

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: P332958-840

Luminaire Tested: **SA4XXRDIP-C1020D365U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332958-840
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-C1020D365U840-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 365 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

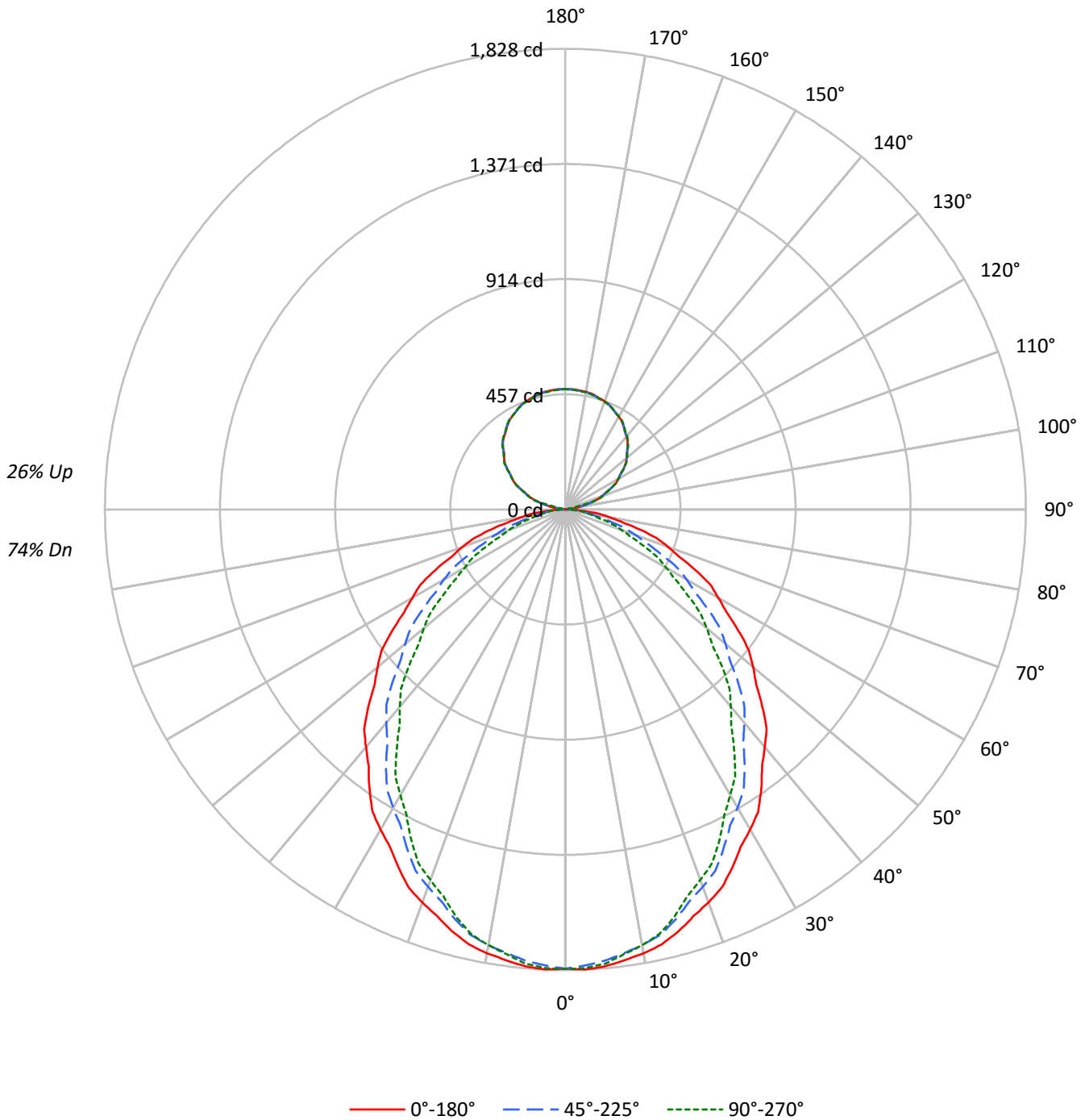
Lumens per Lamp: N/A
Luminaire Lumens: 5690.5 lumens
Efficiency: N/A
Efficacy: 130.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 43.5
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	113	113	113	113	107	107	107	107	97	97	97	87	87	87	78	78	78	74				74
1	104	99	95	92	98	95	91	88	86	83	81	77	75	74	70	68	67				63	
2	95	87	81	76	90	83	78	73	75	71	67	68	65	62	62	59	57				54	
3	87	77	70	64	82	74	67	61	67	62	57	61	57	53	55	52	49				46	
4	80	69	60	54	75	65	58	53	60	54	49	55	50	46	50	46	42				40	
5	73	61	53	47	69	59	51	46	54	48	43	49	44	40	45	41	37				35	
6	68	55	47	41	64	53	45	40	49	42	38	45	39	35	41	36	33				31	
7	63	50	42	36	60	48	41	35	44	38	33	41	35	31	37	33	29				27	
8	58	46	38	32	55	44	37	32	41	34	30	37	32	28	34	30	27				24	
9	55	42	34	29	52	40	33	28	37	31	27	35	29	26	32	27	24				22	
10	51	39	31	26	49	37	30	26	35	29	24	32	27	23	30	25	22				20	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	14721	14721	14721
5°	14755	14574	14665
10°	14662	14399	14399
15°	14493	14097	13992
20°	14262	13698	13447
25°	13967	13233	12897
30°	13679	12743	12209
35°	13361	12232	11517
40°	12978	11653	10771
45°	12625	11079	10011
50°	12223	10417	9207
55°	11792	9728	8332
60°	11317	8972	7440
65°	10883	8029	6562
70°	10249	6987	5570
75°	9451	5792	4529
80°	8243	4412	4156
85°	6984	4011	3751



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.3	3.0
10°-20°	477.7	8.4
20°-30°	689.8	12.1
30°-40°	781.8	13.7
40°-50°	755.0	13.3
50°-60°	627.8	11.0
60°-70°	433.5	7.6
70°-80°	219.7	3.9
80°-90°	57.8	1.0
90°-100°	16.3	0.3
100°-110°	104.1	1.8
110°-120°	199.1	3.5
120°-130°	252.7	4.4
130°-140°	270.4	4.8
140°-150°	252.8	4.4
