

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: P332996-830

Luminaire Tested: **SA4XXRDIP-C1195D590U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332996-830
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-C1195D590U830-4F0-1E-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

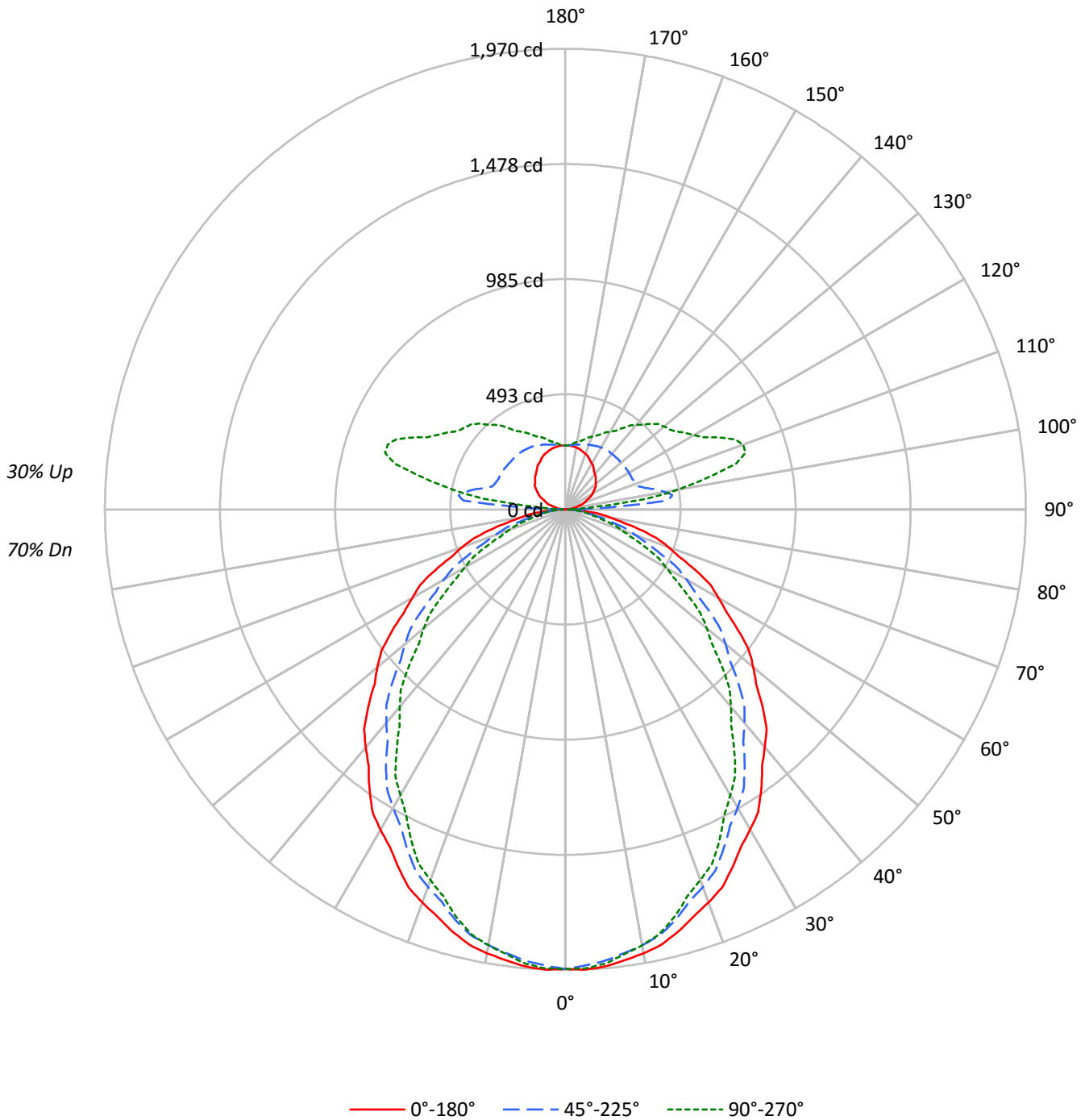
Lumens per Lamp: N/A
Luminaire Lumens: 6533.3 lumens
Efficiency: N/A
Efficacy: 118.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

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	0
RCR																		
0	112	112	112	112	106	106	106	106	94	94	94	84	84	84	74	74	74	70
1	103	98	94	91	97	93	90	87	83	81	78	74	72	71	66	65	63	59
2	94	86	80	75	88	82	76	72	73	69	65	66	62	60	59	56	54	50
3	86	76	69	63	81	72	66	60	65	60	56	58	54	51	52	49	46	43
4	79	68	60	54	74	64	57	52	58	52	48	52	48	44	47	43	40	37
5	72	61	52	46	68	58	50	45	52	46	41	47	42	38	42	38	35	32
6	67	55	46	40	63	52	45	39	47	41	36	43	38	34	39	34	31	29
7	62	50	41	36	59	47	40	35	43	37	32	39	34	30	35	31	28	26
8	58	45	37	32	55	43	36	31	39	33	29	36	31	27	33	28	25	23
9	54	41	34	29	51	40	33	28	36	30	26	33	28	24	30	26	23	21
10	50	38	31	26	48	37	30	25	34	28	24	31	26	22	28	24	21	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15868	15868	15868
5°	15904	15709	15807
10°	15805	15521	15521
15°	15623	15195	15082
20°	15374	14766	14495
25°	15055	14264	13903
30°	14746	13736	13160
35°	14402	13186	12415
40°	13990	12562	11610
45°	13609	11942	10791
50°	13175	11228	9923
55°	12711	10486	8981
60°	12198	9671	8018
65°	11731	8653	7072
70°	11049	7532	6005
75°	10187	6245	4885
80°	8884	4761	4477
85°	7521	4326	4039



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.6	2.8
10°-20°	514.9	7.9
20°-30°	743.5	11.4
30°-40°	842.8	12.9
40°-50°	813.8	12.5
50°-60°	676.7	10.4
60°-70°	467.3	7.2
70°-80°	236.9	3.6
80°-90°	62.3	1.0
90°-100°	197.7	3.0
100°-110°	411.4	6.3
110°-120°	368.5	5.6
120°-130°	310.0	4.7
130°-140°	258.4	4.0
140°-150°	197.4	3.0
150°-160°	138.8	2.1
160°-170°	81.6	1.2
170°-180°	26.6	0.4
0°-30°	1443.1	22.1
0°-40°	2285.8	35.0
0°-60°	3776.4	57.8
