

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: P146876

Luminaire Tested: **LDRL-T4-F04-E-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P146876  
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-F04-E-7050  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (28) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9956.9 lumens  
Efficiency: N/A  
Efficacy: 97.4 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

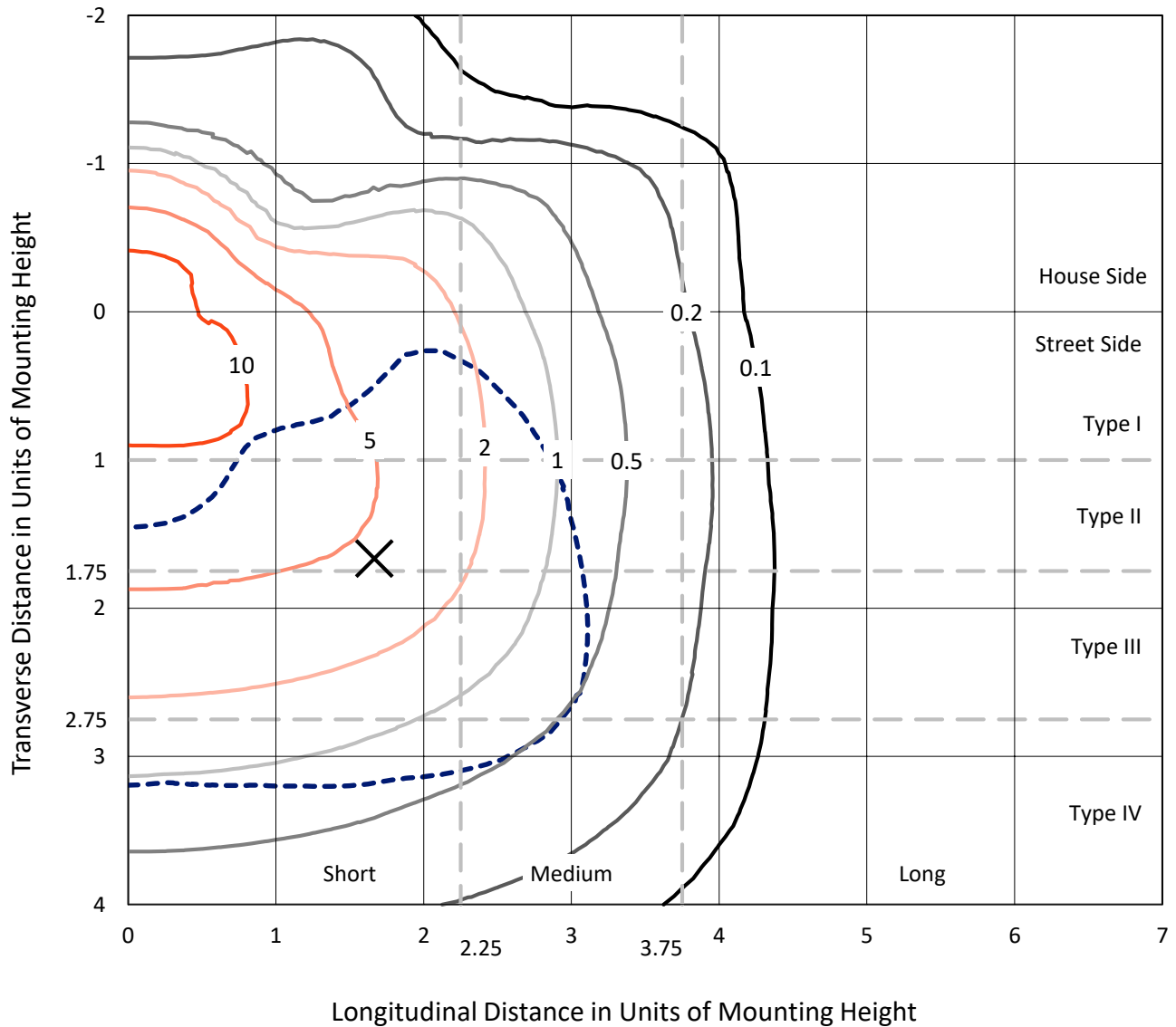
Input Watts (W): 102.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

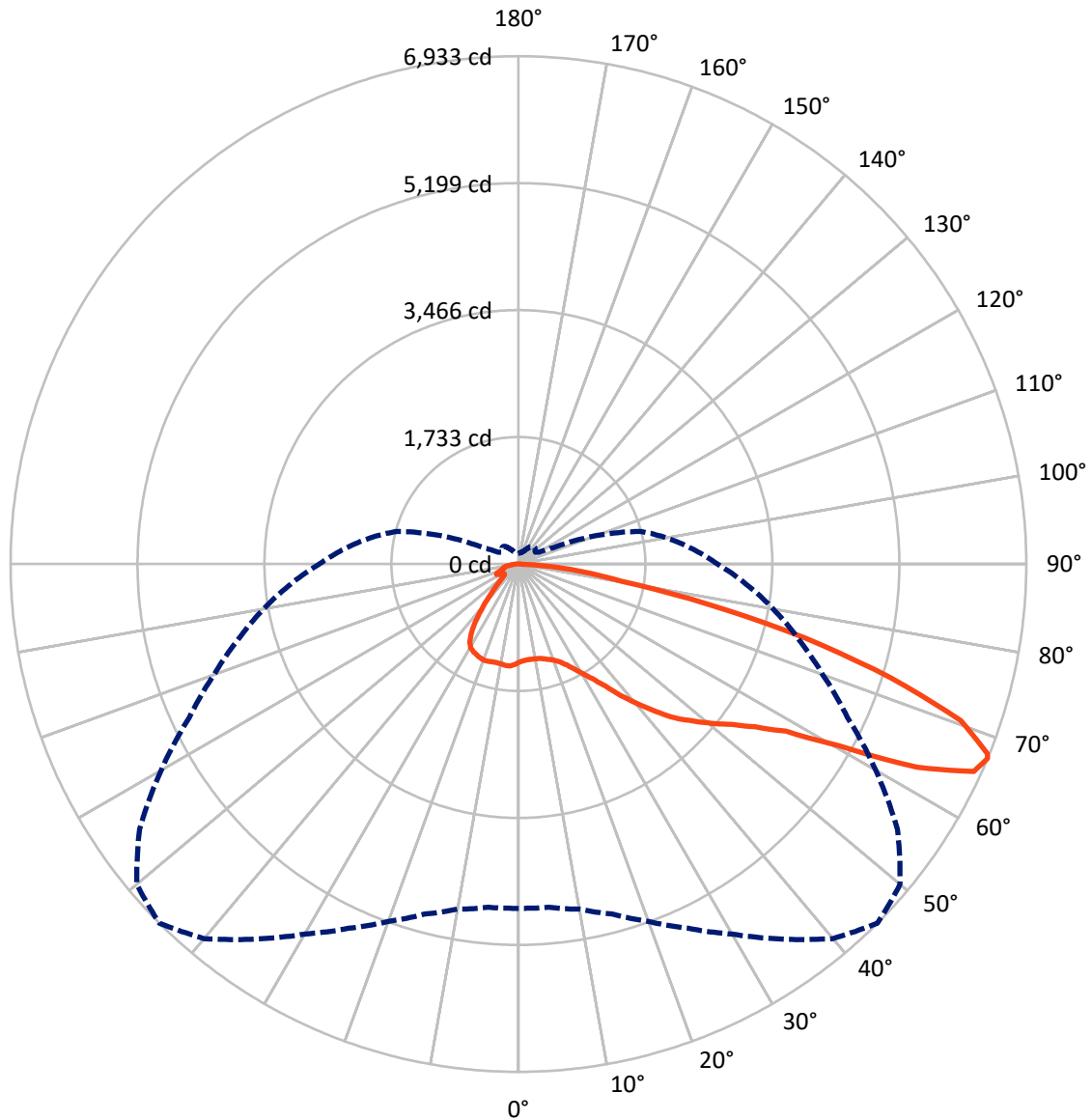
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.7 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
<b>House Side</b>	Lumens	2017.5	0.0	2017.5
	% Fixture	20.3	0.0	20.3
<b>Street Side</b>	Lumens	7939.4	0.0	7939.4
	% Fixture	79.7	0.0	79.7
<b>Total</b>	Lumens	9956.9	0.0	9956.9
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.2	1.3
10°-20°	387.9	3.9
20°-30°	659.3	6.6
30°-40°	990.9	10.0
40°-50°	1288.5	12.9
50°-60°	1769.0	17.8
60°-70°	2790.6	28.0
70°-80°	1686.1	16.9
80°-90°	255.4	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°	9956.9	100.0
0°-180°	9956.9	100.0



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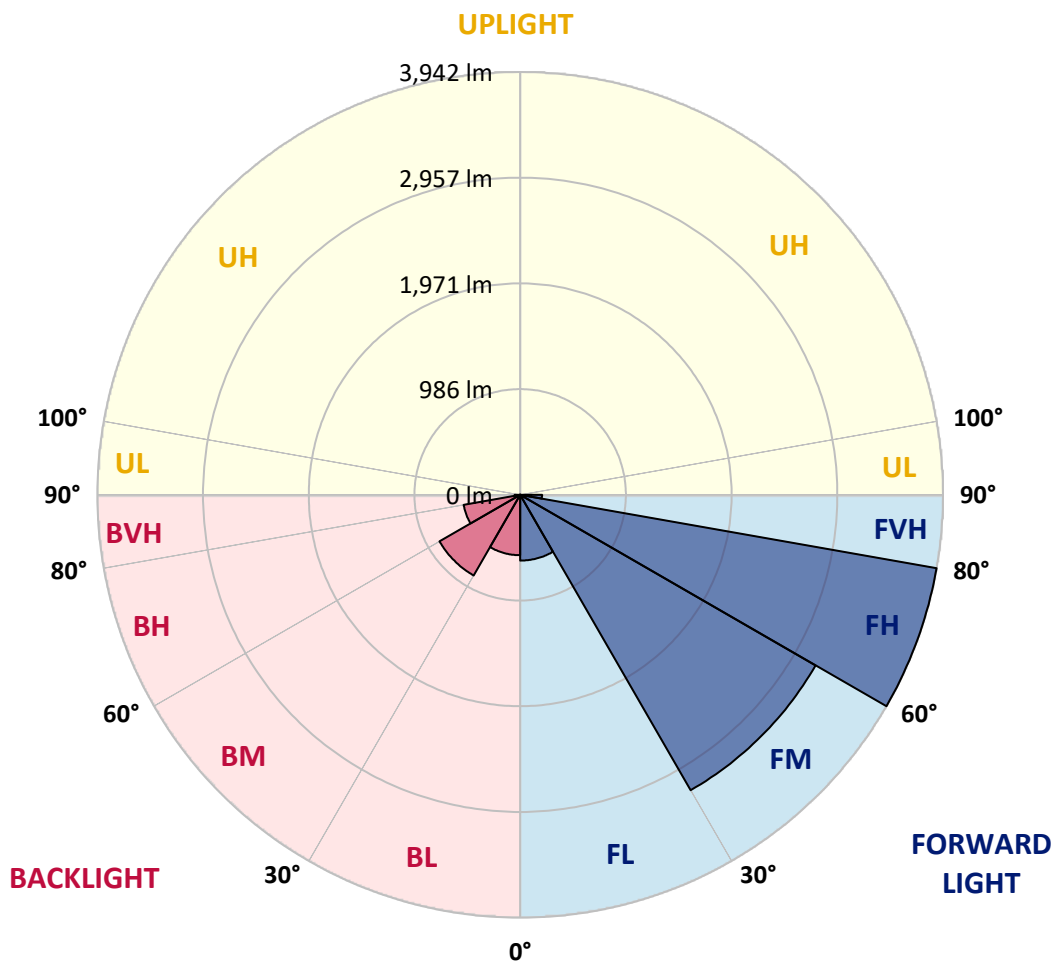
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	613.2	6.2			
FM (30°-60°)	3180.1	31.9			
FH (60°-80°)	3942.1	39.6			G2/5000
FVH (80°-90°)	204.0	2.0			G2/225
BL (0°-30°)	563.3	5.7	B2/1000		
BM (30°-60°)	868.2	8.7	B1/1000		
BH (60°-80°)	534.6	5.4	B2/1000		G2/1000
BVH (80°-90°)	51.5	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°	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4
