

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

Luminaire Tested: **SA4XXRDIP-C1195D590U835-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332996
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-C1195D590U835-4F0-1E-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: 6931.6 lumens
Efficiency: N/A
Efficacy: 125.8 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

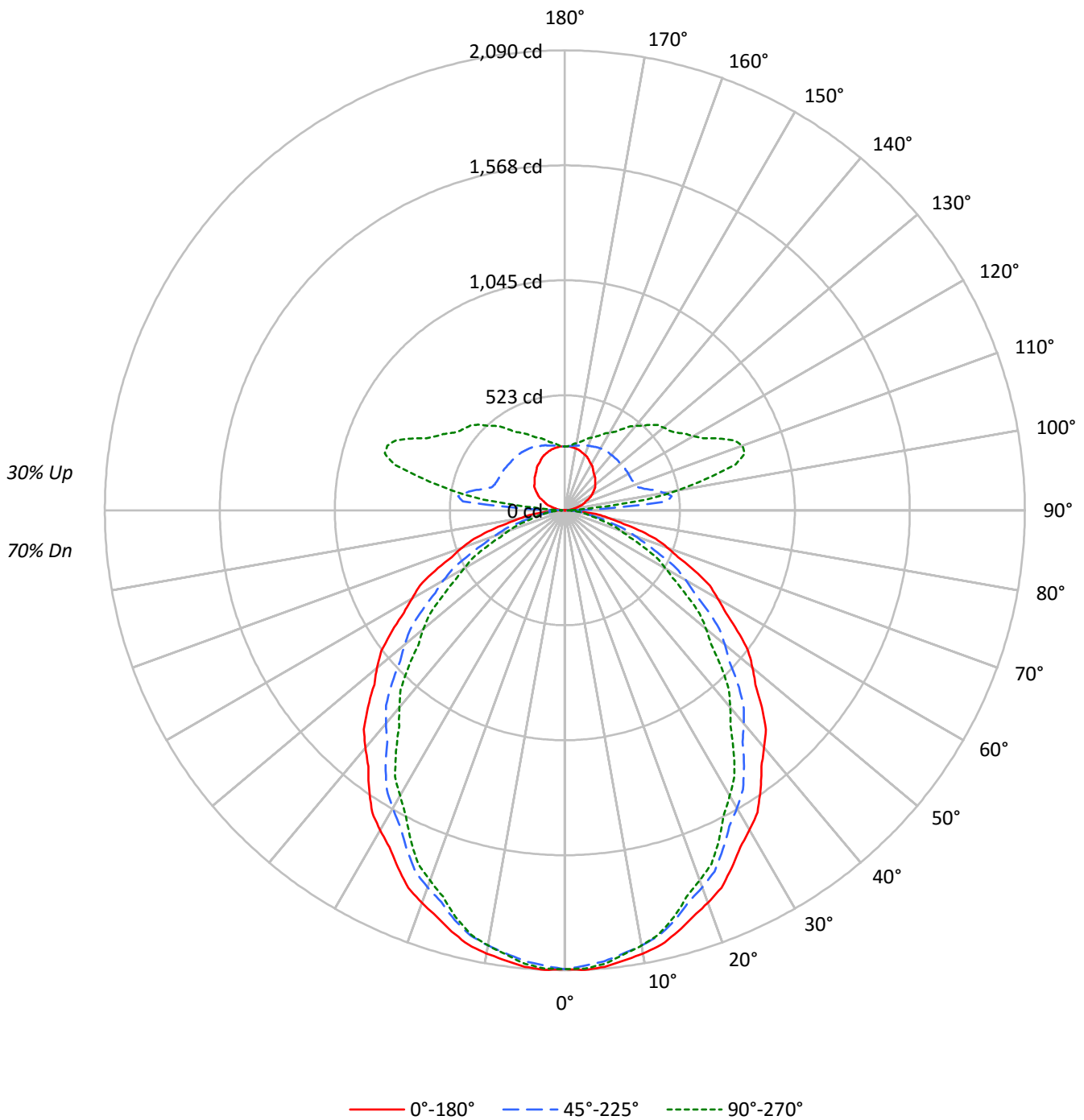
Input Watts (W): 55.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	16835	16835	16835
5°	16874	16667	16771
10°	16768	16467	16467
15°	16575	16121	16002
20°	16311	15667	15378
25°	15973	15134	14750
30°	15645	14573	13962
35°	15281	13991	13172
40°	14842	13328	12318
45°	14439	12670	11449
50°	13978	11912	10528
55°	13485	11125	9529
60°	12943	10261	8507
65°	12445	9181	7503
70°	11722	7990	6371
75°	10808	6625	5181
80°	9428	5049	4751
85°	7984	4585	4289



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.9	2.8
10°-20°	546.3	7.9
20°-30°	788.8	11.4
30°-40°	894.2	12.9
40°-50°	863.5	12.5
50°-60°	718.0	10.4
60°-70°	495.8	7.2
70°-80°	251.3	3.6
80°-90°	66.1	1.0
90°-100°	209.7	3.0
100°-110°	436.5	6.3
110°-120°	391.0	5.6
120°-130°	328.9	4.7
130°-140°	274.2	4.0
140°-150°	209.5	3.0
150°-160°	147.2	2.1
160°-170°	86.6	1.2
170°-180°	28.2	0.4
0°-30°	1531.0	22.1
0°-40°	2425.2	35.0
0°-60°	4006.7	57.8
0°-90°	4819.8	69.5
90°-120°	1037.2	15.0
90°-150°	1849.7	26.7
90°-180°	2112.0	30.5
0°-180°	6931.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2085	2085	2085	2085	2085	
5°	2082	2075	2057	2072	2070	197
15°	1983	1967	1929	1925	1915	559
25°	1793	1762	1699	1672	1656	826
35°	1550	1498	1420	1367	1336	968
45°	1265	1204	1110	1034	1003	975
55°	958	892	790	710	677	857
65°	652	581	481	415	393	643
75°	346	287	212	177	166	366
85°	86	56	50	46	46	97
90°	1	5	10	11	12	5
95°	19	59	465	230	139	21
105°	67	97	374	806	803	71
115°	118	148	334	641	771	117
125°	164	194	332	546	615	146
135°	194	232	329	484	550	150
145°	224	257	327	408	449	141
155°	255	275	318	360	376	118
165°	278	286	305	323	328	78
175°	290	290	293	297	296	27
180°	290	290	290	290	290	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4
2.5°	2090.5	2089.4	2088.3	2087.1	2086.0	2083.9	2080.8	2077.6	2074.5	2071.4	2074.5
5°	2082.2	2080.8	2079.4	2078.0	2076.6	2073.7	2069.5	2065.2	2061.0	2056.7	2060.2
