

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: P145134

Luminaire Tested: **LDRL-SL3-F02-E-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145134
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33702)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL3-F02-E-7030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL
Light Source: (14) 3000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4476.8 lumens
Efficiency: N/A
Efficacy: 81.4 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G1

Input Watts (W): 55
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

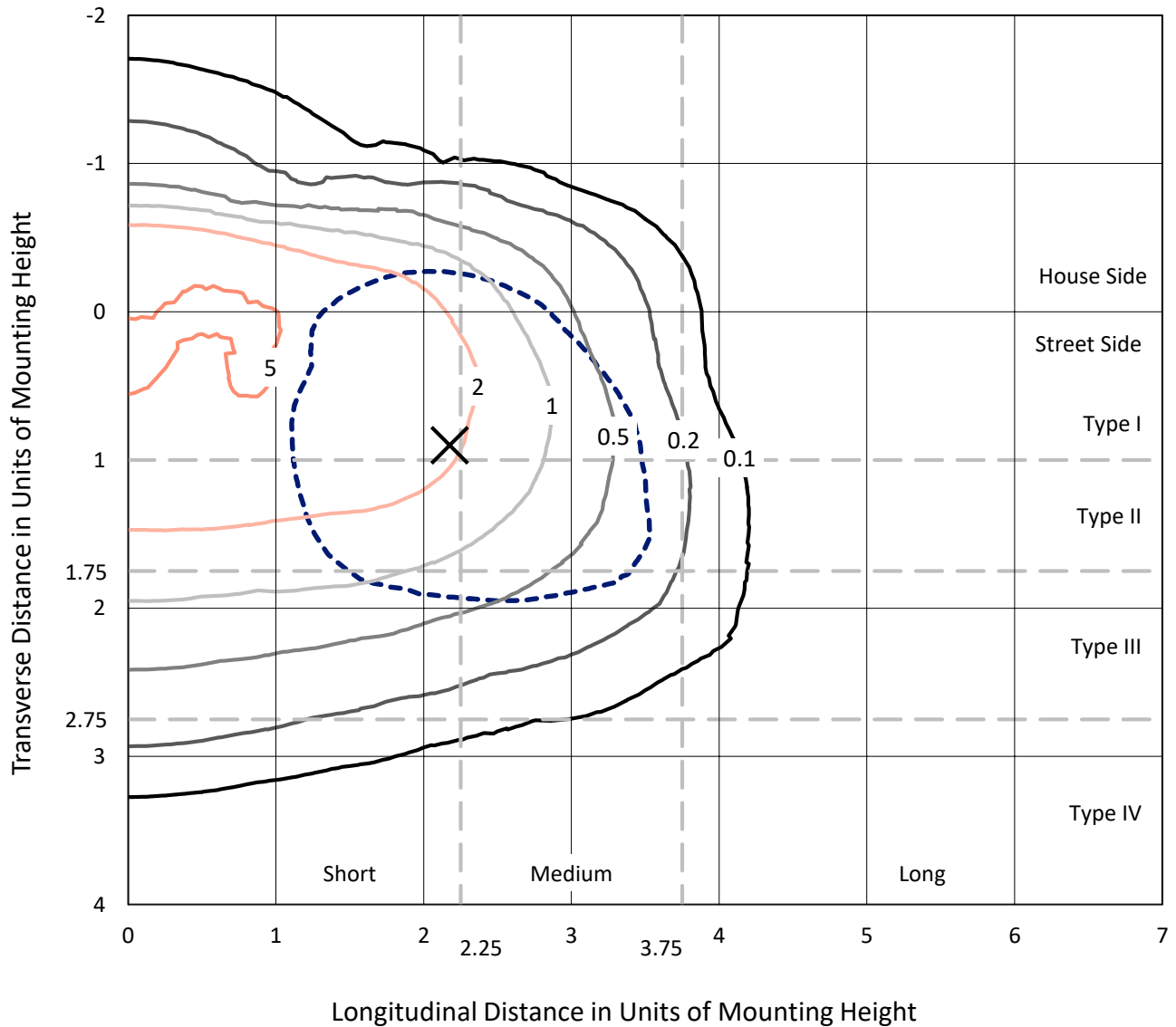


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Iso-Footcandle Lines of Horizontal Illumination

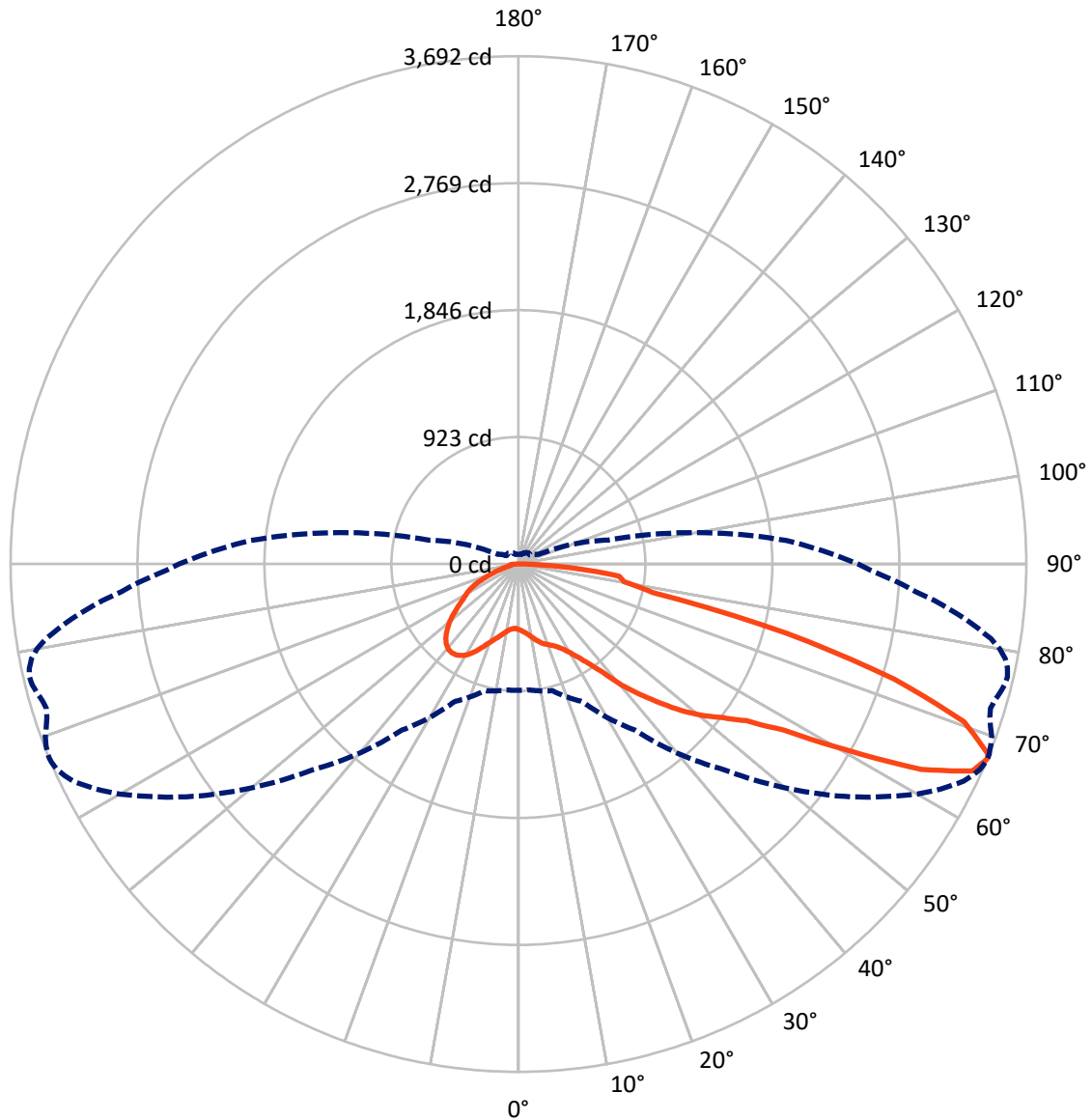
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 6 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1060.1	0.0	1060.1
	% Fixture	23.7	0.0	23.7
Street Side	Lumens	3416.7	0.0	3416.7
	% Fixture	76.3	0.0	76.3
Total	Lumens	4476.8	0.0	4476.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.5	1.1
10°-20°	162.8	3.6
20°-30°	289.7	6.5
30°-40°	422.1	9.4
40°-50°	650.3	14.5
50°-60°	952.4	21.3
60°-70°	1264.7	28.3
70°-80°	596.1	13.3
80°-90°	91.1	2.0
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°	4476.8	100.0
0°-180°	4476.8	100.0



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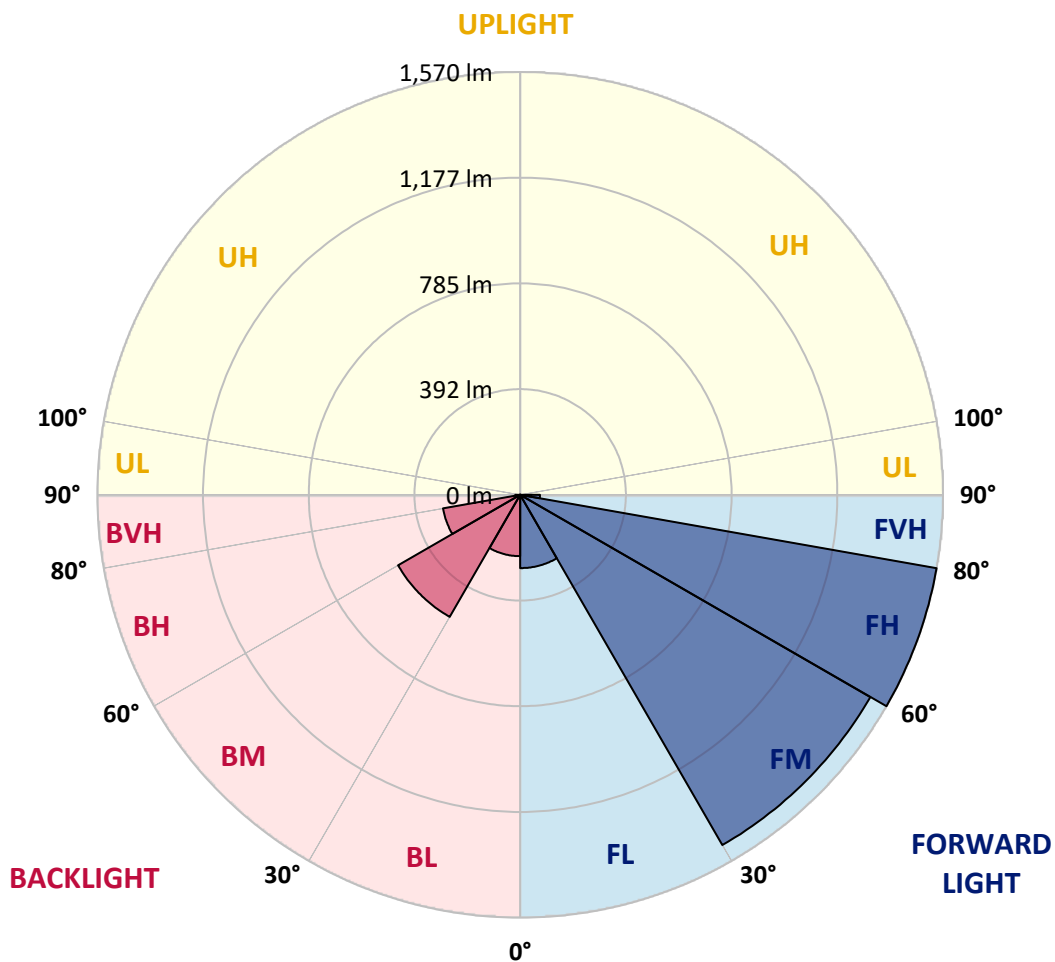
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	272.2	6.1			
FM	(30°-60°)	1501.3	33.5			
FH	(60°-80°)	1569.8	35.1			G1/1800
FVH	(80°-90°)	73.4	1.6			G1/100
BL	(0°-30°)	227.9	5.1	B1/500		
BM	(30°-60°)	523.5	11.7	B1/1000		
BH	(60°-80°)	291.0	6.5	B1/500		G1/500
BVH	(80°-90°)	17.7	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2
2.5°	500.0	497.9	498.2	499.1	496.1	494.6	491.3	489.2	488.9	488.6	487.4
