

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: P195810

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195810
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 37749 lumens
Efficiency: N/A
Efficacy: 113.4 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

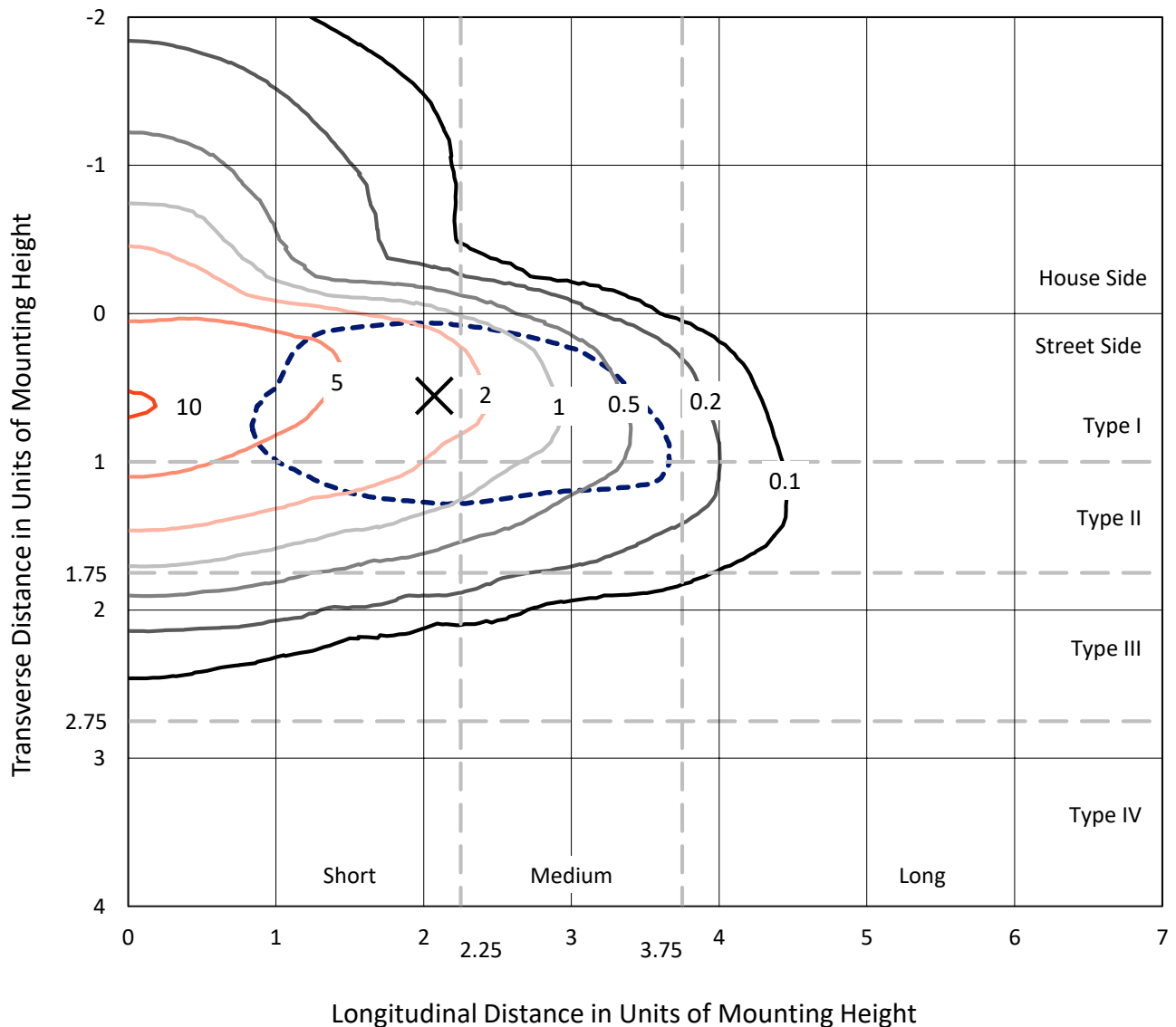
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

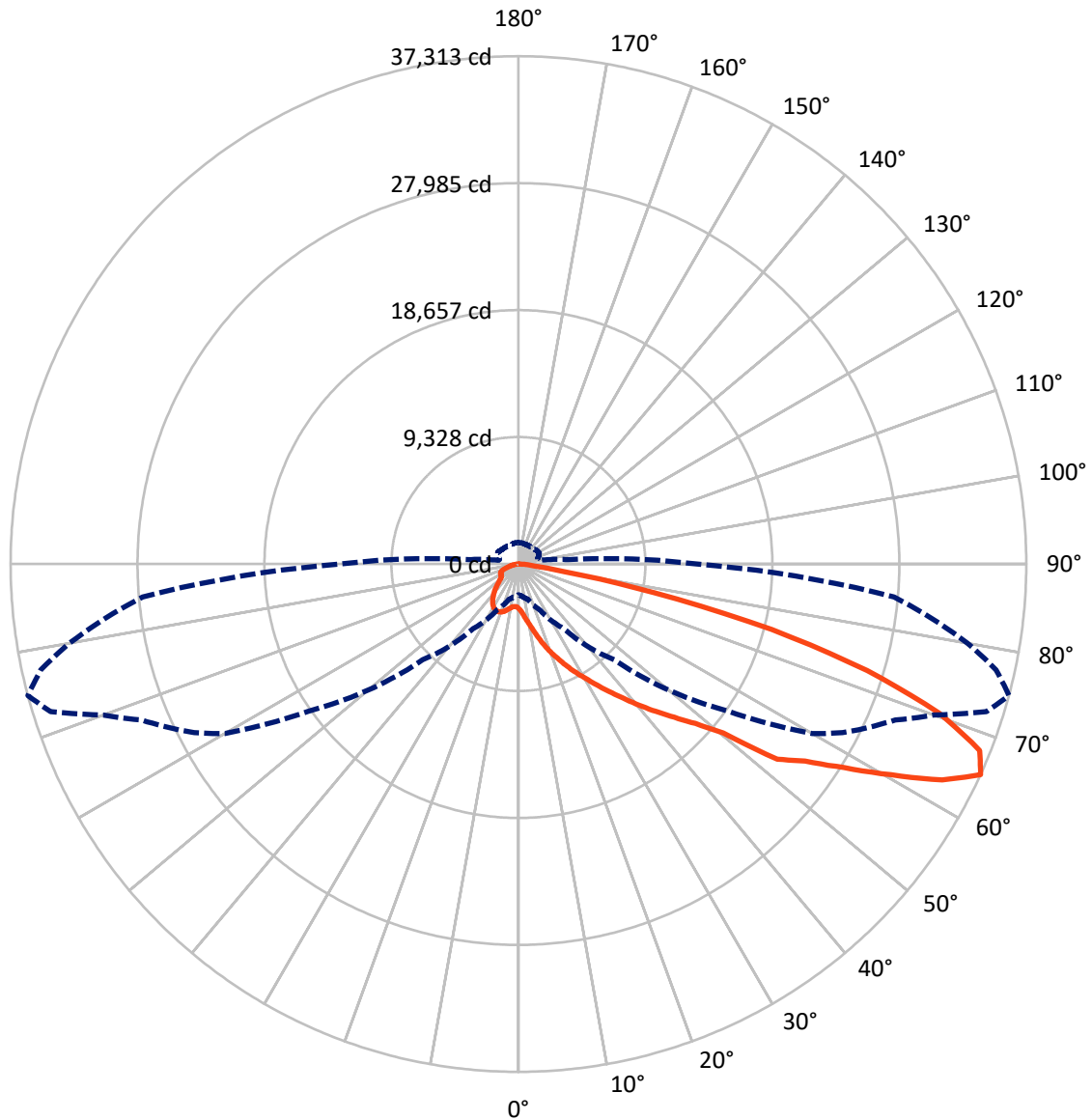
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 10.4 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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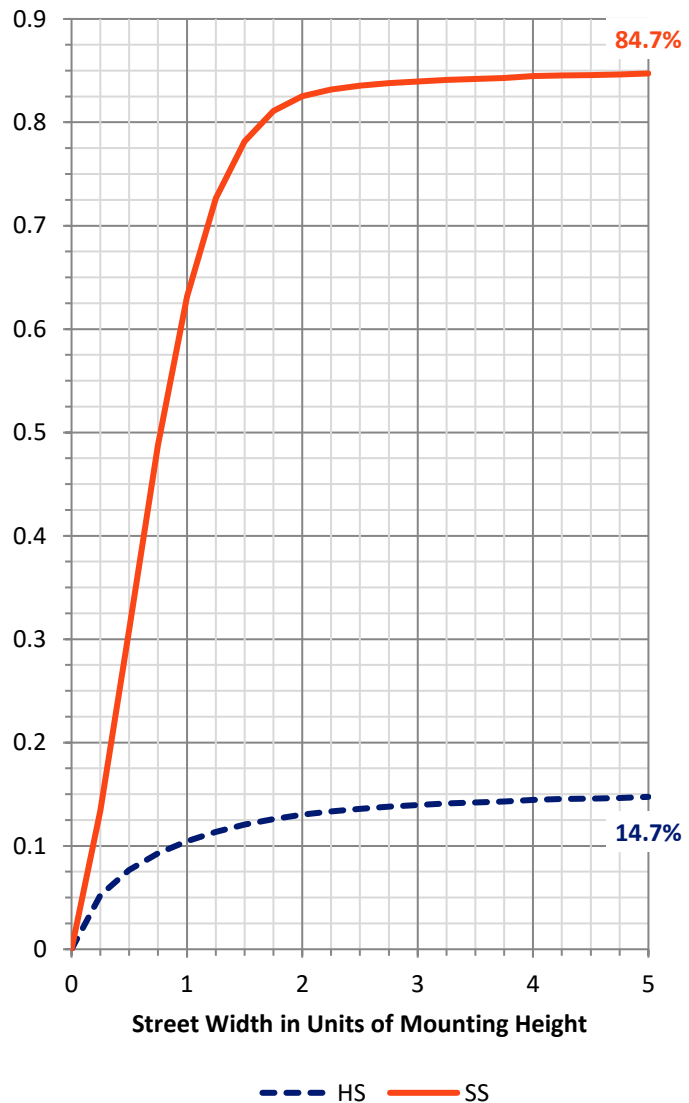
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5672.4	0.0	5672.4
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	32076.6	0.0	32076.6
	% Fixture	85.0	0.0	85.0
Total	Lumens	37749.0	0.0	37749.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	386.1	1.0
10°-20°	1474.8	3.9
20°-30°	2976.4	7.9
30°-40°	5054.7	13.4
40°-50°	7050.0	18.7
50°-60°	8640.7	22.9
60°-70°	8129.7	21.5
70°-80°	3564.8	9.4
80°-90°	471.7	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°	37749.0	100.0
0°-180°	37749.0	100.0

Coefficient of Utilization



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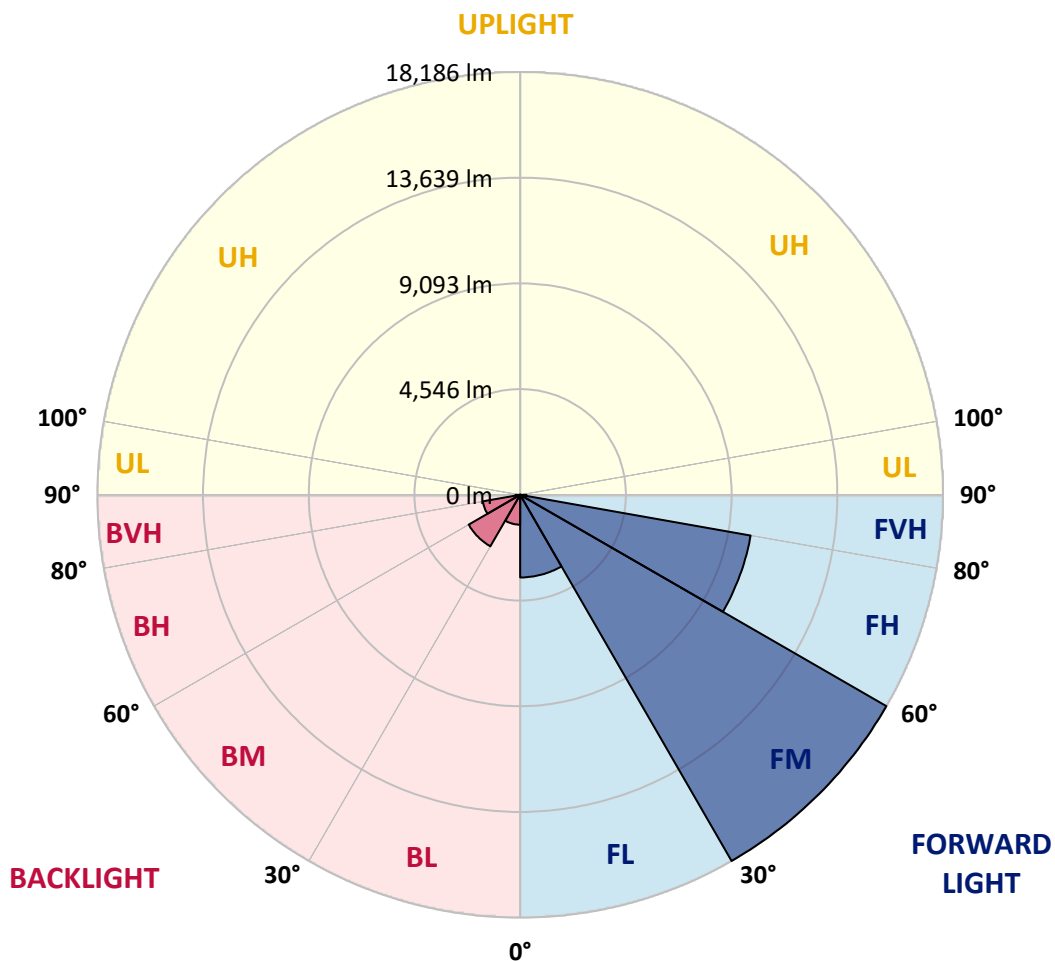
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	3553.2	9.4			
FM	(30°-60°)	18185.8	48.2			
FH	(60°-80°)	10064.2	26.7			G4/12000
FVH	(80°-90°)	273.4	0.7			G3/500
BL	(0°-30°)	1284.1	3.4	B3/2500		
BM	(30°-60°)	2559.7	6.8	B3/5000		
BH	(60°-80°)	1630.3	4.3	B3/2500		G3/2500
