

Test Report

Report Number: L21002

Date: Jan 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-N6B2-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 21, 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

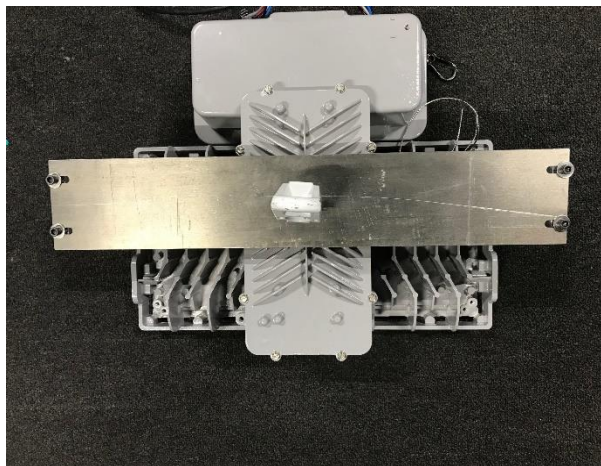
Description of sample:

Sample Number: L21002
Manufacturer: Dialight Corporation
Product Name: No Window, NEMA6, 70 CRI CW, 100-277V, 30K
Description: F1 - Flood Light
Model Number: F1x-N6B2-Fxxx-xxx

Report Summary

Sample number L21002
Dialight unit model number F1x-N6B2-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:	31609 (lumens)	31306 (lumens)
Electrical Power:	241.5 (W)	240.1 (W)
Luminous Efficacy:	130.9 (lumens/W)	130.4 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 241.5 (W)
Power Factor (120VAC): 0.9956
Current ATHD % (120VAC): 9.11348
Input Power (277VAC): 232.0 (W)
Power Factor (277VAC): 0.957
Current ATHD % (277VAC): 10.09

Color Measurements:

Correlated Color Temperature (CCT): 5100
Color Rendering Index (CRI): 71.3179
Chromaticity Coordinate (x): 0.342
Chromaticity Coordinate (y): 0.350
Chromaticity Coordinate (u'): 0.210
Chromaticity Coordinate (v'): 0.322
DUV: 0.0001

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21002.

Dialight unit model number F1x-N6B2-Fxxx-xxx

Test Conditions:

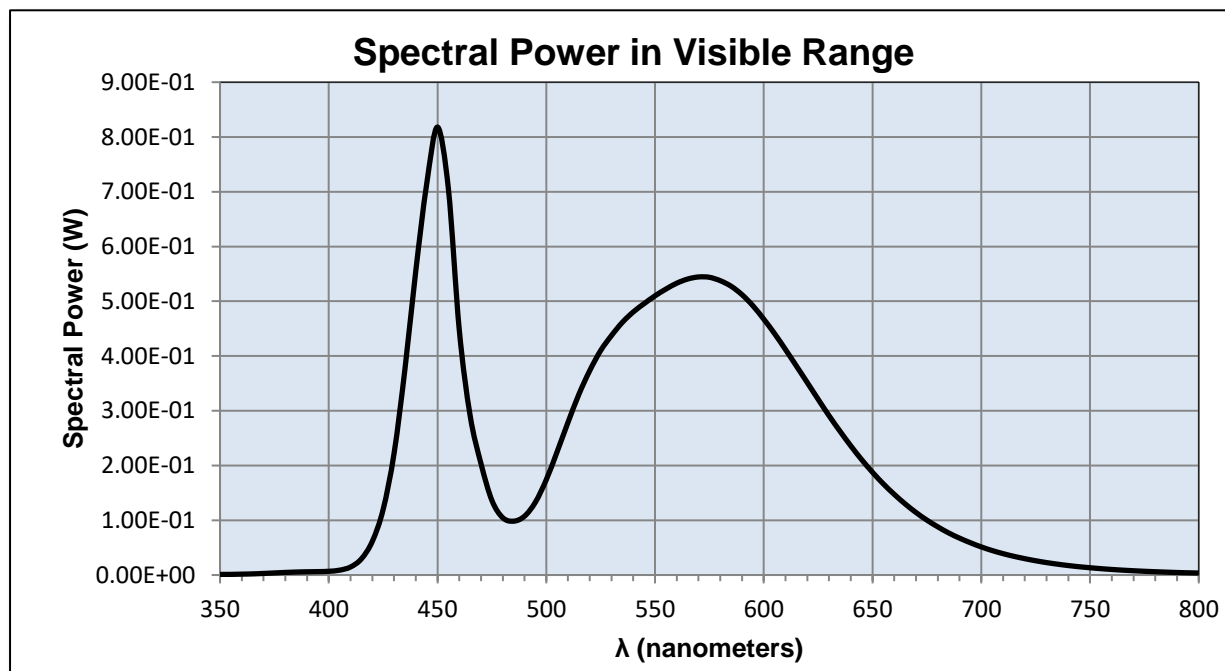
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 2.03 (A)
Input Power: 241.5 (W)
Input Power Factor: 0.9956
Current ATHD: 9.11348 (%)

