

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: P196224

Luminaire Tested: **NAV-AF-06-D-UNV-SLL-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196224
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-06-D-UNV-SLL-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 1200mA 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: 35702 lumens
Efficiency: N/A
Efficacy: 93.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G5

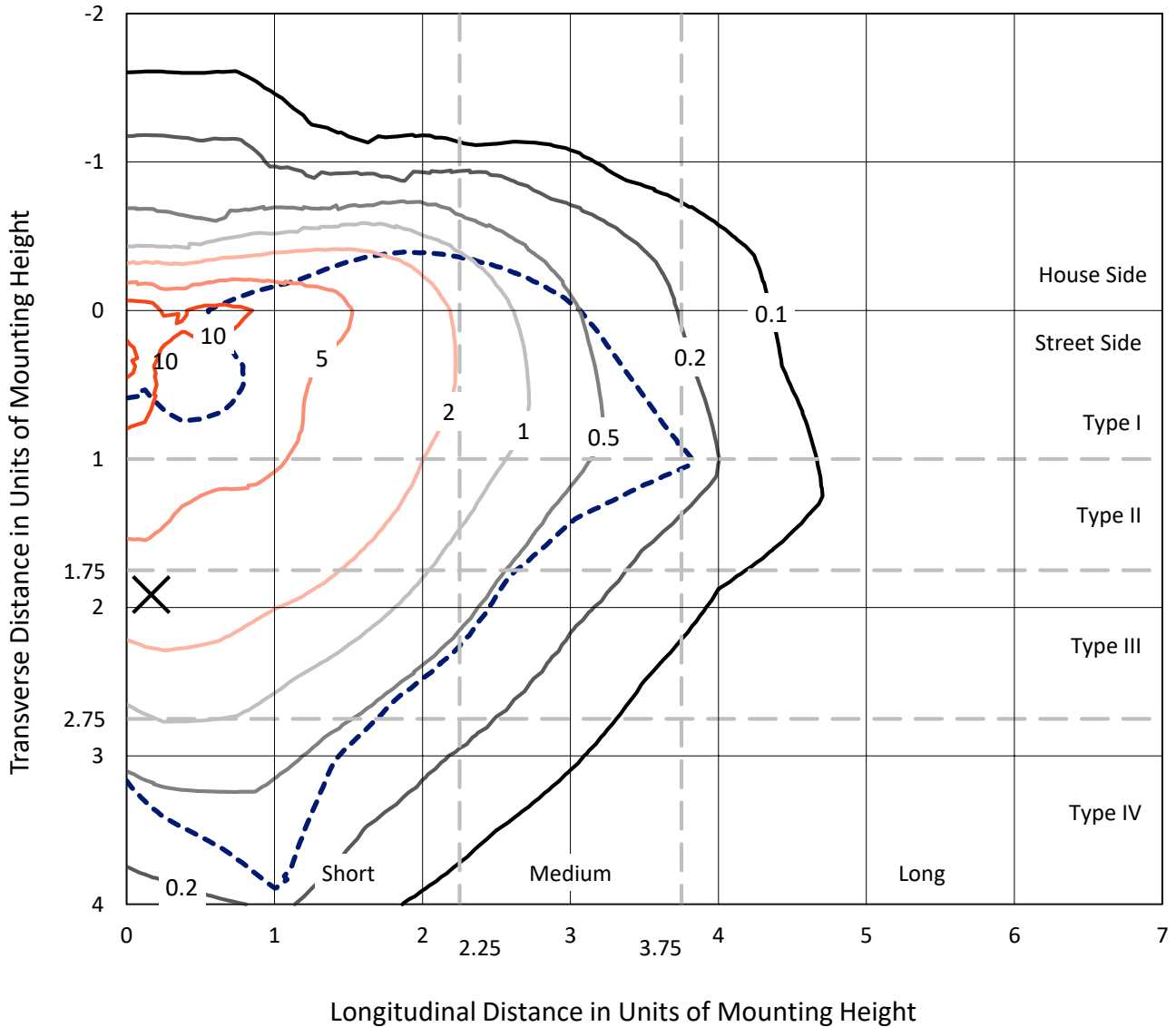
Input Watts (W): 382
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

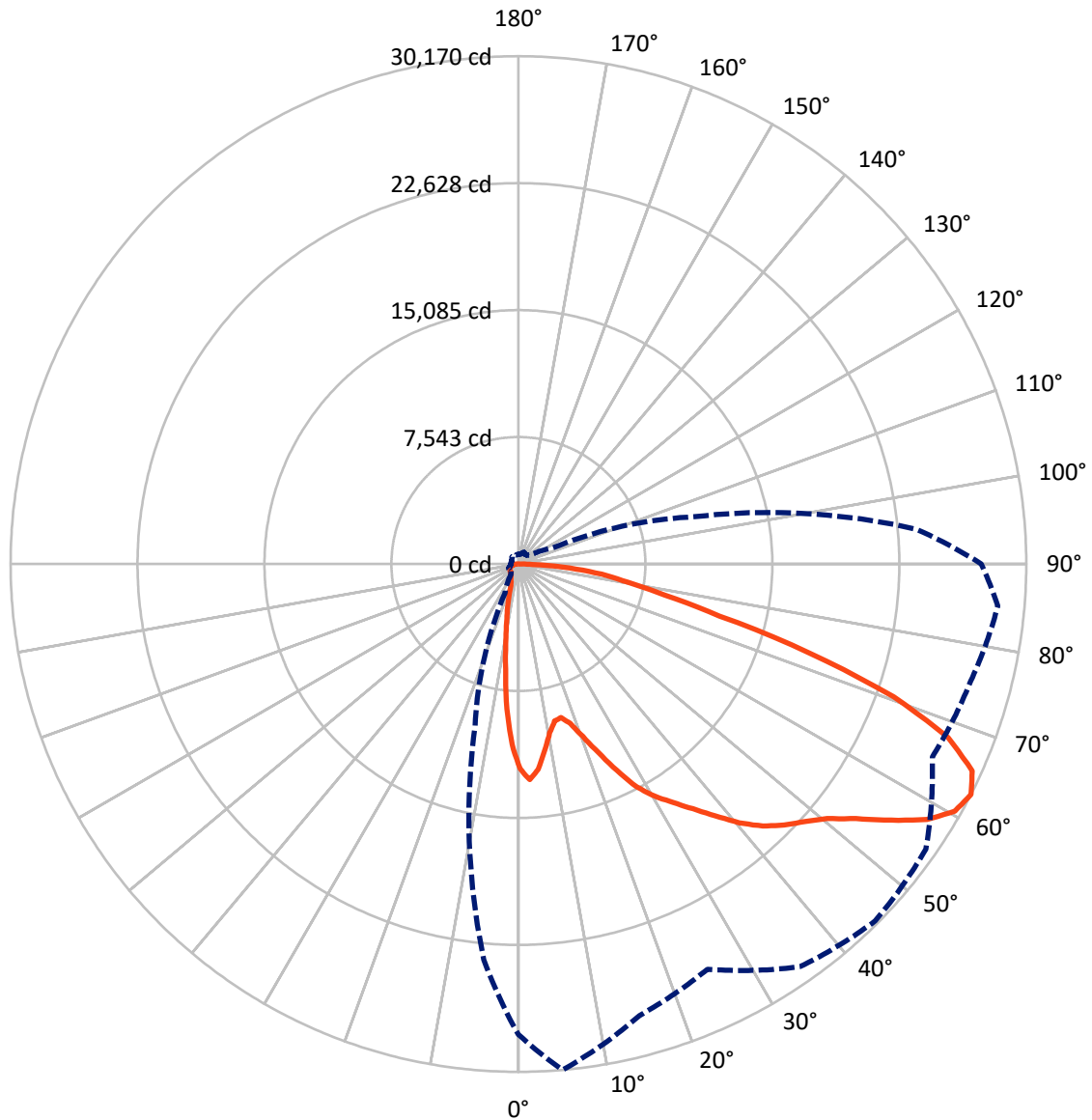
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 15.5 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	6324.7	0.0	6324.7
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	29377.3	0.0	29377.3
	% Fixture	82.3	0.0	82.3
Total	Lumens	35702.0	0.0	35702.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	885.2	2.5
10°-20°	1616.8	4.5
20°-30°	2325.3	6.5
30°-40°	3561.5	10.0
40°-50°	5207.0	14.6
50°-60°	7576.2	21.2
60°-70°	8778.0	24.6
70°-80°	4575.8	12.8
80°-90°	1176.2	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°	35702.0	100.0
0°-180°	35702.0	100.0



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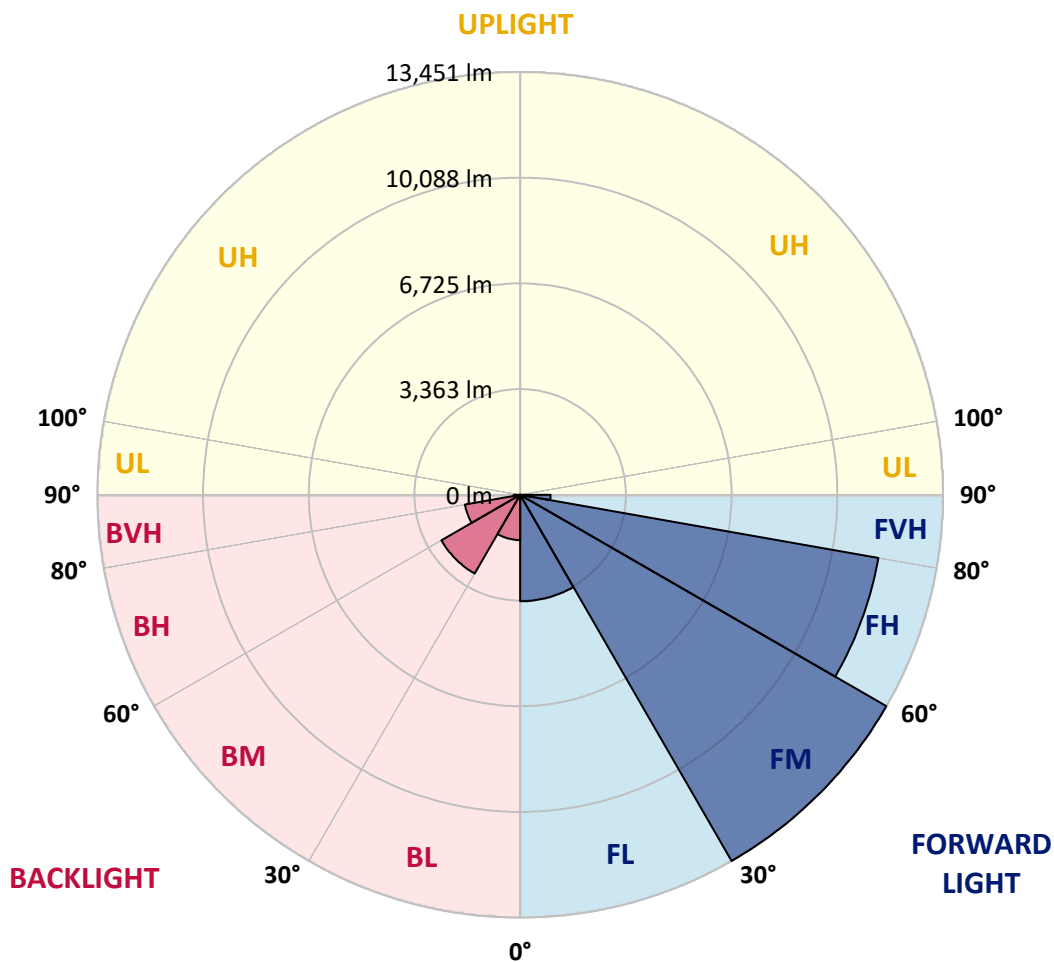
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3388.3	9.5			
FM	(30°-60°)	13450.9	37.7			
FH	(60°-80°)	11570.5	32.4			G4/12000
FVH	(80°-90°)	967.7	2.7			G5
BL	(0°-30°)	1439.0	4.0	B3/2500		
BM	(30°-60°)	2893.8	8.1	B3/5000		
BH	(60°-80°)	1783.4	5.0	B3/2500		G3/2500
BVH	(80°-90°)	208.6	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-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5
2.5°	12565.0	12831.6	13137.0	13535.7	13807.5	13916.2	14006.9	13854.1	13706.5	13429.6	13331.2
