

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: P163237

Luminaire Tested: **LDRL-SL2-E02-E-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P163237
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33726)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-SL2-E02-E-HSS
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE 2 W/ SPILL LIGHT CONTROL AND HOUSE SIDE SHIELD
Light Source: (42) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3557.1 lumens
Efficiency: N/A
Efficacy: 68.3 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.1')
IES Classification: Type II - Short - Non-Cutoff
BUG Rating: B0 - U0 - G1

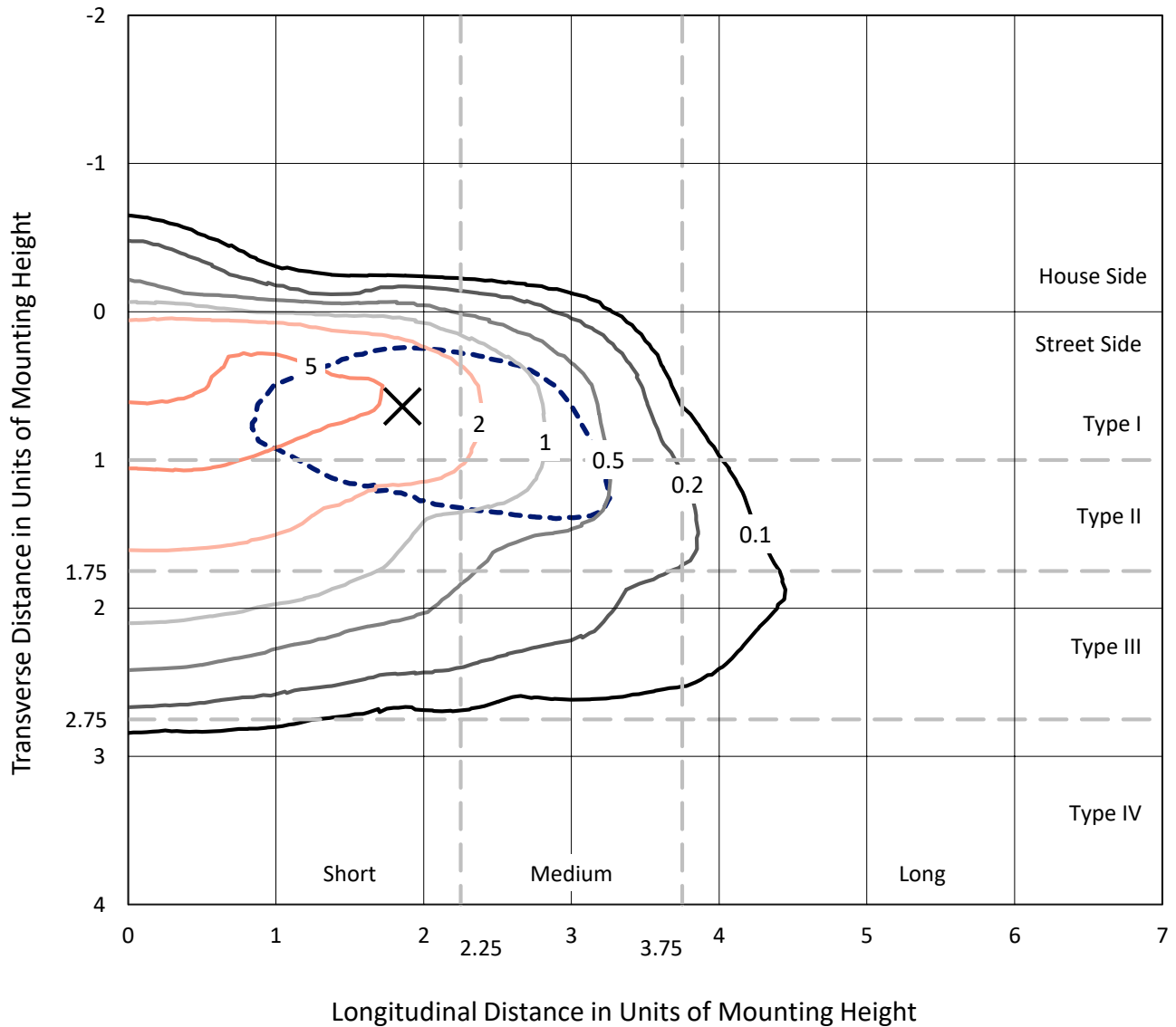
Input Watts (W): 52.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

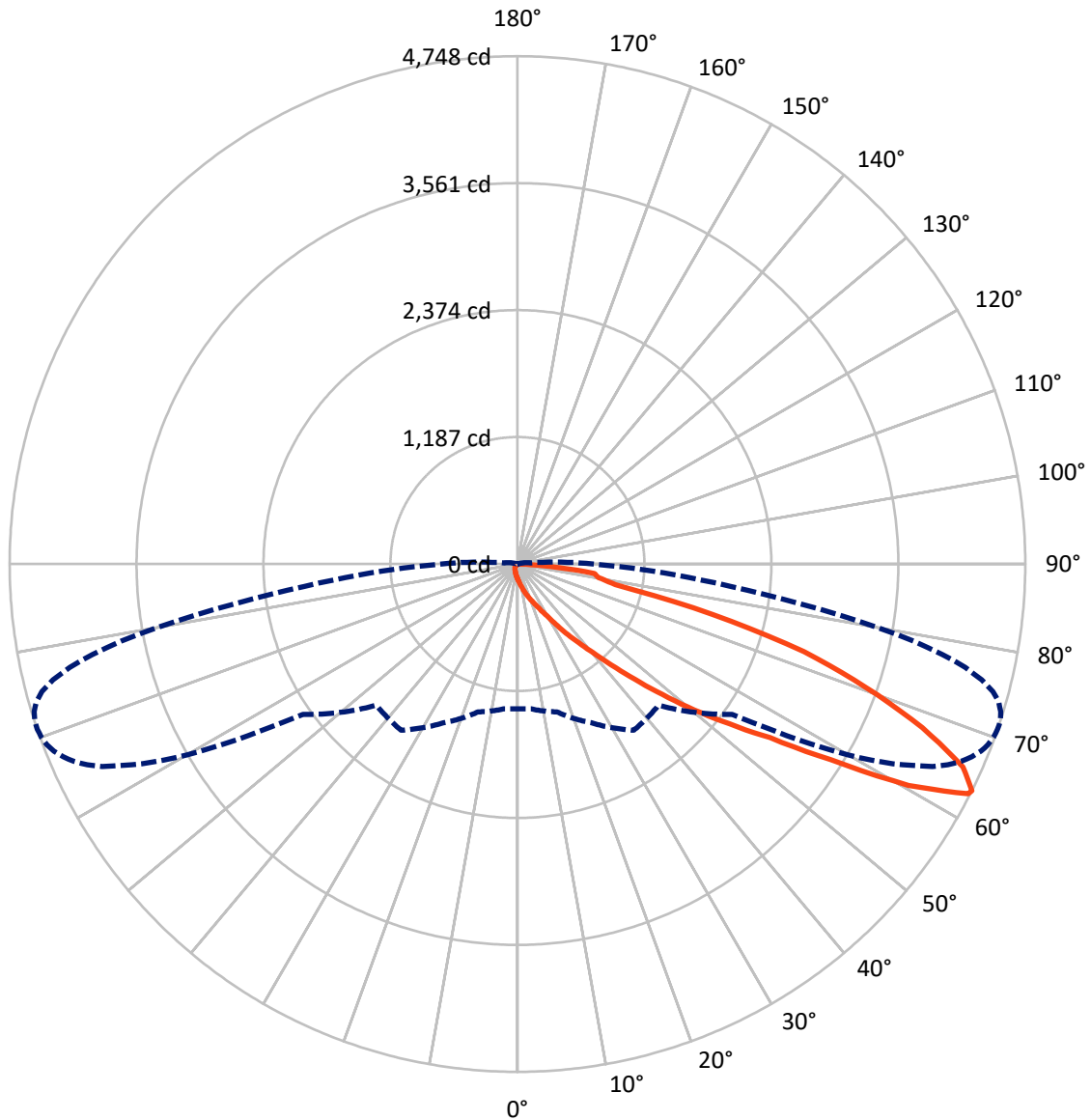
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7.5 fc
 Type II - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 71-Deg Lateral - - - Horizontal Cone Through 63-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	75.5	0.0	75.5
	% Fixture	2.1	0.0	2.1
Street Side	Lumens	3481.6	0.0	3481.6
	% Fixture	97.9	0.0	97.9
Total	Lumens	3557.1	0.0	3557.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	15.1	0.4
10°-20°	58.5	1.6
20°-30°	118.8	3.3
30°-40°	290.2	8.2
40°-50°	649.1	18.2
50°-60°	912.7	25.7
60°-70°	1073.3	30.2
70°-80°	387.6	10.9
80°-90°	51.8	1.5
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°	3557.1	100.0
0°-180°	3557.1	100.0



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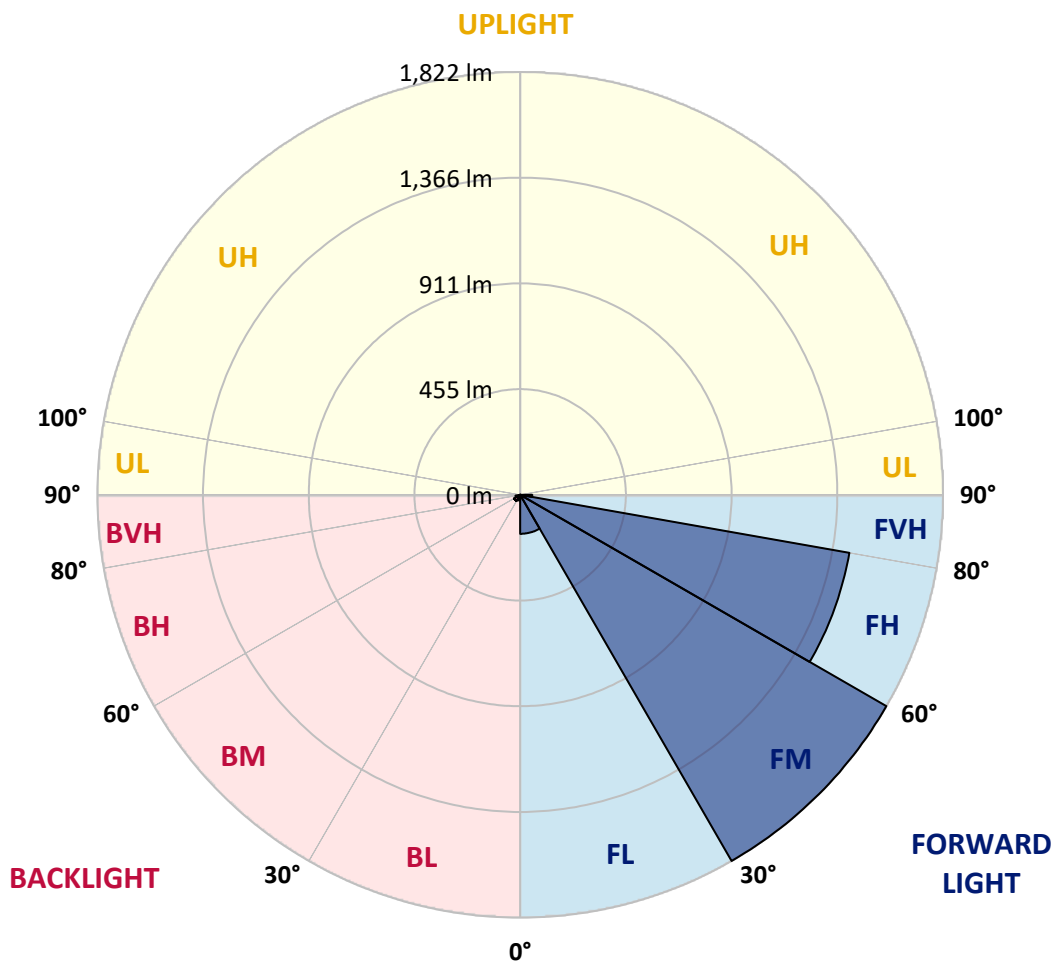
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	168.1	4.7			
FM	(30°-60°)	1821.6	51.2			
FH	(60°-80°)	1440.1	40.5			G1/1800
FVH	(80°-90°)	51.7	1.5			G1/100
BL	(0°-30°)	24.3	0.7	B0/110		
BM	(30°-60°)	30.4	0.9	B0/220		
