

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: P195724

Luminaire Tested: **NAV-AF-04-D-UNV-SLL-7050-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195724
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-7050-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 5000K, 615mA 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: 14197 lumens
Efficiency: N/A
Efficacy: 110.1 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): 129
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

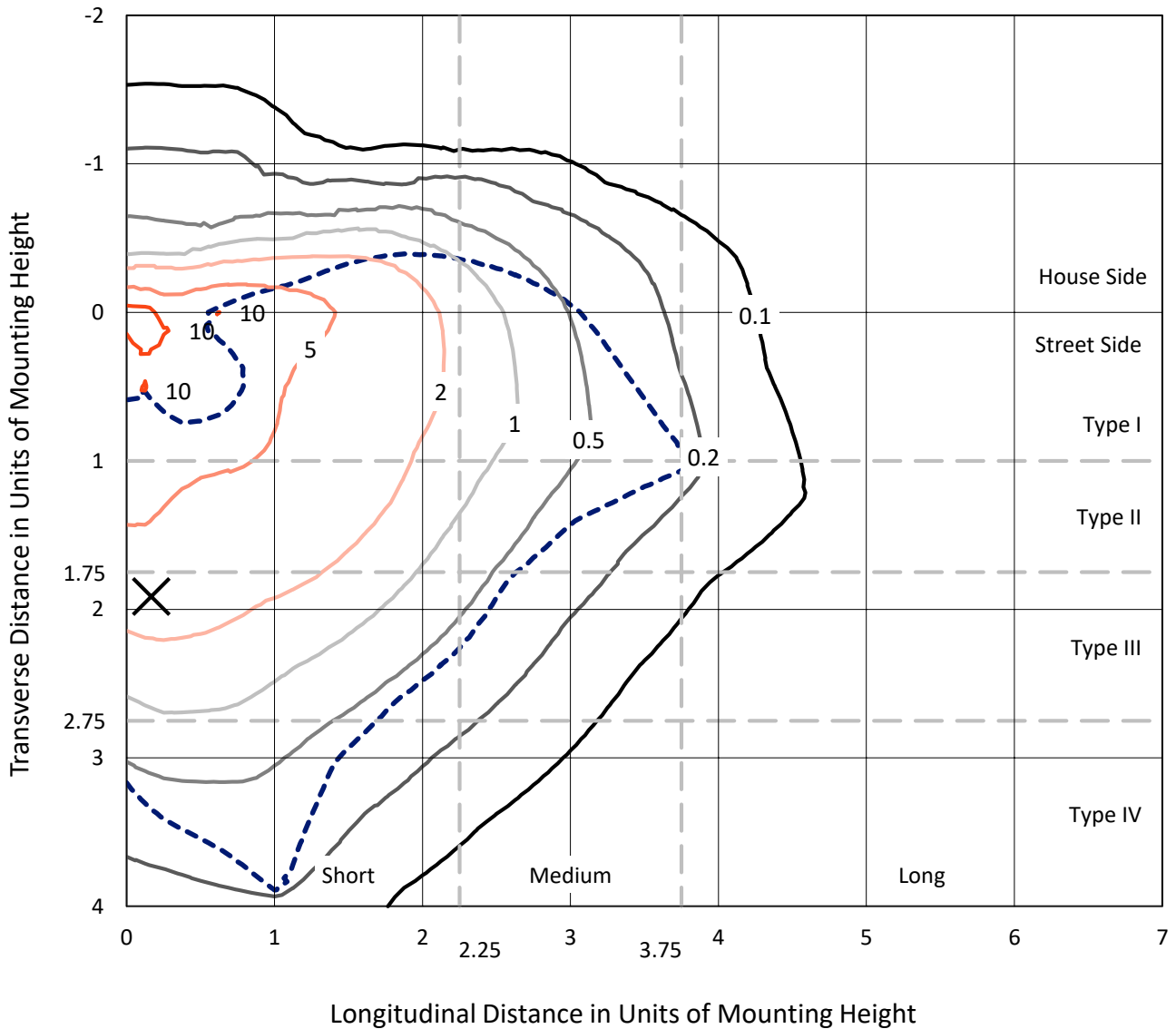


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Iso-Footcandle Lines of Horizontal Illumination

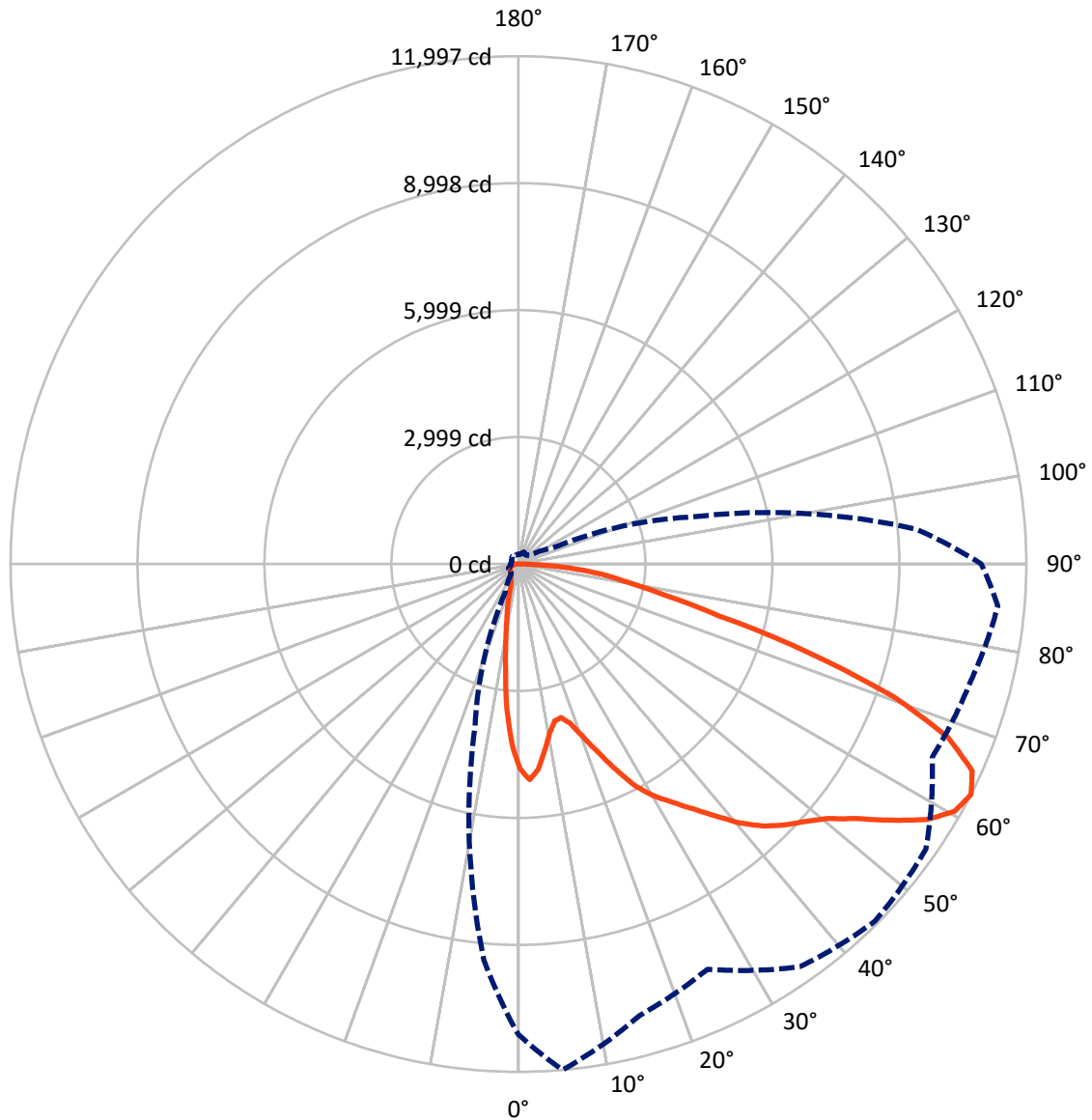
× Max cd
 - - - 1/2 Max cd



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	2515.0	0.0	2515.0
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	11682.0	0.0	11682.0
	% Fixture	82.3	0.0	82.3
Total	Lumens	14197.0	0.0	14197.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	352.0	2.5
10°-20°	642.9	4.5
20°-30°	924.7	6.5
30°-40°	1416.2	10.0
40°-50°	2070.6	14.6
50°-60°	3012.7	21.2
60°-70°	3490.6	24.6
70°-80°	1819.6	12.8
80°-90°	467.7	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°	14197.0	100.0
0°-180°	14197.0	100.0



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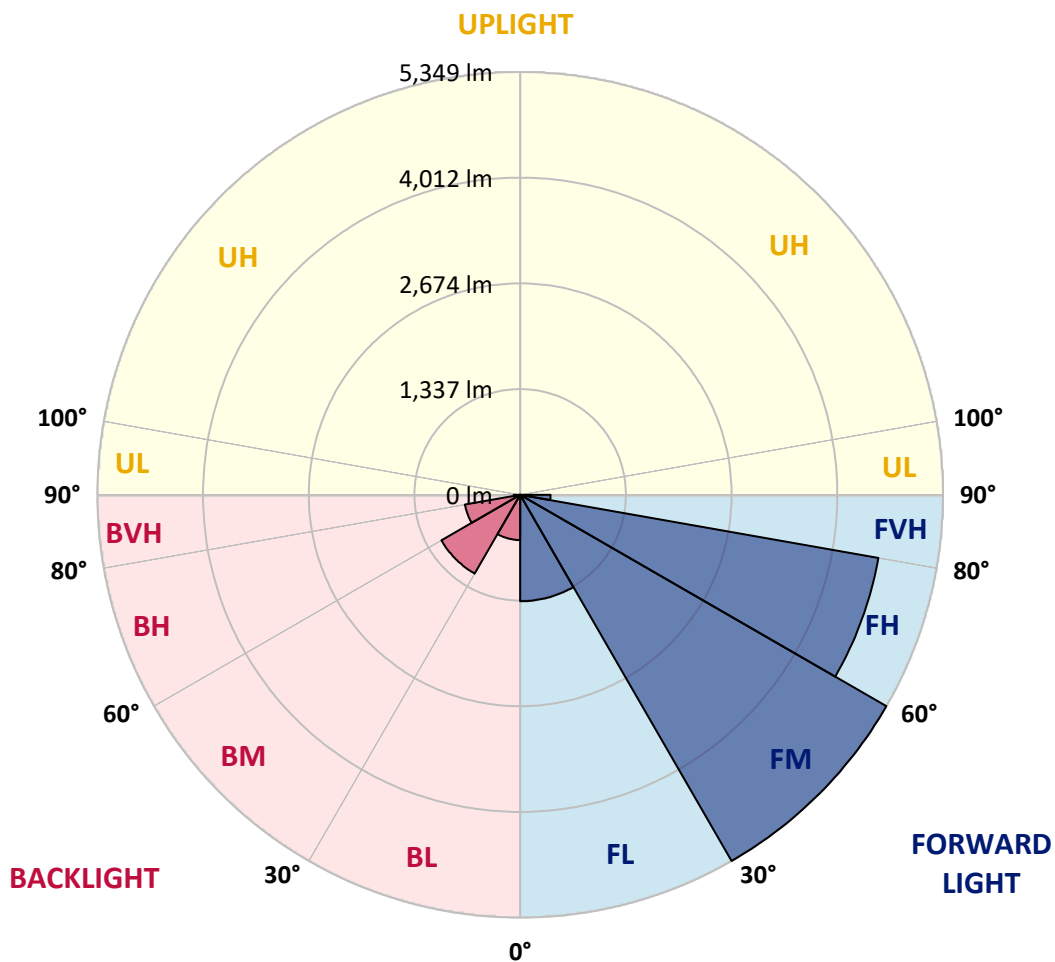
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1347.4	9.5			
FM (30°-60°)	5348.8	37.7			
FH (60°-80°)	4601.0	32.4			G2/5000
FVH (80°-90°)	384.8	2.7			G3/500
BL (0°-30°)	572.2	4.0	B2/1000		
BM (30°-60°)	1150.7	8.1	B2/2500		
BH (60°-80°)	709.2	5.0	B2/1000		G2/1000
BVH (80°-90°)	82.9	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°	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0
