

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: P146865

Luminaire Tested: **LDRL-T4-F03-E**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P146865  
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-F03-E  
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE  
(3) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT  
Light Source: (21) 4000K CCT, 70 CRI LEDs  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7277.7 lumens  
Efficiency: N/A  
Efficacy: 92.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B1 - U0 - G2

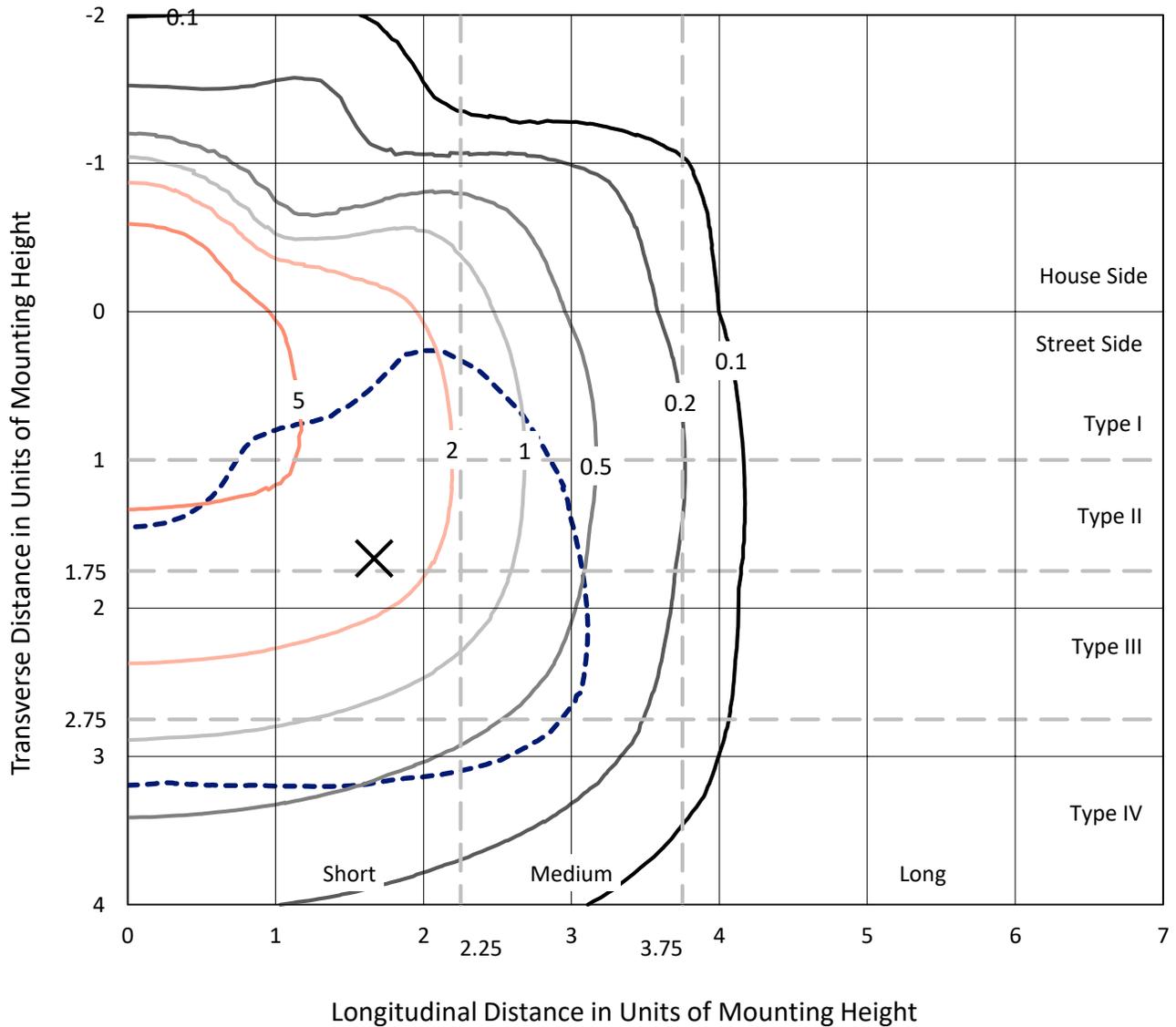
Input Watts (W): 78.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

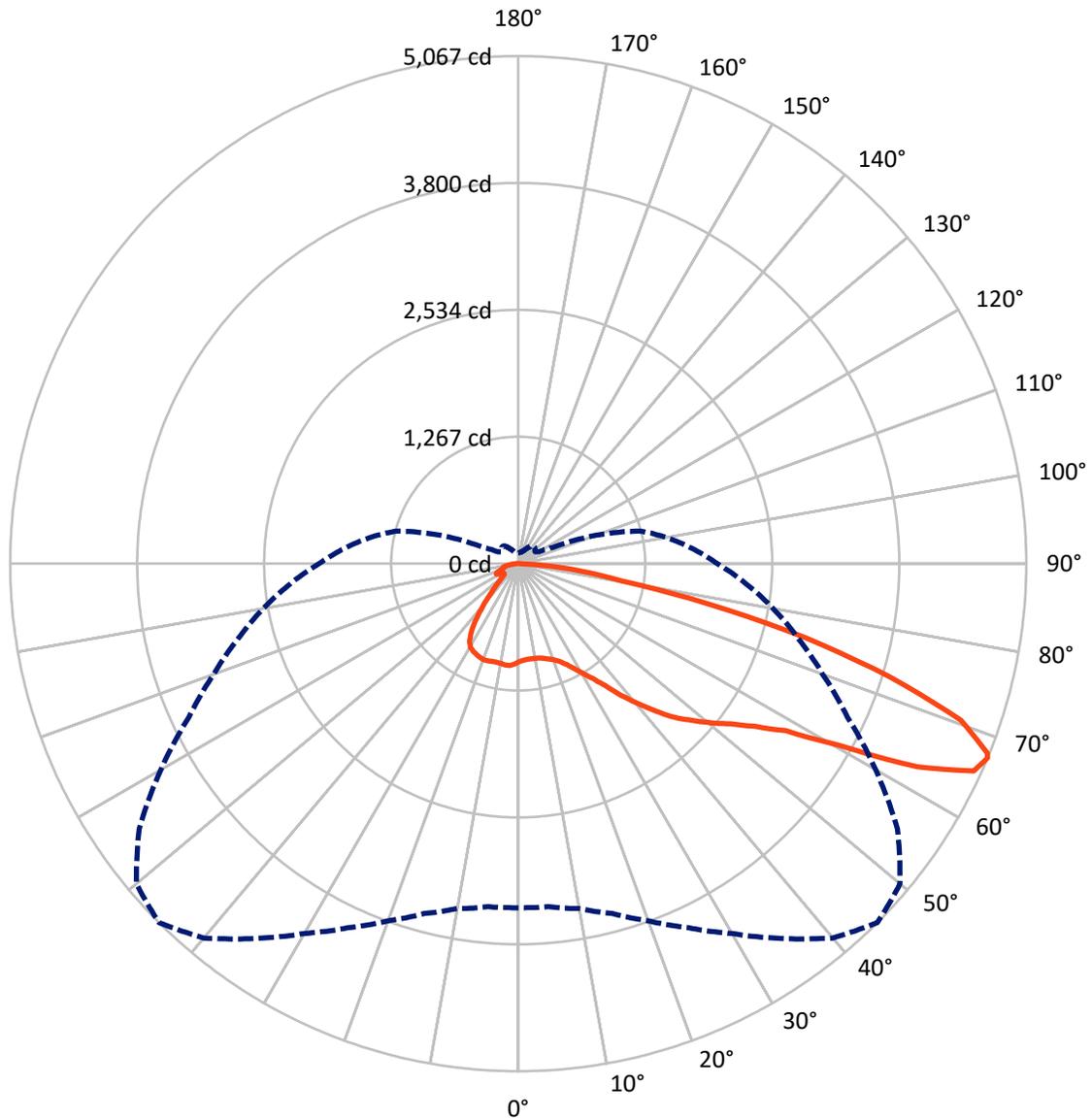
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 10 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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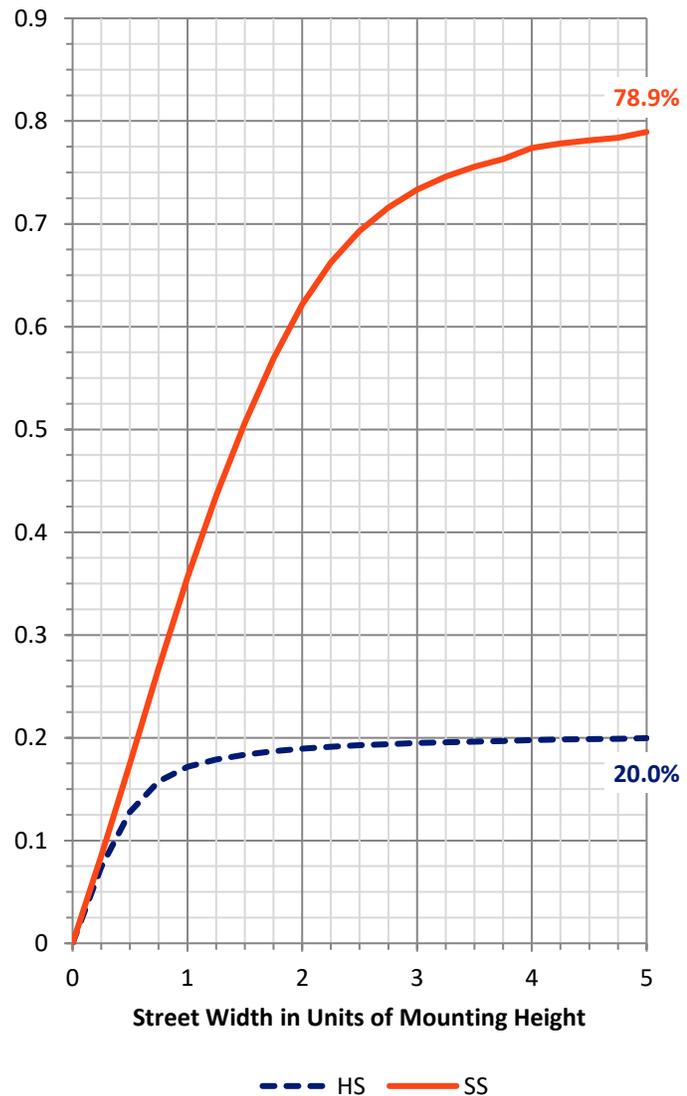
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1474.6	0.0	1474.6
	% Fixture	20.3	0.0	20.3
<b>Street Side</b>	Lumens	5803.1	0.0	5803.1
	% Fixture	79.7	0.0	79.7
<b>Total</b>	Lumens	7277.7	0.0	7277.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	94.4	1.3
10°-20°	283.5	3.9
20°-30°	481.9	6.6
30°-40°	724.3	10.0
40°-50°	941.7	12.9
50°-60°	1293.0	17.8
60°-70°	2039.7	28.0
70°-80°	1232.4	16.9
80°-90°	186.7	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°	7277.7	100.0
0°-180°	7277.7	100.0

