

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: P195253

Luminaire Tested: **NAV-AF-01-D-UNV-SLL-7060**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195253
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-01-D-UNV-SLL-7060
Description: NAVION ROADWAY AND AREA LUMINAIRE
(1) 70 CRI, 5700K, 1050mA LIGHTSQUARE WITH 16 LEDS EACH AND SPILL LIGHT
ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5396 lumens
Efficiency: N/A
Efficacy: 91.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

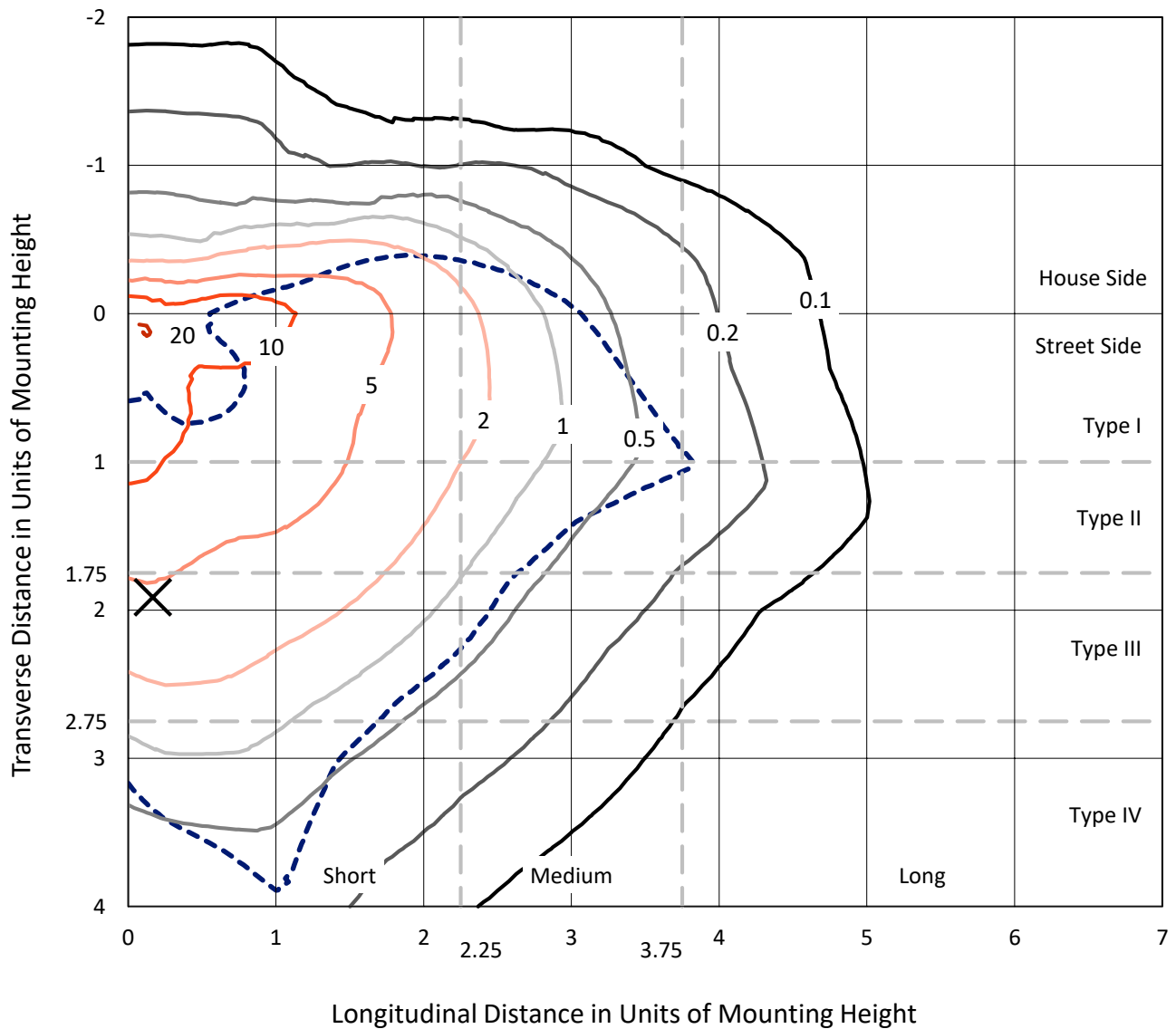
Input Watts (W): 59
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

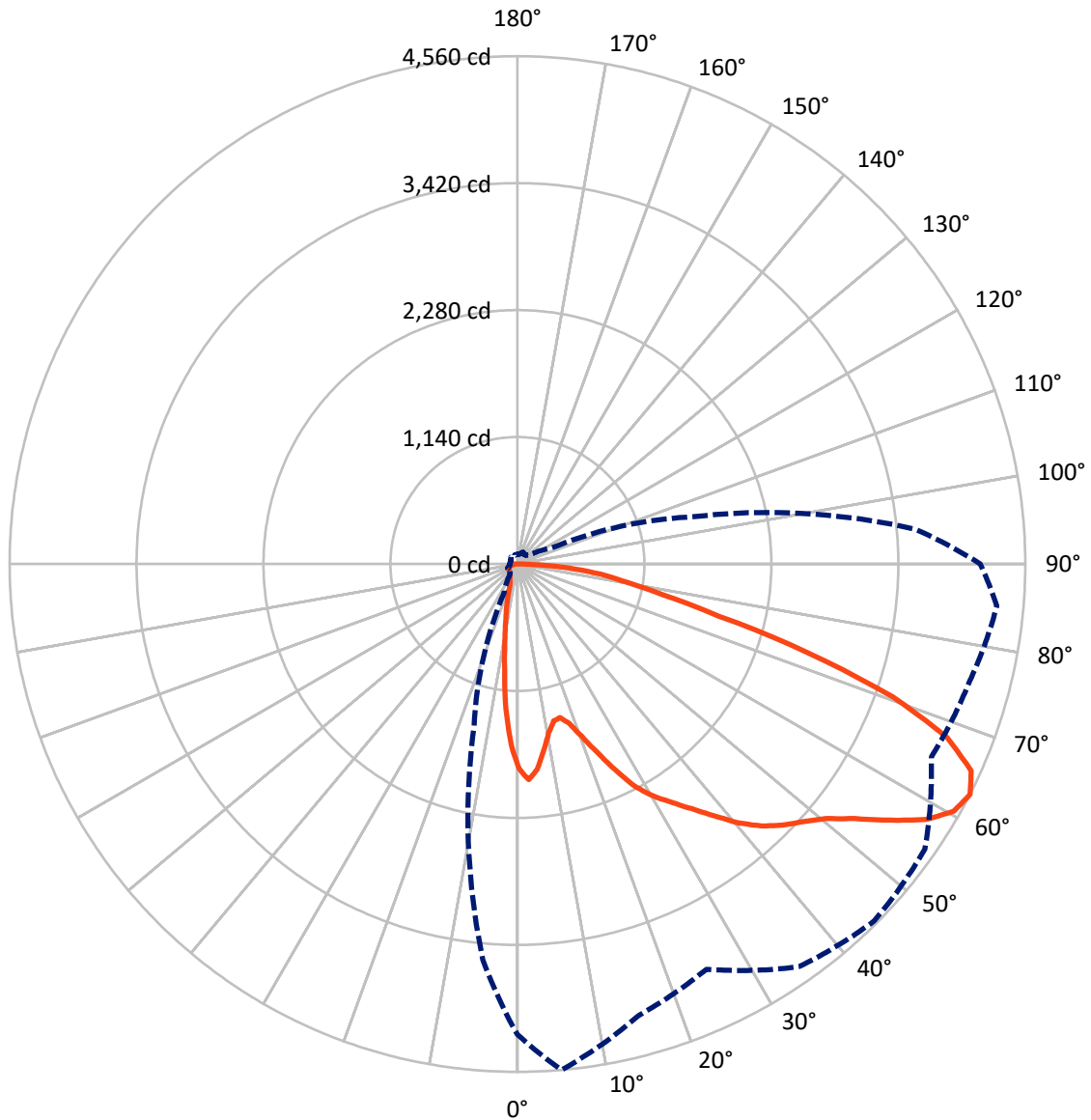
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 21.1 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	955.9	0.0	955.9
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	4440.1	0.0	4440.1
	% Fixture	82.3	0.0	82.3
Total	Lumens	5396.0	0.0	5396.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.8	2.5
10°-20°	244.4	4.5
20°-30°	351.5	6.5
30°-40°	538.3	10.0
40°-50°	787.0	14.6
50°-60°	1145.1	21.2
60°-70°	1326.7	24.6
70°-80°	691.6	12.8
80°-90°	177.8	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°	5396.0	100.0
0°-180°	5396.0	100.0



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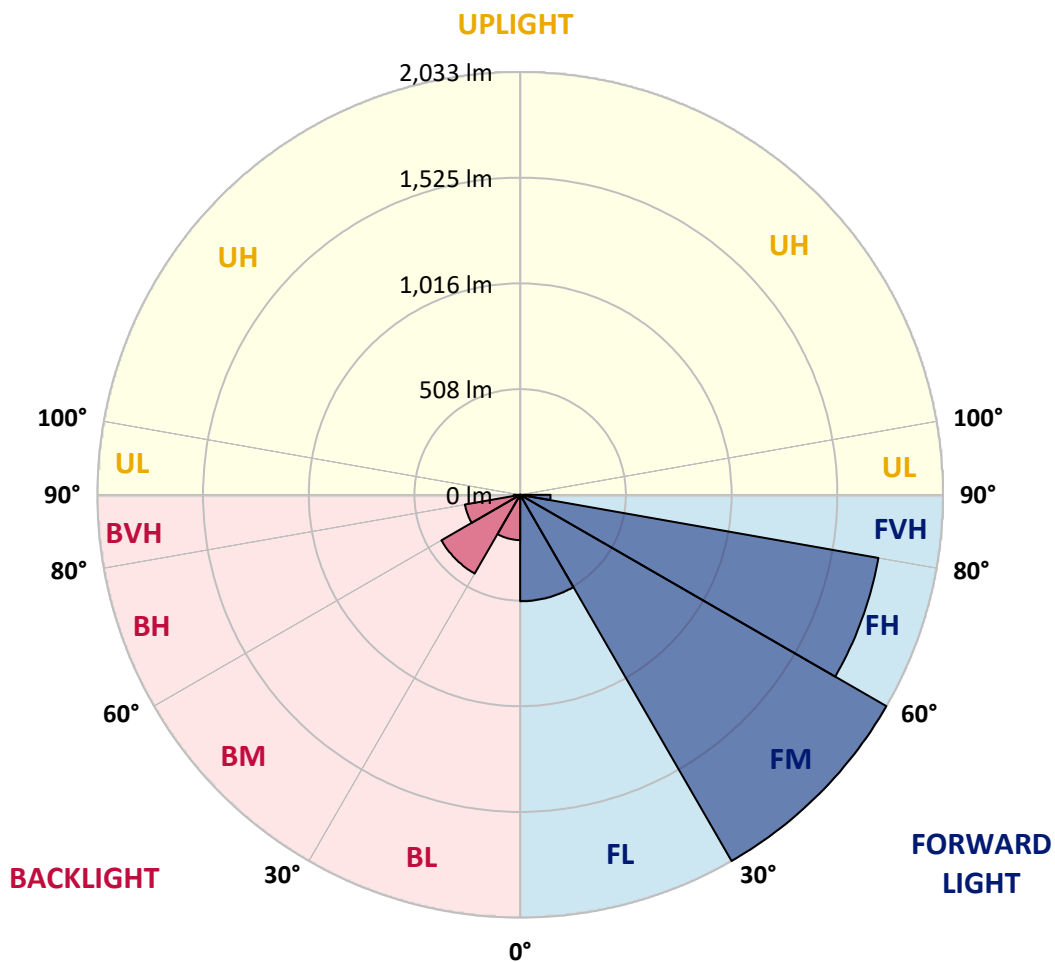
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	512.1	9.5			
FM	(30°-60°)	2033.0	37.7			
FH	(60°-80°)	1748.8	32.4			G1/1800
FVH	(80°-90°)	146.3	2.7			G2/225
BL	(0°-30°)	217.5	4.0	B1/500		
BM	(30°-60°)	437.4	8.1	B1/1000		
BH	(60°-80°)	269.5	5.0	B1/500		G1/500
BVH	(80°-90°)	31.5	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°	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6
