

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: P196766

Luminaire Tested: **NAV-AF-02-D-UNV-T2R-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196766
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-T2R-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12346.3 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

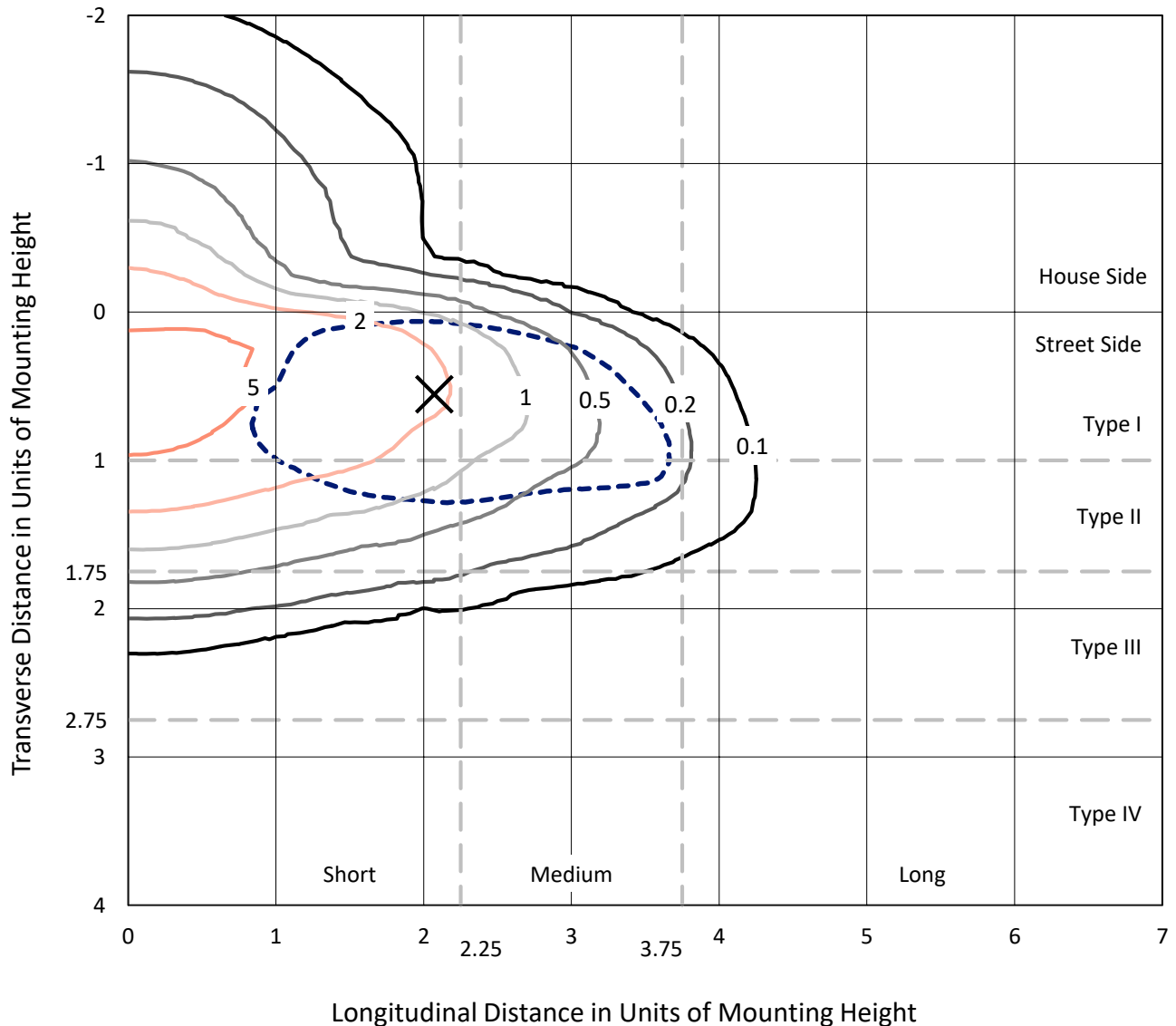
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

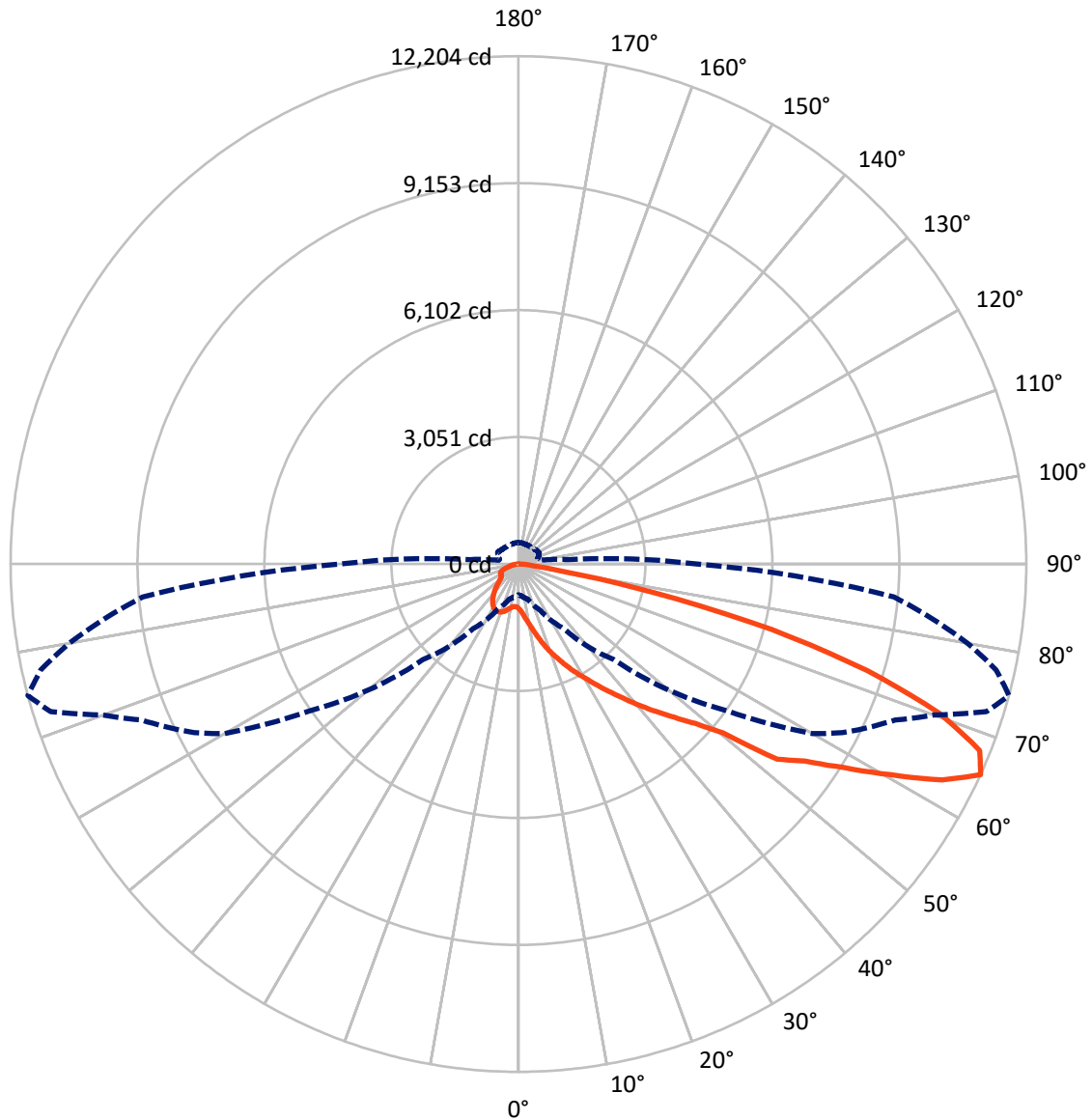
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.7 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1855.2	0.0	1855.2
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	10491.1	0.0	10491.1
	% Fixture	85.0	0.0	85.0
Total	Lumens	12346.3	0.0	12346.3
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	126.3	1.0
10°-20°	482.4	3.9
20°-30°	973.5	7.9
30°-40°	1653.2	13.4
40°-50°	2305.8	18.7
50°-60°	2826.1	22.9
60°-70°	2658.9	21.5
70°-80°	1165.9	9.4
80°-90°	154.3	1.2
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°	12346.3	100.0
0°-180°	12346.3	100.0

Coefficient of Utilization



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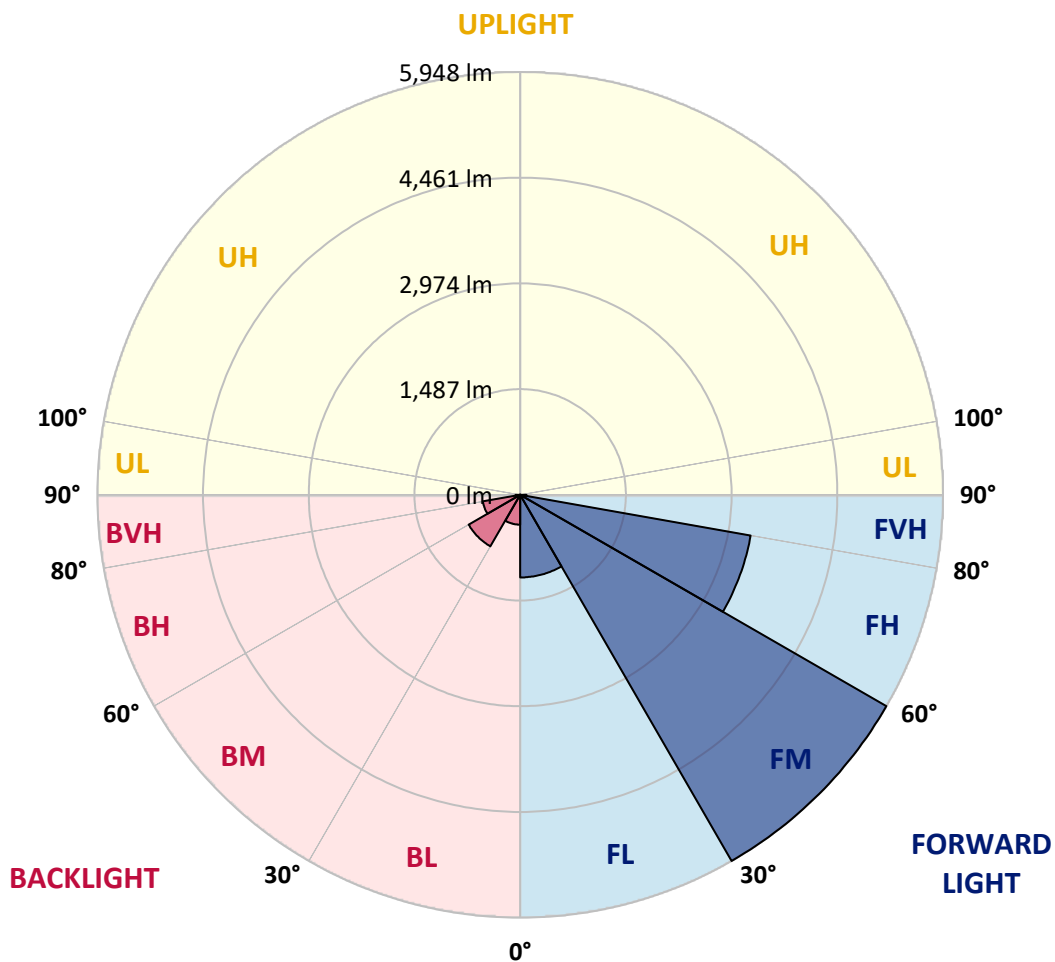
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1162.1	9.4			
FM	(30°-60°)	5947.9	48.2			
FH	(60°-80°)	3291.6	26.7			G2/5000
FVH	(80°-90°)	89.4	0.7			G1/100
BL	(0°-30°)	420.0	3.4	B1/500		
BM	(30°-60°)	837.2	6.8	B1/1000		
BH	(60°-80°)	533.2	4.3	B2/1000		G2/1000
BVH	(80°-90°)	64.8	0.5			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7
2.5°	1346.9	1331.4	1332.9	1310.9	1278.7	1243.3	1214.2	1198.6	1185.1	1181.3	1159.2
