

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-20-22L840-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-20-22L840-UNV-NP
Description: ArcMed Patient Recessed 4 FT x6 IN Fixture Ambient and Exam Light
w/ Nature Pattern Lens
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

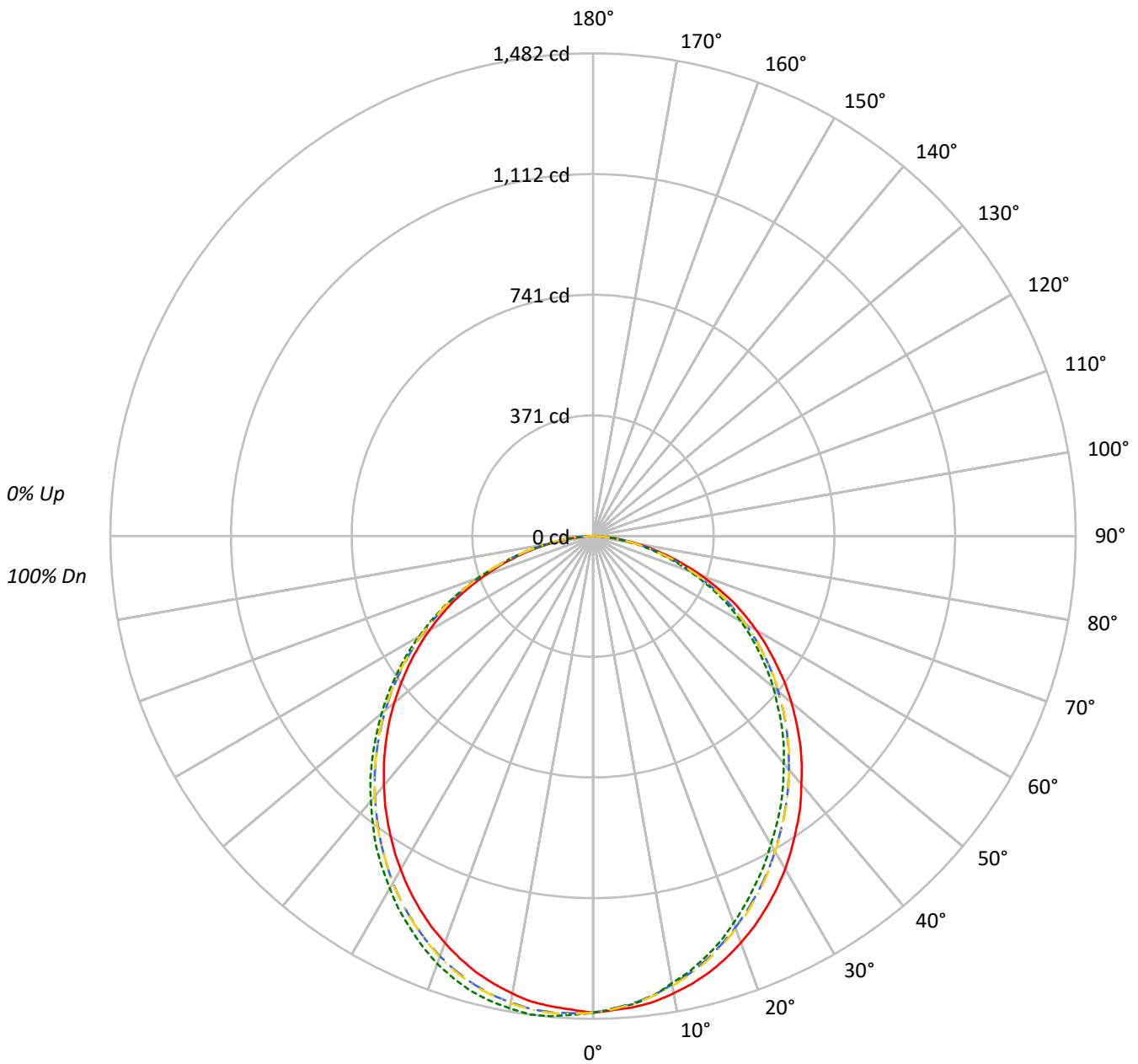
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3868.4 lumens
Efficiency: N/A
Efficacy: 80.6 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	100	100	100	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84	84	84	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70	70	70	70
3	90	80	72	66	88	78	71	65	75	69	64	73	67	63	70	66	62	59	59	59	59
4	83	71	62	56	81	70	62	55	67	60	54	65	59	54	63	57	53	51	51	51	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44	44	44	44
6	71	57	48	42	69	56	48	42	55	47	41	53	46	41	51	45	41	39	39	39	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34	34	34	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	32	31	31	31	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	30	40	34	29	28	28	28	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25	25	25	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	13502	13502	13502	13502
5°	13442	13354	13426	13705
10°	13356	13059	13364	13791
15°	13231	12772	13240	13814
20°	13044	12403	13052	13719
25°	12816	12011	12842	13524
30°	12570	11636	12587	13302
35°	12281	11334	12311	13085
40°	11985	10971	12026	12782
45°	11729	10674	11739	12491
50°	11422	10360	11445	12162
55°	11057	10021	11099	11818
60°	10702	9673	10721	11385
65°	10261	9250	10261	10881
70°	9528	8554	9504	10108
75°	8637	7750	8577	9097
80°	7444	6668	7306	7810
85°	5727	5092	5558	6277



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	138.2	3.6
10°-20°	391.3	10.1
20°-30°	579.3	15.0
30°-40°	679.7	17.6
40°-50°	688.8	17.8
50°-60°	611.4	15.8
60°-70°	459.0	11.9
70°-80°	254.9	6.6
80°-90°	65.8	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°	1108.8	28.7
0°-40°	1788.5	46.2
0°-60°	3088.7	79.8
0°-90°	3868.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3868.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1463	1463	1463	1463	1463	
5°	1451	1442	1450	1480	1451	138
15°	1385	1337	1386	1446	1385	390
25°	1259	1180	1262	1328	1259	580
35°	1090	1006	1093	1162	1090	682
45°	899	818	900	957	899	693
55°	687	623	690	735	687	615
65°	470	424	470	498	470	463
