

Test Report

Report Number: L21005

Date: Jan 27, 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-74B2-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: December 28, 2020 through December 29, 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: L21005

Manufacturer: Dialight Corporation

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

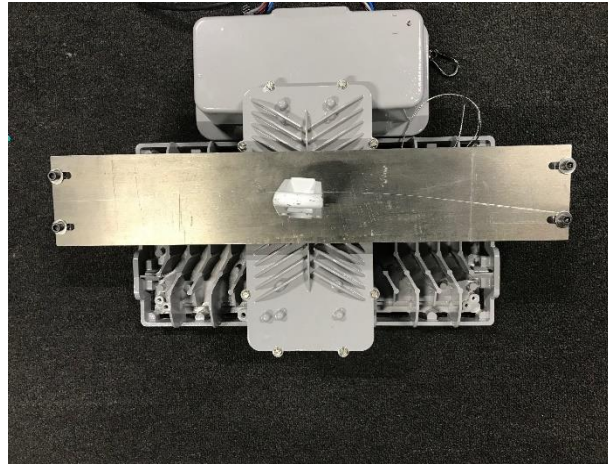
Description: F1 - Flood Light

Model Number: F1x-74B2-Fxxx-xxx

Report Summary

Sample number L21005
Dialight unit model number F1x-74B2-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: | 30302 (lumens) | 30643 (lumens) |
| Electrical Power: | 242.8 (W) | 240.0 (W) |
| Luminous Efficacy: | 124.8 (lumens/W) | 127.7 (lumens/W) |

Electrical Measurements:

Input Power (120VAC): 242.8 (W)
 Power Factor (120VAC): 0.995594
 Current ATHD % (120VAC): 4.82955
 Input Power (277VAC): 232.1 (W)
 Power Factor (277VAC): 0.9576
 Current ATHD % (277VAC): 9.735

Color Measurements:

Correlated Color Temperature (CCT): 5080
 Color Rendering Index (CRI): 70.9634
 Chromaticity Coordinate (x): 0.343
 Chromaticity Coordinate (y): 0.352
 Chromaticity Coordinate (u'): 0.210
 Chromaticity Coordinate (v'): 0.323
 DUV: 0.0009

Test Results: Integrating Sphere

Results include unit color, flux, efficacy and electrical power for sample number L21005.

Dialight unit model number F1x-74B2-Fxxx-xxx

Test Conditions:

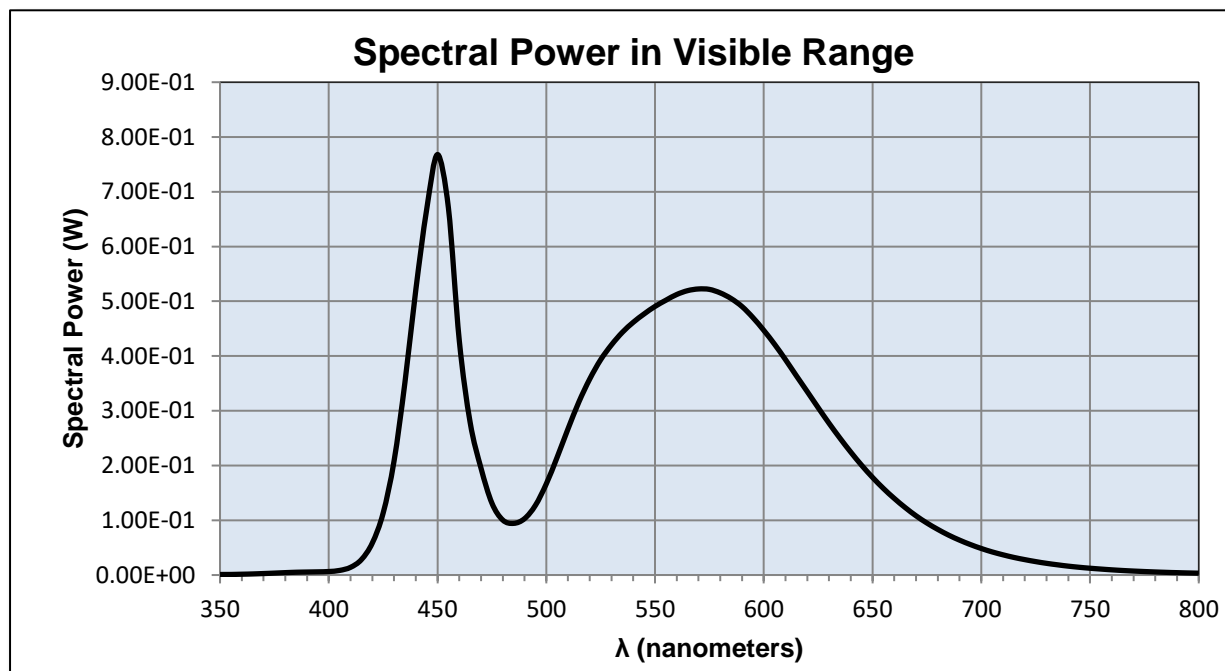
Ambient Temperature: 25 ± 1 (°C)