150°-160°	203.9	3.6
160°-170°	131.5	2.3
170°-180°	45.3	0.8
0°-30°	1338.7	23.5
0°-40°	2120.6	37.3
0°-60°	3503.4	61.6
0°-90°	4214.4	74.1
90°-120°	319.5	5.6
90°-150°	1095.3	19.2
90°-180°	1476.0	25.9
0°-180°	5690.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1824	1824	1824	1824	1824	
5°	1821	1814	1798	1811	1810	173
15°	1734	1720	1687	1683	1674	488
25°	1568	1541	1486	1462	1448	722
35°	1356	1310	1241	1195	1169	847
45°	1106	1052	970	904	877	852
55°	838	780	691	621	592	749
65°	570	508	420	363	344	562
75°	303	251	186	155	145	320
85°	75	49	43	41	40	85
90°	1	5	8	10	11	4
95°	20	8	8	10	10	25
105°	107	110	111	114	102	112
115°	201	202	201	202	202	197
125°	282	283	283	284	284	252
135°	350	349	351	352	352	269
145°	403	404	404	405	406	252
155°	442	442	442	443	442	204
165°	466	465	465	467	464	132
175°	477	475	475	478	474	45
180°	477	477	477	477	477	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5
2.5°	1828.0	1826.9	1825.9	1825.0	1824.0	1822.1	1819.4	1816.6	1813.9	1811.2	1813.9
5°	1820.7	1819.5	1818.3	1816.9	1815.7	1813.2	1809.6	1805.8	1802.1	1798.4	1801.5
7.5°	1804.2	1802.9	1801.6	1800.3	1799.0	1795.9	1791.1	1786.2	1781.4	1776.6	1778.6
10°	1788.6	1787.1	1785.4	1783.9	1782.4	1778.8	1773.2	1767.7	1762.0	1756.5	1757.7
12.5°	1768.5	1766.7	1764.8	1763.1	1761.3	1757.1	1750.5	1743.9	1737.4	1730.8	1731.5
15°	1734.1	1731.3	1728.6	1725.8	1722.9	1717.7	1709.9	1702.1	1694.5	1686.7	1686.1
17.5°	1692.5	1688.5	1684.5	1680.4	1676.4	1669.7	1660.4	1651.1	1641.8	1632.4	1630.7
20°	1660.1	1656.1	1652.0	1648.0	1644.0	1636.7	1626.2	1615.6	1605.1	1594.5	1592.1
22.5°	1624.4	1619.8	1615.3	1610.8	1606.3	1598.3	1587.1	1575.8	1564.5	1553.2	1549.4
25°	1568.0	1562.4	1556.8	1551.3	1545.6	1536.5	1523.8	1511.1	1498.3	1485.6	1480.4
27.5°	1508.7	1501.8	1494.8	1487.7	1480.8	1470.5	1456.8	1443.3	1429.7	1416.0	1409.6
30°	1467.4	1459.7	1452.0	1444.2	1436.4	1425.2	1410.7	1396.0	1381.5	1367.0	1359.2
32.5°	1423.9	1415.1	1406.3	1397.7	1388.9	1377.0	1361.9	1346.9	1331.7	1316.7	1307.7
35°	1355.7	1345.8	1335.8	1326.0	1316.1	1303.3	1287.8	1272.3	1256.8	1241.2	1230.7
