

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: P332990-830

Luminaire Tested: **SA4XXRDIP-C1195D365U830-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332990-830
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-C1195D365U830-4F0-1E-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: 5775.5 lumens
Efficiency: N/A
Efficacy: 116.0 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

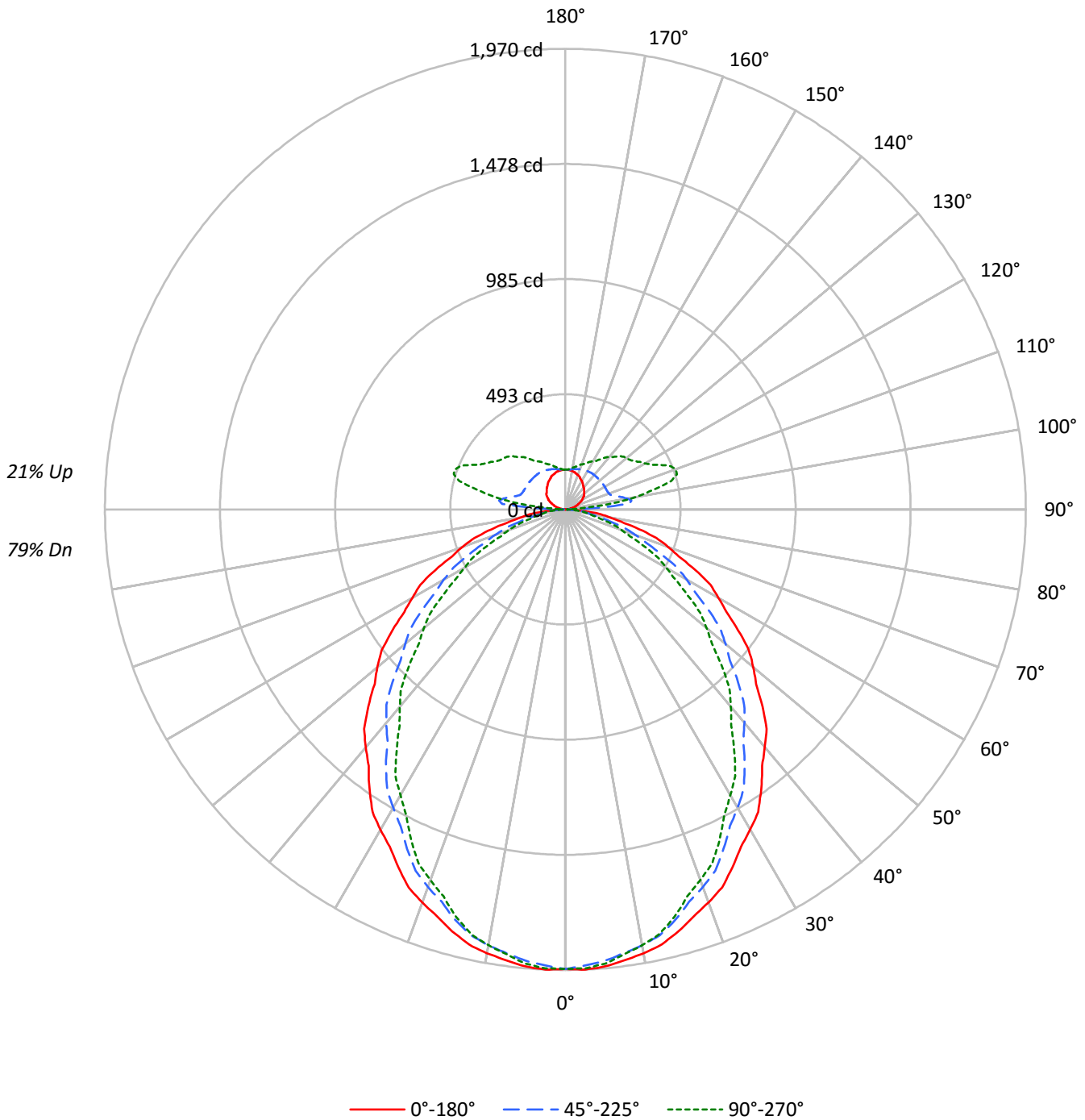
Input Watts (W): 49.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332990-830

CATALOG NUMBER: SA4XXRDIP-C1195D365U830-4F0-1E-UDD-F4

Luminous Intensity Polar Plot





TEST NUMBER: P332990-830

CATALOG NUMBER: SA4XXRDIP-C1195D365U830-4F0-1E-UDD-F4

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	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°	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