0°-90°	4542.9	69.5
90°-120°	977.6	15.0
90°-150°	1743.4	26.7
90°-180°	1990.0	30.5
0°-180°	6533.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1966	1966	1966	1966	1966	
5°	1963	1956	1938	1953	1951	186
15°	1869	1854	1818	1815	1805	526
25°	1690	1661	1601	1576	1561	778
35°	1461	1412	1338	1288	1260	913
45°	1192	1134	1046	975	945	919
55°	903	841	745	669	638	807
65°	614	548	453	391	370	606
75°	327	270	200	167	157	345
85°	81	53	47	44	44	91
90°	1	4	10	11	11	5
95°	18	56	438	217	131	20
105°	63	91	353	760	756	67
115°	111	139	314	604	726	110
125°	154	183	313	514	580	137
135°	183	218	310	456	518	142
145°	211	242	309	385	423	133
155°	240	259	300	340	354	111
165°	262	270	288	305	309	74
175°	273	274	276	280	278	26
180°	274	274	274	274	274	



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CATALOG NUMBER: SA4XXRDIP-C1195D590U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6
2.5°	1970.4	1969.3	1968.3	1967.2	1966.1	1964.2	1961.2	1958.2	1955.3	1952.4	1955.3
5°	1962.6	1961.2	1959.9	1958.6	1957.3	1954.6	1950.6	1946.5	1942.6	1938.5	1941.8
7.5°	1944.8	1943.4	1942.0	1940.6	1939.2	1935.9	1930.7	1925.5	1920.2	1915.1	1917.2
10°	1928.0	1926.3	1924.7	1923.0	1921.3	1917.4	1911.5	1905.4	1899.4	1893.4	1894.7
12.5°	1906.3	1904.4	1902.4	1900.4	1898.6	1894.0	1887.0	1879.9	1872.7	1865.7	1866.5
15°	1869.3	1866.2	1863.3	1860.3	1857.3	1851.5	1843.2	1834.8	1826.5	1818.1	1817.4
17.5°	1824.5	1820.0	1815.7	1811.4	1807.0	1799.9	1789.8	1779.8	1769.7	1759.7	1757.8
20°	1789.5	1785.2	1780.8	1776.5	1772.2	1764.3	1752.9	1741.5	1730.1	1718.8	1716.1
22.5°	1751.0	1746.2	1741.3	1736.4	1731.5	1723.0	1710.7	1698.6	1686.4	1674.2	1670.2
25°	1690.2	1684.1	1678.1	1672.2	1666.1	1656.2	1642.6	1628.8	1615.1	1601.4	1595.7
27.5°	1626.4	1618.8	1611.3	1603.7	1596.1	1585.1	1570.4	1555.8	1541.1	1526.4	1519.4
30°	1581.9	1573.5	1565.1	1556.7	1548.4	1536.3	1520.6	1504.9	1489.2	1473.5	1465.1
32.5°	1534.8	1525.4	1516.0	1506.6	1497.1	1484.3	1468.0	1451.8	1435.5	1419.3	1409.6
35°	1461.4	1450.7	1440.0	1429.3	1418.6	1404.9	1388.2	1371.5	1354.7	1338.0	1326.6
