

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: P195735

Luminaire Tested: **NAV-AF-03-D-UNV-SLL-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195735
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-03-D-UNV-SLL-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 15999 lumens
Efficiency: N/A
Efficacy: 96.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

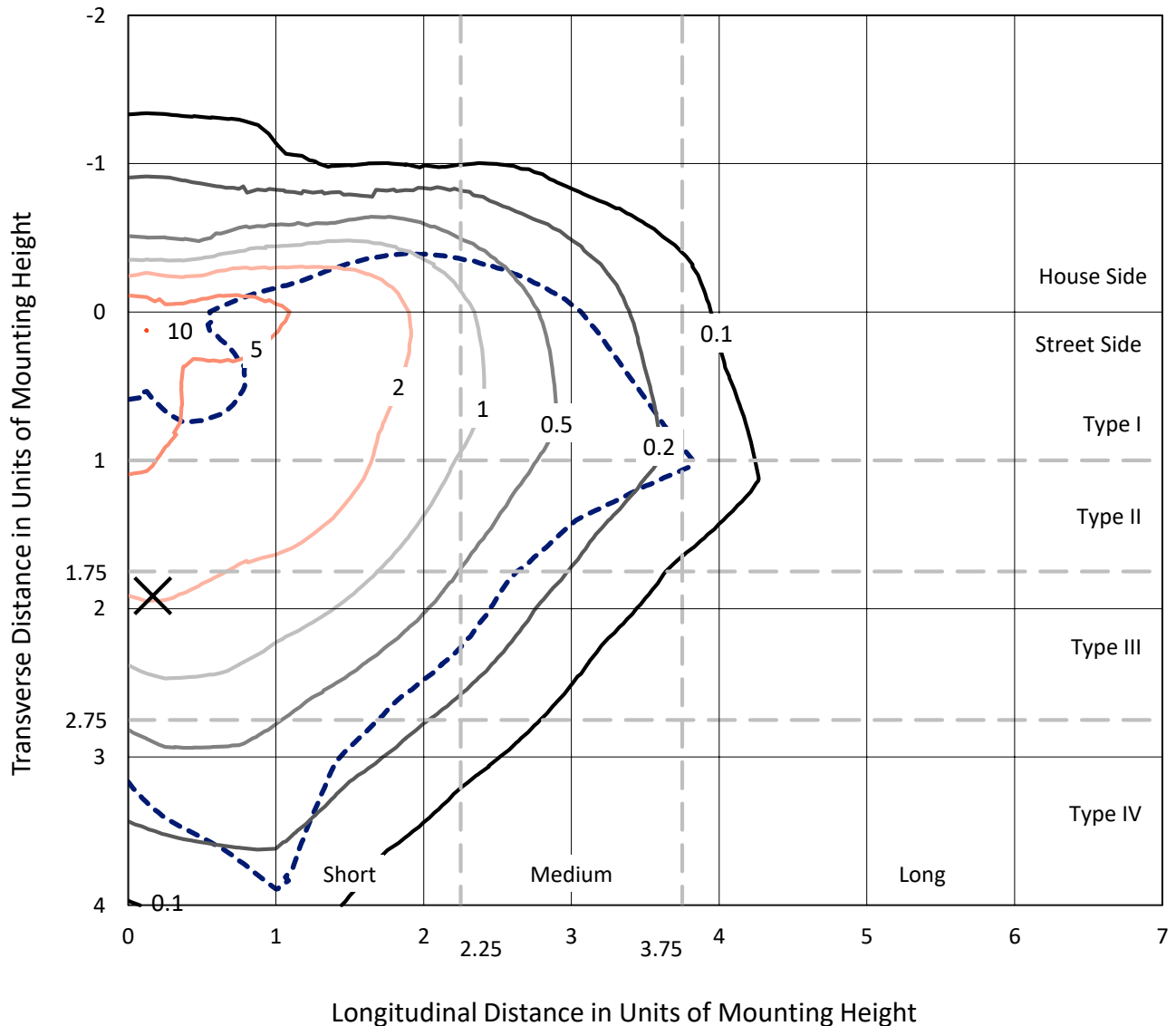
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

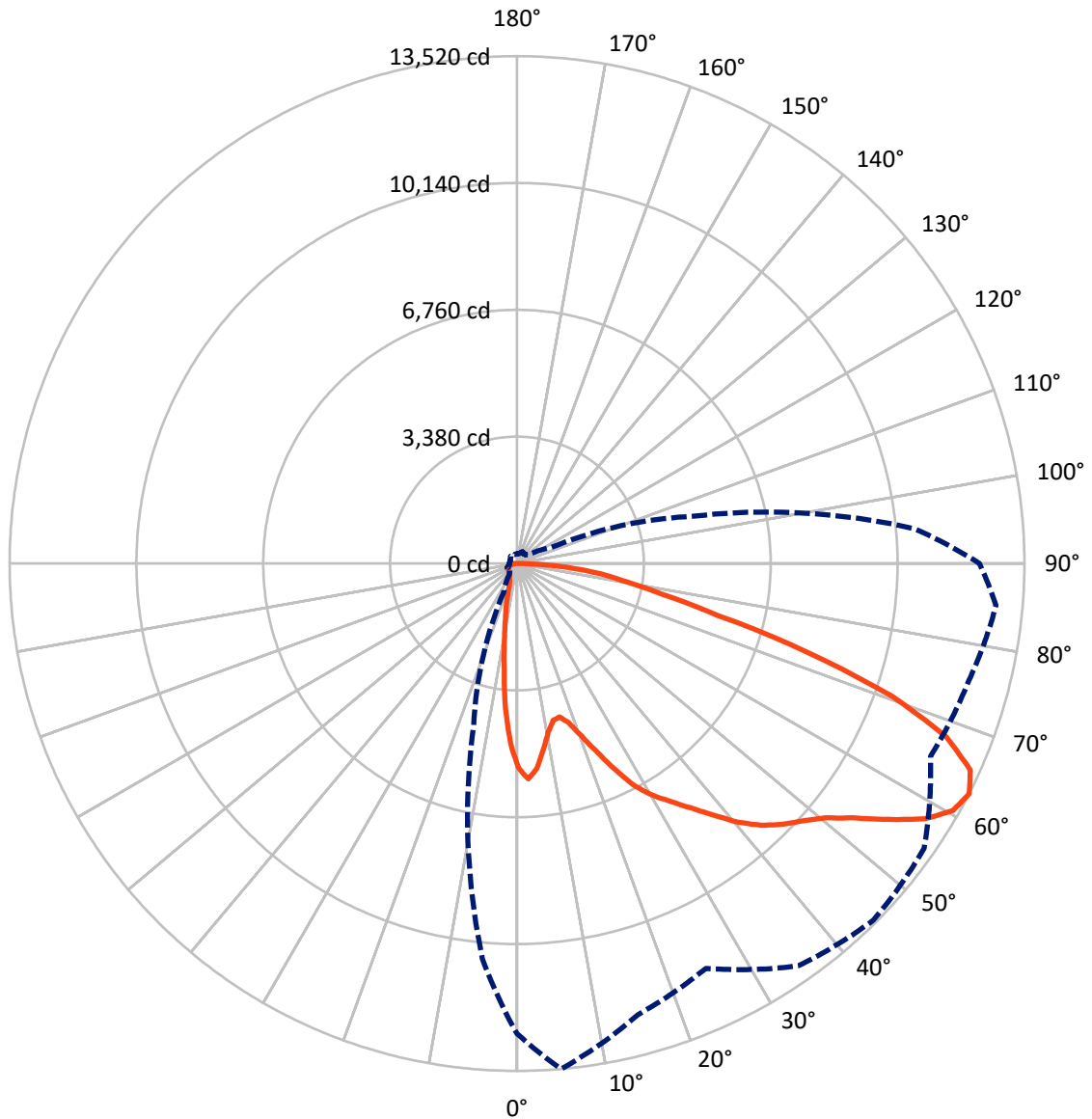
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 10 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 5-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2834.2	0.0	2834.2
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	13164.8	0.0	13164.8
	% Fixture	82.3	0.0	82.3
Total	Lumens	15999.0	0.0	15999.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	396.7	2.5
10°-20°	724.5	4.5
20°-30°	1042.0	6.5
30°-40°	1596.0	10.0
40°-50°	2333.4	14.6
50°-60°	3395.1	21.2
60°-70°	3933.7	24.6
70°-80°	2050.6	12.8
80°-90°	527.1	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°	15999.0	100.0
0°-180°	15999.0	100.0



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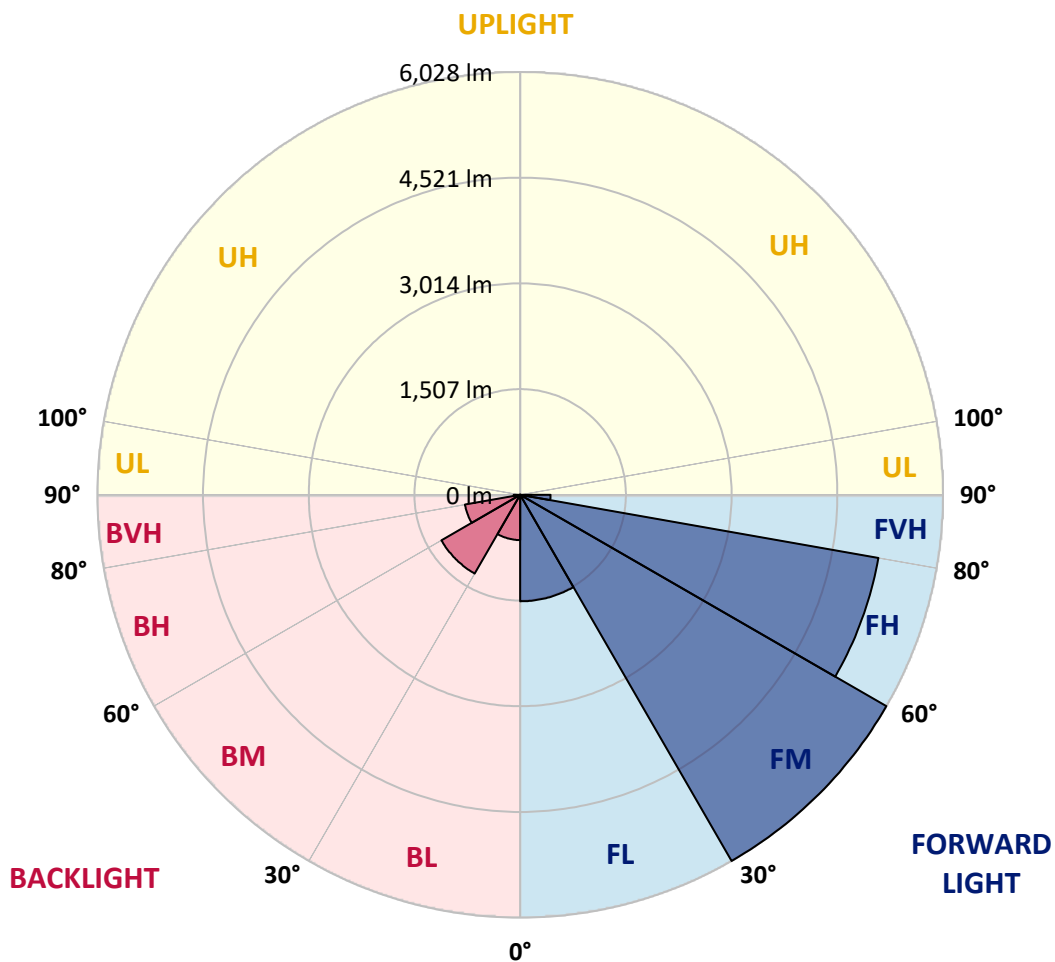
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1518.4	9.5			
FM	(30°-60°)	6027.7	37.7			
FH	(60°-80°)	5185.0	32.4			G3/7500
FVH	(80°-90°)	433.6	2.7			G3/500
BL	(0°-30°)	644.8	4.0	B2/1000		
BM	(30°-60°)	1296.8	8.1	B2/2500		
BH	(60°-80°)	799.2	5.0	B2/1000		G2/1000
BVH	(80°-90°)	93.5	0.6			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	5630.7	5750.2	5887.1	6065.7	6187.5	6236.2	6276.8	6208.4	6142.3	6018.1	5974.1
