

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: P145439

Luminaire Tested: **LDRL-SL4-E03-E-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145439
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-E03-E-7030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(3) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 W/ SPILL LIGHT CONTROL
Light Source: (63) 3000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7896.9 lumens
Efficiency: N/A
Efficacy: 105.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

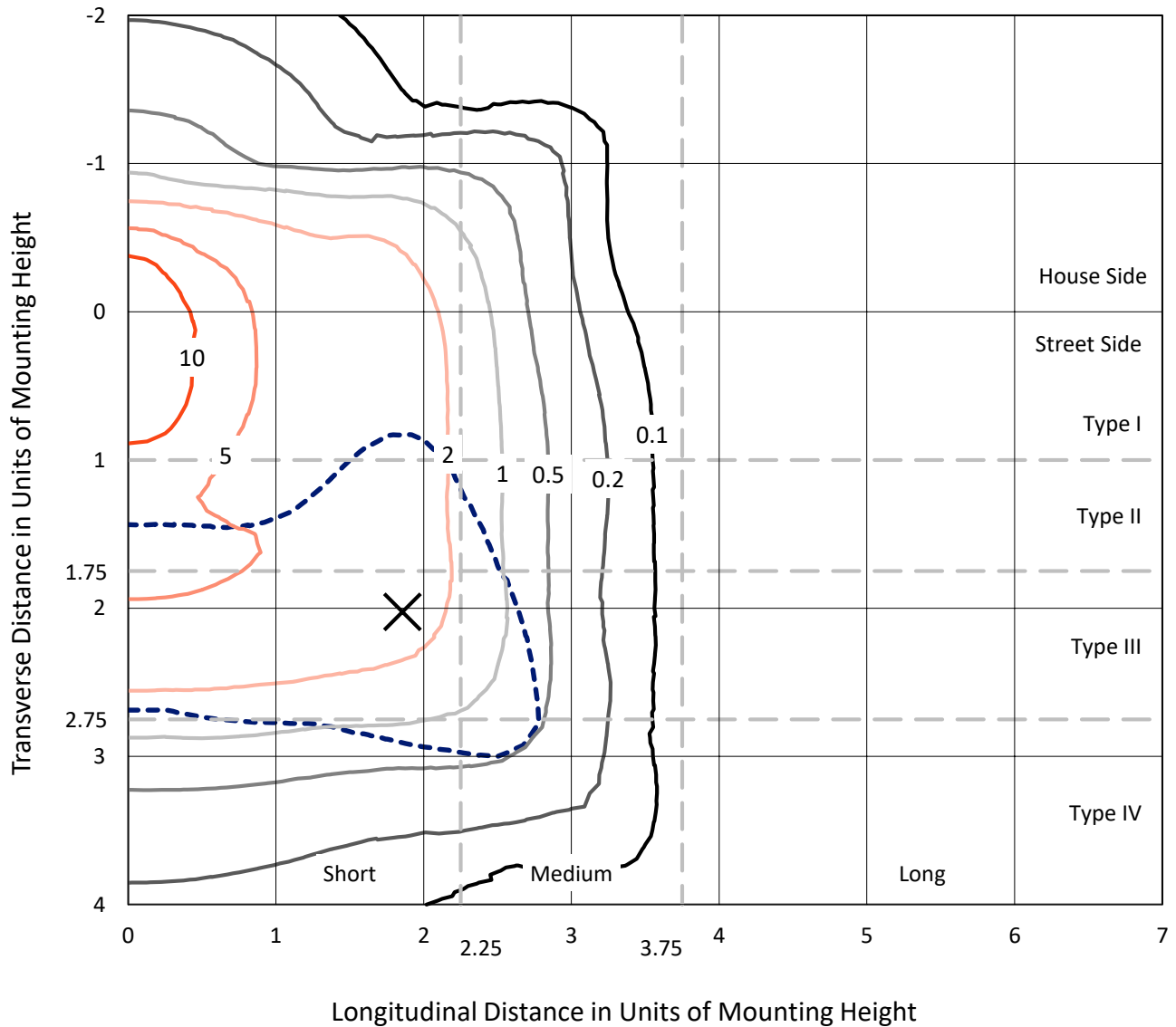
Input Watts (W): 75.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

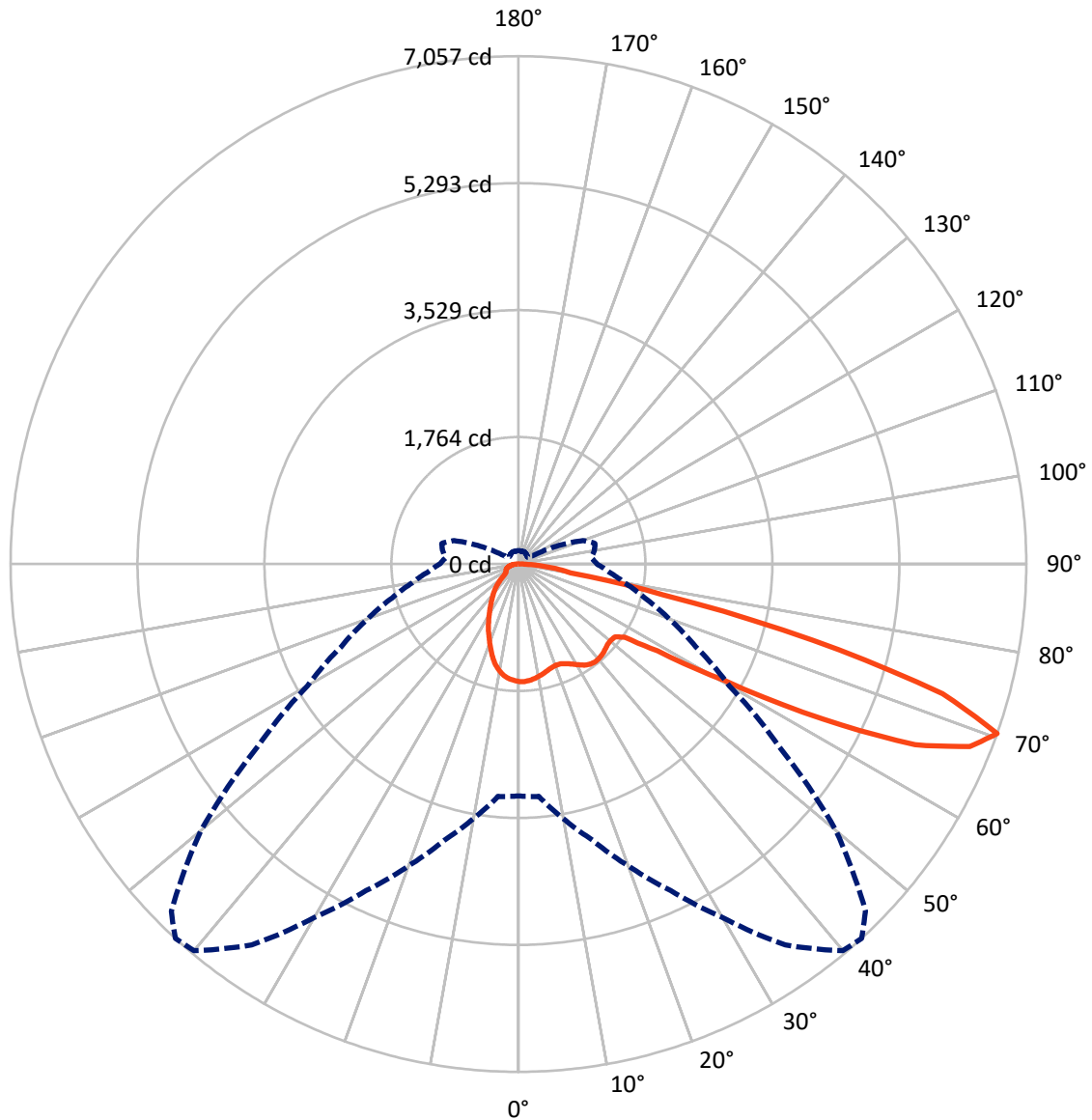
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 16.3 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	1705.9	0.0	1705.9
	% Fixture	21.6	0.0	21.6
Street Side	Lumens	6191.0	0.0	6191.0
	% Fixture	78.4	0.0	78.4
Total	Lumens	7896.9	0.0	7896.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.9	1.9
10°-20°	409.3	5.2
20°-30°	597.1	7.6
30°-40°	761.5	9.6
40°-50°	888.8	11.3
50°-60°	1359.2	17.2
60°-70°	2464.0	31.2
70°-80°	1095.5	13.9
80°-90°	169.5	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°	7896.9	100.0
0°-180°	7896.9	100.0



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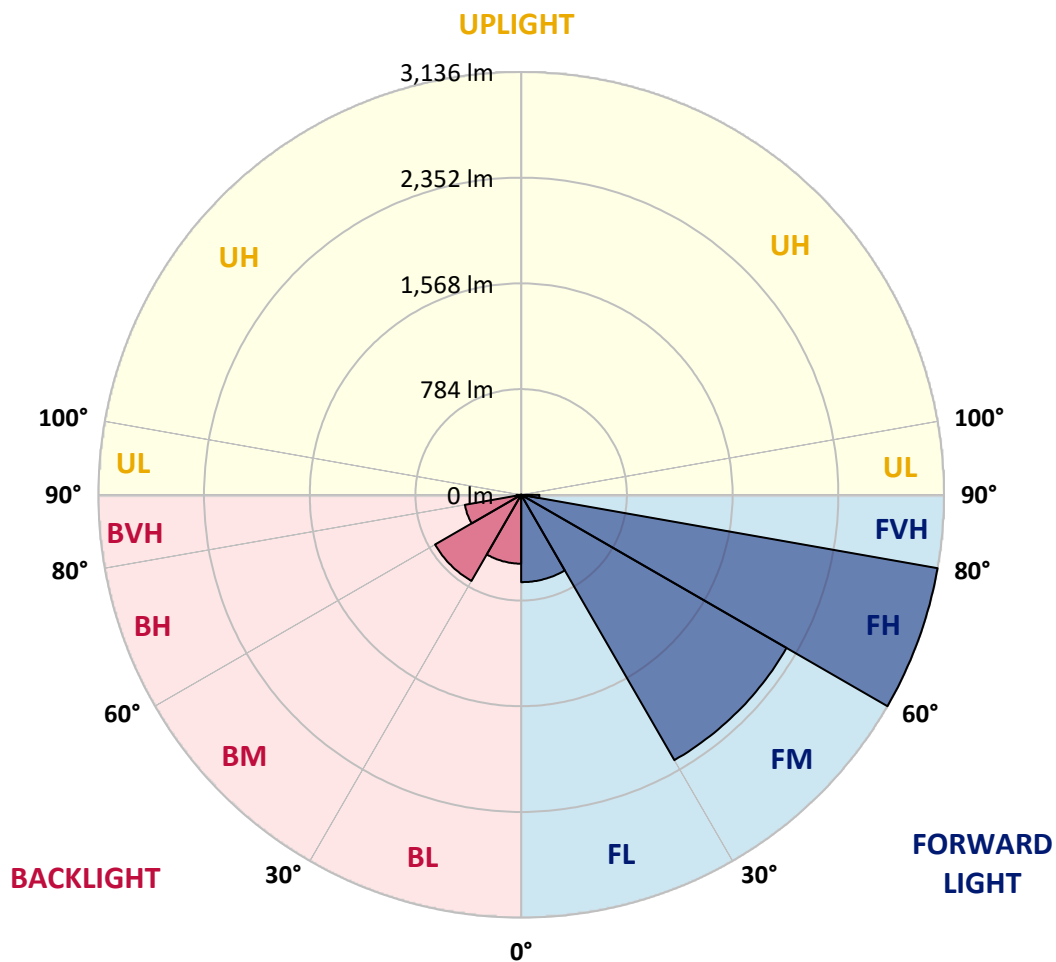
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	647.7	8.2			
FM	(30°-60°)	2272.1	28.8			
FH	(60°-80°)	3135.7	39.7			G2/5000
FVH	(80°-90°)	135.4	1.7			G2/225
BL	(0°-30°)	510.6	6.5	B2/1000		
BM	(30°-60°)	737.4	9.3	B1/1000		
BH	(60°-80°)	423.8	5.4	B1/500		G1/500
BVH	(80°-90°)	34.1	0.4			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°	42.5°	45°
