

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: P146616

Luminaire Tested: **LDRL-T3-F04-E-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P146616
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33695)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-T3-F04-E-7050
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 3
Light Source: (28) 5000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10116.8 lumens
Efficiency: N/A
Efficacy: 99.0 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G3

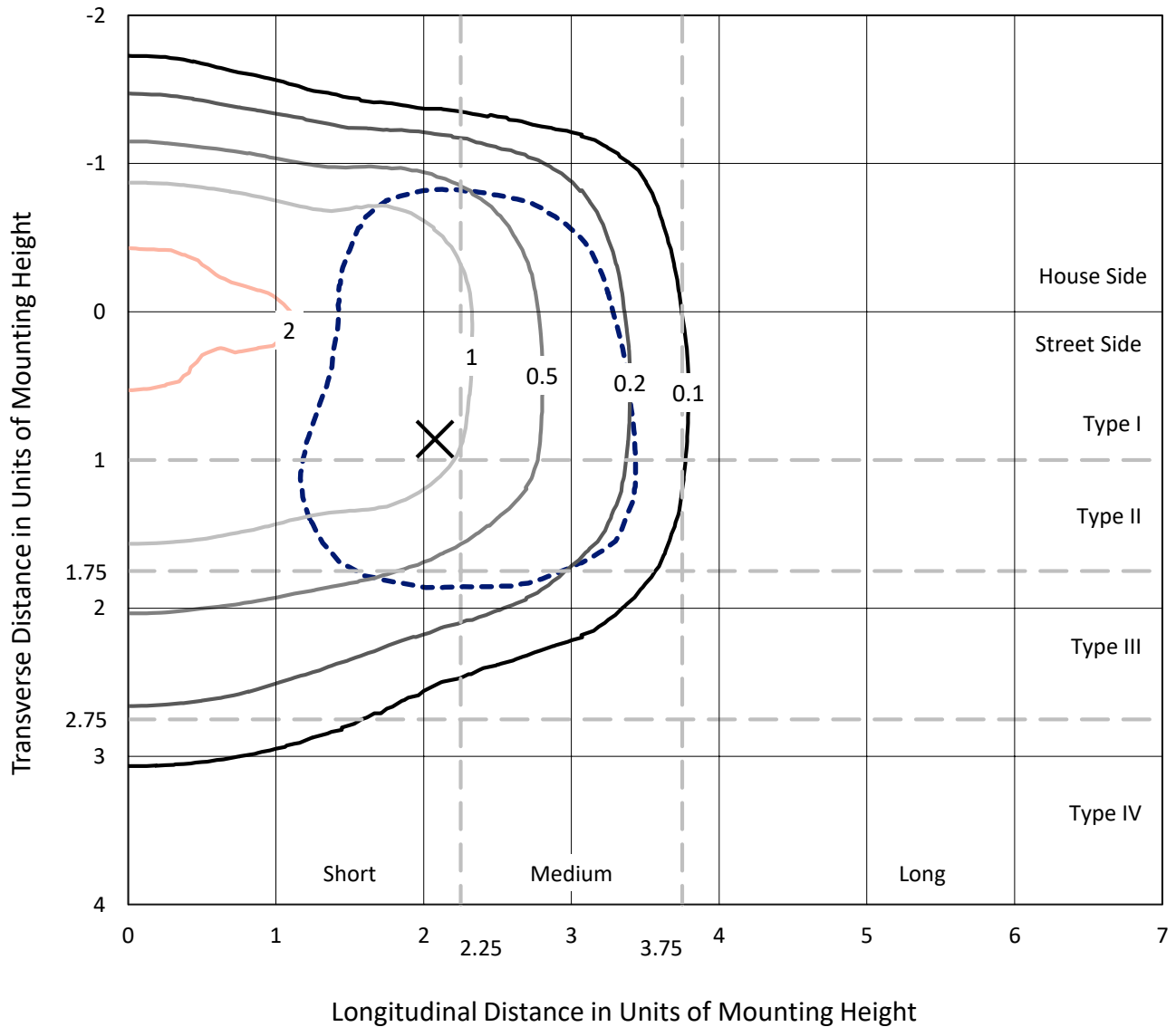
Input Watts (W): 102.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

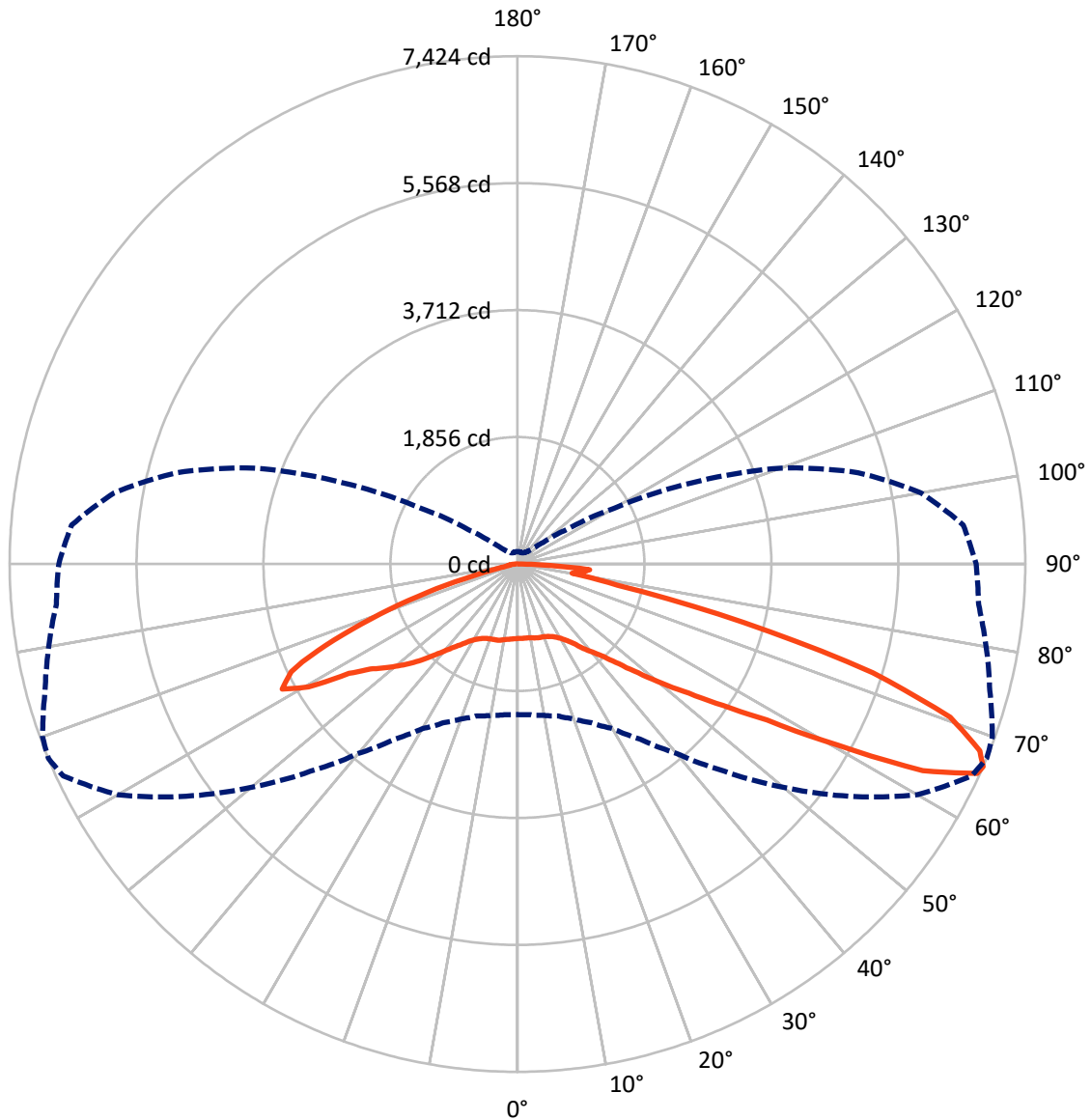
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 2.7 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral - - - Horizontal Cone Through 66-Deg Vertical

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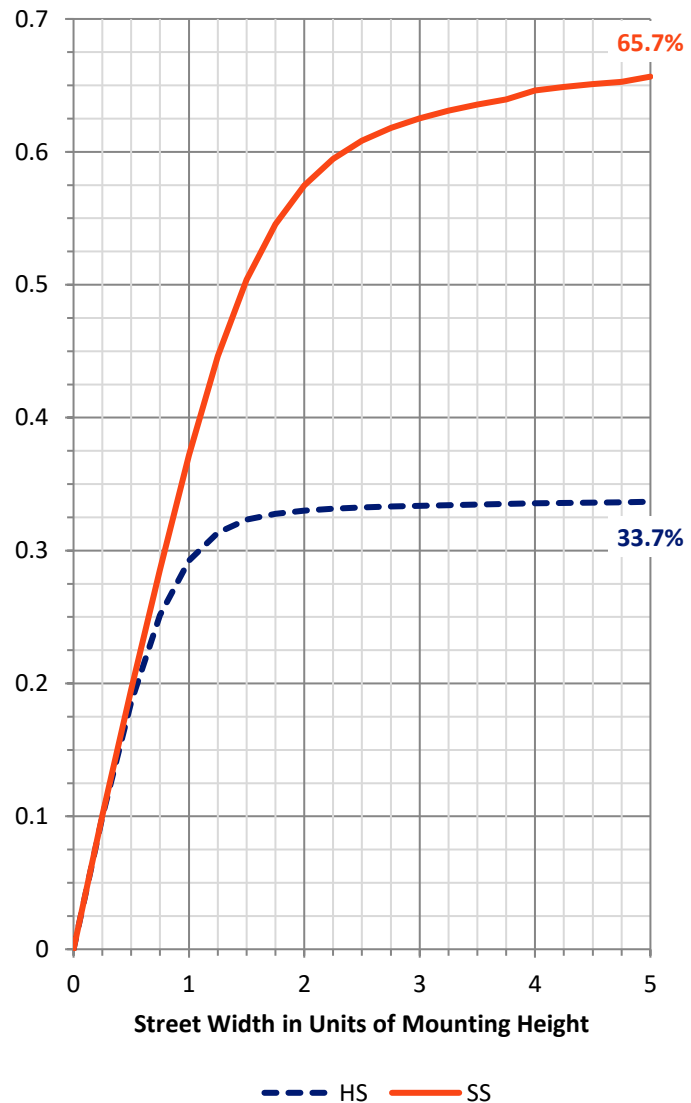
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3437.0	0.0	3437.0
	% Fixture	34.0	0.0	34.0
Street Side	Lumens	6679.8	0.0	6679.8
	% Fixture	66.0	0.0	66.0
Total	Lumens	10116.8	0.0	10116.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.6	1.0
10°-20°	310.0	3.1
20°-30°	532.9	5.3
30°-40°	857.1	8.5
40°-50°	1412.6	14.0
50°-60°	2214.3	21.9
60°-70°	3064.5	30.3
70°-80°	1386.8	13.7
80°-90°	234.0	2.3
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°	10116.8	100.0
0°-180°	10116.8	100.0



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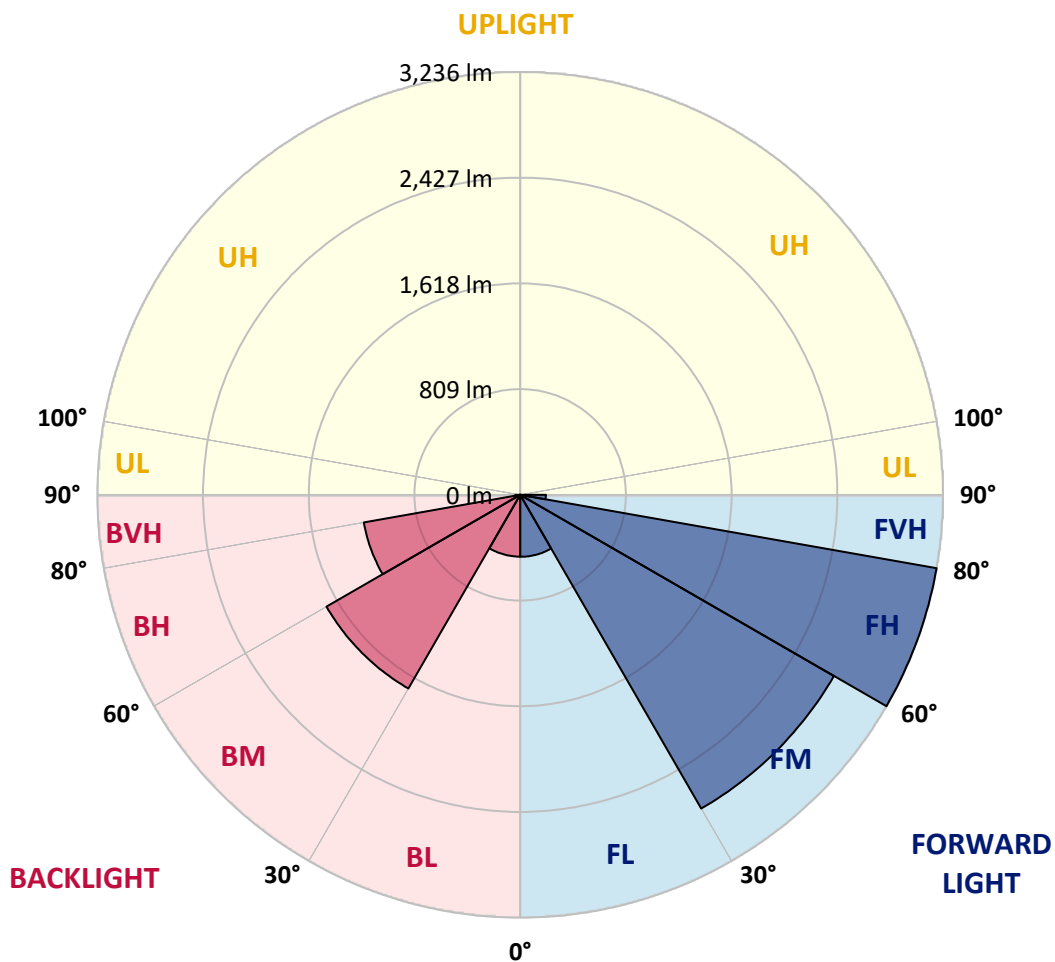
