

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: P331710

Luminaire Tested: **SA2XXRDIP-C865D330U835-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331710
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: SA2XXRDIP-C865D330U835-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

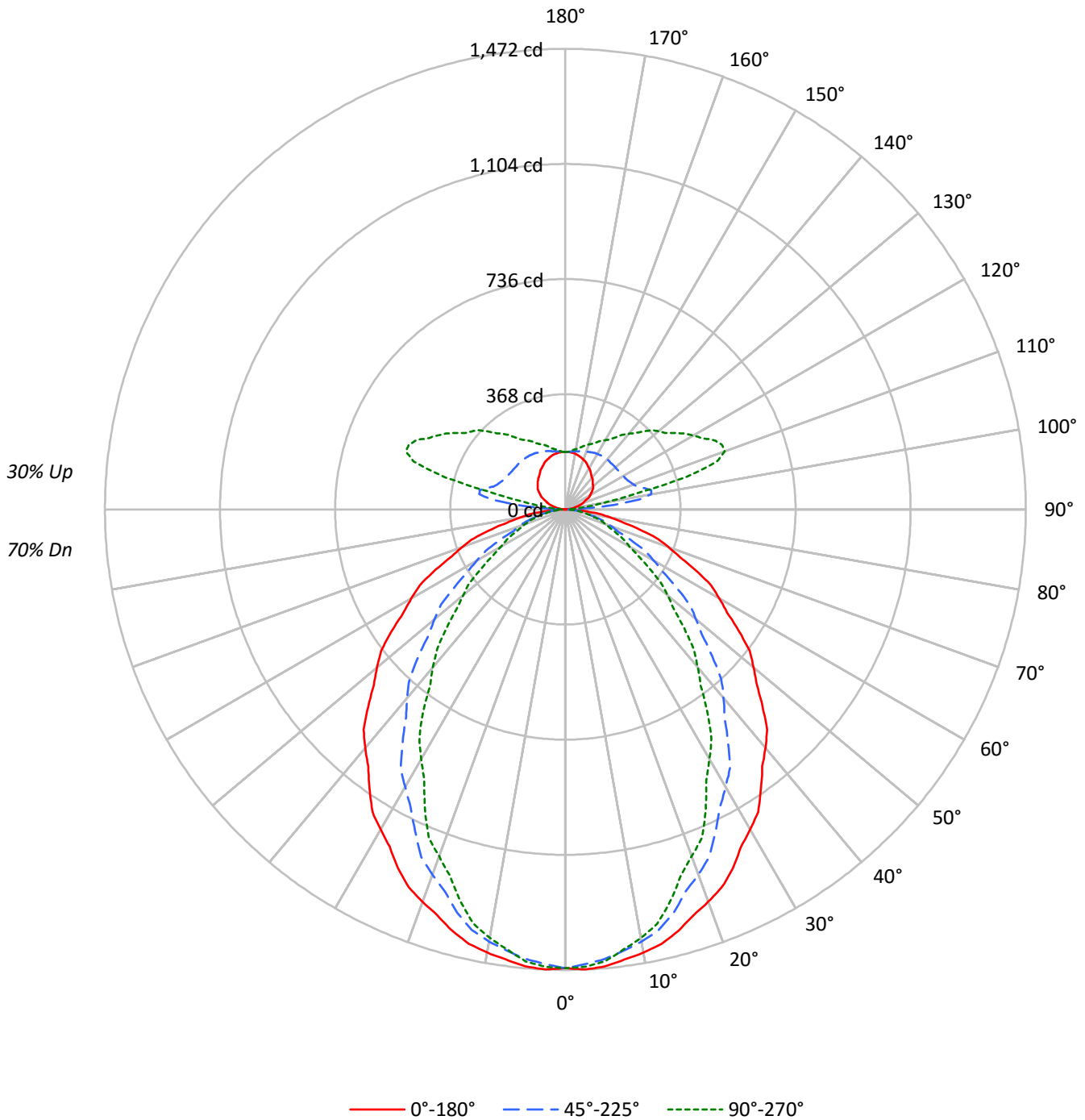
Lumens per Lamp: N/A
Luminaire Lumens: 4295.9 lumens
Efficiency: N/A
Efficacy: 98.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 43.5
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	50	30	10	0	
RCR																						
0	112	112	112	112	106	106	106	106	95	95	95	84	84	84	75	75	75	70				
1	103	99	95	92	97	94	90	87	84	82	79	75	73	72	67	66	64	60				
2	94	87	81	76	89	83	77	73	74	70	67	67	64	61	60	57	55	52				
3	87	77	70	64	82	73	67	62	66	61	57	60	56	52	54	51	48	45				
4	80	69	61	55	75	66	59	53	59	54	49	54	49	45	48	45	42	39				
5	73	62	54	48	69	59	52	46	54	48	43	49	44	40	44	40	37	34				
6	68	56	48	42	64	53	46	41	49	43	38	44	39	35	40	36	33	30				
7	63	51	43	37	60	49	41	36	44	38	34	41	35	32	37	33	30	27				
8	59	46	39	33	56	44	37	32	41	35	30	37	32	29	34	30	27	25				
9	55	43	35	30	52	41	34	29	38	32	28	35	30	26	32	27	24	22				
10	52	39	32	27	49	38	31	27	35	29	25	32	27	24	29	25	22	20				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	23675	23675	23675
5°	23765	23378	23506
10°	23582	22996	22799
15°	23311	22313	21670
20°	22936	21340	20270
25°	22552	20236	18912
30°	22018	19099	17169
35°	21498	17864	15640
40°	20976	16585	13873
45°	20361	15150	12271
50°	19733	13700	10698
55°	19088	12141	9188
60°	18338	10498	7627
65°	17490	8821	6946
70°	16475	7265	6387
75°	15234	6625	5958
80°	13445	5923	5430
85°	10578	4668	4668



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.2	3.2
10°-20°	376.8	8.8
20°-30°	529.2	12.3
30°-40°	577.1	13.4
40°-50°	530.6	12.4
50°-60°	416.7	9.7
60°-70°	271.7	6.3
70°-80°	140.1	3.3
80°-90°	38.0	0.9
90°-100°	73.5	1.7
100°-110°	249.3	5.8
110°-120°	264.8	6.2
120°-130°	218.0	5.1
130°-140°	175.1	4.1
140°-150°	132.3	3.1
150°-160°	93.0	2.2