0°	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1
2.5°	1640.7	1639.1	1640.2	1641.3	1641.3	1641.8	1636.9	1637.5	1635.3	1635.8	1636.4
5°	1634.7	1633.1	1634.2	1634.2	1634.2	1633.6	1627.0	1626.5	1623.8	1623.8	1622.7
7.5°	1623.2	1617.2	1620.5	1621.0	1619.9	1617.2	1613.3	1609.5	1607.9	1607.9	1604.0
10°	1605.7	1599.1	1600.7	1601.8	1601.3	1595.8	1594.2	1590.3	1585.9	1584.3	1579.9
12.5°	1583.2	1578.8	1581.0	1580.5	1580.5	1575.5	1572.8	1567.3	1561.8	1559.1	1553.6
15°	1569.0	1563.5	1565.7	1565.7	1563.5	1558.5	1554.7	1544.8	1535.5	1532.2	1525.1
17.5°	1577.7	1572.2	1574.4	1572.8	1569.0	1558.5	1548.7	1532.8	1518.0	1509.2	1499.9
20°	1612.8	1607.3	1609.0	1607.9	1602.4	1585.4	1567.3	1539.9	1512.5	1499.4	1485.1
22.5°	1668.7	1664.3	1667.0	1665.4	1656.6	1634.7	1607.9	1568.4	1527.3	1507.6	1487.3
25°	1751.4	1750.3	1754.7	1749.8	1737.2	1704.3	1665.4	1612.2	1558.5	1533.9	1505.4
27.5°	1851.2	1841.9	1848.4	1844.1	1835.3	1793.6	1741.0	1673.6	1605.1	1572.8	1538.8
30°	1941.1	1932.8	1944.9	1942.7	1929.5	1886.8	1820.5	1741.6	1664.3	1623.2	1584.3
32.5°	2045.2	2034.8	2044.1	2044.1	2024.3	1966.8	1891.2	1800.8	1719.7	1675.8	1629.2
35°	2154.2	2143.3	2152.0	2149.3	2114.2	2038.0	1943.2	1845.2	1755.8	1710.9	1663.2
37.5°	2255.6	2254.0	2256.2	2238.1	2189.3	2091.8	1978.3	1868.7	1773.9	1726.8	1676.9
40°	2357.0	2353.2	2343.8	2312.1	2240.8	2123.5	1996.4	1876.9	1775.0	1725.7	1675.3
42.5°	2420.6	2413.4	2397.5	2354.3	2264.9	2131.2	1990.9	1864.3	1761.9	1711.4	1662.1
45°	2442.5	2435.4	2416.2	2367.4	2265.5	2119.2	1969.5	1839.1	1737.2	1691.2	1641.3
47.5°	2424.4	2420.0	2402.5	2353.7	2247.9	2096.7	1942.7	1813.9	1713.6	1668.7	1622.1
