

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: P197176

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197176
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 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: 17583 lumens
Efficiency: N/A
Efficacy: 78.1 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

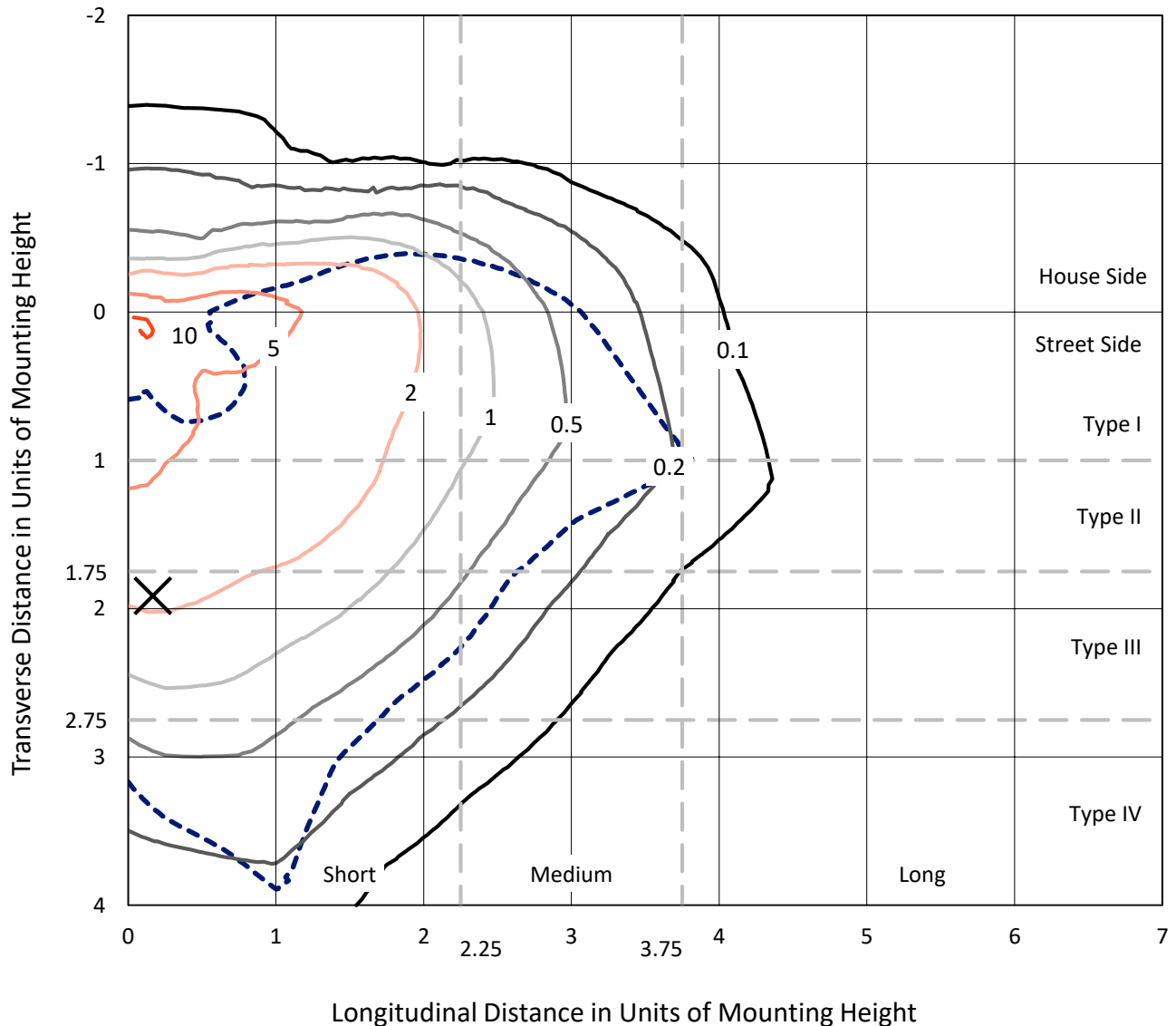
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

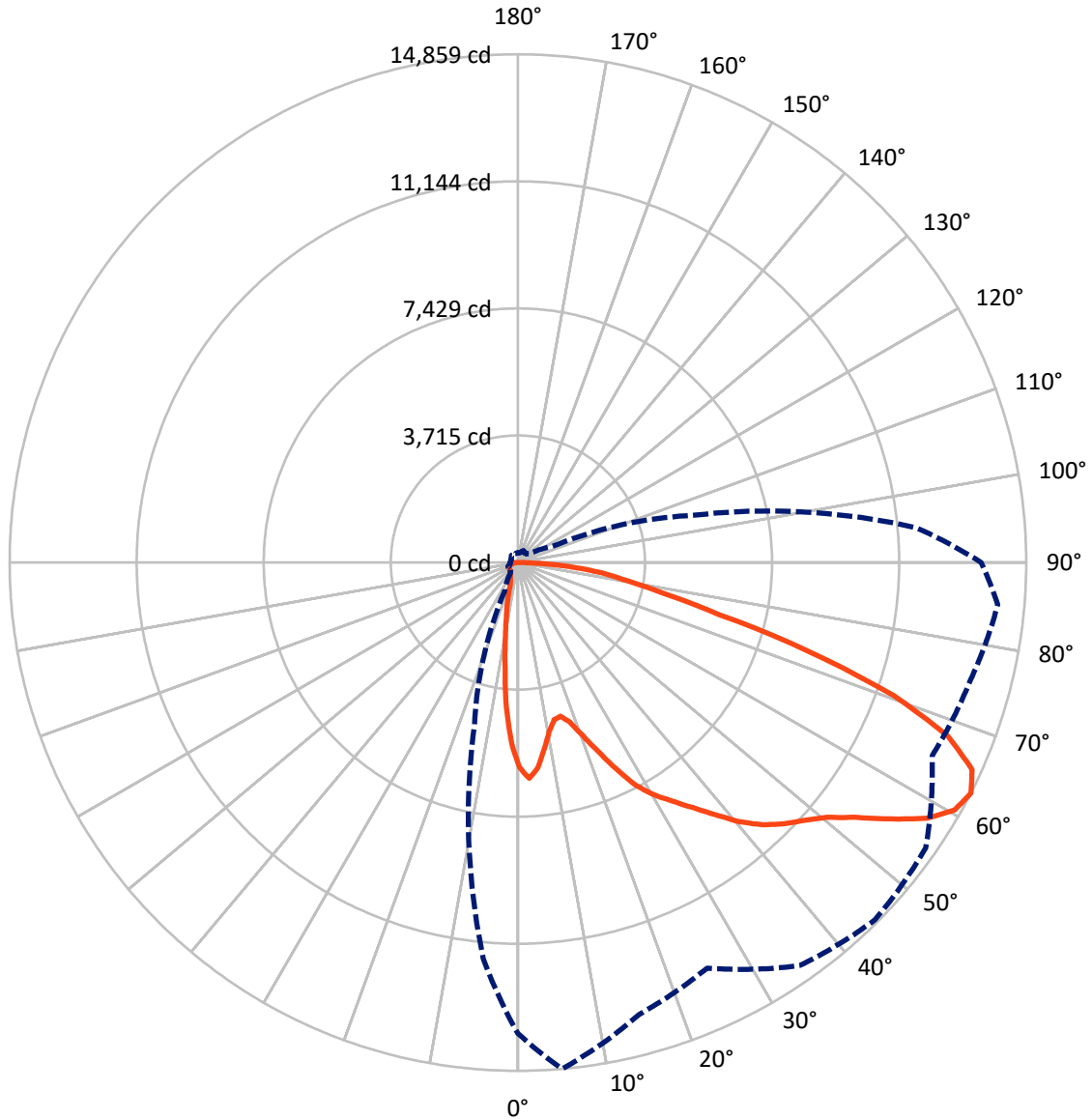
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 11 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	3114.9	0.0	3114.9
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	14468.1	0.0	14468.1
	% Fixture	82.3	0.0	82.3
Total	Lumens	17583.0	0.0	17583.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	435.9	2.5
10°-20°	796.2	4.5
20°-30°	1145.2	6.5
30°-40°	1754.0	10.0
40°-50°	2564.4	14.6
50°-60°	3731.2	21.2
60°-70°	4323.1	24.6
70°-80°	2253.6	12.8
80°-90°	579.3	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°	17583.0	100.0
0°-180°	17583.0	100.0



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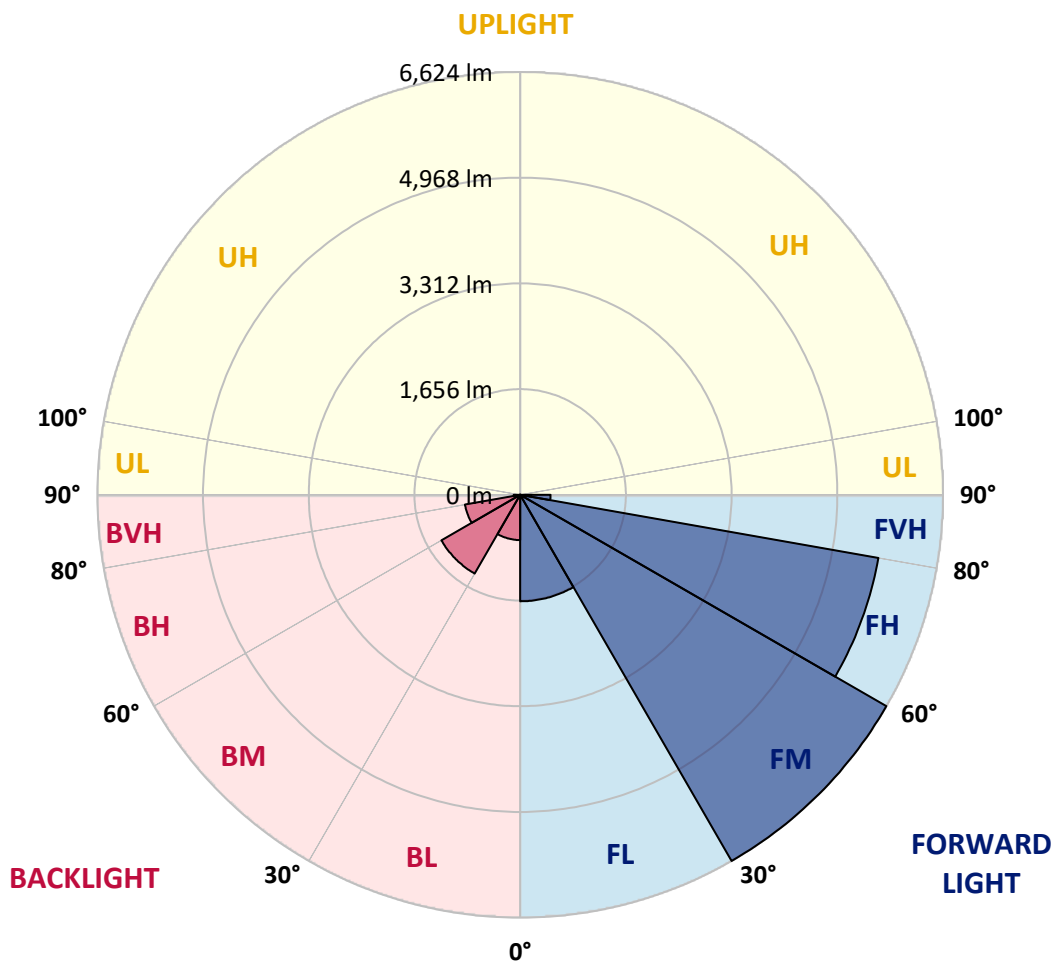
CATALOG NUMBER: NAV-AF-04-D-UNV-SLL-8030

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1668.7	9.5			
FM	(30°-60°)	6624.5	37.7			
FH	(60°-80°)	5698.4	32.4			G3/7500
FVH	(80°-90°)	476.6	2.7			G3/500
BL	(0°-30°)	708.7	4.0	B2/1000		
BM	(30°-60°)	1425.2	8.1	B2/2500		
BH	(60°-80°)	878.3	5.0	B2/1000		G2/1000
BVH	(80°-90°)	102.7	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-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4
2.5°	6188.2	6319.5	6469.9	6666.2	6800.1	6853.7	6898.3	6823.1	6750.4	6614.0	6565.5
5°	5780.2	6032.6	6447.0	6840.9	7187.7	7386.5	7447.7	7308.8	7061.5	6704.5	6515.8
