

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: McGRAW-EDISON

Report Number: P301731

Luminaire Tested: **GLNA-AF-09-LED-E1-T2R-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P301731
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P194759)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: GLNA-AF-09-LED-E1-T2R-600
Description: GALLEONNAIRE AREA AND ROADWAY LUMINAIRE
(9) 70 CRI, 4000K CCT 600mA LIGHTSQUARE WITH 16 LEDS EACH AND Type II
Roadway OPTICS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 36391.1 lumens
Efficiency: N/A
Efficacy: 125.5 lumens/watt
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B3 - U0 - G4

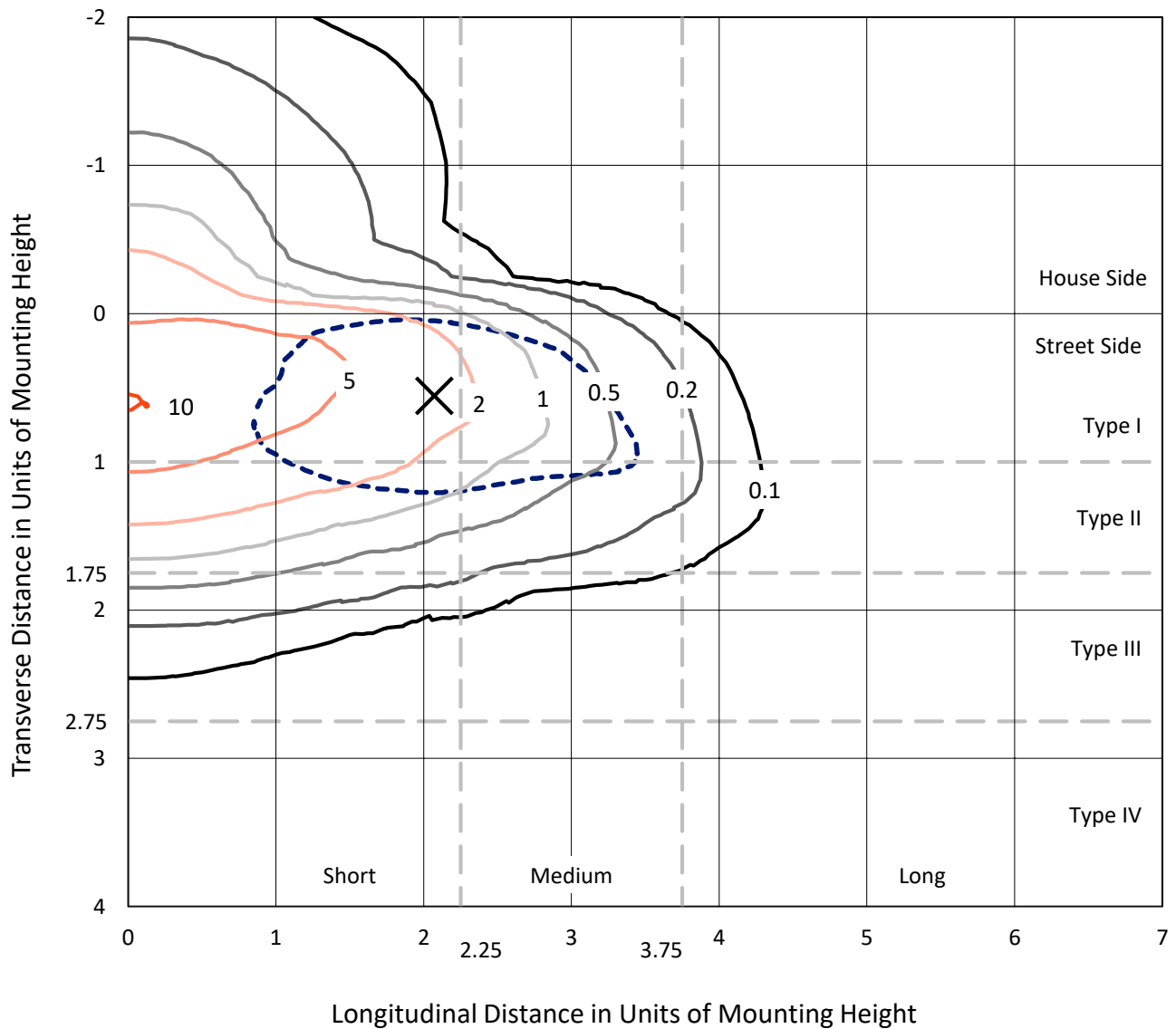
Input Watts (W): 290
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

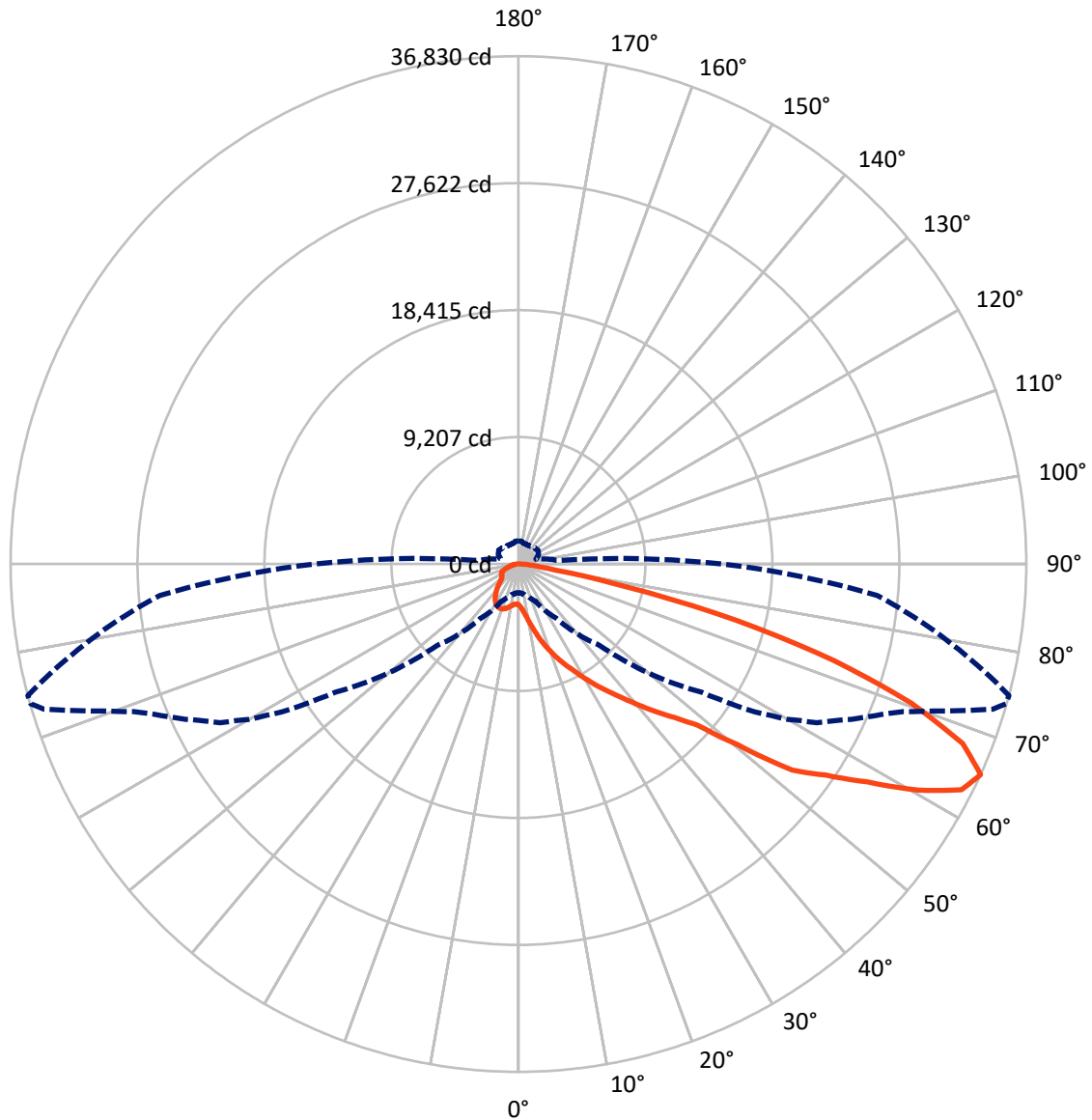
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 10.2 fc
 Type II - Short - Full 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	5610.6	0.0	5610.6
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	30780.4	0.0	30780.4
	% Fixture	84.6	0.0	84.6
Total	Lumens	36391.1	0.0	36391.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	365.6	1.0
10°-20°	1428.3	3.9
20°-30°	2930.4	8.1
30°-40°	4930.3	13.5
40°-50°	6812.2	18.7
50°-60°	8503.7	23.4
60°-70°	7652.4	21.0
70°-80°	3207.8	8.8
80°-90°	560.4	1.5
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°	36391.1	100.0
0°-180°	36391.1	100.0

Coefficient of Utilization



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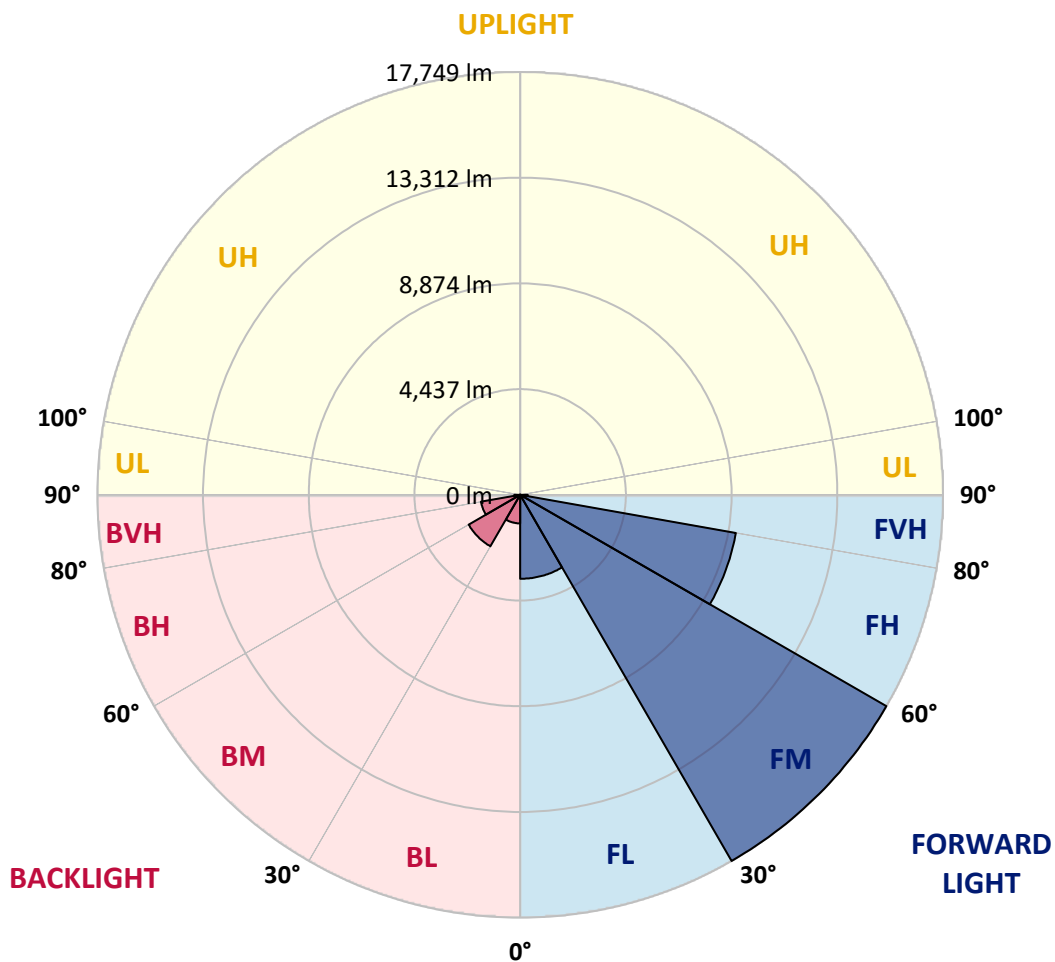
CATALOG NUMBER: GLNA-AF-09-LED-E1-T2R-600

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	3524.4	9.7			