7.5°	2063.4	2061.9	2060.4	2058.9	2057.4	2053.9	2048.4	2042.9	2037.3	2031.8	2034.1
10°	2045.5	2043.7	2042.0	2040.2	2038.4	2034.3	2028.0	2021.6	2015.2	2008.8	2010.2
12.5°	2022.5	2020.5	2018.4	2016.3	2014.3	2009.5	2002.0	1994.5	1986.9	1979.4	1980.3
15°	1983.2	1980.0	1976.9	1973.7	1970.5	1964.4	1955.6	1946.7	1937.8	1928.9	1928.2
17.5°	1935.7	1931.0	1926.4	1921.8	1917.2	1909.6	1898.9	1888.3	1877.6	1867.0	1865.0
20°	1898.6	1894.0	1889.4	1884.8	1880.2	1871.8	1859.8	1847.7	1835.6	1823.6	1820.7
22.5°	1857.7	1852.6	1847.4	1842.2	1837.0	1828.0	1815.0	1802.1	1789.2	1776.3	1772.0
25°	1793.2	1786.8	1780.4	1774.1	1767.7	1757.2	1742.7	1728.1	1713.6	1699.0	1693.0
27.5°	1725.5	1717.5	1709.5	1701.5	1693.4	1681.7	1666.1	1650.6	1635.0	1619.5	1612.0
30°	1678.3	1669.4	1660.5	1651.6	1642.8	1630.0	1613.3	1596.6	1580.0	1563.3	1554.4
32.5°	1628.4	1618.4	1608.4	1598.4	1588.4	1574.8	1557.5	1540.3	1523.0	1505.8	1495.5
35°	1550.5	1539.1	1527.8	1516.4	1505.1	1490.5	1472.8	1455.1	1437.3	1419.6	1407.5
37.5°	1467.2	1455.4	1443.7	1432.0	1420.3	1404.6	1385.0	1365.3	1345.7	1326.0	1312.5
40°	1408.4	1396.7	1385.0	1373.3	1361.5	1345.6	1325.4	1305.1	1284.9	1264.7	1249.8
42.5°	1352.2	1339.9	1327.6	1315.3	1303.1	1286.4	1265.3	1244.2	1223.2	1202.1	1186.9
45°	1264.7	1251.5	1238.4	1225.3	1212.2	1194.9	1173.7	1152.4	1131.1	1109.8	1092.4
47.5°	1174.3	1160.7	1147.2	1133.6	1120.1	1102.2	1080.1	1057.9	1035.8	1013.7	995.6
50°	1113.0	1099.1	1085.3	1071.5	1057.6	1039.3	1016.6	993.9	971.2	948.5	930.8
52.5°	1050.4	1036.8	1023.3	1009.7	996.2	977.7	954.5	931.2	907.9	884.6	866.6
55°	958.1	943.9	929.7	915.5	901.3	882.7	859.6	836.6	813.5	790.4	772.0
57.5°	866.7	852.0	837.2	822.5	807.7	789.0	766.3	743.5	720.8	698.1	679.4
60°	801.6	787.4	773.2	759.0	744.8	726.4	703.7	681.0	658.2	635.5	617.1
62.5°	742.8	728.1	713.3	698.6	683.8	664.8	641.5	618.2	594.9	571.7	554.6
65°	651.5	636.2	621.0	605.7	590.5	571.5	548.8	526.1	503.4	480.6	465.4
67.5°	556.6	542.0	527.4	512.8	498.2	480.3	459.2	438.2	417.1	396.0	382.9
70°	496.6	481.7	466.8	451.9	437.0	419.4	399.2	379.0	358.8	338.5	326.8
72.5°	432.7	419.3	405.8	392.3	378.8	362.5	343.4	324.3	305.2	286.1	276.1
75°	346.5	333.4	320.2	307.1	294.0	279.1	262.4	245.7	229.1	212.4	204.2
77.5°	259.0	247.9	236.7	225.6	214.4	202.1	188.6	175.2	161.7	148.2	143.4
80°	202.8	192.5	182.2	171.9	161.6	151.2	140.5	129.9	119.2	108.6	107.5
