

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: P332996-930

Luminaire Tested: **SA4XXRDIP-C1195D590U930-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332996-930
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C1195D590U930-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 590 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

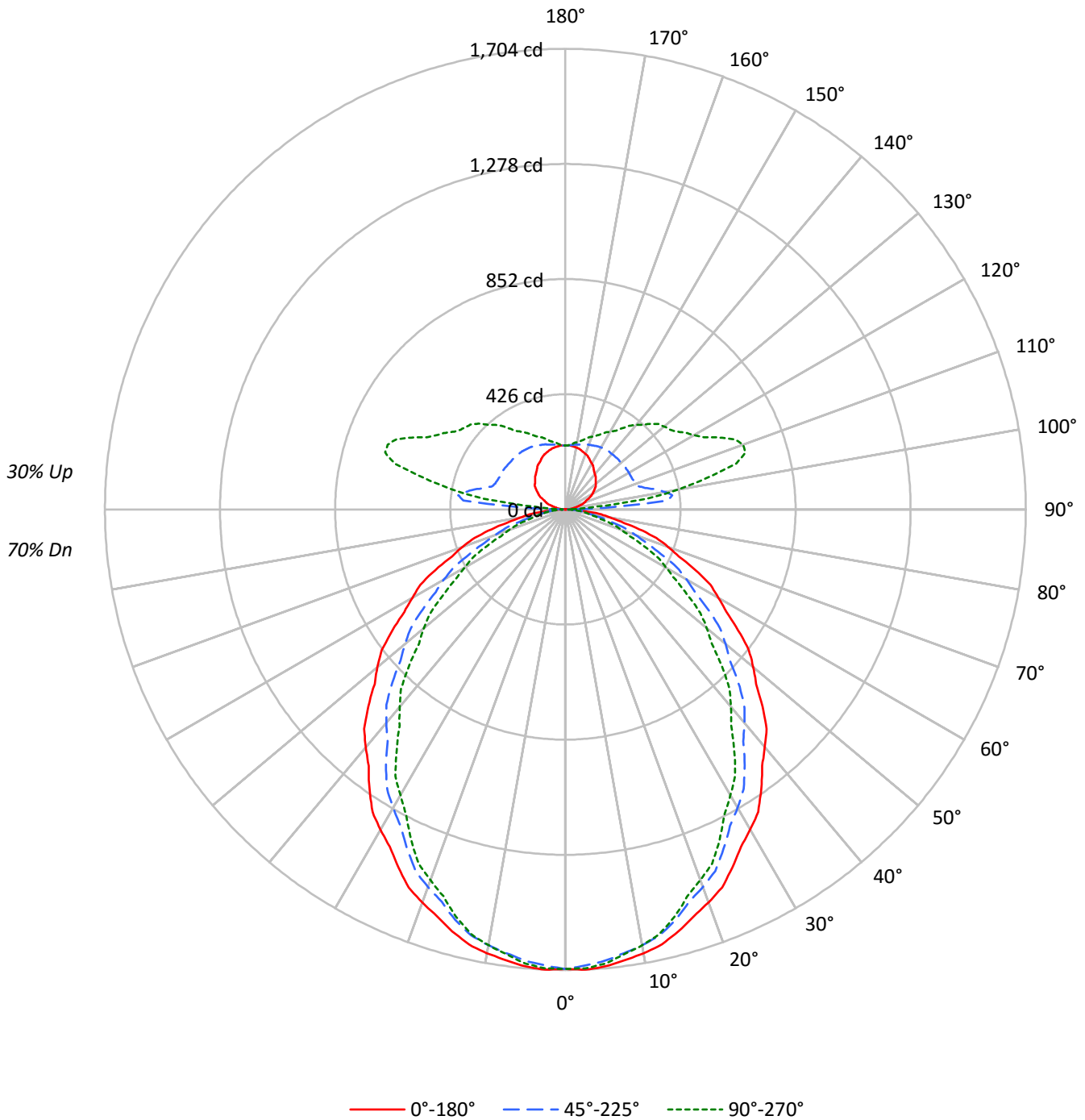
Lumens per Lamp: N/A
Luminaire Lumens: 5651.3 lumens
Efficiency: N/A
Efficacy: 102.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 55.1
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	94	94	94	84	84	84	74	74	74	74	74	74	70	
1	103	98	94	91	97	93	90	87	83	81	78	74	72	71	66	65	63	63	63	63	59	
2	94	86	80	75	88	82	76	72	73	69	65	66	62	60	59	56	54	54	54	54	50	
3	86	76	69	63	81	72	66	60	65	60	56	58	54	51	52	49	46	46	46	46	43	
4	79	68	60	54	74	64	57	52	58	52	48	52	48	44	47	43	40	40	40	40	37	
5	72	61	52	46	68	58	50	45	52	46	41	47	42	38	42	38	35	35	35	35	32	
6	67	55	46	40	63	52	45	39	47	41	36	43	38	34	39	34	31	31	31	31	29	
7	62	50	41	36	59	47	40	35	43	37	32	39	34	30	35	31	28	28	28	28	26	
8	58	45	37	32	55	43	36	31	39	33	29	36	31	27	33	28	25	25	25	25	23	
9	54	41	34	29	51	40	33	28	36	30	26	33	28	24	30	26	23	23	23	23	21	
10	50	38	31	26	48	37	30	25	34	28	24	31	26	22	28	24	21	21	21	21	19	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	13726	13726	13726
5°	13757	13588	13674
10°	13671	13426	13426
15°	13514	13143	13046
20°	13298	12773	12538
25°	13023	12339	12026
30°	12755	11882	11384
35°	12458	11406	10738
40°	12101	10866	10043
45°	11772	10330	9334
50°	11396	9712	8584
55°	10994	9070	7769
60°	10551	8365	6936
65°	10147	7484	6117
70°	9557	6515	5193
75°	8812	5402	4223
80°	7685	4114	3873
85°	6512	3742	3492



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.7	2.8
10°-20°	445.4	7.9
20°-30°	643.1	11.4
30°-40°	729.0	12.9
40°-50°	704.0	12.5
50°-60°	585.4	10.4
60°-70°	404.2	7.2
70°-80°	204.9	3.6
80°-90°	53.9	1.0
90°-100°	171.0	3.0
100°-110°	355.9	6.3
110°-120°	318.7	5.6
120°-130°	268.1	4.7
130°-140°	223.6	4.0
140°-150°	170.8	3.0
