

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: P145118

Luminaire Tested: **LDRL-SL3-E01-E-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145118
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33702)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL3-E01-E-8030
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(1) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL
Light Source: (21) 3000K CCT, 80 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2505.6 lumens
Efficiency: N/A
Efficacy: 101.4 lumens/watt
Luminous Opening: Rectangular (W 0.17' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G1

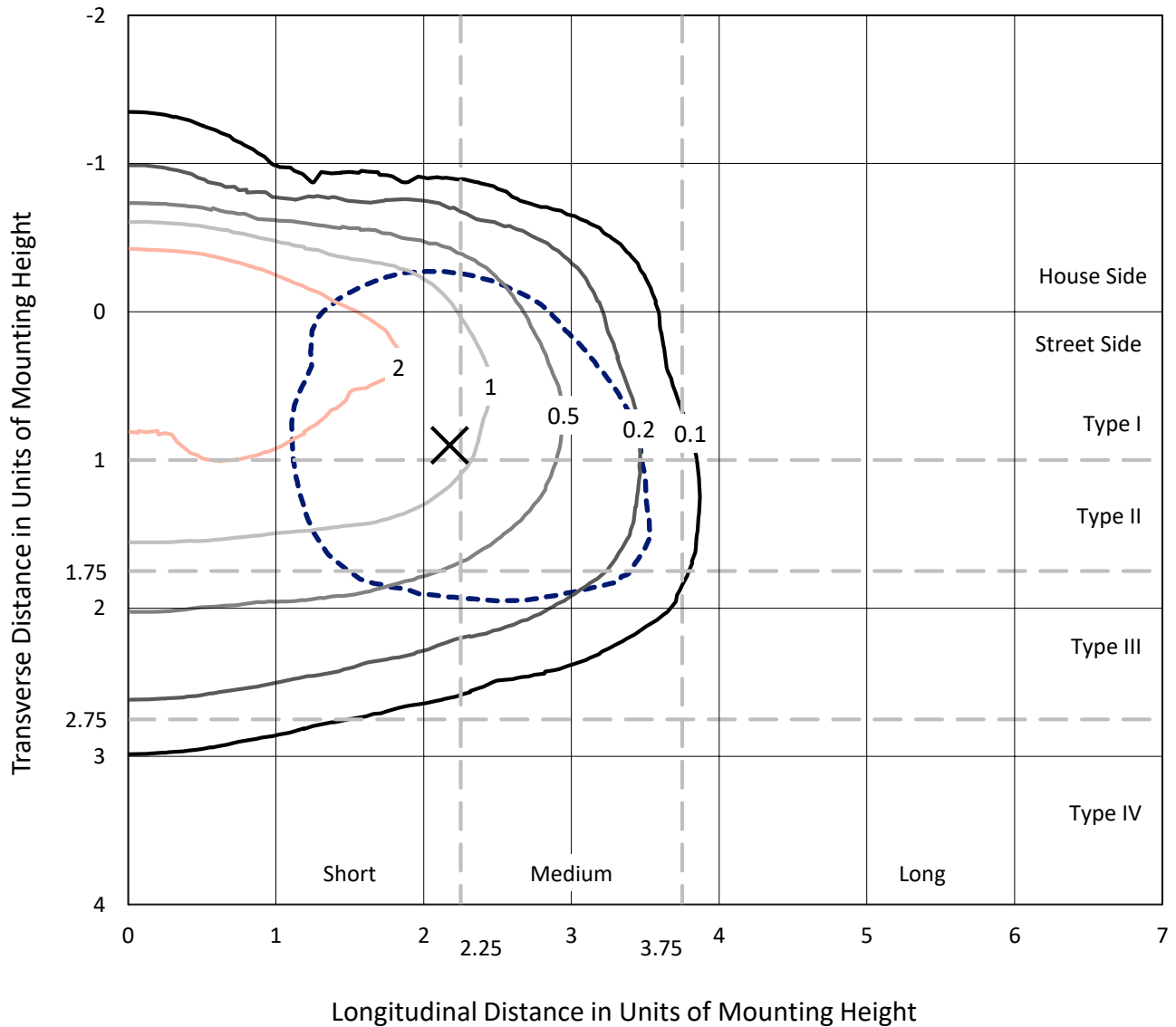
Input Watts (W): 24.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

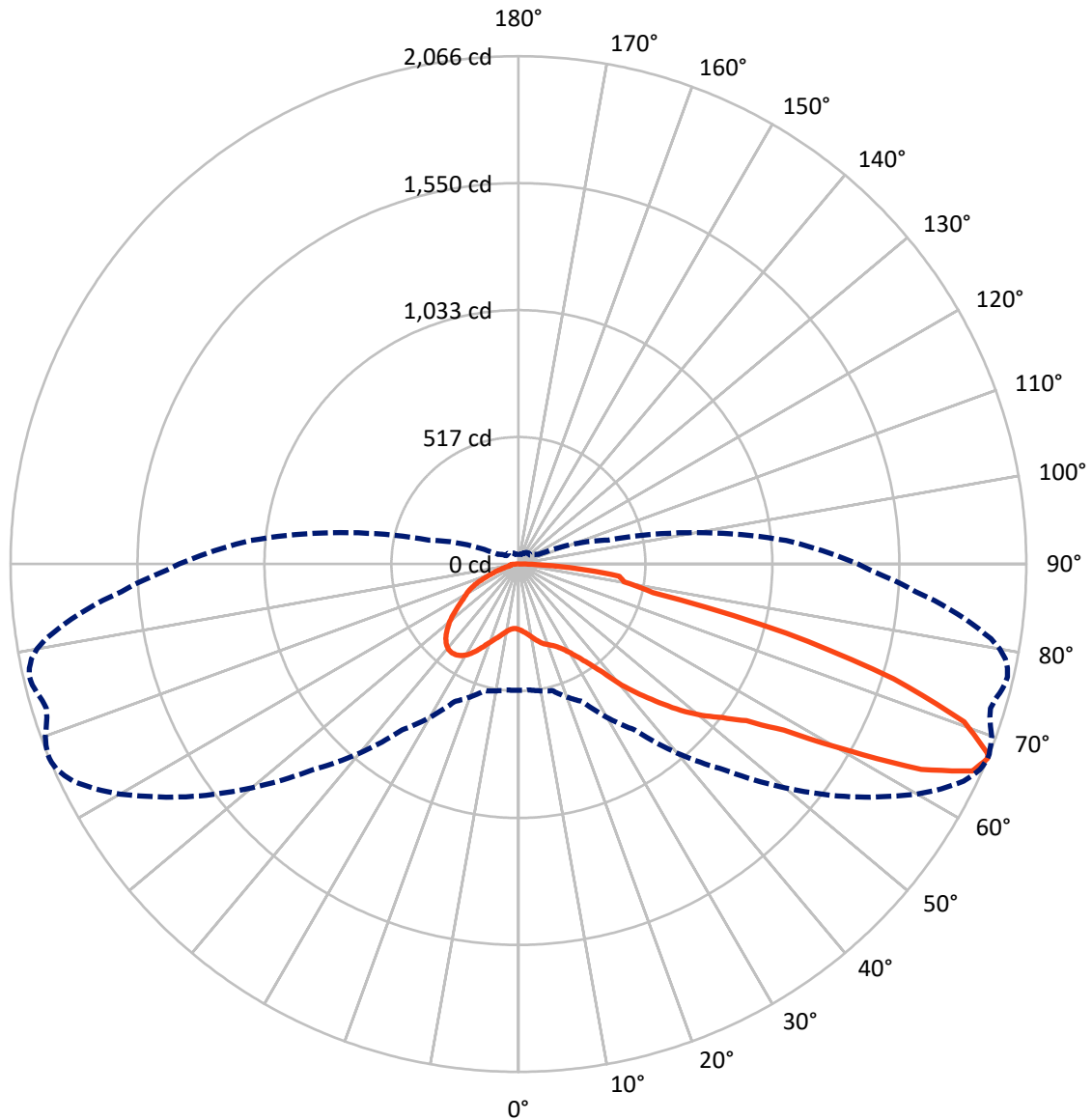
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 3.4 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	593.3	0.0	593.3
	% Fixture	23.7	0.0	23.7
Street Side	Lumens	1912.3	0.0	1912.3
	% Fixture	76.3	0.0	76.3
Total	Lumens	2505.6	0.0	2505.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.6	1.1
10°-20°	91.1	3.6
20°-30°	162.2	6.5
30°-40°	236.2	9.4
40°-50°	364.0	14.5
50°-60°	533.0	21.3
60°-70°	707.8	28.2
70°-80°	333.6	13.3
80°-90°	51.0	2.0
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°	2505.6	100.0
0°-180°	2505.6	100.0



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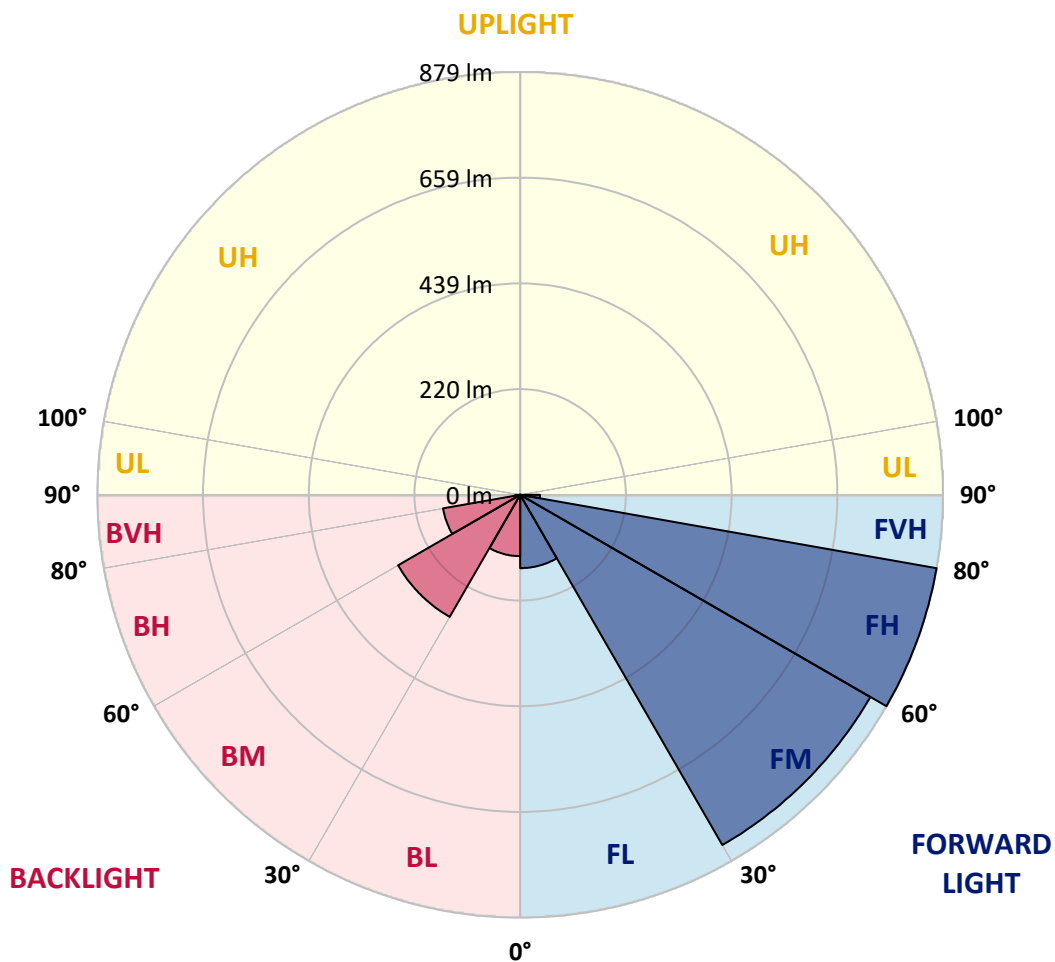
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	152.3	6.1			
FM	(30°-60°)	840.2	33.5			
FH	(60°-80°)	878.6	35.1			G1/1800
FVH	(80°-90°)	41.1	1.6			G1/100
BL	(0°-30°)	127.5	5.1	B1/500		
BM	(30°-60°)	293.0	11.7	B1/1000		
BH	(60°-80°)	162.9	6.5	B1/500		G1/500