2.5°	1310.6	1313.3	1311.3	1311.3	1312.0	1312.6	1314.0	1316.7	1317.4	1321.4	1322.1
5°	1284.2	1284.8	1284.8	1285.5	1289.6	1293.0	1296.4	1301.1	1305.2	1312.6	1317.4
7.5°	1274.7	1277.4	1276.7	1278.1	1282.1	1285.5	1289.6	1296.4	1306.5	1312.6	1319.4
10°	1290.3	1292.3	1290.3	1290.9	1291.6	1295.0	1296.4	1301.1	1309.2	1314.7	1320.8
12.5°	1326.2	1326.2	1324.1	1322.8	1320.8	1321.4	1318.7	1318.0	1322.1	1322.8	1323.5
15°	1373.6	1379.0	1372.3	1366.8	1364.1	1361.4	1352.6	1349.2	1348.5	1342.4	1336.3
17.5°	1421.7	1423.1	1419.0	1412.9	1408.9	1402.8	1395.3	1388.5	1380.4	1370.9	1358.7
20°	1475.3	1475.9	1470.5	1461.7	1457.0	1449.5	1440.0	1428.5	1418.3	1403.4	1389.9
22.5°	1549.8	1549.1	1538.3	1530.8	1524.1	1515.2	1501.7	1486.1	1469.8	1452.2	1433.3
25°	1635.2	1635.2	1627.7	1615.5	1612.2	1599.3	1584.4	1566.1	1549.1	1524.1	1501.0
27.5°	1732.8	1733.5	1719.9	1713.1	1705.7	1692.1	1682.0	1667.7	1644.7	1619.6	1595.9
30°	1848.7	1845.3	1834.4	1820.2	1817.5	1806.6	1792.4	1782.2	1753.8	1736.2	1709.7
32.5°	1958.4	1963.9	1961.1	1944.9	1947.6	1936.8	1924.6	1917.1	1887.3	1870.3	1845.9
35°	2122.4	2127.2	2131.2	2125.1	2128.5	2122.4	2112.3	2092.6	2068.2	2045.9	2012.0
37.5°	2249.8	2254.6	2257.3	2272.2	2293.9	2314.9	2324.4	2314.2	2315.6	2281.7	2236.3
40°	2354.2	2365.7	2382.0	2410.4	2453.8	2493.8	2515.5	2532.4	2541.2	2509.4	2450.4
42.5°	2458.6	2470.8	2493.1	2538.5	2598.2	2655.8	2701.2	2753.3	2762.8	2754.7	2704.5
45°	2567.7	2581.9	2609.7	2661.2	2731.0	2806.2	2879.4	2953.2	2990.5	2996.6	2935.6
47.5°	2699.1	2719.5	2745.2	2803.5	2871.2	2956.0	3047.4	3142.3	3200.6	3200.6	3130.1
50°	2863.1	2886.2	2907.8	2966.1	3033.9	3121.3	3227.0	3332.7	3412.0	3416.8	3331.4
