

Test Report

Report Number: L20018

Date: Apr 5, 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-4FN5-Cxxx-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 21, 2021 through February 11, 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

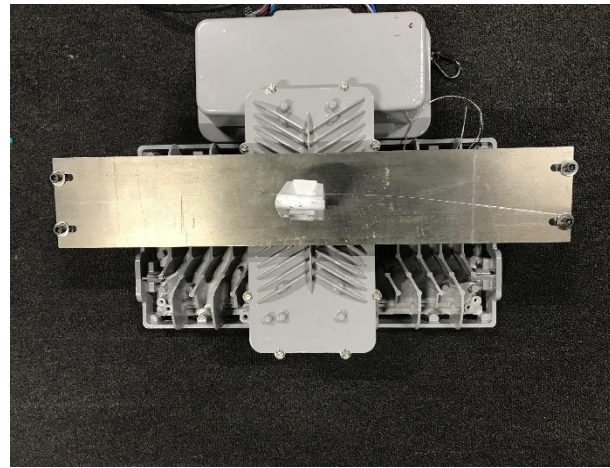
Description of sample:

Sample Number: L20018
Manufacturer: Dialight Corporation
Product Name: PC Window, Asymmetric Forward Throw (Type IV), 80 CRI NW, 347-480V, 18K
Description: F1 - Flood Light
Model Number: F1x-4FN5-Cxxx-xxx

Report Summary

Sample number L20018
Dialight unit model number F1x-4FN5-Cxxx-xxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	15279 (lumens)	14948 (lumens)
Electrical Power:	128.2 (W)	127.8 (W)
Luminous Efficacy:	119.2 (lumens/W)	117 (lumens/W)

Electrical Measurements:

Input Power (347VAC): 128.2 (W)
 Power Factor (347VAC): 0.982246
 Current ATHD % (347VAC): 11.9108
 Input Power (480VAC): 127.9 (W)
 Power Factor (480VAC): 0.96218
 Current ATHD % (480VAC): 12.5274

Color Measurements:

Correlated Color Temperature (CCT): 4016
 Color Rendering Index (CRI): 84.4311
 Chromaticity Coordinate (x): 0.381
 Chromaticity Coordinate (y): 0.381
 Chromaticity Coordinate (u'): 0.224
 Chromaticity Coordinate (v'): 0.336
 DUV: 0.0017

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20018.

Dialight unit model number F1x-4FN5-Cxxx-xxx

Test Conditions:

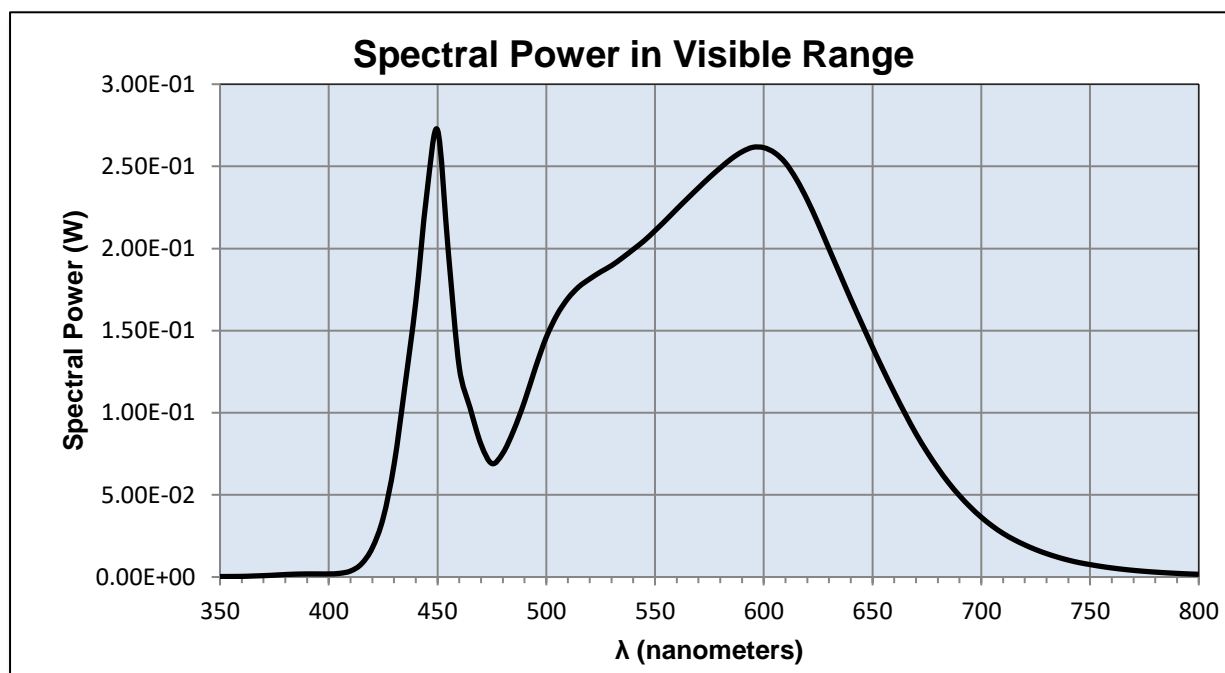
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 347 (VAC)
Input Current: 0.376355 (A)
Input Power: 128.2 (W)
Input Power Factor: 0.982246
Current ATHD: 11.9108 (%)

