

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: P145120

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P145120
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
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(1) LIGHTBARS WITH AccuLED OPTICS - TYPE 3 W/ SPILL LIGHT CONTROL
Light Source: (21) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2968.7 lumens
Efficiency: N/A
Efficacy: 120.2 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

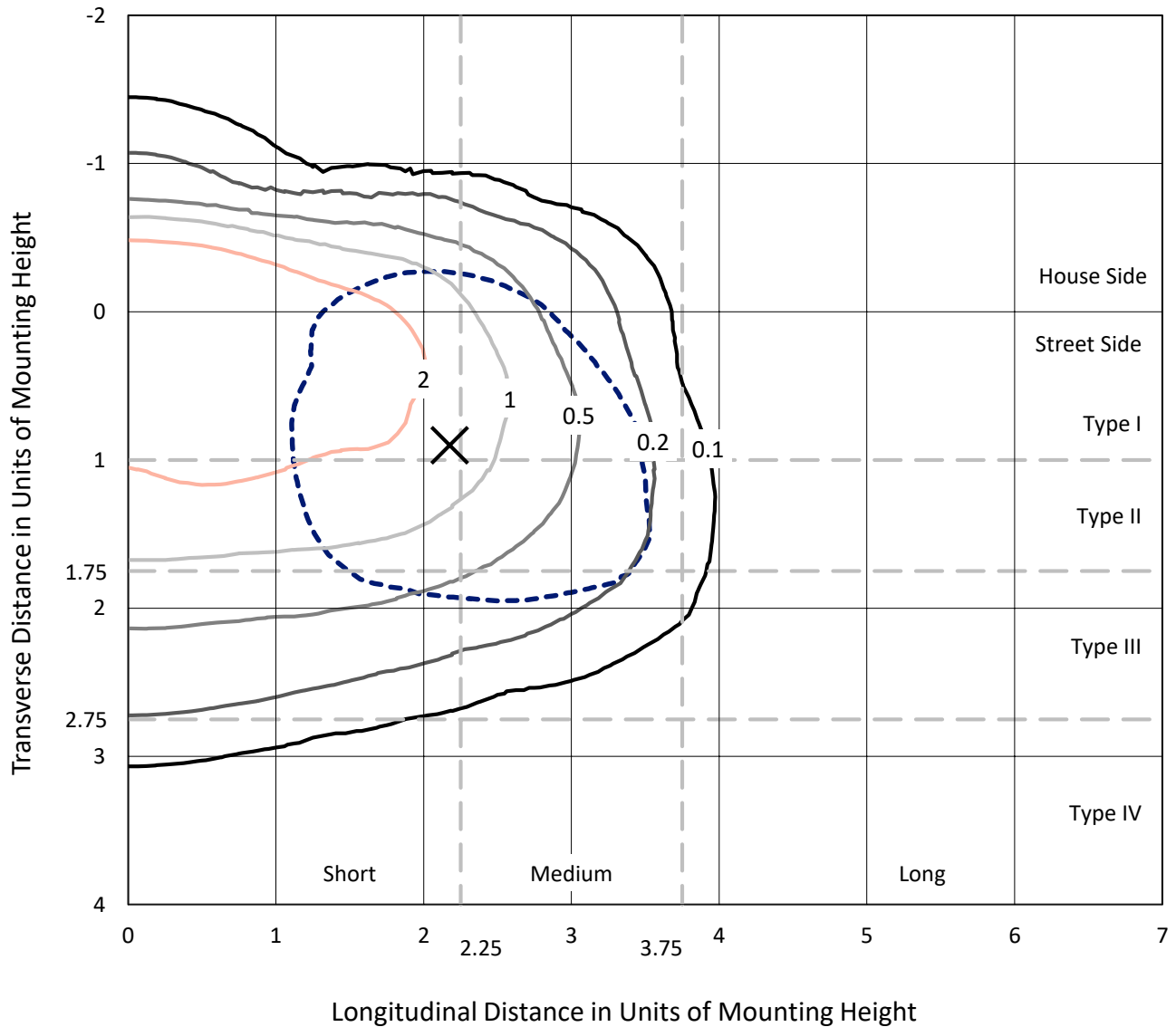
Input Watts (W): 24.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

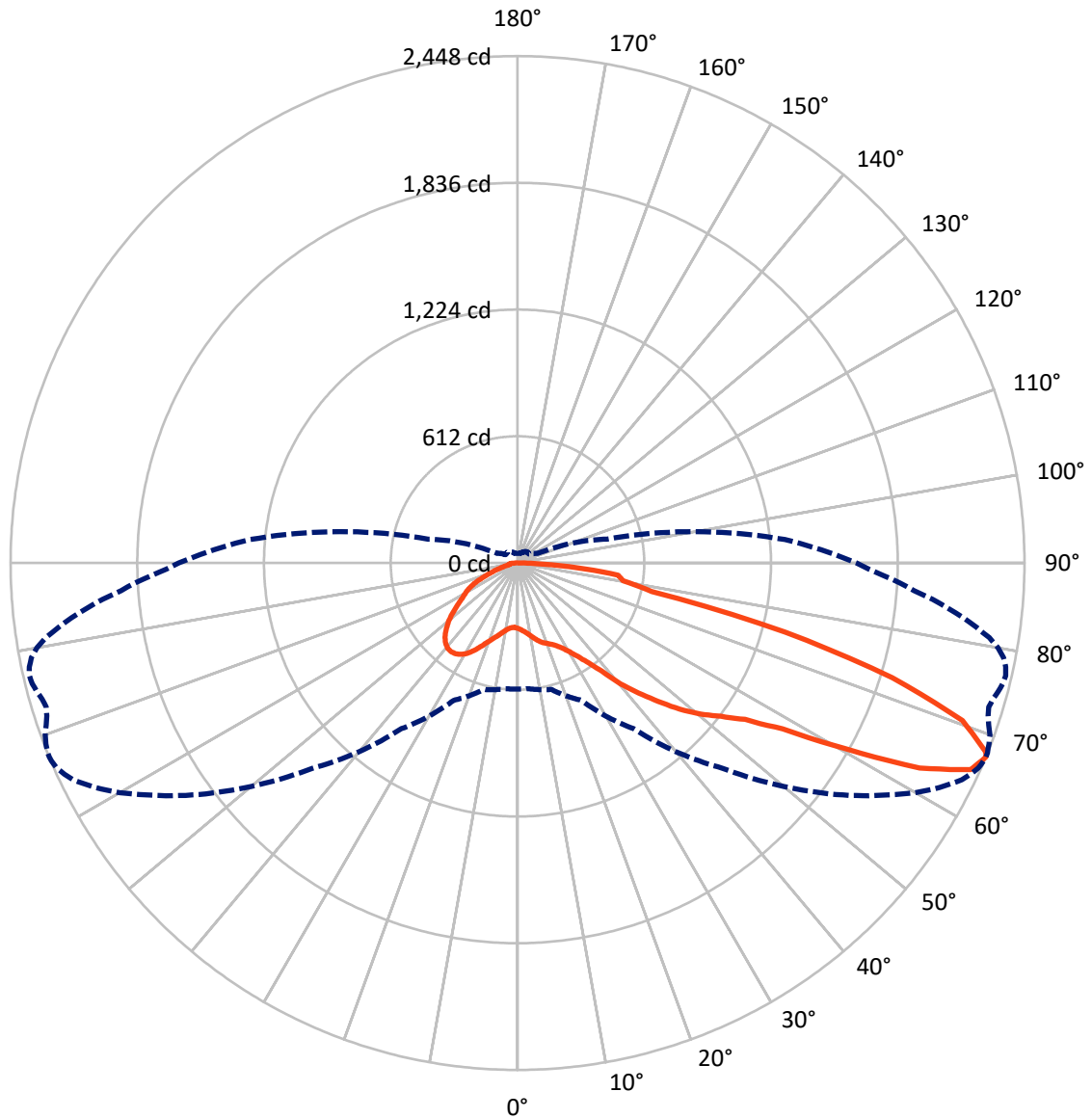
× Max cd
 - - - 1/2 Max cd



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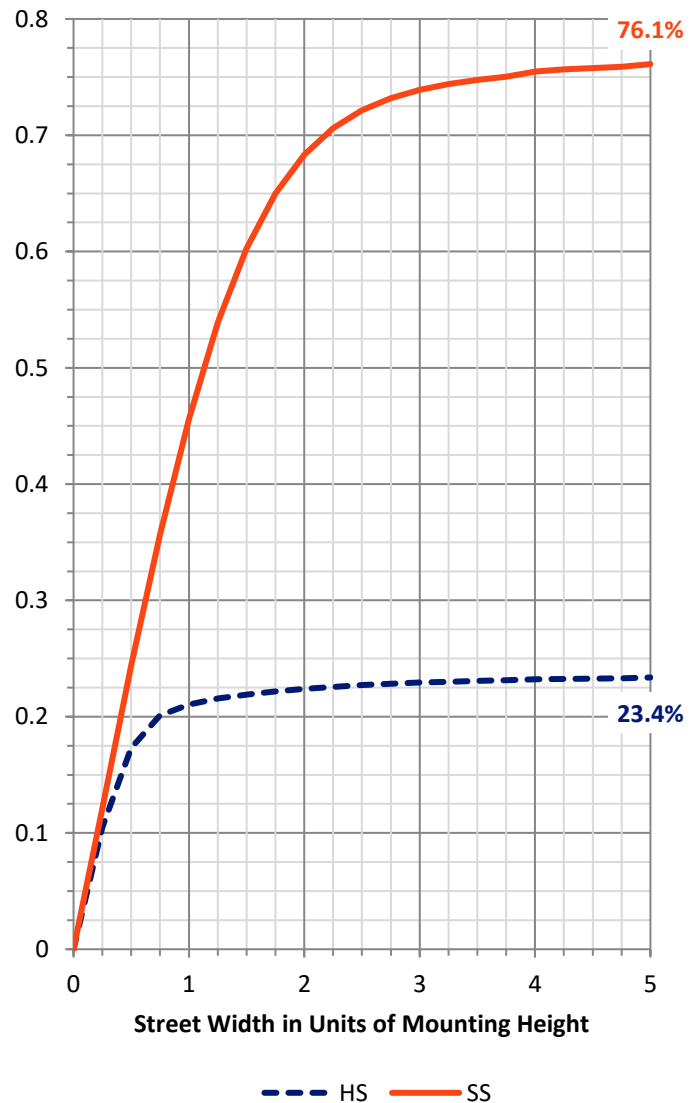
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	703.0	0.0	703.0
	% Fixture	23.7	0.0	23.7
Street Side	Lumens	2265.7	0.0	2265.7
	% Fixture	76.3	0.0	76.3
Total	Lumens	2968.7	0.0	2968.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.5	1.1
10°-20°	107.9	3.6
20°-30°	192.1	6.5
30°-40°	279.9	9.4
40°-50°	431.2	14.5
50°-60°	631.6	21.3
60°-70°	838.7	28.3
70°-80°	395.3	13.3
80°-90°	60.4	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°	2968.7	100.0
0°-180°	2968.7	100.0



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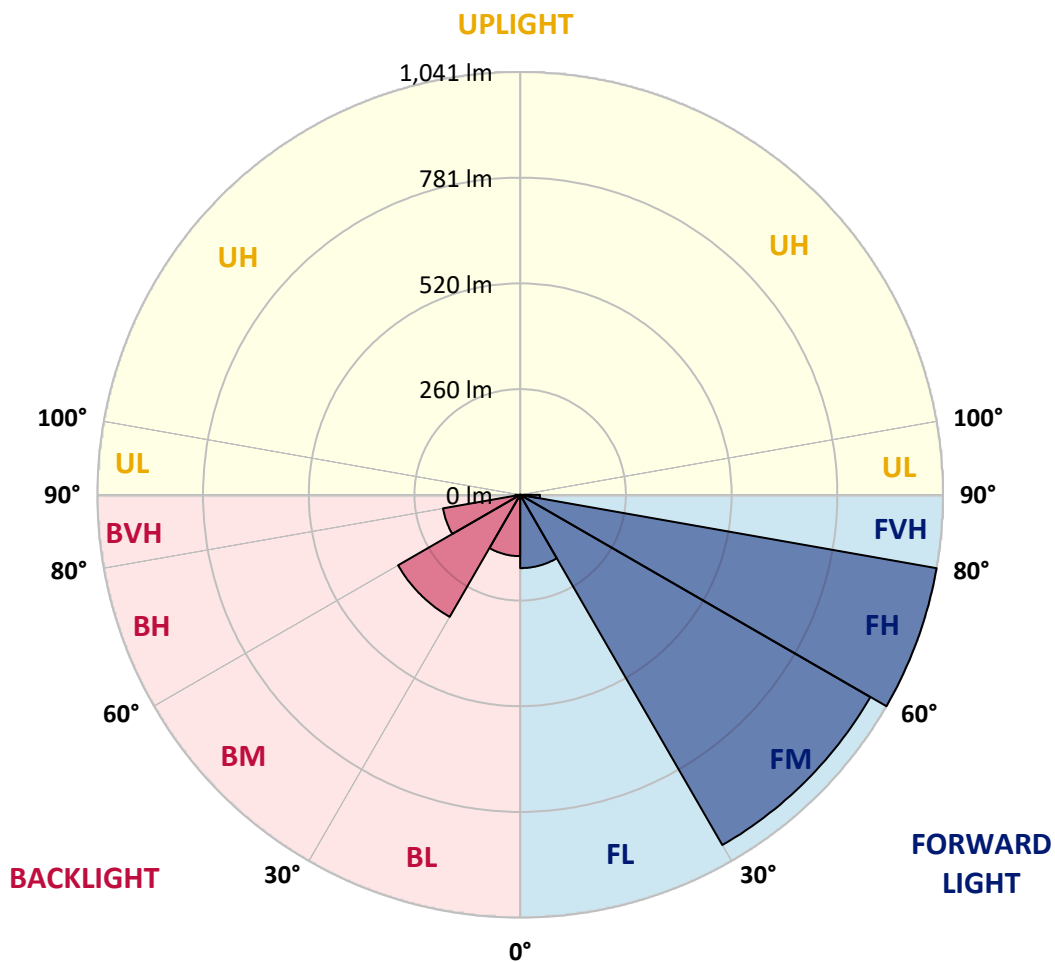
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	180.5	6.1			
FM	(30°-60°)	995.6	33.5			
FH	(60°-80°)	1041.0	35.1			G1/1800
FVH	(80°-90°)	48.7	1.6			G1/100
BL	(0°-30°)	151.1	5.1	B1/500		
BM	(30°-60°)	347.1	11.7	B1/1000		
BH	(60°-80°)	193.0	6.5	B1/500		G1/500
BVH	(80°-90°)	11.7	0.4			G1/100
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°	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8