BVH	(80°-90°)	198.2	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°	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7
2.5°	4118.4	4070.4	4075.2	4008.0	3909.5	3801.4	3712.6	3664.6	3623.7	3611.7	3544.5
5°	5386.4	5326.3	5304.7	5151.0	4920.5	4646.7	4375.4	4269.7	4183.3	4130.4	4000.7
7.5°	6423.8	6392.6	6363.7	6222.1	5993.9	5643.3	5206.3	5050.2	4906.1	4747.6	4591.5
10°	7129.8	7117.8	7105.8	7007.3	6817.6	6512.6	6041.9	5871.4	5691.3	5489.6	5285.5
12.5°	7662.9	7662.9	7672.5	7590.9	7475.6	7240.3	6812.8	6654.3	6471.8	6260.5	6027.5
15°	8020.7	8030.3	8080.7	8104.8	8044.7	7893.4	7518.8	7379.5	7206.6	6997.7	6767.2
17.5°	8258.4	8277.7	8352.1	8431.3	8508.2	8455.4	8176.8	8047.1	7891.0	7698.9	7482.8
20°	8810.8	8786.8	8789.2	8765.1	8878.0	8918.8	8765.1	8657.1	8532.2	8356.9	8160.0
22.5°	9970.7	9925.0	9807.4	9507.2	9370.3	9355.9	9264.6	9207.0	9110.9	9000.5	8803.6
25°	11483.5	11430.7	11197.8	10703.1	10294.8	9917.8	9749.7	9713.7	9651.3	9576.8	9435.1
27.5°	13046.9	12989.2	12689.0	12064.7	11531.6	10770.3	10246.8	10198.8	10141.2	10109.9	10042.7
30°	14422.9	14360.4	14065.1	13431.1	12787.5	11879.8	10916.8	10748.7	10650.3	10659.9	10621.4
32.5°	15630.8	15575.5	15244.1	14598.2	13945.0	13063.7	11786.1	11524.4	11303.4	11221.8	11250.6
35°	16644.2	16593.7	16231.1	15580.3	14922.4	14189.9	12905.2	12511.3	12151.1	11925.4	11899.0
37.5°	17239.7	17210.9	16956.4	16404.0	15750.8	15212.9	14158.7	13721.7	13190.9	12861.9	12717.9
40°	17206.1	17237.3	17194.1	16944.3	16437.6	16046.2	15465.1	15032.8	14514.1	14024.2	13731.3
42.5°	16716.2	16759.4	16954.0	17083.6	16946.7	16709.0	16605.7	16284.0	15818.1	15299.4	14893.5