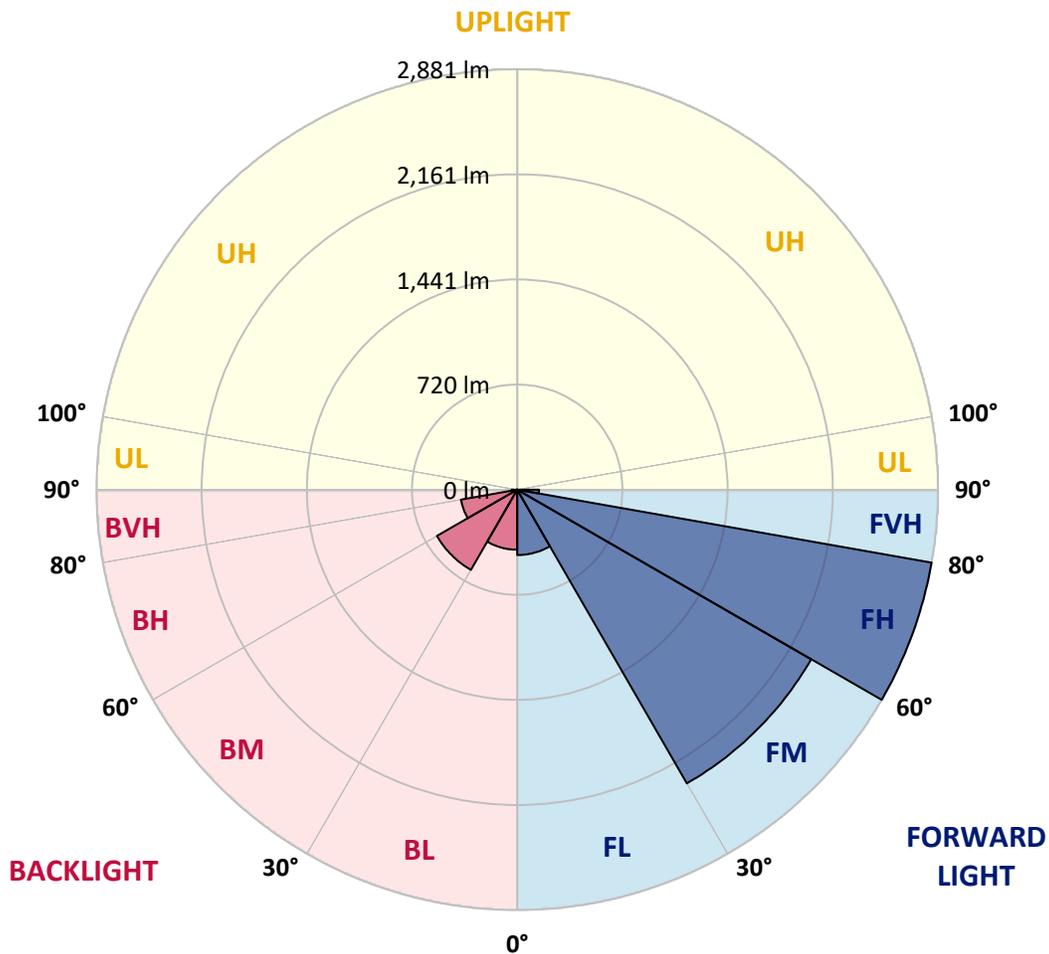


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	448.2	6.2			
FM	(30°-60°)	2324.4	31.9			
FH	(60°-80°)	2881.4	39.6			G2/5000
FVH	(80°-90°)	149.1	2.0			G2/225
BL	(0°-30°)	411.7	5.7	B1/500		
BM	(30°-60°)	634.6	8.7	B1/1000		
BH	(60°-80°)	390.7	5.4	B1/500		G1/500
BVH	(80°-90°)	37.6	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7
2.5°	957.9	959.9	958.4	958.4	958.9	959.4	960.4	962.4	962.9	965.9	966.4
5°	938.6	939.1	939.1	939.6	942.6	945.1	947.5	951.0	954.0	959.4	962.9
7.5°	931.7	933.7	933.2	934.2	937.1	939.6	942.6	947.5	955.0	959.4	964.4
10°	943.1	944.6	943.1	943.6	944.1	946.5	947.5	951.0	956.9	960.9	965.4
12.5°	969.3	969.3	967.8	966.9	965.4	965.9	963.9	963.4	966.4	966.9	967.4
15°	1004.0	1008.0	1003.0	999.1	997.1	995.1	988.6	986.2	985.7	981.2	976.8
17.5°	1039.2	1040.2	1037.2	1032.7	1029.8	1025.3	1019.9	1014.9	1009.0	1002.0	993.1
20°	1078.3	1078.8	1074.8	1068.4	1064.9	1059.5	1052.5	1044.1	1036.7	1025.8	1015.9
22.5°	1132.8	1132.3	1124.4	1118.9	1114.0	1107.5	1097.6	1086.2	1074.3	1061.5	1047.6
25°	1195.2	1195.2	1189.7	1180.8	1178.4	1168.9	1158.0	1144.7	1132.3	1114.0	1097.1
27.5°	1266.5	1267.0	1257.1	1252.2	1246.7	1236.8	1229.4	1219.0	1202.1	1183.8	1166.5
30°	1351.2	1348.7	1340.8	1330.4	1328.4	1320.5	1310.1	1302.7	1281.9	1269.0	1249.7
32.5°	1431.5	1435.4	1433.4	1421.6	1423.5	1415.6	1406.7	1401.2	1379.5	1367.1	1349.2
35°	1551.3	1554.8	1557.8	1553.3	1555.8	1551.3	1543.9	1529.5	1511.7	1495.4	1470.6
