

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: P270544

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-7027-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270544
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)
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-T2R-7027-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 2700K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24366.2 lumens
Efficiency: N/A
Efficacy: 94.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G3

Input Watts (W): 258
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

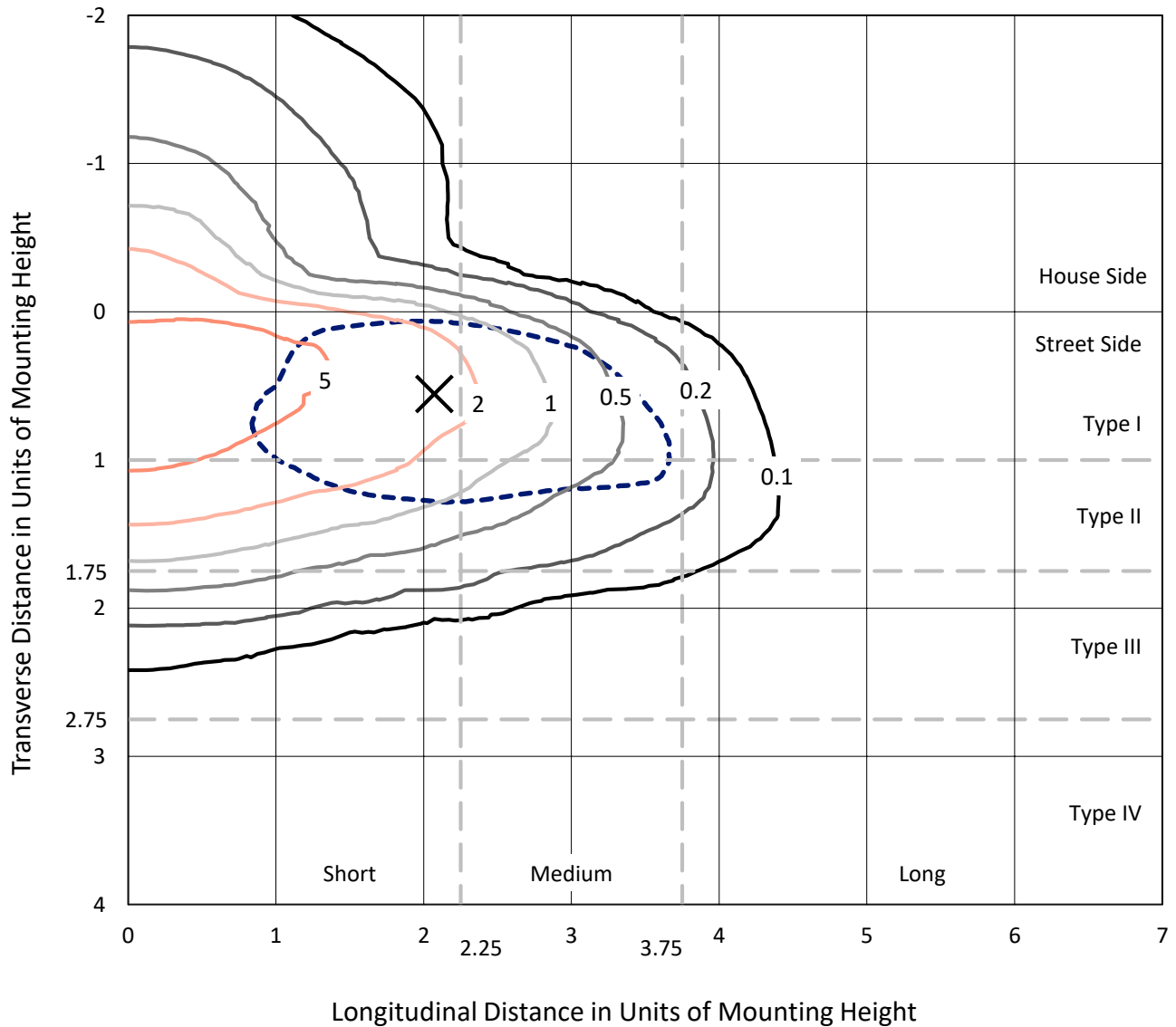


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Iso-Footcandle Lines of Horizontal Illumination

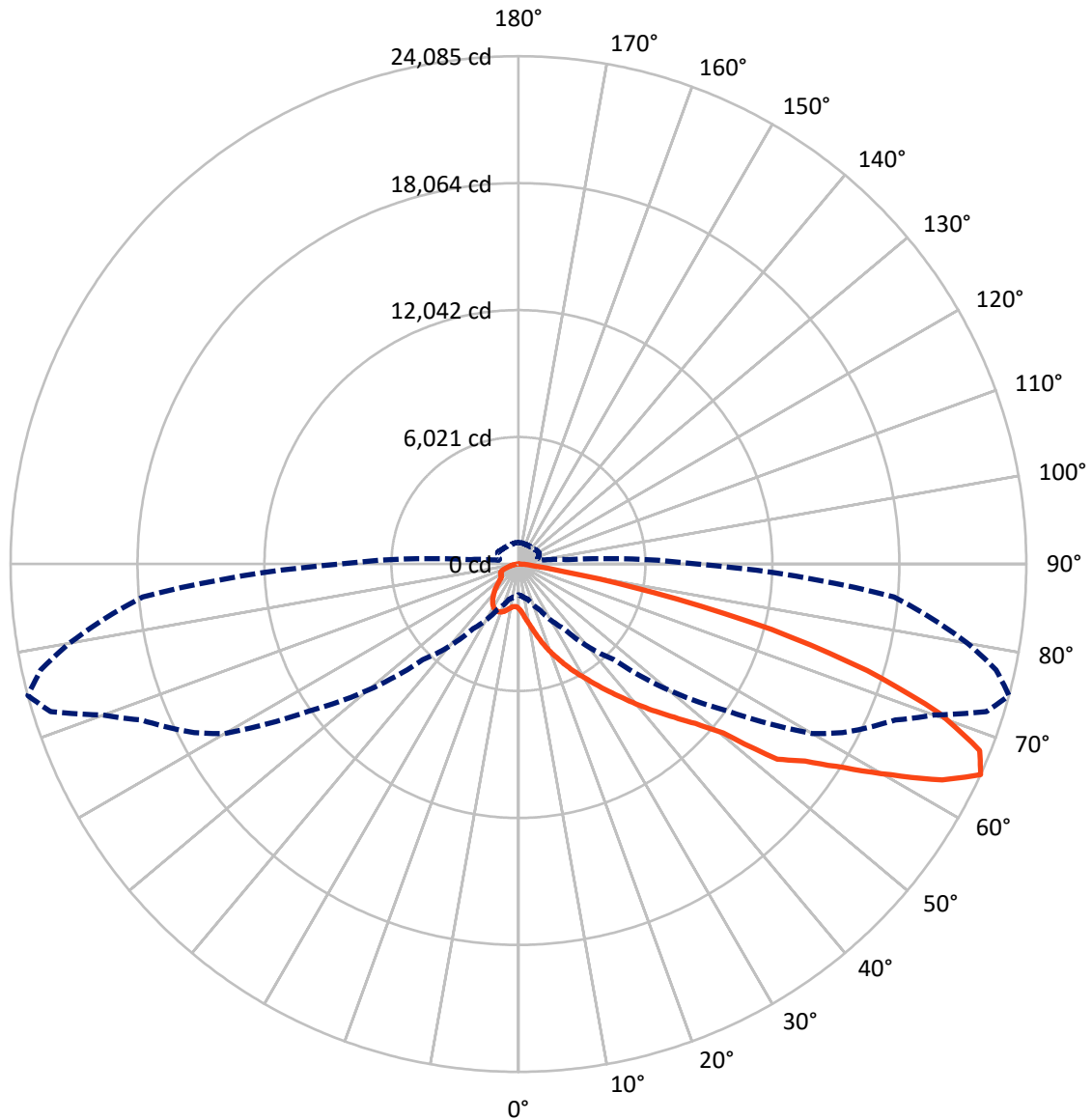
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.7 fc
 Type II - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3661.4	0.0	3661.4
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	20704.8	0.0	20704.8
	% Fixture	85.0	0.0	85.0
Total	Lumens	24366.2	0.0	24366.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	249.2	1.0
10°-20°	952.0	3.9
20°-30°	1921.2	7.9
30°-40°	3262.7	13.4
40°-50°	4550.7	18.7
50°-60°	5577.4	22.9
60°-70°	5247.6	21.5
70°-80°	2301.0	9.4
80°-90°	304.5	1.2
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°	24366.2	100.0
0°-180°	24366.2	100.0

Coefficient of Utilization



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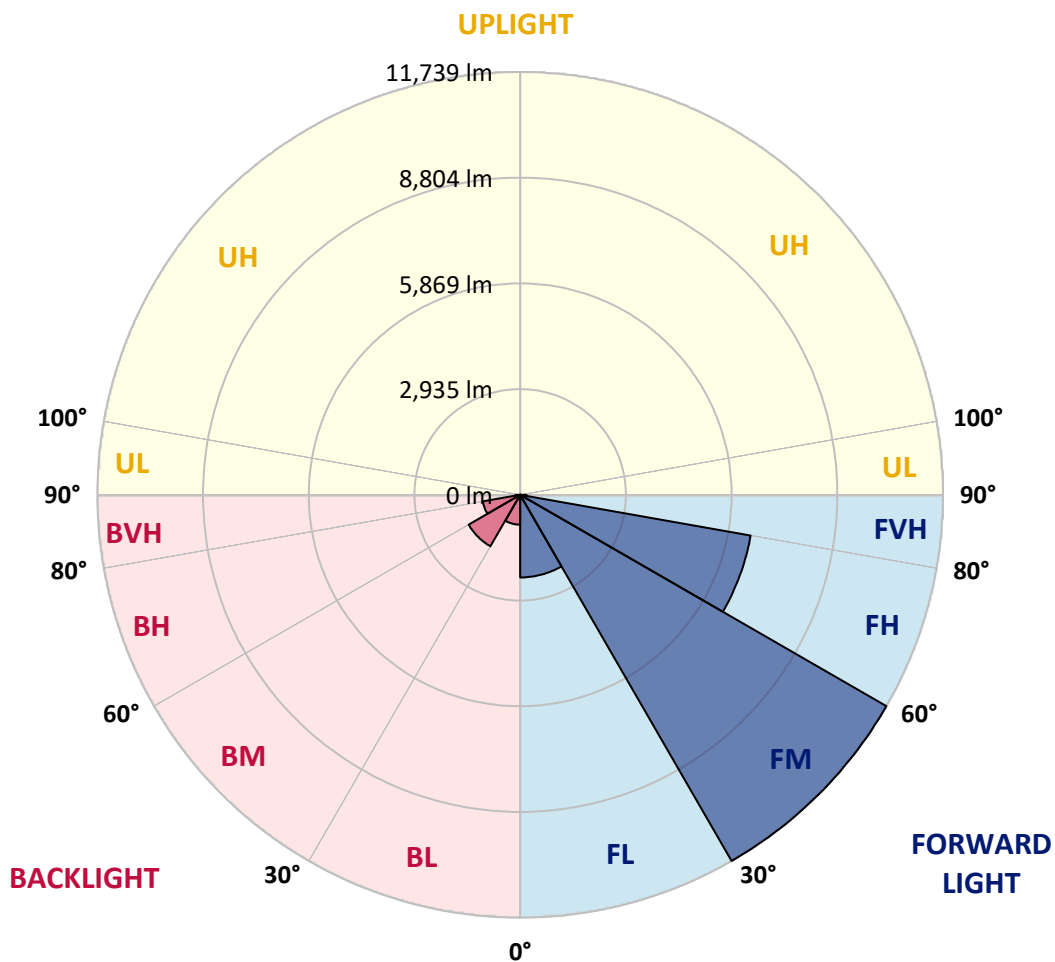
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2293.5	9.4			
FM	(30°-60°)	11738.6	48.2			
FH	(60°-80°)	6496.3	26.7			G3/7500
FVH	(80°-90°)	176.5	0.7			G2/225
BL	(0°-30°)	828.9	3.4	B2/1000		
BM	(30°-60°)	1652.2	6.8	B2/2500		
BH	(60°-80°)	1052.3	4.3	B3/2500		G3/2500