45°	16043.8	16082.2	16334.4	16802.7	17194.1	17261.3	17604.7	17443.8	17050.0	16608.1	16161.5
47.5°	15013.6	15088.1	15381.0	16125.5	17057.2	17705.6	18442.8	18517.3	18289.1	17924.1	17506.3
50°	13522.3	13620.8	14031.4	15090.5	16538.5	18161.9	19689.2	19972.5	19881.3	19511.5	19088.8
52.5°	11995.0	12093.5	12641.0	13767.3	15702.8	18349.2	20916.3	21641.5	22165.0	22546.8	22621.3
55°	10405.3	10515.8	11116.1	12412.9	14588.6	18111.4	21792.8	22616.5	23147.2	23545.8	23706.7
57.5°	8611.5	8736.3	9317.5	10628.6	13013.2	17155.7	22767.8	23934.8	24724.9	25339.7	25685.5
60°	6553.4	6709.5	7312.3	8633.1	10943.2	15325.8	23202.4	24929.0	26185.0	27107.1	27654.6
62.5°	4154.4	4312.9	4939.7	6310.9	8587.4	12825.9	21972.9	24492.0	26634.0	27998.0	29001.8
65°	2266.9	2336.6	2684.8	3717.4	5789.8	9951.4	18855.9	21826.4	24912.2	26845.4	28387.1
67.5°	1700.2	1709.8	1745.8	1998.0	3083.4	6719.1	14742.3	17463.1	20889.9	23377.7	25219.6
70°	1488.9	1488.9	1493.7	1496.1	1673.8	3640.5	9987.5	12492.1	15633.2	18149.9	20438.4
72.5°	1335.2	1320.8	1316.0	1287.2	1311.2	1865.9	5436.8	7686.9	10335.7	13159.7	15294.6
75°	1152.7	1150.3	1150.3	1121.5	1135.9	1313.6	2358.2	3688.6	5741.8	8371.3	10472.5
77.5°	996.6	979.8	982.2	965.4	1011.0	1006.2	1119.1	1520.1	2499.9	4397.0	6140.4
80°	821.3	809.3	816.5	806.9	878.9	744.4	754.0	929.3	1241.5	1928.3	2718.4
82.5°	607.6	612.4	658.0	653.2	739.6	501.9	552.3	694.0	835.7	960.6	1044.6
85°	355.4	362.6	473.1	497.1	542.7	264.2	338.6	413.0	465.9	516.3	537.9
87.5°	38.4	50.4	264.2	271.4	242.5	79.2	136.9	172.9	184.9	196.9	172.9
