

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: P196247

Luminaire Tested: **NAV-AF-05-D-UNV-SLR-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196247
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24264)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-SLR-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR RIGHT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 29802.7 lumens
Efficiency: N/A
Efficacy: 93.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G5

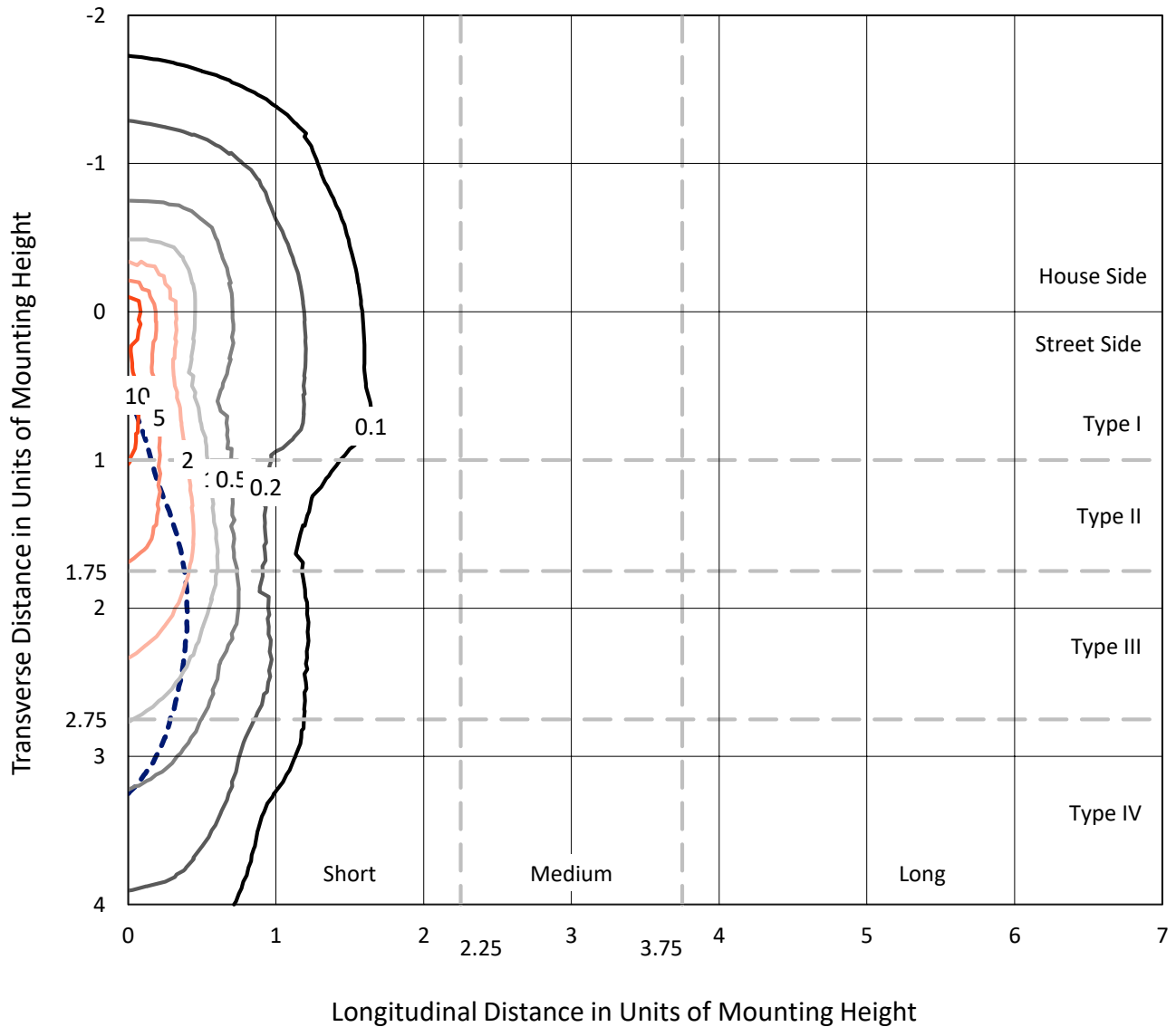
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

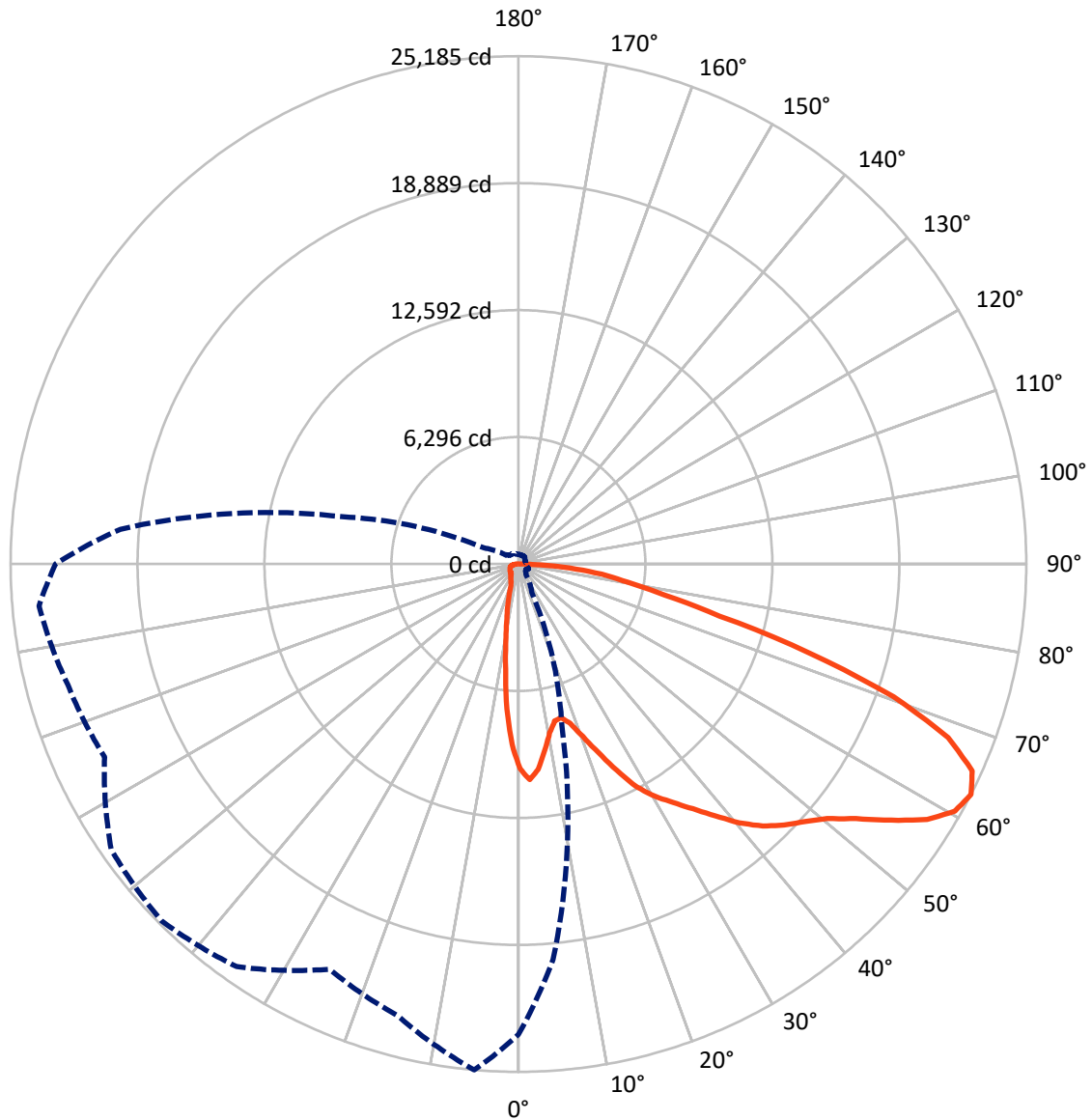
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 16.3 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 355-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5279.6	0.0	5279.6
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	24523.1	0.0	24523.1
	% Fixture	82.3	0.0	82.3
Total	Lumens	29802.7	0.0	29802.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	738.9	2.5
10°-20°	1349.6	4.5
20°-30°	1941.1	6.5
30°-40°	2973.0	10.0
40°-50°	4346.6	14.6
50°-60°	6324.3	21.2
60°-70°	7327.6	24.6
70°-80°	3819.7	12.8
80°-90°	981.9	3.3
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°	29802.7	100.0
0°-180°	29802.7	100.0



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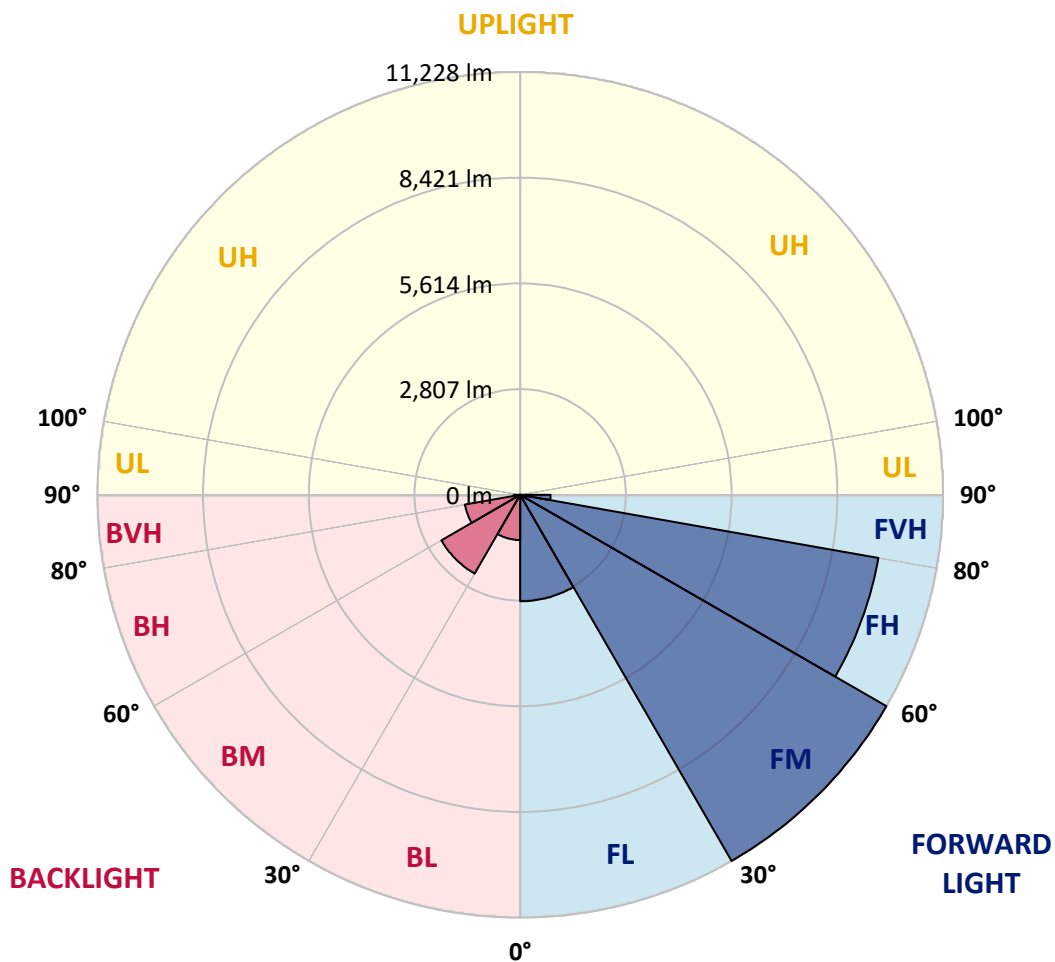
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2828.4	9.5			
FM	(30°-60°)	11228.3	37.7			
FH	(60°-80°)	9658.6	32.4			G4/12000
FVH	(80°-90°)	807.8	2.7			G5
BL	(0°-30°)	1201.2	4.0	B3/2500		
BM	(30°-60°)	2415.6	8.1	B2/2500		
BH	(60°-80°)	1488.7	5.0	B3/2500		G3/2500
BVH	(80°-90°)	174.1	0.6			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	10488.7	10341.8	10002.6	9704.4	9332.7	9053.9	8714.7	8535.4	8403.5	8315.0	8243.7