160°-170°	54.7	1.3
170°-180°	17.8	0.4
0°-30°	1043.3	24.3
0°-40°	1620.3	37.7
0°-60°	2567.6	59.8
0°-90°	3017.4	70.2
90°-120°	587.6	13.7
90°-150°	1113.0	25.9
90°-180°	1279.0	29.8
0°-180°	4295.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1466	1466	1466	1466	1466	
5°	1466	1459	1442	1453	1450	139
15°	1395	1378	1335	1310	1296	393
25°	1266	1221	1136	1083	1062	582
35°	1091	1020	906	826	794	682
45°	892	800	664	573	537	688
55°	678	572	431	355	326	606
65°	458	350	231	188	182	454
75°	244	154	106	97	96	258
85°	57	31	25	25	25	67
90°	0	5	12	12	12	3
95°	12	30	138	52	40	13
105°	43	65	262	468	398	46
115°	76	96	219	452	524	75
125°	106	125	211	366	425	94
135°	124	148	208	308	352	96
145°	142	163	207	257	281	89
155°	162	174	201	227	236	74
165°	176	181	193	204	207	50
175°	183	184	185	187	187	17
180°	184	184	184	184	184	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3
2.5°	1471.6	1470.4	1469.2	1468.0	1466.9	1465.0	1462.4	1459.8	1457.2	1454.6	1457.0
5°	1466.3	1464.8	1463.3	1461.8	1460.4	1457.7	1453.9	1450.1	1446.2	1442.4	1445.0
7.5°	1451.1	1449.3	1447.5	1445.7	1443.8	1440.7	1436.2	1431.7	1427.2	1422.7	1423.5
10°	1438.4	1436.3	1434.3	1432.2	1430.1	1426.2	1420.3	1414.4	1408.5	1402.6	1401.7
12.5°	1422.5	1419.9	1417.4	1414.9	1412.3	1407.3	1399.7	1392.2	1384.6	1377.1	1375.5
15°	1394.6	1391.4	1388.1	1384.9	1381.6	1375.0	1365.0	1355.0	1344.9	1334.9	1329.3
17.5°	1360.4	1355.4	1350.5	1345.5	1340.6	1331.7	1318.8	1305.9	1293.1	1280.2	1273.6
20°	1334.9	1329.0	1323.1	1317.2	1311.3	1301.0	1286.2	1271.5	1256.8	1242.0	1234.6
22.5°	1307.3	1300.7	1294.1	1287.5	1280.9	1269.3	1252.6	1236.0	1219.4	1202.7	1193.2
25°	1265.9	1256.5	1247.0	1237.6	1228.2	1213.7	1194.2	1174.8	1155.3	1135.9	1123.8
27.5°	1216.0	1205.7	1195.5	1185.2	1175.0	1158.9	1136.9	1115.0	1093.0	1071.1	1057.0
30°	1181.0	1169.8	1158.6	1147.4	1136.2	1118.8	1095.2	1071.6	1048.0	1024.4	1009.4
32.5°	1147.0	1133.9	1120.8	1107.7	1094.6	1076.1	1052.0	1027.9	1003.9	979.8	962.7
35°	1090.7	1075.7	1060.7	1045.6	1030.6	1010.1	984.1	958.2	932.3	906.3	887.7