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	474.5	4.7			
FM	(30°-60°)	2772.4	27.4			
FH	(60°-80°)	3236.3	32.0			G2/5000
FVH	(80°-90°)	196.6	1.9			G2/225
BL	(0°-30°)	473.0	4.7	B1/500		
BM	(30°-60°)	1711.7	16.9	B2/2500		
BH	(60°-80°)	1215.0	12.0	B3/2500		G3/2500
BVH	(80°-90°)	37.3	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0
2.5°	1087.6	1087.0	1086.3	1086.3	1085.6	1086.3	1087.0	1087.6	1087.0	1087.6	1087.0
5°	1085.6	1085.6	1084.9	1084.9	1084.9	1084.9	1085.6	1086.3	1085.6	1087.0	1085.6
7.5°	1076.8	1080.9	1079.5	1080.9	1082.2	1083.6	1084.3	1085.6	1087.6	1089.0	1087.6
10°	1065.3	1067.3	1068.0	1069.3	1072.1	1075.4	1078.2	1081.5	1086.3	1087.6	1089.0
12.5°	1044.3	1047.0	1049.0	1051.7	1055.8	1061.2	1066.0	1071.4	1079.5	1084.9	1089.7
15°	1028.7	1032.1	1032.8	1036.1	1040.2	1046.3	1052.4	1060.5	1071.4	1080.9	1090.4
17.5°	1038.9	1040.2	1038.9	1038.9	1040.2	1042.9	1047.7	1054.4	1066.0	1077.5	1089.0
20°	1069.3	1069.3	1068.0	1067.3	1066.0	1063.2	1062.6	1061.9	1069.3	1078.2	1088.3
22.5°	1098.5	1098.5	1097.8	1100.5	1099.8	1099.8	1097.8	1094.4	1091.0	1089.7	1096.5
25°	1116.8	1119.5	1120.9	1124.9	1127.6	1131.7	1133.0	1132.4	1127.6	1119.5	1117.5
27.5°	1146.6	1148.6	1150.0	1154.7	1160.2	1164.9	1169.6	1175.7	1175.7	1168.3	1158.1
30°	1204.2	1201.5	1202.8	1204.2	1208.9	1215.7	1221.8	1230.0	1234.0	1231.3	1217.8
32.5°	1257.7	1260.4	1261.8	1265.9	1270.6	1280.8	1288.2	1297.7	1306.5	1307.9	1301.1
35°	1336.3	1335.0	1333.0	1347.2	1352.6	1364.1	1372.9	1386.5	1393.3	1399.4	1395.3
37.5°	1460.4	1456.3	1453.6	1457.6	1465.1	1472.6	1485.4	1495.6	1507.1	1521.3	1516.6
