

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: P146869

Luminaire Tested: **LDRL-T4-E04-E-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P146869
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-E04-E-7030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT
Light Source: (84) 3000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10735.9 lumens
Efficiency: N/A
Efficacy: 110.5 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

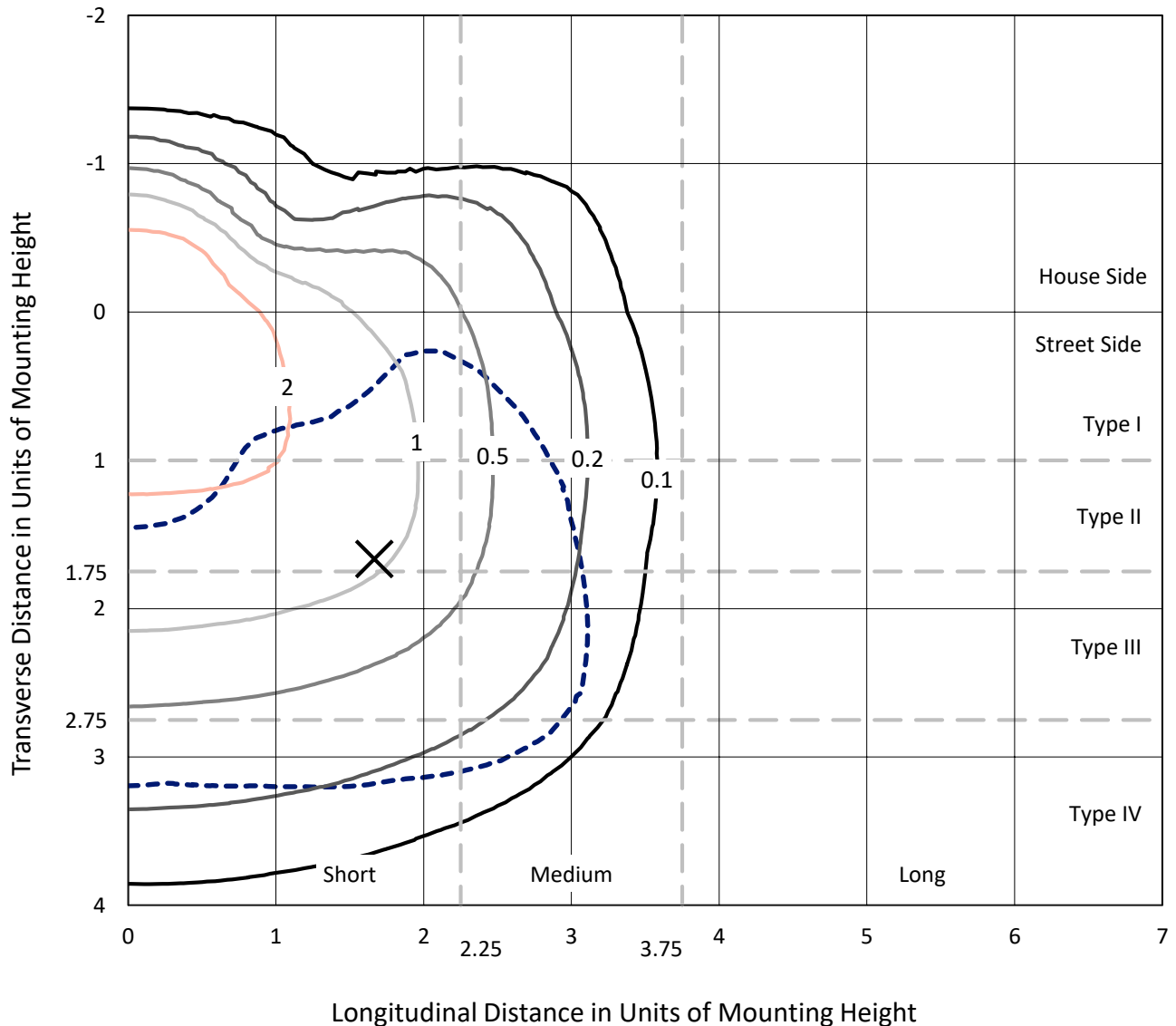
Input Watts (W): 97.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

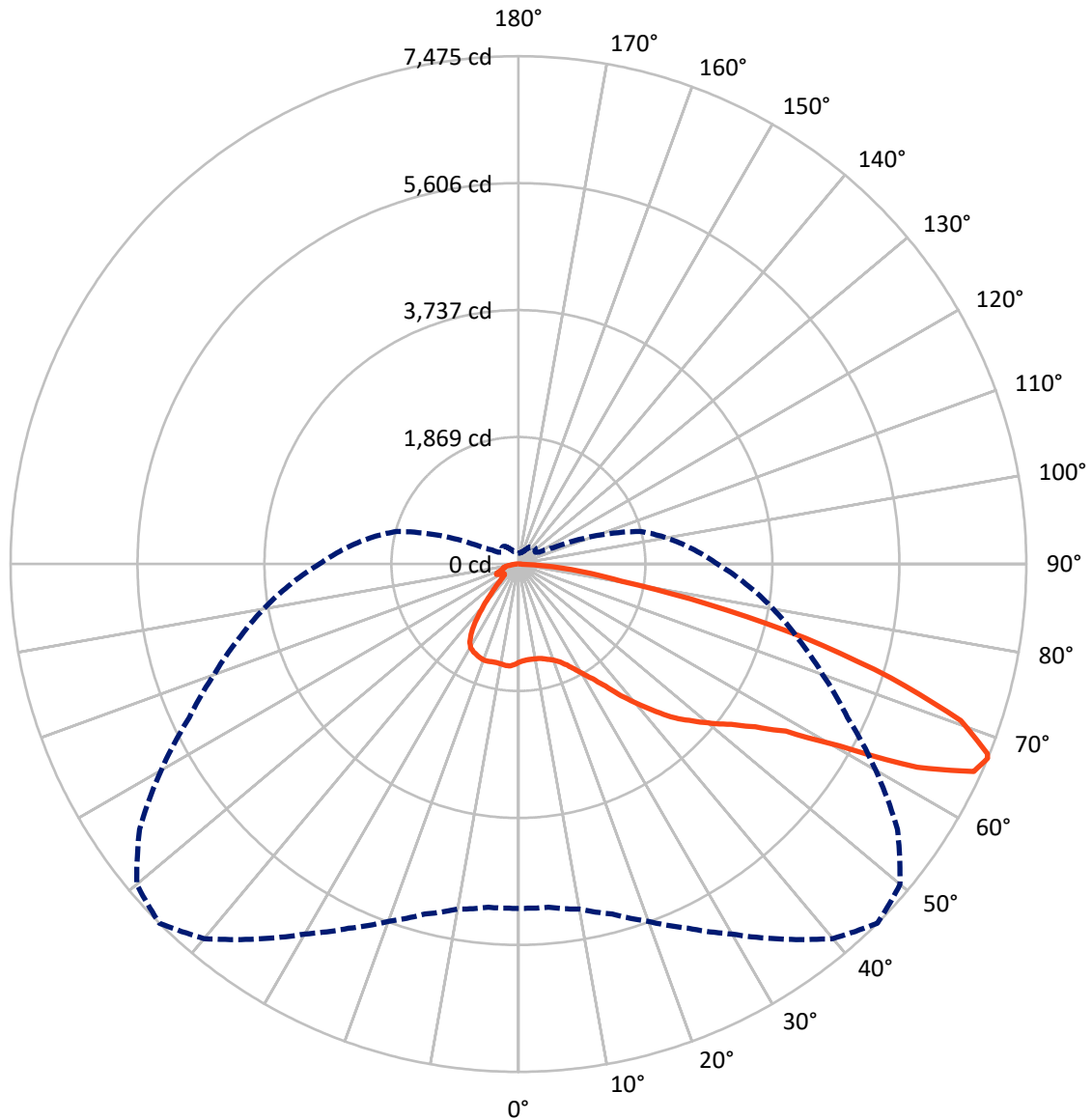
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.7 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
House Side	Lumens	2175.4	0.0	2175.4
	% Fixture	20.3	0.0	20.3
Street Side	Lumens	8560.6	0.0	8560.6
	% Fixture	79.7	0.0	79.7
Total	Lumens	10735.9	0.0	10735.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.3	1.3
10°-20°	418.3	3.9
20°-30°	710.9	6.6
30°-40°	1068.4	10.0
40°-50°	1389.3	12.9
50°-60°	1907.4	17.8
60°-70°	3008.9	28.0
70°-80°	1818.0	16.9
80°-90°	275.4	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°	10735.9	100.0
0°-180°	10735.9	100.0



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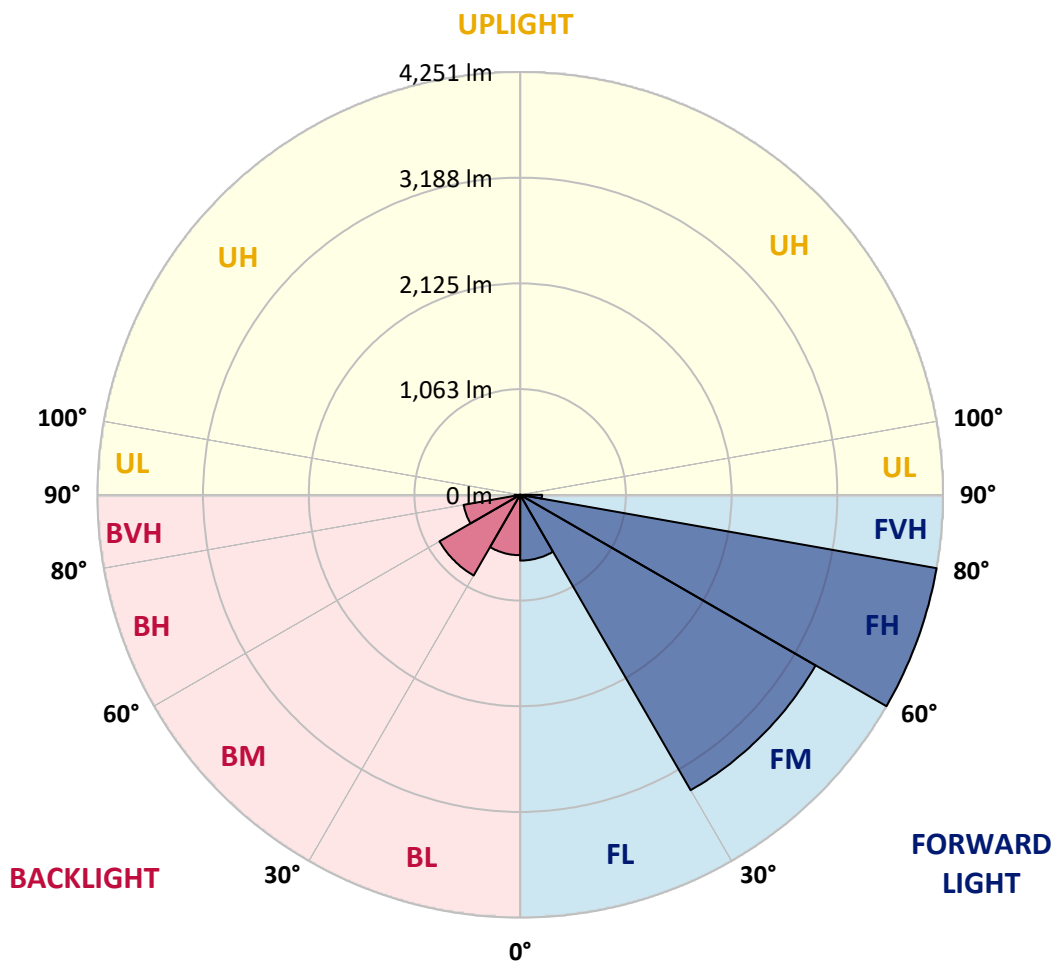
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	661.1	6.2			
FM (30°-60°)	3429.0	31.9			
FH (60°-80°)	4250.6	39.6			G2/5000
FVH (80°-90°)	219.9	2.0			G2/225
BL (0°-30°)	607.4	5.7	B2/1000		
BM (30°-60°)	936.1	8.7	B1/1000		
BH (60°-80°)	576.4	5.4	B2/1000		G2/1000
BVH (80°-90°)	55.5	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°	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3
