

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: P270622

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-7027-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270622
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-05-D-UNV-T2R-7027-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 2700K, 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: 18037.7 lumens
Efficiency: N/A
Efficacy: 111.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

Input Watts (W): 162
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

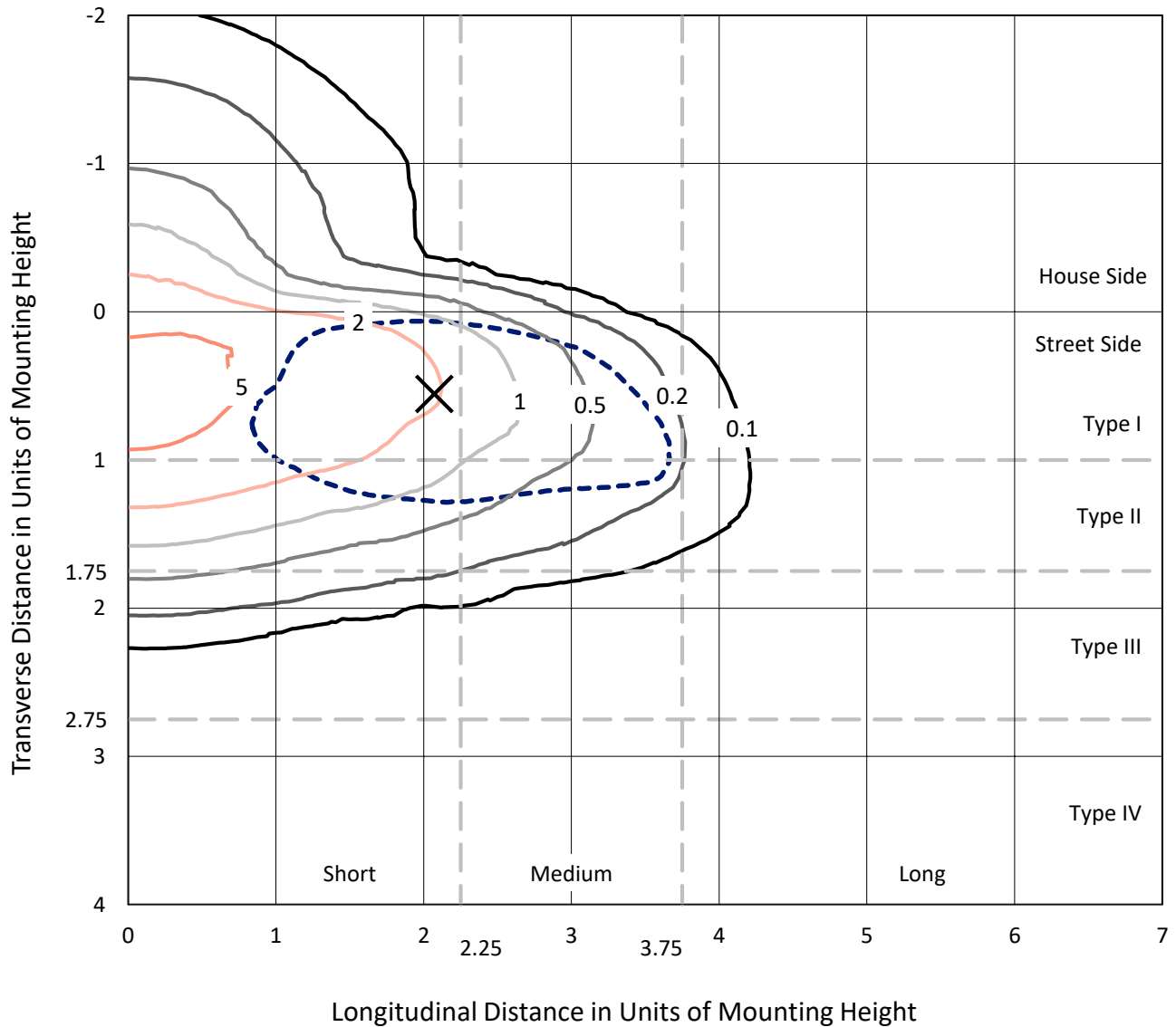


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Iso-Footcandle Lines of Horizontal Illumination

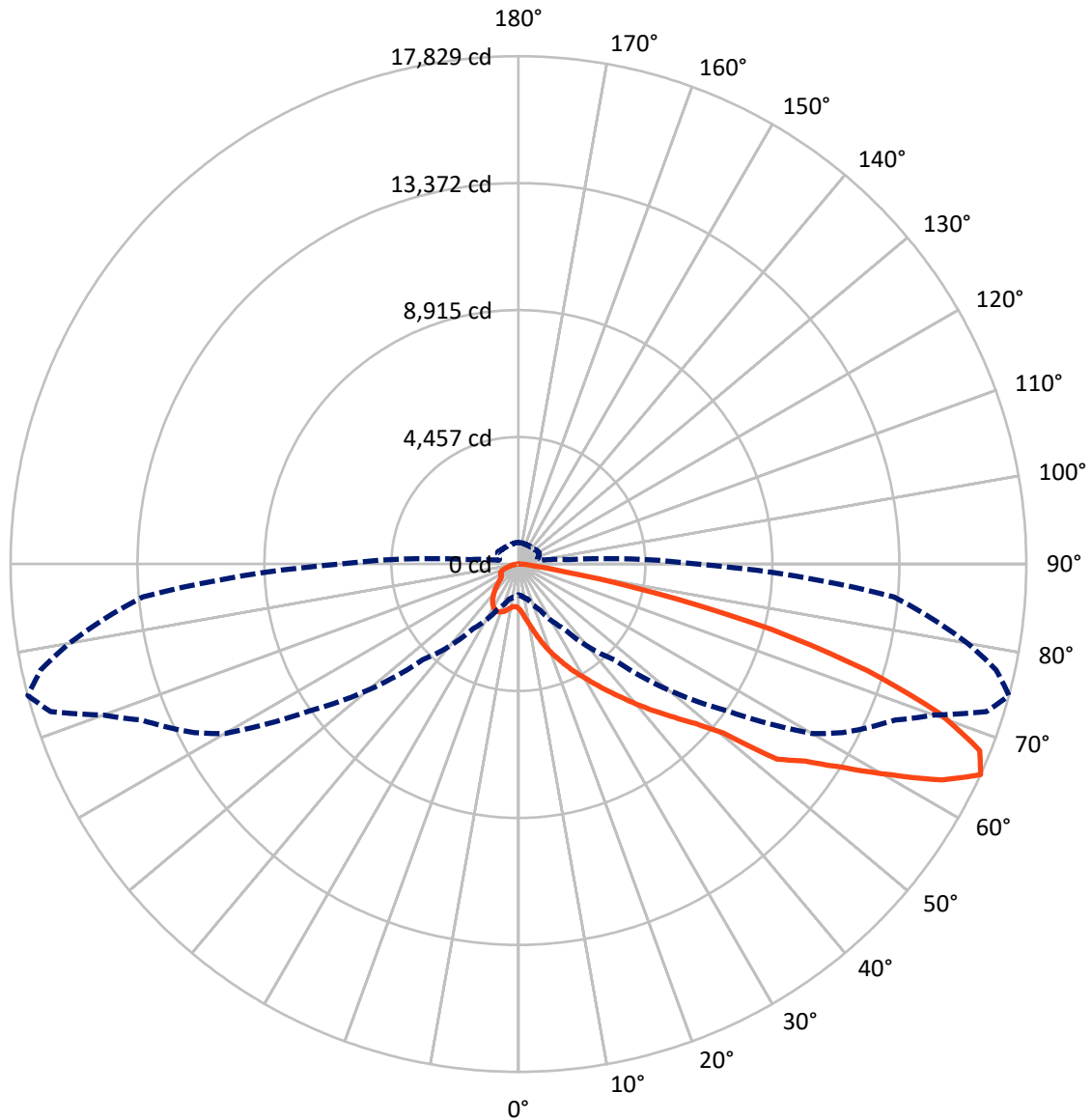
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.2 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	2710.4	0.0	2710.4
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	15327.2	0.0	15327.2
	% Fixture	85.0	0.0	85.0
Total	Lumens	18037.7	0.0	18037.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.5	1.0
10°-20°	704.7	3.9
20°-30°	1422.2	7.9
30°-40°	2415.3	13.4
40°-50°	3368.7	18.7
50°-60°	4128.8	22.9
60°-70°	3884.6	21.5
70°-80°	1703.4	9.4
80°-90°	225.4	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°	18037.7	100.0
0°-180°	18037.7	100.0



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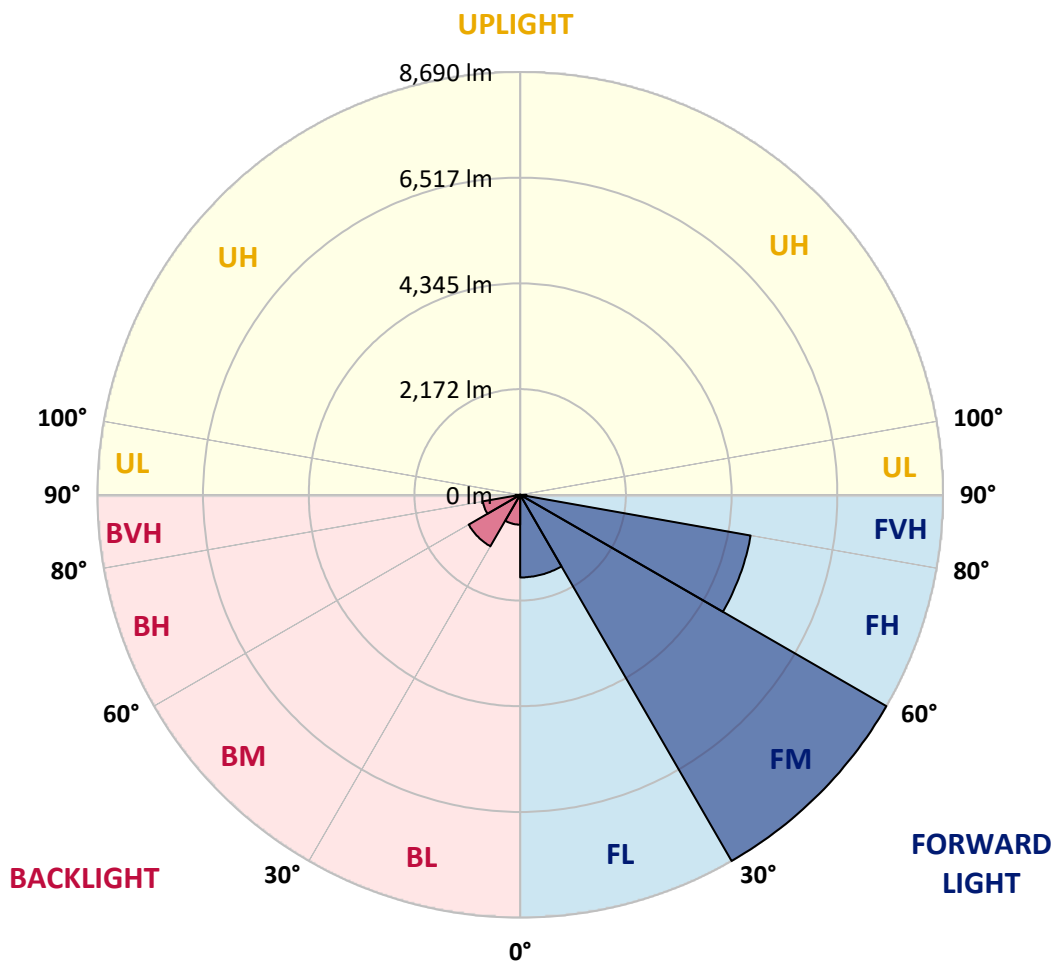
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1697.8	9.4			
FM (30°-60°)	8689.7	48.2			
FH (60°-80°)	4809.0	26.7			G2/5000
FVH (80°-90°)	130.7	0.7			G2/225
BL (0°-30°)	613.6	3.4	B2/1000		
BM (30°-60°)	1223.1	6.8	B2/2500		
BH (60°-80°)	779.0	4.3	B2/1000		G2/1000
