

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: P197192

Luminaire Tested: **NAV-AF-02-D-UNV-SLR-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197192
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-SLR-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR RIGHT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7093 lumens
Efficiency: N/A
Efficacy: 83.4 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 - G2

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

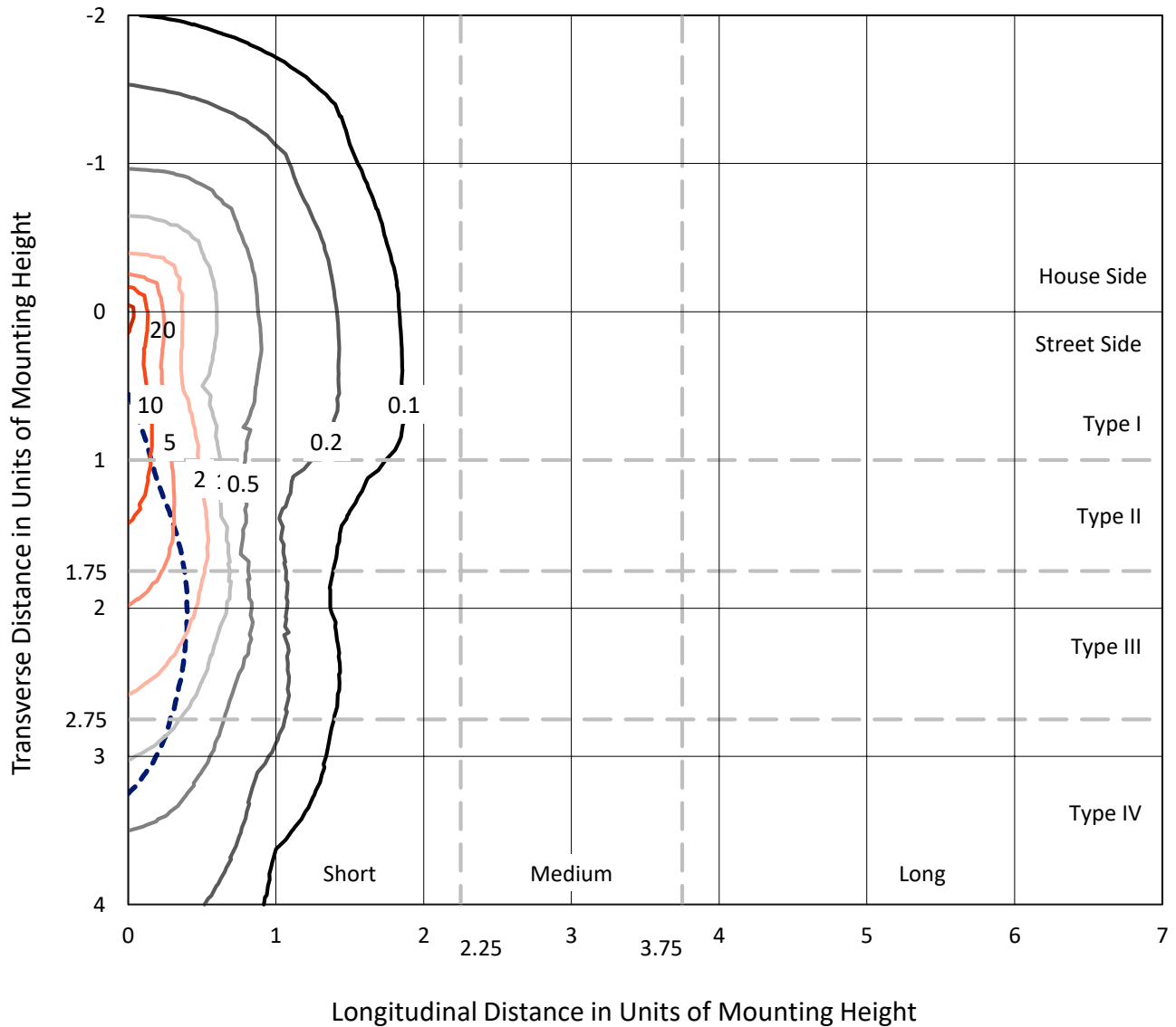


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Iso-Footcandle Lines of Horizontal Illumination

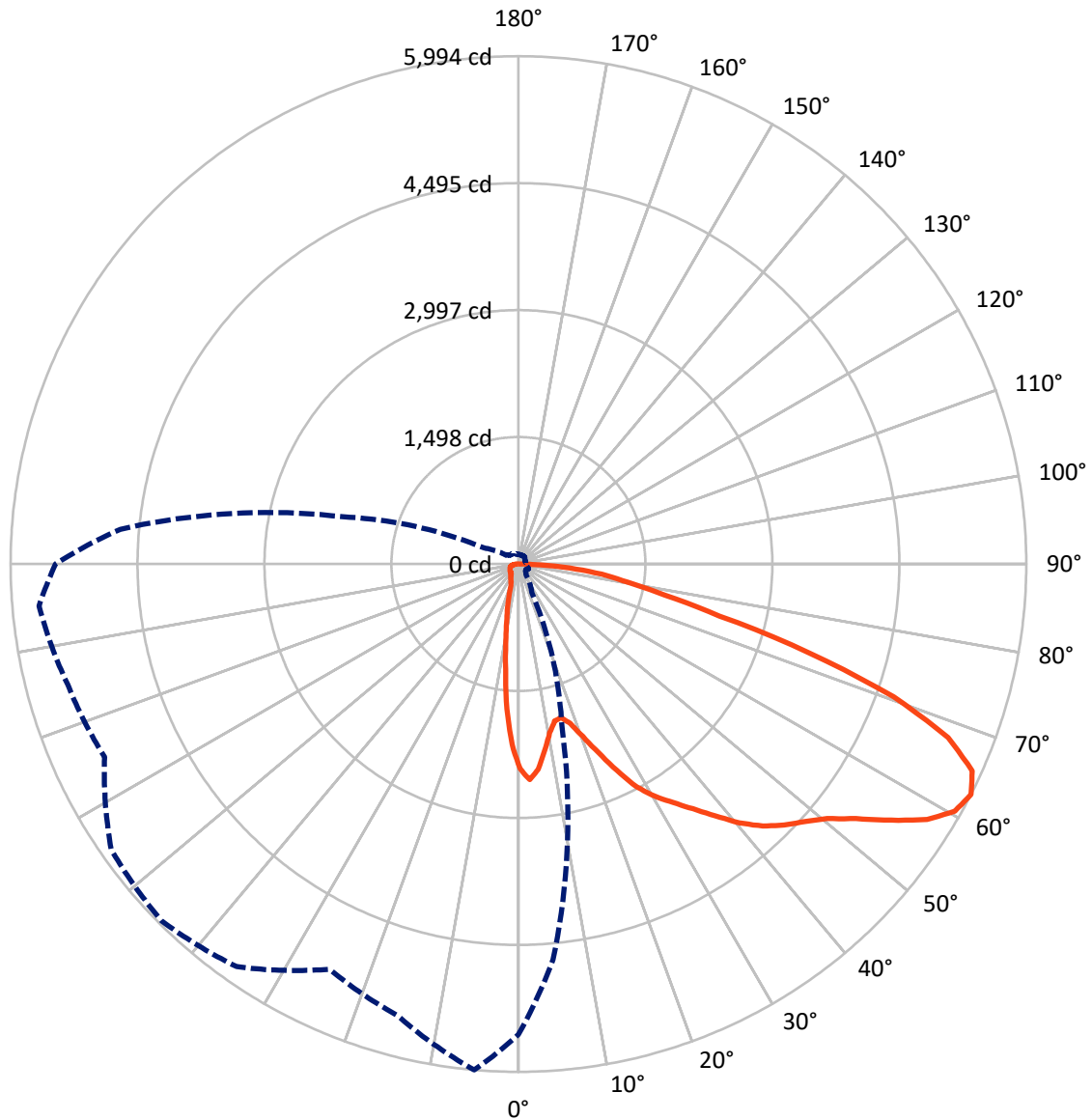
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 24.2 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 355-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1256.5	0.0	1256.5
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	5836.5	0.0	5836.5
	% Fixture	82.3	0.0	82.3
Total	Lumens	7093.0	0.0	7093.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.9	2.5
10°-20°	321.2	4.5
20°-30°	462.0	6.5
30°-40°	707.6	10.0
40°-50°	1034.5	14.6
50°-60°	1505.2	21.2
60°-70°	1744.0	24.6
70°-80°	909.1	12.8
80°-90°	233.7	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°	7093.0	100.0
0°-180°	7093.0	100.0



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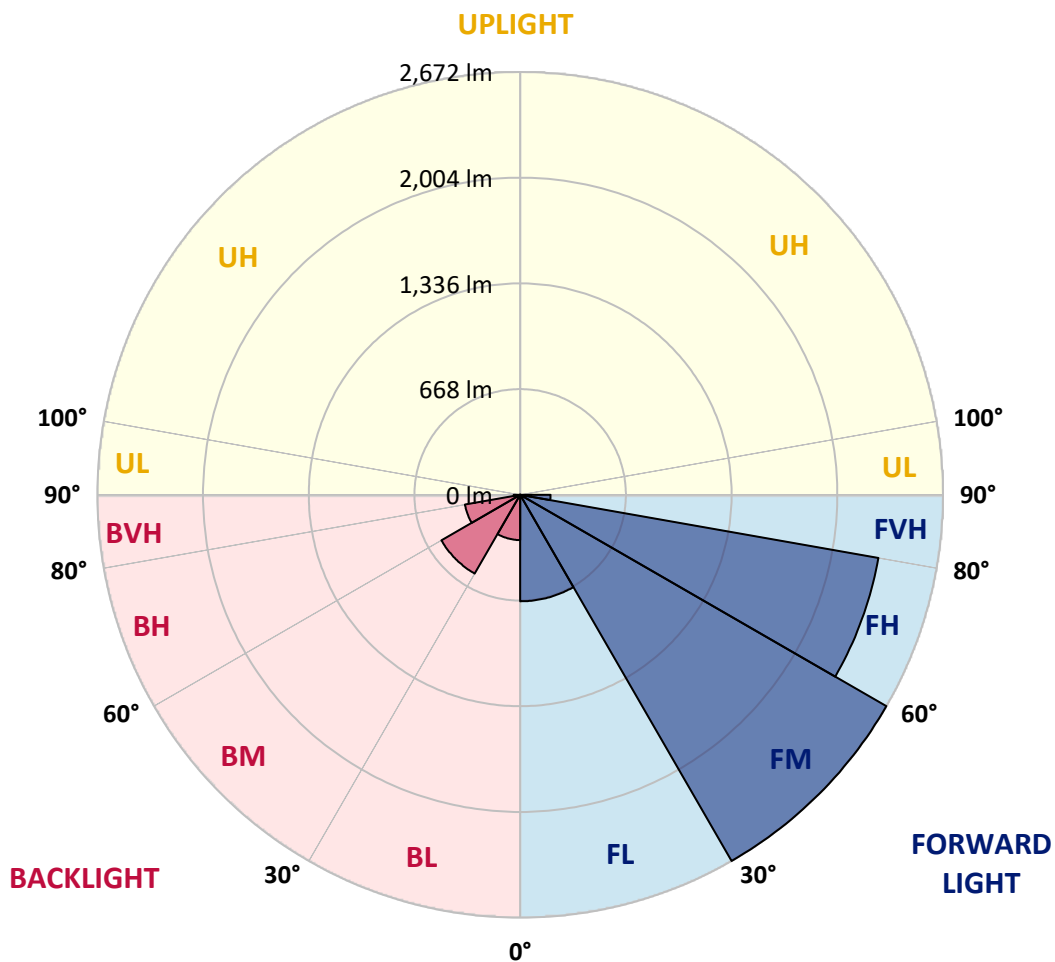
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	673.2	9.5			
FM	(30°-60°)	2672.3	37.7			
FH	(60°-80°)	2298.7	32.4			G2/5000
FVH	(80°-90°)	192.2	2.7			G2/225
BL	(0°-30°)	285.9	4.0	B1/500		
BM	(30°-60°)	574.9	8.1	B1/1000		
BH	(60°-80°)	354.3	5.0	B1/500		G1/500