BH	(60°-80°)	20.7	0.6	B0/110		G0/110
BVH	(80°-90°)	0.1	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G1

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	56°	57°	58°	59°
0°	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4
2.5°	178.5	180.4	179.1	175.9	172.0	166.8	162.3	162.3	161.7	159.7	160.4
5°	234.1	234.7	232.2	224.4	217.3	206.3	194.0	192.7	191.4	189.5	188.8
7.5°	288.4	291.0	288.4	280.0	265.8	249.0	229.6	227.6	223.8	223.8	221.2
10°	344.0	344.0	341.4	331.7	318.8	294.9	270.3	267.1	262.6	261.2	257.4
12.5°	383.5	383.5	382.2	377.0	366.6	345.3	315.6	312.3	306.5	304.6	300.0
15°	399.0	399.0	399.6	404.2	404.8	395.1	364.1	361.5	355.7	350.5	348.6
17.5°	408.7	408.0	408.0	414.5	426.2	432.6	412.6	410.0	403.5	400.9	394.5
20°	430.0	428.7	424.8	424.8	435.8	458.5	458.5	457.8	450.7	448.8	445.6
22.5°	461.7	460.4	448.8	439.1	444.2	472.7	499.2	497.9	495.4	492.8	490.8
25°	513.4	508.9	488.9	460.4	455.9	486.3	530.3	533.5	535.4	535.4	536.7
27.5°	591.7	585.9	550.3	497.3	477.2	508.3	564.5	571.0	576.8	578.1	583.9
30°	700.3	690.0	638.9	561.3	515.4	540.6	615.0	622.1	630.5	633.1	642.1
32.5°	878.8	873.0	823.8	707.4	609.2	604.0	685.4	694.5	705.5	710.0	721.0
35°	1150.4	1151.7	1111.6	1006.8	871.0	799.9	811.6	819.3	823.2	836.8	842.6
37.5°	1334.7	1337.9	1347.0	1305.6	1208.6	1136.2	1045.0	1053.4	1033.4	1035.3	1036.0
40°	1435.6	1445.9	1499.0	1539.0	1531.3	1489.2	1416.2	1420.7	1383.2	1374.8	1334.0
42.5°	1502.8	1516.4	1601.1	1725.3	1788.7	1826.8	1810.0	1808.1	1779.0	1768.0	1733.7
45°	1544.9	1557.2	1663.8	1846.9	1993.0	2104.2	2150.2	2155.3	2130.8	2119.8	2091.3
47.5°	1542.9	1557.2	1671.6	1892.1	2107.5	2285.3	2414.6	2421.1	2436.0	2426.3	2428.2
50°	1457.6	1471.2	1586.2	1815.2	2073.8	2368.1	2604.8	2625.4	2649.4	2665.5	2673.3
52.5°	1354.1	1363.8	1466.0	1683.2	1930.3	2333.8	2717.3	2752.8	2788.4	2818.8	2840.1
