

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P198370

Luminaire Tested: **TT-C3-LED-E1-DL-CG-LWR-LW-UPL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P198370  
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (P27139) AND DOWNLIGHT  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: TT-C3-LED-E1-DL-CG-LWR-LW-UPL  
Description: TOPTIER LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
DRIVE LANE DISTRIBUTION WITH CLEAR GLASS LENS AND LumaWatt WIRELESS SENSOR  
Light Source: (160) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5554.3 lumens  
Efficiency: N/A  
Efficacy: 66.2 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 1.12' x H: 0.1')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B2 - U4 - G2

Input Watts (W): 83.9  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT

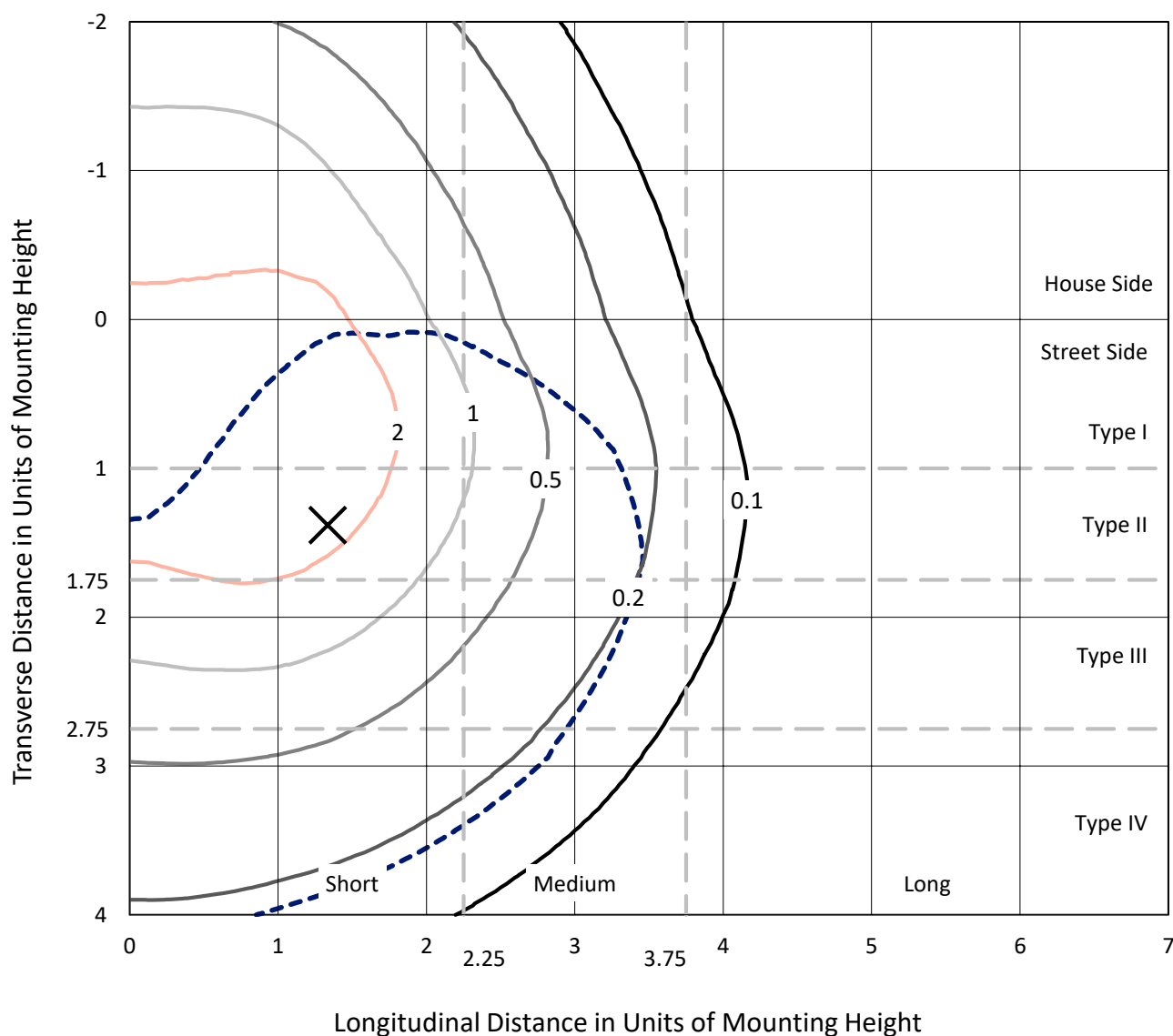


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## Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 --- 1/2 Max cd

