

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: P195816

Luminaire Tested: **NAV-AF-06-D-UNV-T2R-7050-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195816
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-06-D-UNV-T2R-7050-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5000K, 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: 41410 lumens
Efficiency: N/A
Efficacy: 108.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

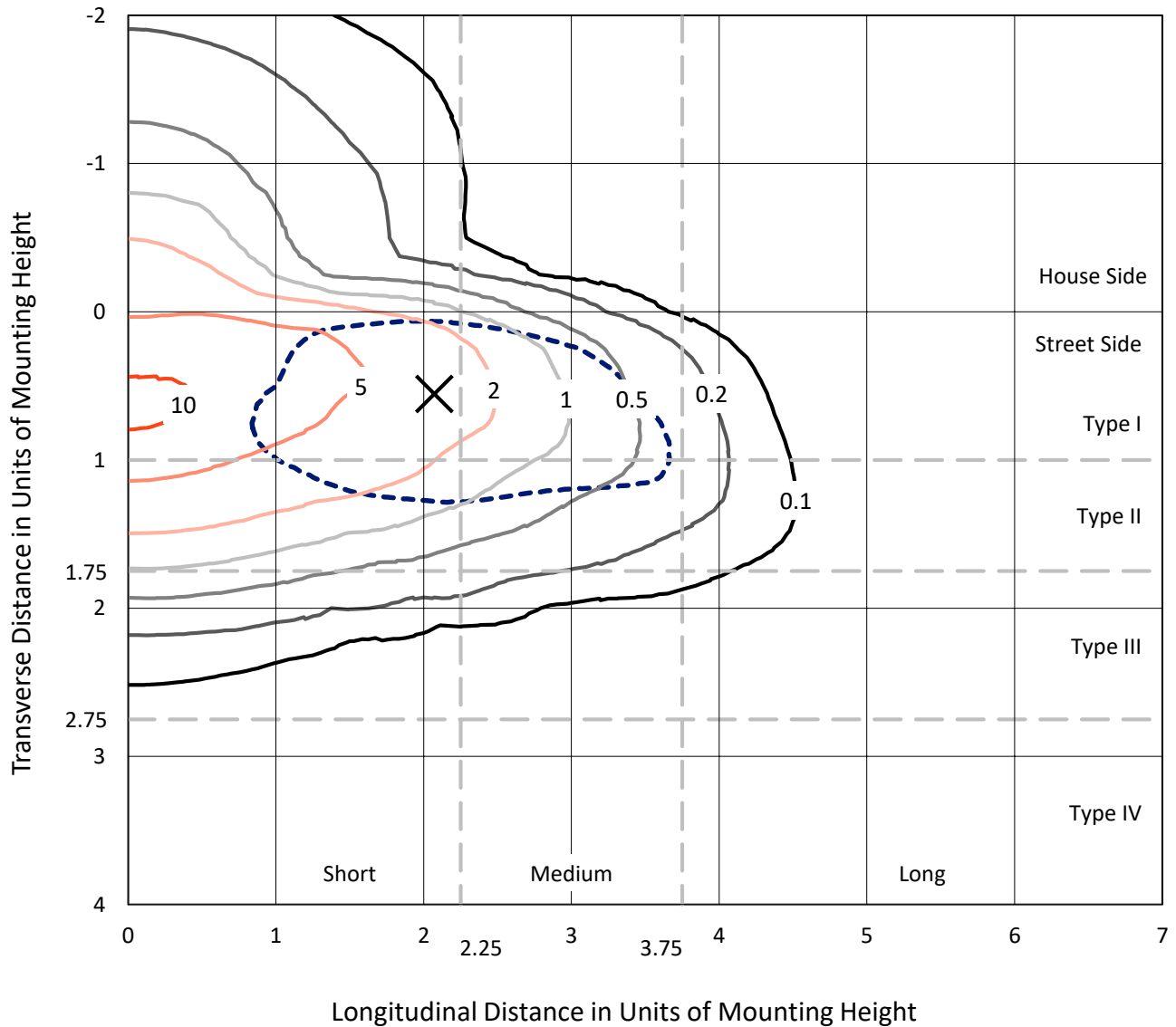
Input Watts (W): 382
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

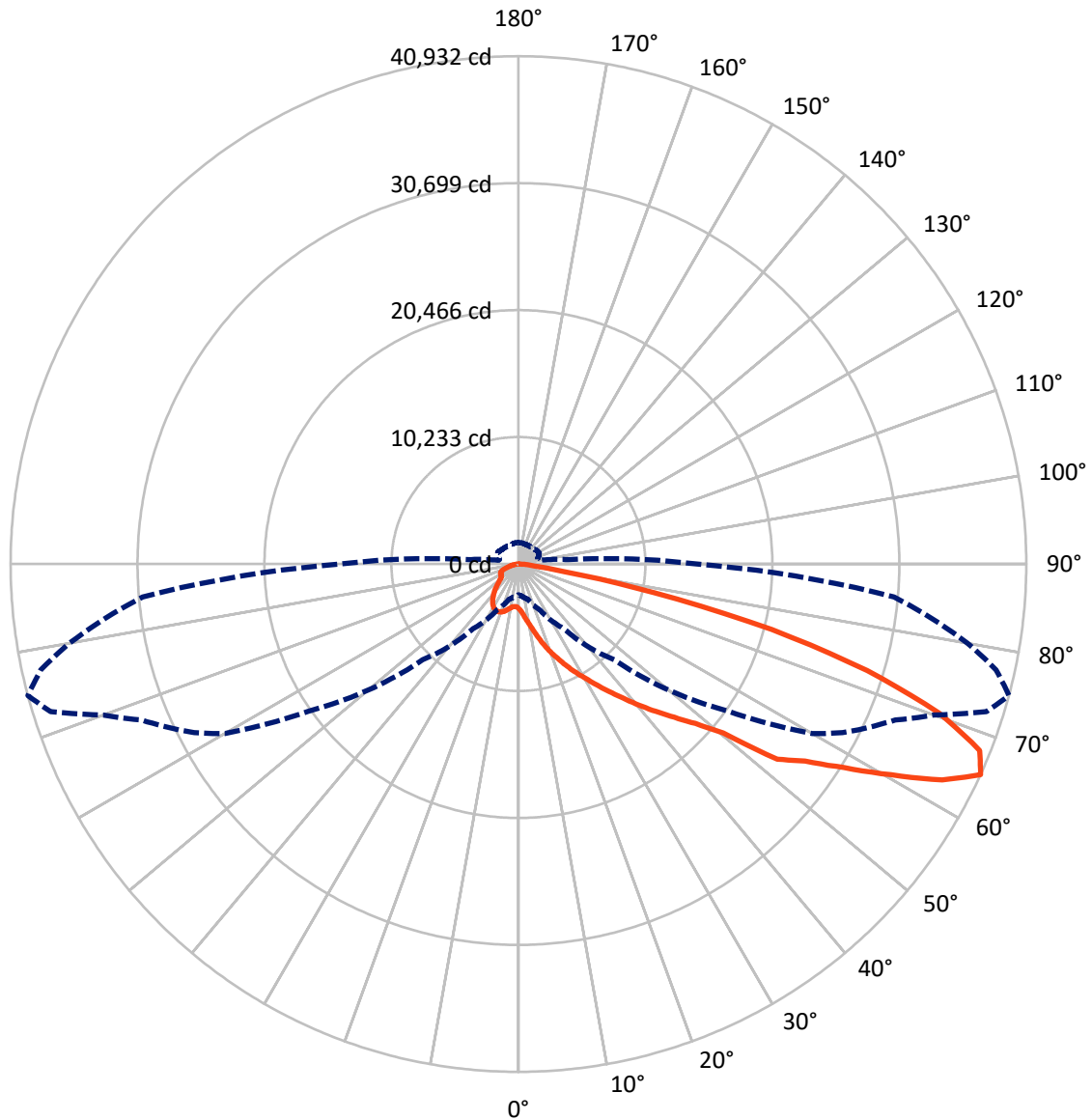
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 11.4 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	6222.5	0.0	6222.5
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	35187.5	0.0	35187.5
	% Fixture	85.0	0.0	85.0
Total	Lumens	41410.0	0.0	41410.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	423.6	1.0
10°-20°	1617.9	3.9
20°-30°	3265.0	7.9
30°-40°	5544.9	13.4
40°-50°	7733.8	18.7
50°-60°	9478.7	22.9
60°-70°	8918.2	21.5
70°-80°	3910.5	9.4
80°-90°	517.4	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°	41410.0	100.0
0°-180°	41410.0	100.0

Coefficient of Utilization



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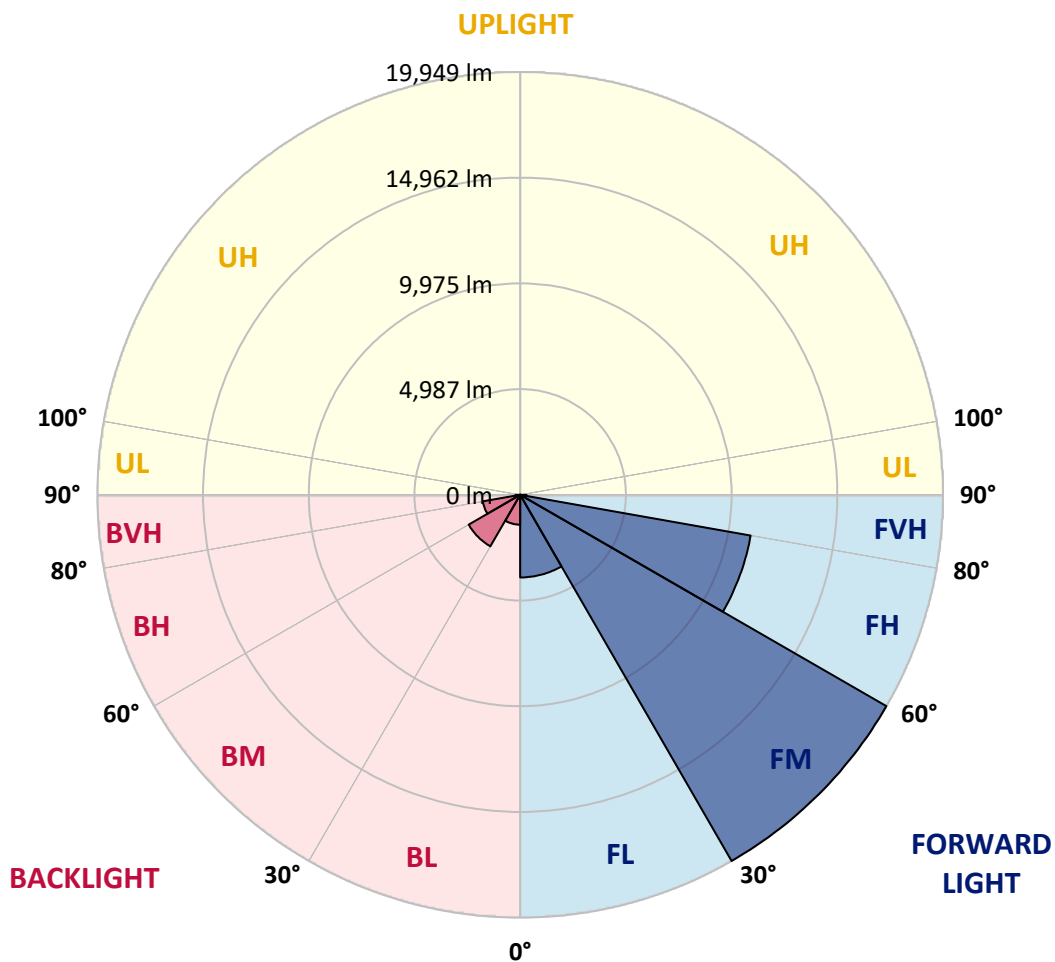
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	3897.8	9.4			
FM (30°-60°)	19949.5	48.2			
FH (60°-80°)	11040.3	26.7			G4/12000
FVH (80°-90°)	300.0	0.7			G3/500
BL (0°-30°)	1408.6	3.4	B3/2500		
BM (30°-60°)	2807.9	6.8	B3/5000		
