

Test Report

Report Number: L20092

Date: Jan 4, 2021

Issued by:

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

Test of one Flood Light NEMA 7x6
Unit manufacturer: Dialight Corporation
Unit model number: FS[D,U]-[7,R]7N-[2,8]Ex-xxx-xx

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 9, 2020 through December 9, 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

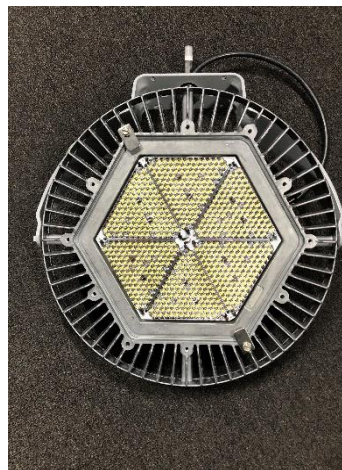
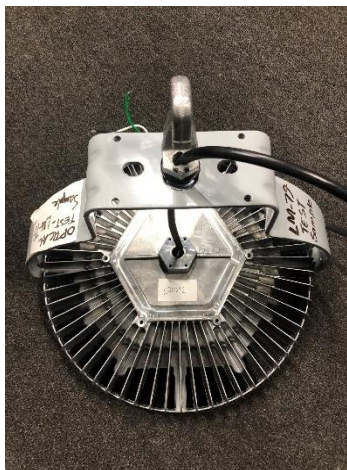
Description of sample:

Sample Number: L20092
Manufacturer: Dialight Corporation
Product Name: Flood Light
Description: Flood Light NEMA 7x6
Model Number: FS[D,U]-[7,R]7N-[2,8]Ex-xxx-xx

Report Summary

Sample number L20092
Dialight unit model number FS[D,U]-[7,R]7N-[2,8]Ex-xxx-xx

Photograph(s) of sample:



*Photographs not to scale. For reference only.

Summary of Results:

	<u>Integrating Sphere</u>	<u>Goniophotometer</u>
Luminous Flux:	26064 (lumens)	25960 (lumens)
Electrical Power:	185.2 (W)	184.1 (W)
Luminous Efficacy:	140.7 (lumens/W)	141 (lumens/W)

Electrical Measurements:

Input Power (120VAC): 185.2 (W)
 Power Factor (120VAC): 0.995556
 Current ATHD % (120VAC): 5.13583
 Input Power (277VAC): 178.8 (W)
 Power Factor (277VAC): 0.9617
 Current ATHD % (277VAC): 9.45

Color Measurements:

Correlated Color Temperature (CCT): 3910
 Color Rendering Index (CRI): 84.4465
 Chromaticity Coordinate (x): 0.384
 Chromaticity Coordinate (y): 0.378
 Chromaticity Coordinate (u'): 0.227
 Chromaticity Coordinate (v'): 0.335
 DUV: -0.0006

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20092.
Dialight unit model number FS[D,U]-[7,R]7N-[2,8]Ex-xxx-xx

Test Conditions:

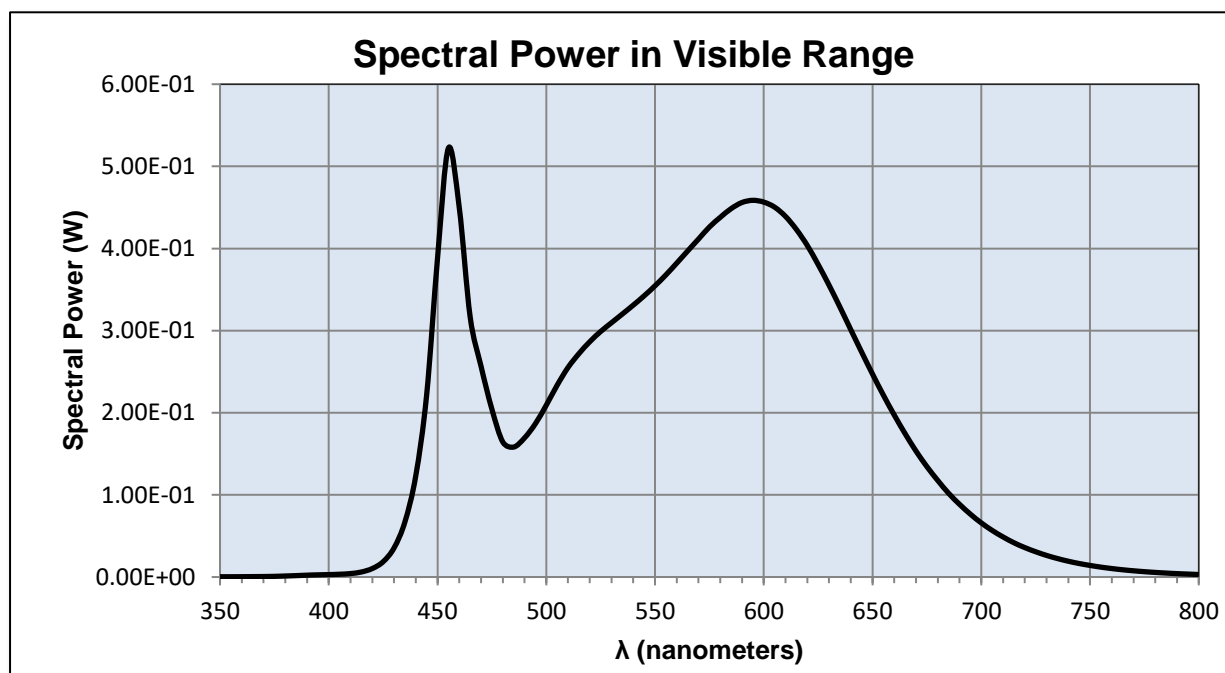
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
Input Current: 1.55796 (A)
Input Power: 185.2 (W)
Input Power Factor: 0.995556
Current ATHD: 5.13583 (%)