5°	529.3	527.2	528.1	525.7	520.0	516.0	509.1	505.5	504.9	504.3	502.8
7.5°	559.8	557.1	554.0	551.3	545.0	538.7	529.6	524.2	523.6	522.7	521.8
10°	596.0	592.0	589.6	581.2	570.3	561.6	552.5	546.8	546.5	545.6	543.8
12.5°	636.7	632.4	627.9	616.8	599.9	586.9	576.4	573.0	570.3	570.6	568.8
15°	677.1	672.6	666.5	652.4	630.0	610.7	597.2	592.3	592.6	591.1	592.0
17.5°	711.2	707.2	698.5	680.4	654.5	627.9	610.7	608.6	609.2	608.9	609.8
20°	733.5	731.1	717.8	696.1	666.8	637.6	620.1	620.1	620.4	621.6	623.7
22.5°	747.1	743.4	725.9	695.5	666.5	642.1	628.5	631.5	633.4	634.3	637.6
25°	754.6	750.1	726.2	685.8	656.3	645.4	641.2	648.7	651.8	653.3	658.7
27.5°	754.6	749.2	722.3	673.8	644.5	655.4	665.3	678.3	680.4	684.9	691.3
30°	746.2	741.9	716.3	664.7	641.5	674.1	704.2	719.0	724.1	729.3	737.4
32.5°	737.1	733.5	713.3	669.5	658.4	713.3	763.6	783.9	786.9	791.1	799.5
35°	736.5	735.3	726.5	700.3	709.4	785.1	853.2	867.1	875.5	877.6	881.3
37.5°	742.8	745.2	752.8	750.1	782.6	891.8	970.5	998.3	1004.9	1001.3	1004.6
40°	757.6	763.6	791.7	826.4	894.5	1020.9	1130.4	1162.4	1169.6	1167.5	1166.6
42.5°	804.4	812.5	853.8	928.0	1011.0	1154.5	1278.8	1313.2	1315.6	1316.8	1308.9
45°	877.6	882.2	937.1	1031.8	1137.0	1298.4	1426.9	1465.2	1463.7	1457.6	1451.9
47.5°	960.9	970.2	1036.0	1150.6	1267.3	1431.4	1576.8	1614.1	1617.5	1612.0	1601.5
50°	1036.6	1043.8	1118.0	1254.0	1382.2	1542.1	1703.1	1740.8	1740.2	1743.2	1746.2
52.5°	1096.3	1102.9	1173.5	1323.1	1466.7	1635.0	1798.4	1844.9	1852.1	1856.9	1863.0
55°	1127.1	1134.0	1199.2	1351.8	1517.9	1725.7	1908.5	1975.2	1987.5	1998.4	2008.3
57.5°	1127.7	1136.7	1196.4	1349.6	1544.5	1806.9	2054.2	2173.9	2191.4	2219.2	2253.2
60°	1109.3	1121.9	1175.6	1330.0	1574.9	1909.7	2294.3	2523.5	2557.8	2606.4	2650.1
62.5°	1061.3	1074.0	1121.9	1280.3	1610.5	2041.5	2641.1	2977.1	3050.4	3104.0	3190.6