2.5°	1413.1	1416.1	1413.9	1413.9	1414.6	1415.3	1416.8	1419.7	1420.4	1424.8	1425.6
5°	1384.6	1385.4	1385.4	1386.1	1390.5	1394.1	1397.8	1402.9	1407.3	1415.3	1420.4
7.5°	1374.4	1377.3	1376.6	1378.1	1382.4	1386.1	1390.5	1397.8	1408.8	1415.3	1422.6
10°	1391.2	1393.4	1391.2	1391.9	1392.7	1396.3	1397.8	1402.9	1411.7	1417.5	1424.1
12.5°	1429.9	1429.9	1427.7	1426.3	1424.1	1424.8	1421.9	1421.2	1425.6	1426.3	1427.0
15°	1481.1	1486.9	1479.6	1473.8	1470.9	1467.9	1458.4	1454.8	1454.1	1447.5	1440.9
17.5°	1533.0	1534.4	1530.0	1523.5	1519.1	1512.5	1504.5	1497.2	1488.4	1478.2	1465.0
20°	1590.7	1591.4	1585.6	1576.1	1571.0	1562.9	1552.7	1540.3	1529.3	1513.2	1498.6
22.5°	1671.1	1670.3	1658.6	1650.6	1643.3	1633.8	1619.2	1602.4	1584.8	1565.8	1545.4
25°	1763.1	1763.1	1755.1	1741.9	1738.3	1724.4	1708.3	1688.6	1670.3	1643.3	1618.5
27.5°	1868.3	1869.1	1854.5	1847.2	1839.1	1824.5	1813.5	1798.2	1773.4	1746.3	1720.8
30°	1993.3	1989.6	1978.0	1962.6	1959.7	1948.0	1932.6	1921.7	1891.0	1872.0	1843.5
32.5°	2111.7	2117.5	2114.6	2097.1	2100.0	2088.3	2075.1	2067.1	2034.9	2016.7	1990.4
35°	2288.5	2293.6	2298.0	2291.4	2295.1	2288.5	2277.5	2256.3	2230.0	2205.9	2169.4
37.5°	2425.9	2431.0	2433.9	2450.0	2473.4	2496.0	2506.2	2495.3	2496.7	2460.2	2411.2
40°	2538.4	2550.8	2568.3	2599.0	2645.8	2688.9	2712.3	2730.6	2740.1	2705.7	2642.1
42.5°	2650.9	2664.1	2688.2	2737.1	2801.4	2863.5	2912.5	2968.8	2979.0	2970.2	2916.1
45°	2768.5	2783.9	2813.8	2869.4	2944.6	3025.7	3104.7	3184.3	3224.5	3231.1	3165.3
47.5°	2910.3	2932.2	2960.0	3022.8	3095.9	3187.2	3285.9	3388.2	3451.0	3451.0	3375.0
50°	3087.1	3112.0	3135.3	3198.2	3271.3	3365.5	3479.5	3593.5	3679.0	3684.1	3592.0