Photometric measurements:

Luminous Flux: 26063.9 (lumens)
Luminous Efficacy: 140.7 (lumens/W)
Correlated Color Temperature (CCT): 3910 (K)
CRI -Ra: 84.4465
CRI -R9: 16.1686
DUV: -0.0006
CIE Coordinate (x): 0.384
CIE Coordinate (y): 0.378
CIE Coordinate (u'): 0.227
CIE Coordinate (v'): 0.335
TM30_Rf: 81.7
TM30_Rg: 93.6
TM30_Rcs_hue1: -11.35 %



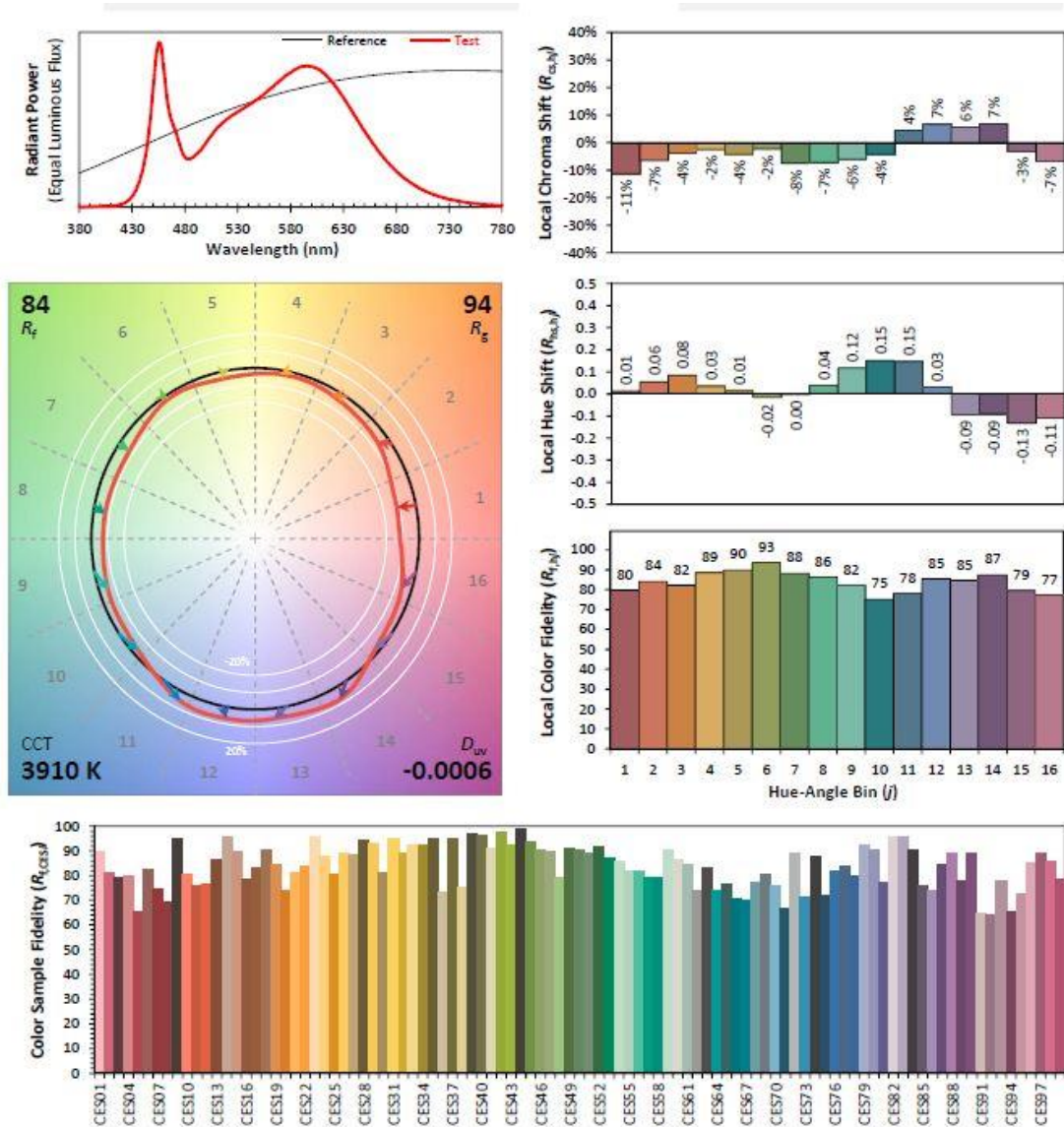
Test Results: Integrating Sphere

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	0.00035	490	0.16934	630	0.35539	770	0.00759
355	0.00033	495	0.18668	635	0.32873	775	0.00651
360	0.00040	500	0.20922	640	0.30115	780	0.00560
365	0.00050	505	0.23352	645	0.27385	785	0.00482
370	0.00062	510	0.25513	650	0.24708	790	0.00414
375	0.00084	515	0.27192	655	0.22140	795	0.00358
380	0.00124	520	0.28645	660	0.19720	800	0.00308
385	0.00172	525	0.29892	665	0.17445		
390	0.00227	530	0.30961	670	0.15337		
395	0.00266	535	0.32024	675	0.13445		
400	0.00296	540	0.33102	680	0.11755		
405	0.00341	545	0.34234	685	0.10189		
410	0.00422	550	0.35455	690	0.08853		
415	0.00614	555	0.36783	695	0.07651		
420	0.01032	560	0.38222	700	0.06593		
425	0.01866	565	0.39696	705	0.05677		
430	0.03539	570	0.41147	710	0.04882		
435	0.06709	575	0.42610	715	0.04175		
440	0.12322	580	0.43792	720	0.03585		
