

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: P146875

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P146875
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
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT
Light Source: (28) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9703.6 lumens
Efficiency: N/A
Efficacy: 94.9 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

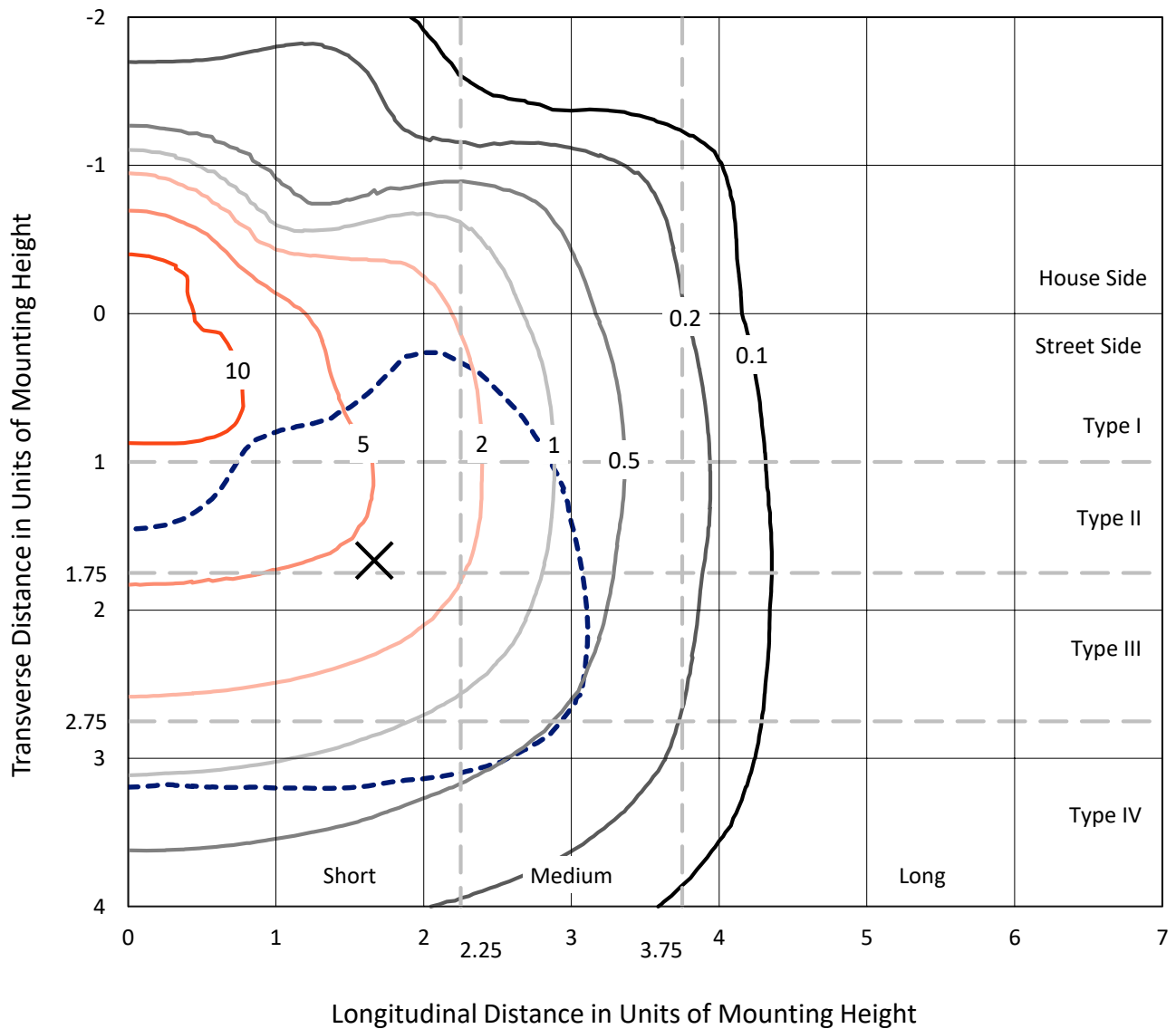
Input Watts (W): 102.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

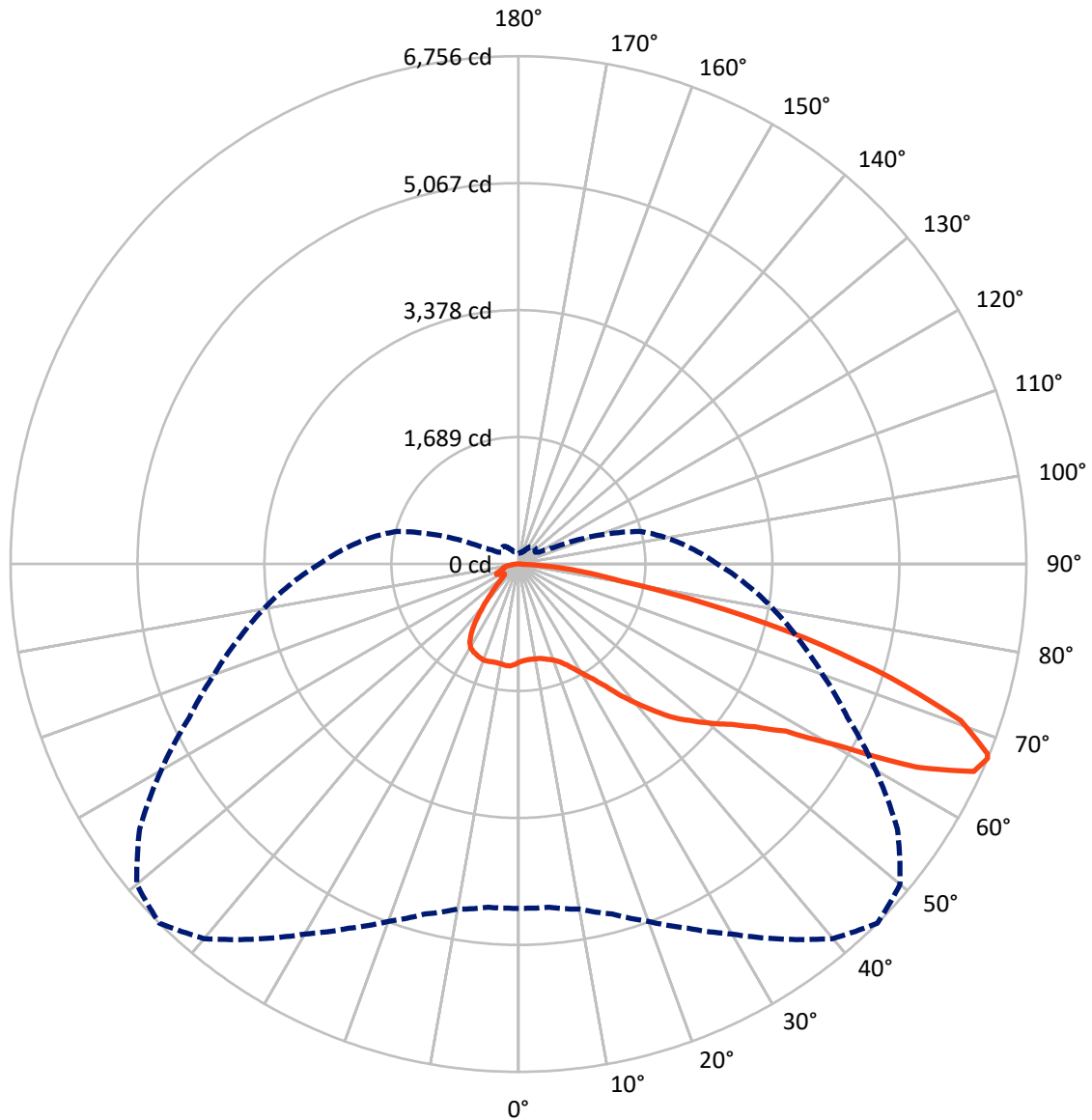
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.3 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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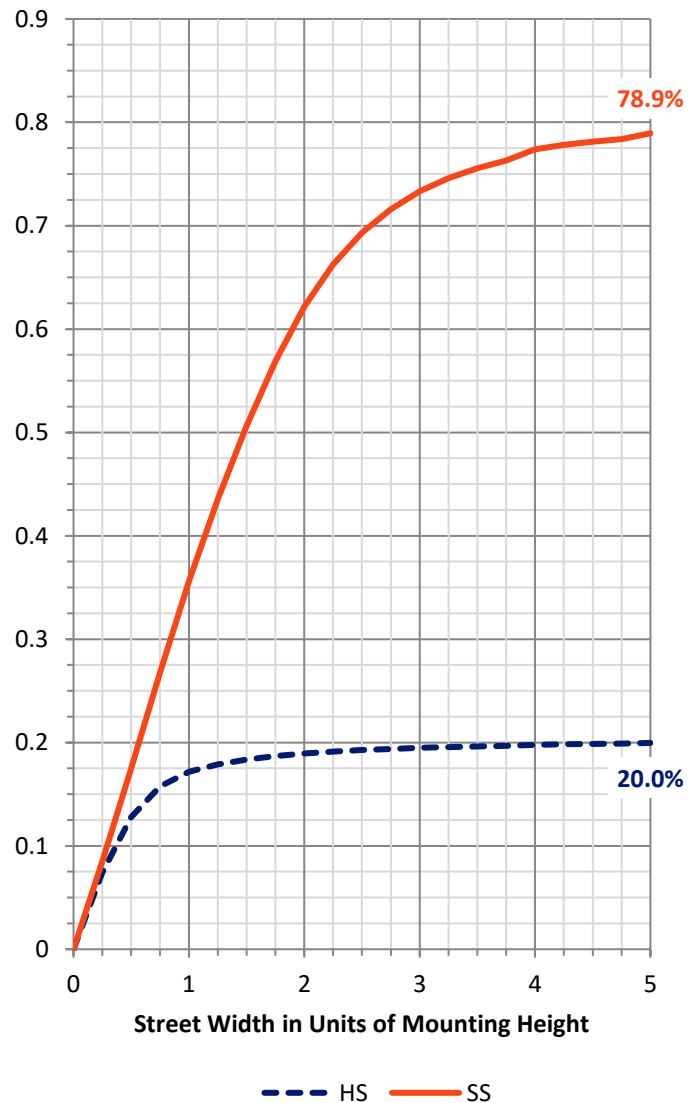
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1966.2	0.0	1966.2
	% Fixture	20.3	0.0	20.3
Street Side	Lumens	7737.4	0.0	7737.4
	% Fixture	79.7	0.0	79.7
Total	Lumens	9703.6	0.0	9703.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	125.9	1.3
10°-20°	378.1	3.9
20°-30°	642.5	6.6
30°-40°	965.7	10.0
40°-50°	1255.7	12.9
50°-60°	1724.0	17.8
60°-70°	2719.6	28.0
70°-80°	1643.2	16.9
80°-90°	248.9	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°	9703.6	100.0
0°-180°	9703.6	100.0

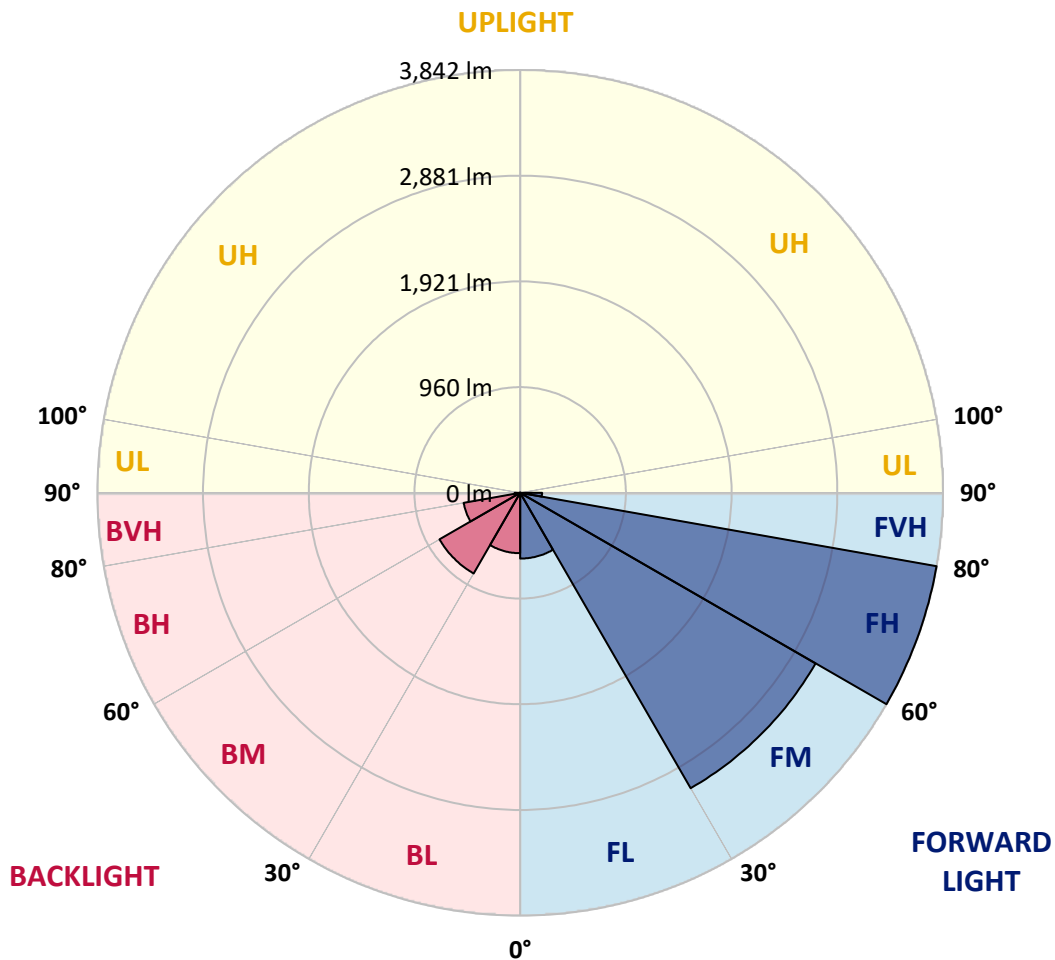


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	597.6	6.2			
FM (30°-60°)	3099.2	31.9			
FH (60°-80°)	3841.8	39.6			G2/5000
FVH (80°-90°)	198.8	2.0			G2/225