75°	242	217	241	255	242	258
85°	54	48	52	59	54	65
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°	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4
2.5°	1456.6	1460.0	1464.3	1460.0	1453.2	1449.7	1449.7	1448.8	1451.4	1452.2	1451.4
5°	1451.4	1453.2	1454.0	1448.8	1441.1	1436.8	1435.1	1434.3	1437.7	1441.9	1437.7
7.5°	1441.9	1441.1	1440.3	1433.3	1424.8	1418.8	1416.2	1415.4	1418.8	1423.0	1419.6
10°	1425.6	1424.8	1422.2	1413.6	1402.5	1394.7	1392.1	1389.5	1392.1	1393.9	1392.1
12.5°	1407.6	1404.1	1400.7	1391.3	1379.2	1370.6	1366.3	1362.9	1366.3	1368.9	1367.2
15°	1385.2	1380.0	1374.1	1363.7	1351.7	1342.2	1337.1	1333.7	1336.3	1337.1	1337.1
17.5°	1358.6	1352.6	1346.6	1333.7	1319.1	1308.8	1302.8	1298.5	1301.9	1303.6	1303.6
20°	1328.5	1321.7	1313.9	1300.2	1284.7	1273.6	1266.6	1261.5	1262.4	1263.2	1263.2
22.5°	1295.9	1287.3	1277.8	1263.2	1246.9	1234.8	1228.0	1221.9	1221.9	1222.8	1222.8
25°	1258.9	1249.5	1240.0	1225.4	1208.2	1195.4	1186.7	1180.7	1180.7	1179.9	1181.5
27.5°	1221.1	1210.8	1201.4	1185.9	1167.8	1154.9	1146.3	1140.3	1139.5	1138.6	1140.3
30°	1179.9	1167.8	1157.5	1141.2	1124.0	1111.1	1102.5	1095.6	1094.0	1092.2	1094.0
32.5°	1136.0	1124.8	1113.7	1096.5	1079.3	1066.4	1057.8	1051.0	1050.1	1049.2	1051.0
35°	1090.4	1078.5	1068.1	1051.8	1034.7	1021.8	1012.3	1006.3	1006.3	1006.3	1006.3
37.5°	1045.8	1033.7	1022.6	1006.3	989.1	976.2	966.7	960.7	959.0	958.1	959.0
40°	995.1	984.8	974.5	959.0	941.8	928.9	921.2	914.3	912.6	910.9	913.4
42.5°	948.7	938.4	927.3	912.6	895.4	882.5	874.0	868.0	867.0	866.2	867.0
45°	898.9	886.9	875.6	861.9	846.4	834.4	825.8	819.8	818.9	818.1	818.9
47.5°	846.4	837.0	827.5	813.8	798.4	786.3	778.5	771.7	770.0	768.2	770.0
50°	795.8	785.5	776.0	763.0	748.5	737.3	730.4	724.4	722.7	721.8	722.7
52.5°	742.5	733.0	724.4	711.5	699.5	688.4	680.6	675.5	674.5	673.7	674.5
55°	687.4	678.9	671.1	660.8	648.8	638.5	631.6	625.6	624.7	623.0	624.7
57.5°	634.2	627.3	619.6	608.4	597.3	587.8	581.8	576.6	575.8	574.9	575.8
60°	580.0	573.2	566.3	556.9	545.6	536.2	531.1	526.7	525.1	524.2	525.1
62.5°	525.9	519.0	513.9	504.4	494.1	486.4	481.2	477.0	475.2	474.4	475.2
65°	470.0	464.0	458.0	449.5	441.7	435.6	430.5	426.2	424.5	423.7	423.7
67.5°	410.8	405.6	401.3	393.6	384.9	378.9	373.8	370.4	368.6	367.8	368.6
70°	353.2	348.9	344.6	338.6	331.7	326.6	323.1	319.7	318.0	317.1	317.1
72.5°	298.2	294.8	290.4	285.3	280.1	274.9	271.5	268.9	267.3	266.4	266.4