7.5°	5174.7	5507.4	6090.0	6670.1	7167.3	7498.7	7523.0	7247.6	6760.6	6175.4	5869.5
10°	4645.6	5021.7	5696.1	6345.0	6871.5	7210.6	7144.3	6758.0	6170.3	5504.8	5159.4
12.5°	4338.4	4714.4	5401.6	6060.7	6556.6	6685.4	6550.2	6225.1	5668.0	5001.3	4653.2
15°	4273.3	4660.9	5297.0	5852.9	6160.1	6077.3	5943.4	5778.9	5382.5	4836.8	4500.3
17.5°	4469.7	4903.1	5436.0	5740.7	5727.9	5529.1	5416.9	5448.8	5381.2	5015.3	4663.4
20°	4873.8	5386.3	5789.1	5710.1	5383.7	5104.5	5039.5	5289.4	5601.7	5462.8	5076.5
22.5°	5405.4	5989.3	6271.0	5798.1	5204.0	4903.1	4890.4	5280.5	6003.3	6139.7	5669.3
25°	6005.9	6686.6	6756.8	5953.6	5184.9	4885.3	4873.8	5418.2	6486.5	6810.3	6333.5
27.5°	6740.2	7390.4	7162.2	6161.4	5269.0	4937.5	4945.2	5652.7	6990.1	7473.2	7081.9
30°	7293.5	7890.1	7412.0	6365.4	5404.1	5029.3	5048.4	5906.4	7261.6	7933.5	7679.8
32.5°	7811.1	8317.2	7651.7	6566.8	5601.7	5165.7	5232.0	6222.6	7588.0	8328.7	8244.5
35°	8383.5	8795.3	7918.2	6782.3	5884.8	5405.4	5501.0	6523.5	7911.8	8723.9	8804.2
37.5°	9032.4	9342.2	8207.6	7087.0	6292.7	5849.1	5902.6	6830.7	8137.4	9161.1	9404.6
40°	9708.1	9955.4	8523.7	7493.6	6885.5	6448.2	6473.7	7224.6	8314.6	9613.7	9987.3
42.5°	10288.1	10480.6	8841.2	7998.5	7566.3	7058.9	7080.6	7649.2	8484.2	10003.8	10453.9
45°	10752.2	10893.7	9140.8	8530.1	8293.0	7821.3	7816.2	8081.3	8711.1	10332.7	10812.1
47.5°	11184.4	11259.6	9474.8	9047.7	9046.4	8802.9	8620.6	8591.3	9013.3	10609.4	11124.4
50°	11679.0	11707.0	9915.9	9570.4	9966.9	9928.6	9592.1	9238.9	9404.6	10920.5	11452.1
52.5°	12367.4	12368.7	10462.8	10080.3	10982.9	11104.0	10712.7	9972.0	9983.4	11526.0	12018.1
55°	13177.0	13233.1	11175.4	10691.0	12046.2	12252.7	11884.3	10842.7	10814.6	12502.6	12936.0
