

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: P195316

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-7060-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P195316  
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-7060-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 5700K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16845 lumens  
Efficiency: N/A  
Efficacy: 130.6 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

Input Watts (W): 129  
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

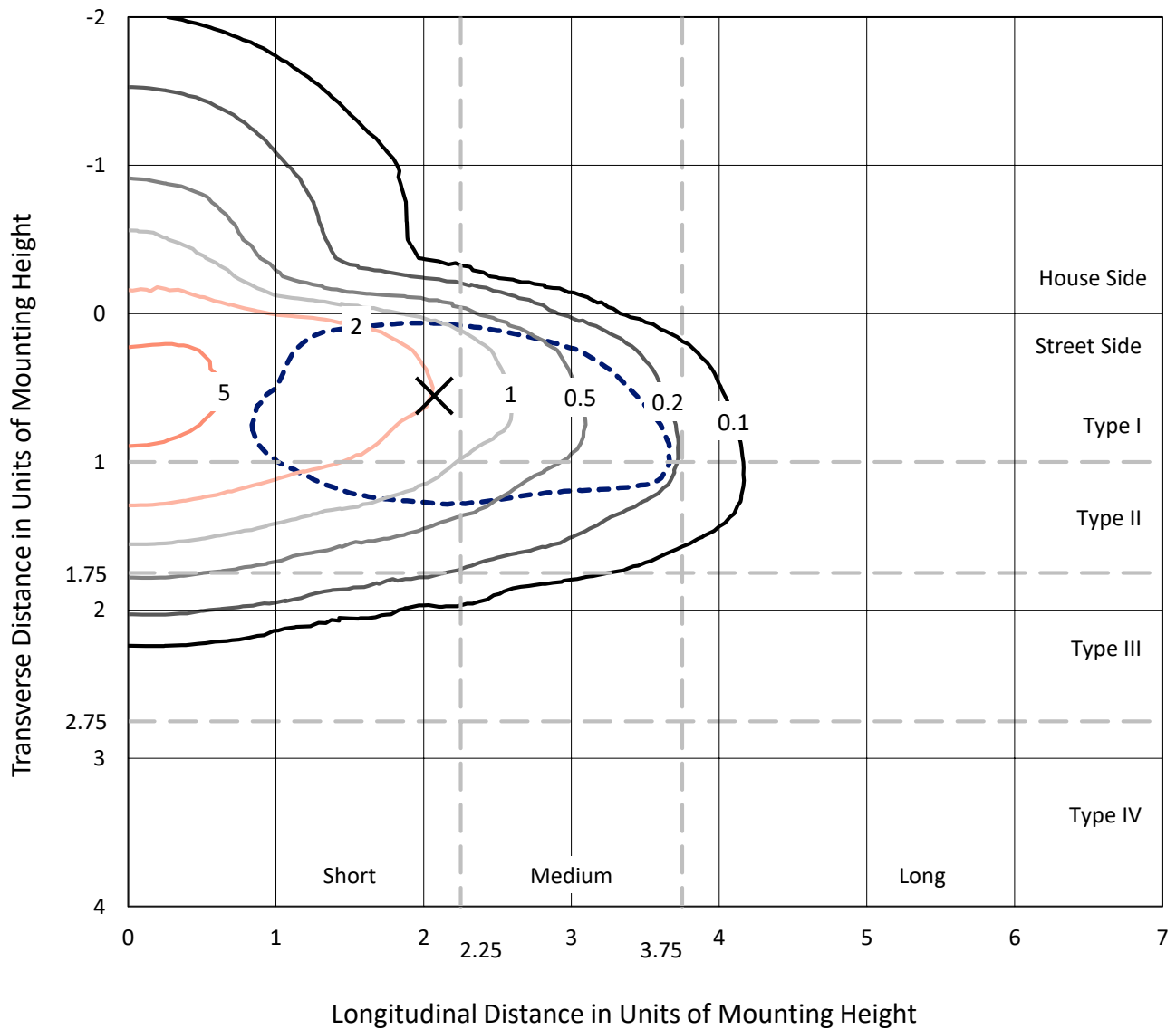


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### Iso-Footcandle Lines of Horizontal Illumination

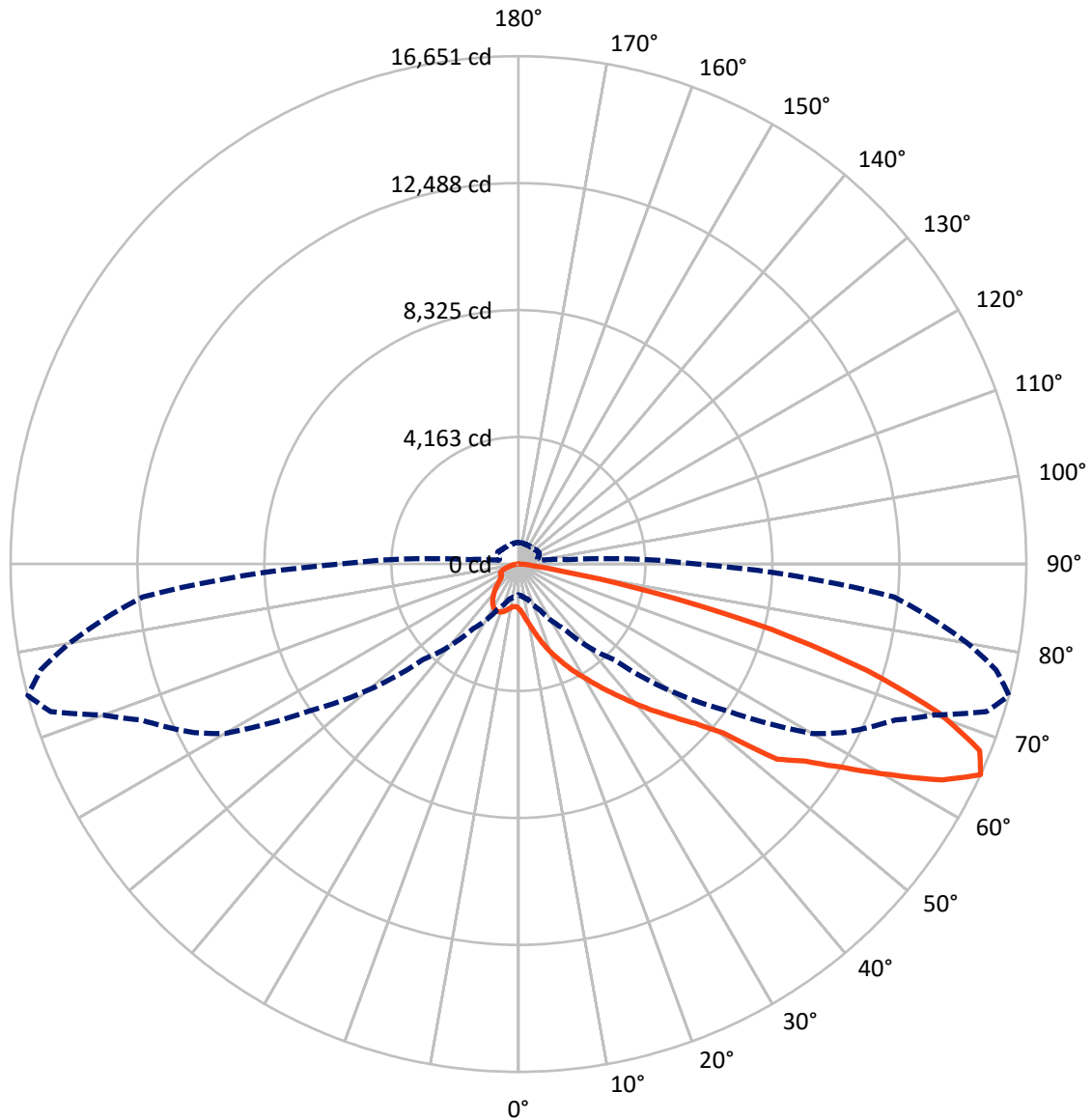
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.7 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
<b>House Side</b>	Lumens	2531.2	0.0	2531.2
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	14313.8	0.0	14313.8
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	16845.0	0.0	16845.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	172.3	1.0
10°-20°	658.1	3.9
20°-30°	1328.2	7.9
30°-40°	2255.6	13.4
40°-50°	3146.0	18.7
50°-60°	3855.8	22.9
60°-70°	3627.8	21.5
70°-80°	1590.8	9.4
80°-90°	210.5	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°	16845.0	100.0
0°-180°	16845.0	100.0

**Coefficient of Utilization**



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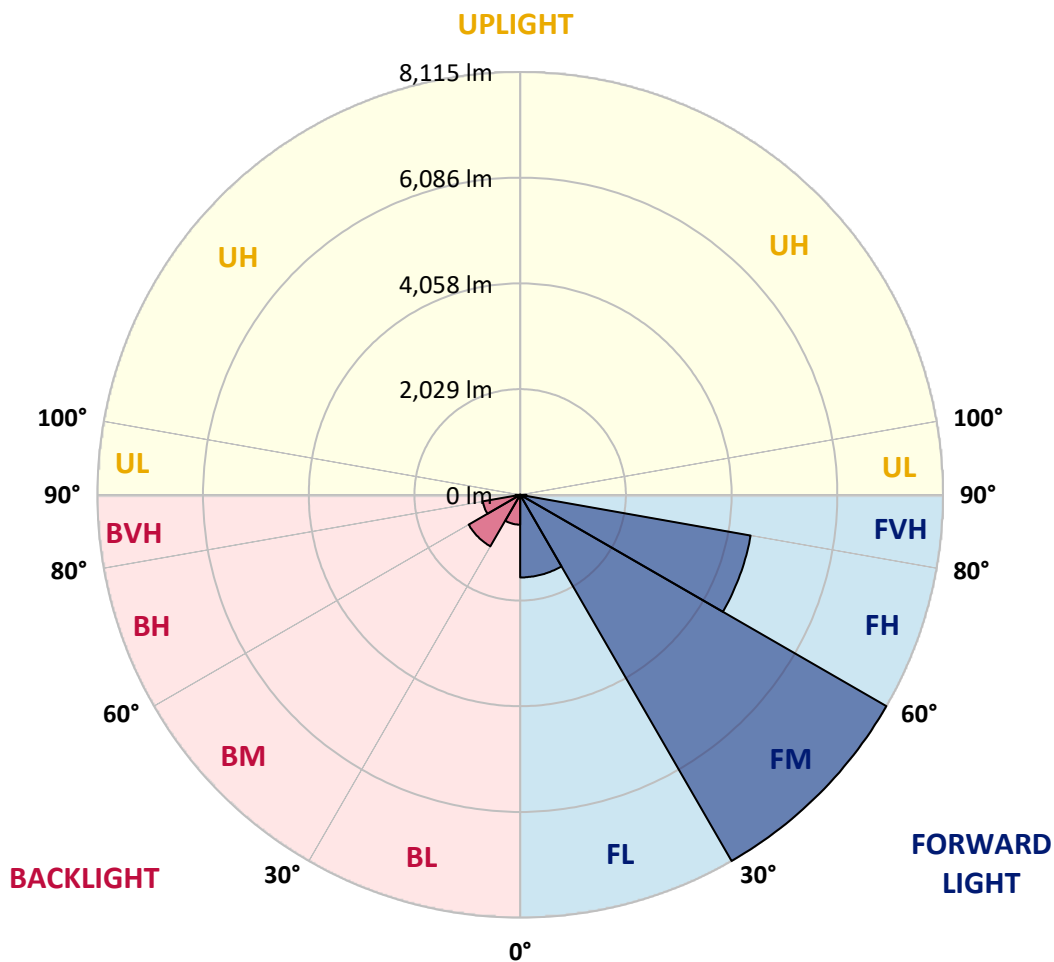
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1585.6	9.4			
FM (30°-60°)	8115.2	48.2			
FH (60°-80°)	4491.0	26.7			G2/5000
FVH (80°-90°)	122.0	0.7			G2/225
BL (0°-30°)	573.0	3.4	B2/1000		
BM (30°-60°)	1142.2	6.8	B2/2500		