82.5°	154.3	144.8	135.4	125.9	116.5	108.7	102.6	96.5	90.4	84.3	83.5
85°	86.2	79.1	72.0	64.9	57.8	53.8	52.7	51.6	50.6	49.5	48.8
87.5°	29.5	27.5	25.5	23.4	21.2	19.9	20.3	20.0	20.0	19.9	19.5
90°	0.6	1.7	3.4	4.0	4.6	4.6	8.0	8.0	9.1	10.3	9.7
92.5°	6.5	9.5	14.8	21.8	30.1	42.0	71.0	115.2	158.4	180.9	150.7
95°	18.8	20.5	26.2	33.7	47.3	71.3	120.9	214.5	350.8	464.9	478.0
97.5°	33.8	33.8	38.7	45.5	57.3	77.4	115.6	192.8	328.4	489.7	600.6
100°	43.4	43.4	47.3	54.2	65.0	83.3	116.9	181.4	297.8	458.6	604.7
102.5°	52.5	53.4	56.9	63.3	73.7	91.0	121.5	178.2	277.2	419.9	570.4
105°	66.7	68.5	71.3	78.2	88.4	105.0	132.3	179.7	259.6	374.2	508.3
107.5°	82.5	83.6	86.5	93.8	103.6	119.9	145.0	188.1	256.4	348.7	458.1
110°	93.0	94.1	97.0	103.8	114.1	129.5	154.6	194.5	257.3	340.0	433.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	103.0	104.2	107.5	113.9	124.1	139.5	163.7	201.4	260.0	335.9	418.8
115°	117.5	119.2	123.2	128.9	139.8	155.2	178.0	212.2	265.3	333.7	405.6
117.5°	132.6	134.2	137.7	144.0	154.1	170.1	191.8	223.3	270.8	333.1	399.7
120°	142.6	143.8	147.7	154.0	163.7	179.7	201.4	231.0	275.0	333.1	396.5
122.5°	151.7	152.9	156.9	162.7	173.3	188.8	210.5	238.3	279.1	332.7	392.8
125°	163.7	166.0	169.4	175.7	186.5	202.5	223.0	249.3	285.2	332.0	386.8
127.5°	174.3	176.2	180.3	187.4	198.7	214.8	234.7	258.8	290.1	330.7	378.7
130°	180.3	182.5	187.1	195.7	206.5	223.0	242.4	264.7	293.8	330.3	373.6
132.5°	186.2	188.0	194.0	202.1	213.8	229.4	248.8	270.6	297.0	329.8	369.1
135°	194.5	196.8	202.5	212.2	224.2	239.0	257.8	278.4	301.8	329.1	362.2
137.5°	202.9	205.0	211.3	220.5	233.0	247.1	264.7	283.9	304.6	329.0	356.3
140°	208.8	210.5	216.8	226.5	238.4	252.1	269.3	287.5	306.9	328.6	353.1
142.5°	215.2	216.9	222.7	231.9	243.5	256.7	273.4	290.2	308.7	328.6	350.4
145°	224.2	225.9	231.6	239.6	250.4	263.0	277.8	293.2	309.8	327.4	345.7
147.5°	234.3	234.9	239.9	248.1	257.2	268.5	282.4	295.8	310.3	325.4	341.5
150°	240.7	241.3	245.9	252.7	261.3	272.1	284.7	297.2	310.3	324.0	338.3
152.5°	246.7	246.8	251.3	257.7	265.4	275.3	286.5	298.1	309.4	321.7	334.6
155°	255.0	255.6	259.0	264.7	271.0	279.5	289.2	298.9	308.0	318.3	329.1
157.5°	263.1	263.1	266.3	270.7	276.2	282.9	291.2	298.9	306.6	314.8	323.6
160°	268.1	268.1	270.4	274.4	278.9	285.2	292.1	298.9	305.2	312.0	319.5
162.5°	272.7	272.2	274.0	277.6	281.7	286.6	293.0	298.9	303.8	309.3	315.8