2.5°	331.6	330.2	330.4	331.0	329.0	328.0	325.8	324.4	324.2	324.0	323.2
5°	351.0	349.6	350.2	348.6	344.8	342.2	337.6	335.2	334.8	334.4	333.4
7.5°	371.2	369.4	367.4	365.6	361.4	357.2	351.2	347.6	347.2	346.6	346.0
10°	395.2	392.6	391.0	385.4	378.2	372.4	366.4	362.6	362.4	361.8	360.6
12.5°	422.2	419.4	416.4	409.0	397.8	389.2	382.2	380.0	378.2	378.4	377.2
15°	449.0	446.0	442.0	432.6	417.8	405.0	396.0	392.8	393.0	392.0	392.6
17.5°	471.6	469.0	463.2	451.2	434.0	416.4	405.0	403.6	404.0	403.8	404.4
20°	486.4	484.8	476.0	461.6	442.2	422.8	411.2	411.2	411.4	412.2	413.6
22.5°	495.4	493.0	481.4	461.2	442.0	425.8	416.8	418.8	420.0	420.6	422.8
25°	500.4	497.4	481.6	454.8	435.2	428.0	425.2	430.2	432.2	433.2	436.8
27.5°	500.4	496.8	479.0	446.8	427.4	434.6	441.2	449.8	451.2	454.2	458.4
30°	494.8	492.0	475.0	440.8	425.4	447.0	467.0	476.8	480.2	483.6	489.0
32.5°	488.8	486.4	473.0	444.0	436.6	473.0	506.4	519.8	521.8	524.6	530.2
35°	488.4	487.6	481.8	464.4	470.4	520.6	565.8	575.0	580.6	582.0	584.4
37.5°	492.6	494.2	499.2	497.4	519.0	591.4	643.6	662.0	666.4	664.0	666.2
40°	502.4	506.4	525.0	548.0	593.2	677.0	749.6	770.8	775.6	774.2	773.6
42.5°	533.4	538.8	566.2	615.4	670.4	765.6	848.0	870.8	872.4	873.2	868.0
45°	582.0	585.0	621.4	684.2	754.0	861.0	946.2	971.6	970.6	966.6	962.8
47.5°	637.2	643.4	687.0	763.0	840.4	949.2	1045.6	1070.4	1072.6	1069.0	1062.0
50°	687.4	692.2	741.4	831.6	916.6	1022.6	1129.4	1154.4	1154.0	1156.0	1158.0
52.5°	727.0	731.4	778.2	877.4	972.6	1084.2	1192.6	1223.4	1228.2	1231.4	1235.4
55°	747.4	752.0	795.2	896.4	1006.6	1144.4	1265.6	1309.8	1318.0	1325.2	1331.8
57.5°	747.8	753.8	793.4	895.0	1024.2	1198.2	1362.2	1441.6	1453.2	1471.6	1494.2
60°	735.6	744.0	779.6	882.0	1044.4	1266.4	1521.4	1673.4	1696.2	1728.4	1757.4
