

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: LUMARK

Report Number: P144562

Luminaire Tested: **LDRL-RW-E05-E-7060**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P144562
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33700)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-RW-E05-E-7060
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(5) LIGHTBARS WITH AccuLED OPTICS - RECTANGULAR WIDE
Light Source: (105) 5700K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15410.4 lumens
Efficiency: N/A
Efficacy: 121.1 lumens/watt
Luminous Opening: Rectangular (W 0.83' x L: 1' x H: 0')
IES Classification: Type I - Short - Full Cutoff
BUG Rating: B4 - U0 - G4

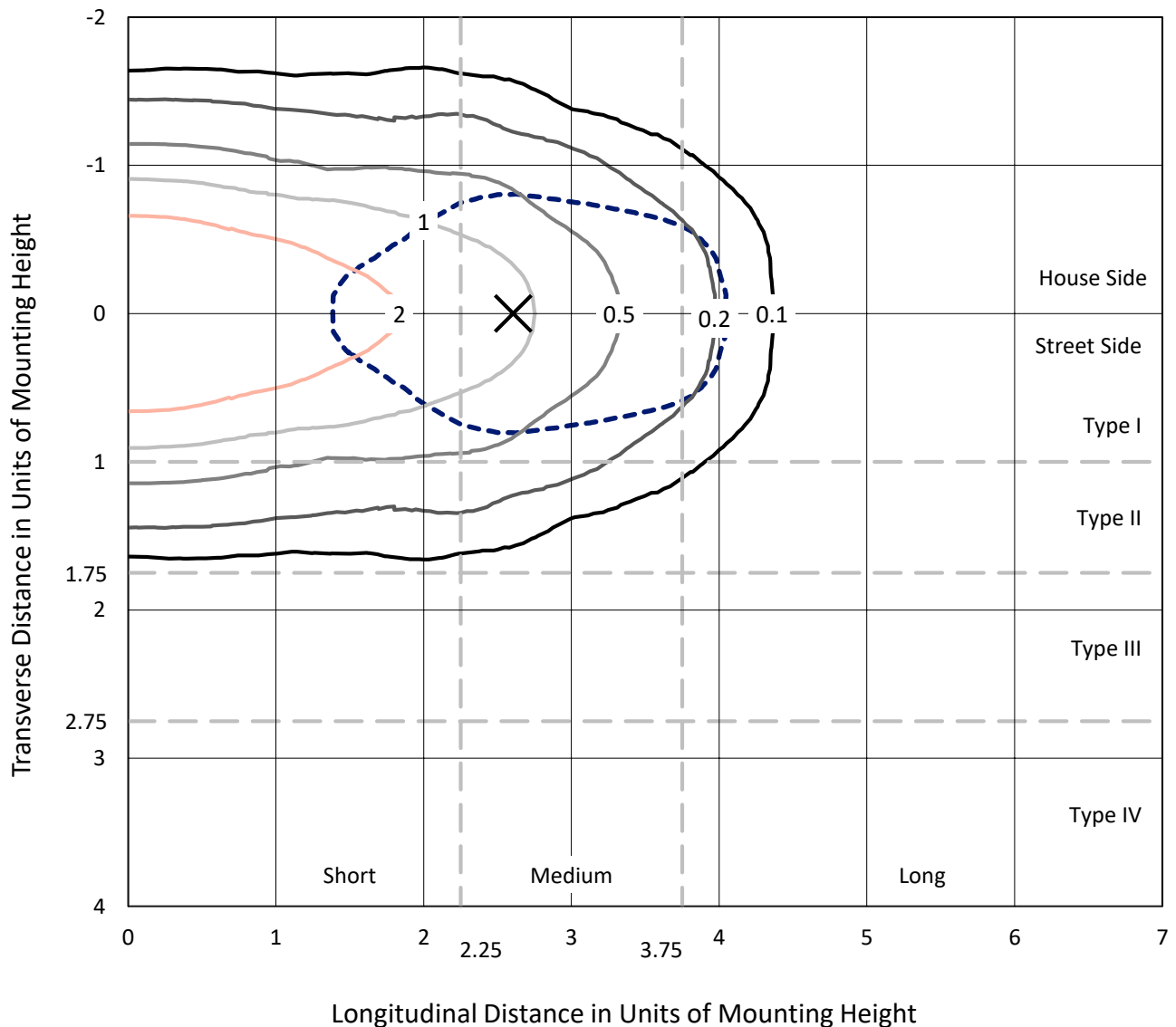
Input Watts (W): 127.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P144562
 CATALOG NUMBER: LDRL-RW-E05-E-7060

