

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: NEO-RAY

Report Number: P331426-830

Luminaire Tested: **SA2XXDIP-C1005D330U830-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331426-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXDIP-C1005D330U830-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

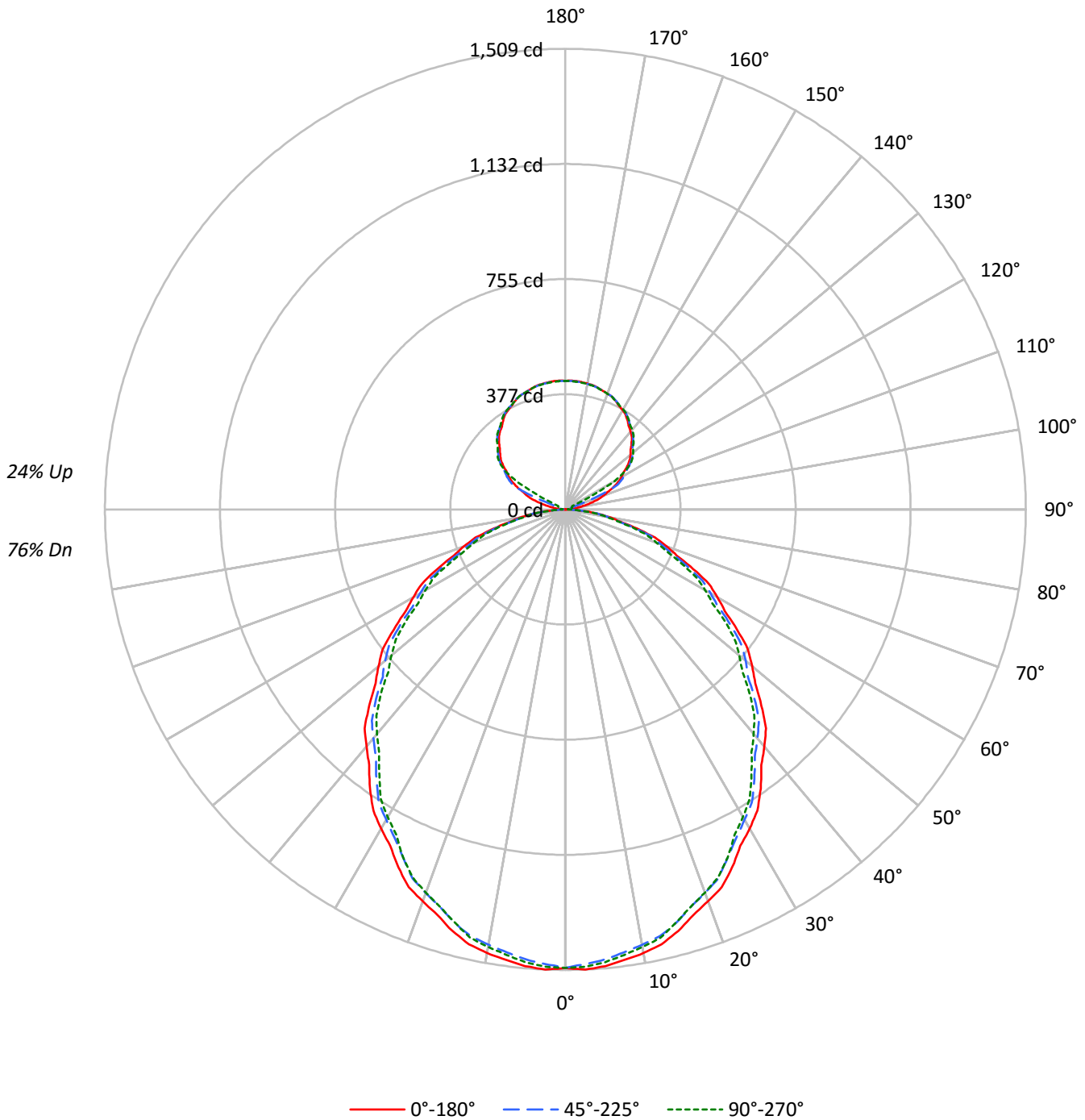
Lumens per Lamp: N/A
Luminaire Lumens: 5057.2 lumens
Efficiency: N/A
Efficacy: 101.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 49.8
Input Voltage (V): 120
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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Luminous Intensity Polar Plot





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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	0
RCR																		
0	113	113	113	113	108	108	108	108	98	98	98	88	88	88	80	80	80	76
1	104	99	95	91	98	94	91	88	86	83	80	78	76	74	70	69	67	64
2	94	87	80	75	89	83	77	72	75	71	67	68	65	62	62	59	57	53
3	86	76	68	62	82	73	66	60	66	61	56	60	56	52	55	51	48	45
4	79	68	59	53	75	65	57	51	59	53	48	54	49	45	49	45	42	39
5	73	60	52	46	69	58	50	44	53	47	42	49	43	39	44	40	36	34
6	67	54	46	40	64	52	44	39	48	41	36	44	38	34	40	36	32	30
7	62	49	41	35	59	47	40	34	44	37	32	40	35	30	37	32	29	26
8	58	45	37	31	55	43	36	30	40	33	29	37	31	27	34	29	26	24
9	54	41	33	28	51	40	32	27	37	30	26	34	28	25	31	27	23	21
10	50	38	30	25	48	36	29	25	34	28	23	31	26	22	29	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	24254	24254	24254
5°	24347	23995	24136
10°	24202	23753	23871
15°	23903	23445	23422
20°	23479	22983	22957
25°	23058	22413	22413
30°	22514	21893	21705
35°	22007	21268	20954
40°	21372	20643	20244
45°	20747	20021	19527
50°	20065	19376	18686
55°	19356	18624	17931
60°	18564	17725	17073
65°	17712	16829	16061
70°	16636	15753	15002
75°	15140	14504	14148
80°	13436	13036	12357
85°	10967	10448	9355



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	141.3	2.8
10°-20°	397.5	7.9
20°-30°	584.2	11.6
30°-40°	678.6	13.4
40°-50°	677.9	13.4
50°-60°	591.2	11.7
60°-70°	437.1	8.6