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7
2.5°	3522.9	3491.6	3458.0	3438.8	3405.2	3376.4	3323.6	3280.3	3232.3	3198.7	3184.3
5°	3935.9	3861.5	3782.2	3724.6	3652.5	3590.1	3470.0	3326.0	3280.3	3184.3	3160.3
7.5°	4473.8	4339.3	4204.9	4094.4	3969.5	3866.3	3664.6	3405.2	3371.6	3217.9	3184.3
10°	5105.4	4908.5	4709.2	4538.7	4356.2	4197.7	3899.9	3534.9	3498.9	3301.9	3268.3
12.5°	5811.4	5571.3	5314.3	5059.8	4843.6	4620.3	4214.5	3736.6	3679.0	3446.0	3400.4
15°	6539.0	6279.7	5981.9	5674.5	5408.0	5112.6	4601.1	4000.7	3895.1	3621.3	3558.9
17.5°	7257.1	6976.1	6663.9	6320.5	6008.3	5655.3	5018.9	4296.1	4113.6	3794.2	3715.0
20°	7951.1	7665.3	7336.3	7000.1	6611.1	6207.6	5446.4	4586.7	4308.1	3938.3	3835.1
22.5°	8582.6	8337.7	8008.7	7622.1	7228.2	6774.4	5881.1	4877.3	4478.6	4048.8	3916.7
25°	9247.8	9024.5	8697.9	8325.7	7867.0	7362.7	6330.1	5153.4	4615.5	4108.8	3945.5
27.5°	9920.2	9728.1	9420.7	9029.3	8537.0	7977.5	6786.4	5408.0	4726.0	4128.0	3931.1
30°	10638.2	10489.4	10206.0	9768.9	9271.8	8652.3	7283.5	5657.7	4795.6	4101.6	3866.3
32.5°	11317.8	11313.0	11060.9	10607.0	10071.5	9389.5	7807.0	5909.9	4831.6	4027.2	3753.4
35°	12023.9	12122.3	11932.6	11500.4	10936.0	10179.6	8385.7	6178.8	4834.0	3895.1	3606.9
37.5°	12825.9	13001.2	12917.2	12506.5	11913.4	11080.1	9065.3	6481.4	4819.6	3712.6	3393.2
40°	13738.5	13978.6	13976.2	13630.4	12996.4	12088.7	9855.4	6820.0	4786.0	3484.4	3141.0
42.5°	14783.1	15068.8	15148.1	14807.1	14165.9	13190.9	10760.7	7192.2	4733.2	3258.7	2874.5
45°	15979.0	16231.1	16380.0	16063.0	15419.5	14391.6	11800.5	7614.9	4668.3	2968.1	2569.5
