

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: P196208

Luminaire Tested: **NAV-AF-02-D-UNV-SLL-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196208
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-02-D-UNV-SLL-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 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: 8891.5 lumens
Efficiency: N/A
Efficacy: 104.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

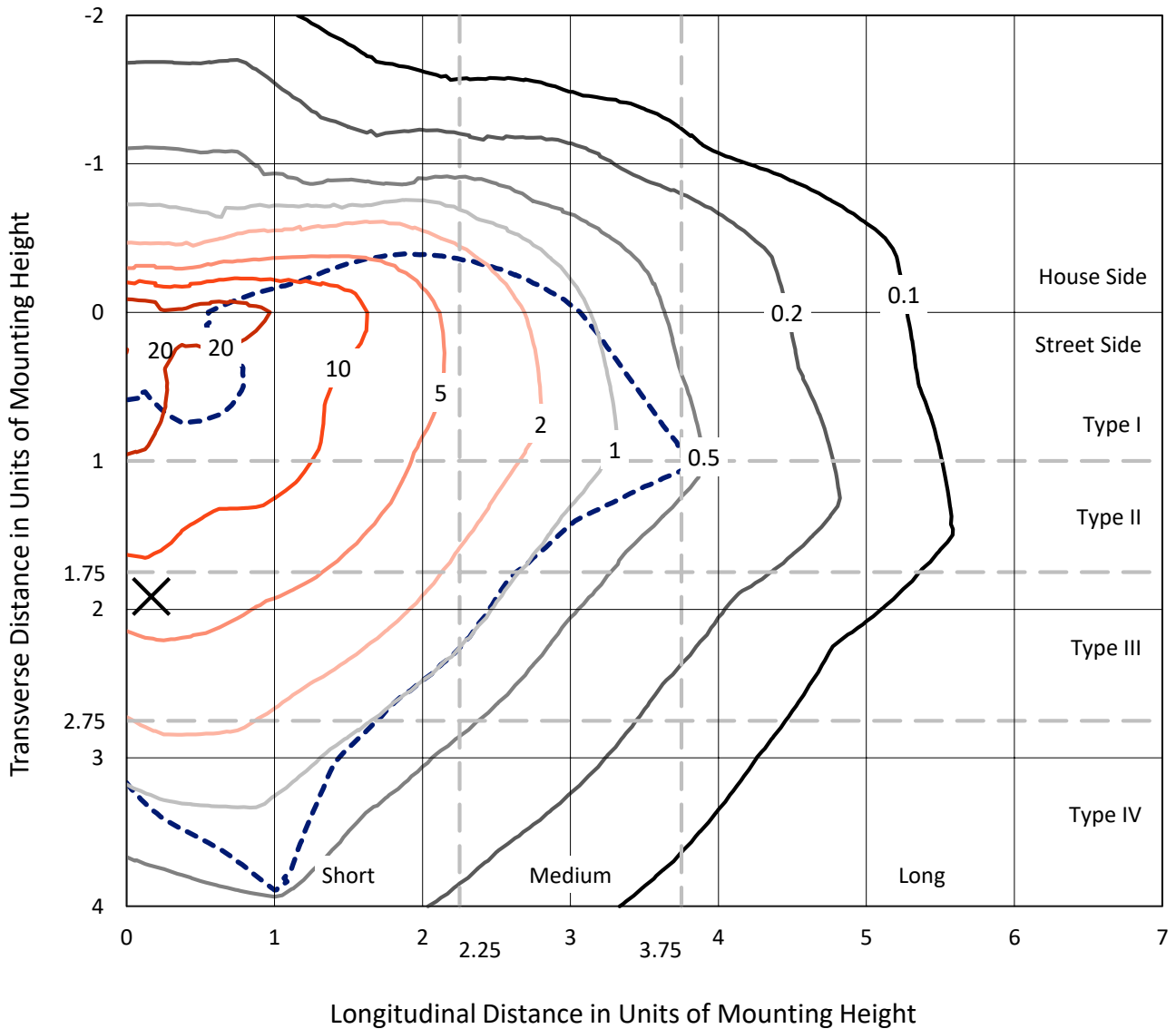
Input Watts (W): 85
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

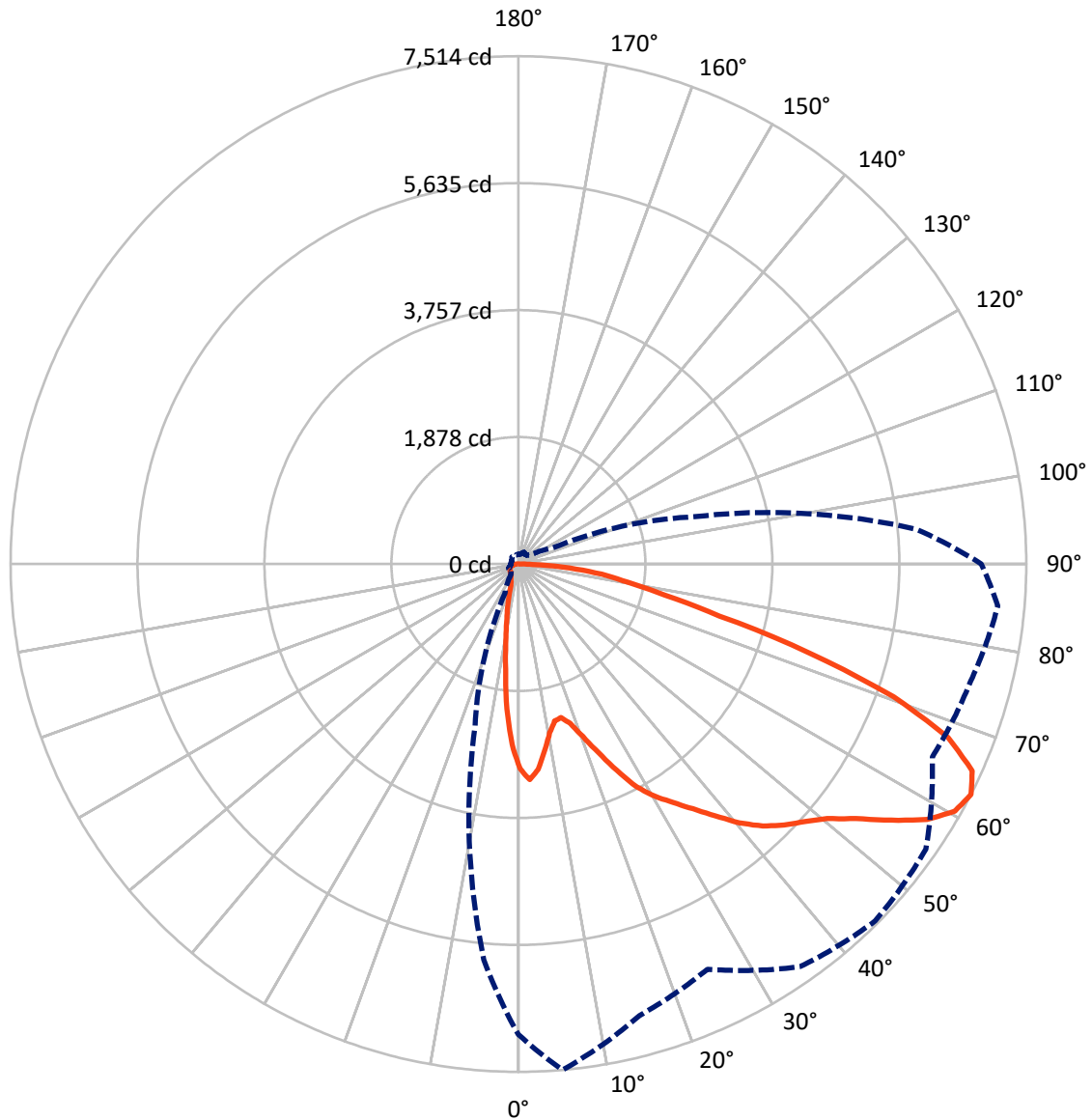
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 34.8 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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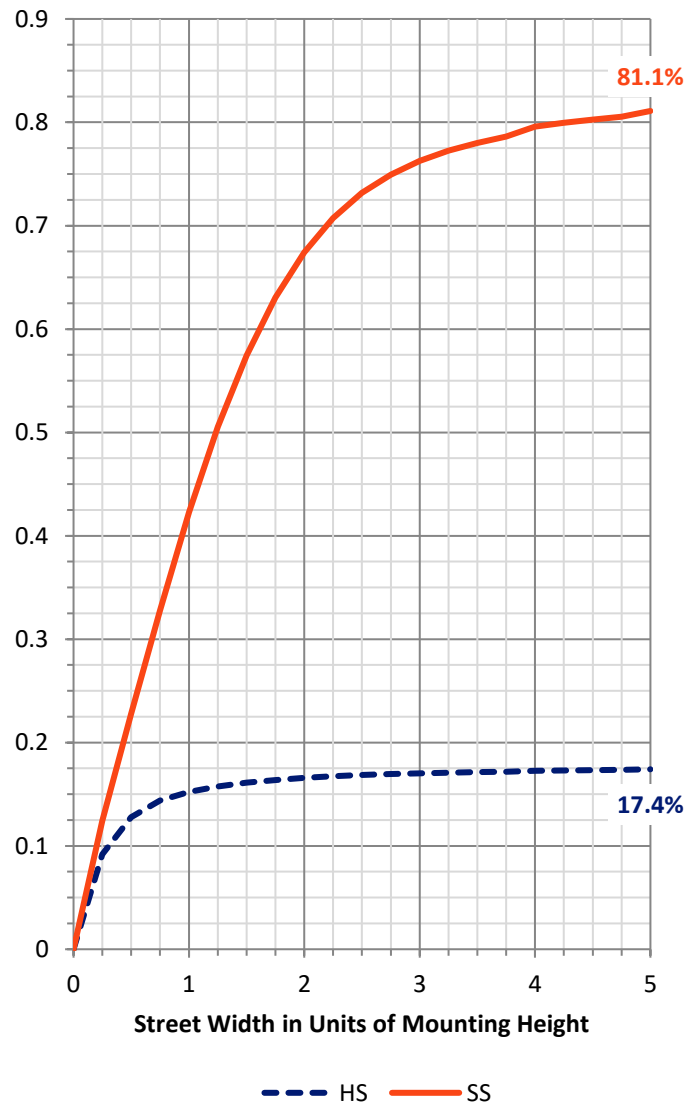
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1575.1	0.0	1575.1
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	7316.4	0.0	7316.4
	% Fixture	82.3	0.0	82.3
Total	Lumens	8891.5	0.0	8891.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	220.4	2.5
10°-20°	402.6	4.5
20°-30°	579.1	6.5
30°-40°	887.0	10.0
40°-50°	1296.8	14.6
50°-60°	1886.8	21.2
60°-70°	2186.1	24.6
70°-80°	1139.6	12.8
80°-90°	292.9	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°	8891.5	100.0
0°-180°	8891.5	100.0



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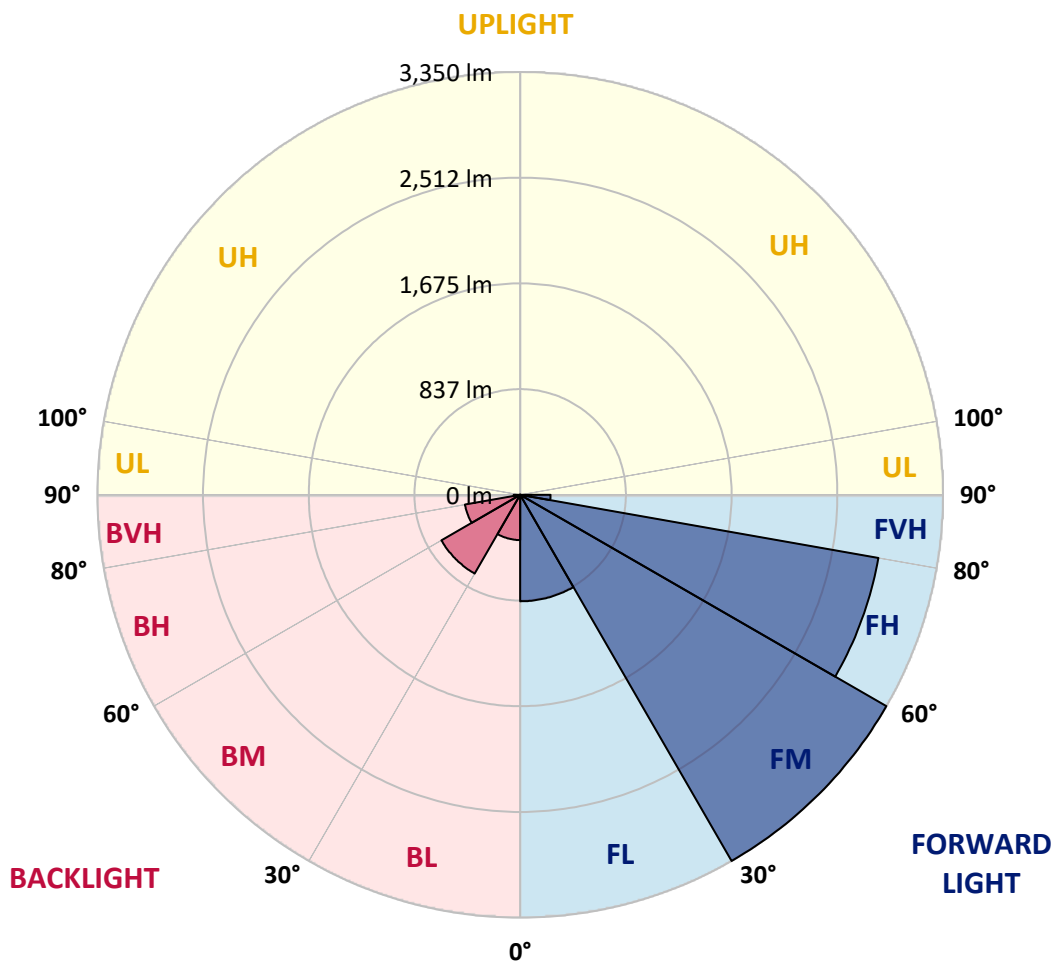
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	843.8	9.5			
FM (30°-60°)	3349.9	37.7			