2.5°	1899.1	1939.4	1985.5	2045.8	2086.9	2103.3	2117.0	2093.9	2071.6	2029.7	2014.9
5°	1773.9	1851.3	1978.5	2099.4	2205.8	2266.8	2285.6	2243.0	2167.1	2057.5	1999.6
7.5°	1588.0	1690.2	1868.9	2047.0	2199.5	2301.3	2308.7	2224.2	2074.7	1895.2	1801.3
10°	1425.7	1541.1	1748.1	1947.2	2108.8	2212.8	2192.5	2074.0	1893.6	1689.4	1583.3
12.5°	1331.4	1446.8	1657.7	1859.9	2012.1	2051.7	2010.2	1910.4	1739.4	1534.8	1428.0
15°	1311.4	1430.4	1625.6	1796.2	1890.5	1865.0	1824.0	1773.5	1651.8	1484.4	1381.1
17.5°	1371.7	1504.7	1668.2	1761.7	1757.8	1696.8	1662.4	1672.2	1651.4	1539.1	1431.2
20°	1495.7	1653.0	1776.6	1752.4	1652.2	1566.5	1546.6	1623.2	1719.1	1676.5	1557.9
22.5°	1658.9	1838.0	1924.5	1779.4	1597.0	1504.7	1500.8	1620.5	1842.3	1884.2	1739.8
25°	1843.1	2052.0	2073.6	1827.1	1591.2	1499.2	1495.7	1662.8	1990.6	2090.0	1943.7
27.5°	2068.5	2268.0	2198.0	1890.9	1617.0	1515.3	1517.6	1734.8	2145.2	2293.4	2173.3
30°	2238.3	2421.4	2274.7	1953.5	1658.5	1543.4	1549.3	1812.6	2228.5	2434.7	2356.8
32.5°	2397.1	2552.4	2348.2	2015.3	1719.1	1585.3	1605.6	1909.6	2328.7	2556.0	2530.1
35°	2572.8	2699.2	2430.0	2081.4	1806.0	1658.9	1688.2	2002.0	2428.0	2677.2	2701.9
37.5°	2771.9	2867.0	2518.8	2174.9	1931.2	1795.0	1811.4	2096.3	2497.3	2811.4	2886.2
40°	2979.3	3055.2	2615.8	2299.7	2113.1	1978.9	1986.7	2217.1	2551.7	2950.3	3065.0
42.5°	3157.3	3216.4	2713.2	2454.6	2322.0	2166.3	2172.9	2347.4	2603.7	3070.0	3208.2
45°	3299.7	3343.1	2805.2	2617.8	2545.0	2400.2	2398.7	2480.1	2673.3	3171.0	3318.1
47.5°	3432.3	3455.4	2907.7	2776.6	2776.2	2701.5	2645.6	2636.6	2766.1	3255.9	3413.9
50°	3584.1	3592.7	3043.1	2937.0	3058.7	3047.0	2943.7	2835.3	2886.2	3351.3	3514.5