5°	1761.7	1742.0	1734.9	1684.7	1609.3	1519.8	1431.0	1396.5	1368.2	1350.9	1308.5
7.5°	2100.9	2090.7	2081.4	2035.0	1960.4	1845.7	1702.8	1651.7	1604.6	1552.8	1501.7
10°	2331.9	2328.0	2324.1	2291.8	2229.8	2130.0	1976.1	1920.3	1861.4	1795.4	1728.7
12.5°	2506.3	2506.3	2509.3	2482.7	2445.0	2367.9	2228.3	2176.3	2116.7	2047.5	1971.4
15°	2623.4	2626.4	2642.9	2650.7	2631.2	2581.7	2459.1	2413.5	2357.0	2288.7	2213.3
17.5°	2701.0	2707.3	2731.7	2757.6	2782.8	2765.5	2674.3	2631.9	2580.8	2518.0	2447.3
20°	2881.7	2873.8	2874.6	2866.8	2903.7	2917.0	2866.8	2831.5	2790.6	2733.2	2668.8
22.5°	3261.1	3246.1	3207.7	3109.4	3064.7	3060.0	3030.1	3011.3	2979.8	2943.8	2879.3
25°	3755.8	3738.6	3662.4	3500.5	3367.1	3243.8	3188.7	3177.0	3156.6	3132.3	3085.9
27.5°	4267.1	4248.3	4150.1	3945.9	3771.5	3522.5	3351.3	3335.6	3316.8	3306.6	3284.6
30°	4717.2	4696.7	4600.2	4392.8	4182.3	3885.5	3570.5	3515.5	3483.3	3486.5	3473.9
32.5°	5112.2	5094.2	4985.8	4774.5	4560.9	4272.7	3854.7	3769.2	3696.9	3670.2	3679.7
35°	5443.8	5427.2	5308.6	5095.8	4880.5	4641.0	4220.8	4092.0	3974.2	3900.3	3891.7
37.5°	5638.5	5629.0	5545.8	5365.1	5151.5	4975.5	4630.7	4487.9	4314.3	4206.7	4159.5
40°	5627.5	5637.7	5623.6	5541.8	5376.1	5248.2	5058.0	4916.6	4747.0	4586.8	4491.0
42.5°	5467.3	5481.4	5545.0	5587.4	5542.6	5464.9	5431.2	5325.9	5173.5	5003.8	4871.1
45°	5247.2	5259.8	5342.3	5495.5	5623.6	5645.5	5757.9	5705.2	5576.4	5432.0	5285.9
47.5°	4910.4	4934.7	5030.6	5274.1	5578.8	5790.8	6031.9	6056.3	5981.7	5862.3	5725.6
50°	4422.7	4454.8	4589.1	4935.6	5409.1	5940.1	6439.6	6532.3	6502.4	6381.5	6243.3
52.5°	3923.2	3955.3	4134.4	4502.8	5135.8	6001.3	6840.9	7078.2	7249.4	7374.2	7398.6