52.5°	3092.8	3096.2	3109.1	3162.6	3221.6	3319.2	3419.5	3542.1	3633.6	3637.7	3539.4
55°	3372.0	3372.0	3386.9	3431.7	3486.6	3567.2	3670.9	3807.1	3903.3	3924.3	3798.3
57.5°	3739.3	3752.9	3760.3	3812.5	3849.8	3935.2	4021.9	4170.3	4293.0	4306.5	4178.5
60°	4337.0	4311.3	4352.6	4398.7	4486.1	4548.5	4696.2	4845.3	5001.8	5039.1	4901.5
62.5°	4925.9	4953.7	5004.5	5087.9	5237.6	5377.2	5588.7	5815.0	6058.3	6108.4	6003.4
65°	4962.5	4979.4	5049.9	5193.6	5398.2	5646.9	5938.3	6279.2	6641.8	6829.5	6653.3
67°	4699.6	4704.3	4784.3	4947.6	5192.9	5487.7	5832.6	6248.7	6674.3	6932.5	6801.0
67.5°	4616.2	4625.0	4703.6	4870.3	5118.4	5419.9	5771.6	6199.2	6635.0	6904.7	6786.1
70°	4127.0	4127.0	4211.7	4379.7	4612.2	4906.3	5274.2	5705.9	6179.6	6406.6	6305.6
72.5°	3513.0	3490.6	3586.2	3713.6	3903.3	4160.2	4456.3	4797.2	5153.6	5319.0	5279.0
75°	2553.4	2595.4	2644.9	2739.1	2903.8	3106.4	3279.9	3584.1	3864.0	4047.0	3998.9
77.5°	1393.3	1409.5	1546.4	1602.7	1747.0	1897.4	2087.9	2301.3	2521.6	2636.8	2590.0
80°	828.1	860.0	941.3	1008.4	1086.3	1200.8	1339.1	1385.8	1429.2	1426.5	1341.8
82.5°	523.2	561.8	649.9	707.5	748.1	814.5	889.8	948.7	961.6	897.9	799.6
85°	84.7	140.3	366.6	431.0	456.7	492.7	548.2	573.3	535.4	467.6	484.5
87.5°	33.2	40.0	111.8	141.6	149.8	78.6	136.2	159.9	81.3	41.3	93.5
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°	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4
2.5°	1326.2	1329.6	1333.0	1337.0	1338.4	1341.8	1347.9	1347.2	1351.9	1354.0	1357.4
5°	1323.5	1330.9	1336.3	1343.8	1346.5	1354.0	1362.1	1364.8	1370.9	1375.7	1379.7
7.5°	1328.9	1337.0	1343.8	1352.6	1358.7	1364.8	1370.9	1378.4	1383.8	1387.2	1389.9
10°	1330.9	1339.7	1347.9	1355.3	1362.1	1366.8	1373.6	1379.7	1385.1	1387.2	1387.8
