

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: P270461

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270461
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-03-D-UNV-T2R-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 2700K, 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: 16491.8 lumens
Efficiency: N/A
Efficacy: 99.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

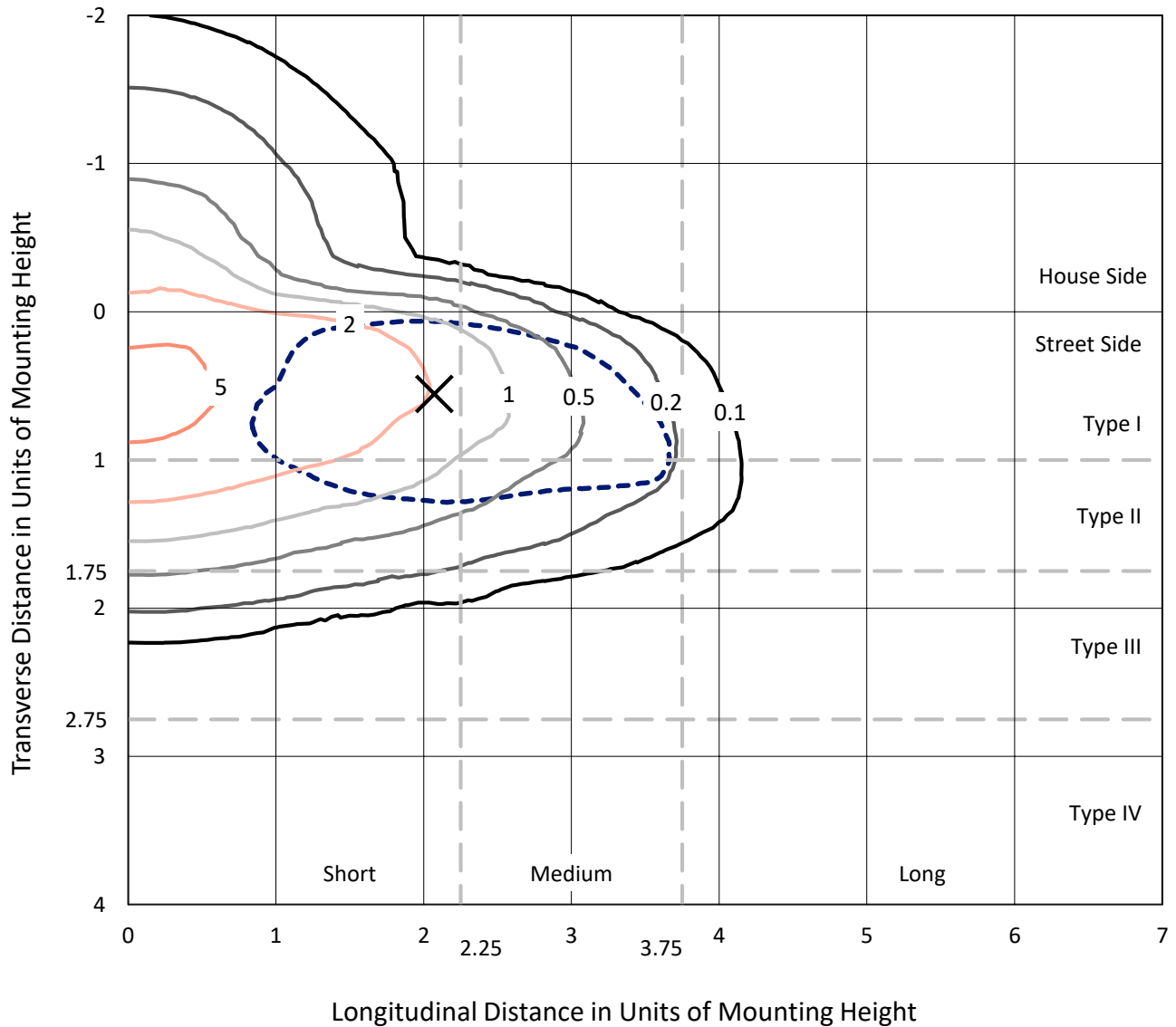
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

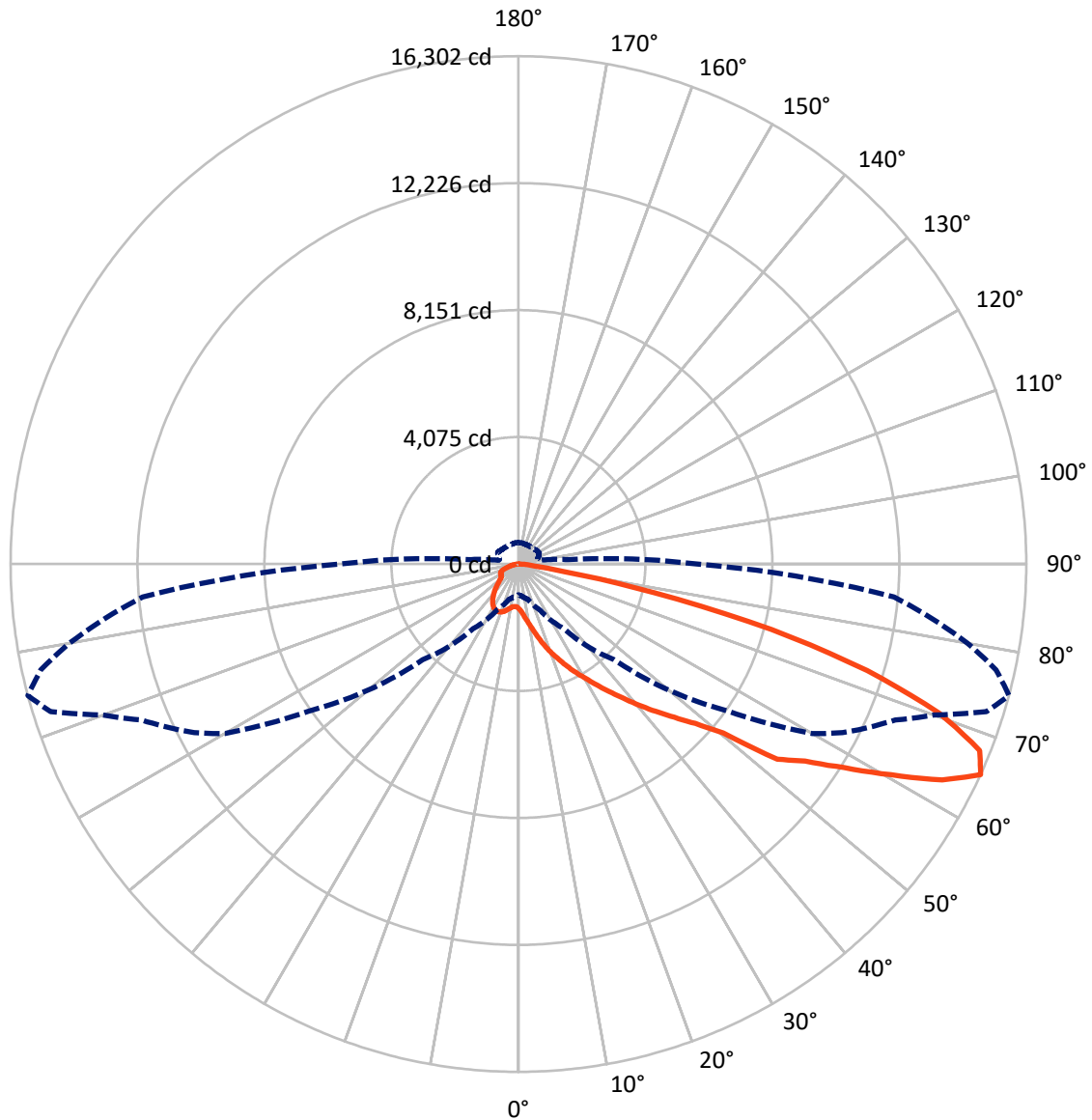
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.6 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	2478.1	0.0	2478.1
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	14013.7	0.0	14013.7
	% Fixture	85.0	0.0	85.0
Total	Lumens	16491.8	0.0	16491.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	168.7	1.0
10°-20°	644.3	3.9
20°-30°	1300.3	7.9
30°-40°	2208.3	13.4
40°-50°	3080.0	18.7
50°-60°	3775.0	22.9
60°-70°	3551.7	21.5
70°-80°	1557.4	9.4
80°-90°	206.1	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°	16491.8	100.0
0°-180°	16491.8	100.0

Coefficient of Utilization



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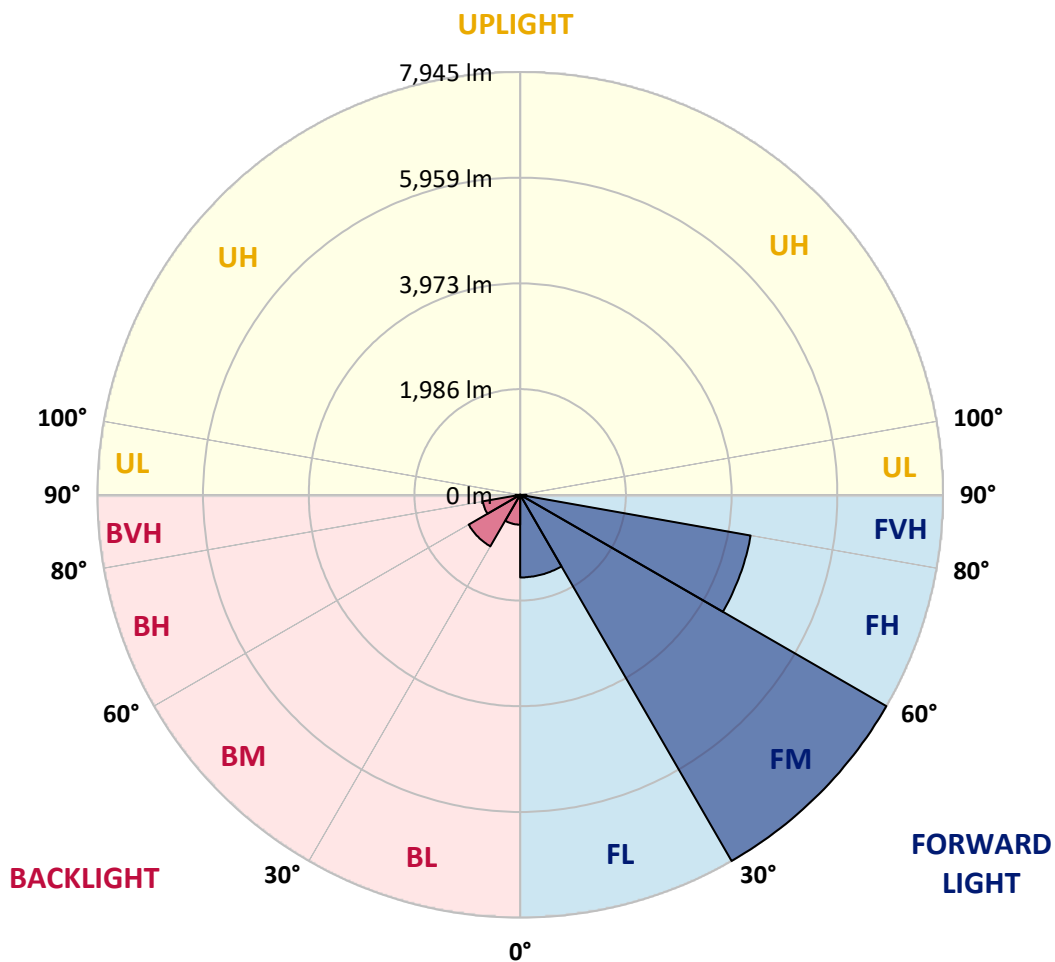
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1552.3	9.4			
FM (30°-60°)	7945.0	48.2			
FH (60°-80°)	4396.9	26.7			G2/5000
FVH (80°-90°)	119.5	0.7			G2/225
BL (0°-30°)	561.0	3.4	B2/1000		
BM (30°-60°)	1118.3	6.8	B2/2500		
BH (60°-80°)	712.3	4.3	B2/1000		G2/1000
BVH (80°-90°)	86.6	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°	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9
2.5°	1799.2	1778.3	1780.4	1750.9	1707.9	1660.7	1622.0	1601.0	1583.2	1578.0	1548.5