52.5°	3795.4	3795.8	3210.9	3093.5	3370.5	3407.7	3287.6	3060.3	3063.8	3537.2	3688.2
55°	4043.8	4061.1	3429.6	3280.9	3696.8	3760.2	3647.1	3327.5	3318.9	3836.9	3969.9
57.5°	4235.9	4327.1	3684.3	3515.3	4001.6	4084.1	3993.0	3604.5	3632.3	4146.0	4202.3
60°	4289.9	4503.2	3938.2	3778.2	4259.4	4383.4	4290.7	3903.8	3939.0	4346.7	4269.2
62.5°	4225.4	4559.9	4196.8	4013.7	4412.4	4531.3	4464.8	4099.8	4189.0	4320.8	4156.1
65°	4034.1	4477.7	4421.4	4113.9	4324.4	4366.6	4349.0	4110.0	4324.8	4076.7	3843.5
67.5°	3587.3	4160.8	4321.2	3899.9	3913.2	3867.8	3844.7	3830.6	4172.2	3682.7	3350.6
70°	2917.5	3575.1	3843.5	3263.7	3165.1	3121.3	3045.4	3233.2	3750.0	3137.7	2757.4
72.5°	2247.3	2735.1	3152.6	2474.2	2269.2	2284.1	2198.0	2472.2	3106.4	2425.7	2105.3
75°	1595.9	1865.0	2516.4	1777.8	1506.3	1505.5	1498.8	1779.4	2451.1	1741.0	1540.3
77.5°	1150.2	1342.7	1971.5	1189.8	1068.9	1082.6	1060.6	1209.3	1910.8	1252.4	1141.2
80°	917.5	994.1	1274.3	793.4	795.8	827.9	823.2	827.1	1257.0	906.9	853.3
82.5°	659.2	754.7	974.2	608.0	526.2	560.3	566.9	613.5	886.9	641.2	562.6
85°	338.0	460.1	896.3	526.6	329.0	272.7	313.8	484.0	770.3	384.2	274.3
87.5°	65.7	127.5	656.9	292.6	147.9	74.7	123.2	205.0	448.0	69.6	34.0
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°	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6
2.5°	1989.4	1939.4	1892.4	1843.9	1806.3	1760.6	1715.6	1676.5	1638.5	1613.5	1621.3
5°	1940.9	1818.9	1709.3	1607.6	1548.1	1476.5	1412.8	1359.2	1317.7	1291.1	1307.1
7.5°	1719.9	1554.8	1410.4	1276.2	1191.7	1099.0	1024.7	972.2	940.1	922.1	948.4
10°	1493.7	1308.3	1146.3	1006.7	923.3	844.7	777.4	721.8	678.8	658.5	669.0