BH (60°-80°)	727.5	4.3	B2/1000		G2/1000
BVH (80°-90°)	88.5	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5
2.5°	1837.8	1816.4	1818.5	1788.5	1744.6	1696.3	1656.7	1635.3	1617.0	1611.7	1581.7
5°	2403.6	2376.8	2367.2	2298.6	2195.7	2073.5	1952.5	1905.3	1866.7	1843.1	1785.3
7.5°	2866.5	2852.6	2839.7	2776.5	2674.7	2518.3	2323.2	2253.6	2189.3	2118.5	2048.9
10°	3181.6	3176.2	3170.9	3126.9	3042.3	2906.2	2696.1	2620.1	2539.7	2449.7	2358.6
12.5°	3419.5	3419.5	3423.8	3387.3	3335.9	3230.9	3040.1	2969.4	2888.0	2793.7	2689.7
15°	3579.1	3583.4	3605.9	3616.6	3589.9	3522.3	3355.2	3293.0	3215.9	3122.6	3019.8
17.5°	3685.2	3693.8	3727.0	3762.4	3796.7	3773.1	3648.8	3590.9	3521.3	3435.5	3339.1
20°	3931.7	3921.0	3922.0	3911.3	3961.7	3979.9	3911.3	3863.1	3807.4	3729.2	3641.3
22.5°	4449.3	4428.9	4376.4	4242.5	4181.4	4174.9	4134.2	4108.5	4065.6	4016.3	3928.5
25°	5124.4	5100.8	4996.9	4776.1	4593.9	4425.7	4350.7	4334.6	4306.8	4273.5	4210.3
27.5°	5822.0	5796.3	5662.3	5383.7	5145.8	4806.1	4572.5	4551.1	4525.4	4511.4	4481.4
30°	6436.0	6408.2	6276.3	5993.4	5706.3	5301.2	4871.5	4796.5	4752.5	4756.8	4739.7
32.5°	6975.0	6950.4	6802.5	6514.2	6222.8	5829.5	5259.4	5142.6	5044.0	5007.6	5020.4
35°	7427.2	7404.7	7242.9	6952.5	6658.9	6332.1	5758.8	5583.0	5422.3	5321.6	5309.8
37.5°	7693.0	7680.1	7566.6	7320.1	7028.6	6788.6	6318.1	6123.1	5886.3	5739.5	5675.2
40°	7678.0	7691.9	7672.6	7561.2	7335.1	7160.4	6901.1	6708.2	6476.7	6258.1	6127.4
42.5°	7459.4	7478.7	7565.5	7623.3	7562.3	7456.2	7410.1	7266.5	7058.6	6827.1	6646.0
45°	7159.3	7176.5	7289.0	7498.0	7672.6	7702.6	7855.9	7784.1	7608.3	7411.2	7211.9
47.5°	6699.6	6732.8	6863.6	7195.8	7611.6	7900.9	8229.9	8263.1	8161.3	7998.4	7811.9
50°	6034.2	6078.1	6261.3	6733.9	7380.1	8104.5	8786.0	8912.5	8871.8	8706.7	8518.1
