

# Test Report

Report Number: L21010

Date: Jan 20, 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-N7B5-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 6, 2021 through January 6, 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

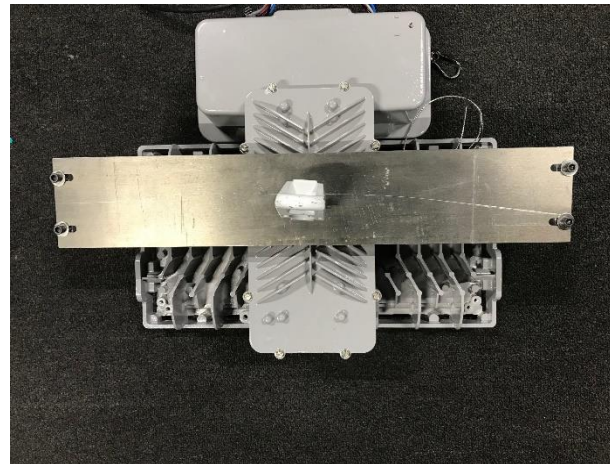
**Description of sample:**

Sample Number: L21010  
Manufacturer: Dialight Corporation  
Product Name: No Window, NEMA7x6, 70 CRI CW, 347-480V, 30K  
Description: F1 - Flood Light  
Model Number: F1x-N7B5-Fxxx-xxx

## Report Summary

Sample number L21010  
Dialight unit model number F1x-N7B5-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:     | 32033 (lumens)            | 31952 (lumens)         |
| Electrical Power:  | 238.1 (W)                 | 237.8 (W)              |
| Luminous Efficacy: | 134.6 (lumens/W)          | 134.4 (lumens/W)       |

### Electrical Measurements:

Input Power (480VAC): 238.1 (W)  
 Power Factor (480VAC): 0.98134  
 Current ATHD % (480VAC): 6.75017  
 Input Power (347VAC): 236.9 (W)  
 Power Factor (347VAC): 0.9473  
 Current ATHD % (347VAC): 9.784

### Color Measurements:

Correlated Color Temperature (CCT): 5139  
 Color Rendering Index (CRI): 71.4324  
 Chromaticity Coordinate (x): 0.341  
 Chromaticity Coordinate (y): 0.349  
 Chromaticity Coordinate (u'): 0.210  
 Chromaticity Coordinate (v'): 0.322  
 DUV: 0.0000

## Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21010.

Dialight unit model number F1x-N7B5-Fxxx-xxx

### Test Conditions:

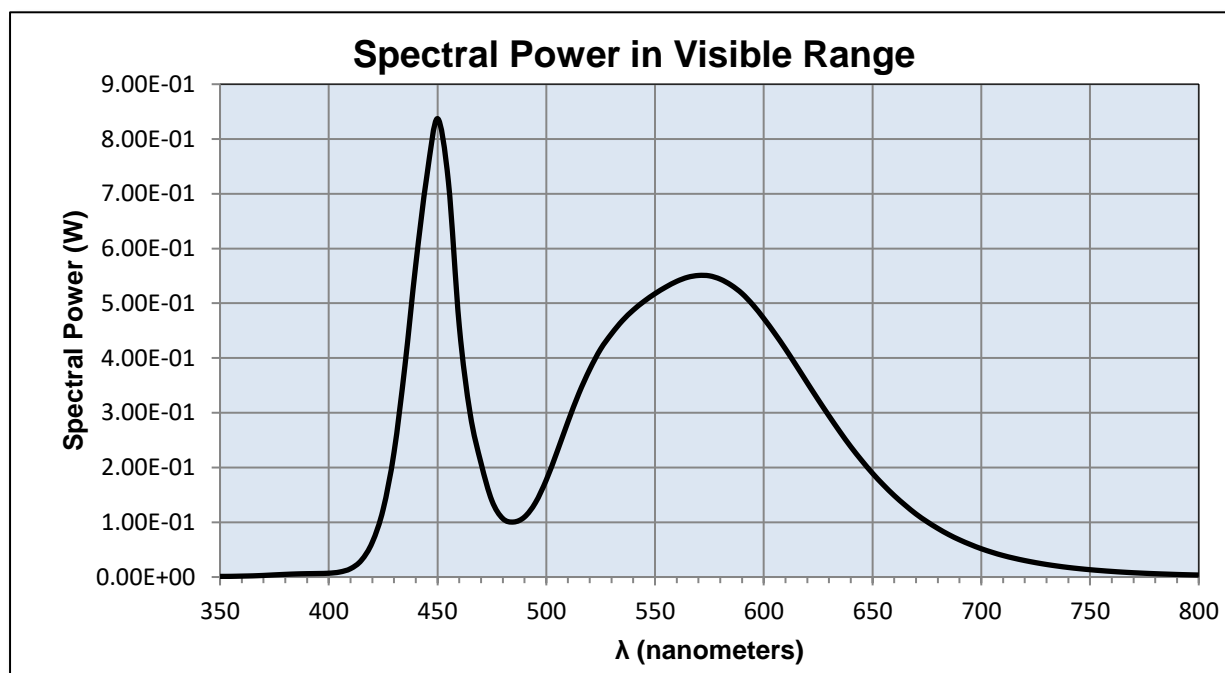
Ambient Temperature:  $25 \pm 1$  (°C)

