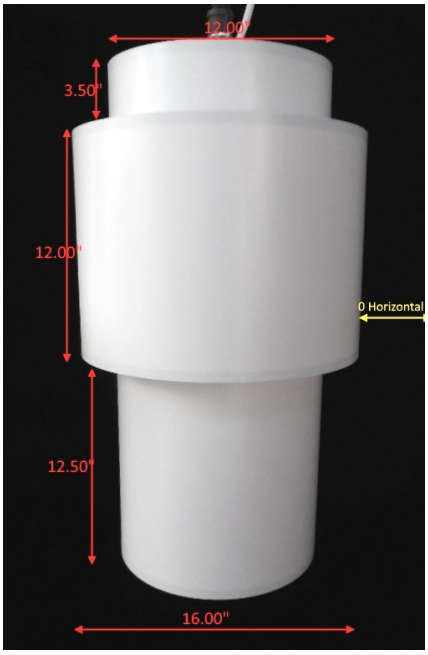
LightLab INTERNATIONAL ALLENTOWN LLC

NVLAP TESTING Lab Code: 201079-0

# Report of Test

# LLIA000901-019

Catalog Number: P5528/F11/D61/L411
Pendant mounted, formed steel and aluminum frame with white outer "lumenate" diffusers translucent white plastic top and bottom enclosures.
One white LED module with clear patterned hemispherical lens below.
One ERP ESS030W-0620-42 LED driver
120.0Vac, 60.00Hz, 0.2103A, 24.71W, 0.979PF, 11.7%THD(i)




**Performance Summary**

| | | |
|---|---|---|
| Total Light Output | 1377 | lm |
| Luminaire Power | 24.7 | W |
| Luminous Efficacy | 55.7 | lm/W |

**PREPARED FOR : Lumetta, Inc, 33 Minnesota Avenue, Warwick, RI 02888, USA**


*USA west coast* LightLab International, LLC, 24825 N. 16th Avenue, Suite 125, Phoenix, AZ, 85085 — Ph : +1 623-434-1499, Fx : +1 623-434-1492, www.lightlabint.com

*USA east coast* LightLab Int'l Allentown LLC, 905 Harrison Street, Suite 135, Allentown, PA 18103 — Ph: +1 484-273-0705, www.lightlabint.com (issuing laboratory)

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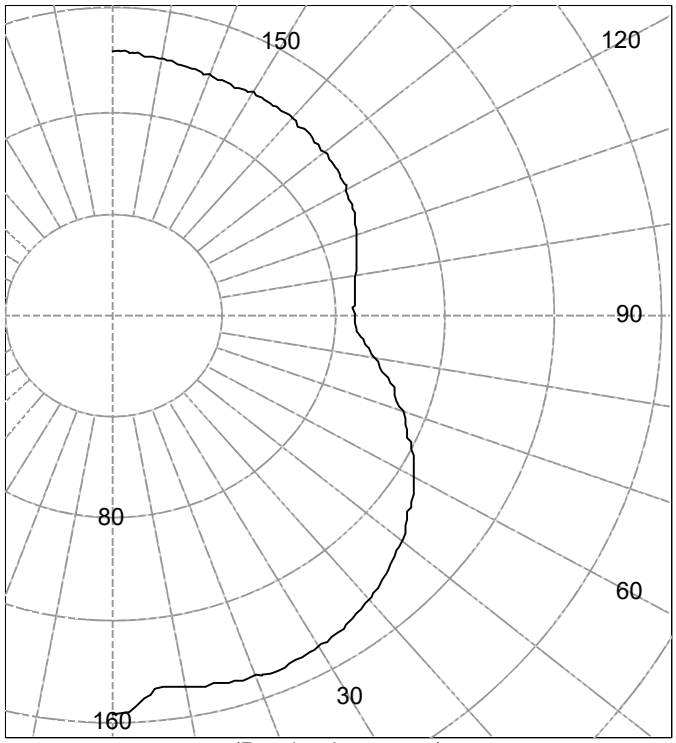
Legend: All planes - Black (cd)




(Rotational symmetry)