445	0.22178	585	0.44853	725	0.03081		
450	0.38821	590	0.45600	730	0.02633		
455	0.52226	595	0.45862	735	0.02252		
460	0.44937	600	0.45646	740	0.01925		
465	0.31677	605	0.45028	745	0.01645		
470	0.25669	610	0.43902	750	0.01412		
475	0.20430	615	0.42313	755	0.01204		
480	0.16444	620	0.40370	760	0.01033		
485	0.15823	625	0.38047	765	0.00883		

IES TM-30-18 Color Rendition Report



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

x 0.3840
y 0.3776
u' 0.2271
v' 0.5025

CIE 13.3-1995 (CRI)	
R _a	84
R ₉	16

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20092.
Dialight unit model number FS[D,U]-[7,R]7N-[2,8]Ex-xxx-xx

Electrical Measurements:

Input Voltage: 120 (VAC)
Input current: 1.5438 (A)
Input Power: 184.1 (W)
Power Factor: 0.9943

Photometric measurements:

Absolute Luminous Flux: 25959.9 (lumens)
Luminous Efficacy: 141.0 (lumens/W)

Intensity Summary:

Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	15619	15605	15599	15602	15619	
5.00	15204	15390	15558	15342	15122	1550
15.00	11740	13173	15279	13242	11593	3544
25.00	9232	10644	14939	10511	8996	4725
35.00	7798	8811	13356	8517	7379	5389
45.00	5328	7059	10049	6528	4209	4596
55.00	1474	3837	6450	3057	728	2114
65.00	124	607	2646	325	126	522
75.00	56	75	125	86	53	74
85.00	8	8	6	5	4	3
90.00	1	1	1	1	1	

