

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: P331644

Luminaire Tested: **SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331644
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-C290D1080U835-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

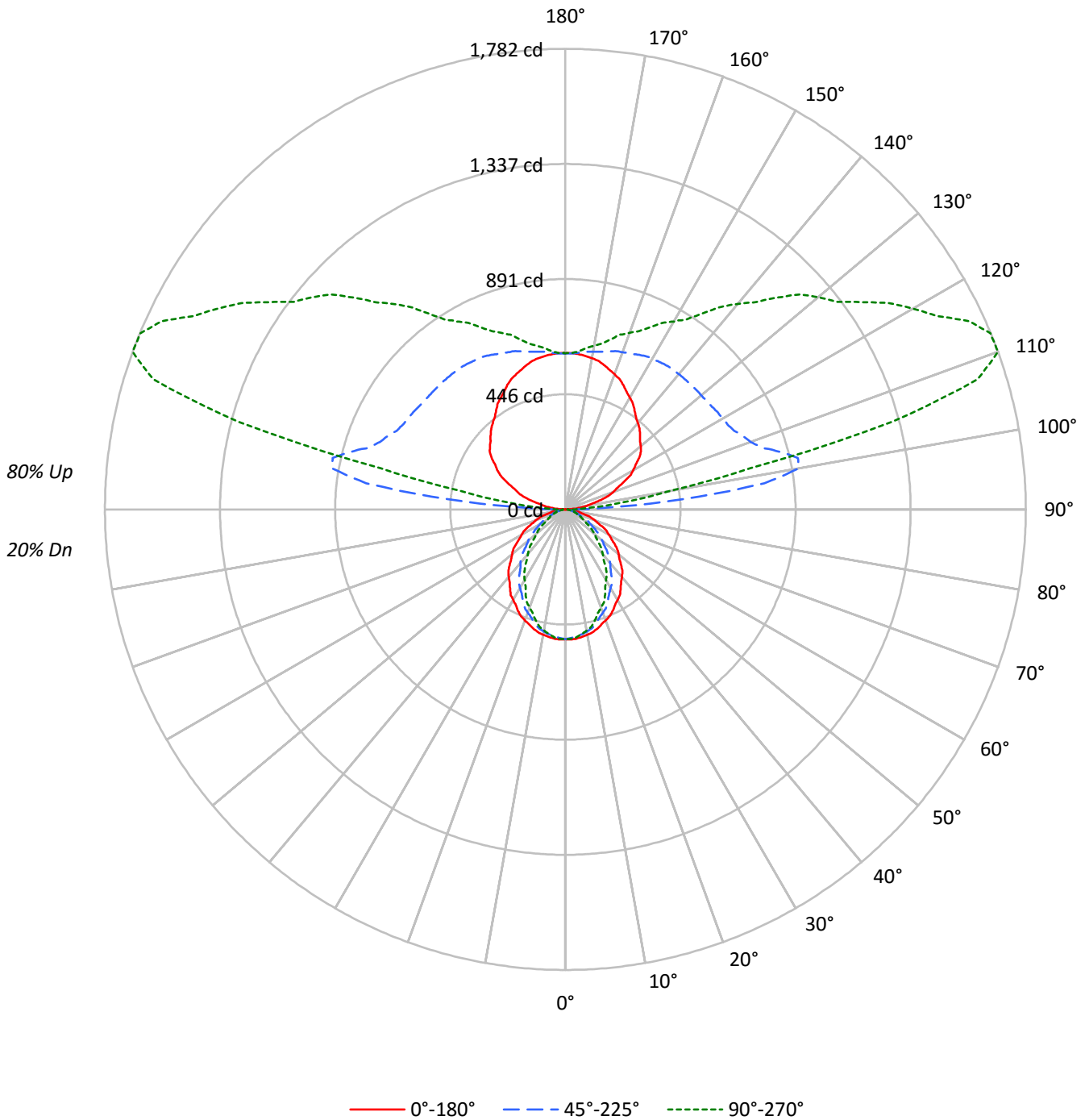
Lumens per Lamp: N/A
Luminaire Lumens: 5241.4 lumens
Efficiency: N/A
Efficacy: 124.2 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