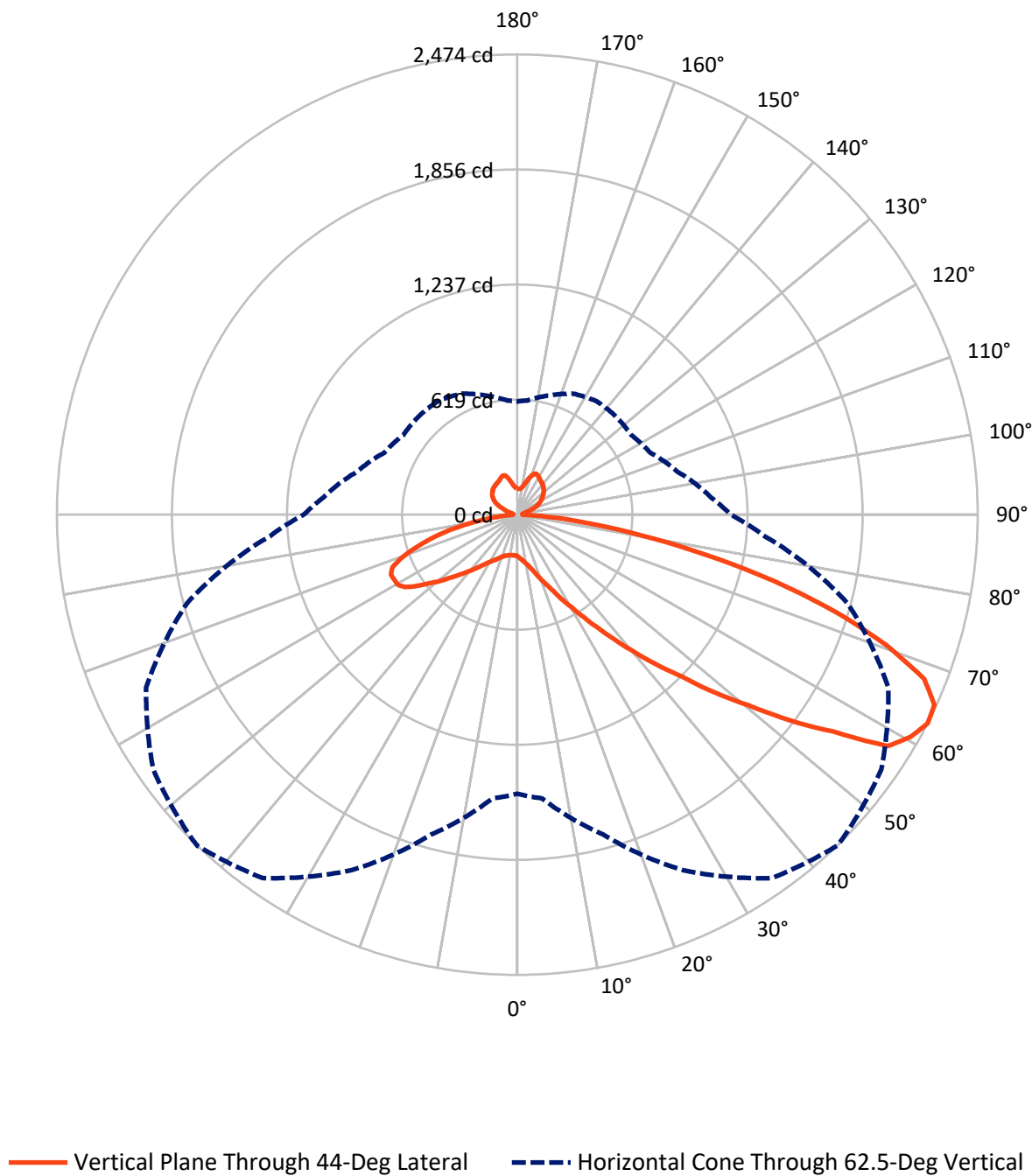


Based on 10 foot mounting height. Maximum calculated value = 4.5 fc  
 Type IV - Short - Semi-Cutoff

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## Luminous Intensity Polar Plot



