

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: P196296

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196296
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-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 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: 42360.4 lumens
Efficiency: N/A
Efficacy: 110.9 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

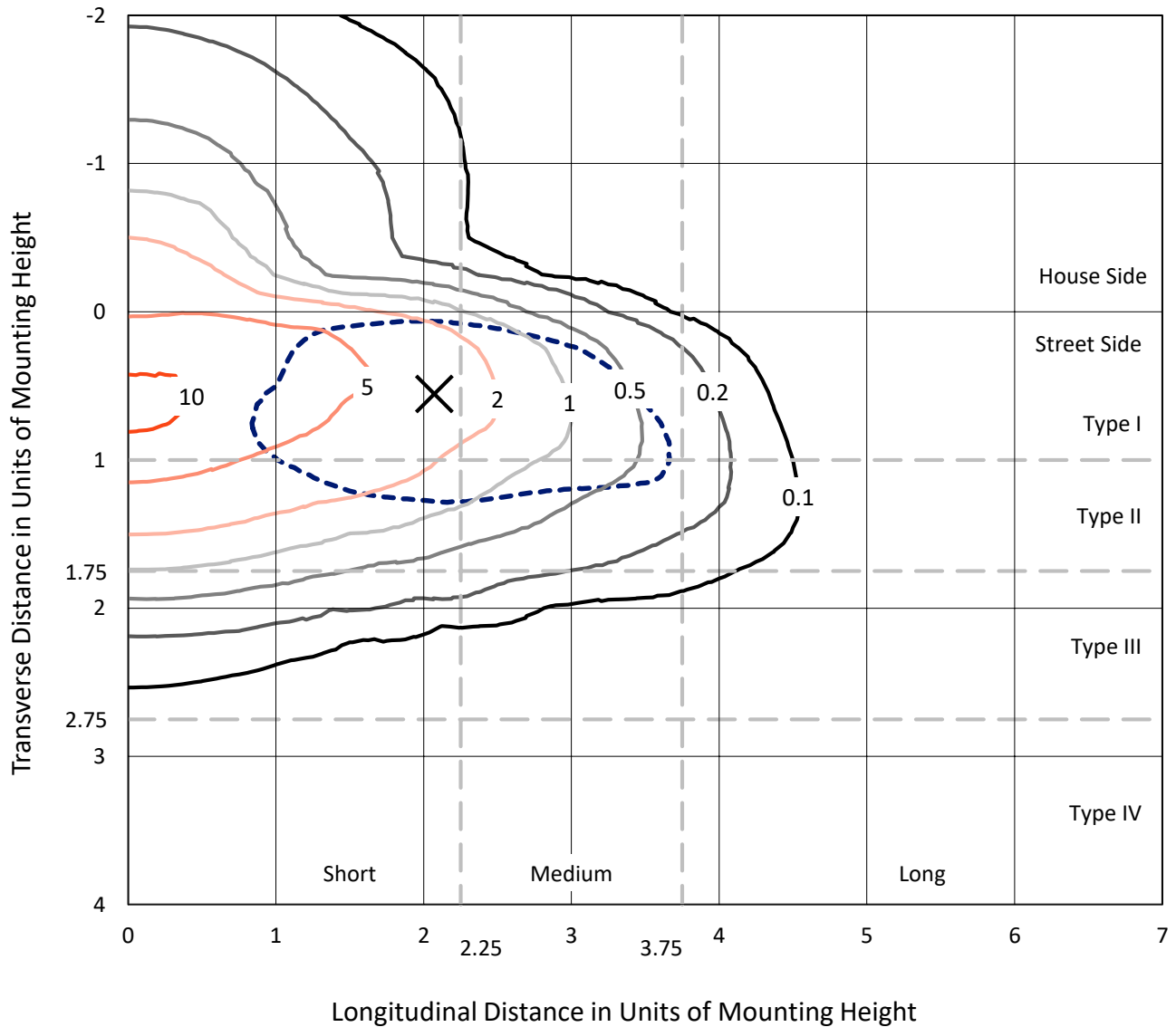
Input Watts (W): 382
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

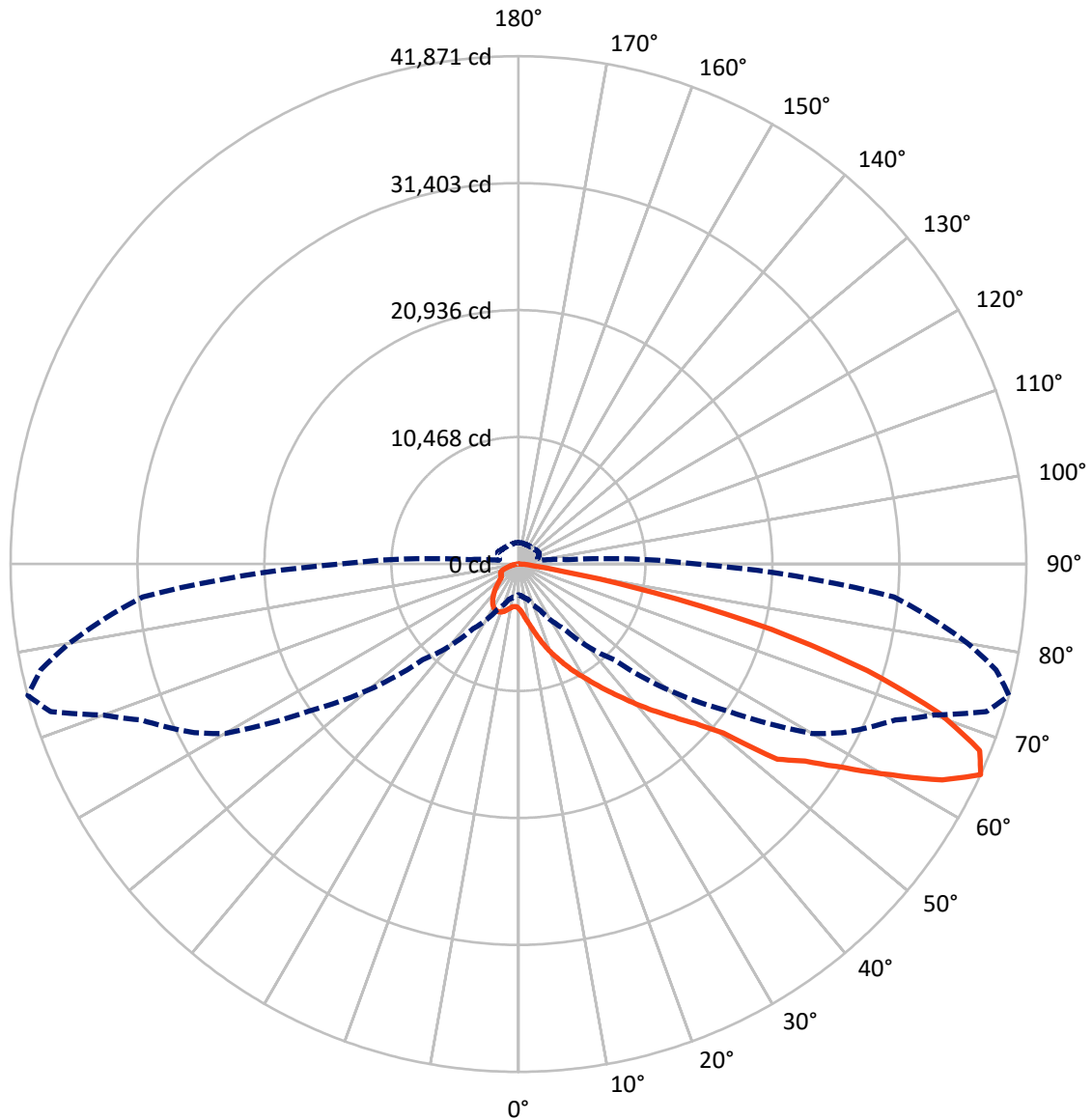
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 11.7 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	6365.3	0.0	6365.3
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	35995.1	0.0	35995.1
	% Fixture	85.0	0.0	85.0
Total	Lumens	42360.4	0.0	42360.4
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	433.3	1.0
10°-20°	1655.0	3.9
20°-30°	3340.0	7.9
30°-40°	5672.1	13.4
40°-50°	7911.3	18.7
50°-60°	9696.3	22.9
60°-70°	9122.9	21.5
70°-80°	4000.3	9.4
80°-90°	529.3	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°	42360.4	100.0
0°-180°	42360.4	100.0

Coefficient of Utilization



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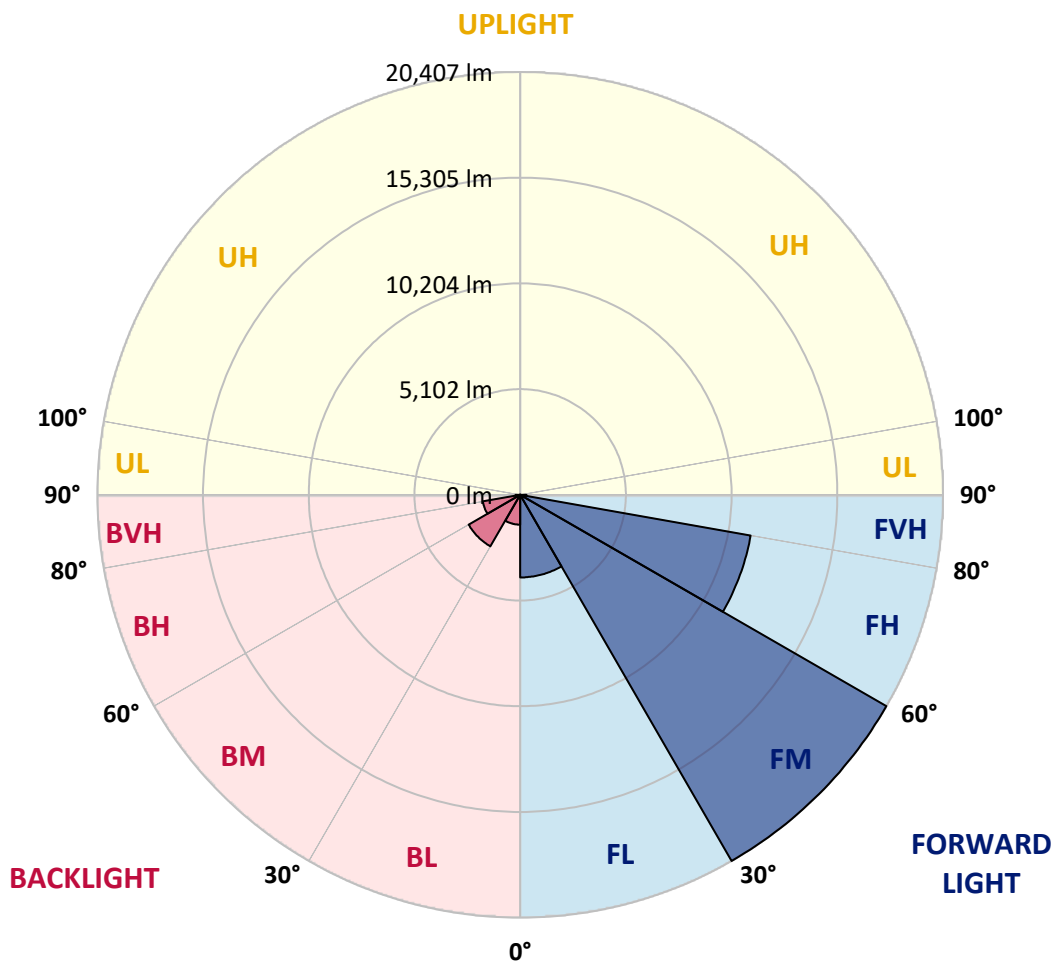
CATALOG NUMBER: NAV-AF-06-D-UNV-T2R-1200

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3987.3	9.4			
FM	(30°-60°)	20407.3	48.2			
FH	(60°-80°)	11293.7	26.7			G4/12000
FVH	(80°-90°)	306.8	0.7			G3/500
BL	(0°-30°)	1441.0	3.4	B3/2500		
BM	(30°-60°)	2872.4	6.8	B3/5000		
BH	(60°-80°)	1829.5	4.3	B3/2500		G3/2500