BVH (80°-90°)	94.7	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°	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8
2.5°	1967.8	1945.0	1947.3	1915.1	1868.0	1816.5	1774.1	1751.1	1731.6	1725.9	1693.7
5°	2573.7	2545.1	2534.7	2461.4	2351.1	2220.3	2090.6	2040.2	1998.9	1973.7	1911.8
7.5°	3069.5	3054.5	3040.9	2973.1	2864.1	2696.5	2487.8	2413.1	2344.2	2268.5	2194.0
10°	3406.8	3401.2	3395.4	3348.3	3257.7	3112.0	2887.1	2805.5	2719.4	2623.1	2525.6
12.5°	3661.6	3661.6	3666.2	3627.1	3572.1	3459.6	3255.4	3179.6	3092.4	2991.4	2880.1
15°	3832.6	3837.1	3861.3	3872.8	3844.0	3771.8	3592.7	3526.1	3443.6	3343.8	3233.5
17.5°	3946.2	3955.3	3990.9	4028.8	4065.5	4040.2	3907.2	3845.1	3770.5	3678.7	3575.6
20°	4210.0	4198.6	4199.8	4188.3	4242.2	4261.6	4188.3	4136.6	4077.0	3993.1	3899.2
22.5°	4764.3	4742.5	4686.3	4542.8	4477.4	4470.5	4426.9	4399.4	4353.5	4300.7	4206.7
25°	5487.1	5462.0	5350.7	5114.3	4919.2	4739.1	4658.7	4641.5	4611.7	4576.1	4508.5
27.5°	6234.1	6206.7	6063.2	5765.0	5510.2	5146.4	4896.2	4873.3	4845.7	4830.8	4798.7
30°	6891.6	6861.9	6720.7	6417.9	6110.4	5676.5	5216.4	5136.1	5089.0	5093.6	5075.2
32.5°	7468.9	7442.5	7284.1	6975.5	6663.4	6242.2	5631.7	5506.7	5401.1	5362.2	5375.8
35°	7953.1	7929.0	7755.7	7444.8	7130.3	6780.3	6166.5	5978.3	5806.1	5698.3	5685.7
37.5°	8237.6	8224.0	8102.4	7838.4	7526.3	7269.3	6765.5	6556.6	6303.0	6145.8	6077.0
40°	8221.6	8236.5	8215.9	8096.6	7854.4	7667.5	7389.6	7183.1	6935.4	6701.3	6561.2
42.5°	7987.5	8008.2	8101.2	8163.1	8097.7	7984.0	7934.8	7780.9	7558.3	7310.5	7116.6
45°	7666.2	7684.6	7805.2	8028.8	8215.9	8248.0	8412.1	8335.3	8147.1	7935.8	7722.5
47.5°	7174.0	7209.5	7349.6	7705.2	8150.5	8460.2	8812.6	8848.1	8739.2	8564.7	8365.0
50°	6461.4	6508.4	6704.7	7210.6	7902.6	8678.3	9408.0	9543.6	9499.8	9323.1	9121.2