150°-160°	120.0	2.1
160°-170°	70.6	1.2
170°-180°	23.0	0.4
0°-30°	1248.2	22.1
0°-40°	1977.3	35.0
0°-60°	3266.6	57.8
0°-90°	3929.6	69.5
90°-120°	845.6	15.0
90°-150°	1508.1	26.7
90°-180°	1722.0	30.5
0°-180°	5651.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1700	1700	1700	1700	1700	
5°	1698	1692	1677	1689	1687	161
15°	1617	1604	1573	1570	1561	455
25°	1462	1437	1385	1364	1350	673
35°	1264	1221	1157	1114	1090	790
45°	1031	981	905	843	818	795
55°	781	727	644	579	552	698
65°	531	474	392	338	320	524
75°	282	234	173	144	135	298
85°	70	46	40	38	38	79
90°	0	4	8	9	10	4
95°	15	48	379	188	114	17
105°	54	79	305	657	654	58
115°	96	120	272	523	628	95
125°	134	159	271	445	501	119
135°	159	189	268	395	448	123
145°	183	209	267	333	366	115
155°	208	224	260	294	306	96
165°	226	234	249	263	267	64
175°	236	237	239	242	241	22
180°	237	237	237	237	237	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1704.4	1703.5	1702.6	1701.6	1700.7	1699.0	1696.5	1693.9	1691.3	1688.8	1691.3
5°	1697.6	1696.5	1695.3	1694.2	1693.1	1690.7	1687.3	1683.8	1680.3	1676.8	1679.7
7.5°	1682.3	1681.1	1679.8	1678.6	1677.4	1674.5	1670.1	1665.6	1661.0	1656.5	1658.4
10°	1667.7	1666.2	1664.8	1663.4	1661.9	1658.6	1653.4	1648.2	1643.0	1637.8	1638.9
12.5°	1648.9	1647.3	1645.6	1643.9	1642.3	1638.3	1632.2	1626.1	1619.9	1613.8	1614.5
15°	1616.9	1614.3	1611.8	1609.2	1606.5	1601.6	1594.4	1587.1	1579.9	1572.6	1572.1
17.5°	1578.2	1574.3	1570.6	1566.8	1563.1	1556.9	1548.2	1539.5	1530.8	1522.2	1520.5
20°	1547.9	1544.2	1540.4	1536.7	1532.9	1526.1	1516.3	1506.4	1496.6	1486.8	1484.4
22.5°	1514.6	1510.4	1506.2	1501.9	1497.7	1490.4	1479.8	1469.3	1458.7	1448.2	1444.7
25°	1462.0	1456.8	1451.6	1446.4	1441.2	1432.6	1420.8	1408.9	1397.1	1385.2	1380.3
27.5°	1406.8	1400.3	1393.8	1387.2	1380.6	1371.1	1358.4	1345.7	1333.0	1320.4	1314.3
30°	1368.3	1361.1	1353.8	1346.5	1339.4	1328.9	1315.3	1301.7	1288.2	1274.6	1267.3
32.5°	1327.6	1319.5	1311.3	1303.2	1295.0	1283.9	1269.8	1255.8	1241.7	1227.7	1219.3
35°	1264.1	1254.8	1245.6	1236.3	1227.1	1215.2	1200.8	1186.3	1171.8	1157.4	1147.5
