



Photometric Indoor Test Report

Relevant Standards

IES LM-79-2008

ANSI C82.77

Prepared For

Eureka Lighting, Inc.

Dirk Zylstra

225 DeLiege Quest

Montreal, Canada

H2P 1H4

Catalog Number

ROLO 2039/4039

LTL Test Number

28157

Test Date

2012-01-26

Prepared By

Kyle Spaziani, Technician III

Approved By

Brian Moyer, Engineer

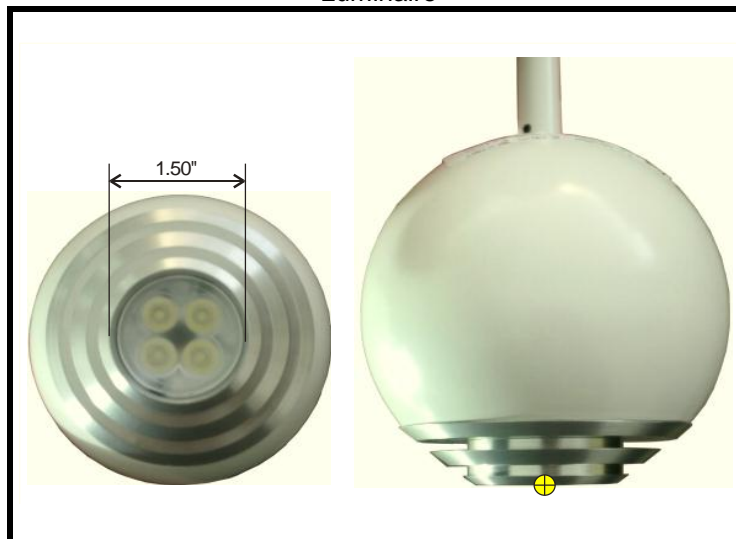
The results contained in this report pertain only to the tested sample.

This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.



Luminaire Description: Formed white enamel steel housing, machined semi-specular reflector, frosted plastic optic / enclosure
Catalog Number: ROLO 2039/4039
Lamp: Four white LEDs
Mounting: Pendant
Ballast/Driver: One Lightech LED 18 CC 350 PU

Luminaire



Zonal Lumen Summary

| Zone (Degrees) | Lumens | % of Lamp | % of Luminaire |
|----------------|--------|-----------|----------------|
| 0-30 | 236.8 | N/A | 69.3% |
| 0-40 | 280.8 | N/A | 82.2% |
| 0-60 | 325.5 | N/A | 95.3% |
| 0-90 | 341.6 | N/A | 100.0% |
| 90-180 | 0 | N/A | 0% |
| 0-180 | 341.6 | N/A | 100.0% |

Test Conditions

| | |
|-------------------|-----------|
| Test Temperature: | 25.3 °C |
| Voltage: | 120.0 VAC |
| Current: | 0.04601 A |
| Power: | 5.365 W |
| Power Factor: | 0.972 |
| Frequency: | 60 Hz |
| Current THD: | 15.4 % |

Summary of Results

Total Lumen Output: 341.6 Lumens
Luminaire Efficacy: 63.7 Lumens/Watt
CIE Type: Direct

Spacing Criterion: 0.47 All Directions

Data was acquired using the calibrated photodetector method of absolute photometry. A spectral mismatch correction factor was employed based on the spectral responsivity of the photodetector and the spectral power distribution of the test subject.