52.5°	5731.6	5778.6	6040.3	6578.5	7503.4	8767.7	9994.5	10341.0	10591.1	10773.6	10809.1
55°	4971.9	5024.8	5311.7	5931.2	6970.8	8654.2	10413.3	10806.9	11060.4	11250.9	11327.8
57.5°	4114.9	4174.6	4452.2	5078.7	6218.2	8197.6	10879.2	11436.9	11814.4	12108.2	12273.4
60°	3131.4	3206.1	3494.0	4125.1	5229.0	7323.2	11086.8	11911.9	12512.0	12952.7	13214.2
62.5°	1985.2	2060.8	2360.3	3015.5	4103.4	6128.6	10499.3	11703.1	12726.6	13378.4	13858.1
65°	1083.1	1116.6	1282.9	1776.3	2766.5	4755.1	9009.9	10429.3	11903.8	12827.5	13564.2
67.5°	812.3	817.0	834.3	954.7	1473.3	3210.6	7044.2	8344.4	9981.8	11170.7	12050.8
70°	711.5	711.5	713.8	715.0	799.9	1739.6	4772.3	5969.1	7470.0	8672.5	9766.2
72.5°	637.9	631.1	628.9	615.0	626.5	891.6	2597.9	3673.1	4938.7	6288.1	7308.3
75°	550.8	549.7	549.7	535.8	542.8	627.6	1126.8	1762.6	2743.7	4000.2	5004.1
77.5°	476.2	468.1	469.4	461.3	483.1	480.9	534.8	726.4	1194.6	2101.0	2934.0
80°	392.4	386.7	390.1	385.6	420.0	355.6	360.3	444.0	593.2	921.4	1298.9
82.5°	290.3	292.6	314.3	312.2	353.5	239.8	263.9	331.7	399.3	458.9	499.2
85°	169.8	173.3	226.1	237.5	259.3	126.2	161.8	197.4	222.6	246.8	257.1
87.5°	18.3	24.2	126.2	129.6	115.9	37.9	65.3	82.6	88.4	94.1	82.6
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°	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8
2.5°	1683.3	1668.4	1652.3	1643.2	1627.1	1613.4	1588.2	1567.5	1544.5	1528.5	1521.5
5°	1880.7	1845.1	1807.3	1779.7	1745.2	1715.5	1658.1	1589.2	1567.5	1521.5	1510.1
7.5°	2137.7	2073.5	2009.1	1956.4	1896.9	1847.5	1751.1	1627.1	1611.0	1537.5	1521.5
10°	2439.4	2345.5	2250.2	2168.7	2081.6	2005.7	1863.5	1689.1	1671.8	1577.8	1561.8
12.5°	2776.9	2662.1	2539.4	2417.7	2314.5	2207.8	2013.8	1785.6	1758.0	1646.7	1624.9
