

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: P332994-830

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

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332994-830
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
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-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

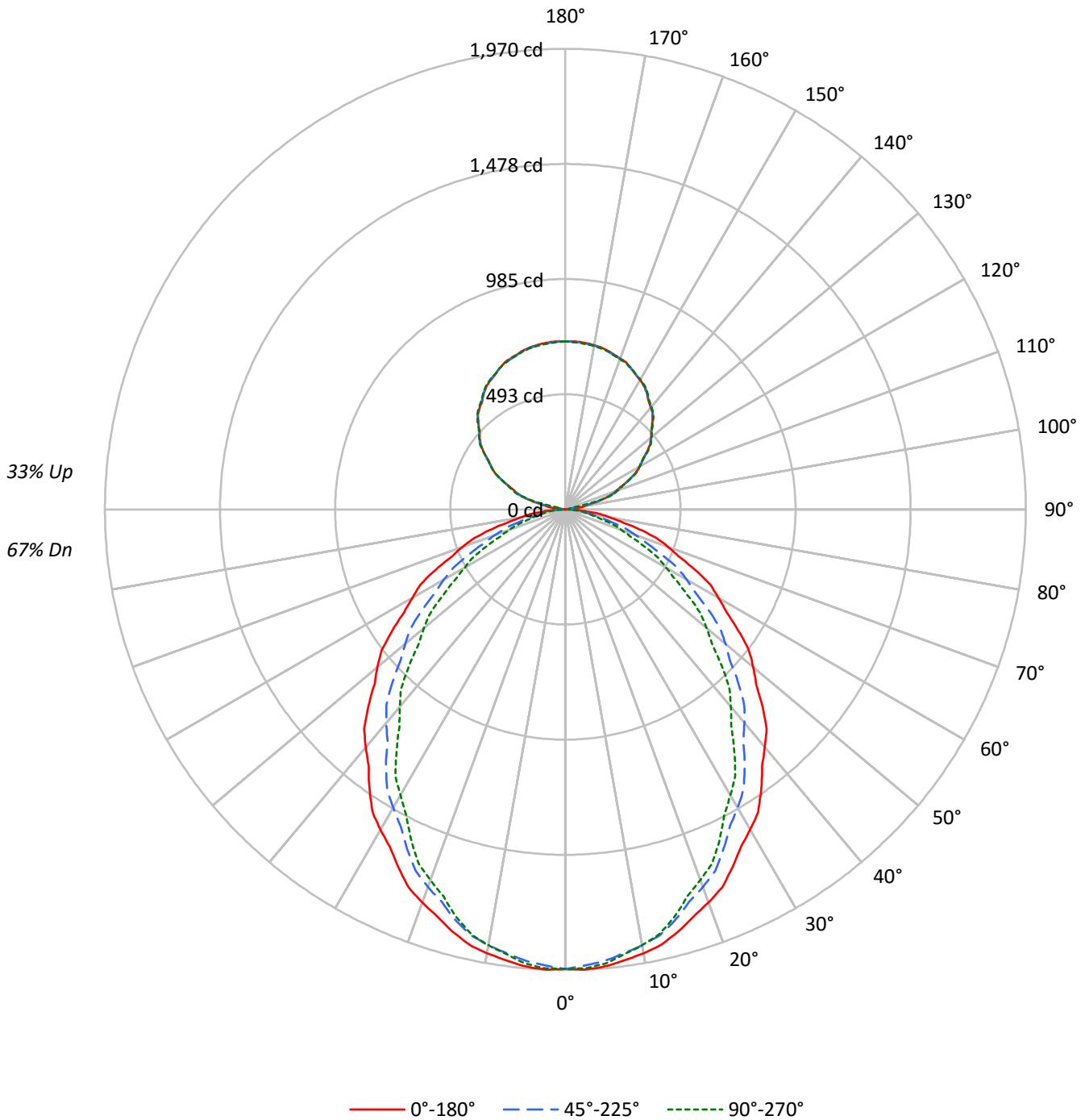
Lumens per Lamp: N/A
Luminaire Lumens: 6767.0 lumens
Efficiency: N/A
Efficacy: 122.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67
1	102	98	94	90	96	92	89	86	82	80	77	73	71	69	64	63	61	57
2	93	86	80	74	88	81	76	71	72	68	65	64	61	58	57	54	52	49
3	85	76	68	62	80	72	65	60	64	59	55	57	53	50	51	48	45	42
4	78	67	59	53	73	64	57	51	57	52	47	51	47	43	46	42	39	36
5	72	60	52	46	68	57	50	44	51	45	41	46	41	37	41	37	34	31
6	66	54	46	40	63	52	44	39	47	40	36	42	37	33	37	33	30	28
7	62	49	41	35	58	47	39	34	42	36	32	38	33	29	34	30	27	25
8	57	45	37	32	54	43	36	31	39	33	28	35	30	26	32	27	24	22
9	54	41	33	28	50	39	32	27	36	30	26	32	27	24	29	25	22	20
10	50	38	30	26	47	36	29	25	33	27	23	30	25	22	27	23	20	18