55°	3403.2	3439.4	3635.7	4059.7	4771.4	5923.6	7127.6	7397.0	7570.6	7700.9	7753.6
57.5°	2816.4	2857.3	3047.3	3476.2	4256.2	5611.0	7446.4	7828.2	8086.6	8287.7	8400.7
60°	2143.3	2194.5	2391.5	2823.6	3579.2	5012.5	7588.6	8153.4	8564.2	8865.8	9044.8
62.5°	1358.7	1410.6	1615.6	2064.0	2808.6	4194.9	7186.5	8010.5	8711.0	9157.1	9485.5
65°	741.5	764.2	878.1	1215.8	1893.7	3254.8	6167.0	7138.6	8147.9	8780.1	9284.3
67.5°	556.0	559.2	571.0	653.5	1008.5	2197.5	4821.6	5711.5	6832.3	7646.0	8248.4
70°	487.0	487.0	488.5	489.3	547.4	1190.7	3266.6	4085.7	5113.0	5936.2	6684.6
72.5°	436.7	432.0	430.4	420.9	428.9	610.2	1778.2	2514.0	3380.4	4304.0	5002.3
75°	377.0	376.2	376.2	366.8	371.5	429.6	771.3	1206.4	1877.9	2737.9	3425.2
77.5°	325.9	320.4	321.2	315.8	330.6	329.1	366.0	497.1	817.6	1438.1	2008.3
80°	268.6	264.7	267.0	263.9	287.5	243.4	246.6	304.0	406.0	630.7	889.1
82.5°	198.8	200.3	215.2	213.6	241.9	164.1	180.6	226.9	273.3	314.1	341.7
85°	116.3	118.5	154.7	162.6	177.5	86.5	110.8	135.1	152.4	169.0	175.9
87.5°	12.6	16.5	86.5	88.7	79.3	25.9	44.8	56.6	60.5	64.4	56.6
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7
2.5°	1152.2	1142.0	1131.0	1124.8	1113.7	1104.3	1087.0	1072.9	1057.2	1046.1	1041.5
5°	1287.3	1262.9	1237.1	1218.1	1194.6	1174.2	1134.8	1087.7	1072.9	1041.5	1033.6
7.5°	1463.2	1419.3	1375.2	1339.1	1298.3	1264.5	1198.6	1113.7	1102.8	1052.5	1041.5
10°	1669.8	1605.3	1540.2	1484.4	1424.7	1373.0	1275.5	1156.1	1144.4	1079.9	1069.0
12.5°	1900.7	1822.1	1738.1	1654.8	1584.1	1511.2	1378.5	1222.1	1203.3	1127.1	1112.1
15°	2138.6	2053.8	1956.5	1855.9	1768.8	1672.1	1504.8	1308.5	1274.0	1184.4	1163.9