15°	3124.6	3000.6	2858.3	2711.4	2584.2	2443.0	2198.5	1911.8	1861.2	1730.3	1700.5
17.5°	3467.6	3333.4	3184.2	3020.1	2871.0	2702.3	2398.3	2052.8	1965.6	1813.0	1775.1
20°	3799.3	3662.7	3505.5	3344.8	3159.0	2966.3	2602.5	2191.7	2058.6	1881.9	1832.5
22.5°	4101.0	3984.1	3826.8	3642.1	3454.0	3237.0	2810.2	2330.6	2140.0	1934.6	1871.4
25°	4418.9	4312.3	4156.2	3978.2	3759.0	3518.1	3024.8	2462.4	2205.3	1963.3	1885.4
27.5°	4740.1	4648.4	4501.5	4314.5	4079.3	3811.9	3242.7	2584.2	2258.2	1972.5	1878.4
30°	5083.2	5012.2	4876.8	4668.0	4430.4	4134.3	3480.3	2703.4	2291.4	1959.9	1847.5
32.5°	5408.1	5405.7	5285.3	5068.3	4812.5	4486.7	3730.4	2823.9	2308.7	1924.3	1793.5
35°	5745.4	5792.5	5701.8	5495.2	5225.6	4864.1	4007.0	2952.4	2309.8	1861.2	1723.5
37.5°	6128.6	6212.4	6172.3	5976.1	5692.6	5294.4	4331.6	3097.0	2303.0	1774.1	1621.4
40°	6564.6	6679.3	6678.3	6513.0	6210.2	5776.3	4709.3	3258.8	2286.9	1665.0	1500.9
42.5°	7063.8	7200.4	7238.3	7075.3	6768.9	6303.0	5141.8	3436.6	2261.7	1557.1	1373.5
45°	7635.2	7755.7	7826.9	7675.4	7367.9	6876.7	5638.8	3638.7	2230.8	1418.2	1227.9
47.5°	8246.9	8386.8	8493.6	8363.8	8035.7	7530.9	6227.3	3899.2	2219.3	1260.0	1070.6
50°	9005.4	9150.0	9380.6	9322.0	9142.0	8735.7	7472.3	4514.2	2223.8	1109.5	938.5
52.5°	10887.2	11218.8	11510.3	11380.5	10952.6	10256.0	8484.4	4856.1	2127.4	986.8	846.8
55°	11455.1	11831.5	12261.9	12208.0	11797.1	11094.8	9284.2	5141.8	2034.4	897.3	787.2
57.5°	12448.9	12893.0	13494.2	13482.8	12979.0	12188.5	10313.4	5483.8	1994.2	845.7	757.4
60°	13501.2	14066.7	14897.6	15027.2	14479.9	13657.2	11529.7	5903.8	2000.0	817.0	740.2
62.5°	14269.9	15099.5	16307.8	16695.7	16050.7	15144.3	12792.0	6323.7	1965.6	783.7	719.5
65°	14316.9	15511.6	17225.8	17829.4	17176.5	16011.7	13237.2	6241.1	1759.2	738.9	686.1