FH (60°-80°)	2881.6	32.4			G2/5000
FVH (80°-90°)	241.0	2.7			G3/500
BL (0°-30°)	358.4	4.0	B1/500		
BM (30°-60°)	720.7	8.1	B1/1000		
BH (60°-80°)	444.1	5.0	B1/500		G1/500
BVH (80°-90°)	51.9	0.6			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3
2.5°	3129.3	3195.7	3271.7	3371.0	3438.8	3465.8	3488.4	3450.3	3413.6	3344.6	3320.1
5°	2923.0	3050.6	3260.1	3459.3	3634.7	3735.3	3766.2	3695.9	3570.9	3390.4	3294.9
7.5°	2616.7	2785.0	3079.6	3373.0	3624.4	3792.0	3804.3	3665.0	3418.7	3122.9	2968.1
10°	2349.2	2539.4	2880.4	3208.6	3474.9	3646.3	3612.8	3417.5	3120.2	2783.8	2609.0
12.5°	2193.8	2384.0	2731.5	3064.8	3315.6	3380.8	3312.4	3147.9	2866.2	2529.0	2353.1
15°	2161.0	2357.0	2678.6	2959.7	3115.1	3073.1	3005.5	2922.4	2721.9	2445.9	2275.8
17.5°	2260.2	2479.4	2748.9	2903.0	2896.6	2795.9	2739.3	2755.3	2721.2	2536.2	2358.2
20°	2464.6	2723.8	2927.5	2887.5	2722.5	2581.3	2548.4	2674.8	2832.8	2762.5	2567.1
22.5°	2733.4	3028.8	3171.1	2932.0	2631.5	2479.4	2473.0	2670.3	3035.8	3104.8	2866.9
25°	3037.0	3381.4	3416.8	3010.6	2621.9	2470.4	2464.6	2739.9	3280.1	3443.9	3202.8
27.5°	3408.5	3737.2	3621.9	3115.7	2664.5	2496.8	2500.7	2858.5	3534.8	3779.1	3581.2
30°	3688.2	3989.9	3748.2	3218.9	2732.8	2543.3	2553.0	2986.8	3672.1	4011.8	3883.5
32.5°	3949.9	4205.9	3869.4	3320.7	2832.8	2612.2	2645.8	3146.7	3837.1	4211.7	4169.1
35°	4239.4	4447.7	4004.1	3429.6	2975.9	2733.4	2781.8	3298.8	4000.9	4411.6	4452.2
37.5°	4567.6	4724.2	4150.4	3583.8	3182.1	2957.8	2984.9	3454.2	4115.0	4632.6	4755.8
