

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: P195736

Luminaire Tested: **NAV-AF-04-D-UNV-SLL-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195736
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-04-D-UNV-SLL-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 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: 21548 lumens
Efficiency: N/A
Efficacy: 95.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G4

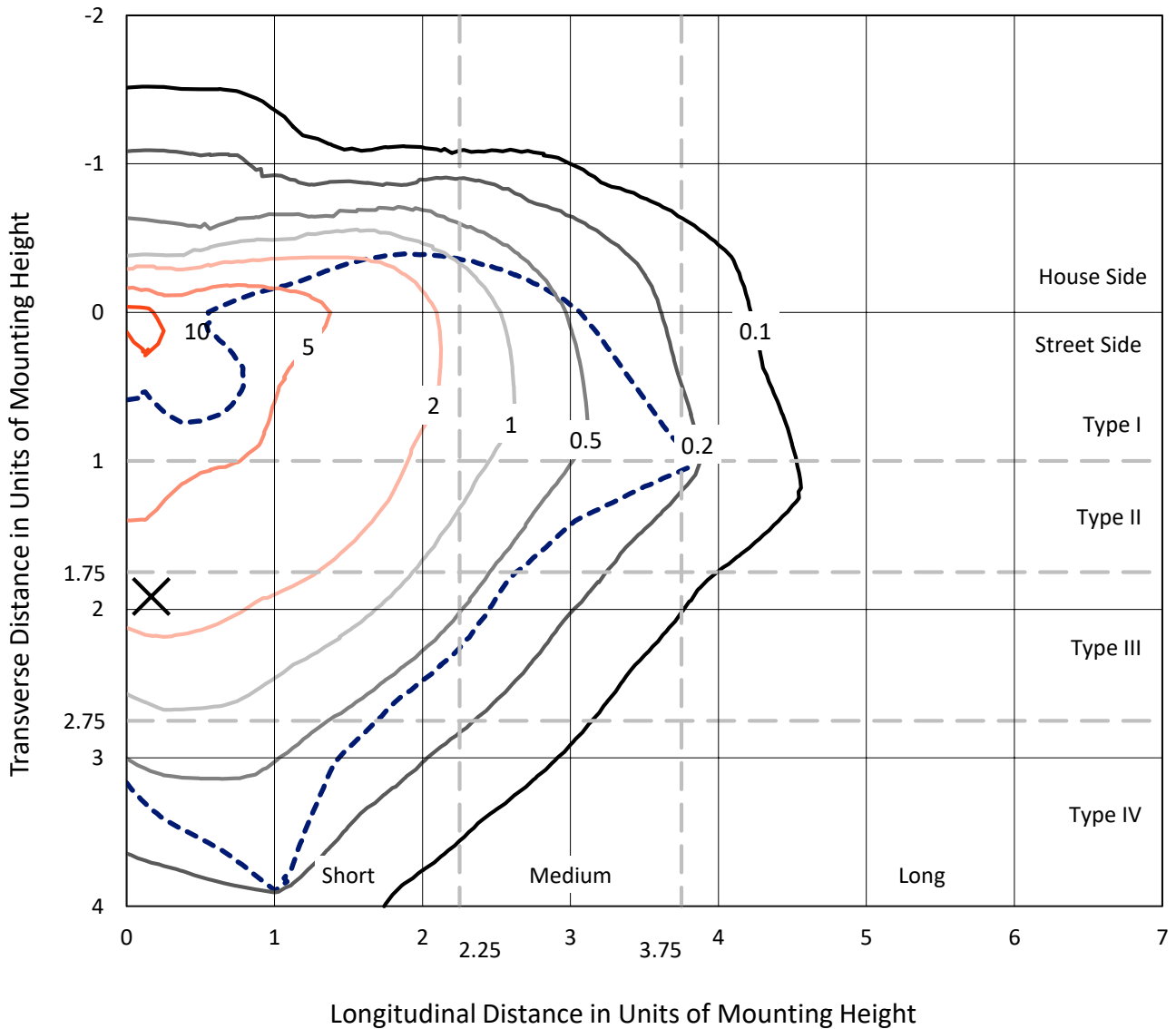
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

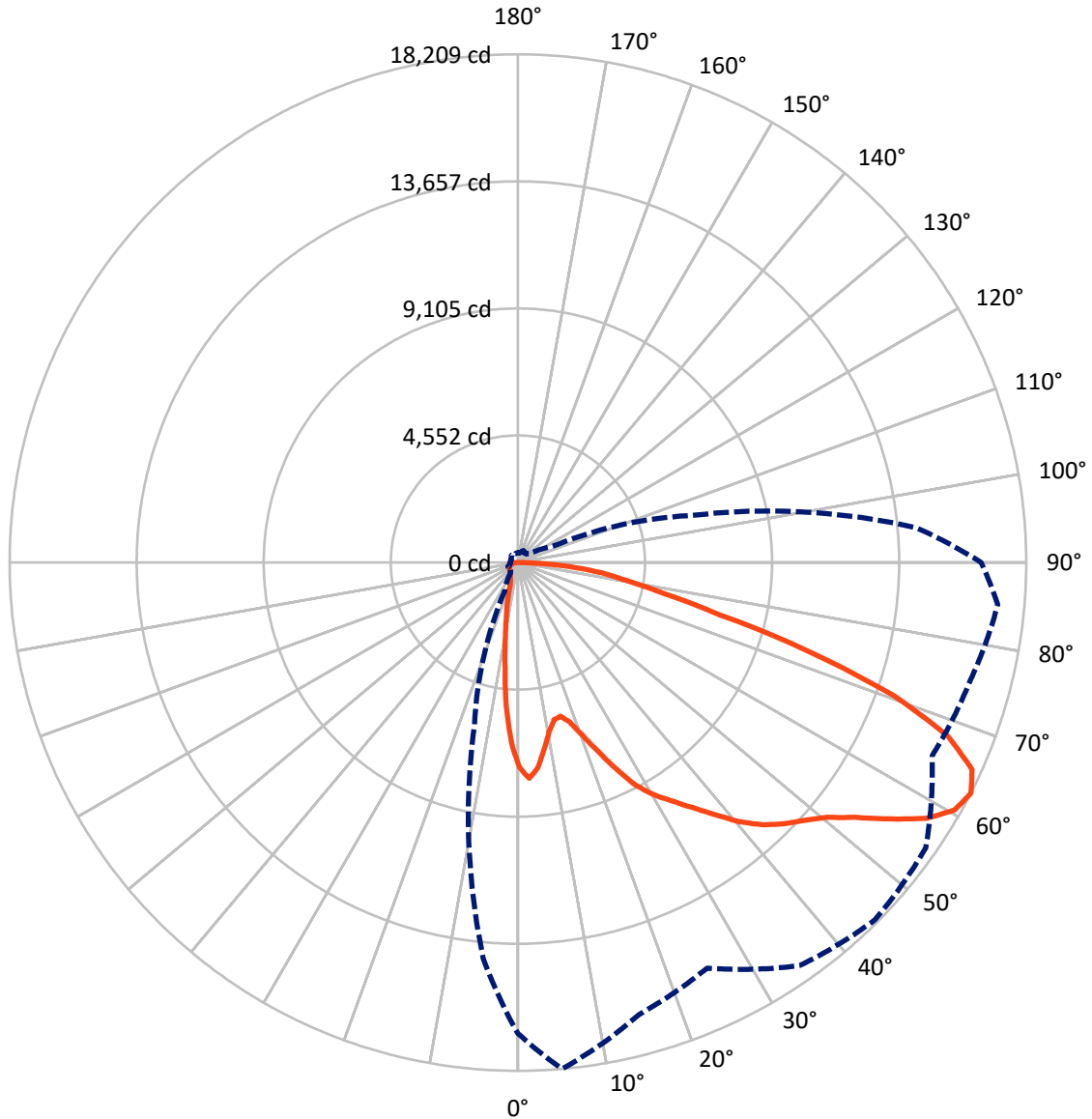
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 13.5 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	3817.3	0.0	3817.3
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	17730.7	0.0	17730.7
	% Fixture	82.3	0.0	82.3
Total	Lumens	21548.0	0.0	21548.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	534.2	2.5
10°-20°	975.8	4.5
20°-30°	1403.5	6.5
30°-40°	2149.5	10.0
40°-50°	3142.7	14.6
50°-60°	4572.6	21.2
60°-70°	5298.0	24.6
70°-80°	2761.8	12.8
80°-90°	709.9	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°	21548.0	100.0
0°-180°	21548.0	100.0



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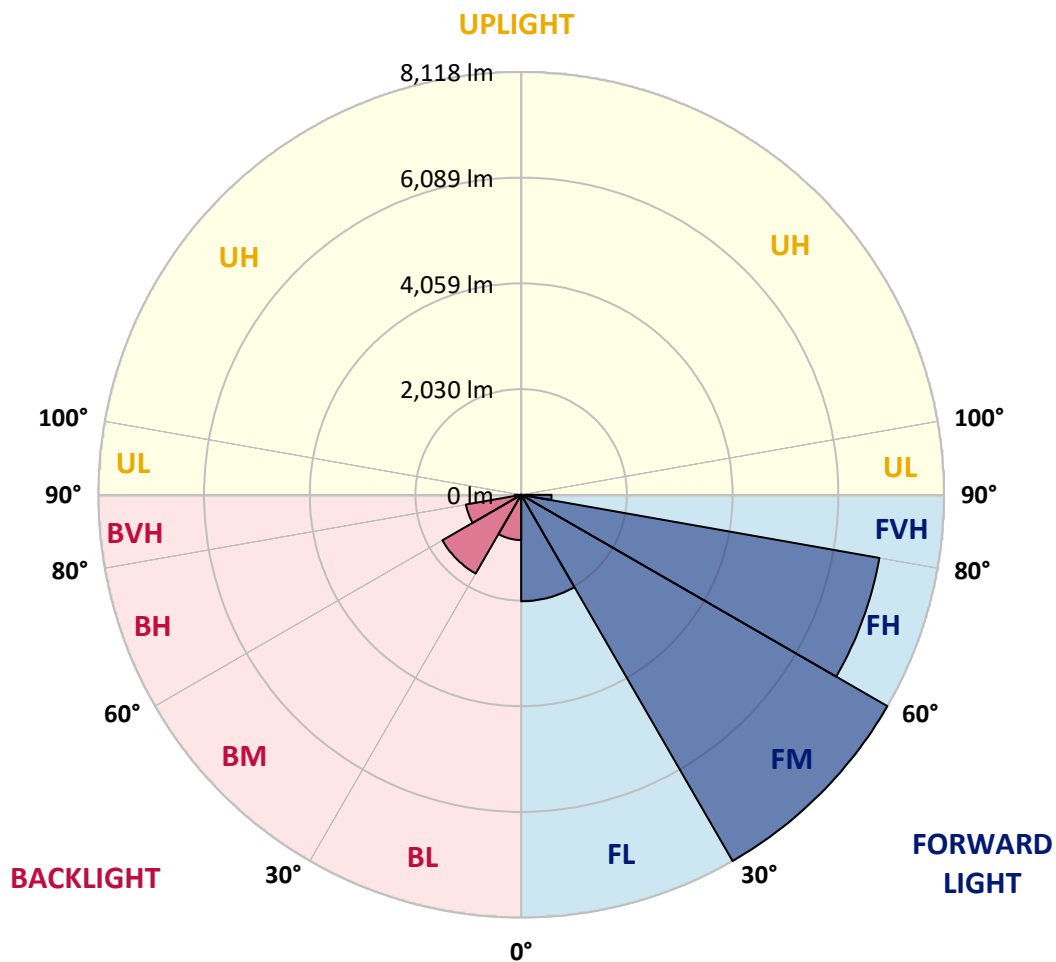
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2045.0	9.5			
FM	(30°-60°)	8118.3	37.7			
FH	(60°-80°)	6983.4	32.4			G3/7500
FVH	(80°-90°)	584.0	2.7			G4/750
BL	(0°-30°)	868.5	4.0	B2/1000		
BM	(30°-60°)	1746.5	8.1	B2/2500		
BH	(60°-80°)	1076.4	5.0	B3/2500		G3/2500
BVH	(80°-90°)	125.9	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-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1
2.5°	7583.6	7744.5	7928.9	8169.5	8333.5	8399.2	8453.8	8361.7	8272.6	8105.4	8046.1