67.5°	13169.5	14725.5	16808.1	17470.2	16802.3	15477.1	12456.9	5456.2	1429.7	661.0	628.9
70°	10968.7	12774.7	14936.6	15674.4	15122.4	13781.1	10841.3	4358.0	1068.4	557.7	542.8
72.5°	8476.3	10160.9	12124.2	12806.9	12384.7	11205.1	8551.0	3176.1	763.1	452.0	440.6
75°	6059.7	7494.1	8919.4	9179.8	8763.2	7680.0	5548.0	1983.9	534.8	370.6	354.7
77.5°	3752.2	4685.1	5196.9	4861.8	4330.5	3599.6	2258.2	980.0	355.6	301.8	285.8
80°	1665.0	1954.2	1824.5	1625.9	1283.9	1055.7	689.5	434.9	229.4	232.9	223.8
82.5°	560.0	592.2	576.1	572.6	516.3	452.0	292.6	188.1	128.5	149.2	145.7
85°	273.2	285.8	286.9	297.2	258.3	200.9	79.2	74.6	55.1	80.3	83.7
87.5°	82.6	83.7	75.7	82.6	66.6	46.0	14.9	20.7	10.3	19.6	19.6
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):

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8
2.5°	1509.0	1504.3	1496.2	1487.1	1484.8	1473.3	1469.8	1464.1	1460.7	1455.0	1450.5
5°	1495.1	1487.1	1477.9	1467.7	1467.7	1451.5	1444.7	1437.7	1437.7	1427.4	1422.8
7.5°	1509.0	1498.6	1488.2	1479.1	1482.6	1464.1	1457.3	1450.5	1449.2	1438.9	1434.4
10°	1547.9	1537.5	1525.1	1515.8	1512.3	1497.5	1489.4	1479.1	1472.2	1465.3	1458.5
12.5°	1607.5	1593.9	1577.8	1558.3	1550.2	1537.5	1525.1	1511.2	1495.1	1488.2	1477.9
15°	1678.8	1655.8	1633.9	1609.9	1588.2	1575.4	1558.3	1536.6	1514.6	1505.5	1491.7
17.5°	1737.2	1713.2	1682.2	1653.5	1614.6	1604.2	1580.1	1553.7	1518.0	1514.6	1494.1
20°	1786.5	1749.9	1712.0	1677.7	1617.9	1612.2	1582.4	1551.5	1500.9	1500.9	1475.6
22.5°	1814.1	1763.6	1718.8	1673.1	1598.4	1593.9	1559.4	1522.6	1460.7	1463.0	1432.1
25°	1818.8	1758.0	1701.7	1646.7	1560.5	1552.5	1509.0	1468.8	1401.0	1396.4	1364.3
27.5°	1800.4	1729.2	1663.8	1597.2	1504.3	1487.1	1438.9	1390.8	1324.2	1312.8	1278.3