Electrical Measurements:

Input Voltage: 120 (VAC)
 Input Current: 2.02513 (A)
 Input Power: 242.8 (W)
 Input Power Factor: 0.995594
 Current ATHD: 4.82955 (%)

Photometric measurements:

Luminous Flux: 30302.3 (lumens)
 Luminous Efficacy: 124.8 (lumens/W)
 Correlated Color Temperature (CCT): 5080 (K)
 CRI -Ra: 70.9634
 CRI -R9: -35.1907
 DUV: 0.0009
 CIE Coordinate (x): 0.343
 CIE Coordinate (y): 0.352
 CIE Coordinate (u'): 0.210
 CIE Coordinate (v'): 0.323
 TM30_Rf: 69.0
 TM30_Rg: 93.2
 TM30_Rcs_hue1: -18.56 %



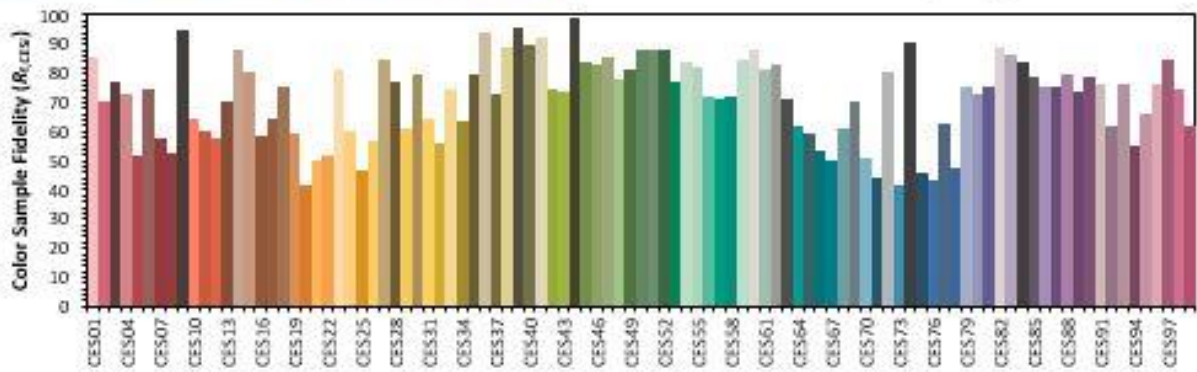
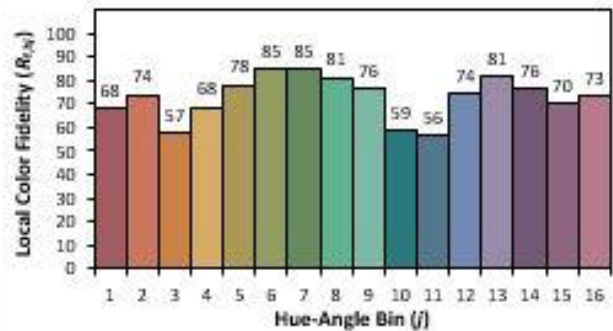
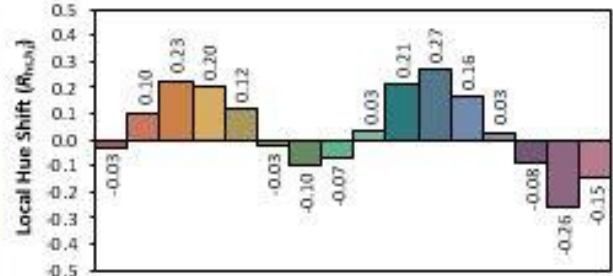
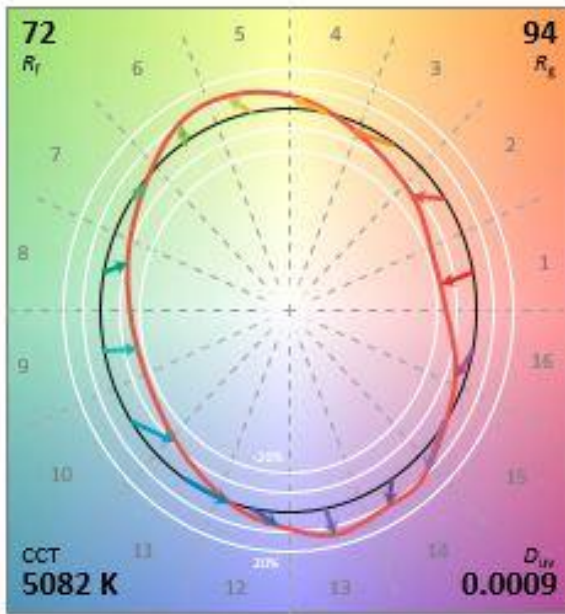
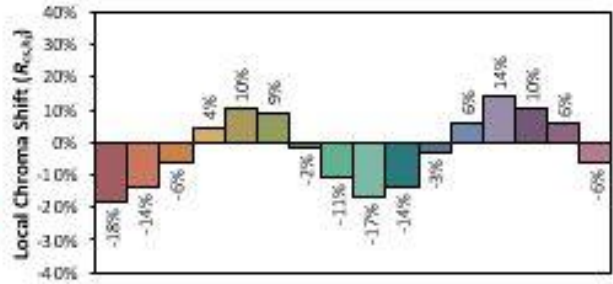
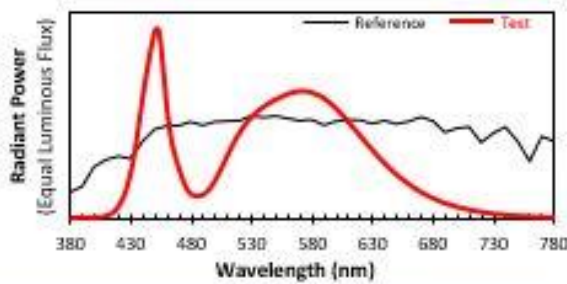
Test Results: Integrating Sphere