BVH	(80°-90°)	9.9	0.4			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5
2.5°	279.9	278.7	278.9	279.4	277.7	276.8	275.0	273.8	273.6	273.5	272.8
5°	296.2	295.1	295.6	294.2	291.0	288.8	284.9	282.9	282.6	282.2	281.4
7.5°	313.3	311.8	310.1	308.6	305.0	301.5	296.4	293.4	293.0	292.5	292.0
10°	333.5	331.4	330.0	325.3	319.2	314.3	309.2	306.0	305.9	305.4	304.3
12.5°	356.3	354.0	351.4	345.2	335.7	328.5	322.6	320.7	319.2	319.4	318.4
15°	379.0	376.4	373.0	365.1	352.6	341.8	334.2	331.5	331.7	330.8	331.4
17.5°	398.0	395.8	390.9	380.8	366.3	351.4	341.8	340.6	341.0	340.8	341.3
20°	410.5	409.2	401.7	389.6	373.2	356.8	347.0	347.0	347.2	347.9	349.1
22.5°	418.1	416.1	406.3	389.2	373.0	359.4	351.8	353.5	354.5	355.0	356.8
25°	422.3	419.8	406.5	383.8	367.3	361.2	358.9	363.1	364.8	365.6	368.7
27.5°	422.3	419.3	404.3	377.1	360.7	366.8	372.4	379.6	380.8	383.3	386.9
30°	417.6	415.2	400.9	372.0	359.0	377.3	394.1	402.4	405.3	408.2	412.7
32.5°	412.5	410.5	399.2	374.7	368.5	399.2	427.4	438.7	440.4	442.8	447.5
35°	412.2	411.5	406.6	391.9	397.0	439.4	477.5	485.3	490.0	491.2	493.2
37.5°	415.7	417.1	421.3	419.8	438.0	499.1	543.2	558.7	562.4	560.4	562.3
40°	424.0	427.4	443.1	462.5	500.7	571.4	632.7	650.5	654.6	653.4	652.9
42.5°	450.2	454.7	477.9	519.4	565.8	646.2	715.7	734.9	736.3	737.0	732.6
45°	491.2	493.7	524.5	577.5	636.4	726.7	798.6	820.0	819.2	815.8	812.6
47.5°	537.8	543.0	579.8	644.0	709.3	801.1	882.5	903.4	905.3	902.2	896.3
50°	580.2	584.2	625.7	701.9	773.6	863.1	953.2	974.3	974.0	975.7	977.3
52.5°	613.6	617.3	656.8	740.5	820.9	915.1	1006.5	1032.5	1036.6	1039.3	1042.7
55°	630.8	634.7	671.1	756.6	849.6	965.9	1068.2	1105.5	1112.4	1118.5	1124.0
57.5°	631.1	636.2	669.6	755.4	864.4	1011.3	1149.7	1216.7	1226.5	1242.0	1261.1