2.5°	4996.5	5102.5	5224.0	5382.5	5490.6	5533.8	5569.9	5509.1	5450.4	5340.3	5301.2
5°	4667.1	4870.9	5205.5	5523.5	5803.5	5964.1	6013.5	5901.3	5701.6	5413.4	5261.0
7.5°	4178.2	4446.8	4917.2	5385.6	5787.0	6054.7	6074.2	5851.9	5458.7	4986.2	4739.2
10°	3751.0	4054.6	4599.2	5123.1	5548.2	5822.0	5768.5	5456.6	4982.1	4444.8	4165.8
12.5°	3502.9	3806.6	4361.4	4893.6	5294.0	5398.0	5288.8	5026.4	4576.5	4038.2	3757.2
15°	3450.4	3763.3	4277.0	4725.8	4973.9	4906.9	4798.9	4666.1	4345.9	3905.4	3633.6
17.5°	3608.9	3958.9	4389.2	4635.2	4624.9	4464.3	4373.7	4399.5	4344.9	4049.5	3765.4
20°	3935.2	4349.0	4674.3	4610.5	4347.0	4121.5	4069.1	4270.8	4523.0	4410.8	4098.9
22.5°	4364.5	4835.9	5063.4	4681.5	4201.8	3958.9	3948.6	4263.6	4847.2	4957.4	4577.6
25°	4849.3	5399.0	5455.6	4807.1	4186.4	3944.5	3935.2	4374.8	5237.4	5498.8	5113.8
27.5°	5442.2	5967.2	5782.9	4974.9	4254.3	3986.7	3992.9	4564.2	5644.0	6034.1	5718.1
30°	5889.0	6370.7	5984.7	5139.6	4363.4	4060.8	4076.3	4769.0	5863.2	6405.7	6200.9
32.5°	6306.9	6715.5	6178.2	5302.2	4523.0	4171.0	4224.5	5024.3	6126.7	6724.8	6656.9
35°	6769.1	7101.5	6393.3	5476.2	4751.5	4364.5	4441.7	5267.2	6388.2	7043.9	7108.7
37.5°	7293.0	7543.1	6627.0	5722.2	5080.9	4722.7	4765.9	5515.3	6570.4	7397.0	7593.6
40°	7838.6	8038.3	6882.3	6050.6	5559.6	5206.5	5227.1	5833.4	6713.5	7762.4	8064.0
42.5°	8306.9	8462.3	7138.6	6458.2	6109.2	5699.6	5717.1	6176.1	6850.4	8077.4	8440.7
45°	8681.6	8795.9	7380.5	6887.4	6696.0	6315.1	6311.0	6525.1	7033.6	8342.9	8730.0
47.5°	9030.6	9091.3	7650.2	7305.4	7304.3	7107.7	6960.5	6936.8	7277.6	8566.3	8982.2
50°	9429.9	9452.6	8006.3	7727.4	8047.5	8016.6	7744.9	7459.8	7593.6	8817.5	9246.7
52.5°	9985.8	9986.8	8447.9	8139.1	8867.9	8965.7	8649.7	8051.6	8060.9	9306.4	9703.8