Input Watts (W): 42.2
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



TEST NUMBER: P331644
CATALOG NUMBER: SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4

Luminous Intensity Polar Plot





TEST NUMBER: P331644

CATALOG NUMBER: SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4

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	100	100	100	100	88	88	88	88	67	67	67	47	47	47	28	28	28	20
1	91	87	83	80	80	77	74	71	58	56	55	41	40	39	25	25	24	17
2	83	76	70	66	73	68	63	59	51	48	45	36	34	33	22	21	21	15
3	76	67	60	55	67	60	54	49	45	42	38	32	30	28	20	19	18	13
4	69	59	52	46	61	53	47	42	40	36	33	29	26	24	18	17	15	11
5	64	53	45	40	56	47	41	36	36	32	28	26	23	21	16	15	14	10
6	58	47	40	34	52	42	36	31	32	28	24	23	20	18	15	13	12	9
7	54	42	35	30	48	38	32	27	29	25	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	24	27	22	19	19	16	14	12	11	10	7
9	46	35	28	23	41	31	25	21	24	20	17	18	15	13	11	10	9	6
10	43	32	25	21	38	29	23	19	22	18	15	16	13	11	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8105	8105	8105
5°	8136	8003	8047
10°	8073	7873	7806
15°	7980	7639	7418
20°	7852	7306	6940
25°	7721	6928	6474
30°	7538	6538	5878
35°	7360	6116	5355
40°	7181	5678	4749
45°	6971	5186	4201
50°	6754	4690	3662
55°	6533	4155	3147
60°	6278	3594	2612
65°	5987	3018	2376
70°	5641	2488	2186
75°	5215	2264	2040
80°	4603	2027	1860
85°	3612	1593	1593



TEST NUMBER: P331644

CATALOG NUMBER: SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.0	0.9
10°-20°	129.0	2.5
20°-30°	181.2	3.5
30°-40°	197.6	3.8
40°-50°	181.6	3.5
50°-60°	142.7	2.7
60°-70°	93.0	1.8
70°-80°	48.0	0.9
80°-90°	17.9	0.3
90°-100°	241.5	4.6
100°-110°	819.6	15.6
110°-120°	870.7	16.6
120°-130°	716.8	13.7
130°-140°	575.6	11.0
140°-150°	435.0	8.3
150°-160°	305.7	5.8
160°-170°	180.0	3.4
170°-180°	58.6	1.1
0°-30°	357.2	6.8
0°-40°	554.7	10.6
0°-60°	879.0	16.8
0°-90°	1037.9	19.8
90°-120°	1931.9	36.9
90°-150°	3659.3	69.8
90°-180°	4204.0	80.2
0°-180°	5241.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	502	502	502	502	502	
5°	502	500	494	498	496	48
15°	477	472	457	449	444	134
25°	433	418	389	371	363	199
35°	373	349	310	283	272	234
45°	305	274	227	196	184	236
55°	232	196	148	121	112	207
65°	157	120	79	64	62	155
75°	84	53	36	33	33	88
85°	20	10	9	9	9	23
90°	1	16	40	38	38	3
95°	41	100	455	172	132	43
105°	142	214	861	1539	1309	151
115°	250	315	720	1486	1723	248
125°	348	412	692	1204	1398	309
135°	409	488	684	1012	1158	316
145°	467	537	681	845	925	293
155°	531	573	661	748	777	244
165°	578	596	633	671	682	163
175°	603	604	609	616	614	57
180°	604	604	604	604	604	



