

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-28-30L935-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-28-30L935-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ Nature Pattern Lens
Light Source: 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

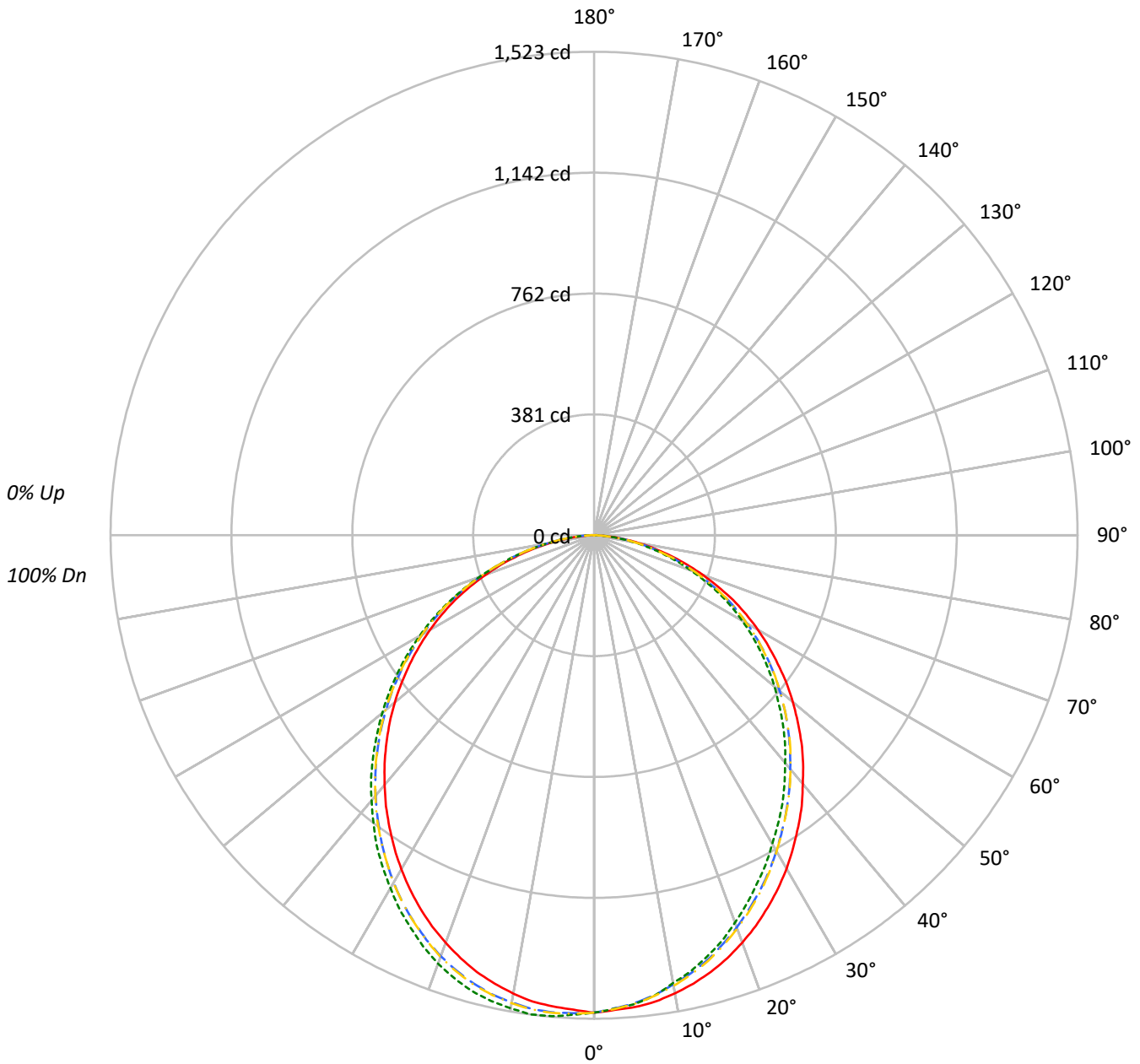
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3975.7 lumens
Efficiency: N/A
Efficacy: 61.2 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): 65
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°	13877	13877	13877	13877
5°	13815	13725	13799	14085
10°	13727	13420	13735	14174
15°	13599	13126	13607	14198
20°	13406	12747	13414	14099
25°	13171	12344	13198	13900
30°	12918	11959	12938	13671
35°	12624	11648	12653	13449
40°	12317	11276	12361	13136
45°	12054	10971	12065	12838
50°	11738	10647	11764	12499
55°	11364	10299	11408	12146
60°	11001	9940	11016	11703
65°	10547	9505	10547	11184
70°	9792	8791	9768	10386
75°	8876	7964	8816	9350
80°	7646	6854	7507	8023
85°	5886	5229	5695	6447



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	142.0	3.6
10°-20°	402.1	10.1
20°-30°	595.4	15.0
30°-40°	698.6	17.6
40°-50°	708.0	17.8
50°-60°	628.3	15.8
60°-70°	471.7	11.9
70°-80°	261.9	6.6
80°-90°	67.6	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°	1139.6	28.7
0°-40°	1838.1	46.2
0°-60°	3174.4	79.8
0°-90°	3975.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3975.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1504	1504	1504	1504	1504	
5°	1492	1482	1490	1521	1492	142
15°	1424	1374	1425	1486	1424	401
25°	1294	1213	1296	1365	1294	596
35°	1121	1034	1123	1194	1121	701
45°	924	841	925	984	924	712
55°	706	640	709	755	706	632
65°	483	435	483	512	483	476
75°	249	223	247	262	249	265
85°	56	49	54	61	56	67
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°	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1
2.5°	1497.0	1500.5	1504.9	1500.5	1493.5	1489.9	1489.9	1489.0	1491.7	1492.5	1491.7
5°	1491.7	1493.5	1494.3	1489.0	1481.1	1476.7	1474.9	1474.0	1477.5	1481.9	1477.5
7.5°	1481.9	1481.1	1480.2	1473.1	1464.3	1458.1	1455.5	1454.5	1458.1	1462.6	1459.0
10°	1465.2	1464.3	1461.6	1452.8	1441.4	1433.3	1430.8	1428.1	1430.8	1432.5	1430.8
12.5°	1446.6	1443.1	1439.6	1429.8	1417.5	1408.6	1404.2	1400.7	1404.2	1406.9	1405.1