FM (30°-60°)	17748.8	48.8			
FH (60°-80°)	9192.3	25.3			G4/12000
FVH (80°-90°)	315.0	0.9			G3/500
BL (0°-30°)	1199.9	3.3	B3/2500		
BM (30°-60°)	2497.4	6.9	B2/2500		
BH (60°-80°)	1668.0	4.6	B3/2500		G3/2500
BVH (80°-90°)	245.4	0.7			G3/500
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°	56°	57°	58°	59°
0°	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5
2.5°	3755.1	3713.7	3723.9	3654.9	3570.6	3460.3	3338.1	3336.6	3338.1	3325.9	3281.4
5°	5206.7	5157.2	5138.3	4982.9	4755.6	4432.1	4080.6	4042.8	4026.9	3987.6	3896.1
7.5°	6266.5	6238.9	6209.3	6092.3	5885.8	5524.1	5051.9	4971.2	4893.5	4874.6	4771.4
10°	6950.2	6943.0	6881.2	6850.0	6721.3	6407.5	5947.7	5870.0	5785.7	5756.5	5647.7
12.5°	7490.8	7489.2	7460.1	7468.8	7356.4	7129.5	6733.0	6662.5	6600.7	6510.7	6433.6
15°	7864.8	7866.3	7909.8	7957.8	7940.4	7787.1	7415.1	7384.0	7330.8	7269.0	7177.5
17.5°	8171.4	8180.1	8224.5	8312.4	8407.4	8395.2	8100.9	8074.8	8028.3	7944.0	7896.0
20°	8863.7	8896.4	8810.6	8810.6	8820.8	8867.3	8725.8	8705.3	8639.9	8595.0	8557.2
22.5°	10033.3	10071.2	9876.5	9678.7	9484.1	9342.5	9201.5	9227.0	9182.6	9151.4	9128.9
25°	11552.4	11582.1	11266.8	10932.6	10536.1	10019.5	9670.0	9654.2	9630.2	9611.3	9601.1
27.5°	12982.1	12994.4	12696.5	12207.0	11747.1	11004.7	10145.2	10126.3	10097.2	10060.9	10029.8
30°	14205.4	14201.8	13895.2	13428.2	12935.6	12114.0	10867.2	10808.5	10722.1	10624.0	10548.4
32.5°	15264.6	15259.5	14923.3	14439.4	13922.8	13213.1	11856.0	11735.4	11601.0	11409.4	11294.4
35°	16098.0	16094.9	15777.6	15273.3	14680.6	14248.3	12989.3	12841.1	12670.4	12413.9	12236.6
37.5°	16413.3	16413.3	16236.0	15891.6	15367.8	15071.5	14248.3	14069.0	13886.5	13595.3	13395.5
