

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: SURE-LITES

Report Number: E430-18

Luminaire Tested: **029-84**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: E430-18
Test Lab:
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: SURE-LITES
Catalog Number: 029-84
Description: SURE-LITES EMERGENCY
EFFICIENCY 87.1
Light Source: 132 LUMENS Incandescent (Low Voltage)
ANSI# 908
Ballast/Driver: -

Summary

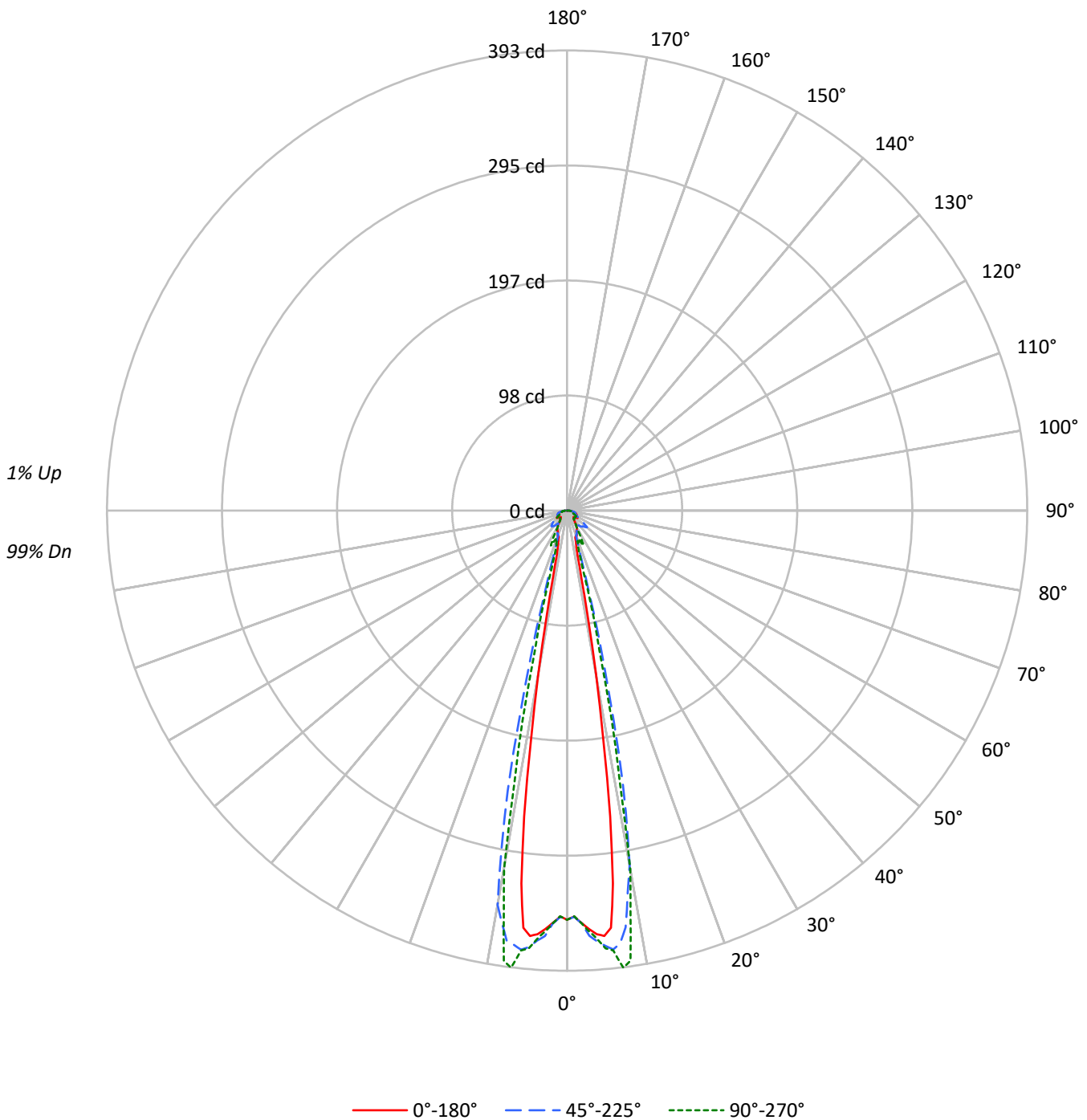
Lumens per Lamp: 132 (1 lamp)
Luminaire Lumens: 114.8 lumens
Efficiency: 87.0%
Efficacy: 11.5 lumens/watt
Spacing Criteria (0/90/45): 0.33 / 0.42 / 0.37
Luminous Opening: (L: 0.38 ' x W: -0.38 ' x H: 0 '
CIE Type: Direct

