

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: P144545

Luminaire Tested: **LDRL-RW-F03-E**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P144545
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33700)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-RW-F03-E
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(3) LIGHTBARS WITH AccuLED OPTICS - RECTANGULAR WIDE
Light Source: (21) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7438.8 lumens
Efficiency: N/A
Efficacy: 95.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type I - Short - Full Cutoff
BUG Rating: B3 - U0 - G3

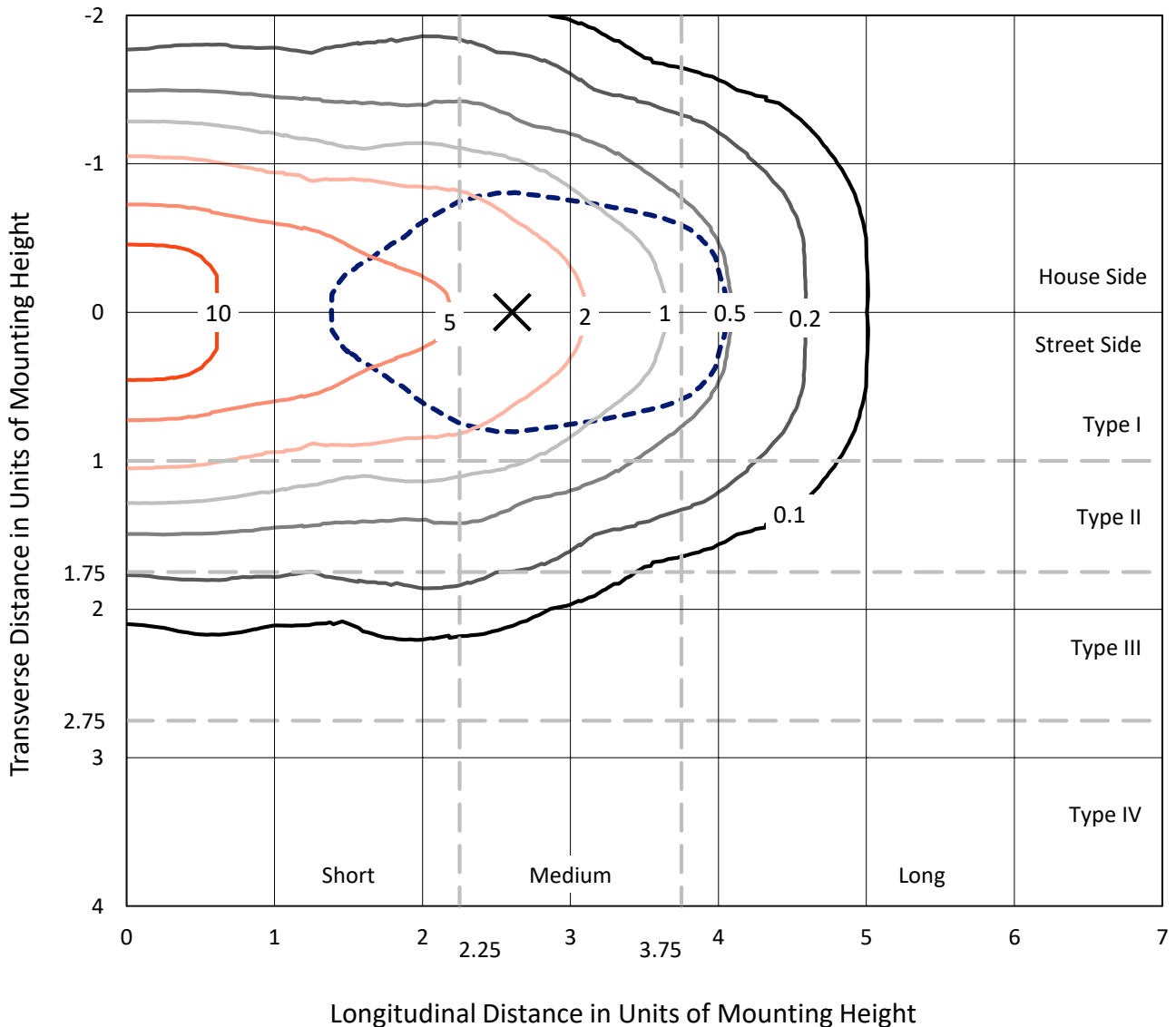
Input Watts (W): 78.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

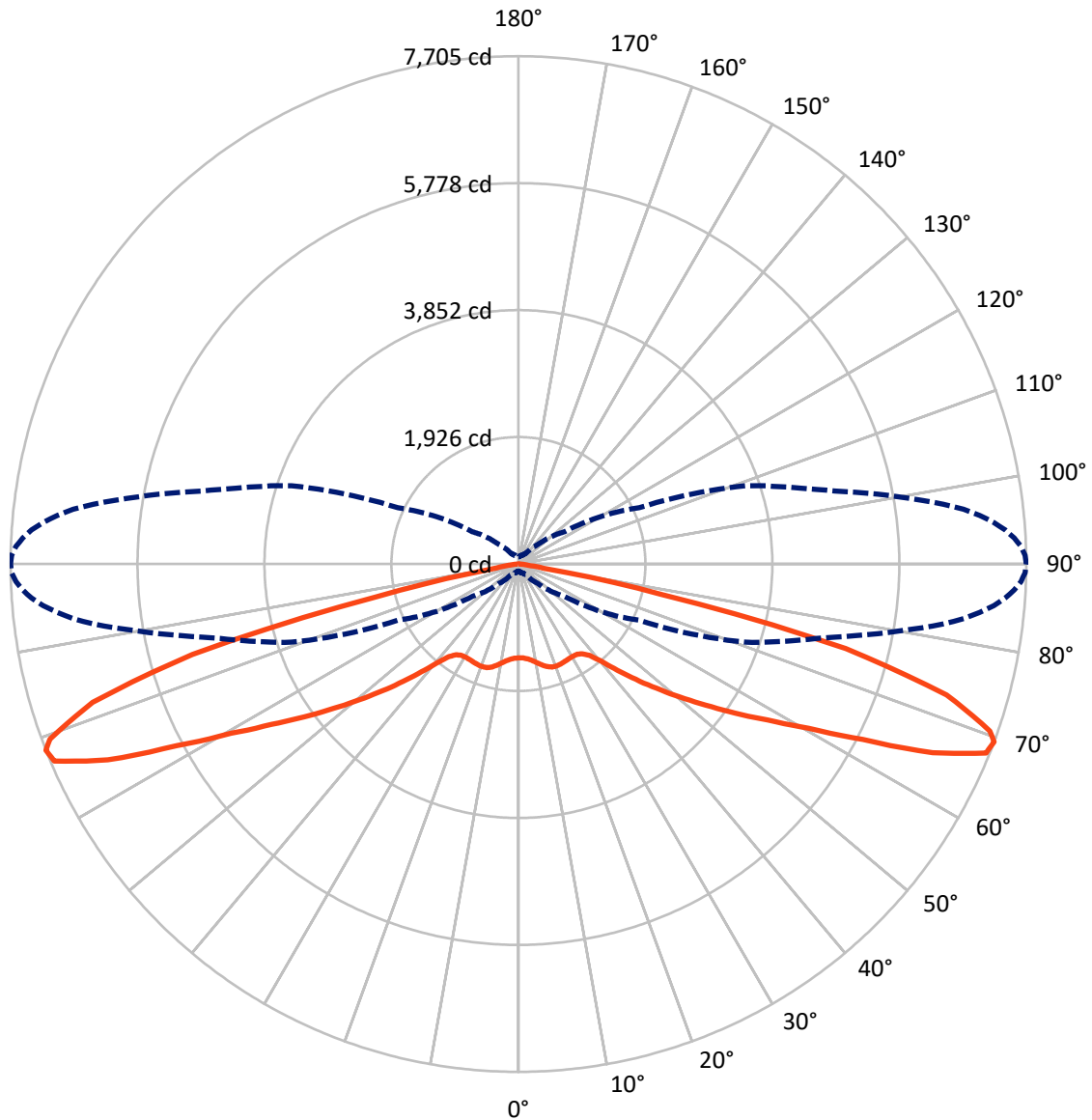
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 14.6 fc
 Type I - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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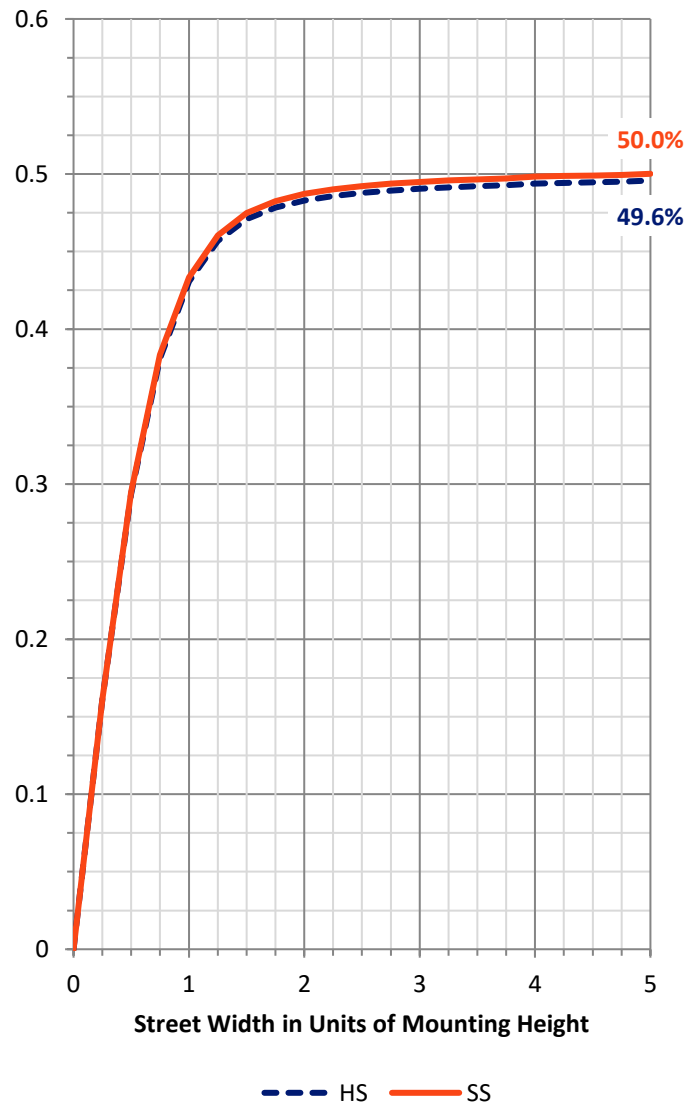
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3719.4	0.0	3719.4
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	3719.4	0.0	3719.4
	% Fixture	50.0	0.0	50.0
Total	Lumens	7438.8	0.0	7438.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.4	1.9
10°-20°	438.9	5.9
20°-30°	710.9	9.6
30°-40°	885.6	11.9
40°-50°	1102.5	14.8
50°-60°	1352.8	18.2
60°-70°	1668.4	22.4
70°-80°	1037.2	13.9