TEST NUMBER: P332990-830

CATALOG NUMBER: SA4XXRDIP-C1195D365U830-4F0-1E-UDD-F4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	184.6	3.2
10°-20°	514.9	8.9
20°-30°	743.5	12.9
30°-40°	842.8	14.6
40°-50°	813.8	14.1
50°-60°	676.7	11.7
60°-70°	467.3	8.1
70°-80°	236.9	4.1
80°-90°	61.7	1.1
90°-100°	122.5	2.1
100°-110°	254.9	4.4
110°-120°	228.3	4.0
120°-130°	192.0	3.3
130°-140°	160.1	2.8
140°-150°	122.3	2.1
150°-160°	86.0	1.5
160°-170°	50.6	0.9
170°-180°	16.5	0.3
0°-30°	1443.1	25.0
0°-40°	2285.8	39.6
0°-60°	3776.4	65.4
0°-90°	4542.3	78.6
90°-120°	605.7	10.5
90°-150°	1080.2	18.7
90°-180°	1233.0	21.3
0°-180°	5775.5	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°	0	3	6	7	7	4
95°	11	35	272	134	81	12
105°	39	56	218	471	469	42
115°	69	86	195	374	450	68
125°	96	114	194	319	359	85
135°	114	135	192	283	321	88
145°	131	150	191	238	262	82
155°	149	161	186	210	220	69
165°	162	167	178	189	192	46
175°	169	170	171	173	173	16
180°	170	170	170	170	170	



TEST NUMBER: P332990-830

CATALOG NUMBER: SA4XXRDIP-C1195D365U830-4F0-1E-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	25.7	23.8	21.8	19.7	18.5	18.6	18.3	18.2	18.1	17.7
90°	0.4	1.0	2.0	2.4	2.6	2.6	4.6	4.6	5.4	6.0	5.7
92.5°	3.8	5.6	8.7	12.7	17.6	24.5	41.5	67.3	92.5	105.7	88.0
95°	11.0	12.0	15.4	19.7	27.6	41.7	70.6	125.3	204.9	271.5	279.2
97.5°	19.7	19.7	22.6	26.6	33.5	45.1	67.5	112.6	191.7	286.0	350.7
100°	25.4	25.4	27.6	31.7	38.0	48.6	68.3	105.9	173.9	267.9	353.1
102.5°	30.6	31.2	33.3	36.9	43.1	53.2	71.0	104.1	161.9	245.2	333.1
105°	39.0	40.0	41.7	45.6	51.7	61.3	77.3	104.9	151.6	218.5	296.8
107.5°	48.2	48.8	50.5	54.8	60.5	70.0	84.6	109.9	149.7	203.6	267.5
110°	54.3	55.0	56.6	60.6	66.6	75.6	90.3	113.6	150.2	198.5	252.9



TEST NUMBER: P332990-830

CATALOG NUMBER: SA4XXRDIP-C1195D365U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	60.1	60.8	62.8	66.4	72.5	81.4	95.6	117.6	151.8	196.1	244.6
115°	68.6	69.7	71.9	75.3	81.6	90.6	104.0	123.9	154.9	194.9	236.9
117.5°	77.4	78.3	80.4	84.1	90.0	99.3	112.0	130.4	158.2	194.5	233.4
120°	83.3	84.0	86.2	89.9	95.6	104.9	117.6	134.9	160.6	194.5	231.5
122.5°	88.6	89.3	91.6	95.0	101.2	110.3	122.9	139.2	163.0	194.3	229.4
125°	95.6	96.9	99.0	102.6	109.0	118.3	130.3	145.5	166.5	193.9	225.8
127.5°	101.8	102.8	105.3	109.4	116.0	125.5	137.0	151.1	169.5	193.1	221.1
130°	105.3	106.6	109.2	114.2	120.6	130.3	141.6	154.6	171.5	192.8	218.2
132.5°	108.8	109.8	113.3	118.0	124.9	133.9	145.3	158.1	173.4	192.7	215.6
135°	113.6	114.9	118.3	123.9	130.9	139.6	150.5	162.6	176.3	192.2	211.5
137.5°	118.5	119.7	123.4	128.8	136.0	144.3	154.6	165.8	177.9	192.2	208.1
140°	122.0	122.9	126.6	132.2	139.2	147.2	157.2	167.9	179.2	191.9	206.2
142.5°	125.6	126.7	130.1	135.4	142.1	149.9	159.7	169.5	180.3	191.9	204.6
145°	130.9	132.0	135.3	139.9	146.3	153.5	162.2	171.3	180.9	191.2	201.9
147.5°	136.9	137.1	140.2	144.9	150.1	156.7	164.9	172.8	181.3	190.0	199.4
150°	140.5	140.9	143.5	147.6	152.6	158.9	166.3	173.5	181.3	189.2	197.6
152.5°	144.0	144.1	146.8	150.5	155.0	160.8	167.3	174.1	180.7	187.8	195.4
155°	148.9	149.2	151.3	154.6	158.3	163.2	168.9	174.6	179.9	185.9	192.2
157.5°	153.6	153.6	155.5	158.1	161.3	165.2	170.0	174.6	179.0	183.8	189.0
160°	156.6	156.6	157.9	160.2	162.9	166.5	170.6	174.6	178.2	182.2	186.5
162.5°	159.2	159.0	160.0	162.1	164.5	167.4	171.1	174.6	177.4	180.6	184.5
165°	162.2	162.2	162.9	164.6	166.3	168.2	171.3	173.9	175.9	178.2	180.9
167.5°	165.2	164.9	165.2	166.5	167.4	169.0	171.2	173.1	174.3	175.8	177.7
170°	166.5	166.3	166.5	167.6	168.2	169.2	170.9	172.6	173.2	174.2	175.6
172.5°	167.9	167.6	167.6	168.3	168.7	169.5	170.6	172.0	172.2	172.6	173.7
175°	169.2	168.9	168.9	169.2	169.6	169.6	170.2	171.3	170.9	170.9	171.5
177.5°	169.8	169.6	169.3	169.6	169.6	169.6	169.8	170.3	169.8	169.8	170.1
180°	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6



