

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: STREETWORKS

Report Number: P177491

Luminaire Tested: **VAL-F02-LED-E-U-GL3-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P177491
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33702)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: VAL-F02-LED-E-U-GL3-8030
Description: VALET TUNNEL LED LUMINAIRE
(2) LIGHTBARS WITH AccuLED OPTICS - TYPE III W/ GLARE CONTROL
Light Source: (14) 3000K CCT, 80 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4136.8 lumens
Efficiency: N/A
Efficacy: 75.2 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 1' x H: 0.1')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B1 - U0 - G1

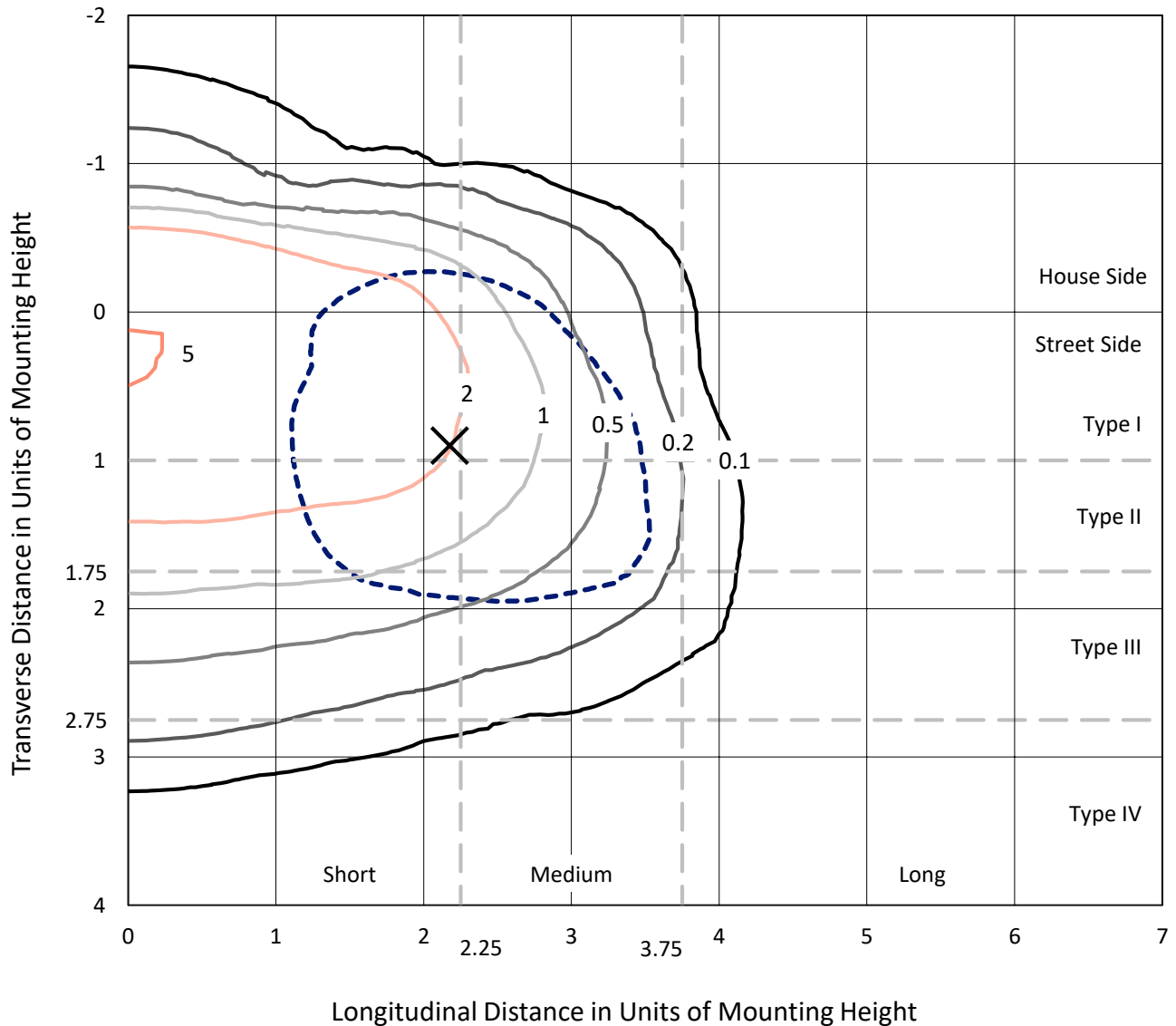
Input Watts (W): 55
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

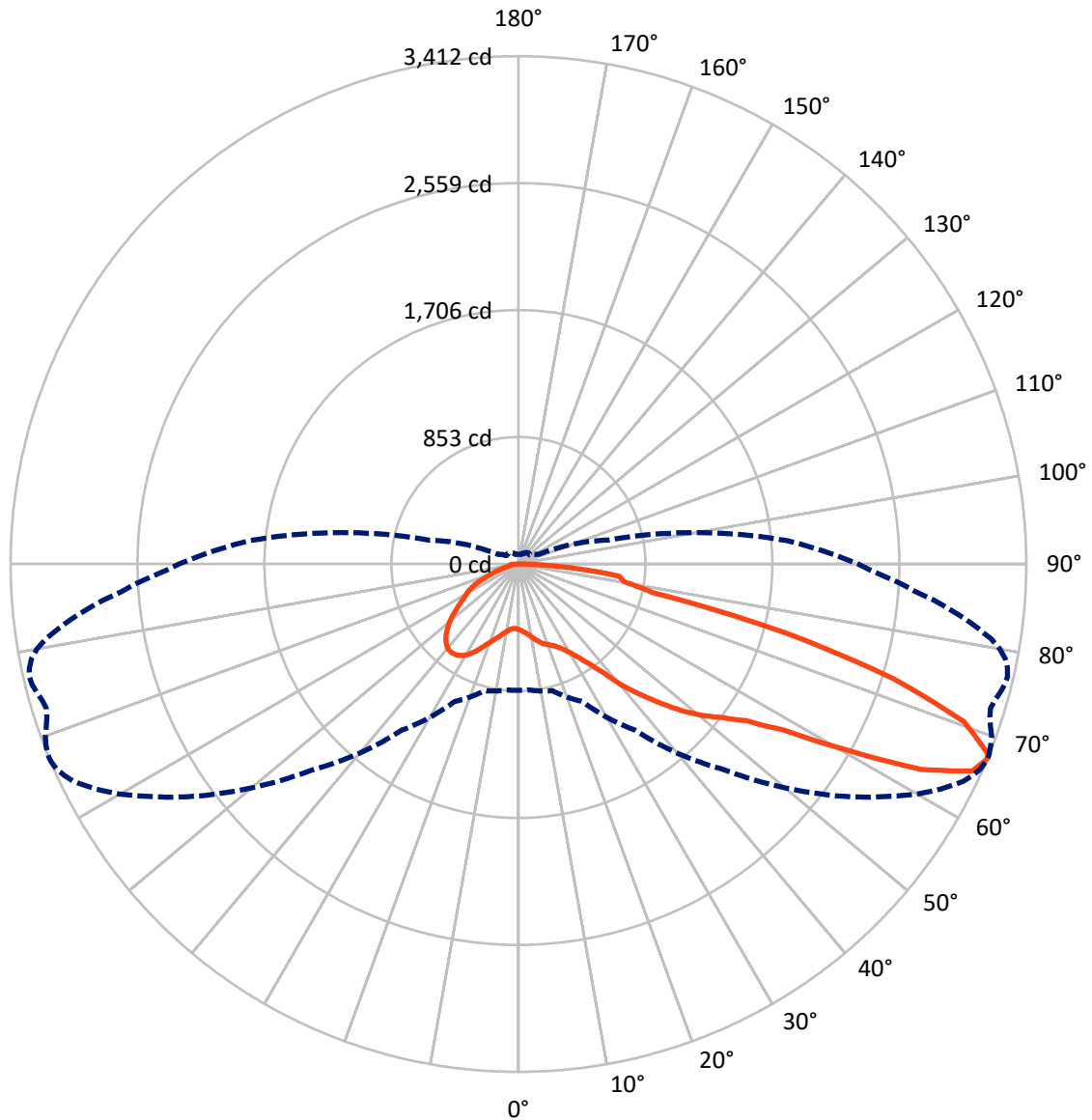
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.6 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	979.6	0.0	979.6
	% Fixture	23.7	0.0	23.7
Street Side	Lumens	3157.2	0.0	3157.2
	% Fixture	76.3	0.0	76.3
Total	Lumens	4136.8	0.0	4136.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.9	1.1
10°-20°	150.4	3.6
20°-30°	267.7	6.5
30°-40°	390.0	9.4
40°-50°	600.9	14.5
50°-60°	880.1	21.3
60°-70°	1168.6	28.2
70°-80°	550.9	13.3
80°-90°	84.2	2.0
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°	4136.8	100.0
0°-180°	4136.8	100.0



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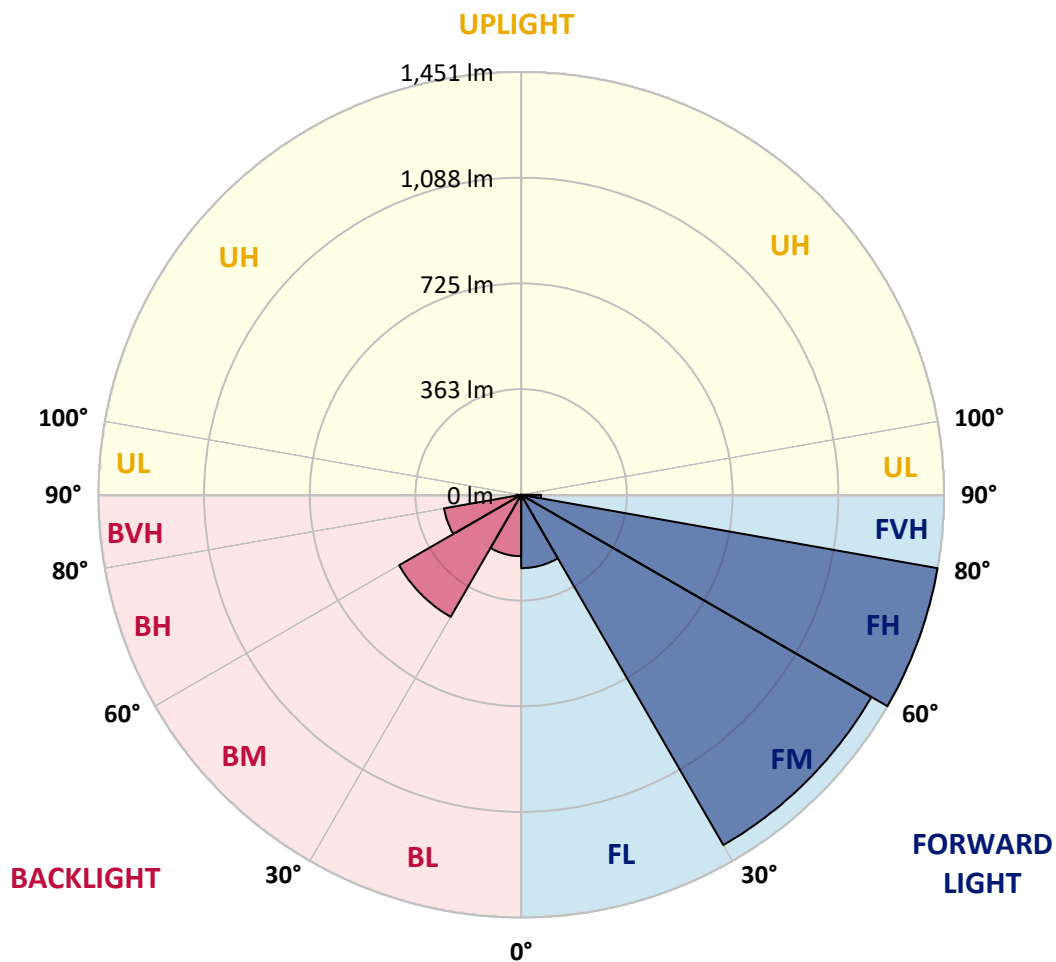
CATALOG NUMBER: VAL-F02-LED-E-U-GL3-8030

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	251.5	6.1			
FM	(30°-60°)	1387.3	33.5			
FH	(60°-80°)	1450.6	35.1			G1/1800
FVH	(80°-90°)	67.9	1.6			G1/100
BL	(0°-30°)	210.6	5.1	B1/500		
BM	(30°-60°)	483.7	11.7	B1/1000		
