

# Test Report

Report Number: L20091

Date: Jan 4, 2021

Issued by:

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

Test of one Flood Light NEMA 6  
Unit manufacturer: Dialight Corporation  
Unit model number: FS[D,U]-[7,R]6N-[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 10, 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

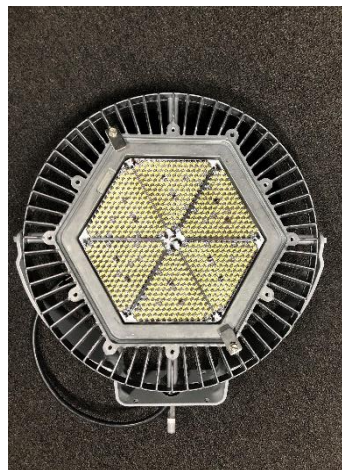
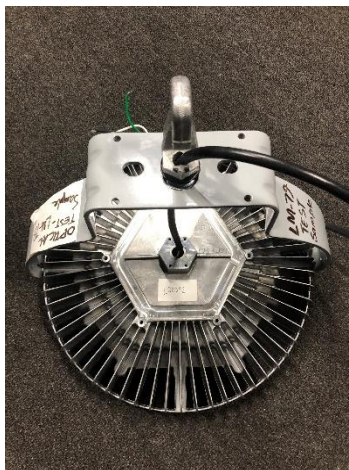
**Description of sample:**

Sample Number: L20091  
Manufacturer: Dialight Corporation  
Product Name: Flood Light  
Description: Flood Light NEMA 6  
Model Number: FS[D,U]-[7,R]6N-[2,8]Ex-xxx-xx

## Report Summary

Sample number L20091  
Dialight unit model number FS[D,U]-[7,R]6N-[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:	26782 (lumens)	26502 (lumens)
Electrical Power:	185.7 (W)	184.1 (W)
Luminous Efficacy:	144.2 (lumens/W)	143.9 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 185.7 (W)  
 Power Factor (120VAC): 0.995516  
 Current ATHD % (120VAC): 5.01027  
 Input Power (277VAC): 179.3 (W)  
 Power Factor (277VAC): 0.961  
 Current ATHD % (277VAC): 9.527

### Color Measurements:

Correlated Color Temperature (CCT): 4016  
 Color Rendering Index (CRI): 83.3751  
 Chromaticity Coordinate (x): 0.381  
 Chromaticity Coordinate (y): 0.380  
 Chromaticity Coordinate (u'): 0.224  
 Chromaticity Coordinate (v'): 0.335  
 DUV: 0.0014

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L20091.  
Dialight unit model number FS[D,U]-[7,R]6N-[2,8]Ex-xxx-xx

### Test Conditions:

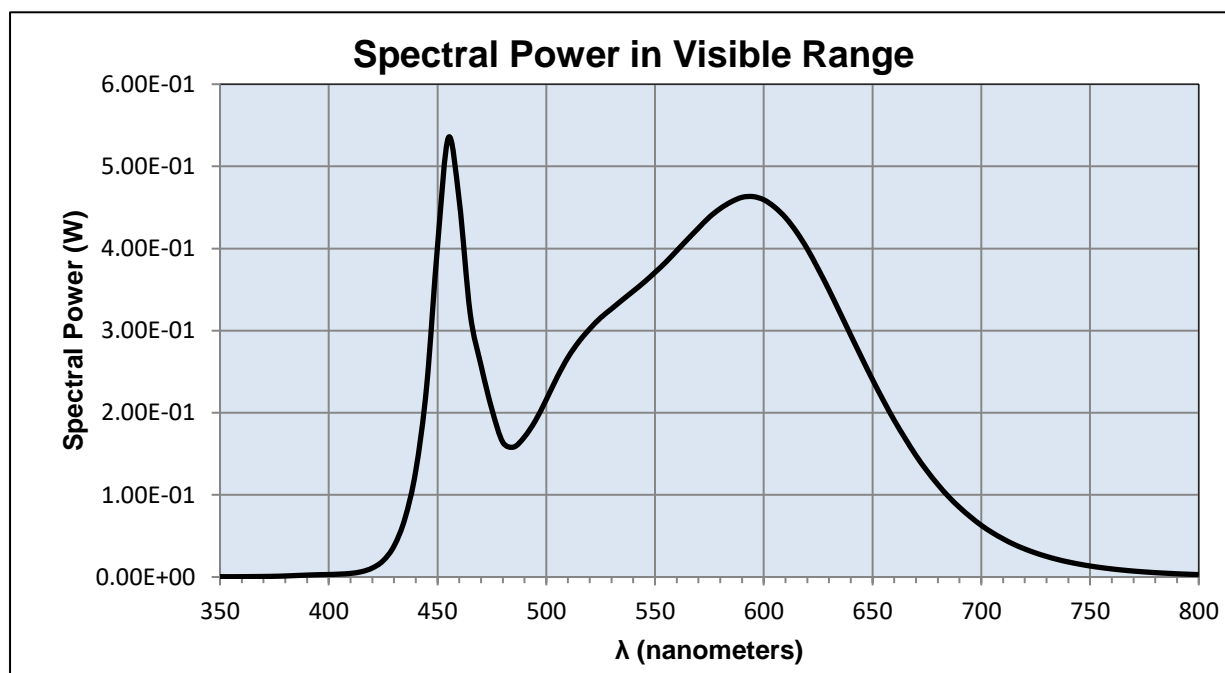
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 1.55347 (A)  
Input Power: 185.7 (W)  
Input Power Factor: 0.995516  
Current ATHD: 5.01027 (%)