65°	985.6	997.7	1038.1	1197.9	1582.2	2145.6	2899.6	3302.5	3377.3	3444.5	3546.2
67°	918.1	919.3	953.3	1103.5	1471.8	2113.3	2951.4	3345.9	3415.0	3483.1	3601.1
67.5°	894.2	900.9	927.4	1072.2	1429.9	2089.5	2930.9	3322.4	3389.4	3462.0	3582.4
70°	722.9	724.7	750.4	855.3	1134.6	1732.4	2632.6	3022.3	3068.2	3174.6	3292.8
72.5°	440.9	437.9	446.1	523.9	746.8	1199.8	2107.9	2488.2	2550.9	2641.7	2721.6
75°	242.8	257.3	267.2	321.2	419.5	705.4	1435.3	1800.2	1892.2	1946.2	1962.2
77.5°	148.4	147.2	151.7	207.2	344.1	482.6	792.9	1056.2	1107.5	1122.8	1063.4
80°	70.6	73.3	72.4	85.4	166.8	407.2	554.3	678.3	704.2	719.0	738.3
82.5°	38.6	40.1	45.5	51.0	65.7	175.2	478.3	625.5	643.0	668.3	696.7
85°	24.1	25.3	35.0	36.8	40.4	54.0	199.4	365.5	380.3	430.7	446.7
87.5°	10.0	10.9	19.0	17.2	20.5	19.0	60.3	92.9	98.6	105.0	116.4
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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CANDELA DISTRIBUTION (continued):

	65°	66°	67°	67.5°	68°	69°	70°	71°	72°	73°	74°
0°	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2
2.5°	487.7	487.4	486.2	485.9	486.5	486.5	485.9	485.0	484.7	484.4	483.8
5°	502.2	501.6	500.7	500.0	499.7	499.7	498.8	497.9	497.0	495.8	495.5
7.5°	519.4	519.4	519.0	518.1	517.2	516.0	515.1	514.2	513.3	512.7	511.8
10°	542.0	543.2	541.1	540.5	540.2	538.4	538.0	537.1	536.5	535.0	535.0
12.5°	568.8	567.6	567.3	566.1	566.1	565.2	564.9	564.6	564.0	562.8	562.5
15°	591.1	591.1	590.8	590.2	590.8	590.2	589.3	589.9	589.0	589.3	588.4
17.5°	609.2	610.4	610.1	610.4	610.1	610.1	610.7	610.7	611.3	610.1	610.4
20°	624.3	626.1	627.0	626.4	627.0	627.3	628.8	629.4	630.3	630.9	630.9
22.5°	640.0	642.4	644.2	644.2	645.4	646.6	649.3	649.9	652.1	651.8	653.3
25°	662.0	665.9	667.1	668.9	670.5	672.6	675.9	677.4	678.3	680.4	682.8