5°	2353.2	2327.0	2317.5	2250.3	2149.6	2030.1	1911.6	1865.4	1827.6	1804.5	1747.8
7.5°	2806.5	2792.8	2780.3	2718.4	2618.6	2465.5	2274.5	2206.3	2143.4	2074.1	2005.9
10°	3114.9	3109.7	3104.5	3061.3	2978.5	2845.2	2639.6	2565.1	2486.5	2398.4	2309.2
12.5°	3347.8	3347.8	3351.9	3316.4	3266.0	3163.1	2976.4	2907.2	2827.4	2735.1	2633.3
15°	3504.1	3508.3	3530.2	3540.8	3514.6	3448.6	3284.8	3223.9	3148.4	3057.2	2956.4
17.5°	3608.0	3616.3	3648.8	3683.5	3717.0	3694.0	3572.3	3515.6	3447.4	3363.6	3269.1
20°	3849.2	3838.7	3839.9	3829.4	3878.6	3896.5	3829.4	3782.1	3727.5	3651.0	3565.0
22.5°	4356.1	4336.1	4284.6	4153.6	4093.7	4087.4	4047.6	4022.4	3980.4	3932.2	3846.2
25°	5016.9	4993.9	4892.1	4675.9	4497.6	4333.0	4259.5	4243.8	4216.5	4183.9	4122.1
27.5°	5699.9	5674.8	5543.6	5270.9	5038.0	4705.3	4476.7	4455.7	4430.5	4416.8	4387.4
30°	6301.2	6273.9	6144.8	5867.8	5586.6	5190.0	4769.3	4695.9	4653.0	4657.2	4640.4
32.5°	6828.7	6804.8	6659.9	6377.6	6092.3	5707.3	5149.2	5034.8	4938.3	4902.6	4915.2
35°	7271.5	7249.5	7091.1	6806.7	6519.3	6199.4	5638.0	5465.9	5308.7	5210.0	5198.4
37.5°	7531.7	7519.2	7408.0	7166.6	6881.2	6646.2	6185.6	5994.7	5762.8	5619.2	5556.1
40°	7517.0	7530.8	7511.7	7402.7	7181.3	7010.4	6756.4	6567.6	6341.0	6126.9	5998.9
42.5°	7303.0	7321.8	7406.9	7463.5	7403.7	7299.8	7254.7	7114.1	6910.7	6684.0	6506.8
45°	7009.2	7026.1	7136.1	7340.8	7511.7	7541.1	7691.2	7621.0	7448.8	7255.8	7060.7
47.5°	6559.2	6591.8	6719.7	7044.9	7452.0	7735.2	8057.3	8089.9	7990.2	7830.7	7648.2
50°	5907.7	5950.6	6130.0	6592.8	7225.3	7934.5	8601.8	8725.6	8685.7	8524.1	8339.5
52.5°	5240.4	5283.4	5522.6	6014.7	6860.3	8016.5	9137.9	9454.8	9683.5	9850.3	9882.9
