2 (W)	83.1 (W)
Luminous Efficacy:	125.2 (lumens/W)	123.3 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 84.2 (W)
 Power Factor (120VAC): 0.985521
 Current ATHD % (120VAC): 6.1517
 Input Power (277VAC): 82.6 (W)
 Power Factor (277VAC): 0.9652
 Current ATHD % (277VAC): 13.3

Color Measurements:

Correlated Color Temperature (CCT): 3949
 Color Rendering Index (CRI): 84.6745
 Chromaticity Coordinate (x): 0.384
 Chromaticity Coordinate (y): 0.384
 Chromaticity Coordinate (u'): 0.225
 Chromaticity Coordinate (v'): 0.337
 DUV: 0.0022

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21013.

Dialight unit model number F1x-4FN2-Bxxx-xxx

Test Conditions:

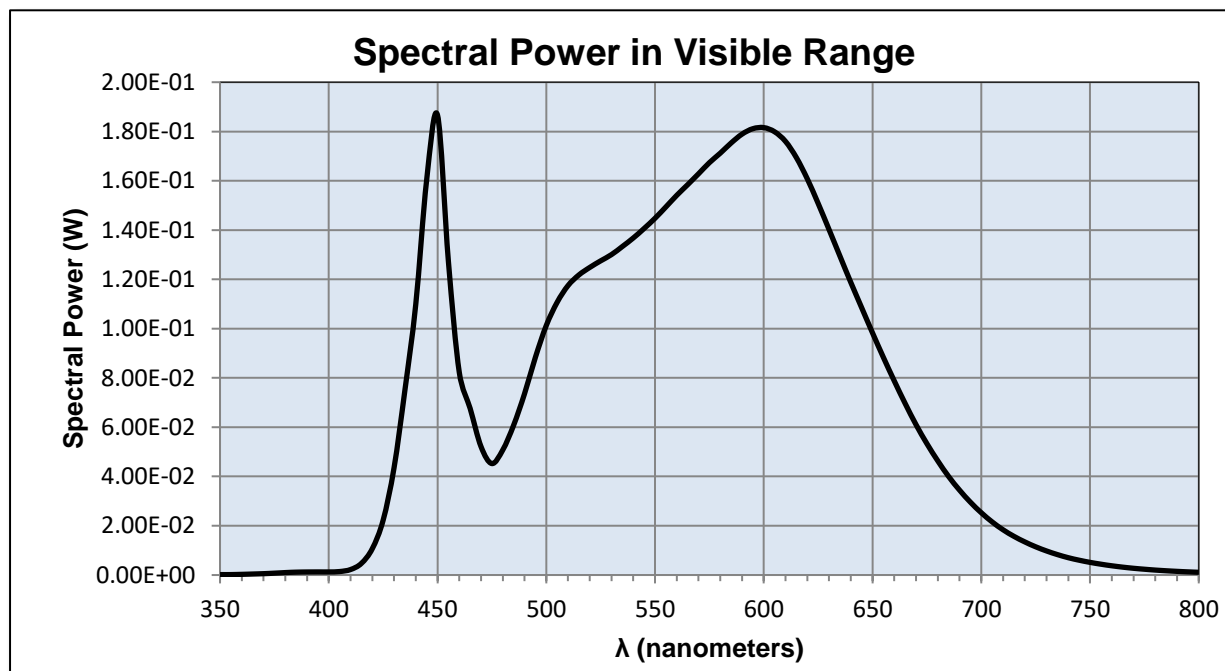
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 0.711469 (A)
Input Power: 84.2 (W)
Input Power Factor: 0.985521
Current ATHD: 6.1517 (%)

Photometric measurements:

Luminous Flux: 10538.52 (lumens)
Luminous Efficacy: 125.2 (lumens/W)
Correlated Color Temperature (CCT): 3949 (K)
CRI -Ra: 84.6745
CRI -R9: 13.7562
DUV: 0.0022
CIE Coordinate (x): 0.384
CIE Coordinate (y): 0.384
CIE Coordinate (u'): 0.225
CIE Coordinate (v'): 0.337
TM30_Rf: 84.9
TM30_Rg: 97.1
TM30_Rcs_hue1: -10.65 %