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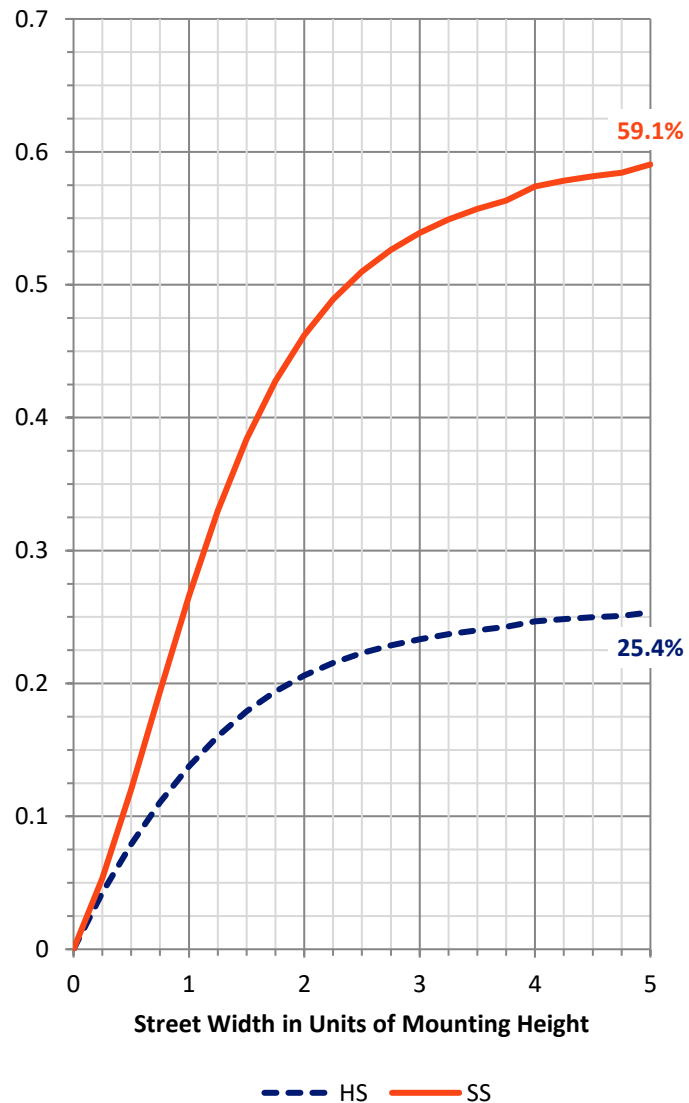
**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 1428.4   | 387.3  | 1815.7 |
|                    | % Fixture | 25.7     | 7.0    | 32.7   |
| <b>Street Side</b> | Lumens    | 3325.9   | 412.6  | 3738.6 |
|                    | % Fixture | 59.9     | 7.4    | 67.3   |
| <b>Total</b>       | Lumens    | 4754.3   | 800.0  | 5554.3 |
|                    | % Fixture | 85.6     | 14.4   | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 22.4   | 0.4       |
| 10°-20°   | 77.4   | 1.4       |
| 20°-30°   | 167.4  | 3.0       |
| 30°-40°   | 330.3  | 5.9       |
| 40°-50°   | 624.5  | 11.2      |
| 50°-60°   | 1073.3 | 19.3      |
| 60°-70°   | 1346.7 | 24.2      |
| 70°-80°   | 919.8  | 16.6      |
| 80°-90°   | 192.4  | 3.5       |
| 90°-100°  | 36.3   | 0.7       |
| 100°-110° | 55.2   | 1.0       |
| 110°-120° | 110.8  | 2.0       |
| 120°-130° | 144.2  | 2.6       |
| 130°-140° | 148.0  | 2.7       |
| 140°-150° | 133.4  | 2.4       |
| 150°-160° | 102.6  | 1.8       |
| 160°-170° | 55.1   | 1.0       |
| 170°-180° | 14.3   | 0.3       |
| 0°-90°    | 4754.3 | 85.6      |
| 0°-180°   | 5554.3 | 100.0     |