BL (0°-30°)	548.9	5.7	B2/1000		
BM (30°-60°)	846.1	8.7	B1/1000		
BH (60°-80°)	521.0	5.4	B2/1000		G2/1000
BVH (80°-90°)	50.2	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°	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3
2.5°	1277.3	1279.9	1277.9	1277.9	1278.6	1279.2	1280.6	1283.2	1283.9	1287.8	1288.5
5°	1251.5	1252.2	1252.2	1252.8	1256.8	1260.1	1263.4	1268.0	1272.0	1279.2	1283.9
7.5°	1242.2	1244.9	1244.2	1245.6	1249.5	1252.8	1256.8	1263.4	1273.3	1279.2	1285.8
10°	1257.4	1259.4	1257.4	1258.1	1258.8	1262.1	1263.4	1268.0	1275.9	1281.2	1287.2
12.5°	1292.4	1292.4	1290.5	1289.1	1287.2	1287.8	1285.2	1284.5	1288.5	1289.1	1289.8
15°	1338.7	1344.0	1337.4	1332.1	1329.4	1326.8	1318.2	1314.9	1314.2	1308.3	1302.3
17.5°	1385.6	1386.9	1382.9	1377.0	1373.0	1367.1	1359.8	1353.2	1345.3	1336.0	1324.1
20°	1437.7	1438.4	1433.1	1424.5	1419.9	1412.6	1403.4	1392.2	1382.3	1367.7	1354.5
22.5°	1510.4	1509.7	1499.2	1491.9	1485.3	1476.7	1463.5	1448.3	1432.5	1415.3	1396.8
25°	1593.6	1593.6	1586.3	1574.4	1571.1	1558.6	1544.1	1526.2	1509.7	1485.3	1462.8
27.5°	1688.7	1689.4	1676.1	1669.5	1662.3	1649.1	1639.2	1625.3	1602.8	1578.4	1555.3
30°	1801.6	1798.3	1787.8	1773.9	1771.2	1760.7	1746.8	1736.9	1709.2	1692.0	1666.2
32.5°	1908.6	1913.9	1911.3	1895.4	1898.0	1887.5	1875.6	1868.3	1839.3	1822.8	1799.0
35°	2068.4	2073.1	2077.0	2071.1	2074.4	2068.4	2058.5	2039.4	2015.6	1993.8	1960.8
37.5°	2192.6	2197.2	2199.9	2214.4	2235.5	2256.0	2265.2	2255.3	2256.7	2223.6	2179.4