55°	1316.0	1327.0	1407.1	1587.6	1815.2	2190.2	2769.6	2822.0	2872.5	2922.2	2963.0
57.5°	1336.0	1346.4	1403.9	1542.3	1746.6	2038.9	2784.5	2866.0	2948.8	3029.6	3109.8
60°	1409.7	1420.7	1469.8	1584.3	1728.5	1951.6	2726.3	2861.5	2999.2	3140.2	3272.8
62.5°	1380.6	1385.2	1457.6	1658.0	1857.8	1877.2	2514.9	2703.7	2913.8	3131.1	3345.2
63°	1352.8	1358.0	1431.7	1638.0	1897.3	1866.3	2449.6	2648.7	2870.5	3104.6	3337.4
65°	1226.7	1227.4	1283.6	1446.6	1853.3	1885.7	2158.6	2348.7	2603.4	2884.1	3178.3
67.5°	915.7	911.2	965.5	1089.6	1455.0	1886.3	1852.7	1959.4	2136.6	2385.5	2649.4
70°	324.6	317.5	405.4	577.5	906.6	1542.9	1592.1	1599.2	1648.3	1782.8	1948.4
72.5°	105.4	107.4	129.3	211.4	417.8	1038.5	1441.4	1419.4	1406.5	1405.8	1427.8
75°	42.0	42.7	51.7	93.8	187.5	500.5	1262.3	1274.6	1279.1	1285.6	1292.7
77.5°	20.0	22.0	29.1	52.4	93.1	247.7	903.4	1007.5	1067.0	1112.9	1140.7
80°	7.1	8.4	16.2	32.3	43.3	113.8	476.0	574.2	661.5	774.0	871.0
82.5°	0.0	0.0	3.2	22.6	23.9	45.9	195.3	228.9	261.9	339.5	435.8
85°	0.0	0.0	0.0	6.5	7.1	7.8	66.0	79.5	89.2	104.1	120.3
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.6	1.9	3.9	9.7	14.9
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):

	60°	61°	62°	64°	65°	66°	67°	68°	69°	70°	71°
0°	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4
2.5°	159.1	158.4	158.4	157.1	156.5	155.2	154.6	152.6	152.0	152.0	152.0
5°	188.2	185.6	184.3	181.1	179.1	178.5	175.2	174.0	172.0	172.6	169.4
7.5°	220.5	216.0	214.0	209.5	208.2	203.7	202.4	199.2	197.2	193.4	192.0
10°	256.1	250.2	247.0	239.9	238.0	234.7	230.8	227.0	223.8	219.9	217.9
12.5°	296.8	291.6	289.0	279.4	274.8	270.3	265.1	260.0	254.8	251.6	247.0
15°	344.7	336.3	333.7	324.6	316.9	311.0	303.9	297.5	293.6	287.1	282.6
17.5°	391.9	383.5	381.5	368.0	359.6	355.7	347.9	339.5	332.4	325.9	318.8