12.5°	1331.8	1125.6	955.8	861.9	790.3	719.9	650.2	585.3	530.5	505.5	500.4
15°	1271.1	1027.4	854.1	749.2	678.0	601.3	526.2	456.6	404.5	383.0	378.3
17.5°	1297.7	1006.3	793.8	669.8	566.5	473.4	388.9	323.2	284.8	272.7	273.9
20°	1391.2	1014.1	745.3	588.0	460.5	350.2	265.7	220.3	203.8	201.1	204.2
22.5°	1519.6	1046.2	710.1	517.6	367.0	254.7	197.6	176.1	171.8	171.4	174.5
25°	1689.0	1108.8	686.6	455.0	289.9	201.9	172.1	160.0	156.5	157.3	160.4
27.5°	1888.5	1188.2	671.4	401.0	238.3	180.0	160.8	150.2	146.7	147.5	149.8
30°	2070.8	1257.8	648.7	360.3	214.0	172.1	154.5	144.0	139.3	139.3	140.8
32.5°	2234.0	1318.1	622.1	329.8	191.7	154.5	140.1	131.8	128.3	129.5	130.3
35°	2378.7	1349.8	601.3	311.8	173.7	142.4	127.9	119.3	114.6	115.4	116.6
37.5°	2521.1	1361.9	587.6	302.0	160.8	135.0	121.7	114.6	109.5	108.8	108.4
40°	2656.5	1359.2	574.7	299.3	152.2	129.5	117.8	111.5	106.4	105.2	104.9
42.5°	2773.5	1350.2	562.6	291.9	146.3	125.6	114.6	109.2	104.1	102.5	101.7
45°	2880.3	1344.7	549.3	278.2	149.5	124.0	113.1	107.2	102.5	100.5	99.8
47.5°	2998.8	1364.2	534.4	263.3	148.7	124.4	113.1	106.4	101.7	99.8	99.0
50°	3140.1	1430.4	516.0	243.0	141.6	133.0	112.7	105.2	100.9	99.8	98.2
52.5°	3339.6	1537.6	490.6	216.7	136.2	142.0	112.3	103.3	99.8	97.8	95.9
55°	3613.1	1644.8	457.7	189.0	127.5	135.8	113.1	100.9	97.0	95.1	92.7
57.5°	3837.3	1726.1	416.3	165.9	119.7	128.3	111.9	98.2	93.9	91.9	90.0
60°	3822.8	1734.0	376.8	151.0	115.0	115.4	114.6	96.2	91.2	89.6	88.0
62.5°	3586.1	1637.3	340.0	143.6	111.5	105.2	117.0	93.9	88.4	86.9	85.7
65°	3192.1	1412.4	320.4	143.6	108.4	99.8	102.1	90.8	85.7	84.1	83.3
67.5°	2692.5	1135.0	302.0	146.7	104.1	95.9	92.7	87.6	82.9	81.4	80.6
70°	2158.1	893.2	289.1	145.1	100.2	91.5	87.6	83.3	78.6	78.2	77.5