5°	5259.5	5489.2	5866.2	6224.6	6540.1	6721.1	6776.8	6650.4	6425.3	6100.5	5928.8
7.5°	4708.5	5011.3	5541.4	6069.2	6521.6	6823.2	6845.2	6594.7	6151.5	5619.1	5340.7
10°	4227.1	4569.3	5182.9	5773.4	6252.5	6561.0	6500.7	6149.2	5614.5	5008.9	4694.6
12.5°	3947.5	4289.7	4915.0	5514.7	5965.9	6083.1	5960.1	5664.3	5157.4	4550.7	4234.0
15°	3888.4	4241.0	4819.9	5325.6	5605.2	5529.8	5408.0	5258.3	4897.6	4401.1	4094.8
17.5°	4067.0	4461.4	4946.3	5223.5	5211.9	5031.0	4928.9	4957.9	4896.4	4563.5	4243.3
20°	4434.7	4901.1	5267.6	5195.7	4898.7	4644.7	4585.5	4812.9	5097.1	4970.7	4619.2
22.5°	4918.5	5449.7	5706.1	5275.7	4735.2	4461.4	4449.8	4804.8	5462.5	5586.6	5158.6
25°	5464.8	6084.3	6148.1	5417.3	4717.8	4445.2	4434.7	4930.1	5902.1	6196.8	5762.9
27.5°	6133.0	6724.6	6516.9	5606.3	4794.3	4492.7	4499.7	5143.5	6360.3	6800.0	6443.9
30°	6636.4	7179.3	6744.3	5791.9	4917.3	4576.2	4593.6	5374.3	6607.4	7218.8	6987.9
32.5°	7107.4	7567.9	6962.4	5975.2	5097.1	4700.4	4760.7	5662.0	6904.4	7578.4	7501.8
35°	7628.2	8002.9	7204.8	6171.3	5354.6	4918.5	5005.5	5935.8	7199.0	7938.0	8011.0
37.5°	8218.7	8500.6	7468.2	6448.5	5725.8	5322.1	5370.9	6215.3	7404.4	8335.8	8557.4
40°	8833.5	9058.5	7755.8	6818.6	6265.2	5867.3	5890.5	6573.8	7565.6	8747.7	9087.5
42.5°	9361.3	9536.5	8044.7	7277.9	6884.7	6423.0	6442.7	6960.1	7719.9	9102.6	9512.1
45°	9783.5	9912.3	8317.3	7761.6	7545.9	7116.7	7112.0	7353.3	7926.4	9401.9	9838.1
47.5°	10176.8	10245.2	8621.2	8232.6	8231.4	8009.9	7844.0	7817.3	8201.3	9653.6	10122.3
50°	10626.9	10652.4	9022.6	8708.2	9069.0	9034.2	8727.9	8406.6	8557.4	9936.7	10420.4
52.5°	11253.3	11254.4	9520.2	9172.2	9993.5	10103.7	9747.6	9073.6	9084.1	10487.7	10935.4
55°	11989.9	12040.9	10168.7	9727.9	10961.0	11148.9	10813.6	9865.9	9840.4	11376.2	11770.6