37.5°	1034.5	1018.0	1001.5	984.9	968.4	946.3	918.7	891.0	863.4	835.7	815.2
40°	995.2	977.5	959.8	942.1	924.4	901.3	872.7	844.1	815.5	786.9	765.9
42.5°	954.9	936.2	917.6	899.0	880.3	856.2	826.7	797.1	767.6	738.0	716.4
45°	891.7	871.9	852.2	832.4	812.7	787.3	756.4	725.4	694.4	663.5	642.5
47.5°	830.1	809.2	788.3	767.3	746.4	719.9	688.0	656.0	624.0	592.1	571.3
50°	785.6	764.6	743.7	722.7	701.8	675.1	642.7	610.2	577.8	545.4	525.0
52.5°	742.0	720.1	698.3	676.4	654.5	627.7	596.0	564.2	532.5	500.8	481.1
55°	678.1	655.1	632.1	609.1	586.1	558.6	526.8	494.9	463.1	431.3	413.6
57.5°	612.5	588.9	565.3	541.7	518.2	491.1	460.4	429.8	399.2	368.6	352.4
60°	567.9	544.3	520.8	497.2	473.6	446.6	416.2	385.8	355.5	325.1	310.1
62.5°	524.4	500.8	477.2	453.6	430.0	403.8	374.8	345.9	316.9	287.9	273.6
65°	457.8	433.9	410.0	386.1	362.3	337.0	310.5	284.0	257.4	230.9	220.9
67.5°	393.6	369.9	346.2	322.4	298.7	274.9	251.1	227.2	203.3	179.4	174.8
70°	349.0	326.0	303.0	280.0	257.0	235.3	215.0	194.6	174.3	153.9	151.0
72.5°	306.5	284.5	262.4	240.4	218.3	199.1	182.8	166.4	150.1	133.8	131.3
75°	244.2	223.5	202.9	182.2	161.6	146.3	136.2	126.2	116.2	106.2	104.1
77.5°	182.9	164.7	146.6	128.5	110.4	99.0	94.1	89.3	84.5	79.6	78.4
80°	144.6	129.6	114.6	99.5	84.5	75.5	72.5	69.6	66.6	63.7	62.5
82.5°	109.6	97.9	86.1	74.4	62.7	55.8	53.8	51.8	49.8	47.8	47.1
85°	57.1	50.9	44.7	38.5	32.3	28.8	27.9	27.0	26.1	25.2	25.2
87.5°	17.1	15.4	13.8	12.0	10.3	9.6	9.9	10.4	10.8	10.9	10.6
90°	0.4	1.4	2.8	3.5	4.2	5.3	7.1	9.5	11.7	12.0	11.7
92.5°	4.3	6.2	8.8	10.3	12.7	16.0	24.0	35.3	45.3	45.9	38.8
95°	12.4	13.8	17.3	20.5	26.1	34.6	50.9	81.6	122.6	138.5	121.2
97.5°	20.1	22.0	25.8	30.6	37.1	46.7	67.1	110.0	178.1	236.4	248.0
100°	27.2	28.3	31.4	37.1	44.2	54.1	72.8	115.9	192.2	279.1	330.0
102.5°	33.7	34.5	37.7	43.3	50.7	60.6	77.9	116.2	186.8	280.5	360.5
105°	43.1	44.5	47.0	52.3	60.1	70.0	86.6	118.0	176.3	261.8	355.8
107.5°	53.3	54.4	56.8	61.7	69.4	79.4	95.5	122.9	171.1	241.7	324.8
