

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: P197170

Luminaire Tested: **NAV-AF-04-D-UNV-SLL-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197170
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-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 800mA 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: 14207 lumens
Efficiency: N/A
Efficacy: 83.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 171
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

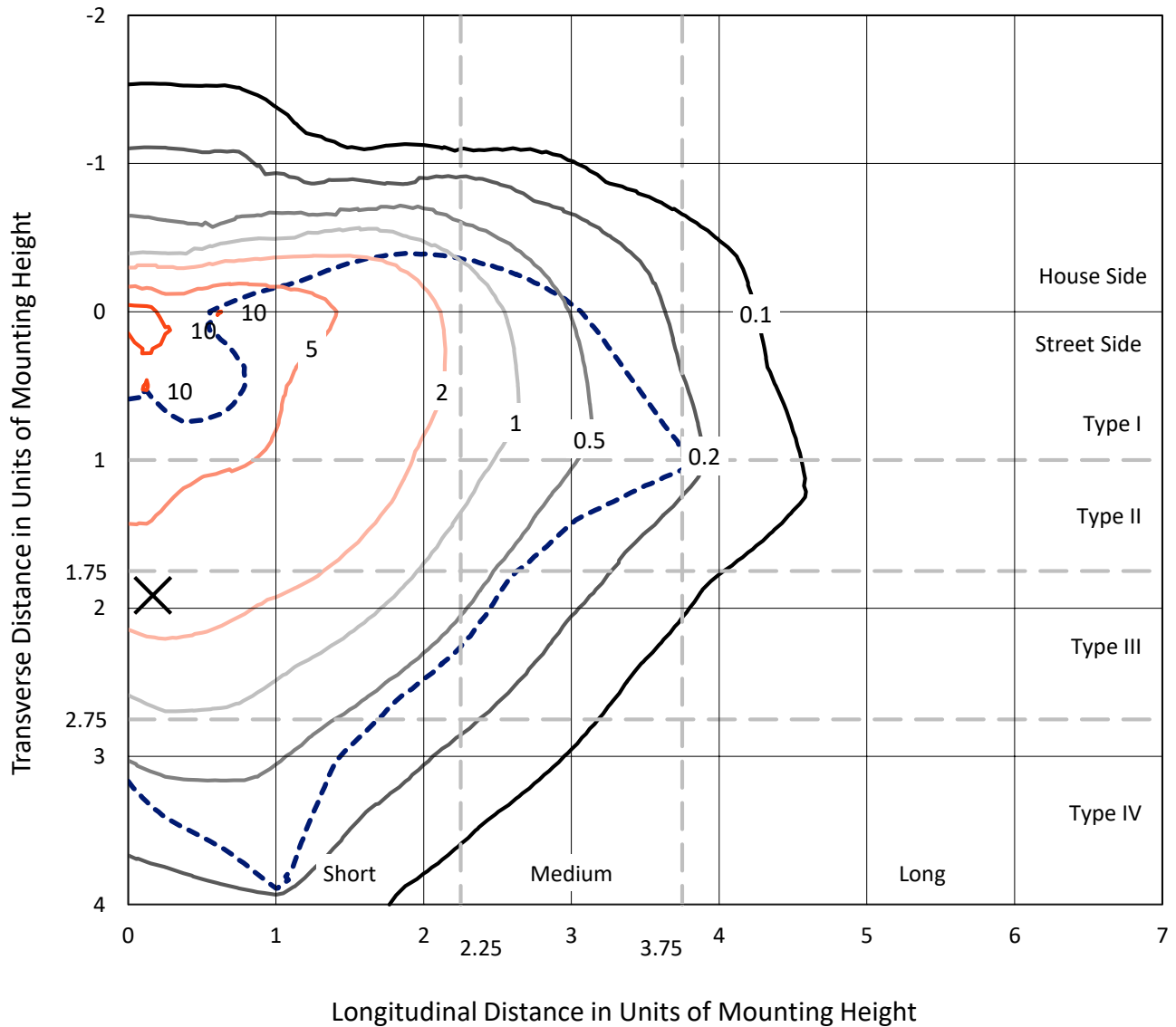


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Iso-Footcandle Lines of Horizontal Illumination

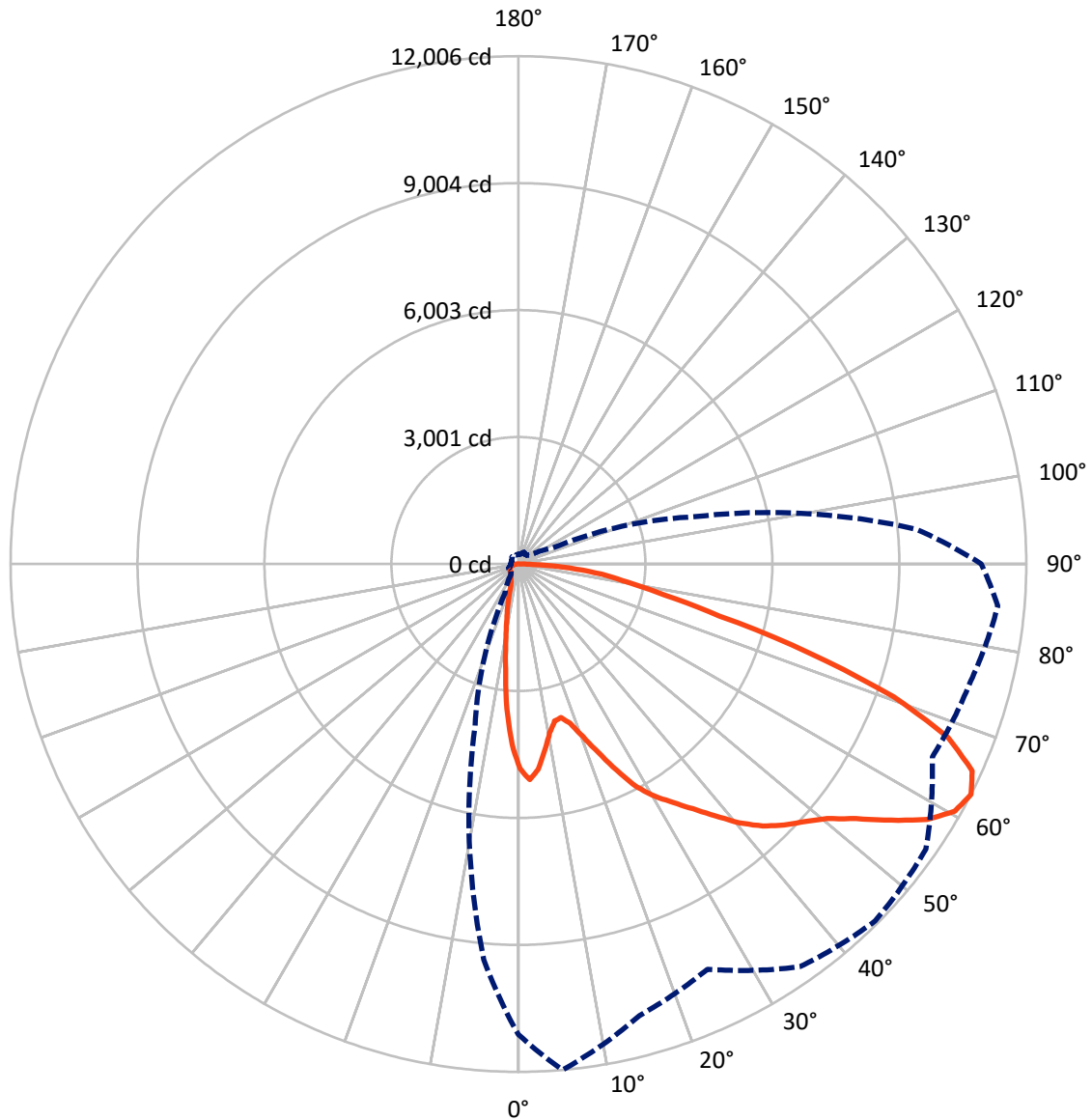
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 13.9 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	2516.8	0.0	2516.8
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	11690.2	0.0	11690.2
	% Fixture	82.3	0.0	82.3
Total	Lumens	14207.0	0.0	14207.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.2	2.5
10°-20°	643.4	4.5
20°-30°	925.3	6.5
30°-40°	1417.2	10.0
40°-50°	2072.0	14.6
50°-60°	3014.8	21.2
60°-70°	3493.1	24.6
70°-80°	1820.9	12.8
80°-90°	468.1	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°	14207.0	100.0
0°-180°	14207.0	100.0



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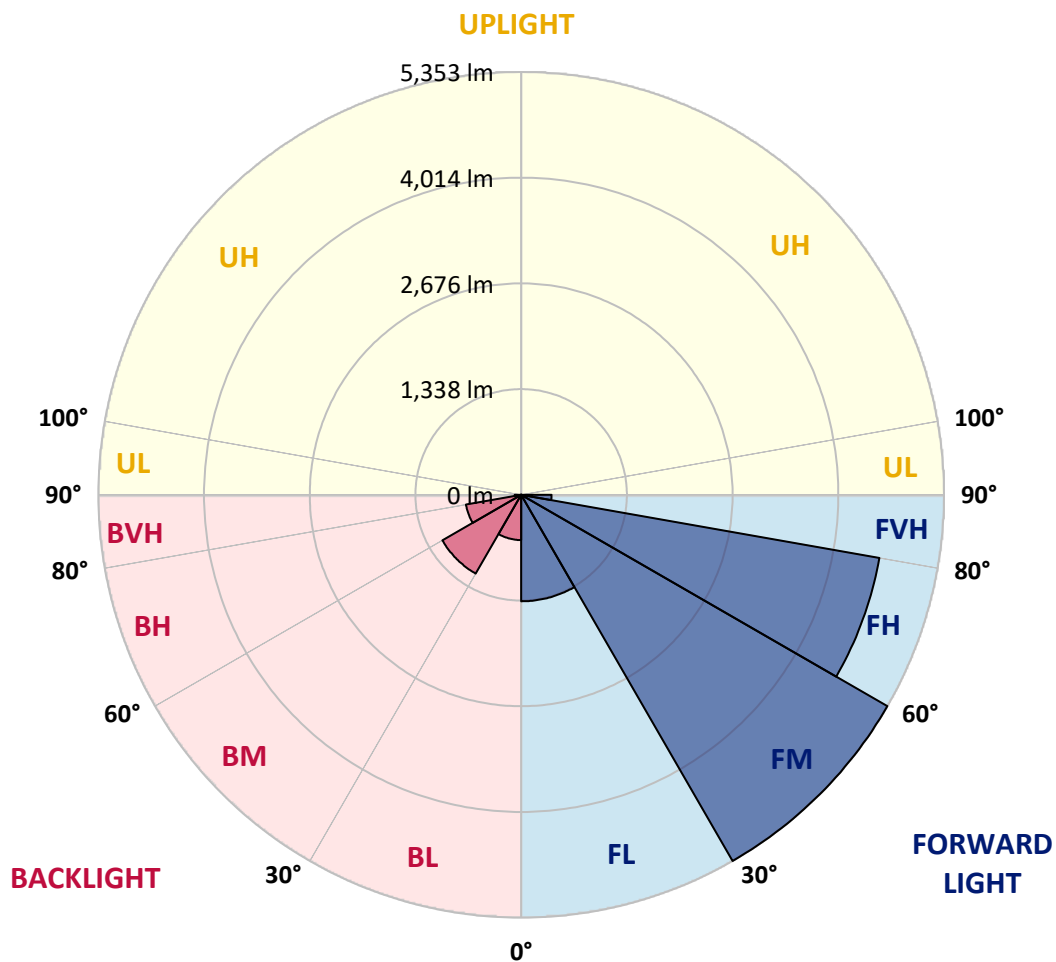
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1348.3	9.5			
FM (30°-60°)	5352.5	37.7			
FH (60°-80°)	4604.3	32.4			G2/5000
FVH (80°-90°)	385.1	2.7			G3/500
BL (0°-30°)	572.6	4.0	B2/1000		
BM (30°-60°)	1151.5	8.1	B2/2500		
BH (60°-80°)	709.7	5.0	B2/1000		G2/1000
BVH (80°-90°)	83.0	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°	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4