75°	242.3	238.9	237.1	232.9	227.7	224.3	220.8	219.2	217.4	217.4	217.4
77.5°	189.9	188.2	186.5	182.2	178.8	175.3	172.7	171.9	170.1	170.1	170.1
80°	140.1	139.2	138.4	135.8	132.3	128.9	127.1	126.3	125.5	125.5	125.5
82.5°	94.5	94.5	93.7	91.1	88.5	87.7	85.9	85.1	85.1	85.1	85.1
85°	54.1	54.1	54.1	53.3	51.5	51.5	49.9	49.0	48.1	48.1	48.1
87.5°	21.5	22.3	23.2	22.3	20.7	20.7	20.7	20.7	20.7	20.7	20.7
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°	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4
2.5°	1448.8	1450.6	1451.4	1455.7	1460.9	1464.3	1460.0	1455.7	1462.6	1470.3	1470.3
5°	1434.3	1435.9	1438.5	1443.7	1450.6	1454.8	1453.2	1449.7	1460.0	1468.6	1469.5
7.5°	1416.2	1417.9	1421.4	1426.5	1435.1	1441.1	1441.1	1441.9	1451.4	1461.7	1464.3
10°	1389.5	1393.9	1399.0	1406.7	1415.4	1423.0	1425.6	1426.5	1438.5	1449.7	1453.2
12.5°	1364.7	1368.9	1374.1	1382.6	1393.0	1401.5	1404.1	1407.6	1420.4	1433.3	1438.5
15°	1336.3	1340.6	1346.6	1355.2	1366.3	1375.8	1381.0	1386.1	1399.0	1412.8	1418.8
17.5°	1302.8	1307.0	1313.0	1323.3	1336.3	1347.4	1353.4	1359.5	1374.1	1388.7	1394.7
20°	1263.2	1269.2	1277.8	1288.1	1302.8	1315.6	1322.5	1329.4	1344.8	1359.5	1366.3
22.5°	1222.8	1229.7	1239.2	1251.2	1266.6	1280.4	1289.0	1297.6	1313.0	1327.7	1335.4
25°	1182.5	1190.2	1199.6	1212.5	1227.1	1240.9	1251.2	1261.5	1277.0	1292.5	1300.2
27.5°	1141.2	1148.1	1157.5	1170.4	1186.7	1201.4	1211.7	1222.8	1238.3	1254.7	1262.4
30°	1095.6	1103.4	1111.9	1124.8	1142.9	1159.2	1169.6	1181.5	1197.0	1213.4	1221.1
32.5°	1051.8	1058.7	1067.3	1080.2	1098.2	1115.4	1126.6	1138.6	1154.1	1170.4	1177.3
35°	1006.3	1013.2	1022.6	1035.5	1053.6	1069.9	1081.0	1093.0	1107.7	1123.2	1130.9
37.5°	961.6	968.5	978.0	990.8	1008.0	1024.3	1035.5	1047.5	1062.1	1076.7	1083.6
40°	915.2	922.1	929.8	942.7	959.9	976.2	986.5	998.5	1013.2	1028.6	1035.5
42.5°	868.0	874.8	884.3	897.1	913.4	928.1	939.2	950.4	964.1	978.0	984.8
45°	820.7	826.7	836.2	848.1	863.6	877.4	888.5	899.7	912.6	925.5	932.4
47.5°	771.7	778.5	786.3	798.4	813.8	828.4	839.6	849.9	861.9	874.8	880.8
50°	724.4	730.4	738.2	749.3	764.0	777.7	787.1	797.4	808.6	820.7	825.8
52.5°	675.5	681.5	689.2	700.4	712.4	725.2	733.9	743.3	754.5	765.6	770.8
55°	625.6	629.9	636.7	647.1	660.0	672.0	680.6	690.0	699.5	708.9	714.9
57.5°	576.6	581.8	588.6	598.1	609.3	620.4	628.2	635.9	645.4	654.8	659.1
60°	526.7	531.1	536.2	544.8	556.0	565.5	573.2	581.0	588.6	597.3	601.5