60°	620.8	627.9	658.0	744.4	881.5	1068.8	1284.0	1412.3	1431.6	1458.8	1483.2
62.5°	594.0	601.1	627.9	716.5	901.4	1142.6	1478.2	1666.2	1707.2	1737.3	1785.7
65°	551.6	558.4	581.0	670.5	885.5	1200.8	1622.8	1848.3	1890.2	1927.8	1984.7
67°	513.8	514.5	533.6	617.6	823.7	1182.8	1651.9	1872.6	1911.3	1949.5	2015.5
67.5°	500.5	504.2	519.1	600.1	800.3	1169.4	1640.4	1859.5	1897.0	1937.6	2005.0
70°	404.6	405.6	420.0	478.7	635.0	969.6	1473.4	1691.5	1717.2	1776.8	1842.9
72.5°	246.8	245.1	249.7	293.2	417.9	671.5	1179.7	1392.6	1427.7	1478.5	1523.2
75°	135.9	144.0	149.6	179.8	234.8	394.8	803.3	1007.6	1059.0	1089.3	1098.2
77.5°	83.0	82.4	84.9	116.0	192.6	270.1	443.8	591.1	619.8	628.4	595.2
80°	39.5	41.0	40.5	47.8	93.3	227.9	310.3	379.6	394.1	402.4	413.2
82.5°	21.6	22.5	25.5	28.5	36.8	98.1	267.7	350.1	359.9	374.1	389.9
85°	13.5	14.2	19.6	20.6	22.6	30.2	111.6	204.6	212.9	241.0	250.0
87.5°	5.6	6.1	10.6	9.6	11.5	10.6	33.8	52.0	55.2	58.7	65.2
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):

	65°	66°	67°	67.5°	68°	69°	70°	71°	72°	73°	74°
0°	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5
2.5°	272.9	272.8	272.1	271.9	272.3	272.3	271.9	271.4	271.3	271.1	270.8
5°	281.0	280.7	280.2	279.9	279.7	279.7	279.2	278.7	278.2	277.5	277.3
7.5°	290.7	290.7	290.5	290.0	289.5	288.8	288.3	287.8	287.3	287.0	286.5
10°	303.3	304.0	302.8	302.5	302.3	301.3	301.1	300.6	300.3	299.4	299.4
12.5°	318.4	317.7	317.5	316.8	316.8	316.3	316.2	316.0	315.7	315.0	314.8
15°	330.8	330.8	330.7	330.3	330.7	330.3	329.8	330.2	329.7	329.8	329.3
17.5°	341.0	341.6	341.5	341.6	341.5	341.5	341.8	341.8	342.2	341.5	341.6
20°	349.4	350.4	350.9	350.6	350.9	351.1	351.9	352.3	352.8	353.1	353.1
22.5°	358.2	359.5	360.6	360.6	361.2	361.9	363.4	363.8	364.9	364.8	365.6