37.5°	1196.2	1186.6	1177.0	1167.5	1158.0	1145.2	1129.2	1113.1	1097.1	1081.1	1070.1
40°	1148.3	1138.7	1129.2	1119.7	1110.0	1097.1	1080.6	1064.0	1047.6	1031.1	1019.0
42.5°	1102.4	1092.4	1082.4	1072.4	1062.4	1048.8	1031.6	1014.4	997.3	980.1	967.7
45°	1031.1	1020.3	1009.7	999.0	988.3	974.2	956.9	939.6	922.2	904.8	890.6
47.5°	957.4	946.3	935.3	924.2	913.2	898.6	880.6	862.5	844.5	826.5	811.7
50°	907.4	896.1	884.8	873.6	862.3	847.3	828.8	810.3	791.8	773.3	758.9
52.5°	856.4	845.3	834.3	823.2	812.2	797.1	778.2	759.2	740.2	721.2	706.5
55°	781.1	769.6	758.0	746.4	734.8	719.7	700.8	682.1	663.2	644.4	629.4
57.5°	706.6	694.6	682.6	670.6	658.5	643.3	624.8	606.2	587.7	569.2	553.9
60°	653.5	642.0	630.4	618.8	607.2	592.2	573.7	555.2	536.6	518.1	503.1
62.5°	605.6	593.6	581.6	569.6	557.5	542.0	523.0	504.0	485.0	466.1	452.2
65°	531.2	518.7	506.3	493.8	481.4	465.9	447.4	428.9	410.4	391.8	379.4
67.5°	453.8	441.9	430.0	418.1	406.2	391.6	374.4	357.3	340.1	322.9	312.2
70°	404.9	392.7	380.6	368.4	356.3	341.9	325.5	309.0	292.5	276.0	266.4
72.5°	352.8	341.9	330.8	319.8	308.8	295.5	280.0	264.4	248.8	233.3	225.1
75°	282.5	271.8	261.1	250.4	239.7	227.6	213.9	200.3	186.8	173.2	166.5
77.5°	211.2	202.1	193.0	183.9	174.8	164.8	153.8	142.8	131.8	120.8	116.9
80°	165.3	156.9	148.5	140.1	131.8	123.3	114.5	105.9	97.2	88.5	87.6
82.5°	125.8	118.1	110.4	102.6	95.0	88.6	83.6	78.7	73.7	68.7	68.1
85°	70.3	64.5	58.7	52.9	47.1	43.9	43.0	42.1	41.3	40.4	39.8
87.5°	24.1	22.4	20.8	19.1	17.3	16.2	16.6	16.3	16.3	16.2	15.9
90°	0.5	1.4	2.8	3.3	3.8	3.8	6.5	6.5	7.4	8.4	7.9
92.5°	5.3	7.7	12.1	17.8	24.5	34.2	57.9	93.9	129.1	147.5	122.9
95°	15.3	16.7	21.4	27.5	38.6	58.1	98.6	174.9	286.0	379.0	389.7
97.5°	27.6	27.6	31.6	37.1	46.7	63.1	94.2	157.2	267.7	399.3	489.7
100°	35.4	35.4	38.6	44.2	53.0	67.9	95.3	147.9	242.8	373.9	493.0
102.5°	42.8	43.5	46.4	51.6	60.1	74.2	99.1	145.3	226.0	342.3	465.0
105°	54.4	55.8	58.1	63.8	72.1	85.6	107.9	146.5	211.7	305.1	414.4
107.5°	67.3	68.2	70.5	76.5	84.5	97.8	118.2	153.4	209.0	284.3	373.5