47.5°	17258.9	17551.9	17775.2	17503.9	16817.1	15760.5	13032.5	8160.0	4644.3	2636.7	2240.5
50°	18846.3	19148.8	19631.5	19509.1	19132.0	18281.9	15638.0	9447.1	4653.9	2322.2	1964.4
52.5°	22784.6	23478.6	24088.5	23817.2	22921.5	21463.8	17756.0	10162.8	4452.2	2065.2	1772.2
55°	23973.3	24760.9	25661.5	25548.6	24688.9	23219.2	19429.8	10760.7	4257.7	1877.9	1647.4
57.5°	26052.9	26982.2	28240.6	28216.6	27162.3	25507.8	21583.9	11476.3	4173.6	1769.8	1584.9
60°	28255.0	29438.9	31177.5	31448.9	30303.4	28581.6	24129.4	12355.3	4185.7	1709.8	1548.9
62.5°	29863.9	31600.1	34128.8	34940.5	33590.9	31693.8	26770.9	13234.2	4113.6	1640.2	1505.7
65°	29962.4	32462.3	36050.0	37313.1	35946.7	33509.3	27702.7	13061.3	3681.4	1546.5	1436.0
67.5°	27561.0	30817.3	35175.8	36561.5	35163.8	32390.2	26069.7	11418.7	2992.2	1383.2	1316.0
70°	22955.1	26734.9	31259.1	32803.3	31648.2	28840.9	22688.5	9120.6	2235.7	1167.1	1135.9
72.5°	17739.2	21264.5	25373.3	26802.1	25918.4	23449.8	17895.3	6647.1	1596.9	946.2	922.1
75°	12681.8	15683.6	18666.2	19211.3	18339.6	16072.6	11610.8	4152.0	1119.1	775.7	742.0
77.5°	7852.6	9805.0	10876.0	10174.8	9062.9	7533.2	4726.0	2050.8	744.4	631.6	598.0
80°	3484.4	4089.6	3818.2	3402.8	2687.2	2209.3	1443.2	910.1	480.3	487.5	468.3
82.5°	1171.9	1239.1	1205.5	1198.3	1080.6	946.2	612.4	393.8	269.0	312.2	305.0
85°	571.5	598.0	600.4	622.0	540.3	420.2	165.7	156.1	115.3	168.1	175.3
87.5°	172.9	175.3	158.5	172.9	139.3	96.1	31.2	43.2	21.6	40.8	40.8
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°	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7