37.5°	1382.9	1371.8	1360.7	1349.7	1338.7	1323.9	1305.4	1286.9	1268.4	1249.8	1237.1
40°	1327.5	1316.4	1305.4	1294.4	1283.3	1268.3	1249.2	1230.1	1211.1	1192.0	1178.0
42.5°	1274.5	1262.9	1251.3	1239.7	1228.2	1212.5	1192.6	1172.7	1152.9	1133.0	1118.7
45°	1192.0	1179.6	1167.2	1154.9	1142.6	1126.2	1106.3	1086.2	1066.1	1046.0	1029.6
47.5°	1106.8	1094.0	1081.3	1068.5	1055.7	1038.9	1018.0	997.1	976.3	955.5	938.4
50°	1049.0	1035.9	1022.9	1009.9	996.8	979.6	958.2	936.8	915.4	894.0	877.3
52.5°	990.0	977.2	964.5	951.7	939.0	921.5	899.7	877.7	855.7	833.8	816.8
55°	903.1	889.7	876.3	862.9	849.5	832.0	810.2	788.5	766.8	745.0	727.6
57.5°	816.9	803.0	789.1	775.2	761.3	743.7	722.3	700.8	679.4	658.0	640.4
60°	755.5	742.2	728.8	715.4	702.0	684.7	663.3	641.9	620.4	599.0	581.6
62.5°	700.1	686.3	672.3	658.5	644.5	626.6	604.6	582.7	560.7	538.9	522.7
65°	614.1	599.6	585.3	570.9	556.6	538.7	517.3	495.9	474.5	453.0	438.7
67.5°	524.6	510.9	497.1	483.3	469.6	452.7	432.8	413.0	393.1	373.2	360.9
70°	468.1	454.0	440.0	425.9	411.9	395.3	376.3	357.2	338.2	319.1	308.0
72.5°	407.8	395.2	382.5	369.8	357.0	341.7	323.7	305.7	287.7	269.7	260.2
75°	326.6	314.2	301.8	289.5	277.1	263.1	247.3	231.6	215.9	200.2	192.5
77.5°	244.1	233.7	223.1	212.6	202.1	190.5	177.8	165.1	152.4	139.7	135.2
80°	191.1	181.4	171.7	162.0	152.3	142.5	132.4	122.4	112.4	102.4	101.3
82.5°	145.4	136.5	127.6	118.7	109.8	102.5	96.7	91.0	85.2	79.5	78.7
85°	81.2	74.6	67.9	61.2	54.5	50.7	49.7	48.6	47.7	46.7	46.0
87.5°	27.8	25.9	24.0	22.1	20.0	18.8	19.1	18.9	18.9	18.8	18.4
90°	0.6	1.6	3.2	3.8	4.3	4.3	7.5	7.5	8.6	9.7	9.1
92.5°	6.1	9.0	13.9	20.5	28.4	39.6	66.9	108.6	149.3	170.5	142.0
95°	17.7	19.3	24.7	31.8	44.6	67.2	114.0	202.2	330.6	438.2	450.5
97.5°	31.9	31.9	36.5	42.9	54.0	73.0	109.0	181.7	309.5	461.6	566.1
100°	40.9	40.9	44.6	51.1	61.3	78.5	110.2	171.0	280.7	432.3	570.0
102.5°	49.5	50.3	53.6	59.7	69.5	85.8	114.5	168.0	261.3	395.8	537.6
105°	62.9	64.6	67.2	73.7	83.3	99.0	124.7	169.4	244.7	352.7	479.1
107.5°	77.8	78.8	81.5	88.4	97.6	113.0	136.7	177.3	241.7	328.7	431.8
