

Test Report

Report Number: L21011

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-4FB2-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 12, 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: L21011

Manufacturer: Dialight Corporation

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

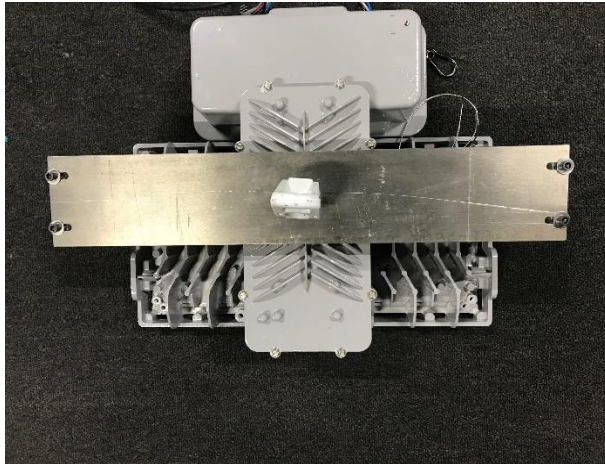
Description: F1 - Flood Light

Model Number: F1x-4FB2-Fxxx-xxx

Report Summary

Sample number L21011
Dialight unit model number F1x-4FB2-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:	28213 (lumens)	27324 (lumens)
Electrical Power:	244.0 (W)	240.7 (W)
Luminous Efficacy:	115.6 (lumens/W)	113.5 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 244.0 (W)
Power Factor (120VAC): 0.995734
Current ATHD % (120VAC): 4.87323
Input Power (277VAC): 232.4 (W)
Power Factor (277VAC): 0.958
Current ATHD % (277VAC): 9.79

Color Measurements:

Correlated Color Temperature (CCT): 5206
Color Rendering Index (CRI): 72.3847
Chromaticity Coordinate (x): 0.340
Chromaticity Coordinate (y): 0.346
Chromaticity Coordinate (u'): 0.210
Chromaticity Coordinate (v'): 0.321
DUV: -0.0005

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21011.

Dialight unit model number F1x-4FB2-Fxxx-xxx

Test Conditions:

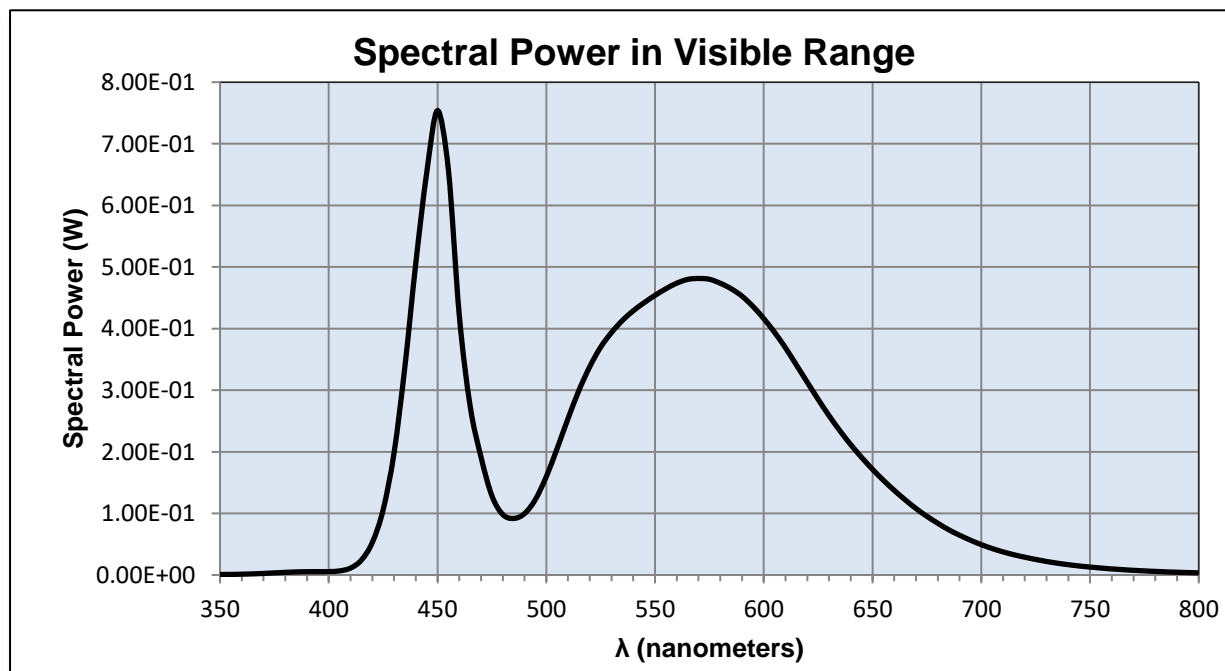
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 2.04829 (A)
Input Power: 244.0 (W)
Input Power Factor: 0.995734
Current ATHD: 4.87323 (%)