165°	277.8	277.8	278.9	281.8	284.7	288.1	293.2	297.8	301.2	305.2	309.8
167.5°	282.9	282.4	282.9	285.1	286.7	289.3	293.1	296.4	298.5	301.1	304.3
170°	285.2	284.7	285.2	286.9	288.1	289.8	292.6	295.5	296.6	298.3	300.6
172.5°	287.5	286.9	287.0	288.3	289.0	290.2	292.2	294.6	294.8	295.6	297.4
175°	289.8	289.2	289.2	289.8	290.4	290.4	291.5	293.2	292.6	292.6	293.8
177.5°	290.8	290.4	289.9	290.4	290.4	290.4	290.8	291.7	290.8	290.8	291.3
180°	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4	2085.4
2.5°	2077.6	2080.8	2083.9	2085.3	2085.0	2084.7	2084.4	2084.2
5°	2063.8	2067.3	2070.9	2072.3	2071.6	2070.9	2070.2	2069.5
7.5°	2036.3	2038.6	2040.9	2041.4	2040.3	2039.2	2038.0	2036.9
10°	2011.6	2013.0	2014.5	2014.5	2013.0	2011.6	2010.2	2008.8
12.5°	1981.1	1982.0	1982.8	1982.2	1980.3	1978.3	1976.3	1974.3
15°	1927.5	1926.8	1926.1	1924.5	1922.0	1919.5	1917.1	1914.6
17.5°	1863.0	1861.0	1859.0	1856.2	1852.4	1848.6	1844.9	1841.1
20°	1817.9	1815.0	1812.2	1808.5	1803.9	1799.3	1794.6	1790.0
22.5°	1767.8	1763.5	1759.3	1755.3	1751.5	1747.7	1744.0	1740.2
25°	1686.9	1680.9	1674.9	1670.1	1666.5	1663.0	1659.4	1655.9
27.5°	1604.6	1597.1	1589.7	1583.4	1578.3	1573.2	1568.1	1563.0
30°	1545.5	1536.7	1527.8	1520.5	1514.8	1509.2	1503.5	1497.8
32.5°	1485.2	1474.9	1464.6	1456.8	1451.4	1446.0	1440.6	1435.2
35°	1395.4	1383.4	1371.3	1362.1	1355.7	1349.3	1342.9	1336.5
37.5°	1299.0	1285.5	1272.1	1262.1	1255.7	1249.3	1243.0	1236.6
40°	1234.9	1220.0	1205.1	1194.4	1188.0	1181.6	1175.3	1168.9
42.5°	1171.7	1156.5	1141.3	1130.4	1123.7	1117.1	1110.4	1103.7
45°	1075.0	1057.6	1040.2	1028.3	1022.0	1015.6	1009.2	1002.8
47.5°	977.6	959.6	941.6	929.0	922.0	915.0	907.9	900.9
50°	913.0	895.3	877.5	865.3	858.6	851.8	845.1	838.3
52.5°	848.6	830.6	812.5	800.0	793.0	786.0	778.9	771.9
55°	753.5	735.1	716.6	704.0	697.3	690.5	683.8	677.0
57.5°	660.7	641.9	623.2	611.3	606.2	601.0	595.9	590.8
60°	598.6	580.2	561.7	549.7	544.0	538.3	532.6	526.9
62.5°	537.6	520.6	503.5	492.7	488.2	483.7	479.1	474.6
65°	450.1	434.9	419.6	409.8	405.6	401.3	397.1	392.8
67.5°	369.8	356.6	343.5	334.6	329.9	325.2	320.5	315.8
70°	315.1	303.4	291.7	284.1	280.5	277.0	273.4	269.9
72.5°	266.1	256.1	246.1	239.5	236.2	233.0	229.7	226.4
75°	196.1	187.9	179.7	174.6	172.5	170.3	168.2	166.1
77.5°	138.7	133.9	129.2	126.5	125.8	125.2	124.6	123.9