110°	60.1	61.5	63.6	68.2	75.6	85.9	101.4	126.8	170.0	232.1	305.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	66.3	67.7	70.1	74.4	81.5	92.1	107.1	131.1	170.2	225.9	291.7
115°	76.0	77.7	79.9	84.1	91.2	100.7	115.9	137.4	171.7	219.1	274.9
117.5°	86.0	87.4	89.5	93.3	100.1	110.0	124.0	144.2	174.3	215.7	264.3
120°	92.2	93.6	95.8	98.9	106.0	115.9	129.7	148.8	176.0	213.8	258.6
122.5°	98.2	99.3	101.4	104.9	111.9	122.1	135.0	152.7	177.9	212.6	253.8
125°	106.0	107.1	109.2	113.4	120.5	130.4	143.1	159.0	180.9	210.6	247.0
127.5°	112.2	113.6	116.6	121.3	128.0	138.2	150.6	164.9	183.9	209.4	240.6
130°	115.9	117.3	120.8	125.8	132.9	142.7	155.1	168.5	186.2	208.8	236.4
132.5°	119.3	121.0	124.8	130.0	137.4	147.3	159.1	172.2	188.5	208.5	233.0
135°	124.4	125.8	130.0	135.3	143.5	153.3	164.7	177.0	191.2	208.1	228.2
137.5°	129.2	130.9	135.1	140.8	148.8	158.0	169.2	180.7	193.6	208.0	224.9
140°	132.9	134.3	138.5	144.2	151.9	161.1	171.7	182.7	194.7	207.8	222.9
142.5°	136.5	137.7	141.6	147.3	154.8	163.4	173.7	184.4	195.5	207.8	221.0
145°	142.0	143.5	147.0	152.3	159.4	167.1	176.7	186.6	196.4	207.0	218.4
147.5°	148.0	149.0	152.4	157.3	163.2	170.1	179.1	187.8	196.7	205.8	215.7
150°	151.9	153.0	155.8	160.4	165.7	172.1	180.2	188.3	196.4	204.9	213.4
152.5°	155.9	156.4	159.2	163.2	168.3	174.0	181.3	188.6	195.9	203.5	211.4
155°	161.5	161.8	163.9	167.8	171.7	177.0	183.0	189.0	195.0	201.0	207.8
157.5°	166.1	166.5	168.2	171.6	174.7	179.1	184.2	189.0	193.4	198.5	204.3
160°	169.2	169.6	171.0	173.8	176.7	180.6	184.8	189.0	192.6	196.8	201.7
162.5°	172.4	172.1	173.6	175.8	178.4	181.4	185.1	188.7	191.7	195.4	199.5
165°	176.0	175.6	176.3	178.4	180.2	182.3	185.5	188.0	190.1	192.6	195.7
167.5°	178.9	178.5	179.1	180.5	181.8	183.1	185.4	187.5	188.5	190.1	192.1
170°	180.9	180.2	180.6	181.6	182.3	183.4	185.1	186.9	187.6	188.7	190.1
172.5°	182.0	181.6	181.4	182.5	182.9	183.7	184.9	186.1	186.5	187.0	188.1
175°	183.4	183.0	182.7	183.4	183.4	183.7	184.4	185.1	184.8	185.1	185.5
177.5°	184.0	183.4	183.2	183.7	183.7	183.7	184.0	184.6	184.0	183.7	184.0
180°	183.7	183.7	183.7	183.7	183.7	183.7	183.7	183.7	183.7	183.7	183.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3	1466.3