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 | 0.00102 | 490 | 0.10292 | 630 | 0.27721 | 770 | 0.00725 |
| 355 | 0.00107 | 495 | 0.12719 | 635 | 0.25011 | 775 | 0.00638 |
| 360 | 0.00149 | 500 | 0.16637 | 640 | 0.22444 | 780 | 0.00560 |
| 365 | 0.00196 | 505 | 0.21513 | 645 | 0.20042 | 785 | 0.00490 |
| 370 | 0.00271 | 510 | 0.26704 | 650 | 0.17834 | 790 | 0.00430 |
| 375 | 0.00350 | 515 | 0.31610 | 655 | 0.15809 | 795 | 0.00378 |
| 380 | 0.00436 | 520 | 0.35807 | 660 | 0.13988 | 800 | 0.00333 |
| 385 | 0.00507 | 525 | 0.39311 | 665 | 0.12324 | | |
| 390 | 0.00550 | 530 | 0.42044 | 670 | 0.10821 | | |
| 395 | 0.00582 | 535 | 0.44333 | 675 | 0.09498 | | |
| 400 | 0.00642 | 540 | 0.46156 | 680 | 0.08338 | | |
| 405 | 0.00839 | 545 | 0.47687 | 685 | 0.07283 | | |
| 410 | 0.01408 | 550 | 0.49054 | 690 | 0.06373 | | |
| 415 | 0.02816 | 555 | 0.50188 | 695 | 0.05566 | | |
| 420 | 0.05826 | 560 | 0.51237 | 700 | 0.04849 | | |
| 425 | 0.11319 | 565 | 0.51935 | 705 | 0.04223 | | |
| 430 | 0.20802 | 570 | 0.52245 | 710 | 0.03691 | | |
| 435 | 0.35142 | 575 | 0.52165 | 715 | 0.03215 | | |
| 440 | 0.52014 | 580 | 0.51520 | 720 | 0.02815 | | |
| 445 | 0.66732 | 585 | 0.50487 | 725 | 0.02451 | | |
| 450 | 0.76797 | 590 | 0.49029 | 730 | 0.02139 | | |
| 455 | 0.67047 | 595 | 0.47024 | 735 | 0.01867 | | |
| 460 | 0.42809 | 600 | 0.44687 | 740 | 0.01620 | | |
| 465 | 0.27875 | 605 | 0.42124 | 745 | 0.01416 | | |
| 470 | 0.19501 | 610 | 0.39324 | 750 | 0.01241 | | |
| 475 | 0.13133 | 615 | 0.36378 | 755 | 0.01087 | | |
| 480 | 0.10040 | 620 | 0.33496 | 760 | 0.00950 | | |
| 485 | 0.09436 | 625 | 0.30573 | 765 | 0.00827 | | |

