

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: P270529

Luminaire Tested: **NAV-AF-04-D-UNV-SLL-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270529
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-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 2700K, 1050mA 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: 18720.8 lumens
Efficiency: N/A
Efficacy: 83.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

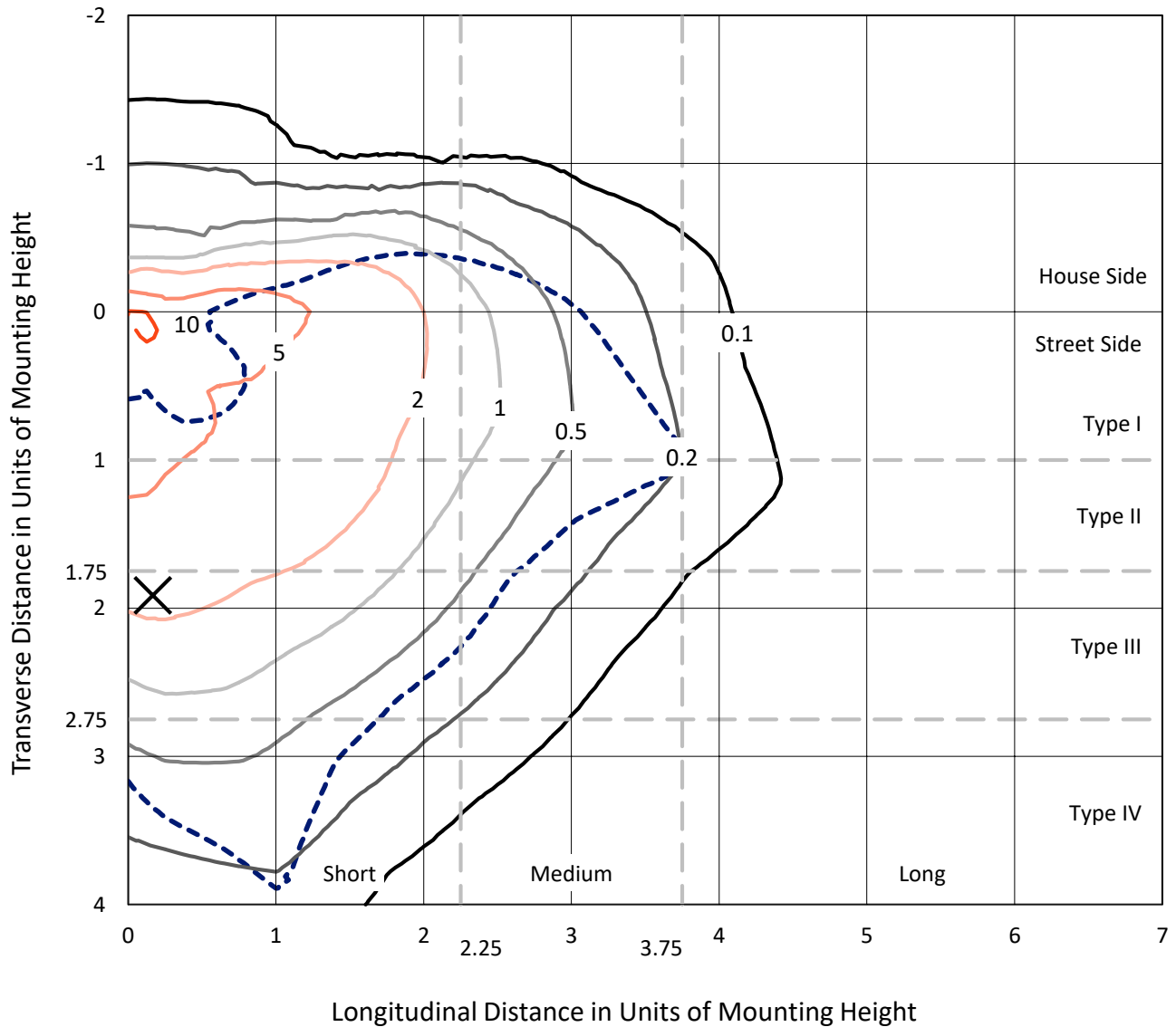
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

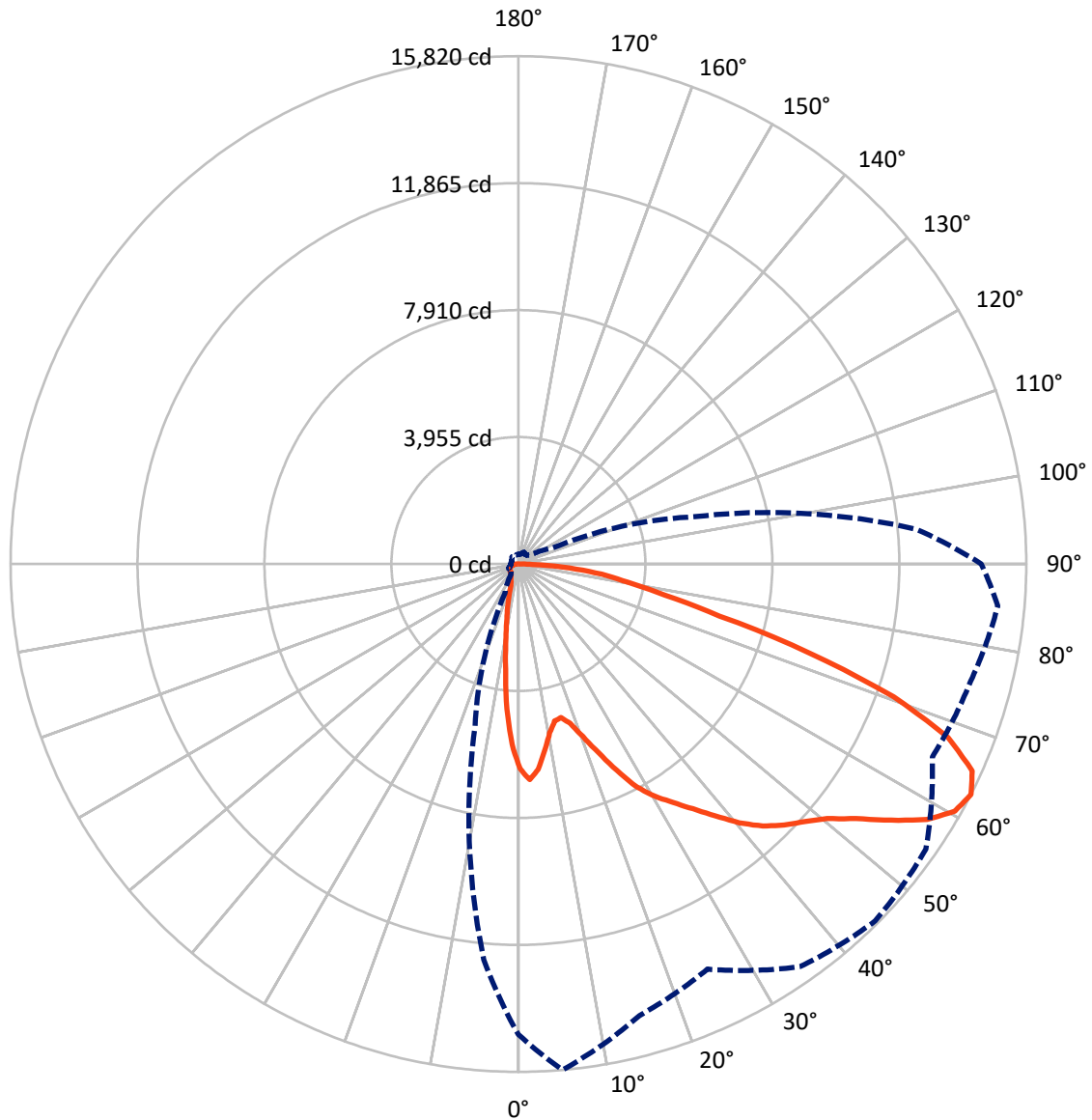
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11.7 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	3316.4	0.0	3316.4
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	15404.4	0.0	15404.4
	% Fixture	82.3	0.0	82.3
Total	Lumens	18720.8	0.0	18720.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	464.1	2.5
10°-20°	847.8	4.5
20°-30°	1219.3	6.5
30°-40°	1867.5	10.0
40°-50°	2730.3	14.6
50°-60°	3972.7	21.2
60°-70°	4602.9	24.6
70°-80°	2399.4	12.8
80°-90°	616.8	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°	18720.8	100.0
0°-180°	18720.8	100.0



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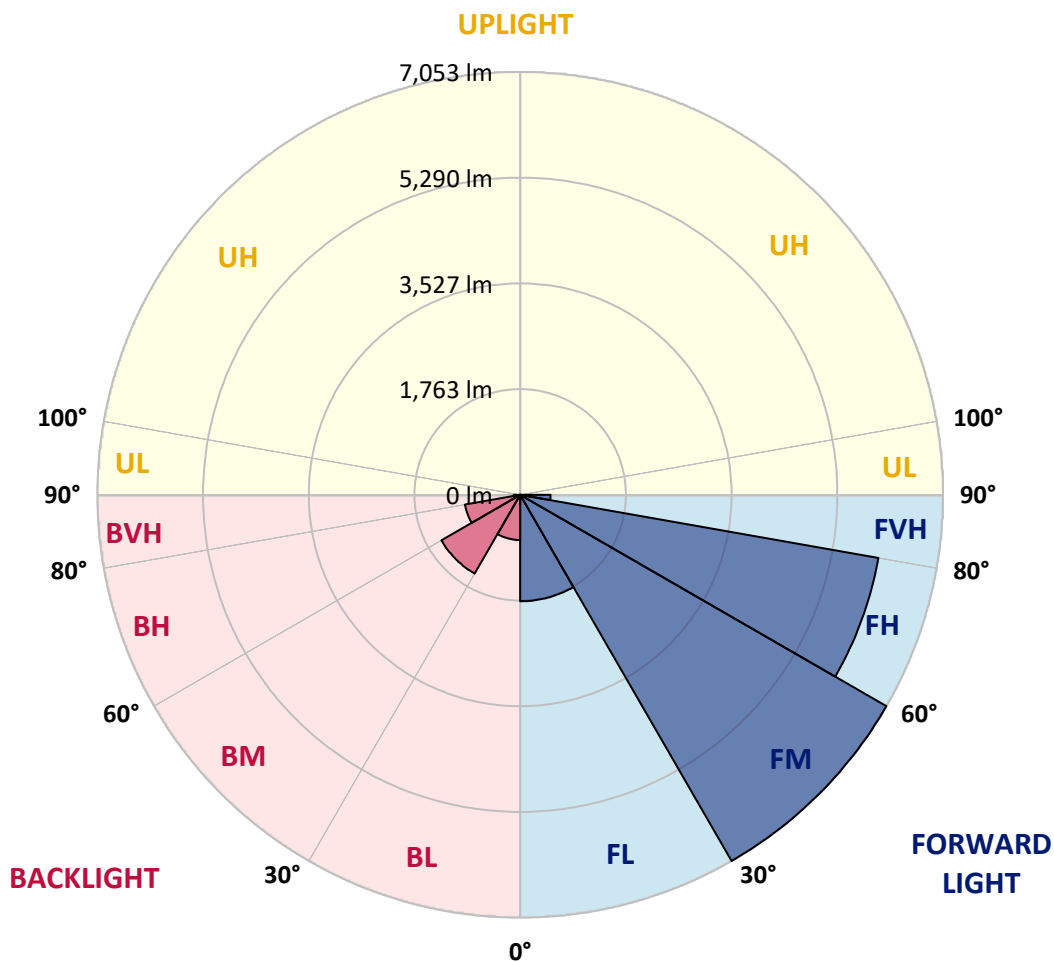
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1776.7	9.5			
FM	(30°-60°)	7053.1	37.7			
FH	(60°-80°)	6067.1	32.4			G3/7500
FVH	(80°-90°)	507.4	2.7			G4/750
BL	(0°-30°)	754.5	4.0	B2/1000		
BM	(30°-60°)	1517.4	8.1	B2/2500		
BH	(60°-80°)	935.1	5.0	B2/1000		G2/1000
BVH	(80°-90°)	109.4	0.6			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3
2.5°	6588.6	6728.5	6888.7	7097.6	7240.1	7297.1	7344.6	7264.6	7187.2	7042.0	6990.4
5°	6154.3	6423.1	6864.2	7283.5	7652.8	7864.5	7929.7	7781.7	7518.4	7138.3	6937.4