40°	16228.8	16232.4	16270.2	16206.8	15951.9	15724.5	15423.0	15316.2	15159.4	14897.7	14689.3
42.5°	15610.5	15629.4	15881.4	16189.5	16316.7	16280.9	16464.9	16416.8	16306.5	16105.2	15939.6
45°	14826.7	14885.5	15160.9	15743.4	16418.4	16761.2	17338.1	17343.2	17322.8	17214.5	17086.7
47.5°	13750.6	13832.9	14196.7	14983.6	16180.8	17228.3	18225.2	18271.7	18315.1	18244.6	18185.8
50°	12320.9	12419.0	12963.2	14007.1	15696.9	17712.1	19901.1	20111.6	20307.9	20283.8	20323.2
52.5°	10789.6	10905.0	11571.3	12734.3	14865.0	17824.0	20972.6	21315.5	21658.3	21938.9	22236.8
55°	9407.9	9346.1	10012.9	11237.2	13497.2	17319.2	21935.8	22349.2	22731.4	23075.8	23430.9
57.5°	7535.7	7637.4	8305.8	9516.8	11686.8	15894.6	22598.5	23203.5	23752.8	24323.0	24825.8
60°	5508.2	5609.9	6335.0	7564.9	9721.7	13734.8	22092.2	23008.8	23888.7	24762.0	25444.1
62.5°	3325.9	3402.0	4040.7	5212.4	7496.4	11173.8	19835.7	21038.0	22333.3	23377.2	24422.7
65°	2070.4	2113.4	2349.4	2993.8	4814.3	8342.0	16206.8	17517.5	18912.4	20237.3	21324.2
67.5°	1694.9	1710.2	1753.6	1891.1	2643.7	5439.8	12062.4	13223.3	14482.3	15763.8	16973.3
70°	1524.2	1514.0	1514.0	1522.7	1694.9	2924.8	7897.5	8653.7	9702.7	10817.2	11922.9
72.5°	1376.0	1365.8	1346.9	1321.4	1383.2	1784.3	4082.1	4652.4	5408.6	6398.8	7458.1
75°	1236.5	1222.7	1200.8	1168.1	1211.0	1346.9	1960.1	2199.7	2568.1	3095.4	3686.1
77.5°	1091.9	1074.6	1054.1	1030.1	1085.3	1047.5	1148.7	1235.0	1376.0	1545.2	1767.4
80°	928.4	913.1	905.9	894.2	959.6	797.6	811.4	864.6	947.3	1038.8	1142.0
82.5°	727.1	727.1	754.2	759.8	831.9	573.8	606.5	653.0	695.9	744.0	792.5
85°	478.8	482.4	575.3	611.6	656.1	385.8	454.8	470.1	504.8	532.4	552.9