Photometric measurements:

Luminous Flux: 15278.79 (lumens)
Luminous Efficacy: 119.2 (lumens/W)
Correlated Color Temperature (CCT): 4016 (K)
CRI -Ra: 84.4311
CRI -R9: 12.9909
DUV: 0.0017
CIE Coordinate (x): 0.381
CIE Coordinate (y): 0.381
CIE Coordinate (u'): 0.224
CIE Coordinate (v'): 0.336
TM30_Rf: 84.5
TM30_Rg: 97.0
TM30_Rcs_hue1: -10.80 %



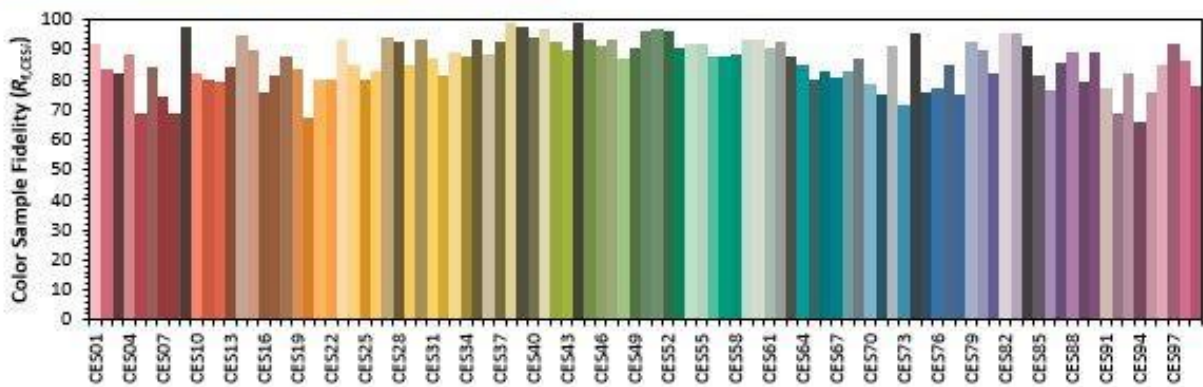
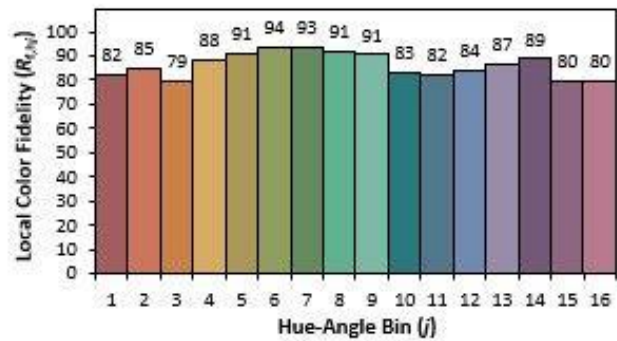
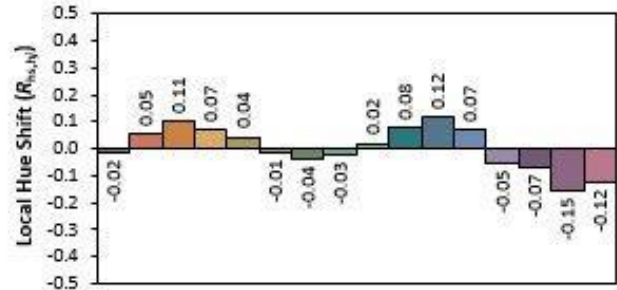
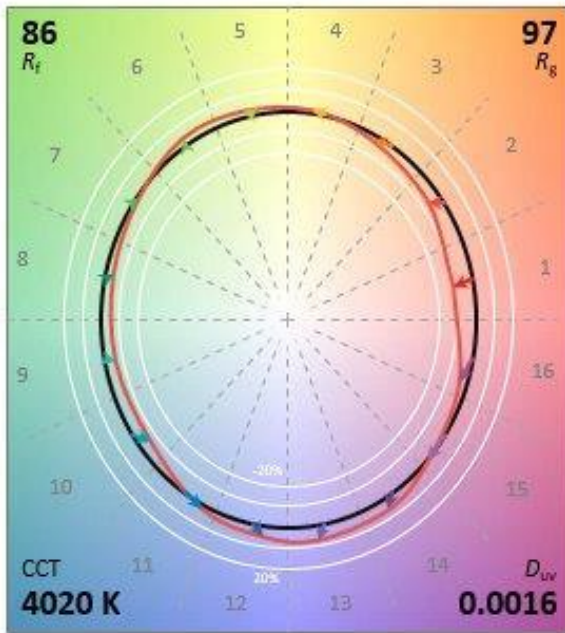
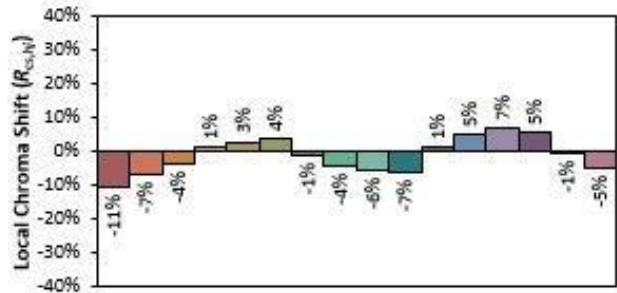
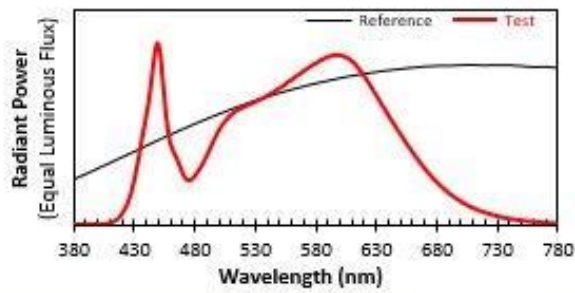
Test Results: Integrating Sphere

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	0.00029	490	0.10687	630	0.19976	770	0.00405
355	0.00033	495	0.12737	635	0.18447	775	0.00347
360	0.00039	500	0.14597	640	0.16915	780	0.00299
365	0.00061	505	0.15976	645	0.15446	785	0.00258
370	0.00085	510	0.16968	650	0.13988	790	0.00222