52.5°	3334.8	3338.5	3352.4	3410.1	3473.7	3578.9	3687.0	3819.3	3917.9	3922.3	3816.3
55°	3635.9	3635.9	3651.9	3700.2	3759.4	3846.3	3958.1	4105.0	4208.7	4231.4	4095.5
57.5°	4031.9	4046.5	4054.5	4110.8	4151.0	4243.1	4336.6	4496.6	4628.9	4643.5	4505.4
60°	4676.4	4648.6	4693.2	4742.8	4837.1	4904.3	5063.6	5224.4	5393.2	5433.3	5285.0
62.5°	5311.3	5341.3	5396.1	5485.9	5647.4	5797.9	6025.9	6270.0	6532.3	6586.4	6473.1
65°	5350.8	5369.0	5445.0	5599.9	5820.6	6088.8	6403.0	6770.5	7161.4	7363.8	7173.8
67°	5067.3	5072.4	5158.6	5334.7	5599.2	5917.0	6289.0	6737.6	7196.5	7474.9	7333.1
67.5°	4977.4	4986.9	5071.7	5251.4	5518.8	5844.0	6223.2	6684.3	7154.1	7444.9	7317.0
70°	4449.8	4449.8	4541.2	4722.4	4973.0	5290.1	5686.9	6152.3	6663.1	6907.9	6799.0
72.5°	3787.8	3763.7	3866.8	4004.1	4208.7	4485.6	4805.0	5172.5	5556.8	5735.1	5692.0
75°	2753.2	2798.5	2851.8	2953.4	3131.0	3349.4	3536.5	3864.6	4166.3	4363.6	4311.7
77.5°	1502.3	1519.8	1667.4	1728.1	1883.7	2045.9	2251.2	2481.4	2718.9	2843.1	2792.7
80°	892.9	927.2	1014.9	1087.3	1171.3	1294.8	1443.8	1494.2	1541.0	1538.1	1446.7
82.5°	564.1	605.7	700.7	762.8	806.7	878.3	959.4	1023.0	1036.8	968.2	862.2
85°	91.3	151.3	395.3	464.7	492.5	531.2	591.1	618.2	577.2	504.2	522.4
87.5°	35.8	43.1	120.6	152.7	161.5	84.8	146.9	172.4	87.7	44.6	100.8
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°	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3
2.5°	1429.9	1433.6	1437.2	1441.6	1443.1	1446.7	1453.3	1452.6	1457.7	1459.9	1463.6
5°	1427.0	1435.1	1440.9	1448.9	1451.9	1459.9	1468.7	1471.6	1478.2	1483.3	1487.7
7.5°	1432.9	1441.6	1448.9	1458.4	1465.0	1471.6	1478.2	1486.2	1492.0	1495.7	1498.6