62.5°	703.8	712.2	744.0	849.0	1068.0	1353.8	1751.4	1974.2	2022.8	2058.4	2115.8
65°	653.6	661.6	688.4	794.4	1049.2	1422.8	1922.8	2190.0	2239.6	2284.2	2351.6
67°	608.8	609.6	632.2	731.8	976.0	1401.4	1957.2	2218.8	2264.6	2309.8	2388.0
67.5°	593.0	597.4	615.0	711.0	948.2	1385.6	1943.6	2203.2	2247.6	2295.8	2375.6
70°	479.4	480.6	497.6	567.2	752.4	1148.8	1745.8	2004.2	2034.6	2105.2	2183.6
72.5°	292.4	290.4	295.8	347.4	495.2	795.6	1397.8	1650.0	1691.6	1751.8	1804.8
75°	161.0	170.6	177.2	213.0	278.2	467.8	951.8	1193.8	1254.8	1290.6	1301.2
77.5°	98.4	97.6	100.6	137.4	228.2	320.0	525.8	700.4	734.4	744.6	705.2
80°	46.8	48.6	48.0	56.6	110.6	270.0	367.6	449.8	467.0	476.8	489.6
82.5°	25.6	26.6	30.2	33.8	43.6	116.2	317.2	414.8	426.4	443.2	462.0
85°	16.0	16.8	23.2	24.4	26.8	35.8	132.2	242.4	252.2	285.6	296.2
87.5°	6.6	7.2	12.6	11.4	13.6	12.6	40.0	61.6	65.4	69.6	77.2
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°	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8
2.5°	323.4	323.2	322.4	322.2	322.6	322.6	322.2	321.6	321.4	321.2	320.8
5°	333.0	332.6	332.0	331.6	331.4	331.4	330.8	330.2	329.6	328.8	328.6
7.5°	344.4	344.4	344.2	343.6	343.0	342.2	341.6	341.0	340.4	340.0	339.4
10°	359.4	360.2	358.8	358.4	358.2	357.0	356.8	356.2	355.8	354.8	354.8
12.5°	377.2	376.4	376.2	375.4	375.4	374.8	374.6	374.4	374.0	373.2	373.0
15°	392.0	392.0	391.8	391.4	391.8	391.4	390.8	391.2	390.6	390.8	390.2
17.5°	404.0	404.8	404.6	404.8	404.6	404.6	405.0	405.0	405.4	404.6	404.8
20°	414.0	415.2	415.8	415.4	415.8	416.0	417.0	417.4	418.0	418.4	418.4
22.5°	424.4	426.0	427.2	427.2	428.0	428.8	430.6	431.0	432.4	432.2	433.2
25°	439.0	441.6	442.4	443.6	444.6	446.0	448.2	449.2	449.8	451.2	452.8