BH	(60°-80°)	268.9	6.5	B1/500		G1/500
BVH	(80°-90°)	16.4	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	61°	62°	64°
0°	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1
2.5°	462.1	460.1	460.4	461.2	458.5	457.1	454.0	452.0	451.8	451.5	450.4
5°	489.1	487.2	488.0	485.8	480.5	476.8	470.4	467.1	466.5	466.0	464.6
7.5°	517.3	514.7	512.0	509.5	503.6	497.7	489.4	484.4	483.8	483.0	482.1
10°	550.7	547.1	544.8	537.0	527.0	518.9	510.6	505.3	505.0	504.2	502.5
12.5°	588.3	584.4	580.2	569.9	554.3	542.3	532.6	529.5	527.0	527.3	525.6
15°	625.7	621.5	615.9	602.8	582.2	564.4	551.8	547.4	547.6	546.2	547.1
17.5°	657.2	653.5	645.5	628.7	604.8	580.2	564.4	562.4	563.0	562.7	563.5
20°	677.8	675.6	663.3	643.2	616.2	589.2	573.0	573.0	573.3	574.4	576.3
22.5°	690.3	687.0	670.8	642.7	615.9	593.3	580.8	583.6	585.3	586.1	589.2
25°	697.3	693.1	671.1	633.8	606.4	596.4	592.5	599.5	602.3	603.7	608.7
27.5°	697.3	692.3	667.5	622.6	595.6	605.6	614.8	626.8	628.7	632.9	638.8
30°	689.5	685.6	661.9	614.2	592.8	622.9	650.8	664.4	669.1	673.9	681.4
32.5°	681.1	677.8	659.1	618.7	608.4	659.1	705.7	724.3	727.1	731.0	738.8
35°	680.6	679.5	671.4	647.1	655.5	725.4	788.4	801.2	809.0	811.0	814.3
37.5°	686.4	688.7	695.6	693.1	723.2	824.1	896.8	922.5	928.6	925.3	928.3
40°	700.1	705.7	731.6	763.6	826.6	943.4	1044.5	1074.1	1080.8	1078.8	1078.0
42.5°	743.3	750.8	789.0	857.5	934.2	1066.8	1181.7	1213.4	1215.7	1216.8	1209.5
45°	811.0	815.2	865.9	953.4	1050.7	1199.8	1318.5	1353.9	1352.5	1346.9	1341.6
47.5°	887.9	896.6	957.3	1063.2	1171.1	1322.7	1457.0	1491.6	1494.6	1489.6	1479.9
50°	957.9	964.6	1033.1	1158.8	1277.3	1425.0	1573.8	1608.6	1608.1	1610.9	1613.6
52.5°	1013.1	1019.2	1084.4	1222.6	1355.3	1510.8	1661.9	1704.8	1711.5	1715.9	1721.5
55°	1041.5	1047.9	1108.1	1249.1	1402.7	1594.7	1763.6	1825.2	1836.6	1846.6	1855.8