Candela Tabulation
Horizontal Angle (Degrees)

| Vertical Angle (Degrees) | | 0 | 22.5 | 45 | 67.5 | 90 | 112.5 | 135 | 157.5 | 180 | 202.5 | 225 | 247.5 | 270 | 292.5 | 315 | 337.5 |
|--------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 | 783.0 |
| | 5 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 | 710.8 |
| | 10 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 | 539.1 |
| | 15 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 | 367.1 |
| | 20 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 | 240.4 |
| | 25 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 | 156.6 |
| | 30 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 | 102.9 |
| | 35 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 | 69.1 |
| | 40 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 | 48.4 |
| | 45 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 | 35.1 |
| | 50 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 | 25.6 |
| | 55 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| | 60 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 | 13.9 |
| | 65 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 | 10.3 |
| | 70 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| | 75 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 | 4.3 |
| | 80 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| | 85 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| | 90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 95 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 105 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 110 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 115 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 120 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 125 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 130 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 135 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 140 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 145 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 150 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 155 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 160 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 165 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 170 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 175 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 180 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Zonal Lumen Tabulation (5 degree zones)

| Zone (Degrees) | Lumens | Zone (Degrees) | Lumens | Zone (Degrees) | Lumens | Zone (Degrees) | Lumens |
|----------------|--------|----------------|--------|----------------|--------|----------------|--------|
| 0-5 | 17.88 | 45-50 | 12.12 | 90-95 | 0 | 135-140 | 0 |
| 5-10 | 44.40 | 50-55 | 9.63 | 95-100 | 0 | 140-145 | 0 |
| 10-15 | 52.74 | 55-60 | 7.63 | 100-105 | 0 | 145-150 | 0 |
| 15-20 | 48.90 | 60-65 | 5.94 | 105-110 | 0 | 150-155 | 0 |
| 20-25 | 40.76 | 65-70 | 4.30 | 110-115 | 0 | 155-160 | 0 |
| 25-30 | 32.17 | 70-75 | 2.88 | 115-120 | 0 | 160-165 | 0 |
| 30-35 | 24.74 | 75-80 | 1.75 | 120-125 | 0 | 165-170 | 0 |
| 35-40 | 19.26 | 80-85 | 1.03 | 125-130 | 0 | 170-175 | 0 |
| 40-45 | 15.24 | 85-90 | 0.26 | 130-135 | 0 | 175-180 | 0 |



Utilization of Lumens - Zonal Cavity Method

| Effective Floor Cavity Reflectance 20% | | | | | | | | | | | | |
|--|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Ceiling Cavity Reflectance | 90 | | | | 80 | | | | 70 | | | |
| Wall Reflectance | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 |
| Room Cavity Ratio (RCR) | ** Values are expressed as Lumens delivered to the task surface ** | | | | | | | | | | | |
| 0 | 416.6 | 416.6 | 416.6 | 416.6 | 406.7 | 406.7 | 406.7 | 406.7 | 397.2 | 397.2 | 397.2 | 397.2 |
| 1 | 395.0 | 383.6 | 373.5 | 364.4 | 386.0 | 375.8 | 366.7 | 358.5 | 377.5 | 368.4 | 360.2 | 352.8 |
| 2 | 373.9 | 354.2 | 338.1 | 324.7 | 365.7 | 348.0 | 333.3 | 321.0 | 358.0 | 342.1 | 328.7 | 317.4 |
| 3 | 354.1 | 328.8 | 309.4 | 294.2 | 346.8 | 323.8 | 305.9 | 291.7 | 339.8 | 318.9 | 302.6 | 289.4 |
| 4 | 335.9 | 306.7 | 285.7 | 269.9 | 329.3 | 302.7 | 283.1 | 268.2 | 323.1 | 298.7 | 280.6 | 266.6 |
| 5 | 319.3 | 287.6 | 265.8 | 250.0 | 313.3 | 284.2 | 263.9 | 248.8 | 307.7 | 280.9 | 261.9 | 247.7 |
| 6 | 304.0 | 270.7 | 248.9 | 233.4 | 298.6 | 267.9 | 247.3 | 232.6 | 293.5 | 265.2 | 245.8 | 231.8 |
| 7 | 289.9 | 255.9 | 234.2 | 219.3 | 285.1 | 253.5 | 233.0 | 218.7 | 280.5 | 251.2 | 231.8 | 218.1 |
| 8 | 277.1 | 242.6 | 221.4 | 207.0 | 272.7 | 240.6 | 220.4 | 206.6 | 268.6 | 238.7 | 219.5 | 206.1 |
| 9 | 265.2 | 230.8 | 210.1 | 196.3 | 261.3 | 229.1 | 209.3 | 196.0 | 257.6 | 227.4 | 208.5 | 195.6 |
| 10 | 254.4 | 220.1 | 200.0 | 186.8 | 250.8 | 218.6 | 199.4 | 186.6 | 247.5 | 217.2 | 198.7 | 186.3 |

