

# Test Report

Report Number: L21006

Date: Jan 19, 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-44B2-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:** January 4, 2021 through January 4, 2021

**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: L21006

Manufacturer: Dialight Corporation

Product Name: PC Window, NEMA4, 70 CRI CW, 100-277V, 30K

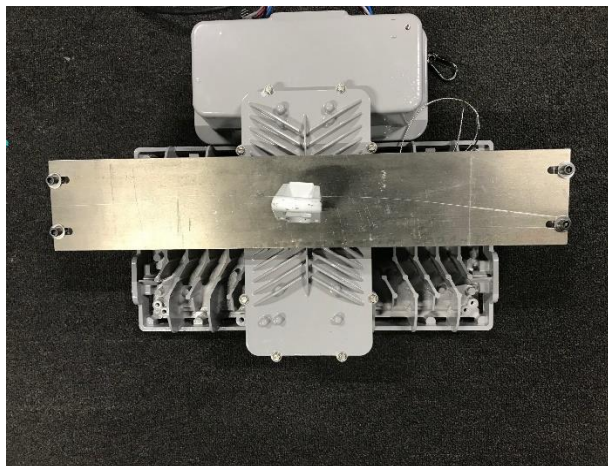
Description: F1 - Flood Light

Model Number: F1x-44B2-Fxxx-xxx

## Report Summary

Sample number L21006  
Dialight unit model number F1x-44B2-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:	28743 (lumens)	28963 (lumens)
Electrical Power:	242.1 (W)	240.0 (W)
Luminous Efficacy:	118.7 (lumens/W)	120.7 (lumens/W)

### Electrical Measurements:

Input Power (120VAC): 242.1 (W)  
Power Factor (120VAC): 0.9956  
Current ATHD % (120VAC): 5.04  
Input Power (277VAC): 231.8 (W)  
Power Factor (277VAC): 0.9567  
Current ATHD % (277VAC): 10.1

### Color Measurements:

Correlated Color Temperature (CCT): 5119  
Color Rendering Index (CRI): 71.9618  
Chromaticity Coordinate (x): 0.342  
Chromaticity Coordinate (y): 0.349  
Chromaticity Coordinate (u'): 0.210  
Chromaticity Coordinate (v'): 0.322

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21006.

Dialight unit model number F1x-44B2-Fxxx-xxx

### Test Conditions:

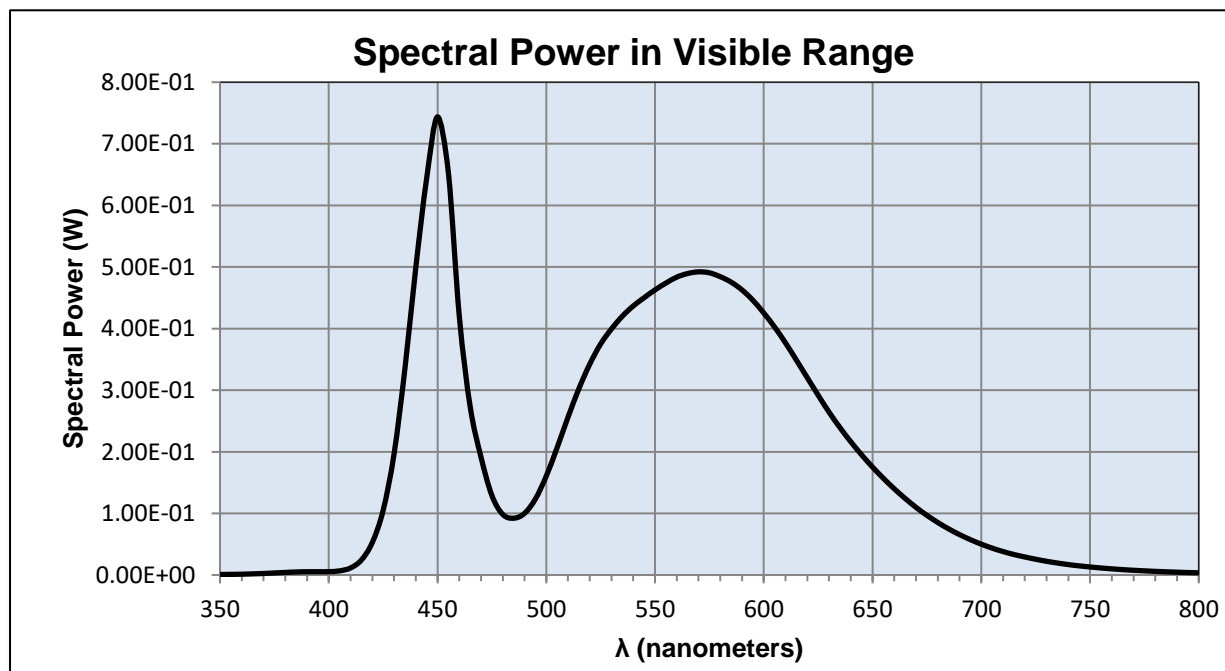
Ambient Temperature: 25 ± 1 (°C)

