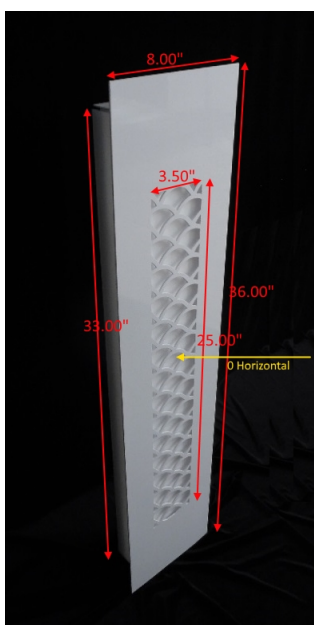


Report of Test

LLIA000901-033

Catalog Number: W163603/F11/D61/L406

Wall mounted, formed white enamel aluminum housing, formed white enamel steel enclosure with translucent white plastic side and front enclosure.
96 white LEDs, two Samsung Electronics LT-M562C G2 3000K-S49 LED boards with 48 LEDs each.
One Philips Advance Xitanium XI054C150V054BST1 LED driver.
120.0Vac, 60.00Hz, 0.3335A, 39.06W, 0.976PF, 8.0%THD(i)



Performance Summary

| | |
|--------------------|-----------|
| Total Light Output | 3190 lm |
| Luminaire Power | 39.1 W |
| Luminous Efficacy | 81.6 lm/W |

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



Test Report No. LLIA000901-033

Catalog Number: W163603/F11/D61/L406

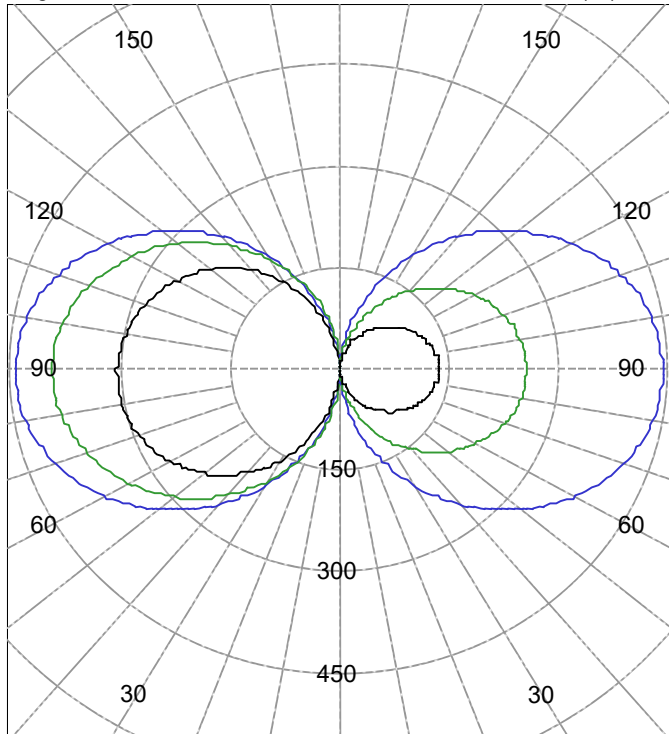
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Legend: C0/C180-Black, C45/C225-Green, C90/C270-Blue (cd)



C180-C270 (Symmetric about C0/C180) C0-C90

| AVERAGE LUMINANCE (cd/m ²) | | | |
|--|-----|------|------|
| Gamma | C0 | C45 | C90 |
| 45.0 | 690 | 1434 | 6225 |
| 55.0 | 721 | 1492 | 6788 |
| 65.0 | 748 | 1538 | 7280 |
| 75.0 | 771 | 1574 | 7715 |
| 85.0 | 790 | 1601 | 8093 |