57.5°	12559.5	12829.7	10923.8	10422.7	11864.6	12109.4	11839.1	10687.2	10769.6	12292.7	12459.7
60°	12719.5	13351.7	11676.7	11202.2	12629.1	12996.8	12721.9	11574.6	11679.0	12887.7	12658.1
62.5°	12528.1	13519.9	12443.5	11900.6	13082.6	13435.3	13238.1	12155.8	12420.3	12811.2	12322.8
65°	11960.9	13276.3	13109.3	12197.5	12821.6	12946.9	12894.7	12185.9	12822.8	12087.3	11396.0
67.5°	10636.2	12336.7	12812.3	11563.0	11602.4	11467.9	11399.4	11357.7	12370.4	10919.2	9934.3
70°	8650.2	10600.2	11396.0	9676.8	9384.5	9254.6	9029.5	9586.3	11118.7	9303.3	8175.8
72.5°	6663.1	8109.6	9347.4	7335.9	6728.1	6772.2	6516.9	7330.1	9210.5	7192.1	6242.0
75°	4731.7	5529.8	7461.2	5271.1	4466.0	4463.7	4444.0	5275.7	7267.5	5162.1	4567.0
77.5°	3410.4	3981.2	5845.3	3527.6	3169.2	3209.8	3144.8	3585.6	5665.5	3713.2	3383.8
80°	2720.2	2947.6	3778.2	2352.5	2359.5	2454.6	2440.7	2452.3	3727.1	2688.9	2530.0
82.5°	1954.6	2237.7	2888.4	1802.7	1560.2	1661.1	1680.9	1818.9	2629.7	1901.3	1668.1
85°	1002.3	1364.2	2657.6	1561.4	975.6	808.5	930.3	1434.9	2284.1	1139.1	813.2
87.5°	194.9	378.2	1947.7	867.7	438.5	221.6	365.4	607.8	1328.2	206.5	100.9
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	5898.7	5750.2	5611.0	5467.1	5355.8	5220.1	5086.7	4970.7	4858.1	4783.9	4807.1
5°	5754.8	5392.9	5068.1	4766.5	4590.2	4377.9	4188.8	4029.9	3906.9	3828.0	3875.6
7.5°	5099.4	4609.9	4181.8	3784.0	3533.4	3258.5	3038.1	2882.6	2787.5	2734.1	2811.9
10°	4428.9	3879.1	3398.8	2984.7	2737.6	2504.5	2304.9	2140.2	2012.6	1952.3	1983.6
12.5°	3948.7	3337.4	2833.9	2555.5	2343.2	2134.4	1927.9	1735.4	1573.0	1498.7	1483.7
15°	3768.9	3046.2	2532.3	2221.4	2010.3	1782.9	1560.2	1353.7	1199.5	1135.7	1121.7
17.5°	3847.8	2983.6	2353.7	1985.9	1679.7	1403.6	1153.1	958.2	844.5	808.5	812.0
