

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: P146868

Luminaire Tested: **LDRL-T4-E04-E-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P146868
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33696)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-T4-E04-E-8030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT
Light Source: (84) 3000K CCT, 80 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9920.6 lumens
Efficiency: N/A
Efficacy: 102.1 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

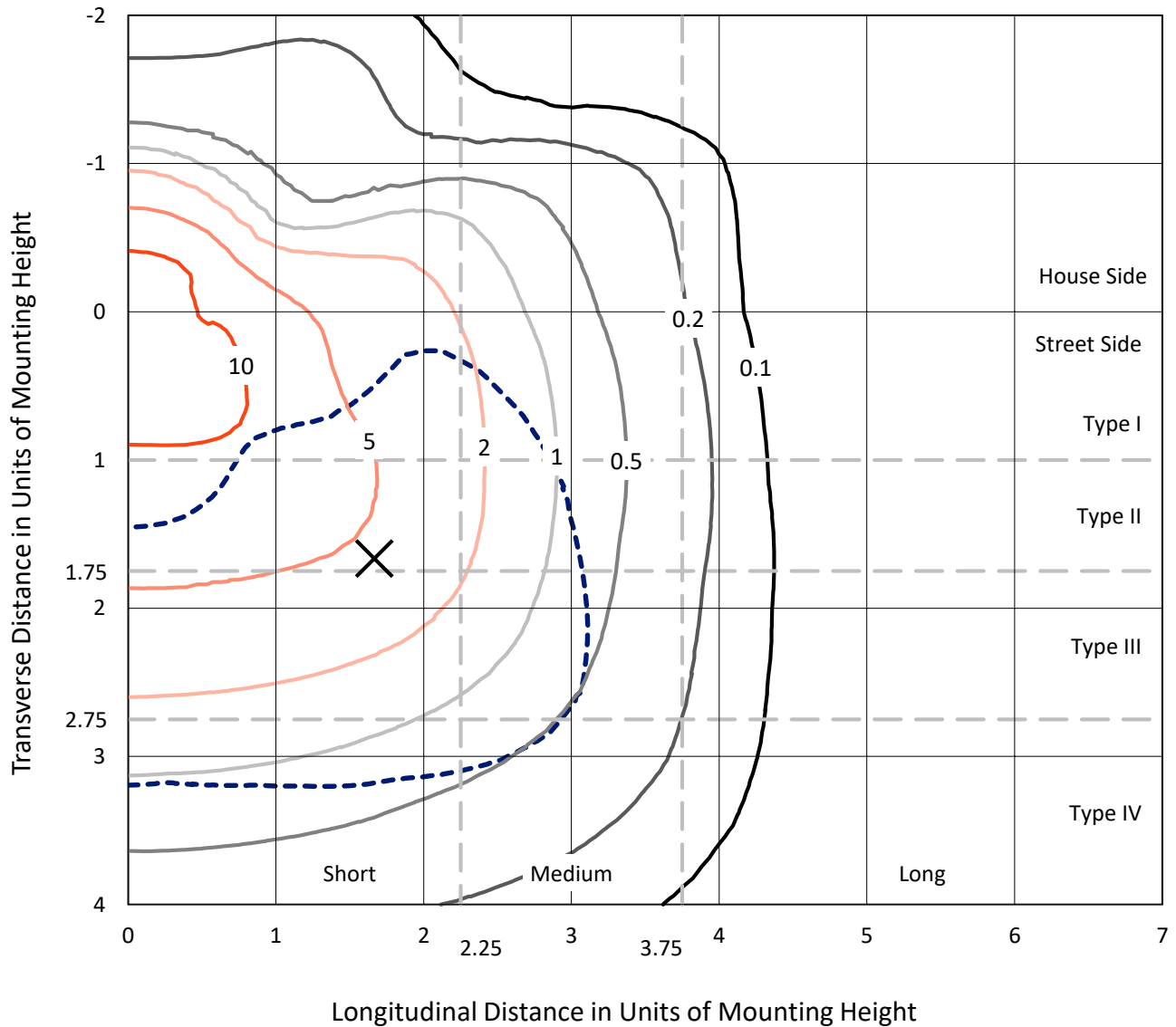
Input Watts (W): 97.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

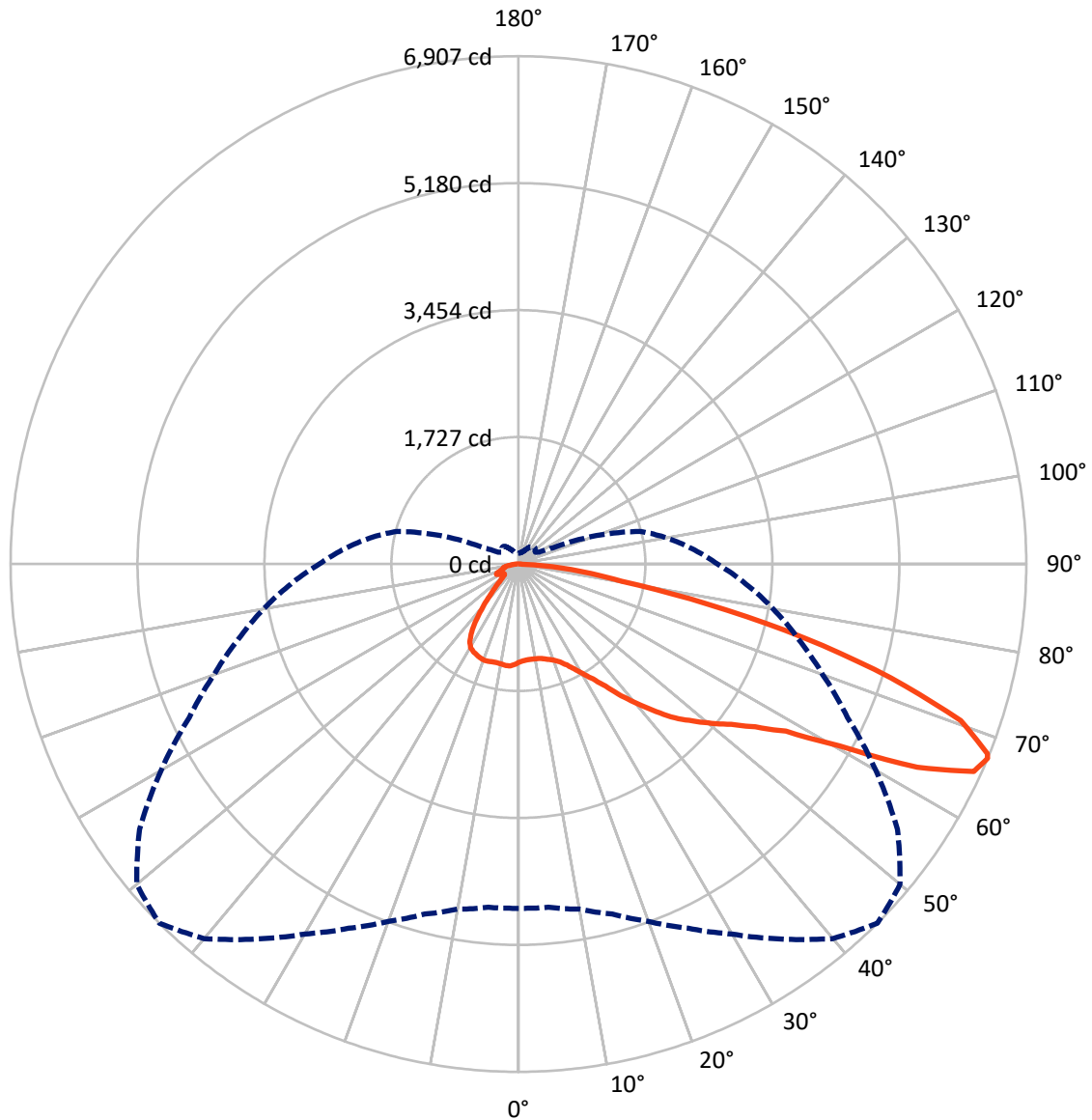
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.6 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2010.1	0.0	2010.1
	% Fixture	20.3	0.0	20.3
Street Side	Lumens	7910.5	0.0	7910.5
	% Fixture	79.7	0.0	79.7
Total	Lumens	9920.6	0.0	9920.6
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	128.7	1.3
10°-20°	386.5	3.9
20°-30°	656.9	6.6
30°-40°	987.3	10.0
40°-50°	1283.8	12.9
50°-60°	1762.5	17.8
60°-70°	2780.4	28.0
70°-80°	1680.0	16.9
80°-90°	254.5	2.6
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°	9920.6	100.0
0°-180°	9920.6	100.0

Coefficient of Utilization



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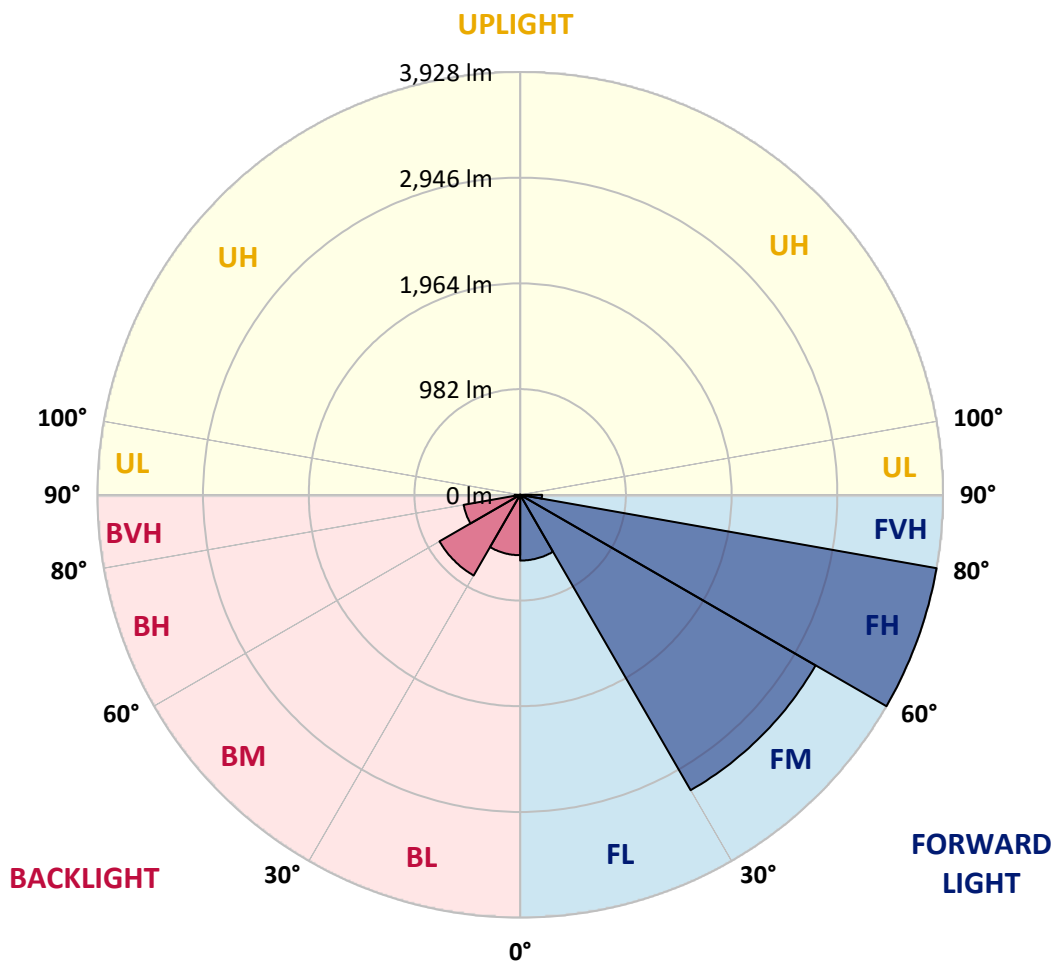
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	610.9	6.2			
FM (30°-60°)	3168.6	31.9			
FH (60°-80°)	3927.8	39.6			G2/5000
FVH (80°-90°)	203.2	2.0			G2/225
BL (0°-30°)	561.2	5.7	B2/1000		
BM (30°-60°)	865.0	8.7	B1/1000		
BH (60°-80°)	532.6	5.4	B2/1000		G2/1000
