

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: P197164

Luminaire Tested: **NAV-AF-04-D-UNV-SLL-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197164
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-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 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: 11585 lumens
Efficiency: N/A
Efficacy: 89.8 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

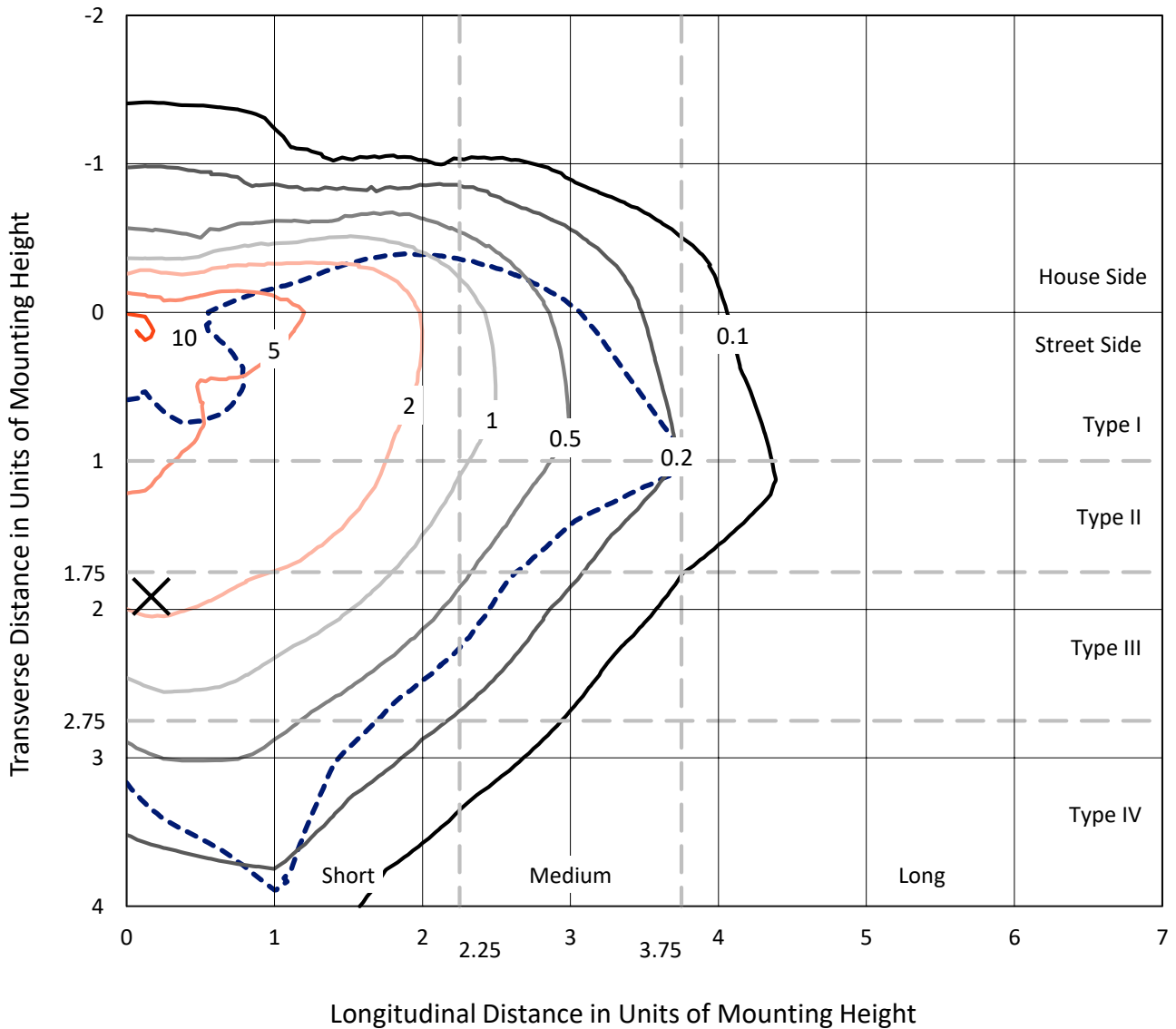
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

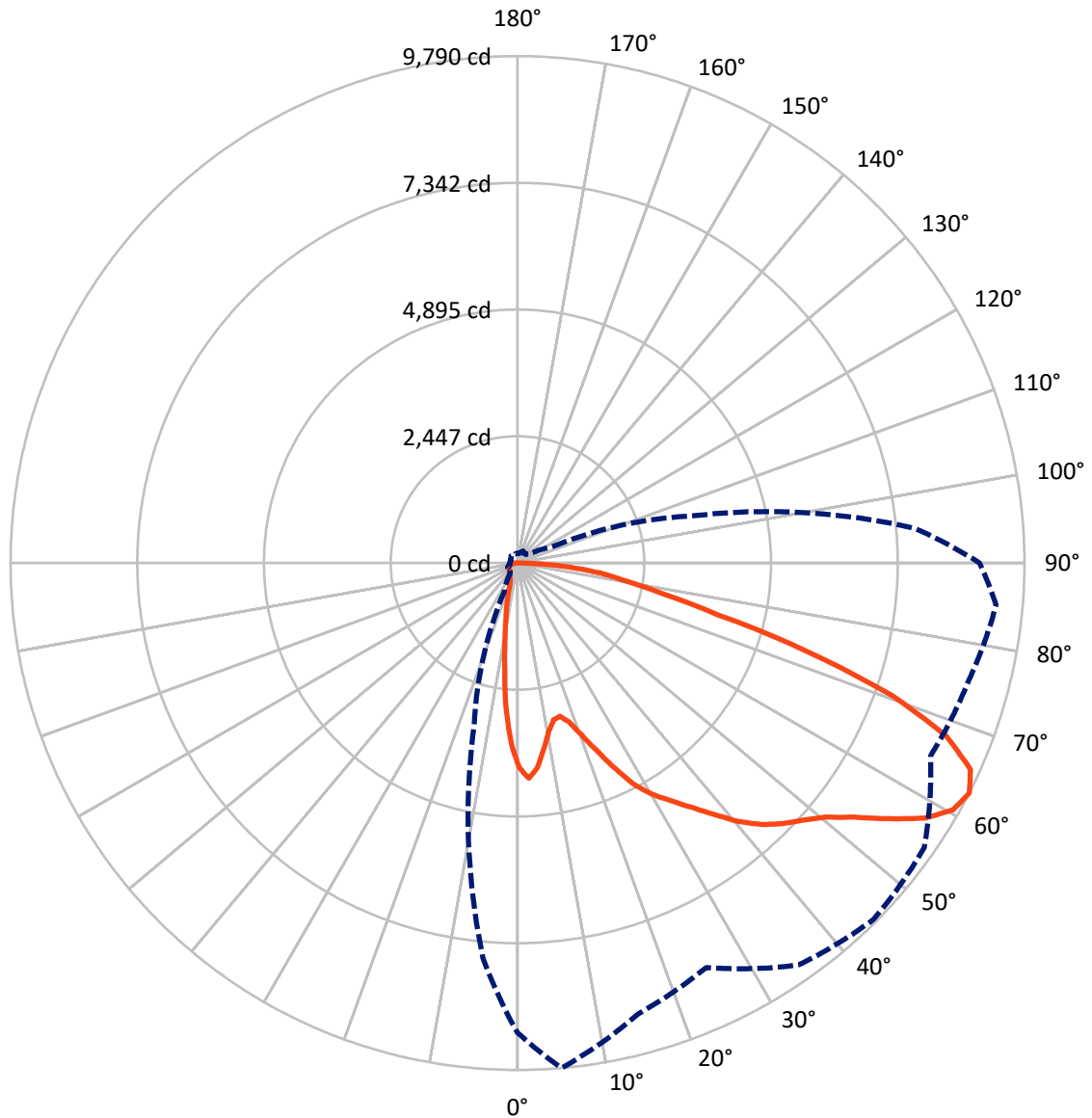
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.3 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	2052.3	0.0	2052.3
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	9532.7	0.0	9532.7
	% Fixture	82.3	0.0	82.3
Total	Lumens	11585.0	0.0	11585.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	287.2	2.5
10°-20°	524.6	4.5
20°-30°	754.5	6.5
30°-40°	1155.7	10.0
40°-50°	1689.6	14.6
50°-60°	2458.4	21.2
60°-70°	2848.4	24.6
70°-80°	1484.8	12.8
80°-90°	381.7	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°	11585.0	100.0
0°-180°	11585.0	100.0

Coefficient of Utilization



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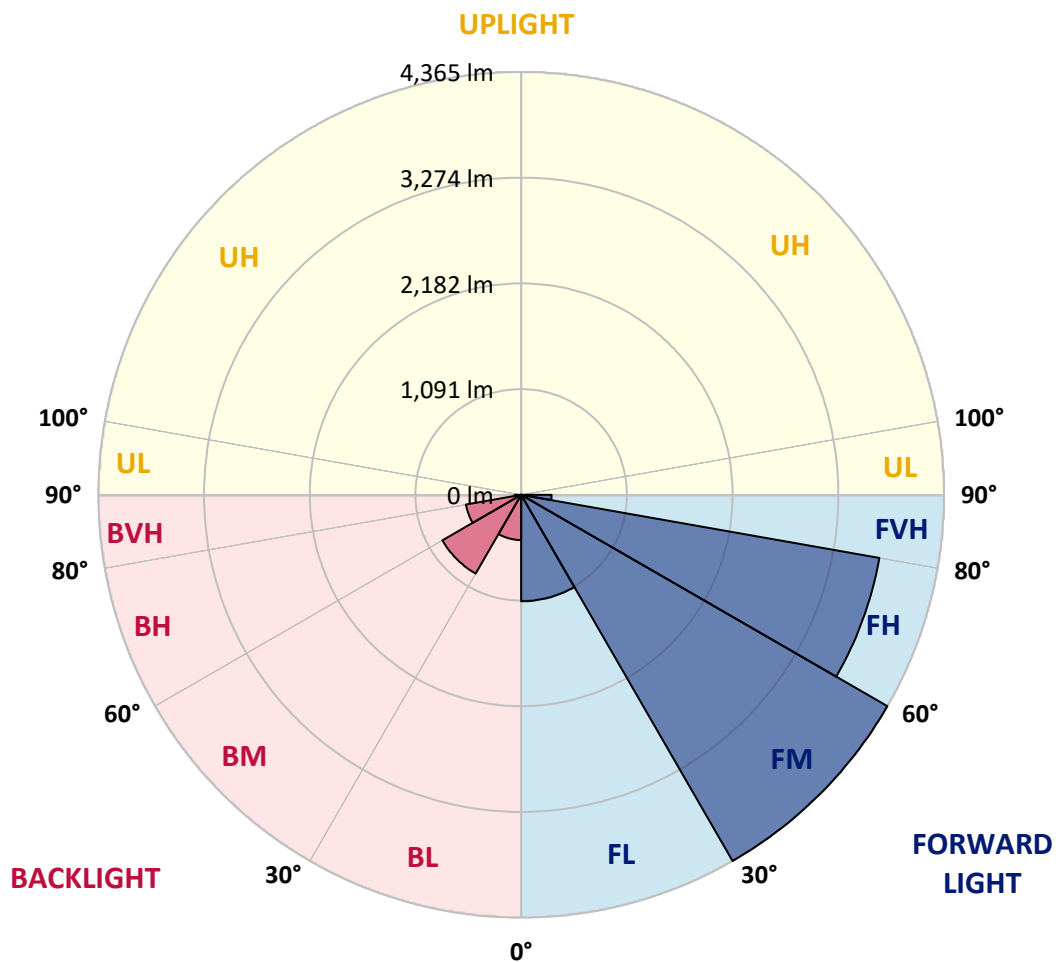
CATALOG NUMBER: NAV-AF-04-D-UNV-SLL-8030-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1099.5	9.5			
FM	(30°-60°)	4364.7	37.7			
FH	(60°-80°)	3754.5	32.4			G2/5000
FVH	(80°-90°)	314.0	2.7			G3/500
BL	(0°-30°)	466.9	4.0	B1/500		
BM	(30°-60°)	939.0	8.1	B1/1000		
BH	(60°-80°)	578.7	5.0	B2/1000		G2/1000
BVH	(80°-90°)	67.7	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°	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6