57.5°	1042.0	1050.4	1105.6	1247.2	1427.2	1669.7	1898.2	2008.8	2025.0	2050.6	2082.1
60°	1025.0	1036.7	1086.4	1229.0	1455.3	1764.7	2120.0	2331.8	2363.6	2408.5	2448.9
62.5°	980.7	992.4	1036.7	1183.1	1488.2	1886.5	2440.5	2751.0	2818.7	2868.3	2948.3
65°	910.8	921.9	959.3	1107.0	1462.0	1982.6	2679.4	3051.7	3120.8	3183.0	3276.9
67°	848.3	849.5	881.0	1019.7	1360.0	1952.8	2727.3	3091.8	3155.7	3218.6	3327.6
67.5°	826.3	832.5	857.0	990.8	1321.3	1930.8	2708.4	3070.1	3132.0	3199.1	3310.3
70°	668.0	669.7	693.4	790.4	1048.4	1600.8	2432.7	2792.8	2835.2	2933.5	3042.8
72.5°	407.5	404.7	412.2	484.1	690.0	1108.6	1947.8	2299.2	2357.2	2441.1	2514.9
75°	224.3	237.7	246.9	296.8	387.7	651.9	1326.3	1663.5	1748.5	1798.4	1813.2
77.5°	137.1	136.0	140.2	191.5	318.0	445.9	732.7	976.0	1023.4	1037.6	982.7
80°	65.2	67.7	66.9	78.9	154.1	376.2	512.2	626.8	650.8	664.4	682.2
82.5°	35.7	37.1	42.1	47.1	60.8	161.9	442.0	578.0	594.2	617.6	643.8
85°	22.3	23.4	32.3	34.0	37.3	49.9	184.2	337.8	351.4	398.0	412.7
87.5°	9.2	10.0	17.6	15.9	19.0	17.6	55.7	85.8	91.1	97.0	107.6
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):

	65°	66°	67°	67.5°	68°	69°	70°	71°	72°	73°	74°
0°	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1
2.5°	450.6	450.4	449.3	449.0	449.5	449.5	449.0	448.1	447.9	447.6	447.0
5°	464.0	463.5	462.6	462.1	461.8	461.8	461.0	460.1	459.3	458.2	457.9
7.5°	479.9	479.9	479.6	478.8	478.0	476.8	476.0	475.2	474.3	473.8	472.9
10°	500.8	501.9	500.0	499.4	499.1	497.5	497.2	496.4	495.8	494.4	494.4
12.5°	525.6	524.5	524.2	523.1	523.1	522.3	522.0	521.7	521.2	520.0	519.8
15°	546.2	546.2	546.0	545.4	546.0	545.4	544.6	545.1	544.3	544.6	543.7
17.5°	563.0	564.1	563.8	564.1	563.8	563.8	564.4	564.4	564.9	563.8	564.1
20°	576.9	578.6	579.4	578.8	579.4	579.7	581.1	581.6	582.5	583.0	583.0