2.5°	5000.0	5106.1	5227.7	5386.3	5494.5	5537.7	5573.8	5513.0	5454.3	5344.1	5304.9
5°	4670.4	4874.4	5209.1	5527.4	5807.6	5968.3	6017.7	5905.5	5705.6	5417.2	5264.8
7.5°	4181.1	4450.0	4920.7	5389.4	5791.1	6058.9	6078.5	5856.0	5462.5	4989.7	4742.5
10°	3753.6	4057.5	4602.4	5126.7	5552.1	5826.1	5772.6	5460.5	4985.6	4447.9	4168.7
12.5°	3505.4	3809.2	4364.5	4897.0	5297.7	5401.8	5292.6	5029.9	4579.7	4041.0	3759.8
15°	3452.8	3766.0	4280.0	4729.1	4977.4	4910.4	4802.2	4669.4	4349.0	3908.1	3636.2
17.5°	3611.5	3961.7	4392.3	4638.5	4628.2	4467.5	4376.8	4402.6	4348.0	4052.3	3768.0
20°	3938.0	4352.1	4677.6	4613.7	4350.0	4124.5	4071.9	4273.8	4526.2	4413.9	4101.8
22.5°	4367.6	4839.3	5067.0	4684.8	4204.8	3961.7	3951.4	4266.6	4850.7	4960.9	4580.8
25°	4852.7	5402.8	5459.4	4810.5	4189.3	3947.3	3938.0	4377.9	5241.1	5502.7	5117.5
27.5°	5446.0	5971.4	5787.0	4978.4	4257.3	3989.5	3995.7	4567.4	5647.9	6038.3	5722.1
30°	5893.1	6375.2	5988.9	5143.2	4366.5	4063.7	4079.1	4772.4	5867.4	6410.2	6205.2
32.5°	6311.3	6720.3	6182.6	5306.0	4526.2	4173.9	4227.5	5027.8	6131.1	6729.5	6661.5
35°	6773.8	7106.5	6397.8	5480.0	4754.9	4367.6	4444.8	5270.9	6392.7	7048.9	7113.8
37.5°	7298.1	7548.4	6631.7	5726.2	5084.5	4726.0	4769.3	5519.2	6575.0	7402.2	7598.9
40°	7844.1	8043.9	6887.1	6054.8	5563.5	5210.2	5230.8	5837.5	6718.2	7767.9	8069.7
42.5°	8312.8	8468.3	7143.6	6462.7	6113.5	5703.6	5721.1	6180.5	6855.2	8083.1	8446.7
45°	8687.7	8802.1	7385.7	6892.3	6700.7	6319.6	6315.4	6529.7	7038.6	8348.8	8736.1
47.5°	9036.9	9097.7	7655.6	7310.5	7309.5	7112.7	6965.4	6941.7	7282.7	8572.3	8988.5
50°	9436.6	9459.3	8012.0	7732.8	8053.2	8022.3	7750.3	7465.0	7598.9	8823.7	9253.2
52.5°	9992.8	9993.9	8453.9	8144.9	8874.2	8972.0	8655.8	8057.3	8066.6	9313.0	9710.6
