

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: P145446

Luminaire Tested: **LDRL-SL4-F03-E-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145446
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33703)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL4-F03-E-7050
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(3) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (21) 5000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7323.9 lumens
Efficiency: N/A
Efficacy: 93.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G2

Input Watts (W): 78.3
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

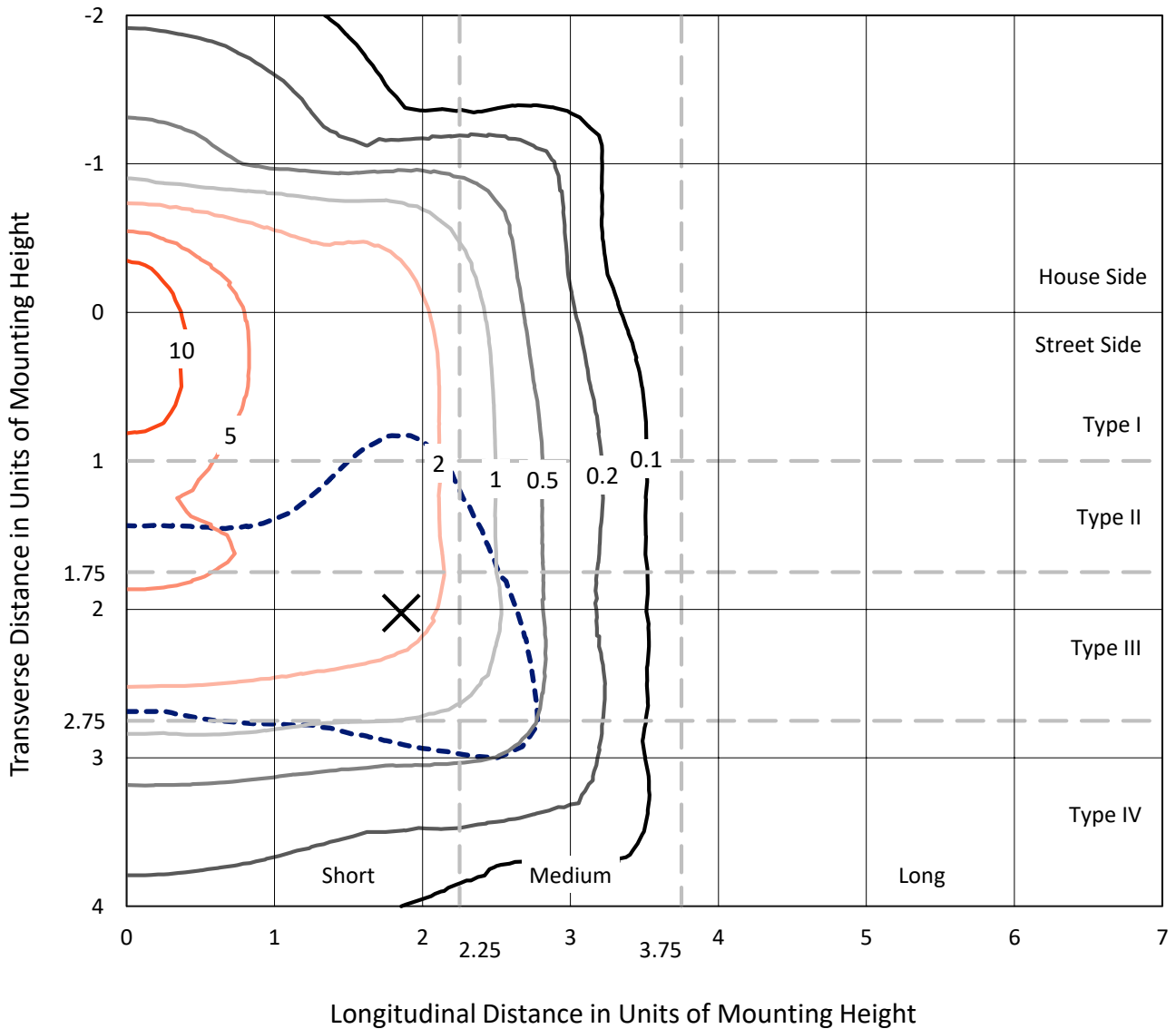


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Iso-Footcandle Lines of Horizontal Illumination

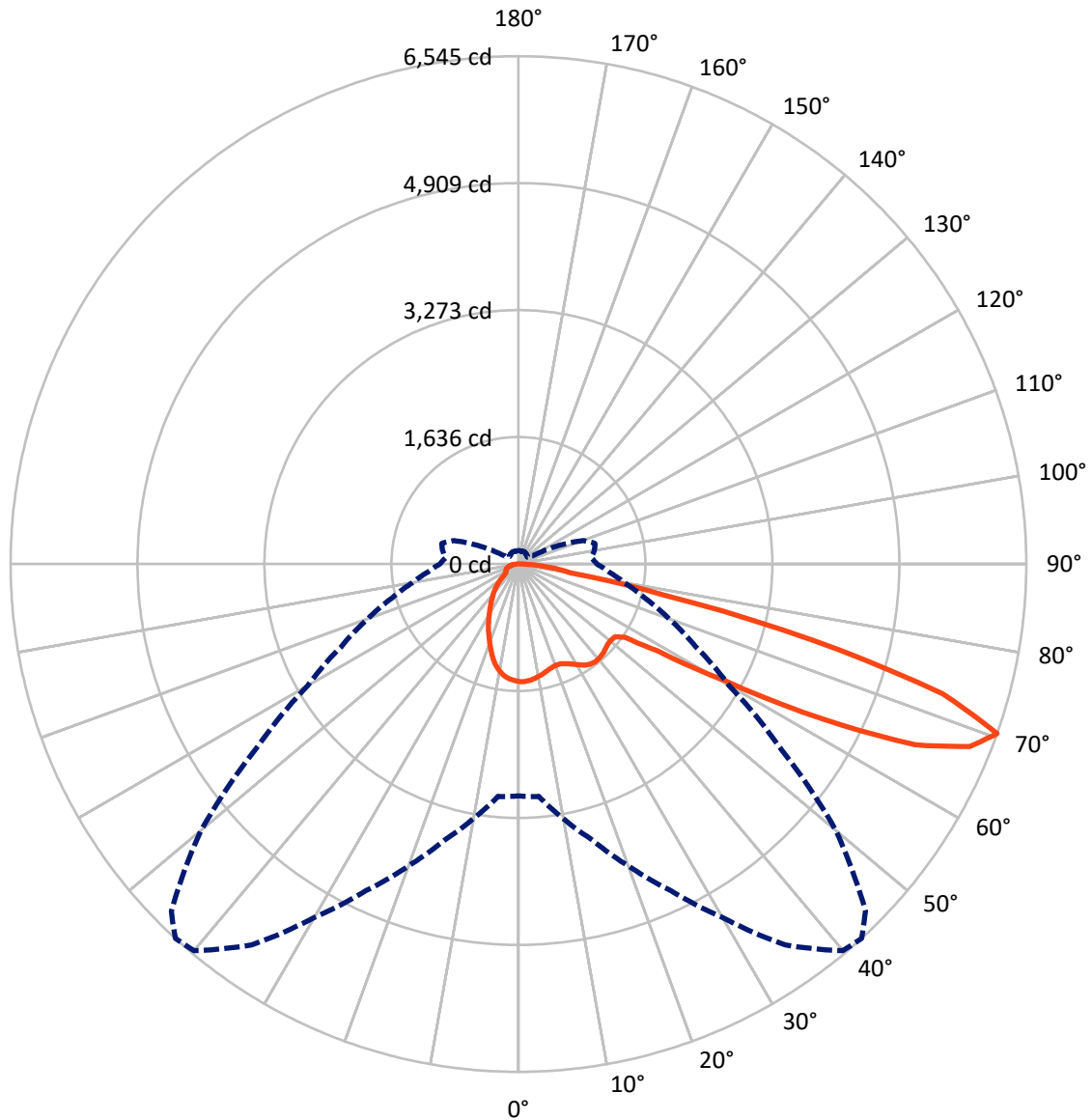
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 15.1 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 42.5-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1582.1	0.0	1582.1
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	5741.8	0.0	5741.8
	% Fixture	78.4	0.0	78.4
Total	Lumens	7323.9	0.0	7323.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.9	1.9
10°-20°	379.6	5.2
20°-30°	553.7	7.6
30°-40°	706.2	9.6
40°-50°	824.3	11.3
50°-60°	1260.6	17.2
60°-70°	2285.2	31.2
70°-80°	1016.0	13.9
80°-90°	157.2	2.1
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°	7323.9	100.0
0°-180°	7323.9	100.0



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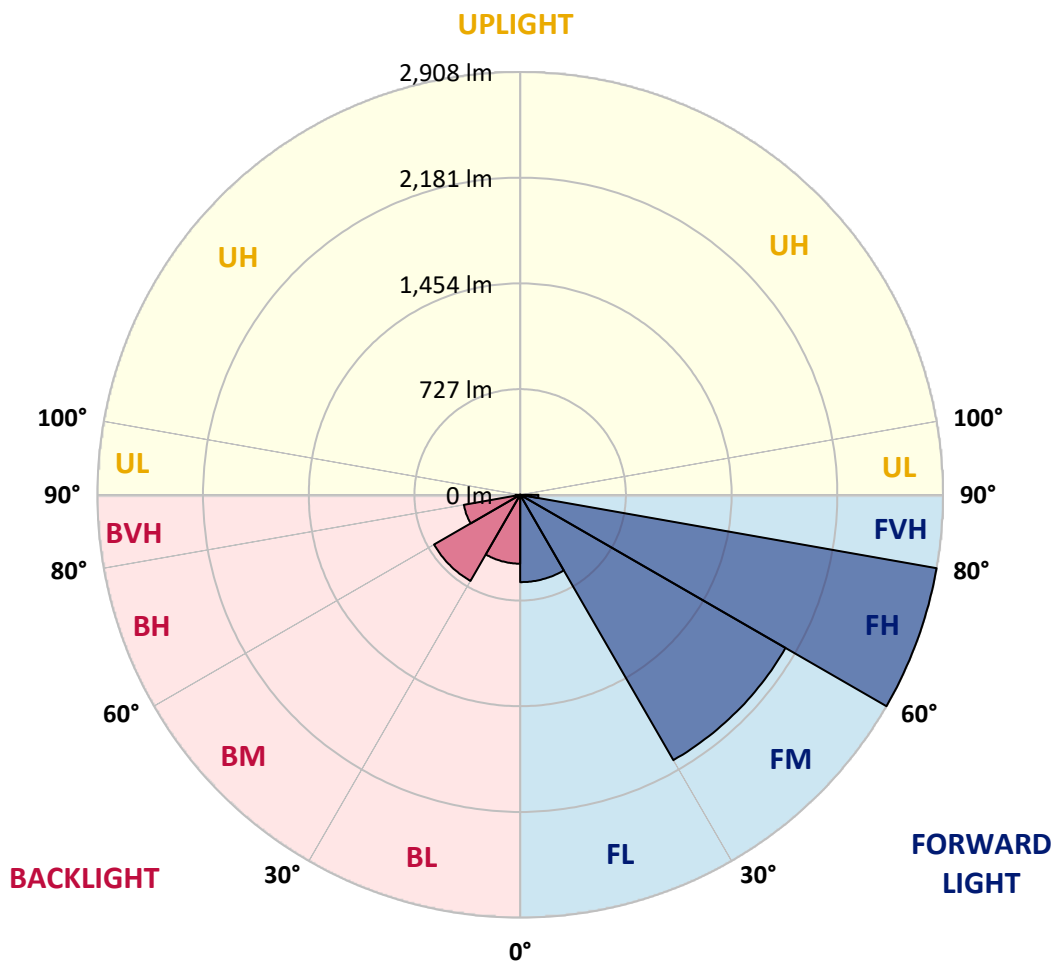
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	600.7	8.2			
FM	(30°-60°)	2107.3	28.8			
FH	(60°-80°)	2908.2	39.7			G2/5000