87.5°	149.7	162.0	351.5	389.4	377.1	218.7	279.0	286.1	310.2	329.1	346.4
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):

	60°	61°	62°	63°	64°	65°	66°	67°	68°	69°	70°
0°	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5
2.5°	3281.4	3260.5	3241.6	3240.0	3226.2	3207.3	3214.0	3184.9	3186.4	3171.1	3153.7
5°	3858.3	3844.5	3775.5	3756.6	3705.0	3672.3	3667.2	3598.2	3589.5	3550.2	3506.8
7.5°	4688.6	4643.7	4547.1	4500.6	4412.7	4347.3	4316.6	4225.2	4180.2	4077.0	4030.5
10°	5558.3	5501.6	5382.5	5317.1	5232.8	5127.5	5070.8	4938.5	4886.4	4791.8	4678.4
12.5°	6364.6	6307.9	6185.3	6135.2	6023.3	5911.4	5849.5	5699.8	5632.4	5480.6	5391.2
15°	7110.1	7053.4	6946.6	6895.0	6783.1	6691.6	6608.8	6461.2	6382.0	6240.4	6123.4
17.5°	7833.6	7773.3	7680.3	7633.8	7525.5	7432.5	7343.1	7203.1	7122.4	6981.3	6876.1
20°	8505.5	8460.6	8393.6	8331.3	8223.0	8138.7	8031.9	7911.3	7794.3	7690.6	7590.9
22.5°	9091.1	9073.7	9001.7	8974.1	8881.1	8808.6	8715.6	8597.0	8512.2	8381.4	8288.4
25°	9596.0	9590.8	9556.1	9547.4	9482.0	9413.0	9392.6	9294.5	9216.8	9101.3	9005.3
27.5°	10029.8	10034.9	10026.7	10050.7	10033.3	10002.2	10004.2	9971.5	9926.5	9830.0	9745.7
30°	10512.1	10484.5	10500.4	10534.6	10544.8	10548.4	10605.1	10624.0	10621.0	10557.1	10515.7
32.5°	11194.3	11128.9	11068.6	11063.4	11097.7	11111.5	11208.1	11258.1	11301.0	11316.4	11323.5
35°	12063.9	11933.1	11807.4	11740.5	11681.7	11697.0	11766.0	11847.3	11941.8	12007.2	12084.9
37.5°	13159.4	12999.5	12777.2	12618.8	12579.0	12493.1	12537.6	12601.5	12694.5	12796.1	12930.5
40°	14487.4	14244.7	13994.9	13784.9	13671.4	13512.5	13511.0	13498.7	13555.9	13650.5	13840.0