BVH (80°-90°)	51.3	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5
2.5°	1305.8	1308.5	1306.5	1306.5	1307.2	1307.8	1309.2	1311.9	1312.6	1316.6	1317.3
5°	1279.5	1280.2	1280.2	1280.8	1284.9	1288.3	1291.6	1296.4	1300.4	1307.8	1312.6
7.5°	1270.0	1272.7	1272.1	1273.4	1277.5	1280.8	1284.9	1291.6	1301.8	1307.8	1314.6
10°	1285.6	1287.6	1285.6	1286.2	1286.9	1290.3	1291.6	1296.4	1304.5	1309.9	1316.0
12.5°	1321.4	1321.4	1319.3	1318.0	1316.0	1316.6	1313.9	1313.2	1317.3	1318.0	1318.7
15°	1368.6	1374.0	1367.3	1361.9	1359.2	1356.5	1347.7	1344.3	1343.6	1337.6	1331.5
17.5°	1416.6	1417.9	1413.9	1407.8	1403.7	1397.6	1390.2	1383.5	1375.4	1365.9	1353.8
20°	1469.9	1470.6	1465.2	1456.4	1451.7	1444.2	1434.8	1423.3	1413.2	1398.3	1384.8
22.5°	1544.2	1543.5	1532.7	1525.3	1518.5	1509.7	1496.2	1480.7	1464.5	1446.9	1428.0
25°	1629.2	1629.2	1621.8	1609.7	1606.3	1593.5	1578.6	1560.4	1543.5	1518.5	1495.6
27.5°	1726.5	1727.1	1713.6	1706.9	1699.5	1686.0	1675.8	1661.6	1638.7	1613.7	1590.1
30°	1841.9	1838.5	1827.7	1813.6	1810.9	1800.1	1785.9	1775.8	1747.4	1729.8	1703.5
32.5°	1951.3	1956.7	1954.0	1937.8	1940.5	1929.7	1917.5	1910.1	1880.4	1863.5	1839.2
35°	2114.7	2119.4	2123.5	2117.4	2120.8	2114.7	2104.6	2085.0	2060.7	2038.4	2004.6
37.5°	2241.6	2246.4	2249.1	2263.9	2285.5	2306.5	2315.9	2305.8	2307.1	2273.4	2228.1
40°	2345.6	2357.1	2373.3	2401.7	2444.9	2484.7	2506.3	2523.2	2532.0	2500.2	2441.5
42.5°	2449.6	2461.8	2484.0	2529.3	2588.7	2646.1	2691.3	2743.3	2752.8	2744.7	2694.7
45°	2558.3	2572.5	2600.2	2651.5	2721.0	2796.0	2868.9	2942.5	2979.6	2985.7	2924.9
47.5°	2689.3	2709.5	2735.2	2793.3	2860.8	2945.2	3036.3	3130.9	3188.9	3188.9	3118.7
50°	2852.7	2875.6	2897.3	2955.3	3022.8	3109.9	3215.3	3320.6	3399.6	3404.3	3319.2