15°	1423.7	1418.4	1412.2	1401.6	1389.3	1379.5	1374.2	1370.6	1373.3	1374.2	1374.2
17.5°	1396.3	1390.1	1383.9	1370.6	1355.7	1345.1	1338.9	1334.5	1338.0	1339.8	1339.8
20°	1365.4	1358.3	1350.4	1336.3	1320.3	1308.9	1301.8	1296.5	1297.3	1298.3	1298.3
22.5°	1331.8	1323.0	1313.3	1298.3	1281.5	1269.1	1262.0	1255.9	1255.9	1256.8	1256.8
25°	1293.8	1284.2	1274.4	1259.4	1241.7	1228.5	1219.6	1213.4	1213.4	1212.6	1214.4
27.5°	1255.0	1244.4	1234.7	1218.8	1200.3	1187.0	1178.1	1172.0	1171.1	1170.2	1172.0
30°	1212.6	1200.3	1189.7	1172.9	1155.2	1141.9	1133.1	1126.0	1124.3	1122.5	1124.3
32.5°	1167.5	1156.1	1144.6	1127.0	1109.3	1096.0	1087.2	1080.1	1079.2	1078.4	1080.1
35°	1120.8	1108.3	1097.7	1081.0	1063.3	1050.1	1040.4	1034.2	1034.2	1034.2	1034.2
37.5°	1074.8	1062.4	1051.0	1034.2	1016.5	1003.3	993.5	987.4	985.6	984.7	985.6
40°	1022.7	1012.1	1001.5	985.6	967.9	954.7	946.8	939.7	938.0	936.2	938.8
42.5°	975.0	964.4	953.0	938.0	920.2	907.0	898.2	892.0	891.1	890.2	891.1
45°	923.8	911.4	900.0	885.9	869.9	857.6	848.7	842.5	841.7	840.8	841.7
47.5°	869.9	860.2	850.5	836.3	820.5	808.1	800.1	793.1	791.4	789.5	791.4
50°	817.8	807.2	797.5	784.3	769.2	757.8	750.7	744.5	742.8	741.8	742.8
52.5°	763.0	753.4	744.5	731.2	718.9	707.5	699.4	694.2	693.3	692.4	693.3
55°	706.5	697.7	689.7	679.1	666.8	656.2	649.1	642.9	642.1	640.3	642.1
57.5°	651.8	644.8	636.7	625.3	613.8	604.1	597.9	592.6	591.7	590.8	591.7
60°	596.2	589.1	582.0	572.3	560.9	551.1	545.8	541.4	539.6	538.7	539.6
62.5°	540.5	533.5	528.1	518.4	507.8	499.9	494.6	490.1	488.4	487.6	488.4
65°	483.1	477.0	470.8	461.9	454.0	447.7	442.5	438.0	436.3	435.4	435.4
67.5°	422.2	416.8	412.4	404.5	395.6	389.5	384.2	380.6	378.8	378.0	378.8
70°	363.0	358.6	354.1	348.0	340.9	335.6	332.1	328.5	326.8	325.9	325.9
72.5°	306.5	303.0	298.5	293.2	287.9	282.6	279.1	276.4	274.7	273.7	273.7
75°	249.0	245.5	243.8	239.4	234.0	230.5	227.0	225.2	223.4	223.4	223.4
77.5°	195.2	193.4	191.7	187.3	183.7	180.2	177.5	176.7	174.9	174.9	174.9
80°	143.9	143.1	142.2	139.5	136.0	132.5	130.7	129.8	129.0	129.0	129.0
82.5°	97.2	97.2	96.3	93.6	91.0	90.1	88.3	87.4	87.4	87.4	87.4
85°	55.6	55.6	55.6	54.8	53.0	53.0	51.3	50.3	49.4	49.4	49.4
87.5°	22.0	23.0	23.9	23.0	21.2	21.2	21.2	21.2	21.2	21.2	21.2
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°	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1