55°	10646.9	10692.3	9029.7	8638.3	9733.3	9900.1	9602.4	8760.9	8738.2	10102.0	10452.3
57.5°	11152.7	11392.7	9700.3	9255.3	10535.7	10753.0	10513.0	9490.2	9563.3	10915.8	11064.1
60°	11294.9	11856.3	10368.8	9947.5	11214.5	11541.0	11296.9	10278.2	10370.9	11444.2	11240.3
62.5°	11124.9	12005.6	11049.7	10567.6	11617.3	11930.4	11755.3	10794.2	11029.1	11376.2	10942.6
65°	10621.2	11789.3	11641.0	10831.3	11385.5	11496.8	11450.4	10821.0	11386.5	10733.5	10119.5
67.5°	9444.8	10954.9	11377.3	10267.9	10302.9	10183.4	10122.6	10085.5	10984.8	9696.2	8821.6
70°	7681.3	9412.9	10119.5	8593.0	8333.4	8218.0	8018.2	8512.6	9873.3	8261.3	7260.0
72.5°	5916.8	7201.3	8300.4	6514.2	5974.5	6013.6	5787.0	6509.1	8178.9	6386.5	5542.9
75°	4201.7	4910.4	6625.5	4680.7	3965.8	3963.8	3946.2	4684.8	6453.5	4583.9	4055.4
77.5°	3028.4	3535.2	5190.6	3132.5	2814.2	2850.2	2792.6	3184.0	5030.9	3297.3	3004.8
80°	2415.5	2617.4	3355.0	2089.0	2095.2	2179.7	2167.3	2177.6	3309.7	2387.7	2246.6
82.5°	1735.7	1987.0	2564.9	1600.7	1385.5	1475.1	1492.6	1615.2	2335.2	1688.3	1481.3
85°	890.0	1211.4	2359.9	1386.5	866.3	718.0	826.1	1274.2	2028.2	1011.5	722.1
87.5°	173.1	335.8	1729.5	770.5	389.4	196.7	324.5	539.8	1179.4	183.4	89.6
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°	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4
2.5°	5238.0	5106.1	4982.5	4854.8	4755.9	4635.4	4516.9	4413.9	4314.0	4248.1	4268.7
5°	5110.2	4788.9	4500.4	4232.6	4076.0	3887.5	3719.6	3578.5	3469.3	3399.3	3441.5
7.5°	4528.2	4093.5	3713.4	3360.1	3137.6	2893.5	2697.8	2559.8	2475.3	2427.9	2496.9
10°	3932.9	3444.6	3018.1	2650.4	2431.0	2223.9	2046.8	1900.5	1787.2	1733.6	1761.4
12.5°	3506.4	2963.5	2516.5	2269.3	2080.8	1895.4	1712.0	1541.0	1396.8	1330.9	1317.5