TEST NUMBER: P332990-830

CATALOG NUMBER: SA4XXRDIP-C1195D365U830-4F0-1E-UDD-F4

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°	17.5	17.3	17.2	17.2	17.4	17.8	18.0	18.3
90°	6.0	6.3	6.7	6.7	7.0	7.4	7.0	7.0
92.5°	65.4	49.2	39.2	32.5	28.6	26.8	25.6	25.6
95°	246.9	195.2	150.5	118.3	101.9	91.6	85.6	81.2
97.5°	364.7	345.5	312.9	278.1	254.2	234.2	224.2	217.3
100°	401.7	408.4	392.1	367.4	338.5	318.1	308.1	305.5
102.5°	399.9	432.9	437.6	427.3	409.6	394.9	384.4	382.2
105°	373.1	430.7	463.7	477.4	478.1	475.3	470.7	468.7
107.5°	335.1	396.4	442.8	472.6	489.0	496.6	499.9	500.8
110°	312.2	369.8	418.1	454.7	478.3	492.4	498.3	501.3



TEST NUMBER: P332990-830

CATALOG NUMBER: SA4XXRDIP-C1195D365U830-4F0-1E-UDD-F4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	295.3	346.3	391.9	428.6	455.4	472.4	480.8	485.6
115°	278.5	319.4	358.4	390.4	416.7	436.7	447.4	450.1
117.5°	270.2	304.2	334.8	361.9	384.4	401.1	411.9	414.0
120°	266.5	297.5	324.1	347.8	366.7	381.4	390.1	393.8
122.5°	263.3	293.2	317.4	338.2	354.2	366.7	374.1	377.8
125°	257.9	286.4	309.4	327.8	341.1	350.8	357.1	359.1
127.5°	251.2	278.5	301.5	318.9	332.2	340.8	346.2	348.2
130°	245.8	272.2	294.8	312.5	326.1	334.4	339.8	341.8
132.5°	240.3	264.9	287.1	304.7	318.1	327.5	332.6	334.6
135°	232.5	254.2	274.5	291.2	304.4	313.8	319.1	321.1
137.5°	225.6	243.8	261.0	276.0	288.5	297.7	302.1	304.4
140°	221.5	237.1	252.1	266.2	277.9	285.1	289.8	292.5
142.5°	217.8	231.6	244.4	256.6	266.9	273.7	277.9	279.7
145°	212.5	223.9	233.8	243.2	251.5	257.1	260.5	262.1
147.5°	208.2	217.2	225.2	232.5	238.7	243.6	246.0	246.7
150°	205.6	213.2	219.9	225.8	231.2	235.5	237.5	237.8
152.5°	202.6	209.2	215.4	220.3	224.8	228.3	229.5	229.9
155°	198.2	203.5	208.5	212.5	215.8	218.5	219.5	219.5
157.5°	193.5	197.9	202.2	205.4	207.8	209.9	210.5	210.5
160°	190.6	194.2	197.8	200.6	202.6	204.5	204.9	204.9
162.5°	187.7	190.8	193.6	196.0	197.5	199.4	199.8	199.5
165°	183.5	185.6	187.8	189.5	190.9	192.2	191.9	191.5
167.5°	179.6	181.2	183.0	184.0	184.6	185.6	185.5	185.2
170°	177.2	178.2	179.6	180.6	181.3	181.5	181.3	181.3
172.5°	175.1	175.8	176.6	177.4	177.8	178.0	177.8	177.2
175°	172.2	172.6	173.2	173.2	173.2	173.9	173.2	172.6
177.5°	170.3	170.6	170.6	170.9	170.6	170.9	170.3	169.8
180°	169.6	169.6	169.6	169.6	169.6	169.6	169.6	169.6

(END OF REPORT)