

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: P332990-840

Luminaire Tested: **SA4XXRDIP-C1195D365U840-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332990-840
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-C1195D365U840-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1195 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6188.0 lumens
Efficiency: N/A
Efficacy: 124.3 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

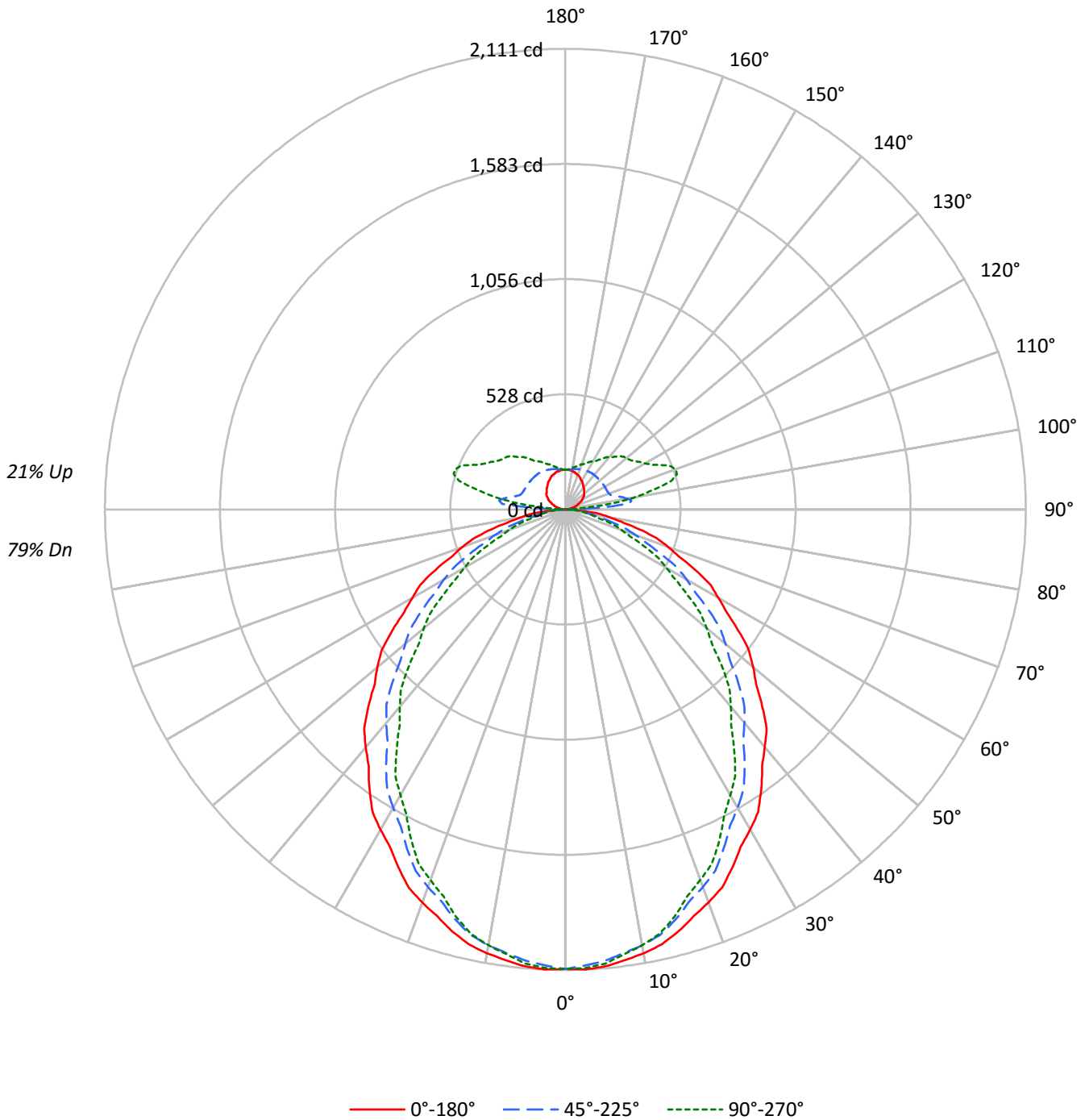
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	114	114	114	114	109	109	109	109	99	99	99	90	90	90	82	82	82	79				
1	105	100	96	93	100	96	93	89	88	85	83	80	78	76	74	72	71	67				
2	96	88	82	77	91	84	79	74	78	73	69	71	68	65	65	63	60	57				
3	88	78	70	64	83	75	68	62	69	63	59	63	59	55	58	55	52	49				
4	80	69	61	55	77	67	59	53	61	55	50	57	52	48	52	48	45	42				
5	74	62	54	48	71	60	52	46	55	49	44	51	46	42	47	43	39	37				
6	68	56	48	42	65	54	46	41	50	44	39	46	41	37	43	38	35	32				
7	64	51	43	37	61	49	41	36	46	39	34	42	37	33	39	35	31	29				
8	59	46	38	33	56	45	37	32	42	35	31	39	33	29	36	32	28	26				
9	55	43	35	30	53	41	34	29	39	32	28	36	31	27	34	29	25	23				
10	52	39	32	27	50	38	31	26	36	30	25	33	28	24	31	27	23	21				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17002	17002	17002
5°	17040	16832	16936
10°	16934	16629	16629
15°	16739	16280	16160
20°	16472	15821	15530
25°	16131	15284	14895
30°	15800	14716	14100
35°	15431	14128	13302
40°	14989	13460	12440
45°	14582	12795	11562
50°	14117	12031	10633
55°	13619	11234	9623
60°	13070	10362	8591
65°	12567	9270	7578
70°	11837	8068	6434
75°	10914	6691	5231
80°	9521	5100	4798
85°	8068	4631	4335



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.8	3.2
10°-20°	551.7	8.9
20°-30°	796.6	12.9
30°-40°	903.0	14.6
40°-50°	872.0	14.1
50°-60°	725.1	11.7
60°-70°	500.7	8.1
70°-80°	253.8	4.1
80°-90°	66.1	1.1
90°-100°	131.2	2.1
100°-110°	273.1	4.4
110°-120°	244.6	4.0
120°-130°	205.8	3.3
130°-140°	171.6	2.8
140°-150°	131.1	2.1
150°-160°	92.1	1.5
160°-170°	54.2	0.9
170°-180°	17.6	0.3