BVH	(80°-90°)	41.4	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-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1
2.5°	2496.3	2461.3	2380.6	2309.6	2221.2	2154.8	2074.1	2031.4	2000.0	1978.9	1962.0
5°	2331.7	2247.4	2093.1	1957.9	1811.8	1706.4	1583.0	1515.6	1473.9	1451.3	1441.0
7.5°	2087.5	1975.9	1776.3	1594.8	1412.2	1280.6	1187.0	1087.2	1034.2	999.8	988.4
10°	1874.0	1748.0	1509.9	1305.8	1164.8	1071.2	991.0	899.5	831.6	772.4	750.3
12.5°	1750.1	1603.5	1332.0	1147.4	1029.1	928.8	843.9	745.2	673.7	612.0	588.3
15°	1723.9	1560.3	1257.4	1046.6	901.5	780.7	678.8	571.4	501.4	450.5	434.1
17.5°	1803.1	1601.5	1226.0	954.5	779.6	632.1	506.6	391.4	333.3	305.5	298.8
20°	1966.1	1692.0	1211.1	871.7	661.4	486.5	350.2	265.9	237.1	228.9	228.3
22.5°	2180.5	1839.1	1227.6	803.8	550.3	359.0	256.6	218.6	206.7	202.1	202.1
25°	2422.8	2038.1	1271.3	751.9	452.6	279.3	221.1	200.6	190.8	186.2	186.7
27.5°	2719.0	2280.3	1331.0	704.0	382.6	244.8	206.7	189.3	179.5	174.9	175.4
30°	2942.2	2488.6	1382.4	660.3	346.6	230.9	199.0	182.6	171.8	165.1	164.6
32.5°	3151.0	2672.2	1424.0	629.0	326.1	206.2	180.0	167.7	158.4	150.7	149.1
35°	3381.9	2845.0	1443.6	627.9	312.7	186.2	164.6	149.7	140.4	131.7	130.1
37.5°	3643.7	3056.4	1460.0	634.1	305.5	173.3	157.4	143.0	135.3	126.5	124.5
40°	3916.2	3263.1	1472.9	639.3	304.5	164.6	151.7	138.9	131.1	121.9	119.8
42.5°	4150.2	3446.2	1490.4	637.2	297.3	163.0	148.1	135.3	128.1	118.8	116.2
45°	4337.4	3591.7	1517.6	636.7	286.5	166.6	147.1	134.2	125.5	115.7	113.7
47.5°	4511.8	3755.8	1575.2	634.6	274.6	165.6	152.7	133.2	124.5	114.7	113.1
50°	4711.3	3976.4	1673.5	619.2	258.2	158.4	163.0	132.2	121.9	113.1	111.6
52.5°	4989.0	4299.4	1819.0	591.4	235.5	150.7	164.6	131.7	117.8	110.1	108.0
55°	5315.6	4645.5	1975.9	551.3	205.7	137.3	156.3	129.6	113.7	105.4	102.3