72.5°	1692.9	717.5	283.3	145.1	94.3	86.5	82.6	79.4	74.7	74.3	73.2
75°	1356.4	538.7	259.0	142.4	88.4	79.8	76.3	73.6	68.9	69.2	68.5
77.5°	1050.5	381.1	216.4	128.3	81.0	72.4	69.6	67.7	62.2	62.6	62.6
80°	821.6	248.0	167.8	106.4	72.4	63.8	61.8	60.3	54.4	55.2	55.2
82.5°	563.0	147.5	121.7	85.7	62.2	54.4	54.0	51.6	45.4	45.8	46.6
85°	307.5	97.0	81.0	63.4	48.9	44.2	43.4	42.3	36.4	36.4	36.8
87.5°	56.7	52.0	47.7	41.9	32.9	31.7	30.5	31.7	27.4	26.6	26.6
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°	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6
2.5°	1602.9	1575.9	1557.1	1540.7	1501.2	1503.9	1509.4	1517.2	1492.6	1505.5	1521.5
5°	1291.1	1268.8	1252.0	1225.8	1170.6	1151.0	1138.5	1133.0	1096.3	1104.1	1121.3
7.5°	951.9	951.5	945.6	916.3	849.8	809.5	782.9	774.7	752.0	760.6	786.8
10°	670.2	677.2	674.5	648.3	588.8	559.9	554.0	570.4	570.8	587.6	632.6
12.5°	484.4	480.4	476.9	455.4	410.8	406.1	419.4	442.1	447.6	465.6	512.5
15°	361.5	352.1	350.2	333.3	304.0	308.3	318.1	329.8	330.2	342.7	381.5
17.5°	271.1	271.1	274.3	263.3	242.2	240.2	235.1	232.0	227.3	232.4	253.5
20°	210.5	220.3	228.1	221.8	202.7	193.3	183.5	177.2	173.7	174.1	180.4
22.5°	180.4	188.2	198.4	195.2	179.2	167.1	160.8	156.5	153.8	153.8	157.3
25°	165.1	170.2	179.6	178.0	164.3	154.5	149.5	145.1	142.0	141.6	145.1
27.5°	153.0	156.1	162.4	161.6	147.5	141.2	138.1	135.4	133.4	133.0	136.5
30°	142.0	143.6	146.7	145.5	135.0	128.7	127.5	126.4	125.2	125.6	130.7
32.5°	132.2	133.4	135.4	133.8	123.6	118.2	116.2	114.6	113.5	114.6	120.5
35°	121.3	124.8	127.2	126.4	115.4	108.8	104.5	100.5	99.0	100.2	106.8
37.5°	111.9	117.8	120.9	120.1	108.8	100.9	95.5	94.7	94.7	96.2	102.9
