



Lumentra Inc.
3730 Laird Road, Unit B, Mississauga,
Ontario, Canada L5L 5Z7
Tel: (647) 479-8820
<http://lumentra.com>

160 Frobisher Drive, Unit 5, Waterloo,
Ontario, Canada N2V 2B1
Tel: (519) 746-3140
Email: services@lumentra.com



LM-79 Report, TM30 and ISTMT TEST REPORT NO. P014A

Test Result Summary

| | |
|--------------------------|-----------------|
| Luminaire Manufacturer | MPS Company Inc |
| Luminaire Model Number | WB 14-3 |
| Input Voltage RMS (V) | 120.0 |
| Input Current RMS (A) | 0.283 |
| Input Power (W) | 33.83 |
| Light Output (lm) | 2593 |
| Luminous Efficacy (lm/W) | 76.65 |
| CCT (K) | 3961 |
| CRI | 82.3 |
| PF | 0.9949 |
| Rf | 84 |
| Rg | 97 |
| R9 | 11 |
| Rchs1 | -11 |
| THDi | 5.4 |
| Duv | 0.0005 |
| ISTMT LED °C | 60.5 |

Prepared for:
MPS Company Inc
Toronto, Ontario

Date Issued: May 5, 2023

Prepared by:

B.Balakumar

Lumentra Inc.

Date Tested: May 4, 2023


Approved by:

Lumentra Inc.

Copyright © 2023 Lumentra, Inc. All rights reserved. Lumentra Inc. (NVLAP lab code 500084-0) is accredited by NVLAP to ISO/IEC 17025:2017. This test report shall not be reproduced except in full, without written approval of Lumentra Inc. This test report must not be used by anyone to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. The information in this document is provided in connection with the supplied sample only.

Lumentra Test Report No. P014A

| Revision History | | |
|------------------|--------|---------------|
| Date | Rev. # | Comments |
| | 0 | Initial Issue |

| Fixture Information | |
|---|--|
| MPS COMPANY LED FLOODLIGHT CAT. NO. W/B 14-03 WITH INDIVIDUAL LED LENS OPTICS (CUSTOM) 30 WHITE LEDS. LUMEN OUTPUT = 2593 LMS. MEAN WELL 100-277V LED DRIVER MODEL HLG-40H-48A | |
|  | |

Light Output, Efficacy and Power Quality

| | |
|-------------------------------------|--------|
| Total Luminous Flux (lm) | 2593 |
| Luminous Efficacy (lm/W) | 76.65 |
| Input Voltage RMS (V) | 120.0 |
| Frequency (Hz) | 60 |
| Input Current RMS (A) | 0.283 |
| Input Power (W) | 33.83 |
| Power Factor | 0.9949 |
| Current Total Harmonic Distortion % | 5.4 |
| Ambient Temperature (°C) | 25.4 |
| Stabilization Time (Minute) | 60 |

Chromaticity

| | |
|--------------------------------------|--------|
| CIE Chromaticity Coordinate x | 0.3825 |
| CIE Chromaticity Coordinate y | 0.3790 |
| CIE Chromaticity Coordinate u' | 0.2255 |
| CIE Chromaticity Coordinate v' | 0.5209 |
| Correlated Color Temperature CCT (K) | 3962 |
| Dominant Wavelength (nm) | 579 |

Lumentra Test Report No. P014A

Colour Rendering Properties

| Special Colour Rendering Index R _i | | Test-Colour Sample Appearance under daylight |
|--|---------|---|
| CRI R1 | 80.7134 | Light greyish red |
| CRI R2 | 87.1524 | Dark greyish yellow |
| CRI R3 | 91.8405 | Strong yellow green |
| CRI R4 | 82.1529 | Moderate yellowish green |
| CRI R5 | 80.5961 | Light bluish green |
| CRI R6 | 82.1702 | Light blue |
| CRI R7 | 86.8218 | Light violet |
| CRI R8 | 66.5746 | Light reddish purple |
| CRI R9 | 11.6417 | Strong red |
| CRI R10 | 69.0212 | Strong yellow |
| CRI R11 | 80.3873 | Strong green |
| CRI R12 | 62.7019 | Strong blue |
| CRI R13 | 81.934 | Light yellowish pink |
| CRI R14 | 95.23 | Moderate olive green (leaf) |