52.5°	5352.6	5396.6	5640.9	6143.5	7007.2	8188.1	9333.6	9657.2	9890.8	10061.2	10094.5
55°	4643.2	4692.5	4960.4	5539.1	6510.0	8082.0	9724.8	10092.3	10329.1	10507.0	10578.8
57.5°	3842.7	3898.5	4157.8	4742.9	5807.0	7655.5	10159.8	10680.6	11033.2	11307.5	11461.8
60°	2924.4	2994.0	3263.0	3852.4	4883.3	6838.9	10353.8	11124.3	11684.7	12096.2	12340.5
62.5°	1853.9	1924.6	2204.3	2816.2	3832.0	5723.4	9805.1	10929.2	11885.1	12493.8	12941.7
65°	1011.6	1042.7	1198.0	1658.8	2583.6	4440.7	8414.2	9739.8	11116.8	11979.4	12667.4
67.5°	758.7	763.0	779.1	891.6	1375.9	2998.3	6578.5	7792.7	9321.8	10432.0	11253.9
70°	664.4	664.4	666.5	667.6	746.9	1624.5	4456.8	5574.5	6976.1	8099.1	9120.4
72.5°	595.8	589.4	587.2	574.4	585.1	832.6	2426.1	3430.2	4612.2	5872.4	6825.0
75°	514.4	513.3	513.3	500.4	506.9	586.2	1052.3	1646.0	2562.2	3735.6	4673.2
77.5°	444.7	437.2	438.3	430.8	451.1	449.0	499.4	678.3	1115.5	1962.1	2740.1
80°	366.5	361.1	364.3	360.1	392.2	332.2	336.5	414.7	554.0	860.5	1213.0
82.5°	271.1	273.3	293.6	291.5	330.1	224.0	246.5	309.7	372.9	428.6	466.1
85°	158.6	161.8	211.1	221.8	242.2	117.9	151.1	184.3	207.9	230.4	240.0
87.5°	17.1	22.5	117.9	121.1	108.2	35.4	61.1	77.2	82.5	87.9	77.2
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°	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5
2.5°	1572.0	1558.1	1543.1	1534.5	1519.5	1506.7	1483.1	1463.8	1442.4	1427.4	1420.9
5°	1756.3	1723.1	1687.8	1662.0	1629.9	1602.0	1548.5	1484.2	1463.8	1420.9	1410.2
7.5°	1996.4	1936.4	1876.4	1827.1	1771.4	1725.3	1635.3	1519.5	1504.5	1435.9	1420.9
10°	2278.2	2190.3	2101.4	2025.3	1943.9	1873.2	1740.3	1577.4	1561.3	1473.4	1458.4
12.5°	2593.3	2486.1	2371.4	2257.9	2161.4	2061.8	1880.7	1667.4	1641.7	1537.7	1517.4