20°	439.1	433.3	428.1	415.2	406.1	399.6	389.3	380.9	375.1	366.0	357.0
22.5°	486.3	480.5	476.6	463.0	454.6	445.6	436.5	427.4	419.0	408.0	397.7
25°	534.8	530.9	529.0	516.7	508.9	500.5	491.5	481.1	470.8	458.5	447.5
27.5°	585.2	586.5	582.6	580.0	571.6	565.8	551.6	544.5	536.7	521.8	508.3
30°	649.2	653.1	651.8	653.8	648.6	644.7	633.7	624.7	615.6	601.4	585.9
32.5°	730.1	735.2	737.8	745.0	742.4	741.1	737.8	724.9	718.4	693.9	687.4
35°	854.9	852.3	863.3	869.1	866.5	865.2	861.4	854.2	846.5	829.0	812.8
37.5°	1017.2	1019.8	1023.7	1012.0	1004.3	1003.6	992.0	984.9	973.9	954.5	935.1
40°	1314.6	1298.5	1280.4	1231.2	1209.9	1197.6	1163.4	1153.6	1134.9	1108.4	1088.3
42.5°	1701.4	1685.2	1630.9	1548.8	1504.8	1444.0	1416.2	1381.9	1355.4	1312.1	1288.8
45°	2085.5	2038.9	2032.4	1936.8	1882.4	1802.2	1752.4	1694.9	1634.8	1577.8	1536.5
47.5°	2409.4	2399.1	2367.4	2309.2	2258.8	2191.5	2127.5	2038.9	1976.8	1896.0	1821.6
50°	2668.8	2668.1	2656.5	2622.8	2580.8	2526.5	2470.2	2395.2	2324.8	2225.8	2146.3
52.5°	2862.8	2873.1	2877.0	2866.6	2850.5	2802.6	2774.2	2711.4	2652.0	2567.9	2481.9
55°	3005.0	3043.2	3062.6	3084.6	3080.0	3063.2	3061.9	3021.2	2994.0	2927.4	2866.6
57.5°	3180.9	3243.6	3303.8	3410.5	3414.4	3451.9	3471.3	3490.7	3495.8	3469.3	3449.3
60°	3404.7	3532.7	3646.5	3869.6	3927.8	4019.6	4079.1	4143.8	4198.8	4203.3	4202.0
62.5°	3562.4	3759.7	3943.3	4274.4	4387.6	4493.6	4573.2	4635.9	4674.0	4712.8	4731.0
63°	3567.0	3783.0	3978.2	4319.7	4438.7	4539.6	4615.2	4673.4	4713.5	4736.8	4748.4
65°	3457.7	3719.6	3952.4	4292.5	4404.4	4505.9	4545.4	4583.5	4602.9	4612.0	4577.7
67.5°	2930.7	3186.8	3458.3	3838.6	3934.3	4055.8	4088.2	4107.6	4116.6	4114.7	4085.6
70°	2191.5	2406.2	2708.2	3142.8	3269.5	3388.5	3462.2	3493.9	3504.2	3501.0	3457.7
72.5°	1530.0	1656.1	1905.1	2388.8	2561.4	2714.0	2805.2	2852.4	2862.1	2842.7	2802.6