2.5°	3157.9	3148.2	3131.4	3112.2	3107.4	3083.4	3076.2	3064.2	3057.0	3045.0	3035.4
5°	3129.0	3112.2	3093.0	3071.4	3071.4	3037.8	3023.4	3009.0	3009.0	2987.4	2977.7
7.5°	3157.9	3136.2	3114.6	3095.4	3102.6	3064.2	3049.8	3035.4	3033.0	3011.4	3001.8
10°	3239.5	3217.9	3191.5	3172.3	3165.1	3133.8	3117.0	3095.4	3081.0	3066.6	3052.2
12.5°	3364.4	3335.6	3301.9	3261.1	3244.3	3217.9	3191.5	3162.7	3129.0	3114.6	3093.0
15°	3513.3	3465.2	3419.6	3369.2	3323.6	3297.1	3261.1	3215.5	3169.9	3150.6	3121.8
17.5°	3635.7	3585.3	3520.5	3460.4	3378.8	3357.2	3306.7	3251.5	3177.1	3169.9	3126.6
20°	3739.0	3662.1	3582.9	3510.9	3386.0	3374.0	3311.5	3246.7	3141.0	3141.0	3088.2
22.5°	3796.6	3691.0	3597.3	3501.3	3345.2	3335.6	3263.5	3186.7	3057.0	3061.8	2997.0
25°	3806.2	3679.0	3561.3	3446.0	3265.9	3249.1	3157.9	3073.8	2932.1	2922.5	2855.3
27.5°	3767.8	3618.9	3482.0	3342.8	3148.2	3112.2	3011.4	2910.5	2771.2	2747.2	2675.2
30°	3679.0	3503.7	3350.0	3189.1	2985.0	2927.3	2821.7	2718.4	2576.7	2545.5	2478.3
32.5°	3537.3	3338.0	3167.5	3006.6	2780.8	2708.8	2603.1	2499.9	2363.0	2339.0	2276.5
35°	3350.0	3126.6	2946.5	2776.0	2550.3	2475.9	2375.0	2283.7	2158.9	2149.3	2106.0
37.5°	3114.6	2881.7	2689.6	2526.3	2312.6	2274.1	2170.9	2103.6	2000.4	2010.0	1988.4
40°	2848.1	2610.3	2427.8	2283.7	2098.8	2065.2	2002.8	1952.3	1863.5	1889.9	1892.3
42.5°	2579.1	2341.4	2175.7	2046.0	1887.5	1865.9	1822.7	1793.9	1726.6	1779.4	1801.1
45°	2274.1	2053.2	1911.5	1813.1	1695.4	1695.4	1673.8	1671.4	1625.8	1700.2	1721.8
