

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: P146870

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P146870  
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  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(4) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (84) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 11754.4 lumens  
Efficiency: N/A  
Efficacy: 120.9 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

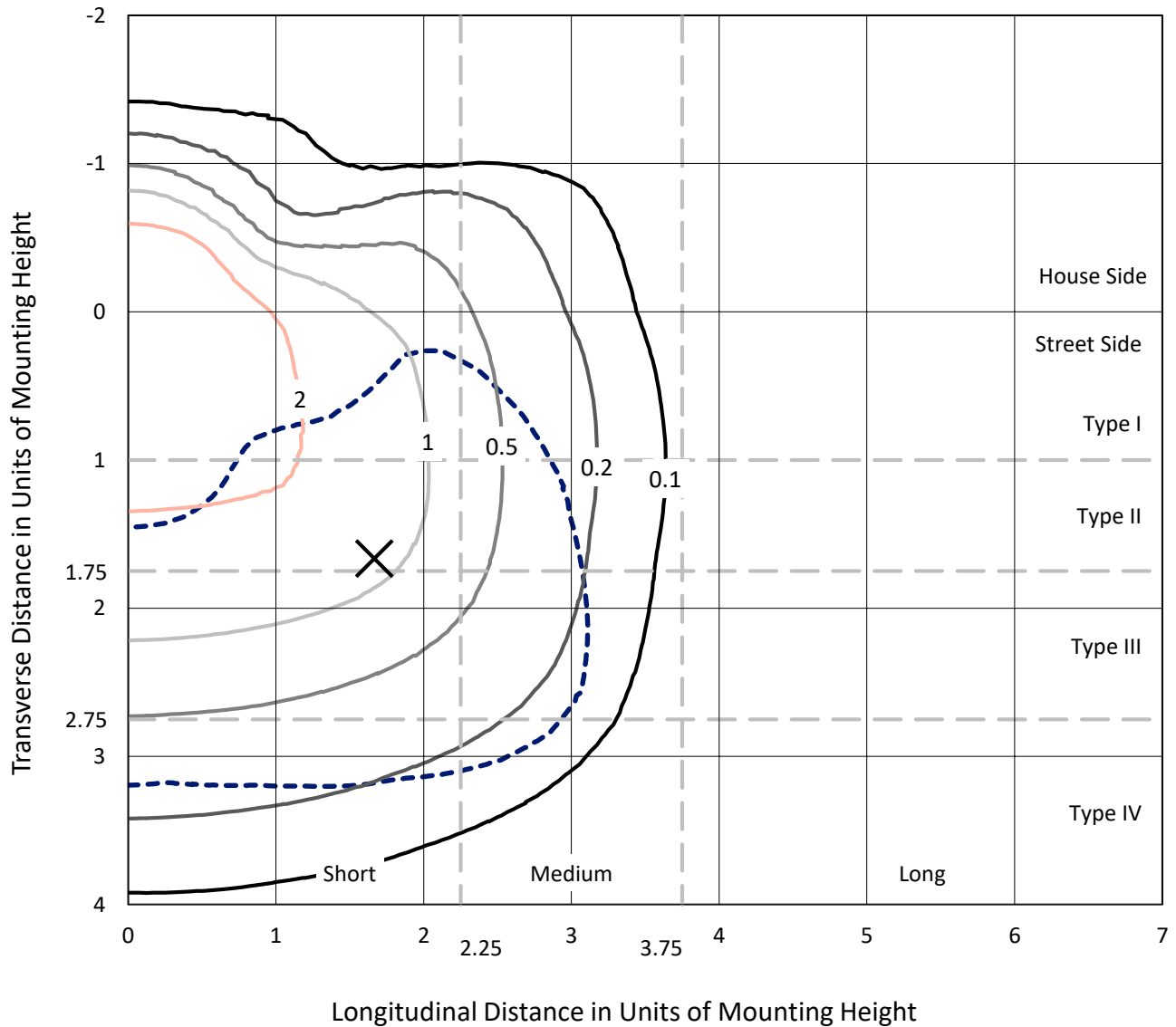
Input Watts (W): 97.2  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

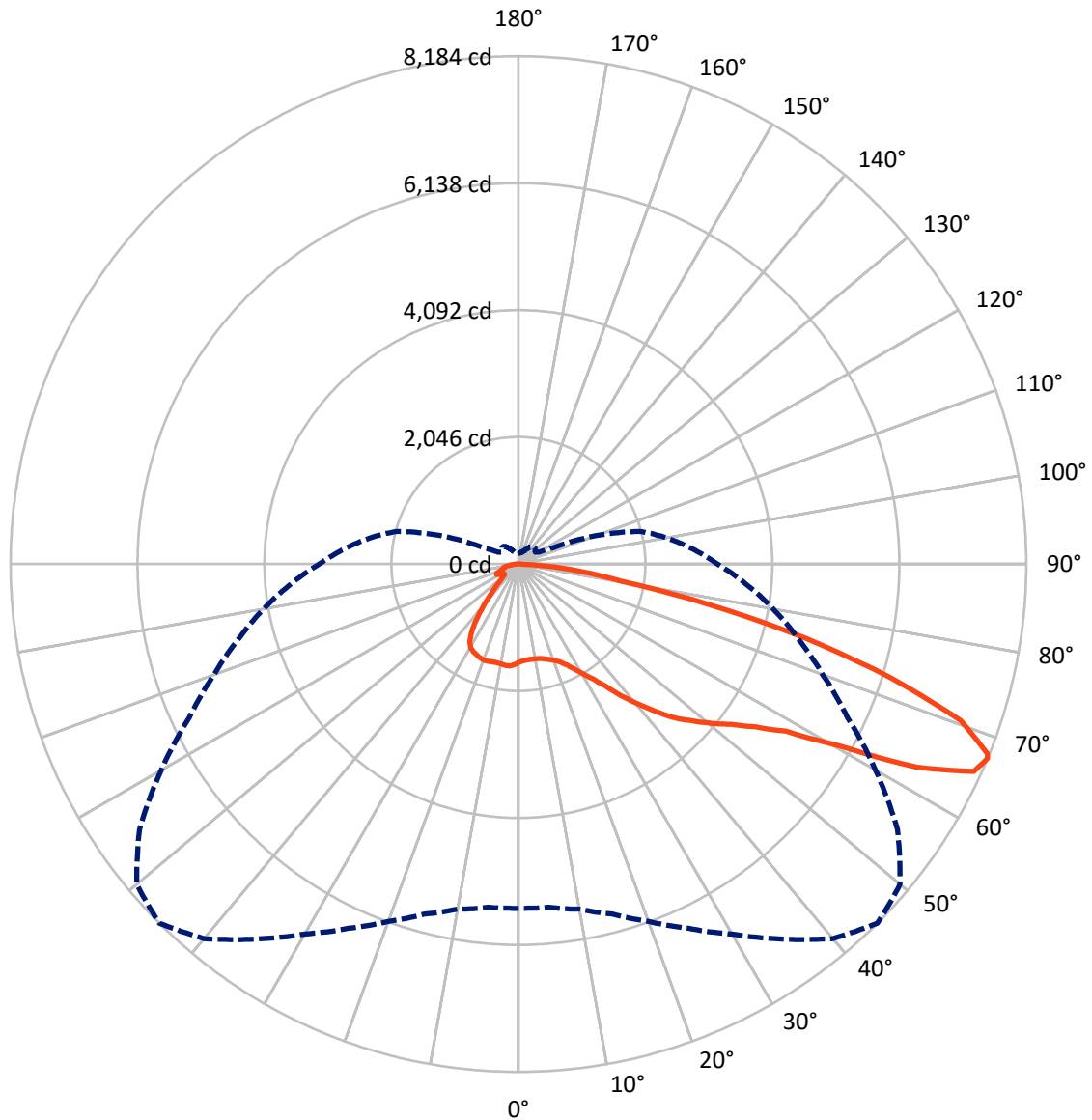
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4 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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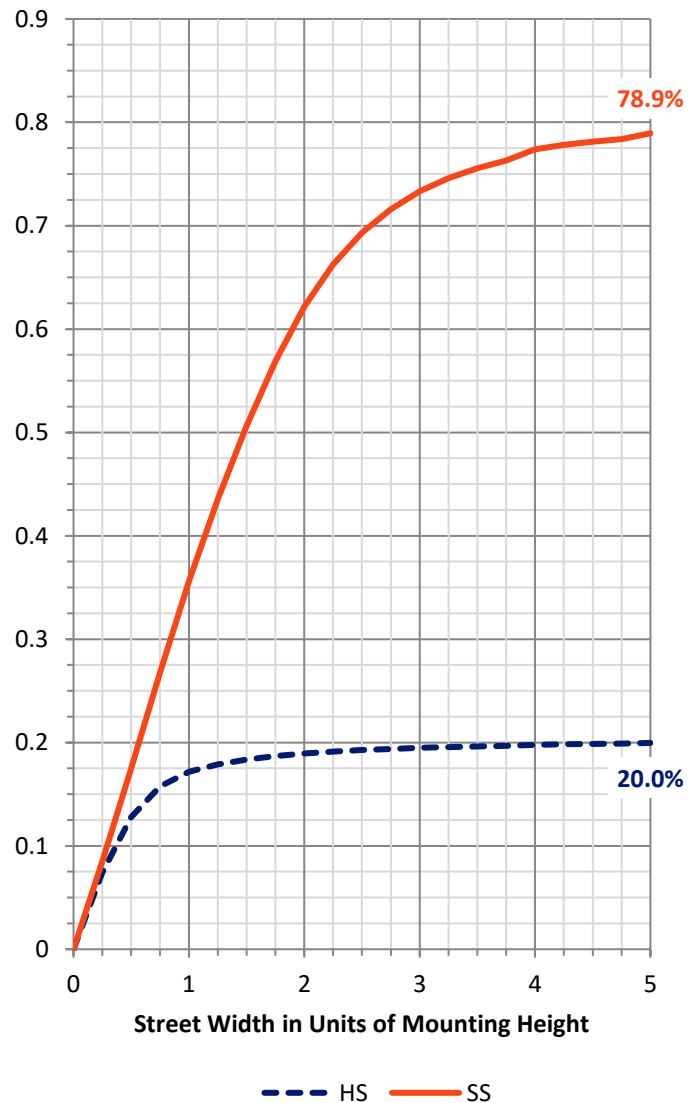
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2381.7	0.0	2381.7
	% Fixture	20.3	0.0	20.3
<b>Street Side</b>	Lumens	9372.7	0.0	9372.7
	% Fixture	79.7	0.0	79.7
<b>Total</b>	Lumens	11754.4	0.0	11754.4
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.5	1.3
10°-20°	458.0	3.9
20°-30°	778.4	6.6
30°-40°	1169.8	10.0
40°-50°	1521.1	12.9
50°-60°	2088.3	17.8
60°-70°	3294.4	28.0
70°-80°	1990.5	16.9
80°-90°	301.5	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°	11754.4	100.0
0°-180°	11754.4	100.0

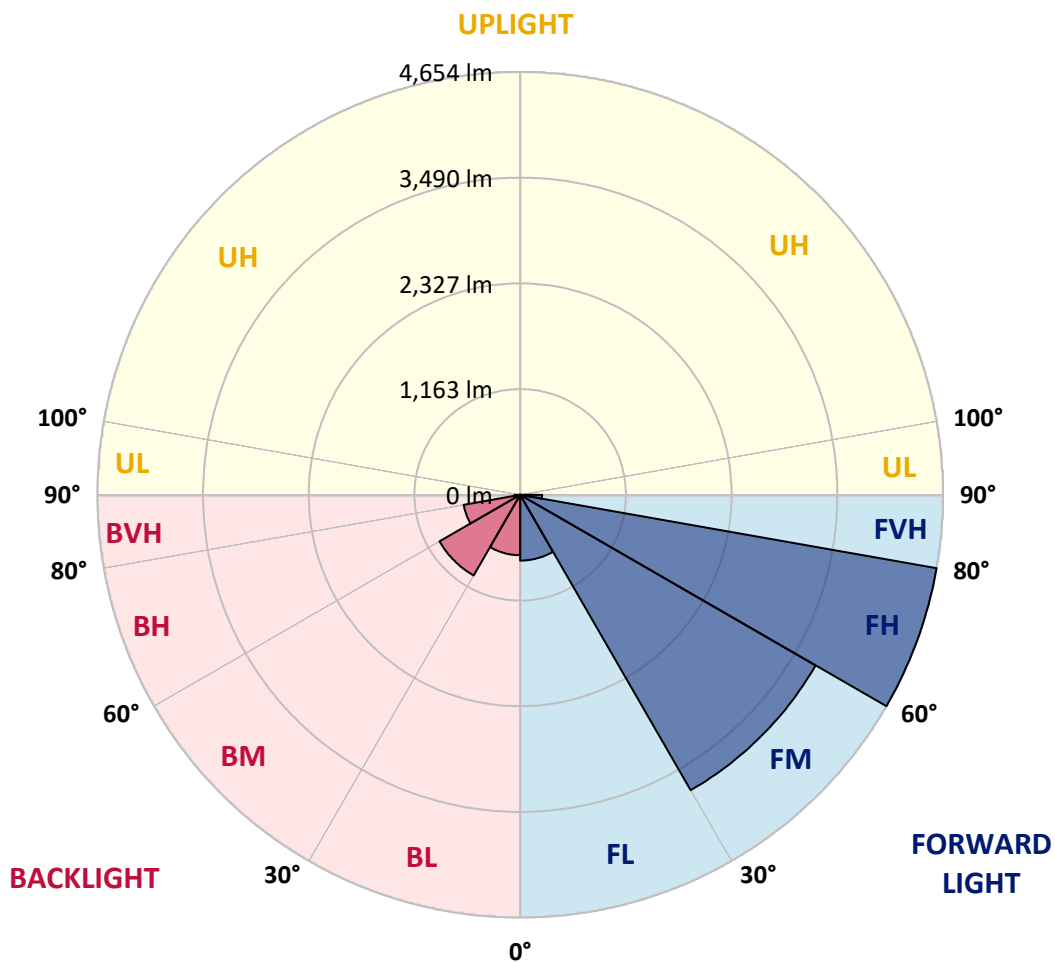


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	723.9	6.2			
FM (30°-60°)	3754.3	31.9			