375	0.00115	515	0.17670	655	0.12578	795	0.00191
380	0.00152	520	0.18150	660	0.11229	800	0.00165
385	0.00176	525	0.18576	665	0.09938		
390	0.00189	530	0.18959	670	0.08722		
395	0.00190	535	0.19433	675	0.07628		
400	0.00189	540	0.19944	680	0.06637		
405	0.00223	545	0.20469	685	0.05734		
410	0.00367	550	0.21086	690	0.04951		
415	0.00795	555	0.21729	695	0.04255		
420	0.01769	560	0.22399	700	0.03642		
425	0.03589	565	0.23055	705	0.03113		
430	0.06834	570	0.23693	710	0.02657		
435	0.11620	575	0.24322	715	0.02281		
440	0.16744	580	0.24906	720	0.01956		
445	0.23247	585	0.25453	725	0.01671		
450	0.27211	590	0.25887	730	0.01426		
455	0.19724	595	0.26159	735	0.01213		
460	0.12749	600	0.26137	740	0.01030		
465	0.10285	605	0.25827	745	0.00878		
470	0.08075	610	0.25207	750	0.00758		
475	0.06907	615	0.24211	755	0.00648		
480	0.07534	620	0.22966	760	0.00554		
485	0.08925	625	0.21522	765	0.00473		