17.5°	2373.5	2281.7	2179.5	2067.1	1965.1	1849.6	1641.5	1405.1	1345.4	1240.9	1215.1
20°	2600.5	2507.1	2399.5	2289.5	2162.2	2030.2	1781.4	1500.1	1409.0	1288.0	1254.3
22.5°	2807.1	2727.0	2619.4	2492.9	2364.1	2215.7	1923.5	1595.1	1464.8	1324.2	1280.9
25°	3024.7	2951.5	2844.8	2723.1	2573.0	2408.1	2070.4	1685.6	1509.5	1343.9	1290.5
27.5°	3244.6	3181.7	3081.2	2953.2	2792.1	2609.1	2219.6	1768.8	1545.7	1350.1	1285.8
30°	3479.4	3430.6	3338.0	3195.1	3032.5	2829.9	2382.2	1850.5	1568.4	1341.4	1264.5
32.5°	3701.6	3700.1	3617.6	3469.2	3294.0	3071.0	2553.4	1932.9	1580.2	1317.1	1227.6
35°	3932.6	3964.8	3902.7	3761.4	3576.8	3329.3	2742.6	2020.9	1581.0	1274.0	1179.7
37.5°	4194.9	4252.3	4224.7	4090.4	3896.4	3623.9	2965.0	2119.8	1576.3	1214.2	1109.7
40°	4493.3	4571.9	4571.1	4458.0	4250.6	3953.8	3223.3	2230.5	1565.3	1139.7	1027.4
42.5°	4835.0	4928.4	4954.4	4842.8	4633.1	4314.3	3519.5	2352.4	1548.1	1065.9	940.1
45°	5226.1	5308.6	5357.3	5253.6	5043.1	4707.0	3859.5	2490.6	1526.8	970.8	840.4
47.5°	5644.8	5740.6	5813.5	5724.8	5500.2	5154.7	4262.4	2668.8	1519.0	862.4	732.8
50°	6163.9	6262.8	6420.7	6380.7	6257.4	5979.3	5114.7	3089.9	1522.1	759.5	642.5
52.5°	7452.0	7679.0	7878.4	7789.7	7496.8	7020.0	5807.3	3323.8	1456.2	675.4	579.6
55°	7840.8	8098.4	8392.9	8356.0	8074.8	7594.2	6354.7	3519.5	1392.5	614.1	538.7
57.5°	8520.9	8824.9	9236.4	9228.6	8883.8	8342.6	7059.2	3753.5	1365.0	578.8	518.3
60°	9241.1	9628.4	10197.0	10285.7	9911.1	9348.0	7891.8	4041.0	1369.0	559.2	506.6
62.5°	9767.3	10335.3	11162.3	11427.8	10986.3	10365.9	8755.8	4328.5	1345.4	536.5	492.4
65°	9799.6	10617.2	11790.6	12203.7	11756.9	10959.7	9060.6	4271.8	1204.0	505.8	469.7