80°	106.5	105.4	104.3	103.6	103.3	102.9	102.6	102.2
82.5°	82.8	82.0	81.2	80.6	80.3	79.9	79.6	79.2
85°	48.1	47.4	46.7	46.3	46.3	46.3	46.3	46.3
87.5°	19.4	19.2	19.0	19.0	19.4	19.8	20.0	20.3
90°	10.3	10.8	11.4	11.4	12.0	12.5	12.0	12.0
92.5°	112.0	84.3	67.1	55.7	48.9	45.9	43.9	43.9
95°	422.7	334.3	257.8	202.5	174.6	156.9	146.6	139.2
97.5°	624.5	591.7	535.9	476.3	435.4	401.0	383.9	372.0
100°	688.0	699.4	671.4	629.2	579.6	544.8	527.7	523.1
102.5°	684.8	741.4	749.5	731.9	701.4	676.2	658.2	654.5
105°	638.9	737.6	794.1	817.5	818.6	814.0	806.0	802.6
107.5°	573.8	678.8	758.4	809.2	837.4	850.4	856.1	857.6
110°	534.5	633.2	715.9	778.7	819.2	843.1	853.4	858.5



TEST NUMBER: P332996

CATALOG NUMBER: SA4XXRDIP-C1195D590U835-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	505.8	593.0	671.2	733.9	779.9	808.9	823.3	831.6
115°	476.9	547.1	613.8	668.6	713.6	747.9	766.1	770.7
117.5°	462.7	520.8	573.3	619.7	658.2	686.9	705.4	709.0
120°	456.4	509.4	555.0	595.5	628.1	653.2	668.0	674.3
122.5°	450.9	502.1	543.6	579.1	606.6	628.1	640.6	646.9
125°	441.5	490.6	529.9	561.3	584.1	600.7	611.5	614.9
127.5°	430.1	477.0	516.3	546.0	569.0	583.7	592.8	596.2
130°	421.0	466.1	504.8	535.1	558.5	572.7	581.9	585.3
132.5°	411.4	453.7	491.6	521.8	544.8	560.9	569.5	573.0
135°	398.2	435.3	470.0	498.6	521.4	537.4	546.5	549.9
137.5°	386.2	417.6	446.9	472.7	494.0	509.8	517.3	521.4
140°	379.3	406.2	431.8	455.8	475.8	488.3	496.3	500.9
142.5°	373.0	396.6	418.6	439.4	457.0	468.7	475.8	478.9
145°	363.9	383.3	400.5	416.4	430.7	440.4	446.1	448.9
147.5°	356.5	371.9	385.6	398.2	408.7	417.0	421.3	422.4
150°	352.0	365.1	376.5	386.8	395.9	403.3	406.7	407.3
152.5°	346.9	358.2	368.7	377.2	384.9	391.0	393.0	393.6
155°	339.4	348.5	357.1	363.9	369.7	374.2	375.9	375.9
157.5°	331.3	339.0	346.1	351.6	356.0	359.4	360.4	360.4
160°	326.3	332.6	338.8	343.4	346.8	350.3	350.8	350.8
162.5°	321.3	326.6	331.5	335.7	338.2	341.6	342.2	341.7
165°	314.3	317.7	321.7	324.6	326.9	329.1	328.6	328.0
167.5°	307.6	310.2	313.4	315.1	316.3	317.7	317.6	317.2
170°	303.5	305.2	307.5	309.2	310.3	310.9	310.3	310.3
172.5°	299.8	301.1	302.5	303.7	304.4	305.0	304.4	303.5
175°	294.9	295.5	296.6	296.6	296.6	297.8	296.6	295.5
177.5°	291.7	292.2	292.2	292.6	292.2	292.6	291.7	290.8
180°	290.4	290.4	290.4	290.4	290.4	290.4	290.4	290.4

(END OF REPORT)