70°-80°	247.6	4.9
80°-90°	67.6	1.3
90°-100°	14.0	0.3
100°-110°	51.5	1.0
110°-120°	137.7	2.7
120°-130°	227.3	4.5
130°-140°	241.8	4.8
140°-150°	224.7	4.4
150°-160°	180.7	3.6
160°-170°	116.4	2.3
170°-180°	40.1	0.8
0°-30°	1123.0	22.2
0°-40°	1801.6	35.6
0°-60°	3070.7	60.7
0°-90°	3823.0	75.6
90°-120°	203.3	4.0
90°-150°	897.1	17.7
90°-180°	1234.0	24.4
0°-180°	5057.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1502	1502	1502	1502	1502	
5°	1502	1496	1480	1491	1489	142
15°	1430	1421	1403	1408	1401	402
25°	1294	1282	1258	1261	1258	595
35°	1116	1102	1079	1070	1063	697
45°	909	898	877	862	855	701
55°	688	678	662	645	637	615
65°	464	455	440	428	420	458
75°	243	240	232	225	227	259
85°	59	58	56	52	50	68
90°	0	4	6	8	8	4
95°	20	10	12	13	13	24
105°	93	97	19	22	23	99
115°	175	181	188	54	25	172
125°	248	252	258	260	260	221
135°	307	311	314	317	317	237
145°	356	356	360	362	361	222
155°	392	389	392	394	392	180
165°	413	411	412	414	412	117
175°	422	420	421	422	420	40
180°	421	421	421	421	421	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2
2.5°	1509.2	1507.9	1506.7	1505.3	1504.0	1502.0	1499.2	1496.4	1493.6	1490.7	1493.3
5°	1502.2	1501.0	1499.7	1498.4	1497.1	1494.7	1491.2	1487.6	1484.1	1480.5	1483.2
7.5°	1488.9	1487.0	1485.0	1483.0	1481.0	1478.2	1474.6	1471.0	1467.4	1463.9	1466.4
10°	1476.2	1474.0	1471.8	1469.5	1467.3	1464.2	1460.4	1456.5	1452.6	1448.8	1451.4
12.5°	1459.0	1456.9	1454.9	1452.9	1451.0	1448.0	1444.2	1440.3	1436.5	1432.7	1434.5
15°	1430.0	1428.1	1426.2	1424.3	1422.3	1419.3	1415.1	1410.9	1406.7	1402.6	1403.9
17.5°	1393.1	1391.1	1389.2	1387.2	1385.3	1382.2	1378.0	1373.8	1369.5	1365.4	1366.8
20°	1366.5	1364.5	1362.6	1360.7	1358.8	1355.6	1351.0	1346.6	1342.1	1337.6	1338.5
22.5°	1339.9	1337.2	1334.5	1331.8	1329.1	1325.7	1321.4	1317.2	1313.0	1308.7	1308.9
25°	1294.3	1291.7	1289.1	1286.6	1284.0	1280.0	1274.5	1269.0	1263.6	1258.1	1258.8
27.5°	1242.3	1239.9	1237.7	1235.3	1233.0	1229.7	1225.4	1221.1	1216.8	1212.5	1211.5
30°	1207.6	1205.0	1202.4	1199.9	1197.3	1193.6	1188.8	1184.0	1179.2	1174.3	1173.4