Iso-Footcandle Lines of Horizontal Illumination

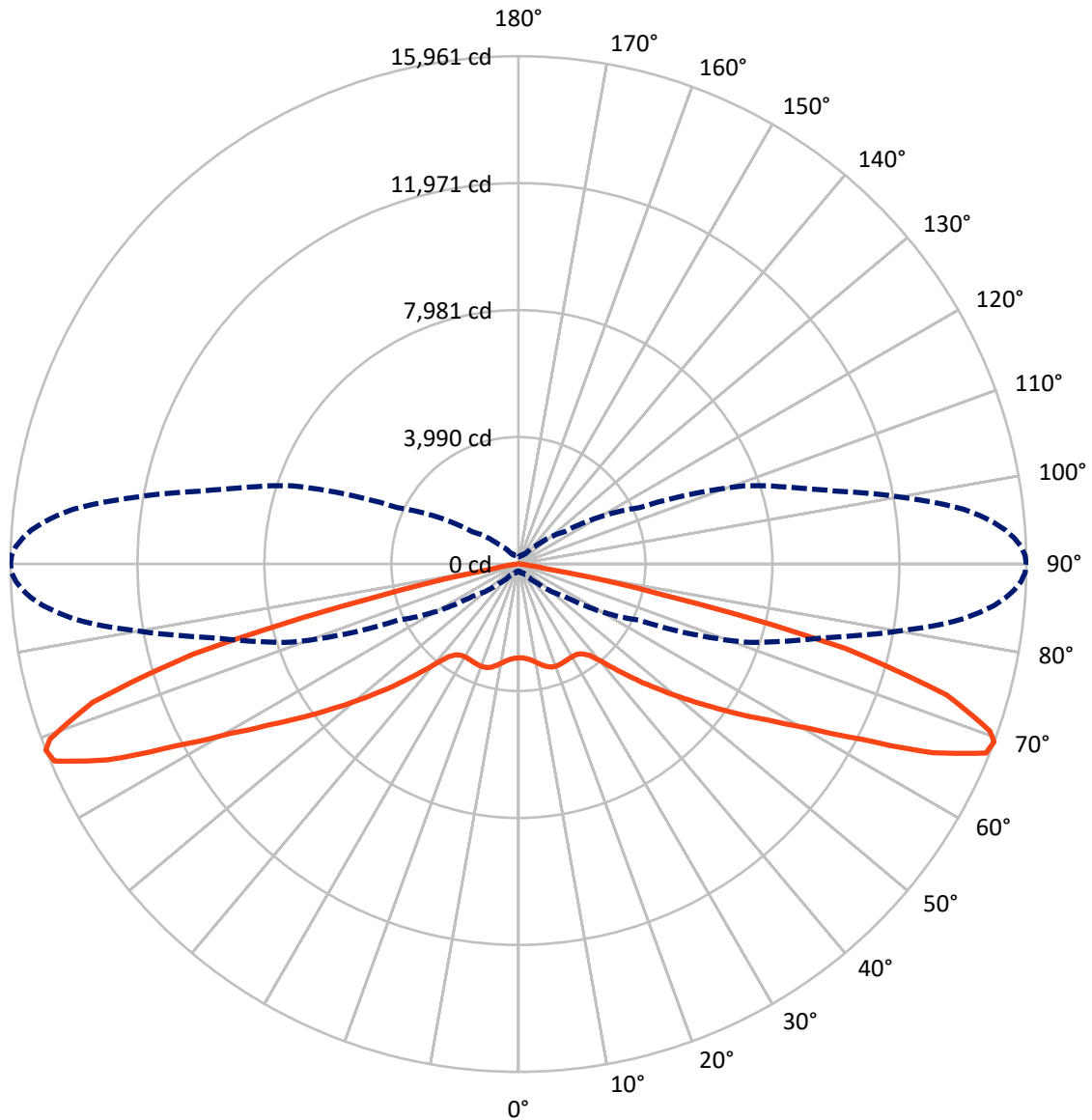
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.8 fc
 Type I - Short - Full Cutoff

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CATALOG NUMBER: LDRL-RW-E05-E-7060

Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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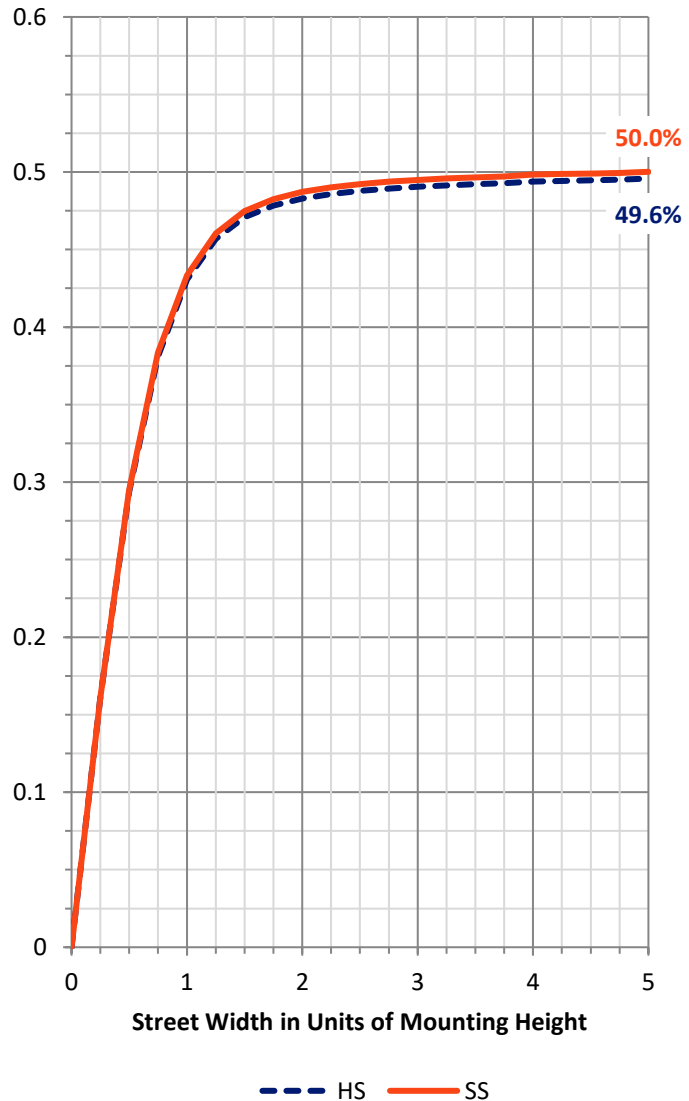
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 7705.2 | 0.0 | 7705.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Street Side | Lumens | 7705.2 | 0.0 | 7705.2 |
| | % Fixture | 50.0 | 0.0 | 50.0 |
| Total | Lumens | 15410.4 | 0.0 | 15410.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 288.7 | 1.9 |
| 10°-20° | 909.3 | 5.9 |
| 20°-30° | 1472.7 | 9.6 |
| 30°-40° | 1834.7 | 11.9 |
| 40°-50° | 2284.0 | 14.8 |
| 50°-60° | 2802.5 | 18.2 |
| 60°-70° | 3456.4 | 22.4 |
| 70°-80° | 2148.7 | 13.9 |
| 80°-90° | 213.4 | 1.4 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 15410.4 | 100.0 |
| 0°-180° | 15410.4 | 100.0 |



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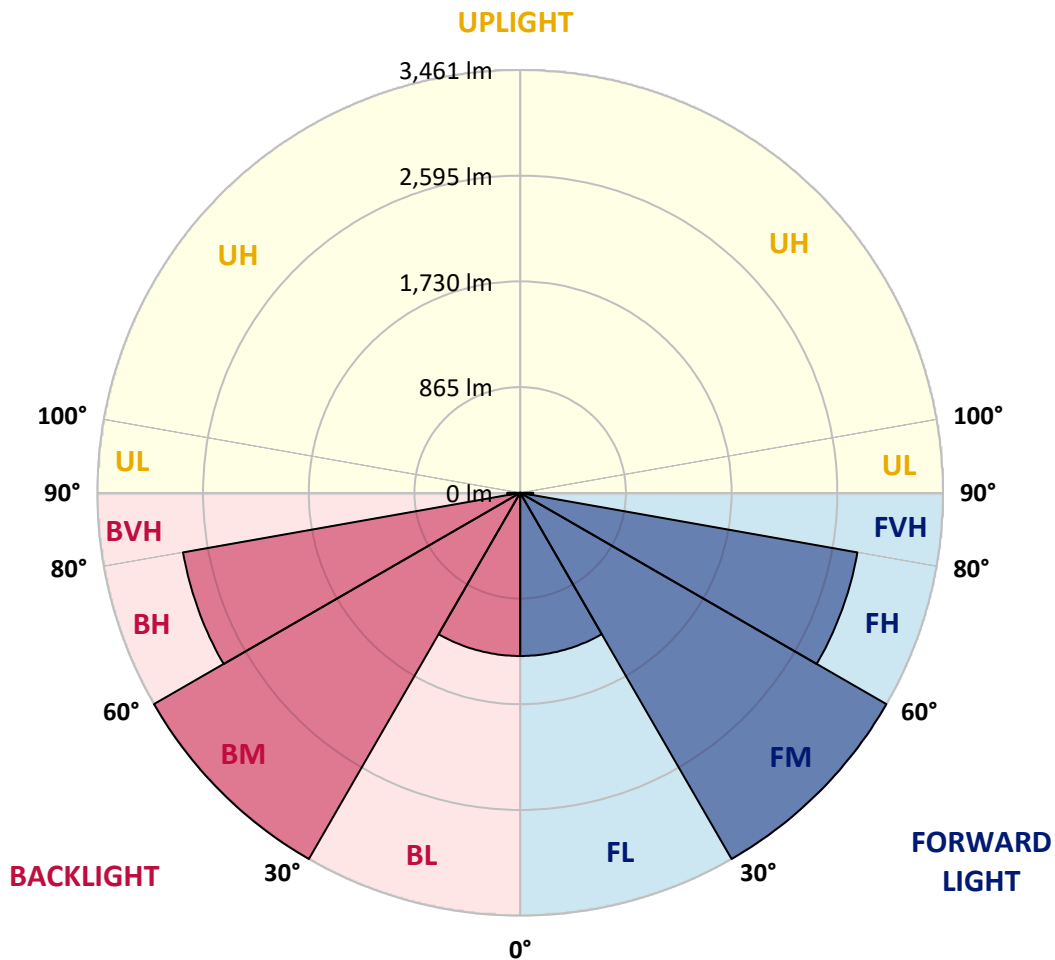
CATALOG NUMBER: LDRL-RW-E05-E-7060