57.5°	13802.9	14100.0	12005.4	11454.6	13039.3	13308.3	13011.2	11745.3	11835.8	13509.7	13693.3
60°	13978.8	14673.6	12832.7	12311.3	13879.4	14283.5	13981.4	12720.6	12835.3	14163.7	13911.3
62.5°	13768.5	14858.5	13675.4	13078.8	14377.9	14765.4	14548.7	13359.3	13649.9	14079.6	13542.8
65°	13145.1	14590.8	14407.2	13405.2	14091.0	14228.7	14171.4	13392.4	14092.3	13284.0	12524.2
67.5°	11689.2	13558.1	14080.8	12707.8	12751.2	12603.3	12528.1	12482.2	13595.1	12000.3	10917.9
70°	9506.6	11649.7	12524.2	10634.9	10313.6	10170.8	9923.5	10535.4	12219.5	10224.4	8985.2
72.5°	7322.8	8912.6	10272.8	8062.2	7394.2	7442.6	7162.2	8055.8	10122.4	7904.1	6860.0
75°	5200.2	6077.3	8199.9	5793.0	4908.2	4905.7	4884.0	5798.1	7987.0	5673.1	5019.1
77.5°	3748.1	4375.3	6424.0	3876.9	3482.9	3527.5	3456.1	3940.6	6226.4	4080.8	3718.8
80°	2989.5	3239.4	4152.2	2585.4	2593.1	2697.6	2682.3	2695.1	4096.1	2955.1	2780.5
82.5°	2148.1	2459.2	3174.4	1981.1	1714.7	1825.6	1847.3	1999.0	2890.1	2089.5	1833.2
85°	1101.5	1499.2	2920.7	1716.0	1072.2	888.6	1022.4	1577.0	2510.2	1251.9	893.7
87.5°	214.2	415.6	2140.5	953.6	481.9	243.5	401.6	668.0	1459.7	226.9	110.9
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4
2.5°	6482.7	6319.5	6166.5	6008.4	5886.0	5736.9	5590.3	5462.8	5339.1	5257.5	5283.0
5°	6324.6	5926.8	5569.9	5238.4	5044.6	4811.3	4603.5	4428.9	4293.7	4207.0	4259.3
7.5°	5604.3	5066.3	4595.9	4158.6	3883.2	3581.1	3338.9	3168.0	3063.5	3004.8	3090.3
10°	4867.4	4263.1	3735.3	3280.2	3008.7	2752.4	2533.1	2352.1	2211.9	2145.6	2180.0
12.5°	4339.6	3667.8	3114.5	2808.5	2575.2	2345.7	2118.8	1907.2	1728.7	1647.1	1630.5
15°	4142.0	3347.8	2783.0	2441.4	2209.3	1959.5	1714.7	1487.8	1318.2	1248.1	1232.8
17.5°	4228.7	3278.9	2586.7	2182.6	1846.0	1542.6	1267.2	1053.0	928.1	888.6	892.4