37.5°	1282.8	1272.6	1262.4	1252.1	1241.9	1228.2	1211.0	1193.9	1176.6	1159.4	1147.6
40°	1231.5	1221.2	1211.0	1200.7	1190.5	1176.6	1158.9	1141.1	1123.5	1105.8	1092.8
42.5°	1182.3	1171.6	1160.8	1150.1	1139.4	1124.8	1106.4	1087.9	1069.5	1051.1	1037.8
45°	1105.8	1094.4	1082.9	1071.4	1059.9	1044.8	1026.2	1007.6	989.0	970.4	955.2
47.5°	1026.8	1014.9	1003.1	991.3	979.4	963.8	944.4	925.0	905.6	886.4	870.6
50°	973.2	961.1	949.0	936.9	924.7	908.8	889.0	869.1	849.2	829.4	813.9
52.5°	918.5	906.6	894.7	882.9	871.0	855.0	834.6	814.3	793.9	773.6	757.8
55°	837.8	825.4	812.9	800.5	788.1	771.8	751.6	731.4	711.3	691.2	675.0
57.5°	757.9	745.0	732.1	719.1	706.3	689.8	670.0	650.2	630.3	610.5	594.1
60°	700.9	688.5	676.1	663.7	651.3	635.1	615.3	595.4	575.5	555.7	539.6
62.5°	649.5	636.6	623.7	610.8	597.9	581.3	560.9	540.6	520.2	499.9	484.9
65°	569.7	556.3	543.0	529.7	516.3	499.7	479.9	460.0	440.1	420.3	407.0
67.5°	486.8	473.9	461.2	448.4	435.6	420.0	401.5	383.1	364.7	346.3	334.8
70°	434.2	421.2	408.2	395.2	382.1	366.8	349.1	331.3	313.7	296.0	285.8
72.5°	378.4	366.6	354.8	343.1	331.2	317.0	300.3	283.6	266.9	250.2	241.5
75°	303.0	291.5	280.0	268.5	257.1	244.0	229.4	214.9	200.3	185.7	178.5
77.5°	226.5	216.7	207.0	197.2	187.5	176.7	164.9	153.2	141.4	129.6	125.4
80°	177.3	168.3	159.4	150.4	141.4	132.2	122.9	113.6	104.2	94.9	94.0
82.5°	134.9	126.6	118.4	110.1	101.9	95.0	89.8	84.4	79.1	73.7	73.0
85°	75.4	69.2	63.0	56.8	50.6	47.0	46.0	45.1	44.2	43.3	42.6
87.5°	26.0	24.1	22.3	20.5	18.7	17.7	17.6	17.5	17.4	17.2	17.1
90°	1.1	1.9	2.8	3.7	4.5	5.4	6.0	6.6	7.2	7.9	8.3
92.5°	4.5	4.5	4.5	4.6	4.6	5.0	5.7	6.3	7.0	7.6	8.1
95°	19.6	17.0	14.2	11.5	8.9	7.6	7.6	7.7	7.8	7.9	8.3
97.5°	41.7	43.3	45.0	46.8	48.4	44.8	36.0	27.2	18.3	9.4	9.5
100°	58.6	60.0	61.4	62.8	64.2	59.5	48.6	37.6	26.7	15.8	14.3
102.5°	77.4	78.5	79.5	80.5	81.6	81.4	80.0	78.6	77.1	75.6	61.1
105°	107.4	107.9	108.4	108.9	109.4	109.8	110.2	110.6	111.0	111.4	112.1
107.5°	135.3	135.5	135.8	136.0	136.3	136.6	137.2	137.7	138.3	138.9	139.2