7.5°	5509.6	5863.7	6484.1	7101.7	7631.0	7984.0	8009.7	7716.6	7198.1	6575.1	6249.2
10°	4946.2	5346.6	6064.6	6755.6	7316.2	7677.3	7606.6	7195.3	6569.7	5861.0	5493.2
12.5°	4619.1	5019.5	5751.0	6452.9	6980.9	7118.0	6974.1	6628.0	6034.9	5325.0	4954.3
15°	4549.8	4962.4	5639.7	6231.6	6558.7	6470.5	6328.0	6152.9	5730.7	5149.9	4791.5
17.5°	4759.0	5220.4	5787.8	6112.2	6098.7	5886.9	5767.4	5801.3	5729.4	5339.9	4965.2
20°	5189.1	5734.8	6163.7	6079.5	5732.2	5434.8	5365.7	5631.7	5964.2	5816.3	5405.0
22.5°	5755.3	6376.9	6676.8	6173.2	5540.7	5220.4	5206.8	5622.1	6391.8	6537.1	6036.3
25°	6394.6	7119.3	7193.9	6338.9	5520.4	5201.4	5189.1	5768.7	6906.2	7250.9	6743.3
27.5°	7176.3	7868.7	7625.6	6560.1	5609.9	5257.1	5265.1	6018.6	7442.4	7956.7	7540.2
30°	7765.4	8400.7	7891.7	6777.3	5753.9	5354.7	5375.1	6288.7	7731.5	8446.9	8176.7
32.5°	8316.5	8855.4	8146.9	6991.8	5964.2	5500.1	5570.6	6625.3	8078.9	8867.6	8778.0
35°	8926.0	9364.4	8430.6	7221.1	6265.6	5755.3	5856.9	6945.5	8423.8	9288.4	9374.0
37.5°	9616.9	9946.8	8738.6	7545.6	6699.9	6227.5	6284.5	7272.7	8664.1	9753.9	10013.1
40°	10336.3	10599.6	9075.2	7978.6	7331.1	6865.4	6892.6	7692.1	8852.6	10235.7	10633.5
42.5°	10953.8	11158.8	9413.2	8516.0	8055.9	7515.7	7538.8	8144.2	9033.1	10651.2	11130.3
45°	11447.9	11598.6	9732.2	9082.0	8829.6	8327.4	8322.0	8604.2	9274.8	11001.4	11511.7
47.5°	11908.1	11988.2	10087.8	9633.2	9631.7	9372.6	9178.4	9147.3	9596.6	11295.8	11844.3
50°	12434.8	12464.6	10557.5	10189.7	10611.8	10571.1	10212.7	9836.8	10013.1	11627.1	12193.1
52.5°	13167.7	13169.1	11139.8	10732.6	11693.6	11822.6	11405.9	10617.2	10629.5	12271.8	12795.7
55°	14029.5	14089.3	11898.6	11382.9	12825.6	13045.5	12653.3	11544.3	11514.5	13311.5	13773.2