BVH	(80°-90°)	128.0	0.5			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1
2.5°	2658.4	2627.4	2630.4	2587.1	2523.5	2453.7	2396.4	2365.3	2339.0	2331.3	2288.0
5°	3476.8	3438.1	3424.1	3324.8	3176.0	2999.4	2824.2	2756.0	2700.2	2666.1	2582.4
7.5°	4146.4	4126.3	4107.7	4016.2	3869.0	3642.6	3360.5	3259.8	3166.7	3064.5	2963.7
10°	4602.1	4594.4	4586.7	4523.1	4400.6	4203.8	3899.9	3789.9	3673.7	3543.5	3411.8
12.5°	4946.2	4946.2	4952.4	4899.7	4825.3	4673.4	4397.6	4295.2	4177.4	4041.0	3890.6
15°	5177.2	5183.4	5216.0	5231.5	5192.7	5095.0	4853.3	4763.4	4651.8	4516.9	4368.1
17.5°	5330.6	5343.1	5391.1	5442.3	5491.9	5457.8	5278.0	5194.3	5093.5	4969.6	4829.9
20°	5687.2	5671.7	5673.2	5657.7	5730.6	5757.0	5657.7	5587.9	5507.4	5394.2	5267.1
22.5°	6435.8	6406.4	6330.4	6136.7	6048.4	6039.0	5980.1	5942.9	5880.9	5809.7	5682.6
25°	7412.5	7378.3	7227.9	6908.7	6645.1	6401.9	6293.3	6270.0	6229.7	6181.6	6090.1
27.5°	8421.5	8384.3	8190.6	7787.5	7443.4	6952.1	6614.1	6583.0	6545.9	6525.7	6482.3
30°	9309.7	9269.4	9078.7	8669.5	8254.0	7668.1	7046.6	6938.1	6874.5	6880.7	6856.0
32.5°	10089.4	10053.7	9839.9	9422.9	9001.2	8432.3	7607.7	7438.8	7296.2	7243.5	7262.1
35°	10743.5	10710.9	10476.9	10056.9	9632.0	9159.3	8330.1	8075.9	7843.3	7697.7	7680.6
37.5°	11127.9	11109.2	10944.9	10588.5	10166.8	9819.6	9139.1	8857.1	8514.6	8302.1	8209.2
40°	11106.3	11126.3	11098.5	10937.3	10610.2	10357.5	9982.4	9703.4	9368.7	9052.4	8863.2
42.5°	10790.0	10817.8	10943.4	11027.1	10938.8	10785.3	10718.7	10511.0	10210.2	9875.4	9613.5
45°	10356.0	10380.8	10543.5	10845.7	11098.5	11141.9	11363.5	11259.6	11005.5	10720.3	10431.9
47.5°	9690.9	9739.1	9928.2	10408.8	11010.0	11428.6	11904.5	11952.6	11805.3	11569.7	11300.0
50°	8728.4	8791.9	9057.0	9740.6	10675.3	11723.2	12709.0	12891.8	12832.9	12594.2	12321.4