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1335.4 | 8.7 | | | |
| FM | (30°-60°) | 3460.6 | 22.5 | | | |
| FH | (60°-80°) | 2802.5 | 18.2 | | | G2/5000 |
| FVH | (80°-90°) | 106.7 | 0.7 | | | G2/225 |
| BL | (0°-30°) | 1335.4 | 8.7 | B3/2500 | | |
| BM | (30°-60°) | 3460.6 | 22.5 | B3/5000 | | |
| BH | (60°-80°) | 2802.5 | 18.2 | B4/5000 | | G4/5000 |
| BVH | (80°-90°) | 106.7 | 0.7 | | | G2/225 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B4-U0-G4

Type I Short





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CATALOG NUMBER: LDRL-RW-E05-E-7060

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 66° | 67° | 68° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 |
| 2.5° | 2958.8 | 2955.7 | 2961.4 | 2966.5 | 2965.0 | 2966.0 | 2963.9 | 2961.4 | 2961.6 | 2961.8 | 2962.0 |
| 5° | 2981.8 | 2978.8 | 2983.9 | 2988.6 | 2990.0 | 2993.7 | 2994.7 | 2993.2 | 2993.9 | 2994.6 | 2995.3 |
| 7.5° | 3009.6 | 3007.0 | 3013.6 | 3019.8 | 3031.6 | 3037.8 | 3044.0 | 3050.1 | 3050.6 | 3051.1 | 3051.6 |
| 10° | 3035.8 | 3034.2 | 3045.0 | 3058.3 | 3077.3 | 3091.6 | 3109.1 | 3126.0 | 3127.4 | 3128.7 | 3130.0 |
| 12.5° | 3052.6 | 3052.7 | 3069.0 | 3093.2 | 3126.0 | 3155.3 | 3185.0 | 3213.8 | 3216.4 | 3219.1 | 3221.8 |
| 15° | 3051.6 | 3053.7 | 3078.9 | 3123.0 | 3179.4 | 3231.2 | 3267.6 | 3299.0 | 3301.5 | 3304.1 | 3306.6 |
| 17.5° | 3030.6 | 3031.1 | 3067.0 | 3137.3 | 3225.6 | 3302.5 | 3349.7 | 3366.6 | 3367.6 | 3368.5 | 3369.4 |
| 20° | 2971.6 | 2975.7 | 3026.5 | 3128.6 | 3261.5 | 3367.7 | 3412.3 | 3405.2 | 3403.6 | 3402.1 | 3400.5 |
| 22.5° | 2870.6 | 2875.6 | 2943.4 | 3080.4 | 3268.1 | 3409.8 | 3455.9 | 3423.6 | 3418.7 | 3413.8 | 3408.8 |
| 25° | 2730.0 | 2738.6 | 2812.0 | 2987.5 | 3223.0 | 3422.0 | 3484.2 | 3432.4 | 3424.6 | 3417.0 | 3409.2 |
| 27.5° | 2567.3 | 2571.4 | 2658.1 | 2842.3 | 3117.9 | 3381.0 | 3497.0 | 3450.2 | 3440.6 | 3431.0 | 3421.3 |
| 30° | 2379.0 | 2389.8 | 2480.1 | 2672.5 | 2969.6 | 3285.6 | 3491.8 | 3485.2 | 3474.4 | 3463.6 | 3452.9 |
| 32.5° | 2191.8 | 2201.0 | 2289.8 | 2497.0 | 2798.7 | 3152.7 | 3466.2 | 3538.0 | 3529.0 | 3519.9 | 3510.9 |
| 35° | 2003.0 | 2014.2 | 2105.6 | 2328.2 | 2628.9 | 3001.8 | 3425.6 | 3613.4 | 3609.5 | 3605.6 | 3601.7 |
| 37.5° | 1837.2 | 1844.4 | 1934.2 | 2165.6 | 2480.1 | 2863.9 | 3372.8 | 3714.5 | 3723.3 | 3732.1 | 3741.0 |