32.5°	1170.6	1168.6	1166.5	1164.4	1162.3	1158.9	1153.8	1148.7	1143.6	1138.5	1136.8
35°	1116.5	1113.3	1110.1	1106.9	1103.7	1099.6	1094.4	1089.3	1084.2	1079.0	1077.1
37.5°	1055.6	1052.8	1050.0	1047.2	1044.3	1040.4	1035.2	1030.1	1024.9	1019.8	1017.4
40°	1014.0	1011.4	1008.9	1006.4	1003.7	999.9	994.8	989.7	984.5	979.4	976.5
42.5°	973.6	971.0	968.5	965.9	963.3	959.4	954.3	949.1	944.1	938.9	935.8
45°	908.6	906.3	904.1	901.8	899.6	896.1	891.3	886.5	881.7	876.8	873.3
47.5°	843.9	841.8	839.6	837.5	835.4	831.8	826.8	821.8	816.8	811.8	808.0
50°	798.8	797.2	795.6	794.0	792.4	789.3	784.9	780.3	775.8	771.4	766.9
52.5°	754.9	752.8	750.6	748.6	746.4	743.2	739.0	734.7	730.6	726.3	722.6
55°	687.6	685.6	683.7	681.8	679.9	676.9	673.2	669.3	665.4	661.6	657.7
57.5°	620.0	618.4	616.9	615.4	613.8	611.0	606.7	602.5	598.2	594.0	590.2
60°	574.9	573.6	572.3	571.1	569.8	566.8	562.4	557.9	553.4	548.9	545.4
62.5°	531.0	529.0	526.9	524.8	522.7	520.0	516.5	513.1	509.6	506.1	502.8
65°	463.6	461.8	459.9	457.9	456.0	453.4	450.2	447.0	443.7	440.5	437.7
67.5°	395.2	393.7	392.1	390.6	389.1	386.8	383.9	381.1	378.1	375.3	373.1
70°	352.4	351.2	349.9	348.6	347.3	345.3	342.3	339.4	336.6	333.7	331.4
72.5°	308.5	307.3	305.9	304.7	303.4	301.8	300.0	298.1	296.2	294.4	292.1
75°	242.7	242.0	241.4	240.7	240.1	238.9	237.3	235.7	234.1	232.5	230.6
77.5°	183.7	182.7	181.5	180.5	179.4	178.5	177.9	177.2	176.5	176.0	174.9
80°	144.5	144.1	143.8	143.5	143.2	142.7	142.0	141.4	140.7	140.2	139.1
82.5°	107.4	107.4	107.4	107.3	107.2	107.0	106.6	106.2	105.8	105.5	104.2
85°	59.2	58.9	58.6	58.2	58.0	57.6	57.3	56.9	56.6	56.4	55.3
87.5°	20.8	20.5	20.2	19.8	19.4	19.0	18.6	18.2	17.8	17.4	16.7
90°	0.3	1.0	1.8	2.5	3.3	4.0	4.4	5.0	5.6	6.1	6.4
92.5°	6.1	6.1	6.0	5.9	5.8	6.0	6.2	6.5	6.8	7.1	7.3
95°	19.8	17.5	15.4	13.1	10.8	10.0	10.5	10.9	11.4	11.9	12.3
97.5°	39.3	33.0	26.7	20.5	14.1	11.5	12.6	13.7	14.8	15.9	16.2
100°	53.9	44.7	35.3	26.1	16.9	12.7	13.9	15.1	16.2	17.3	17.9
102.5°	70.0	68.1	66.1	64.2	62.2	56.4	46.8	37.1	27.5	17.8	18.6
105°	92.7	94.6	96.7	98.8	100.8	92.6	74.1	55.6	37.0	18.6	19.3