62.5°	476.0	480.4	485.5	494.1	503.6	512.2	519.0	525.9	532.8	540.5	544.8
65°	425.4	429.7	434.8	440.8	448.6	456.3	463.2	470.0	475.2	480.4	484.7
67.5°	370.4	374.7	379.9	384.9	391.9	399.6	404.8	410.8	415.9	421.9	424.5
70°	318.8	322.2	327.4	331.7	337.7	342.9	347.1	352.3	355.8	361.0	365.2
72.5°	268.1	271.5	275.9	280.1	283.6	287.8	293.0	297.3	301.6	306.7	308.5
75°	219.2	220.8	224.3	227.7	231.1	234.6	237.1	240.6	244.1	247.5	250.0
77.5°	171.0	172.7	176.2	178.8	181.4	183.9	185.6	187.4	190.8	193.3	195.9
80°	125.5	127.1	129.7	132.3	134.9	137.5	137.5	137.5	141.8	145.2	146.0
82.5°	85.1	85.9	87.7	89.3	91.1	92.8	92.8	91.9	94.5	97.1	98.8
85°	49.0	49.9	51.5	51.5	52.5	52.5	52.5	52.5	54.1	56.7	58.5
87.5°	19.7	19.7	20.7	20.7	21.5	21.5	20.7	19.7	21.5	24.1	24.9
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°	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4	1463.4
2.5°	1466.9	1466.0	1468.6	1469.5	1471.1	1471.1	1472.1	1472.1	1470.3	1467.7	1468.6
5°	1467.7	1467.7	1470.3	1472.9	1476.3	1479.8	1477.2	1474.6	1472.9	1470.3	1469.5
7.5°	1463.4	1465.2	1467.7	1472.1	1476.3	1481.5	1478.1	1474.6	1470.3	1466.9	1465.2
10°	1453.2	1454.8	1459.2	1463.4	1467.7	1472.1	1468.6	1465.2	1461.7	1457.4	1455.7
12.5°	1440.3	1442.8	1448.0	1452.2	1456.6	1461.7	1457.4	1453.2	1448.8	1444.5	1441.9
15°	1421.4	1424.8	1430.8	1435.9	1441.9	1446.2	1442.8	1439.4	1434.3	1428.2	1423.9
17.5°	1397.3	1402.5	1408.4	1414.4	1419.6	1423.9	1421.4	1417.9	1411.9	1405.0	1399.9
20°	1370.6	1375.8	1381.0	1387.0	1393.0	1397.3	1393.9	1389.5	1383.6	1378.4	1373.2
22.5°	1339.7	1344.8	1350.9	1356.0	1361.1	1365.5	1361.1	1356.0	1350.9	1345.8	1340.6
25°	1304.4	1309.6	1316.5	1321.7	1325.1	1328.5	1325.1	1320.8	1315.6	1310.4	1305.4
27.5°	1267.5	1272.6	1279.6	1284.7	1288.1	1291.5	1288.1	1283.9	1278.7	1273.6	1268.4
30°	1226.3	1231.4	1238.3	1243.4	1246.0	1248.6	1245.2	1241.7	1237.4	1232.3	1227.1
32.5°	1182.5	1187.6	1192.8	1198.0	1202.2	1205.6	1202.2	1198.8	1193.6	1186.7	1181.5
35°	1136.0	1141.2	1147.2	1152.4	1157.5	1161.8	1156.6	1150.7	1146.3	1142.1	1137.7
37.5°	1087.0	1093.0	1099.9	1105.9	1107.7	1111.1	1107.7	1104.3	1099.9	1095.6	1090.4
40°	1038.9	1044.1	1050.1	1056.2	1058.7	1061.3	1057.8	1054.4	1049.2	1044.9	1039.8
42.5°	989.1	994.3	999.4	1004.5	1008.0	1011.4	1008.0	1002.9	999.4	995.9	991.7
45°	937.5	942.7	947.0	952.1	954.7	957.3	953.9	949.6	946.2	943.6	939.2
47.5°	885.1	889.5	893.7	898.0	899.7	902.3	898.9	896.3	893.7	891.1	887.7