27.5°	461.4	464.6	465.2	466.6	469.2	470.0	472.4	473.4	475.6	478.6	479.2
30°	492.0	496.0	496.2	497.8	500.8	501.8	503.8	506.4	508.2	511.2	511.4
32.5°	533.6	537.6	537.0	540.0	539.8	542.8	542.2	546.2	547.8	549.4	553.8
35°	589.0	588.6	591.6	592.6	592.0	594.4	594.0	595.8	597.4	597.4	602.2
37.5°	668.8	668.2	667.8	663.6	662.6	662.8	662.0	663.6	661.0	661.0	666.2
40°	775.8	772.2	769.4	766.6	763.8	760.0	756.8	756.0	751.6	751.4	749.4
42.5°	868.8	865.4	863.4	858.0	855.2	854.6	846.8	844.6	843.4	844.2	842.2
45°	966.4	962.8	955.2	952.8	952.0	947.8	946.6	941.2	939.6	942.4	941.4
47.5°	1067.0	1061.8	1057.6	1054.8	1053.8	1050.2	1045.0	1049.4	1047.2	1045.6	1042.6
50°	1157.4	1151.6	1151.6	1146.6	1147.4	1145.0	1139.6	1140.8	1134.6	1137.0	1135.4
52.5°	1233.2	1233.6	1235.6	1230.0	1231.0	1231.0	1229.2	1223.4	1225.0	1224.2	1228.0
55°	1329.6	1336.2	1332.6	1333.6	1334.8	1340.4	1344.4	1341.0	1335.4	1339.8	1352.0
57.5°	1498.2	1504.2	1507.8	1510.6	1515.2	1517.8	1539.4	1542.4	1536.0	1549.2	1576.4
60°	1791.4	1798.6	1809.4	1823.6	1826.6	1844.8	1856.0	1869.2	1874.0	1885.4	1914.6
62.5°	2144.0	2160.2	2162.2	2180.2	2194.2	2177.2	2181.6	2197.8	2179.4	2204.6	2205.8
65°	2374.8	2398.4	2399.2	2405.8	2411.0	2395.0	2387.8	2380.6	2363.2	2362.2	2379.6
67°	2414.4	2436.0	2445.0	2448.2	2447.4	2439.2	2427.4	2406.6	2389.8	2380.2	2387.4
67.5°	2403.2	2424.4	2437.0	2440.0	2440.2	2432.2	2421.4	2398.8	2383.0	2372.2	2379.8
70°	2219.2	2268.8	2290.4	2279.2	2285.6	2285.6	2285.2	2264.4	2256.6	2246.2	2242.2
72.5°	1845.2	1879.6	1907.0	1892.4	1894.2	1907.8	1904.6	1906.8	1884.4	1882.0	1845.0
75°	1321.8	1332.8	1323.6	1334.0	1278.0	1258.0	1224.0	1174.4	1161.4	1140.8	1079.2
77.5°	702.2	689.8	665.2	663.2	640.2	622.4	600.4	586.0	549.6	529.4	483.2