55°	4546.0	4594.1	4856.4	5423.0	6373.5	7912.5	9520.9	9880.6	10112.6	10286.8	10357.0
57.5°	3762.2	3816.8	4070.6	4643.5	5685.3	7495.0	9946.8	10456.7	10801.8	11070.4	11221.4
60°	2863.1	2931.3	3194.6	3771.7	4780.9	6695.5	10136.7	10891.1	11439.7	11842.5	12081.8
62.5°	1814.9	1884.3	2158.1	2757.1	3751.7	5603.4	9599.6	10700.2	11635.9	12231.9	12670.4
65°	990.4	1020.8	1172.9	1624.0	2529.4	4347.5	8237.7	9535.6	10883.7	11728.2	12401.8
67.5°	742.8	747.0	762.8	872.9	1347.1	2935.5	6440.6	7629.2	9126.4	10213.3	11018.0
70°	650.5	650.5	652.6	653.5	731.2	1590.4	4363.3	5457.7	6829.9	7929.2	8929.2
72.5°	583.3	577.0	574.9	562.2	572.8	815.2	2375.2	3358.3	4515.5	5749.2	6682.0
75°	503.6	502.5	502.5	489.9	496.3	573.8	1030.3	1611.5	2508.4	3657.3	4575.2
77.5°	435.4	428.0	429.1	421.8	441.6	439.6	488.9	664.0	1092.2	1920.9	2682.6
80°	358.9	353.6	356.6	352.6	383.9	325.2	329.4	406.0	542.3	842.4	1187.6
82.5°	265.4	267.5	287.5	285.3	323.1	219.2	241.4	303.2	365.2	419.7	456.3
85°	155.2	158.5	206.7	217.2	237.2	115.4	148.0	180.5	203.6	225.6	234.9
87.5°	16.8	22.0	115.4	118.5	106.0	34.7	59.7	75.5	80.8	86.1	75.5
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°	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9
2.5°	1539.1	1525.4	1510.8	1502.3	1487.7	1475.0	1452.0	1433.2	1412.1	1397.5	1391.1
5°	1719.5	1686.9	1652.4	1627.2	1595.7	1568.4	1516.0	1453.1	1433.2	1391.1	1380.7
7.5°	1954.5	1895.8	1837.0	1788.7	1734.2	1689.2	1601.0	1487.7	1473.0	1405.8	1391.1
10°	2230.4	2144.4	2057.4	1982.9	1903.1	1833.9	1703.7	1544.4	1528.6	1442.6	1427.9
12.5°	2538.9	2434.0	2321.7	2210.5	2116.0	2018.5	1841.3	1632.4	1607.2	1505.5	1485.5
15°	2856.8	2743.5	2613.3	2479.1	2362.6	2233.5	2010.1	1747.8	1701.7	1582.1	1554.7