BH (60°-80°)	1788.4	4.3	B3/2500		G3/2500
BVH (80°-90°)	217.5	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-G4

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9
2.5°	4517.8	4465.1	4470.4	4396.7	4288.6	4170.1	4072.6	4019.9	3975.2	3962.0	3888.2
5°	5908.7	5842.9	5819.2	5650.6	5397.7	5097.4	4799.7	4683.8	4589.0	4531.0	4388.8
7.5°	7046.8	7012.5	6980.9	6825.5	6575.2	6190.6	5711.2	5539.9	5381.9	5208.0	5036.8
10°	7821.3	7808.1	7794.9	7686.9	7478.8	7144.2	6627.9	6440.9	6243.3	6022.0	5798.1
12.5°	8406.1	8406.1	8416.6	8327.0	8200.6	7942.4	7473.5	7299.7	7099.5	6867.6	6612.1
15°	8798.6	8809.1	8864.4	8890.8	8824.9	8659.0	8248.0	8095.2	7905.5	7676.4	7423.5
17.5°	9059.4	9080.4	9162.1	9249.0	9333.3	9275.4	8969.8	8827.6	8656.3	8445.6	8208.5
20°	9665.3	9638.9	9641.6	9615.2	9739.0	9783.8	9615.2	9496.7	9359.7	9167.4	8951.4
22.5°	10937.6	10887.6	10758.5	10429.2	10279.1	10263.3	10163.1	10099.9	9994.6	9873.4	9657.4
25°	12597.2	12539.3	12283.8	11741.1	11293.3	10879.7	10695.3	10655.8	10587.3	10505.6	10350.2
27.5°	14312.2	14249.0	13919.7	13234.7	12649.9	11814.9	11240.6	11187.9	11124.7	11090.4	11016.7
30°	15821.6	15753.1	15429.1	14733.7	14027.7	13031.9	11975.5	11791.1	11683.1	11693.7	11651.5
32.5°	17146.7	17086.1	16722.6	16013.9	15297.4	14330.6	12929.2	12642.0	12399.7	12310.1	12341.7
35°	18258.4	18203.0	17805.3	17091.4	16369.6	15566.1	14156.8	13724.7	13329.6	13082.0	13053.0
37.5°	18911.7	18880.1	18600.8	17994.9	17278.4	16688.3	15531.9	15052.4	14470.2	14109.3	13951.3
40°	18874.8	18909.0	18861.6	18587.7	18031.8	17602.4	16964.9	16490.7	15921.7	15384.3	15063.0
