

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: FAIL-SAFE

Report Number: P

Luminaire Tested: **4APN-20-22L835-UNV-NP**

Issue Date: 06/06/2024



Test Information

Test Method: LM-79-08
Report Number: P
Test Lab: INNOVATION CENTER(G2)
Issue Date: 06/06/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 4APN-20-22L835-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ Nature Pattern Lens
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

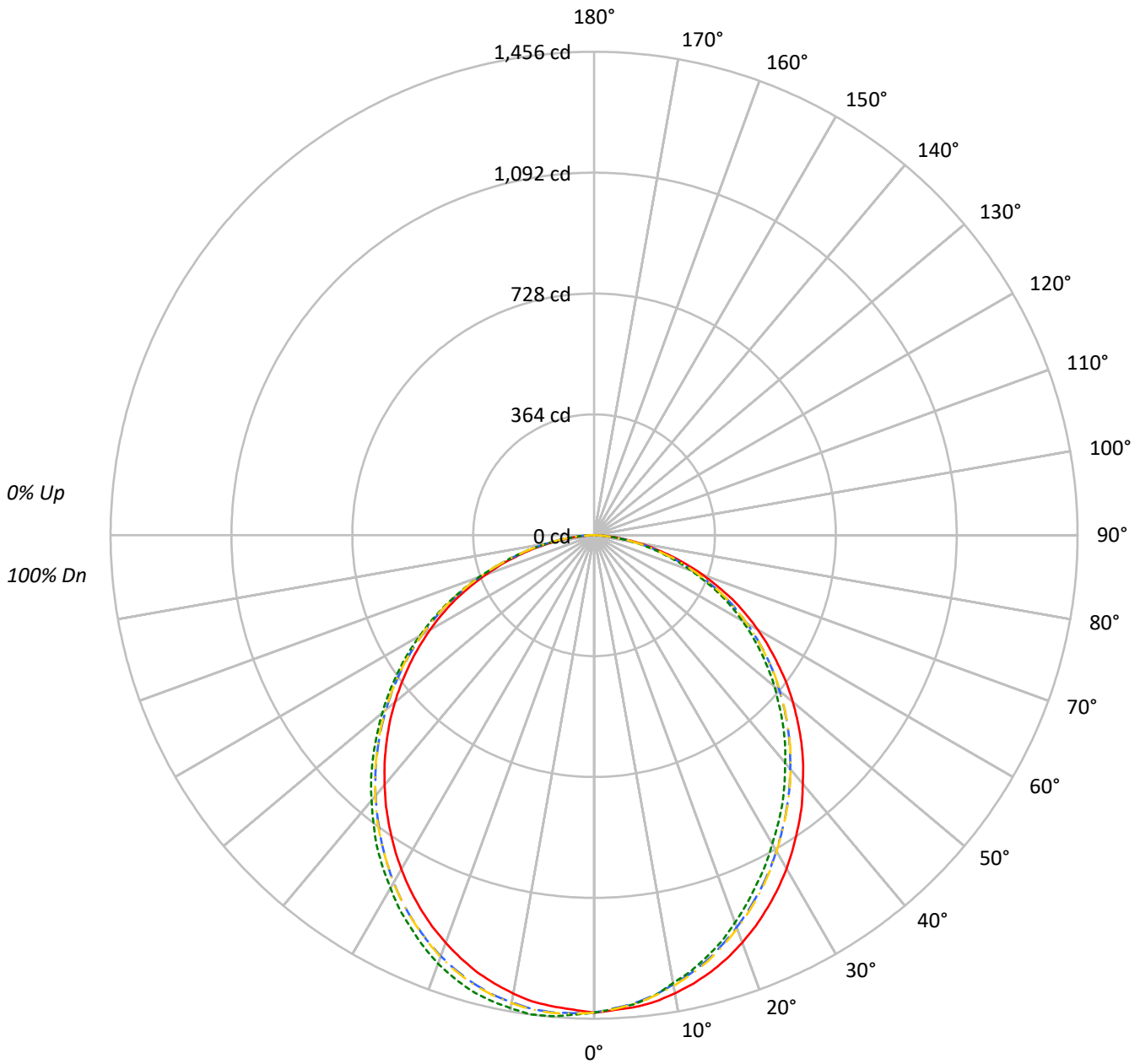
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3800.7 lumens
Efficiency: N/A
Efficacy: 79.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.19 / 1.32
Luminous Opening: Rectangular (W 0.29' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 48
Input Voltage (V): 120
Input Current (A_{in}): 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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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - · - · 90°-270° - · - · 135°-315°