37.5°	1644.4	1647.9	1649.9	1660.8	1676.6	1692.0	1698.9	1691.5	1692.5	1667.7	1634.5
40°	1720.7	1729.1	1741.0	1761.8	1793.5	1822.8	1838.6	1851.0	1857.4	1834.2	1791.1
42.5°	1797.0	1805.9	1822.3	1855.4	1899.0	1941.1	1974.3	2012.5	2019.4	2013.5	1976.8
45°	1876.7	1887.1	1907.5	1945.1	1996.1	2051.1	2104.6	2158.6	2185.8	2190.3	2145.7
47.5°	1972.8	1987.7	2006.5	2049.1	2098.6	2160.6	2227.4	2296.8	2339.4	2339.4	2287.9
50°	2092.7	2109.5	2125.4	2168.0	2217.5	2281.4	2358.7	2436.0	2493.9	2497.4	2435.0
52.5°	2260.6	2263.1	2272.5	2311.6	2354.7	2426.1	2499.4	2589.0	2655.9	2658.9	2587.0
55°	2464.7	2464.7	2475.6	2508.3	2548.4	2607.3	2683.1	2782.7	2853.0	2868.4	2776.2
57.5°	2733.1	2743.1	2748.5	2786.6	2813.9	2876.3	2939.7	3048.2	3137.8	3147.7	3054.1
60°	3170.0	3151.2	3181.4	3215.1	3279.0	3324.6	3432.5	3541.5	3655.9	3683.2	3582.6
62.5°	3600.4	3620.8	3657.9	3718.8	3828.3	3930.3	4084.9	4250.3	4428.1	4464.8	4388.0
65°	3627.2	3639.6	3691.1	3796.1	3945.7	4127.5	4340.4	4589.6	4854.6	4991.8	4863.0
67°	3435.0	3438.5	3496.9	3616.3	3795.6	4011.1	4263.2	4567.3	4878.4	5067.1	4971.0
67.5°	3374.1	3380.5	3438.0	3559.8	3741.1	3961.5	4218.6	4531.1	4849.6	5046.8	4960.1
70°	3016.5	3016.5	3078.4	3201.2	3371.1	3586.1	3855.0	4170.6	4516.8	4682.7	4608.9
72.5°	2567.7	2551.4	2621.2	2714.3	2853.0	3040.7	3257.2	3506.3	3766.9	3887.7	3858.5
75°	1866.3	1897.1	1933.2	2002.1	2122.4	2270.5	2397.3	2619.7	2824.3	2958.0	2922.9