### Photometric measurements:

Luminous Flux: 26781.63 (lumens)  
Luminous Efficacy: 144.2 (lumens/W)  
Correlated Color Temperature (CCT): 4016 (K)  
CRI -Ra: 83.3751  
CRI -R9: 10.5223  
DUV: 0.0014  
CIE Coordinate (x): 0.381  
CIE Coordinate (y): 0.380  
CIE Coordinate (u'): 0.224  
CIE Coordinate (v'): 0.335  
TM30\_Rf: 81.1  
TM30\_Rg: 92.8  
TM30\_Rcs\_hue1: -11.94 %



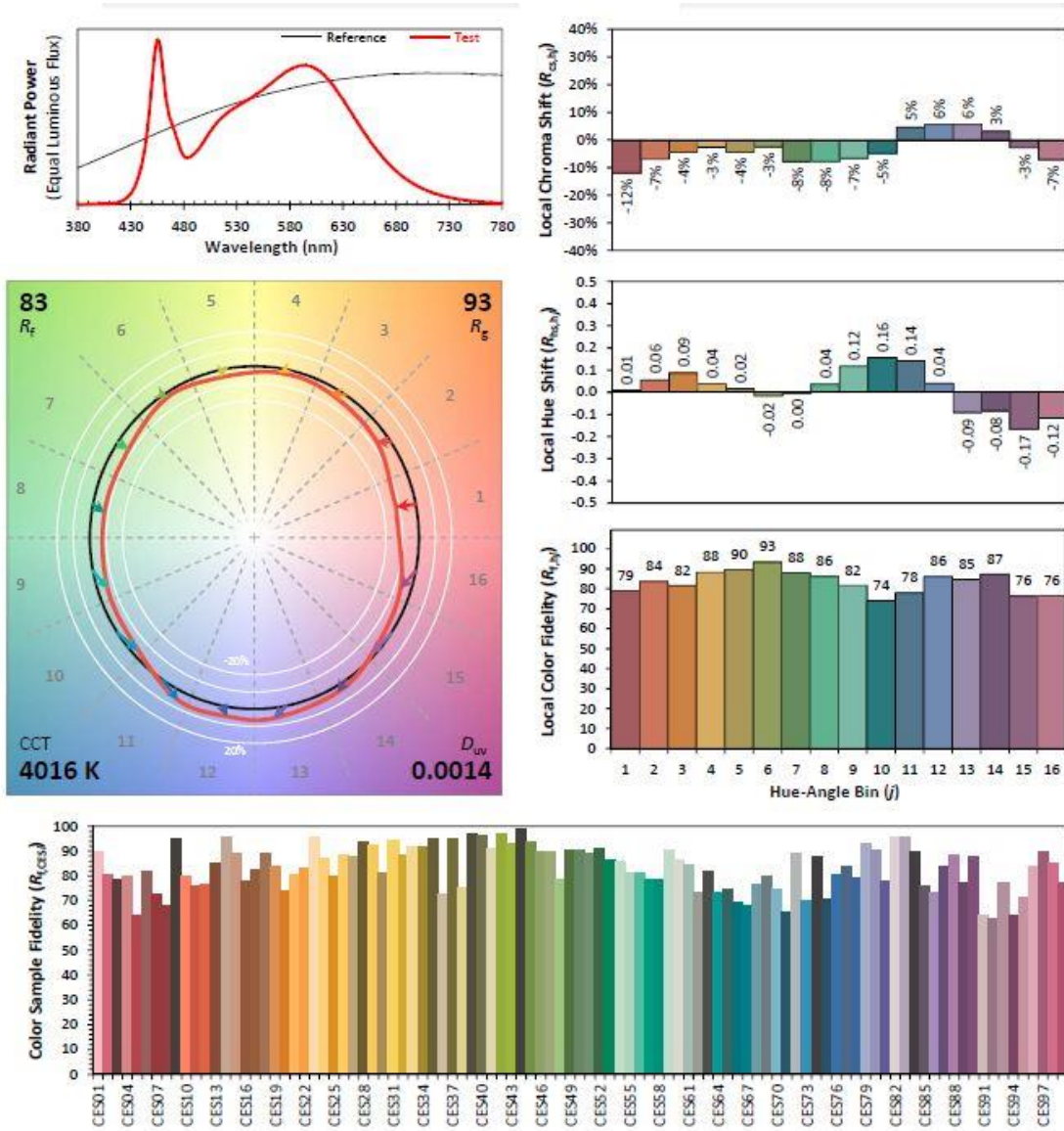
## Test Results: Integrating Sphere

Results continued from previous page.

### Tabulated Spectral Power in Visible Range:

$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)	$\lambda$ (nm)	(W/nm)
350	0.00040	490	0.17062	630	0.34939	770	0.00723
355	0.00039	495	0.19035	635	0.32200	775	0.00622
360	0.00045	500	0.21598	640	0.29435	780	0.00533
365	0.00054	505	0.24334	645	0.26711	785	0.00463
370	0.00071	510	0.26749	650	0.24037	790	0.00396
375	0.00091	515	0.28657	655	0.21487	795	0.00342
380	0.00129	520	0.30217	660	0.19071	800	0.00296
385	0.00183	525	0.31566	665	0.16872		
390	0.00236	530	0.32649	670	0.14787		
395	0.00281	535	0.33746	675	0.12939		
400	0.00308	540	0.34805	680	0.11276		
405	0.00355	545	0.35896	685	0.09775		
410	0.00442	550	0.37089	690	0.08479		
415	0.00646	555	0.38341	695	0.07331		
420	0.01096	560	0.39732	700	0.06299		
425	0.01989	565	0.41127	705	0.05415		