BVH	(80°-90°)	222.5	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°	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2
2.5°	4621.5	4567.6	4573.0	4497.6	4387.0	4265.8	4166.1	4112.2	4066.4	4052.9	3977.4
5°	6044.3	5977.0	5952.8	5780.3	5521.6	5214.4	4909.9	4791.3	4694.3	4635.0	4489.5
7.5°	7208.5	7173.4	7141.1	6982.2	6726.1	6332.7	5842.3	5667.0	5505.4	5327.5	5152.4
10°	8000.8	7987.3	7973.8	7863.3	7650.4	7308.2	6780.0	6588.7	6386.6	6160.2	5931.2
12.5°	8599.0	8599.0	8609.8	8518.1	8388.8	8124.7	7645.0	7467.2	7262.4	7025.2	6763.9
15°	9000.5	9011.3	9067.8	9094.9	9027.4	8857.7	8437.3	8281.0	8086.9	7852.6	7593.9
17.5°	9267.3	9288.8	9372.4	9461.3	9547.5	9488.3	9175.7	9030.2	8855.0	8639.4	8396.9
20°	9887.1	9860.1	9862.9	9835.9	9962.5	10008.3	9835.9	9714.7	9574.5	9377.8	9156.8
22.5°	11188.6	11137.5	11005.4	10668.6	10515.0	10498.9	10396.4	10331.7	10224.0	10100.0	9879.0
25°	12886.3	12827.1	12565.7	12010.6	11552.5	11129.4	10940.8	10900.4	10830.3	10746.7	10587.7
27.5°	14640.7	14576.0	14239.2	13538.4	12940.2	12086.1	11498.6	11444.7	11380.0	11344.9	11269.5
30°	16184.7	16114.6	15783.2	15071.9	14349.6	13331.0	12250.3	12061.7	11951.2	11962.1	11918.9
32.5°	17540.2	17478.2	17106.4	16381.4	15648.5	14659.5	13225.9	12932.1	12684.3	12592.6	12625.0
35°	18677.4	18620.8	18213.9	17483.7	16745.3	15923.4	14481.7	14039.7	13635.5	13382.2	13352.6
37.5°	19345.7	19313.4	19027.7	18407.9	17675.0	17071.3	15888.4	15397.9	14802.3	14433.1	14271.5
40°	19308.0	19343.0	19294.5	19014.3	18445.6	18006.4	17354.3	16869.2	16287.1	15737.4	15408.7
