

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: P146871

Luminaire Tested: **LDRL-T4-E04-E-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P146871  
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-7050  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (84) 5000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12061.3 lumens  
Efficiency: N/A  
Efficacy: 124.1 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 - G3

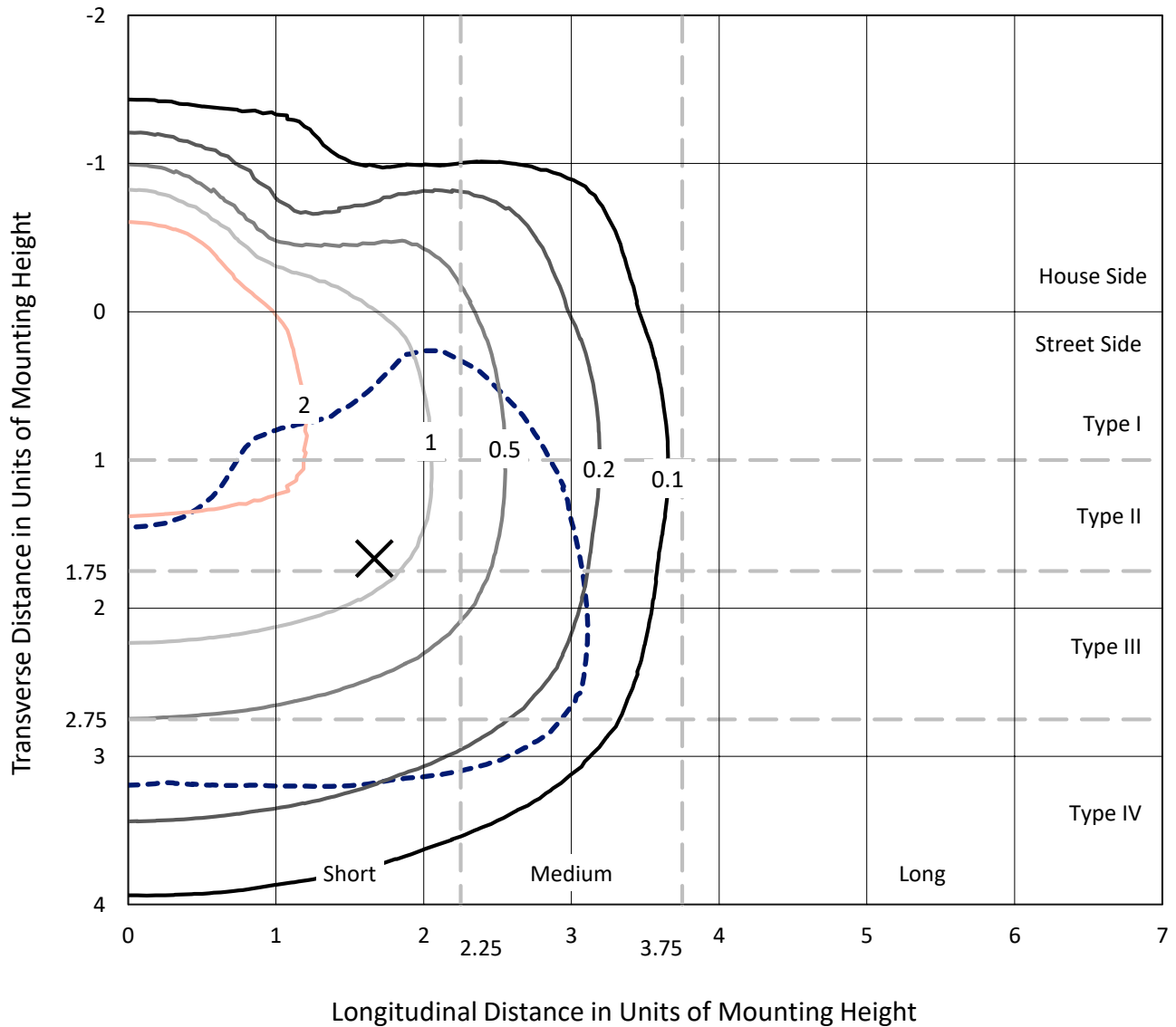
Input Watts (W): 97.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

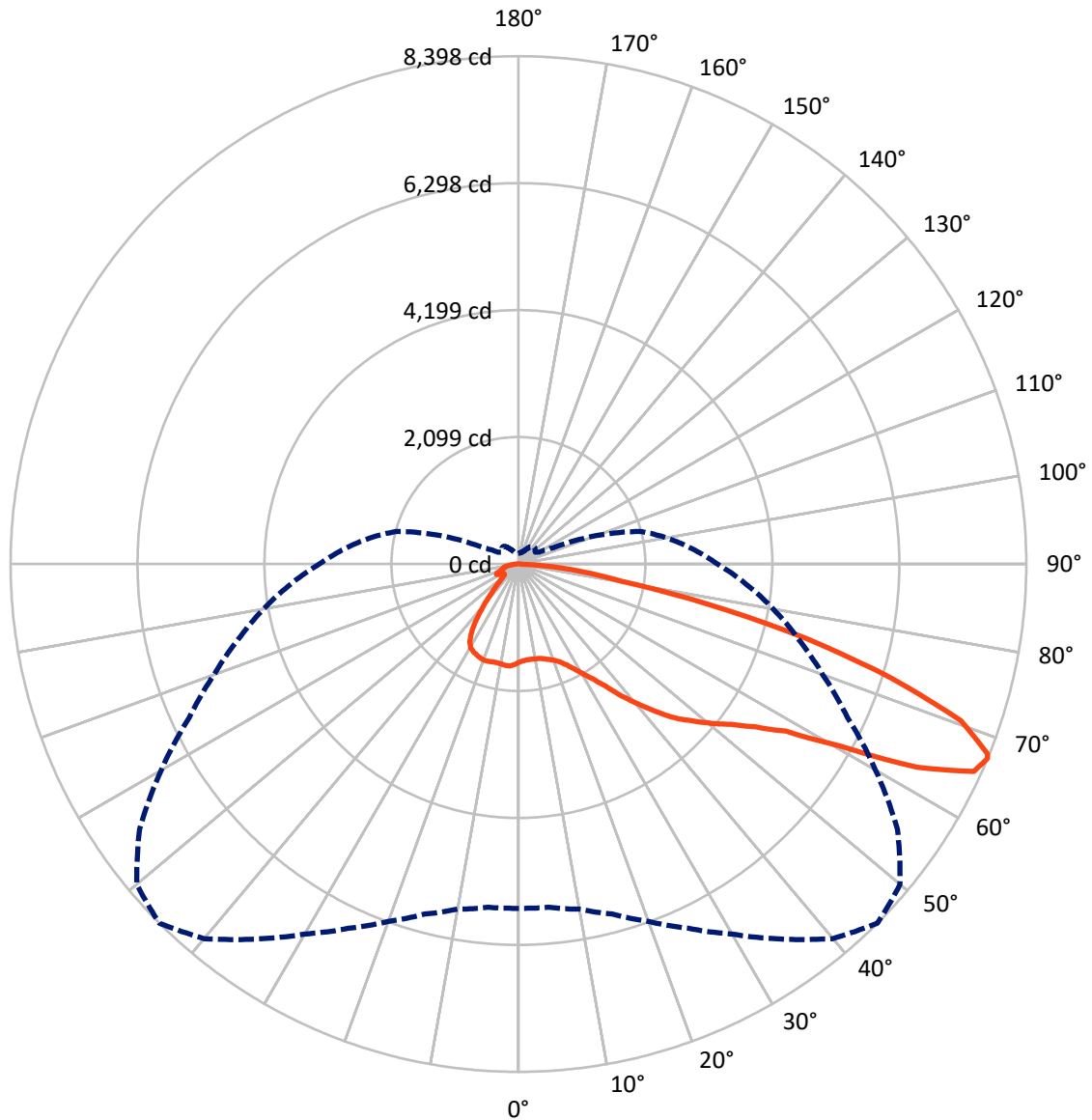
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.1 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
<b>House Side</b>	Lumens	2443.9	0.0	2443.9
	% Fixture	20.3	0.0	20.3
<b>Street Side</b>	Lumens	9617.4	0.0	9617.4
	% Fixture	79.7	0.0	79.7
<b>Total</b>	Lumens	12061.3	0.0	12061.3
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	156.5	1.3
10°-20°	469.9	3.9
20°-30°	798.7	6.6
30°-40°	1200.3	10.0
40°-50°	1560.8	12.9
50°-60°	2142.9	17.8
60°-70°	3380.4	28.0
70°-80°	2042.5	16.9
80°-90°	309.4	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°	12061.3	100.0
0°-180°	12061.3	100.0



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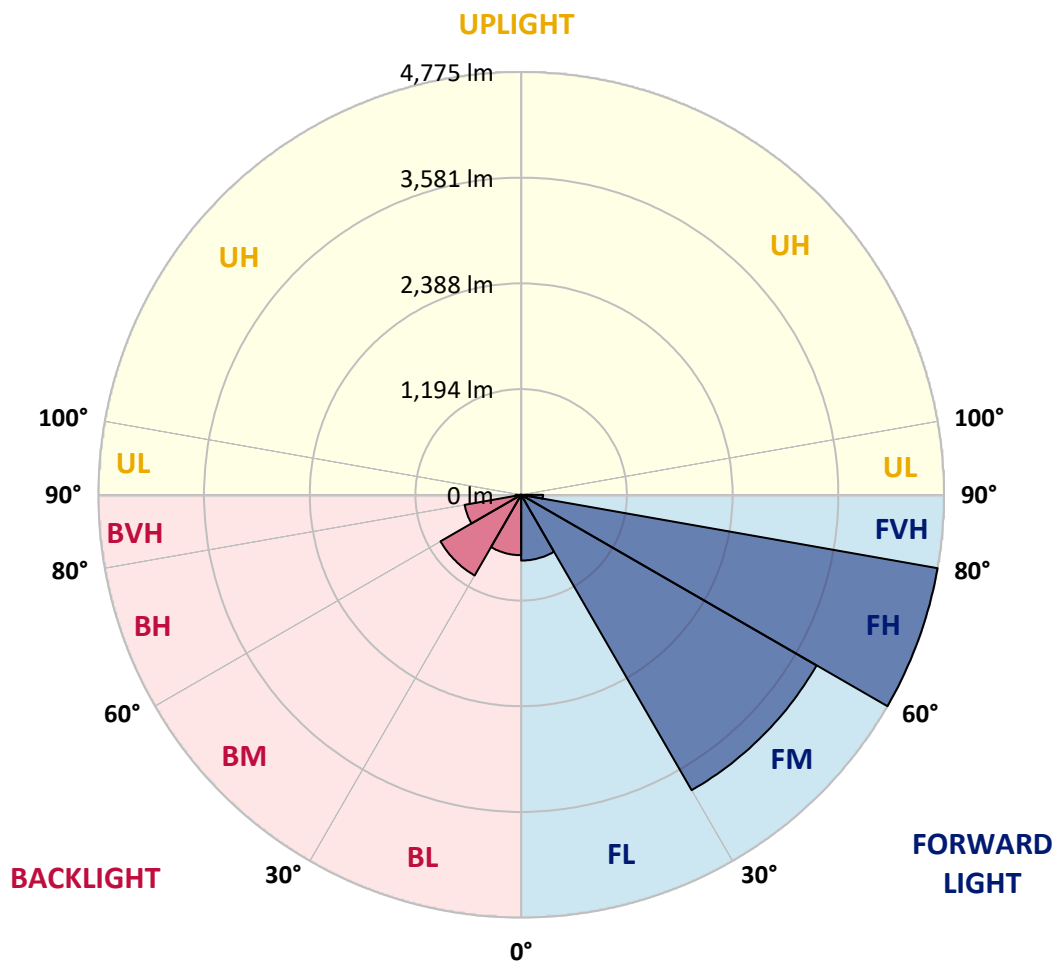
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	742.7	6.2			
FM (30°-60°)	3852.3	31.9			
FH (60°-80°)	4775.3	39.6			G2/5000
FVH (80°-90°)	247.1	2.0			G3/500
BL (0°-30°)	682.3	5.7	B2/1000		
BM (30°-60°)	1051.7	8.7	B2/2500		
BH (60°-80°)	647.6	5.4	B2/1000		G2/1000
BVH (80°-90°)	62.3	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-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7