40°	1635.9	1644.0	1632.5	1637.9	1644.0	1627.1	1638.6	1648.1	1667.7	1668.4	1667.7
42.5°	1864.2	1870.3	1867.6	1871.0	1860.2	1854.8	1850.0	1854.8	1879.2	1875.8	1859.5
45°	2092.6	2101.4	2099.4	2100.7	2121.8	2112.9	2120.4	2121.8	2146.8	2140.1	2127.9
47.5°	2287.8	2302.7	2306.1	2318.3	2346.7	2369.8	2401.6	2425.3	2437.5	2445.7	2455.2
50°	2442.3	2453.1	2472.1	2502.6	2543.9	2583.9	2655.8	2702.5	2745.2	2775.0	2805.5
52.5°	2544.6	2556.8	2586.0	2632.0	2691.7	2764.9	2848.9	2946.5	3036.6	3089.5	3134.9
55°	2586.6	2598.8	2634.7	2695.1	2774.3	2867.9	2988.5	3126.0	3246.0	3367.3	3437.1
57.5°	2562.2	2575.8	2617.1	2684.9	2780.4	2903.1	3052.9	3221.6	3397.1	3580.8	3721.0
60°	2490.4	2502.6	2549.4	2619.8	2728.9	2867.2	3046.8	3258.2	3504.9	3777.3	4043.6
62.5°	2391.5	2409.8	2451.1	2522.9	2631.4	2782.5	2987.1	3262.3	3616.0	4055.1	4573.5
65°	2265.4	2279.0	2315.6	2372.5	2491.8	2649.7	2865.8	3202.6	3664.8	4287.6	5027.6
66°	2200.4	2213.2	2247.1	2300.7	2409.8	2561.6	2777.7	3122.7	3610.6	4286.2	5075.7
67.5°	2085.8	2091.9	2116.3	2169.2	2240.3	2376.6	2577.1	2900.4	3380.8	4105.3	4941.5
70°	1749.7	1758.5	1782.2	1809.4	1835.8	1884.6	2024.8	2238.3	2622.5	3317.1	4114.8
72.5°	1210.3	1223.9	1249.6	1299.8	1341.1	1402.8	1457.6	1528.8	1656.2	2138.7	2943.8
75°	874.9	879.6	917.6	1005.6	1089.0	1212.3	1321.4	1356.0	1312.6	1305.2	1729.4
77.5°	521.8	528.6	583.5	672.2	759.0	926.4	1150.0	1322.8	1418.3	1384.5	1309.2
80°	219.6	229.0	261.6	284.6	356.4	496.7	717.6	988.7	1240.8	1396.0	1360.7