INTENSITY SUMMARY (cd)

| Gamma | C-Plane | | | | | Flux (lm) |
|-------|---------|-------|-----|-------|-----|-----------|
| | C0 | C22.5 | C45 | C67.5 | C90 | |
| 0.0 | 2 | 2 | 2 | 2 | 2 | |
| 5.0 | 5 | 7 | 16 | 23 | 26 | 3 |
| 10.0 | 12 | 14 | 36 | 53 | 58 | |
| 15.0 | 25 | 25 | 52 | 82 | 93 | 22 |
| 20.0 | 37 | 37 | 74 | 115 | 128 | |
| 25.0 | 49 | 49 | 95 | 147 | 162 | 61 |
| 30.0 | 60 | 60 | 117 | 180 | 197 | |
| 35.0 | 70 | 70 | 137 | 212 | 231 | 114 |
| 40.0 | 80 | 80 | 156 | 243 | 263 | |
| 45.0 | 89 | 89 | 174 | 272 | 293 | 175 |
| 50.0 | 98 | 97 | 190 | 299 | 322 | |
| 55.0 | 106 | 105 | 205 | 324 | 349 | 239 |
| 60.0 | 113 | 112 | 218 | 347 | 373 | |
| 65.0 | 119 | 118 | 229 | 367 | 394 | 295 |
| 70.0 | 125 | 123 | 238 | 384 | 412 | |
| 75.0 | 129 | 127 | 246 | 397 | 426 | 338 |
| 80.0 | 133 | 130 | 251 | 407 | 436 | |
| 85.0 | 135 | 132 | 254 | 412 | 442 | 361 |
| 90.0 | 135 | 133 | 255 | 414 | 443 | |

ZONAL FLUX AND PERCENTAGES

| Zone | Flux (lm) | % Lamp | % Luminaire |
|--------|-----------|--------|-------------|
| 0-30 | 86 | N / A | 2.7 |
| 0-40 | 200 | N / A | 6.3 |
| 0-60 | 614 | N / A | 19.2 |
| 0-90 | 1608 | N / A | 50.4 |
| 40-90 | 1408 | N / A | 44.1 |
| 60-90 | 994 | N / A | 31.1 |
| 90-180 | 1583 | N / A | 49.6 |
| 0-180 | 3190 | N / A | 100.0 |

Total Light Output = 3,190 lm

Signed:

Authorized Signatory

Date of test 12-Feb-2018
Date of report 19-Feb-2018



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Intensity data (cd)

| Gamma | C-Plane | | | | |
|-------|---------|-------|-----|-------|-----|
| | C0 | C22.5 | C45 | C67.5 | C90 |
| 0.0 | 2 | 2 | 2 | 2 | 2 |
| 2.5 | 3 | 3 | 7 | 10 | 11 |
| 5.0 | 5 | 7 | 16 | 23 | 26 |
| 7.5 | 9 | 11 | 25 | 38 | 42 |
| 10.0 | 12 | 14 | 36 | 53 | 58 |
| 12.5 | 18 | 19 | 46 | 67 | 76 |
| 15.0 | 25 | 25 | 52 | 82 | 93 |
| 17.5 | 31 | 31 | 62 | 98 | 110 |
| 20.0 | 37 | 37 | 74 | 115 | 128 |
| 22.5 | 43 | 43 | 84 | 131 | 145 |
| 25.0 | 49 | 49 | 95 | 147 | 162 |
| 27.5 | 55 | 54 | 106 | 164 | 179 |
| 30.0 | 60 | 60 | 117 | 180 | 197 |
| 32.5 | 65 | 65 | 127 | 196 | 214 |
| 35.0 | 70 | 70 | 137 | 212 | 231 |
| 37.5 | 75 | 75 | 146 | 228 | 246 |
| 40.0 | 80 | 80 | 156 | 243 | 263 |
| 42.5 | 85 | 84 | 165 | 258 | 278 |
| 45.0 | 89 | 89 | 174 | 272 | 293 |
| 47.5 | 94 | 93 | 182 | 286 | 308 |
| 50.0 | 98 | 97 | 190 | 299 | 322 |
| 52.5 | 102 | 101 | 197 | 312 | 336 |
| 55.0 | 106 | 105 | 205 | 324 | 349 |
| 57.5 | 110 | 108 | 211 | 336 | 361 |
| 60.0 | 113 | 112 | 218 | 347 | 373 |
| 62.5 | 116 | 115 | 224 | 358 | 384 |
| 65.0 | 119 | 118 | 229 | 367 | 394 |
| 67.5 | 122 | 121 | 234 | 376 | 403 |
| 70.0 | 125 | 123 | 238 | 384 | 412 |
| 72.5 | 127 | 125 | 242 | 391 | 419 |
| 75.0 | 129 | 127 | 246 | 397 | 426 |
| 77.5 | 131 | 129 | 249 | 403 | 431 |
| 80.0 | 133 | 130 | 251 | 407 | 436 |
| 82.5 | 134 | 131 | 253 | 410 | 439 |
| 85.0 | 135 | 132 | 254 | 412 | 442 |
| 87.5 | 135 | 133 | 255 | 414 | 443 |
| 90.0 | 135 | 133 | 255 | 414 | 443 |



