

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: P331428-840

Luminaire Tested: **SA2XXDIP-C1005D330U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331428-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXDIP-C1005D330U840-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1005 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

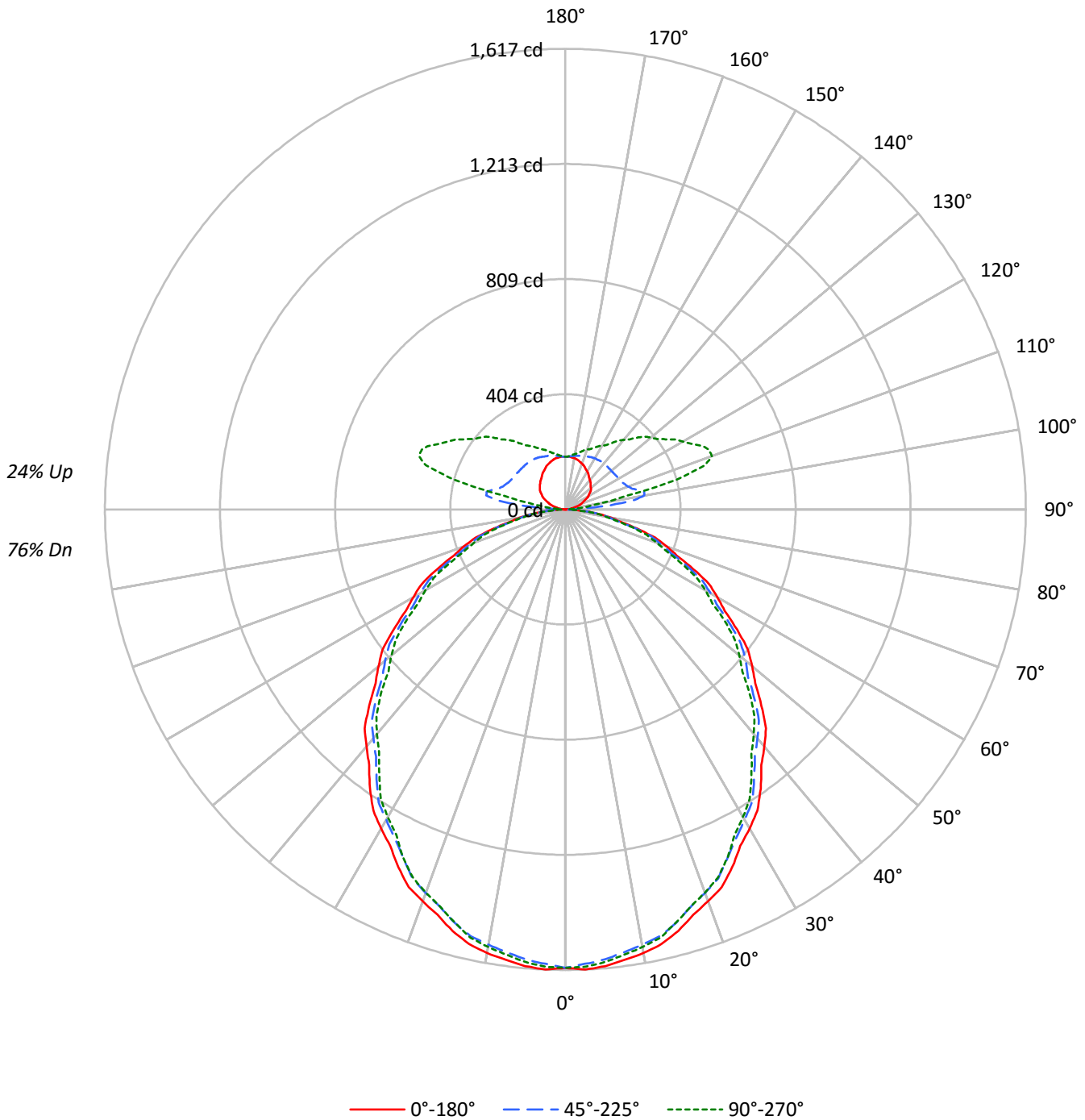
Lumens per Lamp: N/A
Luminaire Lumens: 5387.8 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