2.5°	1587.6	1590.9	1588.4	1588.4	1589.2	1590.1	1591.7	1595.0	1595.8	1600.7	1601.5
5°	1555.6	1556.4	1556.4	1557.2	1562.1	1566.2	1570.4	1576.1	1581.0	1590.1	1595.8
7.5°	1544.1	1547.4	1546.5	1548.2	1553.1	1557.2	1562.1	1570.4	1582.7	1590.1	1598.3
10°	1563.0	1565.4	1563.0	1563.8	1564.6	1568.7	1570.4	1576.1	1585.9	1592.5	1599.9
12.5°	1606.5	1606.5	1604.0	1602.4	1599.9	1600.7	1597.4	1596.6	1601.5	1602.4	1603.2
15°	1663.9	1670.5	1662.3	1655.7	1652.4	1649.2	1638.5	1634.4	1633.6	1626.2	1618.8
17.5°	1722.2	1723.9	1718.9	1711.5	1706.6	1699.2	1690.2	1682.0	1672.1	1660.6	1645.9
20°	1787.1	1787.9	1781.3	1770.6	1764.9	1755.9	1744.4	1730.4	1718.1	1700.1	1683.6
22.5°	1877.4	1876.5	1863.4	1854.4	1846.2	1835.5	1819.1	1800.2	1780.5	1759.2	1736.2
25°	1980.8	1980.8	1971.8	1957.0	1952.9	1937.3	1919.2	1897.1	1876.5	1846.2	1818.3
27.5°	2099.0	2099.8	2083.4	2075.2	2066.2	2049.7	2037.4	2020.2	1992.3	1961.9	1933.2
30°	2239.4	2235.3	2222.1	2204.9	2201.6	2188.5	2171.2	2158.9	2124.4	2103.1	2071.1
32.5°	2372.4	2378.9	2375.6	2355.9	2359.2	2346.1	2331.3	2322.3	2286.2	2265.6	2236.1
35°	2571.0	2576.8	2581.7	2574.3	2578.4	2571.0	2558.7	2534.9	2505.3	2478.2	2437.2
37.5°	2725.3	2731.1	2734.4	2752.4	2778.7	2804.1	2815.6	2803.3	2805.0	2763.9	2708.9
40°	2851.8	2865.7	2885.4	2919.9	2972.4	3020.9	3047.1	3067.6	3078.3	3039.7	2968.3
42.5°	2978.2	2992.9	3020.0	3075.0	3147.3	3217.0	3272.0	3335.3	3346.7	3336.9	3276.1
45°	3110.3	3127.6	3161.2	3223.6	3308.2	3399.3	3487.9	3577.4	3622.6	3630.0	3556.1
47.5°	3269.6	3294.2	3325.4	3396.0	3478.1	3580.7	3691.5	3806.4	3877.0	3877.0	3791.7
50°	3468.2	3496.1	3522.4	3593.0	3675.1	3781.0	3909.1	4037.1	4133.2	4138.9	4035.5