110°	154.2	154.4	154.6	154.9	155.1	155.5	155.9	156.4	156.9	157.4	157.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	172.5	172.9	173.3	173.7	174.2	174.5	174.7	174.9	175.1	175.4	175.3
115°	200.6	200.9	201.1	201.3	201.6	201.6	201.6	201.5	201.4	201.3	201.5
117.5°	225.9	226.2	226.5	226.9	227.2	227.4	227.6	227.8	227.9	228.1	228.1
120°	243.1	243.4	243.7	244.0	244.3	244.4	244.4	244.3	244.2	244.1	244.3
122.5°	259.0	259.2	259.4	259.6	259.8	259.9	260.0	260.1	260.2	260.4	260.4
125°	282.0	282.3	282.6	282.9	283.3	283.3	283.2	283.0	282.9	282.7	282.9
127.5°	303.7	303.8	303.8	303.9	304.0	304.2	304.6	304.9	305.3	305.7	305.6
130°	317.6	317.7	317.8	317.9	318.0	318.1	318.3	318.6	318.8	319.1	319.1
132.5°	330.5	330.6	330.7	330.9	331.0	331.2	331.5	331.8	332.1	332.4	332.5
135°	349.7	349.7	349.6	349.5	349.4	349.5	349.9	350.2	350.5	350.8	351.0
137.5°	366.8	366.9	366.9	366.9	367.0	367.2	367.5	367.8	368.2	368.5	368.7
140°	378.0	378.1	378.3	378.4	378.6	378.7	378.9	379.1	379.2	379.4	379.6
142.5°	388.0	388.2	388.5	388.8	389.1	389.3	389.4	389.5	389.6	389.7	389.8
145°	403.3	403.5	403.7	404.0	404.2	404.3	404.3	404.3	404.3	404.3	404.5
147.5°	415.5	416.0	416.4	416.9	417.3	417.5	417.4	417.3	417.2	417.2	417.2
150°	424.3	424.6	425.0	425.4	425.7	425.8	425.7	425.6	425.5	425.5	425.5
152.5°	431.8	432.0	432.3	432.5	432.8	432.8	432.7	432.5	432.4	432.3	432.4
155°	442.2	442.3	442.3	442.4	442.5	442.4	442.2	441.9	441.7	441.5	441.8
157.5°	451.0	450.9	450.9	450.8	450.8	450.6	450.4	450.1	449.8	449.6	450.0
160°	456.2	455.9	455.7	455.4	455.1	455.0	454.9	454.8	454.7	454.6	455.1
162.5°	460.7	460.4	460.1	459.8	459.5	459.3	459.2	459.1	459.1	459.0	459.5
165°	466.5	466.1	465.6	465.2	464.8	464.6	464.6	464.6	464.6	464.6	465.3
167.5°	471.0	470.6	470.2	469.8	469.4	469.2	469.1	469.1	469.0	469.0	469.7
170°	473.6	473.1	472.6	472.2	471.7	471.5	471.6	471.7	471.7	471.8	472.4
172.5°	475.3	474.8	474.3	473.9	473.4	473.2	473.3	473.4	473.4	473.5	474.1
175°	477.2	476.7	476.3	475.7	475.2	475.0	475.1	475.2	475.3	475.3	476.2
177.5°	478.1	477.6	477.2	476.7	476.3	476.1	476.3	476.4	476.5	476.6	477.2