67.5°	9014.2	10079.1	11504.7	11957.9	11500.7	10593.7	8526.5	3734.6	978.6	452.5	430.4
70°	7507.7	8744.0	10223.7	10728.7	10350.9	9432.8	7420.6	2983.0	731.3	381.8	371.5
72.5°	5801.8	6954.8	8298.7	8766.0	8477.0	7669.6	5852.9	2174.0	522.3	309.4	301.5
75°	4147.8	5129.5	6105.0	6283.3	5998.3	5256.8	3797.5	1358.0	366.0	253.7	242.7
77.5°	2568.2	3206.9	3557.2	3327.8	2964.1	2463.8	1545.7	670.8	243.4	206.6	195.6
80°	1139.7	1337.6	1248.9	1113.0	878.9	722.5	472.0	297.6	157.2	159.4	153.2
82.5°	383.3	405.3	394.3	391.9	353.5	309.4	200.3	128.8	88.0	102.1	99.8
85°	187.0	195.6	196.3	203.4	176.7	137.4	54.2	51.1	37.7	54.9	57.4
87.5°	56.6	57.4	51.8	56.6	45.6	31.4	10.2	14.1	7.1	13.3	13.3
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7
2.5°	1032.8	1029.7	1024.2	1017.9	1016.3	1008.5	1006.1	1002.2	999.8	995.9	992.7
5°	1023.4	1017.9	1011.6	1004.5	1004.5	993.5	988.8	984.1	984.1	977.1	973.9
7.5°	1032.8	1025.7	1018.8	1012.4	1014.8	1002.2	997.4	992.7	992.0	984.9	981.8
10°	1059.5	1052.5	1043.9	1037.5	1035.1	1025.0	1019.5	1012.4	1007.7	1003.0	998.3
12.5°	1100.4	1091.0	1079.9	1066.6	1061.1	1052.5	1043.9	1034.3	1023.4	1018.8	1011.6
15°	1149.1	1133.3	1118.4	1101.9	1087.0	1078.4	1066.6	1051.6	1036.8	1030.5	1021.0
17.5°	1189.1	1172.6	1151.4	1131.8	1105.0	1098.0	1081.5	1063.4	1039.0	1036.8	1022.5
20°	1222.9	1197.7	1171.8	1148.4	1107.5	1103.5	1083.1	1061.9	1027.4	1027.4	1010.0
22.5°	1241.7	1207.2	1176.5	1145.1	1094.1	1091.0	1067.4	1042.3	999.8	1001.4	980.2
25°	1244.9	1203.3	1164.8	1127.1	1068.1	1062.6	1032.8	1005.3	959.0	955.8	933.8
27.5°	1232.3	1183.6	1138.8	1093.2	1029.7	1017.9	984.9	951.8	906.5	898.5	874.9
30°	1203.3	1145.9	1095.7	1043.0	976.2	957.4	922.9	889.1	842.7	832.5	810.6