42.5°	15765.9	15550.2	15285.1	15064.8	14916.6	14704.6	14661.7	14549.8	14575.3	14658.1	14842.6
45°	16962.6	16785.3	16623.3	16368.8	16242.6	16013.7	15941.1	15808.8	15734.7	15772.5	15957.0
47.5°	18121.9	18008.5	17839.4	17674.3	17577.8	17372.9	17279.9	17184.8	17090.3	17086.7	17279.9
50°	20381.9	20321.7	20121.9	19949.7	19996.2	19744.8	19760.1	19505.1	19620.6	19634.4	20039.1
52.5°	22505.5	22716.0	22864.2	23044.6	23162.1	23184.6	23261.8	23377.2	23516.7	23792.1	24167.7
55°	23721.6	23985.3	24138.6	24276.5	24503.9	24551.9	24681.2	24834.5	24956.6	25266.8	25585.6
57.5°	25167.1	25656.1	25893.7	26112.4	26419.0	26536.0	26751.7	26918.7	27077.1	27444.0	27829.8
60°	26057.3	26653.6	27137.4	27483.4	27867.6	28143.5	28469.0	28730.6	29102.6	29542.0	30117.4
62.5°	25349.6	26224.3	26867.1	27461.4	27983.1	28510.4	28976.9	29466.4	30031.0	30695.8	31588.5
65°	22530.1	23420.2	24520.8	25137.5	25828.3	26641.3	27351.0	28143.5	28913.0	29881.3	31200.6
67.5°	18137.8	19172.5	20409.5	21031.4	21825.4	22732.9	23529.0	24496.8	25396.1	26568.7	28200.2
70°	13073.6	14411.8	15452.1	16101.6	17028.5	17963.5	18732.0	19858.2	20602.2	21804.5	23491.2
72.5°	8278.2	9333.8	10608.7	11426.7	12249.9	13197.8	13983.1	14954.5	15648.4	16743.9	18271.7
75°	4451.0	5229.2	6348.8	7125.9	8007.9	8817.2	9737.0	10388.0	10901.5	11768.1	13008.2
77.5°	2085.8	2559.4	3126.1	3723.9	4321.8	4945.1	5551.7	6078.5	6299.2	6795.3	7527.0
80°	1266.2	1419.5	1584.5	1769.0	2018.8	2220.1	2487.4	2680.0	2693.8	2850.7	3074.5
82.5°	845.6	902.4	952.4	998.9	1062.8	1112.9	1169.6	1236.5	1264.1	1300.4	1373.0
85°	576.9	604.5	614.7	644.3	637.2	654.5	677.0	699.5	711.3	709.7	742.4
87.5°	354.6	368.4	375.6	382.2	377.1	370.5	380.7	392.9	396.0	385.8	389.4