2.5°	4077.2	4163.8	4262.9	4392.2	4480.4	4515.7	4545.1	4495.5	4447.7	4357.8	4325.9
5°	3808.4	3974.8	4247.7	4507.3	4735.8	4866.8	4907.1	4815.6	4652.6	4417.4	4293.1
7.5°	3409.5	3628.7	4012.6	4394.7	4722.3	4940.7	4956.7	4775.3	4454.4	4068.8	3867.2
10°	3060.9	3308.7	3753.0	4180.6	4527.5	4750.9	4707.2	4452.7	4065.5	3627.0	3399.4
12.5°	2858.4	3106.2	3559.0	3993.2	4320.0	4404.8	4315.8	4101.6	3734.5	3295.2	3065.9
15°	2815.6	3070.9	3490.1	3856.3	4058.8	4004.2	3916.0	3807.6	3546.4	3186.9	2965.1
17.5°	2944.9	3230.5	3581.6	3782.4	3774.0	3643.0	3569.0	3590.0	3545.5	3304.5	3072.6
20°	3211.2	3548.9	3814.3	3762.2	3547.2	3363.3	3320.4	3485.1	3690.8	3599.3	3344.8
22.5°	3561.5	3946.2	4131.8	3820.2	3428.8	3230.5	3222.1	3479.2	3955.4	4045.3	3735.4
25°	3957.1	4405.7	4451.9	3922.7	3416.2	3218.8	3211.2	3569.9	4273.8	4487.1	4173.0
27.5°	4440.9	4869.3	4719.0	4059.6	3471.6	3253.2	3258.3	3724.4	4605.6	4923.9	4666.1
30°	4805.5	5198.6	4883.6	4194.0	3560.6	3313.7	3326.3	3891.6	4784.5	5227.2	5060.0
32.5°	5146.5	5480.0	5041.5	4326.7	3690.8	3403.6	3447.3	4099.9	4999.5	5487.5	5432.1
35°	5523.7	5795.0	5217.1	4468.7	3877.3	3561.5	3624.5	4298.1	5212.9	5747.9	5800.9
37.5°	5951.2	6155.3	5407.8	4669.4	4146.1	3853.8	3889.1	4500.6	5361.6	6036.1	6196.5
40°	6396.4	6559.4	5616.1	4937.4	4536.7	4248.6	4265.4	4760.1	5478.3	6334.2	6580.4
42.5°	6778.6	6905.4	5825.2	5270.0	4985.2	4650.9	4665.2	5039.8	5590.0	6591.3	6887.8
45°	7084.3	7177.6	6022.6	5620.3	5464.0	5153.2	5149.9	5324.6	5739.5	6808.0	7123.8
47.5°	7369.1	7418.6	6242.7	5961.3	5960.5	5800.0	5679.9	5660.6	5938.6	6990.3	7329.6
50°	7695.0	7713.5	6533.3	6305.7	6566.9	6541.7	6320.0	6087.3	6196.5	7195.2	7545.5
52.5°	8148.6	8149.4	6893.7	6641.7	7236.4	7316.2	7058.3	6570.3	6577.8	7594.2	7918.4