107.5°	118.4	120.1	121.7	123.4	125.0	114.7	92.6	70.4	48.2	26.0	25.3
110°	135.0	136.4	137.9	139.3	140.7	131.6	112.1	92.5	72.9	53.3	46.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	150.6	151.8	153.2	154.4	155.6	153.8	149.0	144.2	139.3	134.5	109.8
115°	175.2	176.3	177.6	178.7	179.8	181.3	182.9	184.6	186.3	188.0	156.7
117.5°	197.3	198.5	199.8	201.1	202.4	203.6	204.8	205.9	207.1	208.3	200.7
120°	213.3	214.3	215.4	216.4	217.4	218.5	219.7	220.9	222.2	223.4	224.2
122.5°	227.0	228.1	229.1	230.2	231.3	232.4	233.8	235.1	236.5	237.8	238.3
125°	247.8	248.6	249.5	250.4	251.3	252.4	253.6	255.0	256.2	257.5	258.0
127.5°	266.6	267.6	268.5	269.6	270.5	271.5	272.4	273.4	274.4	275.3	276.0
130°	278.5	279.7	280.7	281.8	282.9	283.8	284.6	285.3	286.1	286.8	287.5
132.5°	290.8	291.6	292.6	293.5	294.5	295.2	296.0	296.7	297.5	298.2	298.9
135°	306.6	307.6	308.8	309.8	310.9	311.8	312.4	313.0	313.6	314.2	314.9
137.5°	322.6	323.4	324.1	324.9	325.6	326.4	327.1	327.7	328.5	329.1	329.8
140°	333.1	333.7	334.1	334.7	335.3	335.9	336.7	337.4	338.2	338.8	339.5
142.5°	341.9	342.3	342.8	343.4	343.8	344.5	345.3	346.2	347.0	347.9	348.5
145°	355.6	355.6	355.5	355.4	355.3	355.9	357.0	358.3	359.4	360.5	361.0
147.5°	367.7	367.4	367.1	366.8	366.6	367.0	368.2	369.4	370.5	371.6	371.9
150°	375.4	374.9	374.5	374.0	373.5	373.9	374.9	376.1	377.1	378.2	378.6
152.5°	382.0	381.5	381.0	380.4	379.9	380.1	381.2	382.2	383.2	384.3	384.7
155°	391.6	391.0	390.4	389.7	389.2	389.3	390.1	390.9	391.7	392.5	392.9
157.5°	399.1	398.6	398.0	397.6	397.0	397.1	397.7	398.2	398.8	399.4	399.8
160°	403.5	403.1	402.7	402.3	401.9	401.9	402.3	402.7	403.1	403.5	403.9
162.5°	407.4	407.0	406.6	406.1	405.8	405.8	406.0	406.4	406.8	407.2	407.6
165°	412.6	412.3	411.8	411.4	411.0	410.9	411.1	411.3	411.5	411.7	412.2
167.5°	416.5	416.1	415.8	415.3	414.9	414.8	415.0	415.2	415.4	415.6	416.0
170°	418.8	418.3	417.9	417.5	417.1	417.0	417.1	417.3	417.4	417.5	418.0
172.5°	420.2	419.8	419.3	419.0	418.6	418.4	418.6	418.7	418.9	419.0	419.4
175°	422.1	421.6	421.1	420.7	420.2	420.0	420.2	420.3	420.5	420.6	421.0