0°-30°	1546.1	25.0
0°-40°	2449.1	39.6
0°-60°	4046.2	65.4
0°-90°	4866.8	78.6
90°-120°	648.9	10.5
90°-150°	1157.3	18.7
90°-180°	1321.0	21.3
0°-180°	6188.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2106	2106	2106	2106	2106	
5°	2103	2096	2077	2092	2090	199
15°	2003	1987	1948	1944	1934	564
25°	1811	1780	1716	1689	1672	834
35°	1566	1513	1434	1380	1350	978
45°	1277	1215	1121	1044	1013	984
55°	968	901	798	717	684	865
65°	658	587	485	419	397	649
75°	350	289	214	179	168	369
85°	87	56	50	47	47	98
90°	0	3	6	7	8	5
95°	12	37	291	144	87	13
105°	42	60	234	504	502	45
115°	74	92	209	401	482	73
125°	102	122	208	341	385	91
135°	122	145	206	303	344	94
145°	140	161	205	256	281	88
155°	160	172	199	226	235	74
165°	174	179	191	202	205	49
175°	181	182	183	186	185	17
180°	182	182	182	182	182	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0
2.5°	2111.1	2110.0	2108.9	2107.7	2106.6	2104.5	2101.3	2098.1	2095.0	2091.8	2095.0
5°	2102.7	2101.3	2099.9	2098.5	2097.1	2094.2	2089.9	2085.6	2081.3	2077.0	2080.5
7.5°	2083.8	2082.2	2080.7	2079.2	2077.7	2074.2	2068.6	2063.1	2057.4	2051.8	2054.2
10°	2065.7	2063.9	2062.1	2060.3	2058.5	2054.4	2048.0	2041.5	2035.1	2028.6	2030.0
12.5°	2042.5	2040.4	2038.3	2036.2	2034.2	2029.3	2021.7	2014.2	2006.5	1998.9	1999.8
15°	2002.8	1999.5	1996.4	1993.2	1989.9	1983.8	1974.9	1965.9	1956.9	1947.9	1947.2
17.5°	1954.8	1950.0	1945.4	1940.8	1936.1	1928.4	1917.6	1906.9	1896.1	1885.4	1883.4
20°	1917.3	1912.7	1908.0	1903.4	1898.7	1890.3	1878.1	1865.9	1853.7	1841.6	1838.7
22.5°	1876.0	1870.9	1865.6	1860.4	1855.1	1846.0	1832.9	1819.9	1806.9	1793.8	1789.5
25°	1810.9	1804.4	1798.0	1791.6	1785.1	1774.5	1759.9	1745.1	1730.5	1715.8	1709.7
27.5°	1742.5	1734.4	1726.4	1718.3	1710.1	1698.3	1682.5	1666.9	1651.1	1635.5	1627.9
30°	1694.9	1685.9	1676.9	1667.9	1659.0	1646.1	1629.2	1612.4	1595.6	1578.7	1569.7
32.5°	1644.5	1634.4	1624.3	1614.2	1604.1	1590.3	1572.9	1555.5	1538.0	1520.7	1510.3
35°	1565.8	1554.3	1542.9	1531.4	1519.9	1505.2	1487.3	1469.5	1451.5	1433.6	1421.4
37.5°	1481.7	1469.8	1457.9	1446.1	1434.3	1418.5	1398.7	1378.8	1359.0	1339.1	1325.4