10°	1435.1	1444.6	1453.3	1461.4	1468.7	1473.8	1481.1	1487.7	1493.5	1495.7	1496.4
12.5°	1435.8	1442.4	1451.1	1459.9	1466.5	1473.1	1478.2	1485.5	1489.9	1490.6	1489.1
15°	1441.6	1442.4	1448.2	1458.4	1465.0	1471.6	1475.2	1478.9	1481.8	1479.6	1477.4
17.5°	1459.2	1454.1	1454.1	1459.2	1462.8	1465.7	1466.5	1465.7	1462.8	1458.4	1454.8
20°	1487.7	1477.4	1469.4	1466.5	1460.6	1453.3	1443.8	1435.1	1424.1	1419.0	1418.3
22.5°	1532.2	1516.9	1502.3	1487.7	1468.7	1447.5	1425.6	1406.6	1391.2	1383.2	1383.9
25°	1608.2	1585.6	1568.8	1543.2	1512.5	1482.6	1454.1	1428.5	1410.2	1395.6	1398.5
27.5°	1710.5	1684.9	1670.3	1641.1	1606.0	1568.0	1534.4	1499.4	1473.1	1454.8	1458.4
30°	1830.4	1823.0	1798.9	1769.7	1736.8	1693.7	1643.3	1590.7	1543.2	1513.2	1507.4
32.5°	1975.0	1967.0	1940.7	1915.8	1873.5	1826.0	1760.2	1676.9	1602.4	1545.4	1520.5
35°	2153.3	2133.6	2101.4	2077.3	2029.8	1968.5	1883.7	1771.2	1657.9	1572.4	1510.3
37.5°	2375.4	2326.5	2273.1	2210.3	2140.2	2065.6	1967.7	1836.2	1695.9	1574.6	1464.3
40°	2587.3	2508.4	2420.0	2320.6	2235.2	2145.3	2043.7	1893.2	1721.5	1559.3	1394.9
42.5°	2823.3	2700.6	2580.8	2444.1	2331.6	2224.9	2108.7	1933.4	1726.6	1517.6	1305.0
45°	3050.6	2892.8	2732.0	2563.2	2420.0	2301.6	2169.4	1967.7	1725.1	1473.8	1215.9
47.5°	3253.0	3064.5	2865.7	2675.8	2509.2	2379.1	2234.4	2014.5	1744.9	1461.4	1156.7
50°	3442.2	3224.5	2991.4	2780.2	2599.0	2466.0	2317.0	2088.3	1805.5	1489.9	1147.9
52.5°	3637.3	3400.6	3133.9	2906.6	2717.4	2563.2	2412.7	2182.5	1890.3	1548.3	1167.6
55°	3891.6	3619.8	3335.6	3083.5	2866.5	2700.6	2526.7	2296.5	1981.6	1616.3	1204.9
57.5°	4270.1	3952.2	3629.3	3358.2	3107.6	2900.8	2710.1	2446.3	2132.9	1718.6	1286.7
60°	4949.6	4597.4	4223.3	3869.0	3580.3	3338.5	3095.9	2768.5	2412.0	1950.9	1474.5