80°-90°	103.0	1.4
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°	7438.8	100.0
0°-180°	7438.8	100.0



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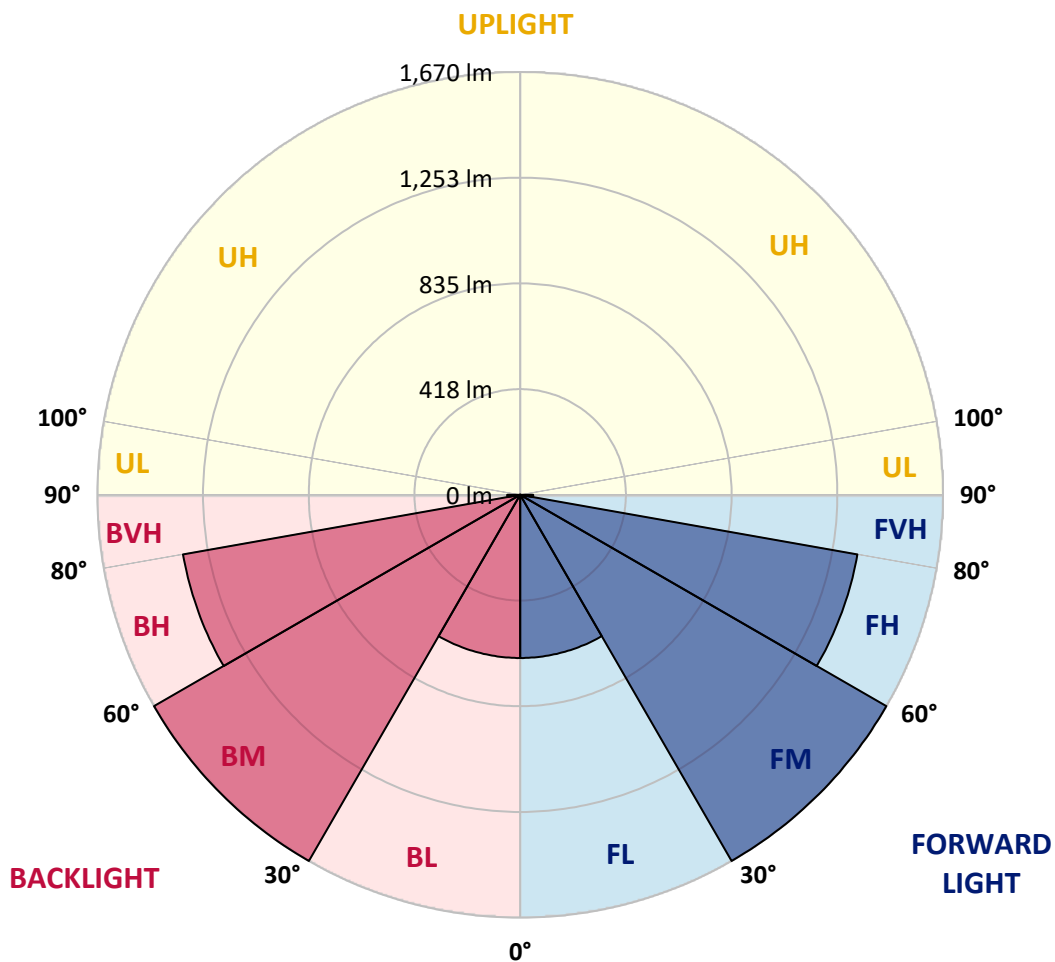
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	644.6	8.7			
FM	(30°-60°)	1670.5	22.5			
FH	(60°-80°)	1352.8	18.2			G1/1800
FVH	(80°-90°)	51.5	0.7			G1/100
BL	(0°-30°)	644.6	8.7	B2/1000		
BM	(30°-60°)	1670.5	22.5	B2/2500		
BH	(60°-80°)	1352.8	18.2	B3/2500		G3/2500
BVH	(80°-90°)	51.5	0.7			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type I Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	66°	67°	68°
0°	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5
2.5°	1428.2	1426.8	1429.5	1432.0	1431.2	1431.7	1430.7	1429.5	1429.6	1429.7	1429.8
5°	1439.4	1437.9	1440.4	1442.6	1443.4	1445.1	1445.6	1444.8	1445.2	1445.6	1445.9
7.5°	1452.8	1451.6	1454.7	1457.7	1463.4	1466.4	1469.4	1472.3	1472.6	1472.8	1473.1
10°	1465.4	1464.6	1469.9	1476.2	1485.4	1492.4	1500.8	1509.0	1509.6	1510.3	1510.9
12.5°	1473.6	1473.6	1481.5	1493.2	1508.9	1523.1	1537.4	1551.4	1552.6	1553.9	1555.2
15°	1473.0	1474.0	1486.2	1507.5	1534.8	1559.8	1577.3	1592.4	1593.7	1594.9	1596.2
17.5°	1462.9	1463.2	1480.4	1514.4	1557.1	1594.2	1617.0	1625.2	1625.6	1626.0	1626.5
20°	1434.4	1436.4	1461.0	1510.2	1574.4	1625.6	1647.2	1643.7	1643.0	1642.2	1641.5