110°	87.7	88.7	91.4	97.8	107.5	122.1	145.7	183.3	242.5	320.5	408.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	97.1	98.2	101.3	107.4	117.0	131.5	154.3	189.8	245.1	316.6	394.7
115°	110.7	112.4	116.1	121.5	131.8	146.3	167.8	200.0	250.1	314.5	382.3
117.5°	125.0	126.5	129.8	135.7	145.2	160.3	180.8	210.5	255.2	314.0	376.7
120°	134.4	135.5	139.2	145.2	154.3	169.4	189.8	217.7	259.2	314.0	373.7
122.5°	143.0	144.1	147.9	153.4	163.3	178.0	198.4	224.6	263.1	313.6	370.2
125°	154.3	156.5	159.7	165.6	175.8	190.9	210.2	235.0	268.8	312.9	364.6
127.5°	164.3	166.1	169.9	176.6	187.3	202.5	221.2	243.9	273.4	311.7	356.9
130°	169.9	172.0	176.3	184.5	194.6	210.2	228.5	249.5	276.9	311.3	352.1
132.5°	175.5	177.2	182.9	190.5	201.5	216.2	234.5	255.1	279.9	310.9	347.9
135°	183.3	185.5	190.9	200.0	211.3	225.3	243.0	262.4	284.5	310.2	341.4
137.5°	191.2	193.2	199.2	207.8	219.6	232.9	249.5	267.6	287.1	310.1	335.8
140°	196.8	198.4	204.3	213.5	224.7	237.6	253.8	271.0	289.3	309.7	332.8
142.5°	202.8	204.4	209.9	218.6	229.5	242.0	257.7	273.5	291.0	309.7	330.3
145°	211.3	212.9	218.3	225.8	236.0	247.9	261.8	276.4	292.0	308.6	325.8
147.5°	220.8	221.4	226.1	233.8	242.4	253.1	266.2	278.8	292.5	306.7	321.9
150°	226.9	227.4	231.8	238.2	246.3	256.5	268.3	280.1	292.5	305.4	318.9
152.5°	232.5	232.6	236.9	242.9	250.2	259.5	270.0	281.0	291.6	303.2	315.4
155°	240.3	240.9	244.1	249.5	255.4	263.4	272.6	281.7	290.3	300.0	310.2
157.5°	248.0	248.0	251.0	255.1	260.3	266.6	274.5	281.7	289.0	296.7	305.0
160°	252.7	252.7	254.9	258.6	262.9	268.8	275.3	281.7	287.7	294.1	301.1
162.5°	257.0	256.6	258.3	261.6	265.5	270.1	276.2	281.7	286.3	291.5	297.7
165°	261.8	261.8	262.9	265.6	268.3	271.5	276.4	280.7	283.9	287.7	292.0
167.5°	266.6	266.2	266.6	268.7	270.2	272.7	276.3	279.4	281.3	283.8	286.8
170°	268.8	268.3	268.8	270.4	271.5	273.1	275.8	278.5	279.6	281.2	283.3
172.5°	271.0	270.4	270.5	271.7	272.4	273.5	275.4	277.7	277.9	278.6	280.3
175°	273.1	272.6	272.6	273.1	273.7	273.7	274.8	276.4	275.8	275.8	276.9
177.5°	274.1	273.7	273.2	273.7	273.7	273.7	274.1	274.9	274.1	274.1	274.6