40°	108.4	112.7	115.4	114.2	102.9	95.1	91.9	90.8	91.2	92.7	99.8
42.5°	105.2	109.2	109.9	107.6	96.2	91.2	89.2	87.6	88.4	90.4	97.4
45°	102.5	105.6	105.2	101.7	90.8	87.2	87.2	86.1	86.5	88.0	95.5
47.5°	100.5	102.1	101.3	97.8	86.9	84.1	85.3	85.3	86.1	87.2	94.7
50°	97.4	98.6	97.8	94.7	83.7	81.4	82.6	84.1	84.9	86.1	92.7
52.5°	94.3	95.1	94.7	91.5	80.6	79.0	79.0	80.6	82.2	83.7	89.6
55°	91.2	91.9	92.3	90.0	78.2	76.7	76.3	76.3	77.9	80.2	86.5
57.5°	88.8	88.8	89.6	88.0	75.9	73.9	72.0	72.4	74.3	76.3	82.6
60°	86.1	86.5	87.6	86.1	72.8	69.6	68.1	70.0	70.8	72.8	79.4
62.5°	83.7	83.7	84.5	83.3	70.0	66.9	65.7	67.7	67.7	69.6	76.3
65°	81.8	81.4	81.4	81.0	67.3	64.2	63.4	64.2	64.6	66.5	73.2
67.5°	80.2	78.2	78.2	79.0	64.6	61.4	61.0	61.0	61.4	63.8	69.6
70°	76.7	75.1	74.7	77.5	61.8	57.9	57.9	57.1	57.9	59.1	65.3
72.5°	72.8	71.6	71.2	75.1	59.1	54.0	53.2	52.8	53.2	54.4	60.3
75°	67.7	66.9	67.7	73.6	56.3	49.7	48.5	48.1	48.1	48.5	54.8
77.5°	61.8	61.0	66.9	68.5	54.8	44.6	43.4	42.6	41.9	41.9	48.9
80°	54.8	54.4	64.6	57.9	52.4	39.1	37.2	36.0	35.2	34.8	41.9
82.5°	47.7	46.9	55.2	45.4	43.4	32.1	29.3	27.0	25.8	25.8	32.1
85°	39.1	38.7	43.4	33.3	30.1	23.5	19.6	17.6	16.0	16.0	20.7
87.5°	28.6	27.8	27.0	20.0	15.3	10.6	7.4	7.0	6.3	5.9	8.6
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°	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6	1839.6
2.5°	1545.4	1577.9	1639.3	1689.8	1757.1	1811.0	1872.5	1899.1
5°	1153.0	1204.2	1298.1	1378.3	1489.4	1592.3	1709.7	1773.9
7.5°	827.1	903.0	974.2	1074.3	1213.2	1351.3	1503.1	1588.0
10°	684.3	753.9	814.9	886.2	993.4	1148.7	1329.8	1425.7
12.5°	566.9	642.0	706.6	782.9	872.9	1013.3	1219.9	1331.4
15°	434.7	516.4	593.9	685.8	796.2	956.6	1187.0	1311.4