42.5°	18758.3	18806.7	19025.0	19170.5	19017.0	18750.2	18634.3	18273.2	17750.4	17168.4	16713.0
45°	18003.7	18046.8	18329.7	18855.2	19294.5	19370.0	19755.3	19574.8	19132.9	18637.0	18135.8
47.5°	16847.7	16931.2	17259.9	18095.4	19140.9	19868.5	20695.8	20779.3	20523.4	20113.8	19644.8
50°	15174.2	15284.7	15745.5	16933.9	18558.9	20380.5	22094.4	22412.3	22309.9	21894.9	21420.7
52.5°	13460.4	13570.9	14185.3	15449.1	17621.0	20590.7	23471.4	24285.3	24872.6	25301.2	25384.7
55°	11676.4	11800.4	12474.1	13929.2	16370.7	20323.9	24455.0	25379.3	25974.9	26422.2	26602.8
57.5°	9663.4	9803.6	10455.7	11927.0	14602.9	19251.4	25549.0	26858.7	27745.3	28435.2	28823.2
60°	7354.0	7529.1	8205.6	9687.7	12280.0	17198.0	26036.9	27974.3	29383.8	30418.5	31033.0
62.5°	4661.9	4839.8	5543.2	7081.9	9636.5	14392.7	24657.1	27483.9	29887.7	31418.3	32544.7
65°	2543.9	2622.0	3012.8	4171.5	6497.1	11167.1	21159.3	24492.7	27955.5	30124.8	31854.8
67.5°	1907.9	1918.6	1959.1	2242.0	3460.0	7540.0	16543.2	19596.4	23441.7	26233.6	28300.4
70°	1670.8	1670.8	1676.1	1678.9	1878.2	4085.3	11207.6	14018.2	17542.9	20367.1	22935.2
72.5°	1498.3	1482.2	1476.7	1444.4	1471.3	2093.9	6101.0	8625.9	11598.2	14767.3	17163.0
75°	1293.5	1290.8	1290.8	1258.4	1274.6	1474.1	2646.3	4139.2	6443.2	9394.0	11751.9
77.5°	1118.3	1099.5	1102.1	1083.3	1134.5	1129.1	1255.8	1705.8	2805.2	4934.1	6890.5
80°	921.6	908.2	916.3	905.4	986.3	835.3	846.2	1042.9	1393.2	2163.8	3050.4
82.5°	681.8	687.1	738.4	732.9	830.0	563.2	619.8	778.8	937.7	1077.9	1172.2
85°	398.8	406.9	530.9	557.8	609.1	296.5	379.9	463.5	522.8	579.4	603.6
87.5°	43.1	56.6	296.5	304.5	272.2	88.9	153.6	194.1	207.5	221.0	194.1