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6	1965.6
2.5°	1958.2	1961.2	1964.2	1965.5	1965.2	1964.9	1964.6	1964.4
5°	1945.2	1948.5	1951.9	1953.2	1952.6	1951.9	1951.3	1950.6
7.5°	1919.3	1921.5	1923.6	1924.1	1923.1	1922.0	1920.9	1919.9
10°	1896.0	1897.3	1898.8	1898.8	1897.3	1896.0	1894.7	1893.4
12.5°	1867.3	1868.1	1868.9	1868.3	1866.5	1864.6	1862.7	1860.9
15°	1816.8	1816.1	1815.4	1813.9	1811.6	1809.2	1806.9	1804.6
17.5°	1756.0	1754.1	1752.2	1749.5	1746.0	1742.4	1738.9	1735.3
20°	1713.4	1710.7	1708.1	1704.6	1700.3	1695.9	1691.5	1687.2
22.5°	1666.2	1662.2	1658.2	1654.4	1650.9	1647.3	1643.8	1640.2
25°	1590.0	1584.3	1578.7	1574.1	1570.7	1567.4	1564.1	1560.8
27.5°	1512.4	1505.3	1498.4	1492.4	1487.6	1482.8	1478.0	1473.2
30°	1456.7	1448.4	1440.0	1433.1	1427.8	1422.5	1417.1	1411.7
32.5°	1399.9	1390.2	1380.4	1373.1	1368.0	1362.9	1357.8	1352.7
35°	1315.2	1303.9	1292.5	1283.8	1277.8	1271.8	1265.7	1259.7
37.5°	1224.4	1211.6	1199.0	1189.6	1183.6	1177.5	1171.6	1165.5
40°	1163.9	1149.9	1135.9	1125.8	1119.7	1113.7	1107.8	1101.7
42.5°	1104.4	1090.1	1075.7	1065.5	1059.1	1052.9	1046.6	1040.3
45°	1013.2	996.8	980.4	969.2	963.3	957.2	951.2	945.2
47.5°	921.4	904.5	887.5	875.6	869.0	862.4	855.7	849.1
50°	860.5	843.9	827.1	815.6	809.3	802.9	796.5	790.1
52.5°	799.8	782.9	765.8	754.0	747.4	740.8	734.1	727.5
55°	710.2	692.9	675.4	663.5	657.2	650.8	644.5	638.1
57.5°	622.7	605.0	587.4	576.2	571.4	566.5	561.7	556.9
60°	564.2	546.9	529.4	518.1	512.7	507.4	502.0	496.6
62.5°	506.7	490.7	474.6	464.4	460.1	455.9	451.6	447.3
65°	424.2	409.9	395.5	386.3	382.3	378.2	374.3	370.2
67.5°	348.6	336.1	323.8	315.4	310.9	306.5	302.1	297.7
70°	297.0	286.0	274.9	267.8	264.4	261.1	257.7	254.4
72.5°	250.8	241.4	232.0	225.7	222.6	219.6	216.5	213.4
75°	184.8	177.1	169.4	164.6	162.6	160.5	158.5	156.6
77.5°	130.7	126.2	121.8	119.2	118.6	118.0	117.4	116.8
80°	100.4	99.3	98.3	97.6	97.4	97.0	96.7	96.3
82.5°	78.0	77.3	76.5	76.0	75.7	75.3	75.0	74.6
85°	45.3	44.7	44.0	43.6	43.6	43.6	43.6	43.6
87.5°	18.3	18.1	17.9	17.9	18.3	18.7	18.9	19.1
90°	9.7	10.2	10.7	10.7	11.3	11.8	11.3	11.3