180°	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5	1823.5
2.5°	1816.6	1819.4	1822.1	1823.4	1823.1	1822.9	1822.6	1822.4
5°	1804.5	1807.7	1810.8	1812.0	1811.4	1810.8	1810.2	1809.6
7.5°	1780.6	1782.5	1784.5	1785.0	1784.0	1783.0	1782.0	1781.0
10°	1759.0	1760.2	1761.4	1761.4	1760.2	1759.0	1757.7	1756.5
12.5°	1732.2	1733.0	1733.7	1733.2	1731.5	1729.8	1728.1	1726.4
15°	1685.5	1684.8	1684.2	1682.7	1680.6	1678.4	1676.3	1674.1
17.5°	1629.0	1627.3	1625.6	1623.1	1619.7	1616.5	1613.2	1609.8
20°	1589.5	1587.1	1584.6	1581.3	1577.3	1573.3	1569.2	1565.2
22.5°	1545.7	1542.0	1538.3	1534.8	1531.5	1528.2	1524.9	1521.7
25°	1475.0	1469.8	1464.5	1460.3	1457.2	1454.1	1451.0	1447.9
27.5°	1403.0	1396.5	1390.0	1384.5	1380.1	1375.5	1371.1	1366.7
30°	1351.4	1343.6	1335.8	1329.5	1324.5	1319.6	1314.6	1309.7
32.5°	1298.7	1289.7	1280.7	1273.8	1269.1	1264.4	1259.7	1255.0
35°	1220.1	1209.6	1199.0	1191.0	1185.4	1179.8	1174.3	1168.6
37.5°	1135.9	1124.1	1112.3	1103.6	1098.0	1092.4	1086.8	1081.3
40°	1079.7	1066.7	1053.7	1044.4	1038.8	1033.2	1027.6	1022.1
42.5°	1024.5	1011.3	997.9	988.5	982.6	976.7	970.9	965.1
45°	940.0	924.7	909.6	899.2	893.6	888.0	882.4	876.9
47.5°	854.9	839.1	823.2	812.3	806.2	800.0	793.9	787.8
50°	798.3	782.8	767.3	756.6	750.7	744.8	738.9	733.1
52.5°	741.9	726.2	710.4	699.5	693.4	687.2	681.1	675.0
55°	658.8	642.8	626.6	615.6	609.7	603.8	597.9	592.0
57.5°	577.6	561.3	544.9	534.5	530.0	525.5	521.1	516.6
60°	523.4	507.3	491.2	480.6	475.6	470.7	465.7	460.8
62.5°	470.1	455.1	440.3	430.8	426.9	422.9	418.9	415.0
65°	393.5	380.2	366.9	358.4	354.7	350.9	347.2	343.5
67.5°	323.3	311.8	300.3	292.6	288.4	284.4	280.2	276.2
70°	275.5	265.3	255.1	248.3	245.3	242.2	239.0	236.0
72.5°	232.7	224.0	215.2	209.4	206.5	203.7	200.9	198.0
75°	171.5	164.3	157.1	152.7	150.8	149.0	147.0	145.2
77.5°	121.3	117.1	112.9	110.6	110.0	109.5	108.9	108.4
80°	93.1	92.2	91.2	90.6	90.3	90.0	89.7	89.4
82.5°	72.3	71.7	71.0	70.5	70.2	69.9	69.6	69.3
85°	42.0	41.4	40.8	40.5	40.5	40.5	40.5	40.5