50°	2393.7	2391.0	2375.6	2330.7	2231.5	2083.0	1930.1	1801.9	1707.1	1665.4	1621.6
52.5°	2470.4	2462.2	2434.8	2381.7	2266.0	2107.6	1949.8	1819.9	1722.4	1680.2	1635.3
55°	3413.6	3352.7	3216.8	2962.0	2605.2	2328.5	2095.6	1938.9	1833.6	1792.5	1749.8
57.5°	4489.3	4425.7	4369.3	4174.7	3751.1	3228.3	2758.1	2483.0	2294.5	2276.4	2259.4
60°	4903.6	4923.9	4918.9	4846.6	4629.6	4381.3	3987.9	3662.9	3302.9	3288.1	3309.4
62.5°	5189.1	5206.1	5208.3	5186.4	5115.7	5032.9	4950.7	4846.6	4778.1	4748.5	4557.3
65°	5306.9	5331.6	5385.8	5426.4	5437.9	5466.4	5540.9	5824.3	6060.4	6058.8	5834.7
67.5°	4857.0	4886.6	5092.1	5293.8	5463.1	5659.3	5961.3	6422.1	6777.8	6766.8	6583.2
70°	3223.4	3242.0	3591.1	3970.9	4463.5	5008.3	5668.1	6462.7	7014.0	7057.3	6820.5
72.5°	1977.2	2020.0	2134.0	2287.9	2551.0	3055.7	4036.6	5394.6	6203.5	6162.9	5974.4
75°	1335.0	1337.1	1333.9	1350.3	1365.1	1467.0	1862.1	2966.4	4202.1	4224.1	4143.0
77.5°	912.4	924.5	931.1	926.7	941.5	937.1	960.1	1016.6	1610.6	2055.6	1889.0
80°	797.4	802.3	809.4	799.0	771.6	756.3	777.6	757.4	713.5	737.1	705.8
82.5°	504.7	519.5	521.2	557.3	611.0	613.2	640.6	620.3	564.5	527.7	482.8
85°	362.8	368.3	378.1	380.3	361.7	345.8	355.7	338.7	305.2	285.5	252.6
87.5°	211.5	217.0	226.9	220.8	202.2	179.2	161.7	139.2	110.2	103.0	91.0
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):

	50°	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°
0°	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1
2.5°	1636.9	1634.2	1632.0	1630.9	1633.1	1630.9	1628.7	1627.6	1625.4	1625.9	1623.2
5°	1621.6	1617.7	1614.4	1611.7	1613.9	1610.1	1606.8	1604.6	1601.8	1601.3	1598.5
7.5°	1600.2	1594.2	1589.8	1584.8	1579.4	1576.1	1572.2	1568.4	1562.4	1561.8	1560.7