177.5°	422.4	422.0	421.6	421.2	420.8	420.8	420.8	420.8	420.8	420.9	421.3
180°	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2	1502.2
2.5°	1495.8	1498.4	1501.0	1502.0	1501.5	1501.0	1500.4	1500.0
5°	1485.7	1488.3	1490.8	1491.9	1491.2	1490.5	1489.9	1489.2
7.5°	1469.0	1471.5	1474.1	1475.1	1474.3	1473.7	1472.9	1472.3
10°	1454.0	1456.5	1459.1	1459.9	1459.0	1457.9	1457.0	1456.0
12.5°	1436.2	1438.0	1439.8	1440.4	1439.6	1439.0	1438.2	1437.6
15°	1405.1	1406.5	1407.7	1407.6	1406.0	1404.4	1402.8	1401.2
17.5°	1368.3	1369.8	1371.2	1371.2	1369.6	1368.1	1366.6	1365.0
20°	1339.5	1340.5	1341.4	1341.2	1340.0	1338.7	1337.5	1336.1
22.5°	1309.1	1309.3	1309.5	1309.2	1308.4	1307.7	1306.8	1306.1
25°	1259.4	1260.1	1260.7	1260.7	1260.1	1259.4	1258.8	1258.1
27.5°	1210.6	1209.6	1208.6	1207.4	1205.9	1204.3	1202.8	1201.3
30°	1172.4	1171.5	1170.5	1169.4	1168.1	1166.8	1165.5	1164.2
32.5°	1135.1	1133.3	1131.6	1130.1	1128.8	1127.6	1126.2	1124.9
35°	1075.2	1073.3	1071.3	1069.6	1068.0	1066.4	1064.7	1063.1
37.5°	1015.0	1012.7	1010.3	1008.3	1006.8	1005.2	1003.7	1002.2
40°	973.6	970.7	967.8	965.7	964.4	963.2	961.9	960.5
42.5°	932.6	929.4	926.3	923.9	922.1	920.3	918.5	916.6
45°	869.8	866.2	862.7	860.3	858.9	857.7	856.4	855.2
47.5°	804.4	800.6	796.9	794.1	792.2	790.4	788.5	786.6
50°	762.3	757.9	753.4	750.4	748.8	747.2	745.6	743.9
52.5°	718.9	715.1	711.4	708.5	706.3	704.3	702.1	700.0
55°	653.8	650.0	646.2	643.5	641.9	640.3	638.7	637.0
57.5°	586.4	582.6	578.8	576.3	575.1	573.9	572.7	571.5
60°	541.9	538.3	534.8	532.5	531.6	530.7	529.6	528.7
62.5°	499.6	496.3	493.0	490.8	489.6	488.3	487.1	485.9
65°	434.8	431.9	429.0	426.8	425.2	423.6	422.0	420.4
67.5°	370.8	368.5	366.3	364.5	363.3	361.9	360.7	359.4
70°	329.1	327.0	324.7	322.9	321.6	320.4	319.1	317.8
72.5°	289.9	287.7	285.4	283.8	282.8	281.7	280.7	279.7
75°	228.8	226.8	224.9	224.2	224.9	225.5	226.1	226.8
77.5°	174.0	173.1	172.1	171.2	170.2	169.4	168.4	167.6
80°	138.2	137.2	136.3	135.4	134.8	134.2	133.6	132.9
82.5°	103.0	101.8	100.6	99.9	99.7	99.6	99.5	99.3
85°	54.4	53.4	52.5	51.8	51.6	51.2	50.9	50.5