52.5°	7742.6	7806.1	8159.6	8886.6	10135.8	11844.1	13501.0	13969.2	14307.0	14553.5	14601.6
55°	6716.4	6787.8	7175.2	8012.3	9416.7	11690.6	14066.7	14598.4	14941.1	15198.3	15302.3
57.5°	5558.5	5639.1	6014.2	6860.5	8399.8	11073.6	14696.1	15449.5	15959.5	16356.2	16579.5
60°	4230.1	4330.9	4720.0	5572.5	7063.6	9892.6	14976.7	16091.2	16901.9	17497.1	17850.5
62.5°	2681.6	2783.8	3188.4	4073.5	5543.0	8278.9	14183.1	15809.1	17191.8	18072.2	18720.0
65°	1463.2	1508.3	1733.0	2399.6	3737.2	6423.5	12171.0	14088.6	16080.4	17328.1	18323.3
67.5°	1097.5	1103.7	1127.0	1289.6	1990.3	4337.0	9515.8	11272.0	13484.0	15089.9	16278.7
70°	961.0	961.0	964.2	965.7	1080.4	2349.8	6446.7	8063.5	10090.9	11715.3	13192.6
72.5°	861.8	852.5	849.4	830.8	846.4	1204.4	3509.4	4961.8	6671.5	8494.4	9872.4
75°	744.1	742.4	742.4	723.9	733.1	847.9	1522.2	2380.9	3706.1	5403.6	6759.8
77.5°	643.2	632.4	633.9	623.2	652.6	649.5	722.3	981.2	1613.6	2838.1	3963.5
80°	530.1	522.4	527.0	520.7	567.3	480.6	486.7	599.9	801.4	1244.7	1754.7
82.5°	392.2	395.3	424.7	421.7	477.4	324.0	356.4	448.0	539.4	620.0	674.3
85°	229.3	234.1	305.3	320.9	350.2	170.5	218.6	266.5	300.8	333.4	347.3
87.5°	24.9	32.6	170.5	175.2	156.6	51.2	88.4	111.6	119.4	127.1	111.6
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1
2.5°	2273.9	2253.8	2232.1	2219.7	2198.1	2179.4	2145.3	2117.3	2086.5	2064.7	2055.4
5°	2540.5	2492.4	2441.4	2404.1	2357.6	2317.4	2239.8	2146.8	2117.3	2055.4	2040.0
7.5°	2887.8	2800.9	2714.1	2642.9	2562.2	2495.6	2365.3	2198.1	2176.4	2077.2	2055.4
10°	3295.4	3168.3	3039.7	2929.6	2811.9	2709.5	2517.3	2281.7	2258.5	2131.4	2109.6
12.5°	3751.1	3596.2	3430.3	3266.0	3126.6	2982.4	2720.3	2411.9	2374.7	2224.4	2194.9
15°	4220.9	4053.4	3861.3	3662.7	3490.8	3300.2	2969.9	2582.4	2514.1	2337.5	2297.1