42.5°	18337.4	18384.8	18598.2	18740.4	18590.3	18329.5	18216.2	17863.2	17352.2	16783.2	16338.0
45°	17599.8	17641.9	17918.5	18432.2	18861.6	18935.4	19312.1	19135.6	18703.6	18218.9	17728.9
47.5°	16469.7	16551.3	16872.7	17689.4	18711.5	19422.7	20231.5	20313.1	20062.9	19662.5	19204.1
50°	14833.8	14941.8	15392.2	16554.0	18142.5	19923.2	21598.7	21909.5	21809.4	21403.7	20940.1
52.5°	13158.4	13266.4	13867.0	15102.5	17225.7	20128.7	22944.8	23740.4	24314.6	24733.5	24815.2
55°	11414.4	11535.6	12194.2	13616.7	16003.4	19867.9	23906.3	24809.9	25392.1	25829.4	26005.9
57.5°	9446.6	9583.6	10221.1	11659.4	14275.3	18819.5	24975.8	26256.1	27122.8	27797.2	28176.5
60°	7189.0	7360.2	8021.5	9470.3	12004.5	16812.1	25452.7	27346.7	28724.5	29736.0	30336.7
62.5°	4557.3	4731.2	5418.8	6923.0	9420.3	14069.8	24103.9	26867.3	29217.1	30713.4	31814.5
65°	2486.8	2563.2	2945.2	4077.9	6351.3	10916.6	20684.6	23943.2	27328.3	29448.9	31140.1
67.5°	1865.1	1875.6	1915.1	2191.7	3382.4	7370.8	16172.0	19156.7	22915.8	25645.0	27665.5
70°	1633.3	1633.3	1638.5	1641.2	1836.1	3993.6	10956.1	13703.7	17149.3	19910.1	22420.6
72.5°	1464.7	1448.9	1443.6	1412.0	1438.3	2046.9	5964.1	8432.4	11338.0	14436.0	16777.9
75°	1264.5	1261.8	1261.8	1230.2	1246.0	1441.0	2586.9	4046.3	6298.6	9183.2	11488.2
77.5°	1093.2	1074.8	1077.4	1059.0	1109.0	1103.8	1227.6	1667.5	2742.3	4823.4	6735.9
80°	900.9	887.8	895.7	885.1	964.2	816.6	827.2	1019.5	1361.9	2115.3	2982.0
82.5°	666.5	671.7	721.8	716.5	811.4	550.6	605.9	761.3	916.7	1053.7	1145.9
85°	389.9	397.8	519.0	545.3	595.4	289.8	371.4	453.1	511.1	566.4	590.1