52.5°	3746.5	3750.6	3766.2	3831.1	3902.5	4020.7	4142.2	4290.8	4401.6	4406.5	4287.5
55°	4084.7	4084.7	4102.8	4157.0	4223.4	4321.1	4446.7	4611.7	4728.3	4753.7	4601.1
57.5°	4529.6	4546.1	4555.1	4618.3	4663.4	4766.9	4871.9	5051.7	5200.3	5216.7	5061.6
60°	5253.7	5222.5	5272.5	5328.4	5434.3	5509.8	5688.7	5869.3	6058.9	6104.1	5937.5
62.5°	5967.0	6000.7	6062.2	6163.2	6344.6	6513.7	6769.8	7044.0	7338.7	7399.5	7272.2
65°	6011.3	6031.9	6117.2	6291.3	6539.2	6840.4	7193.4	7606.3	8045.5	8272.9	8059.4
67°	5692.8	5698.6	5795.4	5993.3	6290.4	6647.5	7065.4	7569.4	8084.9	8397.6	8238.4
67.5°	5591.9	5602.5	5697.8	5899.7	6200.1	6565.4	6991.5	7509.5	8037.3	8364.0	8220.3
70°	4999.2	4999.2	5101.8	5305.4	5586.9	5943.2	6388.9	6911.8	7485.6	7760.6	7638.3
72.5°	4255.5	4228.4	4344.1	4498.4	4728.3	5039.4	5398.1	5811.0	6242.8	6443.1	6394.7
75°	3093.1	3144.0	3203.9	3318.0	3517.5	3762.9	3973.1	4341.7	4680.7	4902.3	4844.0
77.5°	1687.7	1707.4	1873.3	1941.4	2116.2	2298.5	2529.1	2787.7	3054.5	3194.1	3137.4
80°	1003.1	1041.7	1140.2	1221.5	1315.9	1454.6	1622.1	1678.7	1731.2	1728.0	1625.4
82.5°	633.7	680.5	787.2	857.0	906.3	986.7	1077.8	1149.2	1164.8	1087.7	968.6
85°	102.6	169.9	444.1	522.1	553.3	596.8	664.1	694.5	648.5	566.4	586.9
87.5°	40.2	48.4	135.4	171.6	181.4	95.2	165.0	193.7	98.5	50.1	113.3
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7
2.5°	1606.5	1610.6	1614.7	1619.6	1621.2	1625.4	1632.7	1631.9	1637.7	1640.1	1644.2
5°	1603.2	1612.2	1618.8	1627.8	1631.1	1640.1	1650.0	1653.3	1660.6	1666.4	1671.3
7.5°	1609.8	1619.6	1627.8	1638.5	1645.9	1653.3	1660.6	1669.7	1676.2	1680.4	1683.6
10°	1612.2	1622.9	1632.7	1641.8	1650.0	1655.7	1663.9	1671.3	1677.9	1680.4	1681.2