80°	496.0	502.0	511.4	517.0	522.2	526.2	518.0	495.0	464.6	430.6	398.4
82.5°	473.8	482.0	487.6	490.4	488.4	482.0	463.2	441.2	400.6	371.2	336.4
85°	298.8	305.4	294.0	291.6	296.6	256.2	234.0	216.0	175.0	162.8	143.8
87.5°	80.2	84.6	84.8	82.2	80.6	71.0	62.8	55.6	46.0	43.2	35.0
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):

	75°	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°
0°	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8
2.5°	320.8	320.6	320.6	320.0	319.6	319.4	319.2	318.6	318.2	318.2	318.0
5°	328.4	328.0	327.4	327.2	326.4	326.0	325.2	324.8	324.2	323.8	323.6
7.5°	339.2	338.2	337.0	337.2	336.0	335.4	335.0	334.2	333.6	333.0	332.8
10°	353.6	353.4	352.2	352.6	350.4	351.4	349.4	349.6	348.4	347.2	347.0
12.5°	372.0	371.8	370.6	369.2	368.8	369.0	367.8	368.0	366.6	366.2	365.8
15°	389.6	389.2	388.6	387.6	387.0	386.8	386.4	386.0	384.8	384.8	383.4
17.5°	404.8	405.0	404.2	403.4	403.0	402.4	402.2	402.2	401.2	400.2	400.4
20°	418.2	418.6	418.6	418.0	418.2	417.8	417.6	418.0	417.0	416.6	416.0
22.5°	433.2	433.2	433.4	433.8	434.4	434.6	434.6	434.2	433.6	433.4	432.2
25°	454.0	453.2	454.2	454.6	454.6	455.6	455.2	455.4	455.6	455.0	454.4
27.5°	480.2	479.4	481.4	482.8	482.6	483.2	484.4	483.0	483.8	484.4	483.0
30°	512.4	514.4	515.8	516.8	516.4	518.2	518.8	518.6	518.0	519.0	519.0
32.5°	553.4	552.4	556.0	558.2	558.4	558.0	559.0	560.2	559.2	560.8	560.0
35°	602.2	602.8	603.6	606.0	607.0	605.4	607.0	608.4	608.0	608.2	609.0
37.5°	665.2	666.2	665.4	665.6	665.2	672.8	674.0	675.2	673.8	672.6	676.2
40°	752.6	752.6	752.4	755.0	750.6	755.4	754.0	757.4	761.0	759.0	764.4
42.5°	838.6	843.4	843.8	840.0	843.2	848.4	848.4	850.6	853.8	850.6	855.8
45°	937.2	943.2	942.2	948.6	943.8	949.8	950.8	948.0	955.0	955.8	953.8
