

Test Report

Report Number: L22027

Date: Nov 22, 2022

Issued by:

Dialight Optics Laboratory
1501 Route 34 South, Farmingdale, NJ 07727

Test of one Floodlight

Unit manufacturer: Dialight Corporation
Unit model number: F2UNJB8NDENVGN

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: November 21, 2022 through November 22, 2022

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-79:2019: Optical and Electrical 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

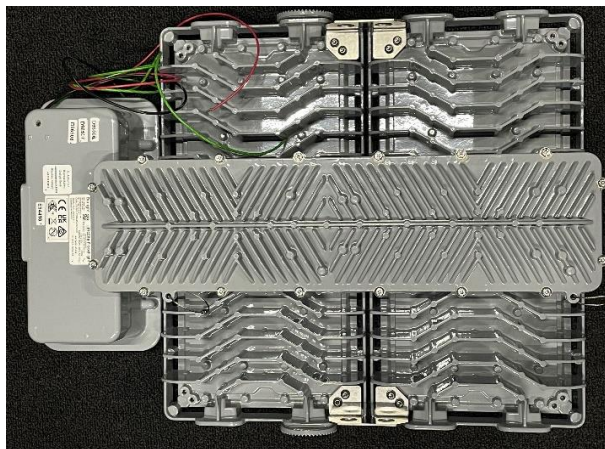
Description of sample:

Sample Number: L22027
Manufacturer: Dialight Corporation
Product Name: ProSite
Description: Floodlight
Model Number: F2UNJB8NDENVGN

Report Summary

Sample number L22027
Dialight unit model number F2UNJB8NDENVGN

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	61301 (lumens)	60531 (lumens)
Electrical Power:	492.4 (W)	492.8 (W)
Luminous Efficacy:	124.5 (lumens/W)	122.8 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 492.4 (W)
Power Factor (120VAC): 0.9955
Current ATHD % (120VAC): 4.94
Input Power (277VAC): 473.9 (W)
Power Factor (277VAC): 0.9652
Current ATHD % (277VAC): 9.52

Color Measurements:

Correlated Color Temperature (CCT): 4989
Color Rendering Index (CRI): 71.96
Chromaticity Coordinate (x): 0.345
Chromaticity Coordinate (y): 0.350
Chromaticity Coordinate (u'): 0.212
Chromaticity Coordinate (v'): 0.484
DUV: -0.0010

Temperature Measurements:

In Situ LED Source Temperature: 67.0 (°C)

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L22027.

Dialight unit model number F2UNJB8NDENVGN

Test Conditions:

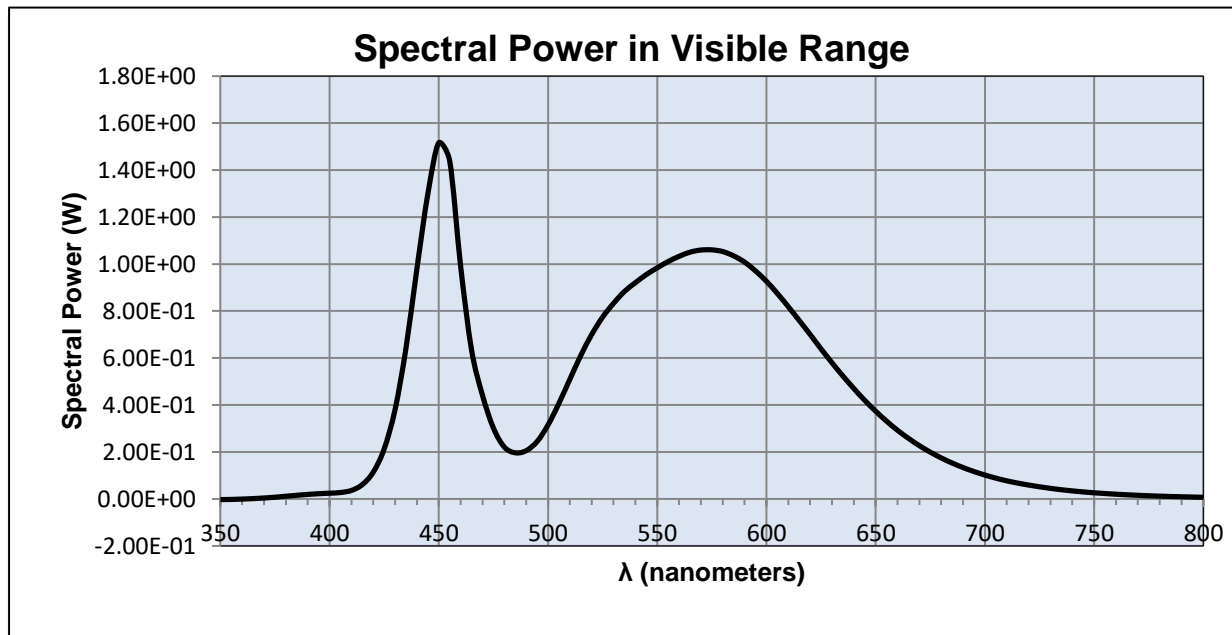
Ambient Temperature: 25 ± 1.2 (°C)
Ambient Relative Humidity: 10 to 65 (%RH)