57.5°	5568.1	4901.1	2085.4	493.7	176.4	129.6	139.4	125.0	108.5	100.3	97.7
60°	5639.1	4912.4	2104.9	424.8	161.5	124.5	119.8	136.3	104.4	95.7	93.1
62.5°	5554.2	4687.7	1977.4	376.5	156.3	119.3	109.0	130.1	100.3	91.5	89.0
65°	5302.7	4308.1	1692.0	369.3	161.5	114.7	103.4	103.9	96.2	87.4	84.9
67.5°	4715.4	3749.6	1333.0	373.9	167.7	110.1	99.3	94.6	91.5	83.8	80.7
70°	3835.0	3018.8	1050.2	382.1	173.3	103.9	94.1	88.5	85.9	77.7	76.1
72.5°	2954.0	2416.1	828.5	376.5	179.0	97.7	86.9	82.3	79.2	71.5	69.9
75°	2097.7	1919.8	608.9	323.0	164.1	89.0	78.7	74.6	72.0	63.8	63.3
77.5°	1512.0	1437.9	423.8	242.7	129.6	78.2	69.4	65.8	64.3	55.0	55.0
80°	1206.0	1094.4	253.5	158.4	94.6	64.8	58.1	56.6	55.0	45.8	46.3
82.5°	866.6	759.1	162.0	98.7	69.4	49.4	45.3	44.7	42.2	33.9	33.9
85°	444.3	387.8	103.9	66.3	48.9	31.9	29.8	28.8	27.3	21.1	21.1
87.5°	86.4	118.8	57.6	32.4	23.7	11.3	11.3	9.8	11.3	7.7	8.2
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):

	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°	185°
0°	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1
2.5°	1994.4	1984.1	1976.9	1973.3	2025.2	2046.8	2071.5	2107.0	2131.2	2120.9	2153.8
5°	1489.4	1496.6	1513.0	1538.7	1611.2	1645.7	1667.8	1697.1	1718.2	1697.1	1732.1
7.5°	1018.3	1029.1	1064.0	1117.0	1204.4	1243.0	1250.7	1251.2	1246.6	1212.2	1235.8
10°	749.8	728.2	735.9	774.0	852.2	886.6	890.2	881.0	879.4	865.5	892.3
12.5°	581.1	551.3	533.8	540.0	598.6	626.9	631.5	636.7	657.8	664.4	697.4
15°	433.5	418.1	405.3	399.6	438.2	460.3	462.9	475.2	497.3	503.5	531.8
17.5°	305.0	309.1	315.8	318.3	346.1	360.5	356.4	356.4	360.0	358.5	374.4
20°	233.0	241.2	254.1	266.4	291.6	299.8	289.5	276.7	268.5	264.3	267.9
22.5°	205.7	211.4	219.6	235.5	256.6	260.7	247.4	237.1	229.4	225.3	225.8