55°	8682.0	8718.9	7363.2	7044.0	7936.9	8073.0	7830.2	7144.0	7125.5	8237.6	8523.2
57.5°	9094.4	9290.1	7910.0	7547.2	8591.3	8768.5	8572.8	7738.7	7798.3	8901.2	9022.2
60°	9210.3	9668.1	8455.2	8111.6	9144.8	9411.1	9212.0	8381.3	8456.9	9332.1	9165.8
62.5°	9071.7	9789.9	9010.4	8617.3	9473.2	9728.6	9585.8	8802.1	8993.6	9276.7	8923.0
65°	8661.0	9613.5	9492.5	8832.3	9284.2	9374.9	9337.1	8823.9	9285.1	8752.5	8251.9
67.5°	7701.7	8933.1	9277.5	8372.9	8401.4	8304.0	8254.4	8224.2	8957.5	7906.7	7193.5
70°	6263.7	7675.7	8251.9	7007.1	6795.4	6701.3	6538.4	6941.5	8051.1	6736.6	5920.1
72.5°	4824.8	5872.3	6768.5	5312.0	4871.8	4903.8	4719.0	5307.8	6669.4	5207.8	4519.9
75°	3426.3	4004.2	5402.7	3816.8	3233.9	3232.2	3217.9	3820.2	5262.4	3737.9	3307.0
77.5°	2469.5	2882.8	4232.6	2554.4	2294.8	2324.2	2277.2	2596.4	4102.4	2688.8	2450.2
80°	1969.7	2134.4	2735.8	1703.5	1708.5	1777.4	1767.3	1775.7	2698.8	1947.1	1832.0
82.5°	1415.4	1620.3	2091.5	1305.3	1129.8	1202.8	1217.1	1317.1	1904.2	1376.7	1207.9
85°	725.7	987.8	1924.4	1130.6	706.4	585.5	673.7	1039.0	1653.9	824.9	588.8
87.5°	141.1	273.8	1410.3	628.3	317.5	160.4	264.6	440.1	961.8	149.5	73.1
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°	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6
2.5°	4271.3	4163.8	4063.0	3958.8	3878.2	3779.9	3683.3	3599.3	3517.8	3464.1	3480.9
5°	4167.1	3905.0	3669.8	3451.5	3323.8	3170.1	3033.1	2918.1	2829.0	2771.9	2806.4
7.5°	3692.5	3338.1	3028.1	2740.0	2558.6	2359.5	2199.9	2087.3	2018.5	1979.8	2036.1
10°	3207.0	2808.9	2461.1	2161.3	1982.3	1813.5	1669.0	1549.8	1457.4	1413.7	1436.4
12.5°	2859.3	2416.6	2052.1	1850.5	1696.7	1545.6	1396.0	1256.6	1139.0	1085.2	1074.3
15°	2729.1	2205.8	1833.7	1608.6	1455.7	1291.0	1129.8	980.2	868.5	822.3	812.3