77.5°	1018.4	1030.3	1130.3	1171.4	1276.9	1386.9	1526.1	1682.1	1843.1	1927.3	1893.1
80°	605.3	628.6	688.0	737.0	794.0	877.7	978.7	1012.9	1044.6	1042.6	980.7
82.5°	382.4	410.6	475.0	517.1	546.8	595.4	650.3	693.4	702.9	656.3	584.5
85°	61.9	102.5	268.0	315.0	333.8	360.1	400.7	419.0	391.3	341.8	354.2
87.5°	24.3	29.2	81.7	103.5	109.5	57.5	99.6	116.9	59.4	30.2	68.4
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°	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7
2.5°	969.3	971.8	974.3	977.3	978.2	980.7	985.2	984.7	988.2	989.6	992.1
5°	967.4	972.8	976.8	982.2	984.2	989.6	995.6	997.6	1002.0	1005.5	1008.5
7.5°	971.3	977.3	982.2	988.6	993.1	997.6	1002.0	1007.5	1011.4	1013.9	1015.9
10°	972.8	979.2	985.2	990.6	995.6	999.1	1004.0	1008.5	1012.4	1013.9	1014.4
12.5°	973.3	977.8	983.7	989.6	994.1	998.6	1002.0	1007.0	1009.9	1010.4	1009.5
15°	977.3	977.8	981.7	988.6	993.1	997.6	1000.0	1002.5	1004.5	1003.0	1001.5
17.5°	989.1	985.7	985.7	989.1	991.6	993.6	994.1	993.6	991.6	988.6	986.2
20°	1008.5	1001.5	996.1	994.1	990.1	985.2	978.7	972.8	965.4	961.9	961.4
22.5°	1038.7	1028.3	1018.4	1008.5	995.6	981.2	966.4	953.5	943.1	937.6	938.1
25°	1090.2	1074.8	1063.4	1046.1	1025.3	1005.0	985.7	968.3	956.0	946.1	948.0
27.5°	1159.5	1142.2	1132.3	1112.5	1088.7	1062.9	1040.2	1016.4	998.6	986.2	988.6
30°	1240.8	1235.8	1219.5	1199.7	1177.4	1148.1	1114.0	1078.3	1046.1	1025.8	1021.8
32.5°	1338.8	1333.4	1315.6	1298.7	1270.0	1237.8	1193.2	1136.7	1086.2	1047.6	1030.8