17.5°	4684.3	4502.9	4301.4	4079.7	3878.3	3650.4	3239.6	2773.1	2655.3	2449.0	2397.9
20°	5132.2	4947.9	4735.4	4518.5	4267.3	4006.9	3515.5	2960.6	2780.9	2542.2	2475.5
22.5°	5539.9	5381.8	5169.4	4919.8	4665.6	4372.7	3796.1	3148.2	2890.8	2613.3	2528.2
25°	5969.2	5825.1	5614.3	5374.1	5077.9	4752.6	4086.0	3326.5	2979.1	2652.2	2546.8
27.5°	6403.3	6279.3	6080.8	5828.3	5510.5	5149.4	4380.4	3490.8	3050.6	2664.6	2537.4
30°	6866.7	6770.6	6587.8	6305.7	5984.8	5584.9	4701.3	3652.0	3095.5	2647.6	2495.6
32.5°	7305.5	7302.3	7139.5	6846.6	6500.9	6060.8	5039.2	3814.7	3118.7	2599.4	2422.8
35°	7761.1	7824.7	7702.2	7423.2	7059.1	6570.7	5412.8	3988.4	3120.4	2514.1	2328.1
37.5°	8278.9	8392.1	8337.8	8072.7	7689.9	7151.9	5851.5	4183.6	3111.0	2396.4	2190.2
40°	8867.9	9022.9	9021.4	8798.2	8388.9	7802.9	6361.4	4402.1	3089.4	2249.1	2027.5
42.5°	9542.2	9726.7	9777.8	9557.6	9143.8	8514.6	6945.9	4642.4	3055.1	2103.4	1855.4
45°	10314.1	10476.9	10573.1	10368.3	9953.0	9289.6	7617.0	4915.3	3013.4	1915.8	1658.6
47.5°	11140.3	11329.5	11473.6	11298.4	10855.1	10173.0	8412.2	5267.1	2997.9	1702.0	1446.2
50°	12164.8	12360.1	12671.9	12592.7	12349.4	11800.7	10094.1	6098.0	3004.0	1498.9	1268.0
52.5°	14707.1	15154.9	15548.8	15373.6	14795.4	13854.5	11461.1	6559.9	2873.8	1333.1	1143.9
55°	15474.4	15982.7	16563.9	16491.2	15936.2	14987.6	12541.5	6945.9	2748.3	1212.2	1063.4
57.5°	16816.6	17416.5	18228.8	18213.2	17532.8	16464.8	13932.0	7407.8	2693.9	1142.5	1023.0
60°	18238.1	19002.2	20124.5	20299.7	19560.2	18448.9	15575.1	7975.2	2701.7	1103.7	999.9
62.5°	19276.5	20397.3	22029.6	22553.4	21682.3	20457.7	17280.2	8542.4	2655.3	1058.7	971.8
65°	19340.1	20953.8	23269.5	24084.8	23203.0	21629.6	17881.5	8430.9	2376.2	998.2	927.0