17.5°	2786.2	2160.4	1704.3	1438.0	1216.3	1016.4	834.9	693.8	611.5	585.5	588.0
20°	2986.9	2177.2	1600.2	1262.5	988.6	751.8	570.3	472.9	437.6	431.7	438.5
22.5°	3262.5	2246.1	1524.6	1111.3	787.9	546.8	424.2	378.0	368.7	367.9	374.6
25°	3626.2	2380.5	1474.2	976.9	622.4	433.4	369.6	343.5	336.0	337.7	344.4
27.5°	4054.6	2551.0	1441.4	861.0	511.5	386.4	345.2	322.5	315.0	316.7	321.7
30°	4446.0	2700.5	1392.7	773.6	459.5	369.6	331.8	309.1	299.0	299.0	302.4
32.5°	4796.3	2829.9	1335.6	708.1	411.6	331.8	300.7	283.1	275.5	278.0	279.7
35°	5107.0	2897.9	1291.0	669.5	372.9	305.8	274.7	256.2	246.1	247.8	250.3
37.5°	5412.8	2923.9	1261.6	648.5	345.2	289.8	261.2	246.1	235.2	233.5	232.7
40°	5703.4	2918.1	1233.9	642.6	326.7	278.0	252.8	239.4	228.5	226.0	225.1
42.5°	5954.6	2898.7	1207.9	626.6	314.2	269.6	246.1	234.4	223.4	220.1	218.4
45°	6183.9	2887.0	1179.3	597.2	320.9	266.3	242.8	230.2	220.1	215.9	214.2
47.5°	6438.4	2929.0	1147.4	565.3	319.2	267.1	242.8	228.5	218.4	214.2	212.5
50°	6741.6	3070.9	1107.9	521.6	304.1	285.6	241.9	226.0	216.7	214.2	210.8
52.5°	7170.0	3301.1	1053.3	465.3	292.3	304.9	241.1	221.8	214.2	210.0	205.8
55°	7757.2	3531.3	982.8	405.7	273.8	291.5	242.8	216.7	208.3	204.1	199.1
57.5°	8238.5	3706.0	893.7	356.1	257.0	275.5	240.2	210.8	201.6	197.4	193.2
60°	8207.4	3722.8	808.9	324.2	247.0	247.8	246.1	206.6	195.7	192.4	189.0
62.5°	7699.2	3515.3	729.9	308.3	239.4	226.0	251.2	201.6	189.8	186.5	184.0
65°	6853.3	3032.3	687.9	308.3	232.7	214.2	219.2	194.9	184.0	180.6	178.9
67.5°	5780.7	2436.8	648.5	315.0	223.4	205.8	199.1	188.2	178.1	174.7	173.0
70°	4633.3	1917.7	620.7	311.6	215.0	196.6	188.2	178.9	168.8	168.0	166.3
72.5°	3634.6	1540.5	608.1	311.6	202.4	185.6	177.2	170.5	160.4	159.6	157.1