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°	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2
2.5°	3953.2	3918.2	3880.5	3858.9	3821.1	3788.8	3729.6	3681.1	3627.2	3589.4	3573.3
5°	4416.7	4333.2	4244.2	4179.6	4098.8	4028.7	3894.0	3732.2	3681.1	3573.3	3546.3
7.5°	5020.3	4869.5	4718.6	4594.6	4454.4	4338.5	4112.2	3821.1	3783.5	3611.0	3573.3
10°	5729.0	5508.1	5284.5	5093.1	4888.3	4710.5	4376.3	3966.7	3926.3	3705.3	3667.6
12.5°	6521.3	6251.9	5963.5	5677.9	5435.3	5184.7	4729.3	4193.1	4128.4	3867.0	3815.8
15°	7337.8	7046.8	6712.7	6367.8	6068.7	5737.1	5163.1	4489.5	4370.9	4063.7	3993.6
17.5°	8143.6	7828.3	7478.0	7092.6	6742.3	6346.2	5632.1	4821.0	4616.2	4257.7	4168.8
20°	8922.4	8601.7	8232.5	7855.2	7418.6	6966.0	6111.7	5147.0	4834.4	4419.5	4303.6
22.5°	9631.1	9356.2	8987.0	8553.2	8111.3	7602.0	6599.5	5473.1	5025.8	4543.3	4395.2
25°	10377.5	10126.9	9760.5	9342.7	8828.1	8262.2	7103.4	5782.9	5179.3	4610.7	4427.5
27.5°	11132.1	10916.5	10571.6	10132.3	9579.9	8952.0	7615.4	6068.7	5303.3	4632.3	4411.4
30°	11937.8	11770.7	11452.8	10962.4	10404.5	9709.2	8173.2	6348.8	5381.4	4602.7	4338.5
32.5°	12700.4	12695.0	12412.1	11902.7	11301.9	10536.5	8760.7	6631.8	5421.8	4519.1	4211.9
35°	13492.7	13603.2	13390.3	12905.2	12271.9	11423.1	9410.1	6933.7	5424.6	4370.9	4047.5
37.5°	14392.7	14589.4	14495.1	14034.4	13368.7	12433.7	10172.7	7273.2	5408.3	4166.1	3807.7
40°	15416.8	15686.2	15683.6	15295.5	14584.1	13565.5	11059.3	7653.1	5370.7	3910.1	3524.8
42.5°	16589.0	16909.7	16998.6	16615.9	15896.5	14802.3	12075.2	8070.8	5311.4	3656.8	3225.7
