

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: P821165

Luminaire Tested: **TT-D4-830-24VDC-MQ-HSS**

Issue Date: 12/2/2020

Test Information

Test Method: LM-79-08
Report Number: P821165
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-1)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TT-D4-830-24VDC-MQ-HSS
Description: TOPTIER LED PARKING GARAGE LUMINAIRE
3000K, 80 CRI LEDS AND MEDIUM DISTRIBUTION WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

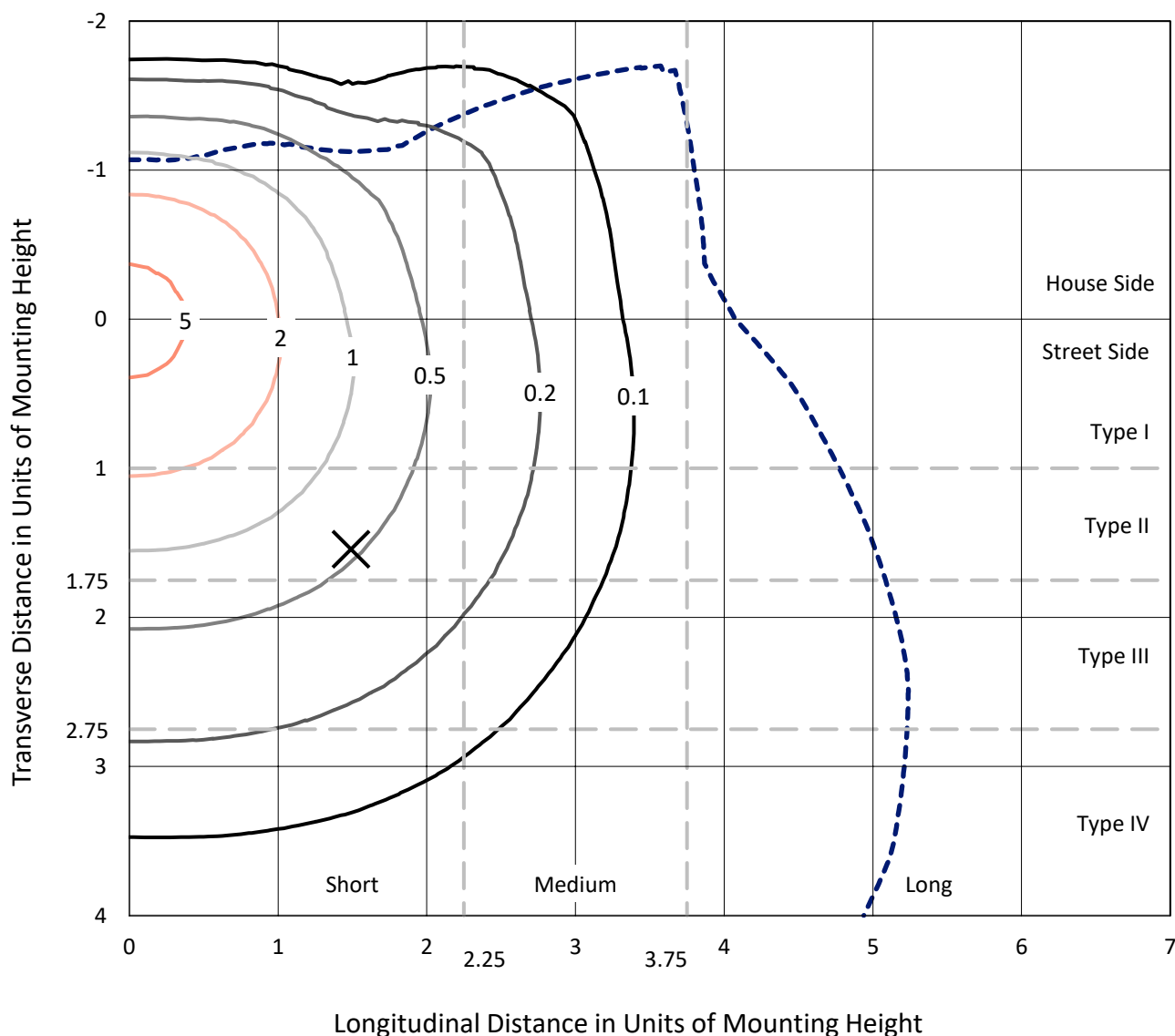
Lumens per Lamp: N/A
Luminaire Lumens: 5998.1 lumens
Efficiency: N/A
Efficacy: 105.2 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U2 - G2

Input Watts (W): 57
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

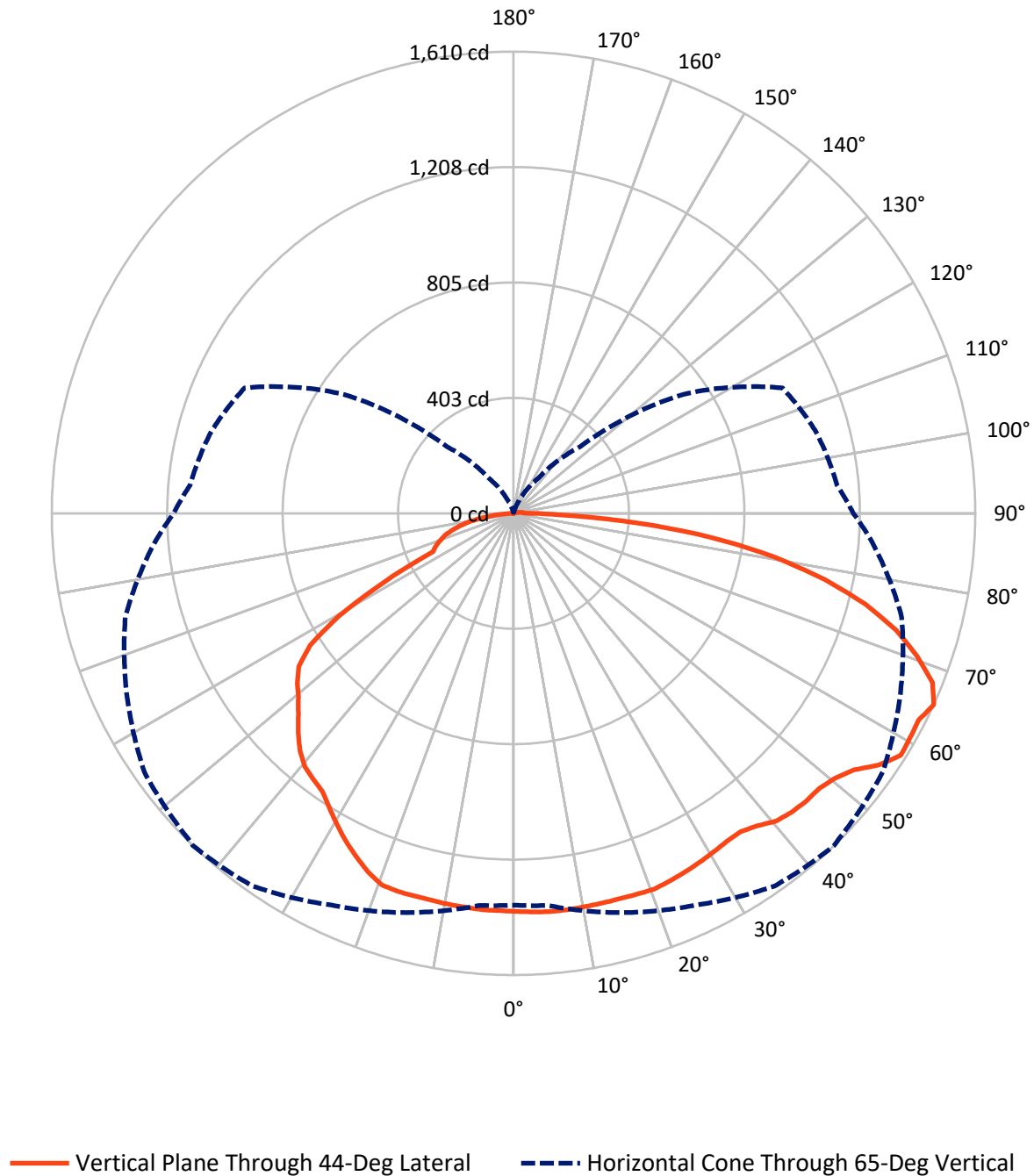
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 6.2 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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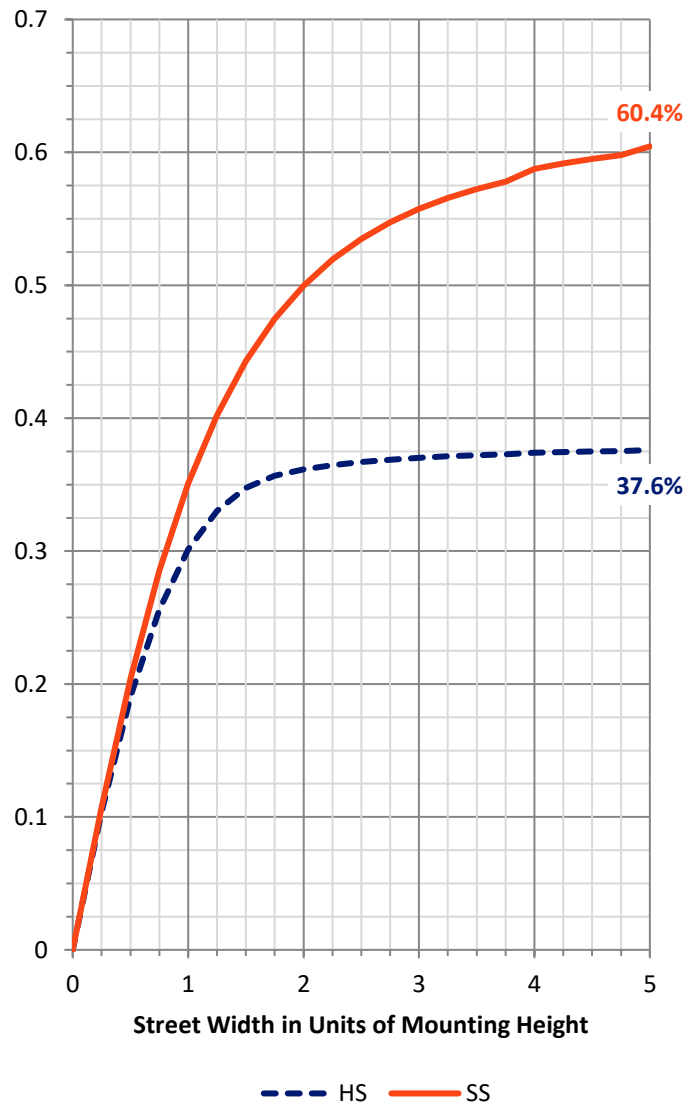
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2271.1	1.6	2272.8
	% Fixture	37.9	0.0	37.9
Street Side	Lumens	3705.0	20.4	3725.4
	% Fixture	61.8	0.3	62.1
Total	Lumens	5976.1	22.1	5998.1
	% Fixture	99.6	0.4	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	132.6	2.2
10°-20°	392.5	6.5
20°-30°	624.6	10.4
30°-40°	800.3	13.3
40°-50°	948.1	15.8
50°-60°	1038.3	17.3
60°-70°	987.0	16.5
70°-80°	785.8	13.1
80°-90°	267.0	4.5
90°-100°	14.1	0.2
100°-110°	4.6	0.1
110°-120°	1.0	0.0
120°-130°	0.7	0.0
130°-140°	0.5	0.0
140°-150°	0.5	0.0
150°-160°	0.4	0.0
160°-170°	0.2	0.0
170°-180°	0.1	0.0
0°-90°	5976.1	99.6
0°-180°	5998.1	100.0

Coefficient of Utilization



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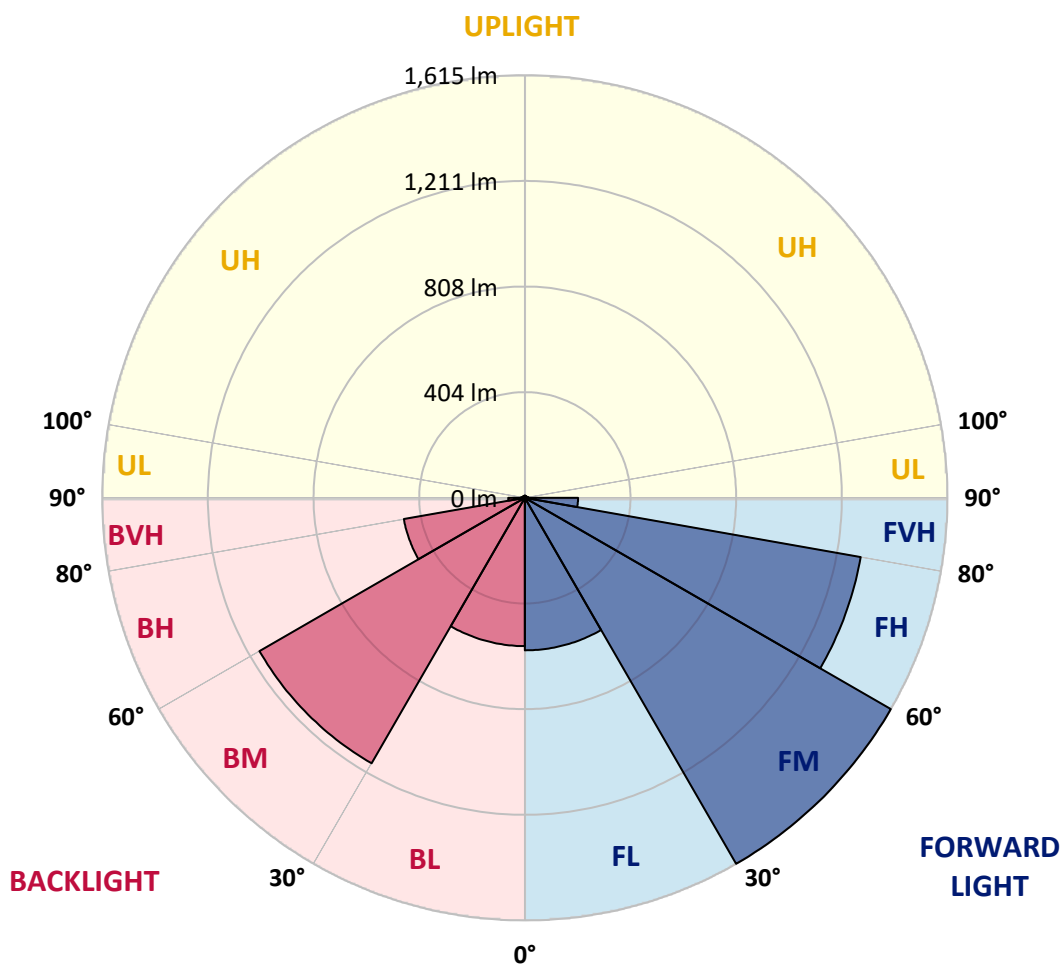