57.5°	14696.1	15012.4	12782.3	12195.8	13883.0	14169.4	13853.2	12505.3	12601.8	14383.9	14579.3
60°	14883.4	15623.1	13663.1	13108.0	14777.6	15207.9	14886.2	13543.7	13665.8	15080.2	14811.4
62.5°	14659.4	15820.1	14560.4	13925.0	15308.2	15720.9	15490.2	14223.8	14533.1	14990.6	14419.1
65°	13995.8	15534.8	15339.5	14272.6	15002.9	15149.5	15088.4	14259.1	15004.2	14143.6	13334.7
67.5°	12445.6	14435.5	14992.1	13530.1	13576.3	13418.8	13338.8	13289.9	14474.8	12776.9	11624.3
70°	10121.8	12403.4	13334.7	11323.0	10981.1	10829.0	10565.7	11217.1	13010.2	10886.0	9566.6
72.5°	7796.7	9489.2	10937.6	8583.9	7872.7	7924.3	7625.6	8577.1	10777.4	8415.6	7303.8
75°	5536.7	6470.5	8730.4	6167.9	5225.8	5223.1	5200.0	6173.2	8503.9	6040.3	5343.8
77.5°	3990.6	4658.4	6839.8	4127.7	3708.4	3755.9	3679.7	4195.5	6629.3	4344.9	3959.4
80°	3183.1	3449.0	4420.9	2752.8	2760.9	2872.2	2855.9	2869.5	4361.2	3146.4	2960.4
82.5°	2287.2	2618.3	3379.9	2109.3	1825.6	1943.8	1966.7	2128.4	3077.1	2224.7	1951.8
85°	1172.7	1596.3	3109.8	1827.1	1141.6	946.0	1088.6	1679.0	2672.6	1332.9	951.6
87.5°	228.0	442.4	2279.0	1015.4	513.1	259.3	427.6	711.3	1554.2	241.6	118.0
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3
2.5°	6902.1	6728.5	6565.5	6397.2	6266.9	6108.0	5952.0	5816.3	5684.7	5597.8	5624.8
5°	6733.9	6310.4	5930.3	5577.3	5371.1	5122.7	4901.4	4715.5	4571.6	4479.3	4535.0
7.5°	5966.9	5394.1	4893.2	4427.7	4134.4	3812.9	3555.0	3373.0	3261.7	3199.4	3290.2
10°	5182.4	4539.0	3977.1	3492.5	3203.4	2930.5	2697.2	2504.4	2354.9	2284.4	2321.1
12.5°	4620.4	3905.1	3316.1	2990.3	2741.8	2497.6	2256.0	2030.6	1840.5	1753.8	1736.1
15°	4410.0	3564.5	2963.1	2599.3	2352.3	2086.3	1825.6	1584.0	1403.5	1328.9	1312.6
17.5°	4502.3	3491.2	2754.1	2323.7	1965.4	1642.5	1349.3	1121.2	988.1	946.0	950.1
20°	4826.8	3518.2	2585.9	2040.1	1597.6	1214.9	921.7	764.2	707.1	697.7	708.6