FH (60°-80°)	4653.8	39.6			G2/5000
FVH (80°-90°)	240.8	2.0			G3/500
BL (0°-30°)	665.0	5.7	B2/1000		
BM (30°-60°)	1024.9	8.7	B2/2500		
BH (60°-80°)	631.1	5.4	B2/1000		G2/1000
BVH (80°-90°)	60.8	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°	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4
2.5°	1547.2	1550.4	1548.0	1548.0	1548.8	1549.6	1551.2	1554.4	1555.2	1560.0	1560.8
5°	1516.0	1516.8	1516.8	1517.6	1522.4	1526.4	1530.4	1536.0	1540.8	1549.6	1555.2
7.5°	1504.8	1508.0	1507.2	1508.8	1513.6	1517.6	1522.4	1530.4	1542.4	1549.6	1557.6
10°	1523.2	1525.6	1523.2	1524.0	1524.8	1528.8	1530.4	1536.0	1545.6	1552.0	1559.2
12.5°	1565.6	1565.6	1563.2	1561.6	1559.2	1560.0	1556.8	1556.0	1560.8	1561.6	1562.4
15°	1621.6	1628.0	1620.0	1613.6	1610.4	1607.2	1596.8	1592.8	1592.0	1584.8	1577.6
17.5°	1678.4	1680.0	1675.2	1668.0	1663.2	1656.0	1647.2	1639.2	1629.6	1618.4	1604.0
20°	1741.6	1742.4	1736.0	1725.6	1720.0	1711.2	1700.0	1686.4	1674.4	1656.8	1640.8
22.5°	1829.6	1828.8	1816.0	1807.2	1799.2	1788.8	1772.8	1754.4	1735.2	1714.4	1692.0
25°	1930.4	1930.4	1921.6	1907.2	1903.2	1888.0	1870.4	1848.8	1828.8	1799.2	1772.0
27.5°	2045.6	2046.4	2030.4	2022.4	2013.6	1997.6	1985.6	1968.8	1941.6	1912.0	1884.0
30°	2182.4	2178.4	2165.6	2148.8	2145.6	2132.8	2116.0	2104.0	2070.4	2049.6	2018.4
32.5°	2312.0	2318.4	2315.2	2296.0	2299.2	2286.4	2272.0	2263.2	2228.0	2208.0	2179.2
35°	2505.6	2511.2	2516.0	2508.8	2512.8	2505.6	2493.6	2470.4	2441.6	2415.2	2375.2