55°	10639.4	10684.7	9023.3	8632.2	9726.4	9893.2	9595.7	8754.7	8732.0	10094.9	10444.9
57.5°	11144.9	11384.7	9693.5	9248.8	10528.3	10745.5	10505.6	9483.5	9556.6	10908.1	11056.3
60°	11286.9	11847.9	10361.5	9940.5	11206.6	11532.9	11289.0	10270.9	10363.6	11436.2	11232.4
62.5°	11117.1	11997.2	11041.9	10560.2	11609.1	11922.0	11747.0	10786.6	11021.3	11368.2	10934.9
65°	10613.7	11781.0	11632.8	10823.7	11377.5	11488.7	11442.3	10813.4	11378.5	10725.9	10112.4
67.5°	9438.2	10947.2	11369.3	10260.6	10295.6	10176.2	10115.5	10078.4	10977.1	9689.3	8815.4
70°	7675.9	9406.3	10112.4	8586.9	8327.5	8212.2	8012.5	8506.6	9866.4	8255.4	7254.9
72.5°	5912.6	7196.2	8294.6	6509.7	5970.3	6009.4	5782.9	6504.5	8173.1	6382.0	5539.0
75°	4198.8	4906.9	6620.8	4677.4	3963.0	3961.0	3943.5	4681.5	6448.9	4580.6	4052.6
77.5°	3026.3	3532.8	5186.9	3130.3	2812.2	2848.2	2790.6	3181.7	5027.4	3295.0	3002.6
80°	2413.8	2615.6	3352.6	2087.5	2093.7	2178.1	2165.8	2176.1	3307.3	2386.1	2245.0
82.5°	1734.5	1985.6	2563.1	1599.6	1384.5	1474.0	1491.5	1614.0	2333.6	1687.1	1480.2
85°	889.4	1210.5	2358.3	1385.5	865.7	717.5	825.5	1273.3	2026.8	1010.8	721.6
87.5°	172.9	335.6	1728.3	770.0	389.1	196.6	324.2	539.4	1178.6	183.2	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°	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0
2.5°	5234.3	5102.5	4979.0	4851.4	4752.5	4632.1	4513.7	4410.8	4311.0	4245.1	4265.7
5°	5106.6	4785.5	4497.3	4229.6	4073.2	3884.8	3717.0	3576.0	3466.9	3396.9	3439.1
7.5°	4525.1	4090.7	3710.8	3357.8	3135.4	2891.5	2695.9	2558.0	2473.5	2426.2	2495.2
10°	3930.1	3442.2	3016.0	2648.5	2429.3	2222.4	2045.3	1899.2	1785.9	1732.4	1760.2
12.5°	3503.9	2961.5	2514.7	2267.7	2079.3	1894.0	1710.8	1539.9	1395.8	1329.9	1316.5