5°	11736.6	12249.2	13090.5	13890.3	14594.4	14998.3	15122.5	14840.4	14338.2	13613.3	13230.2
7.5°	10507.0	11182.7	12365.6	13543.5	14553.0	15226.0	15275.2	14716.1	13727.3	12539.1	11917.9
10°	9432.8	10196.5	11565.8	12883.3	13952.4	14641.1	14506.5	13722.1	12528.8	11177.5	10476.0
12.5°	8808.9	9572.6	10967.9	12306.1	13313.1	13574.6	13300.1	12640.1	11508.8	10155.0	9448.4
15°	8677.0	9463.8	10755.6	11884.2	12508.0	12339.8	12068.0	11734.1	10929.0	9821.0	9137.7
17.5°	9075.6	9955.7	11037.7	11656.4	11630.5	11226.7	10998.9	11063.6	10926.4	10183.5	9469.0
20°	9896.1	10936.8	11754.7	11594.2	10931.6	10364.7	10232.7	10740.1	11374.2	11092.1	10307.8
22.5°	10975.6	12161.1	12733.3	11772.8	10566.6	9955.7	9929.8	10722.0	12189.7	12466.6	11511.5
25°	12194.8	13577.1	13719.5	12088.7	10527.8	9919.5	9896.1	11001.5	13170.7	13828.2	12860.1
27.5°	13685.9	15006.1	14542.7	12510.6	10698.6	10025.6	10041.1	11477.8	14193.2	15174.2	14379.6
30°	14809.3	16020.7	15050.1	12924.8	10973.0	10212.0	10250.8	11992.9	14744.6	16108.7	15593.7
32.5°	15860.2	16887.9	15536.7	13333.8	11374.2	10488.9	10623.5	12634.9	15407.3	16911.2	16740.4
35°	17022.5	17858.7	16077.7	13771.3	11948.9	10975.6	11169.7	13245.8	16064.7	17713.7	17876.8
37.5°	18340.1	18969.2	16665.3	14390.0	12777.3	11876.5	11985.1	13869.7	16522.9	18601.5	19096.0
40°	19712.1	20214.2	17307.3	15215.7	13981.0	13093.1	13144.8	14669.5	16882.8	19520.6	20279.0
42.5°	20889.9	21280.8	17951.9	16240.8	15363.3	14333.0	14377.0	15531.5	17227.0	20312.6	21226.4
45°	21832.1	22119.5	18560.1	17320.2	16838.8	15881.0	15870.6	16409.1	17687.8	20980.5	21953.8
47.5°	22709.6	22862.3	19238.3	18371.2	18368.6	17874.2	17504.0	17444.5	18301.3	21542.2	22588.0
50°	23714.0	23771.0	20134.0	19432.5	20237.5	20159.9	19476.5	18759.5	19096.0	22173.8	23253.2
52.5°	25111.9	25114.5	21244.5	20467.9	22300.6	22546.6	21751.9	20247.9	20271.2	23403.4	24402.6