75°	2912.2	1156.6	556.1	305.8	189.8	171.4	163.8	157.9	147.8	148.7	147.0
77.5°	2255.3	818.1	464.5	275.5	173.9	155.4	149.5	145.3	133.6	134.4	134.4
80°	1763.9	532.5	360.3	228.5	155.4	136.9	132.7	129.4	116.8	118.4	118.4
82.5°	1208.7	316.7	261.2	184.0	133.6	116.8	115.9	110.9	97.4	98.3	100.0
85°	660.2	208.3	173.9	136.1	105.0	94.9	93.2	90.7	78.1	78.1	79.0
87.5°	121.8	111.7	102.5	89.9	70.6	68.0	65.5	68.0	58.8	57.1	57.1
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6
2.5°	3441.4	3383.4	3343.1	3307.8	3223.0	3228.9	3240.6	3257.4	3204.5	3232.2	3266.7
5°	2771.9	2724.0	2687.9	2631.6	2513.2	2471.2	2444.3	2432.6	2353.6	2370.4	2407.4
7.5°	2043.7	2042.8	2030.2	1967.2	1824.4	1737.9	1680.8	1663.1	1614.4	1632.9	1689.2
10°	1438.9	1454.0	1448.1	1391.8	1264.2	1202.0	1189.4	1224.7	1225.5	1261.6	1358.2
12.5°	1039.9	1031.5	1023.9	977.7	882.0	871.9	900.5	949.2	960.9	999.6	1100.4
15°	776.1	756.0	751.8	715.7	652.7	661.9	682.9	708.1	708.9	735.8	819.0
17.5°	582.1	582.1	588.8	565.3	519.9	515.7	504.8	498.1	488.0	498.9	544.3
20°	451.9	472.9	489.7	476.3	435.1	414.9	393.9	380.5	372.9	373.8	387.2
22.5°	387.2	404.0	425.9	419.1	384.7	358.7	345.2	336.0	330.1	330.1	337.7
25°	354.5	365.4	385.5	382.2	352.8	331.8	320.9	311.6	304.9	304.1	311.6
27.5°	328.4	335.1	348.6	346.9	316.7	303.2	296.5	290.6	286.4	285.6	293.2
30°	304.9	308.3	315.0	312.5	289.8	276.4	273.8	271.3	268.8	269.6	280.6
32.5°	283.9	286.4	290.6	287.3	265.4	253.7	249.5	246.1	243.6	246.1	258.7
35°	260.4	268.0	273.0	271.3	247.8	233.5	224.3	215.9	212.5	215.0	229.3
37.5°	240.2	252.8	259.6	257.9	233.5	216.7	205.0	203.3	203.3	206.6	220.9
40°	232.7	241.9	247.8	245.3	220.9	204.1	197.4	194.9	195.7	199.1	214.2
42.5°	226.0	234.4	236.0	231.0	206.6	195.7	191.5	188.2	189.8	194.0	209.2