22.5°	5272.0	3629.6	2463.6	1795.8	1273.2	883.7	685.4	610.8	595.8	594.5	605.4
25°	5859.7	3846.7	2382.1	1578.6	1005.8	700.4	597.3	555.2	542.9	545.7	556.5
27.5°	6552.0	4122.3	2329.2	1391.2	826.6	624.4	557.8	521.2	509.0	511.8	519.8
30°	7184.5	4363.8	2250.6	1250.1	742.4	597.3	536.2	499.5	483.2	483.2	488.7
32.5°	7750.4	4572.9	2158.2	1144.3	665.1	536.2	486.0	457.4	445.2	449.3	451.9
35°	8252.6	4682.9	2086.3	1081.7	602.7	494.1	443.9	413.9	397.7	400.5	404.4
37.5°	8746.7	4724.9	2038.8	1047.9	557.8	468.2	422.2	397.7	380.1	377.4	376.0
40°	9216.4	4715.5	1994.0	1038.4	528.1	449.3	408.5	386.8	369.3	365.2	363.8
42.5°	9622.3	4684.2	1951.8	1012.6	507.6	435.7	397.7	378.6	361.1	355.5	352.9
45°	9992.8	4665.3	1905.8	965.0	518.5	430.3	392.3	371.9	355.5	348.8	346.1
47.5°	10404.1	4733.1	1854.1	913.4	515.7	431.6	392.3	369.3	352.9	346.1	343.4
50°	10894.1	4962.4	1790.3	842.9	491.4	461.5	390.9	365.2	350.2	346.1	340.6
52.5°	11586.3	5334.4	1702.1	752.1	472.4	492.7	389.5	358.3	346.1	339.3	332.6
55°	12535.2	5706.4	1588.2	655.7	442.4	471.0	392.3	350.2	336.7	329.9	321.8
57.5°	13312.9	5988.6	1444.2	575.5	415.3	445.2	388.2	340.6	325.7	319.0	312.3
60°	13262.8	6015.8	1307.2	523.9	399.0	400.5	397.7	333.9	316.3	310.9	305.5
62.5°	12441.5	5680.5	1179.6	498.1	386.8	365.2	405.9	325.7	306.9	301.3	297.2
65°	11074.7	4900.1	1111.7	498.1	376.0	346.1	354.3	314.9	297.2	291.8	289.2
67.5°	9341.4	3937.7	1047.9	509.0	361.1	332.6	321.8	304.0	287.7	282.3	279.6
70°	7487.2	3098.9	1003.0	503.6	347.5	317.6	304.0	289.2	272.8	271.5	268.8
72.5°	5873.3	2489.5	982.7	503.6	327.2	299.9	286.4	275.5	259.3	258.0	253.9
75°	4706.0	1869.1	898.6	494.1	306.9	276.9	264.7	255.2	238.9	240.2	237.5
77.5°	3644.6	1322.0	750.7	445.2	281.0	251.0	241.6	234.8	215.9	217.2	217.2