55°	26755.6	26869.5	22691.5	21707.8	24459.6	24878.9	24130.8	22015.9	21959.0	25386.3	26266.4
57.5°	28026.6	28629.7	24376.7	23258.4	26476.0	27022.3	26419.1	23848.7	24032.4	27431.2	27804.0
60°	28383.8	29794.6	26056.7	24998.0	28181.9	29002.5	28389.0	25828.9	26061.8	28759.1	28246.6
62.5°	27956.7	30170.0	27767.8	26556.3	29194.1	29980.9	29541.0	27125.8	27715.9	28588.3	27498.6
65°	26690.9	29626.4	29253.6	27219.0	28611.6	28891.2	28774.7	27193.1	28614.2	26973.1	25430.3
67.5°	23734.7	27529.6	28591.0	25803.0	25891.0	25590.8	25438.0	25344.8	27604.6	24366.4	22168.7
70°	19303.1	23654.5	25430.3	21594.0	20941.6	20651.7	20149.6	21392.0	24811.6	20760.5	18244.3
72.5°	14868.8	18096.8	20858.8	16370.2	15013.7	15112.2	14542.7	16357.3	20553.3	16049.2	13929.2
75°	10558.8	12339.8	16649.8	11762.5	9966.1	9960.9	9916.9	11772.8	16217.5	11519.2	10191.2
77.5°	7610.4	8884.0	13043.9	7871.9	7072.0	7162.6	7017.6	8001.3	12642.6	8286.1	7550.9
80°	6070.2	6577.6	8431.1	5249.7	5265.2	5477.5	5446.4	5472.3	8317.1	6000.3	5645.7
82.5°	4361.8	4993.3	6445.6	4022.7	3481.6	3706.9	3750.9	4058.9	5868.4	4242.7	3722.4
85°	2236.6	3044.2	5930.5	3484.3	2177.0	1804.3	2076.1	3202.0	5097.0	2542.0	1814.6
87.5°	434.9	843.8	4346.2	1936.2	978.5	494.4	815.4	1356.4	2963.9	460.7	225.3
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°	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5
2.5°	13162.9	12831.6	12521.0	12200.0	11951.5	11648.6	11351.0	11092.1	10841.0	10675.3	10727.1
5°	12841.9	12034.3	11309.5	10636.5	10243.0	9769.3	9347.4	8992.8	8718.3	8542.4	8648.4
7.5°	11379.4	10287.0	9331.9	8443.9	7884.8	7271.3	6779.5	6432.6	6220.4	6101.3	6274.8
10°	9883.2	8656.2	7584.6	6660.4	6109.1	5588.8	5143.5	4776.0	4491.2	4356.5	4426.5
12.5°	8811.5	7447.4	6323.9	5702.6	5228.9	4763.0	4302.2	3872.5	3510.2	3344.4	3310.8