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):

	71°	72°	73°	74°	75°	85°	90°	95°	105°	115°	125°
0°	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5
2.5°	3157.3	3141.9	3126.1	3115.9	3112.3	3021.3	2981.5	2955.9	2900.8	2855.8	2819.5
5°	3482.7	3450.0	3424.5	3393.3	3376.0	3145.0	3060.7	3002.4	2905.9	2849.1	2797.0
7.5°	4006.5	3915.0	3861.9	3801.6	3750.0	3333.0	3193.5	3102.1	2967.7	2892.1	2833.3
10°	4600.7	4506.2	4421.4	4328.4	4247.7	3582.9	3379.5	3238.0	3060.7	2962.6	2884.9
12.5°	5264.0	5171.0	5064.2	4945.1	4841.9	3899.7	3617.1	3415.8	3172.6	3041.8	2933.5
15°	6047.8	5883.8	5754.5	5617.1	5496.5	4278.8	3894.6	3615.6	3291.6	3114.3	2969.7
17.5°	6775.9	6603.7	6428.5	6307.9	6168.4	4704.0	4173.6	3818.5	3389.8	3160.8	2976.4
20°	7487.7	7299.7	7148.4	6986.4	6839.8	5144.9	4471.5	3997.8	3453.6	3162.4	2933.5
22.5°	8114.7	7997.1	7828.5	7652.7	7504.6	5585.9	4750.5	4149.6	3477.6	3123.0	2857.3
25°	8827.5	8703.8	8496.9	8348.7	8183.6	6035.5	5024.3	4266.6	3463.8	3048.9	2740.3
27.5°	9588.8	9451.3	9239.3	9084.5	8884.7	6502.0	5275.7	4350.9	3412.2	2928.3	2583.4
30°	10382.8	10257.1	10048.7	9892.3	9690.5	6996.7	5556.8	4407.6	3309.0	2761.3	2401.0
32.5°	11235.6	11130.4	10924.0	10760.4	10544.8	7532.2	5818.4	4425.0	3152.2	2563.0	2208.4
35°	12045.0	11973.0	11798.7	11645.4	11421.6	8038.5	6095.8	4416.3	2966.2	2345.8	2032.6
37.5°	12956.6	12913.1	12827.3	12632.6	12358.7	8725.8	6428.5	4380.0	2738.8	2130.7	1898.2
40°	13927.9	13931.5	13838.5	13705.7	13450.7	9559.7	6824.5	4309.5	2490.5	1941.2	1775.6
42.5°	14956.0	15009.6	14964.7	14870.1	14625.4	10400.2	7298.1	4223.6	2249.8	1756.7	1655.5
45°	16134.3	16199.7	16268.7	16129.2	15891.6	11509.5	7921.5	4111.7	1989.2	1603.4	1572.8