30°	1758.0	1674.1	1600.7	1523.9	1426.2	1398.8	1348.3	1298.9	1231.2	1216.3	1184.1
32.5°	1690.3	1595.0	1513.6	1436.6	1328.8	1294.4	1243.9	1194.6	1129.1	1117.6	1087.8
35°	1600.7	1494.1	1408.0	1326.4	1218.6	1183.1	1134.9	1091.3	1031.6	1027.0	1006.3
37.5°	1488.2	1376.9	1285.1	1207.1	1105.0	1086.7	1037.4	1005.2	955.8	960.5	950.0
40°	1360.9	1247.2	1160.2	1091.3	1002.9	986.8	957.0	932.9	890.4	903.1	904.2
42.5°	1232.4	1118.7	1039.6	977.6	901.9	891.6	870.9	857.2	825.1	850.2	860.5
45°	1086.7	981.0	913.3	866.3	810.1	810.1	799.9	798.7	776.9	812.3	822.8
47.5°	945.6	862.9	815.8	787.2	748.2	766.6	763.1	772.3	756.2	792.9	802.0
50°	838.7	781.4	752.7	738.9	711.5	740.2	747.0	759.6	745.9	778.0	784.8
52.5°	771.0	733.2	717.1	713.8	694.2	729.9	741.3	752.7	736.7	766.6	765.4
55°	733.2	708.0	702.2	709.1	694.2	728.6	740.2	748.2	734.4	755.0	753.9
57.5°	719.5	705.7	709.1	719.5	709.1	737.8	743.5	752.7	738.9	748.2	752.7
60°	718.4	718.4	732.1	745.9	738.9	759.6	763.1	761.9	749.2	750.4	752.7
62.5°	711.5	728.6	751.6	773.4	771.0	796.3	798.7	783.7	773.4	761.9	758.4
65°	689.5	718.4	751.6	781.4	785.9	825.1	829.7	814.8	807.8	788.4	773.4
67.5°	641.4	678.1	717.1	753.9	761.9	814.8	825.1	830.8	834.3	821.6	802.0
70°	560.0	597.8	637.9	680.5	692.0	750.4	772.3	798.7	819.3	837.7	830.8
72.5°	455.5	489.9	524.4	563.3	580.7	641.4	670.1	715.9	748.2	795.2	814.8
75°	361.5	382.0	402.8	426.9	440.6	500.3	535.8	590.9	634.6	700.0	743.5
77.5°	284.6	295.0	305.2	315.6	321.4	354.7	383.2	438.4	488.8	571.4	635.7
80°	219.1	224.8	226.1	229.4	227.2	243.4	253.6	286.9	330.4	412.0	487.7
82.5°	141.2	145.7	148.0	153.8	142.3	163.0	169.8	173.3	196.2	255.8	309.8
85°	79.2	80.3	81.4	83.7	67.7	88.4	89.6	83.7	81.4	105.6	119.4