15°	8410.3	6797.6	5650.9	4957.1	4486.0	3978.7	3481.6	3020.9	2676.6	2534.3	2503.2
17.5°	8586.3	6657.9	5252.2	4431.6	3748.3	3132.2	2573.0	2138.2	1884.5	1804.3	1812.1
20°	9205.0	6709.6	4931.2	3890.7	3046.8	2316.8	1757.6	1457.4	1348.7	1330.6	1351.2
22.5°	10054.1	6921.9	4698.3	3424.7	2428.1	1685.2	1307.2	1164.8	1136.4	1133.8	1154.5
25°	11174.9	7336.1	4542.9	3010.5	1918.1	1335.7	1139.0	1058.8	1035.4	1040.6	1061.3
27.5°	12495.1	7861.6	4442.1	2653.3	1576.5	1190.7	1063.9	994.0	970.7	975.9	991.4
30°	13701.4	8322.3	4291.9	2384.1	1416.0	1139.0	1022.5	952.6	921.6	921.6	931.9
32.5°	14780.8	8721.0	4115.8	2182.2	1268.4	1022.5	926.7	872.4	849.0	856.8	862.0
35°	15738.6	8930.7	3978.7	2063.1	1149.3	942.2	846.5	789.5	758.4	763.6	771.4
37.5°	16680.8	9010.9	3888.0	1998.4	1063.9	893.0	805.1	758.4	724.8	719.6	717.1
40°	17576.4	8992.8	3802.6	1980.2	1007.0	856.8	779.2	737.8	704.1	696.3	693.8
42.5°	18350.5	8933.2	3722.4	1931.1	968.1	830.9	758.4	722.2	688.5	678.2	673.0
45°	19057.2	8897.0	3634.3	1840.5	988.9	820.6	748.1	709.3	678.2	665.2	660.1
47.5°	19841.5	9026.4	3536.0	1742.1	983.7	823.2	748.1	704.1	673.0	660.1	654.9
50°	20776.0	9463.8	3414.3	1607.5	937.0	880.1	745.5	696.3	667.9	660.1	649.8
52.5°	22096.1	10173.1	3246.1	1434.1	900.8	939.7	743.0	683.4	660.1	647.1	634.2
55°	23905.5	10882.5	3028.7	1250.3	843.8	898.3	748.1	667.9	642.0	629.0	613.5
57.5°	25388.8	11420.8	2754.3	1097.5	792.1	849.0	740.3	649.8	621.2	608.3	595.4
60°	25293.1	11472.6	2492.8	999.2	761.1	763.6	758.4	636.8	603.1	592.8	582.5
62.5°	23726.9	10833.3	2249.5	950.0	737.8	696.3	774.0	621.2	585.0	574.7	566.9
65°	21120.3	9344.8	2120.1	950.0	717.1	660.1	675.7	600.6	566.9	556.6	551.4
67.5°	17814.7	7509.5	1998.4	970.7	688.5	634.2	613.5	579.8	548.8	538.4	533.3
70°	14278.7	5909.7	1912.9	960.3	662.7	605.7	579.8	551.4	520.3	517.7	512.5