5°	7083.7	7393.0	7900.8	8383.5	8808.5	9052.2	9127.2	8956.9	8653.8	8216.4	7985.1
7.5°	6341.6	6749.3	7463.3	8174.2	8783.5	9189.7	9219.4	8881.9	8285.1	7568.0	7193.0
10°	5693.2	6154.1	6980.6	7775.8	8421.0	8836.6	8755.4	8282.0	7561.7	6746.2	6322.8
12.5°	5316.7	5777.5	6619.7	7427.4	8035.1	8192.9	8027.3	7628.9	6946.2	6129.1	5702.6
15°	5237.0	5711.9	6491.5	7172.7	7549.2	7447.7	7283.6	7082.1	6596.2	5927.5	5515.1
17.5°	5477.6	6008.8	6661.8	7035.2	7019.6	6775.9	6638.4	6677.5	6594.7	6146.3	5715.1
20°	5972.8	6600.9	7094.6	6997.7	6597.8	6255.6	6175.9	6482.2	6864.9	6694.6	6221.3
22.5°	6624.3	7339.9	7685.2	7105.5	6377.5	6008.8	5993.2	6471.2	7357.1	7524.2	6947.7
25°	7360.2	8194.5	8280.4	7296.1	6354.1	5986.9	5972.8	6640.0	7949.2	8346.0	7761.7
27.5°	8260.1	9056.9	8777.2	7550.8	6457.2	6051.0	6060.3	6927.4	8566.3	9158.5	8678.8
30°	8938.2	9669.3	9083.5	7800.8	6622.8	6163.4	6186.9	7238.3	8899.1	9722.5	9411.6
32.5°	9572.5	10192.7	9377.2	8047.6	6864.9	6330.6	6411.9	7625.8	9299.1	10206.8	10103.7
35°	10274.0	10778.6	9703.7	8311.7	7211.8	6624.3	6741.5	7994.5	9695.9	10691.1	10789.5
37.5°	11069.2	11448.9	10058.4	8685.1	7711.7	7168.0	7233.7	8371.0	9972.4	11227.0	11525.4
40°	11897.3	12200.3	10445.8	9183.5	8438.2	7902.3	7933.6	8853.8	10189.6	11781.6	12239.4
42.5°	12608.1	12844.0	10834.9	9802.1	9272.5	8650.7	8677.3	9374.1	10397.4	12259.7	12811.2
45°	13176.8	13350.2	11202.0	10453.6	10163.0	9585.0	9578.7	9903.7	10675.5	12662.8	13250.2
47.5°	13706.4	13798.6	11611.3	11088.0	11086.4	10788.0	10564.6	10528.6	11045.8	13001.8	13633.0
50°	14312.6	14347.0	12151.9	11728.5	12214.4	12167.5	11755.1	11322.3	11525.4	13383.0	14034.5
52.5°	15156.3	15157.9	12822.2	12353.5	13459.6	13608.0	13128.4	12220.7	12234.7	14125.2	14728.2
55°	16148.4	16217.1	13695.5	13101.8	14762.6	15015.7	14564.2	13287.7	13253.4	15321.9	15853.1
