Test Report

Report Number: L21004 Date: Jan 18, 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-46B2-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

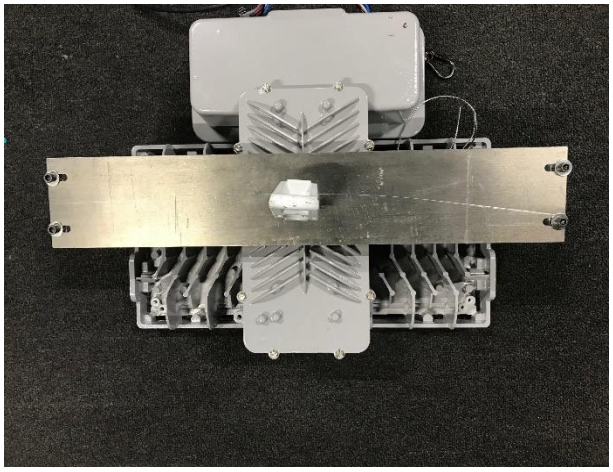
Description of sample:

Sample Number:	L21004
Manufacturer:	Dialight Corporation
Product Name:	PC Window, NEMA6, 70 CRI CW, 100-277V, 30K
Description:	F1 - Flood Light
Model Number:	F1x-46B2-Fxxx-xxx

Report Summary

Sample number L21004
Dialight unit model number F1x-46B2-Fxxx-xxx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	Integrating Sphere	Goniophotometer
Luminous Flux:	28077 (lumens)	27902 (lumens)
Electrical Power:	242.2 (W)	239.6 (W)
Luminous Efficacy:	115.9 (lumens/W)	116.5 (lumens/W)

Electrical Measurements:

Input Power (120VAC):	242.2	(W)
Power Factor (120VAC):	0.997	
Current ATHD % (120VAC):	5.01	
Input Power (277VAC):	231.7	(W)
Power Factor (277VAC):	0.9574	
Current ATHD % (277VAC):	9.99	

Color Measurements:

Correlated Color Temperature (CCT):	5159
Color Rendering Index (CRI):	72.2291
Chromaticity Coordinate (x):	0.341
Chromaticity Coordinate (y):	0.348
Chromaticity Coordinate (u'):	0.210
Chromaticity Coordinate (v'):	0.321
DUV:	-0.0002

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21004.
Dialight unit model number F1x-46B2-Fxxx-xxx

Test Conditions:

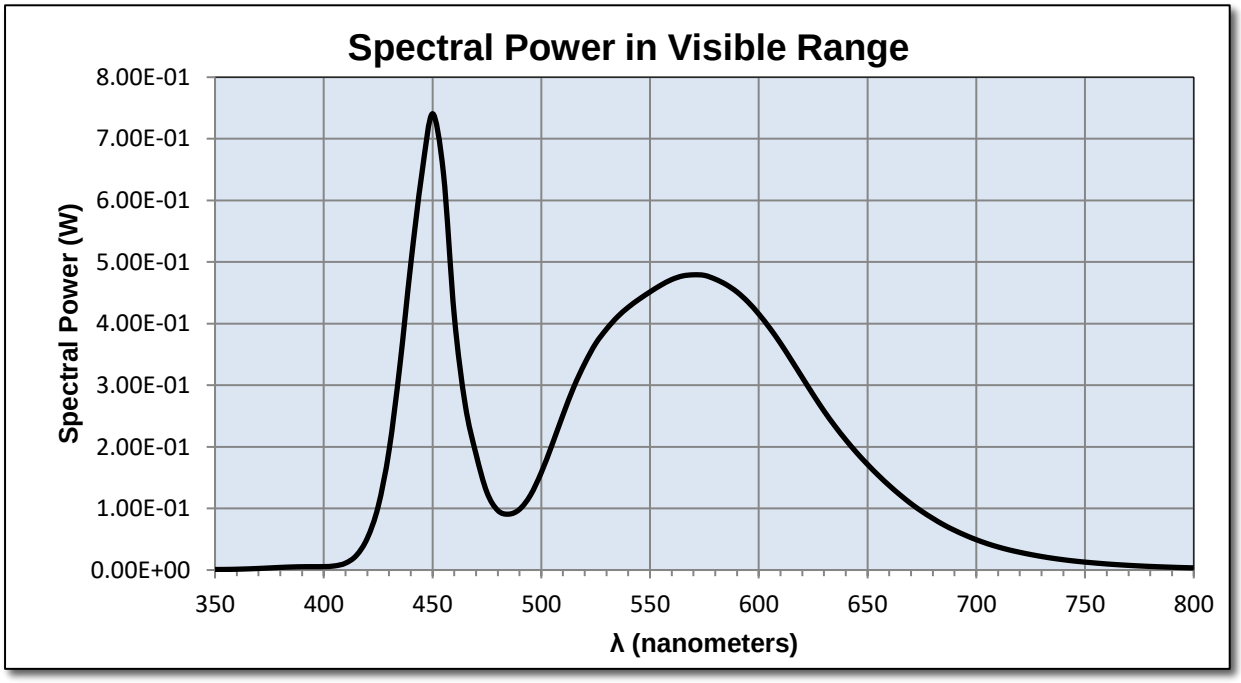
Ambient Temperature:	25 ± 1	(°C)