5°	9797.3	9443.0	8794.6	8226.4	7612.7	7169.7	6651.1	6368.1	6193.0	6097.9	6054.7
7.5°	8770.9	8302.0	7463.6	6700.8	5933.7	5380.5	4987.2	4568.0	4345.5	4200.6	4153.2
10°	7874.2	7344.7	6344.2	5486.4	4894.3	4501.1	4163.9	3779.3	3494.1	3245.6	3152.6
12.5°	7353.4	6737.6	5596.6	4820.9	4323.9	3902.5	3546.0	3131.0	2830.7	2571.4	2472.1
15°	7243.2	6556.0	5283.2	4397.4	3788.0	3280.2	2852.3	2400.7	2106.9	1892.9	1823.7
17.5°	7576.0	6728.9	5151.5	4010.6	3275.9	2655.7	2128.5	1644.4	1400.2	1283.5	1255.5
20°	8260.9	7109.2	5088.8	3662.7	2778.8	2044.2	1471.5	1117.2	996.1	961.6	959.4
22.5°	9162.0	7727.2	5157.9	3377.4	2312.1	1508.2	1078.3	918.4	868.7	849.3	849.3
25°	10179.8	8563.4	5341.6	3159.2	1901.6	1173.3	929.1	842.7	801.7	782.3	784.4
27.5°	11424.4	9581.2	5592.3	2958.2	1607.7	1028.6	868.7	795.2	754.1	734.7	736.8
30°	12362.3	10456.4	5808.3	2774.5	1456.4	970.3	836.3	767.1	721.7	693.7	691.5
32.5°	13239.5	11227.8	5983.4	2642.7	1369.9	866.5	756.3	704.4	665.5	633.1	626.7
35°	14209.7	11953.8	6065.5	2638.4	1313.8	782.3	691.5	628.8	589.9	553.2	546.7
37.5°	15309.6	12841.9	6134.6	2664.4	1283.5	728.2	661.2	600.7	568.4	531.5	522.9
40°	16454.9	13710.6	6188.6	2686.0	1279.2	691.5	637.4	583.4	551.1	512.1	503.5
42.5°	17438.0	14479.9	6262.1	2677.3	1248.9	685.0	622.4	568.4	538.1	499.2	488.4
45°	18224.6	15091.4	6376.7	2675.1	1203.6	700.1	618.0	564.0	527.2	486.2	477.5
47.5°	18957.1	15780.7	6618.7	2666.5	1153.9	695.8	641.8	559.7	522.9	481.9	475.4
50°	19795.5	16707.7	7031.5	2601.7	1084.7	665.5	685.0	555.4	512.1	475.4	468.9
52.5°	20962.4	18064.7	7643.0	2485.0	989.7	633.1	691.5	553.2	494.8	462.4	453.8
55°	22334.6	19518.9	8302.0	2316.5	864.3	576.9	656.9	544.5	477.5	442.9	430.0
57.5°	23395.5	20592.9	8762.3	2074.4	741.1	544.5	585.6	525.1	455.9	421.4	410.6