2.5°	1459.3	1461.7	1464.0	1465.0	1464.5	1464.0	1463.6	1463.1
5°	1447.7	1450.3	1453.0	1453.9	1453.0	1452.1	1451.2	1450.3
7.5°	1424.3	1425.0	1425.8	1425.4	1423.9	1422.4	1420.8	1419.3
10°	1400.8	1399.9	1399.0	1397.7	1395.9	1394.2	1392.4	1390.6
12.5°	1373.9	1372.3	1370.7	1368.5	1365.5	1362.6	1359.6	1356.7
15°	1323.7	1318.1	1312.5	1308.2	1305.3	1302.3	1299.4	1296.4
17.5°	1266.9	1260.2	1253.6	1247.7	1242.6	1237.6	1232.5	1227.4
20°	1227.3	1219.9	1212.5	1205.6	1199.1	1192.6	1186.1	1179.7
22.5°	1183.8	1174.3	1164.8	1157.6	1152.8	1147.9	1143.1	1138.3
25°	1111.7	1099.6	1087.5	1079.2	1074.8	1070.4	1066.0	1061.6
27.5°	1042.9	1028.8	1014.7	1004.2	997.2	990.1	983.1	976.1
30°	994.3	979.3	964.2	952.7	944.8	936.8	928.9	920.9
32.5°	945.5	928.3	911.2	898.8	891.4	883.9	876.4	868.9
35°	869.1	850.6	832.0	819.5	813.0	806.5	800.0	793.5
37.5°	794.8	774.3	753.9	739.9	732.5	725.0	717.6	710.2
40°	745.0	724.1	703.1	688.8	681.2	673.5	665.8	658.2
42.5°	694.8	673.1	651.5	636.9	629.5	622.1	614.6	607.2
45°	621.6	600.7	579.7	565.7	558.6	551.6	544.5	537.4
47.5°	550.4	529.6	508.8	495.2	488.8	482.3	475.9	469.5
50°	504.7	484.3	464.0	450.7	444.5	438.3	432.1	425.9
52.5°	461.5	441.9	422.2	409.6	403.8	398.1	392.4	386.7
55°	395.9	378.2	360.5	348.8	343.2	337.6	332.0	326.4
57.5°	336.2	320.0	303.8	293.3	288.6	283.8	279.1	274.4
60°	295.0	280.0	264.9	255.1	250.3	245.6	240.9	236.2
62.5°	259.3	245.0	230.6	222.0	219.2	216.4	213.5	210.7
65°	210.8	200.8	190.8	185.3	184.4	183.6	182.7	181.8
67.5°	170.2	165.6	161.0	158.2	157.3	156.3	155.4	154.5
70°	148.0	145.1	142.1	140.1	138.9	137.7	136.5	135.3
72.5°	128.8	126.3	123.8	122.3	121.5	120.8	120.1	119.4
75°	102.0	100.0	97.9	96.7	96.4	96.1	95.8	95.5
77.5°	77.3	76.1	74.9	74.1	73.6	73.1	72.7	72.2
80°	61.3	60.2	59.0	58.4	58.4	58.4	58.4	58.4
82.5°	46.4	45.6	44.9	44.6	44.6	44.6	44.6	44.6
85°	25.2	25.2	25.2	25.2	25.2	25.2	25.2	25.2
87.5°	10.3	9.9	9.8	9.8	9.8	9.8	9.8	9.8
90°	11.3	10.6	11.3	11.7	11.7	11.7	11.7	11.7
92.5°	30.8	26.4	23.5	21.3	21.0	19.9	20.1	19.6