15°	2918.0	2802.2	2669.4	2532.2	2413.2	2281.4	2053.2	1785.3	1738.1	1616.0	1588.1
17.5°	3238.4	3113.0	2973.7	2820.4	2681.1	2523.6	2239.6	1917.1	1835.6	1693.1	1657.8
20°	3548.1	3420.5	3273.7	3123.7	2950.1	2770.1	2430.4	2046.8	1922.4	1757.4	1711.3
22.5°	3829.9	3720.6	3573.8	3401.3	3225.5	3023.0	2624.3	2176.4	1998.5	1806.7	1747.8
25°	4126.7	4027.1	3881.3	3715.2	3510.6	3285.5	2824.7	2299.6	2059.6	1833.5	1760.6
27.5°	4426.8	4341.0	4203.9	4029.2	3809.5	3559.8	3028.3	2413.2	2108.9	1842.1	1754.2
30°	4747.2	4680.7	4554.3	4359.3	4137.4	3861.0	3250.2	2524.7	2140.0	1830.3	1725.3
32.5°	5050.4	5048.3	4935.8	4733.2	4494.3	4189.9	3483.8	2637.2	2156.1	1797.1	1674.9
35°	5365.5	5409.4	5324.8	5131.9	4880.1	4542.5	3742.0	2757.2	2157.1	1738.1	1609.5
37.5°	5723.4	5801.6	5764.1	5580.9	5316.2	4944.4	4045.3	2892.2	2150.7	1656.7	1514.2
40°	6130.6	6237.8	6236.7	6082.4	5799.5	5394.4	4397.8	3043.3	2135.7	1554.9	1401.6
42.5°	6596.8	6724.3	6759.6	6607.5	6321.4	5886.3	4801.8	3209.4	2112.1	1454.2	1282.7
45°	7130.4	7242.9	7309.4	7167.9	6880.7	6422.1	5265.8	3398.0	2083.2	1324.5	1146.6
47.5°	7701.6	7832.3	7932.0	7810.9	7504.4	7032.9	5815.6	3641.3	2072.5	1176.6	999.8
50°	8409.9	8544.9	8760.3	8705.7	8537.4	8158.1	6978.2	4215.7	2076.8	1036.2	876.6
52.5°	10167.3	10477.0	10749.2	10628.1	10228.4	9577.9	7923.4	4535.0	1986.7	921.6	790.8
55°	10697.8	11049.2	11451.1	11400.7	11017.1	10361.3	8670.3	4801.8	1899.9	838.0	735.1
57.5°	11625.8	12040.5	12602.0	12591.3	12120.8	11382.5	9631.5	5121.2	1862.4	789.8	707.3
60°	12608.4	13136.7	13912.6	14033.6	13522.5	12754.2	10767.4	5513.4	1867.8	763.0	691.2
62.5°	13326.4	14101.2	15229.5	15591.7	14989.5	14142.9	11946.2	5905.6	1835.6	731.9	671.9
65°	13370.3	14485.9	16086.8	16650.5	16040.7	14953.1	12362.0	5828.4	1642.8	690.1	640.8