### Electrical Measurements:

Input Voltage: 347 (VAC)  
 Input Current: 0.699212 (A)  
 Input Power: 238.1 (W)  
 Input Power Factor: 0.98134  
 Current ATHD: 6.75017 (%)

### Photometric measurements:

Luminous Flux: 32032.57 (lumens)  
 Luminous Efficacy: 134.6 (lumens/W)  
 Correlated Color Temperature (CCT): 5139 (K)  
 CRI -Ra: 71.4324  
 CRI -R9: -32.3224  
 DUV: 0.0000  
 CIE Coordinate (x): 0.341  
 CIE Coordinate (y): 0.349  
 CIE Coordinate (u'): 0.210  
 CIE Coordinate (v'): 0.322  
 TM30\_Rf: 68.9  
 TM30\_Rg: 93.6  
 TM30\_Rcs\_hue1: -18.28 %



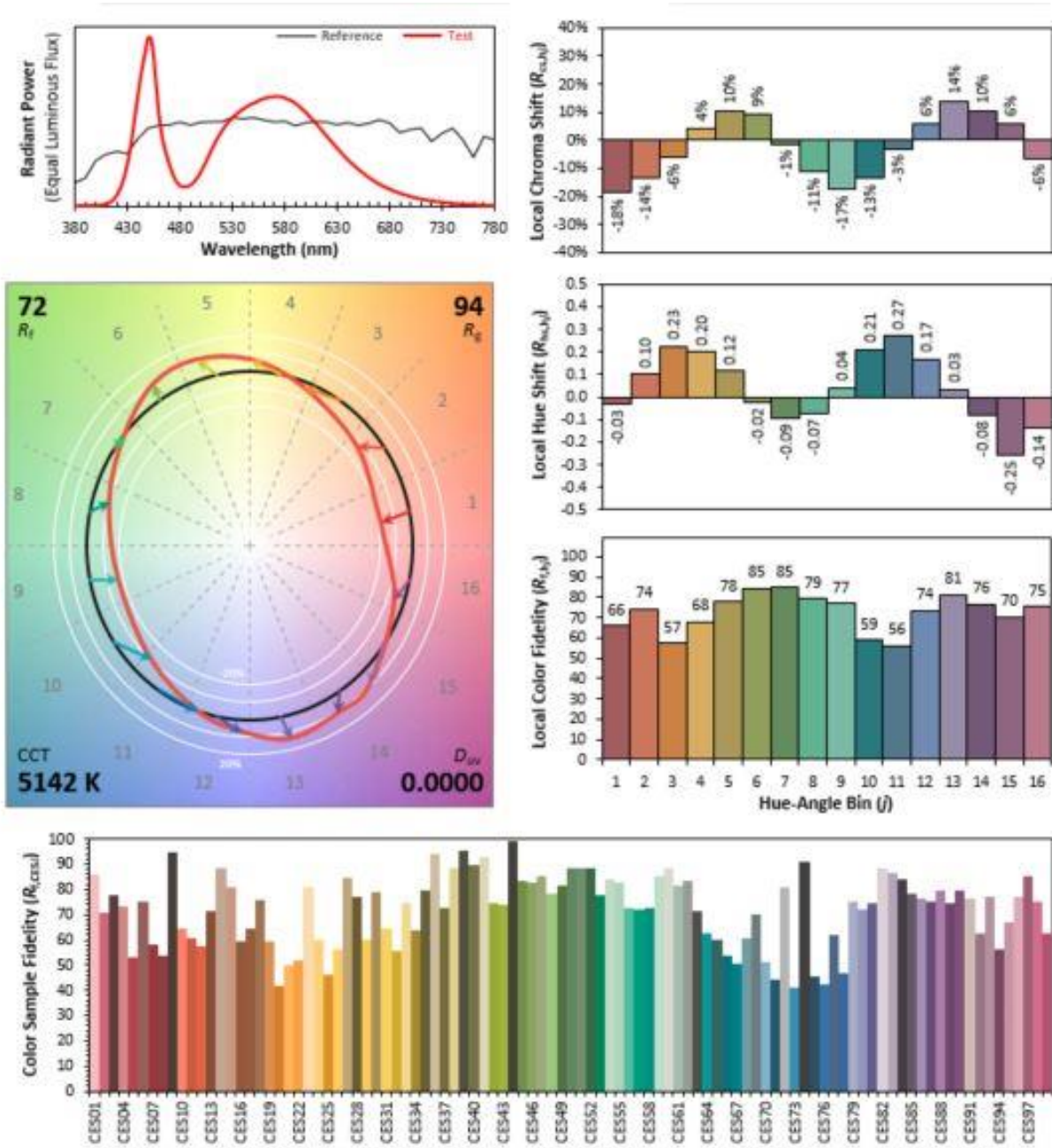
## Test Results: Integrating Sphere

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)  |
|----------------|---------|----------------|---------|----------------|---------|----------------|---------|
| <b>350</b>     | 0.00113 | <b>490</b>     | 0.10967 | <b>630</b>     | 0.29419 | <b>770</b>     | 0.00785 |
| <b>355</b>     | 0.00125 | <b>495</b>     | 0.13556 | <b>635</b>     | 0.26536 | <b>775</b>     | 0.00690 |
| <b>360</b>     | 0.00168 | <b>500</b>     | 0.17722 | <b>640</b>     | 0.23798 | <b>780</b>     | 0.00605 |
| <b>365</b>     | 0.00214 | <b>505</b>     | 0.22909 | <b>645</b>     | 0.21295 | <b>785</b>     | 0.00534 |
| <b>370</b>     | 0.00293 | <b>510</b>     | 0.28400 | <b>650</b>     | 0.18942 | <b>790</b>     | 0.00468 |
| <b>375</b>     | 0.00392 | <b>515</b>     | 0.33531 | <b>655</b>     | 0.16821 | <b>795</b>     | 0.00411 |
| <b>380</b>     | 0.00487 | <b>520</b>     | 0.37930 | <b>660</b>     | 0.14867 | <b>800</b>     | 0.00362 |
| <b>385</b>     | 0.00566 | <b>525</b>     | 0.41641 | <b>665</b>     | 0.13125 |                |         |
| <b>390</b>     | 0.00610 | <b>530</b>     | 0.44424 | <b>670</b>     | 0.11509 |                |         |