52.5°	3081.6	3085.0	3097.8	3151.1	3209.9	3307.1	3407.0	3529.2	3620.4	3624.4	3526.5
55°	3359.8	3359.8	3374.6	3419.2	3473.9	3554.2	3657.5	3793.2	3889.1	3910.0	3784.5
57.5°	3725.7	3739.2	3746.6	3798.6	3835.8	3920.8	4007.3	4155.1	4277.3	4290.8	4163.2
60°	4321.2	4295.6	4336.8	4382.7	4469.8	4531.9	4679.1	4827.6	4983.6	5020.7	4883.7
62.5°	4908.0	4935.7	4986.3	5069.3	5218.6	5357.7	5568.3	5793.8	6036.2	6086.2	5981.5
65°	4944.4	4961.3	5031.5	5174.7	5378.6	5626.4	5916.7	6256.3	6617.6	6804.6	6629.0
67°	4682.5	4687.2	4766.9	4929.6	5174.0	5467.7	5811.4	6226.0	6650.0	6907.2	6776.2
67.5°	4599.4	4608.2	4686.5	4852.6	5099.7	5400.2	5750.6	6176.7	6610.8	6879.5	6761.4
70°	4111.9	4111.9	4196.3	4363.8	4595.4	4888.4	5255.0	5685.1	6157.1	6383.3	6282.7
72.5°	3500.2	3477.9	3573.1	3700.1	3889.1	4145.0	4440.1	4779.7	5134.8	5299.6	5259.8
75°	2544.1	2586.0	2635.3	2729.1	2893.2	3095.1	3267.9	3571.1	3849.9	4032.3	3984.3
77.5°	1388.2	1404.4	1540.8	1596.8	1740.6	1890.5	2080.3	2293.0	2512.4	2627.2	2580.6
80°	825.1	856.8	937.8	1004.7	1082.3	1196.4	1334.2	1380.8	1424.0	1421.3	1336.9
82.5°	521.2	559.7	647.5	704.9	745.4	811.6	886.5	945.3	958.1	894.6	796.7
85°	84.4	139.8	365.3	429.4	455.1	490.9	546.2	571.2	533.4	465.9	482.8
87.5°	33.1	39.8	111.4	141.1	149.2	78.3	135.7	159.3	81.0	41.2	93.2
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):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5
2.5°	1321.4	1324.7	1328.1	1332.2	1333.5	1336.9	1343.0	1342.3	1347.0	1349.0	1352.4
5°	1318.7	1326.1	1331.5	1338.9	1341.6	1349.0	1357.1	1359.8	1365.9	1370.6	1374.7
7.5°	1324.1	1332.2	1338.9	1347.7	1353.8	1359.8	1365.9	1373.3	1378.7	1382.1	1384.8