TEST NUMBER: P331644

CATALOG NUMBER: SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0
2.5°	503.8	503.4	503.0	502.6	502.2	501.5	500.6	499.8	498.9	498.0	498.8
5°	502.0	501.5	501.0	500.5	500.0	499.0	497.7	496.4	495.1	493.8	494.7
7.5°	496.8	496.2	495.5	494.9	494.3	493.2	491.7	490.1	488.6	487.1	487.3
10°	492.4	491.7	491.0	490.3	489.6	488.2	486.2	484.2	482.2	480.2	479.9
12.5°	487.0	486.1	485.2	484.4	483.5	481.8	479.2	476.6	474.0	471.4	470.9
15°	477.4	476.3	475.2	474.1	473.0	470.7	467.3	463.9	460.4	457.0	455.1
17.5°	465.7	464.0	462.3	460.6	458.9	455.9	451.5	447.1	442.7	438.3	436.0
20°	457.0	455.0	453.0	450.9	448.9	445.4	440.3	435.3	430.3	425.2	422.7
22.5°	447.6	445.3	443.0	440.8	438.5	434.5	428.8	423.1	417.5	411.8	408.5
25°	433.4	430.1	426.9	423.7	420.5	415.5	408.8	402.2	395.5	388.9	384.7
27.5°	416.3	412.8	409.3	405.8	402.2	396.7	389.2	381.7	374.2	366.7	361.9
30°	404.3	400.5	396.6	392.8	389.0	383.0	374.9	366.9	358.8	350.7	345.6
32.5°	392.7	388.2	383.7	379.2	374.7	368.4	360.2	351.9	343.7	335.4	329.6
35°	373.4	368.3	363.1	358.0	352.8	345.8	336.9	328.0	319.2	310.3	303.9
37.5°	354.2	348.5	342.8	337.2	331.5	324.0	314.5	305.0	295.6	286.1	279.1
40°	340.7	334.7	328.6	322.5	316.5	308.6	298.8	289.0	279.2	269.4	262.2
42.5°	326.9	320.5	314.1	307.8	301.4	293.1	283.0	272.9	262.8	252.7	245.3
45°	305.3	298.5	291.7	285.0	278.2	269.5	258.9	248.3	237.7	227.1	220.0
47.5°	284.2	277.0	269.9	262.7	255.5	246.5	235.5	224.6	213.6	202.7	195.6
50°	268.9	261.8	254.6	247.4	240.3	231.1	220.0	208.9	197.8	186.7	179.7
52.5°	254.0	246.5	239.1	231.6	224.1	214.9	204.0	193.2	182.3	171.4	164.7
55°	232.1	224.3	216.4	208.5	200.6	191.3	180.3	169.4	158.5	147.6	141.6
57.5°	209.7	201.6	193.5	185.5	177.4	168.1	157.6	147.2	136.7	126.2	120.6
60°	194.4	186.4	178.3	170.2	162.1	152.9	142.5	132.1	121.7	111.3	106.1
62.5°	179.5	171.5	163.4	155.3	147.2	138.2	128.3	118.4	108.5	98.6	93.7
65°	156.7	148.5	140.4	132.2	124.0	115.4	106.3	97.2	88.1	79.0	75.6
67.5°	134.7	126.6	118.5	110.4	102.3	94.1	85.9	77.8	69.6	61.4	59.8
70°	119.5	111.6	103.7	95.9	88.0	80.6	73.6	66.6	59.7	52.7	51.7
72.5°	104.9	97.4	89.8	82.3	74.7	68.2	62.6	57.0	51.4	45.8	44.9
75°	83.6	76.5	69.5	62.4	55.3	50.1	46.6	43.2	39.8	36.3	35.6
77.5°	62.6	56.4	50.2	44.0	37.8	33.9	32.2	30.6	28.9	27.3	26.9
80°	49.5	44.4	39.2	34.1	28.9	25.8	24.8	23.8	22.8	21.8	21.4
82.5°	37.5	33.5	29.5	25.5	21.5	19.1	18.4	17.7	17.0	16.4	16.1
85°	19.5	17.4	15.3	13.2	11.1	9.8	9.5	9.2	8.9	8.6	8.6
87.5°	6.0	6.1	6.4	6.2	6.0	6.4	7.6	9.2	10.6	10.8	10.5
90°	1.2	4.6	9.3	11.6	13.9	17.4	23.2	31.4	38.3	39.5	38.3
92.5°	14.2	20.4	28.8	33.9	41.8	52.7	79.0	115.9	148.9	151.0	127.6
95°	40.7	45.3	56.9	67.4	86.0	113.8	167.3	268.3	403.1	455.4	398.5
97.5°	66.2	72.5	84.8	100.6	122.0	153.6	220.7	361.5	585.5	777.4	815.5
100°	89.4	92.9	103.4	122.0	145.2	177.7	239.3	381.0	631.9	917.7	1085.0
102.5°	110.8	113.4	123.8	142.4	166.6	199.1	256.0	382.0	614.3	922.4	1185.4
105°	141.7	146.4	154.5	171.9	197.5	230.0	284.6	388.0	579.7	860.8	1169.8
107.5°	175.2	178.9	186.8	202.8	228.2	260.9	313.9	404.0	562.5	794.8	1067.8
110°	197.5	202.1	209.1	224.2	248.6	282.3	333.4	417.0	558.8	763.2	1003.7