82.5°	70.5	82.0	96.9	117.2	138.2	185.0	286.7	429.0	677.7	1010.4	1242.2
85°	25.8	26.4	36.6	50.8	56.2	65.1	83.4	128.8	229.0	378.8	704.8
87.5°	10.2	12.2	14.2	19.7	20.3	21.0	23.7	30.5	29.8	25.8	133.5
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°	67.5°	70°	75°	80°	85°	90°	95°	100°
0°	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0
2.5°	1087.6	1089.0	1088.3	1089.0	1089.0	1087.6	1087.6	1090.4	1088.3	1089.7	1089.7
5°	1087.0	1088.3	1087.6	1089.0	1088.3	1088.3	1088.3	1092.4	1091.7	1093.7	1095.1
7.5°	1089.7	1090.4	1089.7	1089.7	1091.7	1091.0	1091.7	1093.1	1096.5	1099.8	1102.6
10°	1093.1	1094.4	1096.5	1097.1	1099.8	1099.2	1101.2	1103.2	1106.6	1110.0	1113.4
12.5°	1097.8	1101.9	1108.0	1109.3	1112.0	1114.1	1117.5	1119.5	1122.2	1127.6	1131.7
15°	1101.9	1109.3	1116.8	1119.5	1122.2	1124.9	1128.3	1130.3	1135.1	1139.8	1144.6
17.5°	1103.2	1112.0	1121.5	1124.9	1127.6	1132.4	1136.4	1140.5	1145.9	1152.0	1157.4
20°	1103.9	1116.1	1128.3	1132.4	1138.5	1145.2	1152.0	1155.4	1162.9	1170.3	1175.1
22.5°	1110.0	1124.9	1141.9	1149.3	1155.4	1167.6	1176.4	1181.8	1190.6	1196.7	1198.8
25°	1126.9	1142.5	1162.9	1174.4	1184.6	1202.2	1213.0	1223.2	1227.9	1236.1	1234.0
27.5°	1157.4	1169.6	1196.1	1211.7	1224.5	1247.6	1268.6	1278.1	1285.5	1289.6	1284.8
30°	1209.6	1214.4	1243.5	1262.5	1284.2	1320.1	1343.1	1355.3	1364.8	1365.5	1353.3
32.5°	1287.6	1280.1	1305.9	1333.0	1361.4	1404.8	1436.0	1448.8	1456.3	1457.0	1429.9
35°	1393.3	1380.4	1402.1	1428.5	1463.7	1520.7	1560.0	1574.9	1586.4	1581.0	1541.0
37.5°	1526.8	1526.1	1536.3	1570.1	1610.1	1683.3	1724.6	1732.8	1732.1	1715.8	1655.5