35°	1459.7	1446.3	1424.5	1408.2	1376.0	1334.4	1276.9	1200.6	1123.9	1065.9	1023.8
37.5°	1610.3	1577.1	1540.9	1498.3	1450.8	1400.3	1333.9	1244.7	1149.6	1067.4	992.6
40°	1753.9	1700.4	1640.5	1573.1	1515.2	1454.2	1385.4	1283.4	1167.0	1057.0	945.6
42.5°	1913.9	1830.7	1749.5	1656.8	1580.6	1508.2	1429.5	1310.6	1170.4	1028.8	884.6
45°	2067.9	1961.0	1852.0	1737.6	1640.5	1560.2	1470.6	1333.9	1169.4	999.1	824.2
47.5°	2205.1	2077.4	1942.6	1813.8	1700.9	1612.7	1514.7	1365.6	1182.8	990.6	784.1
50°	2333.4	2185.8	2027.8	1884.7	1761.8	1671.7	1570.6	1415.6	1223.9	1009.9	778.1
52.5°	2465.7	2305.2	2124.4	1970.4	1842.1	1737.6	1635.5	1479.5	1281.4	1049.6	791.5
55°	2638.0	2453.8	2261.1	2090.2	1943.1	1830.7	1712.8	1556.8	1343.3	1095.6	816.8
57.5°	2894.6	2679.2	2460.2	2276.5	2106.6	1966.4	1837.1	1658.3	1445.8	1165.0	872.2
60°	3355.3	3116.5	2862.9	2622.7	2427.0	2263.1	2098.6	1876.7	1635.0	1322.5	999.5
62.5°	4107.6	3777.3	3426.6	3110.6	2841.6	2619.7	2387.9	2121.4	1839.6	1513.7	1192.2
65°	4559.9	4104.2	3657.9	3291.4	2973.4	2689.1	2408.7	2122.4	1849.5	1564.7	1278.9
67°	4615.8	4116.1	3622.2	3231.9	2891.2	2581.6	2277.5	1984.7	1740.5	1501.8	1255.1
67.5°	4599.0	4092.3	3588.6	3194.3	2850.0	2550.4	2251.2	1951.5	1713.8	1475.0	1237.3
70°	4267.1	3771.3	3273.0	2889.7	2559.8	2253.2	1970.4	1670.2	1486.4	1315.6	1110.0
72.5°	3541.5	3154.7	2737.1	2417.6	2132.8	1867.3	1618.7	1367.6	1220.0	1099.1	954.5