22.5°	591.4	593.6	595.3	595.3	596.4	597.5	600.0	600.6	602.5	602.3	603.7
25°	611.7	615.4	616.5	618.1	619.5	621.5	624.6	625.9	626.8	628.7	631.0
27.5°	642.9	647.4	648.2	650.2	653.8	654.9	658.3	659.7	662.7	666.9	667.8
30°	685.6	691.2	691.4	693.7	697.9	699.2	702.0	705.7	708.2	712.3	712.6
32.5°	743.6	749.1	748.3	752.5	752.2	756.4	755.5	761.1	763.3	765.6	771.7
35°	820.8	820.2	824.4	825.8	824.9	828.3	827.7	830.2	832.5	832.5	839.1
37.5°	932.0	931.1	930.6	924.7	923.3	923.6	922.5	924.7	921.1	921.1	928.3
40°	1081.1	1076.0	1072.1	1068.2	1064.3	1059.0	1054.6	1053.5	1047.3	1047.1	1044.3
42.5°	1210.6	1205.9	1203.1	1195.6	1191.7	1190.9	1180.0	1176.9	1175.3	1176.4	1173.6
45°	1346.7	1341.6	1331.0	1327.7	1326.6	1320.7	1319.1	1311.5	1309.3	1313.2	1311.8
47.5°	1486.8	1479.6	1473.7	1469.8	1468.4	1463.4	1456.2	1462.3	1459.2	1457.0	1452.8
50°	1612.8	1604.7	1604.7	1597.8	1598.9	1595.5	1588.0	1589.7	1581.0	1584.4	1582.1
52.5°	1718.4	1719.0	1721.8	1714.0	1715.4	1715.4	1712.9	1704.8	1707.0	1705.9	1711.2
55°	1852.8	1862.0	1856.9	1858.3	1860.0	1867.8	1873.4	1868.6	1860.8	1867.0	1884.0
57.5°	2087.7	2096.1	2101.1	2105.0	2111.4	2115.0	2145.1	2149.3	2140.4	2158.8	2196.7
60°	2496.3	2506.3	2521.3	2541.1	2545.3	2570.7	2586.3	2604.7	2611.4	2627.3	2667.9
62.5°	2987.6	3010.2	3013.0	3038.0	3057.6	3033.9	3040.0	3062.6	3036.9	3072.0	3073.7
65°	3309.2	3342.1	3343.2	3352.4	3359.7	3337.4	3327.3	3317.3	3293.1	3291.7	3315.9
67°	3364.4	3394.5	3407.0	3411.5	3410.4	3399.0	3382.5	3353.5	3330.1	3316.7	3326.8
67.5°	3348.8	3378.3	3395.9	3400.1	3400.3	3389.2	3374.2	3342.7	3320.6	3305.6	3316.2
70°	3092.4	3161.5	3191.6	3176.0	3184.9	3184.9	3184.4	3155.4	3144.5	3130.0	3124.4
72.5°	2571.2	2619.2	2657.3	2637.0	2639.5	2658.5	2654.0	2657.1	2625.9	2622.5	2571.0
75°	1841.9	1857.2	1844.4	1858.9	1780.9	1753.0	1705.6	1636.5	1618.4	1589.7	1503.8