25°	370.5	372.7	373.4	374.4	375.2	376.4	378.3	379.1	379.6	380.8	382.2
27.5°	389.4	392.1	392.6	393.8	396.0	396.7	398.7	399.5	401.4	403.9	404.4
30°	415.2	418.6	418.8	420.1	422.7	423.5	425.2	427.4	428.9	431.4	431.6
32.5°	450.4	453.7	453.2	455.8	455.6	458.1	457.6	461.0	462.3	463.7	467.4
35°	497.1	496.8	499.3	500.1	499.6	501.7	501.3	502.8	504.2	504.2	508.3
37.5°	564.5	564.0	563.6	560.1	559.2	559.4	558.7	560.1	557.9	557.9	562.3
40°	654.8	651.7	649.4	647.0	644.6	641.4	638.7	638.1	634.3	634.2	632.5
42.5°	733.3	730.4	728.7	724.1	721.8	721.3	714.7	712.8	711.8	712.5	710.8
45°	815.6	812.6	806.2	804.2	803.5	799.9	798.9	794.4	793.0	795.4	794.5
47.5°	900.5	896.1	892.6	890.2	889.4	886.4	882.0	885.7	883.8	882.5	879.9
50°	976.8	971.9	971.9	967.7	968.4	966.4	961.8	962.8	957.6	959.6	958.3
52.5°	1040.8	1041.1	1042.8	1038.1	1039.0	1039.0	1037.4	1032.5	1033.9	1033.2	1036.4
55°	1122.2	1127.7	1124.7	1125.5	1126.6	1131.3	1134.7	1131.8	1127.1	1130.8	1141.1
57.5°	1264.5	1269.5	1272.6	1274.9	1278.8	1281.0	1299.2	1301.8	1296.4	1307.5	1330.5
60°	1511.9	1518.0	1527.1	1539.1	1541.6	1557.0	1566.4	1577.6	1581.6	1591.3	1615.9
62.5°	1809.5	1823.2	1824.9	1840.1	1851.9	1837.5	1841.3	1854.9	1839.4	1860.7	1861.7
65°	2004.3	2024.2	2024.9	2030.5	2034.9	2021.4	2015.3	2009.2	1994.5	1993.7	2008.4
67°	2037.7	2056.0	2063.6	2066.3	2065.6	2058.7	2048.7	2031.1	2017.0	2008.9	2014.9
67.5°	2028.3	2046.2	2056.8	2059.3	2059.5	2052.8	2043.6	2024.6	2011.2	2002.1	2008.5
70°	1873.0	1914.8	1933.1	1923.6	1929.0	1929.0	1928.7	1911.1	1904.5	1895.8	1892.4
72.5°	1557.3	1586.4	1609.5	1597.2	1598.7	1610.2	1607.5	1609.3	1590.4	1588.4	1557.2
75°	1115.6	1124.9	1117.1	1125.9	1078.6	1061.7	1033.0	991.2	980.2	962.8	910.8
77.5°	592.7	582.2	561.4	559.7	540.3	525.3	506.7	494.6	463.9	446.8	407.8