| <b>395</b>     | 0.00642 | <b>535</b>     | 0.46823 | <b>675</b>     | 0.10125 |                |         |
| <b>400</b>     | 0.00697 | <b>540</b>     | 0.48750 | <b>680</b>     | 0.08879 |                |         |
| <b>405</b>     | 0.00913 | <b>545</b>     | 0.50362 | <b>685</b>     | 0.07760 |                |         |
| <b>410</b>     | 0.01527 | <b>550</b>     | 0.51755 | <b>690</b>     | 0.06790 |                |         |
| <b>415</b>     | 0.03055 | <b>555</b>     | 0.52962 | <b>695</b>     | 0.05939 |                |         |
| <b>420</b>     | 0.06333 | <b>560</b>     | 0.54001 | <b>700</b>     | 0.05172 |                |         |
| <b>425</b>     | 0.12365 | <b>565</b>     | 0.54741 | <b>705</b>     | 0.04511 |                |         |
| <b>430</b>     | 0.22768 | <b>570</b>     | 0.55074 | <b>710</b>     | 0.03932 |                |         |
| <b>435</b>     | 0.38545 | <b>575</b>     | 0.55002 | <b>715</b>     | 0.03439 |                |         |
| <b>440</b>     | 0.57050 | <b>580</b>     | 0.54397 | <b>720</b>     | 0.03010 |                |         |
| <b>445</b>     | 0.72963 | <b>585</b>     | 0.53301 | <b>725</b>     | 0.02630 |                |         |
| <b>450</b>     | 0.83718 | <b>590</b>     | 0.51774 | <b>730</b>     | 0.02293 |                |         |
| <b>455</b>     | 0.72187 | <b>595</b>     | 0.49702 | <b>735</b>     | 0.02005 |                |         |
| <b>460</b>     | 0.45811 | <b>600</b>     | 0.47224 | <b>740</b>     | 0.01746 |                |         |
| <b>465</b>     | 0.29850 | <b>605</b>     | 0.44517 | <b>745</b>     | 0.01526 |                |         |
| <b>470</b>     | 0.20804 | <b>610</b>     | 0.41633 | <b>750</b>     | 0.01337 |                |         |