87.5°	42.1	55.3	289.8	297.7	266.1	86.9	150.2	189.7	202.8	216.0	189.7
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9
2.5°	3864.5	3830.3	3793.4	3772.3	3735.4	3703.8	3645.9	3598.5	3545.8	3508.9	3493.1
5°	4317.6	4236.0	4149.0	4085.8	4006.8	3938.3	3806.6	3648.5	3598.5	3493.1	3466.7
7.5°	4907.7	4760.2	4612.7	4491.5	4354.5	4241.2	4019.9	3735.4	3698.6	3530.0	3493.1
10°	5600.5	5384.5	5165.9	4978.8	4778.6	4604.8	4278.1	3877.7	3838.2	3622.2	3585.3
12.5°	6375.0	6111.6	5829.7	5550.5	5313.4	5068.4	4623.2	4099.0	4035.8	3780.2	3730.2
15°	7173.2	6888.7	6562.1	6224.9	5932.5	5608.4	5047.3	4388.8	4272.8	3972.5	3904.0
17.5°	7960.9	7652.7	7310.2	6933.5	6591.0	6203.8	5505.7	4712.8	4512.6	4162.2	4075.3
20°	8722.2	8408.7	8047.8	7679.0	7252.2	6809.7	5974.6	5031.5	4725.9	4320.3	4207.0
22.5°	9415.0	9146.3	8785.4	8361.3	7929.3	7431.4	6451.4	5350.3	4913.0	4441.4	4296.6
25°	10144.7	9899.7	9541.5	9133.1	8630.0	8076.8	6944.0	5653.2	5063.1	4507.3	4328.2
27.5°	10882.3	10671.6	10334.4	9905.0	9365.0	8751.2	7444.5	5932.5	5184.3	4528.4	4312.4
30°	11670.0	11506.6	11195.8	10716.4	10171.1	9491.4	7989.8	6206.4	5260.7	4499.4	4241.2
32.5°	12415.5	12410.2	12133.6	11635.7	11048.3	10300.1	8564.1	6483.0	5300.2	4417.7	4117.4
35°	13190.0	13298.0	13089.9	12615.7	11996.6	11166.8	9199.0	6778.1	5302.9	4272.8	3956.7
37.5°	14069.8	14262.1	14169.9	13719.5	13068.8	12154.7	9944.5	7110.0	5287.0	4072.6	3722.3
40°	15070.9	15334.3	15331.7	14952.3	14256.9	13261.1	10811.2	7481.4	5250.2	3822.4	3445.7
42.5°	16216.8	16530.3	16617.2	16243.1	15539.8	14470.2	11804.3	7889.7	5192.2	3574.8	3153.3