Photometric measurements:

Luminous Flux: 31608.86 (lumens)
Luminous Efficacy: 130.9 (lumens/W)
Correlated Color Temperature (CCT): 5100 (K)
CRI -Ra: 71.3179
CRI -R9: -32.9692
DUV: 0.0001
CIE Coordinate (x): 0.342
CIE Coordinate (y): 0.350
CIE Coordinate (u'): 0.210
CIE Coordinate (v'): 0.322
TM30_Rf: 69.0
TM30_Rg: 93.5
TM30_Rcs_hue1: -18.32 %



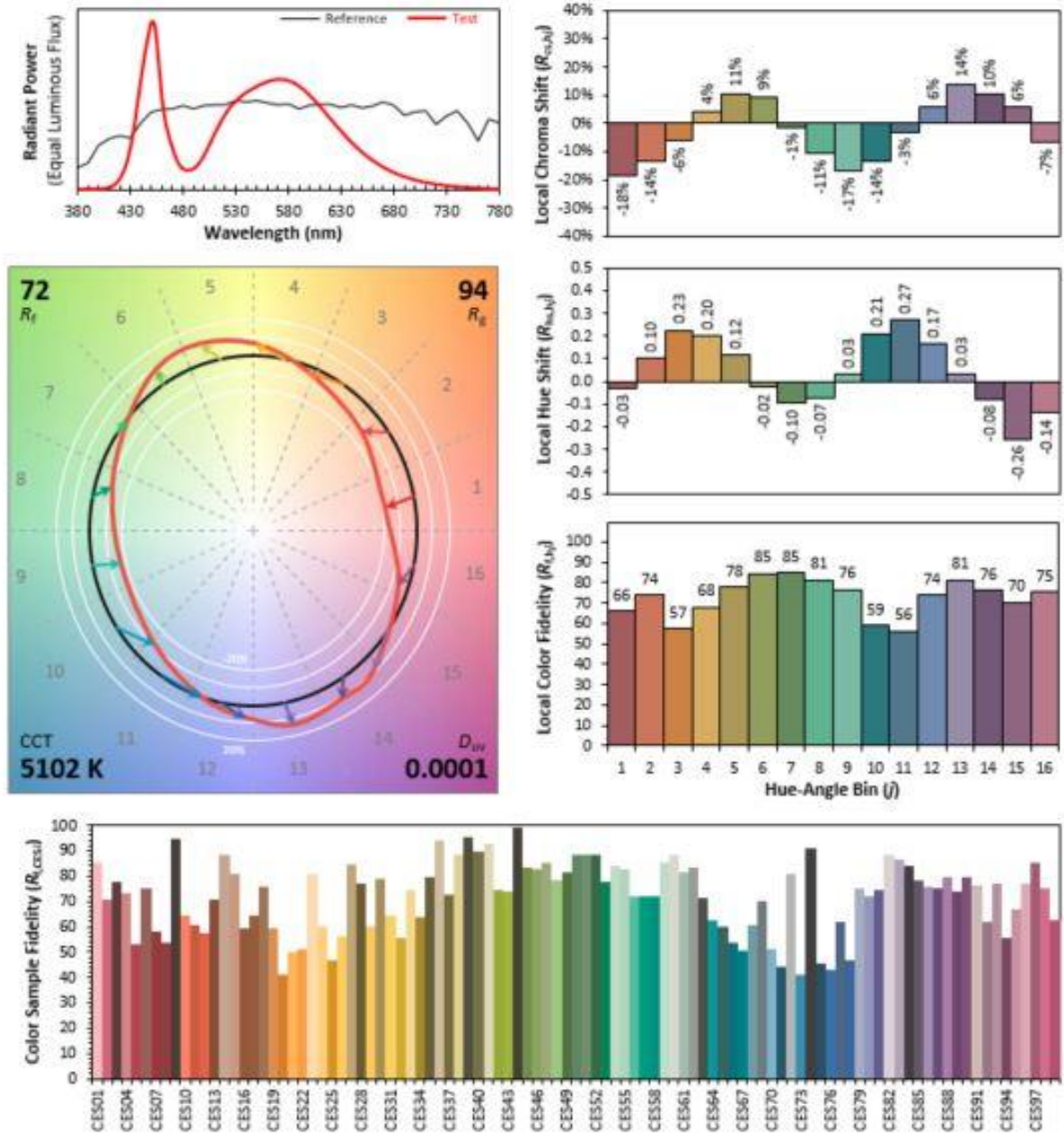
Test Results: Integrating Sphere

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	0.00109	490	0.10744	630	0.29102	770	0.00781
355	0.00122	495	0.13305	635	0.26286	775	0.00685
360	0.00162	500	0.17401	640	0.23594	780	0.00602
365	0.00207	505	0.22528	645	0.21074	785	0.00529
370	0.00289	510	0.27897	650	0.18762	790	0.00462
375	0.00378	515	0.33000	655	0.16640	795	0.00408
380	0.00474	520	0.37336	660	0.14725	800	0.00361
385	0.00544	525	0.40990	665	0.12988		
390	0.00594	530	0.43745	670	0.11417		
395	0.00621	535	0.46153	675	0.10028		
400	0.00683	540	0.48040	680	0.08803		
405	0.00890	545	0.49569	685	0.07686		
410	0.01469	550	0.50987	690	0.06737		
415	0.02953	555	0.52219	695	0.05895		
420	0.06134	560	0.53299	700	0.05136		
425	0.11989	565	0.54054	705	0.04476		
430	0.22178	570	0.54436	710	0.03908		
435	0.37554	575	0.54370	715	0.03414		