67.5°	17790.0	19892.0	22705.3	23599.7	22697.6	20907.2	16827.5	7370.6	1931.4	892.8	849.4
70°	14817.1	17256.9	20177.2	21173.9	20428.3	18616.3	14645.0	5887.1	1443.0	753.3	733.1
72.5°	11450.3	13725.8	16378.0	17300.3	16729.9	15136.4	11551.0	4290.6	1030.7	610.7	595.2
75°	8185.9	10123.4	12048.6	12400.6	11837.9	10374.5	7494.6	2680.1	722.3	500.6	478.9
77.5°	5068.6	6328.9	7020.3	6567.6	5849.9	4862.5	3050.6	1323.7	480.6	407.7	385.9
80°	2249.1	2639.8	2464.6	2196.4	1734.4	1426.1	931.6	587.5	310.1	314.6	302.3
82.5°	756.5	799.9	778.1	773.5	697.5	610.7	395.3	254.2	173.6	201.5	196.9
85°	368.9	385.9	387.4	401.5	348.7	271.3	107.0	100.8	74.4	108.5	113.1
87.5°	111.6	113.1	102.2	111.6	89.9	62.1	20.1	27.8	14.0	26.3	26.3
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1
2.5°	2038.3	2032.1	2021.2	2008.9	2005.7	1990.3	1985.7	1977.9	1973.2	1965.5	1959.3
5°	2019.7	2008.9	1996.6	1982.5	1982.5	1960.8	1951.6	1942.2	1942.2	1928.3	1922.1
7.5°	2038.3	2024.4	2010.4	1998.0	2002.7	1977.9	1968.5	1959.3	1957.8	1943.8	1937.6
10°	2091.1	2077.2	2060.1	2047.6	2042.9	2022.9	2011.9	1998.0	1988.8	1979.4	1970.2
12.5°	2171.7	2153.1	2131.4	2105.0	2094.0	2077.2	2060.1	2041.5	2019.7	2010.4	1996.6
15°	2267.7	2236.7	2207.2	2174.7	2145.3	2128.3	2105.0	2075.5	2046.1	2033.8	2015.1
17.5°	2346.8	2314.3	2272.4	2233.6	2180.9	2167.0	2134.5	2098.8	2050.7	2046.1	2018.2
20°	2413.4	2363.8	2312.6	2266.2	2185.5	2177.9	2137.5	2095.7	2027.5	2027.5	1993.3
22.5°	2450.7	2382.5	2321.9	2260.0	2159.3	2153.1	2106.5	2056.8	1973.2	1976.4	1934.5
25°	2456.9	2374.7	2298.8	2224.4	2108.1	2097.3	2038.3	1984.0	1892.5	1886.4	1843.1
27.5°	2432.0	2336.0	2247.6	2157.6	2032.1	2008.9	1943.8	1878.6	1788.7	1773.3	1726.8
30°	2374.7	2261.6	2162.3	2058.5	1926.8	1889.6	1821.4	1754.7	1663.2	1643.1	1599.6