80°	2850.4	860.5	582.3	369.3	251.0	221.3	214.4	209.0	188.6	191.3	191.3
82.5°	1953.3	511.8	422.2	297.2	215.9	188.6	187.2	179.2	157.5	158.8	161.5
85°	1066.8	336.7	281.0	219.8	169.7	153.4	150.6	146.7	126.2	126.2	127.6
87.5°	196.8	180.5	165.6	145.3	114.1	110.0	105.9	110.0	95.0	92.3	92.3
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):

	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°	285°
0°	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3
2.5°	5561.0	5467.4	5402.2	5345.3	5208.2	5217.6	5236.7	5263.8	5178.3	5223.1	5278.8
5°	4479.3	4402.0	4343.6	4252.5	4061.1	3993.3	3949.8	3931.0	3803.3	3830.5	3890.2
7.5°	3302.4	3301.1	3280.7	3178.9	2948.1	2808.5	2716.0	2687.5	2608.9	2638.7	2729.6
10°	2325.2	2349.5	2340.1	2249.1	2042.8	1942.3	1922.1	1979.1	1980.4	2038.8	2194.9
12.5°	1680.4	1666.8	1654.6	1579.9	1425.3	1408.9	1455.1	1533.9	1552.8	1615.2	1778.1
15°	1254.3	1221.7	1214.9	1156.5	1054.7	1069.6	1103.6	1144.3	1145.6	1189.0	1323.5
17.5°	940.6	940.6	951.6	913.4	840.3	833.4	815.8	804.9	788.6	806.3	879.6
20°	730.2	764.2	791.3	769.6	703.2	670.6	636.5	614.9	602.7	604.0	625.7
22.5°	625.7	652.9	688.2	677.3	621.6	579.5	557.8	542.9	533.5	533.5	545.7
25°	572.8	590.5	623.1	617.6	570.1	536.2	518.5	503.6	492.7	491.4	503.6
27.5°	530.7	541.6	563.2	560.6	511.8	490.0	479.2	469.6	462.8	461.5	473.8
30°	492.7	498.1	509.0	504.9	468.2	446.5	442.4	438.5	434.3	435.7	453.4
32.5°	458.8	462.8	469.6	464.2	428.9	409.9	403.1	397.7	393.6	397.7	418.2
35°	420.8	433.1	441.2	438.5	400.5	377.4	362.5	348.8	343.4	347.5	370.6
37.5°	388.2	408.5	419.4	416.8	377.4	350.2	331.1	328.5	328.5	333.9	356.9
40°	376.0	390.9	400.5	396.3	356.9	329.9	319.0	314.9	316.3	321.8	346.1
42.5°	365.2	378.6	381.4	373.2	333.9	316.3	309.5	304.0	306.9	313.6	338.0