87.5°	16.0	15.3	14.6	14.1	13.9	13.7	13.4	13.2
90°	6.8	7.1	7.4	7.7	7.8	7.9	8.1	8.2
92.5°	7.4	7.6	7.7	7.9	8.0	8.1	8.1	8.2
95°	12.5	12.9	13.2	13.4	13.3	13.2	13.2	13.1
97.5°	16.5	16.7	17.0	17.2	17.2	17.3	17.4	17.5
100°	18.5	19.0	19.5	19.9	20.0	20.2	20.3	20.5
102.5°	19.2	20.0	20.6	21.1	21.3	21.5	21.7	21.9
105°	20.1	20.8	21.6	22.1	22.3	22.6	22.9	23.2
107.5°	24.5	23.8	23.0	22.7	23.0	23.3	23.6	23.8
110°	39.8	33.0	26.2	23.0	23.3	23.6	23.8	24.0



TEST NUMBER: P331426-830

CATALOG NUMBER: SA2XXDIP-C1005D330U830-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	85.1	60.4	35.7	23.5	23.7	23.8	24.1	24.3
115°	125.4	94.0	62.6	44.5	39.6	34.8	29.9	25.0
117.5°	193.1	185.5	178.0	166.2	150.1	134.1	118.1	102.1
120°	225.0	225.8	226.6	222.4	213.3	204.2	195.0	185.9
122.5°	238.7	239.2	239.7	239.0	237.3	235.5	233.8	232.0
125°	258.4	258.9	259.4	259.8	260.0	260.1	260.3	260.5
127.5°	276.7	277.4	278.1	278.4	278.5	278.5	278.5	278.6
130°	288.2	289.0	289.7	290.1	290.0	289.9	289.9	289.8
132.5°	299.5	300.1	300.8	301.0	301.0	301.0	300.9	300.8
135°	315.6	316.2	316.9	317.2	317.1	316.9	316.8	316.6
137.5°	330.5	331.1	331.8	332.0	331.8	331.6	331.3	331.1
140°	340.1	340.7	341.3	341.5	341.1	340.8	340.4	340.1
142.5°	349.0	349.6	350.2	350.2	349.9	349.6	349.2	348.8
145°	361.5	361.9	362.4	362.5	362.1	361.8	361.5	361.1
147.5°	372.3	372.7	373.1	373.1	372.8	372.5	372.2	371.9
150°	379.0	379.4	379.8	379.8	379.6	379.2	378.8	378.5
152.5°	385.1	385.5	385.9	385.9	385.4	385.0	384.6	384.1
155°	393.3	393.7	394.2	394.1	393.5	393.0	392.5	391.9
157.5°	400.3	400.8	401.1	401.1	400.6	400.1	399.5	399.1
160°	404.4	404.7	405.1	405.1	404.6	404.2	403.7	403.2
162.5°	408.0	408.5	409.0	409.0	408.3	407.7	407.2	406.6
165°	412.6	413.1	413.6	413.6	413.1	412.6	412.2	411.7
167.5°	416.5	417.0	417.5	417.4	416.8	416.1	415.6	414.9
170°	418.5	419.0	419.4	419.3	418.8	418.1	417.5	416.9
172.5°	419.9	420.4	420.8	420.8	420.2	419.6	419.0	418.4
175°	421.5	422.0	422.4	422.4	421.7	421.0	420.3	419.6
177.5°	421.7	422.1	422.4	422.4	421.9	421.4	420.9	420.5
180°	421.1	421.1	421.1	421.1	421.1	421.1	421.1	421.1

(END OF REPORT)