17.5°	3170.5	3047.7	2911.3	2761.3	2624.9	2470.7	2192.8	1876.9	1797.1	1657.6	1623.0
20°	3473.7	3348.8	3205.2	3058.2	2888.3	2712.1	2379.4	2003.8	1882.2	1720.6	1675.5
22.5°	3749.5	3642.5	3498.9	3329.9	3157.9	2959.6	2569.3	2130.8	1956.6	1768.9	1711.1
25°	4040.1	3942.7	3799.9	3637.3	3436.9	3216.7	2765.5	2251.4	2016.4	1795.1	1723.7
27.5°	4334.0	4250.1	4115.8	3944.7	3729.7	3485.2	2964.9	2362.6	2064.7	1803.4	1717.4
30°	4647.7	4582.7	4458.7	4267.8	4050.6	3780.0	3182.1	2471.7	2095.0	1791.8	1689.2
32.5°	4944.5	4942.5	4832.3	4633.9	4400.1	4102.1	3410.8	2581.9	2110.8	1759.4	1639.8
35°	5253.0	5296.0	5213.1	5024.3	4777.7	4447.2	3663.6	2699.3	2111.8	1701.7	1575.7
37.5°	5603.4	5680.1	5643.3	5463.9	5204.7	4840.6	3960.4	2831.5	2105.5	1622.0	1482.5
40°	6002.0	6106.9	6105.9	5954.9	5677.8	5281.3	4305.7	2979.5	2091.0	1522.3	1372.3
42.5°	6458.5	6583.3	6618.0	6469.0	6188.9	5762.8	4701.2	3142.1	2067.9	1423.6	1255.8
45°	6980.9	7091.1	7156.1	7017.6	6736.5	6287.4	5155.5	3326.9	2039.5	1296.8	1122.6
47.5°	7540.2	7668.1	7765.7	7647.1	7347.1	6885.5	5693.6	3565.0	2029.0	1151.9	978.9
50°	8233.5	8365.7	8576.7	8523.2	8358.4	7987.0	6831.9	4127.4	2033.3	1014.5	858.2
52.5°	9954.2	10257.3	10523.9	10405.2	10013.9	9377.1	7757.3	4440.0	1945.1	902.3	774.2
55°	10473.5	10817.6	11210.9	11161.7	10786.0	10144.0	8488.5	4701.2	1860.1	820.4	719.7
57.5°	11382.1	11788.1	12337.9	12327.4	11866.7	11143.8	9429.6	5013.8	1823.4	773.3	692.5
60°	12344.1	12861.4	13620.9	13739.4	13239.0	12486.8	10541.7	5397.7	1828.6	747.0	676.8
62.5°	13047.1	13805.5	14910.2	15264.9	14675.3	13846.5	11695.8	5781.9	1797.1	716.6	657.7
65°	13090.0	14182.1	15749.5	16301.5	15704.4	14639.6	12102.8	5706.3	1608.3	675.6	627.3