27.5°	695.8	700.6	701.5	703.6	707.5	708.8	712.4	713.9	717.2	721.7	722.6
30°	741.9	748.0	748.3	750.7	755.2	756.7	759.7	763.6	766.4	770.9	771.2
32.5°	804.7	810.7	809.8	814.3	814.0	818.5	817.6	823.7	826.1	828.5	835.1
35°	888.2	887.6	892.1	893.6	892.7	896.3	895.7	898.5	900.9	900.9	908.1
37.5°	1008.5	1007.6	1007.0	1000.7	999.2	999.5	998.3	1000.7	996.8	996.8	1004.6
40°	1169.9	1164.5	1160.2	1156.0	1151.8	1146.1	1141.2	1140.0	1133.4	1133.1	1130.1
42.5°	1310.1	1305.0	1302.0	1293.9	1289.6	1288.7	1277.0	1273.6	1271.8	1273.0	1270.0
45°	1457.3	1451.9	1440.4	1436.8	1435.6	1429.3	1427.5	1419.3	1416.9	1421.1	1419.6
47.5°	1609.0	1601.2	1594.8	1590.6	1589.1	1583.7	1575.8	1582.5	1579.2	1576.8	1572.2
50°	1745.3	1736.6	1736.6	1729.1	1730.3	1726.6	1718.5	1720.3	1711.0	1714.6	1712.2
52.5°	1859.6	1860.3	1863.3	1854.8	1856.3	1856.3	1853.6	1844.9	1847.3	1846.1	1851.8
55°	2005.0	2015.0	2009.5	2011.1	2012.9	2021.3	2027.3	2022.2	2013.8	2020.4	2038.8
57.5°	2259.3	2268.3	2273.7	2278.0	2284.9	2288.8	2321.4	2325.9	2316.3	2336.2	2377.2
60°	2701.4	2712.3	2728.6	2750.0	2754.5	2781.9	2798.8	2818.7	2826.0	2843.2	2887.2
62.5°	3233.1	3257.6	3260.6	3287.7	3308.8	3283.2	3289.8	3314.3	3286.5	3324.5	3326.3
65°	3581.2	3616.8	3618.0	3627.9	3635.8	3611.6	3600.8	3589.9	3563.7	3562.2	3588.4
67°	3640.9	3673.5	3687.0	3691.9	3690.6	3678.3	3660.5	3629.1	3603.8	3589.3	3600.2
67.5°	3624.0	3656.0	3675.0	3679.5	3679.8	3667.7	3651.4	3617.4	3593.5	3577.2	3588.7
70°	3346.5	3421.3	3453.9	3437.0	3446.7	3446.7	3446.1	3414.7	3402.9	3387.2	3381.2
72.5°	2782.5	2834.4	2875.7	2853.7	2856.4	2876.9	2872.1	2875.4	2841.7	2838.0	2782.2
75°	1993.3	2009.8	1996.0	2011.7	1927.2	1897.0	1845.8	1771.0	1751.4	1720.3	1627.4
77.5°	1058.9	1040.2	1003.1	1000.1	965.4	938.6	905.4	883.7	828.8	798.3	728.7
80°	748.0	757.0	771.2	779.6	787.5	793.5	781.1	746.5	700.6	649.3	600.8