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input Current: 4.121 (A)
Input Power: 492.4 (W)
Input Power Factor: 0.9955
Current ATHD: 4.94 (%)

Photometric measurements:

Luminous Flux: 61301.4 (lumens)
Luminous Efficacy: 124.5 (lumens/W)
Correlated Color Temperature (CCT): 4989 (K)
CRI -Ra: 71.96
CRI -R9: -29.39
DUV: -0.0010
CIE Coordinate (x): 0.345
CIE Coordinate (y): 0.350
CIE Coordinate (u'): 0.212
CIE Coordinate (v'): 0.484
TM30_Rf: 72.2
TM30_Rg: 94.1
TM30_Rcs_hue1: -17.95 %



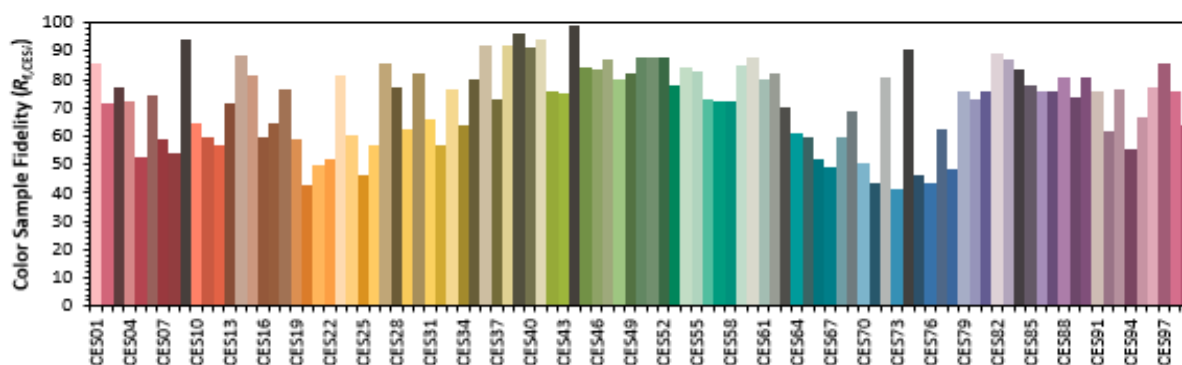
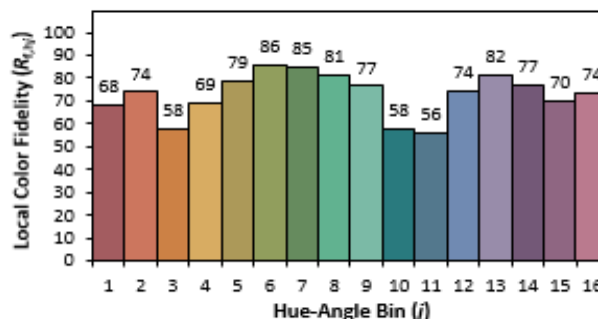
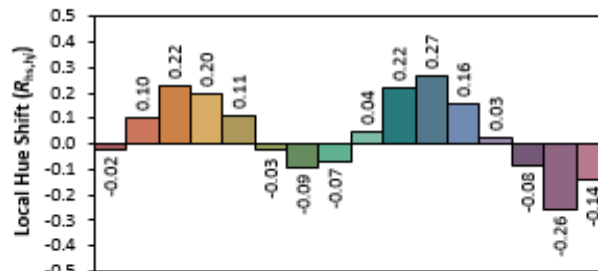
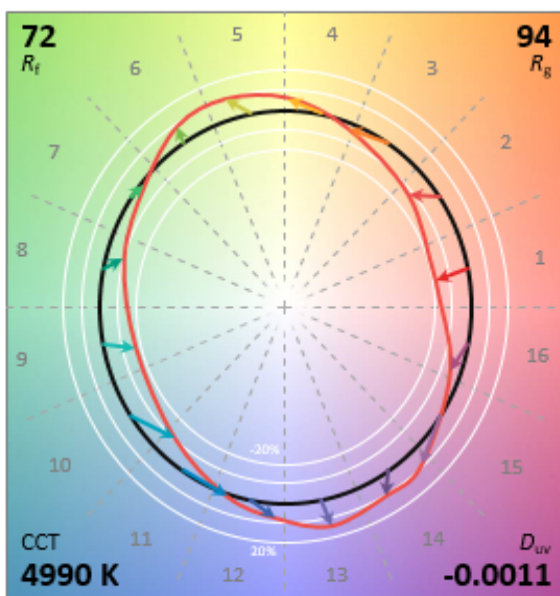
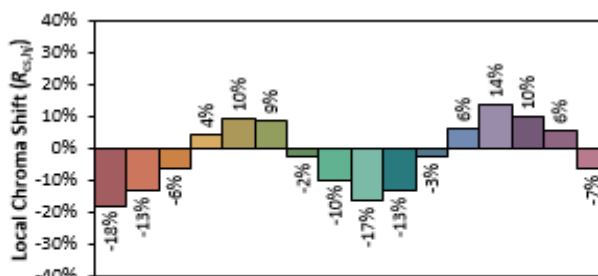
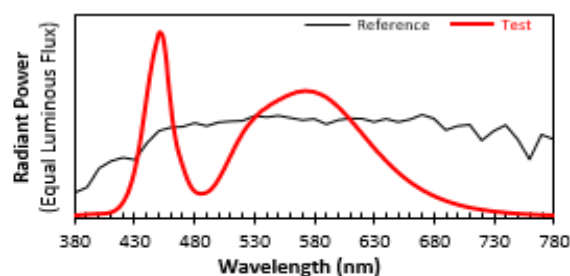
Test Results: Integrating Sphere