45°	220.1	226.8	226.0	218.4	194.9	187.3	187.3	184.8	185.6	189.0	205.0
47.5°	215.9	219.2	217.6	210.0	186.5	180.6	183.1	183.1	184.8	187.3	203.3
50°	209.2	211.7	210.0	203.3	179.8	174.7	177.2	180.6	182.3	184.8	199.1
52.5°	202.4	204.1	203.3	196.6	173.0	169.7	169.7	173.0	176.4	179.8	192.4
55°	195.7	197.4	198.2	193.2	168.0	164.6	163.8	163.8	167.2	172.2	185.6
57.5°	190.7	190.7	192.4	189.0	163.0	158.8	154.6	155.4	159.6	163.8	177.2
60°	184.8	185.6	188.2	184.8	156.2	149.5	146.2	150.4	152.0	156.2	170.5
62.5°	179.8	179.8	181.4	178.9	150.4	143.6	141.1	145.3	145.3	149.5	163.8
65°	175.6	174.7	174.7	173.9	144.5	137.8	136.1	137.8	138.6	142.8	157.1
67.5°	172.2	168.0	168.0	169.7	138.6	131.9	131.0	131.0	131.9	136.9	149.5
70°	164.6	161.3	160.4	166.3	132.7	124.3	124.3	122.6	124.3	126.8	140.3
72.5°	156.2	153.7	152.9	161.3	126.8	115.9	114.2	113.4	114.2	116.8	129.4
75°	145.3	143.6	145.3	157.9	121.0	106.7	104.2	103.3	103.3	104.2	117.6
77.5°	132.7	131.0	143.6	147.0	117.6	95.8	93.2	91.6	89.9	89.9	105.0
80°	117.6	116.8	138.6	124.3	112.6	84.0	79.8	77.3	75.6	74.8	89.9
82.5°	102.5	100.8	118.4	97.4	93.2	68.9	63.0	58.0	55.4	55.4	68.9
85°	84.0	83.2	93.2	71.4	64.7	50.4	42.0	37.8	34.4	34.4	44.5
87.5°	61.3	59.6	58.0	42.8	32.8	22.7	16.0	15.1	13.4	12.6	18.5
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°	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6	3949.6
2.5°	3317.9	3387.6	3519.5	3627.8	3772.3	3888.2	4020.1	4077.2
5°	2475.4	2585.4	2787.0	2959.2	3197.8	3418.7	3670.7	3808.4
7.5°	1775.7	1938.7	2091.5	2306.6	2604.8	2901.3	3227.2	3409.5
10°	1469.1	1618.6	1749.7	1902.5	2132.7	2466.2	2855.1	3060.9
12.5°	1217.1	1378.4	1517.0	1680.8	1874.0	2175.5	2619.0	2858.4