77.5°	978.5	961.2	926.9	924.2	892.1	867.3	836.6	816.6	765.9	737.7	673.3
80°	691.2	699.5	712.6	720.4	727.7	733.2	721.8	689.8	647.4	600.0	555.2
82.5°	660.2	671.7	679.5	683.4	680.6	671.7	645.5	614.8	558.2	517.3	468.8
85°	416.4	425.6	409.7	406.3	413.3	357.0	326.1	301.0	243.9	226.9	200.4
87.5°	111.8	117.9	118.2	114.5	112.3	98.9	87.5	77.5	64.1	60.2	48.8
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):

	75°	76°	77°	78°	79°	80°	81°	82°	83°	84°	85°
0°	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1
2.5°	447.0	446.7	446.7	445.9	445.4	445.1	444.8	444.0	443.4	443.4	443.1
5°	457.6	457.1	456.2	455.9	454.8	454.3	453.2	452.6	451.8	451.2	450.9
7.5°	472.7	471.3	469.6	469.9	468.2	467.4	466.8	465.7	464.9	464.0	463.7
10°	492.7	492.5	490.8	491.3	488.3	489.7	486.9	487.2	485.5	483.8	483.5
12.5°	518.4	518.1	516.4	514.5	513.9	514.2	512.5	512.8	510.8	510.3	509.7
15°	542.9	542.3	541.5	540.1	539.3	539.0	538.4	537.9	536.2	536.2	534.3
17.5°	564.1	564.4	563.2	562.1	561.6	560.7	560.5	560.5	559.1	557.7	557.9
20°	582.7	583.3	583.3	582.5	582.7	582.2	581.9	582.5	581.1	580.5	579.7
22.5°	603.7	603.7	603.9	604.5	605.3	605.6	605.6	605.0	604.2	603.9	602.3
25°	632.6	631.5	632.9	633.5	633.5	634.9	634.3	634.6	634.9	634.0	633.2
27.5°	669.1	668.0	670.8	672.8	672.5	673.3	675.0	673.0	674.2	675.0	673.0
30°	714.0	716.8	718.8	720.1	719.6	722.1	722.9	722.7	721.8	723.2	723.2
32.5°	771.1	769.8	774.8	777.8	778.1	777.6	779.0	780.6	779.2	781.5	780.3
35°	839.1	840.0	841.1	844.4	845.8	843.6	845.8	847.8	847.2	847.5	848.6
37.5°	926.9	928.3	927.2	927.5	926.9	937.5	939.2	940.9	938.9	937.2	942.3
40°	1048.7	1048.7	1048.4	1052.1	1045.9	1052.6	1050.7	1055.4	1060.4	1057.6	1065.2
42.5°	1168.6	1175.3	1175.8	1170.5	1175.0	1182.2	1182.2	1185.3	1189.7	1185.3	1192.5