20°	4125.0	3006.8	2209.8	1743.5	1365.3	1038.2	787.6	653.1	604.4	596.2	605.5
22.5°	4505.5	3101.9	2105.4	1534.7	1088.1	755.2	585.8	522.0	509.2	508.1	517.4
25°	5007.8	3287.5	2035.8	1349.1	859.6	598.6	510.4	474.4	464.0	466.3	475.6
27.5°	5599.4	3523.0	1990.6	1189.0	706.4	533.6	476.8	445.4	435.0	437.3	444.3
30°	6139.9	3729.4	1923.3	1068.4	634.5	510.4	458.2	426.9	413.0	413.0	417.6
32.5°	6623.7	3908.1	1844.4	977.9	568.4	458.2	415.3	390.9	380.5	384.0	386.3
35°	7052.9	4002.0	1782.9	924.5	515.0	422.2	379.3	353.8	339.9	342.2	345.7
37.5°	7475.1	4038.0	1742.3	895.5	476.8	400.2	360.8	339.9	324.8	322.5	321.3
40°	7876.5	4029.9	1704.1	887.4	451.2	384.0	349.2	330.6	315.5	312.0	310.9
42.5°	8223.3	4003.2	1668.1	865.4	433.8	372.4	339.9	323.6	308.6	303.9	301.6
45°	8540.0	3987.0	1628.7	824.8	443.1	367.7	335.2	317.8	303.9	298.1	295.8
47.5°	8891.5	4045.0	1584.6	780.7	440.8	368.9	335.2	315.5	301.6	295.8	293.5
50°	9310.3	4241.0	1530.1	720.4	419.9	394.4	334.1	312.0	299.3	295.8	291.2
52.5°	9901.9	4558.8	1454.7	642.6	403.7	421.1	332.9	306.2	295.8	290.0	284.2
55°	10712.7	4876.7	1357.2	560.3	378.2	402.5	335.2	299.3	287.7	281.9	274.9
57.5°	11377.4	5118.0	1234.3	491.8	355.0	380.5	331.8	291.2	278.4	272.6	266.8
60°	11334.5	5141.2	1117.1	447.8	341.0	342.2	339.9	285.4	270.3	265.6	261.0
62.5°	10632.7	4854.7	1008.1	425.7	330.6	312.0	346.8	278.4	262.2	257.5	254.0
65°	9464.5	4187.6	950.1	425.7	321.3	295.8	302.8	269.1	254.0	249.4	247.1
67.5°	7983.2	3365.2	895.5	435.0	308.6	284.2	274.9	259.8	245.9	241.3	239.0
70°	6398.6	2648.3	857.2	430.4	297.0	271.4	259.8	247.1	233.2	232.0	229.7
72.5°	5019.4	2127.5	839.8	430.4	279.6	256.4	244.8	235.5	221.6	220.4	216.9