72.5°	11200.8	4747.5	1874.1	960.3	623.9	572.0	546.2	525.5	494.4	491.8	484.1
75°	8974.7	3564.5	1713.6	942.2	585.0	528.0	504.7	486.6	455.6	458.2	453.0
77.5°	6950.3	2521.3	1431.5	849.0	535.8	478.8	460.7	447.8	411.6	414.2	414.2
80°	5436.1	1641.1	1110.5	704.1	478.8	422.0	409.0	398.6	359.8	365.0	365.0
82.5°	3725.0	975.9	805.1	566.9	411.6	359.8	357.2	341.7	300.2	302.9	308.0
85°	2034.6	642.0	535.8	419.3	323.6	292.5	287.3	279.6	240.7	240.7	243.4
87.5°	375.3	344.3	315.8	277.0	217.5	209.7	201.9	209.7	181.2	176.0	176.0
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°	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5
2.5°	10605.4	10426.8	10302.5	10193.8	9932.4	9950.5	9986.8	10038.5	9875.5	9960.9	10067.0
5°	8542.4	8394.7	8283.4	8110.1	7745.1	7615.7	7532.8	7496.5	7253.2	7305.0	7418.8
7.5°	6298.0	6295.4	6256.6	6062.4	5622.4	5355.8	5179.7	5125.4	4975.2	5032.2	5205.7
10°	4434.3	4480.8	4462.7	4289.3	3895.8	3704.3	3665.4	3774.2	3776.7	3888.0	4185.7
12.5°	3204.7	3178.8	3155.5	3013.1	2718.0	2687.0	2775.0	2925.1	2961.3	3080.4	3391.1
15°	2391.9	2329.8	2316.8	2205.5	2011.3	2039.8	2104.5	2182.2	2184.7	2267.6	2523.8
17.5°	1793.8	1793.8	1814.6	1742.1	1602.4	1589.4	1555.7	1535.0	1503.9	1537.6	1677.4
20°	1392.6	1457.4	1509.2	1467.7	1340.9	1278.8	1214.0	1172.6	1149.3	1151.9	1193.4
22.5°	1193.4	1245.1	1312.4	1291.7	1185.6	1105.3	1063.9	1035.4	1017.3	1017.3	1040.6
25°	1092.4	1126.1	1188.2	1177.8	1087.2	1022.5	988.9	960.3	939.7	937.0	960.3
27.5°	1012.1	1032.9	1074.3	1069.1	975.9	934.5	913.8	895.7	882.7	880.1	903.4
30°	939.7	950.0	970.7	962.9	893.0	851.6	843.8	836.2	828.4	830.9	864.6
32.5°	874.9	882.7	895.7	885.3	818.0	781.7	768.8	758.4	750.6	758.4	797.3
35°	802.5	825.7	841.3	836.2	763.6	719.6	691.1	665.2	654.9	662.7	706.7
37.5°	740.3	779.2	799.8	794.7	719.6	667.9	631.6	626.5	626.5	636.8	680.8