12.5°	1331.6	1337.7	1345.8	1354.0	1360.1	1366.2	1370.9	1377.7	1381.7	1382.4	1381.1
15°	1337.0	1337.7	1343.1	1352.6	1358.7	1364.8	1368.2	1371.6	1374.3	1372.3	1370.2
17.5°	1353.3	1348.5	1348.5	1353.3	1356.7	1359.4	1360.1	1359.4	1356.7	1352.6	1349.2
20°	1379.7	1370.2	1362.8	1360.1	1354.6	1347.9	1339.1	1330.9	1320.8	1316.0	1315.3
22.5°	1421.1	1406.8	1393.3	1379.7	1362.1	1342.4	1322.1	1304.5	1290.3	1282.8	1283.5
25°	1491.5	1470.5	1454.9	1431.2	1402.8	1375.0	1348.5	1324.8	1307.9	1294.3	1297.0
27.5°	1586.4	1562.7	1549.1	1522.0	1489.5	1454.3	1423.1	1390.6	1366.2	1349.2	1352.6
30°	1697.5	1690.8	1668.4	1641.3	1610.8	1570.8	1524.1	1475.3	1431.2	1403.4	1398.0
32.5°	1831.7	1824.3	1799.9	1776.8	1737.5	1693.5	1632.5	1555.2	1486.1	1433.3	1410.2
35°	1997.1	1978.8	1949.0	1926.6	1882.5	1825.6	1747.0	1642.6	1537.6	1458.3	1400.7
37.5°	2203.1	2157.7	2108.2	2049.9	1984.9	1915.7	1824.9	1703.0	1572.9	1460.4	1358.0
40°	2399.6	2326.4	2244.4	2152.2	2073.0	1989.6	1895.4	1755.8	1596.6	1446.1	1293.7
42.5°	2618.5	2504.6	2393.5	2266.8	2162.4	2063.5	1955.7	1793.1	1601.3	1407.5	1210.3
45°	2829.2	2682.9	2533.8	2377.2	2244.4	2134.6	2012.0	1824.9	1600.0	1366.8	1127.6
47.5°	3016.9	2842.1	2657.8	2481.6	2327.1	2206.5	2072.3	1868.3	1618.3	1355.3	1072.7
50°	3192.5	2990.5	2774.3	2578.5	2410.4	2287.1	2148.9	1936.8	1674.5	1381.7	1064.6
52.5°	3373.4	3153.8	2906.5	2695.7	2520.2	2377.2	2237.6	2024.2	1753.1	1436.0	1082.9
55°	3609.2	3357.1	3093.5	2859.7	2658.5	2504.6	2343.3	2129.9	1837.8	1499.0	1117.5
57.5°	3960.2	3665.5	3365.9	3114.5	2882.1	2690.3	2513.4	2268.8	1978.1	1593.9	1193.4
60°	4590.5	4263.8	3916.9	3588.2	3320.5	3096.2	2871.2	2567.7	2237.0	1809.4	1367.5