40°	1675.2	1663.0	1664.3	1688.7	1734.8	1831.0	1888.6	1902.2	1897.4	1873.7	1795.1
42.5°	1862.2	1856.8	1838.5	1851.4	1894.1	2011.3	2081.1	2094.6	2098.7	2059.4	1966.6
45°	2124.5	2119.7	2079.1	2081.8	2112.9	2236.3	2308.8	2331.2	2331.8	2294.6	2173.9
47.5°	2442.3	2438.2	2390.8	2377.2	2392.8	2502.6	2592.7	2597.5	2598.8	2547.3	2422.0
50°	2802.8	2791.3	2755.4	2741.1	2722.8	2844.1	2916.7	2916.0	2908.5	2851.6	2710.6
52.5°	3151.1	3176.9	3163.3	3135.5	3136.2	3223.6	3292.1	3254.1	3258.9	3204.7	3042.7
55°	3523.2	3588.9	3638.4	3648.5	3643.8	3688.5	3726.5	3658.7	3633.6	3624.8	3452.7
57.5°	3918.2	4086.3	4238.8	4302.5	4278.1	4360.1	4394.0	4323.5	4324.8	4394.0	4245.5
60°	4446.1	4870.3	5254.6	5373.8	5429.4	5564.9	5504.6	5500.6	5607.0	5696.4	5421.3
62.5°	5247.1	5949.9	6563.1	6651.9	6696.6	6727.1	6700.0	6626.2	6735.9	6746.8	6322.6
65°	5854.3	6679.0	7272.0	7383.1	7375.0	7219.8	7069.4	6921.6	6920.3	6811.8	6265.6
66°	5920.0	6748.1	7326.2	7424.4	7388.5	7149.3	6958.2	6766.4	6704.8	6542.1	5987.8
67.5°	5776.4	6627.5	7201.5	7289.6	7213.0	6849.1	6588.9	6329.3	6236.5	6010.2	5445.0
70°	4938.1	5815.0	6582.8	6710.2	6619.4	6136.2	5750.6	5465.3	5212.6	4989.6	4523.4
72.5°	3828.8	4484.8	5297.3	5430.1	5437.5	5059.4	4625.0	4351.3	4057.2	3833.5	3483.9
75°	2511.4	3007.5	3454.0	3409.3	3422.2	3124.7	2865.8	2638.1	2371.8	2195.6	2028.9
77.5°	1467.8	1645.4	1604.7	1493.6	1400.0	1100.5	787.4	540.8	471.7	492.0	555.0
80°	1276.0	1176.4	920.9	809.8	736.6	500.1	269.0	189.7	166.7	168.7	178.9
82.5°	1373.6	1425.1	1169.6	963.0	839.6	588.9	316.5	157.9	113.8	132.8	146.4