92.5°	105.6	79.5	63.2	52.5	46.1	43.3	41.4	41.4
95°	398.4	315.1	243.0	190.9	164.6	147.9	138.2	131.2
97.5°	588.6	557.7	505.1	448.9	410.4	378.0	361.8	350.6
100°	648.5	659.2	632.8	593.0	546.3	513.5	497.4	493.0
102.5°	645.5	698.8	706.4	689.8	661.1	637.3	620.4	616.9
105°	602.2	695.2	748.5	770.5	771.6	767.2	759.7	756.5
107.5°	540.8	639.8	714.8	762.7	789.3	801.5	806.9	808.3
110°	503.8	596.8	674.8	734.0	772.1	794.7	804.4	809.2



TEST NUMBER: P332996-830

CATALOG NUMBER: SA4XXRDIP-C1195D590U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	476.7	558.9	632.6	691.7	735.1	762.4	776.0	783.8
115°	449.5	515.7	578.5	630.2	672.6	704.9	722.1	726.4
117.5°	436.1	490.9	540.4	584.1	620.4	647.4	664.9	668.3
120°	430.2	480.1	523.1	561.3	592.0	615.7	629.6	635.6
122.5°	425.0	473.3	512.4	545.8	571.7	592.0	603.8	609.7
125°	416.1	462.4	499.5	529.0	550.5	566.2	576.4	579.6
127.5°	405.4	449.6	486.6	514.6	536.3	550.2	558.7	561.9
130°	396.8	439.3	475.8	504.4	526.4	539.8	548.5	551.7
132.5°	387.8	427.6	463.4	491.8	513.5	528.7	536.8	540.1
135°	375.3	410.3	443.0	470.0	491.4	506.5	515.1	518.3
137.5°	364.0	393.6	421.2	445.5	465.6	480.5	487.6	491.4
140°	357.5	382.9	407.0	429.6	448.5	460.2	467.8	472.1
142.5°	351.6	373.8	394.5	414.2	430.7	441.8	448.5	451.4
145°	343.0	361.3	377.5	392.5	406.0	415.1	420.5	423.1
147.5°	336.0	350.5	363.4	375.3	385.2	393.0	397.1	398.1
150°	331.8	344.1	354.9	364.6	373.2	380.1	383.3	383.9
152.5°	327.0	337.6	347.5	355.5	362.8	368.5	370.4	371.0
155°	319.9	328.5	336.6	343.0	348.5	352.7	354.3	354.3
157.5°	312.3	319.5	326.2	331.4	335.5	338.7	339.7	339.7
160°	307.6	313.5	319.3	323.7	326.9	330.2	330.6	330.6
162.5°	302.8	307.8	312.5	316.4	318.8	322.0	322.5	322.1
165°	296.2	299.4	303.2	305.9	308.1	310.2	309.7	309.2
167.5°	289.9	292.4	295.4	297.0	298.1	299.4	299.4	299.0
170°	286.1	287.7	289.8	291.4	292.5	293.0	292.5	292.5
172.5°	282.6	283.8	285.1	286.3	286.9	287.5	286.9	286.1
175°	278.0	278.5	279.6	279.6	279.6	280.7	279.6	278.5
177.5°	274.9	275.4	275.4	275.8	275.4	275.8	274.9	274.1
180°	273.7	273.7	273.7	273.7	273.7	273.7	273.7	273.7

(END OF REPORT)