20°	4533.4	3304.4	2428.6	1916.1	1500.5	1141.0	865.6	717.7	664.2	655.3	665.5
22.5°	4951.6	3409.0	2313.9	1686.6	1195.8	829.9	643.8	573.7	559.7	558.4	568.6
25°	5503.6	3613.0	2237.4	1482.7	944.7	657.8	560.9	521.4	509.9	512.5	522.7
27.5°	6153.8	3871.8	2187.7	1306.7	776.4	586.4	524.0	489.5	478.1	480.6	488.3
30°	6747.8	4098.7	2113.7	1174.1	697.3	560.9	503.6	469.1	453.9	453.9	458.9
32.5°	7279.5	4295.0	2027.0	1074.7	624.7	503.6	456.4	429.6	418.2	422.0	424.5
35°	7751.2	4398.3	1959.5	1016.1	566.0	464.0	416.9	388.8	373.5	376.1	379.9
37.5°	8215.2	4437.8	1914.8	984.2	524.0	439.8	396.5	373.5	357.0	354.4	353.1
40°	8656.3	4428.9	1872.8	975.3	495.9	422.0	383.7	363.3	346.8	342.9	341.7
42.5°	9037.5	4399.5	1833.2	951.0	476.8	409.2	373.5	355.7	339.1	334.0	331.5
45°	9385.5	4381.7	1789.9	906.4	487.0	404.1	368.4	349.3	334.0	327.6	325.1
47.5°	9771.8	4445.4	1741.5	858.0	484.4	405.4	368.4	346.8	331.5	325.1	322.5
50°	10232.0	4660.9	1681.5	791.7	461.5	433.5	367.2	342.9	328.9	325.1	320.0
52.5°	10882.2	5010.2	1598.7	706.3	443.7	462.8	365.9	336.6	325.1	318.7	312.3
55°	11773.3	5359.5	1491.6	615.8	415.6	442.4	368.4	328.9	316.2	309.8	302.1
57.5°	12503.8	5624.7	1356.5	540.5	390.1	418.2	364.6	320.0	306.0	299.6	293.2
60°	12456.7	5650.2	1227.7	492.1	374.8	376.1	373.5	313.6	297.0	291.9	286.8
62.5°	11685.4	5335.3	1107.9	467.9	363.3	342.9	381.2	306.0	288.1	283.0	279.2
65°	10401.6	4602.2	1044.1	467.9	353.1	325.1	332.7	295.8	279.2	274.1	271.5
67.5°	8773.6	3698.4	984.2	478.1	339.1	312.3	302.1	285.6	270.3	265.2	262.6
70°	7032.1	2910.5	942.1	473.0	326.4	298.3	285.6	271.5	256.2	255.0	252.4
72.5°	5516.3	2338.1	923.0	473.0	307.2	281.7	269.0	258.8	243.5	242.2	238.4
75°	4419.9	1755.5	844.0	464.0	288.1	260.1	248.6	239.7	224.4	225.7	223.1