75°	2626.2	2271.5	1918.4	1726.2	1505.3	1292.8	1100.6	914.8	857.9	829.2	744.0
77.5°	1621.7	1303.2	1037.2	863.3	686.5	537.9	428.0	348.2	363.1	422.5	449.7
80°	807.4	596.4	461.6	367.0	296.7	239.7	175.8	128.8	154.0	182.8	207.0
82.5°	485.9	383.9	303.6	257.1	209.0	161.5	114.4	87.2	96.6	129.8	142.7
85°	301.6	241.7	193.2	161.5	133.7	99.1	64.9	64.4	68.4	86.2	98.6
87.5°	88.7	59.9	47.6	49.5	55.0	45.6	34.2	29.2	36.2	49.5	55.5
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°	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7	979.7
2.5°	992.6	996.1	997.6	998.1	998.6	1001.5	1001.5	1004.5	1005.5	1005.5	1006.5
5°	1011.4	1014.9	1016.4	1016.9	1017.9	1019.4	1018.9	1020.8	1021.8	1021.3	1021.3
7.5°	1018.4	1019.4	1019.4	1020.8	1022.3	1020.8	1019.9	1020.8	1020.3	1020.8	1020.8
10°	1015.9	1014.9	1014.9	1013.9	1015.4	1012.4	1012.4	1013.4	1012.9	1013.9	1015.4
12.5°	1009.9	1009.5	1008.0	1007.5	1009.5	1007.5	1008.0	1009.5	1010.4	1012.4	1014.9
15°	1001.5	1000.0	1000.0	1002.0	1007.0	1008.5	1010.4	1012.9	1013.4	1014.4	1015.4
17.5°	987.2	989.6	995.6	1002.5	1011.9	1015.4	1016.4	1014.9	1009.9	1006.0	1002.0
20°	967.4	978.2	993.6	1008.5	1019.9	1019.4	1012.9	1003.5	991.6	983.2	977.8
22.5°	950.5	971.8	995.6	1013.4	1020.8	1011.4	996.6	982.2	968.3	956.0	945.1
25°	962.4	982.7	1003.0	1013.9	1013.4	997.1	977.3	961.4	942.6	925.2	906.9
27.5°	1001.0	1013.4	1019.4	1015.9	1005.5	983.7	961.9	939.6	915.3	894.5	873.2
30°	1027.3	1027.3	1021.3	1007.5	989.1	964.9	938.1	909.4	880.7	856.4	832.1