40°	4909.2	5034.4	4310.3	3789.4	3481.9	3260.8	3273.6	3653.4	4204.6	4861.6	5050.4
42.5°	5202.5	5299.9	4470.8	4044.7	3826.1	3569.6	3580.5	3868.1	4290.4	5058.8	5286.4
45°	5437.2	5508.8	4622.3	4313.6	4193.7	3955.1	3952.6	4086.6	4405.1	5225.1	5467.6
47.5°	5655.8	5693.8	4791.3	4575.2	4574.6	4451.5	4359.3	4344.5	4557.9	5365.1	5625.5
50°	5905.9	5920.1	5014.3	4839.6	5040.1	5020.7	4850.5	4672.0	4755.8	5522.3	5791.1
52.5°	6254.0	6254.7	5290.9	5097.5	5553.9	5615.2	5417.2	5042.7	5048.5	5828.6	6077.4
55°	6663.4	6691.7	5651.3	5406.3	6091.6	6196.0	6009.7	5483.0	5468.8	6322.3	6541.6
57.5°	6979.9	7130.2	6070.9	5792.5	6593.7	6729.8	6579.6	5939.5	5985.2	6831.7	6924.6
60°	7068.9	7420.3	6489.4	6225.7	7018.7	7223.0	7070.2	6432.6	6490.6	7162.4	7034.7
62.5°	6962.5	7513.8	6915.5	6613.8	7270.7	7466.7	7357.1	6755.6	6902.6	7119.8	6848.5
65°	6647.3	7378.3	7285.6	6778.8	7125.7	7195.2	7166.3	6772.3	7126.3	6717.6	6333.3
67.5°	5911.1	6856.1	7120.5	6426.2	6448.1	6373.3	6335.2	6312.0	6874.8	6068.3	5521.1
70°	4807.4	5891.1	6333.3	5378.0	5215.4	5143.3	5018.2	5327.6	6179.2	5170.3	4543.7
72.5°	3703.1	4506.9	5194.9	4077.0	3739.2	3763.6	3621.9	4073.7	5118.7	3997.0	3469.0
75°	2629.7	3073.1	4146.5	2929.4	2482.0	2480.8	2469.8	2932.0	4038.9	2868.9	2538.1
77.5°	1895.3	2212.5	3248.6	1960.5	1761.3	1783.8	1747.7	1992.7	3148.6	2063.6	1880.5
80°	1511.8	1638.2	2099.7	1307.4	1311.3	1364.1	1356.4	1362.9	2071.4	1494.3	1406.0
82.5°	1086.3	1243.6	1605.2	1001.9	867.1	923.2	934.2	1010.9	1461.5	1056.6	927.1
85°	557.0	758.1	1476.9	867.8	542.2	449.4	517.0	797.5	1269.4	633.1	451.9