77.5°	3423.0	1241.7	705.0	418.2	263.9	235.8	226.9	220.6	202.7	204.0	204.0
80°	2677.2	808.3	546.9	346.8	235.8	207.8	201.4	196.3	177.2	179.8	179.8
82.5°	1834.5	480.6	396.5	279.2	202.7	177.2	175.9	168.3	147.9	149.2	151.7
85°	1002.0	316.2	263.9	206.5	159.4	144.1	141.5	137.7	118.6	118.6	119.8
87.5°	184.9	169.6	155.5	136.4	107.1	103.3	99.4	103.3	89.2	86.7	86.7
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°	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4
2.5°	5223.1	5135.1	5073.9	5020.4	4891.6	4900.6	4918.4	4943.9	4863.6	4905.7	4957.9
5°	4207.0	4134.4	4079.6	3994.1	3814.4	3750.6	3709.8	3692.0	3572.2	3597.7	3653.8
7.5°	3101.7	3100.5	3081.3	2985.7	2769.0	2637.7	2551.0	2524.2	2450.3	2478.3	2563.7
10°	2183.8	2206.8	2197.9	2112.4	1918.7	1824.3	1805.2	1858.7	1860.0	1914.8	2061.4
12.5°	1578.3	1565.5	1554.1	1483.9	1338.6	1323.3	1366.7	1440.6	1458.4	1517.1	1670.1
15°	1178.0	1147.4	1141.0	1086.2	990.6	1004.6	1036.5	1074.7	1076.0	1116.8	1243.0
17.5°	883.5	883.5	893.7	858.0	789.1	782.8	766.2	756.0	740.7	757.3	826.1
20°	685.9	717.7	743.2	722.8	660.4	629.8	597.9	577.5	566.0	567.3	587.7
22.5°	587.7	613.2	646.4	636.2	583.9	544.4	524.0	509.9	501.0	501.0	512.5
25°	538.0	554.6	585.2	580.1	535.4	503.6	487.0	473.0	462.8	461.5	473.0
27.5°	498.5	508.7	529.1	526.5	480.6	460.2	450.0	441.1	434.7	433.5	444.9
30°	462.8	467.9	478.1	474.2	439.8	419.4	415.6	411.8	408.0	409.2	425.8
32.5°	430.9	434.7	441.1	436.0	402.9	385.0	378.6	373.5	369.7	373.5	392.7
35°	395.2	406.7	414.3	411.8	376.1	354.4	340.4	327.6	322.5	326.4	348.0
37.5°	364.6	383.7	393.9	391.4	354.4	328.9	311.1	308.5	308.5	313.6	335.3
40°	353.1	367.2	376.1	372.3	335.3	309.8	299.6	295.8	297.0	302.1	325.1
42.5°	342.9	355.7	358.2	350.6	313.6	297.0	290.7	285.6	288.1	294.5	317.4