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	89	89	89	80	80	80	76
1	104	99	95	91	98	95	91	88	86	83	81	78	76	74	71	69	68	64
2	94	87	80	75	90	83	77	72	75	71	67	69	65	62	62	60	57	54
3	86	76	69	62	82	73	66	60	67	61	56	61	56	52	55	52	49	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	45	40	37	34
6	67	54	46	40	64	52	44	39	48	41	36	44	39	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	29	25	31	27	23	21
10	50	38	30	25	48	37	29	25	34	28	24	32	26	22	29	25	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	25987	25987	25987
5°	26086	25710	25861
10°	25932	25450	25576
15°	25611	25120	25095
20°	25156	24624	24598
25°	24704	24015	24015
30°	24121	23457	23256
35°	23580	22787	22450
40°	22898	22118	21692
45°	22229	21450	20922
50°	21499	20760	20022
55°	20738	19952	19212
60°	19888	18991	18290
65°	18980	18032	17207
70°	17825	16877	16074
75°	16220	15540	15159
80°	14393	13966	13240
85°	11745	11189	10022



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	151.3	2.8
10°-20°	425.9	7.9
20°-30°	626.0	11.6
30°-40°	727.1	13.5
40°-50°	726.3	13.5
50°-60°	633.4	11.8
60°-70°	468.3	8.7
70°-80°	265.3	4.9
80°-90°	73.0	1.4
90°-100°	74.2	1.4
100°-110°	251.8	4.7
110°-120°	267.5	5.0
120°-130°	220.2	4.1
130°-140°	176.8	3.3
140°-150°	133.6	2.5
150°-160°	93.9	1.7
160°-170°	55.3	1.0
170°-180°	18.0	0.3
0°-30°	1203.2	22.3
0°-40°	1930.3	35.8
0°-60°	3290.0	61.1
0°-90°	4096.6	76.0
90°-120°	593.4	11.0
90°-150°	1124.0	20.9
90°-180°	1291.0	24.0
0°-180°	5387.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1610	1610	1610	1610	1610	
5°	1610	1603	1586	1598	1596	153
15°	1532	1522	1503	1508	1501	431
25°	1387	1374	1348	1351	1348	638
35°	1196	1180	1156	1147	1139	747
45°	974	962	939	923	916	751
55°	737	727	709	691	682	658
65°	497	487	472	458	450	491
75°	260	257	249	241	243	278
85°	63	62	60	56	54	73
90°	0	5	12	12	12	4
95°	12	31	140	53	41	13
105°	44	66	264	473	402	46
115°	77	97	221	457	529	76
125°	107	127	213	370	429	95
135°	126	150	210	311	356	97
145°	143	165	209	260	284	90
155°	163	176	203	230	239	75
165°	178	183	194	206	209	50
175°	185	185	187	189	189	18
180°	186	186	186	186	186	