430	0.03776	570	0.42487	710	0.04653		
435	0.07116	575	0.43817	715	0.03978		
440	0.12944	580	0.44865	720	0.03416		
445	0.23215	585	0.45675	725	0.02928		
450	0.40301	590	0.46229	730	0.02506		
455	0.53503	595	0.46318	735	0.02142		
460	0.45760	600	0.45934	740	0.01834		
465	0.32125	605	0.45035	745	0.01572		
470	0.25773	610	0.43756	750	0.01342		
475	0.20416	615	0.42036	755	0.01153		
480	0.16412	620	0.39956	760	0.00985		
485	0.15822	625	0.37519	765	0.00845		

**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 0.3799  
u' 0.2240  
v' 0.5030

CIE 13.3-1995 (CRI)	
$R_a$	83
$R_g$	11

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L20091.  
Dialight unit model number FS[D,U]-[7,R]6N-[2,8]Ex-xxx-xx

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input current: 1.5407 (A)  
Input Power: 184.1 (W)  
Power Factor: 0.9944

### Photometric measurements:

Absolute Luminous Flux: 26502.3 (lumens)  
Luminous Efficacy: 143.9 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	25478	25521	25546	25534	25478	
5.00	25134	24745	24442	24448	24558	2513
15.00	18739	18625	18332	18362	17786	5196
25.00	11262	11382	11314	11112	10800	5147
35.00	8275	8246	8342	8184	8164	5172
45.00	6651	6616	6638	6640	6575	5127
55.00	3790	3727	3635	3695	3352	3243
65.00	404	403	406	412	325	378
75.00	82	79	85	82	81	87
85.00	7	7	8	8	6	4
90.00	1	1	1	1	1	