22.5°	1385.6	1388.1	1420.8	1486.9	1577.6	1646.0	1668.2	1652.6	1650.2	1647.9	1645.5
25°	1317.8	1322.0	1357.4	1442.1	1555.8	1651.9	1681.8	1656.8	1653.1	1649.4	1645.7
27.5°	1239.2	1241.2	1283.2	1372.0	1505.0	1632.0	1688.0	1665.4	1660.8	1656.2	1651.5
30°	1148.4	1153.6	1197.2	1290.0	1433.4	1585.9	1685.6	1682.4	1677.2	1672.0	1666.8
32.5°	1058.0	1062.4	1105.3	1205.4	1351.0	1521.8	1673.2	1707.8	1703.5	1699.1	1694.8
35°	966.8	972.3	1016.4	1123.8	1269.0	1449.1	1653.6	1744.2	1742.4	1740.5	1738.6
37.5°	886.8	890.3	933.6	1045.4	1197.2	1382.4	1628.1	1793.0	1797.3	1801.6	1805.8
40°	805.4	808.8	854.2	968.6	1131.1	1325.4	1604.6	1854.4	1866.1	1877.7	1889.4
42.5°	727.2	730.1	773.9	888.1	1057.5	1276.2	1590.4	1928.8	1951.1	1973.4	1995.8
45°	646.9	648.8	690.0	801.2	973.6	1218.7	1586.8	2012.2	2044.5	2076.7	2108.9
47.5°	567.8	572.6	615.0	720.4	877.7	1136.5	1581.3	2104.6	2147.3	2190.1	2232.8
50°	492.3	497.6	541.2	641.2	785.0	1039.0	1553.6	2209.4	2261.5	2313.6	2365.7
52.5°	415.4	420.5	464.1	559.8	699.2	929.0	1476.3	2319.3	2381.3	2443.2	2505.2
55°	333.1	335.1	379.9	475.8	613.2	836.8	1353.2	2420.1	2495.1	2570.2	2645.2
57.5°	242.2	248.9	293.2	382.4	525.5	755.4	1196.7	2471.6	2565.3	2658.9	2752.6
60°	174.8	179.3	218.2	288.2	426.2	675.4	1057.8	2434.0	2559.0	2684.0	2809.0
62.5°	138.2	143.1	173.1	217.2	329.6	587.4	967.1	2330.7	2506.1	2681.5	2856.9
65°	122.4	126.8	154.6	176.4	252.1	497.0	910.1	2228.4	2465.1	2701.8	2938.6