85°	1066.0	1356.7	1251.0	1057.2	889.1	626.2	323.2	100.3	67.8	90.8	114.5
87.5°	303.6	480.5	384.2	339.5	273.8	187.0	77.3	40.0	36.6	47.4	65.7
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):

	105°	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°
0°	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0	1089.0
2.5°	1090.4	1090.4	1092.4	1093.1	1093.7	1093.7	1095.1	1095.1	1095.8	1098.5	1097.8
5°	1097.1	1099.2	1101.9	1103.2	1105.3	1105.9	1108.0	1108.0	1110.0	1112.0	1111.4
7.5°	1105.3	1107.3	1109.3	1111.4	1113.4	1116.1	1115.4	1114.8	1114.1	1112.7	1111.4
10°	1116.8	1118.8	1120.9	1120.2	1118.8	1117.5	1112.0	1105.9	1103.2	1097.8	1093.7
12.5°	1135.8	1137.8	1135.8	1130.3	1122.9	1114.1	1102.6	1092.4	1086.3	1078.2	1073.4
15°	1150.0	1152.0	1148.0	1138.5	1126.3	1114.8	1099.2	1086.3	1075.4	1066.6	1059.9
17.5°	1160.8	1159.5	1150.7	1139.8	1126.9	1117.5	1103.2	1089.0	1076.1	1063.9	1054.4
20°	1176.4	1169.0	1156.1	1142.5	1129.7	1121.5	1110.0	1097.1	1083.6	1066.0	1053.8
22.5°	1196.7	1183.2	1166.3	1152.7	1140.5	1132.4	1120.9	1108.7	1095.8	1075.4	1058.5
25°	1225.9	1204.2	1184.6	1170.3	1159.5	1151.3	1137.1	1124.2	1110.0	1089.7	1068.0
27.5°	1266.5	1235.4	1215.0	1200.8	1190.0	1180.5	1162.2	1146.6	1128.3	1108.0	1082.2
30°	1319.4	1281.5	1259.1	1246.9	1235.4	1221.8	1202.2	1179.1	1155.4	1128.3	1100.5
32.5°	1385.1	1342.4	1321.4	1309.2	1294.3	1276.0	1250.3	1219.8	1184.6	1148.6	1114.1
35°	1478.7	1429.9	1406.8	1385.8	1364.1	1337.0	1298.4	1254.3	1207.6	1160.8	1118.1
37.5°	1571.5	1526.1	1497.6	1475.9	1442.1	1398.0	1344.5	1283.5	1221.1	1161.5	1110.0