IES TM-30-18 Color Rendition Report



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

x 0.3807
y 0.3804
u' 0.2238
v' 0.5032

CIE 13.3-1995	
(CRI)	
R_a	84
R_g	13

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20018.
Dialight unit model number F1x-4FN5-Cxxx-xxx

Electrical Measurements:

Input Voltage: 347 (VAC)
Input current: 0.37512 (A)
Input Power: 127.8 (W)
Power Factor: 0.9812

Photometric measurements:

Absolute Luminous Flux: 14948.4 (lumens)
Luminous Efficacy: 117.0 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	2028	2025	2028	2040	2028	
5.00	2489	2338	2052	1850	1790	214
15.00	4767	3581	2263	1664	1454	817
25.00	9061	5183	2744	1501	1071	2011
35.00	11529	4929	3215	1417	1038	3218
45.00	17992	5734	3318	1373	775	5551
55.00	7919	8451	3121	1229	635	3834
65.00	2216	2280	1467	400	473	1349
75.00	850	251	161	130	547	534
85.00	123	33	21	16	14	29
90.00	9	5	1	1	1	

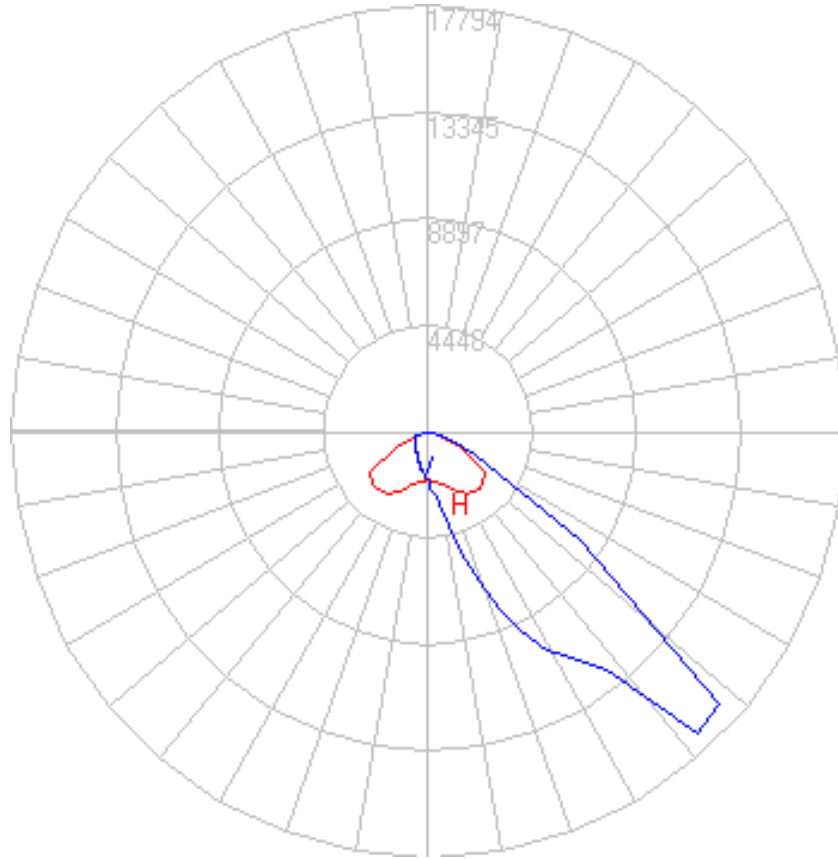
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	2664.16	17.82	17.82
0 to 40	5264.37	35.22	35.22
0 to 60	13094.26	87.60	87.60
0 to 90	14948.42	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	14948.42	100.00	100.00