67.5°	12040.9	13463.4	15367.7	15973.0	15362.5	14150.7	11389.4	4988.6	1307.3	604.3	574.9
70°	10028.7	11680.0	13656.6	14331.1	13826.5	12600.0	9912.2	3984.6	976.7	509.9	496.3
72.5°	7749.9	9290.0	11085.2	11709.3	11323.2	10244.8	7818.0	2904.0	697.7	413.4	402.9
75°	5540.4	6851.9	8155.0	8393.0	8012.3	7021.8	5072.5	1813.9	488.9	338.9	324.2
77.5°	3430.6	4283.6	4751.6	4445.2	3959.4	3291.1	2064.7	896.0	325.2	275.9	261.2
80°	1522.3	1786.6	1668.2	1486.7	1173.9	965.1	630.5	397.6	209.8	213.0	204.5
82.5°	511.9	541.4	526.6	523.5	472.1	413.4	267.5	172.0	117.5	136.5	133.3
85°	249.6	261.2	262.2	271.7	236.1	183.7	72.5	68.2	50.3	73.4	76.5
87.5°	75.5	76.5	69.2	75.5	60.8	42.0	13.7	18.9	9.4	17.8	17.8
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°	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9
2.5°	1379.5	1375.5	1368.1	1359.7	1357.6	1347.1	1344.0	1338.7	1335.5	1330.3	1326.1
5°	1367.0	1359.7	1351.3	1341.9	1341.9	1327.2	1320.9	1314.6	1314.6	1305.1	1300.9
7.5°	1379.5	1370.2	1360.8	1352.3	1355.5	1338.7	1332.4	1326.1	1325.1	1315.6	1311.4
10°	1415.3	1405.8	1394.3	1385.9	1382.8	1369.0	1361.8	1352.3	1346.0	1339.7	1333.4
12.5°	1469.8	1457.2	1442.6	1424.7	1417.3	1405.8	1394.3	1381.8	1367.0	1360.8	1351.3
15°	1534.8	1514.0	1494.1	1472.0	1452.0	1440.4	1424.7	1404.8	1384.8	1376.5	1363.8
17.5°	1588.5	1566.4	1538.0	1511.8	1476.2	1466.8	1444.7	1420.5	1388.1	1384.8	1366.0
20°	1633.5	1599.9	1565.2	1533.9	1479.2	1473.9	1446.7	1418.5	1372.3	1372.3	1349.2
22.5°	1658.7	1612.5	1571.7	1529.6	1461.5	1457.2	1425.8	1392.3	1335.5	1337.7	1309.3
25°	1662.9	1607.2	1555.9	1505.5	1426.8	1419.5	1379.5	1342.8	1281.1	1276.9	1247.4
27.5°	1646.1	1581.0	1521.2	1460.4	1375.5	1359.7	1315.6	1271.6	1210.6	1200.2	1168.8