FVH	(80°-90°)	125.6	1.7			G2/225
BL	(0°-30°)	473.5	6.5	B1/500		
BM	(30°-60°)	683.9	9.3	B1/1000		
BH	(60°-80°)	393.0	5.4	B1/500		G1/500
BVH	(80°-90°)	31.6	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-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	42.5°	45°
0°	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6
2.5°	1521.7	1520.2	1521.2	1522.2	1522.2	1522.7	1518.1	1518.6	1516.6	1517.1	1517.6
5°	1516.1	1514.6	1515.6	1515.6	1515.6	1515.1	1509.0	1508.5	1505.9	1505.9	1504.9
7.5°	1505.4	1499.8	1502.9	1503.4	1502.4	1499.8	1496.3	1492.7	1491.2	1491.2	1487.6
10°	1489.2	1483.1	1484.6	1485.6	1485.1	1480.0	1478.5	1474.9	1470.9	1469.3	1465.3
12.5°	1468.3	1464.3	1466.3	1465.8	1465.8	1461.2	1458.7	1453.6	1448.5	1446.0	1440.9
15°	1455.1	1450.0	1452.1	1452.1	1450.0	1445.4	1441.9	1432.7	1424.1	1421.1	1414.4
17.5°	1463.2	1458.2	1460.2	1458.7	1455.1	1445.4	1436.3	1421.6	1407.8	1399.7	1391.1
20°	1495.8	1490.7	1492.2	1491.2	1486.1	1470.4	1453.6	1428.2	1402.8	1390.6	1377.3
22.5°	1547.6	1543.5	1546.1	1544.6	1536.4	1516.1	1491.2	1454.6	1416.5	1398.2	1379.4
25°	1624.4	1623.3	1627.4	1622.8	1611.1	1580.6	1544.6	1495.3	1445.4	1422.6	1396.2
27.5°	1716.9	1708.2	1714.3	1710.2	1702.1	1663.5	1614.7	1552.2	1488.7	1458.7	1427.2
30°	1800.2	1792.6	1803.8	1801.7	1789.5	1749.9	1688.4	1615.2	1543.5	1505.4	1469.3
32.5°	1896.8	1887.1	1895.8	1895.8	1877.5	1824.1	1754.0	1670.1	1594.9	1554.2	1511.0
35°	1997.9	1987.7	1995.9	1993.3	1960.8	1890.2	1802.2	1711.3	1628.4	1586.7	1542.5
37.5°	2091.9	2090.4	2092.4	2075.7	2030.4	1940.0	1834.8	1733.1	1645.2	1601.5	1555.2
40°	2186.0	2182.4	2173.8	2144.3	2078.2	1969.5	1851.5	1740.7	1646.2	1600.5	1553.7
42.5°	2244.9	2238.3	2223.6	2183.4	2100.6	1976.6	1846.5	1729.1	1634.0	1587.3	1541.5