40°	1422.3	1410.5	1398.7	1386.8	1374.9	1358.9	1338.5	1318.0	1297.6	1277.2	1262.1
42.5°	1365.5	1353.1	1340.7	1328.3	1316.0	1299.1	1277.8	1256.5	1235.3	1214.0	1198.6
45°	1277.2	1263.8	1250.6	1237.4	1224.2	1206.7	1185.3	1163.8	1142.3	1120.7	1103.2
47.5°	1185.9	1172.2	1158.5	1144.8	1131.1	1113.1	1090.8	1068.3	1046.0	1023.7	1005.4
50°	1124.0	1109.9	1096.0	1082.1	1068.0	1049.6	1026.6	1003.7	980.8	957.9	940.0
52.5°	1060.8	1047.0	1033.4	1019.7	1006.0	987.3	963.9	940.4	916.9	893.3	875.1
55°	967.6	953.2	938.9	924.5	910.2	891.4	868.1	844.9	821.5	798.2	779.6
57.5°	875.3	860.4	845.5	830.6	815.7	796.8	773.9	750.8	727.9	705.0	686.1
60°	809.5	795.2	780.8	766.5	752.1	733.6	710.6	687.7	664.7	641.8	623.2
62.5°	750.1	735.3	720.3	705.5	690.5	671.4	647.8	624.3	600.8	577.3	560.1
65°	657.9	642.5	627.1	611.7	596.3	577.1	554.2	531.3	508.4	485.3	470.0
67.5°	562.1	547.3	532.6	517.9	503.1	485.0	463.7	442.5	421.2	399.9	386.7
70°	501.5	486.5	471.4	456.4	441.3	423.5	403.1	382.7	362.3	341.8	330.0
72.5°	437.0	423.4	409.8	396.2	382.5	366.1	346.8	327.5	308.2	288.9	278.8
75°	349.9	336.7	323.4	310.1	296.9	281.9	265.0	248.1	231.4	214.5	206.2
77.5°	261.6	250.3	239.0	227.8	216.5	204.1	190.5	176.9	163.3	149.7	144.8
80°	204.8	194.4	184.0	173.6	163.2	152.7	141.9	131.2	120.4	109.7	108.6
82.5°	155.8	146.2	136.7	127.1	117.6	109.8	103.6	97.5	91.3	85.1	84.3
85°	87.1	79.9	72.7	65.5	58.4	54.3	53.2	52.1	51.1	50.0	49.3
87.5°	29.8	27.6	25.5	23.3	21.1	19.8	19.9	19.6	19.5	19.4	19.0
90°	0.4	1.1	2.1	2.5	2.8	2.8	4.9	4.9	5.8	6.5	6.1
92.5°	4.0	6.0	9.3	13.6	18.9	26.3	44.4	72.1	99.1	113.2	94.3
95°	11.8	12.8	16.5	21.1	29.6	44.6	75.6	134.2	219.5	290.8	299.1
97.5°	21.1	21.1	24.2	28.5	35.9	48.4	72.3	120.7	205.4	306.4	375.8
100°	27.2	27.2	29.6	33.9	40.7	52.1	73.2	113.5	186.3	287.0	378.3
102.5°	32.8	33.4	35.6	39.6	46.2	57.0	76.0	111.5	173.5	262.7	356.9
105°	41.8	42.8	44.6	48.9	55.3	65.6	82.8	112.4	162.4	234.1	318.0
107.5°	51.6	52.3	54.1	58.7	64.8	75.0	90.7	117.8	160.4	218.1	286.6