37.5°	2656.0	2661.6	2664.8	2682.4	2708.0	2732.8	2744.0	2732.0	2733.6	2693.6	2640.0
40°	2779.2	2792.8	2812.0	2845.6	2896.8	2944.0	2969.6	2989.6	3000.0	2962.4	2892.8
42.5°	2902.4	2916.8	2943.2	2996.8	3067.2	3135.2	3188.8	3250.4	3261.6	3252.0	3192.8
45°	3031.2	3048.0	3080.8	3141.6	3224.0	3312.8	3399.2	3486.4	3530.4	3537.6	3465.6
47.5°	3186.4	3210.4	3240.8	3309.6	3389.6	3489.6	3597.6	3709.6	3778.4	3778.4	3695.2
50°	3380.0	3407.2	3432.8	3501.6	3581.6	3684.8	3809.6	3934.4	4028.0	4033.6	3932.8
52.5°	3651.2	3655.2	3670.4	3733.6	3803.2	3918.4	4036.8	4181.6	4289.6	4294.4	4178.4
55°	3980.8	3980.8	3998.4	4051.2	4116.0	4211.2	4333.6	4494.4	4608.0	4632.8	4484.0
57.5°	4414.4	4430.4	4439.2	4500.8	4544.8	4645.6	4748.0	4923.2	5068.0	5084.0	4932.8
60°	5120.0	5089.6	5138.4	5192.8	5296.0	5369.6	5544.0	5720.0	5904.8	5948.8	5786.4
62.5°	5815.2	5848.0	5908.0	6006.4	6183.2	6348.0	6597.6	6864.8	7152.0	7211.2	7087.2
65°	5858.4	5878.4	5961.6	6131.2	6372.8	6666.4	7010.4	7412.8	7840.8	8062.4	7854.4
67°	5548.0	5553.6	5648.0	5840.8	6130.4	6478.4	6885.6	7376.8	7879.2	8184.0	8028.8
67.5°	5449.6	5460.0	5552.8	5749.6	6042.4	6398.4	6813.6	7318.4	7832.8	8151.2	8011.2
70°	4872.0	4872.0	4972.0	5170.4	5444.8	5792.0	6226.4	6736.0	7295.2	7563.2	7444.0
72.5°	4147.2	4120.8	4233.6	4384.0	4608.0	4911.2	5260.8	5663.2	6084.0	6279.2	6232.0
75°	3014.4	3064.0	3122.4	3233.6	3428.0	3667.2	3872.0	4231.2	4561.6	4777.6	4720.8
77.5°	1644.8	1664.0	1825.6	1892.0	2062.4	2240.0	2464.8	2716.8	2976.8	3112.8	3057.6