60°	23693.7	20640.5	8844.3	1784.8	678.5	522.9	503.5	572.6	438.6	401.9	391.1
62.5°	23337.2	19696.1	8308.5	1581.8	656.9	501.3	458.1	546.7	421.4	384.6	373.8
65°	22280.5	18101.4	7109.2	1551.5	678.5	481.9	434.3	436.5	404.1	367.3	356.5
67.5°	19812.8	15754.8	5601.0	1570.9	704.4	462.4	417.1	397.6	384.6	352.2	339.2
70°	16113.4	12684.2	4412.5	1605.5	728.2	436.5	395.5	371.6	360.9	326.3	319.8
72.5°	12411.9	10151.7	3481.1	1581.8	752.0	410.6	365.2	345.8	332.8	300.3	293.9
75°	8814.2	8066.5	2558.4	1357.0	689.3	373.8	330.6	313.3	302.5	267.9	265.8
77.5°	6352.9	6041.8	1780.5	1019.9	544.5	328.5	291.7	276.6	270.1	231.2	231.2
80°	5067.2	4598.3	1065.3	665.5	397.6	272.3	244.2	237.7	231.2	192.3	194.5
82.5°	3641.0	3189.5	680.7	414.9	291.7	207.5	190.2	188.0	177.2	142.6	142.6
85°	1867.0	1629.3	436.5	278.8	205.3	134.0	125.3	121.0	114.6	88.6	88.6
87.5°	363.0	499.2	242.0	136.2	99.4	47.6	47.6	41.0	47.6	32.4	34.6
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	8379.8	8336.5	8306.3	8291.2	8509.4	8600.2	8703.9	8853.0	8954.6	8911.3	9049.6
5°	6257.8	6288.1	6357.2	6465.3	6770.0	6914.7	7007.6	7130.8	7219.4	7130.8	7277.8
7.5°	4278.5	4323.9	4470.8	4693.4	5060.7	5222.8	5255.2	5257.4	5237.9	5093.2	5192.5
10°	3150.5	3059.7	3092.2	3252.1	3580.5	3725.3	3740.4	3701.5	3695.1	3636.7	3749.1
12.5°	2441.8	2316.5	2242.9	2268.9	2515.2	2634.1	2653.5	2675.1	2763.7	2791.8	2930.1
15°	1821.6	1756.8	1702.7	1679.0	1841.0	1934.0	1944.7	1996.6	2089.6	2115.5	2234.3
17.5°	1281.3	1298.6	1326.8	1337.6	1454.2	1514.8	1497.5	1497.5	1512.6	1506.1	1573.1
20°	978.9	1013.4	1067.4	1119.3	1225.2	1259.8	1216.6	1162.6	1128.0	1110.7	1125.8
22.5°	864.3	888.1	922.7	989.7	1078.3	1095.6	1039.3	996.1	963.7	946.4	948.6
25°	801.7	825.4	853.6	907.6	983.2	991.9	940.0	911.9	886.0	868.7	864.3