110°	58.2	58.9	60.7	64.9	71.4	81.0	96.7	121.7	161.0	212.7	270.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	64.4	65.1	67.3	71.2	77.7	87.3	102.4	126.0	162.7	210.2	262.1
115°	73.5	74.6	77.1	80.7	87.5	97.0	111.4	132.8	165.9	208.8	253.8
117.5°	82.9	83.9	86.1	90.1	96.4	106.4	120.0	139.7	169.5	208.4	250.0
120°	89.3	90.0	92.4	96.3	102.4	112.4	126.0	144.5	172.1	208.4	248.0
122.5°	94.9	95.6	98.2	101.8	108.5	118.2	131.7	149.2	174.6	208.1	245.8
125°	102.4	103.8	106.0	110.0	116.7	126.7	139.6	155.9	178.4	207.7	242.0
127.5°	109.1	110.2	112.8	117.2	124.3	134.4	146.8	161.9	181.6	206.9	236.9
130°	112.8	114.2	117.0	122.4	129.2	139.6	151.7	165.6	183.8	206.6	233.8
132.5°	116.5	117.6	121.4	126.4	133.8	143.5	155.7	169.4	185.8	206.4	231.0
135°	121.7	123.1	126.7	132.8	140.3	149.6	161.3	174.2	188.8	205.9	226.6
137.5°	126.9	128.3	132.2	137.9	145.7	154.6	165.6	177.6	190.6	205.9	223.0
140°	130.7	131.7	135.6	141.7	149.2	157.7	168.4	179.9	192.0	205.6	221.0
142.5°	134.6	135.7	139.4	145.1	152.3	160.6	171.1	181.6	193.2	205.6	219.2
145°	140.3	141.4	144.9	149.9	156.7	164.5	173.8	183.5	193.8	204.9	216.3
147.5°	146.6	146.9	150.2	155.2	160.9	167.9	176.6	185.1	194.2	203.6	213.7
150°	150.6	151.0	153.8	158.1	163.5	170.3	178.1	185.9	194.2	202.7	211.7
152.5°	154.3	154.4	157.2	161.3	166.0	172.3	179.3	186.5	193.6	201.3	209.3
155°	159.6	159.9	162.1	165.6	169.6	174.9	181.0	187.0	192.8	199.1	205.9
157.5°	164.6	164.6	166.6	169.4	172.8	177.0	182.2	187.0	191.8	196.9	202.5
160°	167.7	167.7	169.2	171.7	174.5	178.4	182.8	187.0	191.0	195.2	199.9
162.5°	170.6	170.4	171.5	173.7	176.2	179.4	183.3	187.0	190.1	193.5	197.6
165°	173.8	173.8	174.5	176.3	178.1	180.3	183.5	186.3	188.4	191.0	193.8
167.5°	177.0	176.6	177.0	178.3	179.4	181.1	183.4	185.4	186.7	188.3	190.4
170°	178.4	178.1	178.4	179.6	180.3	181.3	183.1	184.9	185.6	186.6	188.1
172.5°	179.9	179.6	179.6	180.4	180.8	181.6	182.8	184.3	184.5	184.9	186.1
175°	181.3	181.0	181.0	181.3	181.7	181.7	182.4	183.5	183.1	183.1	183.8
177.5°	182.0	181.7	181.4	181.7	181.7	181.7	182.0	182.5	182.0	182.0	182.3
180°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0	2106.0