75°	1284.9	1291.4	1347.6	1612.1	1773.8	1936.8	2039.6	2069.3	2049.9	1991.1	1888.9
77.5°	1147.2	1161.4	1161.4	1200.8	1232.5	1277.8	1287.5	1215.1	1131.0	1022.4	934.4
80°	962.2	1012.0	1047.0	1076.0	1079.3	1070.2	1046.3	1005.6	940.9	858.1	766.3
82.5°	584.6	682.9	723.0	873.0	946.7	996.5	992.6	938.3	889.2	803.2	724.9
85°	147.4	159.1	172.6	224.4	251.6	307.2	342.1	358.2	364.1	334.3	302.6
87.5°	14.2	9.7	16.2	12.3	17.4	12.9	17.4	16.2	20.0	21.3	23.3
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):

	72°	73°	74°	75°	76°	77°	78°	79°	80°	81°	82°
0°	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4
2.5°	150.7	150.0	149.4	148.7	148.1	147.4	146.2	146.2	144.8	144.2	143.6
5°	167.5	166.2	165.6	164.2	162.3	161.0	159.1	156.5	154.6	153.9	152.6
7.5°	188.8	185.6	184.3	182.4	179.8	175.9	173.3	171.4	168.1	166.2	162.3
10°	212.8	209.5	205.6	201.8	197.9	193.4	190.1	187.5	182.4	179.8	175.2
12.5°	243.2	237.3	232.8	227.6	222.4	217.3	213.4	205.6	201.1	195.3	191.4
15°	274.2	269.0	263.8	257.4	249.6	241.2	237.3	230.2	224.4	215.3	210.2
17.5°	311.7	302.0	294.2	286.5	279.4	271.6	263.8	252.8	244.4	236.7	226.3
20°	348.6	336.9	328.5	318.2	307.8	295.5	286.5	278.7	267.1	256.7	245.7
22.5°	388.0	376.4	362.8	352.4	338.2	328.5	316.2	303.3	291.6	278.1	264.5
25°	435.8	423.6	408.0	394.5	378.3	364.7	349.8	335.0	320.8	305.2	287.8
27.5°	494.7	481.8	465.0	448.8	427.4	410.6	396.4	376.4	358.2	338.8	318.8
30°	569.1	554.8	534.2	510.9	489.5	470.8	450.7	424.2	404.2	380.9	355.0
32.5°	666.0	649.2	621.4	599.4	573.0	548.4	520.6	494.0	465.6	435.2	405.4
35°	788.3	772.8	740.4	708.1	679.0	649.9	615.0	584.6	544.5	507.6	469.5
37.5°	915.0	887.2	857.5	822.6	786.3	751.4	708.7	666.7	620.8	580.7	532.8
40°	1059.9	1026.2	1001.7	964.2	913.1	863.3	823.8	771.5	713.9	660.2	604.0