87.5°	108.3	210.2	1082.4	482.2	243.7	123.2	203.1	337.8	738.2	114.8	56.1
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°	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3
2.5°	3278.1	3195.7	3118.4	3038.4	2976.5	2901.1	2826.9	2762.5	2699.9	2658.6	2671.5
5°	3198.3	2997.1	2816.6	2649.0	2551.0	2433.0	2327.9	2239.6	2171.3	2127.4	2153.9
7.5°	2834.0	2562.0	2324.0	2103.0	1963.7	1810.9	1688.4	1602.0	1549.2	1519.5	1562.7
10°	2461.4	2155.8	1888.9	1658.7	1521.4	1391.8	1280.9	1189.4	1118.5	1085.0	1102.4
12.5°	2194.5	1854.7	1574.9	1420.3	1302.2	1186.2	1071.4	964.4	874.2	832.9	824.5
15°	2094.6	1692.9	1407.4	1234.6	1117.3	990.8	867.1	752.4	666.6	631.2	623.4
17.5°	2138.4	1658.1	1308.0	1103.7	933.5	780.1	640.8	532.5	469.3	449.4	451.3
20°	2292.4	1671.0	1228.2	968.9	758.8	576.9	437.7	362.9	335.8	331.3	336.6
22.5°	2504.0	1723.9	1170.1	852.9	604.7	419.7	325.6	290.1	283.1	282.3	287.6
25°	2783.0	1827.0	1131.4	749.7	477.7	332.7	283.7	263.7	257.9	259.1	264.3
27.5°	3111.9	1957.9	1106.3	660.8	392.6	296.6	264.9	247.6	241.7	243.1	246.9
30°	3412.3	2072.6	1068.9	593.7	352.6	283.7	254.6	237.2	229.6	229.6	232.1
32.5°	3681.1	2171.9	1025.0	543.5	315.9	254.6	230.8	217.3	211.4	213.4	214.7
35°	3919.6	2224.1	990.8	513.8	286.2	234.7	210.8	196.6	188.9	190.2	192.1
37.5°	4154.3	2244.1	968.3	497.7	264.9	222.4	200.5	188.9	180.6	179.2	178.6
40°	4377.4	2239.6	947.0	493.2	250.8	213.4	194.1	183.7	175.3	173.4	172.8
42.5°	4570.1	2224.8	927.1	480.9	241.1	206.9	188.9	179.8	171.4	168.9	167.7