45°	17528.7	17805.3	17968.6	17620.9	16914.9	15787.4	12945.0	8353.4	5121.1	3256.0	2818.7
47.5°	18932.7	19254.1	19499.1	19201.4	18448.0	17288.9	14296.4	8951.4	5094.7	2892.5	2457.8
50°	20674.0	21005.9	21535.4	21401.1	20987.5	20055.0	17154.6	10363.4	5105.3	2547.4	2154.9
52.5°	24994.3	25755.6	26424.7	26127.0	25144.4	23545.4	19478.0	11148.4	4884.0	2265.5	1944.1
55°	26298.3	27162.3	28150.2	28026.4	27083.3	25471.1	21314.2	11804.3	4670.6	2060.0	1807.1
57.5°	28579.6	29599.0	30979.4	30953.1	29796.6	27981.6	23677.1	12589.3	4578.4	1941.5	1738.6
60°	30995.2	32293.9	34201.2	34498.9	33242.3	31353.5	26469.5	13553.5	4591.6	1875.6	1699.1
62.5°	32760.2	34664.8	37438.7	38329.1	36848.7	34767.6	29367.2	14517.7	4512.6	1799.2	1651.7
65°	32868.2	35610.5	39546.2	40931.8	39432.9	36759.1	30389.3	14328.0	4038.4	1696.5	1575.3
67.5°	30233.9	33806.0	38587.3	40107.3	38574.1	35531.5	28598.0	12526.1	3282.3	1517.4	1443.6
70°	25181.3	29327.7	34290.7	35984.6	34717.5	31638.0	24888.9	10005.1	2452.5	1280.3	1246.0
72.5°	19459.6	23326.8	27834.1	29401.5	28432.1	25724.0	19630.8	7291.8	1751.8	1037.9	1011.6
75°	13911.8	17204.6	20476.5	21074.4	20118.2	17631.4	12736.9	4554.7	1227.6	850.9	814.0
77.5°	8614.2	10755.9	11930.8	11161.5	9941.9	8263.8	5184.3	2249.7	816.6	692.8	655.9
80°	3822.4	4486.2	4188.5	3732.8	2947.8	2423.6	1583.2	998.4	526.9	534.8	513.7
82.5°	1285.5	1359.3	1322.4	1314.5	1185.4	1037.9	671.7	432.0	295.0	342.5	334.6
85°	627.0	655.9	658.6	682.3	592.7	461.0	181.8	171.2	126.4	184.4	192.3
87.5°	189.7	192.3	173.9	189.7	152.8	105.4	34.2	47.4	23.7	44.8	44.8