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Intensity data (cd)

| Gamma | C-Plane | | | | |
|-------|---------|-------|-----|-------|-----|
| | C0 | C22.5 | C45 | C67.5 | C90 |
| 90.0 | 135 | 133 | 255 | 414 | 443 |
| 92.5 | 135 | 133 | 255 | 413 | 443 |
| 95.0 | 135 | 132 | 254 | 411 | 441 |
| 97.5 | 134 | 131 | 252 | 409 | 438 |
| 100.0 | 133 | 130 | 250 | 405 | 434 |
| 102.5 | 131 | 129 | 247 | 400 | 429 |
| 105.0 | 129 | 127 | 244 | 395 | 423 |
| 107.5 | 127 | 125 | 240 | 388 | 416 |
| 110.0 | 124 | 123 | 236 | 380 | 408 |
| 112.5 | 122 | 120 | 231 | 372 | 399 |
| 115.0 | 119 | 117 | 226 | 362 | 390 |
| 117.5 | 116 | 114 | 221 | 352 | 379 |
| 120.0 | 112 | 111 | 214 | 342 | 368 |
| 122.5 | 109 | 108 | 208 | 330 | 356 |
| 125.0 | 105 | 104 | 201 | 318 | 344 |
| 127.5 | 101 | 100 | 194 | 306 | 330 |
| 130.0 | 97 | 96 | 186 | 293 | 316 |
| 132.5 | 93 | 92 | 178 | 279 | 302 |
| 135.0 | 89 | 88 | 170 | 265 | 287 |
| 137.5 | 84 | 83 | 161 | 251 | 272 |
| 140.0 | 80 | 79 | 152 | 236 | 256 |
| 142.5 | 75 | 74 | 142 | 221 | 240 |
| 145.0 | 70 | 69 | 133 | 205 | 223 |
| 147.5 | 65 | 64 | 123 | 189 | 206 |
| 150.0 | 59 | 59 | 113 | 173 | 189 |
| 152.5 | 54 | 53 | 102 | 156 | 172 |
| 155.0 | 48 | 48 | 91 | 140 | 155 |
| 157.5 | 43 | 42 | 81 | 124 | 137 |
| 160.0 | 36 | 36 | 70 | 108 | 120 |
| 162.5 | 30 | 30 | 59 | 92 | 103 |
| 165.0 | 24 | 24 | 49 | 76 | 86 |
| 167.5 | 18 | 19 | 43 | 62 | 70 |
| 170.0 | 13 | 14 | 34 | 49 | 54 |
| 172.5 | 9 | 11 | 25 | 34 | 39 |
| 175.0 | 5 | 7 | 16 | 22 | 24 |
| 177.5 | 3 | 4 | 7 | 9 | 10 |
| 180.0 | 2 | 2 | 2 | 2 | 2 |



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One Philips Advance Xitanium XI054C150V054BST1 LED driver.