| 40° | 1668.4 | 1675.6 | 1769.6 | 2006.6 | 2343.1 | 2745.8 | 3324.1 | 3841.8 | 3865.9 | 3890.0 | 3914.1 |
| 42.5° | 1506.4 | 1512.4 | 1603.3 | 1839.8 | 2190.8 | 2643.8 | 3294.8 | 3995.6 | 4041.9 | 4088.2 | 4134.5 |
| 45° | 1340.1 | 1344.2 | 1429.4 | 1659.8 | 2016.8 | 2524.8 | 3287.1 | 4168.5 | 4235.4 | 4302.2 | 4369.0 |
| 47.5° | 1176.4 | 1186.2 | 1273.9 | 1492.4 | 1818.3 | 2354.4 | 3275.8 | 4359.9 | 4448.5 | 4537.0 | 4625.6 |
| 50° | 1020.0 | 1030.7 | 1121.1 | 1328.3 | 1626.4 | 2152.3 | 3218.4 | 4577.0 | 4684.9 | 4792.8 | 4900.8 |
| 52.5° | 860.4 | 871.2 | 961.5 | 1159.5 | 1448.4 | 1924.5 | 3058.3 | 4804.8 | 4933.1 | 5061.5 | 5189.9 |
| 55° | 690.0 | 694.2 | 787.0 | 985.6 | 1270.4 | 1733.6 | 2803.3 | 5013.6 | 5169.0 | 5324.5 | 5479.9 |
| 57.5° | 501.8 | 515.6 | 607.4 | 792.2 | 1088.7 | 1564.8 | 2479.0 | 5120.3 | 5314.3 | 5508.4 | 5702.4 |
| 60° | 362.2 | 371.4 | 452.0 | 597.2 | 883.0 | 1399.1 | 2191.2 | 5042.2 | 5301.2 | 5560.2 | 5819.2 |
| 62.5° | 286.3 | 296.5 | 358.6 | 450.0 | 682.9 | 1216.9 | 2003.5 | 4828.4 | 5191.7 | 5555.0 | 5918.4 |
| 65° | 253.4 | 262.6 | 320.2 | 365.3 | 522.3 | 1029.7 | 1885.4 | 4616.4 | 5106.8 | 5597.2 | 6087.6 |
| 67.5° | 231.4 | 241.1 | 291.5 | 322.2 | 431.5 | 909.2 | 1829.6 | 4456.4 | 5022.7 | 5589.0 | 6155.3 |
| 69° | 221.1 | 229.8 | 276.0 | 304.8 | 406.8 | 868.1 | 1769.6 | 4185.5 | 4747.0 | 5308.5 | 5870.0 |
| 70° | 215.5 | 223.2 | 265.2 | 294.0 | 397.1 | 834.2 | 1680.8 | 3863.2 | 4405.0 | 4946.8 | 5488.6 |
| 72.5° | 199.6 | 204.7 | 240.1 | 266.8 | 363.2 | 665.9 | 1267.8 | 2725.9 | 3185.1 | 3644.4 | 4103.7 |
| 75° | 177.0 | 183.1 | 214.4 | 239.1 | 277.0 | 400.2 | 793.7 | 1582.2 | 1897.0 | 2211.7 | 2526.4 |
| 77.5° | 151.9 | 159.0 | 184.7 | 223.7 | 223.2 | 260.6 | 481.8 | 908.6 | 1061.5 | 1214.4 | 1367.3 |
| 80° | 130.3 | 136.5 | 159.6 | 221.1 | 186.8 | 206.2 | 359.1 | 677.8 | 739.3 | 800.9 | 862.5 |
| 82.5° | 102.1 | 107.2 | 133.9 | 182.6 | 149.3 | 157.0 | 273.4 | 617.2 | 659.0 | 700.7 | 742.5 |
| 85° | 64.1 | 66.2 | 97.5 | 126.2 | 106.2 | 94.9 | 176.0 | 475.0 | 505.4 | 535.8 | 566.2 |
| 87.5° | 25.6 | 31.3 | 47.2 | 45.2 | 45.6 | 38.0 | 56.9 | 171.4 | 186.9 | 202.5 | 218.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CATALOG NUMBER: LDRL-RW-E05-E-7060

CANDELA DISTRIBUTION (continued):

