

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: P332678

Luminaire Tested: **SA4XXDIP-C1195D365U835-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332678
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: SA4XXDIP-C1195D365U835-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

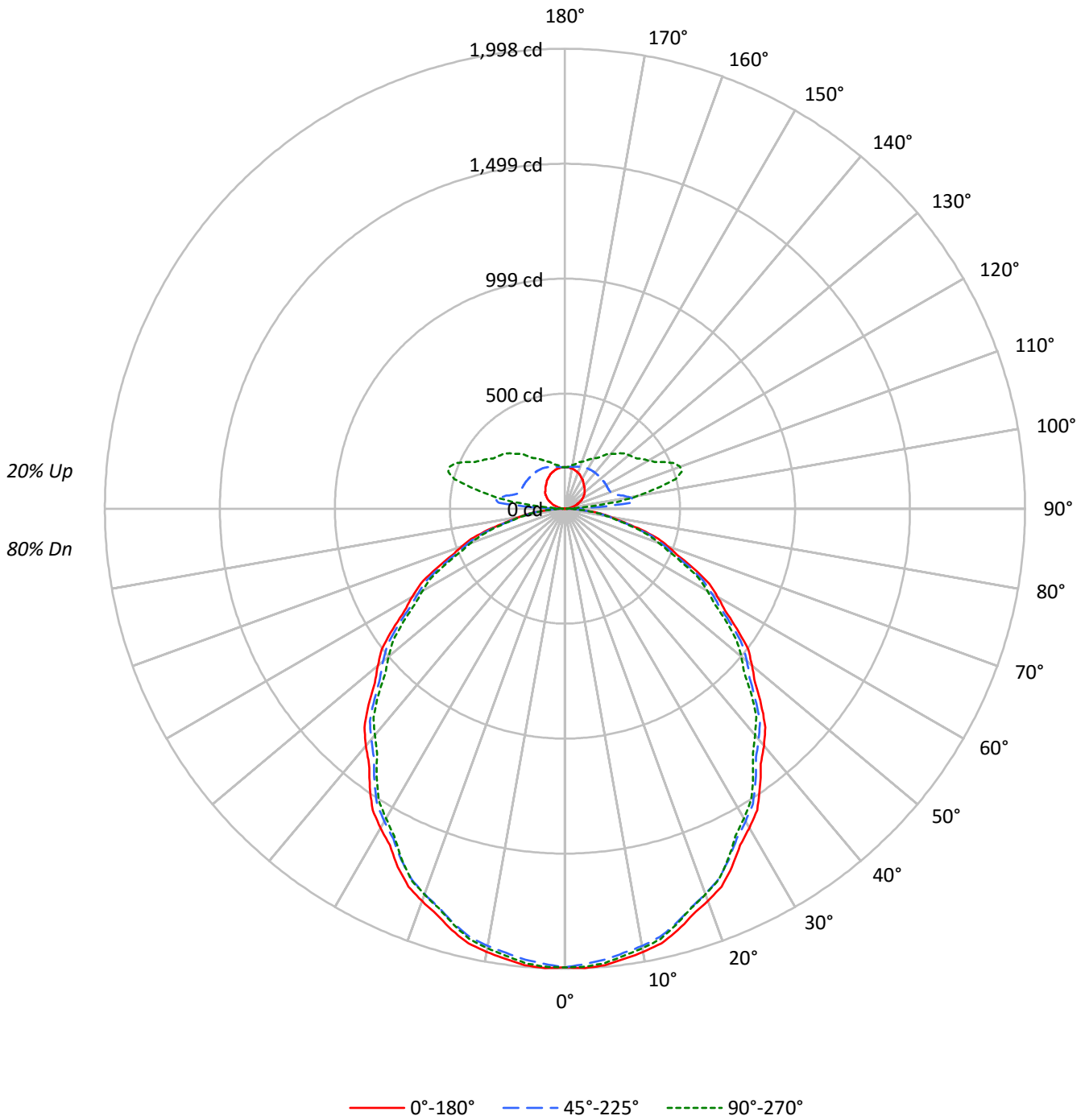
Lumens per Lamp: N/A
Luminaire Lumens: 6423.2 lumens
Efficiency: N/A
Efficacy: 129.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 49.8
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	114	114	114	114	109	109	109	109	100	100	100	91	91	91	83	83	83	80
1	104	100	96	92	100	96	92	89	88	85	82	80	78	76	74	72	70	67
2	95	87	81	75	91	84	78	73	77	72	68	71	67	64	65	62	59	56
3	87	77	69	63	83	74	67	61	68	62	57	62	58	54	57	54	50	47
4	80	68	60	53	76	65	58	52	60	54	49	56	50	46	51	47	43	41
5	73	61	52	46	70	59	51	45	54	48	42	50	45	40	46	42	38	35
6	68	55	46	40	64	53	45	39	49	42	37	45	40	35	42	37	33	31
7	63	50	41	35	60	48	40	35	45	38	33	41	36	31	38	34	30	28
8	58	45	37	32	56	44	36	31	41	34	29	38	32	28	35	30	27	25
9	54	41	34	28	52	40	33	28	37	31	27	35	29	25	33	28	24	22
10	51	38	31	26	49	37	30	25	35	28	24	32	27	23	30	26	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16088	16088	16088
5°	16136	15943	16058
10°	16035	15813	15891
15°	15841	15588	15628
20°	15584	15309	15323
25°	15291	14991	14949
30°	14930	14618	14483
35°	14557	14226	14038
40°	14169	13782	13529
45°	13764	13345	13089
50°	13317	12955	12554
55°	12833	12451	12047
60°	12350	11885	11525
65°	11805	11347	10890
70°	11195	10629	10213
75°	10259	9763	9513
80°	9131	8759	8536
85°	7984	7688	7540



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.7	2.9
10°-20°	528.8	8.2
20°-30°	778.3	12.1
30°-40°	904.8	14.1
40°-50°	904.8	14.1
50°-60°	791.5	12.3
60°-70°	587.8	9.2
70°-80°	333.9	5.2
80°-90°	97.4	1.5
90°-100°	129.9	2.0
100°-110°	270.4	4.2
110°-120°	242.2	3.8
120°-130°	203.7	3.2
130°-140°	169.9	2.6
140°-150°	129.8	2.0
150°-160°	91.2	1.4
160°-170°	53.7	0.8
170°-180°	17.5	0.3
0°-30°	1494.7	23.3
0°-40°	2399.5	37.4
0°-60°	4095.8	63.8