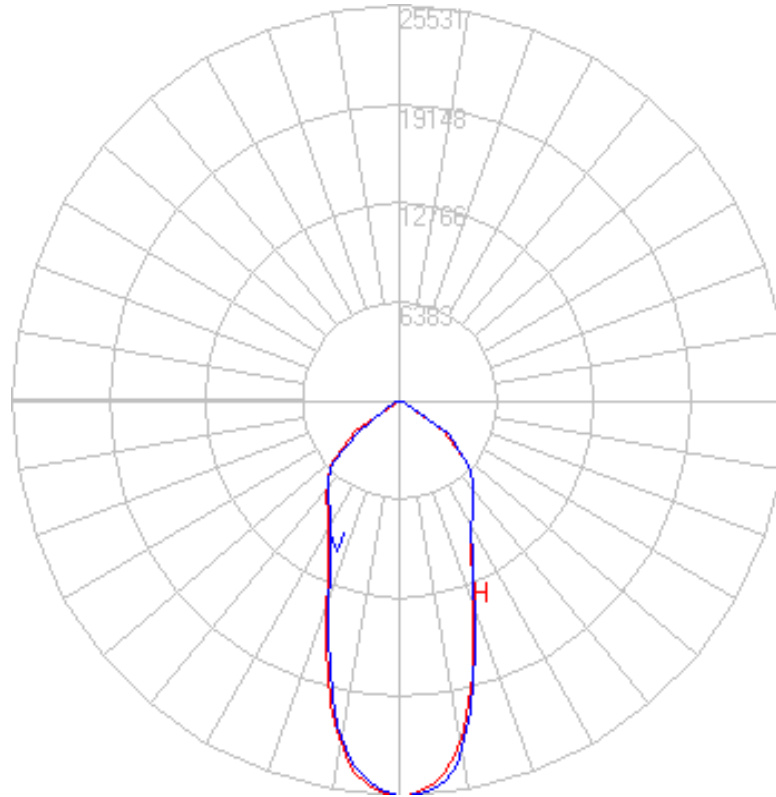
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	12507.70	47.19	47.19
0 to 40	17687.66	66.74	66.74
0 to 60	25889.73	97.69	97.69
0 to 90	26502.34	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	26502.34	100.00	100.00

## Test Results: Goniometer

Results continued from previous page.

**Polar Plot:**



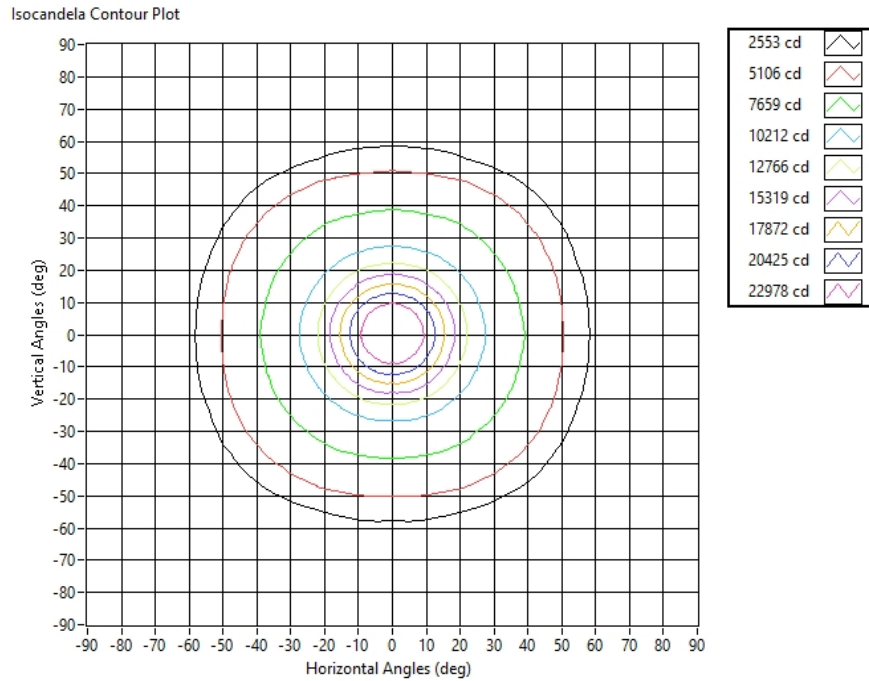
**Characteristics**

NEMA Type	6 H x 6 V
Maximum Candela	25531.131
Maximum Candela Angle	0 H 0 V
Horizontal Beam Angle (50%)	44.0
Vertical Beam Angle (50%)	43.8
Horizontal Field Angle (10%)	116.3
Vertical Field Angle (10%)	116.3
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	8532
Beam Efficiency	N.A.
Field Lumens	25231
Field Efficiency	N.A.
Spill Lumens	1422
Luminaire Lumens	26654

## 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	1.63	1.54	6382.8
4	3.26	3.08	1595.7
6	4.89	4.62	709.2
8	6.52	6.16	398.9
10	8.15	7.70	255.3
12	9.78	9.24	177.3
14	11.41	10.78	130.3
16	13.03	12.32	99.7
18	14.66	13.87	78.8
20	16.29	15.41	63.8



**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