57.5°	16915.5	17279.5	14712.6	14037.7	15979.7	16309.3	15945.3	14393.9	14504.8	16556.2	16781.1
60°	17131.1	17982.6	15726.6	15087.6	17009.2	17504.5	17134.2	15589.1	15729.7	17357.6	17048.3
62.5°	16873.3	18209.1	16759.3	16028.1	17620.1	18095.1	17829.5	16371.8	16728.0	17254.5	16596.8
65°	16109.3	17881.0	17656.1	16428.0	17268.6	17437.3	17367.0	16412.4	17270.2	16279.6	15348.5
67.5°	14325.1	16615.5	17256.1	15573.4	15626.6	15445.3	15353.2	15296.9	16660.8	14706.3	13379.9
70°	11650.4	14276.7	15348.5	13033.1	12639.4	12464.4	12161.3	12911.2	14975.1	12530.0	11011.4
72.5°	8974.1	10922.3	12589.4	9880.3	9061.6	9121.0	8777.2	9872.5	12405.0	9686.5	8407.0
75°	6372.8	7447.7	10049.0	7099.3	6015.0	6011.9	5985.3	7105.5	9788.1	6952.4	6150.9
77.5°	4593.3	5362.0	7872.7	4751.1	4268.3	4323.0	4235.5	4829.2	7630.5	5001.1	4557.4
80°	3663.7	3969.9	5088.6	3168.4	3177.8	3305.9	3287.2	3302.8	5019.8	3621.5	3407.5
82.5°	2632.5	3013.8	3890.2	2427.9	2101.4	2237.3	2263.8	2449.8	3541.8	2560.7	2246.7
85°	1349.9	1837.3	3579.3	2102.9	1313.9	1089.0	1253.0	1932.6	3076.3	1534.2	1095.2
87.5°	262.5	509.3	2623.2	1168.6	590.6	298.4	492.1	818.7	1788.9	278.1	135.9
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°	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1
2.5°	7944.5	7744.5	7557.1	7363.3	7213.3	7030.5	6850.9	6694.6	6543.1	6443.1	6474.4
5°	7750.8	7263.3	6825.9	6419.7	6182.2	5896.3	5641.6	5427.6	5262.0	5155.7	5219.8
7.5°	6868.1	6208.8	5632.3	5096.4	4758.9	4388.6	4091.8	3882.4	3754.3	3682.4	3787.1
10°	5965.0	5224.5	4577.7	4019.9	3687.1	3373.1	3104.4	2882.5	2710.7	2629.4	2671.6
12.5°	5318.2	4494.9	3816.8	3441.8	3155.9	2874.7	2596.6	2337.3	2118.5	2018.5	1998.2
15°	5076.1	4102.7	3410.6	2991.9	2707.5	2401.3	2101.4	1823.3	1615.5	1529.5	1510.8