32.5°	1156.9	1091.7	1036.0	983.4	909.5	886.0	851.3	817.6	772.8	765.1	744.6
35°	1095.7	1022.5	963.6	908.0	834.0	809.7	776.8	746.9	706.1	703.0	688.8
37.5°	1018.8	942.5	879.6	826.2	756.4	743.8	709.9	688.0	654.3	657.4	650.3
40°	931.6	853.8	794.1	746.9	686.4	675.4	655.0	638.5	609.4	618.1	619.0
42.5°	843.5	765.8	711.6	669.2	617.4	610.2	596.1	586.7	564.8	582.1	589.0
45°	743.8	671.5	625.2	592.9	554.5	554.5	547.4	546.7	531.8	556.0	563.1
47.5°	647.2	590.6	558.5	538.7	512.1	524.7	522.3	528.6	517.6	542.7	549.0
50°	574.1	534.9	515.2	505.8	487.0	506.6	511.4	520.0	510.6	532.5	537.2
52.5°	527.8	501.8	490.9	488.5	475.2	499.6	507.4	515.2	504.2	524.7	523.9
55°	501.8	484.6	480.6	485.4	475.2	498.8	506.6	512.1	502.7	516.8	516.0
57.5°	492.4	483.0	485.4	492.4	485.4	505.0	508.9	515.2	505.8	512.1	515.2
60°	491.6	491.6	501.1	510.6	505.8	520.0	522.3	521.5	512.9	513.6	515.2
62.5°	487.0	498.8	514.4	529.4	527.8	545.1	546.7	536.5	529.4	521.5	519.2
65°	472.0	491.6	514.4	534.9	538.0	564.8	567.8	557.7	553.0	539.6	529.4
67.5°	439.0	464.2	490.9	516.0	521.5	557.7	564.8	568.5	571.0	562.3	549.0
70°	383.3	409.1	436.7	465.8	473.6	513.6	528.6	546.7	560.8	573.4	568.5
72.5°	311.8	335.3	358.9	385.6	397.3	439.0	458.7	490.1	512.1	544.3	557.7
75°	247.4	261.5	275.7	292.2	301.5	342.4	366.8	404.5	434.3	479.1	508.9
77.5°	194.8	201.8	208.9	216.0	219.9	242.7	262.3	300.0	334.6	391.1	435.1
80°	150.0	153.9	154.7	157.2	155.4	166.5	173.6	196.3	226.1	282.0	333.8
82.5°	96.5	99.8	101.3	105.2	97.4	111.6	116.3	118.5	134.3	175.2	212.1
85°	54.2	54.9	55.7	57.4	46.3	60.5	61.3	57.4	55.7	72.2	81.7
87.5°	13.3	12.6	13.3	13.3	5.5	12.6	12.6	8.6	6.3	11.8	9.4