27.5°	747.7	762.8	780.1	814.7	892.4	896.7	862.1	844.9	827.6	814.7	810.3
30°	698.0	704.4	711.0	745.5	803.8	810.3	793.0	784.4	778.0	769.3	769.3
32.5°	633.1	641.8	652.5	682.8	739.0	747.7	736.8	730.4	719.5	715.2	708.8
35°	555.4	576.9	600.7	637.4	698.0	702.3	689.3	669.8	643.9	637.4	633.1
37.5°	522.9	527.2	557.5	600.7	663.4	667.7	650.4	618.0	598.5	600.7	605.1
40°	501.3	507.8	525.1	568.4	631.0	637.4	622.4	598.5	579.1	581.2	587.8
42.5°	484.1	492.7	503.5	531.5	594.2	607.2	602.9	581.2	561.8	566.1	574.8
45°	475.4	481.9	481.9	501.3	561.8	581.2	583.4	566.1	551.1	555.4	566.1
47.5°	471.1	471.1	464.6	479.7	540.2	559.7	564.0	555.4	546.7	551.1	561.8
50°	464.6	455.9	449.5	462.4	522.9	540.2	544.5	538.1	542.4	551.1	557.5
52.5°	445.1	436.5	436.5	445.1	505.6	522.9	525.1	520.8	529.4	540.2	551.1
55°	421.4	421.4	423.5	432.2	496.9	509.9	507.8	503.5	512.1	525.1	535.9
57.5°	399.8	397.6	408.4	419.2	486.2	494.8	490.5	490.5	496.9	507.8	518.6
60°	386.8	376.0	384.6	401.9	475.4	484.1	477.5	475.4	486.2	494.8	503.5
62.5°	373.8	363.0	369.5	386.8	460.2	466.8	462.4	462.4	473.2	479.7	488.4
65°	354.4	350.1	354.4	371.6	447.3	449.5	449.5	451.6	460.2	464.6	473.2
67.5°	337.1	337.1	339.2	356.5	436.5	432.2	432.2	442.9	445.1	449.5	458.1
70°	315.5	319.8	319.8	341.5	427.8	412.8	414.9	423.5	427.8	432.2	434.3
72.5°	291.7	293.9	298.2	326.3	414.9	393.3	395.5	401.9	404.1	410.6	412.8
75°	265.8	267.9	274.5	311.2	406.2	373.8	369.5	373.8	378.2	382.5	380.3
77.5°	235.5	239.9	246.3	302.5	378.2	369.5	337.1	341.5	345.8	345.8	343.6
80°	198.8	205.3	216.0	289.6	319.8	356.5	300.3	302.5	304.6	304.6	300.3
82.5°	149.1	162.0	177.2	239.9	250.6	304.6	259.3	263.6	257.2	252.8	250.6
85°	97.3	108.0	129.6	166.4	183.7	239.9	213.9	216.0	203.2	201.0	201.0
87.5°	38.9	41.0	58.3	84.3	110.2	149.1	153.4	157.7	146.9	146.9	151.3