| | 69° | 70° | 71° | 72° | 73° | 74° | 75° | 76° | 77° | 78° | 79° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|
| 0° | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 |
| 2.5° | 2962.2 | 2962.4 | 2961.4 | 2959.8 | 2961.4 | 2959.8 | 2960.3 | 2961.9 | 2961.4 | 2961.4 | 2960.3 |
| 5° | 2996.0 | 2996.8 | 2996.8 | 2993.7 | 2995.2 | 2995.8 | 2996.2 | 2995.2 | 2995.7 | 2996.8 | 2994.7 |
| 7.5° | 3052.1 | 3052.6 | 3054.2 | 3055.8 | 3054.7 | 3055.2 | 3056.2 | 3055.2 | 3053.7 | 3057.3 | 3054.7 |
| 10° | 3131.4 | 3132.7 | 3132.7 | 3137.4 | 3135.2 | 3136.8 | 3141.4 | 3141.5 | 3138.9 | 3142.4 | 3141.4 |
| 12.5° | 3224.4 | 3227.1 | 3226.6 | 3226.0 | 3228.1 | 3229.7 | 3234.8 | 3235.8 | 3236.8 | 3242.5 | 3240.4 |
| 15° | 3309.2 | 3311.8 | 3313.8 | 3314.8 | 3318.4 | 3319.4 | 3322.6 | 3324.6 | 3326.2 | 3328.2 | 3329.2 |
| 17.5° | 3370.3 | 3371.2 | 3374.4 | 3372.8 | 3377.9 | 3377.0 | 3380.6 | 3382.0 | 3383.6 | 3386.2 | 3387.7 |
| 20° | 3399.0 | 3397.4 | 3398.0 | 3396.4 | 3396.4 | 3397.4 | 3398.0 | 3400.0 | 3399.0 | 3401.5 | 3403.6 |
| 22.5° | 3403.9 | 3399.0 | 3395.9 | 3392.3 | 3390.8 | 3387.7 | 3387.7 | 3388.8 | 3385.1 | 3387.7 | 3390.8 |
| 25° | 3401.6 | 3393.8 | 3388.2 | 3382.0 | 3376.4 | 3371.2 | 3368.2 | 3367.2 | 3364.6 | 3364.6 | 3367.2 |
| 27.5° | 3411.7 | 3402.0 | 3393.8 | 3383.6 | 3376.4 | 3369.2 | 3362.6 | 3357.4 | 3352.2 | 3351.2 | 3351.2 |
| 30° | 3442.1 | 3431.3 | 3422.0 | 3409.2 | 3398.0 | 3388.7 | 3379.5 | 3372.3 | 3362.6 | 3358.4 | 3353.8 |
| 32.5° | 3501.9 | 3492.8 | 3480.0 | 3468.8 | 3455.4 | 3444.1 | 3431.8 | 3420.5 | 3409.2 | 3399.0 | 3394.8 |
| 35° | 3597.8 | 3593.9 | 3586.8 | 3579.0 | 3566.2 | 3551.9 | 3541.6 | 3528.3 | 3515.4 | 3500.6 | 3496.4 |
| 37.5° | 3749.8 | 3758.6 | 3754.5 | 3748.9 | 3745.3 | 3740.7 | 3726.8 | 3718.1 | 3709.4 | 3697.0 | 3694.5 |
| 40° | 3938.2 | 3962.3 | 3986.4 | 4002.3 | 3996.6 | 4015.6 | 4018.8 | 4020.3 | 4012.6 | 4022.8 | 4024.9 |
| 42.5° | 4180.8 | 4227.0 | 4270.6 | 4302.4 | 4339.4 | 4367.1 | 4403.0 | 4418.4 | 4447.6 | 4478.0 | 4495.4 |
| 45° | 4435.8 | 4502.6 | 4565.1 | 4630.3 | 4694.4 | 4764.7 | 4833.0 | 4881.2 | 4951.5 | 5003.8 | 5036.6 |