120.0Vac, 60.00Hz, 0.3335A, 39.06W, 0.976PF, 8.0%THD(i)

Intensity data (cd)

| Gamma | C-Plane | | | | |
|-------|---------|--------|------|--------|------|
| | C90 | C112.5 | C135 | C157.5 | C180 |
| 0.0 | 2 | 2 | 2 | 2 | 2 |
| 2.5 | 11 | 13 | 12 | 8 | 6 |
| 5.0 | 26 | 32 | 31 | 22 | 12 |
| 7.5 | 42 | 52 | 51 | 44 | 23 |
| 10.0 | 58 | 71 | 69 | 64 | 36 |
| 12.5 | 76 | 90 | 86 | 83 | 51 |
| 15.0 | 93 | 109 | 102 | 100 | 66 |
| 17.5 | 110 | 127 | 117 | 116 | 82 |
| 20.0 | 128 | 145 | 132 | 130 | 98 |
| 22.5 | 145 | 163 | 147 | 144 | 113 |
| 25.0 | 162 | 181 | 161 | 155 | 127 |
| 27.5 | 179 | 199 | 175 | 167 | 141 |
| 30.0 | 197 | 217 | 189 | 178 | 154 |
| 32.5 | 214 | 234 | 203 | 190 | 167 |
| 35.0 | 231 | 252 | 217 | 200 | 179 |
| 37.5 | 246 | 268 | 231 | 211 | 190 |
| 40.0 | 263 | 285 | 244 | 221 | 201 |
| 42.5 | 278 | 301 | 257 | 231 | 212 |
| 45.0 | 293 | 316 | 269 | 240 | 222 |
| 47.5 | 308 | 332 | 282 | 249 | 231 |
| 50.0 | 322 | 346 | 293 | 258 | 240 |
| 52.5 | 336 | 360 | 305 | 266 | 248 |
| 55.0 | 349 | 373 | 315 | 274 | 256 |
| 57.5 | 361 | 386 | 326 | 282 | 263 |
| 60.0 | 373 | 398 | 335 | 289 | 270 |
| 62.5 | 384 | 409 | 344 | 295 | 276 |
| 65.0 | 394 | 419 | 352 | 301 | 281 |
| 67.5 | 403 | 429 | 360 | 306 | 286 |
| 70.0 | 412 | 437 | 366 | 311 | 290 |
| 72.5 | 419 | 445 | 372 | 316 | 294 |
| 75.0 | 426 | 451 | 378 | 320 | 297 |
| 77.5 | 431 | 457 | 382 | 323 | 300 |
| 80.0 | 436 | 461 | 386 | 326 | 302 |
| 82.5 | 439 | 465 | 389 | 328 | 303 |
| 85.0 | 442 | 468 | 391 | 329 | 304 |
| 87.5 | 443 | 469 | 392 | 330 | 304 |
| 90.0 | 443 | 469 | 393 | 331 | 304 |



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Intensity data (cd)

| Gamma | C-Plane | | | | |
|-------|---------|--------|------|--------|------|
| | C90 | C112.5 | C135 | C157.5 | C180 |
| 90.0 | 443 | 469 | 393 | 331 | 304 |
| 92.5 | 443 | 468 | 392 | 330 | 303 |
| 95.0 | 441 | 466 | 390 | 329 | 301 |
| 97.5 | 438 | 463 | 388 | 327 | 299 |
| 100.0 | 434 | 459 | 384 | 324 | 296 |
| 102.5 | 429 | 454 | 380 | 321 | 293 |
| 105.0 | 423 | 448 | 375 | 317 | 290 |
| 107.5 | 416 | 441 | 369 | 313 | 286 |
| 110.0 | 408 | 433 | 363 | 308 | 281 |
| 112.5 | 399 | 424 | 356 | 303 | 276 |
| 115.0 | 390 | 414 | 348 | 297 | 271 |
| 117.5 | 379 | 404 | 340 | 291 | 265 |
| 120.0 | 368 | 392 | 330 | 284 | 259 |
| 122.5 | 356 | 380 | 321 | 276 | 252 |
| 125.0 | 344 | 367 | 310 | 268 | 245 |
| 127.5 | 330 | 354 | 299 | 260 | 237 |
| 130.0 | 316 | 340 | 288 | 251 | 229 |
| 132.5 | 302 | 325 | 276 | 241 | 220 |
| 135.0 | 287 | 309 | 264 | 231 | 211 |
| 137.5 | 272 | 294 | 251 | 220 | 201 |
| 140.0 | 256 | 278 | 238 | 210 | 191 |
| 142.5 | 240 | 261 | 225 | 198 | 180 |
| 145.0 | 223 | 244 | 211 | 186 | 169 |
| 147.5 | 206 | 226 | 197 | 175 | 158 |
| 150.0 | 189 | 209 | 183 | 162 | 145 |
| 152.5 | 172 | 191 | 168 | 150 | 133 |
| 155.0 | 155 | 173 | 154 | 138 | 119 |
| 157.5 | 137 | 155 | 139 | 126 | 105 |
| 160.0 | 120 | 137 | 124 | 113 | 91 |
| 162.5 | 103 | 119 | 110 | 105 | 77 |
| 165.0 | 86 | 100 | 96 | 95 | 62 |
| 167.5 | 70 | 82 | 81 | 80 | 48 |
| 170.0 | 54 | 64 | 65 | 63 | 34 |
| 172.5 | 39 | 45 | 47 | 43 | 21 |
| 175.0 | 24 | 27 | 28 | 20 | 11 |
| 177.5 | 10 | 10 | 10 | 6 | 5 |
| 180.0 | 2 | 2 | 2 | 2 | 2 |