30°	1607.2	1530.7	1463.6	1393.2	1304.1	1278.8	1232.7	1187.6	1125.8	1112.1	1082.6
32.5°	1545.4	1458.3	1383.7	1313.5	1214.9	1183.3	1137.3	1092.2	1032.3	1021.8	994.6
35°	1463.6	1366.0	1287.4	1212.8	1114.2	1081.6	1037.6	997.7	943.2	939.0	920.0
37.5°	1360.8	1259.0	1175.1	1103.7	1010.4	993.5	948.4	919.1	874.0	878.2	868.8
40°	1244.2	1140.4	1060.7	997.7	916.9	902.3	874.9	852.9	814.1	825.6	826.7
42.5°	1126.7	1022.9	950.4	893.9	824.6	815.2	796.3	783.7	754.3	777.5	786.8
45°	993.5	897.0	835.2	792.0	740.7	740.7	731.2	730.2	710.3	742.8	752.2
47.5°	864.4	788.9	746.0	719.7	684.0	700.8	697.7	706.1	691.3	724.9	733.3
50°	767.0	714.4	688.2	675.6	650.5	676.8	683.0	694.5	682.0	711.3	717.6
52.5°	705.0	670.3	655.8	652.6	634.7	667.3	677.7	688.2	673.5	700.8	699.8
55°	670.3	647.3	642.1	648.3	634.7	666.3	676.8	684.0	671.5	690.3	689.3
57.5°	657.7	645.3	648.3	657.7	648.3	674.5	679.8	688.2	675.6	684.0	688.2
60°	656.8	656.8	669.3	682.0	675.6	694.5	697.7	696.6	685.0	686.1	688.2
62.5°	650.5	666.3	687.2	707.1	705.0	728.0	730.2	716.6	707.1	696.6	693.5
65°	630.5	656.8	687.2	714.4	718.6	754.3	758.4	744.9	738.5	720.8	707.1
67.5°	586.5	620.0	655.8	689.3	696.6	744.9	754.3	759.5	762.8	751.3	733.3
70°	511.9	546.6	583.3	622.2	632.6	686.1	706.1	730.2	749.0	765.9	759.5
72.5°	416.5	448.0	479.4	515.1	530.9	586.5	612.7	654.7	684.0	727.1	744.9
75°	330.4	349.4	368.2	390.3	402.9	457.4	489.9	540.3	580.1	640.0	679.8
77.5°	260.1	269.6	279.1	288.5	293.7	324.2	350.3	400.7	446.9	522.5	581.3
80°	200.4	205.6	206.7	209.8	207.7	222.4	231.9	262.2	302.2	376.6	445.9
82.5°	129.0	133.3	135.4	140.6	130.1	148.9	155.2	158.5	179.4	234.0	283.2
85°	72.5	73.4	74.5	76.5	62.0	80.8	81.8	76.5	74.5	96.5	109.1