40°	2294.3	2305.5	2321.4	2349.1	2391.4	2430.3	2451.5	2468.0	2476.6	2445.5	2388.1
42.5°	2396.0	2407.9	2429.7	2473.9	2532.1	2588.2	2632.4	2683.3	2692.5	2684.6	2635.7
45°	2502.3	2516.2	2543.3	2593.5	2661.5	2734.8	2806.1	2878.1	2914.4	2920.4	2860.9
47.5°	2630.5	2650.3	2675.4	2732.2	2798.2	2880.8	2969.9	3062.4	3119.2	3119.2	3050.5
50°	2790.3	2812.7	2833.9	2890.7	2956.7	3041.9	3144.9	3247.9	3325.2	3329.8	3246.6
52.5°	3014.2	3017.5	3030.0	3082.2	3139.6	3234.7	3332.5	3452.0	3541.2	3545.1	3449.4
55°	3286.2	3286.2	3300.8	3344.4	3397.9	3476.5	3577.5	3710.2	3804.0	3824.5	3701.7
57.5°	3644.2	3657.4	3664.7	3715.5	3751.8	3835.1	3919.6	4064.2	4183.8	4197.0	4072.1
60°	4226.7	4201.6	4241.9	4286.8	4372.0	4432.7	4576.7	4722.0	4874.6	4910.9	4776.8
62.5°	4800.6	4827.7	4877.2	4958.4	5104.4	5240.4	5446.5	5667.1	5904.2	5953.0	5850.7
65°	4836.3	4852.8	4921.4	5061.5	5260.9	5503.3	5787.3	6119.5	6472.8	6655.7	6484.0
67°	4580.0	4584.6	4662.6	4821.7	5060.8	5348.1	5684.2	6089.7	6504.5	6756.1	6628.0
67.5°	4498.8	4507.4	4584.0	4746.4	4988.2	5282.0	5624.8	6041.5	6466.2	6729.0	6613.4
70°	4022.0	4022.0	4104.5	4268.3	4494.8	4781.4	5140.0	5560.7	6022.4	6243.6	6145.2
72.5°	3423.6	3401.8	3494.9	3619.1	3804.0	4054.3	4342.9	4675.1	5022.5	5183.6	5144.7
75°	2488.5	2529.4	2577.6	2669.4	2829.9	3027.4	3196.4	3493.0	3765.7	3944.0	3897.1
77.5°	1357.8	1373.7	1507.1	1561.9	1702.6	1849.2	2034.8	2242.8	2457.4	2569.7	2524.1
80°	807.0	838.1	917.3	982.7	1058.7	1170.3	1305.0	1350.6	1392.8	1390.2	1307.6