2.5°	2098.1	2101.3	2104.5	2105.9	2105.6	2105.3	2105.0	2104.8
5°	2084.2	2087.7	2091.3	2092.7	2092.0	2091.3	2090.6	2089.9
7.5°	2056.4	2058.7	2061.0	2061.5	2060.4	2059.3	2058.1	2057.0
10°	2031.4	2032.9	2034.4	2034.4	2032.9	2031.4	2030.0	2028.6
12.5°	2000.6	2001.6	2002.4	2001.8	1999.8	1997.8	1995.8	1993.8
15°	1946.5	1945.8	1945.1	1943.5	1941.0	1938.4	1936.0	1933.5
17.5°	1881.4	1879.4	1877.3	1874.5	1870.7	1866.8	1863.1	1859.3
20°	1835.8	1832.9	1830.1	1826.3	1821.7	1817.1	1812.3	1807.7
22.5°	1785.2	1780.9	1776.7	1772.6	1768.8	1764.9	1761.2	1757.4
25°	1703.5	1697.5	1691.4	1686.6	1682.9	1679.4	1675.8	1672.2
27.5°	1620.4	1612.9	1605.4	1599.0	1593.9	1588.7	1583.6	1578.4
30°	1560.7	1551.9	1542.9	1535.5	1529.7	1524.1	1518.3	1512.6
32.5°	1499.9	1489.4	1479.0	1471.2	1465.7	1460.3	1454.8	1449.4
35°	1409.2	1397.0	1384.8	1375.5	1369.1	1362.6	1356.1	1349.7
37.5°	1311.8	1298.2	1284.6	1274.6	1268.1	1261.6	1255.3	1248.8
40°	1247.1	1232.0	1217.0	1206.2	1199.7	1193.3	1186.9	1180.4
42.5°	1183.3	1167.9	1152.6	1141.6	1134.8	1128.1	1121.4	1114.6
45°	1085.6	1068.0	1050.5	1038.4	1032.1	1025.6	1019.2	1012.7
47.5°	987.2	969.1	950.9	938.2	931.1	924.0	916.9	909.8
50°	922.0	904.1	886.2	873.8	867.1	860.2	853.4	846.6
52.5°	857.0	838.8	820.5	807.9	800.8	793.8	786.6	779.5
55°	760.9	742.4	723.7	710.9	704.2	697.3	690.5	683.7
57.5°	667.2	648.2	629.3	617.3	612.2	606.9	601.8	596.6
60°	604.5	585.9	567.2	555.1	549.4	543.6	537.9	532.1
62.5°	542.9	525.7	508.5	497.6	493.0	488.5	483.8	479.3
65°	454.5	439.2	423.7	413.8	409.6	405.3	401.0	396.7
67.5°	373.4	360.1	346.9	337.9	333.2	328.4	323.7	318.9
70°	318.2	306.4	294.6	286.9	283.3	279.7	276.1	272.6
72.5°	268.7	258.6	248.5	241.9	238.5	235.3	232.0	228.6
75°	198.0	189.8	181.5	176.3	174.2	172.0	169.9	167.7
77.5°	140.1	135.2	130.5	127.7	127.0	126.4	125.8	125.1
80°	107.6	106.4	105.3	104.6	104.3	103.9	103.6	103.2
82.5°	83.6	82.8	82.0	81.4	81.1	80.7	80.4	80.0
85°	48.6	47.9	47.2	46.8	46.8	46.8	46.8	46.8
87.5°	18.8	18.6	18.4	18.4	18.7	19.1	19.3	19.6
90°	6.5	6.8	7.2	7.2	7.5	7.9	7.5	7.5
92.5°	70.1	52.7	42.0	34.8	30.6	28.7	27.5	27.5