67.5°	12298.7	13751.8	15696.8	16315.1	15691.4	14453.7	11633.3	5095.4	1335.2	617.2	587.2
70°	10243.4	11930.1	13949.0	14638.0	14122.6	12869.9	10124.5	4069.9	997.7	520.8	506.9
72.5°	7915.9	9489.0	11322.5	11960.1	11565.8	10464.2	7985.5	2966.2	712.6	422.2	411.5
75°	5659.1	6998.6	8329.5	8572.8	8183.8	7172.2	5181.2	1852.8	499.4	346.1	331.1
77.5°	3504.1	4375.3	4853.3	4540.4	4044.2	3361.6	2108.9	915.1	332.2	281.8	266.8
80°	1554.9	1824.9	1703.8	1518.5	1199.1	985.9	644.0	406.1	214.3	217.5	209.0
82.5°	522.9	552.9	537.9	534.7	482.2	422.2	273.3	175.7	120.0	139.3	136.1
85°	255.0	266.8	267.9	277.5	241.1	187.5	73.9	69.7	51.4	75.0	78.2
87.5°	77.2	78.2	70.7	77.2	62.2	42.9	13.9	19.3	9.6	18.2	18.2
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°	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5
2.5°	1409.2	1404.9	1397.4	1388.8	1386.6	1375.9	1372.7	1367.4	1364.1	1358.8	1354.5
5°	1396.3	1388.8	1380.2	1370.6	1370.6	1355.6	1349.1	1342.7	1342.7	1333.1	1328.8
7.5°	1409.2	1399.5	1389.9	1381.3	1384.5	1367.4	1360.9	1354.5	1353.4	1343.8	1339.5
10°	1445.6	1435.9	1424.2	1415.6	1412.4	1398.4	1390.9	1381.3	1374.9	1368.4	1362.0
12.5°	1501.3	1488.4	1473.4	1455.2	1447.7	1435.9	1424.2	1411.3	1396.3	1389.9	1380.2
15°	1567.7	1546.3	1526.0	1503.5	1483.1	1471.3	1455.2	1434.9	1414.5	1405.9	1393.1
17.5°	1622.4	1599.9	1571.0	1544.2	1507.7	1498.1	1475.6	1450.9	1417.7	1414.5	1395.2
20°	1668.5	1634.2	1598.8	1566.7	1511.0	1505.6	1477.7	1448.8	1401.6	1401.6	1378.1
22.5°	1694.2	1647.0	1605.3	1562.4	1492.7	1488.4	1456.3	1422.0	1364.1	1366.3	1337.4
25°	1698.5	1641.7	1589.2	1537.7	1457.4	1449.9	1409.2	1371.6	1308.4	1304.1	1274.1
27.5°	1681.3	1614.9	1553.8	1491.7	1404.9	1388.8	1343.8	1298.8	1236.6	1225.9	1193.8