110°	75.8	76.7	79.1	84.6	93.0	105.6	126.0	158.6	209.8	277.2	353.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	84.0	85.0	87.6	92.9	101.2	113.7	133.5	164.2	212.0	273.9	341.4
115°	95.8	97.2	100.4	105.1	114.0	126.5	145.1	173.0	216.3	272.1	330.7
117.5°	108.1	109.4	112.3	117.4	125.6	138.7	156.4	182.1	220.8	271.6	325.9
120°	116.3	117.2	120.4	125.6	133.5	146.5	164.2	188.3	224.2	271.6	323.3
122.5°	123.7	124.7	127.9	132.6	141.3	153.9	171.6	194.3	227.6	271.3	320.2
125°	133.5	135.3	138.1	143.2	152.1	165.1	181.8	203.3	232.5	270.7	315.4
127.5°	142.1	143.7	147.0	152.8	162.0	175.1	191.4	211.0	236.5	269.6	308.8
130°	147.0	148.8	152.5	159.6	168.4	181.8	197.6	215.8	239.5	269.3	304.6
132.5°	151.8	153.3	158.2	164.8	174.3	187.0	202.8	220.6	242.1	268.9	300.9
135°	158.6	160.5	165.1	173.0	182.8	194.9	210.2	227.0	246.1	268.3	295.3
137.5°	165.4	167.1	172.3	179.8	190.0	201.5	215.8	231.5	248.3	268.2	290.5
140°	170.2	171.6	176.8	184.7	194.4	205.5	219.6	234.4	250.2	267.9	287.9
142.5°	175.5	176.8	181.6	189.1	198.5	209.3	222.9	236.6	251.7	267.9	285.7
145°	182.8	184.2	188.8	195.3	204.2	214.4	226.5	239.0	252.6	266.9	281.8
147.5°	191.0	191.5	195.6	202.3	209.7	218.9	230.2	241.2	253.0	265.3	278.4
150°	196.2	196.7	200.5	206.0	213.0	221.8	232.1	242.3	253.0	264.2	275.8
152.5°	201.1	201.2	204.9	210.1	216.4	224.5	233.6	243.0	252.3	262.3	272.8
155°	207.9	208.4	211.2	215.8	220.9	227.9	235.8	243.7	251.1	259.5	268.3
157.5°	214.5	214.5	217.1	220.7	225.2	230.6	237.4	243.7	250.0	256.7	263.8
160°	218.6	218.6	220.5	223.7	227.4	232.5	238.1	243.7	248.8	254.4	260.5
162.5°	222.3	221.9	223.4	226.3	229.7	233.7	238.9	243.7	247.7	252.2	257.5
165°	226.5	226.5	227.4	229.8	232.1	234.9	239.0	242.8	245.6	248.8	252.6
167.5°	230.6	230.2	230.6	232.4	233.7	235.9	239.0	241.7	243.4	245.5	248.1
170°	232.5	232.1	232.5	233.9	234.9	236.3	238.6	240.9	241.8	243.2	245.1
172.5°	234.4	233.9	234.0	235.1	235.6	236.6	238.2	240.2	240.4	241.0	242.5
175°	236.3	235.8	235.8	236.3	236.8	236.8	237.7	239.0	238.6	238.6	239.5
177.5°	237.1	236.8	236.4	236.8	236.8	236.8	237.1	237.8	237.1	237.1	237.5