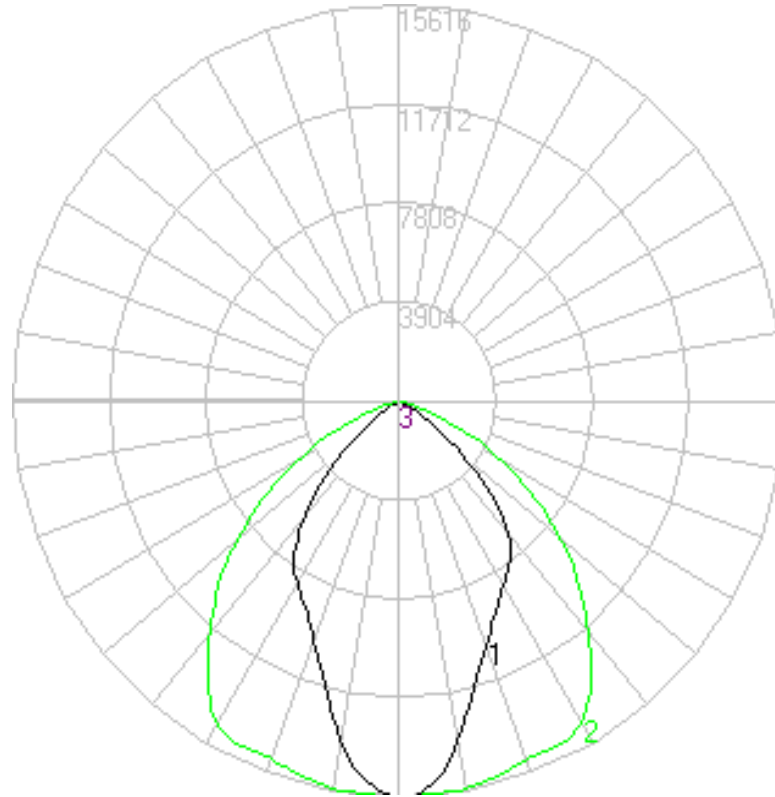
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	10440.41	40.22	40.22
0 to 40	16332.22	62.91	62.91
0 to 60	24619.81	94.84	94.84
0 to 90	25959.87	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	25959.87	100.00	100.00

Test Results: Goniometer

Results continued from previous page.

Polar Plot:



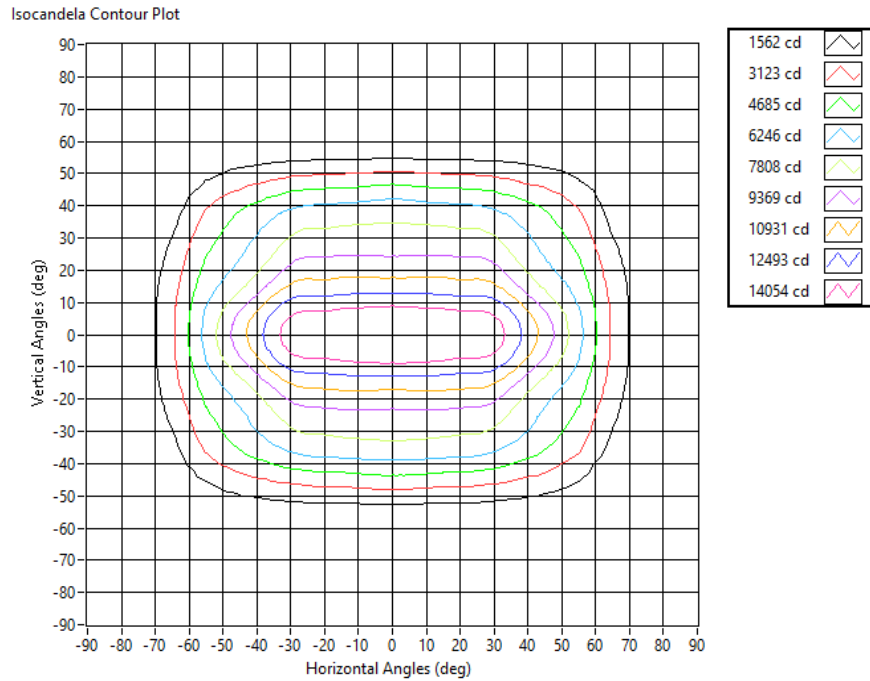
Characteristics

NEMA Type	7 H x 6 V
Maximum Candela	15615.8
Maximum Candela Angle	0 H 1 V
Horizontal Beam Angle (50%)	103.9
Vertical Beam Angle (50%)	67.7
Horizontal Field Angle (10%)	139.7
Vertical Field Angle (10%)	107.3
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	16796
Beam Efficiency	N.A.
Field Lumens	25301
Field Efficiency	N.A.
Spill Lumens	751
Luminaire Lumens	26053

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	2.70	5.28	3901.3
4	5.40	10.57	975.3
6	8.10	15.85	433.5
8	10.79	21.13	243.8
10	13.49	26.42	156.1
12	16.19	31.70	108.4
14	18.89	36.98	79.6
16	21.59	42.27	61.0
18	24.29	47.55	48.2
20	26.99	52.83	39.0

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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 Optical Engineer
 Approved Signatory