Photometric measurements:

Luminous Flux: 28213.18 (lumens)
Luminous Efficacy: 115.6 (lumens/W)
Correlated Color Temperature (CCT): 5206 (K)
CRI -Ra: 72.3847
CRI -R9: -27.5344
DUV: -0.0005
CIE Coordinate (x): 0.340
CIE Coordinate (y): 0.346
CIE Coordinate (u'): 0.210
CIE Coordinate (v'): 0.321
TM30_Rf: 69.6
TM30_Rg: 94.1
TM30_Rcs_hue1: -17.70 %



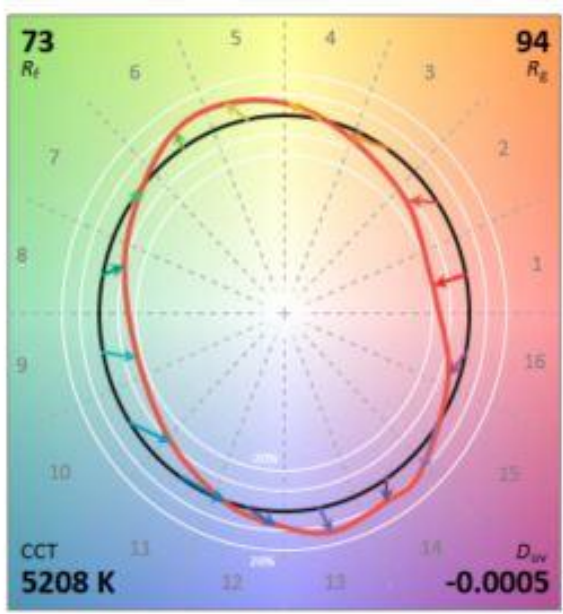
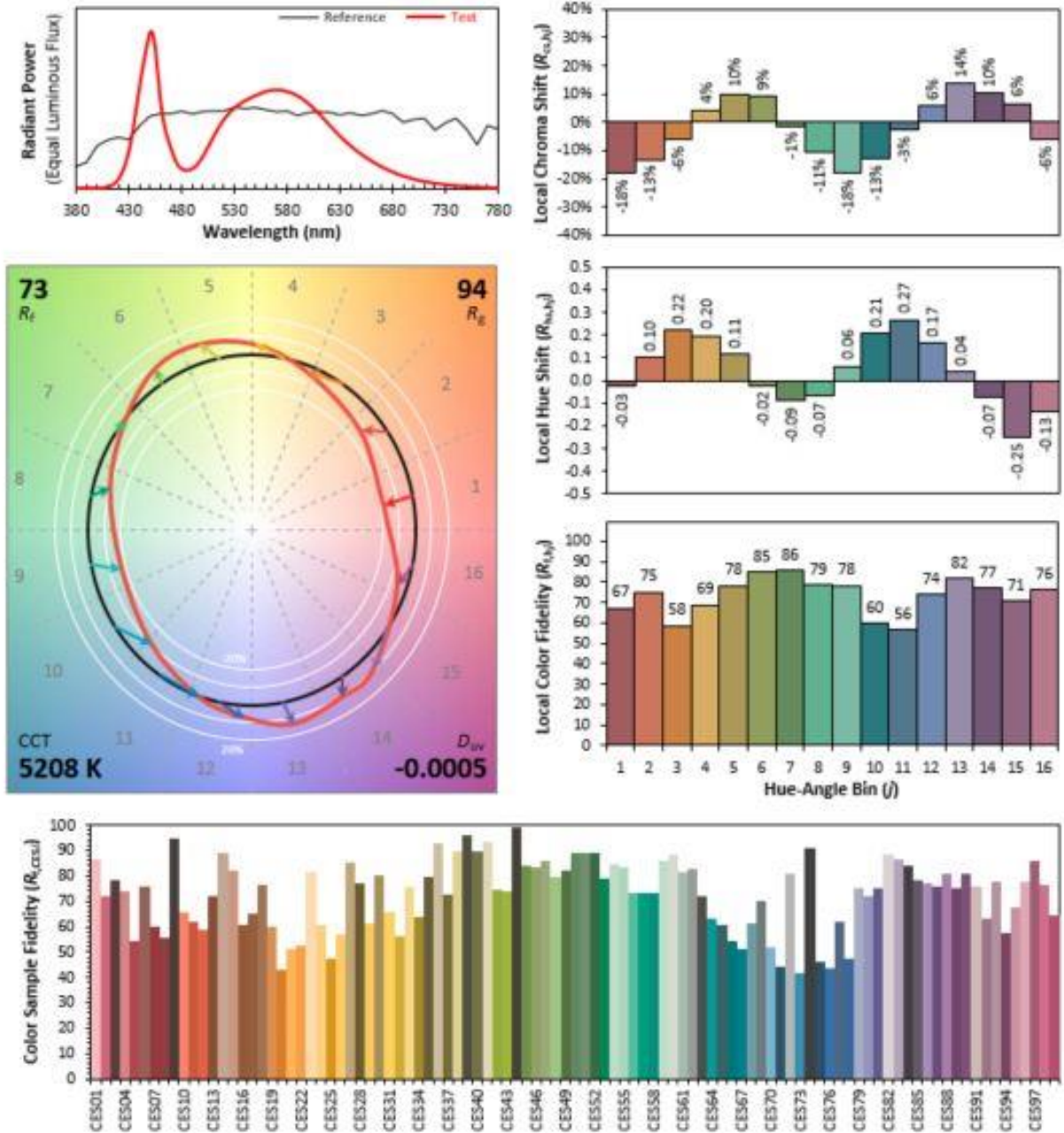
Test Results: Integrating Sphere

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	0.00089	490	0.09973	630	0.25870	770	0.00762
355	0.00104	495	0.12267	635	0.23420	775	0.00670
360	0.00135	500	0.15965	640	0.21155	780	0.00590
365	0.00189	505	0.20550	645	0.19090	785	0.00515
370	0.00258	510	0.25401	650	0.17160	790	0.00453
375	0.00347	515	0.29953	655	0.15384	795	0.00399
380	0.00431	520	0.33820	660	0.13738	800	0.00352
385	0.00506	525	0.36987	665	0.12210		
390	0.00539	530	0.39371	670	0.10789		
395	0.00549	535	0.41320	675	0.09532		
400	0.00557	540	0.42898	680	0.08405		
405	0.00671	545	0.44209	685	0.07357		
410	0.01128	550	0.45401	690	0.06470		
415	0.02424	555	0.46469	695	0.05658		
420	0.05268	560	0.47381	700	0.04935		
425	0.10606	565	0.47987	705	0.04303		
430	0.19810	570	0.48142	710	0.03759		
435	0.33850	575	0.48010	715	0.03295		
440	0.50571	580	0.47364	720	0.02893		
445	0.65236	585	0.46474	725	0.02531		
450	0.75404	590	0.45265	730	0.02203		
455	0.65762	595	0.43610	735	0.01920		
460	0.42150	600	0.41622	740	0.01676		
465	0.27427	605	0.39373	745	0.01468		
470	0.19150	610	0.36866	750	0.01293		
475	0.12864	615	0.34091	755	0.01133		
480	0.09825	620	0.31294	760	0.00992		
485	0.09184	625	0.28523	765	0.00872		