**Coefficient of Utilization**



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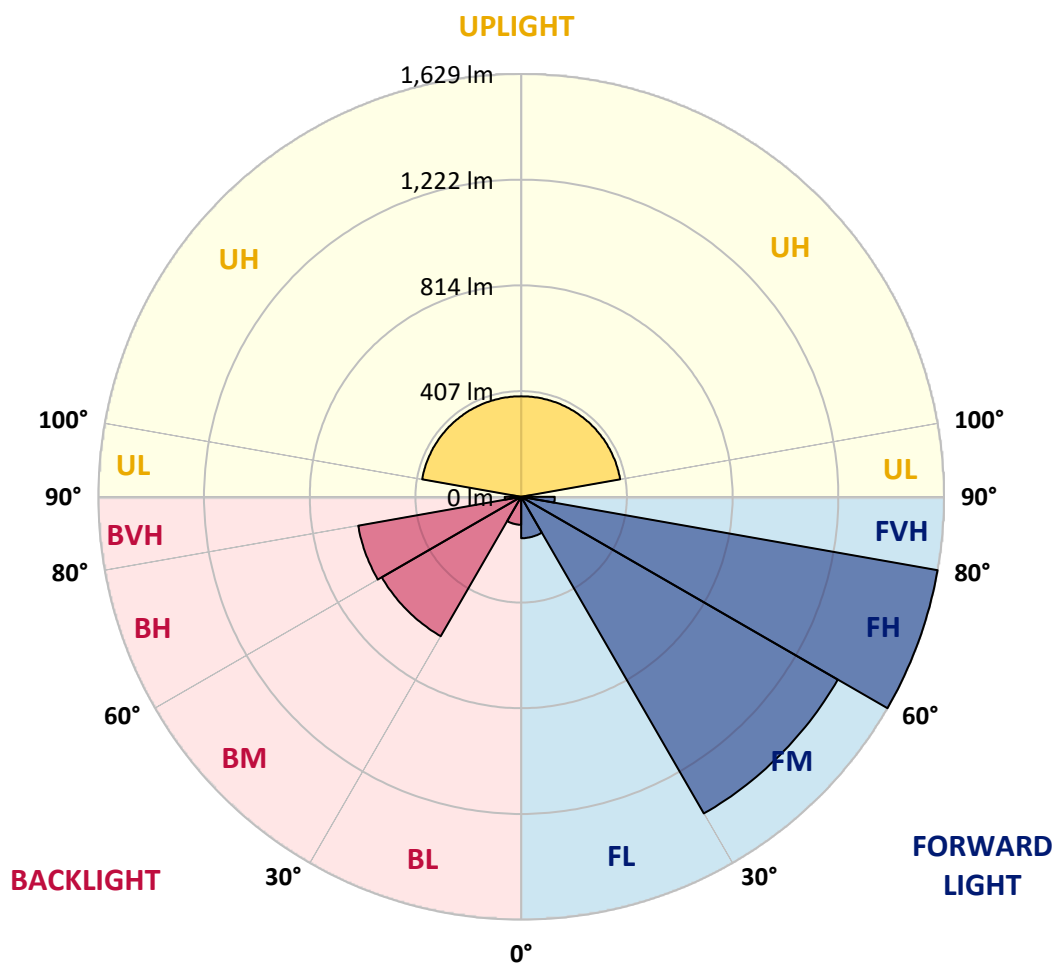
CATALOG NUMBER: TT-C3-LED-E1-DL-CG-LWR-LW-UPL

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |        |         |
|------|-------------|--------|-----------|-------------------------|--------|---------|
|      |             |        |           | B                       | U      | G       |
| FL   | (0°-30°)    | 159.4  | 2.9       |                         |        |         |
| FM   | (30°-60°)   | 1408.3 | 25.4      |                         |        |         |
| FH   | (60°-80°)   | 1628.9 | 29.3      |                         |        | G1/1800 |
| FVH  | (80°-90°)   | 129.3  | 2.3       |                         |        | G2/225  |
| BL   | (0°-30°)    | 107.7  | 1.9       | B0/110                  |        |         |
| BM   | (30°-60°)   | 619.9  | 11.2      | B1/1000                 |        |         |
| BH   | (60°-80°)   | 637.6  | 11.5      | B2/1000                 |        | G2/1000 |
| BVH  | (80°-90°)   | 63.2   | 1.1       |                         |        | G1/100  |
| UL   | (90°-100°)  | 36.3   | 0.7       |                         | U2/50  |         |
| UH   | (100°-180°) | 387.3  | 7.0       |                         | U3/500 |         |