440	0.55516	580	0.53753	720	0.02989		
445	0.71370	585	0.52735	725	0.02605		
450	0.81807	590	0.51197	730	0.02275		
455	0.70494	595	0.49181	735	0.01985		
460	0.44730	600	0.46731	740	0.01731		
465	0.29106	605	0.44067	745	0.01515		
470	0.20319	610	0.41171	750	0.01329		
475	0.13625	615	0.38170	755	0.01163		
480	0.10461	620	0.35149	760	0.01016		
485	0.09837	625	0.32096	765	0.00889		

IES TM-30-18 Color Rendition Report



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

x 0.3423
y 0.3496
u' 0.2103
v' 0.4833

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 L21002.
Dialight unit model number F1x-N6B2-Fxxx-xxx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 2.0164 (A)
Input Power: 240.1 (W)
Power Factor: 0.9953

Photometric measurements:

Absolute Luminous Flux: 31305.7 (lumens)
Luminous Efficacy: 130.4 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	16932	16947	16923	16917	16932	
5.00	17110	17113	17045	16999	16958	1728
15.00	15346	15585	14901	14800	14519	4250
25.00	13312	13290	13011	12926	12880	6058
35.00	12025	12014	11644	11579	11401	7366
45.00	9606	9599	9206	9021	8679	7119
55.00	5528	5522	5062	4694	3605	4274
65.00	967	976	848	816	723	852
75.00	375	361	355	325	312	365
85.00	94	94	73	72	56	44
90.00	10	11	6	3	1	