TEST NUMBER: P331428-840

CATALOG NUMBER: SA2XXDIP-C1005D330U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5
2.5°	1617.0	1615.6	1614.3	1612.9	1611.4	1609.3	1606.3	1603.3	1600.2	1597.2	1599.9
5°	1609.5	1608.2	1606.8	1605.4	1604.1	1601.4	1597.7	1593.9	1590.1	1586.3	1589.1
7.5°	1595.3	1593.2	1591.0	1588.9	1586.8	1583.8	1579.9	1576.1	1572.3	1568.4	1571.1
10°	1581.7	1579.3	1576.9	1574.5	1572.1	1568.8	1564.7	1560.5	1556.4	1552.3	1555.1
12.5°	1563.2	1560.9	1558.8	1556.7	1554.6	1551.5	1547.3	1543.2	1539.1	1535.0	1536.9
15°	1532.2	1530.1	1528.0	1526.0	1523.9	1520.7	1516.2	1511.7	1507.2	1502.8	1504.2
17.5°	1492.6	1490.5	1488.4	1486.3	1484.3	1481.0	1476.4	1471.9	1467.3	1462.9	1464.4
20°	1464.1	1462.0	1460.0	1457.8	1455.8	1452.4	1447.5	1442.8	1437.9	1433.1	1434.1
22.5°	1435.6	1432.7	1429.9	1426.9	1424.0	1420.4	1415.8	1411.3	1406.7	1402.2	1402.4
25°	1386.7	1383.9	1381.2	1378.5	1375.7	1371.4	1365.5	1359.7	1353.8	1348.0	1348.7
27.5°	1331.0	1328.5	1326.1	1323.5	1321.1	1317.6	1312.9	1308.3	1303.7	1299.1	1298.1
30°	1293.8	1291.1	1288.3	1285.6	1282.8	1278.9	1273.7	1268.6	1263.4	1258.2	1257.2
32.5°	1254.3	1252.0	1249.8	1247.6	1245.4	1241.6	1236.2	1230.7	1225.3	1219.8	1218.0
35°	1196.3	1192.9	1189.4	1186.0	1182.6	1178.1	1172.6	1167.1	1161.6	1156.1	1154.1
37.5°	1131.0	1128.0	1125.0	1122.0	1118.9	1114.7	1109.1	1103.7	1098.1	1092.7	1090.0
40°	1086.4	1083.7	1081.0	1078.2	1075.4	1071.4	1065.8	1060.4	1054.8	1049.4	1046.2
42.5°	1043.1	1040.4	1037.6	1034.9	1032.1	1027.9	1022.5	1016.9	1011.5	1005.9	1002.6
45°	973.5	971.1	968.7	966.2	963.8	960.1	954.9	949.8	944.6	939.4	935.6
47.5°	904.1	901.9	899.6	897.4	895.0	891.2	885.9	880.5	875.1	869.8	865.8
50°	855.9	854.1	852.4	850.7	849.0	845.7	840.9	836.1	831.2	826.5	821.6
52.5°	808.8	806.6	804.3	802.0	799.7	796.3	791.7	787.2	782.7	778.2	774.2
55°	736.7	734.6	732.6	730.5	728.4	725.3	721.2	717.1	713.0	708.8	704.7
57.5°	664.3	662.6	661.0	659.3	657.6	654.6	650.1	645.5	641.0	636.4	632.4
60°	615.9	614.6	613.2	611.9	610.5	607.3	602.6	597.7	592.9	588.1	584.3
62.5°	569.0	566.7	564.5	562.3	560.1	557.1	553.4	549.8	546.0	542.3	538.8
65°	496.8	494.7	492.7	490.6	488.6	485.7	482.3	478.9	475.4	472.0	469.0
67.5°	423.4	421.8	420.1	418.5	416.9	414.4	411.3	408.3	405.2	402.1	399.7
70°	377.6	376.3	374.9	373.5	372.1	369.9	366.8	363.7	360.6	357.5	355.1
72.5°	330.5	329.2	327.8	326.5	325.1	323.4	321.4	319.4	317.4	315.4	313.0
75°	260.0	259.3	258.6	257.9	257.2	256.0	254.3	252.6	250.9	249.1	247.1
77.5°	196.8	195.7	194.5	193.4	192.2	191.3	190.6	189.9	189.1	188.5	187.4
80°	154.8	154.4	154.1	153.7	153.4	152.9	152.2	151.5	150.8	150.2	149.1
82.5°	115.1	115.1	115.0	114.9	114.8	114.6	114.2	113.8	113.4	113.0	111.7
85°	63.4	63.1	62.8	62.4	62.1	61.7	61.4	61.0	60.7	60.4	59.3
87.5°	22.3	22.0	21.7	21.3	20.9	20.6	20.4	20.4	20.2	19.8	18.9
90°	0.4	1.4	2.8	3.5	4.2	5.4	7.2	9.6	11.8	12.1	11.8
92.5°	4.3	6.3	8.9	10.4	12.8	16.2	24.2	35.6	45.7	46.4	39.2
95°	12.5	13.9	17.5	20.7	26.4	34.9	51.4	82.4	123.8	139.9	122.4
97.5°	20.3	22.2	26.1	30.9	37.5	47.2	67.8	111.1	179.9	238.7	250.4
100°	27.5	28.6	31.7	37.5	44.6	54.6	73.5	117.0	194.1	281.9	333.3
102.5°	34.0	34.8	38.1	43.7	51.2	61.2	78.7	117.3	188.6	283.3	364.1
105°	43.5	44.9	47.5	52.8	60.7	70.7	87.5	119.2	178.0	264.4	359.3
107.5°	53.8	54.9	57.4	62.3	70.1	80.2	96.4	124.1	172.8	244.1	328.0
110°	60.7	62.1	64.2	68.9	76.3	86.7	102.4	128.1	171.7	234.4	308.3