Electrical Measurements:

Input Voltage:	120	(VAC)
Input Current:	2.034	(A)
Input Power:	242.2	(W)
Input Power Factor:	0.997	
Current ATHD:	5.01	(%)

Photometric measurements:

Luminous Flux:	28077.41	(lumens)
Luminous Efficacy:	115.9	(lumens/W)
Correlated Color Temperature (CCT):	5159	(K)
CRI -Ra:	72.2291	
CRI -R9:	-28.4553	
DUV:	-0.0002	
CIE Coordinate (x):	0.341	
CIE Coordinate (y):	0.348	
CIE Coordinate (u'):	0.210	
CIE Coordinate (v'):	0.321	
TM30_Rf:	69.6	
TM30_Rg:	93.9	
TM30_Rcs_hue1:	-17.76	%



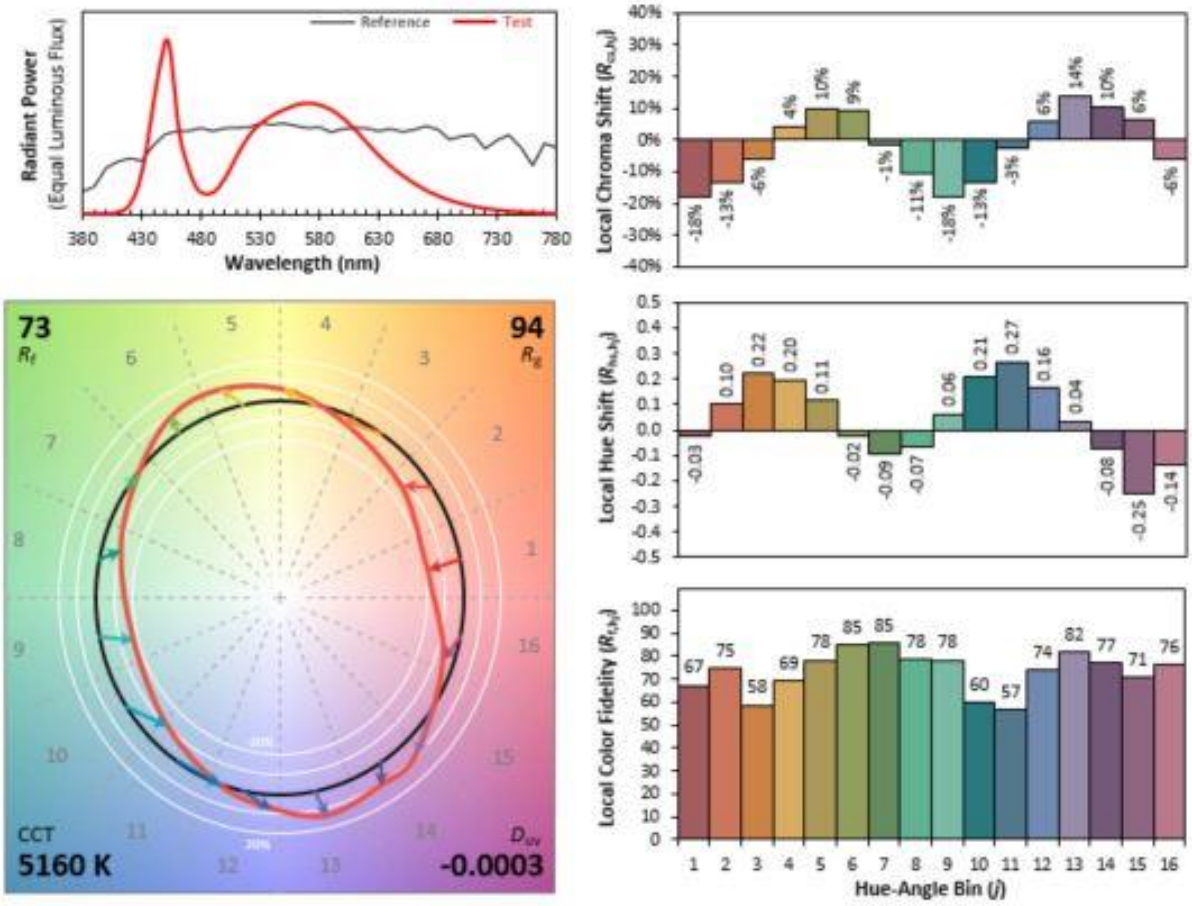
Test Results: Integrating Sphere

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	0.00085	490	0.09851	630	0.25812	770	0.00755
355	0.00096	495	0.12134	635	0.23374	775	0.00665
360	0.00131	500	0.15816	640	0.21128	780	0.00585
365	0.00187	505	0.20377	645	0.19055	785	0.00515
370	0.00252	510	0.25211	650	0.17143	790	0.00453
375	0.00337	515	0.29743	655	0.15360	795	0.00397
380	0.00423	520	0.33543	660	0.13710	800	0.00348
385	0.00492	525	0.36758	665	0.12184		
390	0.00535	530	0.39111	670	0.10774		
395	0.00544	535	0.41091	675	0.09514		
400	0.00553	540	0.42655	680	0.08383		
405	0.00670	545	0.43965	685	0.07343		
410	0.01118	550	0.45149	690	0.06447		
415	0.02371	555	0.46242	695	0.05643		
420	0.05153	560	0.47160	700	0.04926		
425	0.10320	565	0.47739	705	0.04289		
430	0.19387	570	0.47923	710	0.03747		