10°	1326.1	1334.9	1343.0	1350.4	1357.1	1361.9	1368.6	1374.7	1380.1	1382.1	1382.8
12.5°	1326.8	1332.8	1340.9	1349.0	1355.1	1361.2	1365.9	1372.7	1376.7	1377.4	1376.0
15°	1332.2	1332.8	1338.2	1347.7	1353.8	1359.8	1363.2	1366.6	1369.3	1367.3	1365.2
17.5°	1348.4	1343.6	1343.6	1348.4	1351.7	1354.4	1355.1	1354.4	1351.7	1347.7	1344.3
20°	1374.7	1365.2	1357.8	1355.1	1349.7	1343.0	1334.2	1326.1	1316.0	1311.2	1310.5
22.5°	1415.9	1401.7	1388.2	1374.7	1357.1	1337.6	1317.3	1299.7	1285.6	1278.1	1278.8
25°	1486.1	1465.2	1449.6	1426.0	1397.6	1370.0	1343.6	1320.0	1303.1	1289.6	1292.3
27.5°	1580.6	1557.0	1543.5	1516.5	1484.1	1449.0	1417.9	1385.5	1361.2	1344.3	1347.7
30°	1691.4	1684.6	1662.3	1635.3	1604.9	1565.1	1518.5	1469.9	1426.0	1398.3	1392.9
32.5°	1825.0	1817.6	1793.3	1770.4	1731.2	1687.3	1626.5	1549.6	1480.7	1428.0	1405.1
35°	1989.8	1971.6	1941.9	1919.6	1875.7	1819.0	1740.6	1636.7	1532.0	1453.0	1395.6
37.5°	2195.1	2149.8	2100.5	2042.5	1977.6	1908.8	1818.3	1696.8	1567.1	1455.0	1353.1
40°	2390.9	2317.9	2236.2	2144.4	2065.4	1982.4	1888.5	1749.4	1590.8	1440.9	1288.9
42.5°	2608.9	2495.5	2384.8	2258.5	2154.5	2056.0	1948.6	1786.6	1595.5	1402.4	1205.9
45°	2818.9	2673.1	2524.5	2368.6	2236.2	2126.9	2004.6	1818.3	1594.1	1361.9	1123.5
47.5°	3006.0	2831.8	2648.1	2472.6	2318.6	2198.4	2064.7	1861.5	1612.4	1350.4	1068.8
50°	3180.8	2979.6	2764.2	2569.1	2401.7	2278.8	2141.0	1929.7	1668.4	1376.7	1060.7
52.5°	3361.1	3142.3	2895.9	2685.9	2511.0	2368.6	2229.5	2016.8	1746.7	1430.7	1079.0
55°	3596.1	3344.9	3082.3	2849.3	2648.8	2495.5	2334.8	2122.1	1831.1	1493.5	1113.4
57.5°	3945.8	3652.1	3353.7	3103.2	2871.6	2680.5	2504.3	2260.5	1970.9	1588.1	1189.0
60°	4573.8	4248.3	3902.6	3575.1	3308.4	3085.0	2860.8	2558.3	2228.8	1802.8	1362.5