Input Watts (W): 10
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



TEST NUMBER: E430-18
CATALOG NUMBER: 029-84

Luminous Intensity Polar Plot





TEST NUMBER: E430-18
 CATALOG NUMBER: 029-84

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|--|----|----|----|--|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 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 |
| RCR | | | | | | | | | | | | | | | | | | | | |
| 0 | 104 | 104 | 104 | 104 | 101 | 101 | 101 | 101 | 96 | 96 | 96 | | 92 | 92 | 92 | | 88 | 88 | 88 | 86 |
| 1 | 96 | 92 | 89 | 86 | 93 | 90 | 87 | 85 | 86 | 84 | 82 | | 83 | 81 | 79 | | 80 | 78 | 77 | 75 |
| 2 | 89 | 84 | 79 | 74 | 87 | 82 | 77 | 74 | 79 | 75 | 72 | | 76 | 73 | 70 | | 73 | 71 | 68 | 67 |
| 3 | 84 | 77 | 71 | 66 | 82 | 75 | 70 | 66 | 73 | 68 | 65 | | 70 | 67 | 63 | | 68 | 65 | 62 | 61 |
| 4 | 79 | 71 | 65 | 61 | 77 | 70 | 64 | 60 | 68 | 63 | 59 | | 66 | 62 | 58 | | 64 | 61 | 58 | 56 |
| 5 | 75 | 67 | 61 | 56 | 74 | 66 | 60 | 56 | 64 | 59 | 55 | | 62 | 58 | 55 | | 61 | 57 | 54 | 53 |
| 6 | 72 | 63 | 57 | 53 | 70 | 62 | 56 | 52 | 61 | 56 | 52 | | 59 | 55 | 52 | | 58 | 54 | 51 | 50 |
| 7 | 69 | 60 | 54 | 50 | 67 | 59 | 54 | 50 | 58 | 53 | 49 | | 57 | 52 | 49 | | 56 | 52 | 49 | 47 |
| 8 | 66 | 57 | 51 | 48 | 65 | 57 | 51 | 47 | 55 | 51 | 47 | | 54 | 50 | 47 | | 54 | 50 | 47 | 45 |
| 9 | 64 | 55 | 49 | 46 | 63 | 54 | 49 | 46 | 53 | 49 | 45 | | 53 | 48 | 45 | | 52 | 48 | 45 | 44 |
| 10 | 61 | 53 | 48 | 44 | 60 | 52 | 47 | 44 | 52 | 47 | 44 | | 51 | 47 | 44 | | 50 | 46 | 44 | 42 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|--|-----|------|
| 0° | Luminous shape not found, | | |
| 5° | reference photometric report, or contact | | |
| 10° | the photometric lab for calculations. | | |
| 15° | | | |
| 20° | | | |
| 25° | | | |
| 30° | | | |
| 35° | | | |
| 40° | | | |
| 45° | | | |
| 50° | | | |
| 55° | | | |
| 60° | | | |
| 65° | | | |
| 70° | | | |
| 75° | | | |
| 80° | | | |
| 85° | | | |



TEST NUMBER: E430-18
 CATALOG NUMBER: 029-84

ZONAL LUMENS:

CANDELA DISTRIBUTION:

| Zone | Lumens | % Fixture | % Lamp | | 0° | 45° | 90° | 135° | 180° | Flux |
|-----------|--------|-----------|--------|------|-----|-----|-----|------|------|------|
| 0°-10° | 32.8 | 28.5 | 24.8 | 0° | 350 | 350 | 350 | 350 | 350 | |
| 10°-20° | 21.8 | 19.0 | 16.5 | 5° | 365 | 373 | 375 | 374 | 365 | 28 |
| 20°-30° | 9.7 | 8.5 | 7.4 | 15° | 29 | 70 | 49 | 80 | 29 | 11 |
| 30°-40° | 8.4 | 7.3 | 6.4 | 25° | 19 | 20 | 33 | 19 | 19 | 9 |
| 40°-50° | 9.3 | 8.1 | 7.0 | 35° | 11 | 14 | 10 | 13 | 11 | 7 |
| 50°-60° | 10.7 | 9.3 | 8.1 | 45° | 8 | 19 | 9 | 19 | 8 | 6 |
| 60°-70° | 9.7 | 8.4 | 7.3 | 55° | 11 | 14 | 11 | 12 | 11 | 9 |
| 70°-80° | 7.5 | 6.6 | 5.7 | 65° | 9 | 8 | 5 | 9 | 9 | 9 |
| 80°-90° | 4.1 | 3.6 | 3.1 | 75° | 7 | 7 | 5 | 8 | 7 | 7 |
| 90°-100° | 1.0 | 0.9 | 0.8 | 85° | 3 | 3 | 3 | 3 | 3 | 3 |
| 100°-110° | 0.0 | 0.0 | 0.0 | 90° | 1 | 2 | 1 | 2 | 1 | 0 |
| 110°-120° | 0.0 | 0.0 | 0.0 | 95° | 0 | 0 | 0 | 0 | 0 | 0 |
| 120°-130° | 0.0 | 0.0 | 0.0 | 105° | 0 | 0 | 0 | 0 | 0 | 0 |
| 130°-140° | 0.0 | 0.0 | 0.0 | 115° | 0 | 0 | 0 | 0 | 0 | 0 |
| 140°-150° | 0.0 | 0.0 | 0.0 | 125° | 0 | 0 | 0 | 0 | 0 | 0 |
| 150°-160° | 0.0 | 0.0 | 0.0 | 135° | 0 | 0 | 0 | 0 | 0 | 0 |
| 160°-170° | 0.0 | 0.0 | 0.0 | 145° | 0 | 0 | 0 | 0 | 0 | 0 |
| 170°-180° | 0.0 | 0.0 | 0.0 | 155° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-30° | 64.3 | 56.0 | 48.7 | 165° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-40° | 72.7 | 63.4 | 55.1 | 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-60° | 92.7 | 80.8 | 70.2 | 180° | 0 | 0 | 0 | 0 | 0 | 0 |
| 0°-90° | 114.0 | 99.3 | 86.4 | | | | | | | |
| 90°-120° | 1.0 | 0.9 | 0.8 | | | | | | | |
| 90°-150° | 1.0 | 0.9 | 0.8 | | | | | | | |
| 90°-180° | 1.0 | 0.9 | 0.8 | | | | | | | |
| 0°-180° | 114.8 | 100.0 | 87.0 | | | | | | | |