0°-90°	5114.9	79.6
90°-120°	642.6	10.0
90°-150°	1146.0	17.8
90°-180°	1308.0	20.4
0°-180°	6423.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1993	1993	1993	1993	1993	
5°	1991	1984	1967	1984	1982	189
15°	1895	1888	1865	1874	1870	534
25°	1717	1705	1683	1684	1678	789
35°	1477	1465	1444	1433	1424	923
45°	1206	1194	1169	1152	1146	929
55°	912	906	885	866	856	816
65°	618	610	594	578	570	612
75°	329	321	313	307	305	350
85°	86	86	83	83	81	95
90°	0	3	6	7	7	5
95°	12	37	288	143	86	13
105°	41	60	232	499	497	44
115°	73	91	207	397	478	72
125°	101	121	206	338	381	90
135°	120	144	204	300	341	93
145°	139	159	203	253	278	87
155°	158	171	197	223	233	73
165°	172	177	189	200	203	49
175°	180	180	181	184	183	17
180°	180	180	180	180	180	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8
2.5°	1997.9	1997.1	1996.2	1995.4	1994.5	1992.5	1989.4	1986.3	1983.2	1980.1	1982.9
5°	1991.2	1989.8	1988.4	1987.0	1985.6	1982.9	1979.0	1975.1	1971.2	1967.3	1971.2
7.5°	1972.7	1971.3	1969.9	1968.4	1967.0	1964.2	1959.8	1955.5	1951.2	1946.8	1950.0
10°	1956.1	1954.7	1953.3	1951.8	1950.4	1947.4	1942.8	1938.2	1933.6	1929.0	1931.8
12.5°	1934.4	1933.0	1931.5	1930.1	1928.7	1925.5	1920.7	1915.8	1910.9	1906.0	1909.1
15°	1895.4	1894.0	1892.6	1891.2	1889.7	1886.4	1881.0	1875.7	1870.4	1865.1	1867.2
17.5°	1848.5	1846.7	1844.9	1843.2	1841.4	1838.0	1832.9	1827.9	1822.9	1817.8	1819.2
20°	1814.0	1812.2	1810.4	1808.7	1806.9	1803.3	1798.0	1792.7	1787.4	1782.0	1783.1
22.5°	1776.9	1774.6	1772.3	1769.9	1767.6	1763.7	1758.4	1753.1	1747.8	1742.4	1744.4
25°	1716.6	1714.1	1711.6	1709.1	1706.6	1702.9	1697.9	1693.0	1688.0	1683.0	1683.4
27.5°	1647.6	1645.0	1642.5	1639.9	1637.4	1633.8	1629.2	1624.6	1620.0	1615.3	1614.5
30°	1601.6	1598.8	1595.9	1593.1	1590.3	1586.5	1581.9	1577.3	1572.7	1568.1	1566.7
32.5°	1553.1	1550.5	1548.0	1545.4	1542.8	1539.1	1534.2	1529.3	1524.4	1519.5	1517.8
35°	1477.1	1474.6	1472.1	1469.6	1467.1	1463.4	1458.4	1453.5	1448.5	1443.5	1441.0
37.5°	1396.9	1394.6	1392.4	1390.1	1387.8	1384.0	1378.7	1373.4	1368.0	1362.7	1360.0