INTENSITY SUMMARY (cd)

| Gamma | All Planes | Flux (lm) | Gamma | C0 | Flux (lm) |
|---|---|---|---|---|---|
| 0 | 157 | | 90 | 87 | |
| 5 | 149 | 14 | 95 | 88 | 96 |
| 10 | 148 | | 100 | 89 | |
| 15 | 150 | 43 | 105 | 92 | 97 |
| 20 | 151 | | 110 | 94 | |
| 25 | 151 | 70 | 115 | 96 | 95 |
| 30 | 150 | | 120 | 98 | |
| 35 | 148 | 93 | 125 | 99 | 89 |
| 40 | 145 | | 130 | 100 | |
| 45 | 141 | 109 | 135 | 100 | 78 |
| 50 | 137 | | 140 | 101 | |
| 55 | 132 | 118 | 145 | 101 | 63 |
| 60 | 126 | | 150 | 101 | |
| 65 | 119 | 118 | 155 | 100 | 47 |
| 70 | 112 | | 160 | 101 | |
| 75 | 104 | 110 | 165 | 101 | 29 |
| 80 | 96 | | 170 | 102 | |
| 85 | 90 | 99 | 175 | 103 | 10 |
| 90 | 87 | | 180 | 104 | |

AVERAGE LUMINANCE (cd / m^2)

| Gamma | C0 |
|---|---|
| 45.0 | 478 |
| 55.0 | 424 |
| 65.0 | 376 |
| 75.0 | 333 |
| 85.0 | 302 |

ZONAL FLUX AND PERCENTAGES

| Zone | Flux (lm) | %Lamp | %Luminaire |
|---|---|---|---|
| 0-30 | 127 | N / A | 9.2 |
| 0-40 | 220 | N / A | 15.9 |
| 0-60 | 447 | N / A | 32.4 |
| 0-90 | 774 | N / A | 56.2 |
| 40-90 | 554 | N / A | 40.2 |
| 60-90 | 327 | N / A | 23.7 |
| 90-180 | 603 | N / A | 43.8 |
| 0-180 | 1377 | N / A | 100.0 |

Total Light Output = 1,377 lm

Spacing Criterion: 0-180 1.4
Spacing Criterion: 90-270 1.4

Signed: Michael L. Grather

Authorized Signatory

Date of test 28-Dec-2017
Date of report 8-Jan-2018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One white LED module with clear patterned hemispherical lens below.

One ERP ESS030W-0620-42 LED driver

120.0Vac, 60.00Hz, 0.2103A, 24.71W, 0.979PF, 11.7%THD(i)

**Intensity (cd) and Flux (lm) data**

| Gamma | Intensity | Flux | Gamma | Intensity | Flux |
|---|---|---|---|---|---|
| 0.0 | 157 | | 90.0 | 87 | |
| 2.5 | 155 | | 92.5 | 87 | |
| 5.0 | 149 | 14 | 95.0 | 88 | 96 |
| 7.5 | 147 | | 97.5 | 88 | |
| 10.0 | 148 | | 100.0 | 89 | |
| 12.5 | 149 | | 102.5 | 90 | |
| 15.0 | 150 | 43 | 105.0 | 92 | 97 |
| 17.5 | 151 | | 107.5 | 93 | |
| 20.0 | 151 | | 110.0 | 94 | |
| 22.5 | 152 | | 112.5 | 95 | |
| 25.0 | 151 | 70 | 115.0 | 96 | 95 |
| 27.5 | 151 | | 117.5 | 97 | |
| 30.0 | 150 | | 120.0 | 98 | |
| 32.5 | 149 | | 122.5 | 99 | |
| 35.0 | 148 | 93 | 125.0 | 99 | 89 |
| 37.5 | 147 | | 127.5 | 100 | |
| 40.0 | 145 | | 130.0 | 100 | |
| 42.5 | 143 | | 132.5 | 100 | |
| 45.0 | 141 | 109 | 135.0 | 100 | 78 |
| 47.5 | 139 | | 137.5 | 101 | |
| 50.0 | 137 | | 140.0 | 101 | |
| 52.5 | 134 | | 142.5 | 101 | |
| 55.0 | 132 | 118 | 145.0 | 101 | 63 |
| 57.5 | 129 | | 147.5 | 101 | |
| 60.0 | 126 | | 150.0 | 101 | |
| 62.5 | 122 | | 152.5 | 101 | |
| 65.0 | 119 | 118 | 155.0 | 100 | 47 |
| 67.5 | 115 | | 157.5 | 100 | |
| 70.0 | 112 | | 160.0 | 101 | |
| 72.5 | 108 | | 162.5 | 101 | |
| 75.0 | 104 | 110 | 165.0 | 101 | 29 |
| 77.5 | 100 | | 167.5 | 102 | |
| 80.0 | 96 | | 170.0 | 102 | |
| 82.5 | 93 | | 172.5 | 103 | |
| 85.0 | 90 | 99 | 175.0 | 103 | 10 |
| 87.5 | 88 | | 177.5 | 104 | |
| 90.0 | 87 | | 180.0 | 104 | |