95°	264.5	209.1	161.3	126.7	109.2	98.2	91.7	87.1
97.5°	390.7	370.2	335.3	298.0	272.4	251.0	240.2	232.8
100°	430.4	437.6	420.1	393.6	362.6	340.8	330.1	327.3
102.5°	428.5	463.8	468.9	457.9	438.9	423.1	411.8	409.5
105°	399.7	461.5	496.9	511.5	512.2	509.3	504.3	502.2
107.5°	359.0	424.7	474.4	506.3	523.9	532.1	535.6	536.5
110°	334.5	396.2	448.0	487.2	512.5	527.6	533.9	537.1



TEST NUMBER: P332990-840

CATALOG NUMBER: SA4XXRDIP-C1195D365U840-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	316.4	371.0	419.9	459.2	488.0	506.1	515.1	520.3
115°	298.4	342.2	384.1	418.3	446.5	467.9	479.4	482.2
117.5°	289.5	325.9	358.7	387.8	411.8	429.8	441.3	443.5
120°	285.5	318.7	347.3	372.6	392.9	408.7	418.0	421.9
122.5°	282.1	314.2	340.1	362.3	379.5	392.9	400.8	404.8
125°	276.3	306.9	331.5	351.2	365.5	375.9	382.6	384.8
127.5°	269.1	298.4	323.1	341.6	356.0	365.2	370.9	373.0
130°	263.4	291.6	315.9	334.8	349.4	358.3	364.1	366.2
132.5°	257.4	283.9	307.6	326.5	340.8	350.9	356.4	358.5
135°	249.1	272.4	294.1	311.9	326.2	336.2	341.9	344.1
137.5°	241.7	261.3	279.6	295.7	309.1	318.9	323.7	326.2
140°	237.3	254.1	270.1	285.2	297.7	305.5	310.5	313.4
142.5°	233.4	248.1	261.9	274.9	286.0	293.3	297.7	299.6
145°	227.7	239.8	250.5	260.5	269.4	275.5	279.1	280.8
147.5°	223.1	232.7	241.3	249.1	255.7	260.9	263.6	264.3
150°	220.3	228.4	235.6	242.0	247.7	252.4	254.5	254.8
152.5°	217.1	224.2	230.8	236.0	240.9	244.6	245.9	246.3
155°	212.4	218.0	223.4	227.7	231.3	234.1	235.2	235.2
157.5°	207.3	212.1	216.6	220.0	222.7	224.9	225.5	225.5
160°	204.2	208.0	212.0	214.9	217.0	219.1	219.5	219.5
162.5°	201.1	204.4	207.4	210.1	211.6	213.7	214.1	213.8
165°	196.6	198.8	201.3	203.1	204.5	205.9	205.6	205.2
167.5°	192.5	194.1	196.1	197.1	197.8	198.8	198.7	198.4
170°	189.9	191.0	192.4	193.5	194.2	194.5	194.2	194.2
172.5°	187.6	188.3	189.2	190.1	190.5	190.8	190.5	189.9
175°	184.5	184.9	185.6	185.6	185.6	186.3	185.6	184.9
177.5°	182.5	182.8	182.8	183.1	182.8	183.1	182.5	182.0
180°	181.7	181.7	181.7	181.7	181.7	181.7	181.7	181.7

(END OF REPORT)