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°	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9
2.5°	3464.1	3453.6	3435.1	3414.1	3408.8	3382.4	3374.5	3361.4	3353.5	3340.3	3329.8
5°	3432.5	3414.1	3393.0	3369.3	3369.3	3332.4	3316.6	3300.8	3300.8	3277.1	3266.5
7.5°	3464.1	3440.4	3416.7	3395.6	3403.5	3361.4	3345.6	3329.8	3327.1	3303.4	3292.9
10°	3553.7	3530.0	3501.0	3479.9	3472.0	3437.8	3419.3	3395.6	3379.8	3364.0	3348.2
12.5°	3690.7	3659.0	3622.2	3577.4	3558.9	3530.0	3501.0	3469.4	3432.5	3416.7	3393.0
15°	3854.0	3801.3	3751.3	3695.9	3645.9	3616.9	3577.4	3527.3	3477.3	3456.2	3424.6
17.5°	3988.3	3933.0	3861.9	3796.0	3706.5	3682.8	3627.4	3566.8	3485.2	3477.3	3429.9
20°	4101.6	4017.3	3930.4	3851.4	3714.4	3701.2	3632.7	3561.6	3445.7	3445.7	3387.7
22.5°	4164.8	4048.9	3946.2	3840.8	3669.6	3659.0	3580.0	3495.7	3353.5	3358.7	3287.6
25°	4175.4	4035.8	3906.7	3780.2	3582.7	3564.2	3464.1	3371.9	3216.5	3205.9	3132.2
27.5°	4133.2	3969.9	3819.7	3667.0	3453.6	3414.1	3303.4	3192.8	3040.0	3013.6	2934.6
30°	4035.8	3843.5	3674.9	3498.4	3274.4	3211.2	3095.3	2982.0	2826.6	2792.4	2718.6
32.5°	3880.3	3661.7	3474.6	3298.1	3050.5	2971.5	2855.6	2742.3	2592.2	2565.8	2497.3
35°	3674.9	3429.9	3232.3	3045.3	2797.6	2716.0	2605.3	2505.2	2368.2	2357.7	2310.3
37.5°	3416.7	3161.2	2950.4	2771.3	2536.8	2494.7	2381.4	2307.7	2194.4	2204.9	2181.2
40°	3124.3	2863.5	2663.3	2505.2	2302.4	2265.5	2197.0	2141.7	2044.2	2073.2	2075.8
42.5°	2829.2	2568.4	2386.7	2244.4	2070.6	2046.9	1999.4	1967.8	1894.1	1952.0	1975.7
45°	2494.7	2252.3	2096.9	1988.9	1859.8	1859.8	1836.1	1833.5	1783.4	1865.1	1888.8