2.5°	1489.0	1490.8	1491.7	1496.1	1501.4	1504.9	1500.5	1496.1	1503.1	1511.1	1511.1
5°	1474.0	1475.8	1478.4	1483.7	1490.8	1495.2	1493.5	1489.9	1500.5	1509.3	1510.2
7.5°	1455.5	1457.2	1460.7	1466.1	1474.9	1481.1	1481.1	1481.9	1491.7	1502.3	1504.9
10°	1428.1	1432.5	1437.8	1445.8	1454.5	1462.6	1465.2	1466.1	1478.4	1489.9	1493.5
12.5°	1402.5	1406.9	1412.2	1421.0	1431.6	1440.4	1443.1	1446.6	1459.9	1473.1	1478.4
15°	1373.3	1377.7	1383.9	1392.8	1404.2	1414.0	1419.2	1424.6	1437.8	1452.0	1458.1
17.5°	1338.9	1343.3	1349.4	1360.0	1373.3	1384.8	1391.0	1397.2	1412.2	1427.2	1433.3
20°	1298.3	1304.4	1313.3	1323.9	1338.9	1352.1	1359.2	1366.2	1382.2	1397.2	1404.2
22.5°	1256.8	1263.8	1273.6	1285.9	1301.8	1315.9	1324.7	1333.6	1349.4	1364.5	1372.5
25°	1215.2	1223.2	1232.9	1246.2	1261.2	1275.3	1285.9	1296.5	1312.4	1328.3	1336.3
27.5°	1172.9	1179.9	1189.7	1202.8	1219.6	1234.7	1245.3	1256.8	1272.6	1289.4	1297.3
30°	1126.0	1134.0	1142.8	1156.1	1174.6	1191.4	1202.0	1214.4	1230.2	1247.0	1255.0
32.5°	1081.0	1088.1	1096.9	1110.2	1128.7	1146.3	1157.8	1170.2	1186.1	1202.8	1209.9
35°	1034.2	1041.2	1051.0	1064.2	1082.8	1099.6	1111.0	1123.4	1138.4	1154.3	1162.3
37.5°	988.3	995.3	1005.1	1018.3	1036.0	1052.7	1064.2	1076.6	1091.6	1106.6	1113.7
40°	940.5	947.6	955.6	968.8	986.5	1003.3	1013.9	1026.3	1041.2	1057.2	1064.2
42.5°	892.0	899.0	908.8	922.0	938.8	953.8	965.3	976.8	990.9	1005.1	1012.1
45°	843.4	849.6	859.3	871.7	887.6	901.7	913.2	924.7	938.0	951.1	958.2
47.5°	793.1	800.1	808.1	820.5	836.3	851.4	862.9	873.4	885.9	899.0	905.2
50°	744.5	750.7	758.6	770.1	785.2	799.3	809.0	819.6	831.1	843.4	848.7
52.5°	694.2	700.4	708.3	719.8	732.2	745.4	754.2	764.0	775.4	786.9	792.2
55°	642.9	647.3	654.4	665.0	678.3	690.7	699.4	709.2	718.9	728.7	734.8
57.5°	592.6	597.9	605.0	614.7	626.1	637.7	645.6	653.5	663.3	673.0	677.4
60°	541.4	545.8	551.1	559.9	571.5	581.1	589.1	597.0	605.0	613.8	618.2
62.5°	489.3	493.7	499.0	507.8	517.5	526.4	533.5	540.5	547.6	555.5	559.9
65°	437.2	441.5	446.9	453.1	461.0	468.9	476.0	483.1	488.4	493.7	498.1
67.5°	380.6	385.0	390.4	395.6	402.7	410.7	416.0	422.2	427.4	433.6	436.3
70°	327.7	331.2	336.5	340.9	347.0	352.4	356.8	362.1	365.7	370.9	375.3
72.5°	275.6	279.1	283.5	287.9	291.4	295.9	301.1	305.6	310.0	315.3	317.1