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	86	86	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	72	72	72	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	62	62	62	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	53	53	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	46	46	46	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	41	41	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	36	36	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	32	32	32	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	29	29	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	27	27	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	13266	13266	13266	13266
5°	13208	13121	13191	13465
10°	13123	12829	13130	13549
15°	13000	12549	13008	13573
20°	12816	12186	12824	13480
25°	12592	11801	12617	13288
30°	12350	11432	12368	13069
35°	12067	11136	12095	12857
40°	11775	10779	11816	12558
45°	11523	10488	11534	12271
50°	11223	10179	11246	11949
55°	10866	9846	10904	11610
60°	10516	9503	10531	11186
65°	10082	9086	10082	10691
70°	9361	8403	9336	9932
75°	8488	7614	8427	8940
80°	7316	6551	7178	7672
85°	5632	5007	5452	6172



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	135.8	3.6
10°-20°	384.4	10.1
20°-30°	569.2	15.0
30°-40°	667.8	17.6
40°-50°	676.8	17.8
50°-60°	600.7	15.8
60°-70°	451.0	11.9
70°-80°	250.4	6.6
80°-90°	64.7	1.7
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°-30°	1089.4	28.7
0°-40°	1757.2	46.2
0°-60°	3034.7	79.8
0°-90°	3800.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3800.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1438	1438	1438	1438	1438	
5°	1426	1417	1424	1454	1426	135
15°	1361	1314	1362	1421	1361	384
25°	1237	1159	1239	1305	1237	570
35°	1071	989	1074	1142	1071	671
45°	883	804	884	940	883	681
55°	676	612	678	722	676	605
65°	462	416	462	490	462	455
75°	238	214	236	251	238	253
85°	53	47	52	58	53	64
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	100°
0°	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9
2.5°	1431.0	1434.4	1438.7	1434.4	1427.7	1424.3	1424.3	1423.5	1426.1	1426.9	1426.1
5°	1426.1	1427.7	1428.5	1423.5	1415.9	1411.7	1410.0	1409.1	1412.5	1416.7	1412.5
7.5°	1416.7	1415.9	1415.0	1408.3	1399.9	1394.0	1391.4	1390.6	1394.0	1398.1	1394.8
10°	1400.7	1399.9	1397.3	1388.9	1377.9	1370.3	1367.8	1365.2	1367.8	1369.4	1367.8
12.5°	1382.9	1379.6	1376.2	1367.0	1355.1	1346.7	1342.4	1339.0	1342.4	1344.9	1343.3
15°	1361.0	1355.9	1350.0	1339.9	1328.0	1318.8	1313.8	1310.3	1312.8	1313.8	1313.8
17.5°	1334.9	1328.9	1323.0	1310.3	1296.0	1285.8	1279.9	1275.8	1279.1	1280.8	1280.8
20°	1305.3	1298.5	1290.9	1277.4	1262.2	1251.2	1244.5	1239.4	1240.3	1241.1	1241.1
22.5°	1273.2	1264.7	1255.5	1241.1	1225.1	1213.3	1206.5	1200.6	1200.6	1201.5	1201.5
25°	1236.9	1227.6	1218.3	1203.9	1187.1	1174.4	1166.0	1160.1	1160.1	1159.2	1160.9
27.5°	1199.7	1189.6	1180.3	1165.1	1147.4	1134.7	1126.3	1120.4	1119.5	1118.7	1120.4
30°	1159.2	1147.4	1137.3	1121.2	1104.4	1091.6	1083.3	1076.4	1074.8	1073.1	1074.8
32.5°	1116.2	1105.2	1094.2	1077.4	1060.4	1047.8	1039.4	1032.5	1031.7	1030.9	1032.5
35°	1071.4	1059.6	1049.4	1033.4	1016.5	1003.9	994.6	988.7	988.7	988.7	988.7
37.5°	1027.5	1015.7	1004.7	988.7	971.8	959.2	949.8	943.9	942.2	941.4	942.2
40°	977.7	967.5	957.4	942.2	925.3	912.7	905.1	898.3	896.6	895.0	897.5
42.5°	932.1	922.0	911.0	896.6	879.8	867.0	858.7	852.8	851.9	851.0	851.9
45°	883.1	871.3	860.3	846.9	831.6	819.8	811.4	805.5	804.6	803.8	804.6
47.5°	831.6	822.3	813.0	799.6	784.3	772.5	764.9	758.2	756.5	754.8	756.5
50°	781.9	771.7	762.4	749.8	735.4	724.4	717.7	711.8	710.0	709.2	710.0
52.5°	729.5	720.2	711.8	699.1	687.3	676.3	668.6	663.7	662.7	661.9	662.7
55°	675.5	667.0	659.4	649.3	637.5	627.3	620.6	614.6	613.8	612.1	613.8
57.5°	623.1	616.4	608.7	597.7	586.8	577.5	571.5	566.5	565.6	564.8	565.6
60°	569.9	563.2	556.4	547.1	536.1	526.8	521.8	517.5	515.9	515.0	515.9
62.5°	516.7	510.0	504.9	495.6	485.4	477.9	472.8	468.6	466.9	466.1	466.9
65°	461.8	455.9	450.0	441.5	434.0	428.1	423.0	418.8	417.1	416.2	416.2
67.5°	403.6	398.5	394.2	386.7	378.2	372.3	367.2	363.9	362.2	361.3	362.2
70°	347.0	342.8	338.6	332.7	325.9	320.9	317.4	314.0	312.4	311.5	311.5
72.5°	293.0	289.6	285.4	280.3	275.2	270.1	266.8	264.2	262.6	261.8	261.8
75°	238.1	234.7	233.0	228.8	223.8	220.4	216.9	215.3	213.6	213.6	213.6
77.5°	186.6	184.9	183.2	179.0	175.6	172.2	169.7	168.8	167.2	167.2	167.2
80°	137.7	136.7	135.9	133.4	130.0	126.7	124.9	124.1	123.3	123.3	123.3
82.5°	92.8	92.8	92.0	89.5	86.9	86.1	84.5	83.6	83.6	83.6	83.6
85°	53.2	53.2	53.2	52.4	50.6	50.6	49.0	48.1	47.3	47.3	47.3
87.5°	21.1	21.9	22.8	21.9	20.3	20.3	20.3	20.3	20.3	20.3	20.3
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):