12.5°	1613.0	1620.4	1630.3	1640.1	1647.5	1654.9	1660.6	1668.9	1673.8	1674.6	1673.0
15°	1619.6	1620.4	1627.0	1638.5	1645.9	1653.3	1657.4	1661.5	1664.8	1662.3	1659.8
17.5°	1639.3	1633.6	1633.6	1639.3	1643.4	1646.7	1647.5	1646.7	1643.4	1638.5	1634.4
20°	1671.3	1659.8	1650.8	1647.5	1640.9	1632.7	1622.1	1612.2	1599.9	1594.2	1593.3
22.5°	1721.4	1704.2	1687.7	1671.3	1650.0	1626.2	1601.5	1580.2	1563.0	1553.9	1554.8
25°	1806.8	1781.3	1762.4	1733.7	1699.2	1665.6	1633.6	1604.8	1584.3	1567.9	1571.2
27.5°	1921.7	1893.0	1876.5	1843.7	1804.3	1761.6	1723.9	1684.5	1654.9	1634.4	1638.5
30°	2056.3	2048.1	2021.0	1988.2	1951.2	1902.8	1846.2	1787.1	1733.7	1700.1	1693.5
32.5°	2218.9	2209.8	2180.3	2152.4	2104.7	2051.4	1977.5	1883.9	1800.2	1736.2	1708.3
35°	2419.1	2397.0	2360.9	2333.8	2280.4	2211.5	2116.2	1989.8	1862.6	1766.5	1696.8
37.5°	2668.7	2613.7	2553.8	2483.2	2404.4	2320.6	2210.6	2062.9	1905.3	1769.0	1645.1
40°	2906.8	2818.1	2718.8	2607.1	2511.1	2410.1	2296.0	2126.9	1934.0	1751.8	1567.1
42.5°	3171.9	3034.0	2899.4	2745.9	2619.4	2499.6	2369.1	2172.1	1939.7	1705.0	1466.1
45°	3427.2	3249.9	3069.3	2879.7	2718.8	2585.8	2437.2	2210.6	1938.1	1655.7	1366.0
47.5°	3654.6	3442.8	3219.5	3006.1	2818.9	2672.8	2510.3	2263.2	1960.3	1641.8	1299.5
50°	3867.2	3622.6	3360.7	3123.5	2919.9	2770.5	2603.0	2346.1	2028.4	1673.8	1289.6
52.5°	4086.4	3820.4	3520.8	3265.5	3052.9	2879.7	2710.6	2452.0	2123.6	1739.5	1311.8
55°	4372.0	4066.7	3747.3	3464.1	3220.3	3034.0	2838.6	2580.0	2226.2	1815.8	1353.6
57.5°	4797.2	4440.2	4077.3	3772.8	3491.2	3258.9	3044.7	2748.3	2396.2	1930.7	1445.6
60°	5560.7	5165.0	4744.7	4346.6	4022.3	3750.6	3478.1	3110.3	2709.7	2191.8	1656.5