45°	17931.0	18213.9	18381.0	18025.3	17303.1	16149.7	13242.1	8545.1	5238.6	3330.7	2883.4
47.5°	19367.2	19696.0	19946.6	19642.1	18871.4	17685.7	14624.5	9156.8	5211.6	2958.9	2514.2
50°	21148.5	21488.0	22029.7	21892.3	21469.2	20515.3	17548.3	10601.2	5222.5	2605.9	2204.4
52.5°	25567.9	26346.7	27031.2	26726.6	25721.5	24085.8	19925.0	11404.3	4996.1	2317.5	1988.7
55°	26901.9	27785.7	28796.3	28669.6	27704.9	26055.7	21803.4	12075.2	4777.8	2107.3	1848.6
57.5°	29235.5	30278.3	31690.4	31663.5	30480.5	28623.8	24220.5	12878.2	4683.5	1986.1	1778.5
60°	31706.6	33035.1	34986.1	35290.7	34005.2	32073.1	27077.0	13864.6	4697.0	1918.6	1738.1
62.5°	33512.1	35460.4	38297.9	39208.8	37694.4	35565.5	30041.2	14850.9	4616.2	1840.5	1689.6
65°	33622.6	36427.8	40453.8	41871.2	40337.9	37602.8	31086.8	14656.8	4131.1	1735.4	1611.5
67.5°	30927.8	34581.9	39472.9	41027.8	39459.4	36347.0	29254.3	12813.6	3357.6	1552.2	1476.7
70°	25759.2	30000.8	35077.7	36810.5	35514.3	32364.1	25460.1	10234.7	2508.8	1309.7	1274.6
72.5°	19906.2	23862.2	28472.9	30076.3	29084.6	26314.4	20081.3	7459.2	1792.0	1061.7	1034.8
75°	14231.1	17599.5	20946.5	21558.1	20579.9	18036.1	13029.2	4659.2	1255.8	870.4	832.7
77.5°	8811.9	11002.8	12204.6	11417.7	10170.1	8453.5	5303.3	2301.3	835.3	708.7	671.0
80°	3910.1	4589.2	4284.6	3818.5	3015.5	2479.2	1619.5	1021.3	539.0	547.1	525.5
82.5°	1315.0	1390.5	1352.8	1344.7	1212.6	1061.7	687.1	441.9	301.8	350.4	342.3
85°	641.4	671.0	673.7	698.0	606.3	471.6	186.0	175.1	129.3	188.6	196.7
87.5°	194.1	196.7	177.9	194.1	156.3	107.8	35.0	48.5	24.2	45.8	45.8