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	9259.2	9475.3	9723.9	9976.6	10184.1	10452.0	10711.3	10987.9	11128.4	11210.5	11441.7
5°	7506.8	7802.9	8155.1	8550.4	8878.9	9440.7	10045.8	10720.0	11044.1	11364.0	11968.9
7.5°	5369.7	5659.3	6069.8	6582.0	7048.6	7789.9	8587.3	9499.1	9948.5	10467.1	11459.0
10°	3986.7	4293.6	4665.3	5099.6	5559.8	6331.2	7225.9	8250.1	8745.0	9330.5	10458.5
12.5°	3232.6	3591.4	3976.0	4364.9	4760.3	5278.9	6216.8	7355.5	7887.1	8477.0	9607.1
15°	2521.7	2906.3	3321.2	3744.7	4138.0	4717.1	5674.4	7020.6	7627.8	8198.2	9123.1
17.5°	1784.8	2147.9	2614.7	3128.9	3699.4	4384.4	5557.7	7167.5	7904.3	8500.8	9120.9
20°	1216.6	1467.2	1934.0	2543.4	3247.8	4116.5	5601.0	7684.0	8604.6	9259.2	9494.8
22.5°	972.4	1091.2	1406.8	2026.9	2858.8	3922.0	5778.1	8392.7	9609.3	10406.7	10175.4
25°	883.8	950.7	1115.0	1601.2	2513.1	3792.3	6123.9	9328.4	10735.2	11543.3	10994.4
27.5°	829.7	888.1	994.0	1315.9	2214.9	3708.0	6562.5	10430.4	12003.5	12666.9	11847.9
30°	795.2	853.6	950.7	1182.0	1990.2	3582.7	6947.2	11437.4	13016.9	13447.0	12308.2
32.5°	728.2	773.6	853.6	1058.9	1821.6	3435.8	7279.9	12338.4	13974.2	14116.8	12861.4
35°	659.1	706.6	786.5	959.4	1722.2	3321.2	7455.0	13138.0	14922.8	14786.7	13410.3
37.5°	633.1	672.0	745.5	888.1	1668.1	3245.6	7522.0	13924.5	15940.5	15527.9	13792.8
40°	615.8	650.4	715.2	840.6	1653.1	3174.3	7506.8	14672.2	16928.1	16295.0	14093.1
42.5°	602.9	633.1	693.7	808.1	1612.0	3107.3	7457.1	15318.3	17718.9	16956.2	14380.4
45°	592.1	624.5	685.0	825.4	1536.4	3033.9	7426.8	15908.2	18326.2	17513.7	14765.1
47.5°	587.8	624.5	687.1	821.1	1454.2	2951.7	7534.9	16562.9	18855.5	17982.6	15277.3
50°	581.2	622.4	734.7	782.3	1341.9	2850.1	7900.0	17343.0	19410.9	18509.9	15940.5
52.5°	570.5	620.2	784.4	752.0	1197.2	2709.7	8492.1	18445.0	20370.3	19536.2	16921.7