TEST NUMBER: P331428-840

CATALOG NUMBER: SA2XXDIP-C1005D330U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	67.0	68.4	70.8	75.1	82.3	93.0	108.2	132.4	171.9	228.1	294.6
115°	76.7	78.5	80.7	84.9	92.1	101.7	117.0	138.8	173.4	221.3	277.6
117.5°	86.8	88.3	90.4	94.2	101.1	111.1	125.2	145.6	176.0	217.8	266.9
120°	93.1	94.5	96.7	99.9	107.0	117.0	131.0	150.3	177.7	215.9	261.2
122.5°	99.2	100.3	102.4	105.9	113.0	123.3	136.3	154.2	179.7	214.7	256.3
125°	107.0	108.2	110.3	114.5	121.7	131.7	144.5	160.6	182.7	212.7	249.4
127.5°	113.3	114.7	117.8	122.5	129.3	139.6	152.1	166.5	185.7	211.5	243.0
130°	117.0	118.5	122.0	127.0	134.2	144.1	156.6	170.2	188.0	210.9	238.7
132.5°	120.5	122.2	126.0	131.3	138.8	148.8	160.7	173.9	190.4	210.6	235.3
135°	125.6	127.0	131.3	136.6	144.9	154.8	166.3	178.7	193.1	210.2	230.5
137.5°	130.5	132.2	136.4	142.2	150.3	159.6	170.9	182.5	195.5	210.1	227.1
140°	134.2	135.6	139.9	145.6	153.4	162.7	173.4	184.5	196.6	209.8	225.1
142.5°	137.8	139.1	143.0	148.8	156.3	165.0	175.4	186.2	197.4	209.8	223.2
145°	143.4	144.9	148.5	153.8	161.0	168.7	178.4	188.4	198.3	209.0	220.6
147.5°	149.5	150.5	153.9	158.9	164.8	171.8	180.9	189.7	198.6	207.8	217.8
150°	153.4	154.5	157.3	162.0	167.3	173.8	182.0	190.2	198.3	206.9	215.5
152.5°	157.4	157.9	160.8	164.8	170.0	175.7	183.1	190.5	197.8	205.5	213.5
155°	163.1	163.4	165.5	169.5	173.4	178.7	184.8	190.9	196.9	203.0	209.8
157.5°	167.7	168.1	169.9	173.3	176.4	180.9	186.0	190.9	195.3	200.5	206.3
160°	170.9	171.3	172.7	175.5	178.4	182.4	186.6	190.9	194.5	198.7	203.7
162.5°	174.1	173.8	175.3	177.5	180.2	183.2	186.9	190.6	193.6	197.3	201.5
165°	177.7	177.3	178.0	180.2	182.0	184.1	187.3	189.9	192.0	194.5	197.6
167.5°	180.7	180.3	180.9	182.3	183.6	184.9	187.2	189.3	190.4	192.0	194.0
170°	182.7	182.0	182.4	183.4	184.1	185.2	186.9	188.7	189.5	190.6	192.0
172.5°	183.8	183.4	183.2	184.3	184.7	185.5	186.7	187.9	188.3	188.8	190.0
175°	185.2	184.8	184.5	185.2	185.2	185.5	186.2	186.9	186.6	186.9	187.3
177.5°	185.8	185.2	185.0	185.5	185.5	185.5	185.8	186.4	185.8	185.5	185.8
180°	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5