10°	1572.2	1567.3	1558.5	1550.9	1543.2	1535.0	1526.8	1520.7	1513.6	1510.9	1507.0
12.5°	1544.3	1534.4	1524.0	1512.0	1502.6	1489.5	1478.5	1467.0	1456.6	1450.0	1442.9
15°	1511.4	1501.0	1486.2	1474.7	1461.5	1446.7	1432.5	1415.5	1398.5	1388.1	1378.2
17.5°	1482.9	1469.8	1457.7	1441.3	1428.1	1411.1	1389.8	1371.7	1351.4	1334.4	1316.3
20°	1461.0	1446.2	1432.0	1417.2	1401.3	1382.1	1358.5	1332.8	1307.0	1282.9	1256.0
22.5°	1452.2	1428.7	1412.8	1399.1	1382.6	1360.7	1334.4	1302.6	1270.8	1240.1	1208.9
25°	1459.9	1424.8	1400.2	1384.8	1370.0	1347.6	1318.0	1281.8	1244.5	1205.6	1168.4
27.5°	1480.7	1436.3	1401.3	1377.1	1360.2	1338.2	1305.4	1267.5	1225.4	1181.5	1141.5
30°	1510.9	1455.5	1411.7	1377.1	1351.9	1326.7	1291.1	1248.4	1204.0	1157.9	1113.0
32.5°	1543.7	1476.9	1424.3	1378.8	1339.9	1308.1	1270.8	1229.2	1182.1	1133.3	1085.1
35°	1568.4	1492.2	1429.8	1372.8	1322.9	1282.9	1242.9	1202.3	1156.3	1107.0	1058.8
37.5°	1578.8	1498.3	1428.7	1360.2	1299.3	1255.5	1213.8	1173.3	1128.9	1082.3	1037.9
40°	1579.4	1498.3	1422.1	1343.2	1274.7	1227.0	1183.2	1145.3	1103.7	1063.7	1024.2
42.5°	1569.0	1490.6	1410.0	1327.3	1256.6	1202.9	1157.9	1119.0	1085.6	1050.0	1016.6
45°	1550.3	1475.2	1399.1	1318.5	1250.0	1196.9	1148.6	1111.9	1081.8	1050.0	1020.9
47.5°	1536.1	1466.5	1399.6	1331.1	1265.9	1211.1	1159.0	1120.1	1094.4	1069.2	1048.3
50°	1538.8	1469.8	1406.2	1341.0	1276.9	1221.5	1171.1	1137.7	1122.3	1114.1	1109.2
52.5°	1553.1	1482.9	1434.7	1391.4	1370.6	1336.6	1308.6	1283.4	1287.3	1267.5	1242.3
55°	1699.9	1676.4	1731.7	1771.7	1791.4	1826.0	1875.8	1828.2	1821.6	1760.8	1579.9
57.5°	2282.5	2338.4	2423.3	2483.6	2489.6	2479.2	2438.1	2398.6	2334.5	2243.0	1989.8