80°	418.6	423.7	431.6	436.3	440.7	444.1	437.2	417.8	392.1	363.4	336.2
82.5°	399.9	406.8	411.5	413.9	412.2	406.8	390.9	372.4	338.1	313.3	283.9
85°	252.2	257.8	248.1	246.1	250.3	216.2	197.5	182.3	147.7	137.4	121.4
87.5°	67.7	71.4	71.6	69.4	68.0	59.9	53.0	46.9	38.8	36.5	29.5
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):

	75°	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°
0°	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5
2.5°	270.8	270.6	270.6	270.1	269.7	269.6	269.4	268.9	268.6	268.6	268.4
5°	277.2	276.8	276.3	276.2	275.5	275.1	274.5	274.1	273.6	273.3	273.1
7.5°	286.3	285.4	284.4	284.6	283.6	283.1	282.7	282.1	281.6	281.0	280.9
10°	298.4	298.3	297.3	297.6	295.7	296.6	294.9	295.1	294.0	293.0	292.9
12.5°	314.0	313.8	312.8	311.6	311.3	311.4	310.4	310.6	309.4	309.1	308.7
15°	328.8	328.5	328.0	327.1	326.6	326.5	326.1	325.8	324.8	324.8	323.6
17.5°	341.6	341.8	341.1	340.5	340.1	339.6	339.5	339.5	338.6	337.8	337.9
20°	353.0	353.3	353.3	352.8	353.0	352.6	352.5	352.8	351.9	351.6	351.1
22.5°	365.6	365.6	365.8	366.1	366.6	366.8	366.8	366.5	366.0	365.8	364.8
25°	383.2	382.5	383.3	383.7	383.7	384.5	384.2	384.4	384.5	384.0	383.5
27.5°	405.3	404.6	406.3	407.5	407.3	407.8	408.8	407.6	408.3	408.8	407.6
30°	432.5	434.1	435.3	436.2	435.8	437.4	437.9	437.7	437.2	438.0	438.0
32.5°	467.1	466.2	469.3	471.1	471.3	470.9	471.8	472.8	472.0	473.3	472.6
35°	508.3	508.8	509.4	511.5	512.3	511.0	512.3	513.5	513.1	513.3	514.0
37.5°	561.4	562.3	561.6	561.8	561.4	567.8	568.8	569.9	568.7	567.7	570.7
40°	635.2	635.2	635.0	637.2	633.5	637.6	636.4	639.2	642.3	640.6	645.1
42.5°	707.8	711.8	712.2	709.0	711.7	716.0	716.0	717.9	720.6	717.9	722.3