### Electrical Measurements:

Input Voltage: 120 (VAC)  
Input Current: 2.035 (A)  
Input Power: 242.1 (W)  
Input Power Factor: 0.9956  
Current ATHD: 5.04 (%)

### Photometric measurements:

Luminous Flux: 28742.59 (lumens)  
Luminous Efficacy: 118.7 (lumens/W)  
Correlated Color Temperature (CCT): 5119 (K)  
CRI -Ra: 71.9618  
CRI -R9: -29.8878  
DUV: 0.0001  
CIE Coordinate (x): 0.342  
CIE Coordinate (y): 0.349  
CIE Coordinate (u'): 0.210  
CIE Coordinate (v'): 0.322  
TM30\_Rf: 69.6  
TM30\_Rg: 93.7  
TM30\_Rcs\_hue1: -17.91 %



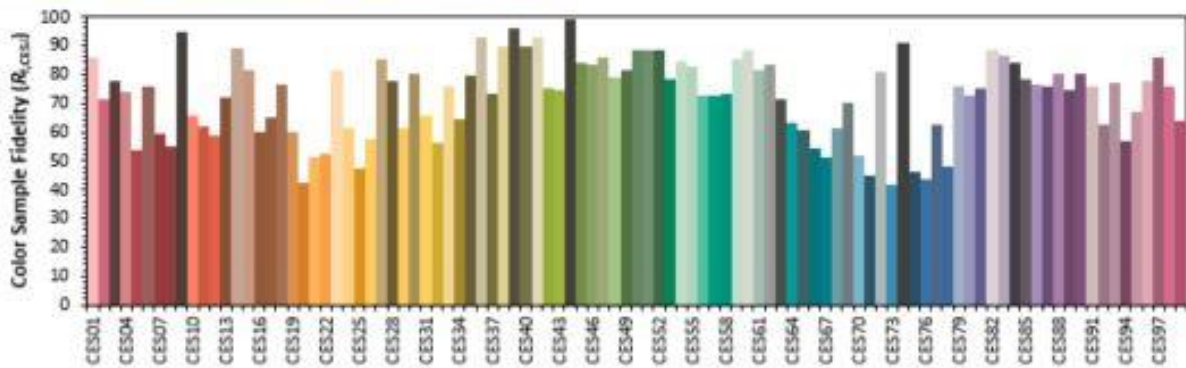
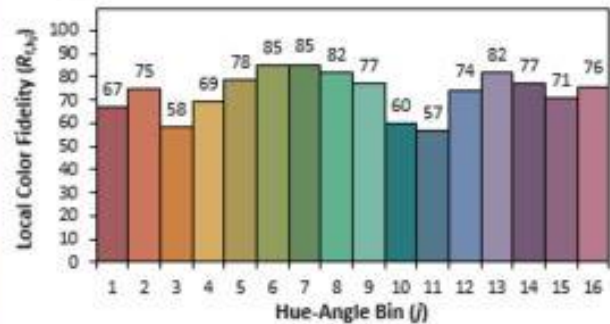
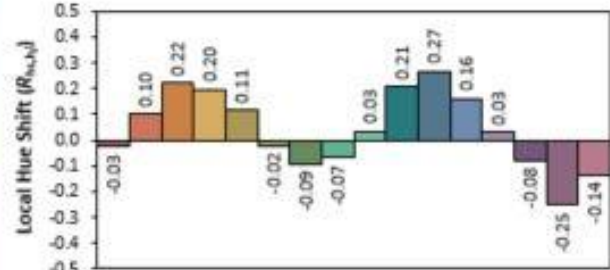
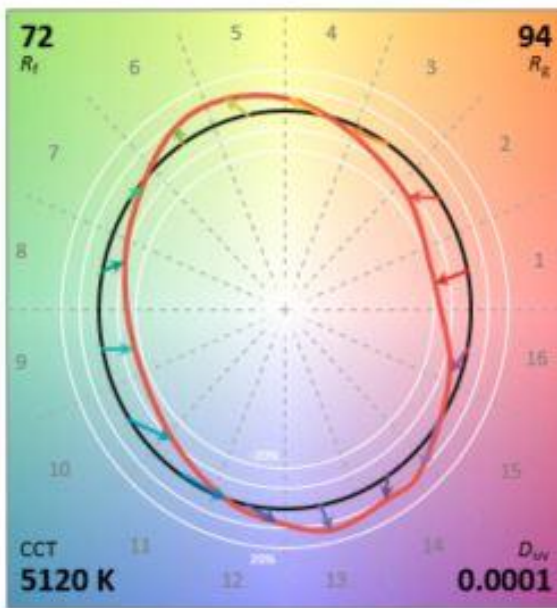
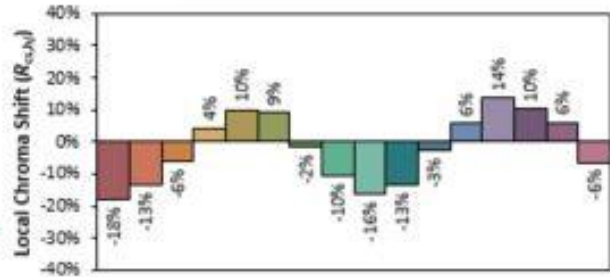
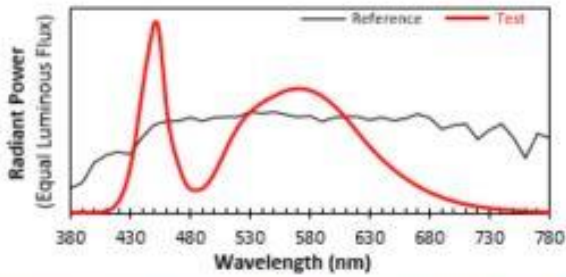
## Test Results: Integrating Sphere