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	583.0	9.7			
FM	(30°-60°)	1615.2	26.9			
FH	(60°-80°)	1303.4	21.7			G1/1800
FVH	(80°-90°)	203.3	3.4			G2/225
BL	(0°-30°)	566.7	9.4	B2/1000		
BM	(30°-60°)	1171.5	19.5	B2/2500		
BH	(60°-80°)	469.3	7.8	B1/500		G1/500
BVH	(80°-90°)	63.6	1.1			G1/100
UL	(90°-100°)	14.1	0.2		U2/50	
UH	(100°-180°)	8.0	0.1		U1/10	

BUG Rating: B2-U2-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5
2.5°	1393.8	1392.7	1392.7	1392.7	1392.7	1391.7	1392.7	1390.6	1391.7	1388.5	1388.5
5°	1397.0	1394.9	1395.9	1395.9	1395.9	1394.9	1395.9	1392.7	1393.8	1389.6	1388.5
7.5°	1398.0	1397.0	1397.0	1397.0	1397.0	1394.9	1395.9	1393.8	1392.7	1389.6	1387.4
10°	1398.0	1397.0	1397.0	1397.0	1395.9	1393.8	1394.9	1391.7	1391.7	1387.4	1385.3
12.5°	1398.0	1397.0	1398.0	1395.9	1395.9	1393.8	1393.8	1390.6	1390.6	1385.3	1383.2
15°	1397.0	1395.9	1395.9	1397.0	1395.9	1393.8	1393.8	1390.6	1389.6	1383.2	1381.1
17.5°	1395.9	1394.9	1395.9	1397.0	1398.0	1395.9	1397.0	1391.7	1389.6	1383.2	1380.0
20°	1397.0	1395.9	1397.0	1399.1	1399.1	1399.1	1399.1	1393.8	1389.6	1383.2	1377.9
22.5°	1393.8	1393.8	1393.8	1393.8	1395.9	1392.7	1392.7	1389.6	1384.3	1379.0	1373.7
25°	1386.4	1386.4	1387.4	1388.5	1388.5	1386.4	1385.3	1382.1	1377.9	1371.5	1365.2
27.5°	1377.9	1377.9	1379.0	1379.0	1381.1	1379.0	1377.9	1373.7	1369.4	1362.0	1354.6
30°	1368.4	1368.4	1368.4	1370.5	1371.5	1371.5	1370.5	1365.2	1359.9	1351.4	1341.9
32.5°	1357.8	1357.8	1360.9	1363.1	1364.1	1364.1	1364.1	1357.8	1351.4	1340.8	1327.0
35°	1349.3	1349.3	1353.5	1360.9	1365.2	1363.1	1362.0	1357.8	1348.2	1336.6	1314.3
37.5°	1354.6	1354.6	1364.1	1374.7	1384.3	1382.1	1382.1	1374.7	1362.0	1342.9	1315.4
40°	1367.3	1368.4	1383.2	1397.0	1408.6	1410.8	1410.8	1402.3	1383.2	1358.8	1320.7