17.5°	297.7	385.4	480.8	593.1	726.1	932.7	1218.3	1371.7
20°	202.3	266.4	370.1	503.1	663.1	921.4	1287.2	1495.7
22.5°	166.3	195.2	273.1	418.6	611.5	933.9	1399.1	1658.9
25°	152.6	168.2	212.4	344.3	572.0	967.1	1550.5	1843.1
27.5°	144.0	157.3	186.2	291.1	535.6	1012.5	1734.8	2068.5
30°	138.9	151.4	175.7	263.7	502.4	1051.6	1893.2	2238.3
32.5°	127.5	136.9	156.9	248.0	478.5	1083.3	2032.9	2397.1
35°	113.9	125.2	141.6	237.9	477.7	1098.2	2164.3	2572.8
37.5°	108.8	119.7	131.8	232.4	482.4	1110.7	2325.1	2771.9
40°	105.6	115.4	125.2	231.6	486.3	1120.5	2482.4	2979.3
42.5°	102.9	112.7	124.0	226.1	484.7	1133.8	2621.7	3157.3
45°	102.1	111.9	126.8	217.9	484.4	1154.5	2732.4	3299.7
47.5°	101.3	116.2	126.0	208.9	482.8	1198.4	2857.2	3432.3
50°	100.5	124.0	120.5	196.4	471.1	1273.1	3025.1	3584.1
52.5°	100.2	125.2	114.6	179.2	449.9	1383.8	3270.8	3795.4
55°	98.6	118.9	104.5	156.5	419.4	1503.1	3534.1	4043.8
57.5°	95.1	106.0	98.6	134.2	375.6	1586.5	3728.5	4235.9
60°	103.7	91.2	94.7	122.8	323.2	1601.3	3737.1	4289.9
62.5°	99.0	82.9	90.8	118.9	286.4	1504.3	3566.1	4225.4
65°	79.0	78.6	87.2	122.8	280.9	1287.2	3277.4	4034.1
67.5°	72.0	75.5	83.7	127.5	284.4	1014.1	2852.5	3587.3
70°	67.3	71.6	79.0	131.8	290.7	798.9	2296.6	2917.5
72.5°	62.6	66.1	74.3	136.2	286.4	630.3	1838.0	2247.3
75°	56.7	59.9	67.7	124.8	245.7	463.2	1460.5	1595.9
77.5°	50.1	52.8	59.5	98.6	184.7	322.4	1093.9	1150.2
80°	43.0	44.2	49.3	72.0	120.5	192.9	832.6	917.5
82.5°	34.0	34.4	37.6	52.8	75.1	123.2	577.5	659.2
85°	21.9	22.7	24.3	37.2	50.5	79.0	295.0	338.0
87.5°	7.4	8.6	8.6	18.0	24.6	43.8	90.4	65.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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