62.5°	5619.8	5167.8	4688.1	4255.7	3887.7	3584.1	3267.0	2902.4	2516.8	2070.9	1631.1
65°	6238.5	5615.1	5004.5	4503.1	4068.0	3679.0	3295.5	2903.8	2530.4	2140.7	1749.7
67°	6315.1	5631.4	4955.7	4421.7	3955.5	3532.0	3115.9	2715.4	2381.3	2054.7	1717.2
67.5°	6292.1	5598.8	4909.7	4370.2	3899.3	3489.3	3080.0	2670.0	2344.7	2018.1	1692.8
70°	5838.0	5159.7	4478.0	3953.5	3502.1	3082.7	2695.7	2285.1	2033.7	1799.9	1518.6
72.5°	4845.3	4316.0	3744.8	3307.7	2918.0	2554.8	2214.6	1871.0	1669.1	1503.7	1305.9
75°	3593.0	3107.8	2624.6	2361.6	2059.4	1768.7	1505.8	1251.6	1173.7	1134.4	1017.8
77.5°	2218.7	1782.9	1419.0	1181.2	939.2	735.9	585.5	476.4	496.7	578.0	615.3
80°	1104.6	815.9	631.6	502.1	405.9	328.0	240.6	176.2	210.8	250.1	283.3
82.5°	664.8	525.2	415.4	351.7	286.0	220.9	156.5	119.3	132.1	177.5	195.2
85°	412.7	330.7	264.3	220.9	183.0	135.5	88.8	88.1	93.5	117.9	134.9
87.5°	121.3	82.0	65.1	67.8	75.2	62.3	46.8	40.0	49.5	67.8	75.9
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°	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4	1340.4
2.5°	1358.0	1362.8	1364.8	1365.5	1366.2	1370.2	1370.2	1374.3	1375.7	1375.7	1377.0
5°	1383.8	1388.5	1390.6	1391.2	1392.6	1394.6	1393.9	1396.7	1398.0	1397.3	1397.3
7.5°	1393.3	1394.6	1394.6	1396.7	1398.7	1396.7	1395.3	1396.7	1396.0	1396.7	1396.7
10°	1389.9	1388.5	1388.5	1387.2	1389.2	1385.1	1385.1	1386.5	1385.8	1387.2	1389.2
12.5°	1381.7	1381.1	1379.0	1378.4	1381.1	1378.4	1379.0	1381.1	1382.4	1385.1	1388.5
15°	1370.2	1368.2	1368.2	1370.9	1377.7	1379.7	1382.4	1385.8	1386.5	1387.8	1389.2
17.5°	1350.6	1354.0	1362.1	1371.6	1384.5	1389.2	1390.6	1388.5	1381.7	1376.3	1370.9
20°	1323.5	1338.4	1359.4	1379.7	1395.3	1394.6	1385.8	1372.9	1356.7	1345.2	1337.7