62.5°	6059.5	5572.2	5054.8	4588.7	4191.9	3864.6	3522.6	3129.5	2713.7	2233.0	1758.7
65°	6726.6	6054.4	5396.1	4855.4	4386.3	3966.9	3553.3	3131.0	2728.4	2308.2	1886.6
67°	6809.2	6072.0	5343.5	4767.7	4265.0	3808.3	3359.7	2927.8	2567.6	2215.4	1851.5
67.5°	6784.4	6036.9	5293.8	4712.2	4204.3	3762.3	3320.9	2878.9	2528.2	2176.0	1825.2
70°	6294.8	5563.4	4828.3	4262.8	3776.2	3323.9	2906.6	2463.9	2192.8	1940.7	1637.5
72.5°	5224.4	4653.7	4037.7	3566.5	3146.3	2754.7	2387.9	2017.4	1799.7	1621.4	1408.0
75°	3874.1	3350.9	2829.9	2546.4	2220.5	1907.1	1623.6	1349.6	1265.5	1223.2	1097.5
77.5°	2392.2	1922.4	1530.0	1273.6	1012.7	793.5	631.3	513.7	535.6	623.3	663.5
80°	1191.0	879.7	681.0	541.4	437.7	353.6	259.4	190.0	227.2	269.6	305.4
82.5°	716.8	566.3	447.9	379.2	308.3	238.2	168.8	128.6	142.5	191.4	210.4
85°	445.0	356.6	285.0	238.2	197.3	146.1	95.7	95.0	100.8	127.1	145.4
87.5°	130.8	88.4	70.1	73.1	81.1	67.2	50.4	43.1	53.3	73.1	81.8
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°	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3	1445.3
2.5°	1464.3	1469.4	1471.6	1472.3	1473.1	1477.4	1477.4	1481.8	1483.3	1483.3	1484.7
5°	1492.0	1497.2	1499.4	1500.1	1501.5	1503.7	1503.0	1505.9	1507.4	1506.7	1506.7
7.5°	1502.3	1503.7	1503.7	1505.9	1508.1	1505.9	1504.5	1505.9	1505.2	1505.9	1505.9
10°	1498.6	1497.2	1497.2	1495.7	1497.9	1493.5	1493.5	1495.0	1494.2	1495.7	1497.9
12.5°	1489.9	1489.1	1486.9	1486.2	1489.1	1486.2	1486.9	1489.1	1490.6	1493.5	1497.2
15°	1477.4	1475.2	1475.2	1478.2	1485.5	1487.7	1490.6	1494.2	1495.0	1496.4	1497.9
17.5°	1456.2	1459.9	1468.7	1478.9	1492.8	1497.9	1499.4	1497.2	1489.9	1484.0	1478.2