45°	2265.2	2258.6	2240.9	2195.6	2101.1	1965.4	1826.6	1705.7	1611.1	1568.4	1522.2
47.5°	2248.5	2244.4	2228.1	2182.9	2084.8	1944.5	1801.7	1682.3	1589.3	1547.6	1504.4
50°	2220.0	2217.5	2203.2	2161.6	2069.6	1931.8	1790.0	1671.1	1583.2	1544.6	1503.9
52.5°	2291.2	2283.5	2258.1	2208.8	2101.6	1954.7	1808.3	1687.9	1597.4	1558.3	1516.6
55°	3165.9	3109.4	2983.4	2747.1	2416.2	2159.5	1943.5	1798.2	1700.6	1662.5	1622.8
57.5°	4163.5	4104.6	4052.2	3871.8	3478.9	2994.1	2558.0	2302.9	2128.0	2111.3	2095.5
60°	4547.8	4566.6	4562.0	4494.9	4293.7	4063.4	3698.5	3397.1	3063.2	3049.5	3069.3
62.5°	4812.6	4828.3	4830.4	4810.0	4744.5	4667.7	4591.5	4494.9	4431.4	4403.9	4226.6
65°	4921.8	4944.7	4995.0	5032.6	5043.3	5069.7	5138.9	5401.6	5620.7	5619.2	5411.3
67.5°	4504.6	4532.0	4722.6	4909.7	5066.7	5248.6	5528.7	5956.1	6286.0	6275.8	6105.6
70°	2989.5	3006.8	3330.5	3682.7	4139.7	4644.9	5256.8	5993.7	6505.0	6545.2	6325.6
72.5°	1833.7	1873.4	1979.1	2121.9	2365.9	2834.0	3743.7	5003.2	5753.3	5715.7	5540.9
75°	1238.1	1240.1	1237.1	1252.3	1266.0	1360.6	1727.0	2751.1	3897.2	3917.6	3842.3
77.5°	846.2	857.4	863.5	859.4	873.2	869.1	890.4	942.8	1493.7	1906.4	1751.9
80°	739.5	744.1	750.7	741.0	715.6	701.4	721.2	702.4	661.7	683.6	654.6
82.5°	468.1	481.8	483.3	516.9	566.7	568.7	594.1	575.3	523.5	489.4	447.8
85°	336.5	341.5	350.7	352.7	335.4	320.7	329.9	314.1	283.1	264.8	234.3
87.5°	196.2	201.3	210.4	204.8	187.5	166.2	149.9	129.1	102.2	95.6	84.4
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6
2.5°	1518.1	1515.6	1513.6	1512.5	1514.6	1512.5	1510.5	1509.5	1507.5	1508.0	1505.4
5°	1503.9	1500.3	1497.3	1494.7	1496.8	1493.2	1490.2	1488.1	1485.6	1485.1	1482.6