62.5°	6807.6	6260.1	5678.9	5155.2	4709.4	4341.7	3957.5	3515.8	3048.8	2508.6	1975.9
65°	7557.1	6801.8	6062.2	5454.8	4927.8	4456.6	3992.0	3517.5	3065.2	2593.2	2119.5
67°	7649.8	6821.5	6003.1	5356.3	4791.5	4278.4	3774.4	3289.3	2884.6	2488.9	2080.1
67.5°	7621.9	6782.1	5947.3	5293.9	4723.4	4226.7	3730.9	3234.3	2840.3	2444.6	2050.6
70°	7071.9	6250.2	5424.4	4789.0	4242.3	3734.2	3265.5	2768.0	2463.5	2180.3	1839.6
72.5°	5869.3	5228.2	4536.2	4006.7	3534.7	3094.7	2682.7	2266.5	2021.8	1821.5	1581.8
75°	4352.3	3764.6	3179.3	2860.8	2494.7	2142.5	1824.0	1516.2	1421.8	1374.2	1233.0
77.5°	2687.6	2159.7	1718.9	1430.8	1137.7	891.5	709.2	577.1	601.7	700.2	745.4
80°	1338.0	988.3	765.1	608.3	491.7	397.3	291.4	213.4	255.3	302.9	343.1
82.5°	805.3	636.2	503.2	426.0	346.4	267.6	189.6	144.5	160.1	215.1	236.4
85°	499.9	400.6	320.1	267.6	221.6	164.2	107.5	106.7	113.3	142.8	163.4
87.5°	146.9	99.3	78.8	82.1	91.1	75.5	56.6	48.4	59.9	82.1	91.9
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°	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7	1623.7
2.5°	1645.1	1650.8	1653.3	1654.1	1654.9	1659.8	1659.8	1664.8	1666.4	1666.4	1668.0
5°	1676.2	1682.0	1684.5	1685.3	1686.9	1689.4	1688.6	1691.8	1693.5	1692.7	1692.7
7.5°	1687.7	1689.4	1689.4	1691.8	1694.3	1691.8	1690.2	1691.8	1691.0	1691.8	1691.8
10°	1683.6	1682.0	1682.0	1680.4	1682.8	1677.9	1677.9	1679.5	1678.7	1680.4	1682.8
12.5°	1673.8	1673.0	1670.5	1669.7	1673.0	1669.7	1670.5	1673.0	1674.6	1677.9	1682.0
15°	1659.8	1657.4	1657.4	1660.6	1668.9	1671.3	1674.6	1678.7	1679.5	1681.2	1682.8
17.5°	1636.0	1640.1	1650.0	1661.5	1677.1	1682.8	1684.5	1682.0	1673.8	1667.2	1660.6
20°	1603.2	1621.2	1646.7	1671.3	1690.2	1689.4	1678.7	1663.1	1643.4	1629.5	1620.4