82.5°	509.8	547.5	633.3	689.5	729.1	793.8	867.1	924.6	937.1	875.1	779.3
85°	82.6	136.7	357.3	420.0	445.1	480.1	534.3	558.7	521.7	455.7	472.2
87.5°	32.4	39.0	109.0	138.0	146.0	76.6	132.7	155.9	79.3	40.3	91.1
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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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3
2.5°	1292.4	1295.7	1299.0	1303.0	1304.3	1307.6	1313.6	1312.9	1317.5	1319.5	1322.8
5°	1289.8	1297.1	1302.3	1309.6	1312.3	1319.5	1327.4	1330.1	1336.0	1340.7	1344.6
7.5°	1295.1	1303.0	1309.6	1318.2	1324.1	1330.1	1336.0	1343.3	1348.6	1351.9	1354.5
10°	1297.1	1305.7	1313.6	1320.8	1327.4	1332.1	1338.7	1344.6	1349.9	1351.9	1352.5
12.5°	1297.7	1303.7	1311.6	1319.5	1325.5	1331.4	1336.0	1342.6	1346.6	1347.3	1345.9
15°	1303.0	1303.7	1309.0	1318.2	1324.1	1330.1	1333.4	1336.7	1339.3	1337.4	1335.4
17.5°	1318.9	1314.2	1314.2	1318.9	1322.2	1324.8	1325.5	1324.8	1322.2	1318.2	1314.9
20°	1344.6	1335.4	1328.1	1325.5	1320.2	1313.6	1305.0	1297.1	1287.2	1282.5	1281.9
22.5°	1384.9	1371.0	1357.8	1344.6	1327.4	1308.3	1288.5	1271.3	1257.4	1250.2	1250.8
25°	1453.6	1433.1	1417.9	1394.8	1367.1	1340.0	1314.2	1291.1	1274.6	1261.4	1264.0
27.5°	1546.0	1522.9	1509.7	1483.3	1451.6	1417.3	1386.9	1355.2	1331.4	1314.9	1318.2
30°	1654.4	1647.7	1626.0	1599.5	1569.8	1530.9	1485.3	1437.7	1394.8	1367.7	1362.4
32.5°	1785.1	1777.9	1754.1	1731.6	1693.3	1650.4	1591.0	1515.7	1448.3	1396.8	1374.3
35°	1946.3	1928.4	1899.4	1877.6	1834.6	1779.2	1702.6	1600.9	1498.5	1421.2	1365.1