IES TM-30-18 Color Rendition Report



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

x 0.3395
y 0.3459
u' 0.2098
v' 0.4810

CIE 13.3-1995
(CRI)
 R_a 72
 R_g -28

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21011.
Dialight unit model number F1x-4FB2-Fxxx-xxx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 2.0196 (A)
Input Power: 240.7 (W)
Power Factor: 0.9953

Photometric measurements:

Absolute Luminous Flux: 27324 (lumens)
Luminous Efficacy: 113.5 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	3772	3788	3808	3883	3772	
5.00	4615	4355	3826	3484	3330	399
15.00	8950	6641	4171	3112	2716	1527
25.00	17172	9214	5019	2770	1966	3752
35.00	21286	8772	5830	2579	1901	5901
45.00	32807	10015	6011	2481	1419	10075
55.00	13332	14768	5623	2161	1167	6594
65.00	3855	3625	2532	745	883	2326
75.00	1433	441	291	248	1074	958
85.00	165	53	38	35	30	43
90.00	12	6	1	1	2	

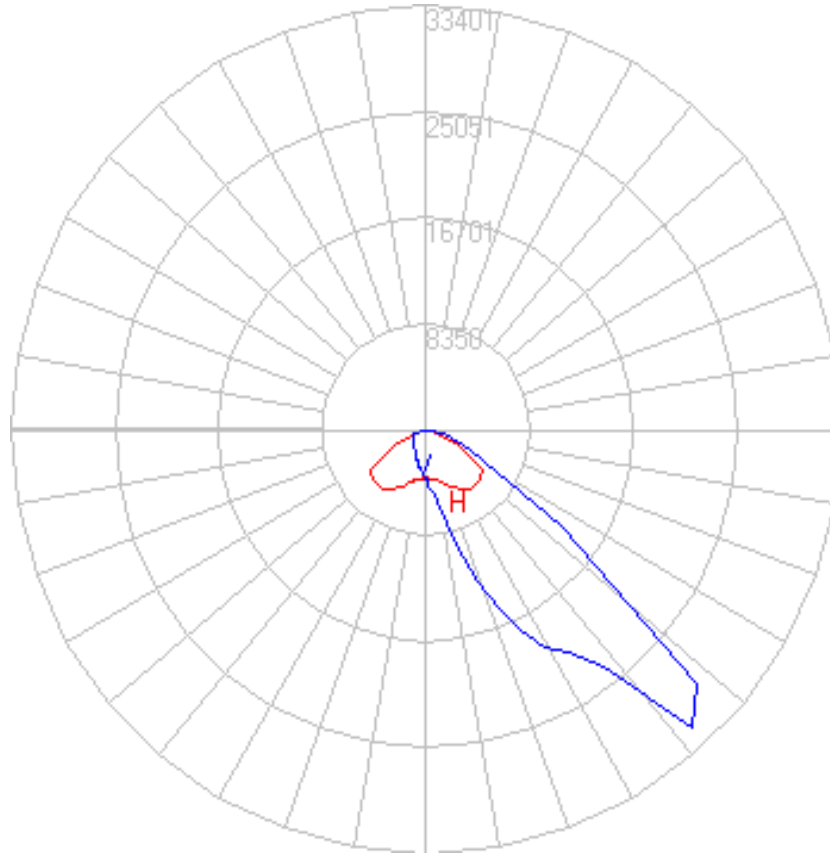
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	5070.73	18.56	18.56
0 to 40	9957.81	36.44	36.44
0 to 60	24137.64	88.34	88.34
0 to 90	27323.95	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	27323.95	100.00	100.00