55°	557.5	624.5	749.8	704.4	1043.7	2528.2	9084.2	19955.4	21926.1	21191.4	18330.5
57.5°	542.4	618.0	708.8	661.2	916.2	2299.2	9533.7	21193.6	23209.7	22898.5	20061.3
60°	531.5	633.1	637.4	635.3	834.1	2080.9	9576.9	21113.7	23579.2	24007.0	21755.4
62.5°	518.6	646.1	581.2	615.8	793.0	1877.7	9043.2	19806.4	22954.7	23864.4	23136.2
65°	501.3	564.0	551.1	598.5	793.0	1769.7	7800.7	17630.4	21228.2	22516.1	23886.0
67.5°	484.1	512.1	529.4	574.8	810.3	1668.1	6268.6	14870.9	18505.5	20340.0	23043.3
70°	460.2	484.1	505.6	553.2	801.7	1596.8	4933.2	11919.2	15229.7	17330.0	20711.8
72.5°	438.6	455.9	477.5	520.8	801.7	1564.5	3963.0	9350.0	11627.6	13397.3	17157.1
75°	406.2	421.4	440.8	488.4	786.5	1430.5	2975.5	7491.7	8507.3	9615.7	13537.7
77.5°	373.8	384.6	399.8	447.3	708.8	1194.9	2104.6	5801.9	6303.2	6916.9	10553.6
80°	332.8	341.5	352.2	399.8	587.8	927.0	1369.9	4537.8	4712.8	5008.9	6942.8
82.5°	285.2	298.2	300.3	343.6	473.2	672.0	814.7	3109.5	3107.3	3541.7	4898.6
85°	233.3	239.9	244.2	270.1	350.1	447.3	535.9	1698.4	1514.8	2121.9	4254.8
87.5°	175.0	168.6	175.0	181.5	231.2	263.6	287.3	313.3	188.0	384.6	2474.2
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4	10160.4
2.5°	11564.9	11692.3	11616.7	11526.0	11299.1	10966.3	10711.3	10488.7
5°	12388.1	12623.7	12520.0	12182.8	11595.1	10927.5	10225.1	9797.3
7.5°	12284.4	12751.2	12710.2	12148.3	11305.6	10322.4	9334.8	8770.9
10°	11454.7	12109.4	12221.8	11647.0	10754.6	9654.7	8511.6	7874.2
12.5°	10551.4	11102.5	11331.5	11113.2	10272.7	9155.5	7990.8	7353.4
15°	9795.2	10073.9	10300.8	10441.3	9920.5	8978.3	7900.0	7243.2
17.5°	9235.5	9181.5	9371.6	9708.7	9730.3	9213.8	8310.7	7576.0
20°	8965.3	8541.8	8652.0	9125.2	9678.4	9812.5	9129.6	8260.9
22.5°	8950.2	8289.0	8310.7	8820.6	9827.6	10629.2	10151.7	9162.0