80°	977.6	1015.2	1111.2	1190.4	1282.4	1417.6	1580.8	1636.0	1687.2	1684.0	1584.0
82.5°	617.6	663.2	767.2	835.2	883.2	961.6	1050.4	1120.0	1135.2	1060.0	944.0
85°	100.0	165.6	432.8	508.8	539.2	581.6	647.2	676.8	632.0	552.0	572.0
87.5°	39.2	47.2	132.0	167.2	176.8	92.8	160.8	188.8	96.0	48.8	110.4
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):**

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4
2.5°	1565.6	1569.6	1573.6	1578.4	1580.0	1584.0	1591.2	1590.4	1596.0	1598.4	1602.4
5°	1562.4	1571.2	1577.6	1586.4	1589.6	1598.4	1608.0	1611.2	1618.4	1624.0	1628.8
7.5°	1568.8	1578.4	1586.4	1596.8	1604.0	1611.2	1618.4	1627.2	1633.6	1637.6	1640.8
10°	1571.2	1581.6	1591.2	1600.0	1608.0	1613.6	1621.6	1628.8	1635.2	1637.6	1638.4
12.5°	1572.0	1579.2	1588.8	1598.4	1605.6	1612.8	1618.4	1626.4	1631.2	1632.0	1630.4
15°	1578.4	1579.2	1585.6	1596.8	1604.0	1611.2	1615.2	1619.2	1622.4	1620.0	1617.6
17.5°	1597.6	1592.0	1592.0	1597.6	1601.6	1604.8	1605.6	1604.8	1601.6	1596.8	1592.8
20°	1628.8	1617.6	1608.8	1605.6	1599.2	1591.2	1580.8	1571.2	1559.2	1553.6	1552.8
22.5°	1677.6	1660.8	1644.8	1628.8	1608.0	1584.8	1560.8	1540.0	1523.2	1514.4	1515.2
25°	1760.8	1736.0	1717.6	1689.6	1656.0	1623.2	1592.0	1564.0	1544.0	1528.0	1531.2
27.5°	1872.8	1844.8	1828.8	1796.8	1758.4	1716.8	1680.0	1641.6	1612.8	1592.8	1596.8
30°	2004.0	1996.0	1969.6	1937.6	1901.6	1854.4	1799.2	1741.6	1689.6	1656.8	1650.4
32.5°	2162.4	2153.6	2124.8	2097.6	2051.2	1999.2	1927.2	1836.0	1754.4	1692.0	1664.8