40°	1703.0	1650.1	1616.9	1578.3	1523.4	1454.9	1377.0	1295.0	1217.8	1145.9	1084.9
42.5°	1864.2	1803.9	1754.5	1684.7	1599.3	1500.3	1392.6	1288.2	1194.0	1111.4	1044.3
45°	2068.2	1989.6	1906.9	1797.2	1666.4	1528.1	1391.9	1264.5	1153.4	1059.9	993.5
47.5°	2306.1	2195.6	2056.7	1889.3	1710.4	1534.9	1370.2	1221.8	1092.4	989.4	912.8
50°	2550.7	2390.8	2193.6	1960.5	1732.8	1518.0	1322.1	1152.0	1012.4	895.2	812.5
52.5°	2852.3	2604.2	2317.6	2008.6	1723.3	1467.8	1242.2	1053.8	904.7	790.2	695.3
55°	3211.4	2849.6	2435.5	2035.0	1681.3	1377.7	1120.9	925.0	768.5	664.1	578.7
57.5°	3805.7	3233.8	2636.8	2074.3	1598.6	1243.5	973.1	770.5	623.4	534.7	466.2
60°	4830.4	4021.9	3062.3	2171.2	1484.1	1052.4	785.4	603.8	482.5	411.3	363.2
62.5°	5545.3	4499.7	3291.4	2138.0	1289.6	828.8	580.8	431.7	351.7	304.9	272.4
65°	5406.4	4311.3	3015.6	1816.1	1010.4	586.2	386.3	292.1	246.7	217.5	201.3
66°	5157.0	4103.2	2805.5	1630.5	876.2	488.6	318.5	241.9	212.1	191.1	180.3
67.5°	4702.3	3672.2	2428.1	1308.6	656.0	360.5	241.9	188.4	172.1	161.3	153.8
70°	3893.2	2903.8	1671.8	773.2	347.0	201.9	153.8	138.9	131.5	126.7	126.0
72.5°	2985.1	2083.1	967.0	374.1	185.7	134.2	117.9	112.5	109.8	108.4	108.4
75°	1843.9	1175.1	432.3	187.7	128.1	109.8	102.3	99.6	98.9	98.9	98.9
77.5°	648.5	409.3	193.8	137.6	112.5	98.9	92.8	91.5	92.8	92.8	92.8
80°	178.9	157.9	140.3	122.0	101.6	91.5	86.1	85.4	88.1	88.8	86.1
82.5°	139.6	131.5	119.9	109.1	92.8	83.4	80.6	82.0	83.4	81.3	77.3
85°	119.3	113.8	84.0	84.0	75.2	72.5	71.8	73.2	72.5	67.1	61.7