15°	3346.7	2705.0	2248.7	1972.6	1785.1	1583.2	1385.5	1202.1	1065.1	1008.5	996.1
17.5°	3416.8	2649.4	2090.0	1763.5	1491.6	1246.4	1023.9	850.8	749.9	718.0	721.1
20°	3663.0	2670.0	1962.3	1548.2	1212.4	921.9	699.4	579.9	536.7	529.5	537.7
22.5°	4000.8	2754.4	1869.6	1362.8	966.2	670.6	520.2	463.5	452.2	451.2	459.4
25°	4446.9	2919.3	1807.8	1198.0	763.3	531.5	453.2	421.3	412.0	414.1	422.3
27.5°	4972.2	3128.4	1767.6	1055.8	627.3	473.8	423.4	395.6	386.3	388.3	394.5
30°	5452.2	3311.7	1707.9	948.7	563.5	453.2	406.9	379.1	366.7	366.7	370.8
32.5°	5881.8	3470.3	1637.8	868.4	504.7	406.9	368.8	347.1	337.9	341.0	343.0
35°	6262.9	3553.8	1583.2	821.0	457.4	375.0	336.8	314.2	301.8	303.9	307.0
37.5°	6637.9	3585.7	1547.2	795.2	423.4	355.4	320.4	301.8	288.4	286.4	285.3
40°	6994.3	3578.5	1513.2	788.0	400.7	341.0	310.1	293.6	280.2	277.1	276.1
42.5°	7302.3	3554.8	1481.3	768.4	385.3	330.7	301.8	287.4	274.0	269.9	267.8
45°	7583.5	3540.4	1446.2	732.4	393.5	326.5	297.7	282.2	269.9	264.7	262.7
47.5°	7895.6	3591.9	1407.1	693.2	391.4	327.6	297.7	280.2	267.8	262.7	260.6
50°	8267.4	3766.0	1358.7	639.7	372.9	350.2	296.7	277.1	265.8	262.7	258.6
52.5°	8792.8	4048.2	1291.7	570.7	358.5	373.9	295.6	271.9	262.7	257.5	252.4
55°	9512.8	4330.5	1205.2	497.5	335.8	357.4	297.7	265.8	255.5	250.3	244.1
57.5°	10103.1	4544.7	1096.0	436.8	315.2	337.9	294.6	258.6	247.2	242.1	236.9
60°	10064.9	4565.3	992.0	397.6	302.8	303.9	301.8	253.4	240.0	235.9	231.8
62.5°	9441.7	4310.9	895.1	378.0	293.6	277.1	308.0	247.2	232.8	228.7	225.6
65°	8404.4	3718.6	843.6	378.0	285.3	262.7	268.9	239.0	225.6	221.5	219.4
67.5°	7089.0	2988.3	795.2	386.3	274.0	252.4	244.1	230.7	218.4	214.3	212.2
70°	5681.9	2351.7	761.2	382.2	263.7	241.0	230.7	219.4	207.0	206.0	204.0
72.5°	4457.2	1889.2	745.8	382.2	248.2	227.6	217.3	209.1	196.7	195.7	192.6