37.5°	2147.0	2102.8	2054.6	1997.8	1934.4	1867.0	1778.5	1659.6	1532.8	1423.2	1323.5
40°	2338.5	2267.2	2187.3	2097.5	2020.2	1939.0	1847.2	1711.1	1555.9	1409.3	1260.7
42.5°	2551.9	2440.9	2332.6	2209.1	2107.4	2011.0	1906.0	1747.5	1560.6	1371.7	1179.5
45°	2757.3	2614.6	2469.3	2316.8	2187.3	2080.3	1960.8	1778.5	1559.3	1332.1	1098.9
47.5°	2940.2	2769.8	2590.2	2418.5	2267.9	2150.3	2019.6	1820.8	1577.1	1320.8	1045.4
50°	3111.2	2914.4	2703.8	2512.9	2349.1	2228.9	2094.2	1887.5	1631.9	1346.6	1037.5
52.5°	3287.6	3073.6	2832.5	2627.2	2456.1	2316.8	2180.7	1972.7	1708.5	1399.4	1055.4
55°	3517.4	3271.7	3014.8	2787.0	2590.8	2440.9	2283.7	2075.7	1791.1	1460.8	1089.0
57.5°	3859.5	3572.2	3280.3	3035.3	2808.8	2621.9	2449.5	2211.1	1927.8	1553.3	1163.0
60°	4473.7	4155.4	3817.2	3496.9	3236.1	3017.5	2798.2	2502.3	2180.0	1763.3	1332.7
62.5°	5476.9	5036.4	4568.8	4147.4	3788.8	3493.0	3183.9	2828.6	2452.8	2018.2	1589.6
65°	6079.8	5472.2	4877.2	4388.5	3964.5	3585.4	3211.6	2829.9	2466.0	2086.3	1705.2
67°	6154.5	5488.1	4829.7	4309.2	3854.9	3442.1	3036.6	2646.3	2320.7	2002.4	1673.5
67.5°	6132.0	5456.4	4784.7	4259.0	3800.1	3400.5	3001.6	2602.1	2285.1	1966.7	1649.7
70°	5689.5	5028.4	4364.1	3852.9	3413.1	3004.3	2627.2	2226.9	1981.9	1754.1	1480.0
72.5°	4722.0	4206.2	3649.5	3223.5	2843.8	2489.8	2158.3	1823.4	1626.6	1465.5	1272.6
75°	3501.5	3028.7	2557.8	2301.6	2007.0	1723.7	1467.5	1219.8	1143.8	1105.5	992.0
77.5°	2162.2	1737.6	1382.9	1151.1	915.3	717.2	570.6	464.3	484.1	563.3	599.7