60°	3259.6	3246.4	3167.5	3061.7	2979.5	2871.6	2763.1	2671.5	2568.5	2428.2	2158.6
62.5°	4287.1	3970.3	3689.2	3449.7	3246.4	3066.1	2902.3	2764.7	2623.3	2421.7	2134.5
65°	5116.8	4507.4	4012.0	3626.7	3324.2	3069.4	2857.9	2668.3	2479.2	2245.7	1967.4
67.5°	5709.7	4743.0	3995.5	3453.6	3029.4	2678.7	2370.7	2154.8	1960.8	1777.2	1651.7
70°	5756.8	4417.0	3380.1	2717.0	2227.7	1815.6	1496.1	1260.4	1091.6	1015.5	1069.7
72.5°	4919.5	3267.8	2247.4	1663.2	1320.2	1025.9	824.8	659.3	523.3	456.5	465.8
75°	2897.3	1569.0	1012.2	754.1	616.0	492.1	425.8	359.5	317.3	254.3	203.3
77.5°	1103.1	682.3	510.7	424.2	302.5	217.6	171.5	148.0	135.9	134.3	127.1
80°	635.7	500.3	350.2	229.1	167.7	141.9	121.7	104.1	97.0	95.4	98.1
82.5°	401.7	311.8	192.4	147.4	122.2	105.2	87.7	76.2	70.1	68.0	71.8
85°	207.7	156.2	117.3	100.8	93.7	85.5	70.1	58.6	58.1	60.8	70.1
87.5°	76.7	66.9	52.6	45.5	48.8	45.5	32.9	28.5	25.8	34.0	49.3
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°	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1	1633.1
2.5°	1623.2	1622.1	1622.7	1621.6	1621.6	1623.2	1621.0	1619.4	1622.1	1622.1	1623.8
5°	1598.0	1599.1	1599.1	1598.5	1599.6	1602.4	1601.8	1601.8	1606.2	1607.9	1610.1
7.5°	1558.0	1559.6	1560.2	1561.8	1562.4	1566.2	1569.0	1572.2	1578.8	1580.5	1585.4
10°	1503.7	1502.6	1506.5	1505.9	1510.9	1514.2	1516.3	1523.5	1533.3	1538.8	1543.7
12.5°	1439.6	1439.6	1441.8	1442.4	1446.7	1451.1	1453.9	1462.6	1470.9	1478.0	1488.9
15°	1371.7	1369.5	1364.5	1364.0	1365.6	1370.0	1376.1	1382.6	1395.2	1405.6	1415.0
17.5°	1300.4	1293.9	1287.8	1280.2	1279.6	1279.1	1282.3	1287.3	1307.0	1317.4	1330.6
20°	1237.4	1223.2	1208.9	1193.0	1183.7	1179.3	1181.0	1187.5	1206.2	1219.9	1233.6