7.5°	1484.1	1478.5	1474.4	1469.8	1464.8	1461.7	1458.2	1454.6	1449.0	1448.5	1447.5
10°	1458.2	1453.6	1445.4	1438.3	1431.2	1423.6	1416.0	1410.4	1403.8	1401.2	1397.7
12.5°	1432.2	1423.1	1413.4	1402.2	1393.6	1381.4	1371.2	1360.6	1350.9	1344.8	1338.2
15°	1401.7	1392.1	1378.4	1367.7	1355.5	1341.8	1328.6	1312.8	1297.0	1287.4	1278.2
17.5°	1375.3	1363.1	1351.9	1336.7	1324.5	1308.7	1288.9	1272.1	1253.3	1237.6	1220.8
20°	1355.0	1341.3	1328.0	1314.3	1299.6	1281.8	1259.9	1236.1	1212.2	1189.8	1164.9
22.5°	1346.9	1325.0	1310.3	1297.6	1282.3	1262.0	1237.6	1208.1	1178.6	1150.2	1121.2
25°	1354.0	1321.4	1298.6	1284.3	1270.6	1249.8	1222.3	1188.8	1154.2	1118.1	1083.6
27.5°	1373.3	1332.1	1299.6	1277.2	1261.5	1241.1	1210.6	1175.6	1136.4	1095.8	1058.7
30°	1401.2	1349.9	1309.2	1277.2	1253.8	1230.5	1197.4	1157.8	1116.6	1073.9	1032.2
32.5°	1431.7	1369.7	1320.9	1278.7	1242.7	1213.2	1178.6	1140.0	1096.3	1051.1	1006.3
35°	1454.6	1384.0	1326.0	1273.2	1226.9	1189.8	1152.7	1115.1	1072.4	1026.7	981.9
37.5°	1464.3	1389.5	1325.0	1261.5	1205.0	1164.4	1125.8	1088.2	1047.0	1003.8	962.6
40°	1464.8	1389.5	1318.9	1245.7	1182.2	1138.0	1097.3	1062.2	1023.6	986.5	949.9
42.5°	1455.1	1382.4	1307.7	1231.0	1165.4	1115.6	1073.9	1037.8	1006.8	973.8	942.8
45°	1437.8	1368.2	1297.6	1222.8	1159.3	1110.0	1065.3	1031.2	1003.3	973.8	946.9
47.5°	1424.6	1360.1	1298.1	1234.5	1174.0	1123.2	1074.9	1038.9	1015.0	991.6	972.3
50°	1427.2	1363.1	1304.2	1243.7	1184.2	1132.9	1086.1	1055.1	1040.9	1033.3	1028.7
52.5°	1440.4	1375.3	1330.6	1290.4	1271.1	1239.6	1213.7	1190.3	1193.9	1175.6	1152.2
55°	1576.6	1554.7	1606.1	1643.2	1661.5	1693.5	1739.7	1695.5	1689.4	1633.0	1465.3
57.5°	2116.8	2168.7	2247.5	2303.4	2309.0	2299.3	2261.2	2224.6	2165.1	2080.2	1845.4