47.5°	2170.7	1981.0	1873.0	1807.1	1717.6	1759.7	1751.8	1772.9	1736.0	1820.3	1841.4
50°	1925.7	1794.0	1728.1	1696.5	1633.3	1699.1	1714.9	1743.9	1712.3	1786.1	1801.9
52.5°	1770.3	1683.3	1646.4	1638.5	1593.8	1675.4	1701.8	1728.1	1691.2	1759.7	1757.1
55°	1683.3	1625.4	1612.2	1628.0	1593.8	1672.8	1699.1	1717.6	1686.0	1733.4	1730.7
57.5°	1651.7	1620.1	1628.0	1651.7	1628.0	1693.9	1707.0	1728.1	1696.5	1717.6	1728.1
60°	1649.1	1649.1	1680.7	1712.3	1696.5	1743.9	1751.8	1749.2	1720.2	1722.8	1728.1
62.5°	1633.3	1672.8	1725.5	1775.5	1770.3	1828.2	1833.5	1799.2	1775.5	1749.2	1741.3
65°	1583.2	1649.1	1725.5	1794.0	1804.5	1894.1	1904.6	1870.4	1854.6	1809.8	1775.5
67.5°	1472.6	1556.9	1646.4	1730.7	1749.2	1870.4	1894.1	1907.2	1915.1	1886.2	1841.4
70°	1285.5	1372.5	1464.7	1562.1	1588.5	1722.8	1772.9	1833.5	1880.9	1923.0	1907.2
72.5°	1045.8	1124.8	1203.9	1293.4	1333.0	1472.6	1538.4	1643.8	1717.6	1825.6	1870.4
75°	829.8	877.2	924.6	980.0	1011.6	1148.6	1230.2	1356.7	1456.8	1606.9	1707.0
77.5°	653.3	677.0	700.7	724.4	737.6	814.0	879.9	1006.3	1122.2	1311.9	1459.4
80°	503.2	516.3	519.0	526.9	521.6	558.5	582.2	658.6	758.7	945.7	1119.6
82.5°	324.0	334.6	339.8	353.0	326.7	374.1	389.9	397.8	450.5	587.4	711.3
85°	181.8	184.4	187.0	192.3	155.4	202.8	205.5	192.3	187.0	242.4	274.0
87.5°	44.8	42.1	44.8	44.8	18.4	42.1	42.1	29.0	21.1	39.5	31.6
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):

	135°	145°	155°	165°	175°	180°
0°	3587.9	3587.9	3587.9	3587.9	3587.9	3587.9
2.5°	3306.1	3300.8	3303.4	3290.2	3285.0	3287.6
5°	3253.4	3242.8	3242.8	3234.9	3224.4	3224.4