30°	1641.7	1563.5	1494.9	1423.1	1332.0	1306.3	1259.1	1213.0	1149.8	1135.9	1105.9
32.5°	1578.5	1489.5	1413.4	1341.6	1240.9	1208.8	1161.6	1115.5	1054.5	1043.7	1015.9
35°	1494.9	1395.2	1314.9	1238.8	1138.0	1104.8	1059.8	1019.1	963.4	959.1	939.8
37.5°	1389.9	1285.9	1200.2	1127.3	1031.9	1014.8	968.7	938.7	892.6	896.9	887.3
40°	1270.9	1164.8	1083.4	1019.1	936.6	921.6	893.7	871.2	831.6	843.3	844.4
42.5°	1150.9	1044.8	970.9	913.0	842.3	832.6	813.3	800.5	770.5	794.1	803.7
45°	1014.8	916.2	853.0	809.1	756.5	756.5	746.9	745.8	725.5	758.7	768.3
47.5°	883.0	805.8	761.9	735.1	698.7	715.8	712.6	721.2	706.2	740.5	749.0
50°	783.3	729.8	703.0	690.1	664.4	691.2	697.6	709.4	696.5	726.5	733.0
52.5°	720.1	684.8	669.7	666.5	648.3	681.5	692.3	703.0	688.0	715.8	714.8
55°	684.8	661.2	655.8	662.2	648.3	680.5	691.2	698.7	685.8	705.1	704.0
57.5°	671.9	659.0	662.2	671.9	662.2	689.0	694.4	703.0	690.1	698.7	703.0
60°	670.8	670.8	683.7	696.5	690.1	709.4	712.6	711.5	699.8	700.8	703.0
62.5°	664.4	680.5	701.9	722.3	720.1	743.7	745.8	731.9	722.3	711.5	708.3
65°	644.0	670.8	701.9	729.8	734.0	770.5	774.8	760.8	754.4	736.2	722.3
67.5°	599.0	633.3	669.7	704.0	711.5	760.8	770.5	775.8	779.1	767.3	749.0
70°	522.9	558.3	595.8	635.5	646.2	700.8	721.2	745.8	765.1	782.3	775.8
72.5°	425.4	457.6	489.7	526.2	542.2	599.0	625.8	668.7	698.7	742.6	760.8
75°	337.6	356.8	376.1	398.6	411.5	467.2	500.4	551.9	592.6	653.7	694.4
77.5°	265.8	275.4	285.0	294.7	300.0	331.1	357.9	409.4	456.5	533.7	593.7
80°	204.7	210.0	211.1	214.3	212.2	227.2	236.8	267.9	308.6	384.7	455.4
82.5°	131.8	136.1	138.2	143.6	132.9	152.2	158.6	161.8	183.2	239.0	289.3
85°	73.9	75.0	76.1	78.2	63.2	82.5	83.6	78.2	76.1	98.6	111.4