42.5°	1258.4	1220.9	1176.9	1120.0	1083.2	1025.0	973.9	911.8	836.1	776.0	708.1
45°	1488.0	1436.9	1394.2	1339.2	1294.6	1222.2	1162.7	1079.9	1004.3	925.4	842.6
47.5°	1749.9	1686.5	1624.4	1570.1	1499.0	1427.8	1352.2	1264.2	1167.2	1080.6	982.3
50°	2050.6	1960.7	1874.7	1804.8	1707.2	1625.0	1542.9	1444.0	1336.6	1237.1	1125.2
52.5°	2384.9	2280.8	2167.0	2059.6	1946.4	1841.0	1742.1	1628.3	1508.6	1387.1	1262.3
55°	2788.4	2710.2	2576.3	2439.8	2288.5	2147.6	2020.2	1879.2	1733.7	1574.0	1442.7
57.5°	3420.2	3382.0	3270.2	3133.7	2936.5	2765.1	2549.1	2376.5	2165.7	1945.8	1776.4
60°	4276.4	4229.2	4166.4	4055.8	3899.4	3666.6	3428.6	3160.2	2839.5	2534.9	2245.8
62.5°	4732.9	4716.1	4665.0	4588.7	4442.6	4258.9	4019.0	3724.1	3362.0	2992.1	2623.5
63°	4746.5	4725.2	4681.2	4603.6	4474.9	4297.0	4061.7	3775.2	3420.8	3043.8	2667.5
65°	4562.8	4554.4	4509.8	4425.1	4337.2	4201.4	4019.0	3772.6	3475.2	3118.8	2744.4
67.5°	4046.8	4021.6	3953.0	3927.2	3865.7	3771.3	3632.3	3462.9	3250.1	2970.1	2646.8
70°	3422.8	3385.3	3299.2	3253.4	3178.3	3118.8	3034.1	2913.2	2781.9	2586.6	2345.4
72.5°	2761.2	2683.6	2604.8	2485.1	2380.4	2274.3	2180.5	2095.2	1951.0	1872.1	1689.1
75°	1793.2	1652.2	1517.1	1336.0	1173.0	1028.8	888.5	817.4	669.3	609.2	523.2
77.5°	851.0	772.1	666.0	583.9	479.2	391.2	319.4	239.9	188.2	147.4	112.5
80°	686.8	620.2	556.1	481.8	402.9	321.4	246.4	184.3	130.6	90.5	64.0
82.5°	612.4	540.0	461.1	410.0	356.3	291.6	239.3	195.3	144.2	105.4	71.8
85°	238.0	200.5	154.6	126.1	98.3	80.8	73.1	50.4	39.4	31.0	23.9
87.5°	20.7	16.8	13.6	9.0	9.7	5.2	5.8	3.9	3.2	3.2	2.6
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):

	83°	84°	85°	86°	87°	88°	89°	90°	95°	105°	115°
0°	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4	136.4
2.5°	142.9	142.3	141.6	140.3	140.3	139.0	138.4	137.7	134.5	127.4	121.6