67.5°	111.7	116.4	140.6	155.5	208.2	438.8	883.2	2151.2	2424.5	2697.9	2971.2
69°	106.8	111.0	133.2	147.1	196.4	419.0	854.2	2020.4	2291.4	2562.5	2833.5
70°	104.0	107.8	128.0	141.9	191.6	402.7	811.3	1864.9	2126.4	2387.9	2649.5
72.5°	96.4	98.8	115.9	128.8	175.4	321.4	612.0	1315.8	1537.5	1759.2	1980.9
75°	85.4	88.4	103.5	115.4	133.8	193.1	383.1	763.8	915.7	1067.6	1219.5
77.5°	73.3	76.8	89.1	108.0	107.8	125.8	232.6	438.6	512.4	586.2	660.0
80°	62.9	65.9	77.0	106.8	90.1	99.6	173.4	327.2	356.9	386.6	416.3
82.5°	49.2	51.8	64.6	88.1	72.0	75.8	132.0	298.0	318.1	338.3	358.4
85°	31.0	32.0	47.1	61.0	51.2	45.8	85.0	229.4	244.0	258.7	273.3
87.5°	12.4	15.1	22.8	21.8	22.0	18.4	27.5	82.7	90.2	97.8	105.3
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):

	69°	70°	71°	72°	73°	74°	75°	76°	77°	78°	79°
0°	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5
2.5°	1429.9	1430.0	1429.5	1428.8	1429.4	1428.8	1428.9	1429.7	1429.4	1429.4	1428.9
5°	1446.2	1446.6	1446.6	1445.0	1445.8	1446.0	1446.3	1445.8	1446.0	1446.6	1445.6
7.5°	1473.3	1473.6	1474.3	1475.1	1474.6	1474.8	1475.3	1474.8	1474.1	1475.8	1474.6
10°	1511.6	1512.2	1512.2	1514.4	1513.4	1514.2	1516.4	1516.4	1515.2	1516.9	1516.4
12.5°	1556.5	1557.8	1557.5	1557.2	1558.2	1559.0	1561.4	1561.9	1562.4	1565.2	1564.2
15°	1597.4	1598.6	1599.6	1600.1	1601.8	1602.3	1603.8	1604.8	1605.6	1606.6	1607.0