87.5°	19.6	18.3	19.6	19.6	8.1	18.3	18.3	12.7	9.3	17.2	13.7
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°	1562.8	1562.8	1562.8	1562.8	1562.8	1562.8
2.5°	1440.1	1437.7	1438.9	1433.2	1430.9	1432.1
5°	1417.2	1412.6	1412.6	1409.1	1404.5	1404.5
7.5°	1427.4	1418.2	1414.8	1408.0	1401.0	1402.3
10°	1443.5	1427.4	1416.0	1405.7	1397.7	1397.7
12.5°	1453.8	1425.2	1408.0	1394.2	1384.9	1384.9
15°	1456.2	1412.6	1387.3	1372.4	1363.2	1363.2
17.5°	1442.4	1387.3	1355.2	1335.7	1325.3	1327.7
20°	1408.0	1340.2	1302.5	1281.7	1271.5	1272.5
22.5°	1354.0	1276.0	1232.4	1208.3	1198.0	1198.0
25°	1280.5	1195.6	1148.7	1129.1	1119.9	1119.9
27.5°	1196.8	1109.5	1068.4	1053.4	1047.7	1047.7
30°	1102.7	1030.4	1000.6	990.3	981.0	981.0
32.5°	1023.6	971.8	961.5	947.8	923.6	922.6
35°	960.5	954.7	946.6	905.3	870.9	866.3
37.5°	926.1	960.5	910.0	838.7	811.3	810.1
40°	907.6	939.7	852.6	818.1	814.8	814.8
42.5°	864.0	886.9	849.1	829.7	829.7	830.8
45°	818.1	837.7	857.2	839.9	845.7	846.8
47.5°	785.9	825.1	857.2	842.3	853.7	860.5
50°	756.2	813.5	839.9	839.9	852.6	853.7
52.5°	749.2	797.4	823.8	836.5	837.7	831.9
55°	750.4	784.8	811.3	827.2	820.4	820.4
57.5°	749.2	778.0	800.8	806.7	810.1	810.1
60°	750.4	768.8	787.2	784.8	796.3	796.3
62.5°	753.9	756.2	765.4	763.1	780.3	780.3
65°	761.9	740.2	734.4	736.7	757.4	756.2
67.5°	776.9	718.4	700.0	701.0	731.0	726.4
70°	798.7	688.6	661.0	654.1	704.5	696.5
72.5°	805.5	654.1	610.5	603.7	633.5	610.5
75°	773.4	626.5	556.5	533.6	520.9	514.1
77.5°	689.5	609.3	500.3	452.0	432.7	428.0
80°	571.4	573.7	426.9	369.6	429.2	428.0
82.5°	431.5	495.8	342.0	320.2	311.0	259.3
85°	208.9	372.9	262.8	220.4	132.0	125.0
87.5°	18.3	156.0	151.5	98.6	44.7	42.5
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)