TEST NUMBER: P331644

CATALOG NUMBER: SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	217.9	222.6	230.5	244.6	268.1	302.7	352.0	431.0	559.7	742.8	959.1
115°	249.8	255.6	262.5	276.5	299.7	331.1	381.0	451.9	564.6	720.2	903.8
117.5°	282.8	287.4	294.4	306.7	329.0	361.5	407.7	474.2	572.9	709.3	868.9
120°	303.2	307.8	314.8	325.3	348.5	381.0	426.3	489.1	578.5	702.8	850.3
122.5°	322.7	326.4	333.4	344.8	368.0	401.5	444.0	502.1	585.0	699.1	834.5
125°	348.5	352.0	359.0	372.9	396.1	428.7	470.5	522.8	594.8	692.4	812.0
127.5°	368.9	373.6	383.4	398.7	421.0	454.4	495.1	542.0	604.8	688.4	791.1
130°	381.0	385.7	397.3	413.6	436.8	469.3	510.0	554.1	612.2	686.5	777.2
132.5°	392.2	397.8	410.3	427.5	451.7	484.2	523.0	566.2	619.6	685.6	766.0
135°	408.9	413.6	427.5	444.9	471.6	504.2	541.3	582.0	628.5	684.2	750.4
137.5°	424.7	430.3	444.2	462.8	489.3	519.5	556.2	594.1	636.4	684.0	739.5
140°	436.8	441.4	455.4	474.0	499.5	529.7	564.6	600.6	640.1	683.1	733.0
142.5°	448.9	452.6	465.6	484.2	508.8	537.2	571.1	606.2	642.9	683.1	726.5
145°	467.0	471.6	483.3	500.7	523.9	549.5	580.8	613.4	645.9	680.7	717.9
147.5°	486.5	490.0	501.1	517.2	536.5	559.2	588.7	617.3	646.8	676.6	709.1
150°	499.5	503.0	512.3	527.4	544.8	565.7	592.5	619.2	645.9	673.8	701.6
152.5°	512.5	514.2	523.4	536.7	553.2	572.2	596.2	620.1	644.0	669.1	695.1
155°	530.9	532.0	539.0	551.8	564.6	582.0	601.7	621.5	641.2	661.0	683.1
157.5°	546.2	547.4	553.0	564.1	574.3	589.0	605.7	621.5	635.9	652.6	671.7
160°	556.4	557.6	562.2	571.5	580.8	593.6	607.6	621.5	633.1	647.1	663.3
162.5°	566.7	566.0	570.6	578.0	586.4	596.4	608.5	620.6	630.3	642.4	655.9
165°	578.5	577.4	579.7	586.6	592.5	599.4	609.9	618.0	625.0	633.1	643.6
167.5°	588.3	586.9	589.0	593.4	597.6	602.0	609.6	616.4	619.6	625.0	631.5
170°	594.8	592.5	593.6	597.1	599.4	602.9	608.7	614.5	616.8	620.3	625.0
172.5°	598.5	597.1	596.4	599.9	601.3	603.8	607.8	611.7	613.1	614.8	618.5
175°	602.9	601.7	600.6	602.9	602.9	604.1	606.4	608.7	607.6	608.7	609.9
177.5°	605.0	603.1	602.2	604.1	604.1	604.1	605.0	606.9	605.0	604.1	605.0
180°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1