60°	3023.0	3010.8	2937.7	2839.6	2763.3	2663.2	2562.6	2477.7	2382.1	2252.0	2002.0
62.5°	3976.0	3682.2	3421.5	3199.4	3010.8	2843.6	2691.7	2564.1	2433.0	2245.9	1979.6
65°	4745.5	4180.3	3720.9	3363.6	3083.0	2846.7	2650.5	2474.6	2299.3	2082.8	1824.6
67.5°	5295.4	4398.9	3705.6	3203.0	2809.6	2484.3	2198.7	1998.4	1818.5	1648.2	1531.9
70°	5339.1	4096.5	3134.9	2519.9	2066.0	1683.8	1387.5	1169.0	1012.4	941.8	992.1
72.5°	4562.5	3030.7	2084.3	1542.5	1224.4	951.4	764.9	611.4	485.4	423.4	432.0
75°	2687.1	1455.1	938.7	699.3	571.3	456.4	394.9	333.4	294.3	235.8	188.6
77.5°	1023.1	632.8	473.7	393.4	280.6	201.8	159.1	137.2	126.0	124.5	117.9
80°	589.6	464.0	324.8	212.4	155.5	131.6	112.8	96.6	90.0	88.4	91.0
82.5°	372.5	289.2	178.4	136.7	113.3	97.6	81.3	70.6	65.1	63.0	66.6
85°	192.6	144.8	108.8	93.5	86.9	79.3	65.1	54.4	53.9	56.4	65.1
87.5°	71.2	62.0	48.8	42.2	45.2	42.2	30.5	26.4	23.9	31.5	45.7
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°	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6	1514.6
2.5°	1505.4	1504.4	1504.9	1503.9	1503.9	1505.4	1503.4	1501.9	1504.4	1504.4	1505.9
5°	1482.0	1483.1	1483.1	1482.6	1483.6	1486.1	1485.6	1485.6	1489.7	1491.2	1493.2
7.5°	1444.9	1446.5	1447.0	1448.5	1449.0	1452.6	1455.1	1458.2	1464.3	1465.8	1470.4
10°	1394.6	1393.6	1397.2	1396.7	1401.2	1404.3	1406.3	1412.9	1422.1	1427.2	1431.7
12.5°	1335.2	1335.2	1337.2	1337.7	1341.8	1345.8	1348.4	1356.5	1364.1	1370.7	1380.9
15°	1272.1	1270.1	1265.5	1265.0	1266.5	1270.6	1276.2	1282.3	1294.0	1303.6	1312.3
17.5°	1206.1	1200.0	1194.4	1187.3	1186.8	1186.2	1189.3	1193.9	1212.2	1221.8	1234.0
20°	1147.6	1134.4	1121.2	1106.5	1097.8	1093.7	1095.3	1101.4	1118.6	1131.4	1144.1