42.5°	1370.5	1372.6	1387.4	1407.6	1418.2	1423.5	1423.5	1411.8	1391.7	1363.1	1318.5
45°	1370.5	1371.5	1388.5	1409.7	1426.7	1430.9	1430.9	1418.2	1392.7	1365.2	1311.1
47.5°	1370.5	1369.4	1384.3	1413.9	1430.9	1434.1	1434.1	1420.3	1395.9	1360.9	1300.5
50°	1367.3	1372.6	1394.9	1418.2	1447.9	1452.1	1451.0	1436.2	1402.3	1366.2	1292.0
52.5°	1374.7	1373.7	1403.3	1450.0	1476.5	1486.0	1487.1	1468.0	1433.0	1381.1	1286.7
55°	1405.5	1406.5	1435.1	1489.2	1529.5	1547.5	1545.4	1521.0	1471.2	1410.8	1301.6
57.5°	1416.1	1426.7	1468.0	1514.6	1576.1	1592.0	1592.0	1562.3	1501.9	1434.1	1312.2
60°	1394.9	1399.1	1450.0	1529.5	1585.6	1588.8	1589.9	1568.7	1505.1	1421.4	1291.0
62.5°	1389.6	1398.0	1437.3	1526.3	1562.3	1585.6	1584.6	1556.0	1501.9	1411.8	1283.6
65°	1366.2	1372.6	1441.5	1507.2	1586.7	1610.0	1604.7	1571.9	1488.1	1401.2	1260.2
67.5°	1318.5	1324.9	1388.5	1480.7	1552.8	1575.0	1580.3	1542.2	1455.3	1351.4	1210.4
70°	1239.0	1248.6	1313.2	1403.3	1479.6	1492.4	1490.2	1466.9	1380.0	1268.7	1137.3
72.5°	1127.8	1142.6	1224.2	1310.1	1375.8	1394.9	1386.4	1359.9	1288.9	1169.1	1037.7
75°	1010.1	1023.9	1088.5	1185.0	1253.9	1266.6	1260.2	1228.4	1156.4	1038.7	920.0
77.5°	881.9	893.5	948.6	1047.2	1098.1	1108.7	1111.9	1069.5	1001.6	895.6	789.6
80°	709.1	714.4	788.6	853.2	897.8	919.0	916.8	885.0	817.2	729.2	623.2
82.5°	523.6	527.8	585.1	640.2	680.5	699.5	688.9	657.2	603.1	527.8	447.3
85°	321.2	313.7	360.4	401.7	426.1	438.8	428.2	410.2	362.5	303.1	247.0
87.5°	115.5	109.2	130.4	136.7	164.3	160.0	169.6	136.7	110.2	78.4	55.1
90°	50.9	50.9	49.8	47.7	43.5	39.2	38.2	31.8	23.3	14.8	5.3
92.5°	46.6	46.6	45.6	43.5	39.2	35.0	35.0	28.6	21.2	13.8	5.3
95°	39.2	39.2	38.2	36.0	32.9	29.7	29.7	23.3	18.0	11.7	4.2