45°	1306.0	1314.3	1312.9	1321.8	1315.2	1323.5	1324.9	1321.0	1330.8	1331.9	1329.1
47.5°	1455.9	1457.6	1457.8	1460.9	1462.3	1469.0	1468.7	1476.0	1473.7	1462.6	1466.5
50°	1584.4	1588.6	1590.8	1592.7	1599.7	1604.4	1610.9	1612.0	1610.3	1607.0	1603.9
52.5°	1712.9	1722.9	1729.3	1746.6	1757.4	1766.1	1776.7	1780.6	1778.6	1777.8	1765.5
55°	1884.8	1908.8	1945.8	1969.8	1996.0	2011.3	2023.6	2029.7	2025.3	2027.5	2002.1
57.5°	2208.7	2264.9	2297.3	2338.2	2384.5	2403.7	2409.0	2430.8	2406.8	2382.8	2363.6
60°	2690.0	2741.8	2800.6	2842.7	2858.3	2911.5	2886.4	2858.3	2832.6	2783.0	2727.0
62.5°	3124.4	3191.3	3221.4	3260.7	3250.1	3245.7	3229.0	3184.1	3129.2	3055.3	2980.6
65°	3338.8	3376.4	3395.1	3407.9	3395.9	3365.0	3309.8	3243.4	3164.9	3069.3	2971.2
67°	3347.4	3364.7	3370.8	3358.5	3331.8	3283.6	3213.9	3120.0	3023.3	2913.7	2803.4
67.5°	3333.2	3344.6	3347.7	3328.4	3296.7	3244.6	3170.1	3069.8	2967.0	2853.3	2742.4
70°	3139.2	3130.9	3103.8	3077.3	2978.1	2908.2	2778.6	2671.6	2528.9	2424.4	2305.9
72.5°	2550.3	2512.1	2486.0	2368.9	2249.1	2179.7	2040.3	1912.4	1782.2	1682.8	1610.0
75°	1431.7	1403.8	1331.0	1269.2	1170.2	1079.7	1014.7	933.3	855.3	809.0	775.0
77.5°	646.8	567.1	512.2	442.8	357.8	287.6	213.5	197.3	168.3	161.1	145.2
80°	504.7	447.6	375.7	296.3	209.0	140.5	103.1	87.5	82.2	78.9	77.2
82.5°	421.1	347.0	292.1	207.3	132.7	89.2	67.2	60.8	56.9	54.1	51.6
85°	180.0	142.4	117.3	83.9	59.6	47.1	41.2	37.6	34.0	30.9	29.0
87.5°	42.1	32.3	29.5	25.1	23.7	23.4	23.1	22.0	20.6	19.0	17.0
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):

	86°	87°	88°	89°	90°	95°	105°	115°	125°	135°	145°
0°	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1	440.1
2.5°	442.8	442.6	442.0	441.2	441.2	440.1	436.4	433.9	431.1	429.5	427.8
5°	450.4	450.1	448.7	447.9	447.3	445.1	438.9	434.2	429.2	425.6	422.8