40°	1344.5	1341.7	1338.8	1336.0	1333.2	1329.1	1323.8	1318.4	1313.1	1307.8	1304.2
42.5°	1288.3	1286.6	1284.9	1283.2	1281.5	1277.7	1271.8	1265.9	1260.0	1254.1	1250.0
45°	1205.6	1203.1	1200.6	1198.1	1195.7	1191.6	1185.9	1180.2	1174.5	1168.9	1165.0
47.5°	1119.0	1117.3	1115.6	1113.9	1112.2	1108.8	1103.5	1098.3	1093.0	1087.8	1083.4
50°	1060.3	1058.9	1057.4	1056.0	1054.6	1051.4	1046.4	1041.5	1036.5	1031.5	1026.6
52.5°	1002.8	1001.1	999.4	997.7	996.0	992.5	987.3	982.0	976.8	971.5	967.1
55°	911.8	910.7	909.7	908.6	907.5	904.5	899.5	894.6	889.6	884.6	880.4
57.5°	824.9	823.7	822.5	821.3	820.1	817.0	812.1	807.2	802.3	797.4	793.4
60°	764.9	763.1	761.3	759.6	757.8	754.6	750.0	745.4	740.7	736.1	732.9
62.5°	706.1	704.6	703.1	701.6	700.2	697.0	692.1	687.2	682.3	677.4	674.5
65°	618.0	616.2	614.4	612.6	610.9	608.2	604.7	601.1	597.6	594.0	590.5
67.5°	529.2	527.6	525.9	524.3	522.7	520.1	516.7	513.3	509.9	506.5	503.1
70°	474.3	471.8	469.3	466.8	464.3	461.7	458.8	456.0	453.1	450.3	447.5
72.5°	415.5	413.0	410.5	408.0	405.6	403.2	400.9	398.6	396.4	394.1	391.8
75°	328.9	327.2	325.4	323.6	321.8	320.1	318.3	316.5	314.8	313.0	311.6
77.5°	246.2	245.4	244.7	243.9	243.1	241.9	240.4	238.8	237.3	235.7	235.3
80°	196.4	195.3	194.3	193.2	192.2	191.3	190.6	189.8	189.1	188.4	187.7
82.5°	147.9	147.4	146.9	146.4	145.9	145.6	145.4	145.3	145.1	145.0	144.6
85°	86.2	86.2	86.2	86.2	86.2	85.9	85.2	84.5	83.7	83.0	83.0
87.5°	33.3	33.1	33.1	32.9	32.6	32.4	32.5	32.2	32.1	31.9	31.9
90°	0.4	1.1	2.1	2.5	2.8	2.8	4.9	4.9	5.7	6.4	6.0
92.5°	4.0	5.9	9.2	13.5	18.7	26.0	44.0	71.4	98.1	112.1	93.4
95°	11.7	12.7	16.3	20.9	29.3	44.2	74.9	132.9	217.4	288.0	296.2
97.5°	20.9	20.9	24.0	28.2	35.5	47.9	71.6	119.5	203.4	303.4	372.1
100°	26.9	26.9	29.3	33.6	40.3	51.6	72.5	112.4	184.5	284.2	374.6
102.5°	32.5	33.1	35.3	39.2	45.7	56.4	75.3	110.4	171.8	260.1	353.4
105°	41.4	42.4	44.2	48.4	54.8	65.0	82.0	111.3	160.8	231.8	314.9
107.5°	51.1	51.8	53.6	58.1	64.2	74.3	89.8	116.6	158.8	216.0	283.8
110°	57.6	58.3	60.1	64.3	70.7	80.2	95.8	120.5	159.4	210.6	268.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	63.8	64.5	66.6	70.5	76.9	86.4	101.4	124.8	161.1	208.1	259.5