17.5°	5182.3	4018.3	3170.0	2674.7	2262.3	1890.4	1553.0	1290.5	1137.4	1089.0	1093.6
20°	5555.7	4049.6	2976.3	2348.2	1838.9	1398.3	1060.8	879.6	814.0	803.0	815.5
22.5°	6068.1	4177.7	2835.7	2067.0	1465.5	1017.1	789.0	703.1	685.9	684.3	696.8
25°	6744.6	4427.7	2741.9	1817.0	1157.7	806.2	687.4	639.0	624.9	628.1	640.6
27.5°	7541.4	4744.8	2681.0	1601.4	951.5	718.7	642.1	599.9	585.9	589.0	598.4
30°	8269.5	5022.9	2590.4	1438.9	854.6	687.4	617.1	574.9	556.2	556.2	562.4
32.5°	8921.0	5263.5	2484.1	1317.1	765.5	617.1	559.3	526.5	512.4	517.1	520.3
35°	9499.1	5390.1	2401.3	1245.2	693.7	568.7	510.9	476.5	457.8	460.9	465.6
37.5°	10067.7	5438.5	2346.6	1206.1	642.1	539.0	485.9	457.8	437.5	434.3	432.8
40°	10608.3	5427.6	2295.1	1195.2	607.8	517.1	470.3	445.3	425.0	420.3	418.7
42.5°	11075.5	5391.6	2246.7	1165.5	584.3	501.5	457.8	435.9	415.6	409.3	406.2
45°	11502.0	5369.8	2193.5	1110.8	596.8	495.3	451.5	428.1	409.3	401.5	398.4
47.5°	11975.4	5447.9	2134.2	1051.5	593.7	496.8	451.5	425.0	406.2	398.4	395.3
50°	12539.4	5711.9	2060.7	970.2	565.6	531.2	450.0	420.3	403.1	398.4	392.1
52.5°	13336.2	6140.0	1959.2	865.5	543.7	567.1	448.4	412.5	398.4	390.6	382.8
55°	14428.2	6568.1	1827.9	754.6	509.3	542.1	451.5	403.1	387.5	379.6	370.3
57.5°	15323.5	6893.1	1662.3	662.4	478.1	512.4	446.8	392.1	375.0	367.2	359.3
60°	15265.7	6924.3	1504.5	603.1	459.3	460.9	457.8	384.3	364.0	357.8	351.5
62.5°	14320.4	6538.4	1357.7	573.4	445.3	420.3	467.1	375.0	353.1	346.8	342.2
65°	12747.2	5640.1	1279.6	573.4	432.8	398.4	407.8	362.5	342.2	335.9	332.8
67.5°	10752.1	4532.4	1206.1	585.9	415.6	382.8	370.3	350.0	331.2	325.0	321.8
70°	8617.9	3566.8	1154.6	579.6	400.0	365.6	350.0	332.8	314.0	312.5	309.3
72.5°	6760.3	2865.3	1131.1	579.6	376.5	345.3	329.7	317.2	298.4	296.8	292.2