22.5°	1575.3	1610.6	1650.0	1679.5	1691.8	1676.2	1651.6	1627.8	1604.8	1584.3	1566.2
25°	1595.0	1628.6	1662.3	1680.4	1679.5	1652.4	1619.6	1593.3	1562.1	1533.4	1503.0
27.5°	1659.0	1679.5	1689.4	1683.6	1666.4	1630.3	1594.2	1557.2	1517.0	1482.5	1447.2
30°	1702.5	1702.5	1692.7	1669.7	1639.3	1599.1	1554.8	1507.1	1459.5	1419.3	1379.1
32.5°	1688.6	1656.5	1627.8	1596.6	1562.1	1518.6	1467.7	1416.0	1361.8	1315.1	1280.6
35°	1627.8	1558.9	1498.9	1454.6	1418.5	1366.8	1307.7	1248.6	1204.2	1172.2	1152.5
37.5°	1519.5	1409.5	1322.4	1268.3	1212.4	1159.1	1091.0	1063.9	1024.5	1004.8	997.4
40°	1388.1	1227.2	1118.0	1048.3	989.2	922.7	876.7	859.5	844.7	840.6	837.3
42.5°	1237.1	1036.0	906.3	834.0	762.6	714.2	693.6	683.0	680.5	680.5	684.6
45°	1080.3	841.4	692.0	633.7	574.6	549.2	544.2	539.3	540.1	537.7	539.3
47.5°	958.8	675.6	522.1	468.7	438.4	430.1	424.4	422.8	422.8	418.7	413.7
50°	895.6	564.8	409.6	367.8	350.5	344.8	344.8	341.5	334.9	330.8	320.1
52.5°	879.2	507.3	354.6	318.5	303.7	298.8	293.9	289.0	279.1	270.1	257.8
55°	892.3	489.2	337.4	303.7	287.3	281.6	277.5	269.3	255.3	242.2	228.2
57.5°	947.3	500.7	344.0	307.8	293.1	289.0	284.8	272.5	255.3	236.4	220.8
60°	1097.5	554.9	371.9	330.0	317.7	318.5	312.8	297.2	272.5	245.4	222.5
62.5°	1291.3	630.4	408.0	361.2	359.5	367.8	367.8	340.7	300.4	259.4	228.2
65°	1402.1	654.2	412.9	365.3	379.2	403.1	401.4	365.3	310.3	259.4	225.7
67°	1374.2	628.8	392.4	341.5	357.9	385.0	381.7	347.2	295.5	248.7	219.2
67.5°	1352.0	620.6	387.5	335.7	352.2	374.3	374.3	339.8	289.0	245.4	216.7
70°	1190.3	548.4	362.8	313.6	313.6	319.3	315.2	290.6	256.1	225.7	206.9
72.5°	992.4	479.4	343.1	298.0	282.4	279.1	273.4	256.1	234.0	212.6	196.2