45°	791.0	796.1	795.2	800.6	796.6	801.6	802.5	800.1	806.0	806.7	805.0
47.5°	881.8	882.8	883.0	884.8	885.7	889.7	889.6	894.0	892.6	885.9	888.2
50°	959.6	962.1	963.5	964.7	968.9	971.8	975.7	976.3	975.3	973.3	971.4
52.5°	1037.4	1043.5	1047.4	1057.9	1064.4	1069.7	1076.1	1078.5	1077.3	1076.8	1069.3
55°	1141.6	1156.1	1178.5	1193.1	1208.9	1218.2	1225.6	1229.4	1226.7	1228.0	1212.6
57.5°	1337.7	1371.8	1391.4	1416.2	1444.2	1455.9	1459.1	1472.3	1457.7	1443.2	1431.6
60°	1629.2	1660.6	1696.3	1721.7	1731.2	1763.4	1748.2	1731.2	1715.7	1685.6	1651.7
62.5°	1892.4	1932.9	1951.1	1974.9	1968.5	1965.8	1955.7	1928.5	1895.3	1850.5	1805.3
65°	2022.2	2045.0	2056.3	2064.1	2056.8	2038.1	2004.6	1964.5	1916.9	1859.0	1799.6
67°	2027.4	2037.9	2041.6	2034.2	2018.0	1988.8	1946.6	1889.7	1831.1	1764.8	1697.9
67.5°	2018.8	2025.7	2027.6	2016.0	1996.7	1965.1	1920.1	1859.3	1797.0	1728.2	1661.0
70°	1901.3	1896.3	1879.9	1863.9	1803.8	1761.4	1682.9	1618.1	1531.7	1468.4	1396.6
72.5°	1544.7	1521.5	1505.7	1434.8	1362.2	1320.2	1235.8	1158.3	1079.5	1019.2	975.1
75°	867.1	850.2	806.2	768.7	708.8	653.9	614.6	565.3	518.0	490.0	469.4
77.5°	391.8	343.5	310.3	268.2	216.7	174.2	129.3	119.5	102.0	97.6	87.9
80°	305.7	271.1	227.5	179.4	126.6	85.1	62.5	53.0	49.8	47.8	46.8
82.5°	255.1	210.2	176.9	125.6	80.3	54.0	40.7	36.8	34.4	32.7	31.2
85°	109.0	86.3	71.1	50.8	36.1	28.5	25.0	22.8	20.6	18.7	17.6
87.5°	25.5	19.6	17.9	15.2	14.3	14.2	14.0	13.3	12.5	11.5	10.3
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):

	86°	87°	88°	89°	90°	95°	105°	115°	125°	135°	145°
0°	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5	266.5
2.5°	268.2	268.1	267.7	267.2	267.2	266.5	264.3	262.8	261.1	260.1	259.1
5°	272.8	272.6	271.8	271.3	270.9	269.6	265.9	263.0	259.9	257.8	256.1