75°	3571.3	1418.4	681.9	375.0	232.8	210.1	200.9	193.7	181.3	182.3	180.3
77.5°	2765.8	1003.3	569.6	337.9	213.2	190.6	183.4	178.2	163.8	164.8	164.8
80°	2163.2	653.1	441.9	280.2	190.6	167.9	162.8	158.6	143.2	145.2	145.2
82.5°	1482.3	388.3	320.4	225.6	163.8	143.2	142.2	136.0	119.5	120.5	122.6
85°	809.6	255.5	213.2	166.9	128.8	116.4	114.3	111.2	95.8	95.8	96.8
87.5°	149.4	137.0	125.7	110.2	86.5	83.4	80.3	83.4	72.1	70.0	70.0
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4
2.5°	4220.2	4149.2	4099.7	4056.5	3952.4	3959.6	3974.1	3994.7	3929.8	3963.8	4006.0
5°	3399.3	3340.6	3296.3	3227.2	3082.0	3030.5	2997.5	2983.1	2886.3	2906.9	2952.2
7.5°	2506.2	2505.2	2489.7	2412.5	2237.3	2131.2	2061.2	2039.6	1979.8	2002.5	2071.5
10°	1764.5	1783.1	1775.9	1706.8	1550.3	1474.0	1458.6	1501.9	1502.9	1547.2	1665.6
12.5°	1275.2	1264.9	1255.7	1199.0	1081.6	1069.2	1104.2	1164.0	1178.4	1225.8	1349.4
15°	951.8	927.1	921.9	877.6	800.4	811.7	837.5	868.4	869.4	902.4	1004.3
17.5°	713.8	713.8	722.1	693.2	637.6	632.5	619.1	610.8	598.5	611.9	667.5
20°	554.2	579.9	600.5	584.1	533.6	508.9	483.1	466.6	457.4	458.4	474.9
22.5°	474.9	495.5	522.3	514.0	471.8	439.8	423.4	412.0	404.8	404.8	414.1
25°	434.7	448.1	472.8	468.7	432.6	406.9	393.5	382.2	373.9	372.9	382.2
27.5°	402.8	411.0	427.5	425.4	388.3	371.9	363.6	356.4	351.3	350.2	359.5
30°	373.9	378.0	386.3	383.2	355.4	338.9	335.8	332.7	329.6	330.7	344.0
32.5°	348.2	351.3	356.4	352.3	325.5	311.1	305.9	301.8	298.7	301.8	317.3
35°	319.3	328.6	334.8	332.7	303.9	286.4	275.0	264.7	260.6	263.7	281.2
37.5°	294.6	310.1	318.3	316.2	286.4	265.8	251.3	249.3	249.3	253.4	270.9
40°	285.3	296.7	303.9	300.8	270.9	250.3	242.1	239.0	240.0	244.1	262.7