25°	190.8	196.5	203.1	216.0	234.0	236.1	223.7	217.0	210.9	206.7	205.7
27.5°	177.9	181.5	185.7	193.9	212.4	213.4	205.2	201.1	197.0	193.9	192.9
30°	166.1	167.7	169.2	177.4	191.3	192.9	188.7	186.7	185.1	183.1	183.1
32.5°	150.7	152.7	155.3	162.5	175.9	177.9	175.4	173.8	171.3	170.2	168.7
35°	132.2	137.3	143.0	151.7	166.1	167.1	164.1	159.4	153.3	151.7	150.7
37.5°	124.5	125.5	132.7	143.0	157.9	158.9	154.8	147.1	142.5	143.0	144.0
40°	119.3	120.9	125.0	135.3	150.2	151.7	148.1	142.5	137.8	138.3	139.9
42.5°	115.2	117.3	119.8	126.5	141.4	144.5	143.5	138.3	133.7	134.7	136.8
45°	113.1	114.7	114.7	119.3	133.7	138.3	138.9	134.7	131.1	132.2	134.7
47.5°	112.1	112.1	110.6	114.2	128.6	133.2	134.2	132.2	130.1	131.1	133.7
50°	110.6	108.5	107.0	110.1	124.5	128.6	129.6	128.1	129.1	131.1	132.7
52.5°	105.9	103.9	103.9	105.9	120.3	124.5	125.0	123.9	126.0	128.6	131.1
55°	100.3	100.3	100.8	102.9	118.3	121.4	120.9	119.8	121.9	125.0	127.5
57.5°	95.1	94.6	97.2	99.8	115.7	117.8	116.7	116.7	118.3	120.9	123.4
60°	92.1	89.5	91.5	95.7	113.1	115.2	113.7	113.1	115.7	117.8	119.8
62.5°	89.0	86.4	87.9	92.1	109.5	111.1	110.1	110.1	112.6	114.2	116.2
65°	84.3	83.3	84.3	88.5	106.5	107.0	107.0	107.5	109.5	110.6	112.6
67.5°	80.2	80.2	80.7	84.9	103.9	102.9	102.9	105.4	105.9	107.0	109.0
70°	75.1	76.1	76.1	81.3	101.8	98.2	98.7	100.8	101.8	102.9	103.4
72.5°	69.4	69.9	71.0	77.7	98.7	93.6	94.1	95.7	96.2	97.7	98.2
75°	63.3	63.8	65.3	74.1	96.7	89.0	87.9	89.0	90.0	91.0	90.5
77.5°	56.1	57.1	58.6	72.0	90.0	87.9	80.2	81.3	82.3	82.3	81.8
80°	47.3	48.9	51.4	68.9	76.1	84.9	71.5	72.0	72.5	72.5	71.5
82.5°	35.5	38.6	42.2	57.1	59.7	72.5	61.7	62.7	61.2	60.2	59.7
85°	23.1	25.7	30.9	39.6	43.7	57.1	50.9	51.4	48.3	47.8	47.8