62.5°	5599.4	5149.0	4671.0	4240.2	3873.6	3571.1	3255.1	2891.9	2507.7	2063.4	1625.2
65°	6215.8	5594.6	4986.3	4486.7	4053.2	3665.6	3283.5	2893.2	2521.2	2132.9	1743.3
67°	6292.1	5610.9	4937.7	4405.6	3941.1	3519.1	3104.5	2705.5	2372.6	2047.2	1710.9
67.5°	6269.2	5578.4	4891.8	4354.3	3885.1	3476.6	3068.8	2660.3	2336.2	2010.7	1686.6
70°	5816.8	5140.9	4461.7	3939.1	3489.4	3071.5	2685.9	2276.7	2026.3	1793.3	1513.1
72.5°	4827.6	4300.3	3731.1	3295.6	2907.4	2545.5	2206.5	1864.2	1663.0	1498.3	1301.1
75°	3579.9	3096.4	2615.0	2353.0	2051.9	1762.3	1500.3	1247.1	1169.4	1130.3	1014.1
77.5°	2210.6	1776.4	1413.9	1176.9	935.8	733.3	583.4	474.7	494.9	575.9	613.1
80°	1100.6	812.9	629.3	500.3	404.4	326.8	239.7	175.6	210.0	249.1	282.2
82.5°	662.4	523.3	413.9	350.4	284.9	220.1	156.0	118.8	131.7	176.9	194.5
85°	411.2	329.5	263.3	220.1	182.3	135.0	88.5	87.8	93.2	117.5	134.4
87.5°	120.9	81.7	64.8	67.5	74.9	62.1	46.6	39.8	49.3	67.5	75.6
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):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5	1335.5
2.5°	1353.1	1357.8	1359.8	1360.5	1361.2	1365.2	1365.2	1369.3	1370.6	1370.6	1372.0
5°	1378.7	1383.5	1385.5	1386.2	1387.5	1389.5	1388.9	1391.6	1392.9	1392.2	1392.2
7.5°	1388.2	1389.5	1389.5	1391.6	1393.6	1391.6	1390.2	1391.6	1390.9	1391.6	1391.6
10°	1384.8	1383.5	1383.5	1382.1	1384.1	1380.1	1380.1	1381.4	1380.8	1382.1	1384.1
12.5°	1376.7	1376.0	1374.0	1373.3	1376.0	1373.3	1374.0	1376.0	1377.4	1380.1	1383.5
15°	1365.2	1363.2	1363.2	1365.9	1372.7	1374.7	1377.4	1380.8	1381.4	1382.8	1384.1
17.5°	1345.7	1349.0	1357.1	1366.6	1379.4	1384.1	1385.5	1383.5	1376.7	1371.3	1365.9