15°	3344.4	2703.1	2247.1	1971.2	1783.9	1582.1	1384.5	1201.3	1064.4	1007.7	995.4
17.5°	3414.4	2647.5	2088.6	1762.3	1490.5	1245.5	1023.2	850.2	749.4	717.5	720.6
20°	3660.4	2668.1	1960.9	1547.1	1211.6	921.3	698.9	579.5	536.3	529.1	537.3
22.5°	3998.0	2752.5	1868.3	1361.8	965.5	670.1	519.8	463.2	451.9	450.9	459.1
25°	4443.7	2917.2	1806.5	1197.1	762.8	531.1	452.9	421.0	411.7	413.8	422.0
27.5°	4968.7	3126.2	1766.4	1055.1	626.9	473.5	423.1	395.3	386.0	388.1	394.2
30°	5448.4	3309.4	1706.7	948.0	563.1	452.9	406.6	378.8	366.5	366.5	370.6
32.5°	5877.6	3467.9	1636.7	867.7	504.4	406.6	368.5	346.9	337.6	340.7	342.8
35°	6258.5	3551.3	1582.1	820.4	457.0	374.7	336.6	314.0	301.6	303.7	306.7
37.5°	6633.2	3583.2	1546.1	794.7	423.1	355.1	320.1	301.6	288.2	286.2	285.1
40°	6989.3	3576.0	1512.1	787.5	400.4	340.7	309.8	293.4	280.0	276.9	275.9
42.5°	7297.1	3552.3	1480.2	767.9	385.0	330.4	301.6	287.2	273.8	269.7	267.6
45°	7578.1	3537.9	1445.2	731.9	393.2	326.3	297.5	282.0	269.7	264.5	262.5
47.5°	7890.0	3589.4	1406.1	692.8	391.2	327.3	297.5	280.0	267.6	262.5	260.4
50°	8261.6	3763.3	1357.7	639.2	372.6	350.0	296.5	276.9	265.6	262.5	258.4
52.5°	8786.6	4045.4	1290.8	570.3	358.2	373.7	295.4	271.8	262.5	257.3	252.2
55°	9506.1	4327.4	1204.3	497.2	335.6	357.2	297.5	265.6	255.3	250.1	244.0
57.5°	10095.9	4541.5	1095.2	436.4	315.0	337.6	294.4	258.4	247.0	241.9	236.8
60°	10057.9	4562.1	991.3	397.3	302.6	303.7	301.6	253.2	239.8	235.7	231.6
62.5°	9435.1	4307.9	894.5	377.8	293.4	276.9	307.8	247.0	232.6	228.5	225.4
65°	8398.5	3716.0	843.0	377.8	285.1	262.5	268.7	238.8	225.4	221.3	219.3
67.5°	7084.0	2986.2	794.7	386.0	273.8	252.2	244.0	230.6	218.2	214.1	212.0
70°	5677.9	2350.0	760.7	381.9	263.5	240.9	230.6	219.3	206.9	205.9	203.8