22.5°	1300.4	1329.6	1362.1	1386.5	1396.7	1383.8	1363.5	1343.8	1324.8	1307.9	1293.0
25°	1316.7	1344.5	1372.3	1387.2	1386.5	1364.1	1337.0	1315.3	1289.6	1265.9	1240.8
27.5°	1369.6	1386.5	1394.6	1389.9	1375.7	1345.8	1316.0	1285.5	1252.3	1223.9	1194.7
30°	1405.5	1405.5	1397.3	1378.4	1353.3	1320.1	1283.5	1244.2	1204.9	1171.7	1138.5
32.5°	1393.9	1367.5	1343.8	1318.0	1289.6	1253.7	1211.7	1169.0	1124.2	1085.6	1057.2
35°	1343.8	1286.9	1237.4	1200.8	1171.0	1128.3	1079.5	1030.7	994.1	967.7	951.4
37.5°	1254.3	1163.5	1091.7	1047.0	1000.9	956.9	900.6	878.2	845.7	829.5	823.4
40°	1145.9	1013.1	923.0	865.4	816.6	761.7	723.7	709.5	697.3	693.9	691.2
42.5°	1021.2	855.2	748.1	688.5	629.5	589.6	572.6	563.8	561.8	561.8	565.2
45°	891.8	694.6	571.3	523.2	474.4	453.4	449.3	445.2	445.9	443.9	445.2
47.5°	791.5	557.7	431.0	386.9	361.9	355.1	350.4	349.0	349.0	345.6	341.5
50°	739.3	466.2	338.2	303.6	289.4	284.6	284.6	281.9	276.5	273.1	264.3
52.5°	725.8	418.8	292.7	262.9	250.7	246.7	242.6	238.5	230.4	223.0	212.8
55°	736.6	403.9	278.5	250.7	237.2	232.4	229.0	222.3	210.8	199.9	188.4
57.5°	782.0	413.4	283.9	254.1	241.9	238.5	235.1	225.0	210.8	195.2	182.3
60°	906.0	458.1	307.0	272.4	262.3	262.9	258.2	245.3	225.0	202.6	183.6
62.5°	1066.0	520.4	336.8	298.2	296.8	303.6	303.6	281.2	248.0	214.1	188.4
65°	1157.4	540.1	340.9	301.6	313.1	332.7	331.4	301.6	256.2	214.1	186.4
67°	1134.4	519.1	323.9	281.9	295.5	317.8	315.1	286.7	244.0	205.3	180.9
67.5°	1116.1	512.3	319.9	277.2	290.7	309.0	309.0	280.6	238.5	202.6	178.9
70°	982.6	452.7	299.5	258.9	258.9	263.6	260.2	239.9	211.4	186.4	170.8
72.5°	819.3	395.8	283.3	246.0	233.1	230.4	225.7	211.4	193.1	175.5	162.0