75°	4021.8	1597.3	767.9	422.2	262.2	236.6	226.2	218.1	204.2	205.3	203.0
77.5°	3114.6	1129.9	641.5	380.5	240.1	214.6	206.5	200.7	184.4	185.6	185.6
80°	2436.0	735.4	497.6	315.5	214.6	189.1	183.3	178.6	161.2	163.6	163.6
82.5°	1669.3	437.3	360.8	254.0	184.4	161.2	160.1	153.1	134.6	135.7	138.0
85°	911.8	287.7	240.1	187.9	145.0	131.1	128.8	125.3	107.9	107.9	109.0
87.5°	168.2	154.3	141.5	124.1	97.4	94.0	90.5	94.0	81.2	78.9	78.9
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	4752.6	4672.5	4616.8	4568.1	4451.0	4459.1	4475.3	4498.5	4425.4	4463.7	4511.3
5°	3828.0	3761.9	3712.0	3634.3	3470.8	3412.8	3375.6	3359.4	3250.4	3273.6	3324.6
7.5°	2822.3	2821.1	2803.7	2716.7	2519.5	2400.1	2321.2	2296.8	2229.5	2255.1	2332.8
10°	1987.1	2008.0	1999.9	1922.1	1745.8	1660.0	1642.6	1691.3	1692.5	1742.3	1875.7
12.5°	1436.1	1424.5	1414.1	1350.3	1218.0	1204.1	1243.5	1310.8	1327.1	1380.4	1519.6
15°	1071.9	1044.0	1038.2	988.3	901.3	914.1	943.1	977.9	979.1	1016.2	1131.0
17.5°	803.9	803.9	813.2	780.7	718.0	712.2	697.2	687.9	674.0	689.0	751.7
20°	624.1	653.1	676.3	657.7	600.9	573.0	544.0	525.5	515.0	516.2	534.8
22.5°	534.8	558.0	588.1	578.8	531.3	495.3	476.8	464.0	455.9	455.9	466.3
25°	489.5	504.6	532.4	527.8	487.2	458.2	443.1	430.4	421.1	419.9	430.4
27.5°	453.6	462.8	481.4	479.1	437.3	418.8	409.5	401.4	395.6	394.4	404.8
30°	421.1	425.7	435.0	431.5	400.2	381.6	378.2	374.7	371.2	372.4	387.4
32.5°	392.1	395.6	401.4	396.7	366.6	350.3	344.5	339.9	336.4	339.9	357.3
35°	359.6	370.0	377.0	374.7	342.2	322.5	309.7	298.1	293.5	297.0	316.7
37.5°	331.8	349.2	358.4	356.1	322.5	299.3	283.0	280.7	280.7	285.4	305.1
40°	321.3	334.1	342.2	338.7	305.1	281.9	272.6	269.1	270.3	274.9	295.8
42.5°	312.0	323.6	326.0	319.0	285.4	270.3	264.5	259.8	262.2	268.0	288.8