	110°	120°	130°	140°	150°	160°	170°	180°	190°	200°	210°
0°	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9
2.5°	1423.5	1425.1	1426.1	1430.2	1435.3	1438.7	1434.4	1430.2	1437.0	1444.6	1444.6
5°	1409.1	1410.8	1413.3	1418.4	1425.1	1429.4	1427.7	1424.3	1434.4	1442.9	1443.8
7.5°	1391.4	1393.0	1396.5	1401.5	1410.0	1415.9	1415.9	1416.7	1426.1	1436.1	1438.7
10°	1365.2	1369.4	1374.5	1382.1	1390.6	1398.1	1400.7	1401.5	1413.3	1424.3	1427.7
12.5°	1340.8	1344.9	1350.0	1358.5	1368.6	1377.0	1379.6	1382.9	1395.6	1408.3	1413.3
15°	1312.8	1317.1	1323.0	1331.5	1342.4	1351.7	1356.8	1361.9	1374.5	1388.0	1394.0
17.5°	1279.9	1284.2	1290.1	1300.2	1312.8	1323.8	1329.8	1335.7	1350.0	1364.4	1370.3
20°	1241.1	1247.0	1255.5	1265.6	1279.9	1292.6	1299.4	1306.1	1321.3	1335.7	1342.4
22.5°	1201.5	1208.2	1217.5	1229.3	1244.5	1258.0	1266.5	1274.8	1290.1	1304.4	1312.0
25°	1161.7	1169.4	1178.6	1191.3	1205.6	1219.2	1229.3	1239.4	1254.7	1269.8	1277.4
27.5°	1121.2	1128.0	1137.3	1149.9	1166.0	1180.3	1190.5	1201.5	1216.7	1232.7	1240.3
30°	1076.4	1084.1	1092.5	1105.2	1122.9	1138.9	1149.1	1160.9	1176.1	1192.1	1199.7
32.5°	1033.4	1040.2	1048.6	1061.3	1079.0	1095.9	1106.9	1118.7	1133.9	1149.9	1156.6
35°	988.7	995.4	1004.7	1017.3	1035.1	1051.2	1062.1	1073.9	1088.3	1103.4	1111.1
37.5°	944.8	951.5	960.8	973.4	990.3	1006.4	1017.3	1029.2	1043.5	1057.9	1064.6
40°	899.1	906.0	913.5	926.1	943.1	959.2	969.2	981.1	995.4	1010.6	1017.3
42.5°	852.8	859.5	868.8	881.4	897.5	911.9	922.8	933.8	947.3	960.8	967.5
45°	806.3	812.2	821.5	833.3	848.5	862.0	873.0	884.0	896.6	909.3	916.1
47.5°	758.2	764.9	772.5	784.3	799.6	813.9	824.9	835.0	846.9	859.5	865.4
50°	711.8	717.7	725.2	736.2	750.6	764.1	773.4	783.5	794.5	806.3	811.4
52.5°	663.7	669.6	677.1	688.1	699.9	712.6	721.0	730.3	741.3	752.3	757.3
55°	614.6	618.8	625.6	635.7	648.4	660.2	668.6	677.9	687.3	696.6	702.5
57.5°	566.5	571.5	578.4	587.6	598.6	609.5	617.2	624.7	634.1	643.4	647.6
60°	517.5	521.8	526.8	535.3	546.3	555.5	563.2	570.7	578.4	586.8	591.0
62.5°	467.7	472.0	477.0	485.4	494.7	503.2	510.0	516.7	523.4	531.1	535.3
65°	417.9	422.2	427.3	433.2	440.7	448.3	455.1	461.8	466.9	472.0	476.2
67.5°	363.9	368.2	373.1	378.2	385.0	392.6	397.7	403.6	408.6	414.5	417.1
70°	313.2	316.6	321.7	325.9	331.8	336.9	341.1	346.1	349.5	354.6	358.8
72.5°	263.4	266.8	271.0	275.2	278.6	282.9	287.9	292.1	296.3	301.4	303.1
75°	215.3	216.9	220.4	223.8	227.1	230.5	233.0	236.4	239.8	243.1	245.7
77.5°	168.0	169.7	173.1	175.6	178.1	180.7	182.4	184.0	187.4	189.9	192.5
80°	123.3	124.9	127.5	130.0	132.6	135.1	135.1	135.1	139.3	142.7	143.6
82.5°	83.6	84.5	86.1	87.8	89.5	91.2	91.2	90.4	92.8	95.4	97.1
85°	48.1	49.0	50.6	50.6	51.5	51.5	51.5	51.5	53.2	55.7	57.4
87.5°	19.5	19.5	20.3	20.3	21.1	21.1	20.3	19.5	21.1	23.6	24.5