22.5°	1095.3	1075.4	1054.6	1031.2	1017.0	1008.4	1009.4	1011.9	1024.6	1032.2	1038.9
25°	1050.5	1023.1	994.1	964.1	944.3	931.1	930.6	930.6	925.0	926.0	922.5
27.5°	1020.0	981.9	944.8	909.8	883.8	870.6	852.8	840.1	828.9	813.7	807.1
30°	990.6	951.4	909.3	870.6	839.6	813.7	780.7	753.2	731.4	710.5	692.7
32.5°	964.1	923.5	883.3	841.1	798.5	753.7	710.5	679.0	648.0	616.0	594.6
35°	940.8	902.6	862.5	814.7	754.7	696.3	647.5	604.8	568.2	529.6	498.6
37.5°	927.5	893.0	851.3	786.3	711.0	644.5	590.1	542.3	493.5	447.3	409.1
40°	920.9	890.4	839.6	757.3	671.9	600.7	540.3	482.8	425.4	371.0	331.4
42.5°	919.9	890.4	822.3	727.8	638.4	562.1	494.5	425.4	355.8	302.9	267.8
45°	929.1	889.4	804.0	701.4	608.4	527.6	446.2	364.9	293.3	247.0	227.7
47.5°	955.5	893.0	789.8	679.0	579.9	489.4	391.3	297.8	236.8	216.0	215.5
50°	998.2	909.3	786.8	662.8	552.0	441.7	326.8	238.4	208.9	207.9	213.5
52.5°	1065.8	939.7	794.4	651.6	518.4	379.7	258.7	205.8	200.2	205.8	213.0
55°	1214.7	994.1	804.6	631.7	464.0	300.9	213.0	195.2	197.7	204.3	210.9
57.5°	1485.6	1107.0	815.2	587.0	376.1	231.3	191.6	191.1	195.7	201.3	207.4
60°	1657.4	1246.2	841.1	521.0	284.1	191.1	183.5	188.6	194.1	198.2	203.3
62.5°	1663.0	1282.8	854.9	450.3	211.4	174.8	176.4	186.0	192.6	194.1	196.7
65°	1555.7	1213.7	792.9	366.4	175.3	165.7	171.3	179.9	186.5	187.5	189.6
67.5°	1359.0	1070.4	671.9	276.5	159.6	158.6	164.7	171.3	175.9	179.9	183.0
70°	1023.6	883.3	540.3	214.5	149.9	148.9	155.0	160.6	164.7	169.8	174.8
72.5°	518.9	611.4	409.6	175.3	136.7	137.7	144.3	149.4	152.5	157.0	162.1
75°	176.9	266.8	259.2	141.8	122.0	126.0	129.1	134.7	139.3	142.3	144.8
77.5°	110.8	115.9	133.7	114.4	107.7	108.8	113.8	118.9	124.0	126.0	127.1