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°	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2
2.5°	3543.6	3532.9	3513.9	3492.5	3487.0	3460.0	3451.9	3438.5	3430.5	3417.0	3406.2
5°	3511.3	3492.5	3470.9	3446.6	3446.6	3408.9	3392.7	3376.6	3376.6	3352.3	3341.5
7.5°	3543.6	3519.4	3495.1	3473.5	3481.6	3438.5	3422.4	3406.2	3403.5	3379.2	3368.5
10°	3635.3	3611.0	3581.4	3559.8	3551.7	3516.7	3497.8	3473.5	3457.4	3441.2	3425.0
12.5°	3775.4	3743.0	3705.3	3659.5	3640.6	3611.0	3581.4	3549.0	3511.3	3495.1	3470.9
15°	3942.5	3888.5	3837.4	3780.7	3729.6	3699.9	3659.5	3608.3	3557.1	3535.5	3503.2
17.5°	4079.8	4023.3	3950.5	3883.1	3791.6	3767.3	3710.7	3648.7	3565.2	3557.1	3508.6
20°	4195.7	4109.5	4020.6	3939.8	3799.6	3786.1	3716.1	3643.3	3524.8	3524.8	3465.5
22.5°	4260.4	4141.8	4036.8	3928.9	3753.8	3743.0	3662.2	3575.9	3430.5	3435.8	3363.1
25°	4271.2	4128.4	3996.4	3867.0	3664.9	3646.0	3543.6	3449.3	3290.3	3279.5	3204.1
27.5°	4228.1	4061.0	3907.4	3751.2	3532.9	3492.5	3379.2	3266.1	3109.8	3082.8	3002.0
30°	4128.4	3931.7	3759.2	3578.7	3349.6	3284.9	3166.3	3050.4	2891.5	2856.5	2781.0
32.5°	3969.4	3745.7	3554.3	3373.8	3120.5	3039.7	2921.1	2805.2	2651.7	2624.7	2554.6
35°	3759.2	3508.6	3306.5	3115.2	2861.8	2778.3	2665.1	2562.7	2422.6	2411.8	2363.3
37.5°	3495.1	3233.8	3018.1	2834.9	2595.0	2552.0	2436.1	2360.7	2244.8	2255.5	2231.3
40°	3196.0	2929.2	2724.4	2562.7	2355.2	2317.5	2247.4	2190.9	2091.1	2120.8	2123.4
42.5°	2894.1	2627.3	2441.5	2295.9	2118.1	2093.9	2045.3	2013.0	1937.6	1996.8	2021.0
45°	2552.0	2304.0	2145.0	2034.5	1902.5	1902.5	1878.2	1875.6	1824.3	1907.9	1932.1