435	0.33222	575	0.47833	715	0.03276		
440	0.49661	580	0.47217	720	0.02879		
445	0.64073	585	0.46336	725	0.02518		
450	0.74076	590	0.45129	730	0.02200		
455	0.64464	595	0.43531	735	0.01916		
460	0.41259	600	0.41554	740	0.01674		
465	0.26923	605	0.39299	745	0.01461		
470	0.18822	610	0.36797	750	0.01286		
475	0.12616	615	0.34058	755	0.01129		
480	0.09674	620	0.31261	760	0.00987		
485	0.09070	625	0.28473	765	0.00866		

IES TM-30-18 Color Renditon Report



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

x	0.3407
y	0.3475
u'	0.2100
v'	0.4820

CIE 13.3-1995 (CRI)	
R_a	72
R_9	-28

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21004.
Dialight unit model number F1x-46B2-Fxxx-xxx

Electrical Measurements:

Input Voltage:	119.75	(VAC)
Input current:	2.0104	(A)
Input Power:	239.6	(W)
Power Factor:	0.9953	

Photometric measurements:

Absolute Luminous Flux:	27902.1	(lumens)
Luminous Efficacy:	116.5	(lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	15959	16000	15905	15938	15959	
5.00	15938	15932	15752	15746	15718	1606
15.00	13859	14002	13374	13448	13348	3857
25.00	11979	11972	11658	11687	11724	5472
35.00	10649	10629	10268	10363	10320	6571
45.00	8294	8206	7910	7970	7879	6246
55.00	4302	4228	3937	4007	3612	3584
65.00	735	755	706	716	649	700
75.00	240	232	238	231	220	244
85.00	21	19	21	20	17	11
90.00	1	1	1	1	1	