IES TM-30-18 Color Rendition Report



Notes: This is a recommended method for displaying ANSIIES TM-30-18 information.

x **0.3430**
 y **0.3516**
 u' **0.2100**
 v' **0.4844**

CIE 13.3-1995
(CRI)
 R_a 71
 R_s -35

Test Results: Goniometer

Results include unit flux, distribution, efficacy, and electrical power for sample number L21005.
Dialight unit model number F1x-74B2-Fxxx-xxx

Electrical Measurements:

Input Voltage: 120.03 (VAC)
Input current: 2.0097 (A)
Input Power: 240.0 (W)
Power Factor: 0.9952

Photometric measurements:

Absolute Luminous Flux: 30643 (lumens)
Luminous Efficacy: 127.7 (lumens/W)

Intensity Summary:

Candlepower Summary

| H/V | 0.00 | Lumens |
|-------|-------|--------|
| 0.00 | 75704 | |
| 5.00 | 68643 | 7005 |
| 15.00 | 50844 | 14413 |
| 25.00 | 13589 | 6290 |
| 35.00 | 1996 | 1254 |
| 45.00 | 1027 | 796 |
| 55.00 | 671 | 602 |
| 65.00 | 440 | 437 |
| 75.00 | 179 | 189 |
| 85.00 | 11 | 6 |
| 90.00 | 1 | |

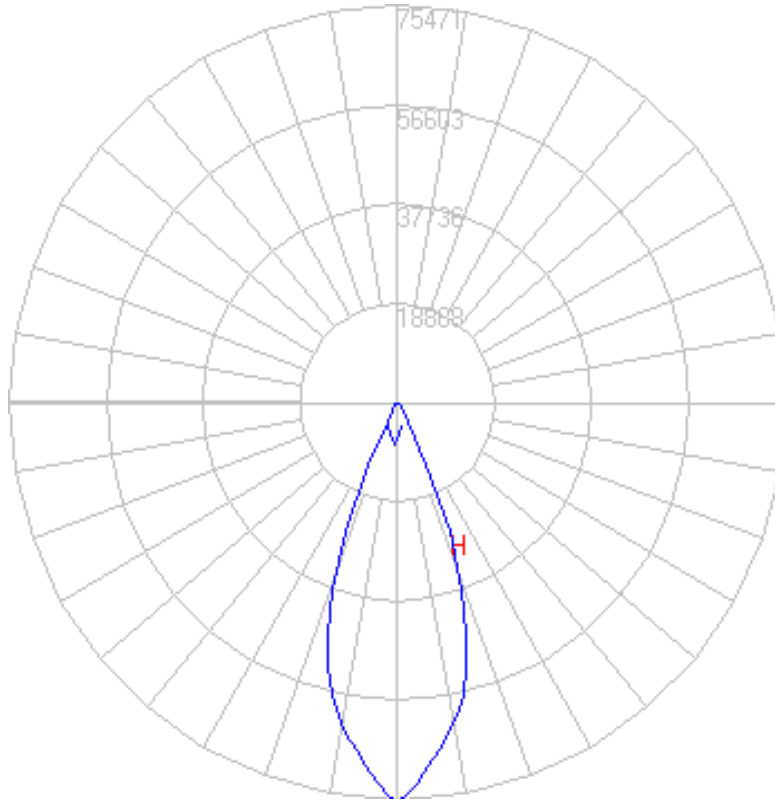
Zonal Lumen Summary

| Zone | Lumens | % Lamp | % Fixture |
|-----------|----------|--------|-----------|
| 0 to 30 | 27687.32 | 90.35 | 90.35 |
| 0 to 40 | 28781.98 | 93.93 | 93.93 |
| 0 to 60 | 29993.75 | 97.88 | 97.88 |
| 0 to 90 | 30643.02 | 100.00 | 100.00 |
| 90 to 180 | 0.00 | 0.00 | 0.00 |
| 0 to 180 | 30643.02 | 100.00 | 100.00 |