97.5°	30.7	30.7	29.7	28.6	25.4	23.3	23.3	19.1	13.8	8.5	3.2
100°	23.3	23.3	22.3	21.2	20.1	18.0	17.0	13.8	10.6	6.4	2.1
102.5°	17.0	17.0	17.0	15.9	13.8	12.7	12.7	10.6	7.4	5.3	2.1
105°	11.7	11.7	11.7	10.6	9.5	8.5	8.5	7.4	5.3	3.2	1.1
107.5°	7.4	7.4	7.4	7.4	6.4	5.3	5.3	4.2	3.2	2.1	1.1
110°	4.2	3.2	4.2	4.2	4.2	3.2	3.2	2.1	2.1	1.1	1.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
112.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.1	1.1	1.1	1.1
115°	1.1	1.1	1.1	2.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1
117.5°	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
120°	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
122.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
125°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
127.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
130°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
132.5°	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
135°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
137.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
140°	0.0	1.1	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
142.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
145°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
147.5°	1.1	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
150°	1.1	1.1	1.1	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1
152.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
155°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
157.5°	1.1	1.1	1.1	0.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1
160°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
162.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
165°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
167.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
170°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
172.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
175°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
177.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
180°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5	1388.5
2.5°	1388.5	1387.4	1386.4	1387.4	1386.4	1386.4	1385.3	1385.3	1384.3	1384.3	1383.2
5°	1388.5	1387.4	1386.4	1387.4	1385.3	1386.4	1386.4	1385.3	1384.3	1383.2	1382.1
7.5°	1387.4	1387.4	1385.3	1386.4	1384.3	1384.3	1383.2	1383.2	1382.1	1382.1	1381.1
10°	1385.3	1384.3	1384.3	1384.3	1382.1	1382.1	1381.1	1380.0	1380.0	1379.0	1377.9
12.5°	1383.2	1382.1	1381.1	1381.1	1380.0	1379.0	1377.9	1377.9	1376.8	1375.8	1374.7
15°	1380.0	1379.0	1379.0	1379.0	1377.9	1377.9	1376.8	1375.8	1373.7	1372.6	1371.5
17.5°	1379.0	1377.9	1379.0	1379.0	1377.9	1379.0	1376.8	1374.7	1372.6	1371.5	1370.5
20°	1377.9	1377.9	1377.9	1376.8	1375.8	1374.7	1373.7	1372.6	1371.5	1370.5	1369.4
22.5°	1372.6	1371.5	1369.4	1363.1	1355.6	1350.3	1349.3	1351.4	1351.4	1351.4	1348.2
25°	1363.1	1359.9	1351.4	1339.7	1327.0	1318.5	1313.2	1313.2	1312.2	1310.1	1309.0
27.5°	1351.4	1345.0	1330.2	1315.4	1297.3	1286.7	1274.0	1266.6	1263.4	1262.4	1260.2
30°	1335.5	1326.0	1306.9	1287.8	1265.5	1250.7	1230.6	1217.8	1210.4	1207.2	1205.1
32.5°	1316.4	1306.9	1284.6	1261.3	1234.8	1213.6	1188.2	1168.0	1154.3	1147.9	1144.7
35°	1303.7	1289.9	1264.5	1236.9	1210.4	1179.7	1149.0	1121.4	1100.2	1092.8	1088.5
37.5°	1298.4	1285.7	1258.1	1230.6	1200.9	1163.8	1127.8	1088.5	1059.9	1047.2	1043.0
40°	1301.6	1285.7	1254.9	1225.3	1190.3	1149.0	1101.3	1052.5	1015.4	997.4	993.1
42.5°	1294.2	1276.1	1240.1	1208.3	1164.9	1118.2	1059.9	1003.7	953.9	939.1	932.7