47.5°	1044.8	1046.0	1046.2	1048.4	1049.4	1054.2	1054.0	1059.2	1057.6	1049.6	1052.4
50°	1137.0	1140.0	1141.6	1143.0	1148.0	1151.4	1156.0	1156.8	1155.6	1153.2	1151.0
52.5°	1229.2	1236.4	1241.0	1253.4	1261.2	1267.4	1275.0	1277.8	1276.4	1275.8	1267.0
55°	1352.6	1369.8	1396.4	1413.6	1432.4	1443.4	1452.2	1456.6	1453.4	1455.0	1436.8
57.5°	1585.0	1625.4	1648.6	1678.0	1711.2	1725.0	1728.8	1744.4	1727.2	1710.0	1696.2
60°	1930.4	1967.6	2009.8	2040.0	2051.2	2089.4	2071.4	2051.2	2032.8	1997.2	1957.0
62.5°	2242.2	2290.2	2311.8	2340.0	2332.4	2329.2	2317.2	2285.0	2245.6	2192.6	2139.0
65°	2396.0	2423.0	2436.4	2445.6	2437.0	2414.8	2375.2	2327.6	2271.2	2202.6	2132.2
67°	2402.2	2414.6	2419.0	2410.2	2391.0	2356.4	2306.4	2239.0	2169.6	2091.0	2011.8
67.5°	2392.0	2400.2	2402.4	2388.6	2365.8	2328.4	2275.0	2203.0	2129.2	2047.6	1968.0
70°	2252.8	2246.8	2227.4	2208.4	2137.2	2087.0	1994.0	1917.2	1814.8	1739.8	1654.8
72.5°	1830.2	1802.8	1784.0	1700.0	1614.0	1564.2	1464.2	1372.4	1279.0	1207.6	1155.4
75°	1027.4	1007.4	955.2	910.8	839.8	774.8	728.2	669.8	613.8	580.6	556.2
77.5°	464.2	407.0	367.6	317.8	256.8	206.4	153.2	141.6	120.8	115.6	104.2
80°	362.2	321.2	269.6	212.6	150.0	100.8	74.0	62.8	59.0	56.6	55.4
82.5°	302.2	249.0	209.6	148.8	95.2	64.0	48.2	43.6	40.8	38.8	37.0
85°	129.2	102.2	84.2	60.2	42.8	33.8	29.6	27.0	24.4	22.2	20.8
87.5°	30.2	23.2	21.2	18.0	17.0	16.8	16.6	15.8	14.8	13.6	12.2
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):

	86°	87°	88°	89°	90°	95°	105°	115°	125°	135°	145°
0°	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8	315.8
2.5°	317.8	317.6	317.2	316.6	316.6	315.8	313.2	311.4	309.4	308.2	307.0
5°	323.2	323.0	322.0	321.4	321.0	319.4	315.0	311.6	308.0	305.4	303.4
7.5°	332.2	331.6	330.8	330.4	329.2	327.2	320.8	316.0	310.8	306.6	303.2