87.5°	9.3	9.8	13.9	20.1	26.2	35.5	36.5	37.5	35.0	35.0	36.0
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°	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1
2.5°	2203.7	2255.1	2314.3	2374.4	2423.8	2487.6	2549.3	2615.1	2648.5	2668.1	2723.1
5°	1786.6	1857.1	1940.9	2035.0	2113.2	2246.9	2390.9	2551.3	2628.5	2704.6	2848.6
7.5°	1278.0	1346.9	1444.6	1566.5	1677.6	1854.0	2043.7	2260.8	2367.7	2491.2	2727.2
10°	948.8	1021.9	1110.3	1213.7	1323.2	1506.8	1719.8	1963.5	2081.3	2220.7	2489.1
12.5°	769.4	854.7	946.3	1038.8	1133.0	1256.4	1479.6	1750.6	1877.1	2017.5	2286.5
15°	600.2	691.7	790.4	891.2	984.8	1122.7	1350.5	1670.9	1815.4	1951.2	2171.3
17.5°	424.8	511.2	622.3	744.7	880.4	1043.5	1322.7	1705.9	1881.2	2023.2	2170.8
20°	289.5	349.2	460.3	605.3	773.0	979.7	1333.0	1828.8	2047.9	2203.7	2259.7
22.5°	231.4	259.7	334.8	482.4	680.4	933.4	1375.2	1997.5	2287.0	2476.8	2421.7
25°	210.3	226.3	265.4	381.1	598.1	902.6	1457.5	2220.1	2554.9	2747.3	2616.7
27.5°	197.5	211.4	236.6	313.2	527.1	882.5	1561.9	2482.4	2856.8	3014.7	2819.8
30°	189.3	203.1	226.3	281.3	473.7	852.7	1653.4	2722.1	3098.0	3200.4	2929.3
32.5°	173.3	184.1	203.1	252.0	433.5	817.7	1732.6	2936.5	3325.8	3359.8	3061.0
35°	156.9	168.2	187.2	228.3	409.9	790.4	1774.3	3126.8	3551.6	3519.2	3191.6
37.5°	150.7	159.9	177.4	211.4	397.0	772.4	1790.2	3314.0	3793.8	3695.6	3282.6
40°	146.6	154.8	170.2	200.1	393.4	755.5	1786.6	3492.0	4028.9	3878.2	3354.1
42.5°	143.5	150.7	165.1	192.3	383.7	739.5	1774.8	3645.7	4217.1	4035.6	3422.5
45°	140.9	148.6	163.0	196.5	365.7	722.0	1767.6	3786.1	4361.6	4168.2	3514.1
47.5°	139.9	148.6	163.5	195.4	346.1	702.5	1793.3	3942.0	4487.6	4279.8	3636.0
50°	138.3	148.1	174.9	186.2	319.4	678.3	1880.2	4127.6	4619.8	4405.3	3793.8