40°	717.1	745.5	763.6	755.9	680.8	629.0	608.3	600.6	603.1	613.5	660.1
42.5°	696.3	722.2	727.4	711.9	636.8	603.1	590.2	579.8	585.0	597.9	644.6
45°	678.2	698.9	696.3	673.0	600.6	577.3	577.3	569.5	572.0	582.5	631.6
47.5°	665.2	675.7	670.4	647.1	574.7	556.6	564.4	564.4	569.5	577.3	626.5
50°	644.6	652.3	647.1	626.5	553.9	538.4	546.2	556.6	561.7	569.5	613.5
52.5°	623.9	629.0	626.5	605.7	533.3	522.9	522.9	533.3	543.6	553.9	592.8
55°	603.1	608.3	610.9	595.4	517.7	507.4	504.7	504.7	515.2	530.7	572.0
57.5°	587.6	587.6	592.8	582.5	502.2	489.3	476.3	478.8	491.8	504.7	546.2
60°	569.5	572.0	579.8	569.5	481.5	460.7	450.4	463.4	468.5	481.5	525.5
62.5°	553.9	553.9	559.1	551.4	463.4	442.6	434.9	447.8	447.8	460.7	504.7
65°	541.0	538.4	538.4	535.8	445.2	424.5	419.3	424.5	427.1	440.1	484.1
67.5°	530.7	517.7	517.7	522.9	427.1	406.4	403.9	403.9	406.4	422.0	460.7
70°	507.4	497.1	494.4	512.5	409.0	383.1	383.1	378.0	383.1	390.9	432.3
72.5°	481.5	473.7	471.2	497.1	390.9	357.2	352.0	349.4	352.0	359.8	398.6
75°	447.8	442.6	447.8	486.6	372.8	328.8	321.0	318.4	318.4	321.0	362.4
77.5°	409.0	403.9	442.6	453.0	362.4	295.1	287.3	282.1	277.0	277.0	323.6
80°	362.4	359.8	427.1	383.1	346.9	258.9	245.9	238.1	232.9	230.4	277.0
82.5°	315.8	310.7	365.0	300.2	287.3	212.3	194.2	178.6	170.8	170.8	212.3
85°	258.9	256.2	287.3	220.0	199.3	155.3	129.4	116.5	106.2	106.2	137.2
87.5°	188.9	183.8	178.6	132.1	101.0	69.9	49.2	46.5	41.4	38.9	57.0
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5	12171.5
2.5°	10224.9	10439.7	10846.1	11180.1	11625.3	11982.5	12389.0	12565.0
5°	7628.6	7967.7	8588.9	9119.6	9854.7	10535.6	11312.1	11736.6
7.5°	5472.3	5974.4	6445.6	7108.3	8027.2	8941.0	9945.3	10507.0
10°	4527.5	4988.2	5392.0	5863.1	6572.5	7600.1	8798.6	9432.8
12.5°	3750.9	4247.9	4675.0	5179.7	5775.2	6704.4	8071.2	8808.9
15°	2875.9	3417.0	3929.5	4537.8	5267.8	6329.1	7853.8	8677.0