5°	150.0	148.7	147.4	145.5	144.2	142.3	141.0	139.0	131.9	118.3	106.7
7.5°	160.4	157.8	155.8	152.0	150.0	147.4	145.5	142.3	130.6	109.9	93.8
10°	172.6	168.1	164.9	160.4	156.5	153.2	150.0	145.5	129.3	100.9	82.1
12.5°	187.5	182.4	175.9	170.7	165.6	161.0	156.5	150.7	127.4	93.1	73.1
15°	202.4	194.6	190.1	183.0	175.9	169.4	163.0	157.8	128.0	84.7	65.3
17.5°	219.2	211.4	201.8	194.0	186.2	177.8	170.1	159.7	124.8	78.2	59.5
20°	235.4	224.4	215.3	205.6	194.6	184.3	174.6	165.6	122.2	71.8	54.3
22.5°	252.8	239.9	228.3	216.0	202.4	190.8	179.1	167.5	117.7	66.0	49.8
25°	274.2	259.3	242.5	227.6	213.4	199.2	184.3	170.1	113.2	60.8	46.6
27.5°	300.0	280.6	263.8	245.1	225.0	206.9	190.8	175.2	108.6	56.9	43.3
30°	333.0	310.4	286.5	262.6	241.2	220.5	197.9	178.5	104.1	53.0	40.1
32.5°	377.0	348.6	319.4	291.6	263.2	236.7	212.8	187.5	101.5	49.8	36.8
35°	435.2	398.4	362.8	327.8	293.6	261.2	230.2	201.8	101.5	45.9	33.0
37.5°	490.2	447.5	402.2	358.9	318.2	280.6	243.8	209.5	96.4	42.7	29.8
40°	549.7	498.6	445.6	394.5	345.3	298.8	256.7	217.3	91.8	38.8	26.5
42.5°	640.8	576.2	507.0	447.5	388.6	331.1	278.7	232.2	86.0	34.9	23.3
45°	760.5	678.4	596.9	524.4	449.4	379.0	316.9	259.3	84.7	31.7	20.0
47.5°	888.5	791.5	695.8	603.3	515.4	433.3	358.9	289.7	84.7	28.4	17.4
50°	1015.9	894.3	792.2	684.8	585.9	488.9	400.3	321.4	85.4	25.9	14.2
52.5°	1131.0	1001.0	886.6	762.4	653.1	540.6	444.2	352.4	84.1	22.6	11.6
55°	1290.7	1138.1	1005.6	868.5	740.4	613.7	504.4	399.0	84.7	20.0	9.7
57.5°	1585.0	1405.8	1246.1	1066.4	918.9	755.3	622.7	494.7	92.5	16.8	7.1
60°	2007.2	1774.4	1550.0	1330.8	1143.3	948.6	776.6	626.0	108.6	13.6	5.2
62.5°	2291.1	1986.5	1718.8	1477.0	1259.0	1055.4	867.8	696.4	119.6	11.0	3.2
63°	2320.2	2005.3	1736.3	1486.7	1264.2	1060.5	871.7	701.6	120.3	10.4	3.2
65°	2375.2	2037.6	1746.0	1488.6	1259.0	1053.4	869.1	701.0	121.6	8.4	2.6