22.5°	1181.0	1159.6	1137.1	1111.9	1096.6	1087.3	1088.3	1091.1	1104.8	1113.0	1120.1
25°	1132.7	1103.1	1071.9	1039.6	1018.2	1004.0	1003.4	1003.4	997.4	998.5	994.6
27.5°	1099.9	1058.8	1018.8	980.9	953.0	938.7	919.6	905.9	893.8	877.4	870.2
30°	1068.1	1025.9	980.4	938.7	905.3	877.4	841.7	812.2	788.6	766.1	746.9
32.5°	1039.6	995.7	952.4	907.0	860.9	812.7	766.1	732.1	698.7	664.2	641.2
35°	1014.4	973.3	930.0	878.5	813.8	750.8	698.2	652.1	612.7	571.0	537.6
37.5°	1000.1	962.9	917.9	847.8	766.7	694.9	636.2	584.7	532.1	482.2	441.1
40°	993.0	960.1	905.3	816.5	724.5	647.7	582.5	520.6	458.7	400.0	357.3
42.5°	991.9	960.1	886.7	784.8	688.3	606.1	533.2	458.7	383.6	326.6	288.8
45°	1001.8	959.0	867.0	756.3	656.0	568.8	481.2	393.5	316.2	266.3	245.5
47.5°	1030.3	962.9	851.6	732.1	625.3	527.7	422.0	321.1	255.4	232.9	232.4
50°	1076.3	980.4	848.3	714.6	595.1	476.2	352.4	257.0	225.2	224.1	230.2
52.5°	1149.2	1013.3	856.5	702.5	559.0	409.4	278.9	221.9	215.9	221.9	229.6
55°	1309.7	1071.9	867.5	681.2	500.3	324.4	229.6	210.4	213.2	220.3	227.4
57.5°	1601.8	1193.6	879.0	633.0	405.5	249.3	206.6	206.1	211.0	217.0	223.6
60°	1787.1	1343.7	907.0	561.7	306.3	206.1	197.8	203.3	209.3	213.7	219.2
62.5°	1793.1	1383.2	921.8	485.5	228.0	188.5	190.2	200.6	207.7	209.3	212.1
65°	1677.5	1308.6	854.9	395.1	189.1	178.7	184.7	194.0	201.1	202.2	204.4
67.5°	1465.4	1154.1	724.5	298.1	172.1	171.0	177.6	184.7	189.6	194.0	197.3
70°	1103.7	952.4	582.5	231.3	161.7	160.6	167.1	173.2	177.6	183.0	188.5
72.5°	559.5	659.3	441.7	189.1	147.4	148.5	155.6	161.1	164.4	169.3	174.8
75°	190.7	287.7	279.5	152.9	131.5	135.9	139.2	145.2	150.2	153.4	156.2
77.5°	119.5	124.9	144.1	123.3	116.2	117.3	122.8	128.2	133.7	135.9	137.0