20°	1318.7	1333.5	1354.4	1374.7	1390.2	1389.5	1380.8	1367.9	1351.7	1340.3	1332.8
22.5°	1295.7	1324.7	1357.1	1381.4	1391.6	1378.7	1358.5	1338.9	1320.0	1303.1	1288.3
25°	1311.9	1339.6	1367.3	1382.1	1381.4	1359.2	1332.2	1310.5	1284.9	1261.3	1236.3
27.5°	1364.6	1381.4	1389.5	1384.8	1370.6	1340.9	1311.2	1280.8	1247.8	1219.4	1190.4
30°	1400.3	1400.3	1392.2	1373.3	1348.4	1315.3	1278.8	1239.7	1200.5	1167.4	1134.3
32.5°	1388.9	1362.5	1338.9	1313.2	1284.9	1249.1	1207.2	1164.7	1120.1	1081.7	1053.3
35°	1338.9	1282.2	1232.9	1196.4	1166.7	1124.2	1075.6	1027.0	990.5	964.2	948.0
37.5°	1249.8	1159.3	1087.7	1043.2	997.3	953.4	897.3	875.0	842.6	826.4	820.4
40°	1141.8	1009.4	919.6	862.2	813.6	758.9	721.1	706.9	694.8	691.4	688.7
42.5°	1017.5	852.1	745.4	686.0	627.3	587.4	570.5	561.8	559.7	559.7	563.1
45°	888.6	692.1	569.2	521.2	472.6	451.7	447.7	443.6	444.3	442.3	443.6
47.5°	788.6	555.7	429.4	385.5	360.6	353.8	349.1	347.7	347.7	344.3	340.3
50°	736.6	464.5	336.9	302.5	288.3	283.6	283.6	280.9	275.5	272.1	263.3
52.5°	723.1	417.3	291.7	262.0	249.8	245.8	241.7	237.7	229.6	222.1	212.0
55°	733.9	402.4	277.5	249.8	236.3	231.6	228.2	221.5	210.0	199.2	187.7
57.5°	779.2	411.9	282.9	253.2	241.0	237.7	234.3	224.2	210.0	194.5	181.6
60°	902.7	456.4	305.9	271.4	261.3	262.0	257.2	244.4	224.2	201.9	183.0
62.5°	1062.1	518.5	335.6	297.1	295.7	302.5	302.5	280.2	247.1	213.4	187.7
65°	1153.2	538.1	339.6	300.5	311.9	331.5	330.2	300.5	255.2	213.4	185.7
67°	1130.3	517.2	322.7	280.9	294.4	316.7	314.0	285.6	243.1	204.6	180.3
67.5°	1112.0	510.4	318.7	276.2	289.7	307.9	307.9	279.5	237.7	201.9	178.3
70°	979.0	451.0	298.4	257.9	257.9	262.6	259.3	239.0	210.7	185.7	170.1
72.5°	816.3	394.3	282.2	245.1	232.3	229.6	224.8	210.7	192.4	174.9	161.4