47.5°	17493.5	17596.7	17658.5	17660.5	17422.9	12884.0	8934.3	4044.3	1758.7	1500.2	1532.9
50°	20361.0	20394.2	20540.3	20795.3	20612.9	16065.3	10703.2	4002.9	1601.9	1436.3	1503.8
52.5°	24493.2	24853.4	25106.9	25089.5	24841.2	18085.7	11678.1	3789.3	1508.9	1412.3	1490.0
55°	26176.3	26626.0	27094.5	27218.2	27025.5	19810.2	12599.9	3575.7	1463.9	1429.7	1495.1
57.5°	28418.9	29176.7	29819.5	30089.8	29810.8	22016.5	13812.4	3463.8	1450.1	1476.2	1527.8
60°	31038.7	31975.8	32819.9	33305.3	33305.3	24551.9	15069.9	3417.3	1431.2	1545.2	1583.0
62.5°	32721.8	34097.8	35372.7	36084.0	36063.0	26317.3	15627.9	3258.9	1388.3	1593.2	1658.6
65°	32728.4	34365.1	35988.9	36788.6	36829.5	26100.7	14706.6	2878.3	1309.1	1600.3	1734.7
67.5°	30000.4	31744.8	33638.0	34532.1	34738.6	24026.7	12730.7	2366.8	1179.8	1531.4	1762.3
70°	25337.3	27040.9	28973.3	29852.2	30219.1	20481.6	10253.6	1824.2	1014.8	1379.6	1705.1
72.5°	19961.4	21632.3	22977.7	23619.9	23906.1	15655.5	7466.8	1378.1	831.9	1162.4	1551.8
75°	14132.8	15386.7	16101.6	16244.7	16289.1	9437.6	4536.9	1025.0	685.7	904.4	1310.6
77.5°	7976.7	8514.2	8455.5	8519.3	7989.0	3643.2	1975.9	733.7	565.1	687.3	1016.3
80°	3114.3	3210.9	3016.2	2955.9	2711.2	1355.6	871.7	511.5	451.2	520.2	711.3
82.5°	1373.0	1417.4	1376.0	1386.8	1326.5	699.5	521.7	370.5	344.4	380.7	472.1
85°	756.2	770.0	766.4	788.9	756.2	279.0	247.8	227.4	241.2	258.5	303.0
87.5°	368.4	372.0	360.2	379.1	366.9	141.0	122.1	129.3	141.0	144.6	144.6
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):

	135°	145°	155°	165°	175°	180°
0°	2957.5	2957.5	2957.5	2957.5	2957.5	2957.5
2.5°	2794.0	2780.2	2781.7	2778.1	2771.5	2771.5