80°	99.7	100.3	100.8	98.6	99.2	102.5	105.8	111.8	117.3	118.4	118.9
82.5°	78.9	84.4	83.8	83.3	86.0	89.3	91.5	93.7	95.9	97.0	98.6
85°	69.6	68.5	69.0	70.7	68.5	66.3	65.8	65.8	69.0	72.9	74.5
87.5°	63.6	54.3	40.6	38.4	38.4	37.3	35.1	35.1	38.4	41.6	43.3
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°	1633.1	1633.1	1633.1	1633.1	1633.1
2.5°	1623.2	1623.8	1623.2	1623.2	1625.9
5°	1611.2	1613.3	1612.2	1613.9	1615.5
7.5°	1586.5	1592.0	1593.1	1597.4	1595.8
10°	1550.9	1554.7	1560.2	1564.6	1562.9
12.5°	1494.4	1503.7	1512.0	1516.9	1515.8
15°	1422.6	1435.8	1446.7	1450.6	1446.2
17.5°	1345.9	1354.1	1367.3	1370.0	1374.4
20°	1248.9	1248.4	1259.9	1259.9	1257.7
22.5°	1122.3	1130.5	1130.5	1122.9	1119.0
25°	993.0	995.7	987.5	989.2	978.7
27.5°	863.1	856.0	849.4	852.2	844.5
30°	739.3	723.9	717.3	718.4	710.2
32.5°	620.3	602.3	595.7	586.9	579.8
35°	512.4	483.9	466.9	462.5	467.5
37.5°	406.6	386.3	366.1	351.3	352.9
40°	321.7	300.9	287.7	281.7	280.6
42.5°	265.8	253.7	251.0	251.5	251.5
45°	241.1	241.7	243.9	246.1	246.6
47.5°	236.2	239.5	243.3	246.1	246.6
50°	235.6	238.9	241.7	245.0	246.1
52.5°	235.1	237.3	238.9	240.6	242.2
55°	232.9	234.0	233.5	234.5	236.2
57.5°	227.4	228.0	226.9	227.4	230.7
60°	222.5	223.0	220.8	223.6	224.1
62.5°	216.5	215.9	214.8	216.5	216.5
65°	207.7	204.4	205.5	207.1	207.7
67.5°	197.3	194.0	194.0	195.1	196.7
70°	184.1	182.5	182.5	184.7	186.9
72.5°	169.3	170.4	173.7	177.0	180.3
75°	157.3	160.0	163.3	171.5	176.5
77.5°	141.9	142.5	145.2	153.4	162.2
80°	120.6	120.0	120.6	121.7	123.3
82.5°	95.4	94.3	91.0	92.1	89.9
85°	70.1	68.5	64.7	61.9	61.4
87.5°	40.6	40.6	38.9	36.7	34.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)