32.5°	1018.9	999.5	982.2	963.4	942.6	916.3	885.6	854.4	821.7	793.5	772.7
35°	982.2	940.6	904.4	877.7	855.9	824.7	789.0	753.4	726.6	707.3	695.4
37.5°	916.8	850.5	798.0	765.3	731.6	699.4	658.3	641.9	618.2	606.3	601.8
40°	837.6	740.5	674.6	632.5	596.9	556.7	529.0	518.6	509.7	507.2	505.2
42.5°	746.4	625.1	546.8	503.2	460.1	430.9	418.5	412.1	410.6	410.6	413.1
45°	651.8	507.7	417.6	382.4	346.7	331.4	328.4	325.4	325.9	324.4	325.4
47.5°	578.5	407.6	315.0	282.8	264.5	259.5	256.1	255.1	255.1	252.6	249.6
50°	540.4	340.8	247.2	221.9	211.5	208.0	208.0	206.1	202.1	199.6	193.2
52.5°	530.5	306.1	214.0	192.2	183.3	180.3	177.3	174.4	168.4	163.0	155.5
55°	538.4	295.2	203.6	183.3	173.4	169.9	167.4	162.5	154.0	146.1	137.7
57.5°	571.6	302.1	207.5	185.7	176.8	174.4	171.9	164.4	154.0	142.7	133.2
60°	662.2	334.8	224.4	199.1	191.7	192.2	188.7	179.3	164.4	148.1	134.2
62.5°	779.1	380.4	246.2	217.9	216.9	221.9	221.9	205.6	181.3	156.5	137.7
65°	846.0	394.8	249.1	220.4	228.8	243.2	242.2	220.4	187.2	156.5	136.2
67°	829.2	379.4	236.8	206.1	216.0	232.3	230.3	209.5	178.3	150.1	132.2
67.5°	815.8	374.5	233.8	202.6	212.5	225.9	225.9	205.1	174.4	148.1	130.8
70°	718.2	330.9	218.9	189.2	189.2	192.7	190.2	175.3	154.5	136.2	124.8
72.5°	598.8	289.3	207.0	179.8	170.4	168.4	164.9	154.5	141.2	128.3	118.4
75°	464.1	256.1	197.6	169.9	157.5	153.1	149.6	141.7	131.3	120.4	111.9
77.5°	324.9	219.4	185.2	161.5	148.1	144.6	139.2	130.3	121.8	112.4	104.5