82.5°	714.5	726.8	735.3	739.5	736.5	726.8	698.5	665.3	604.1	559.8	507.3
85°	450.6	460.5	443.3	439.7	447.3	386.3	352.9	325.7	263.9	245.5	216.8
87.5°	120.9	127.6	127.9	124.0	121.5	107.1	94.7	83.8	69.4	65.1	52.8
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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CANDELA DISTRIBUTION (continued):

	75°	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°
0°	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2
2.5°	483.8	483.5	483.5	482.6	482.0	481.7	481.3	480.4	479.8	479.8	479.5
5°	495.2	494.6	493.7	493.4	492.2	491.6	490.4	489.8	488.9	488.3	488.0
7.5°	511.5	510.0	508.2	508.5	506.7	505.8	505.2	504.0	503.1	502.2	501.9
10°	533.2	532.9	531.1	531.7	528.4	529.9	526.9	527.2	525.4	523.6	523.3
12.5°	561.0	560.7	558.9	556.7	556.1	556.4	554.6	554.9	552.8	552.2	551.6
15°	587.5	586.9	586.0	584.5	583.6	583.3	582.7	582.1	580.3	580.3	578.2
17.5°	610.4	610.7	609.5	608.3	607.7	606.8	606.5	606.5	605.0	603.5	603.8
20°	630.6	631.2	631.2	630.3	630.6	630.0	629.7	630.3	628.8	628.2	627.3
22.5°	653.3	653.3	653.6	654.2	655.1	655.4	655.4	654.8	653.9	653.6	651.8
25°	684.6	683.4	684.9	685.5	685.5	687.0	686.4	686.7	687.0	686.1	685.2
27.5°	724.1	722.9	725.9	728.1	727.8	728.7	730.5	728.4	729.6	730.5	728.4
30°	772.7	775.7	777.8	779.3	778.7	781.4	782.3	782.0	781.1	782.6	782.6
32.5°	834.5	833.0	838.4	841.8	842.1	841.5	843.0	844.8	843.3	845.7	844.5
35°	908.1	909.0	910.2	913.8	915.3	912.9	915.3	917.5	916.9	917.2	918.4
37.5°	1003.1	1004.6	1003.4	1003.7	1003.1	1014.6	1016.4	1018.2	1016.1	1014.3	1019.7
40°	1134.9	1134.9	1134.6	1138.5	1131.9	1139.1	1137.0	1142.1	1147.6	1144.6	1152.7
42.5°	1264.6	1271.8	1272.4	1266.7	1271.5	1279.4	1279.4	1282.7	1287.5	1282.7	1290.5
45°	1413.3	1422.3	1420.8	1430.5	1423.2	1432.3	1433.8	1429.6	1440.1	1441.3	1438.3