7.5°	3277.1	3256.0	3248.1	3232.3	3216.5	3219.1
10°	3314.0	3277.1	3250.7	3227.0	3208.6	3208.6
12.5°	3337.7	3271.8	3232.3	3200.7	3179.6	3179.6
15°	3342.9	3242.8	3184.9	3150.6	3129.6	3129.6
17.5°	3311.3	3184.9	3111.1	3066.3	3042.6	3047.9
20°	3232.3	3076.9	2989.9	2942.5	2918.8	2921.4
22.5°	3108.5	2929.3	2829.2	2773.9	2750.2	2750.2
25°	2939.9	2744.9	2636.9	2592.2	2571.1	2571.1
27.5°	2747.6	2547.4	2452.5	2418.3	2405.1	2405.1
30°	2531.6	2365.6	2297.1	2273.4	2252.3	2252.3
32.5°	2349.8	2231.3	2207.5	2175.9	2120.6	2118.0
35°	2204.9	2191.7	2173.3	2078.5	1999.4	1988.9
37.5°	2125.9	2204.9	2089.0	1925.7	1862.5	1859.8
40°	2083.7	2157.5	1957.3	1878.3	1870.4	1870.4
42.5°	1983.6	2036.3	1949.4	1904.6	1904.6	1907.2
45°	1878.3	1923.0	1967.8	1928.3	1941.5	1944.1
47.5°	1804.5	1894.1	1967.8	1933.6	1959.9	1975.7
50°	1736.0	1867.7	1928.3	1928.3	1957.3	1959.9
52.5°	1720.2	1830.8	1891.4	1920.4	1923.0	1909.9
55°	1722.8	1801.9	1862.5	1899.3	1883.5	1883.5
57.5°	1720.2	1786.1	1838.7	1851.9	1859.8	1859.8
60°	1722.8	1765.0	1807.1	1801.9	1828.2	1828.2
62.5°	1730.7	1736.0	1757.1	1751.8	1791.3	1791.3
65°	1749.2	1699.1	1686.0	1691.2	1738.6	1736.0
67.5°	1783.4	1649.1	1606.9	1609.6	1678.1	1667.5
70°	1833.5	1580.6	1517.4	1501.6	1617.5	1599.0
72.5°	1849.3	1501.6	1401.5	1385.6	1454.1	1401.5
75°	1775.5	1438.3	1277.6	1225.0	1196.0	1180.2
77.5°	1583.2	1398.8	1148.6	1037.9	993.1	982.6
80°	1311.9	1317.2	980.0	848.2	985.2	982.6
82.5°	990.5	1138.0	785.0	735.0	713.9	595.4
85°	479.4	856.1	603.3	505.8	302.9	287.1
87.5°	42.1	358.3	347.7	226.6	102.7	97.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)