7.5°	280.4	279.9	279.2	278.9	277.8	276.2	270.8	266.7	262.3	258.8	255.9
10°	292.7	291.9	290.8	289.8	290.2	287.5	281.2	275.3	268.9	263.3	259.4
12.5°	307.7	307.7	307.2	306.5	305.4	302.3	293.9	287.0	279.2	272.3	269.4
15°	323.6	322.7	321.9	320.9	320.7	316.7	309.1	301.1	293.0	287.1	283.7
17.5°	336.6	336.9	335.7	335.4	335.1	331.0	322.9	315.8	309.9	303.7	298.3
20°	350.4	349.7	349.4	348.9	348.7	345.4	338.9	334.6	329.3	319.9	305.7
22.5°	365.3	364.4	364.8	363.8	363.6	361.2	356.5	355.2	347.4	327.5	302.8
25°	384.5	383.0	383.5	383.5	383.7	381.5	381.0	378.6	359.0	325.6	291.3
27.5°	407.5	408.2	408.2	408.0	406.8	407.5	409.8	401.7	363.1	315.8	274.1
30°	437.4	437.7	438.0	439.2	436.7	441.1	443.9	418.1	360.0	302.3	252.5
32.5°	473.6	472.3	473.0	473.6	474.5	479.0	477.4	426.4	351.1	283.9	225.7
35°	513.7	516.2	516.9	518.4	520.1	527.0	507.6	428.1	337.4	259.3	191.4
37.5°	573.2	577.3	577.3	582.7	579.5	587.9	534.6	424.0	316.7	225.0	152.8
40°	648.4	650.2	652.1	652.7	651.1	650.0	552.3	414.1	287.5	182.0	111.7
42.5°	725.0	724.3	724.5	725.7	721.1	702.0	563.3	396.7	251.2	135.9	80.2
45°	807.5	804.7	803.8	801.5	797.4	757.2	569.5	372.2	203.4	95.5	63.0
47.5°	887.9	884.3	878.9	872.3	864.6	801.6	568.8	340.5	156.0	68.4	55.5
50°	970.3	964.0	952.4	945.9	932.8	845.7	565.0	305.2	112.3	56.5	52.0
52.5°	1064.4	1053.3	1042.5	1029.7	1007.9	899.9	559.1	265.5	81.9	51.8	49.6
55°	1204.9	1186.7	1168.9	1142.3	1121.2	972.4	549.1	222.8	64.6	50.0	48.3
57.5°	1398.5	1367.4	1345.0	1309.0	1275.3	1072.9	538.5	184.0	57.7	49.5	47.6
60°	1616.4	1569.7	1527.8	1483.6	1445.1	1198.3	532.9	153.6	56.2	50.0	47.8
62.5°	1753.1	1697.9	1645.6	1591.6	1536.2	1258.2	508.8	132.7	56.9	52.2	49.1
65°	1735.9	1675.0	1618.1	1552.3	1500.1	1201.7	447.3	112.3	58.1	56.0	52.8