45°	334.0	344.2	342.9	331.5	295.8	284.3	284.3	280.5	281.7	286.8	311.1
47.5°	327.6	332.7	330.2	318.7	283.0	274.1	277.9	277.9	280.5	284.3	308.5
50°	317.4	321.3	318.7	308.5	272.8	265.2	269.0	274.1	276.6	280.5	302.1
52.5°	307.2	309.8	308.5	298.3	262.6	257.5	257.5	262.6	267.7	272.8	291.9
55°	297.0	299.6	300.9	293.2	255.0	249.9	248.6	248.6	253.7	261.3	281.7
57.5°	289.4	289.4	291.9	286.8	247.3	240.9	234.6	235.8	242.2	248.6	269.0
60°	280.5	281.7	285.6	280.5	237.1	226.9	221.8	228.2	230.7	237.1	258.8
62.5°	272.8	272.8	275.4	271.5	228.2	218.0	214.2	220.6	220.6	226.9	248.6
65°	266.4	265.2	265.2	263.9	219.3	209.1	206.5	209.1	210.4	216.7	238.4
67.5°	261.3	255.0	255.0	257.5	210.4	200.2	198.9	198.9	200.2	207.8	226.9
70°	249.9	244.8	243.5	252.4	201.4	188.7	188.7	186.1	188.7	192.5	212.9
72.5°	237.1	233.3	232.0	244.8	192.5	175.9	173.4	172.1	173.4	177.2	196.3
75°	220.6	218.0	220.6	239.7	183.6	161.9	158.1	156.8	156.8	158.1	178.5
77.5°	201.4	198.9	218.0	223.1	178.5	145.3	141.5	139.0	136.4	136.4	159.4
80°	178.5	177.2	210.4	188.7	170.8	127.5	121.1	117.3	114.7	113.5	136.4
82.5°	155.5	153.0	179.8	147.9	141.5	104.5	95.6	88.0	84.1	84.1	104.5
85°	127.5	126.2	141.5	108.4	98.2	76.5	63.7	57.4	52.3	52.3	67.6
87.5°	93.1	90.5	88.0	65.0	49.7	34.4	24.2	22.9	20.4	19.1	28.0
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°	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4	5994.4
2.5°	5035.7	5141.5	5341.7	5506.1	5725.4	5901.3	6101.5	6188.2
5°	3757.0	3924.0	4230.0	4491.3	4853.4	5188.7	5571.1	5780.2
7.5°	2695.1	2942.4	3174.4	3500.8	3953.3	4403.4	4898.0	5174.7
10°	2229.7	2456.7	2655.5	2887.6	3236.9	3743.0	4333.3	4645.6
12.5°	1847.3	2092.0	2302.4	2551.0	2844.2	3301.9	3975.0	4338.4
15°	1416.4	1682.8	1935.2	2234.8	2594.3	3117.0	3867.9	4273.3