17.5°	1626.9	1627.4	1628.8	1628.1	1630.6	1630.1	1631.8	1632.6	1633.3	1634.6	1635.3
20°	1640.7	1640.0	1640.2	1639.5	1639.5	1640.0	1640.2	1641.2	1640.8	1642.0	1643.0
22.5°	1643.1	1640.8	1639.2	1637.6	1636.8	1635.2	1635.3	1635.8	1634.0	1635.3	1636.8
25°	1642.0	1638.2	1635.6	1632.6	1629.8	1627.4	1625.9	1625.4	1624.2	1624.1	1625.4
27.5°	1646.9	1642.2	1638.2	1633.3	1629.8	1626.4	1623.2	1620.7	1618.2	1617.7	1617.7
30°	1661.6	1656.4	1651.8	1645.7	1640.2	1635.8	1631.3	1627.8	1623.2	1621.2	1619.0
32.5°	1690.4	1686.0	1679.8	1674.4	1668.0	1662.5	1656.6	1651.1	1645.6	1640.7	1638.8
35°	1736.7	1734.8	1731.4	1727.6	1721.4	1714.6	1709.6	1703.2	1697.0	1689.8	1687.8
37.5°	1810.1	1814.4	1812.4	1809.6	1807.9	1805.6	1799.0	1794.8	1790.6	1784.6	1783.4
40°	1901.0	1912.6	1924.3	1932.0	1929.2	1938.4	1939.9	1940.6	1936.9	1941.9	1942.9
42.5°	2018.1	2040.4	2061.5	2076.8	2094.7	2108.0	2125.4	2132.8	2146.9	2161.6	2170.0
45°	2141.2	2173.4	2203.6	2235.1	2266.1	2300.0	2333.0	2356.2	2390.2	2415.4	2431.2
47.5°	2275.6	2318.3	2354.4	2401.6	2446.4	2486.4	2544.2	2590.5	2631.8	2671.2	2712.6
50°	2417.8	2469.9	2514.5	2572.0	2626.4	2689.3	2756.9	2815.9	2880.8	2943.4	2999.1
52.5°	2567.2	2629.1	2689.3	2748.2	2814.4	2882.8	2956.0	3041.2	3119.0	3213.4	3281.0
55°	2720.3	2795.3	2859.4	2921.1	2991.2	3067.0	3154.1	3255.0	3353.8	3457.0	3559.6
57.5°	2846.3	2940.0	3010.0	3082.1	3157.6	3232.6	3340.9	3444.2	3569.5	3696.2	3824.6