47.5°	2220.5	2026.5	1916.0	1848.6	1757.0	1800.1	1792.0	1813.6	1775.8	1862.1	1883.7
50°	1969.9	1835.2	1767.8	1735.4	1670.8	1738.1	1754.3	1783.9	1751.6	1827.1	1843.3
52.5°	1810.9	1721.9	1684.2	1676.1	1630.4	1713.9	1740.9	1767.8	1730.0	1800.1	1797.4
55°	1721.9	1662.7	1649.2	1665.4	1630.4	1711.2	1738.1	1757.0	1724.7	1773.2	1770.4
57.5°	1689.6	1657.3	1665.4	1689.6	1665.4	1732.8	1746.2	1767.8	1735.4	1757.0	1767.8
60°	1686.9	1686.9	1719.3	1751.6	1735.4	1783.9	1792.0	1789.3	1759.7	1762.3	1767.8
62.5°	1670.8	1711.2	1765.1	1816.2	1810.9	1870.2	1875.6	1840.5	1816.2	1789.3	1781.3
65°	1619.5	1686.9	1765.1	1835.2	1845.9	1937.6	1948.3	1913.3	1897.2	1851.3	1816.2
67.5°	1506.4	1592.6	1684.2	1770.4	1789.3	1913.3	1937.6	1951.0	1959.1	1929.5	1883.7
70°	1315.0	1404.0	1498.3	1598.0	1625.0	1762.3	1813.6	1875.6	1924.1	1967.1	1951.0
72.5°	1069.8	1150.6	1231.5	1323.1	1363.6	1506.4	1573.7	1681.5	1757.0	1867.5	1913.3
75°	848.8	897.3	945.8	1002.5	1034.8	1175.0	1258.4	1387.8	1490.2	1643.8	1746.2
77.5°	668.3	692.5	716.8	741.0	754.5	832.7	900.1	1029.4	1148.0	1342.0	1492.9
80°	514.7	528.1	530.9	539.0	533.6	571.3	595.6	673.7	776.1	967.4	1145.3
82.5°	331.4	342.3	347.6	361.1	334.2	382.7	398.8	406.9	460.8	600.9	727.6
85°	186.0	188.6	191.3	196.7	159.0	207.5	210.2	196.7	191.3	248.0	280.3
87.5°	45.8	43.1	45.8	45.8	18.8	43.1	43.1	29.7	21.6	40.4	32.3
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):

	135°	145°	155°	165°	175°	180°
0°	3670.2	3670.2	3670.2	3670.2	3670.2	3670.2
2.5°	3382.0	3376.6	3379.2	3365.7	3360.4	3363.1
5°	3328.1	3317.2	3317.2	3309.1	3298.4	3298.4