75°	632.7	349.1	269.4	231.6	214.7	208.6	203.9	193.1	178.9	164.1	152.6
77.5°	442.9	299.1	252.5	220.1	201.9	197.2	189.7	177.6	166.1	153.3	142.5
80°	274.8	247.1	220.1	198.5	179.6	172.8	163.4	152.6	143.1	135.7	127.6
82.5°	195.8	181.6	164.1	152.6	133.0	112.8	120.9	121.5	115.5	110.7	108.7
85°	131.0	118.2	109.4	99.3	87.8	79.0	81.0	87.1	87.8	85.7	85.7
87.5°	71.6	60.8	58.7	60.8	52.7	50.0	50.6	56.0	56.7	56.7	57.4
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):

	165°	170°	175°	180°
0°	1335.5	1335.5	1335.5	1335.5
2.5°	1372.7	1374.7	1374.0	1375.4
5°	1393.6	1394.9	1394.3	1394.9
7.5°	1390.2	1392.9	1394.3	1392.2
10°	1384.8	1388.9	1391.6	1391.6
12.5°	1386.2	1392.9	1397.0	1397.0
15°	1384.8	1390.2	1391.6	1391.6
17.5°	1363.9	1363.9	1364.6	1361.9
20°	1327.4	1323.4	1322.0	1317.3
22.5°	1275.4	1266.0	1259.9	1256.5
25°	1216.0	1201.2	1191.7	1186.3
27.5°	1166.7	1153.9	1144.5	1139.1
30°	1112.0	1097.2	1091.8	1087.7
32.5°	1033.0	1018.9	1014.8	1011.4
35°	930.4	925.7	914.9	907.5
37.5°	811.6	805.5	801.5	798.8
40°	687.3	688.0	684.6	678.6
42.5°	563.1	569.9	563.1	561.8
45°	442.3	449.7	449.7	451.7
47.5°	341.0	339.6	342.3	343.0
50°	257.9	253.9	252.5	250.5
52.5°	204.6	199.9	197.2	193.8
55°	180.3	174.9	172.2	171.5
57.5°	172.2	165.4	161.4	160.7
60°	170.1	160.7	155.3	153.9
62.5°	170.1	158.7	152.6	150.6
65°	168.1	156.6	151.2	149.2
67°	165.4	155.3	149.9	148.5
67.5°	164.1	154.6	149.9	147.9
70°	160.7	152.6	147.2	145.2
72.5°	153.3	146.5	141.1	139.8
75°	145.2	139.1	135.7	134.4
77.5°	135.7	130.3	126.3	122.9
80°	121.5	115.5	109.4	108.0
82.5°	103.3	96.6	91.8	91.2
85°	83.0	77.6	72.2	72.2
87.5°	58.1	54.7	51.3	47.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)