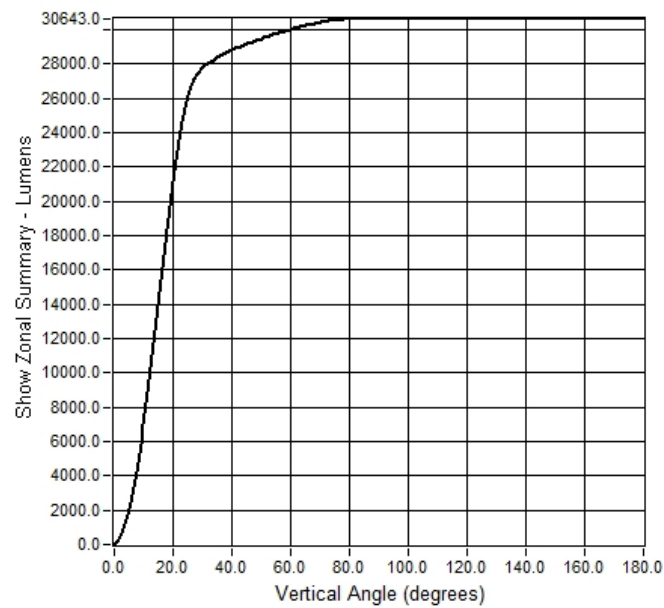
Test Results: Goniometer

Results continued from previous page.

Polar Plot:



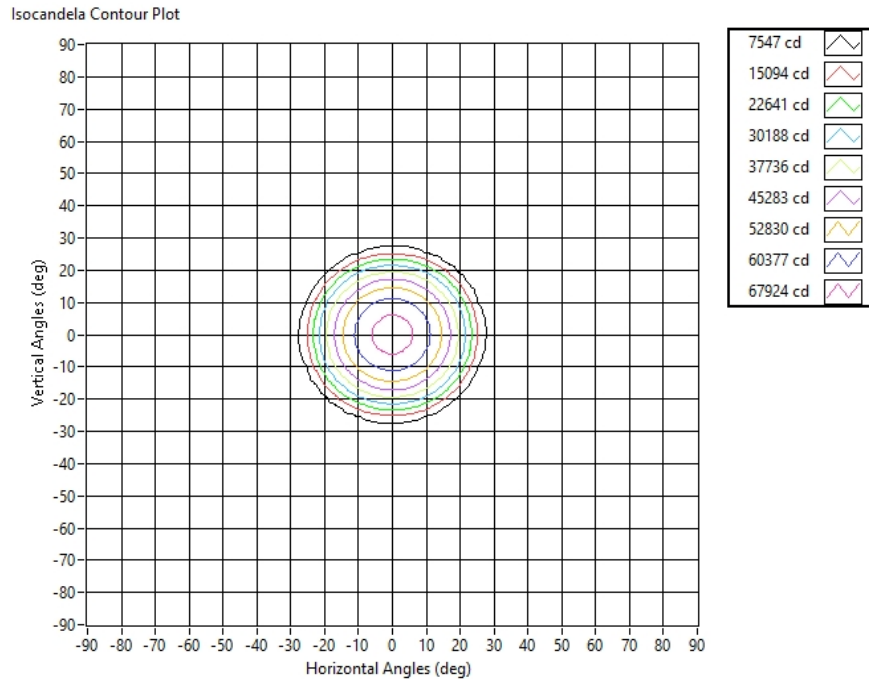
Zonal Flux Graph



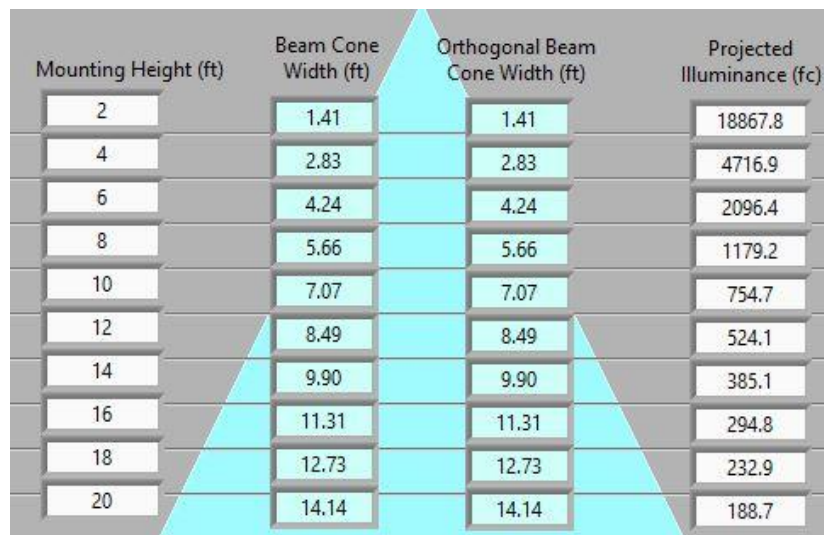
Test Results: Goniometer

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.

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 Lighting Division

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Vishnu Shastry
 Dialight Optics Laboratory
 Optical Engineer
 Approved Signatory