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):

	135°	145°	155°	165°	175°	180°
0°	1069.7	1069.7	1069.7	1069.7	1069.7	1069.7
2.5°	985.7	984.1	984.9	980.9	979.4	980.2
5°	970.0	966.8	966.8	964.4	961.4	961.4
7.5°	977.1	970.8	968.4	963.6	959.0	959.8
10°	988.0	977.1	969.2	962.1	956.7	956.7
12.5°	995.2	975.4	963.6	954.3	948.1	948.1
15°	996.7	966.8	949.6	939.3	933.1	933.1
17.5°	987.2	949.6	927.6	914.2	907.2	908.7
20°	963.6	917.3	891.4	877.4	870.2	871.1
22.5°	926.7	873.4	843.5	827.1	820.0	820.0
25°	876.5	818.4	786.2	772.8	766.6	766.6
27.5°	819.2	759.5	731.3	721.0	717.1	717.1
30°	754.8	705.3	684.8	677.9	671.5	671.5
32.5°	700.6	665.3	658.2	648.8	632.3	631.5
35°	657.4	653.5	648.0	619.7	596.1	592.9
37.5°	633.8	657.4	622.8	574.1	555.2	554.5
40°	621.2	643.2	583.6	560.0	557.7	557.7
42.5°	591.4	607.2	581.3	567.8	567.8	568.5
45°	560.0	573.4	586.7	574.9	578.8	579.6
47.5°	538.0	564.8	586.7	576.5	584.3	589.0
50°	517.6	556.9	574.9	574.9	583.6	584.3
52.5°	512.9	545.9	563.9	572.5	573.4	569.5
55°	513.6	537.2	555.2	566.3	561.6	561.6
57.5°	512.9	532.5	548.3	552.2	554.5	554.5
60°	513.6	526.2	538.7	537.2	545.1	545.1
62.5°	516.0	517.6	523.9	522.3	534.1	534.1
65°	521.5	506.6	502.7	504.2	518.3	517.6
67.5°	531.8	491.6	479.1	479.8	500.3	497.1
70°	546.7	471.2	452.5	447.6	482.3	476.7
72.5°	551.3	447.6	417.8	413.1	433.5	417.8
75°	529.4	428.9	380.9	365.3	356.6	351.9
77.5°	472.0	417.1	342.4	309.4	296.1	293.0
80°	391.1	392.7	292.2	252.9	293.8	293.0
82.5°	295.3	339.2	234.1	219.2	212.8	177.5
85°	142.9	255.2	179.8	150.8	90.3	85.7
87.5°	12.6	106.8	103.7	67.5	30.6	29.1
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)