75°	225.2	227.0	230.5	234.0	237.6	241.1	243.8	247.3	250.8	254.4	257.0
77.5°	175.7	177.5	181.1	183.7	186.3	189.0	190.8	192.5	196.1	198.7	201.4
80°	129.0	130.7	133.3	136.0	138.7	141.3	141.3	141.3	145.8	149.3	150.1
82.5°	87.4	88.3	90.1	91.8	93.6	95.4	95.4	94.5	97.2	99.8	101.6
85°	50.3	51.3	53.0	53.0	53.8	53.8	53.8	53.8	55.6	58.3	60.0
87.5°	20.3	20.3	21.2	21.2	22.0	22.0	21.2	20.3	22.0	24.7	25.6
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):

	220°	230°	240°	250°	260°	270°	280°	290°	300°	310°	320°
0°	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1	1504.1
2.5°	1507.6	1506.6	1509.3	1510.2	1512.0	1512.0	1512.9	1512.9	1511.1	1508.5	1509.3
5°	1508.5	1508.5	1511.1	1513.7	1517.2	1520.8	1518.2	1515.5	1513.7	1511.1	1510.2
7.5°	1504.1	1505.8	1508.5	1512.9	1517.2	1522.6	1519.1	1515.5	1511.1	1507.6	1505.8
10°	1493.5	1495.2	1499.6	1504.1	1508.5	1512.9	1509.3	1505.8	1502.3	1497.9	1496.1
12.5°	1480.2	1482.9	1488.1	1492.5	1497.0	1502.3	1497.9	1493.5	1489.0	1484.6	1481.9
15°	1460.7	1464.3	1470.5	1475.8	1481.9	1486.4	1482.9	1479.3	1474.0	1467.8	1463.4
17.5°	1436.0	1441.4	1447.5	1453.7	1459.0	1463.4	1460.7	1457.2	1451.0	1443.9	1438.7
20°	1408.6	1414.0	1419.2	1425.4	1431.6	1436.0	1432.5	1428.1	1421.9	1416.6	1411.3
22.5°	1376.8	1382.2	1388.3	1393.6	1399.0	1403.4	1399.0	1393.6	1388.3	1383.0	1377.7
25°	1340.7	1345.9	1353.0	1358.3	1361.9	1365.4	1361.9	1357.5	1352.1	1346.9	1341.5
27.5°	1302.7	1307.9	1315.0	1320.3	1323.9	1327.4	1323.9	1319.5	1314.1	1308.9	1303.5
30°	1260.3	1265.5	1272.6	1278.0	1280.6	1283.2	1279.7	1276.1	1271.8	1266.5	1261.2
32.5°	1215.2	1220.5	1225.8	1231.1	1235.6	1239.1	1235.6	1232.0	1226.7	1219.6	1214.4
35°	1167.5	1172.9	1179.1	1184.3	1189.7	1194.1	1188.7	1182.6	1178.1	1173.7	1169.3
37.5°	1117.2	1123.4	1130.5	1136.6	1138.4	1141.9	1138.4	1134.9	1130.5	1126.0	1120.8
40°	1067.8	1073.0	1079.2	1085.4	1088.1	1090.7	1087.2	1083.6	1078.4	1073.9	1068.6
42.5°	1016.5	1021.9	1027.1	1032.5	1036.0	1039.5	1036.0	1030.7	1027.1	1023.6	1019.2
45°	963.6	968.8	973.3	978.5	981.2	983.9	980.4	975.9	972.3	969.8	965.3
47.5°	909.6	914.1	918.5	922.9	924.7	927.3	923.8	921.2	918.5	915.8	912.3
50°	853.1	857.6	862.9	867.2	868.2	870.8	867.2	864.7	862.0	859.3	856.6
52.5°	797.5	801.0	805.5	809.9	811.6	813.4	809.9	806.3	803.7	802.0	799.3