67.5°	2312.4	1987.8	1689.7	1433.0	1213.8	1011.4	836.8	675.1	120.9	5.8	1.9
70°	2068.0	1799.0	1537.1	1297.8	1098.7	915.7	761.8	615.6	111.2	3.9	1.3
72.5°	1518.4	1335.4	1132.3	959.6	827.7	687.4	586.5	462.4	86.0	2.6	0.6
75°	450.1	410.0	344.7	303.9	268.4	221.8	197.2	153.9	44.0	1.3	0.0
77.5°	89.9	81.5	73.1	66.6	62.7	53.7	51.1	42.0	18.1	0.6	0.0
80°	47.2	38.8	33.0	29.1	25.2	20.7	17.4	14.2	3.2	0.0	0.0
82.5°	45.3	30.4	22.0	18.1	15.5	12.3	9.7	7.1	1.9	0.0	0.0
85°	16.8	12.9	9.7	7.8	6.5	5.8	4.5	3.9	0.0	0.0	0.0
87.5°	2.6	1.9	1.9	1.3	1.3	0.6	0.6	0.6	0.0	0.0	0.0
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):

	125°	135°	145°	155°	165°	175°	180°
0°	136.4	136.4	136.4	136.4	136.4	136.4	136.4
2.5°	115.8	110.6	108.0	104.8	104.8	104.1	105.4
5°	96.4	89.2	84.1	80.2	80.8	78.9	79.5
7.5°	81.5	74.4	69.8	67.2	66.6	66.0	66.0
10°	70.5	64.0	60.1	58.2	57.6	57.6	57.6
12.5°	62.7	56.2	53.0	51.7	51.7	51.1	51.1
15°	56.2	51.1	47.8	46.6	46.6	45.9	46.6
17.5°	51.1	45.9	43.3	42.0	42.0	41.4	41.4
20°	46.6	42.0	39.4	37.5	37.5	36.8	37.5
22.5°	42.7	38.2	34.9	33.6	33.0	32.3	33.0
25°	38.8	34.3	31.0	29.1	28.4	28.4	27.8
27.5°	35.6	31.0	27.2	25.2	24.6	24.6	23.9
30°	32.3	27.2	23.3	21.3	20.7	20.7	20.7
32.5°	29.1	23.3	20.0	18.1	17.4	17.4	17.4
35°	25.9	20.0	16.8	14.9	14.2	14.2	14.2
37.5°	22.0	16.8	12.9	11.6	11.0	10.4	10.4
40°	18.8	12.9	9.7	8.4	7.1	7.1	7.1
42.5°	15.5	10.4	7.1	5.2	4.5	3.9	4.5
45°	12.9	7.8	4.5	2.6	1.9	1.9	1.9
47.5°	10.4	5.2	1.9	0.6	0.6	0.6	0.6
50°	7.8	3.2	0.6	0.0	0.0	0.6	0.6
52.5°	5.8	1.9	0.0	0.0	0.0	0.0	0.0
55°	3.2	0.6	0.0	0.0	0.0	0.0	0.0
57.5°	1.9	0.0	0.0	0.0	0.0	0.0	0.0
60°	1.3	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.6	0.0	0.0	0.0	0.0	0.0	0.0
63°	0.6	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.6	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)