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)
<b>350</b>	0.00092	<b>490</b>	0.10014	<b>630</b>	0.26446	<b>770</b>	0.00771
<b>355</b>	0.00107	<b>495</b>	0.12344	<b>635</b>	0.23944	<b>775</b>	0.00678
<b>360</b>	0.00138	<b>500</b>	0.16060	<b>640</b>	0.21634	<b>780</b>	0.00595
<b>365</b>	0.00188	<b>505</b>	0.20693	<b>645</b>	0.19505	<b>785</b>	0.00522
<b>370</b>	0.00251	<b>510</b>	0.25630	<b>650</b>	0.17528	<b>790</b>	0.00460
<b>375</b>	0.00337	<b>515</b>	0.30251	<b>655</b>	0.15695	<b>795</b>	0.00403
<b>380</b>	0.00423	<b>520</b>	0.34235	<b>660</b>	0.13995	<b>800</b>	0.00356
<b>385</b>	0.00496	<b>525</b>	0.37510	<b>665</b>	0.12433		
<b>390</b>	0.00537	<b>530</b>	0.39960	<b>670</b>	0.10984		
<b>395</b>	0.00541	<b>535</b>	0.42028	<b>675</b>	0.09692		
<b>400</b>	0.00549	<b>540</b>	0.43678	<b>680</b>	0.08530		
<b>405</b>	0.00679	<b>545</b>	0.45018	<b>685</b>	0.07490		
<b>410</b>	0.01148	<b>550</b>	0.46286	<b>690</b>	0.06563		
<b>415</b>	0.02437	<b>555</b>	0.47391	<b>695</b>	0.05745		
<b>420</b>	0.05272	<b>560</b>	0.48361	<b>700</b>	0.05012		
<b>425</b>	0.10510	<b>565</b>	0.48946	<b>705</b>	0.04366		
<b>430</b>	0.19630	<b>570</b>	0.49215	<b>710</b>	0.03813		
<b>435</b>	0.33485	<b>575</b>	0.49062	<b>715</b>	0.03333		
<b>440</b>	0.49867	<b>580</b>	0.48430	<b>720</b>	0.02933		
<b>445</b>	0.64376	<b>585</b>	0.47543	<b>725</b>	0.02560		
<b>450</b>	0.74384	<b>590</b>	0.46278	<b>730</b>	0.02233		
<b>455</b>	0.65258	<b>595</b>	0.44604	<b>735</b>	0.01948		
<b>460</b>	0.42017	<b>600</b>	0.42544	<b>740</b>	0.01696		
<b>465</b>	0.27368	<b>605</b>	0.40241	<b>745</b>	0.01488		
<b>470</b>	0.19130	<b>610</b>	0.37673	<b>750</b>	0.01306		
<b>475</b>	0.12903	<b>615</b>	0.34883	<b>755</b>	0.01146		
<b>480</b>	0.09839	<b>620</b>	0.32037	<b>760</b>	0.01002		
<b>485</b>	0.09221	<b>625</b>	0.29197	<b>765</b>	0.00878		