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Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

| RC | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 0 | 109 | 109 | 109 | 109 | 101 | 101 | 101 | 101 | 87 | 87 | 87 | 74 | 74 | 74 | 62 | 62 | 62 | 56 |
| 1 | 96 | 90 | 85 | 80 | 88 | 83 | 79 | 74 | 71 | 67 | 64 | 60 | 57 | 54 | 49 | 47 | 45 | 40 |
| 2 | 86 | 77 | 69 | 63 | 79 | 71 | 64 | 58 | 60 | 55 | 50 | 50 | 46 | 43 | 41 | 38 | 36 | 31 |
| 3 | 77 | 66 | 57 | 51 | 71 | 61 | 54 | 47 | 52 | 46 | 41 | 43 | 39 | 35 | 36 | 32 | 29 | 25 |
| 4 | 70 | 58 | 49 | 42 | 65 | 54 | 45 | 39 | 46 | 39 | 34 | 38 | 33 | 29 | 31 | 27 | 24 | 20 |
| 5 | 64 | 51 | 42 | 35 | 59 | 47 | 39 | 33 | 40 | 34 | 29 | 34 | 29 | 24 | 28 | 24 | 20 | 17 |
| 6 | 59 | 46 | 37 | 30 | 54 | 42 | 34 | 28 | 36 | 29 | 25 | 30 | 25 | 21 | 25 | 21 | 17 | 14 |
| 7 | 54 | 41 | 32 | 26 | 50 | 38 | 30 | 24 | 33 | 26 | 21 | 27 | 22 | 18 | 23 | 18 | 15 | 13 |
| 8 | 50 | 37 | 29 | 23 | 46 | 34 | 27 | 21 | 30 | 23 | 19 | 25 | 20 | 16 | 21 | 16 | 13 | 11 |
| 9 | 47 | 34 | 26 | 20 | 43 | 31 | 24 | 19 | 27 | 21 | 17 | 23 | 18 | 14 | 19 | 15 | 12 | 10 |
| 10 | 44 | 31 | 23 | 18 | 40 | 29 | 22 | 17 | 25 | 19 | 15 | 21 | 16 | 13 | 18 | 14 | 11 | 9 |

For absolute test reports, CUs are expressed as a percentage of total lumen output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 3) The room is spectrally neutral. When luminaires are not evenly distributed throughout the room, or do not exhibit lateral symmetry, CU values may differ from actual performance.

Circle of Light Plot

| Height(ft) | Illuminance at Nadir (fc) | Beam Width (across 50% Nadir Illum) 0-180 | 90-270 |
|---|---|---|---|
| 6.0 | 4.4 | 8.68 | 8.68 |
| 8.0 | 2.5 | 11.57 | 11.57 |
| 10.0 | 1.6 | 14.47 | 14.47 |
| 12.0 | 1.1 | 17.36 | 17.36 |
| 14.0 | 0.8 | 20.26 | 20.26 |
| 16.0 | 0.6 | 23.15 | 23.15 |

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| | |
|---|---|
| **Test Distance** | 9.5 m |
| **Test Temperature** | 25.2 °C |

**Notes**

The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Tested in accordance with the applicable sections of publications: IES LM-79-08 (Sec. 12), IES LM-16-93, IES LM-58-13, CIE 13.3:1995, CIE 15:2004, ANSI C78.377:2015, ANSI C82.77-10:2014.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Gamma coordinate system as defined in CIE publication number 121.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with * are not covered.

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the Federal Government.



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