10°	346.8	345.8	344.6	343.4	343.8	340.6	333.2	326.2	318.6	312.0	307.4
12.5°	364.6	364.6	364.0	363.2	361.8	358.2	348.2	340.0	330.8	322.6	319.2
15°	383.4	382.4	381.4	380.2	380.0	375.2	366.2	356.8	347.2	340.2	336.2
17.5°	398.8	399.2	397.8	397.4	397.0	392.2	382.6	374.2	367.2	359.8	353.4
20°	415.2	414.4	414.0	413.4	413.2	409.2	401.6	396.4	390.2	379.0	362.2
22.5°	432.8	431.8	432.2	431.0	430.8	428.0	422.4	420.8	411.6	388.0	358.8
25°	455.6	453.8	454.4	454.4	454.6	452.0	451.4	448.6	425.4	385.8	345.2
27.5°	482.8	483.6	483.6	483.4	482.0	482.8	485.6	476.0	430.2	374.2	324.8
30°	518.2	518.6	519.0	520.4	517.4	522.6	526.0	495.4	426.6	358.2	299.2
32.5°	561.2	559.6	560.4	561.2	562.2	567.6	565.6	505.2	416.0	336.4	267.4
35°	608.6	611.6	612.4	614.2	616.2	624.4	601.4	507.2	399.8	307.2	226.8
37.5°	679.2	684.0	684.0	690.4	686.6	696.6	633.4	502.4	375.2	266.6	181.0
40°	768.2	770.4	772.6	773.4	771.4	770.2	654.4	490.6	340.6	215.6	132.4
42.5°	859.0	858.2	858.4	859.8	854.4	831.8	667.4	470.0	297.6	161.0	95.0
45°	956.8	953.4	952.4	949.6	944.8	897.2	674.8	441.0	241.0	113.2	74.6
47.5°	1052.0	1047.8	1041.4	1033.6	1024.4	949.8	674.0	403.4	184.8	81.0	65.8
50°	1149.6	1142.2	1128.4	1120.8	1105.2	1002.0	669.4	361.6	133.0	67.0	61.6
52.5°	1261.2	1248.0	1235.2	1220.0	1194.2	1066.2	662.4	314.6	97.0	61.4	58.8
55°	1427.6	1406.0	1385.0	1353.4	1328.4	1152.2	650.6	264.0	76.6	59.2	57.2
57.5°	1657.0	1620.2	1593.6	1551.0	1511.0	1271.2	638.0	218.0	68.4	58.6	56.4
60°	1915.2	1859.8	1810.2	1757.8	1712.2	1419.8	631.4	182.0	66.6	59.2	56.6
62.5°	2077.2	2011.8	1949.8	1885.8	1820.2	1490.8	602.8	157.2	67.4	61.8	58.2
65°	2056.8	1984.6	1917.2	1839.2	1777.4	1423.8	530.0	133.0	68.8	66.4	62.6
67°	1919.2	1849.2	1772.4	1696.0	1636.0	1296.4	447.4	112.0	70.4	71.6	67.4