72.5°	4454.0	1887.8	745.3	381.9	248.1	227.5	217.2	209.0	196.6	195.6	192.5
75°	3568.8	1417.4	681.4	374.7	232.6	210.0	200.7	193.5	181.2	182.2	180.1
77.5°	2763.8	1002.6	569.2	337.6	213.1	190.4	183.2	178.1	163.7	164.7	164.7
80°	2161.7	652.6	441.6	280.0	190.4	167.8	162.6	158.5	143.1	145.1	145.1
82.5°	1481.2	388.1	320.1	225.4	163.7	143.1	142.1	135.9	119.4	120.4	122.5
85°	809.1	255.3	213.1	166.8	128.7	116.3	114.3	111.2	95.7	95.7	96.8
87.5°	149.3	136.9	125.6	110.1	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°	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0
2.5°	4217.3	4146.3	4096.8	4053.6	3949.6	3956.9	3971.3	3991.8	3927.0	3961.0	4003.2
5°	3396.9	3338.2	3293.9	3225.0	3079.8	3028.4	2995.4	2981.0	2884.3	2904.8	2950.1
7.5°	2504.4	2503.4	2488.0	2410.8	2235.8	2129.7	2059.7	2038.1	1978.4	2001.1	2070.0
10°	1763.3	1781.8	1774.6	1705.6	1549.2	1473.0	1457.6	1500.8	1501.8	1546.1	1664.5
12.5°	1274.3	1264.1	1254.8	1198.2	1080.8	1068.5	1103.5	1163.2	1177.6	1224.9	1348.5
15°	951.1	926.4	921.3	877.0	799.8	811.1	836.9	867.7	868.8	901.7	1003.6
17.5°	713.3	713.3	721.6	692.8	637.2	632.0	618.6	610.4	598.1	611.4	667.0
20°	553.8	579.5	600.1	583.6	533.2	508.5	482.8	466.3	457.0	458.1	474.5
22.5°	474.5	495.1	521.9	513.6	471.4	439.5	423.1	411.7	404.5	404.5	413.8
25°	434.4	447.8	472.5	468.4	432.3	406.6	393.2	381.9	373.7	372.6	381.9
27.5°	402.5	410.7	427.2	425.1	388.1	371.6	363.4	356.2	351.0	350.0	359.2
30°	373.7	377.8	386.0	382.9	355.1	338.7	335.6	332.5	329.4	330.4	343.8
32.5°	347.9	351.0	356.2	352.0	325.3	310.9	305.7	301.6	298.5	301.6	317.0
35°	319.1	328.4	334.5	332.5	303.7	286.2	274.8	264.5	260.4	263.5	281.0
37.5°	294.4	309.8	318.1	316.0	286.2	265.6	251.2	249.1	249.1	253.2	270.7
40°	285.1	296.5	303.7	300.6	270.7	250.1	241.9	238.8	239.8	244.0	262.5