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	-0.00277	490	0.20540	630	0.57960	770	0.01544
355	-0.00210	495	0.24421	635	0.52334	775	0.01351
360	-0.00049	500	0.31464	640	0.47006	780	0.01185
365	0.00139	505	0.40700	645	0.41968	785	0.01043
370	0.00404	510	0.50930	650	0.37338	790	0.00914
375	0.00726	515	0.61068	655	0.33105	795	0.00803
380	0.01149	520	0.69987	660	0.29219	800	0.00706
385	0.01551	525	0.77419	665	0.25802		
390	0.01920	530	0.83267	670	0.22672		
395	0.02229	535	0.88336	675	0.19922		
400	0.02446	540	0.92056	680	0.17458		
405	0.02727	545	0.95523	685	0.15280		
410	0.03616	550	0.98385	690	0.13362		
415	0.06111	555	1.01047	695	0.11667		
420	0.11402	560	1.03271	700	0.10172		
425	0.21298	565	1.05048	705	0.08861		
430	0.38106	570	1.05961	710	0.07716		
435	0.64322	575	1.06032	715	0.06758		
440	0.98092	580	1.05306	720	0.05915		
445	1.29862	585	1.03474	725	0.05171		
450	1.51623	590	1.00800	730	0.04503		
455	1.43852	595	0.97057	735	0.03916		
460	0.99055	600	0.92638	740	0.03419		
465	0.63442	605	0.87461	745	0.02985		
470	0.44144	610	0.81842	750	0.02616		
475	0.30193	615	0.75980	755	0.02296		
480	0.22103	620	0.70004	760	0.02013		
485	0.19653	625	0.63876	765	0.01760		

IES TM-30-18 Color Rendition Report



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

x 0.3452
y 0.3495
u' 0.2123
v' 0.4837

CIE 13.3-1995
(CRI)
Ra 72
Rg -29

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L22027.
Dialight unit model number F2UNJB8NDENVGN

Electrical Measurements:

Input Voltage: 120.0 (VAC)
Input current: 4.12 (A)
Input Power: 492.81 (W)
Power Factor: 0.9954

Photometric measurements:

Absolute Luminous Flux: 60530.7 (lumens)
Luminous Efficacy: 122.8 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	15384	15384	15384	15384	15384	
5.00	15680	15614	15501	14870	13901	1523
15.00	14381	11701	11900	11867	7624	3206
25.00	16339	11448	8955	9681	4960	4821
35.00	18727	12516	9932	8572	4151	6927
45.00	14717	15444	10379	7349	3877	7711
55.00	8439	22658	14698	4774	3519	8077
65.00	4480	28386	13892	3741	2790	7965
75.00	2707	16331	4022	2928	1825	4577
85.00	1713	2640	1068	989	670	727
90.00	0	0	0	0	0	

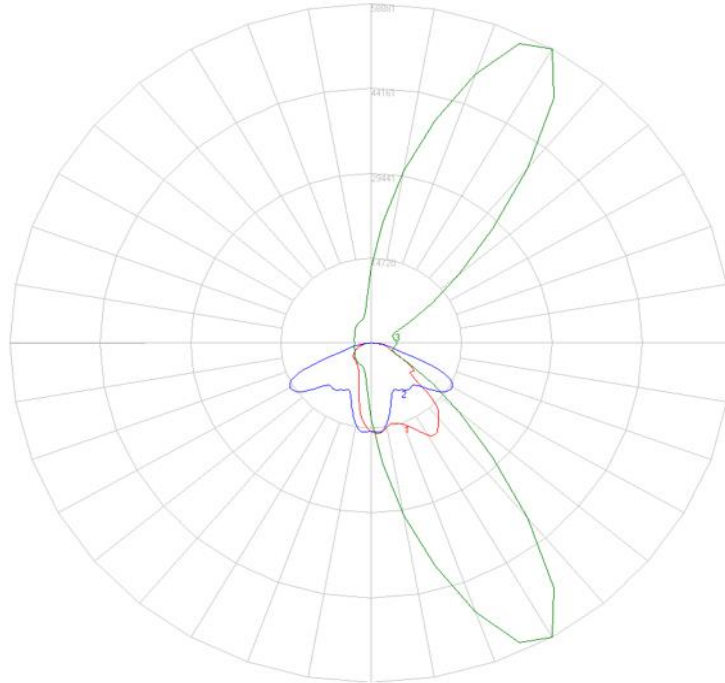
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	9467.99	15.64	15.64
0 to 40	16244.20	26.84	26.84
0 to 60	36110.57	59.66	59.66
0 to 90	60530.73	100.00	100.00
80 to 90	2007.63	3.32	3.32
90 to 180	0.00	0.00	0.00

Test Results: Goniometer

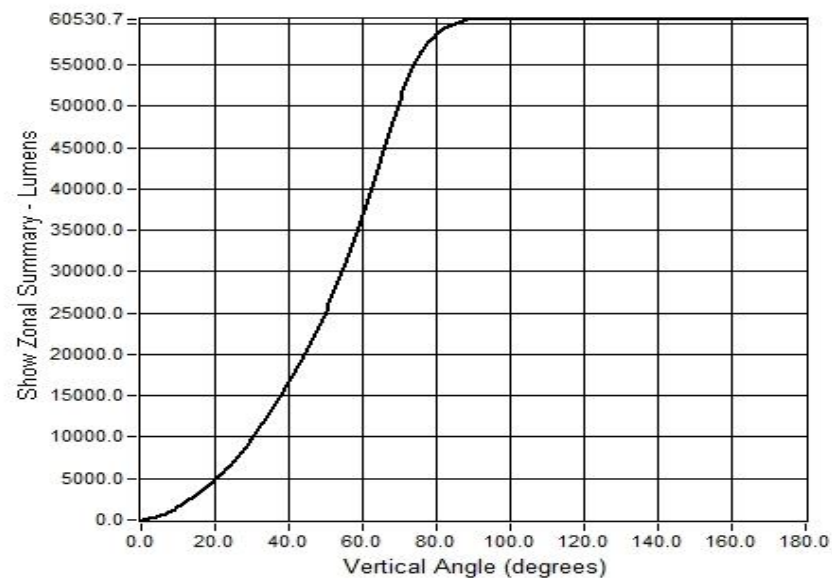
Results continued from previous page.