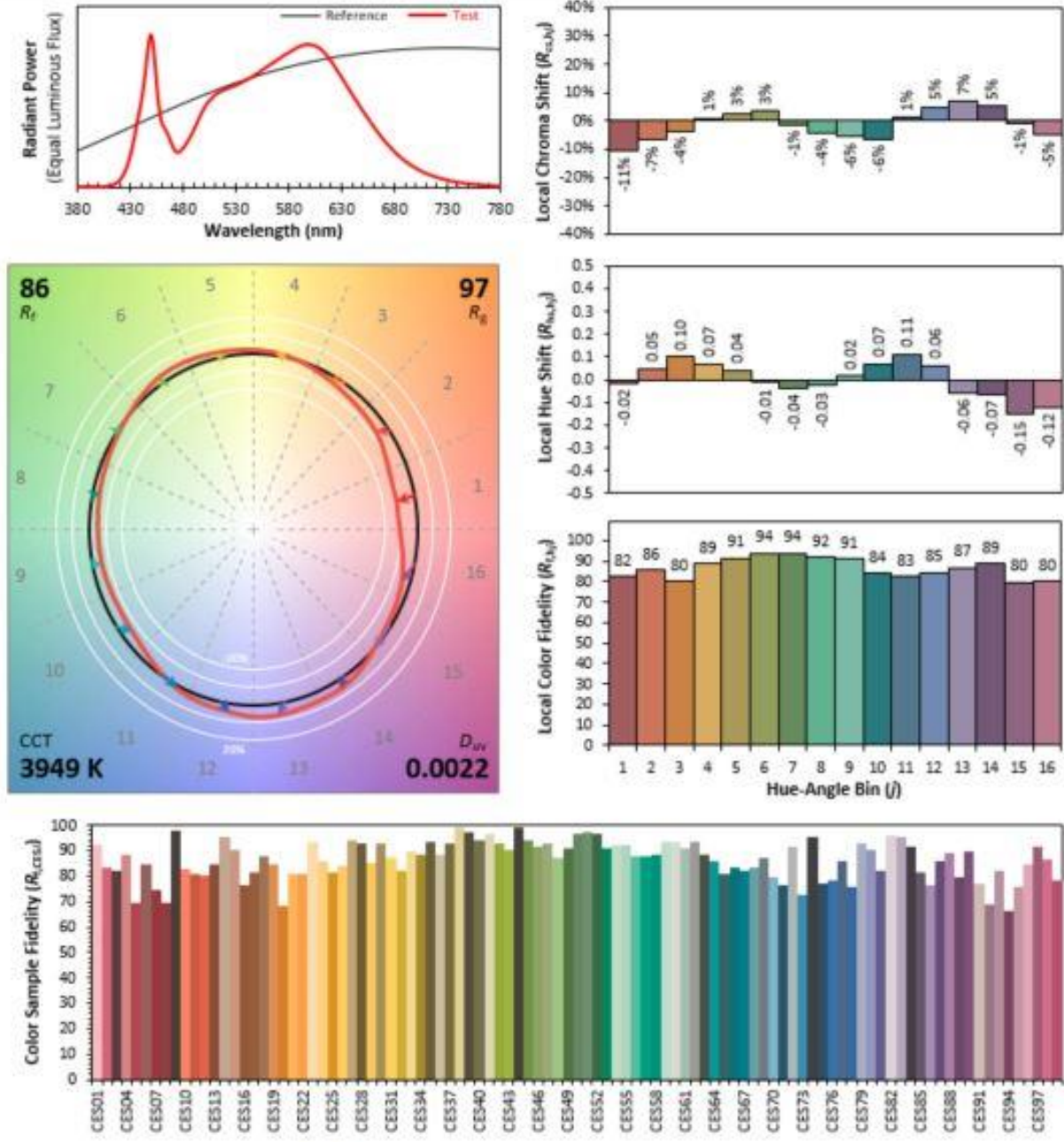
Test Results: Integrating Sphere

Results continued from previous page.