45°	1281.4	1259.2	1220.0	1179.7	1134.1	1076.9	1016.5	944.4	885.0	867.0	861.7
47.5°	1268.7	1238.0	1191.4	1154.3	1099.1	1032.4	961.3	880.8	806.6	788.6	785.4
50°	1249.6	1221.0	1171.2	1127.8	1071.6	994.2	913.7	813.0	729.2	698.5	690.0
52.5°	1241.2	1204.1	1156.4	1122.5	1054.6	966.6	864.9	756.8	636.0	597.8	589.3
55°	1249.6	1203.0	1152.1	1119.3	1040.8	931.7	806.6	668.8	528.9	488.6	477.0
57.5°	1234.8	1194.5	1143.7	1106.6	1004.8	859.6	721.8	544.8	399.6	347.7	343.4
60°	1215.7	1158.5	1110.8	1076.9	929.6	723.9	561.8	387.9	240.6	196.1	187.6
62.5°	1208.3	1149.0	1093.8	1052.5	828.9	532.1	342.4	196.1	99.6	70.0	63.6
65°	1185.0	1132.0	1092.8	1034.5	723.9	328.6	147.3	58.3	4.2	3.2	3.2
67.5°	1140.5	1086.4	1059.9	1026.0	713.3	313.7	133.5	53.0	2.1	0.0	0.0
70°	1064.2	1021.8	1003.7	985.7	682.6	290.4	121.9	47.7	1.1	0.0	0.0
72.5°	963.5	934.8	931.7	929.6	638.1	268.2	109.2	42.4	1.1	0.0	0.0
75°	862.8	827.8	833.1	845.8	583.0	237.4	94.3	37.1	1.1	0.0	0.0
77.5°	735.6	710.1	722.9	744.1	510.9	201.4	77.4	29.7	1.1	0.0	0.0
80°	578.7	561.8	590.4	609.5	417.6	160.0	58.3	21.2	0.0	0.0	0.0
82.5°	411.2	401.7	428.2	452.6	310.6	113.4	40.3	13.8	0.0	0.0	0.0
85°	221.5	216.2	241.7	268.2	186.5	64.7	20.1	6.4	0.0	0.0	0.0
87.5°	55.1	50.9	51.9	62.5	45.6	13.8	3.2	1.1	0.0	0.0	0.0
90°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
92.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
95°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
97.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
100°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
102.5°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
105°	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
107.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
110°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
112.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
115°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
117.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
120°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
122.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
125°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
127.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
130°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
132.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
135°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
137.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
140°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
142.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
145°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
147.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
150°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
152.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
155°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
157.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
160°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
162.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
165°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
167.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
170°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
172.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
175°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
177.5°	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0
180°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

(END OF REPORT)