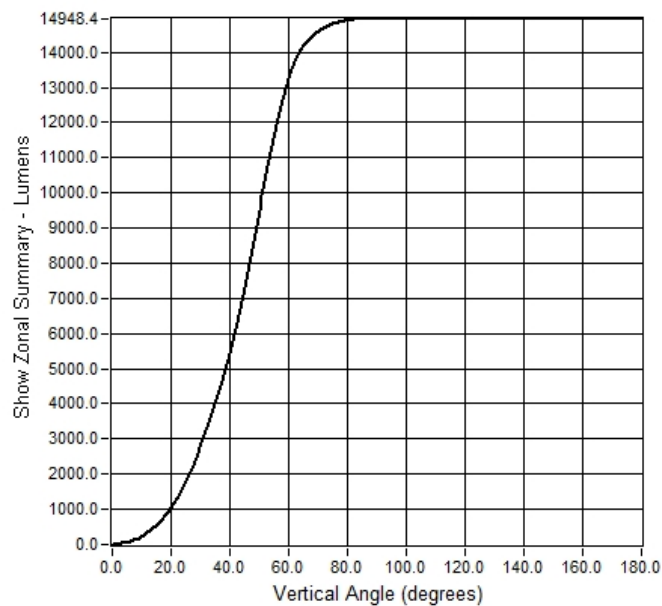
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



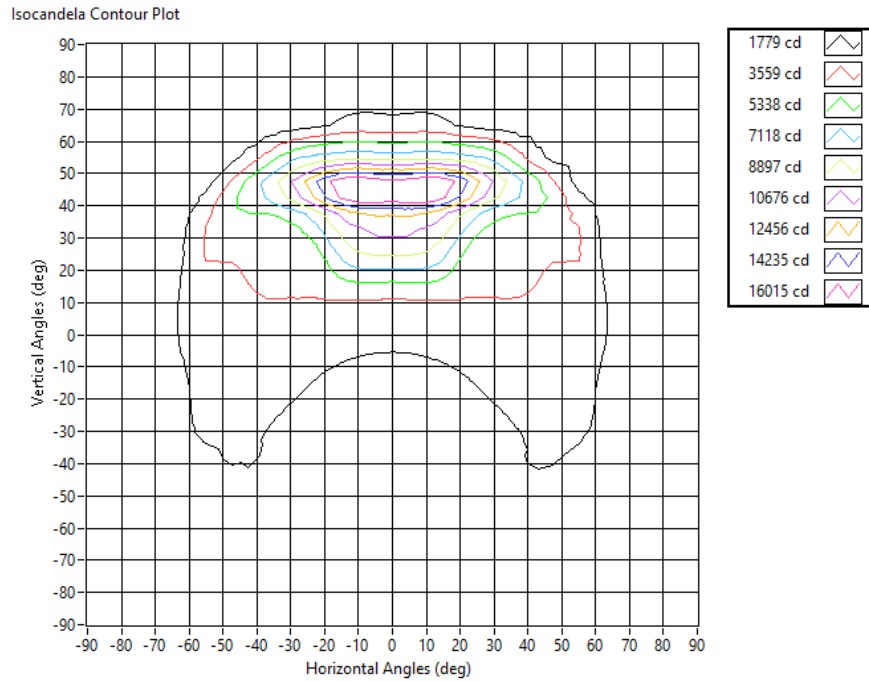
Zonal Flux Graph



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	7.73	9.31	507.9
4	15.46	18.62	127.0
6	23.19	27.93	56.4
8	30.92	37.25	31.7
10	38.65	46.56	20.3
12	46.38	55.87	14.1
14	54.11	65.18	10.4
16	61.84	74.49	7.9
18	69.57	83.80	6.3
20	77.29	93.11	5.1

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