| <b>475</b>     | 0.13942 | <b>615</b>     | 0.38574 | <b>755</b>     | 0.01171 |                |         |
| <b>480</b>     | 0.10679 | <b>620</b>     | 0.35468 | <b>760</b>     | 0.01026 |                |         |
| <b>485</b>     | 0.10049 | <b>625</b>     | 0.32396 | <b>765</b>     | 0.00893 |                |         |

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



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

x 0.3413  
y 0.3484  
u' 0.2101  
v' 0.4825

|               |     |
|---------------|-----|
| CIE 13.3-1995 |     |
| (CRI)         |     |
| $R_a$         | 71  |
| $R_g$         | -32 |

## Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21010.  
Dialight unit model number F1x-N7B5-Fxxx-xxx

### Electrical Measurements:

Input Voltage: 346.93 (VAC)  
Input current: 0.6985 (A)  
Input Power: 237.8 (W)  
Power Factor: 0.9812

### Photometric measurements:

Absolute Luminous Flux: 31951.9 (lumens)  
Luminous Efficacy: 134.4 (lumens/W)

### Intensity Summary:

#### Candlepower Summary

| H/V   | 0.00  | 45.00 | 90.00 | 135.00 | 180.00 | Lumens |
|-------|-------|-------|-------|--------|--------|--------|
| 0.00  | 21336 | 21287 | 21268 | 21320  | 21336  |        |
| 5.00  | 21051 | 21232 | 21190 | 20560  | 19953  | 2102   |
| 15.00 | 15265 | 17961 | 19257 | 16745  | 13072  | 4422   |
| 25.00 | 11299 | 13690 | 17541 | 12967  | 10488  | 5708   |
| 35.00 | 9131  | 11063 | 15495 | 10808  | 8275   | 6351   |
| 45.00 | 6080  | 9462  | 12230 | 8642   | 5025   | 5624   |
| 55.00 | 2090  | 2331  | 8626  | 1958   | 1181   | 2366   |
| 65.00 | 695   | 724   | 2382  | 689    | 598    | 872    |
| 75.00 | 363   | 298   | 320   | 259    | 229    | 312    |
| 85.00 | 63    | 76    | 57    | 45     | 26     | 29     |
| 90.00 | 8     | 9     | 2     | 1      | 1      |        |