35°	2357.6	2336.0	2300.8	2274.4	2222.4	2155.2	2062.4	1939.2	1815.2	1721.6	1653.6
37.5°	2600.8	2547.2	2488.8	2420.0	2343.2	2261.6	2154.4	2010.4	1856.8	1724.0	1603.2
40°	2832.8	2746.4	2649.6	2540.8	2447.2	2348.8	2237.6	2072.8	1884.8	1707.2	1527.2
42.5°	3091.2	2956.8	2825.6	2676.0	2552.8	2436.0	2308.8	2116.8	1890.4	1661.6	1428.8
45°	3340.0	3167.2	2991.2	2806.4	2649.6	2520.0	2375.2	2154.4	1888.8	1613.6	1331.2
47.5°	3561.6	3355.2	3137.6	2929.6	2747.2	2604.8	2446.4	2205.6	1910.4	1600.0	1266.4
50°	3768.8	3530.4	3275.2	3044.0	2845.6	2700.0	2536.8	2286.4	1976.8	1631.2	1256.8
52.5°	3982.4	3723.2	3431.2	3182.4	2975.2	2806.4	2641.6	2389.6	2069.6	1695.2	1278.4
55°	4260.8	3963.2	3652.0	3376.0	3138.4	2956.8	2766.4	2514.4	2169.6	1769.6	1319.2
57.5°	4675.2	4327.2	3973.6	3676.8	3402.4	3176.0	2967.2	2678.4	2335.2	1881.6	1408.8
60°	5419.2	5033.6	4624.0	4236.0	3920.0	3655.2	3389.6	3031.2	2640.8	2136.0	1614.4
62.5°	6634.4	6100.8	5534.4	5024.0	4589.6	4231.2	3856.8	3426.4	2971.2	2444.8	1925.6
65°	7364.8	6628.8	5908.0	5316.0	4802.4	4343.2	3890.4	3428.0	2987.2	2527.2	2065.6
67°	7455.2	6648.0	5850.4	5220.0	4669.6	4169.6	3678.4	3205.6	2811.2	2425.6	2027.2
67.5°	7428.0	6609.6	5796.0	5159.2	4603.2	4119.2	3636.0	3152.0	2768.0	2382.4	1998.4
70°	6892.0	6091.2	5286.4	4667.2	4134.4	3639.2	3182.4	2697.6	2400.8	2124.8	1792.8
72.5°	5720.0	5095.2	4420.8	3904.8	3444.8	3016.0	2614.4	2208.8	1970.4	1775.2	1541.6
75°	4241.6	3668.8	3098.4	2788.0	2431.2	2088.0	1777.6	1477.6	1385.6	1339.2	1201.6