80°	1076.5	795.1	615.5	489.4	395.6	319.6	234.4	171.7	205.4	243.7	276.1
82.5°	647.9	511.8	404.8	342.8	278.7	215.3	152.6	116.2	128.8	173.0	190.2
85°	402.2	322.3	257.6	215.3	178.3	132.1	86.5	85.9	91.1	114.9	131.4
87.5°	118.2	79.9	63.4	66.0	73.3	60.8	45.6	39.0	48.2	66.0	74.0
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°	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3	1306.3
2.5°	1323.5	1328.1	1330.1	1330.7	1331.4	1335.4	1335.4	1339.3	1340.7	1340.7	1342.0
5°	1348.6	1353.2	1355.2	1355.8	1357.2	1359.1	1358.5	1361.1	1362.4	1361.8	1361.8
7.5°	1357.8	1359.1	1359.1	1361.1	1363.1	1361.1	1359.8	1361.1	1360.5	1361.1	1361.1
10°	1354.5	1353.2	1353.2	1351.9	1353.9	1349.9	1349.9	1351.2	1350.6	1351.9	1353.9
12.5°	1346.6	1345.9	1344.0	1343.3	1345.9	1343.3	1344.0	1345.9	1347.3	1349.9	1353.2
15°	1335.4	1333.4	1333.4	1336.0	1342.6	1344.6	1347.3	1350.6	1351.2	1352.5	1353.9
17.5°	1316.2	1319.5	1327.4	1336.7	1349.2	1353.9	1355.2	1353.2	1346.6	1341.3	1336.0
20°	1289.8	1304.3	1324.8	1344.6	1359.8	1359.1	1350.6	1338.0	1322.2	1310.9	1303.7
22.5°	1267.3	1295.7	1327.4	1351.2	1361.1	1348.6	1328.8	1309.6	1291.1	1274.6	1260.1
25°	1283.2	1310.3	1337.4	1351.9	1351.2	1329.4	1303.0	1281.9	1256.8	1233.7	1209.2
27.5°	1334.7	1351.2	1359.1	1354.5	1340.7	1311.6	1282.5	1252.8	1220.5	1192.7	1164.3
30°	1369.7	1369.7	1361.8	1343.3	1318.9	1286.5	1250.8	1212.5	1174.2	1141.9	1109.5
32.5°	1358.5	1332.7	1309.6	1284.5	1256.8	1221.8	1180.8	1139.2	1095.6	1058.0	1030.3