20°	1427.0	1443.1	1465.7	1487.7	1504.5	1503.7	1494.2	1480.4	1462.8	1450.4	1442.4
22.5°	1402.2	1433.6	1468.7	1495.0	1505.9	1492.0	1470.1	1448.9	1428.5	1410.2	1394.1
25°	1419.7	1449.7	1479.6	1495.7	1495.0	1470.9	1441.6	1418.3	1390.5	1364.9	1337.9
27.5°	1476.7	1495.0	1503.7	1498.6	1483.3	1451.1	1419.0	1386.1	1350.3	1319.6	1288.2
30°	1515.4	1515.4	1506.7	1486.2	1459.2	1423.4	1383.9	1341.5	1299.1	1263.3	1227.5
32.5°	1503.0	1474.5	1448.9	1421.2	1390.5	1351.8	1306.5	1260.4	1212.2	1170.5	1139.9
35°	1448.9	1387.6	1334.2	1294.8	1262.6	1216.6	1164.0	1111.4	1071.9	1043.4	1025.9
37.5°	1352.5	1254.6	1177.1	1128.9	1079.2	1031.7	971.1	947.0	911.9	894.4	887.8
40°	1235.6	1092.4	995.2	933.1	880.5	821.3	780.4	765.0	751.9	748.2	745.3
42.5°	1101.1	922.1	806.7	742.4	678.8	635.7	617.4	607.9	605.7	605.7	609.4
45°	961.6	748.9	616.0	564.1	511.5	488.8	484.4	480.1	480.8	478.6	480.1
47.5°	853.4	601.3	464.7	417.2	390.2	382.9	377.8	376.3	376.3	372.6	368.3
50°	797.2	502.7	364.6	327.3	312.0	306.9	306.9	304.0	298.1	294.5	285.0
52.5°	782.6	451.6	315.7	283.5	270.4	266.0	261.6	257.2	248.4	240.4	229.4
55°	794.2	435.5	300.3	270.4	255.7	250.6	247.0	239.7	227.2	215.6	203.1
57.5°	843.2	445.7	306.2	274.0	260.9	257.2	253.5	242.6	227.2	210.4	196.6
60°	976.9	493.9	331.0	293.7	282.8	283.5	278.4	264.5	242.6	218.5	198.0
62.5°	1149.4	561.2	363.1	321.5	320.0	327.3	327.3	303.2	267.4	230.9	203.1
65°	1248.0	582.4	367.5	325.2	337.6	358.8	357.3	325.2	276.2	230.9	200.9
67°	1223.2	559.7	349.3	304.0	318.6	342.7	339.8	309.1	263.0	221.4	195.1
67.5°	1203.4	552.4	344.9	298.8	313.5	333.2	333.2	302.5	257.2	218.5	192.9
70°	1059.5	488.1	323.0	279.1	279.1	284.2	280.6	258.7	228.0	200.9	184.1