75°	5416.6	2151.3	1034.3	568.7	353.1	318.7	304.7	293.7	275.0	276.5	273.4
77.5°	4194.9	1521.7	864.0	512.4	323.4	289.0	278.1	270.3	248.4	250.0	250.0
80°	3280.9	990.5	670.2	425.0	289.0	254.7	246.9	240.6	217.2	220.3	220.3
82.5°	2248.2	589.0	485.9	342.2	248.4	217.2	215.6	206.2	181.2	182.8	185.9
85°	1228.0	387.5	323.4	253.1	195.3	176.5	173.4	168.7	145.3	145.3	146.9
87.5°	226.5	207.8	190.6	167.2	131.2	126.5	121.9	126.5	109.4	106.2	106.2
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1
2.5°	6400.9	6293.1	6218.1	6152.5	5994.7	6005.7	6027.5	6058.8	5960.3	6011.9	6076.0
5°	5155.7	5066.7	4999.5	4894.8	4674.5	4596.4	4546.4	4524.5	4377.7	4408.9	4477.7
7.5°	3801.2	3799.6	3776.2	3659.0	3393.4	3232.5	3126.3	3093.4	3002.8	3037.2	3141.9
10°	2676.3	2704.4	2693.5	2588.8	2351.3	2235.7	2212.3	2277.9	2279.5	2346.6	2526.3
12.5°	1934.2	1918.6	1904.5	1818.6	1640.5	1621.7	1674.8	1765.4	1787.3	1859.2	2046.7
15°	1443.6	1406.1	1398.3	1331.1	1213.9	1231.1	1270.2	1317.1	1318.6	1368.6	1523.3
17.5°	1082.7	1082.7	1095.2	1051.5	967.1	959.3	939.0	926.5	907.7	928.0	1012.4
20°	840.5	879.6	910.8	885.8	809.3	771.8	732.7	707.7	693.7	695.2	720.2
22.5°	720.2	751.5	792.1	779.6	715.6	667.1	642.1	624.9	614.0	614.0	628.1
25°	659.3	679.6	717.1	710.9	656.2	617.1	596.8	579.6	567.1	565.6	579.6
27.5°	610.9	623.4	648.4	645.2	589.0	564.0	551.5	540.6	532.8	531.2	545.3
30°	567.1	573.4	585.9	581.2	539.0	514.0	509.3	504.6	500.0	501.5	521.8
32.5°	528.1	532.8	540.6	534.3	493.7	471.8	464.0	457.8	453.1	457.8	481.2
35°	484.3	498.4	507.8	504.6	460.9	434.3	417.1	401.5	395.3	400.0	426.5
37.5°	446.8	470.3	482.8	479.6	434.3	403.1	381.2	378.1	378.1	384.3	410.9
40°	432.8	450.0	460.9	456.2	410.9	379.6	367.2	362.5	364.0	370.3	398.4