115°	72.8	73.9	76.3	79.9	86.6	96.1	110.3	131.5	164.3	206.8	251.3
117.5°	82.1	83.1	85.3	89.2	95.5	105.4	118.8	138.3	167.8	206.4	247.6
120°	88.4	89.1	91.5	95.4	101.4	111.3	124.8	143.1	170.4	206.4	245.6
122.5°	94.0	94.7	97.2	100.8	107.4	117.0	130.4	147.7	172.9	206.1	243.4
125°	101.4	102.8	105.0	108.9	115.6	125.5	138.2	154.4	176.7	205.7	239.6
127.5°	108.0	109.1	111.7	116.1	123.1	133.1	145.4	160.3	179.8	204.9	234.6
130°	111.7	113.1	115.9	121.2	127.9	138.2	150.2	164.0	182.0	204.6	231.5
132.5°	115.4	116.5	120.2	125.2	132.5	142.1	154.2	167.7	184.0	204.4	228.7
135°	120.5	121.9	125.5	131.5	138.9	148.1	159.7	172.5	187.0	203.9	224.4
137.5°	125.7	127.0	130.9	136.6	144.3	153.1	164.0	175.9	188.7	203.9	220.8
140°	129.4	130.4	134.3	140.3	147.7	156.2	166.8	178.1	190.1	203.6	218.8
142.5°	133.3	134.4	138.0	143.7	150.8	159.0	169.4	179.8	191.3	203.6	217.1
145°	138.9	140.0	143.5	148.4	155.2	162.9	172.1	181.7	191.9	202.9	214.2
147.5°	145.2	145.5	148.7	153.7	159.3	166.3	174.9	183.3	192.3	201.6	211.6
150°	149.1	149.5	152.3	156.6	161.9	168.6	176.4	184.1	192.3	200.7	209.6
152.5°	152.8	152.9	155.7	159.7	164.4	170.6	177.5	184.7	191.7	199.3	207.3
155°	158.0	158.3	160.5	164.0	167.9	173.2	179.2	185.2	190.9	197.2	203.9
157.5°	163.0	163.0	165.0	167.7	171.1	175.3	180.4	185.2	189.9	195.0	200.5
160°	166.1	166.1	167.5	170.0	172.8	176.7	181.0	185.2	189.1	193.3	197.9
162.5°	168.9	168.7	169.8	172.0	174.5	177.6	181.5	185.2	188.2	191.6	195.7
165°	172.1	172.1	172.8	174.6	176.4	178.5	181.7	184.5	186.6	189.1	191.9
167.5°	175.3	174.9	175.3	176.6	177.6	179.3	181.6	183.6	184.9	186.5	188.5
170°	176.7	176.4	176.7	177.8	178.5	179.5	181.3	183.1	183.8	184.8	186.3
172.5°	178.1	177.8	177.8	178.6	179.0	179.8	181.0	182.5	182.7	183.1	184.3
175°	179.5	179.2	179.2	179.5	179.9	179.9	180.6	181.7	181.3	181.3	182.0
177.5°	180.2	179.9	179.6	179.9	179.9	179.9	180.2	180.7	180.2	180.2	180.5
180°	179.9	179.9	179.9	179.9	179.9	179.9	179.9	179.9	179.9	179.9	179.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8	1992.8