75°	635.0	350.4	270.4	232.4	215.5	209.4	204.7	193.8	179.6	164.7	153.2
77.5°	444.5	300.2	253.4	220.9	202.6	197.9	190.4	178.2	166.7	153.8	143.0
80°	275.8	248.0	220.9	199.2	180.3	173.5	164.0	153.2	143.7	136.2	128.1
82.5°	196.5	182.3	164.7	153.2	133.5	113.2	121.3	122.0	115.9	111.1	109.1
85°	131.5	118.6	109.8	99.6	88.1	79.3	81.3	87.4	88.1	86.1	86.1
87.5°	71.8	61.0	59.0	61.0	52.9	50.1	50.8	56.2	56.9	56.9	57.6
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):**

	165°	170°	175°	180°
0°	1340.4	1340.4	1340.4	1340.4
2.5°	1377.7	1379.7	1379.0	1380.4
5°	1398.7	1400.0	1399.4	1400.0
7.5°	1395.3	1398.0	1399.4	1397.3
10°	1389.9	1393.9	1396.7	1396.7
12.5°	1391.2	1398.0	1402.1	1402.1
15°	1389.9	1395.3	1396.7	1396.7
17.5°	1368.9	1368.9	1369.6	1366.8
20°	1332.3	1328.2	1326.9	1322.1
22.5°	1280.1	1270.6	1264.5	1261.1
25°	1220.5	1205.6	1196.1	1190.6
27.5°	1171.0	1158.1	1148.6	1143.2
30°	1116.1	1101.2	1095.8	1091.7
32.5°	1036.8	1022.6	1018.5	1015.1
35°	933.8	929.1	918.2	910.8
37.5°	814.5	808.4	804.4	801.7
40°	689.9	690.5	687.1	681.0
42.5°	565.2	571.9	565.2	563.8
45°	443.9	451.3	451.3	453.4
47.5°	342.2	340.9	343.6	344.3
50°	258.9	254.8	253.4	251.4
52.5°	205.3	200.6	197.9	194.5
55°	180.9	175.5	172.8	172.1
57.5°	172.8	166.0	162.0	161.3
60°	170.8	161.3	155.9	154.5
62.5°	170.8	159.3	153.2	151.1
65°	168.7	157.2	151.8	149.8
67°	166.0	155.9	150.4	149.1
67.5°	164.7	155.2	150.4	148.4
70°	161.3	153.2	147.7	145.7
72.5°	153.8	147.1	141.6	140.3
75°	145.7	139.6	136.2	134.9
77.5°	136.2	130.8	126.7	123.3
80°	122.0	115.9	109.8	108.4
82.5°	103.7	96.9	92.2	91.5
85°	83.4	77.9	72.5	72.5
87.5°	58.3	54.9	51.5	48.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)