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2	1700.2
2.5°	1693.9	1696.5	1699.0	1700.1	1699.9	1699.7	1699.4	1699.2
5°	1682.6	1685.5	1688.4	1689.5	1689.0	1688.4	1687.8	1687.3
7.5°	1660.2	1662.1	1663.9	1664.4	1663.5	1662.6	1661.6	1660.7
10°	1640.1	1641.2	1642.4	1642.4	1641.2	1640.1	1638.9	1637.8
12.5°	1615.2	1615.9	1616.6	1616.1	1614.5	1612.9	1611.3	1609.6
15°	1571.5	1570.9	1570.3	1569.0	1567.0	1565.0	1563.0	1561.0
17.5°	1518.9	1517.3	1515.6	1513.4	1510.3	1507.2	1504.1	1501.0
20°	1482.1	1479.8	1477.5	1474.5	1470.7	1467.0	1463.1	1459.4
22.5°	1441.3	1437.8	1434.4	1431.1	1428.0	1424.9	1421.9	1418.8
25°	1375.3	1370.4	1365.5	1361.6	1358.7	1355.8	1352.9	1350.1
27.5°	1308.2	1302.1	1296.1	1290.9	1286.8	1282.6	1278.5	1274.3
30°	1260.0	1252.9	1245.6	1239.7	1235.0	1230.4	1225.8	1221.2
32.5°	1210.9	1202.5	1194.1	1187.7	1183.3	1178.9	1174.5	1170.1
35°	1137.7	1127.9	1118.0	1110.5	1105.3	1100.1	1094.9	1089.6
37.5°	1059.1	1048.1	1037.1	1029.0	1023.8	1018.6	1013.4	1008.2
40°	1006.8	994.7	982.5	973.8	968.6	963.4	958.2	953.0
42.5°	955.3	942.9	930.5	921.6	916.2	910.8	905.3	899.8
45°	876.4	862.3	848.1	838.4	833.2	828.0	822.8	817.6
47.5°	797.0	782.4	767.7	757.4	751.7	746.0	740.2	734.5
50°	744.4	729.9	715.4	705.5	700.0	694.5	689.0	683.5
52.5°	691.9	677.2	662.4	652.2	646.5	640.8	635.0	629.3
55°	614.3	599.3	584.2	574.0	568.5	563.0	557.5	552.0
57.5°	538.7	523.3	508.1	498.4	494.2	490.0	485.8	481.7
60°	488.0	473.0	458.0	448.2	443.5	438.9	434.2	429.6
62.5°	438.3	424.4	410.5	401.7	398.0	394.4	390.6	386.9
65°	367.0	354.6	342.1	334.1	330.7	327.2	323.8	320.2
67.5°	301.5	290.7	280.1	272.8	269.0	265.1	261.3	257.5
70°	256.9	247.4	237.8	231.6	228.7	225.8	222.9	220.0
72.5°	217.0	208.8	200.6	195.3	192.6	190.0	187.3	184.6
75°	159.9	153.2	146.5	142.4	140.6	138.8	137.1	135.4
77.5°	113.1	109.2	105.3	103.1	102.6	102.1	101.6	101.0
80°	86.8	85.9	85.0	84.5	84.2	83.9	83.6	83.3
82.5°	67.5	66.9	66.2	65.7	65.5	65.1	64.9	64.6
85°	39.2	38.6	38.1	37.7	37.7	37.7	37.7	37.7
87.5°	15.8	15.7	15.5	15.5	15.8	16.1	16.3	16.6
90°	8.4	8.8	9.3	9.3	9.8	10.2	9.8	9.8
92.5°	91.3	68.7	54.7	45.4	39.9	37.4	35.8	35.8