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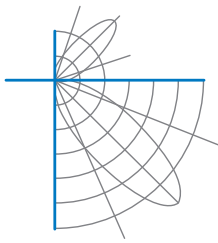
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| Coefficients Of Utilization - Zonal Cavity Method | | | | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Effective Floor Cavity Reflectance 0.20 | | | | | | | | | | | | | | | | | | |
| RC | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
| | RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | |
| 0 | 107 | 107 | 107 | 107 | 99 | 99 | 99 | 99 | 84 | 84 | 84 | 69 | 69 | 69 | 56 | 56 | 56 | 50 |
| 1 | 92 | 85 | 79 | 74 | 84 | 78 | 73 | 68 | 65 | 60 | 57 | 52 | 49 | 46 | 41 | 38 | 36 | 30 |
| 2 | 82 | 71 | 63 | 56 | 74 | 65 | 57 | 51 | 53 | 47 | 42 | 43 | 38 | 34 | 33 | 29 | 26 | 21 |
| 3 | 73 | 61 | 51 | 44 | 66 | 55 | 47 | 40 | 45 | 39 | 33 | 36 | 31 | 26 | 27 | 23 | 20 | 15 |
| 4 | 66 | 53 | 43 | 35 | 60 | 48 | 39 | 32 | 39 | 32 | 27 | 31 | 25 | 21 | 23 | 19 | 16 | 12 |
| 5 | 60 | 46 | 36 | 29 | 54 | 42 | 33 | 27 | 34 | 27 | 22 | 27 | 21 | 17 | 20 | 16 | 13 | 9 |
| 6 | 55 | 41 | 31 | 24 | 50 | 37 | 29 | 22 | 30 | 23 | 18 | 24 | 18 | 14 | 18 | 14 | 10 | 7 |
| 7 | 50 | 36 | 27 | 21 | 46 | 33 | 25 | 19 | 27 | 20 | 16 | 21 | 16 | 12 | 16 | 12 | 9 | 6 |
| 8 | 47 | 33 | 24 | 18 | 42 | 30 | 22 | 16 | 24 | 18 | 13 | 19 | 14 | 10 | 15 | 10 | 7 | 5 |
| 9 | 43 | 30 | 21 | 16 | 39 | 27 | 19 | 14 | 22 | 16 | 12 | 18 | 13 | 9 | 13 | 9 | 6 | 4 |
| 10 | 40 | 27 | 19 | 14 | 37 | 25 | 17 | 12 | 20 | 14 | 10 | 16 | 11 | 8 | 12 | 8 | 6 | 3 |

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.



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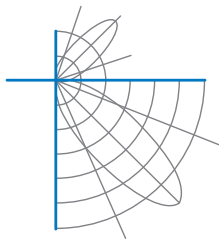
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Test Distance 9.5 m
Test Temperature 24.8 °C

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.