TEST NUMBER: P331644

CATALOG NUMBER: SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	502.0	502.0	502.0	502.0	502.0	502.0	502.0	502.0
2.5°	499.6	500.4	501.2	501.5	501.4	501.2	501.0	500.9
5°	495.6	496.5	497.4	497.7	497.4	497.1	496.8	496.5
7.5°	487.6	487.9	488.1	488.0	487.5	486.9	486.4	485.9
10°	479.6	479.3	479.0	478.5	477.9	477.3	476.7	476.1
12.5°	470.4	469.8	469.3	468.5	467.5	466.5	465.5	464.5
15°	453.2	451.2	449.3	447.9	446.9	445.8	444.8	443.8
17.5°	433.7	431.4	429.2	427.2	425.4	423.7	421.9	420.2
20°	420.2	417.6	415.1	412.7	410.5	408.3	406.1	403.9
22.5°	405.3	402.0	398.8	396.3	394.6	393.0	391.3	389.7
25°	380.6	376.4	372.3	369.5	368.0	366.4	364.9	363.4
27.5°	357.0	352.2	347.4	343.8	341.4	339.0	336.6	334.2
30°	340.4	335.3	330.1	326.2	323.4	320.7	318.0	315.3
32.5°	323.7	317.8	311.9	307.7	305.2	302.6	300.0	297.5
35°	297.6	291.2	284.8	280.5	278.3	276.1	273.9	271.7
37.5°	272.1	265.1	258.1	253.3	250.8	248.2	245.7	243.1
40°	255.1	247.9	240.7	235.8	233.2	230.6	227.9	225.3
42.5°	237.8	230.4	223.0	218.1	215.5	213.0	210.4	207.9
45°	212.8	205.6	198.5	193.7	191.3	188.8	186.4	184.0
47.5°	188.4	181.3	174.2	169.5	167.3	165.1	162.9	160.7
50°	172.8	165.8	158.8	154.3	152.2	150.1	147.9	145.8
52.5°	158.0	151.3	144.6	140.2	138.3	136.3	134.3	132.4
55°	135.5	129.5	123.4	119.4	117.5	115.6	113.7	111.8
57.5°	115.1	109.5	104.0	100.4	98.8	97.2	95.6	93.9
60°	101.0	95.9	90.7	87.3	85.7	84.1	82.5	80.9
62.5°	88.8	83.9	79.0	76.0	75.0	74.1	73.1	72.1
65°	72.2	68.7	65.3	63.4	63.1	62.8	62.5	62.2
67.5°	58.3	56.7	55.1	54.2	53.8	53.5	53.2	52.9
70°	50.7	49.7	48.7	48.0	47.5	47.1	46.7	46.3
72.5°	44.1	43.2	42.4	41.9	41.6	41.4	41.1	40.9
75°	34.9	34.2	33.5	33.1	33.0	32.9	32.8	32.7
77.5°	26.4	26.0	25.6	25.4	25.2	25.0	24.9	24.7
80°	21.0	20.6	20.2	20.0	20.0	20.0	20.0	20.0
82.5°	15.9	15.6	15.4	15.3	15.3	15.3	15.3	15.3
85°	8.6	8.6	8.6	8.6	8.6	8.6	8.6	8.6
87.5°	10.2	9.6	10.0	10.2	10.2	10.2	10.2	10.2
90°	37.2	34.9	37.2	38.3	38.3	38.3	38.3	38.3
92.5°	101.3	86.9	77.1	69.9	69.0	65.3	66.2	64.4
95°	304.4	233.5	184.7	159.1	144.0	134.8	131.3	132.4
97.5°	710.2	581.1	455.4	371.5	316.0	287.4	270.4	260.7
100°	1060.6	916.6	757.4	616.8	520.4	470.5	436.8	415.9
102.5°	1290.2	1257.6	1141.2	992.3	887.5	802.3	760.2	731.9
105°	1411.4	1542.7	1557.8	1519.5	1447.4	1375.4	1325.5	1309.2
107.5°	1324.1	1521.8	1642.6	1698.8	1707.9	1703.9	1693.9	1672.3
110°	1248.8	1456.7	1605.4	1700.7	1750.6	1772.7	1783.2	1782.0