TEST NUMBER: E430-18
 CATALOG NUMBER: 029-84

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 50° | 55° | 65° | 75° | 85° |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 |
| 1° | 346.7 | 346.8 | 347.2 | 346.6 | 346.6 | 347.1 | 347.1 | 346.9 | 347.2 | 346.7 | 346.7 |
| 2° | 352.5 | 351.5 | 351.6 | 352.9 | 353.9 | 352.7 | 353.2 | 353.9 | 353.4 | 354.2 | 353.9 |
| 3° | 357.9 | 357.0 | 360.4 | 360.8 | 362.0 | 363.7 | 363.9 | 364.0 | 361.4 | 360.8 | 358.6 |
| 4° | 362.7 | 364.4 | 367.9 | 371.2 | 372.5 | 368.9 | 368.2 | 367.3 | 368.3 | 367.1 | 367.9 |
| 5° | 364.7 | 365.6 | 371.3 | 375.8 | 374.2 | 373.1 | 374.3 | 375.1 | 378.9 | 378.8 | 375.3 |
| 6° | 358.4 | 361.6 | 373.0 | 377.6 | 373.9 | 376.9 | 377.1 | 378.0 | 380.4 | 380.1 | 380.0 |
| 7° | 320.7 | 328.6 | 338.4 | 353.8 | 366.7 | 372.1 | 373.7 | 375.5 | 385.5 | 391.6 | 391.4 |
| 8° | 263.9 | 264.7 | 282.7 | 298.1 | 329.7 | 359.3 | 370.9 | 384.5 | 390.0 | 390.2 | 384.5 |
| 9° | 197.7 | 207.6 | 212.9 | 242.0 | 279.4 | 330.8 | 356.4 | 380.2 | 383.1 | 361.6 | 352.9 |
| 10° | 142.1 | 136.6 | 154.2 | 180.7 | 225.5 | 307.4 | 342.1 | 356.7 | 352.3 | 333.8 | 308.9 |
| 11° | 89.9 | 93.8 | 99.0 | 126.5 | 179.7 | 262.7 | 294.3 | 316.8 | 304.7 | 281.8 | 254.5 |
| 12° | 59.0 | 57.9 | 64.1 | 85.0 | 133.1 | 212.9 | 244.7 | 257.3 | 246.2 | 207.7 | 175.7 |
| 13° | 39.5 | 41.5 | 41.1 | 55.4 | 94.8 | 155.9 | 179.1 | 199.9 | 181.4 | 143.3 | 128.0 |
| 14° | 32.7 | 33.6 | 33.1 | 41.7 | 61.6 | 113.0 | 128.6 | 131.4 | 120.2 | 103.9 | 91.5 |
| 15° | 29.2 | 29.6 | 29.3 | 34.6 | 40.1 | 69.8 | 80.0 | 85.8 | 76.7 | 60.2 | 51.6 |
| 16° | 27.0 | 26.8 | 27.0 | 29.5 | 31.5 | 47.1 | 54.4 | 57.1 | 46.3 | 38.1 | 36.6 |
| 17° | 24.0 | 24.7 | 25.1 | 25.5 | 26.3 | 35.1 | 37.0 | 38.0 | 34.1 | 31.1 | 30.0 |
| 18° | 23.0 | 23.0 | 23.7 | 23.5 | 23.8 | 28.0 | 28.4 | 29.9 | 27.5 | 27.5 | 29.6 |
| 19° | 23.0 | 22.5 | 23.2 | 22.3 | 23.0 | 24.6 | 25.2 | 24.9 | 25.4 | 26.2 | 27.4 |
| 20° | 23.2 | 21.8 | 22.4 | 21.1 | 23.6 | 22.3 | 22.3 | 24.0 | 25.2 | 25.1 | 27.1 |
| 21° | 22.8 | 21.4 | 21.6 | 19.6 | 22.4 | 22.0 | 21.7 | 23.6 | 23.4 | 24.6 | 26.9 |
| 22° | 22.1 | 20.9 | 20.1 | 18.8 | 21.5 | 21.9 | 21.2 | 22.6 | 23.9 | 25.7 | 27.1 |
| 23° | 20.6 | 20.5 | 18.7 | 18.5 | 20.8 | 20.7 | 21.7 | 21.3 | 24.2 | 26.4 | 27.1 |
| 24° | 19.4 | 20.2 | 17.6 | 18.7 | 19.1 | 20.1 | 20.3 | 21.6 | 25.0 | 28.0 | 30.4 |
| 25° | 19.5 | 19.8 | 16.9 | 19.5 | 18.6 | 19.5 | 19.1 | 21.4 | 26.7 | 29.6 | 31.5 |
| 30° | 16.3 | 17.1 | 18.3 | 18.8 | 17.6 | 16.0 | 17.7 | 18.0 | 16.4 | 14.9 | 15.6 |
| 35° | 11.0 | 11.3 | 14.1 | 14.3 | 14.6 | 14.2 | 13.1 | 12.7 | 11.1 | 9.5 | 9.8 |
| 40° | 8.4 | 9.1 | 12.0 | 12.0 | 16.7 | 17.7 | 17.1 | 13.9 | 10.4 | 8.6 | 8.4 |
| 45° | 7.7 | 8.0 | 9.1 | 11.3 | 14.3 | 19.1 | 19.0 | 15.1 | 11.2 | 8.9 | 8.8 |
| 50° | 9.3 | 9.2 | 9.5 | 10.2 | 13.7 | 22.3 | 16.0 | 13.6 | 13.9 | 10.0 | 8.4 |
| 55° | 11.0 | 11.0 | 11.1 | 10.2 | 14.3 | 14.0 | 12.1 | 13.0 | 14.5 | 12.2 | 10.6 |
| 60° | 8.9 | 8.6 | 10.1 | 9.8 | 11.2 | 9.8 | 10.3 | 12.7 | 17.8 | 12.8 | 8.7 |
| 65° | 9.1 | 8.2 | 8.4 | 8.0 | 8.6 | 7.9 | 9.4 | 11.9 | 16.4 | 10.7 | 6.1 |
| 75° | 7.1 | 6.7 | 6.2 | 7.8 | 6.8 | 7.4 | 7.7 | 7.6 | 8.4 | 11.1 | 6.2 |
| 85° | 2.6 | 2.2 | 2.5 | 3.7 | 3.8 | 3.4 | 3.2 | 3.0 | 5.6 | 6.3 | 3.1 |
| 95° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 |
| 105° | 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 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: E430-18