45°	303.9	313.2	312.0	301.6	269.1	258.7	258.7	255.2	256.4	261.0	283.0
47.5°	298.1	302.8	300.4	290.0	257.5	249.4	252.9	252.9	255.2	258.7	280.7
50°	288.8	292.3	290.0	280.7	248.2	241.3	244.8	249.4	251.7	255.2	274.9
52.5°	279.6	281.9	280.7	271.4	239.0	234.3	234.3	239.0	243.6	248.2	265.6
55°	270.3	272.6	273.8	266.8	232.0	227.4	226.2	226.2	230.8	237.8	256.4
57.5°	263.3	263.3	265.6	261.0	225.0	219.2	213.4	214.6	220.4	226.2	244.8
60°	255.2	256.4	259.8	255.2	215.8	206.5	201.8	207.6	210.0	215.8	235.5
62.5°	248.2	248.2	250.6	247.1	207.6	198.4	194.9	200.7	200.7	206.5	226.2
65°	242.4	241.3	241.3	240.1	199.5	190.2	187.9	190.2	191.4	197.2	216.9
67.5°	237.8	232.0	232.0	234.3	191.4	182.1	181.0	181.0	182.1	189.1	206.5
70°	227.4	222.7	221.6	229.7	183.3	171.7	171.7	169.4	171.7	175.2	193.7
72.5°	215.8	212.3	211.1	222.7	175.2	160.1	157.8	156.6	157.8	161.2	178.6
75°	200.7	198.4	200.7	218.1	167.0	147.3	143.8	142.7	142.7	143.8	162.4
77.5°	183.3	181.0	198.4	203.0	162.4	132.2	128.8	126.4	124.1	124.1	145.0
80°	162.4	161.2	191.4	171.7	155.4	116.0	110.2	106.7	104.4	103.2	124.1
82.5°	141.5	139.2	163.6	134.6	128.8	95.1	87.0	80.0	76.6	76.6	95.1
85°	116.0	114.8	128.8	98.6	89.3	69.6	58.0	52.2	47.6	47.6	61.5
87.5°	84.7	82.4	80.0	59.2	45.2	31.3	22.0	20.9	18.6	17.4	25.5
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4	5454.4
2.5°	4582.0	4678.3	4860.5	5010.1	5209.6	5369.7	5551.8	5630.7
5°	3418.6	3570.5	3848.9	4086.7	4416.2	4721.3	5069.3	5259.5
7.5°	2452.3	2677.3	2888.4	3185.4	3597.2	4006.7	4456.8	4708.5
10°	2028.9	2235.3	2416.3	2627.4	2945.3	3405.8	3942.9	4227.1
12.5°	1680.9	1903.6	2095.0	2321.2	2588.0	3004.4	3616.9	3947.5
15°	1288.8	1531.2	1760.9	2033.5	2360.6	2836.2	3519.5	3888.4