55°	739.2	742.8	747.2	750.7	753.4	755.1	751.6	748.0	745.4	744.5	741.8
57.5°	680.9	684.5	688.8	692.4	694.2	695.9	692.4	688.8	687.1	685.3	683.6
60°	621.7	625.3	628.8	631.5	633.2	634.2	630.6	628.0	627.1	626.1	624.4
62.5°	563.4	565.2	568.8	570.5	572.3	573.2	570.5	568.8	567.9	567.0	566.1
65°	502.5	506.9	509.6	511.3	511.3	512.3	509.6	508.7	507.8	506.9	505.2
67.5°	439.8	443.4	445.1	446.9	446.9	446.9	446.9	446.9	446.0	444.2	442.5
70°	379.8	382.4	384.2	385.0	385.0	385.0	383.3	382.4	383.3	383.3	382.4
72.5°	318.8	320.6	321.5	322.3	321.5	321.5	321.5	323.3	323.3	322.3	320.6
75°	259.6	261.4	262.3	263.1	262.3	262.3	262.3	264.1	263.1	263.1	262.3
77.5°	204.0	204.9	204.9	205.8	204.9	204.9	205.8	207.5	206.6	206.6	206.6
80°	151.0	151.0	151.0	151.9	151.0	151.0	151.9	153.7	152.8	152.8	152.8
82.5°	102.4	103.4	103.4	103.4	104.2	105.1	105.1	105.1	105.1	105.1	104.2
85°	60.9	61.9	60.9	60.9	60.9	60.9	61.9	62.7	62.7	62.7	62.7
87.5°	26.5	27.4	26.5	25.6	24.7	24.7	26.5	28.3	28.3	27.4	27.4
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-28-30L935-UNV-NP

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1504.1	1504.1	1504.1	1504.1
2.5°	1512.9	1512.9	1504.9	1497.0
5°	1512.0	1510.2	1501.4	1491.7
7.5°	1506.6	1504.1	1492.5	1481.9
10°	1494.3	1490.8	1478.4	1465.2
12.5°	1479.3	1474.0	1459.9	1446.6
15°	1459.9	1453.7	1438.7	1423.7
17.5°	1434.3	1427.2	1412.2	1396.3
20°	1406.9	1399.0	1382.2	1365.4
22.5°	1373.3	1366.2	1348.6	1331.8
25°	1337.1	1329.2	1311.5	1293.8
27.5°	1298.3	1289.4	1271.8	1255.0
30°	1255.9	1247.0	1229.4	1212.6
32.5°	1210.9	1203.8	1186.1	1167.5
35°	1164.9	1156.1	1138.4	1120.8
37.5°	1116.4	1108.3	1091.6	1074.8
40°	1065.1	1057.2	1039.5	1022.7
42.5°	1014.8	1007.7	990.9	975.0
45°	960.9	953.8	938.0	923.8
47.5°	907.0	900.0	884.9	869.9
50°	852.3	845.2	831.1	817.8
52.5°	794.9	789.5	776.3	763.0
55°	737.4	731.2	718.1	706.5
57.5°	680.1	675.6	663.3	651.8
60°	620.9	615.5	605.8	596.2
62.5°	563.4	559.0	549.3	540.5
65°	502.5	499.0	491.1	483.1
67.5°	439.8	437.2	429.2	422.2
70°	379.8	375.3	369.2	363.0
72.5°	318.8	317.1	311.7	306.5
75°	260.6	258.8	253.5	249.0
77.5°	205.8	204.0	199.6	195.2
80°	151.9	151.0	147.5	143.9
82.5°	104.2	103.4	100.7	97.2
85°	62.7	60.9	58.3	55.6
87.5°	27.4	26.5	23.9	22.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)