45°	355.5	366.5	365.2	352.9	314.9	302.6	302.6	298.6	299.9	305.5	331.1
47.5°	348.8	354.3	351.5	339.3	301.3	291.8	295.9	295.9	298.6	302.6	328.5
50°	338.0	342.1	339.3	328.5	290.5	282.3	286.4	291.8	294.6	298.6	321.8
52.5°	327.2	329.9	328.5	317.6	279.6	274.3	274.3	279.6	285.0	290.5	310.9
55°	316.3	319.0	320.3	312.3	271.5	266.1	264.7	264.7	270.1	278.3	299.9
57.5°	308.1	308.1	310.9	305.5	263.4	256.6	249.8	251.0	258.0	264.7	286.4
60°	298.6	299.9	304.0	298.6	252.5	241.6	236.2	243.0	245.6	252.5	275.5
62.5°	290.5	290.5	293.1	289.2	243.0	232.1	228.0	234.8	234.8	241.6	264.7
65°	283.7	282.3	282.3	281.0	233.5	222.6	219.8	222.6	223.9	230.8	253.9
67.5°	278.3	271.5	271.5	274.3	223.9	213.1	211.7	211.7	213.1	221.3	241.6
70°	266.1	260.6	259.3	268.8	214.4	201.0	201.0	198.2	201.0	205.0	226.7
72.5°	252.5	248.4	247.0	260.6	205.0	187.2	184.6	183.3	184.6	188.6	209.0
75°	234.8	232.1	234.8	255.2	195.4	172.4	168.3	166.9	166.9	168.3	190.0
77.5°	214.4	211.7	232.1	237.5	190.0	154.8	150.6	148.0	145.3	145.3	169.7
80°	190.0	188.6	223.9	201.0	181.8	135.7	128.9	124.9	122.2	120.8	145.3
82.5°	165.6	163.0	191.3	157.5	150.6	111.3	101.8	93.7	89.7	89.7	111.3
85°	135.7	134.3	150.6	115.4	104.6	81.4	67.8	61.1	55.7	55.7	72.0
87.5°	99.2	96.4	93.7	69.2	52.9	36.7	25.8	24.4	21.6	20.3	29.9
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):

	295°	305°	315°	325°	335°	345°	355°	360°
0°	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3	6382.3
2.5°	5361.5	5474.2	5687.3	5862.3	6095.9	6283.3	6496.4	6588.6
5°	4000.2	4177.9	4503.7	4781.9	5167.5	5524.4	5931.7	6154.3
7.5°	2869.5	3132.7	3379.9	3727.2	4209.2	4688.3	5215.0	5509.6
10°	2374.0	2615.7	2827.3	3074.4	3446.3	3985.2	4613.6	4946.2
12.5°	1966.7	2227.3	2451.4	2716.0	3028.2	3515.5	4232.3	4619.1