| 47.5° | 4714.1 | 4802.7 | 4877.6 | 4975.0 | 5067.9 | 5151.0 | 5270.6 | 5366.5 | 5452.2 | 5533.8 | 5619.4 |
| 50° | 5008.7 | 5116.6 | 5209.0 | 5328.0 | 5441.0 | 5571.2 | 5711.3 | 5833.4 | 5967.8 | 6097.6 | 6213.1 |
| 52.5° | 5318.2 | 5446.6 | 5571.2 | 5693.4 | 5830.3 | 5972.0 | 6123.8 | 6300.3 | 6461.4 | 6656.8 | 6797.0 |
| 55° | 5635.4 | 5790.8 | 5923.7 | 6051.4 | 6196.7 | 6353.6 | 6534.2 | 6743.0 | 6947.8 | 7161.8 | 7374.1 |
| 57.5° | 5896.4 | 6090.4 | 6235.6 | 6384.9 | 6541.4 | 6696.9 | 6921.0 | 7135.0 | 7394.6 | 7657.4 | 7923.0 |
| 60° | 6078.2 | 6337.2 | 6513.2 | 6702.0 | 6883.1 | 7072.0 | 7313.6 | 7584.0 | 7908.7 | 8226.8 | 8588.0 |
| 62.5° | 6281.7 | 6645.0 | 6891.8 | 7143.8 | 7363.8 | 7590.6 | 7913.8 | 8225.3 | 8642.4 | 9008.7 | 9463.2 |
| 65° | 6577.9 | 7068.3 | 7431.6 | 7771.2 | 8066.8 | 8375.6 | 8758.8 | 9148.2 | 9625.4 | 10131.8 | 10701.8 |
| 67.5° | 6721.6 | 7287.9 | 7763.5 | 8182.7 | 8560.3 | 8953.8 | 9349.4 | 9810.0 | 10347.8 | 10957.2 | 11583.2 |
| 69° | 6431.5 | 6993.0 | 7539.8 | 7963.6 | 8361.2 | 8781.4 | 9204.7 | 9669.6 | 10199.0 | 10831.6 | 11495.0 |
| 70° | 6030.4 | 6572.2 | 7153.5 | 7578.3 | 7979.5 | 8415.6 | 8846.6 | 9316.0 | 9822.4 | 10474.0 | 11145.0 |
| 72.5° | 4563.0 | 5022.3 | 5586.7 | 6035.6 | 6457.2 | 6898.0 | 7341.8 | 7749.2 | 8262.7 | 8889.6 | 9507.9 |
| 75° | 2841.1 | 3155.8 | 3663.2 | 4114.2 | 4453.3 | 4830.9 | 5247.5 | 5633.4 | 6148.9 | 6593.2 | 7187.9 |
| 77.5° | 1520.2 | 1673.0 | 1969.1 | 2292.3 | 2481.1 | 2665.3 | 2936.8 | 3146.0 | 3363.0 | 3620.1 | 3865.8 |
| 80° | 924.0 | 985.6 | 1086.6 | 1156.4 | 1130.2 | 1054.8 | 1030.7 | 955.3 | 982.5 | 936.3 | 903.0 |
| 82.5° | 784.2 | 826.0 | 887.6 | 929.6 | 898.8 | 778.3 | 641.8 | 540.2 | 468.4 | 399.6 | 339.6 |
| 85° | 596.6 | 627.0 | 658.8 | 677.8 | 676.2 | 616.2 | 489.4 | 379.2 | 295.5 | 228.8 | 190.3 |
| 87.5° | 233.7 | 249.3 | 272.4 | 268.8 | 280.6 | 282.7 | 221.1 | 170.8 | 121.6 | 82.1 | 71.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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CATALOG NUMBER: LDRL-RW-E05-E-7060