47.5°	1978.8	1805.9	1707.4	1647.4	1565.7	1604.1	1596.9	1616.1	1582.5	1659.4	1678.6
50°	1755.4	1635.4	1575.3	1546.5	1488.9	1548.9	1563.3	1589.7	1560.9	1628.2	1642.6
52.5°	1613.7	1534.5	1500.9	1493.7	1452.9	1527.3	1551.3	1575.3	1541.7	1604.1	1601.7
55°	1534.5	1481.7	1469.7	1484.1	1452.9	1524.9	1548.9	1565.7	1536.9	1580.1	1577.7
57.5°	1505.7	1476.9	1484.1	1505.7	1484.1	1544.1	1556.1	1575.3	1546.5	1565.7	1575.3
60°	1503.3	1503.3	1532.1	1560.9	1546.5	1589.7	1596.9	1594.5	1568.1	1570.5	1575.3
62.5°	1488.9	1524.9	1572.9	1618.6	1613.7	1666.6	1671.4	1640.2	1618.6	1594.5	1587.3
65°	1443.2	1503.3	1572.9	1635.4	1645.0	1726.6	1736.2	1705.0	1690.6	1649.8	1618.6
67.5°	1342.4	1419.2	1500.9	1577.7	1594.5	1705.0	1726.6	1738.6	1745.8	1719.4	1678.6
70°	1171.9	1251.1	1335.2	1424.0	1448.1	1570.5	1616.1	1671.4	1714.6	1753.0	1738.6
72.5°	953.4	1025.4	1097.4	1179.1	1215.1	1342.4	1402.4	1498.5	1565.7	1664.2	1705.0
75°	756.4	799.7	842.9	893.3	922.1	1047.0	1121.5	1236.7	1328.0	1464.9	1556.1
77.5°	595.5	617.2	638.8	660.4	672.4	742.0	802.1	917.3	1023.0	1195.9	1330.4
80°	458.7	470.7	473.1	480.3	475.5	509.1	530.7	600.4	691.6	862.1	1020.6
82.5°	295.4	305.0	309.8	321.8	297.8	341.0	355.4	362.6	410.6	535.5	648.4
85°	165.7	168.1	170.5	175.3	141.7	184.9	187.3	175.3	170.5	220.9	249.7
87.5°	40.8	38.4	40.8	40.8	16.8	38.4	38.4	26.4	19.2	36.0	28.8
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):

	135°	145°	155°	165°	175°	180°
0°	3270.7	3270.7	3270.7	3270.7	3270.7	3270.7
2.5°	3013.8	3009.0	3011.4	2999.4	2994.6	2997.0
5°	2965.7	2956.1	2956.1	2948.9	2939.3	2939.3
7.5°	2987.4	2968.1	2960.9	2946.5	2932.1	2934.5