42.5°	420.3	435.9	439.0	429.6	384.3	364.0	356.2	350.0	353.1	360.9	389.0
45°	409.3	421.8	420.3	406.2	362.5	348.4	348.4	343.7	345.3	351.5	381.2
47.5°	401.5	407.8	404.6	390.6	346.8	335.9	340.6	340.6	343.7	348.4	378.1
50°	389.0	393.7	390.6	378.1	334.3	325.0	329.7	335.9	339.0	343.7	370.3
52.5°	376.5	379.6	378.1	365.6	321.8	315.6	315.6	321.8	328.1	334.3	357.8
55°	364.0	367.2	368.7	359.3	312.5	306.2	304.7	304.7	310.9	320.3	345.3
57.5°	354.7	354.7	357.8	351.5	303.1	295.3	287.5	289.0	296.8	304.7	329.7
60°	343.7	345.3	350.0	343.7	290.6	278.1	271.8	279.7	282.8	290.6	317.2
62.5°	334.3	334.3	337.5	332.8	279.7	267.2	262.5	270.3	270.3	278.1	304.7
65°	326.5	325.0	325.0	323.4	268.7	256.2	253.1	256.2	257.8	265.6	292.2
67.5°	320.3	312.5	312.5	315.6	257.8	245.3	243.7	243.7	245.3	254.7	278.1
70°	306.2	300.0	298.4	309.3	246.9	231.2	231.2	228.1	231.2	235.9	260.9
72.5°	290.6	285.9	284.3	300.0	235.9	215.6	212.5	210.9	212.5	217.2	240.6
75°	270.3	267.2	270.3	293.7	225.0	198.4	193.7	192.2	192.2	193.7	218.7
77.5°	246.9	243.7	267.2	273.4	218.7	178.1	173.4	170.3	167.2	167.2	195.3
80°	218.7	217.2	257.8	231.2	209.4	156.2	148.4	143.7	140.6	139.0	167.2
82.5°	190.6	187.5	220.3	181.2	173.4	128.1	117.2	107.8	103.1	103.1	128.1
85°	156.2	154.7	173.4	132.8	120.3	93.7	78.1	70.3	64.1	64.1	82.8
87.5°	114.1	110.9	107.8	79.7	60.9	42.2	29.7	28.1	25.0	23.4	34.4
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1	7346.1
2.5°	6171.3	6300.9	6546.2	6747.8	7016.5	7232.1	7477.4	7583.6
5°	4604.2	4808.9	5183.9	5504.1	5947.8	6358.7	6827.4	7083.7
7.5°	3302.8	3605.9	3890.2	4290.2	4844.8	5396.3	6002.5	6341.6
10°	2732.5	3010.6	3254.4	3538.7	3966.8	4587.0	5310.4	5693.2
12.5°	2263.8	2563.8	2821.6	3126.3	3485.6	4046.5	4871.4	5316.7
15°	1735.8	2062.3	2371.6	2738.8	3179.4	3819.9	4740.2	5237.0