| Ceiling Cavity Reflectance | 50 | | | | 30 | | | 10 | | | 0 |
|----------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Wall Reflectance | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| Room Cavity Ratio (RCR) | ** Values are expressed as Lumens delivered to the task surface ** | | | | | | | | | | |
| 0 | 379.6 | 379.6 | 379.6 | 379.6 | 363.4 | 363.4 | 363.4 | 348.6 | 348.6 | 348.6 | 341.6 |
| 1 | 361.7 | 354.5 | 347.9 | 341.9 | 341.8 | 336.5 | 331.7 | 330.0 | 325.9 | 322.1 | 315.9 |
| 2 | 343.8 | 330.9 | 319.9 | 310.4 | 320.7 | 311.6 | 303.7 | 311.2 | 303.9 | 297.4 | 291.6 |
| 3 | 327.0 | 309.9 | 296.1 | 284.7 | 301.5 | 289.9 | 280.2 | 293.8 | 284.1 | 275.9 | 270.4 |
| 4 | 311.6 | 291.3 | 275.7 | 263.4 | 284.4 | 271.1 | 260.3 | 278.0 | 266.7 | 257.3 | 252.0 |
| 5 | 297.3 | 274.8 | 258.2 | 245.5 | 269.1 | 254.6 | 243.3 | 263.7 | 251.2 | 241.2 | 236.0 |
| 6 | 284.2 | 260.0 | 242.9 | 230.2 | 255.2 | 240.1 | 228.6 | 250.7 | 237.4 | 227.0 | 222.1 |
| 7 | 272.1 | 246.8 | 229.5 | 216.9 | 242.8 | 227.3 | 215.7 | 238.9 | 225.1 | 214.6 | 209.8 |
| 8 | 261.0 | 234.9 | 217.6 | 205.2 | 231.5 | 215.8 | 204.4 | 228.2 | 214.1 | 203.5 | 198.9 |
| 9 | 250.7 | 224.2 | 207.0 | 195.0 | 221.2 | 205.5 | 194.3 | 218.3 | 204.1 | 193.6 | 189.2 |
| 10 | 241.2 | 214.4 | 197.5 | 185.8 | 211.8 | 196.3 | 185.3 | 209.4 | 195.1 | 184.8 | 180.5 |

Average Luminance Table (cd/m²)

| Horizontal Angle (Degrees) | | 0 | 45 | 90 |
|----------------------------|----|--------|--------|--------|
| Vertical Angle (Degree) | 0 | 686800 | 686800 | 686800 |
| | 45 | 43530 | 43530 | 43530 |
| | 55 | 29080 | 29080 | 29080 |
| | 65 | 21420 | 21420 | 21420 |
| | 75 | 14460 | 14460 | 14460 |
| | 85 | 12560 | 12560 | 12560 |

This test was conducted using photometry techniques according to standard IES procedures. The user must therefore use caution in the following situations: 1) This test was performed using a specific ballast/lamp combination. Extrapolation of this data for other ballast/lamp combinations may produce erroneous results. 2) This test was conducted in a controlled laboratory environment where the ambient temperature was held at 25°C ±1°C. Field performance may differ particularly in regards to change in luminous output as a result of difference in ambient temperature and method of mounting the luminaire.



Polar Plot (Candela)