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CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 140° | 145° | 155° | 165° | 175° |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 | 349.5 |
| 1° | 346.5 | 346.7 | 346.7 | 347.2 | 346.9 | 347.1 | 347.1 | 346.6 | 346.6 | 347.2 | 346.8 |
| 2° | 353.0 | 353.9 | 354.2 | 353.4 | 353.9 | 353.2 | 352.7 | 353.9 | 352.9 | 351.6 | 351.5 |
| 3° | 359.9 | 358.6 | 360.8 | 361.4 | 364.0 | 363.9 | 363.7 | 362.0 | 360.8 | 360.4 | 357.0 |
| 4° | 366.6 | 367.9 | 367.1 | 368.3 | 367.3 | 368.2 | 368.9 | 372.5 | 371.2 | 367.9 | 364.4 |
| 5° | 375.4 | 375.3 | 378.8 | 378.9 | 375.1 | 374.3 | 373.1 | 374.2 | 375.8 | 371.3 | 365.6 |
| 6° | 377.7 | 380.0 | 380.1 | 380.4 | 378.0 | 377.1 | 376.9 | 373.9 | 377.6 | 373.0 | 361.6 |
| 7° | 393.3 | 391.4 | 391.6 | 385.5 | 375.5 | 373.7 | 372.1 | 366.7 | 353.8 | 338.4 | 328.6 |
| 8° | 388.3 | 384.5 | 390.2 | 390.0 | 384.5 | 370.9 | 359.3 | 329.7 | 298.1 | 282.7 | 264.7 |
| 9° | 345.9 | 352.9 | 361.6 | 383.1 | 380.2 | 356.4 | 330.8 | 279.4 | 242.0 | 212.9 | 207.6 |
| 10° | 310.7 | 308.9 | 333.8 | 352.3 | 356.7 | 342.1 | 307.4 | 225.5 | 180.7 | 154.2 | 136.6 |
| 11° | 235.4 | 254.5 | 281.8 | 304.7 | 316.8 | 294.3 | 262.7 | 179.7 | 126.5 | 99.0 | 93.8 |
| 12° | 183.0 | 175.7 | 207.7 | 246.2 | 257.3 | 244.7 | 212.9 | 133.1 | 85.0 | 64.1 | 57.9 |
| 13° | 122.5 | 128.0 | 143.3 | 181.4 | 199.9 | 179.1 | 155.9 | 94.8 | 55.4 | 41.1 | 41.5 |
| 14° | 93.1 | 91.5 | 103.9 | 120.2 | 131.4 | 128.6 | 113.0 | 61.6 | 41.7 | 33.1 | 33.6 |
| 15° | 49.4 | 51.6 | 60.2 | 76.7 | 85.8 | 80.0 | 69.8 | 40.1 | 34.6 | 29.3 | 29.6 |
| 16° | 38.2 | 36.6 | 38.1 | 46.3 | 57.1 | 54.4 | 47.1 | 31.5 | 29.5 | 27.0 | 26.8 |
| 17° | 30.4 | 30.0 | 31.1 | 34.1 | 38.0 | 37.0 | 35.1 | 26.3 | 25.5 | 25.1 | 24.7 |
| 18° | 30.3 | 29.6 | 27.5 | 27.5 | 29.9 | 28.4 | 28.0 | 23.8 | 23.5 | 23.7 | 23.0 |
| 19° | 27.4 | 27.4 | 26.2 | 25.4 | 24.9 | 25.2 | 24.6 | 23.0 | 22.3 | 23.2 | 22.5 |
| 20° | 28.7 | 27.1 | 25.1 | 25.2 | 24.0 | 22.3 | 22.3 | 23.6 | 21.1 | 22.4 | 21.8 |
| 21° | 27.4 | 26.9 | 24.6 | 23.4 | 23.6 | 21.7 | 22.0 | 22.4 | 19.6 | 21.6 | 21.4 |
| 22° | 26.3 | 27.1 | 25.7 | 23.9 | 22.6 | 21.2 | 21.9 | 21.5 | 18.8 | 20.1 | 20.9 |
| 23° | 28.3 | 27.1 | 26.4 | 24.2 | 21.3 | 21.7 | 20.7 | 20.8 | 18.5 | 18.7 | 20.5 |
| 24° | 31.2 | 30.4 | 28.0 | 25.0 | 21.6 | 20.3 | 20.1 | 19.1 | 18.7 | 17.6 | 20.2 |
| 25° | 32.9 | 31.5 | 29.6 | 26.7 | 21.4 | 19.1 | 19.5 | 18.6 | 19.5 | 16.9 | 19.8 |
| 30° | 16.1 | 15.6 | 14.9 | 16.4 | 18.0 | 17.7 | 16.0 | 17.6 | 18.8 | 18.3 | 17.1 |
| 35° | 10.4 | 9.8 | 9.5 | 11.1 | 12.7 | 13.1 | 14.2 | 14.6 | 14.3 | 14.1 | 11.3 |
| 40° | 8.9 | 8.4 | 8.6 | 10.4 | 13.9 | 17.1 | 17.7 | 16.7 | 12.0 | 12.0 | 9.1 |
| 45° | 8.9 | 8.8 | 8.9 | 11.2 | 15.1 | 19.0 | 19.1 | 14.3 | 11.3 | 9.1 | 8.0 |
| 50° | 8.7 | 8.4 | 10.0 | 13.9 | 13.6 | 16.0 | 22.3 | 13.7 | 10.2 | 9.5 | 9.2 |
| 55° | 10.6 | 10.6 | 12.2 | 14.5 | 13.0 | 12.1 | 14.0 | 14.3 | 10.2 | 11.1 | 11.0 |
| 60° | 8.2 | 8.7 | 12.8 | 17.8 | 12.7 | 10.3 | 9.8 | 11.2 | 9.8 | 10.1 | 8.6 |
| 65° | 5.4 | 6.1 | 10.7 | 16.4 | 11.9 | 9.4 | 7.9 | 8.6 | 8.0 | 8.4 | 8.2 |
| 75° | 5.3 | 6.2 | 11.1 | 8.4 | 7.6 | 7.7 | 7.4 | 6.8 | 7.8 | 6.2 | 6.7 |
| 85° | 2.7 | 3.1 | 6.3 | 5.6 | 3.0 | 3.2 | 3.4 | 3.8 | 3.7 | 2.5 | 2.2 |
| 95° | 0.1 | 0.1 | 0.0 | 0.2 | 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 |
| 115° | 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 |