7.5°	3352.3	3330.7	3322.6	3306.5	3290.3	3293.0
10°	3390.1	3352.3	3325.3	3301.1	3282.2	3282.2
12.5°	3414.3	3346.9	3306.5	3274.2	3252.6	3252.6
15°	3419.6	3317.2	3258.0	3222.9	3201.4	3201.4
17.5°	3387.3	3258.0	3182.5	3136.7	3112.4	3117.9
20°	3306.5	3147.5	3058.5	3010.0	2985.8	2988.4
22.5°	3179.8	2996.5	2894.1	2837.6	2813.3	2813.3
25°	3007.4	2807.9	2697.4	2651.7	2630.1	2630.1
27.5°	2810.7	2605.9	2508.8	2473.8	2460.3	2460.3
30°	2589.7	2419.9	2349.8	2325.6	2304.0	2304.0
32.5°	2403.7	2282.5	2258.2	2225.8	2169.3	2166.6
35°	2255.5	2242.0	2223.2	2126.2	2045.3	2034.5
37.5°	2174.7	2255.5	2136.9	1969.9	1905.2	1902.5
40°	2131.5	2207.0	2002.2	1921.4	1913.3	1913.3
42.5°	2029.1	2083.0	1994.1	1948.3	1948.3	1951.0
45°	1921.4	1967.1	2013.0	1972.6	1986.1	1988.7
47.5°	1845.9	1937.6	2013.0	1978.0	2004.9	2021.0
50°	1775.8	1910.6	1972.6	1972.6	2002.2	2004.9
52.5°	1759.7	1872.8	1934.8	1964.5	1967.1	1953.7
55°	1762.3	1843.3	1905.2	1942.9	1926.7	1926.7
57.5°	1759.7	1827.1	1880.9	1894.4	1902.5	1902.5
60°	1762.3	1805.5	1848.6	1843.3	1870.2	1870.2
62.5°	1770.4	1775.8	1797.4	1792.0	1832.4	1832.4
65°	1789.3	1738.1	1724.7	1730.0	1778.5	1775.8
67.5°	1824.3	1686.9	1643.8	1646.5	1716.6	1705.8
70°	1875.6	1616.9	1552.2	1536.1	1654.6	1635.7
72.5°	1891.7	1536.1	1433.7	1417.4	1487.5	1433.7
75°	1816.2	1471.3	1306.9	1253.1	1223.4	1207.3
77.5°	1619.5	1430.9	1175.0	1061.7	1015.9	1005.2
80°	1342.0	1347.4	1002.5	867.7	1007.8	1005.2
82.5°	1013.2	1164.1	803.0	751.9	730.3	609.1
85°	490.4	875.7	617.1	517.4	309.9	293.7
87.5°	43.1	366.5	355.7	231.8	105.1	99.7
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)