Lumentra Test Report No. P014A

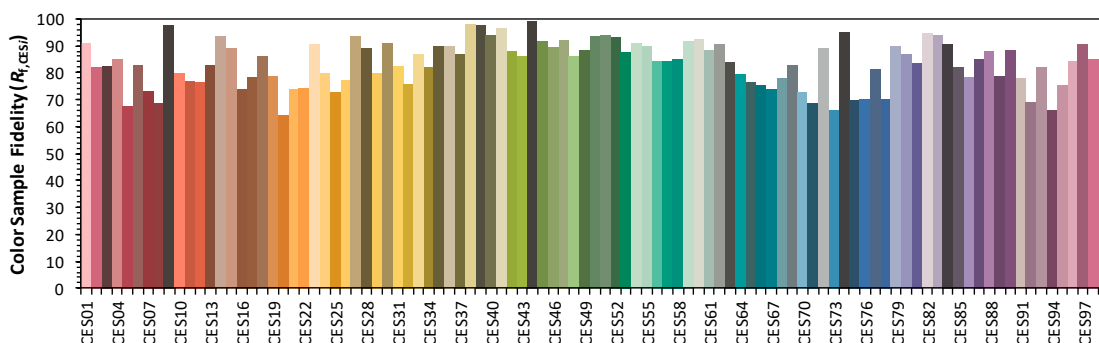
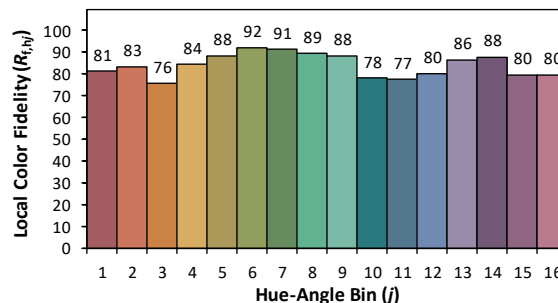
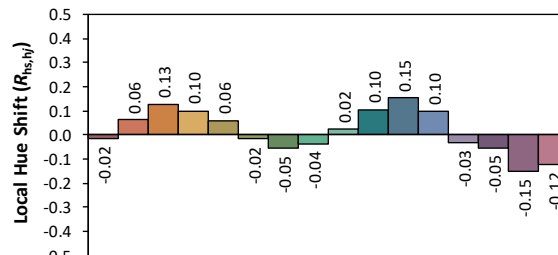
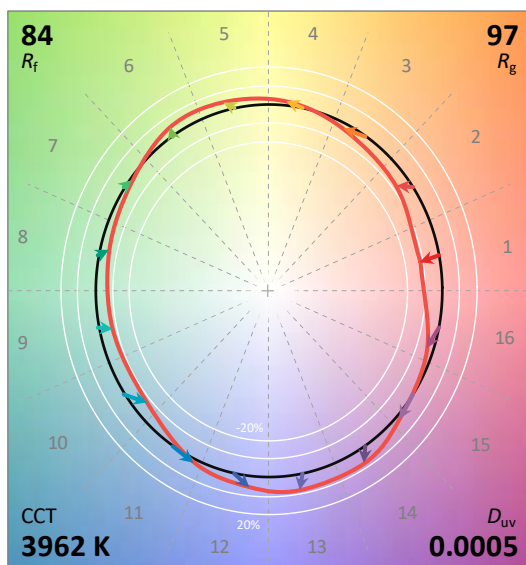
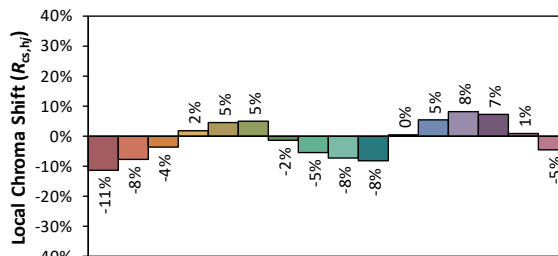
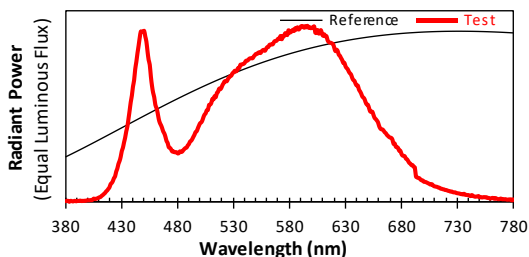
ANSI/IES TM-30-18 Color Rendition Report

Source: Gamma scientific

Manufacturer: MPS Company Inc

Date: 5/5/2023

Model: WB14-3



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

x 0.3825

y 0.3790

u' 0.2255

v' 0.5029

CIE 13.3-1995
(CRI)