15°	933.2	1108.8	1275.1	1472.5	1709.3	2053.7	2548.5	2815.6
17.5°	639.2	827.4	1032.3	1273.4	1559.0	2002.5	2615.7	2944.9
20°	434.3	572.0	794.6	1080.2	1423.8	1978.1	2763.5	3211.2
22.5°	357.0	419.1	586.3	898.8	1312.9	2005.0	3003.7	3561.5
25°	327.6	361.2	456.1	739.2	1228.0	2076.4	3328.8	3957.1
27.5°	309.1	337.7	399.8	624.9	1149.9	2173.9	3724.4	4440.9
30°	298.2	325.1	377.1	566.1	1078.5	2257.8	4064.6	4805.5
32.5°	273.8	294.0	336.8	532.5	1027.3	2325.9	4364.5	5146.5
35°	244.4	268.8	304.1	510.7	1025.6	2357.8	4646.7	5523.7
37.5°	233.5	257.0	283.1	498.9	1035.7	2384.7	4992.0	5951.2
40°	226.8	247.8	268.8	497.3	1044.1	2405.7	5329.6	6396.4
42.5°	220.9	241.9	266.3	485.5	1040.7	2434.2	5628.7	6778.6
45°	219.2	240.2	272.2	467.9	1039.9	2478.8	5866.4	7084.3
47.5°	217.6	249.5	270.5	448.5	1036.5	2572.8	6134.3	7369.1
50°	215.9	266.3	258.7	421.7	1011.3	2733.3	6494.7	7695.0
52.5°	215.0	268.8	246.1	384.7	966.0	2971.0	7022.2	8148.6
55°	211.7	255.4	224.3	336.0	900.5	3227.2	7587.5	8682.0
57.5°	204.1	227.6	211.7	288.1	806.4	3406.1	8005.0	9094.4
60°	222.6	195.7	203.3	263.8	693.8	3438.0	8023.4	9210.3
62.5°	212.5	178.1	194.9	255.4	614.9	3229.7	7656.4	9071.7
65°	169.7	168.8	187.3	263.8	603.1	2763.5	7036.5	8661.0
67.5°	154.6	162.1	179.8	273.8	610.7	2177.2	6124.2	7701.7
70°	144.5	153.7	169.7	283.1	624.1	1715.2	4930.6	6263.7
72.5°	134.4	142.0	159.6	292.3	614.9	1353.2	3946.2	4824.8
75°	121.8	128.5	145.3	268.0	527.5	994.5	3135.6	3426.3
77.5°	107.5	113.4	127.7	211.7	396.5	692.1	2348.6	2469.5
80°	92.4	94.9	105.8	154.6	258.7	414.1	1787.5	1969.7
82.5°	73.1	73.9	80.6	113.4	161.3	264.6	1239.8	1415.4
85°	47.0	48.7	52.1	79.8	108.4	169.7	633.3	725.7
87.5°	16.0	18.5	18.5	38.6	52.9	94.1	194.0	141.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)