60°	2934.0	3059.0	3144.0	3235.2	3322.6	3413.7	3530.4	3660.8	3817.6	3971.2	4145.5
62.5°	3032.3	3207.6	3326.8	3448.4	3554.6	3664.1	3820.1	3970.4	4171.8	4348.6	4568.0
65°	3175.3	3412.0	3587.3	3751.3	3894.0	4043.0	4228.0	4416.0	4646.3	4890.8	5165.9
67.5°	3244.6	3518.0	3747.6	3949.9	4132.2	4322.1	4513.0	4735.5	4995.0	5289.2	5591.4
69°	3104.6	3375.6	3639.6	3844.2	4036.0	4238.9	4443.2	4667.6	4923.2	5228.5	5548.8
70°	2911.0	3172.5	3453.1	3658.2	3851.8	4062.3	4270.4	4497.0	4741.4	5056.0	5379.8
72.5°	2202.6	2424.3	2696.8	2913.4	3117.0	3329.8	3544.0	3740.6	3988.6	4291.2	4589.6
75°	1371.4	1523.4	1768.3	1986.0	2149.7	2332.0	2533.0	2719.3	2968.2	3182.6	3469.7
77.5°	733.8	807.6	950.5	1106.6	1197.6	1286.6	1417.6	1518.6	1623.4	1747.5	1866.1
80°	446.0	475.8	524.5	558.2	545.6	509.2	497.6	461.2	474.2	452.0	435.9
82.5°	378.6	398.8	428.4	448.8	433.9	375.7	309.8	260.8	226.1	192.9	164.0
85°	288.0	302.6	318.0	327.2	326.4	297.4	236.2	183.0	142.6	110.5	91.9
87.5°	112.8	120.4	131.5	129.8	135.5	136.4	106.7	82.5	58.7	39.7	34.6
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):

	80°	81°	82°	83°	84°	85°	86°	87°	88°	89°	90°
0°	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5	1424.5
2.5°	1427.9	1427.8	1428.0	1428.8	1428.8	1429.2	1428.8	1429.0	1428.2	1427.5	1428.0
5°	1445.6	1445.1	1445.6	1446.1	1446.1	1445.6	1446.8	1446.8	1446.3	1445.6	1445.8