15°	1508.1	1791.7	2060.4	2379.4	2762.2	3318.8	4118.2	4549.8
17.5°	1033.0	1336.9	1668.2	2057.7	2519.2	3236.0	4226.9	4759.0
20°	701.8	924.4	1284.0	1745.5	2300.6	3196.6	4465.7	5189.1
22.5°	576.9	677.3	947.4	1452.4	2121.5	3239.9	4853.9	5755.3
25°	529.5	583.7	737.1	1194.4	1984.4	3355.3	5379.2	6394.6
27.5°	499.5	545.7	646.2	1009.9	1858.2	3512.8	6018.6	7176.3
30°	481.9	525.2	609.5	914.8	1742.8	3648.6	6568.2	7765.4
32.5°	442.4	475.1	544.4	860.5	1660.1	3758.5	7052.9	8316.5
35°	395.0	434.3	491.4	825.3	1657.4	3810.2	7508.9	8926.0
37.5°	377.4	415.3	457.4	806.3	1673.6	3853.5	8066.8	9616.9
40°	366.5	400.5	434.3	803.5	1687.1	3887.4	8612.4	10336.3
42.5°	356.9	390.9	430.3	784.6	1681.7	3933.6	9095.7	10953.8
45°	354.3	388.2	439.8	756.1	1680.4	4005.5	9479.8	11447.9
47.5°	351.5	403.1	437.0	724.8	1675.0	4157.5	9912.7	11908.1
50°	348.8	430.3	418.2	681.4	1634.2	4416.8	10495.1	12434.8
52.5°	347.5	434.3	397.7	621.6	1561.0	4801.0	11347.5	13167.7
55°	342.1	412.6	362.5	542.9	1455.1	5215.0	12261.0	14029.5
57.5°	329.9	367.9	342.1	465.6	1303.0	5504.1	12935.7	14696.1
60°	359.7	316.3	328.5	426.2	1121.2	5555.7	12965.4	14883.4
62.5°	343.4	287.7	314.9	412.6	993.5	5219.1	12372.3	14659.4
65°	274.3	272.8	302.6	426.2	974.7	4465.7	11370.6	13995.8
67.5°	249.8	261.9	290.5	442.4	986.8	3518.2	9896.4	12445.6
70°	233.5	248.4	274.3	457.4	1008.4	2771.7	7967.6	10121.8
72.5°	217.2	229.3	258.0	472.4	993.5	2186.7	6376.9	7796.7
75°	196.8	207.7	234.8	433.1	852.4	1607.1	5067.0	5536.7
77.5°	173.7	183.3	206.3	342.1	640.8	1118.5	3795.2	3990.6
80°	149.3	153.4	171.0	249.8	418.2	669.1	2888.5	3183.1
82.5°	118.0	119.5	130.3	183.3	260.6	427.6	2003.5	2287.2
85°	75.9	78.7	84.1	128.9	175.1	274.3	1023.4	1172.7
87.5°	25.8	29.9	29.9	62.4	85.5	152.1	313.6	228.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)