32.5°	2283.2	2154.6	2044.5	1940.7	1795.0	1748.6	1680.3	1613.6	1525.2	1509.7	1469.4
35°	2162.3	2018.2	1901.9	1791.8	1646.1	1598.2	1533.0	1474.1	1393.5	1387.3	1359.5
37.5°	2010.4	1860.1	1736.1	1630.7	1492.8	1467.9	1401.3	1357.9	1291.3	1297.4	1283.5
40°	1838.4	1685.0	1567.2	1474.1	1354.7	1333.1	1292.8	1260.2	1202.8	1219.9	1221.4
42.5°	1664.7	1511.3	1404.4	1320.7	1218.3	1204.4	1176.5	1157.8	1114.4	1148.7	1162.5
45°	1467.9	1325.3	1233.8	1170.3	1094.3	1094.3	1080.4	1078.9	1049.4	1097.5	1111.5
47.5°	1277.3	1165.6	1102.1	1063.4	1010.7	1035.4	1030.7	1043.2	1021.6	1071.0	1083.4
50°	1133.1	1055.6	1016.8	998.2	961.0	999.9	1009.1	1026.1	1007.5	1050.9	1060.2
52.5°	1041.7	990.6	968.8	964.2	937.8	985.8	1001.3	1016.8	995.1	1035.4	1033.9
55°	990.6	956.3	948.6	958.0	937.8	984.4	999.9	1010.7	992.1	1019.9	1018.4
57.5°	971.8	953.3	958.0	971.8	958.0	996.7	1004.5	1016.8	998.2	1010.7	1016.8
60°	970.3	970.3	988.9	1007.5	998.2	1026.1	1030.7	1029.3	1012.2	1013.7	1016.8
62.5°	961.0	984.4	1015.3	1044.8	1041.7	1075.7	1078.9	1058.7	1044.8	1029.3	1024.5
65°	931.6	970.3	1015.3	1055.6	1061.7	1114.4	1120.6	1100.6	1091.3	1064.9	1044.8
67.5°	866.4	916.1	968.8	1018.4	1029.3	1100.6	1114.4	1122.3	1127.0	1109.9	1083.4
70°	756.5	807.5	861.8	919.1	934.6	1013.7	1043.2	1078.9	1106.7	1131.5	1122.3
72.5°	615.3	662.0	708.4	761.0	784.3	866.4	905.2	967.3	1010.7	1074.3	1100.6
75°	488.3	516.2	544.1	576.6	595.2	675.9	723.9	798.2	857.3	945.6	1004.5
77.5°	384.5	398.4	412.3	426.2	434.1	478.9	517.8	592.2	660.3	772.0	858.7
80°	296.0	303.7	305.3	310.1	307.0	328.6	342.6	387.4	446.4	556.5	658.7
82.5°	190.7	196.9	200.0	207.7	192.1	220.2	229.3	234.1	265.1	345.7	418.5
85°	107.0	108.5	110.0	113.1	91.4	119.4	120.9	113.1	110.0	142.7	161.2
87.5°	26.3	24.9	26.3	26.3	10.9	24.9	24.9	17.1	12.3	23.3	18.7