2.5°	1985.7	1988.6	1991.4	1992.7	1992.4	1992.1	1991.8	1991.5
5°	1975.1	1979.0	1982.9	1984.5	1983.8	1983.1	1982.4	1981.6
7.5°	1953.1	1956.2	1959.3	1960.7	1960.3	1959.8	1959.4	1959.0
10°	1934.6	1937.5	1940.3	1941.4	1940.7	1940.0	1939.2	1938.5
12.5°	1912.2	1915.3	1918.5	1919.5	1918.5	1917.5	1916.5	1915.5
15°	1869.3	1871.5	1873.6	1874.1	1873.1	1872.0	1870.9	1869.9
17.5°	1820.5	1821.9	1823.2	1823.5	1822.8	1822.1	1821.4	1820.7
20°	1784.2	1785.2	1786.3	1786.5	1785.8	1785.1	1784.4	1783.6
22.5°	1746.3	1748.2	1750.1	1750.4	1749.2	1747.9	1746.6	1745.3
25°	1683.8	1684.1	1684.5	1683.9	1682.5	1681.1	1679.7	1678.3
27.5°	1613.6	1612.8	1611.9	1610.6	1608.8	1607.1	1605.3	1603.5
30°	1565.2	1563.8	1562.4	1560.8	1559.0	1557.3	1555.5	1553.7
32.5°	1516.1	1514.4	1512.7	1511.0	1509.2	1507.4	1505.7	1503.9
35°	1438.6	1436.1	1433.6	1431.5	1429.7	1427.9	1426.1	1424.4
37.5°	1357.3	1354.6	1351.9	1349.4	1347.1	1344.7	1342.4	1340.0
40°	1300.7	1297.1	1293.6	1290.9	1289.2	1287.4	1285.6	1283.8
42.5°	1245.9	1241.8	1237.7	1235.0	1233.8	1232.6	1231.4	1230.2
45°	1161.1	1157.2	1153.3	1150.8	1149.7	1148.6	1147.6	1146.5
47.5°	1079.0	1074.6	1070.2	1066.6	1063.9	1061.2	1058.5	1055.8
50°	1021.6	1016.6	1011.7	1008.1	1006.0	1003.9	1001.7	999.6
52.5°	962.7	958.3	953.9	950.4	947.7	945.0	942.3	939.6
55°	876.1	871.9	867.6	864.4	862.3	860.2	858.0	855.9
57.5°	789.4	785.3	781.3	778.2	776.2	774.1	772.0	770.0
60°	729.7	726.6	723.4	720.9	719.1	717.3	715.6	713.8
62.5°	671.5	668.6	665.7	663.4	661.6	659.8	658.1	656.3
65°	586.9	583.4	579.8	577.2	575.4	573.6	571.8	570.1
67.5°	499.7	496.3	492.9	490.9	490.4	489.9	489.4	488.9
70°	444.6	441.8	438.9	437.0	435.9	434.9	433.8	432.7
72.5°	389.6	387.3	385.0	383.3	382.3	381.2	380.1	379.1
75°	310.1	308.7	307.3	306.4	306.1	305.7	305.3	305.0
77.5°	234.8	234.4	234.0	233.3	232.4	231.5	230.5	229.6
80°	187.0	186.3	185.6	185.1	184.7	184.3	184.0	183.6
82.5°	144.1	143.7	143.3	142.9	142.5	142.2	141.8	141.5
85°	83.0	83.0	83.0	82.9	82.5	82.1	81.8	81.4
87.5°	31.9	32.0	32.1	32.1	32.1	32.2	32.1	32.1
90°	6.4	6.7	7.1	7.1	7.4	7.8	7.4	7.4