47.5°	1575.5	1577.4	1577.7	1581.0	1582.5	1589.7	1589.4	1597.3	1594.8	1582.8	1587.0
50°	1714.6	1719.1	1721.5	1723.6	1731.2	1736.3	1743.2	1744.4	1742.6	1739.0	1735.7
52.5°	1853.6	1864.5	1871.4	1890.1	1901.9	1911.2	1922.7	1926.9	1924.8	1923.9	1910.6
55°	2039.7	2065.6	2105.8	2131.7	2160.0	2176.6	2189.9	2196.5	2191.7	2194.1	2166.7
57.5°	2390.2	2451.1	2486.1	2530.4	2580.5	2601.3	2607.0	2630.5	2604.6	2578.7	2557.8
60°	2911.0	2967.1	3030.8	3076.3	3093.2	3150.8	3123.6	3093.2	3065.4	3011.8	2951.1
62.5°	3381.2	3453.6	3486.2	3528.7	3517.2	3512.4	3494.3	3445.8	3386.3	3306.4	3225.6
65°	3613.1	3653.9	3674.1	3687.9	3675.0	3641.5	3581.8	3510.0	3424.9	3321.5	3215.3
67°	3622.5	3641.2	3647.8	3634.6	3605.6	3553.4	3478.0	3376.4	3271.7	3153.2	3033.8
67.5°	3607.1	3619.5	3622.8	3602.0	3567.6	3511.2	3430.7	3322.1	3210.8	3087.8	2967.7
70°	3397.2	3388.1	3358.9	3330.2	3222.9	3147.2	3006.9	2891.1	2736.7	2623.6	2495.4
72.5°	2759.9	2718.6	2690.2	2563.6	2433.9	2358.8	2208.0	2069.6	1928.7	1821.0	1742.3
75°	1549.3	1519.1	1440.4	1373.5	1266.4	1168.4	1098.1	1010.0	925.6	875.5	838.7
77.5°	700.0	613.8	554.3	479.2	387.3	311.2	231.0	213.5	182.2	174.3	157.1
80°	546.2	484.4	406.6	320.6	226.2	152.0	111.6	94.7	89.0	85.4	83.5
82.5°	455.7	375.5	316.1	224.4	143.6	96.5	72.7	65.7	61.5	58.5	55.8
85°	194.8	154.1	127.0	90.8	64.5	51.0	44.6	40.7	36.8	33.5	31.4
87.5°	45.5	35.0	32.0	27.1	25.6	25.3	25.0	23.8	22.3	20.5	18.4
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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CANDELA DISTRIBUTION (continued):

	86°	87°	88°	89°	90°	95°	105°	115°	125°	135°	145°
0°	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2	476.2
2.5°	479.2	478.9	478.3	477.4	477.4	476.2	472.3	469.6	466.6	464.8	463.0
5°	487.4	487.1	485.6	484.7	484.1	481.7	475.0	469.9	464.5	460.5	457.5
7.5°	501.0	500.0	498.8	498.2	496.4	493.4	483.8	476.5	468.7	462.3	457.2