7.5°	462.9	462.1	461.0	460.4	458.7	455.9	447.0	440.3	433.1	427.2	422.5
10°	483.3	481.9	480.2	478.5	479.1	474.6	464.3	454.6	444.0	434.8	428.4
12.5°	508.1	508.1	507.2	506.1	504.2	499.1	485.2	473.8	461.0	449.5	444.8
15°	534.3	532.9	531.5	529.8	529.5	522.8	510.3	497.2	483.8	474.1	468.5
17.5°	555.7	556.3	554.3	553.8	553.2	546.5	533.1	521.4	511.7	501.4	492.5
20°	578.6	577.5	576.9	576.1	575.8	570.2	559.6	552.4	543.7	528.1	504.7
22.5°	603.1	601.7	602.3	600.6	600.3	596.4	588.6	586.4	573.6	540.7	500.0
25°	634.9	632.4	633.2	633.2	633.5	629.8	629.0	625.1	592.8	537.6	481.0
27.5°	672.8	673.9	673.9	673.6	671.7	672.8	676.7	663.3	599.5	521.4	452.6
30°	722.1	722.7	723.2	725.2	721.0	728.2	733.0	690.3	594.5	499.1	416.9
32.5°	782.0	779.8	780.9	782.0	783.4	790.9	788.1	704.0	579.7	468.8	372.6
35°	848.1	852.2	853.4	855.9	858.7	870.1	838.0	706.8	557.1	428.1	316.0
37.5°	946.4	953.1	953.1	962.1	956.8	970.7	882.6	700.1	522.8	371.5	252.2
40°	1070.5	1073.5	1076.6	1077.7	1074.9	1073.3	911.9	683.6	474.6	300.4	184.5
42.5°	1197.0	1195.9	1196.2	1198.1	1190.6	1159.1	930.0	654.9	414.7	224.3	132.4
45°	1333.3	1328.5	1327.1	1323.2	1316.6	1250.2	940.3	614.5	335.8	157.7	104.0
47.5°	1465.9	1460.1	1451.2	1440.3	1427.5	1323.5	939.2	562.1	257.5	112.9	91.7
50°	1601.9	1591.6	1572.4	1561.8	1540.1	1396.3	932.8	503.9	185.3	93.4	85.8
52.5°	1757.4	1739.1	1721.2	1700.0	1664.1	1485.7	923.0	438.4	135.2	85.6	81.9
55°	1989.3	1959.2	1930.0	1885.9	1851.1	1605.6	906.6	367.9	106.7	82.5	79.7
57.5°	2309.0	2257.7	2220.6	2161.3	2105.5	1771.4	889.0	303.8	95.3	81.7	78.6
60°	2668.8	2591.6	2522.5	2449.4	2385.9	1978.5	879.8	253.6	92.8	82.5	78.9
62.5°	2894.5	2803.4	2717.0	2627.8	2536.4	2077.4	840.0	219.1	93.9	86.1	81.1
65°	2866.1	2765.5	2671.6	2562.9	2476.8	1984.0	738.5	185.3	95.9	92.5	87.2