**BUG Rating: B2-U4-G2**

Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°   | 5°   | 15°  | 25°  | 35°  | 44°  | 45°  | 55°  | 65°  | 75°  | 85°  |
|--------|------|------|------|------|------|------|------|------|------|------|------|
| 0°     | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  |
| 2.5°   | 234  | 234  | 234  | 234  | 232  | 232  | 232  | 231  | 230  | 228  | 227  |
| 5°     | 246  | 247  | 246  | 245  | 243  | 242  | 241  | 240  | 237  | 234  | 231  |
| 7.5°   | 261  | 260  | 260  | 259  | 256  | 254  | 254  | 250  | 246  | 242  | 237  |
| 10°    | 277  | 278  | 278  | 275  | 273  | 269  | 269  | 263  | 258  | 252  | 246  |
| 12.5°  | 297  | 296  | 298  | 296  | 293  | 286  | 286  | 281  | 272  | 264  | 256  |
| 15°    | 322  | 322  | 323  | 319  | 316  | 309  | 311  | 298  | 290  | 281  | 268  |
| 17.5°  | 354  | 354  | 351  | 349  | 344  | 340  | 336  | 325  | 313  | 298  | 283  |
| 20°    | 390  | 391  | 386  | 386  | 380  | 375  | 372  | 359  | 341  | 321  | 302  |
| 22.5°  | 434  | 432  | 428  | 424  | 421  | 412  | 415  | 398  | 374  | 347  | 322  |
| 25°    | 469  | 472  | 472  | 475  | 470  | 460  | 463  | 442  | 414  | 382  | 347  |
| 27.5°  | 512  | 518  | 523  | 529  | 527  | 520  | 518  | 499  | 463  | 425  | 378  |
| 30°    | 559  | 568  | 572  | 583  | 586  | 580  | 579  | 560  | 525  | 468  | 417  |
| 32.5°  | 620  | 619  | 631  | 650  | 662  | 659  | 658  | 637  | 590  | 530  | 460  |
| 35°    | 679  | 681  | 695  | 724  | 743  | 749  | 748  | 726  | 679  | 604  | 517  |
| 37.5°  | 743  | 746  | 773  | 808  | 839  | 854  | 854  | 844  | 781  | 680  | 580  |
| 40°    | 806  | 820  | 851  | 896  | 948  | 973  | 972  | 956  | 898  | 785  | 646  |
| 42.5°  | 882  | 896  | 930  | 994  | 1059 | 1107 | 1107 | 1102 | 1029 | 908  | 742  |
| 45°    | 957  | 969  | 1011 | 1092 | 1187 | 1243 | 1250 | 1268 | 1217 | 1047 | 853  |
| 47.5°  | 1037 | 1047 | 1101 | 1203 | 1322 | 1431 | 1438 | 1452 | 1370 | 1183 | 940  |
| 50°    | 1117 | 1121 | 1200 | 1337 | 1506 | 1610 | 1633 | 1661 | 1547 | 1347 | 1038 |
| 52.5°  | 1209 | 1211 | 1303 | 1478 | 1689 | 1841 | 1845 | 1865 | 1802 | 1548 | 1221 |
| 55°    | 1290 | 1293 | 1411 | 1636 | 1911 | 2057 | 2097 | 2155 | 2001 | 1683 | 1275 |
| 57.5°  | 1365 | 1377 | 1539 | 1827 | 2126 | 2347 | 2340 | 2337 | 2118 | 1737 | 1286 |
| 60°    | 1438 | 1460 | 1667 | 1982 | 2284 | 2427 | 2435 | 2378 | 2149 | 1759 | 1275 |
| 62.5°  | 1501 | 1531 | 1779 | 2109 | 2385 | 2474 | 2469 | 2388 | 2200 | 1836 | 1335 |
| 65°    | 1546 | 1587 | 1830 | 2163 | 2377 | 2463 | 2470 | 2427 | 2244 | 1840 | 1317 |
| 67.5°  | 1569 | 1627 | 1829 | 2127 | 2317 | 2358 | 2361 | 2282 | 2109 | 1742 | 1205 |
| 70°    | 1575 | 1613 | 1780 | 1995 | 2109 | 2105 | 2100 | 2041 | 1875 | 1554 | 1071 |
| 72.5°  | 1510 | 1544 | 1625 | 1757 | 1803 | 1793 | 1774 | 1708 | 1596 | 1336 | 913  |
| 75°    | 1367 | 1379 | 1382 | 1419 | 1421 | 1424 | 1402 | 1359 | 1280 | 1080 | 729  |
| 77.5°  | 1101 | 1119 | 1080 | 1038 | 1037 | 1033 | 1028 | 974  | 936  | 810  | 542  |
| 80°    | 802  | 794  | 762  | 714  | 682  | 672  | 666  | 651  | 628  | 555  | 377  |
| 82.5°  | 484  | 493  | 460  | 426  | 409  | 392  | 401  | 385  | 373  | 339  | 231  |
| 85°    | 217  | 217  | 210  | 201  | 187  | 188  | 190  | 184  | 176  | 159  | 111  |
| 87.5°  | 42   | 38   | 41   | 42   | 39   | 40   | 43   | 45   | 47   | 44   | 33   |
| 90°    | 36   | 36   | 36   | 34   | 29   | 26   | 26   | 28   | 32   | 34   | 34   |
| 92.5°  | 40   | 39   | 38   | 34   | 29   | 27   | 27   | 28   | 32   | 35   | 36   |
| 95°    | 44   | 43   | 41   | 36   | 32   | 30   | 30   | 30   | 34   | 37   | 39   |
| 97.5°  | 42   | 42   | 40   | 37   | 35   | 33   | 33   | 33   | 34   | 36   | 36   |
| 100°   | 45   | 45   | 44   | 40   | 38   | 36   | 36   | 36   | 38   | 38   | 37   |
| 102.5° | 51   | 51   | 49   | 46   | 44   | 42   | 42   | 43   | 44   | 42   | 41   |
| 105°   | 60   | 60   | 57   | 54   | 53   | 52   | 52   | 54   | 53   | 49   | 48   |
| 107.5° | 72   | 72   | 70   | 67   | 66   | 68   | 68   | 68   | 66   | 60   | 59   |
| 110°   | 86   | 86   | 89   | 85   | 86   | 87   | 87   | 84   | 84   | 78   | 74   |