87.5°	18.2	17.1	18.2	18.2	7.5	17.1	17.1	11.8	8.6	16.1	12.9
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):**

	135°	145°	155°	165°	175°	180°
0°	1459.5	1459.5	1459.5	1459.5	1459.5	1459.5
2.5°	1344.9	1342.7	1343.8	1338.4	1336.3	1337.4
5°	1323.4	1319.1	1319.1	1315.9	1311.6	1311.6
7.5°	1333.1	1324.5	1321.3	1314.9	1308.4	1309.5
10°	1348.1	1333.1	1322.4	1312.7	1305.2	1305.2
12.5°	1357.7	1330.9	1314.9	1302.0	1293.4	1293.4
15°	1359.9	1319.1	1295.6	1281.6	1273.1	1273.1
17.5°	1347.0	1295.6	1265.6	1247.3	1237.7	1239.8
20°	1314.9	1251.6	1216.3	1197.0	1187.3	1188.4
22.5°	1264.5	1191.6	1150.9	1128.4	1118.7	1118.7
25°	1195.9	1116.6	1072.7	1054.5	1045.9	1045.9
27.5°	1117.7	1036.2	997.7	983.7	978.4	978.4
30°	1029.8	962.3	934.4	924.8	916.2	916.2
32.5°	955.9	907.6	898.0	885.1	862.6	861.6
35°	896.9	891.6	884.1	845.5	813.3	809.1
37.5°	864.8	896.9	849.8	783.3	757.6	756.5
40°	847.6	877.6	796.2	764.0	760.8	760.8
42.5°	806.9	828.3	793.0	774.8	774.8	775.8
45°	764.0	782.3	800.5	784.4	789.8	790.8
47.5°	734.0	770.5	800.5	786.6	797.3	803.7
50°	706.2	759.8	784.4	784.4	796.2	797.3
52.5°	699.8	744.8	769.4	781.2	782.3	776.9
55°	700.8	733.0	757.6	772.6	766.2	766.2
57.5°	699.8	726.5	748.0	753.3	756.5	756.5
60°	700.8	718.0	735.1	733.0	743.7	743.7
62.5°	704.0	706.2	714.8	712.6	728.7	728.7
65°	711.5	691.2	685.8	688.0	707.3	706.2
67.5°	725.5	670.8	653.7	654.7	682.6	678.3
70°	745.8	643.0	617.2	610.8	658.0	650.5
72.5°	752.3	610.8	570.1	563.7	591.5	570.1
75°	722.3	585.1	519.7	498.3	486.5	480.1
77.5°	644.0	569.0	467.2	422.2	404.0	399.7
80°	533.7	535.8	398.6	345.1	400.8	399.7
82.5°	402.9	462.9	319.3	299.0	290.4	242.2
85°	195.0	348.3	245.4	205.7	123.2	116.8
87.5°	17.1	145.7	141.5	92.2	41.8	39.6
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)