35°	1309.6	1254.1	1205.9	1170.3	1141.2	1099.6	1052.0	1004.5	968.8	943.1	927.2
37.5°	1222.4	1133.9	1063.9	1020.3	975.4	932.5	877.7	855.9	824.2	808.4	802.4
40°	1116.8	987.3	899.5	843.4	795.8	742.3	705.3	691.5	679.6	676.3	673.6
42.5°	995.3	833.4	729.1	671.0	613.5	574.6	558.1	549.5	547.5	547.5	550.8
45°	869.1	676.9	556.7	509.8	462.3	441.8	437.9	433.9	434.6	432.6	433.9
47.5°	771.4	543.5	420.0	377.1	352.7	346.1	341.4	340.1	340.1	336.8	332.9
50°	720.5	454.4	329.5	295.9	282.0	277.4	277.4	274.7	269.5	266.1	257.6
52.5°	707.3	408.1	285.3	256.2	244.4	240.4	236.4	232.5	224.5	217.3	207.4
55°	717.9	393.6	271.4	244.4	231.1	226.5	223.2	216.6	205.4	194.8	183.6
57.5°	762.1	402.9	276.7	247.7	235.8	232.5	229.2	219.3	205.4	190.2	177.7
60°	883.0	446.4	299.2	265.5	255.6	256.2	251.6	239.1	219.3	197.5	179.0
62.5°	1038.8	507.2	328.2	290.6	289.3	295.9	295.9	274.1	241.7	208.7	183.6
65°	1128.0	526.4	332.2	293.9	305.1	324.3	322.9	293.9	249.6	208.7	181.6
67°	1105.5	505.9	315.7	274.7	287.9	309.7	307.1	279.4	237.8	200.1	176.3
67.5°	1087.7	499.3	311.7	270.1	283.3	301.2	301.2	273.4	232.5	197.5	174.4
70°	957.6	441.2	291.9	252.3	252.3	256.9	253.6	233.8	206.1	181.6	166.4
72.5°	798.4	385.7	276.1	239.7	227.2	224.5	219.9	206.1	188.2	171.0	157.8
75°	618.8	341.4	263.5	226.5	210.0	204.1	199.4	188.9	175.0	160.5	149.3
77.5°	433.2	292.6	247.0	215.3	197.5	192.8	185.6	173.7	162.5	149.9	139.3
80°	268.8	241.7	215.3	194.2	175.7	169.1	159.8	149.3	140.0	132.7	124.8
82.5°	191.5	177.7	160.5	149.3	130.1	110.3	118.2	118.9	112.9	108.3	106.3