87.5°	67.8	59.6	45.4	49.5	52.9	54.2	45.4	48.8	48.1	42.7	40.0
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):

	160°	165°	170°	175°	180°
0°	1089.0	1089.0	1089.0	1089.0	1089.0
2.5°	1099.2	1099.2	1100.5	1100.5	1099.8
5°	1112.7	1112.7	1114.8	1113.4	1114.1
7.5°	1110.0	1107.3	1107.3	1105.9	1105.3
10°	1091.0	1086.3	1083.6	1084.9	1082.9
12.5°	1069.3	1065.3	1062.6	1061.9	1061.2
15°	1055.8	1051.1	1049.0	1047.7	1047.7
17.5°	1048.3	1042.9	1040.2	1038.2	1037.5
20°	1045.0	1038.2	1034.1	1032.1	1030.7
22.5°	1046.3	1038.2	1032.8	1030.0	1028.7
25°	1051.7	1041.6	1034.8	1031.4	1029.4
27.5°	1061.2	1047.7	1040.2	1035.5	1032.8
30°	1072.7	1053.8	1042.9	1036.1	1033.4
32.5°	1080.2	1054.4	1040.9	1030.7	1028.0
35°	1078.8	1047.0	1029.4	1016.5	1014.5
37.5°	1065.3	1027.3	1005.6	988.7	986.7
40°	1036.1	997.5	972.4	955.5	951.4
42.5°	995.5	955.5	928.4	912.8	907.4
45°	935.8	887.1	862.0	849.1	841.7
47.5°	851.8	805.7	778.0	767.1	757.6
50°	756.3	705.4	685.1	672.9	662.1
52.5°	643.8	600.4	584.8	573.3	564.5
55°	534.7	504.2	485.9	473.7	474.4
57.5°	429.6	411.3	401.2	388.3	389.7
60°	338.2	322.6	322.6	314.4	311.7
62.5°	258.2	252.1	250.1	247.3	242.6
65°	195.8	195.8	196.5	196.5	193.8
66°	176.2	178.2	180.9	180.9	177.5
67.5°	152.5	155.2	157.9	159.3	159.3
70°	126.0	129.4	130.8	132.1	131.5
72.5°	110.5	113.2	113.2	113.8	112.5
75°	100.3	101.6	102.3	101.0	100.3
77.5°	92.8	93.5	92.8	92.2	91.5
80°	84.0	83.4	81.3	78.6	77.9
82.5°	72.5	69.8	68.4	64.4	63.7
85°	58.3	54.9	52.2	46.8	44.0
87.5°	38.6	37.3	35.2	25.8	21.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)