7.5°	1475.8	1476.0	1475.3	1477.8	1475.6	1475.8	1477.3	1477.0	1476.5	1476.8	1477.0
10°	1517.9	1517.6	1518.2	1519.6	1517.4	1518.9	1520.6	1521.1	1519.8	1519.8	1520.1
12.5°	1564.4	1566.4	1566.6	1567.6	1567.6	1568.9	1569.2	1569.4	1570.4	1570.6	1569.2
15°	1609.0	1610.5	1611.5	1612.5	1611.2	1613.0	1615.0	1615.0	1614.7	1615.7	1614.2
17.5°	1636.5	1637.8	1639.5	1639.2	1639.5	1641.0	1642.2	1642.8	1643.2	1643.2	1643.5
20°	1645.2	1646.0	1647.0	1647.9	1648.4	1649.9	1650.9	1651.6	1652.2	1651.6	1651.9
22.5°	1638.3	1639.2	1641.2	1642.0	1642.2	1644.4	1645.4	1646.2	1646.7	1647.2	1646.4
25°	1626.4	1627.4	1629.4	1630.1	1630.6	1632.6	1633.8	1635.6	1636.1	1636.2	1636.5
27.5°	1618.2	1618.6	1620.2	1621.2	1621.4	1623.6	1625.4	1626.6	1626.8	1627.1	1627.1
30°	1618.4	1618.4	1620.2	1620.4	1620.2	1622.2	1623.1	1623.9	1624.4	1624.4	1624.6
32.5°	1635.5	1634.6	1636.1	1633.8	1634.0	1633.8	1633.6	1634.3	1633.8	1634.1	1633.1
35°	1683.8	1681.1	1678.9	1679.8	1676.4	1671.4	1674.2	1672.9	1670.2	1670.4	1671.2
37.5°	1776.4	1773.7	1776.2	1774.0	1774.8	1767.8	1769.6	1763.4	1761.6	1763.8	1757.4
40°	1940.9	1939.6	1944.4	1942.4	1943.6	1945.6	1947.4	1941.4	1931.5	1940.4	1940.6
42.5°	2168.8	2179.8	2184.4	2190.6	2197.2	2194.2	2200.2	2201.9	2191.0	2199.2	2201.2
45°	2454.6	2466.4	2480.3	2484.5	2495.4	2496.9	2501.4	2502.6	2492.7	2493.6	2495.9
47.5°	2754.0	2775.7	2792.1	2803.4	2814.8	2817.1	2819.6	2814.8	2815.6	2817.8	2817.8