87.5°	17.8	16.8	17.8	17.8	7.4	16.8	16.8	11.6	8.4	15.7	12.5
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°	1428.9	1428.9	1428.9	1428.9	1428.9	1428.9
2.5°	1316.6	1314.6	1315.6	1310.4	1308.3	1309.3
5°	1295.6	1291.5	1291.5	1288.3	1284.1	1284.1
7.5°	1305.1	1296.8	1293.6	1287.4	1281.1	1282.1
10°	1319.8	1305.1	1294.6	1285.1	1277.8	1277.8
12.5°	1329.2	1303.0	1287.4	1274.7	1266.3	1266.3
15°	1331.4	1291.5	1268.3	1254.8	1246.4	1246.4
17.5°	1318.7	1268.3	1239.0	1221.2	1211.8	1213.8
20°	1287.4	1225.4	1190.8	1171.8	1162.4	1163.5
22.5°	1238.0	1166.5	1126.7	1104.7	1095.4	1095.4
25°	1170.9	1093.1	1050.2	1032.3	1024.0	1024.0
27.5°	1094.2	1014.5	976.7	963.2	957.9	957.9
30°	1008.2	942.1	914.8	905.4	897.0	897.0
32.5°	935.9	888.7	879.3	866.5	844.5	843.5
35°	878.2	872.9	865.5	827.8	796.3	792.0
37.5°	846.7	878.2	832.0	767.0	741.7	740.7
40°	829.9	859.3	779.5	748.0	744.9	744.9
42.5°	790.0	811.0	776.3	758.4	758.4	759.5
45°	748.0	765.9	783.7	768.1	773.3	774.2
47.5°	718.6	754.3	783.7	770.0	780.5	786.8
50°	691.3	743.8	768.1	768.1	779.5	780.5
52.5°	685.0	729.2	753.3	764.7	765.9	760.7
55°	686.1	717.6	741.7	756.5	750.2	750.2
57.5°	685.0	711.3	732.3	737.6	740.7	740.7
60°	686.1	703.0	719.7	717.6	728.0	728.0
62.5°	689.3	691.3	699.8	697.7	713.4	713.4
65°	696.6	676.8	671.5	673.5	692.5	691.3
67.5°	710.3	656.8	640.0	641.0	668.2	664.0
70°	730.2	629.5	604.3	598.0	644.2	636.8
72.5°	736.5	598.0	558.1	551.9	579.0	558.1
75°	707.1	572.8	508.8	487.9	476.3	470.1
77.5°	630.5	557.0	457.4	413.4	395.6	391.3
80°	522.5	524.6	390.3	337.9	392.4	391.3
82.5°	394.4	453.3	312.6	292.7	284.4	237.2
85°	190.9	340.9	240.2	201.4	120.6	114.4
87.5°	16.8	142.7	138.5	90.2	41.0	38.8
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)