67.5°	1882.4	1803.6	1726.2	1656.0	1591.0	1257.0	425.8	106.8	70.8	73.0	69.0
70°	1569.8	1507.4	1416.8	1364.8	1317.8	1019.0	317.6	83.0	72.0	79.2	76.6
72.5°	1098.4	1038.0	990.6	962.2	934.8	740.4	223.4	66.2	70.2	82.6	80.0
75°	554.8	541.0	524.4	515.2	515.6	430.4	134.6	56.4	66.0	79.2	72.6
77.5°	109.6	106.8	108.0	118.2	116.4	132.6	66.8	47.8	56.2	61.0	52.2
80°	53.0	51.2	49.6	49.2	48.2	46.2	42.0	39.8	45.6	40.2	34.6
82.5°	34.4	32.4	31.6	30.0	30.2	32.8	36.6	38.2	37.0	27.8	23.4
85°	19.4	19.2	18.8	19.2	20.0	26.2	39.2	35.8	29.8	19.6	17.6
87.5°	11.6	11.0	11.2	11.4	11.8	19.4	31.0	25.8	19.0	10.2	10.4
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):

	155°	165°	175°	180°
0°	315.8	315.8	315.8	315.8
2.5°	306.8	306.0	306.0	305.8
5°	301.8	300.6	300.4	300.4
7.5°	301.0	299.4	299.2	298.6
10°	304.6	304.0	304.2	303.6
12.5°	316.0	316.8	317.6	317.6
15°	333.4	332.8	333.8	332.8
17.5°	346.2	341.0	339.8	339.2
20°	346.6	335.8	332.2	331.6
22.5°	334.2	318.2	312.2	311.2
25°	313.2	293.0	285.4	284.6
27.5°	286.8	264.2	253.0	252.6
30°	255.0	228.2	214.0	211.8
32.5°	216.2	184.4	169.4	164.6
35°	171.4	138.8	124.8	124.4
37.5°	128.0	102.6	93.6	93.2
40°	93.8	80.6	77.2	76.6
42.5°	76.6	71.2	69.8	69.2
45°	68.6	66.4	65.6	65.0
47.5°	63.8	62.4	61.8	61.8
50°	60.0	59.6	59.2	59.2
52.5°	57.4	57.2	56.8	56.6
55°	55.2	54.4	54.6	54.4
57.5°	53.8	52.6	52.6	52.6
60°	53.0	50.8	50.8	51.0
62.5°	53.2	49.8	49.6	49.6
65°	54.8	49.2	48.0	48.2
67°	56.8	48.6	46.2	46.0
67.5°	57.4	48.2	45.6	45.4
70°	59.8	47.0	42.6	42.2
72.5°	60.2	45.2	39.6	39.2
75°	56.0	42.8	37.2	36.2
77.5°	43.6	36.8	33.6	33.6
80°	30.6	28.2	24.0	23.8
82.5°	22.4	21.2	17.6	17.2
85°	16.4	15.4	13.0	13.0
87.5°	10.2	9.8	8.4	8.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)