TEST NUMBER: P331644

CATALOG NUMBER: SA2XXRDIP-C290D1080U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1180.0	1379.6	1538.5	1647.7	1717.2	1754.1	1773.9	1780.1
115°	1095.5	1274.4	1426.5	1546.2	1628.7	1682.1	1712.3	1722.8
117.5°	1031.8	1188.9	1326.9	1439.1	1523.2	1579.6	1611.5	1620.3
120°	1000.2	1144.2	1267.4	1373.1	1454.4	1509.0	1542.7	1554.3
122.5°	975.1	1107.1	1223.7	1319.2	1392.1	1445.8	1475.8	1485.5
125°	938.6	1058.3	1160.5	1247.6	1315.0	1359.2	1388.2	1397.5
127.5°	902.6	1010.9	1107.3	1187.7	1246.5	1287.8	1312.9	1320.4
130°	879.4	979.3	1071.1	1147.7	1204.7	1244.2	1267.4	1276.7
132.5°	857.1	949.6	1033.9	1105.9	1161.9	1201.4	1222.8	1231.1
135°	825.9	902.6	979.3	1044.3	1094.3	1132.6	1153.5	1158.2
137.5°	801.1	865.2	926.1	982.8	1028.3	1061.3	1079.7	1086.6
140°	785.3	841.1	894.5	945.6	982.8	1013.0	1030.4	1037.4
142.5°	772.3	819.7	865.7	908.4	943.7	971.2	986.7	988.1
145°	753.9	792.3	828.3	862.0	889.8	909.6	921.2	924.7
147.5°	739.8	770.0	798.1	822.7	845.7	861.5	869.4	871.5
150°	729.5	755.1	779.5	800.4	817.8	831.8	838.7	839.9
152.5°	719.3	743.0	763.7	781.8	795.5	807.6	812.7	812.9
155°	705.1	723.7	741.1	753.9	766.7	774.8	779.5	777.2
157.5°	688.6	704.2	718.8	728.8	737.9	744.6	746.7	746.7
160°	678.4	691.2	704.0	712.1	720.2	726.0	727.2	727.2
162.5°	668.2	679.1	690.0	696.3	704.4	708.4	709.5	708.6
165°	652.9	661.0	669.1	673.8	678.4	683.1	683.1	681.9
167.5°	638.2	644.5	650.1	654.3	656.3	658.9	658.7	657.3
170°	630.8	634.3	638.9	641.2	642.4	645.9	644.7	642.4
172.5°	622.4	625.0	628.7	630.1	631.3	632.9	631.7	630.3
175°	613.4	614.5	615.7	616.8	616.8	618.0	616.8	614.5
177.5°	606.9	606.9	607.8	607.8	607.8	607.8	606.9	605.0
180°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1

(END OF REPORT)