TEST NUMBER: E430-18
CATALOG NUMBER: 029-84

CANDELA DISTRIBUTION (continued):

| | 180° |
|------|-------|
| 0° | 349.5 |
| 1° | 346.7 |
| 2° | 352.5 |
| 3° | 357.9 |
| 4° | 362.7 |
| 5° | 364.7 |
| 6° | 358.4 |
| 7° | 320.7 |
| 8° | 263.9 |
| 9° | 197.7 |
| 10° | 142.1 |
| 11° | 89.9 |
| 12° | 59.0 |
| 13° | 39.5 |
| 14° | 32.7 |
| 15° | 29.2 |
| 16° | 27.0 |
| 17° | 24.0 |
| 18° | 23.0 |
| 19° | 23.0 |
| 20° | 23.2 |
| 21° | 22.8 |
| 22° | 22.1 |
| 23° | 20.6 |
| 24° | 19.4 |
| 25° | 19.5 |
| 30° | 16.3 |
| 35° | 11.0 |
| 40° | 8.4 |
| 45° | 7.7 |
| 50° | 9.3 |
| 55° | 11.0 |
| 60° | 8.9 |
| 65° | 9.1 |
| 75° | 7.1 |
| 85° | 2.6 |
| 95° | 0.0 |
| 105° | 0.0 |
| 115° | 0.0 |
| 180° | 0.0 |

(END OF REPORT)