45°	4746.2	2215.8	905.1	458.4	246.2	204.4	186.3	176.7	168.9	165.7	164.4
47.5°	4941.5	2248.0	880.7	433.8	245.0	205.0	186.3	175.3	167.7	164.4	163.1
50°	5174.2	2357.0	850.4	400.4	233.3	219.2	185.7	173.4	166.3	164.4	161.8
52.5°	5503.0	2533.5	808.4	357.1	224.3	234.1	185.1	170.2	164.4	161.2	157.9
55°	5953.6	2710.2	754.3	311.4	210.2	223.7	186.3	166.3	159.9	156.6	152.8
57.5°	6323.1	2844.3	685.9	273.3	197.2	211.4	184.3	161.8	154.8	151.5	148.2
60°	6299.1	2857.2	620.8	248.9	189.6	190.2	188.9	158.6	150.2	147.6	145.1
62.5°	5909.2	2698.0	560.3	236.6	183.7	173.4	192.7	154.8	145.7	143.1	141.2
65°	5259.9	2327.3	527.9	236.6	178.6	164.4	168.3	149.6	141.2	138.6	137.3
67.5°	4436.6	1870.3	497.7	241.7	171.4	157.9	152.8	144.4	136.7	134.1	132.8
70°	3556.1	1471.8	476.4	239.2	165.0	150.9	144.4	137.3	129.6	128.9	127.7
72.5°	2789.5	1182.3	466.8	239.2	155.4	142.5	136.1	130.8	123.2	122.4	120.6
75°	2235.1	887.7	426.8	234.7	145.7	131.6	125.7	121.2	113.4	114.1	112.8
77.5°	1730.9	627.9	356.5	211.4	133.5	119.3	114.8	111.5	102.5	103.1	103.1
80°	1353.9	408.8	276.6	175.3	119.3	105.1	101.9	99.3	89.6	90.9	90.9
82.5°	927.7	243.1	200.5	141.2	102.5	89.6	89.0	85.1	74.8	75.4	76.7
85°	506.7	159.9	133.5	104.4	80.6	72.8	71.6	69.7	59.9	59.9	60.6
87.5°	93.5	85.7	78.7	68.9	54.1	52.2	50.3	52.2	45.1	43.9	43.9
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°	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3
2.5°	2641.3	2596.8	2565.9	2538.8	2473.6	2478.2	2487.2	2500.1	2459.5	2480.8	2507.2