72.5°	883.4	426.7	305.4	265.2	251.4	248.4	243.3	228.0	208.2	189.2	174.6
75°	684.6	377.8	291.5	250.6	232.4	225.8	220.7	209.0	193.6	177.6	165.1
77.5°	479.3	323.7	273.3	238.2	218.5	213.4	205.3	192.2	179.7	165.9	154.2
80°	297.4	267.4	238.2	214.8	194.4	187.1	176.8	165.1	154.9	146.9	138.1
82.5°	211.9	196.6	177.6	165.1	143.9	122.0	130.8	131.5	124.9	119.8	117.6
85°	141.8	127.9	118.4	107.4	95.0	85.5	87.7	94.3	95.0	92.8	92.8
87.5°	77.5	65.8	63.6	65.8	57.0	54.1	54.8	60.6	61.4	61.4	62.1
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°	1445.3	1445.3	1445.3	1445.3
2.5°	1485.5	1487.7	1486.9	1488.4
5°	1508.1	1509.6	1508.9	1509.6
7.5°	1504.5	1507.4	1508.9	1506.7
10°	1498.6	1503.0	1505.9	1505.9
12.5°	1500.1	1507.4	1511.8	1511.8
15°	1498.6	1504.5	1505.9	1505.9
17.5°	1476.0	1476.0	1476.7	1473.8
20°	1436.5	1432.1	1430.7	1425.6
22.5°	1380.3	1370.0	1363.4	1359.8
25°	1316.0	1299.9	1289.7	1283.8
27.5°	1262.6	1248.7	1238.5	1232.7
30°	1203.4	1187.4	1181.5	1177.1
32.5°	1117.9	1102.6	1098.2	1094.6
35°	1006.9	1001.8	990.1	982.0
37.5°	878.3	871.7	867.3	864.4
40°	743.8	744.6	740.9	734.3
42.5°	609.4	616.7	609.4	607.9
45°	478.6	486.6	486.6	488.8
47.5°	369.0	367.5	370.5	371.2
50°	279.1	274.7	273.3	271.1
52.5°	221.4	216.3	213.4	209.7
55°	195.1	189.2	186.3	185.6
57.5°	186.3	179.0	174.6	173.9
60°	184.1	173.9	168.1	166.6
62.5°	184.1	171.7	165.1	162.9
65°	181.9	169.5	163.7	161.5
67°	179.0	168.1	162.2	160.7
67.5°	177.6	167.3	162.2	160.0
70°	173.9	165.1	159.3	157.1
72.5°	165.9	158.6	152.7	151.3
75°	157.1	150.5	146.9	145.4
77.5°	146.9	141.0	136.6	133.0
80°	131.5	124.9	118.4	116.9
82.5°	111.8	104.5	99.4	98.6
85°	89.9	84.0	78.2	78.2
87.5°	62.8	59.2	55.5	51.9
90°	0.0	0.0	0.0	0.0

(END OF REPORT)