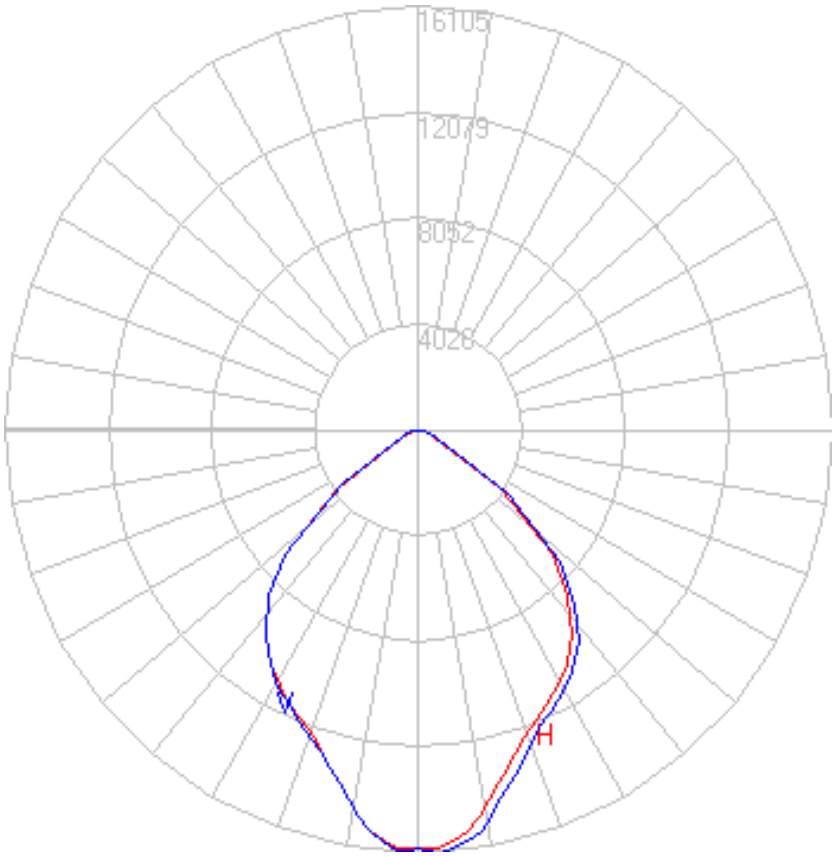
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10733.76	38.47	38.47
0 to 40	17246.03	61.81	61.81
0 to 60	26819.82	96.12	96.12
0 to 90	27902.12	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	27902.12	100.00	100.00

Test Results: Goniometer

Results continued from previous page.

Polar Plot:

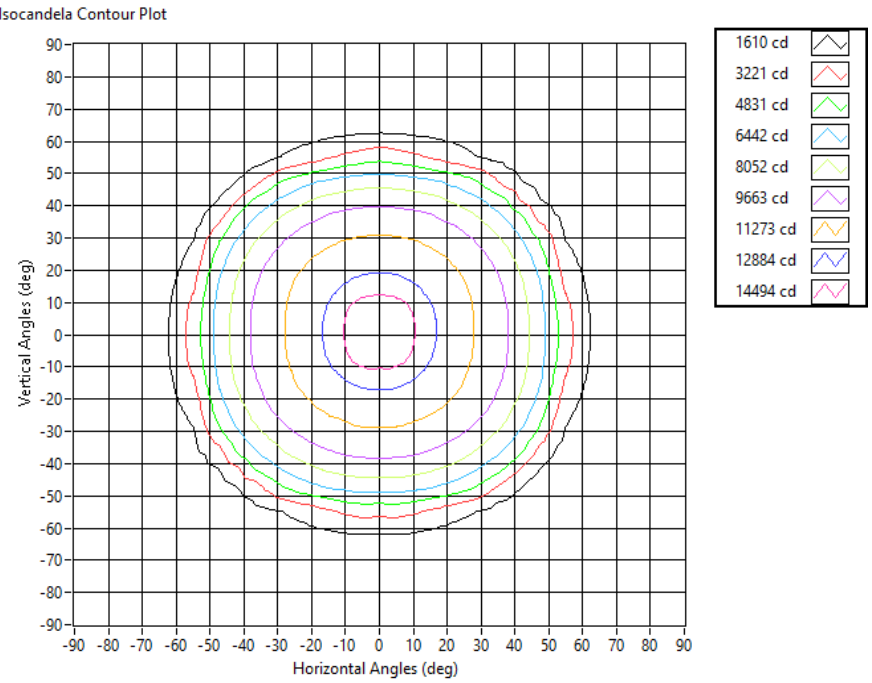


Characteristics	
NEMA Type	6 H x 6 V
Maximum Candela	16104.963
Maximum Candela Angle	-1 H 3 V
Horizontal Beam Angle (50%)	88.5
Vertical Beam Angle (50%)	89.9
Horizontal Field Angle (10%)	124.4
Vertical Field Angle (10%)	124.3
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	20091
Beam Efficiency	N.A.
Field Lumens	27012
Field Efficiency	N.A.
Spill Lumens	1042
Luminaire Lumens	28054
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	4.10	3.90	3989.0
4	8.19	7.80	997.3
6	12.29	11.70	443.2
8	16.39	15.60	249.3
10	20.48	19.50	159.6
12	24.58	23.39	110.8
14	28.68	27.29	81.4
16	32.77	31.19	62.3
18	36.87	35.09	49.2
20	40.97	38.99	39.9

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 Humdity 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 Spectrameter- 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.

Test Report Issued By:

Richard Huegi
Dialight Optics Laboratory
Senior Optical Engineering Technician
Lighting Division

Test Report Reviewed and Approved By:

Vishnu Shastry
Dialight Optics Laboratory
Optical Engineer
Approved Signatory