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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 5°  | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 112.5° | 101 | 102 | 108 | 107 | 110 | 107 | 107 | 102 | 105 | 100 | 95  |
| 115°   | 121 | 122 | 128 | 128 | 129 | 124 | 124 | 121 | 125 | 123 | 116 |
| 117.5° | 140 | 141 | 144 | 141 | 141 | 136 | 136 | 138 | 141 | 139 | 133 |
| 120°   | 152 | 153 | 155 | 149 | 149 | 147 | 147 | 150 | 153 | 148 | 145 |
| 122.5° | 161 | 162 | 164 | 154 | 155 | 158 | 158 | 159 | 162 | 155 | 153 |
| 125°   | 169 | 169 | 172 | 163 | 165 | 168 | 168 | 167 | 168 | 163 | 160 |
| 127.5° | 177 | 177 | 181 | 171 | 176 | 178 | 178 | 176 | 175 | 173 | 166 |
| 130°   | 187 | 188 | 191 | 179 | 186 | 186 | 186 | 183 | 183 | 184 | 171 |
| 132.5° | 198 | 199 | 201 | 186 | 193 | 195 | 195 | 190 | 192 | 192 | 179 |
| 135°   | 210 | 210 | 209 | 192 | 199 | 201 | 201 | 196 | 201 | 199 | 185 |
| 137.5° | 221 | 219 | 213 | 197 | 205 | 208 | 208 | 203 | 210 | 204 | 191 |
| 140°   | 229 | 226 | 216 | 200 | 207 | 212 | 213 | 212 | 217 | 209 | 195 |
| 142.5° | 235 | 231 | 218 | 201 | 208 | 217 | 218 | 220 | 223 | 211 | 198 |
| 145°   | 235 | 230 | 218 | 202 | 211 | 221 | 223 | 230 | 227 | 211 | 201 |
| 147.5° | 230 | 227 | 219 | 207 | 216 | 227 | 229 | 239 | 229 | 212 | 204 |
| 150°   | 224 | 221 | 220 | 214 | 222 | 233 | 235 | 242 | 232 | 214 | 210 |
| 152.5° | 216 | 214 | 221 | 220 | 230 | 240 | 241 | 242 | 235 | 219 | 215 |
| 155°   | 208 | 207 | 219 | 224 | 237 | 242 | 243 | 238 | 234 | 224 | 220 |
| 157.5° | 203 | 203 | 216 | 224 | 234 | 234 | 235 | 228 | 229 | 226 | 222 |
| 160°   | 199 | 198 | 210 | 213 | 219 | 218 | 219 | 215 | 219 | 221 | 218 |
| 162.5° | 185 | 184 | 193 | 193 | 198 | 197 | 198 | 196 | 200 | 204 | 207 |
| 165°   | 169 | 167 | 173 | 173 | 176 | 176 | 177 | 176 | 181 | 185 | 190 |
| 167.5° | 154 | 152 | 156 | 155 | 159 | 159 | 159 | 160 | 165 | 168 | 172 |
| 170°   | 142 | 141 | 145 | 144 | 147 | 147 | 147 | 148 | 152 | 155 | 159 |
| 172.5° | 137 | 135 | 139 | 138 | 141 | 141 | 141 | 141 | 145 | 146 | 149 |
| 175°   | 136 | 134 | 137 | 137 | 139 | 139 | 139 | 138 | 141 | 141 | 143 |
| 177.5° | 137 | 136 | 139 | 138 | 140 | 139 | 139 | 138 | 140 | 140 | 141 |
| 180°   | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 | 140 |