42.5°	276.9	287.2	289.2	283.1	253.2	239.8	234.7	230.6	232.6	237.8	256.3
45°	269.7	277.9	276.9	267.6	238.8	229.5	229.5	226.5	227.5	231.6	251.2
47.5°	264.5	268.7	266.6	257.3	228.5	221.3	224.4	224.4	226.5	229.5	249.1
50°	256.3	259.4	257.3	249.1	220.3	214.1	217.2	221.3	223.4	226.5	244.0
52.5°	248.1	250.1	249.1	240.9	212.0	207.9	207.9	212.0	216.2	220.3	235.7
55°	239.8	241.9	242.9	236.8	205.9	201.8	200.7	200.7	204.8	211.0	227.5
57.5°	233.7	233.7	235.7	231.6	199.7	194.5	189.4	190.4	195.6	200.7	217.2
60°	226.5	227.5	230.6	226.5	191.5	183.2	179.1	184.3	186.3	191.5	209.0
62.5°	220.3	220.3	222.3	219.3	184.3	176.0	172.9	178.1	178.1	183.2	200.7
65°	215.1	214.1	214.1	213.1	177.0	168.8	166.8	168.8	169.8	175.0	192.5
67.5°	211.0	205.9	205.9	207.9	169.8	161.6	160.6	160.6	161.6	167.8	183.2
70°	201.8	197.6	196.6	203.8	162.6	152.3	152.3	150.3	152.3	155.4	171.9
72.5°	191.5	188.4	187.3	197.6	155.4	142.1	140.0	139.0	140.0	143.1	158.5
75°	178.1	176.0	178.1	193.5	148.2	130.7	127.6	126.6	126.6	127.6	144.1
77.5°	162.6	160.6	176.0	180.1	144.1	117.3	114.3	112.2	110.1	110.1	128.7
80°	144.1	143.1	169.8	152.3	137.9	102.9	97.8	94.7	92.6	91.6	110.1
82.5°	125.6	123.5	145.1	119.4	114.3	84.4	77.2	71.0	67.9	67.9	84.4
85°	102.9	101.9	114.3	87.5	79.3	61.8	51.5	46.3	42.2	42.2	54.6
87.5°	75.1	73.1	71.0	52.5	40.1	27.8	19.6	18.5	16.5	15.4	22.6
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0	4840.0
2.5°	4066.0	4151.4	4313.0	4445.8	4622.8	4764.9	4926.5	4996.5
5°	3033.5	3168.4	3415.4	3626.4	3918.8	4189.5	4498.3	4667.1
7.5°	2176.1	2375.8	2563.1	2826.6	3192.0	3555.4	3954.8	4178.2
10°	1800.3	1983.6	2144.2	2331.5	2613.5	3022.2	3498.8	3751.0
12.5°	1491.5	1689.2	1859.0	2059.7	2296.5	2666.0	3209.5	3502.9