**IES TM-30-18 Color Rendition Report**



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

$x$  0.3418  
 $y$  0.3491  
 $u'$  0.2102  
 $v'$  0.4830

CIE 13.3-1995  
(CRI)  
 $R_a$  72  
 $R_g$  -30



## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21006.  
Dialight unit model number F1x-44B2-Fxxx-xxx

### Electrical Measurements:

Input Voltage: 119.79 (VAC)  
Input current: 2.0128 (A)  
Input Power: 240.0 (W)  
Power Factor: 0.9952

### Photometric measurements:

Absolute Luminous Flux: 28962.7 (lumens)  
Luminous Efficacy: 120.7 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

H/V	0.00	45.00	90.00	135.00	180.00	Lumens
0.00	72074	72373	72507	72217	72074	
5.00	65788	64284	62860	64703	66360	6663
15.00	48285	44439	42332	45034	48642	13256
25.00	12705	8696	6801	11959	16872	5867
35.00	1882	1278	1140	1280	1984	1049
45.00	954	669	658	684	996	667
55.00	617	498	480	502	636	517
65.00	405	342	333	364	424	386
75.00	166	132	144	162	196	178
85.00	11	7	8	14	21	8
90.00	1	1	1	1	2	

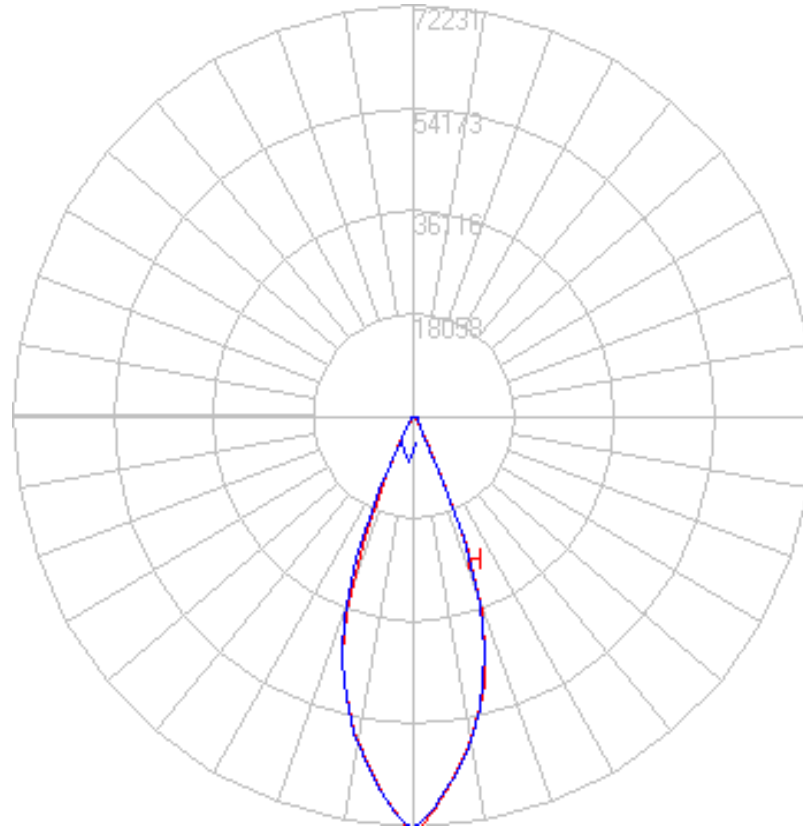
#### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0 to 30	26231.47	90.57	90.57
0 to 40	27270.19	94.16	94.16
0 to 60	28376.91	97.98	97.98
0 to 90	28962.75	100.00	100.00
90 to 180	0.00	0.00	0.00
0 to 180	28962.75	100.00	100.00

## Test Results: Goniometer

Results continued from previous page.