77.5°	2619.2	2104.8	1675.2	1394.4	1108.8	868.8	691.2	562.4	586.4	682.4	726.4
80°	1304.0	963.2	745.6	592.8	479.2	387.2	284.0	208.0	248.8	295.2	334.4
82.5°	784.8	620.0	490.4	415.2	337.6	260.8	184.8	140.8	156.0	209.6	230.4
85°	487.2	390.4	312.0	260.8	216.0	160.0	104.8	104.0	110.4	139.2	159.2
87.5°	143.2	96.8	76.8	80.0	88.8	73.6	55.2	47.2	58.4	80.0	89.6
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°	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4	1582.4
2.5°	1603.2	1608.8	1611.2	1612.0	1612.8	1617.6	1617.6	1622.4	1624.0	1624.0	1625.6
5°	1633.6	1639.2	1641.6	1642.4	1644.0	1646.4	1645.6	1648.8	1650.4	1649.6	1649.6
7.5°	1644.8	1646.4	1646.4	1648.8	1651.2	1648.8	1647.2	1648.8	1648.0	1648.8	1648.8
10°	1640.8	1639.2	1639.2	1637.6	1640.0	1635.2	1635.2	1636.8	1636.0	1637.6	1640.0
12.5°	1631.2	1630.4	1628.0	1627.2	1630.4	1627.2	1628.0	1630.4	1632.0	1635.2	1639.2
15°	1617.6	1615.2	1615.2	1618.4	1626.4	1628.8	1632.0	1636.0	1636.8	1638.4	1640.0
17.5°	1594.4	1598.4	1608.0	1619.2	1634.4	1640.0	1641.6	1639.2	1631.2	1624.8	1618.4
20°	1562.4	1580.0	1604.8	1628.8	1647.2	1646.4	1636.0	1620.8	1601.6	1588.0	1579.2
22.5°	1535.2	1569.6	1608.0	1636.8	1648.8	1633.6	1609.6	1586.4	1564.0	1544.0	1526.4
25°	1554.4	1587.2	1620.0	1637.6	1636.8	1610.4	1578.4	1552.8	1522.4	1494.4	1464.8
27.5°	1616.8	1636.8	1646.4	1640.8	1624.0	1588.8	1553.6	1517.6	1478.4	1444.8	1410.4
30°	1659.2	1659.2	1649.6	1627.2	1597.6	1558.4	1515.2	1468.8	1422.4	1383.2	1344.0
32.5°	1645.6	1614.4	1586.4	1556.0	1522.4	1480.0	1430.4	1380.0	1327.2	1281.6	1248.0