10°	3021.0	2987.4	2963.3	2941.7	2924.9	2924.9
12.5°	3042.6	2982.6	2946.5	2917.7	2898.5	2898.5
15°	3047.4	2956.1	2903.3	2872.1	2852.9	2852.9
17.5°	3018.6	2903.3	2836.1	2795.2	2773.6	2778.4
20°	2946.5	2804.8	2725.6	2682.4	2660.8	2663.2
22.5°	2833.7	2670.4	2579.1	2528.7	2507.1	2507.1
25°	2680.0	2502.3	2403.8	2363.0	2343.8	2343.8
27.5°	2504.7	2322.2	2235.7	2204.5	2192.5	2192.5
30°	2307.8	2156.5	2094.0	2072.4	2053.2	2053.2
32.5°	2142.1	2034.0	2012.4	1983.6	1933.1	1930.7
35°	2010.0	1998.0	1981.2	1894.7	1822.7	1813.1
37.5°	1937.9	2010.0	1904.3	1755.4	1697.8	1695.4
40°	1899.5	1966.8	1784.2	1712.2	1705.0	1705.0
42.5°	1808.3	1856.3	1777.0	1736.2	1736.2	1738.6
45°	1712.2	1753.0	1793.9	1757.8	1769.8	1772.2
47.5°	1645.0	1726.6	1793.9	1762.6	1786.6	1801.1
50°	1582.5	1702.6	1757.8	1757.8	1784.2	1786.6
52.5°	1568.1	1669.0	1724.2	1750.6	1753.0	1741.0
55°	1570.5	1642.6	1697.8	1731.4	1717.0	1717.0
57.5°	1568.1	1628.2	1676.2	1688.2	1695.4	1695.4
60°	1570.5	1608.9	1647.4	1642.6	1666.6	1666.6
62.5°	1577.7	1582.5	1601.7	1596.9	1633.0	1633.0
65°	1594.5	1548.9	1536.9	1541.7	1584.9	1582.5
67.5°	1625.8	1503.3	1464.9	1467.3	1529.7	1520.1
70°	1671.4	1440.8	1383.2	1368.8	1474.5	1457.7
72.5°	1685.8	1368.8	1277.5	1263.1	1325.6	1277.5
75°	1618.6	1311.2	1164.7	1116.7	1090.2	1075.8
77.5°	1443.2	1275.1	1047.0	946.2	905.3	895.7
80°	1195.9	1200.7	893.3	773.3	898.1	895.7
82.5°	902.9	1037.4	715.6	670.0	650.8	542.7
85°	437.1	780.5	549.9	461.1	276.2	261.8
87.5°	38.4	326.6	317.0	206.5	93.7	88.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)