5°	2127.4	2090.7	2063.0	2019.8	1928.9	1896.7	1876.0	1867.0	1806.4	1819.3	1847.7
7.5°	1568.5	1567.9	1558.2	1509.9	1400.2	1333.8	1290.0	1276.4	1239.1	1253.2	1296.5
10°	1104.4	1115.9	1111.4	1068.3	970.3	922.5	912.9	940.0	940.6	968.3	1042.5
12.5°	798.1	791.7	785.8	750.4	676.9	669.2	691.1	728.4	737.5	767.2	844.5
15°	595.7	580.2	576.9	549.2	500.9	508.0	524.2	543.5	544.1	564.8	628.6
17.5°	446.7	446.7	451.9	433.8	399.1	395.9	387.5	382.3	374.6	382.9	417.8
20°	346.9	362.9	375.8	365.5	334.0	318.4	302.4	292.1	286.2	286.8	297.2
22.5°	297.2	310.1	326.8	321.7	295.2	275.3	264.9	257.9	253.4	253.4	259.1
25°	272.1	280.4	295.9	293.3	270.8	254.6	246.2	239.2	234.1	233.3	239.2
27.5°	252.1	257.3	267.5	266.3	243.1	232.7	227.6	223.1	219.8	219.2	224.9
30°	234.1	236.6	241.7	239.8	222.4	212.1	210.2	208.3	206.3	206.9	215.3
32.5°	217.9	219.8	223.1	220.4	203.7	194.7	191.5	188.9	187.0	188.9	198.6
35°	199.9	205.6	209.5	208.3	190.2	179.2	172.2	165.7	163.1	165.0	175.9
37.5°	184.3	194.1	199.2	197.9	179.2	166.3	157.3	156.0	156.0	158.6	169.5
40°	178.6	185.7	190.2	188.2	169.5	156.6	151.5	149.6	150.2	152.8	164.4
42.5°	173.4	179.8	181.2	177.3	158.6	150.2	147.0	144.4	145.7	148.9	160.5
45°	168.9	174.1	173.4	167.7	149.6	143.7	143.7	141.8	142.5	145.1	157.3
47.5°	165.7	168.3	166.9	161.2	143.1	138.6	140.6	140.6	141.8	143.7	156.0
50°	160.5	162.4	161.2	156.0	138.0	134.1	136.1	138.6	139.9	141.8	152.8
52.5°	155.4	156.6	156.0	150.9	132.8	130.2	130.2	132.8	135.3	138.0	147.6
55°	150.2	151.5	152.1	148.2	128.9	126.3	125.7	125.7	128.3	132.2	142.5