35°	1586.4	1519.2	1460.8	1417.6	1382.4	1332.0	1274.4	1216.8	1173.6	1142.4	1123.2
37.5°	1480.8	1373.6	1288.8	1236.0	1181.6	1129.6	1063.2	1036.8	998.4	979.2	972.0
40°	1352.8	1196.0	1089.6	1021.6	964.0	899.2	854.4	837.6	823.2	819.2	816.0
42.5°	1205.6	1009.6	883.2	812.8	743.2	696.0	676.0	665.6	663.2	663.2	667.2
45°	1052.8	820.0	674.4	617.6	560.0	535.2	530.4	525.6	526.4	524.0	525.6
47.5°	934.4	658.4	508.8	456.8	427.2	419.2	413.6	412.0	412.0	408.0	403.2
50°	872.8	550.4	399.2	358.4	341.6	336.0	336.0	332.8	326.4	322.4	312.0
52.5°	856.8	494.4	345.6	310.4	296.0	291.2	286.4	281.6	272.0	263.2	251.2
55°	869.6	476.8	328.8	296.0	280.0	274.4	270.4	262.4	248.8	236.0	222.4
57.5°	923.2	488.0	335.2	300.0	285.6	281.6	277.6	265.6	248.8	230.4	215.2
60°	1069.6	540.8	362.4	321.6	309.6	310.4	304.8	289.6	265.6	239.2	216.8
62.5°	1258.4	614.4	397.6	352.0	350.4	358.4	358.4	332.0	292.8	252.8	222.4
65°	1366.4	637.6	402.4	356.0	369.6	392.8	391.2	356.0	302.4	252.8	220.0
67°	1339.2	612.8	382.4	332.8	348.8	375.2	372.0	338.4	288.0	242.4	213.6
67.5°	1317.6	604.8	377.6	327.2	343.2	364.8	364.8	331.2	281.6	239.2	211.2
70°	1160.0	534.4	353.6	305.6	305.6	311.2	307.2	283.2	249.6	220.0	201.6
72.5°	967.2	467.2	334.4	290.4	275.2	272.0	266.4	249.6	228.0	207.2	191.2
75°	749.6	413.6	319.2	274.4	254.4	247.2	241.6	228.8	212.0	194.4	180.8
77.5°	524.8	354.4	299.2	260.8	239.2	233.6	224.8	210.4	196.8	181.6	168.8
80°	325.6	292.8	260.8	235.2	212.8	204.8	193.6	180.8	169.6	160.8	151.2