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9	1437.9
2.5°	1441.2	1440.3	1442.9	1443.8	1445.4	1445.4	1446.2	1446.2	1444.6	1442.0	1442.9
5°	1442.0	1442.0	1444.6	1447.1	1450.5	1453.9	1451.3	1448.8	1447.1	1444.6	1443.8
7.5°	1437.9	1439.5	1442.0	1446.2	1450.5	1455.6	1452.2	1448.8	1444.6	1441.2	1439.5
10°	1427.7	1429.4	1433.6	1437.9	1442.0	1446.2	1442.9	1439.5	1436.1	1432.0	1430.2
12.5°	1415.0	1417.6	1422.6	1426.9	1431.0	1436.1	1432.0	1427.7	1423.5	1419.2	1416.7
15°	1396.5	1399.9	1405.8	1410.8	1416.7	1421.0	1417.6	1414.2	1409.1	1403.2	1399.0
17.5°	1372.9	1377.9	1383.8	1389.7	1394.8	1399.0	1396.5	1393.0	1387.1	1380.4	1375.3
20°	1346.7	1351.7	1356.8	1362.7	1368.6	1372.9	1369.4	1365.2	1359.3	1354.2	1349.2
22.5°	1316.2	1321.3	1327.2	1332.3	1337.4	1341.6	1337.4	1332.3	1327.2	1322.1	1317.1
25°	1281.7	1286.7	1293.5	1298.5	1301.9	1305.3	1301.9	1297.7	1292.6	1287.6	1282.5
27.5°	1245.3	1250.4	1257.1	1262.2	1265.6	1268.9	1265.6	1261.4	1256.3	1251.2	1246.2
30°	1204.8	1209.8	1216.7	1221.7	1224.2	1226.7	1223.4	1220.0	1215.7	1210.7	1205.6
32.5°	1161.7	1166.8	1171.9	1176.9	1181.2	1184.6	1181.2	1177.8	1172.7	1166.0	1160.9
35°	1116.2	1121.2	1127.1	1132.2	1137.3	1141.5	1136.5	1130.5	1126.3	1122.1	1117.8
37.5°	1068.0	1073.9	1080.7	1086.6	1088.3	1091.6	1088.3	1084.9	1080.7	1076.4	1071.4
40°	1020.7	1025.8	1031.7	1037.6	1040.2	1042.7	1039.4	1036.0	1030.9	1026.6	1021.6
42.5°	971.8	976.9	981.9	987.0	990.3	993.7	990.3	985.2	981.9	978.5	974.3
45°	921.2	926.1	930.4	935.5	938.0	940.5	937.1	933.0	929.6	927.1	922.8
47.5°	869.6	873.9	878.0	882.3	884.0	886.5	883.1	880.6	878.0	875.5	872.1
50°	815.6	819.8	824.9	829.1	830.0	832.5	829.1	826.6	824.0	821.5	818.9
52.5°	762.4	765.8	770.0	774.2	775.9	777.6	774.2	770.9	768.3	766.6	764.1
55°	706.7	710.0	714.3	717.7	720.2	721.8	718.5	715.1	712.6	711.8	709.2
57.5°	650.9	654.3	658.6	661.9	663.7	665.3	661.9	658.6	656.8	655.2	653.5
60°	594.4	597.7	601.1	603.6	605.4	606.2	602.8	600.3	599.5	598.6	596.9
62.5°	538.6	540.4	543.7	545.5	547.1	547.9	545.5	543.7	542.9	542.0	541.2
65°	480.4	484.6	487.2	488.8	488.8	489.7	487.2	486.4	485.4	484.6	482.9
67.5°	420.4	423.8	425.5	427.3	427.3	427.3	427.3	427.3	426.3	424.7	423.0
70°	363.1	365.6	367.2	368.2	368.2	368.2	366.4	365.6	366.4	366.4	365.6
72.5°	304.8	306.5	307.3	308.1	307.3	307.3	307.3	309.1	309.1	308.1	306.5
75°	248.2	250.0	250.8	251.6	250.8	250.8	250.8	252.4	251.6	251.6	250.8
77.5°	195.0	195.8	195.8	196.8	195.8	195.8	196.8	198.4	197.6	197.6	197.6
80°	144.4	144.4	144.4	145.2	144.4	144.4	145.2	146.9	146.0	146.0	146.0
82.5°	97.9	98.7	98.7	98.7	99.7	100.5	100.5	100.5	100.5	100.5	99.7
85°	58.3	59.1	58.3	58.3	58.3	58.3	59.1	59.9	59.9	59.9	59.9
87.5°	25.4	26.2	25.4	24.5	23.6	23.6	25.4	27.0	27.0	26.2	26.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P
 CATALOG NUMBER: 4APN-20-22L835-UNV-NP