R_a 82

R_g 11

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

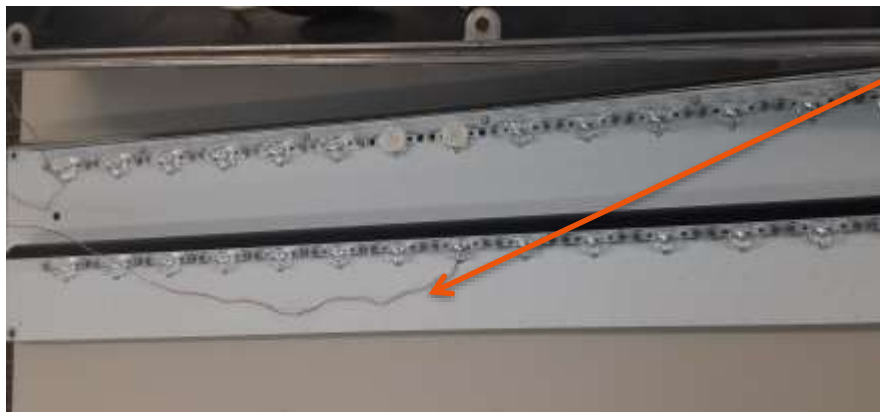
Copyright © 2023 Lumentra, Inc. All rights reserved. Lumentra Inc. (NVLAP lab code 500084-0) is accredited by NVLAP to ISO/IEC 17025:2017. This test report shall not be reproduced except in full, without written approval of Lumentra Inc. This test report must not be used by anyone to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. The information in this document is provided in connection with the supplied sample only.

ISTMT

In-situ Temperature Measurement Test (LED)

Maximum temperature at the temperature measurement point (TMP): 60.5°C

ISTMT Type: Surface mount



TMP

Test Methods

Color qualities were measured using an integrating sphere with a spectrometer in 4π geometry. Self-absorption and spatial non-uniformity corrections were applied when applicable. The spectrometer bandwidth is less than 1.5 nm. The sample was tested in the orientation for its intended use. Tests were performed in accordance with LM-79:2019. All photometric measurement equipment was calibrated using a 75W omni-directional halogen standard lamp. All measurements are traceable to NIST. The TM-30-20 Chromaticity plots were generated with the ANSI/IES TM-30-18 Advanced Calculation Tool using measured SPD data.

All measurements were performed when the device under test was operated long enough to reach stabilization. Stability is reached when the variation of three readings of the light output and electrical power over a period of 30 min, taken 10 minutes apart, is less than 0.5 %. The uncertainty for sphere measured luminous flux is +/- 1.4% and +/- 0.5% for CCT measurements ($k = 2$).

Applicable Standards and Operating Equipment

- IES LM-79:2019 (Sec. 7) Solid State Lighting Luminaires - Total Flux Measurements (Luminous Efficacy)
- IES LM-79:2019 (Sec. 9) Solid State Lighting Luminaires - Color Characteristic Measurements
- IES LM-58:1994 Spectroradiometric Measurements
- CIE Pub. 13.3:1995 Method of Measuring and Specifying Color Rendering of Light Sources
- IES LM-16:1993 Practical Guide to Colorimetry of Light Sources
- CIE Pub. 15:2004 Colorimetry
- ANSI C78.377-2017. Specifications for the Chromaticity of Solid-State Lighting Products
- ANSI C82.2:2002 Ballast for Fluorescent Lamps - Methods of Measurement
- ANSI C82.77:2002 Harmonic Emission Limits - Related Power Quality Requirements for Lighting Equipment
- ANSI/UL 1598:2008 (Secs. 19.7, 19.10-16) Luminaires
- ANSI/UL 153:2002 (Secs. 124-128A) Standard for Portable Electric Luminaires
- ANSI/UL 1574:2004 (Sec. 54) Standard for Track Lighting Systems
- ANSI/IES TM30:2020 IES Method for Evaluating Light Source Color Rendition

| Equipment | Manufacturer | Model |
|----------------------------------|------------------|-------------------------|
| 2m Integrating Sphere | Gamma Scientific | GS-IS80 |
| Spectrometer | Gamma Scientific | RadOMA (GS-1220-1) |
| Digital Power Meter | Tektronix | PA4000 |
| DC Power Supply | Agilent | E3634A |
| DC Power Supply | Gamma Scientific | RS-4 (Constant Current) |
| Spectral Flux Reference Standard | Gamma Scientific | RA15-75 |
| AC Power Source | Kikusui | PCR 1000M |

END OF REPORT

Copyright © 2023 Lumentra, Inc. All rights reserved. Lumentra Inc. (NVLAP lab code 500084-0) is accredited by NVLAP to ISO/IEC 17025:2017. This test report shall not be reproduced except in full, without written approval of Lumentra Inc. This test report must not be used by anyone to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. The information in this document is provided in connection with the supplied sample only.