52.5°	135.8	147.6	186.7	179.0	284.9	644.9	2021.1	4389.9	4848.1	4649.6	4027.3
55°	132.7	148.6	178.5	167.7	248.4	601.7	2162.0	4749.4	5218.4	5043.5	4362.6
57.5°	129.1	147.1	168.7	157.4	218.1	547.2	2269.0	5044.1	5523.9	5449.8	4774.6
60°	126.5	150.7	151.7	151.2	198.5	495.3	2279.3	5025.0	5611.8	5713.7	5177.8
62.5°	123.4	153.8	138.3	146.6	188.7	446.9	2152.3	4713.9	5463.2	5679.7	5506.4
65°	119.3	134.2	131.1	142.5	188.7	421.2	1856.6	4196.0	5052.3	5358.8	5684.9
67.5°	115.2	121.9	126.0	136.8	192.9	397.0	1491.9	3539.3	4404.3	4840.9	5484.3
70°	109.5	115.2	120.3	131.7	190.8	380.1	1174.1	2836.8	3624.6	4124.5	4929.4
72.5°	104.4	108.5	113.7	123.9	190.8	372.3	943.2	2225.3	2767.3	3188.5	4083.4
75°	96.7	100.3	104.9	116.2	187.2	340.5	708.2	1783.0	2024.7	2288.5	3222.0
77.5°	89.0	91.5	95.1	106.5	168.7	284.4	500.9	1380.8	1500.2	1646.2	2511.7
80°	79.2	81.3	83.8	95.1	139.9	220.6	326.1	1080.0	1121.6	1192.1	1652.4
82.5°	67.9	71.0	71.5	81.8	112.6	159.9	193.9	740.0	739.5	842.9	1165.9
85°	55.5	57.1	58.1	64.3	83.3	106.5	127.5	404.2	360.5	505.0	1012.6
87.5°	41.7	40.1	41.7	43.2	55.0	62.7	68.4	74.6	44.7	91.5	588.9
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°	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1	2418.1
2.5°	2752.4	2782.8	2764.8	2743.2	2689.2	2610.0	2549.3	2496.3
5°	2948.4	3004.4	2979.7	2899.5	2759.6	2600.7	2433.6	2331.7
7.5°	2923.7	3034.8	3025.0	2891.3	2690.7	2456.7	2221.7	2087.5
10°	2726.2	2882.0	2908.8	2772.0	2559.6	2297.8	2025.7	1874.0
12.5°	2511.2	2642.4	2696.9	2644.9	2444.9	2179.0	1901.8	1750.1
15°	2331.2	2397.6	2451.6	2485.0	2361.1	2136.8	1880.2	1723.9
17.5°	2198.0	2185.2	2230.4	2310.7	2315.8	2192.9	1977.9	1803.1
20°	2133.7	2032.9	2059.2	2171.8	2303.5	2335.3	2172.8	1966.1