17.5°	882.8	1142.6	1425.7	1758.6	2153.0	2765.5	3612.3	4067.0
20°	599.7	790.0	1097.4	1491.8	1966.2	2731.8	3816.4	4434.7
22.5°	493.0	578.8	809.7	1241.2	1813.1	2768.9	4148.2	4918.5
25°	452.4	498.8	629.9	1020.8	1695.9	2867.6	4597.1	5464.8
27.5°	426.9	466.3	552.2	863.0	1588.1	3002.1	5143.5	6133.0
30°	411.8	448.9	520.8	781.8	1489.5	3118.1	5613.3	6636.4
32.5°	378.2	406.0	465.2	735.4	1418.7	3212.1	6027.4	7107.4
35°	337.6	371.2	419.9	705.3	1416.4	3256.2	6417.2	7628.2
37.5°	322.5	355.0	390.9	689.0	1430.3	3293.3	6894.0	8218.7
40°	313.2	342.2	371.2	686.7	1441.9	3322.3	7360.3	8833.5
42.5°	305.1	334.1	367.7	670.5	1437.3	3361.7	7773.2	9361.3
45°	302.8	331.8	375.8	646.1	1436.1	3423.2	8101.5	9783.5
47.5°	300.4	344.5	373.5	619.4	1431.5	3553.1	8471.6	10176.8
50°	298.1	367.7	357.3	582.3	1396.7	3774.7	8969.2	10626.9
52.5°	297.0	371.2	339.9	531.3	1334.0	4103.0	9697.7	11253.3
55°	292.3	352.6	309.7	464.0	1243.5	4456.8	10478.4	11989.9
57.5°	281.9	314.4	292.3	397.9	1113.6	4703.8	11054.9	12559.5
60°	307.4	270.3	280.7	364.2	958.2	4747.9	11080.4	12719.5
62.5°	293.5	245.9	269.1	352.6	849.1	4460.2	10573.5	12528.1
65°	234.3	233.2	258.7	364.2	832.9	3816.4	9717.4	11960.9
67.5°	213.4	223.9	248.2	378.2	843.3	3006.8	8457.6	10636.2
70°	199.5	212.3	234.3	390.9	861.9	2368.7	6809.3	8650.2
72.5°	185.6	196.0	220.4	403.7	849.1	1868.8	5449.7	6663.1
75°	168.2	177.5	200.7	370.0	728.5	1373.5	4330.3	4731.7
77.5°	148.5	156.6	176.3	292.3	547.5	955.9	3243.4	3410.4
80°	127.6	131.1	146.2	213.4	357.3	571.9	2468.5	2720.2
82.5°	100.9	102.1	111.4	156.6	222.7	365.4	1712.2	1954.6
85°	65.0	67.3	71.9	110.2	149.6	234.3	874.6	1002.3
87.5°	22.0	25.5	25.5	53.4	73.1	129.9	268.0	194.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)