57.5°	146.4	146.4	147.6	145.1	125.1	121.8	118.7	119.3	122.4	125.7	136.1
60°	141.8	142.5	144.4	141.8	119.9	114.8	112.2	115.4	116.7	119.9	130.8
62.5°	138.0	138.0	139.2	137.3	115.4	110.3	108.3	111.5	111.5	114.8	125.7
65°	134.7	134.1	134.1	133.5	110.9	105.8	104.4	105.8	106.4	109.6	120.6
67.5°	132.2	128.9	128.9	130.2	106.4	101.2	100.6	100.6	101.2	105.1	114.8
70°	126.3	123.8	123.2	127.7	101.9	95.4	95.4	94.1	95.4	97.4	107.6
72.5°	119.9	117.9	117.3	123.8	97.4	89.0	87.7	87.1	87.7	89.6	99.3
75°	111.5	110.3	111.5	121.2	92.9	81.8	79.9	79.3	79.3	79.9	90.2
77.5°	101.9	100.6	110.3	112.8	90.2	73.4	71.6	70.3	68.9	68.9	80.6
80°	90.2	89.6	106.4	95.4	86.3	64.4	61.3	59.3	58.0	57.4	68.9
82.5°	78.7	77.3	90.9	74.8	71.6	52.9	48.4	44.5	42.6	42.6	52.9
85°	64.4	63.8	71.6	54.8	49.6	38.7	32.2	29.1	26.4	26.4	34.2
87.5°	47.1	45.7	44.5	32.8	25.2	17.4	12.3	11.6	10.3	9.7	14.2
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°	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3	3031.3
2.5°	2546.5	2600.0	2701.2	2784.4	2895.3	2984.3	3085.4	3129.3
5°	1899.8	1984.3	2139.1	2271.3	2454.3	2623.9	2817.2	2923.0
7.5°	1362.9	1487.9	1605.2	1770.3	1999.2	2226.8	2476.9	2616.7
10°	1127.5	1242.3	1342.8	1460.2	1636.8	1892.8	2191.3	2349.2
12.5°	934.2	1057.9	1164.3	1290.0	1438.3	1669.8	2010.1	2193.8
15°	716.3	851.0	978.7	1130.2	1311.9	1576.3	1956.0	2161.0
17.5°	490.6	635.0	792.3	977.3	1196.5	1536.9	2007.5	2260.2
20°	333.3	439.1	609.9	829.1	1092.7	1518.3	2121.0	2464.6
22.5°	273.9	321.7	450.0	689.8	1007.6	1538.8	2305.4	2733.4