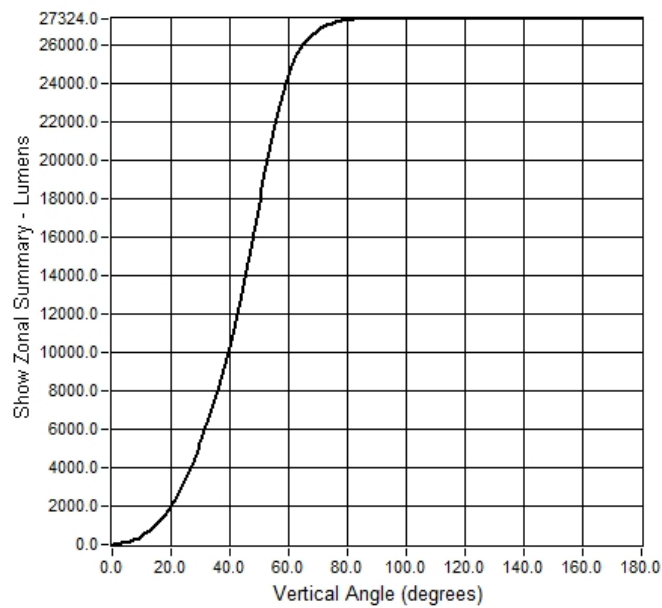
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



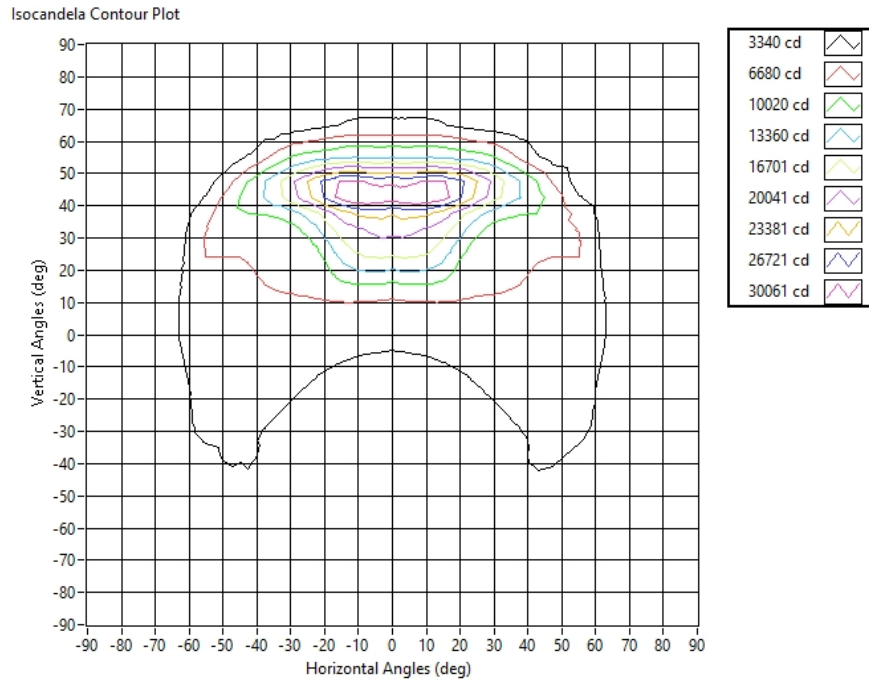
Zonal Flux Graph



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	7.30	9.34	957.3
4	14.60	18.67	239.3
6	21.90	28.01	106.4
8	29.20	37.34	59.8
10	36.50	46.68	38.3
12	43.80	56.01	26.6
14	51.09	65.35	19.5
16	58.39	74.68	15.0
18	65.69	84.02	11.8
20	72.99	93.35	9.6

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