10°	523.0	521.5	519.7	517.8	518.4	513.6	502.5	491.9	480.4	470.5	463.6
12.5°	549.8	549.8	548.9	547.7	545.6	540.2	525.1	512.7	498.8	486.5	481.3
15°	578.2	576.7	575.1	573.3	573.0	565.8	552.2	538.0	523.6	513.0	507.0
17.5°	601.4	602.0	599.9	599.3	598.7	591.4	577.0	564.3	553.7	542.6	532.9
20°	626.1	624.9	624.3	623.4	623.1	617.1	605.6	597.8	588.4	571.5	546.2
22.5°	652.7	651.1	651.8	649.9	649.6	645.4	637.0	634.6	620.7	585.1	541.1
25°	687.0	684.3	685.2	685.2	685.5	681.6	680.7	676.5	641.5	581.8	520.6
27.5°	728.1	729.3	729.3	729.0	726.8	728.1	732.3	717.8	648.7	564.3	489.8
30°	781.4	782.0	782.6	784.8	780.2	788.1	793.2	747.1	643.3	540.2	451.2
32.5°	846.3	843.9	845.1	846.3	847.8	855.9	852.9	761.8	627.3	507.3	403.2
35°	917.8	922.3	923.5	926.2	929.2	941.6	906.9	764.9	602.9	463.3	342.0
37.5°	1024.2	1031.5	1031.5	1041.1	1035.4	1050.5	955.2	757.6	565.8	402.0	272.9
40°	1158.4	1161.8	1165.1	1166.3	1163.3	1161.5	986.8	739.8	513.6	325.1	199.7
42.5°	1295.4	1294.2	1294.5	1296.6	1288.4	1254.3	1006.4	708.8	448.8	242.8	143.3
45°	1442.8	1437.7	1436.2	1432.0	1424.7	1353.0	1017.6	665.0	363.4	170.7	112.5
47.5°	1586.4	1580.1	1570.4	1558.7	1544.8	1432.3	1016.4	608.3	278.7	122.1	99.2
50°	1733.6	1722.4	1701.6	1690.2	1666.6	1511.0	1009.4	545.3	200.6	101.0	92.9
52.5°	1901.9	1882.0	1862.7	1839.7	1800.8	1607.8	998.9	474.4	146.3	92.6	88.7
55°	2152.8	2120.2	2088.6	2040.9	2003.2	1737.5	981.1	398.1	115.5	89.3	86.3
57.5°	2498.7	2443.2	2403.1	2338.9	2278.6	1917.0	962.1	328.7	103.1	88.4	85.1
60°	2888.1	2804.6	2729.8	2650.7	2582.0	2141.0	952.1	274.5	100.4	89.3	85.4
62.5°	3132.4	3033.8	2940.3	2843.8	2744.8	2248.1	909.0	237.1	101.6	93.2	87.8
65°	3101.6	2992.8	2891.1	2773.5	2680.3	2147.1	799.2	200.6	103.7	100.1	94.4
67°	2894.1	2788.6	2672.8	2557.5	2467.1	1955.0	674.7	168.9	106.2	108.0	101.6