80°	201.6	181.3	161.5	145.6	131.8	126.8	119.9	111.9	105.0	99.6	93.6
82.5°	143.6	133.2	120.4	111.9	97.6	82.7	88.7	89.2	84.7	81.2	79.7
85°	96.1	86.7	80.2	72.8	64.4	58.0	59.4	63.9	64.4	62.9	62.9
87.5°	52.5	44.6	43.1	44.6	38.6	36.7	37.1	41.1	41.6	41.6	42.1
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°	979.7	979.7	979.7	979.7
2.5°	1007.0	1008.5	1008.0	1009.0
5°	1022.3	1023.3	1022.8	1023.3
7.5°	1019.9	1021.8	1022.8	1021.3
10°	1015.9	1018.9	1020.8	1020.8
12.5°	1016.9	1021.8	1024.8	1024.8
15°	1015.9	1019.9	1020.8	1020.8
17.5°	1000.5	1000.5	1001.0	999.1
20°	973.8	970.8	969.8	966.4
22.5°	935.6	928.7	924.3	921.8
25°	892.1	881.2	874.2	870.3
27.5°	855.9	846.5	839.6	835.6
30°	815.8	804.9	800.9	798.0
32.5°	757.8	747.4	744.5	742.0
35°	682.5	679.1	671.2	665.7
37.5°	595.4	590.9	587.9	586.0
40°	504.2	504.7	502.2	497.8
42.5°	413.1	418.0	413.1	412.1
45°	324.4	329.9	329.9	331.4
47.5°	250.1	249.1	251.1	251.6
50°	189.2	186.2	185.2	183.8
52.5°	150.1	146.6	144.6	142.2
55°	132.2	128.3	126.3	125.8
57.5°	126.3	121.4	118.4	117.9
60°	124.8	117.9	113.9	112.9
62.5°	124.8	116.4	111.9	110.5
65°	123.3	114.9	111.0	109.5
67°	121.4	113.9	110.0	109.0
67.5°	120.4	113.4	110.0	108.5
70°	117.9	111.9	108.0	106.5
72.5°	112.4	107.5	103.5	102.5
75°	106.5	102.0	99.6	98.6
77.5°	99.6	95.6	92.6	90.1
80°	89.2	84.7	80.2	79.3
82.5°	75.8	70.8	67.4	66.9
85°	60.9	57.0	53.0	53.0
87.5°	42.6	40.1	37.6	35.2
90°	0.0	0.0	0.0	0.0

(END OF REPORT)