50°	830.1	834.4	839.6	843.9	844.7	847.3	843.9	841.3	838.7	836.2	833.6
52.5°	776.0	779.5	783.7	788.0	789.7	791.4	788.0	784.5	781.9	780.3	777.7
55°	719.3	722.7	727.0	730.4	733.0	734.7	731.3	727.8	725.2	724.4	721.8
57.5°	662.5	666.0	670.3	673.7	675.5	677.1	673.7	670.3	668.5	666.9	665.1
60°	604.9	608.4	611.8	614.4	616.2	617.0	613.6	611.0	610.1	609.3	607.5
62.5°	548.2	550.0	553.4	555.1	556.9	557.7	555.1	553.4	552.6	551.7	550.8
65°	488.9	493.3	495.9	497.5	497.5	498.4	495.9	494.9	494.1	493.3	491.5
67.5°	428.0	431.4	433.1	434.8	434.8	434.8	434.8	434.8	434.0	432.2	430.5
70°	369.5	372.1	373.8	374.7	374.7	374.7	372.9	372.1	372.9	372.9	372.1
72.5°	310.3	311.9	312.8	313.7	312.8	312.8	312.8	314.5	314.5	313.7	311.9
75°	252.6	254.4	255.2	256.0	255.2	255.2	255.2	257.0	256.0	256.0	255.2
77.5°	198.5	199.3	199.3	200.3	199.3	199.3	200.3	201.9	201.1	201.1	201.1
80°	147.0	147.0	147.0	147.8	147.0	147.0	147.8	149.5	148.6	148.6	148.6
82.5°	99.7	100.5	100.5	100.5	101.4	102.2	102.2	102.2	102.2	102.2	101.4
85°	59.3	60.1	59.3	59.3	59.3	59.3	60.1	61.0	61.0	61.0	61.0
87.5°	25.8	26.6	25.8	24.9	24.1	24.1	25.8	27.5	27.5	26.6	26.6
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-20-22L840-UNV-NP

CANDELA DISTRIBUTION (continued):

	330°	340°	350°	360°
0°	1463.4	1463.4	1463.4	1463.4
2.5°	1472.1	1472.1	1464.3	1456.6
5°	1471.1	1469.5	1460.9	1451.4
7.5°	1466.0	1463.4	1452.2	1441.9
10°	1454.0	1450.6	1438.5	1425.6
12.5°	1439.4	1434.3	1420.4	1407.6
15°	1420.4	1414.4	1399.9	1385.2
17.5°	1395.5	1388.7	1374.1	1358.6
20°	1368.9	1361.1	1344.8	1328.5
22.5°	1336.3	1329.4	1312.2	1295.9
25°	1301.0	1293.3	1276.1	1258.9
27.5°	1263.2	1254.7	1237.4	1221.1
30°	1221.9	1213.4	1196.2	1179.9
32.5°	1178.1	1171.3	1154.1	1136.0
35°	1133.4	1124.8	1107.7	1090.4
37.5°	1086.2	1078.5	1062.1	1045.8
40°	1036.3	1028.6	1011.4	995.1
42.5°	987.4	980.5	964.1	948.7
45°	934.9	928.1	912.6	898.9
47.5°	882.5	875.6	861.1	846.4
50°	829.2	822.4	808.6	795.8
52.5°	773.4	768.2	755.4	742.5
55°	717.5	711.5	698.6	687.4
57.5°	661.7	657.4	645.4	634.2
60°	604.1	598.9	589.5	580.0
62.5°	548.2	544.0	534.5	525.9
65°	488.9	485.5	477.8	470.0
67.5°	428.0	425.4	417.7	410.8
70°	369.5	365.2	359.2	353.2
72.5°	310.3	308.5	303.3	298.2
75°	253.5	251.8	246.6	242.3
77.5°	200.3	198.5	194.2	189.9
80°	147.8	147.0	143.5	140.1
82.5°	101.4	100.5	98.0	94.5
85°	61.0	59.3	56.7	54.1
87.5°	26.6	25.8	23.2	21.5
90°	0.0	0.0	0.0	0.0

(END OF REPORT)