22.5°	2130.1	1972.8	1977.9	2099.3	2338.9	2529.7	2416.1	2180.5
25°	2185.7	1966.1	1970.7	2091.6	2401.7	2725.7	2697.4	2422.8
27.5°	2280.3	1994.9	1991.8	2125.5	2485.5	2889.2	2981.3	2719.0
30°	2382.7	2036.5	2028.8	2180.0	2567.8	2990.0	3182.9	2942.2
32.5°	2510.2	2110.6	2083.9	2259.7	2649.1	3086.7	3355.2	3151.0
35°	2631.6	2219.1	2180.5	2373.9	2736.0	3194.2	3548.0	3381.9
37.5°	2755.5	2381.1	2359.5	2538.5	2858.9	3310.9	3768.6	3643.7
40°	2914.4	2611.5	2601.2	2777.6	3022.9	3438.5	4016.0	3916.2
42.5°	3085.7	2856.3	2847.6	3052.3	3226.6	3566.5	4227.9	4150.2
45°	3260.0	3153.1	3155.1	3345.4	3441.0	3687.4	4394.5	4337.4
47.5°	3465.7	3477.6	3551.1	3649.3	3649.8	3822.1	4542.1	4511.8
50°	3727.0	3869.4	4005.2	4020.6	3860.7	4000.1	4722.6	4711.3
52.5°	4022.7	4321.5	4479.4	4430.5	4066.4	4220.7	4989.5	4989.0
55°	4374.0	4794.1	4942.7	4859.4	4312.8	4508.2	5338.2	5315.6
57.5°	4738.1	5248.7	5368.6	5260.1	4620.8	4843.0	5687.9	5568.1
60°	5131.5	5640.1	5762.0	5599.0	4966.4	5176.7	5919.4	5639.1
62.5°	5389.1	5869.0	5956.4	5800.1	5276.0	5516.7	5993.9	5554.2
65°	5402.5	5716.7	5739.9	5684.3	5407.7	5811.9	5885.9	5302.7
67.5°	5035.3	5053.8	5084.2	5143.8	5126.3	5680.2	5469.4	4715.4
70°	4250.0	4003.2	4102.9	4160.5	4290.1	5052.3	4699.5	3835.0
72.5°	3249.7	2889.2	3002.4	2982.8	3252.3	4144.1	3595.3	2954.0
75°	2338.9	1970.2	1978.9	1980.0	2336.9	3307.8	2451.6	2097.7
77.5°	1589.6	1394.2	1423.0	1405.0	1563.9	2591.5	1765.0	1512.0
80°	1087.2	1082.0	1088.2	1046.0	1043.0	1675.0	1306.8	1206.0
82.5°	806.4	745.2	736.4	691.7	799.2	1280.6	992.0	866.6
85°	636.2	412.5	358.5	432.5	692.2	1178.2	604.8	444.3
87.5°	269.5	162.0	98.2	194.4	384.7	863.5	167.7	86.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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