50°	3048.2	3094.8	3123.7	3146.2	3165.8	3155.6	3164.4	3165.0	3168.0	3161.9	3165.6
52.5°	3357.5	3419.2	3467.7	3505.6	3517.5	3553.6	3538.8	3550.2	3557.8	3546.4	3553.9
55°	3659.6	3747.6	3825.6	3880.6	3919.2	3955.8	3961.5	3991.0	3987.6	3998.7	3993.7
57.5°	3946.9	4069.8	4181.2	4262.6	4318.2	4374.1	4412.0	4444.2	4447.4	4479.4	4461.3
60°	4294.4	4465.6	4608.9	4730.2	4812.2	4895.4	4961.0	5013.8	5026.0	5080.7	5062.6
62.5°	4763.2	4972.0	5155.2	5297.6	5480.2	5568.1	5695.9	5775.6	5825.4	5839.0	5864.5
65°	5422.2	5694.2	5935.8	6163.7	6369.0	6511.4	6659.2	6778.2	6873.5	6865.6	6904.7
67.5°	5911.8	6221.9	6512.9	6786.0	7007.0	7190.2	7360.2	7488.6	7573.8	7628.1	7651.1
69°	5860.8	6193.6	6514.6	6806.4	7034.2	7239.0	7404.4	7531.0	7628.6	7687.6	7704.6
70°	5691.2	6033.2	6367.8	6654.0	6886.4	7111.2	7279.6	7420.6	7513.4	7577.8	7587.7
72.5°	4922.7	5293.2	5589.2	5901.4	6125.0	6352.7	6458.6	6633.2	6754.4	6793.5	6792.7
75°	3712.9	4022.0	4282.0	4512.8	4712.9	4867.2	4917.2	5041.6	5142.1	5140.9	5131.5
77.5°	1999.4	2072.2	2169.5	2202.2	2263.8	2262.8	2201.0	2220.4	2277.4	2167.0	2202.7
80°	429.0	422.5	417.0	413.8	412.1	412.8	415.1	401.0	414.8	408.6	382.4
82.5°	149.4	145.8	142.4	144.9	143.1	144.6	144.1	145.8	145.6	145.1	141.7
85°	84.0	81.0	79.2	80.5	77.8	75.3	73.6	72.8	72.6	70.8	69.8
87.5°	32.0	31.7	31.4	30.2	27.2	25.0	23.6	20.6	19.3	17.6	16.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)