Tabulated Spectral Power in Visible Range:

λ (nm)	(W/nm)	λ (nm)	(W/nm)	λ (nm)	(W/nm)	λ (nm)	(W/nm)
350	0.00018	490	0.07355	630	0.14023	770	0.00273
355	0.00018	495	0.08834	635	0.12946	775	0.00235
360	0.00028	500	0.10126	640	0.11877	780	0.00201
365	0.00040	505	0.11068	645	0.10851	785	0.00173
370	0.00055	510	0.11747	650	0.09826	790	0.00149
375	0.00075	515	0.12178	655	0.08832	795	0.00128
380	0.00099	520	0.12483	660	0.07877	800	0.00111
385	0.00117	525	0.12750	665	0.06962		
390	0.00124	530	0.13005	670	0.06103		
395	0.00126	535	0.13334	675	0.05332		
400	0.00125	540	0.13678	680	0.04634		
405	0.00141	545	0.14065	685	0.03997		
410	0.00222	550	0.14479	690	0.03446		
415	0.00472	555	0.14939	695	0.02956		
420	0.01068	560	0.15410	700	0.02529		
425	0.02228	565	0.15841	705	0.02156		
430	0.04348	570	0.16283	710	0.01838		
435	0.07503	575	0.16735	715	0.01571		
440	0.10986	580	0.17120	720	0.01345		
445	0.16029	585	0.17534	725	0.01147		
450	0.18661	590	0.17893	730	0.00977		
455	0.12724	595	0.18114	735	0.00829		
460	0.08222	600	0.18157	740	0.00704		
465	0.06761	605	0.17987	745	0.00601		
470	0.05210	610	0.17596	750	0.00514		
475	0.04524	615	0.16938	755	0.00440		
480	0.05076	620	0.16081	760	0.00375		
485	0.06083	625	0.15082	765	0.00320		

IES TM-30-18 Color Rendition Report



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

x 0.3843
 y 0.3838
 u' 0.2248
 v' 0.5052

CIE 13.3-1995 (CRI)	
R_a	85
R_g	14

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21013.
Dialight unit model number F1x-4FN2-Bxxx-xxx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 0.7039 (A)
Input Power: 83.1 (W)
Power Factor: 0.9841

Photometric measurements:

Absolute Luminous Flux: 10246.3 (lumens)
Luminous Efficacy: 123.3 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	1453	1453	1458	1478	1453	
5.00	1808	1697	1475	1318	1255	154
15.00	3613	2661	1620	1174	1034	605
25.00	6533	3608	1943	1062	754	1437
35.00	8113	3422	2247	1000	705	2255
45.00	12148	4097	2290	954	548	3783
55.00	4555	5576	2142	870	449	2366
65.00	1360	1082	816	286	349	801
75.00	495	140	102	96	390	337
85.00	50	16	12	13	23	16
90.00	3	1	0	0	1	

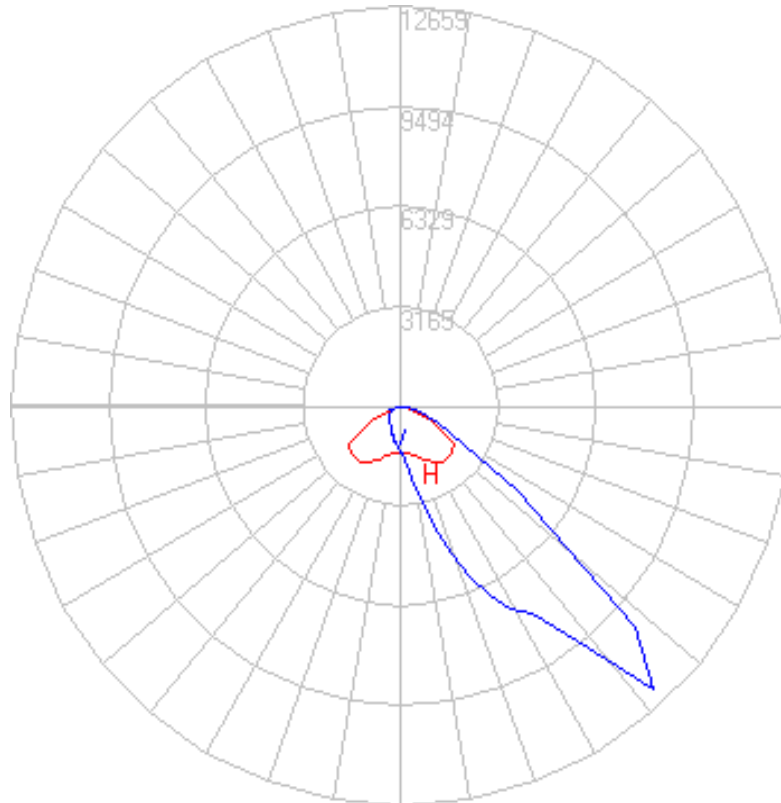
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	1933.98	18.87	18.87
0 to 40	3796.28	37.05	37.05
0 to 60	9086.60	88.68	88.68
0 to 90	10246.27	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	10246.27	100.00	100.00