82.5°	232.0	215.2	194.4	180.8	157.6	133.6	143.2	144.0	136.8	131.2	128.8
85°	155.2	140.0	129.6	117.6	104.0	93.6	96.0	103.2	104.0	101.6	101.6
87.5°	84.8	72.0	69.6	72.0	62.4	59.2	60.0	66.4	67.2	67.2	68.0
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):**

	165°	170°	175°	180°
0°	1582.4	1582.4	1582.4	1582.4
2.5°	1626.4	1628.8	1628.0	1629.6
5°	1651.2	1652.8	1652.0	1652.8
7.5°	1647.2	1650.4	1652.0	1649.6
10°	1640.8	1645.6	1648.8	1648.8
12.5°	1642.4	1650.4	1655.2	1655.2
15°	1640.8	1647.2	1648.8	1648.8
17.5°	1616.0	1616.0	1616.8	1613.6
20°	1572.8	1568.0	1566.4	1560.8
22.5°	1511.2	1500.0	1492.8	1488.8
25°	1440.8	1423.2	1412.0	1405.6
27.5°	1382.4	1367.2	1356.0	1349.6
30°	1317.6	1300.0	1293.6	1288.8
32.5°	1224.0	1207.2	1202.4	1198.4
35°	1102.4	1096.8	1084.0	1075.2
37.5°	961.6	954.4	949.6	946.4
40°	814.4	815.2	811.2	804.0
42.5°	667.2	675.2	667.2	665.6
45°	524.0	532.8	532.8	535.2
47.5°	404.0	402.4	405.6	406.4
50°	305.6	300.8	299.2	296.8
52.5°	242.4	236.8	233.6	229.6
55°	213.6	207.2	204.0	203.2
57.5°	204.0	196.0	191.2	190.4
60°	201.6	190.4	184.0	182.4
62.5°	201.6	188.0	180.8	178.4
65°	199.2	185.6	179.2	176.8
67°	196.0	184.0	177.6	176.0
67.5°	194.4	183.2	177.6	175.2
70°	190.4	180.8	174.4	172.0
72.5°	181.6	173.6	167.2	165.6
75°	172.0	164.8	160.8	159.2
77.5°	160.8	154.4	149.6	145.6
80°	144.0	136.8	129.6	128.0
82.5°	122.4	114.4	108.8	108.0
85°	98.4	92.0	85.6	85.6
87.5°	68.8	64.8	60.8	56.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)