TEST NUMBER: P331428-840

CATALOG NUMBER: SA2XXDIP-C1005D330U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5	1609.5
2.5°	1602.7	1605.4	1608.2	1609.3	1608.7	1608.2	1607.6	1607.1
5°	1591.9	1594.6	1597.3	1598.4	1597.7	1597.0	1596.3	1595.6
7.5°	1573.9	1576.6	1579.4	1580.4	1579.6	1578.9	1578.1	1577.4
10°	1557.8	1560.5	1563.3	1564.2	1563.2	1562.1	1561.0	1560.0
12.5°	1538.8	1540.8	1542.7	1543.3	1542.5	1541.8	1541.0	1540.2
15°	1505.5	1506.9	1508.2	1508.1	1506.4	1504.7	1503.0	1501.3
17.5°	1466.0	1467.6	1469.2	1469.2	1467.4	1465.8	1464.2	1462.5
20°	1435.2	1436.2	1437.2	1437.0	1435.7	1434.3	1433.0	1431.6
22.5°	1402.6	1402.8	1403.0	1402.7	1401.9	1401.1	1400.2	1399.4
25°	1349.4	1350.1	1350.8	1350.8	1350.1	1349.4	1348.7	1348.0
27.5°	1297.1	1296.0	1294.9	1293.6	1292.0	1290.3	1288.7	1287.1
30°	1256.2	1255.2	1254.2	1252.9	1251.5	1250.1	1248.8	1247.4
32.5°	1216.2	1214.3	1212.4	1210.8	1209.4	1208.1	1206.7	1205.3
35°	1152.0	1149.9	1147.8	1146.0	1144.3	1142.6	1140.7	1139.0
37.5°	1087.5	1085.0	1082.5	1080.4	1078.7	1077.0	1075.4	1073.8
40°	1043.1	1040.1	1036.9	1034.7	1033.3	1032.0	1030.6	1029.2
42.5°	999.3	995.8	992.5	989.9	988.0	986.0	984.1	982.1
45°	931.9	928.1	924.3	921.7	920.3	919.0	917.6	916.3
47.5°	861.8	857.8	853.8	850.8	848.8	846.9	844.9	842.8
50°	816.8	812.0	807.2	804.0	802.2	800.5	798.8	797.1
52.5°	770.2	766.2	762.2	759.1	756.8	754.6	752.2	750.0
55°	700.5	696.4	692.4	689.4	687.7	686.0	684.3	682.5
57.5°	628.2	624.2	620.2	617.4	616.2	614.9	613.6	612.3
60°	580.6	576.7	573.0	570.6	569.6	568.6	567.4	566.4
62.5°	535.3	531.8	528.3	525.8	524.5	523.2	521.9	520.6
65°	465.9	462.7	459.7	457.3	455.6	453.8	452.1	450.4
67.5°	397.3	394.9	392.4	390.5	389.2	387.8	386.5	385.1
70°	352.6	350.3	347.9	346.0	344.6	343.3	341.8	340.5
72.5°	310.6	308.2	305.8	304.1	303.0	301.8	300.7	299.6
75°	245.1	243.0	241.0	240.2	241.0	241.6	242.3	243.0
77.5°	186.4	185.4	184.4	183.4	182.4	181.5	180.5	179.6
80°	148.0	147.0	146.0	145.1	144.4	143.8	143.1	142.4
82.5°	110.4	109.1	107.8	107.0	106.8	106.7	106.6	106.4
85°	58.3	57.3	56.2	55.5	55.2	54.8	54.5	54.1
87.5°	18.0	17.0	16.4	15.9	15.6	15.2	15.0	14.7
90°	11.4	10.7	11.4	11.8	11.8	11.8	11.8	11.8
92.5°	31.1	26.7	23.7	21.5	21.2	20.1	20.3	19.8
95°	93.5	71.7	56.8	48.9	44.2	41.4	40.3	40.7
97.5°	218.1	178.4	139.9	114.1	97.0	88.3	83.1	80.1
100°	325.8	281.6	232.7	189.5	159.9	144.5	134.2	127.7
102.5°	396.3	386.3	350.5	304.8	272.6	246.4	233.5	224.8
105°	433.5	473.8	478.5	466.8	444.5	422.4	407.1	402.1
107.5°	406.7	467.5	504.5	521.8	524.6	523.4	520.3	513.7
110°	383.5	447.5	493.1	522.4	537.8	544.5	547.8	547.3