25°	251.4	277.2	350.1	567.3	942.5	1593.7	2554.8	3037.0
27.5°	237.2	259.1	306.9	479.7	882.6	1668.4	2858.5	3408.5
30°	228.8	249.5	289.5	434.5	827.8	1732.9	3119.6	3688.2
32.5°	210.2	225.7	258.5	408.8	788.5	1785.2	3349.8	3949.9
35°	187.6	206.3	233.3	392.0	787.2	1809.6	3566.4	4239.4
37.5°	179.2	197.2	217.3	382.9	794.9	1830.3	3831.4	4567.6
40°	174.1	190.2	206.3	381.7	801.4	1846.3	4090.5	4909.2
42.5°	169.5	185.7	204.4	372.7	798.7	1868.3	4320.0	5202.5
45°	168.3	184.3	208.9	359.1	798.1	1902.5	4502.4	5437.2
47.5°	166.9	191.5	207.6	344.2	795.5	1974.7	4708.1	5655.8
50°	165.7	204.4	198.6	323.7	776.2	2097.8	4984.6	5905.9
52.5°	165.0	206.3	188.9	295.2	741.3	2280.3	5389.5	6254.0
55°	162.4	196.0	172.2	257.9	691.1	2476.9	5823.4	6663.4
57.5°	156.6	174.7	162.4	221.2	618.9	2614.2	6143.8	6979.9
60°	170.8	150.2	156.0	202.4	532.5	2638.7	6158.0	7068.9
62.5°	163.1	136.7	149.6	196.0	471.9	2478.8	5876.2	6962.5
65°	130.2	129.6	143.7	202.4	462.9	2121.0	5400.5	6647.3
67.5°	118.7	124.4	138.0	210.2	468.7	1671.0	4700.4	5911.1
70°	110.9	117.9	130.2	217.3	479.0	1316.4	3784.3	4807.4
72.5°	103.1	108.9	122.4	224.3	471.9	1038.6	3028.8	3703.1
75°	93.5	98.6	111.5	205.6	404.9	763.3	2406.6	2629.7
77.5°	82.6	87.1	98.0	162.4	304.3	531.2	1802.5	1895.3
80°	70.9	72.8	81.2	118.7	198.6	317.8	1371.9	1511.8
82.5°	56.1	56.8	61.9	87.1	123.8	203.1	951.5	1086.3
85°	36.1	37.4	40.0	61.3	83.2	130.2	486.1	557.0
87.5°	12.3	14.2	14.2	29.7	40.6	72.2	148.9	108.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)