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1437.9	1437.9	1437.9	1437.9
2.5°	1446.2	1446.2	1438.7	1431.0
5°	1445.4	1443.8	1435.3	1426.1
7.5°	1440.3	1437.9	1426.9	1416.7
10°	1428.5	1425.1	1413.3	1400.7
12.5°	1414.2	1409.1	1395.6	1382.9
15°	1395.6	1389.7	1375.3	1361.0
17.5°	1371.1	1364.4	1350.0	1334.9
20°	1344.9	1337.4	1321.3	1305.3
22.5°	1312.8	1306.1	1289.2	1273.2
25°	1278.3	1270.7	1253.7	1236.9
27.5°	1241.1	1232.7	1215.7	1199.7
30°	1200.6	1192.1	1175.3	1159.2
32.5°	1157.6	1150.7	1133.9	1116.2
35°	1113.6	1105.2	1088.3	1071.4
37.5°	1067.2	1059.6	1043.5	1027.5
40°	1018.3	1010.6	993.7	977.7
42.5°	970.1	963.3	947.3	932.1
45°	918.6	911.9	896.6	883.1
47.5°	867.0	860.3	846.0	831.6
50°	814.8	807.9	794.5	781.9
52.5°	759.8	754.8	742.1	729.5
55°	705.0	699.1	686.4	675.5
57.5°	650.1	645.9	634.1	623.1
60°	593.6	588.5	579.2	569.9
62.5°	538.6	534.5	525.2	516.7
65°	480.4	477.0	469.4	461.8
67.5°	420.4	417.9	410.3	403.6
70°	363.1	358.8	352.9	347.0
72.5°	304.8	303.1	298.0	293.0
75°	249.0	247.4	242.3	238.1
77.5°	196.8	195.0	190.9	186.6
80°	145.2	144.4	141.0	137.7
82.5°	99.7	98.7	96.3	92.8
85°	59.9	58.3	55.7	53.2
87.5°	26.2	25.4	22.8	21.1
90°	0.0	0.0	0.0	0.0

(END OF REPORT)