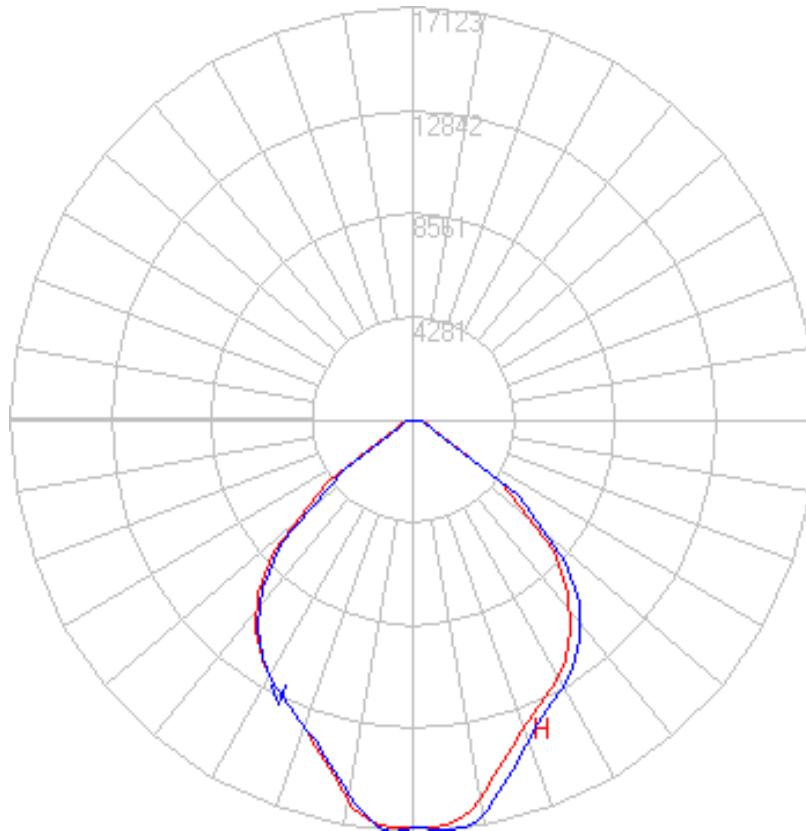
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	11793.91	37.67	37.67
0 to 40	19062.85	60.89	60.89
0 to 60	29949.39	95.67	95.67
0 to 90	31305.73	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	31305.73	100.00	100.00

Test Results: Goniometer

Results continued from previous page.

Polar Plot:



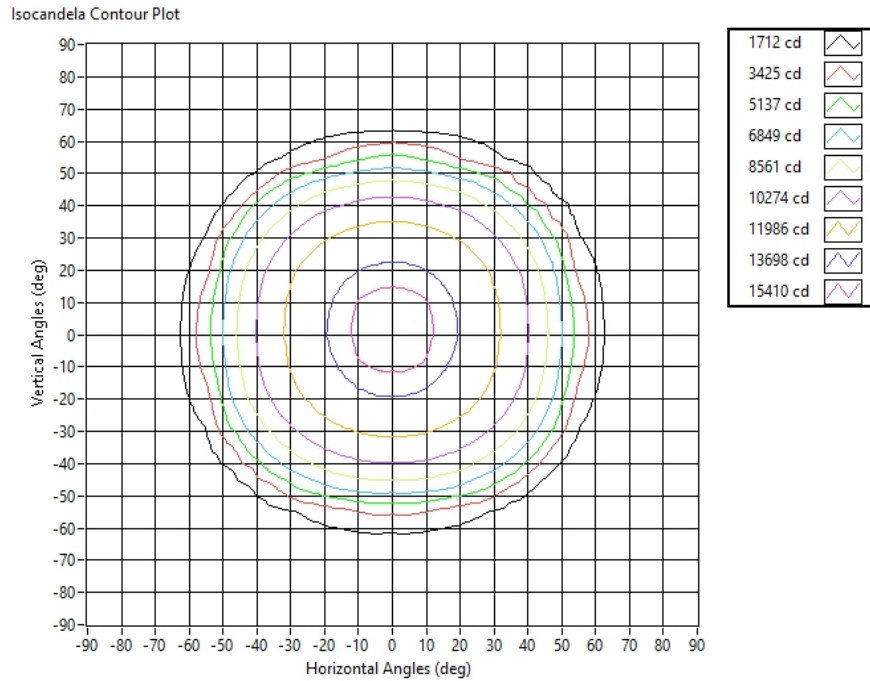
Characteristics

NEMA Type	6 H x 6 V
Maximum Candela	17122.774
Maximum Candela Angle	-1 H -3 V
Horizontal Beam Angle (50%)	91.6
Vertical Beam Angle (50%)	93.0
Horizontal Field Angle (10%)	124.9
Vertical Field Angle (10%)	125.0
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	23710
Beam Efficiency	N.A.
Field Lumens	30264
Field Efficiency	N.A.
Spill Lumens	1214
Luminaire Lumens	31478
Total Efficiency	N.A.
Total Luminaire Watts	240.1
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	4.31	4.23	4228.0
4	8.63	8.45	1057.0
6	12.94	12.68	469.8
8	17.26	16.90	264.3
10	21.57	21.13	169.1
12	25.89	25.36	117.4
14	30.20	29.58	86.3
16	34.51	33.81	66.1
18	38.83	38.03	52.2
20	43.14	42.26	42.3

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