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	2.7
10°-20°	514.9	7.6
20°-30°	743.5	11.0
30°-40°	842.8	12.5
40°-50°	813.8	12.0
50°-60°	676.7	10.0
60°-70°	467.3	6.9
70°-80°	236.9	3.5
80°-90°	62.8	0.9
90°-100°	24.6	0.4
100°-110°	156.8	2.3
110°-120°	299.9	4.4
120°-130°	380.7	5.6
130°-140°	407.3	6.0
140°-150°	380.9	5.6
150°-160°	307.1	4.5
160°-170°	198.1	2.9
170°-180°	68.3	1.0
0°-30°	1443.1	21.3
0°-40°	2285.8	33.8
0°-60°	3776.4	55.8
0°-90°	4543.5	67.1
90°-120°	481.2	7.1
90°-150°	1650.1	24.4
90°-180°	2224.0	32.9
0°-180°	6767.0	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°	2	7	12	15	16	5
95°	30	12	12	15	16	38
105°	162	165	168	171	153	169
115°	302	304	303	304	304	297
125°	425	427	426	427	428	379
135°	527	526	528	530	531	406
145°	608	609	609	610	611	380
155°	666	667	665	667	666	307
165°	703	700	700	704	700	198
175°	719	716	716	720	714	68
180°	719	719	719	719	719	



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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°	28.0	26.1	24.2	22.3	20.5	19.5	19.4	19.4	19.3	19.2	19.1
90°	1.6	2.9	4.2	5.6	6.9	8.0	9.0	9.9	10.8	11.8	12.5
92.5°	6.8	6.9	6.9	7.0	7.1	7.5	8.6	9.5	10.5	11.4	12.2
95°	29.6	25.5	21.5	17.3	13.3	11.3	11.5	11.6	11.7	11.8	12.5
97.5°	62.8	65.3	67.9	70.4	73.0	67.5	54.2	40.9	27.5	14.2	14.2
100°	88.1	90.3	92.5	94.6	96.8	89.6	73.1	56.6	40.2	23.7	21.6
102.5°	116.6	118.1	119.7	121.3	122.9	122.6	120.5	118.3	116.1	114.0	92.1
105°	161.8	162.6	163.2	164.0	164.7	165.3	166.0	166.5	167.1	167.8	168.8
107.5°	203.9	204.2	204.6	204.9	205.3	205.9	206.7	207.5	208.3	209.2	209.7
110°	232.2	232.6	233.0	233.4	233.7	234.2	235.0	235.6	236.4	237.1	237.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	259.8	260.4	261.1	261.7	262.4	262.9	263.2	263.5	263.9	264.2	264.2
115°	302.2	302.6	302.8	303.2	303.6	303.7	303.6	303.5	303.3	303.2	303.5
117.5°	340.4	340.8	341.3	341.8	342.2	342.6	342.9	343.2	343.4	343.7	343.7
120°	366.2	366.6	367.1	367.6	368.1	368.3	368.2	368.0	367.9	367.8	368.0
122.5°	390.2	390.5	390.8	391.1	391.3	391.6	391.8	391.9	392.1	392.3	392.4
125°	424.7	425.2	425.7	426.2	426.7	426.8	426.5	426.3	426.0	425.8	426.2
127.5°	457.4	457.5	457.7	457.8	457.9	458.3	458.8	459.3	459.9	460.4	460.3
130°	478.5	478.6	478.7	478.9	479.0	479.2	479.6	479.9	480.3	480.7	480.8
132.5°	497.9	498.0	498.3	498.5	498.7	499.1	499.5	499.9	500.4	500.9	501.0
135°	526.9	526.8	526.7	526.5	526.4	526.6	527.1	527.5	528.0	528.5	528.8
137.5°	552.6	552.6	552.7	552.7	552.8	553.1	553.6	554.1	554.7	555.2	555.4
140°	569.4	569.6	569.9	570.0	570.3	570.5	570.8	571.1	571.3	571.6	571.8
142.5°	584.5	584.8	585.3	585.7	586.2	586.4	586.5	586.7	586.8	587.0	587.3
145°	607.6	607.9	608.2	608.6	609.0	609.2	609.2	609.2	609.2	609.2	609.3
147.5°	625.9	626.6	627.3	627.9	628.6	628.9	628.8	628.7	628.5	628.4	628.5
150°	639.2	639.7	640.3	640.7	641.2	641.4	641.2	641.1	641.0	640.8	640.8
152.5°	650.4	650.8	651.2	651.6	652.0	652.1	651.9	651.7	651.4	651.2	651.4
155°	666.2	666.3	666.4	666.5	666.7	666.5	666.2	665.8	665.4	665.1	665.5
157.5°	679.4	679.3	679.2	679.2	679.1	678.8	678.4	678.1	677.6	677.2	677.9
160°	687.1	686.7	686.4	686.1	685.7	685.4	685.3	685.2	685.0	684.9	685.7
162.5°	694.0	693.5	693.1	692.7	692.2	691.9	691.7	691.6	691.5	691.4	692.1
165°	702.7	702.1	701.5	700.9	700.3	700.0	700.0	700.0	700.0	700.0	701.0
167.5°	709.5	709.0	708.3	707.8	707.1	706.7	706.7	706.6	706.5	706.4	707.6
170°	713.5	712.8	712.0	711.3	710.6	710.3	710.4	710.5	710.7	710.8	711.7
172.5°	716.0	715.3	714.6	713.9	713.2	712.8	713.0	713.1	713.2	713.3	714.4
175°	718.9	718.1	717.4	716.7	716.0	715.7	715.8	716.0	716.0	716.1	717.2
177.5°	720.1	719.4	718.8	718.1	717.5	717.2	717.4	717.6	717.7	717.9	718.8
180°	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9