85°	128.1	115.6	107.0	97.1	85.9	77.3	79.3	85.2	85.9	83.9	83.9
87.5°	70.0	59.4	57.5	59.4	51.5	48.9	49.5	54.8	55.5	55.5	56.1
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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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	1306.3	1306.3	1306.3	1306.3
2.5°	1342.6	1344.6	1344.0	1345.3
5°	1363.1	1364.4	1363.8	1364.4
7.5°	1359.8	1362.4	1363.8	1361.8
10°	1354.5	1358.5	1361.1	1361.1
12.5°	1355.8	1362.4	1366.4	1366.4
15°	1354.5	1359.8	1361.1	1361.1
17.5°	1334.0	1334.0	1334.7	1332.1
20°	1298.4	1294.4	1293.1	1288.5
22.5°	1247.5	1238.3	1232.3	1229.0
25°	1189.4	1174.9	1165.6	1160.4
27.5°	1141.2	1128.7	1119.4	1114.1
30°	1087.7	1073.2	1067.9	1063.9
32.5°	1010.4	996.6	992.6	989.3
35°	910.1	905.4	894.9	887.6
37.5°	793.8	787.9	783.9	781.3
40°	672.3	673.0	669.7	663.7
42.5°	550.8	557.4	550.8	549.5
45°	432.6	439.8	439.8	441.8
47.5°	333.5	332.2	334.8	335.5
50°	252.3	248.3	247.0	245.0
52.5°	200.1	195.5	192.8	189.5
55°	176.3	171.0	168.4	167.7
57.5°	168.4	161.8	157.8	157.2
60°	166.4	157.2	151.9	150.6
62.5°	166.4	155.2	149.3	147.3
65°	164.4	153.2	147.9	146.0
67°	161.8	151.9	146.6	145.3
67.5°	160.5	151.2	146.6	144.6
70°	157.2	149.3	144.0	142.0
72.5°	149.9	143.3	138.0	136.7
75°	142.0	136.0	132.7	131.4
77.5°	132.7	127.5	123.5	120.2
80°	118.9	112.9	107.0	105.7
82.5°	101.0	94.4	89.8	89.2
85°	81.2	75.9	70.7	70.7
87.5°	56.8	53.5	50.2	46.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)