42.5°	277.1	287.4	289.5	283.3	253.4	240.0	234.9	230.7	232.8	237.9	256.5
45°	269.9	278.1	277.1	267.8	239.0	229.7	229.7	226.6	227.6	231.8	251.3
47.5°	264.7	268.9	266.8	257.5	228.7	221.5	224.6	224.6	226.6	229.7	249.3
50°	256.5	259.6	257.5	249.3	220.4	214.3	217.3	221.5	223.5	226.6	244.1
52.5°	248.2	250.3	249.3	241.0	212.2	208.1	208.1	212.2	216.3	220.4	235.9
55°	240.0	242.1	243.1	236.9	206.0	201.9	200.9	200.9	205.0	211.2	227.6
57.5°	233.8	233.8	235.9	231.8	199.8	194.7	189.5	190.6	195.7	200.9	217.3
60°	226.6	227.6	230.7	226.6	191.6	183.4	179.2	184.4	186.4	191.6	209.1
62.5°	220.4	220.4	222.5	219.4	184.4	176.1	173.1	178.2	178.2	183.4	200.9
65°	215.3	214.3	214.3	213.2	177.2	168.9	166.9	168.9	170.0	175.1	192.6
67.5°	211.2	206.0	206.0	208.1	170.0	161.7	160.7	160.7	161.7	167.9	183.4
70°	201.9	197.8	196.7	204.0	162.8	152.5	152.5	150.4	152.5	155.5	172.0
72.5°	191.6	188.5	187.5	197.8	155.5	142.2	140.1	139.1	140.1	143.2	158.6
75°	178.2	176.1	178.2	193.7	148.3	130.8	127.7	126.7	126.7	127.7	144.2
77.5°	162.8	160.7	176.1	180.3	144.2	117.4	114.3	112.3	110.2	110.2	128.8
80°	144.2	143.2	170.0	152.5	138.0	103.0	97.9	94.8	92.7	91.7	110.2
82.5°	125.7	123.6	145.2	119.5	114.3	84.5	77.3	71.1	68.0	68.0	84.5
85°	103.0	102.0	114.3	87.6	79.3	61.8	51.5	46.4	42.2	42.2	54.6
87.5°	75.2	73.1	71.1	52.5	40.2	27.8	19.6	18.5	16.5	15.5	22.7
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°	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4	4843.4
2.5°	4068.8	4154.3	4316.0	4448.9	4626.1	4768.3	4930.0	5000.0
5°	3035.7	3170.6	3417.8	3629.0	3921.5	4192.4	4501.5	4670.4
7.5°	2177.6	2377.4	2564.9	2828.6	3194.3	3557.9	3957.6	4181.1
10°	1801.6	1985.0	2145.7	2333.1	2615.4	3024.3	3501.3	3753.6
12.5°	1492.6	1690.4	1860.3	2061.2	2298.1	2667.9	3211.8	3505.4