15°	1143.6	1358.8	1562.6	1804.5	2094.7	2516.8	3123.1	3450.4
17.5°	783.3	1013.9	1265.1	1560.5	1910.5	2454.0	3205.4	3608.9
20°	532.2	701.0	973.8	1323.8	1744.8	2424.1	3386.6	3935.2
22.5°	437.5	513.6	718.5	1101.4	1608.9	2457.1	3681.0	4364.5
25°	401.4	442.6	558.9	905.8	1504.9	2544.6	4079.3	4849.3
27.5°	378.8	413.8	490.0	765.8	1409.2	2664.0	4564.2	5442.2
30°	365.4	398.4	462.2	693.8	1321.7	2766.9	4981.1	5889.0
32.5°	335.6	360.3	412.8	652.6	1258.9	2850.3	5348.5	6306.9
35°	299.5	329.4	372.6	625.8	1256.8	2889.4	5694.4	6769.1
37.5°	286.2	315.0	346.9	611.4	1269.2	2922.3	6117.5	7293.0
40°	277.9	303.7	329.4	609.4	1279.5	2948.1	6531.3	7838.6
42.5°	270.7	296.5	326.3	595.0	1275.4	2983.1	6897.7	8306.9
45°	268.7	294.4	333.5	573.4	1274.3	3037.6	7189.0	8681.6
47.5°	266.6	305.7	331.5	549.7	1270.2	3152.9	7517.4	9030.6
50°	264.5	326.3	317.0	516.7	1239.3	3349.5	7959.0	9429.9
52.5°	263.5	329.4	301.6	471.4	1183.8	3640.8	8605.4	9985.8
55°	259.4	312.9	274.8	411.7	1103.5	3954.8	9298.2	10639.4
57.5°	250.1	279.0	259.4	353.1	988.2	4174.0	9809.8	11144.9
60°	272.8	239.8	249.1	323.2	850.2	4213.2	9832.4	11286.9
62.5°	260.4	218.2	238.8	312.9	753.5	3957.9	9382.6	11117.1
65°	207.9	206.9	229.5	323.2	739.1	3386.6	8622.9	10613.7
67.5°	189.4	198.7	220.3	335.6	748.3	2668.1	7505.0	9438.2
70°	177.0	188.4	207.9	346.9	764.8	2101.9	6042.3	7675.9
72.5°	164.7	174.0	195.6	358.2	753.5	1658.3	4835.9	5912.6
75°	149.3	157.5	178.1	328.4	646.4	1218.8	3842.6	4198.8
77.5°	131.8	139.0	156.5	259.4	485.9	848.2	2878.1	3026.3
80°	113.2	116.3	129.7	189.4	317.0	507.5	2190.5	2413.8
82.5°	89.6	90.6	98.8	139.0	197.6	324.2	1519.3	1734.5
85°	57.6	59.7	63.8	97.8	132.8	207.9	776.1	889.4
87.5°	19.6	22.6	22.6	47.4	64.8	115.3	237.8	172.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)