**Polar Plot:**



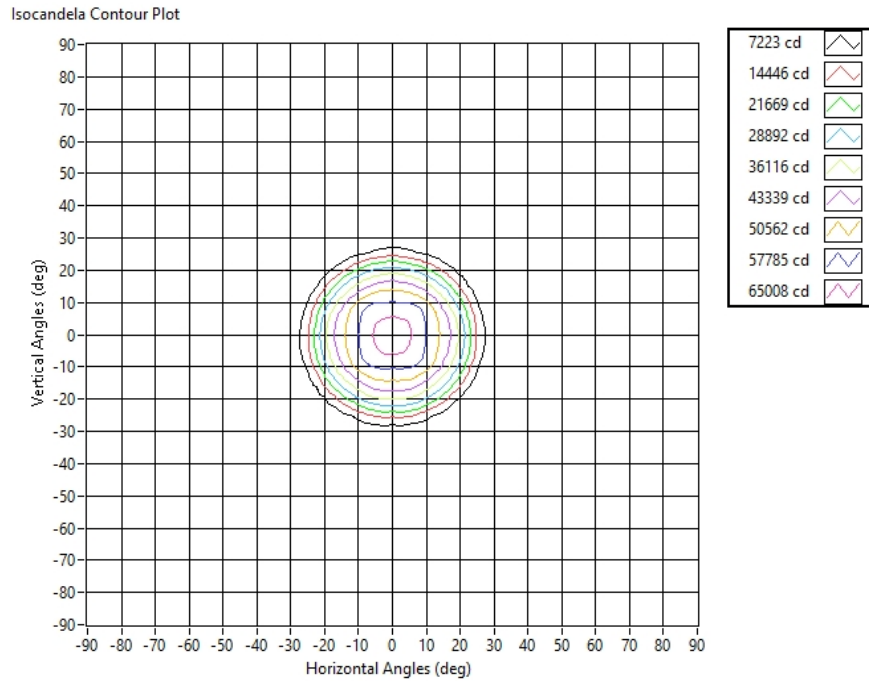
**Characteristics**

NEMA Type	4 H x 4 V
Maximum Candela	72231.156
Maximum Candela Angle	0 H 0 V
Horizontal Beam Angle (50%)	39.2
Vertical Beam Angle (50%)	39.1
Horizontal Field Angle (10%)	54.7
Vertical Field Angle (10%)	55.3
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Beam Lumens	18688
Beam Efficiency	N.A.
Field Lumens	25591
Field Efficiency	N.A.
Spill Lumens	3481
Luminaire Lumens	29072
Total Efficiency	N.A.
Total Luminaire Watts	240
Ballast Factor	1.00

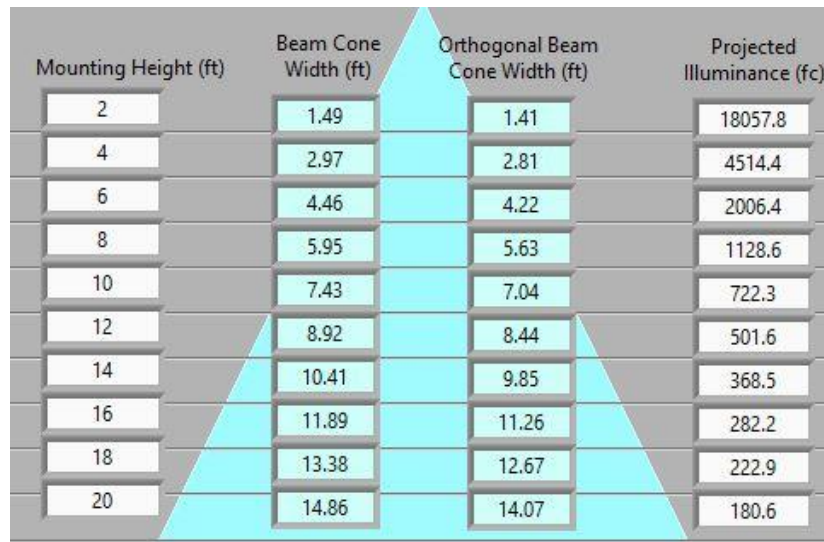
## Test Results: Goniometer

Results continued from previous page.

### Illuminance Plot:



### Illuminance-Cone of Light:





**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.

Test Report Issued By:

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 Dialight Optics Laboratory  
 Senior Optical Engineering Technician  
 Lighting Division

Test Report Reviewed and Approved By:

Vishnu Shastry  
 Dialight Optics Laboratory  
 Optical Engineer  
 Approved Signatory