Polar Plot:



BUG Rating: 4 - 0 - 5

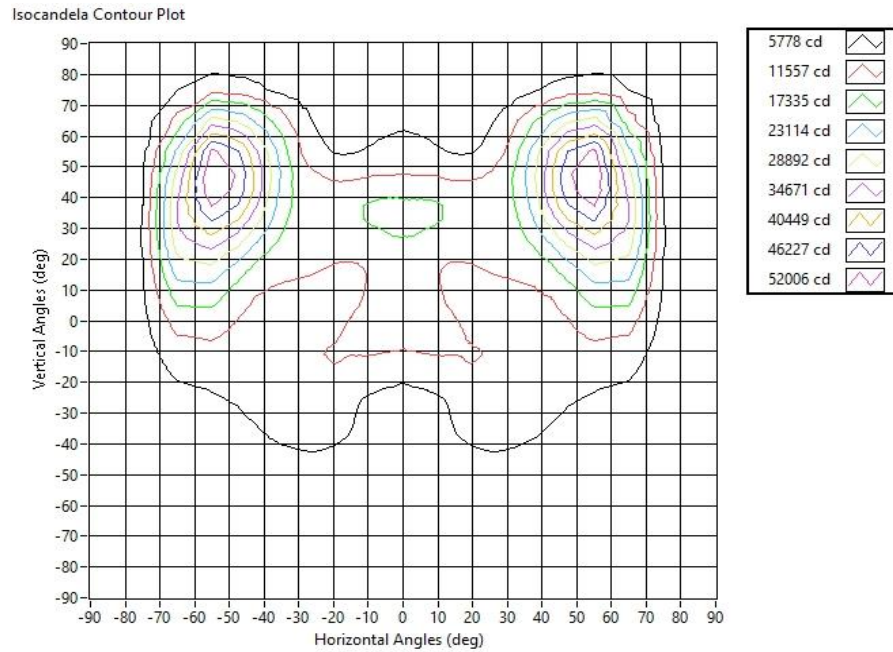
Zonal Flux Graph



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	3.59	11.47	3845.9
4	7.17	22.94	961.5
6	10.76	34.42	427.3
8	14.35	45.89	240.4
10	17.93	57.36	153.8
12	21.52	68.83	106.8
14	25.11	80.31	78.5
16	28.70	91.78	60.1
18	32.28	103.25	47.5
20	35.87	114.72	38.5

Test Results: In Situ Temperature Measurement Test

Results include maximum LED chip temperature for sample number L22027.

Dialight unit model number F2UNJB8NDENVGN

LED identified as Samsung part number LH231B.

LED drive current (as indicated by customer): 1100 (mA)

LED Specifications:

LED specifications are taken from LED manufacturer datasheet:

Maximum Forward Current (If): 2000 (mA)
Maximum Rated Power Dissipation: 6.4 (W)
Maximum Junction Temp. (Tj): 135 (°C)
Thermal Resistance (Rth): 2 (°C/W)

Derived Specifications:

Maximum Power at Indicated Current: 3.432 (W)
Maximum Source Temperature: 128.136 (°C)

Test Conditions:

Temperature Measurement Location: See Photographs Below

Ambient Temperature: $25^{\circ} \pm 5^{\circ}$ (°C)

Ambient temperature at time of measurement: 25.5 (°C)

Relative humidity at time of measurement: 23%

Results:

Measured LED source temperature: 67 (°C)



Equipment Used:

Equipment Name	Model Number
Omega TC	DPI8
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	
Omega Thermocouple	5TC-TT-K
Fluke 971 Humidity Meter	971
GwINSTEK DC Power Supply	GEP172679
Dialight Confirmation Sample	
Omega TC	TC-08
Labshere 2M sphere	Illumia Plus 2600-1
Labshere Controller	PM-150-140
Xitron Power Analyzer	XT2640
Xitron Power Analyzer	XT2640
LPS-525 DC Power Supply	LPS-525
Omega Temperature Controller	DP41-RTD-A
YOKOGAWA Digital Power Meter	WT310E
STS Luminous Intensity Standard Lamp for Type-C Cal	STD-EHD
STS Luminous Intensity Standard Lamp for Type-C Cal	STD-EHD
STS Luminous Intensity Standard Lamp for Type-C Cal	STD-EHD
Dialight Confirmation Sample	
Labshere calibration lamp for 2M sphere	SCL-1400
Labshere calibration lamp for 2M sphere	SCL-1400
Labshere calibration lamp for 2M sphere	SCL-1400
Labshere Spectrometer- CDS 2600 Spectrometer	CDS-2600

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.
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Approved Signatory