92.5°	69.4	52.2	41.6	34.5	30.3	28.4	27.2	27.2
95°	261.9	207.1	159.7	125.5	108.1	97.2	90.8	86.2
97.5°	386.9	366.6	332.0	295.1	269.7	248.5	237.9	230.5
100°	426.2	433.3	416.0	389.8	359.1	337.5	326.9	324.1
102.5°	424.3	459.3	464.3	453.4	434.6	419.0	407.8	405.5
105°	395.8	457.0	492.0	506.5	507.2	504.3	499.4	497.3
107.5°	355.5	420.6	469.8	501.4	518.8	526.9	530.4	531.3
110°	331.2	392.3	443.6	482.4	507.5	522.4	528.7	531.9



TEST NUMBER: P332678

CATALOG NUMBER: SA4XXDIP-C1195D365U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	313.3	367.4	415.8	454.7	483.2	501.2	510.1	515.2
115°	295.5	338.9	380.3	414.2	442.1	463.3	474.7	477.5
117.5°	286.7	322.7	355.2	384.0	407.8	425.6	437.0	439.2
120°	282.7	315.6	343.9	369.0	389.1	404.7	413.9	417.8
122.5°	279.3	311.1	336.8	358.8	375.8	389.1	396.9	400.8
125°	273.6	303.9	328.3	347.8	361.9	372.2	378.9	381.0
127.5°	266.5	295.5	319.9	338.3	352.5	361.6	367.3	369.4
130°	260.8	288.8	312.8	331.5	346.0	354.8	360.5	362.6
132.5°	254.9	281.1	304.6	323.3	337.5	347.5	352.9	355.0
135°	246.7	269.7	291.2	308.9	323.0	332.9	338.6	340.7
137.5°	239.3	258.7	276.9	292.8	306.1	315.8	320.5	323.0
140°	235.0	251.6	267.5	282.4	294.8	302.5	307.5	310.3
142.5°	231.1	245.7	259.3	272.2	283.2	290.4	294.8	296.7
145°	225.5	237.5	248.1	258.0	266.8	272.8	276.4	278.1
147.5°	220.9	230.4	238.9	246.7	253.2	258.4	261.0	261.7
150°	218.1	226.2	233.3	239.6	245.3	249.9	252.0	252.3
152.5°	215.0	222.0	228.5	233.7	238.5	242.2	243.5	243.9
155°	210.3	215.9	221.2	225.5	229.0	231.8	232.9	232.9
157.5°	205.3	210.0	214.5	217.9	220.5	222.7	223.3	223.3
160°	202.2	206.0	209.9	212.8	214.9	217.0	217.4	217.4
162.5°	199.1	202.4	205.4	208.0	209.5	211.6	212.0	211.7
165°	194.7	196.9	199.3	201.1	202.5	203.9	203.6	203.2
167.5°	190.6	192.2	194.2	195.2	195.9	196.9	196.8	196.5
170°	188.0	189.1	190.5	191.6	192.3	192.6	192.3	192.3
172.5°	185.8	186.5	187.4	188.2	188.6	188.9	188.6	188.0
175°	182.7	183.1	183.8	183.8	183.8	184.5	183.8	183.1
177.5°	180.7	181.0	181.0	181.3	181.0	181.3	180.7	180.2
180°	179.9	179.9	179.9	179.9	179.9	179.9	179.9	179.9

(END OF REPORT)