95°	92.6	71.0	56.2	48.4	43.8	41.0	39.9	40.3
97.5°	216.0	176.7	138.5	113.0	96.1	87.4	82.3	79.3
100°	322.6	278.8	230.4	187.6	158.3	143.1	132.9	126.5
102.5°	392.4	382.5	347.1	301.8	269.9	244.0	231.2	222.6
105°	429.3	469.2	473.8	462.2	440.2	418.3	403.1	398.2
107.5°	402.7	462.9	499.6	516.7	519.5	518.3	515.2	508.7
110°	379.8	443.1	488.3	517.3	532.5	539.2	542.4	542.0



TEST NUMBER: P331710

CATALOG NUMBER: SA2XXRDIP-C865D330U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	358.9	419.6	467.9	501.2	522.3	533.5	539.5	541.4
115°	333.2	387.6	433.9	470.3	495.4	511.6	520.8	524.0
117.5°	313.8	361.6	403.6	437.7	463.3	480.5	490.1	492.8
120°	304.2	348.0	385.5	417.6	442.4	459.0	469.2	472.8
122.5°	296.6	336.7	372.2	401.2	423.4	439.8	448.9	451.8
125°	285.5	321.9	353.0	379.5	400.0	413.4	422.2	425.1
127.5°	274.5	307.5	336.8	361.2	379.1	391.7	399.3	401.6
130°	267.5	297.9	325.8	349.1	366.4	378.4	385.5	388.3
132.5°	260.7	288.8	314.5	336.4	353.4	365.4	371.9	374.5
135°	251.2	274.5	297.9	317.6	332.8	344.5	350.9	352.3
137.5°	243.7	263.2	281.7	298.9	312.8	322.8	328.4	330.5
140°	238.8	255.8	272.1	287.6	298.9	308.1	313.4	315.5
142.5°	234.9	249.3	263.3	276.3	287.0	295.4	300.1	300.5
145°	229.3	241.0	251.9	262.2	270.6	276.7	280.2	281.2
147.5°	225.0	234.2	242.7	250.2	257.2	262.0	264.4	265.1
150°	221.9	229.7	237.1	243.4	248.7	253.0	255.1	255.5
152.5°	218.8	226.0	232.3	237.8	242.0	245.6	247.2	247.3
155°	214.5	220.1	225.4	229.3	233.2	235.7	237.1	236.4
157.5°	209.5	214.2	218.6	221.7	224.4	226.5	227.1	227.1
160°	206.3	210.2	214.1	216.6	219.1	220.8	221.2	221.2
162.5°	203.2	206.6	209.9	211.8	214.3	215.5	215.8	215.5
165°	198.6	201.0	203.5	204.9	206.3	207.8	207.8	207.4
167.5°	194.1	196.0	197.7	199.0	199.6	200.4	200.3	199.9
170°	191.9	192.9	194.3	195.0	195.4	196.4	196.1	195.4
172.5°	189.3	190.1	191.2	191.6	192.0	192.5	192.1	191.7
175°	186.6	186.9	187.3	187.6	187.6	188.0	187.6	186.9
177.5°	184.6	184.6	184.9	184.9	184.9	184.9	184.6	184.0
180°	183.7	183.7	183.7	183.7	183.7	183.7	183.7	183.7

(END OF REPORT)