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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°	18.9	18.9	18.8	18.9	19.1	19.4	19.8	20.1
90°	13.3	13.9	14.7	15.2	15.5	15.6	15.9	16.1
92.5°	12.8	13.6	14.2	14.6	14.7	14.7	14.8	14.8
95°	13.3	13.9	14.7	15.1	15.3	15.4	15.5	15.6
97.5°	14.3	14.4	14.5	14.6	14.7	14.8	14.9	15.1
100°	19.6	17.5	15.6	14.6	14.7	14.8	14.9	15.1
102.5°	70.1	48.3	26.3	15.4	15.5	15.5	15.5	15.5
105°	169.9	171.0	172.0	170.4	166.2	161.8	157.5	153.3
107.5°	210.2	210.8	211.2	211.7	212.2	212.6	213.1	213.6
110°	237.6	237.8	238.1	238.4	238.7	239.0	239.4	239.8



TEST NUMBER: P332994-830

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

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	264.1	264.1	264.0	264.2	264.7	265.1	265.6	266.0
115°	303.7	304.0	304.2	304.3	304.3	304.3	304.3	304.3
117.5°	343.6	343.6	343.5	343.5	343.4	343.4	343.3	343.3
120°	368.3	368.4	368.7	368.7	368.4	368.3	368.0	367.8
122.5°	392.6	392.7	392.9	392.8	392.6	392.3	392.1	391.8
125°	426.5	426.9	427.3	427.5	427.6	427.7	427.8	428.0
127.5°	460.3	460.2	460.1	460.1	460.0	459.9	459.8	459.7
130°	480.9	481.0	481.2	481.2	481.2	481.2	481.2	481.2
132.5°	501.1	501.2	501.3	501.3	501.2	501.1	501.1	501.0
135°	529.0	529.2	529.4	529.7	529.9	530.2	530.5	530.7
137.5°	555.7	556.0	556.2	556.3	556.3	556.2	556.1	556.0
140°	572.2	572.6	573.0	573.2	573.3	573.4	573.5	573.6
142.5°	587.5	587.8	588.1	588.2	588.2	588.2	588.2	588.3
145°	609.4	609.5	609.6	609.8	610.0	610.3	610.6	610.8
147.5°	628.6	628.7	628.8	628.9	629.1	629.1	629.2	629.3
150°	640.8	640.8	640.8	640.9	641.0	641.2	641.3	641.4
152.5°	651.6	651.8	652.0	652.1	652.0	651.9	651.8	651.8
155°	666.0	666.5	666.9	667.0	666.7	666.3	666.0	665.6
157.5°	678.4	679.1	679.7	679.7	679.1	678.4	677.9	677.2
160°	686.4	687.1	687.9	687.9	687.1	686.4	685.7	684.9
162.5°	692.9	693.5	694.3	694.3	693.4	692.6	691.8	691.0
165°	701.9	702.9	703.9	703.8	702.7	701.6	700.6	699.5
167.5°	708.6	709.6	710.7	710.6	709.5	708.2	707.0	705.9
170°	712.7	713.6	714.6	714.4	713.3	712.1	710.9	709.7
172.5°	715.3	716.2	717.2	717.0	715.8	714.4	713.1	711.8
175°	718.3	719.3	720.5	720.3	718.9	717.4	716.0	714.5
177.5°	719.5	720.3	721.0	720.9	719.7	718.6	717.4	716.2
180°	718.9	718.9	718.9	718.9	718.9	718.9	718.9	718.9

(END OF REPORT)