75°	769.2	424.4	327.5	281.6	261.0	253.7	247.9	234.8	217.5	199.5	185.5
77.5°	538.5	363.7	307.0	267.6	245.4	239.7	230.7	215.9	201.9	186.3	173.2
80°	334.1	300.4	267.6	241.3	218.4	210.1	198.7	185.5	174.0	165.0	155.1
82.5°	238.1	220.8	199.5	185.5	161.7	137.1	146.9	147.8	140.4	134.6	132.2
85°	159.3	143.7	133.0	120.7	106.7	96.0	98.5	105.9	106.7	104.3	104.3
87.5°	87.0	73.9	71.4	73.9	64.0	60.7	61.6	68.1	69.0	69.0	69.8
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):**

	165°	170°	175°	180°
0°	1623.7	1623.7	1623.7	1623.7
2.5°	1668.9	1671.3	1670.5	1672.1
5°	1694.3	1695.9	1695.1	1695.9
7.5°	1690.2	1693.5	1695.1	1692.7
10°	1683.6	1688.6	1691.8	1691.8
12.5°	1685.3	1693.5	1698.4	1698.4
15°	1683.6	1690.2	1691.8	1691.8
17.5°	1658.2	1658.2	1659.0	1655.7
20°	1613.9	1608.9	1607.3	1601.5
22.5°	1550.7	1539.2	1531.8	1527.7
25°	1478.4	1460.4	1448.9	1442.3
27.5°	1418.5	1402.9	1391.4	1384.8
30°	1352.0	1333.9	1327.4	1322.4
32.5°	1256.0	1238.7	1233.8	1229.7
35°	1131.2	1125.4	1112.3	1103.3
37.5°	986.7	979.3	974.4	971.1
40°	835.7	836.5	832.4	825.0
42.5°	684.6	692.8	684.6	683.0
45°	537.7	546.7	546.7	549.2
47.5°	414.5	412.9	416.2	417.0
50°	313.6	308.7	307.0	304.5
52.5°	248.7	243.0	239.7	235.6
55°	219.2	212.6	209.3	208.5
57.5°	209.3	201.1	196.2	195.4
60°	206.9	195.4	188.8	187.2
62.5°	206.9	192.9	185.5	183.1
65°	204.4	190.4	183.9	181.4
67°	201.1	188.8	182.2	180.6
67.5°	199.5	188.0	182.2	179.8
70°	195.4	185.5	179.0	176.5
72.5°	186.3	178.1	171.6	169.9
75°	176.5	169.1	165.0	163.4
77.5°	165.0	158.4	153.5	149.4
80°	147.8	140.4	133.0	131.3
82.5°	125.6	117.4	111.6	110.8
85°	101.0	94.4	87.8	87.8
87.5°	70.6	66.5	62.4	58.3
90°	0.0	0.0	0.0	0.0

(END OF REPORT)