67.5°	2838.6	2719.8	2603.1	2497.2	2399.2	1895.5	642.1	161.1	106.8	110.1	104.1
70°	2367.2	2273.1	2136.5	2058.1	1987.2	1536.6	478.9	125.2	108.6	119.4	115.5
72.5°	1656.4	1565.3	1493.8	1451.0	1409.7	1116.5	336.9	99.8	105.9	124.6	120.6
75°	836.6	815.8	790.8	776.9	777.5	649.0	203.0	85.1	99.5	119.4	109.5
77.5°	165.3	161.1	162.9	178.2	175.5	200.0	100.7	72.1	84.7	92.0	78.7
80°	79.9	77.2	74.8	74.2	72.7	69.7	63.3	60.0	68.8	60.6	52.2
82.5°	51.9	48.9	47.7	45.2	45.5	49.5	55.2	57.6	55.8	41.9	35.3
85°	29.3	29.0	28.4	29.0	30.2	39.5	59.1	54.0	44.9	29.6	26.5
87.5°	17.5	16.6	16.9	17.2	17.8	29.3	46.7	38.9	28.7	15.4	15.7
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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CANDELA DISTRIBUTION (continued):

	155°	165°	175°	180°
0°	476.2	476.2	476.2	476.2
2.5°	462.7	461.4	461.4	461.1
5°	455.1	453.3	453.0	453.0
7.5°	453.9	451.5	451.2	450.3
10°	459.3	458.4	458.7	457.8
12.5°	476.5	477.7	478.9	478.9
15°	502.8	501.9	503.4	501.9
17.5°	522.1	514.2	512.4	511.5
20°	522.7	506.4	501.0	500.0
22.5°	504.0	479.8	470.8	469.3
25°	472.3	441.8	430.4	429.2
27.5°	432.5	398.4	381.5	380.9
30°	384.5	344.1	322.7	319.4
32.5°	326.0	278.1	255.5	248.2
35°	258.5	209.3	188.2	187.6
37.5°	193.0	154.7	141.1	140.5
40°	141.4	121.5	116.4	115.5
42.5°	115.5	107.4	105.3	104.4
45°	103.4	100.1	98.9	98.0
47.5°	96.2	94.1	93.2	93.2
50°	90.5	89.9	89.3	89.3
52.5°	86.6	86.3	85.7	85.4
55°	83.2	82.0	82.3	82.0
57.5°	81.1	79.3	79.3	79.3
60°	79.9	76.6	76.6	76.9
62.5°	80.2	75.1	74.8	74.8
65°	82.6	74.2	72.4	72.7
67°	85.7	73.3	69.7	69.4
67.5°	86.6	72.7	68.8	68.5
70°	90.2	70.9	64.2	63.6
72.5°	90.8	68.2	59.7	59.1
75°	84.4	64.5	56.1	54.6
77.5°	65.7	55.5	50.7	50.7
80°	46.1	42.5	36.2	35.9
82.5°	33.8	32.0	26.5	25.9
85°	24.7	23.2	19.6	19.6
87.5°	15.4	14.8	12.7	12.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)