95°	344.6	272.6	210.2	165.1	142.4	127.9	119.5	113.5
97.5°	509.2	482.4	436.9	388.3	355.0	326.9	313.0	303.3
100°	560.9	570.2	547.4	513.0	472.5	444.2	430.2	426.5
102.5°	558.3	604.5	611.1	596.7	571.9	551.3	536.6	533.6
105°	520.9	601.4	647.4	666.5	667.4	663.7	657.1	654.4
107.5°	467.8	553.4	618.3	659.7	682.7	693.3	698.0	699.2
110°	435.8	516.2	583.7	634.9	667.9	687.4	695.8	699.9



TEST NUMBER: P332996-930

CATALOG NUMBER: SA4XXRDIP-C1195D590U930-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	412.4	483.5	547.2	598.3	635.9	659.5	671.2	678.0
115°	388.8	446.1	500.4	545.1	581.8	609.8	624.6	628.4
117.5°	377.2	424.6	467.4	505.2	536.6	560.0	575.1	578.0
120°	372.1	415.3	452.5	485.5	512.1	532.6	544.6	549.8
122.5°	367.6	409.4	443.2	472.1	494.6	512.1	522.3	527.4
125°	360.0	400.0	432.0	457.6	476.2	489.8	498.6	501.3
127.5°	350.7	388.9	420.9	445.2	463.9	475.9	483.3	486.1
130°	343.2	380.0	411.6	436.3	455.3	466.9	474.4	477.2
132.5°	335.4	369.9	400.8	425.4	444.2	457.3	464.3	467.2
135°	324.7	354.9	383.2	406.5	425.1	438.1	445.6	448.3
137.5°	314.9	340.5	364.4	385.4	402.8	415.6	421.8	425.1
140°	309.2	331.2	352.0	371.6	387.9	398.1	404.6	408.4
142.5°	304.1	323.3	341.3	358.2	372.6	382.1	387.9	390.4
145°	296.7	312.5	326.5	339.5	351.1	359.1	363.7	366.0
147.5°	290.7	303.2	314.4	324.7	333.2	340.0	343.5	344.4
150°	287.0	297.7	307.0	315.4	322.8	328.8	331.6	332.1
152.5°	282.8	292.0	300.6	307.5	313.8	318.8	320.4	320.9
155°	276.7	284.1	291.1	296.7	301.4	305.1	306.5	306.5
157.5°	270.1	276.4	282.2	286.7	290.2	293.0	293.8	293.8
160°	266.0	271.2	276.2	280.0	282.7	285.6	286.0	286.0
162.5°	262.0	266.3	270.3	273.7	275.7	278.5	279.0	278.6
165°	256.2	259.0	262.3	264.6	266.5	268.3	267.9	267.4
167.5°	250.8	252.9	255.5	256.9	257.9	259.0	258.9	258.6
170°	247.4	248.8	250.7	252.1	253.0	253.5	253.0	253.0
172.5°	244.4	245.5	246.6	247.6	248.2	248.7	248.2	247.4
175°	240.4	240.9	241.8	241.8	241.8	242.8	241.8	240.9
177.5°	237.8	238.2	238.2	238.6	238.2	238.6	237.8	237.1
180°	236.8	236.8	236.8	236.8	236.8	236.8	236.8	236.8

(END OF REPORT)