67°	2674.3	2576.8	2469.8	2363.3	2279.7	1806.5	623.4	156.1	98.1	99.8	93.9
67.5°	2623.1	2513.3	2405.4	2307.6	2217.0	1751.6	593.3	148.8	98.7	101.7	96.1
70°	2187.5	2100.5	1974.3	1901.8	1836.3	1419.9	442.6	115.7	100.3	110.4	106.7
72.5°	1530.6	1446.4	1380.4	1340.8	1302.6	1031.7	311.3	92.2	97.8	115.1	111.5
75°	773.1	753.9	730.7	717.9	718.5	599.7	187.6	78.6	92.0	110.4	101.2
77.5°	152.7	148.8	150.5	164.7	162.2	184.8	93.1	66.6	78.3	85.0	72.7
80°	73.9	71.3	69.1	68.6	67.2	64.4	58.5	55.5	63.5	56.0	48.2
82.5°	47.9	45.1	44.0	41.8	42.1	45.7	51.0	53.2	51.6	38.7	32.6
85°	27.0	26.8	26.2	26.8	27.9	36.5	54.6	49.9	41.5	27.3	24.5
87.5°	16.2	15.3	15.6	15.9	16.4	27.0	43.2	36.0	26.5	14.2	14.5
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):

	155°	165°	175°	180°
0°	440.1	440.1	440.1	440.1
2.5°	427.5	426.4	426.4	426.1
5°	420.5	418.9	418.6	418.6
7.5°	419.4	417.2	416.9	416.1
10°	424.5	423.6	423.9	423.1
12.5°	440.3	441.5	442.6	442.6
15°	464.6	463.7	465.1	463.7
17.5°	482.4	475.2	473.5	472.7
20°	483.0	467.9	462.9	462.1
22.5°	465.7	443.4	435.0	433.6
25°	436.4	408.3	397.7	396.6
27.5°	399.6	368.2	352.5	352.0
30°	355.3	318.0	298.2	295.1
32.5°	301.3	257.0	236.1	229.4
35°	238.8	193.4	173.9	173.3
37.5°	178.4	143.0	130.4	129.9
40°	130.7	112.3	107.6	106.7
42.5°	106.7	99.2	97.3	96.4
45°	95.6	92.5	91.4	90.6
47.5°	88.9	87.0	86.1	86.1
50°	83.6	83.1	82.5	82.5
52.5°	80.0	79.7	79.1	78.9
55°	76.9	75.8	76.1	75.8
57.5°	75.0	73.3	73.3	73.3
60°	73.9	70.8	70.8	71.1
62.5°	74.1	69.4	69.1	69.1
65°	76.4	68.6	66.9	67.2
67°	79.1	67.7	64.4	64.1
67.5°	80.0	67.2	63.5	63.3
70°	83.3	65.5	59.4	58.8
72.5°	83.9	63.0	55.2	54.6
75°	78.0	59.6	51.8	50.4
77.5°	60.8	51.3	46.8	46.8
80°	42.6	39.3	33.4	33.2
82.5°	31.2	29.5	24.5	24.0
85°	22.9	21.5	18.1	18.1
87.5°	14.2	13.7	11.7	11.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)