15°	1144.4	1359.7	1563.7	1805.7	2096.2	2518.6	3125.3	3452.8
17.5°	783.9	1014.6	1266.0	1561.6	1911.8	2455.7	3207.7	3611.5
20°	532.6	701.5	974.5	1324.7	1746.0	2425.8	3389.0	3938.0
22.5°	437.8	514.0	719.0	1102.2	1610.0	2458.8	3683.6	4367.6
25°	401.7	442.9	559.3	906.5	1506.0	2546.4	4082.2	4852.7
27.5°	379.1	414.1	490.3	766.4	1410.2	2665.9	4567.4	5446.0
30°	365.7	398.6	462.5	694.3	1322.6	2768.9	4984.6	5893.1
32.5°	335.8	360.5	413.1	653.1	1259.8	2852.3	5352.3	6311.3
35°	299.8	329.6	372.9	626.3	1257.7	2891.4	5698.4	6773.8
37.5°	286.4	315.2	347.1	611.9	1270.1	2924.4	6121.8	7298.1
40°	278.1	303.9	329.6	609.8	1280.4	2950.2	6535.9	7844.1
42.5°	270.9	296.7	326.5	595.4	1276.3	2985.2	6902.6	8312.8
45°	268.9	294.6	333.7	573.8	1275.2	3039.8	7194.1	8687.7
47.5°	266.8	305.9	331.7	550.1	1271.1	3155.1	7522.7	9036.9
50°	264.7	326.5	317.3	517.1	1240.2	3351.9	7964.6	9436.6
52.5°	263.7	329.6	301.8	471.8	1184.6	3643.4	8611.5	9992.8
55°	259.6	313.1	275.0	412.0	1104.2	3957.6	9304.7	10646.9
57.5°	250.3	279.2	259.6	353.3	988.9	4177.0	9816.7	11152.7
60°	273.0	240.0	249.3	323.4	850.8	4216.1	9839.4	11294.9
62.5°	260.6	218.4	239.0	313.1	754.0	3960.7	9389.2	11124.9
65°	208.1	207.0	229.7	323.4	739.6	3389.0	8629.0	10621.2
67.5°	189.5	198.8	220.4	335.8	748.9	2670.0	7510.3	9444.8
70°	177.2	188.5	208.1	347.1	765.4	2103.4	6046.6	7681.3
72.5°	164.8	174.1	195.7	358.5	754.0	1659.5	4839.3	5916.8
75°	149.4	157.6	178.2	328.6	646.9	1219.6	3845.3	4201.7
77.5°	131.9	139.1	156.6	259.6	486.2	848.8	2880.1	3028.4
80°	113.3	116.4	129.8	189.5	317.3	507.8	2192.0	2415.5
82.5°	89.6	90.6	98.9	139.1	197.8	324.5	1520.4	1735.7
85°	57.7	59.7	63.9	97.9	132.9	208.1	776.7	890.0
87.5°	19.6	22.7	22.7	47.4	64.9	115.4	237.9	173.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)