17.5°	1969.9	2549.7	3181.4	3924.2	4804.4	6171.2	8060.9	9075.6
20°	1338.3	1762.9	2448.8	3328.9	4387.6	6096.1	8516.5	9896.1
22.5°	1100.2	1291.7	1806.8	2769.7	4046.0	6178.9	9256.8	10975.6
25°	1009.6	1113.1	1405.6	2277.9	3784.5	6399.0	10258.6	12194.8
27.5°	952.6	1040.6	1232.1	1925.9	3543.8	6699.3	11477.8	13685.9
30°	918.9	1001.8	1162.3	1744.7	3323.8	6958.1	12526.1	14809.3
32.5°	843.8	906.0	1038.0	1641.1	3165.8	7167.8	13450.3	15860.2
35°	753.3	828.4	937.0	1573.8	3160.6	7266.1	14320.1	17022.5
37.5°	719.6	792.1	872.4	1537.6	3191.7	7349.0	15384.0	18340.1
40°	698.9	763.6	828.4	1532.5	3217.6	7413.7	16424.6	19712.1
42.5°	680.8	745.5	820.6	1496.2	3207.3	7501.7	17346.1	20889.9
45°	675.7	740.3	838.7	1441.8	3204.7	7638.9	18078.7	21832.1
47.5°	670.4	768.8	833.5	1382.3	3194.3	7928.8	18904.4	22709.6
50°	665.2	820.6	797.3	1299.5	3116.6	8423.3	20015.0	23714.0
52.5°	662.7	828.4	758.4	1185.6	2976.9	9155.8	21640.5	25111.9
55°	652.3	787.0	691.1	1035.4	2775.0	9945.3	23382.7	26755.6
57.5°	629.0	701.5	652.3	887.9	2485.1	10496.7	24669.2	28026.6
60°	686.0	603.1	626.5	812.8	2138.2	10595.1	24726.2	28383.8
62.5°	654.9	548.8	600.6	787.0	1894.8	9953.1	23595.0	27956.7
65°	522.9	520.3	577.3	812.8	1858.6	8516.5	21684.6	26690.9
67.5°	476.3	499.6	553.9	843.8	1881.9	6709.6	18873.3	23734.7
70°	445.2	473.7	522.9	872.4	1923.4	5285.9	15195.0	19303.1
72.5°	414.2	437.5	491.8	900.8	1894.8	4170.2	12161.1	14868.8
75°	375.3	396.1	447.8	825.7	1625.7	3064.9	9663.2	10558.8
77.5°	331.3	349.4	393.4	652.3	1221.8	2133.0	7237.7	7610.4
80°	284.8	292.5	326.1	476.3	797.3	1276.1	5508.5	6070.2
82.5°	225.3	227.8	248.5	349.4	497.1	815.4	3820.7	4361.8
85°	145.0	150.2	160.5	245.9	333.9	522.9	1951.8	2236.6
87.5°	49.2	57.0	57.0	119.1	163.1	289.9	597.9	434.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)