TEST NUMBER: P331428-840

CATALOG NUMBER: SA2XXDIP-C1005D330U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	362.4	423.7	472.5	506.1	527.5	538.8	544.8	546.7
115°	336.5	391.4	438.2	474.9	500.3	516.6	525.9	529.2
117.5°	316.9	365.2	407.6	442.0	467.9	485.2	494.9	497.7
120°	307.2	351.4	389.3	421.7	446.8	463.5	473.8	477.5
122.5°	299.5	340.0	375.9	405.2	427.6	444.1	453.3	456.3
125°	288.3	325.1	356.5	383.2	403.9	417.5	426.4	429.3
127.5°	277.2	310.5	340.1	364.8	382.8	395.6	403.2	405.6
130°	270.1	300.8	329.0	352.5	370.0	382.1	389.3	392.1
132.5°	263.3	291.6	317.6	339.7	356.9	369.0	375.6	378.2
135°	253.7	277.2	300.8	320.7	336.1	347.9	354.4	355.8
137.5°	246.1	265.8	284.5	301.8	315.9	326.0	331.6	333.8
140°	241.2	258.3	274.8	290.4	301.8	311.1	316.5	318.6
142.5°	237.2	251.8	265.9	279.0	289.8	298.3	303.1	303.5
145°	231.6	243.4	254.4	264.8	273.3	279.4	283.0	284.0
147.5°	227.2	236.5	245.1	252.7	259.7	264.6	267.0	267.7
150°	224.1	232.0	239.4	245.8	251.2	255.5	257.6	258.0
152.5°	221.0	228.2	234.6	240.1	244.4	248.0	249.6	249.7
155°	216.6	222.3	227.6	231.6	235.5	238.0	239.4	238.7
157.5°	211.6	216.3	220.8	223.9	226.6	228.7	229.3	229.3
160°	208.3	212.3	216.2	218.7	221.3	223.0	223.4	223.4
162.5°	205.2	208.6	212.0	213.9	216.4	217.6	217.9	217.6
165°	200.6	203.0	205.5	206.9	208.3	209.8	209.8	209.4
167.5°	196.0	197.9	199.7	201.0	201.6	202.4	202.3	201.9
170°	193.8	194.8	196.2	196.9	197.3	198.3	198.0	197.3
172.5°	191.2	192.0	193.1	193.5	193.9	194.4	194.0	193.6
175°	188.4	188.7	189.1	189.5	189.5	189.9	189.5	188.7
177.5°	186.4	186.4	186.7	186.7	186.7	186.7	186.4	185.8
180°	185.5	185.5	185.5	185.5	185.5	185.5	185.5	185.5

(END OF REPORT)