5°	2769.9	2756.2	2756.2	2752.6	2743.9	2745.4
7.5°	2794.0	2771.5	2762.8	2750.5	2738.8	2738.8
10°	2821.6	2781.7	2757.7	2737.2	2721.4	2721.4
12.5°	2842.0	2780.2	2740.3	2712.7	2697.4	2697.4
15°	2849.1	2767.9	2712.7	2680.0	2666.2	2664.7
17.5°	2826.7	2721.4	2654.5	2616.7	2599.3	2594.2
20°	2757.7	2637.1	2556.4	2512.9	2488.9	2480.2
22.5°	2654.5	2516.5	2422.0	2377.0	2345.8	2340.7
25°	2509.9	2361.7	2268.7	2225.3	2208.4	2202.8
27.5°	2340.7	2202.8	2123.6	2096.0	2080.7	2079.1
30°	2180.8	2063.3	2005.0	1984.1	1965.2	1962.1
32.5°	2030.6	1956.5	1934.5	1904.9	1860.4	1855.3
35°	1923.8	1917.1	1901.8	1835.9	1781.2	1765.4
37.5°	1858.4	1922.3	1843.1	1713.8	1674.4	1670.9
40°	1820.6	1869.1	1732.7	1688.2	1691.3	1688.2
42.5°	1734.7	1784.3	1736.3	1715.8	1729.1	1732.7
45°	1648.4	1703.6	1762.3	1748.5	1781.2	1781.2
47.5°	1600.3	1682.6	1760.3	1760.3	1808.8	1825.7
50°	1545.2	1665.8	1732.7	1756.7	1795.0	1781.2
52.5°	1541.6	1636.1	1693.3	1736.3	1753.6	1737.8
55°	1546.7	1612.1	1653.5	1702.0	1722.5	1724.0
57.5°	1553.8	1598.3	1625.9	1648.4	1710.2	1710.2
60°	1570.7	1586.6	1601.9	1614.1	1694.9	1696.4
62.5°	1598.3	1574.3	1570.7	1583.0	1686.2	1679.5
65°	1641.7	1556.9	1531.4	1543.1	1677.5	1657.1
67.5°	1700.0	1531.4	1481.3	1490.0	1670.9	1625.9
70°	1753.6	1490.0	1419.5	1410.8	1605.5	1526.3
72.5°	1758.7	1441.9	1333.1	1307.6	1395.4	1319.3
75°	1672.4	1408.7	1238.6	1162.4	1152.2	1142.0
77.5°	1507.4	1389.8	1128.2	1009.2	988.7	995.4
80°	1261.1	1319.3	995.4	854.3	966.2	954.5
82.5°	942.2	1164.5	845.6	756.2	754.2	666.8
85°	523.7	908.0	688.8	566.7	394.5	382.2
87.5°	146.6	504.8	482.4	320.4	218.7	227.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)