CANDELA DISTRIBUTION (continued):

| | 80° | 81° | 82° | 83° | 84° | 85° | 86° | 87° | 88° | 89° | 90° |
|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 0° | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 | 2951.1 |
| 2.5° | 2958.2 | 2957.8 | 2958.2 | 2959.8 | 2959.8 | 2960.8 | 2959.8 | 2960.3 | 2958.8 | 2957.2 | 2958.3 |
| 5° | 2994.7 | 2993.7 | 2994.7 | 2995.7 | 2995.7 | 2994.7 | 2997.2 | 2997.2 | 2996.2 | 2994.7 | 2995.2 |
| 7.5° | 3057.2 | 3057.8 | 3056.3 | 3061.4 | 3056.8 | 3057.3 | 3060.4 | 3059.8 | 3058.8 | 3059.4 | 3059.8 |
| 10° | 3144.5 | 3144.0 | 3145.0 | 3148.1 | 3143.4 | 3146.6 | 3150.1 | 3151.1 | 3148.6 | 3148.6 | 3149.1 |
| 12.5° | 3241.0 | 3245.0 | 3245.6 | 3247.6 | 3247.6 | 3250.2 | 3250.7 | 3251.2 | 3253.3 | 3253.8 | 3250.7 |
| 15° | 3333.3 | 3336.4 | 3338.4 | 3340.5 | 3338.0 | 3341.5 | 3345.6 | 3345.6 | 3345.1 | 3347.2 | 3344.1 |
| 17.5° | 3390.2 | 3392.8 | 3396.4 | 3395.9 | 3396.4 | 3399.4 | 3402.0 | 3403.1 | 3404.1 | 3404.1 | 3404.6 |
| 20° | 3408.2 | 3409.8 | 3411.8 | 3413.8 | 3414.9 | 3418.0 | 3420.0 | 3421.6 | 3422.6 | 3421.6 | 3422.1 |
| 22.5° | 3393.8 | 3395.8 | 3400.0 | 3401.6 | 3402.0 | 3406.7 | 3408.8 | 3410.2 | 3411.3 | 3412.3 | 3410.8 |
| 25° | 3369.2 | 3371.2 | 3375.4 | 3376.9 | 3377.9 | 3382.0 | 3384.6 | 3388.2 | 3389.2 | 3389.8 | 3390.3 |
| 27.5° | 3352.3 | 3353.3 | 3356.4 | 3358.4 | 3359.0 | 3363.6 | 3367.2 | 3369.8 | 3370.2 | 3370.8 | 3370.8 |
| 30° | 3352.8 | 3352.8 | 3356.4 | 3356.9 | 3356.4 | 3360.5 | 3362.6 | 3364.1 | 3365.1 | 3365.1 | 3365.6 |
| 32.5° | 3388.2 | 3386.1 | 3389.2 | 3384.6 | 3385.2 | 3384.6 | 3384.1 | 3385.6 | 3384.6 | 3385.2 | 3383.1 |
| 35° | 3488.2 | 3482.6 | 3478.0 | 3480.0 | 3472.8 | 3462.6 | 3468.2 | 3465.6 | 3460.0 | 3460.6 | 3462.1 |
| 37.5° | 3680.2 | 3674.5 | 3679.6 | 3675.0 | 3676.5 | 3662.2 | 3665.8 | 3653.0 | 3649.4 | 3654.0 | 3640.6 |
| 40° | 4020.8 | 4018.2 | 4028.0 | 4023.8 | 4026.4 | 4030.6 | 4034.1 | 4021.8 | 4001.3 | 4019.8 | 4020.3 |
| 42.5° | 4492.8 | 4515.9 | 4525.1 | 4538.0 | 4551.8 | 4545.6 | 4558.0 | 4561.6 | 4539.0 | 4555.9 | 4560.0 |
| 45° | 5084.8 | 5109.5 | 5138.2 | 5147.0 | 5169.5 | 5172.6 | 5181.8 | 5184.4 | 5163.9 | 5165.9 | 5170.5 |
| 47.5° | 5705.2 | 5750.3 | 5784.2 | 5807.8 | 5831.4 | 5836.0 | 5841.1 | 5831.4 | 5832.9 | 5837.5 | 5837.5 |
| 50° | 6314.7 | 6411.1 | 6471.1 | 6517.8 | 6558.4 | 6537.3 | 6555.3 | 6556.8 | 6563.0 | 6550.1 | 6557.8 |
| 52.5° | 6955.4 | 7083.2 | 7183.8 | 7262.2 | 7286.9 | 7361.8 | 7331.0 | 7354.6 | 7370.5 | 7347.0 | 7362.3 |
| 55° | 7581.4 | 7763.5 | 7925.1 | 8039.0 | 8119.1 | 8195.0 | 8206.8 | 8267.8 | 8260.7 | 8283.8 | 8273.5 |
| 57.5° | 8176.5 | 8431.0 | 8661.8 | 8830.6 | 8945.6 | 9061.5 | 9140.0 | 9206.7 | 9213.4 | 9279.6 | 9242.1 |
| 60° | 8896.3 | 9250.8 | 9547.9 | 9799.3 | 9969.1 | 10141.5 | 10277.4 | 10386.8 | 10411.8 | 10525.3 | 10487.8 |
| 62.5° | 9867.6 | 10300.0 | 10679.7 | 10974.7 | 11352.8 | 11535.0 | 11799.7 | 11964.9 | 12068.0 | 12096.2 | 12149.1 |
| 65° | 11232.8 | 11796.2 | 12296.8 | 12768.8 | 13194.2 | 13489.2 | 13795.4 | 14041.8 | 14239.3 | 14222.8 | 14303.9 |
| 67.5° | 12247.1 | 12889.4 | 13492.2 | 14058.2 | 14515.8 | 14895.4 | 15247.4 | 15513.7 | 15690.2 | 15802.6 | 15850.3 |
| 69° | 12141.4 | 12831.0 | 13495.8 | 14100.2 | 14572.2 | 14996.6 | 15339.2 | 15601.4 | 15803.6 | 15925.6 | 15961.1 |
| 70° | 11790.0 | 12498.5 | 13191.6 | 13784.7 | 14266.0 | 14731.8 | 15080.6 | 15372.6 | 15565.0 | 15698.4 | 15718.9 |
| 72.5° | 10198.0 | 10965.5 | 11578.6 | 12225.6 | 12688.8 | 13160.4 | 13379.9 | 13741.6 | 13992.4 | 14073.6 | 14072.0 |
| 75° | 7691.7 | 8332.0 | 8870.7 | 9348.8 | 9763.4 | 10083.0 | 10186.6 | 10444.2 | 10652.5 | 10650.0 | 10630.5 |
| 77.5° | 4141.8 | 4292.7 | 4494.4 | 4562.1 | 4689.8 | 4687.8 | 4559.5 | 4600.0 | 4718.0 | 4489.2 | 4563.1 |
| 80° | 888.6 | 875.2 | 864.0 | 857.3 | 853.8 | 855.2 | 859.8 | 830.6 | 859.4 | 846.5 | 792.2 |
| 82.5° | 309.4 | 302.2 | 295.0 | 300.2 | 296.6 | 299.6 | 298.6 | 302.2 | 301.6 | 300.6 | 293.5 |
| 85° | 173.9 | 167.8 | 164.2 | 166.8 | 161.1 | 156.0 | 152.4 | 150.8 | 150.3 | 146.8 | 144.7 |
| 87.5° | 66.2 | 65.6 | 65.2 | 62.6 | 56.4 | 51.8 | 48.8 | 42.6 | 40.0 | 36.4 | 33.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)