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**CANDELA DISTRIBUTION (continued):**

|        | 90°  | 95°  | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|------|------|------|------|------|------|------|------|------|------|------|
| 0°     | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  | 223  |
| 2.5°   | 227  | 226  | 225  | 223  | 221  | 220  | 219  | 218  | 218  | 217  | 217  |
| 5°     | 230  | 229  | 227  | 225  | 223  | 220  | 218  | 217  | 215  | 215  | 215  |
| 7.5°   | 235  | 233  | 229  | 226  | 223  | 220  | 218  | 216  | 215  | 213  | 213  |
| 10°    | 242  | 239  | 234  | 228  | 224  | 221  | 218  | 216  | 215  | 214  | 214  |
| 12.5°  | 252  | 247  | 239  | 233  | 227  | 223  | 220  | 218  | 217  | 216  | 216  |
| 15°    | 262  | 257  | 247  | 238  | 231  | 227  | 223  | 222  | 220  | 220  | 220  |
| 17.5°  | 276  | 268  | 256  | 246  | 238  | 232  | 229  | 226  | 226  | 227  | 227  |
| 20°    | 292  | 283  | 268  | 255  | 246  | 240  | 237  | 235  | 234  | 235  | 236  |
| 22.5°  | 311  | 298  | 279  | 267  | 257  | 250  | 247  | 245  | 244  | 246  | 245  |
| 25°    | 330  | 317  | 295  | 279  | 267  | 262  | 259  | 258  | 256  | 258  | 257  |
| 27.5°  | 362  | 344  | 314  | 293  | 282  | 276  | 272  | 270  | 270  | 270  | 269  |
| 30°    | 390  | 369  | 334  | 313  | 297  | 290  | 286  | 285  | 285  | 286  | 285  |
| 32.5°  | 429  | 403  | 362  | 334  | 319  | 308  | 304  | 303  | 303  | 302  | 303  |
| 35°    | 479  | 448  | 394  | 361  | 341  | 331  | 327  | 326  | 323  | 323  | 323  |
| 37.5°  | 533  | 492  | 432  | 396  | 371  | 358  | 352  | 348  | 346  | 344  | 344  |
| 40°    | 592  | 545  | 478  | 431  | 405  | 388  | 377  | 371  | 368  | 365  | 363  |
| 42.5°  | 669  | 617  | 531  | 474  | 441  | 422  | 406  | 400  | 392  | 389  | 383  |
| 45°    | 770  | 704  | 597  | 533  | 485  | 458  | 442  | 429  | 419  | 414  | 409  |
| 47.5°  | 849  | 771  | 661  | 584  | 537  | 502  | 480  | 459  | 447  | 438  | 436  |
| 50°    | 929  | 847  | 729  | 637  | 585  | 554  | 525  | 499  | 477  | 467  | 469  |
| 52.5°  | 1084 | 985  | 820  | 709  | 636  | 601  | 571  | 539  | 514  | 498  | 499  |
| 55°    | 1128 | 1027 | 879  | 779  | 709  | 663  | 623  | 588  | 552  | 529  | 530  |
| 57.5°  | 1125 | 1025 | 884  | 798  | 752  | 719  | 682  | 634  | 592  | 562  | 558  |
| 60°    | 1110 | 1009 | 875  | 788  | 754  | 746  | 727  | 683  | 626  | 592  | 585  |
| 62.5°  | 1147 | 1047 | 891  | 788  | 747  | 748  | 744  | 717  | 663  | 616  | 608  |
| 65°    | 1131 | 1023 | 881  | 795  | 760  | 752  | 750  | 724  | 687  | 634  | 627  |
| 67.5°  | 1036 | 942  | 813  | 737  | 722  | 729  | 739  | 722  | 685  | 645  | 636  |
| 70°    | 909  | 829  | 720  | 654  | 647  | 661  | 684  | 686  | 665  | 634  | 635  |
| 72.5°  | 767  | 703  | 611  | 566  | 558  | 571  | 600  | 614  | 615  | 604  | 603  |
| 75°    | 616  | 558  | 492  | 454  | 456  | 476  | 498  | 522  | 530  | 537  | 543  |
| 77.5°  | 459  | 428  | 372  | 347  | 352  | 374  | 388  | 403  | 420  | 428  | 434  |
| 80°    | 321  | 294  | 257  | 242  | 248  | 261  | 273  | 286  | 308  | 309  | 321  |
| 82.5°  | 201  | 183  | 164  | 159  | 160  | 165  | 179  | 187  | 197  | 200  | 198  |
| 85°    | 98   | 94   | 88   | 85   | 86   | 91   | 100  | 106  | 112  | 111  | 105  |
| 87.5°  | 31   | 32   | 33   | 34   | 34   | 37   | 40   | 40   | 42   | 41   | 41   |
| 90°    | 34   | 34   | 34   | 32   | 27   | 21   | 25   | 30   | 33   | 34   | 34   |
| 92.5°  | 36   | 35   | 33   | 31   | 27   | 23   | 25   | 29   | 34   | 36   | 36   |
| 95°    | 38   | 38   | 35   | 33   | 29   | 26   | 27   | 31   | 34   | 35   | 36   |
| 97.5°  | 36   | 35   | 35   | 34   | 30   | 25   | 26   | 30   | 33   | 35   | 35   |
| 100°   | 37   | 37   | 38   | 38   | 33   | 27   | 28   | 32   | 35   | 36   | 36   |
| 102.5° | 41   | 42   | 43   | 45   | 39   | 32   | 33   | 35   | 38   | 40   | 41   |
| 105°   | 49   | 49   | 52   | 54   | 48   | 39   | 38   | 41   | 44   | 48   | 49   |
| 107.5° | 60   | 61   | 65   | 65   | 58   | 50   | 47   | 50   | 54   | 60   | 61   |
| 110°   | 75   | 77   | 78   | 75   | 71   | 65   | 60   | 62   | 67   | 73   | 74   |