25°	9183.6	8260.9	8280.4	8788.2	10091.2	11452.5	11333.7	10179.8
27.5°	9581.2	8382.0	8369.0	8930.8	10443.4	12139.7	12526.4	11424.4
30°	10011.2	8557.0	8524.6	9159.8	10789.2	12563.2	13373.5	12362.3
32.5°	10547.1	8868.2	8755.7	9494.8	11130.5	12969.4	14097.4	13239.5
35°	11057.1	9324.1	9162.0	9974.5	11495.7	13421.0	14907.7	14209.7
37.5°	11577.9	10004.8	9914.0	10666.0	12012.2	13911.5	15834.7	15309.6
40°	12245.5	10972.8	10929.6	11670.7	12701.5	14447.4	16874.1	16454.9
42.5°	12965.1	12001.4	11964.6	12824.6	13557.2	14985.5	17764.4	17438.0
45°	13697.6	13248.1	13256.8	14056.4	14458.3	15493.3	18464.5	18224.6
47.5°	14562.0	14611.6	14920.7	15333.4	15335.6	16059.4	19084.6	18957.1
50°	15659.6	16258.3	16828.7	16893.5	16221.5	16807.1	19843.1	19795.5
52.5°	16902.2	18157.6	18821.0	18615.8	17085.8	17734.1	20964.6	20962.4
55°	18378.0	20143.4	20767.9	20417.9	18120.9	18942.0	22429.6	22334.6
57.5°	19908.0	22053.6	22557.1	22101.2	19415.2	20348.7	23899.0	23395.5
60°	21560.9	23698.1	24210.2	23525.2	20867.4	21751.1	24871.4	23693.7
62.5°	22643.5	24659.7	25027.0	24370.1	22168.2	23179.5	25184.7	23337.2
65°	22699.7	24020.0	24117.3	23883.9	22721.4	24419.8	24731.0	22280.5
67.5°	21156.9	21234.7	21362.2	21612.8	21539.4	23866.6	22980.6	19812.8
70°	17857.2	16820.1	17239.3	17481.3	18025.8	21228.2	19745.8	16113.4
72.5°	13654.4	12139.7	12615.0	12532.9	13665.2	17412.2	15106.5	12411.9
75°	9827.6	8278.2	8315.0	8319.2	9818.9	13898.6	10300.8	8814.2
77.5°	6679.2	5858.0	5979.0	5903.4	6571.1	10888.5	7416.1	6352.9
80°	4568.0	4546.4	4572.4	4395.2	4382.2	7037.9	5490.7	5067.2
82.5°	3388.2	3131.0	3094.3	2906.3	3357.9	5380.5	4168.3	3641.0
85°	2673.0	1733.0	1506.1	1817.3	2908.5	4950.5	2541.1	1867.0
87.5°	1132.3	680.7	412.8	816.8	1616.4	3628.1	704.4	363.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)