17.5°	970.2	1255.7	1566.8	1932.7	2366.1	3039.3	3969.9	4469.7
20°	659.1	868.2	1206.0	1639.5	2160.9	3002.3	4194.3	4873.8
22.5°	541.8	636.2	889.9	1364.1	1992.6	3043.1	4558.9	5405.4
25°	497.2	548.2	692.2	1121.9	1863.8	3151.5	5052.3	6005.9
27.5°	469.1	512.5	606.8	948.5	1745.3	3299.3	5652.7	6740.2
30°	452.6	493.4	572.4	859.3	1636.9	3426.8	6169.1	7293.5
32.5°	415.6	446.2	511.2	808.3	1559.2	3530.1	6624.2	7811.1
35°	371.0	408.0	461.5	775.1	1556.6	3578.5	7052.5	8383.5
37.5°	354.4	390.1	429.6	757.3	1571.9	3619.3	7576.5	9032.4
40°	344.2	376.1	408.0	754.7	1584.7	3651.2	8089.0	9708.1
42.5°	335.3	367.2	404.1	736.9	1579.6	3694.5	8542.8	10288.1
45°	332.7	364.6	413.1	710.1	1578.3	3762.1	8903.6	10752.2
47.5°	330.2	378.6	410.5	680.8	1573.2	3904.9	9310.3	11184.4
50°	327.6	404.1	392.7	640.0	1534.9	4148.4	9857.2	11679.0
52.5°	326.4	408.0	373.5	583.9	1466.1	4509.2	10657.8	12367.4
55°	321.3	387.6	340.4	509.9	1366.7	4898.0	11515.8	13177.0
57.5°	309.8	345.5	321.3	437.3	1223.9	5169.6	12149.4	13802.9
60°	337.8	297.0	308.5	400.3	1053.0	5218.0	12177.5	13978.8
62.5°	322.5	270.3	295.8	387.6	933.2	4901.8	11620.4	13768.5
65°	257.5	256.2	284.3	400.3	915.3	4194.3	10679.5	13145.1
67.5°	234.6	246.0	272.8	415.6	926.8	3304.4	9295.0	11689.2
70°	219.3	233.3	257.5	429.6	947.2	2603.3	7483.4	9506.6
72.5°	204.0	215.5	242.2	443.7	933.2	2053.8	5989.3	7322.8
75°	184.9	195.1	220.6	406.7	800.6	1509.4	4759.1	5200.2
77.5°	163.2	172.1	193.8	321.3	601.7	1050.5	3564.5	3748.1
80°	140.2	144.1	160.6	234.6	392.7	628.5	2712.9	2989.5
82.5°	110.9	112.2	122.4	172.1	244.8	401.6	1881.7	2148.1
85°	71.4	73.9	79.0	121.1	164.5	257.5	961.2	1101.5
87.5°	24.2	28.0	28.0	58.6	80.3	142.8	294.5	214.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)