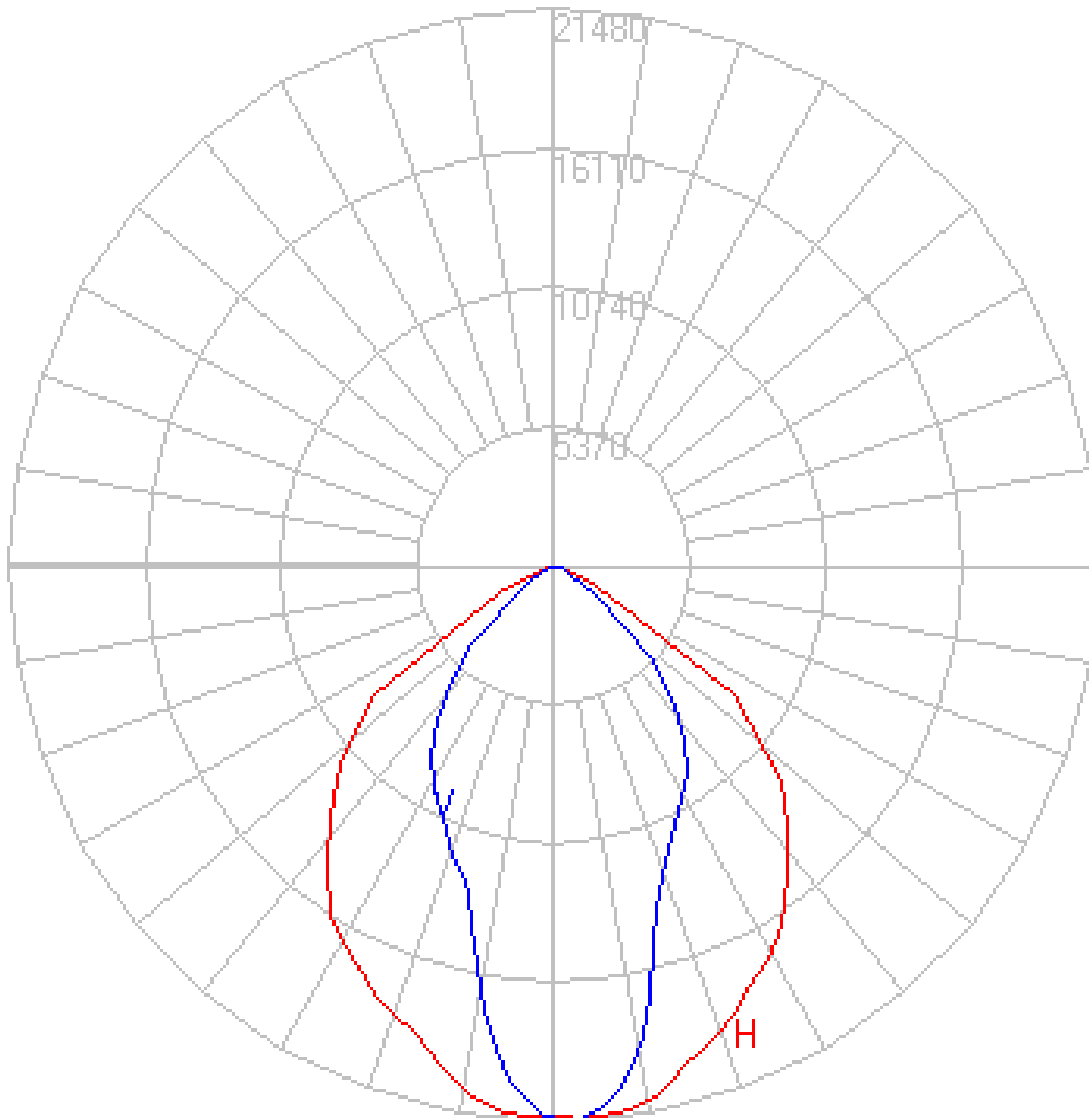
#### Zonal Lumen Summary

| Zone      | Lumens   | % Lamp | % Fixture |
|-----------|----------|--------|-----------|
| 0 to 30   | 13239.01 | 41.43  | 41.43     |
| 0 to 40   | 20556.82 | 64.34  | 64.34     |
| 0 to 60   | 30651.65 | 95.93  | 95.93     |
| 0 to 90   | 31951.88 | 100.00 | 100.00    |
| 90 to 180 | 0.00     | 0.00   | 0.00      |
| 0 to 180  | 31951.88 | 100.00 | 100.00    |

## Test Results: Goniometer

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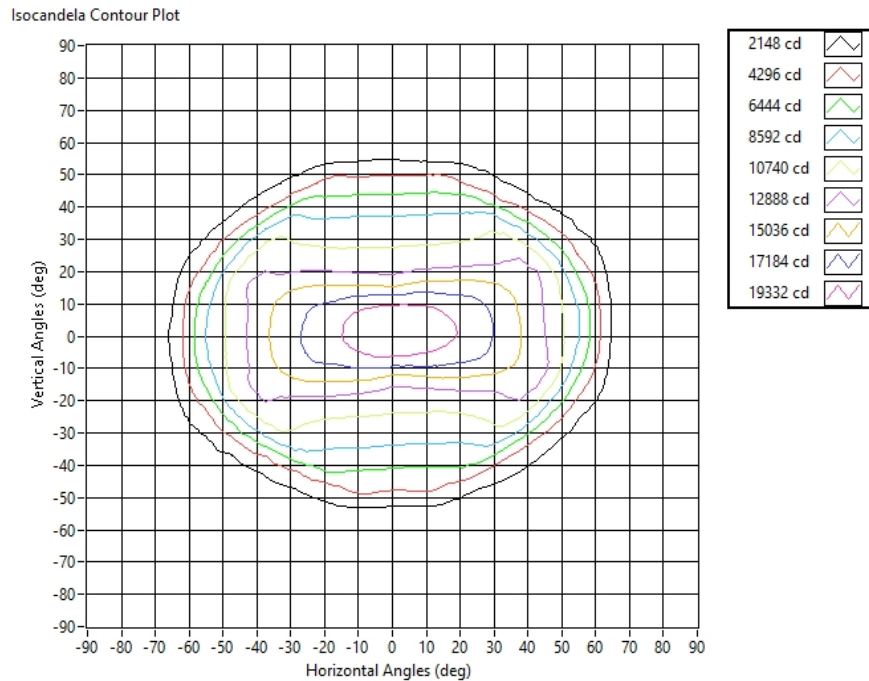
Polar Plot:



## 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                    | 1.95                 | 4.96                            | 5322.9                     |
| 4                    | 3.90                 | 9.91                            | 1330.7                     |
| 6                    | 5.86                 | 14.87                           | 591.4                      |
| 8                    | 7.81                 | 19.82                           | 332.7                      |
| 10                   | 9.76                 | 24.78                           | 212.9                      |
| 12                   | 11.71                | 29.73                           | 147.9                      |
| 14                   | 13.66                | 34.69                           | 108.6                      |
| 16                   | 15.62                | 39.64                           | 83.2                       |
| 18                   | 17.57                | 44.60                           | 65.7                       |
| 20                   | 19.52                | 49.55                           | 53.2                       |



**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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 Senior Optical Engineering Technician  
 Lighting Division

Test Report Reviewed and Approved By:

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 Dialight Optics Laboratory  
 Optical Engineer  
 Approved Signatory