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CATALOG NUMBER: TT-C3-LED-E1-DL-CG-LWR-LW-UPL

**CANDELA DISTRIBUTION (continued):**

|        | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-----|-----|------|------|------|------|------|------|------|------|------|
| 112.5° | 94  | 94  | 91   | 86   | 84   | 82   | 77   | 80   | 85   | 87   | 87   |
| 115°   | 113 | 111 | 104  | 100  | 99   | 102  | 99   | 103  | 106  | 102  | 102  |
| 117.5° | 129 | 128 | 121  | 117  | 116  | 120  | 121  | 125  | 125  | 120  | 120  |
| 120°   | 142 | 142 | 137  | 134  | 134  | 137  | 137  | 139  | 139  | 134  | 136  |
| 122.5° | 150 | 153 | 151  | 148  | 149  | 149  | 145  | 148  | 149  | 145  | 146  |
| 125°   | 158 | 162 | 162  | 159  | 160  | 159  | 149  | 154  | 156  | 154  | 154  |
| 127.5° | 163 | 169 | 170  | 168  | 168  | 169  | 154  | 158  | 163  | 160  | 161  |
| 130°   | 169 | 176 | 178  | 174  | 175  | 175  | 159  | 164  | 169  | 164  | 167  |
| 132.5° | 176 | 182 | 186  | 181  | 183  | 181  | 165  | 171  | 176  | 171  | 174  |
| 135°   | 184 | 190 | 195  | 190  | 191  | 187  | 170  | 177  | 184  | 179  | 179  |
| 137.5° | 190 | 196 | 204  | 200  | 199  | 191  | 175  | 182  | 192  | 187  | 187  |
| 140°   | 195 | 201 | 213  | 212  | 206  | 195  | 180  | 186  | 200  | 195  | 196  |
| 142.5° | 198 | 204 | 220  | 222  | 212  | 197  | 184  | 190  | 205  | 204  | 205  |
| 145°   | 202 | 208 | 225  | 230  | 216  | 199  | 187  | 193  | 208  | 211  | 214  |
| 147.5° | 206 | 212 | 230  | 236  | 219  | 202  | 191  | 195  | 212  | 220  | 225  |
| 150°   | 211 | 216 | 231  | 235  | 219  | 205  | 194  | 199  | 215  | 227  | 233  |
| 152.5° | 216 | 220 | 229  | 230  | 220  | 208  | 201  | 205  | 219  | 232  | 239  |
| 155°   | 219 | 221 | 224  | 222  | 220  | 213  | 208  | 212  | 224  | 234  | 240  |
| 157.5° | 219 | 219 | 216  | 213  | 216  | 219  | 215  | 220  | 229  | 232  | 235  |
| 160°   | 215 | 214 | 210  | 208  | 213  | 223  | 224  | 228  | 233  | 229  | 232  |
| 162.5° | 207 | 207 | 204  | 204  | 209  | 221  | 227  | 231  | 230  | 224  | 226  |
| 165°   | 192 | 194 | 196  | 198  | 203  | 212  | 216  | 219  | 220  | 215  | 217  |
| 167.5° | 174 | 177 | 181  | 184  | 189  | 195  | 196  | 199  | 200  | 197  | 200  |
| 170°   | 160 | 163 | 166  | 168  | 172  | 177  | 178  | 180  | 181  | 178  | 181  |
| 172.5° | 151 | 153 | 155  | 156  | 159  | 162  | 162  | 164  | 165  | 163  | 166  |
| 175°   | 144 | 146 | 147  | 148  | 149  | 151  | 151  | 152  | 153  | 151  | 153  |
| 177.5° | 141 | 142 | 142  | 142  | 143  | 144  | 143  | 144  | 145  | 143  | 145  |
| 180°   | 140 | 140 | 140  | 140  | 140  | 140  | 140  | 140  | 140  | 140  | 140  |

(END OF REPORT)