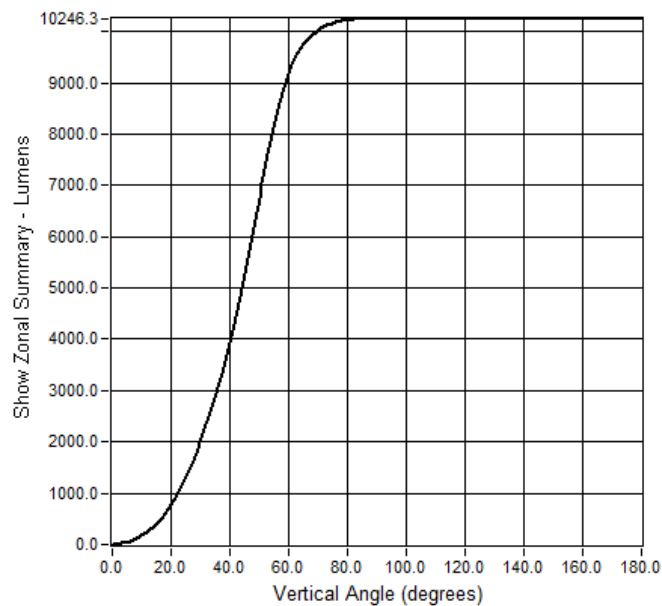
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



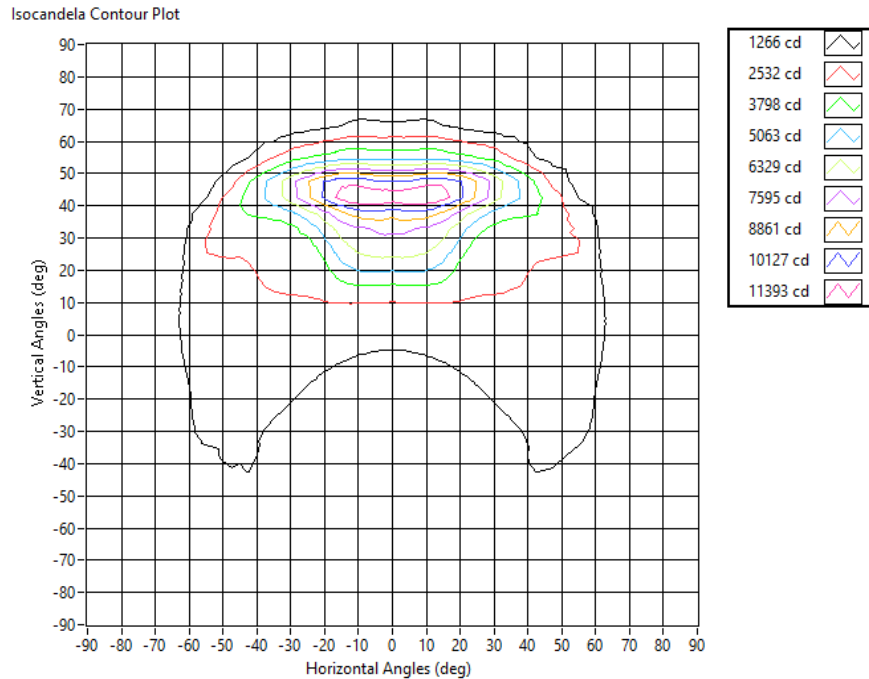
Zonal Flux Graph



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	6.90	9.39	366.2
4	13.79	18.78	91.6
6	20.69	28.17	40.7
8	27.58	37.56	22.9
10	34.48	46.96	14.6
12	41.37	56.35	10.2
14	48.27	65.74	7.5
16	55.16	75.13	5.7
18	62.06	84.52	4.5
20	68.95	93.91	3.7

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