17.5°	1188.9	1538.9	1920.1	2368.5	2899.7	3724.6	4865.1	5477.6
20°	807.7	1064.0	1478.0	2009.2	2648.2	3679.3	5140.1	5972.8
22.5°	664.0	779.6	1090.5	1671.7	2441.9	3729.3	5586.9	6624.3
25°	609.3	671.8	848.4	1374.9	2284.1	3862.1	6191.6	7360.2
27.5°	574.9	628.1	743.7	1162.4	2138.8	4043.3	6927.4	8260.1
30°	554.6	604.6	701.5	1053.0	2006.0	4199.6	7560.2	8938.2
32.5°	509.3	546.8	626.5	990.5	1910.7	4326.1	8117.9	9572.5
35°	454.6	500.0	565.6	949.9	1907.6	4385.5	8642.9	10274.0
37.5°	434.3	478.1	526.5	928.0	1926.4	4435.5	9285.0	11069.2
40°	421.8	460.9	500.0	924.9	1942.0	4474.6	9913.1	11897.3
42.5°	410.9	450.0	495.3	903.0	1935.7	4527.7	10469.3	12608.1
45°	407.8	446.8	506.2	870.2	1934.2	4610.5	10911.4	13176.8
47.5°	404.6	464.0	503.1	834.3	1927.9	4785.5	11409.8	13706.4
50°	401.5	495.3	481.2	784.3	1881.1	5083.9	12080.0	14312.6
52.5°	400.0	500.0	457.8	715.6	1796.7	5526.0	13061.2	15156.3
55°	393.7	475.0	417.1	624.9	1674.8	6002.5	14112.7	16148.4
57.5°	379.6	423.4	393.7	535.9	1499.9	6335.3	14889.1	16915.5
60°	414.0	364.0	378.1	490.6	1290.5	6394.7	14923.5	17131.1
62.5°	395.3	331.2	362.5	475.0	1143.6	6007.2	14240.8	16873.3
65°	315.6	314.0	348.4	490.6	1121.8	5140.1	13087.8	16109.3
67.5°	287.5	301.5	334.3	509.3	1135.8	4049.6	11391.1	14325.1
70°	268.7	285.9	315.6	526.5	1160.8	3190.3	9171.0	11650.4
72.5°	250.0	264.0	296.8	543.7	1143.6	2516.9	7339.9	8974.1
75°	226.5	239.0	270.3	498.4	981.2	1849.8	5832.2	6372.8
77.5°	200.0	210.9	237.5	393.7	737.4	1287.4	4368.3	4593.3
80°	171.9	176.5	196.9	287.5	481.2	770.2	3324.7	3663.7
82.5°	135.9	137.5	150.0	210.9	300.0	492.1	2306.0	2632.5
85°	87.5	90.6	96.9	148.4	201.5	315.6	1178.0	1349.9
87.5°	29.7	34.4	34.4	71.9	98.4	175.0	360.9	262.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)