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):

	135°	145°	155°	165°	175°	180°
0°	2111.1	2111.1	2111.1	2111.1	2111.1	2111.1
2.5°	1945.3	1942.2	1943.8	1936.0	1933.0	1934.5
5°	1914.3	1908.1	1908.1	1903.5	1897.3	1897.3
7.5°	1928.3	1915.8	1911.2	1901.9	1892.5	1894.2
10°	1950.0	1928.3	1912.9	1898.8	1888.0	1888.0
12.5°	1964.0	1925.2	1901.9	1883.3	1870.9	1870.9
15°	1967.0	1908.1	1874.0	1853.9	1841.4	1841.4
17.5°	1948.5	1874.0	1830.7	1804.2	1790.3	1793.5
20°	1901.9	1810.4	1759.3	1731.5	1717.5	1719.0
22.5°	1829.0	1723.7	1664.7	1632.2	1618.2	1618.2
25°	1729.9	1615.2	1551.6	1525.2	1512.8	1512.8
27.5°	1616.7	1498.9	1443.0	1422.9	1415.2	1415.2
30°	1489.6	1392.0	1351.7	1337.7	1325.3	1325.3
32.5°	1382.6	1313.0	1298.9	1280.4	1247.7	1246.3
35°	1297.4	1289.6	1278.7	1223.0	1176.5	1170.3
37.5°	1250.9	1297.4	1229.2	1133.1	1095.9	1094.3
40°	1226.0	1269.6	1151.6	1105.2	1100.6	1100.6
42.5°	1167.2	1198.2	1147.0	1120.6	1120.6	1122.3
45°	1105.2	1131.5	1157.8	1134.6	1142.5	1143.9
47.5°	1061.7	1114.4	1157.8	1137.8	1153.2	1162.5
50°	1021.6	1098.9	1134.6	1134.6	1151.6	1153.2
52.5°	1012.2	1077.2	1112.9	1130.0	1131.5	1123.8
55°	1013.7	1060.2	1095.9	1117.6	1108.2	1108.2
57.5°	1012.2	1050.9	1082.0	1089.7	1094.3	1094.3
60°	1013.7	1038.5	1063.4	1060.2	1075.7	1075.7
62.5°	1018.4	1021.6	1033.9	1030.7	1054.0	1054.0
65°	1029.3	999.9	992.1	995.1	1023.0	1021.6
67.5°	1049.4	970.3	945.6	947.2	987.3	981.2
70°	1078.9	930.0	892.8	883.6	951.8	940.9
72.5°	1088.1	883.6	824.6	815.3	855.6	824.6
75°	1044.8	846.4	751.8	720.8	703.7	694.4
77.5°	931.6	823.0	675.9	610.7	584.3	578.1
80°	772.0	775.1	576.6	499.1	579.8	578.1
82.5°	582.8	669.6	461.9	432.4	420.0	350.2
85°	282.1	503.8	355.0	297.6	178.3	168.9
87.5°	24.9	210.8	204.6	133.3	60.5	57.3
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)