67°	1619.8	1560.7	1495.9	1431.4	1380.8	1094.1	377.6	94.5	59.4	60.4	56.9
67.5°	1588.7	1522.2	1456.9	1397.6	1342.8	1060.9	359.4	90.1	59.8	61.6	58.2
70°	1324.9	1272.2	1195.8	1151.9	1112.2	860.0	268.1	70.1	60.8	66.8	64.6
72.5°	927.0	876.1	836.1	812.1	789.0	624.9	188.5	55.9	59.2	69.7	67.5
75°	468.2	456.6	442.6	434.8	435.2	363.3	113.6	47.6	55.7	66.8	61.3
77.5°	92.5	90.1	91.2	99.8	98.2	111.9	56.4	40.3	47.4	51.5	44.1
80°	44.7	43.2	41.9	41.5	40.7	39.0	35.4	33.6	38.5	33.9	29.2
82.5°	29.0	27.3	26.7	25.3	25.5	27.7	30.9	32.2	31.2	23.5	19.7
85°	16.4	16.2	15.9	16.2	16.9	22.1	33.1	30.2	25.2	16.5	14.9
87.5°	9.8	9.3	9.5	9.6	10.0	16.4	26.2	21.8	16.0	8.6	8.8
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):

	155°	165°	175°	180°
0°	266.5	266.5	266.5	266.5
2.5°	258.9	258.3	258.3	258.1
5°	254.7	253.7	253.5	253.5
7.5°	254.0	252.7	252.5	252.0
10°	257.1	256.6	256.7	256.2
12.5°	266.7	267.4	268.1	268.1
15°	281.4	280.9	281.7	280.9
17.5°	292.2	287.8	286.8	286.3
20°	292.5	283.4	280.4	279.9
22.5°	282.1	268.6	263.5	262.6
25°	264.3	247.3	240.9	240.2
27.5°	242.1	223.0	213.5	213.2
30°	215.2	192.6	180.6	178.8
32.5°	182.5	155.6	143.0	138.9
35°	144.7	117.1	105.3	105.0
37.5°	108.0	86.6	79.0	78.7
40°	79.2	68.0	65.2	64.6
42.5°	64.6	60.1	58.9	58.4
45°	57.9	56.0	55.4	54.9
47.5°	53.8	52.7	52.2	52.2
50°	50.6	50.3	50.0	50.0
52.5°	48.4	48.3	47.9	47.8
55°	46.6	45.9	46.1	45.9
57.5°	45.4	44.4	44.4	44.4
60°	44.7	42.9	42.9	43.0
62.5°	44.9	42.0	41.9	41.9
65°	46.3	41.5	40.5	40.7
67°	47.9	41.0	39.0	38.8
67.5°	48.4	40.7	38.5	38.3
70°	50.5	39.7	36.0	35.6
72.5°	50.8	38.1	33.4	33.1
75°	47.3	36.1	31.4	30.6
77.5°	36.8	31.1	28.4	28.4
80°	25.8	23.8	20.3	20.1
82.5°	18.9	17.9	14.9	14.5
85°	13.8	13.0	11.0	11.0
87.5°	8.6	8.3	7.1	6.8
90°	0.0	0.0	0.0	0.0

(END OF REPORT)