80°	92.5	93.0	93.5	91.5	92.0	95.0	98.1	103.7	108.8	109.8	110.3
82.5°	73.2	78.3	77.8	77.3	79.8	82.8	84.9	86.9	88.9	90.0	91.5
85°	64.5	63.5	64.0	65.6	63.5	61.5	61.0	61.0	64.0	67.6	69.1
87.5°	59.0	50.3	37.6	35.6	35.6	34.6	32.5	32.5	35.6	38.6	40.2
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):

	160°	165°	170°	175°	180°
0°	1514.6	1514.6	1514.6	1514.6	1514.6
2.5°	1505.4	1505.9	1505.4	1505.4	1508.0
5°	1494.2	1496.3	1495.3	1496.8	1498.3
7.5°	1471.4	1476.5	1477.5	1481.5	1480.0
10°	1438.3	1441.9	1447.0	1451.0	1449.5
12.5°	1386.0	1394.6	1402.2	1406.8	1405.8
15°	1319.4	1331.6	1341.8	1345.3	1341.3
17.5°	1248.3	1255.9	1268.1	1270.6	1274.7
20°	1158.3	1157.8	1168.5	1168.5	1166.4
22.5°	1040.9	1048.5	1048.5	1041.4	1037.8
25°	920.9	923.5	915.9	917.4	907.7
27.5°	800.5	793.9	787.8	790.3	783.2
30°	685.6	671.4	665.3	666.3	658.7
32.5°	575.3	558.6	552.5	544.3	537.7
35°	475.2	448.8	433.0	429.0	433.5
37.5°	377.1	358.3	339.5	325.8	327.3
40°	298.3	279.0	266.8	261.2	260.2
42.5°	246.5	235.3	232.8	233.3	233.3
45°	223.6	224.1	226.2	228.2	228.7
47.5°	219.1	222.1	225.7	228.2	228.7
50°	218.5	221.6	224.1	227.2	228.2
52.5°	218.0	220.1	221.6	223.1	224.6
55°	216.0	217.0	216.5	217.5	219.1
57.5°	210.9	211.4	210.4	210.9	214.0
60°	206.3	206.9	204.8	207.4	207.9
62.5°	200.8	200.2	199.2	200.8	200.8
65°	192.6	189.6	190.6	192.1	192.6
67.5°	183.0	179.9	179.9	180.9	182.5
70°	170.8	169.2	169.2	171.3	173.3
72.5°	157.0	158.1	161.1	164.2	167.2
75°	145.9	148.4	151.5	159.1	163.7
77.5°	131.6	132.1	134.7	142.3	150.4
80°	111.8	111.3	111.8	112.8	114.4
82.5°	88.4	87.4	84.4	85.4	83.4
85°	65.1	63.5	60.0	57.4	56.9
87.5°	37.6	37.6	36.1	34.1	32.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)