87.5°	16.9	16.8	16.6	16.7	17.0	17.3	17.5	17.8
90°	8.8	9.3	9.8	10.1	10.2	10.4	10.5	10.7
92.5°	8.5	9.0	9.5	9.7	9.8	9.8	9.8	9.9
95°	8.8	9.3	9.8	10.0	10.1	10.2	10.3	10.3
97.5°	9.5	9.6	9.6	9.7	9.8	9.8	9.9	10.0
100°	13.0	11.6	10.3	9.7	9.8	9.8	9.9	10.0
102.5°	46.6	32.0	17.5	10.2	10.2	10.2	10.3	10.3
105°	112.8	113.5	114.2	113.1	110.3	107.4	104.5	101.7
107.5°	139.6	139.9	140.3	140.6	140.9	141.2	141.5	141.8
110°	157.7	157.8	158.0	158.2	158.4	158.8	159.0	159.2



TEST NUMBER: P332958-840

CATALOG NUMBER: SA4XXRDIP-C1020D365U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	175.3	175.3	175.2	175.4	175.7	176.0	176.3	176.6
115°	201.6	201.8	202.0	202.0	202.0	202.0	202.0	202.0
117.5°	228.0	228.0	228.0	227.9	227.9	227.9	227.9	227.8
120°	244.4	244.6	244.8	244.8	244.6	244.4	244.3	244.1
122.5°	260.5	260.6	260.7	260.7	260.5	260.4	260.2	260.1
125°	283.2	283.4	283.6	283.8	283.9	284.0	284.0	284.1
127.5°	305.6	305.5	305.5	305.4	305.4	305.3	305.2	305.2
130°	319.2	319.3	319.4	319.4	319.4	319.4	319.4	319.4
132.5°	332.6	332.8	332.9	332.9	332.8	332.6	332.6	332.5
135°	351.1	351.3	351.4	351.6	351.7	351.9	352.1	352.2
137.5°	368.9	369.1	369.2	369.3	369.2	369.2	369.1	369.1
140°	379.8	380.1	380.3	380.5	380.6	380.6	380.7	380.8
142.5°	390.0	390.2	390.3	390.4	390.5	390.5	390.5	390.5
145°	404.6	404.7	404.7	404.8	405.0	405.2	405.3	405.5
147.5°	417.3	417.4	417.4	417.5	417.6	417.6	417.7	417.8
150°	425.5	425.5	425.5	425.5	425.6	425.7	425.7	425.8
152.5°	432.5	432.6	432.8	432.8	432.7	432.7	432.7	432.6
155°	442.1	442.4	442.7	442.8	442.5	442.3	442.1	441.8
157.5°	450.4	450.8	451.2	451.2	450.8	450.4	450.0	449.6
160°	455.7	456.2	456.6	456.6	456.2	455.7	455.1	454.6
162.5°	459.9	460.4	460.9	460.8	460.3	459.8	459.2	458.7
165°	466.0	466.6	467.3	467.2	466.5	465.7	465.0	464.3
167.5°	470.4	471.1	471.7	471.7	470.9	470.1	469.3	468.6
170°	473.1	473.7	474.3	474.2	473.5	472.7	471.9	471.1
172.5°	474.8	475.4	476.1	475.9	475.1	474.2	473.4	472.5
175°	476.9	477.6	478.3	478.2	477.2	476.3	475.2	474.3
177.5°	477.7	478.2	478.7	478.5	477.8	477.0	476.3	475.4
180°	477.2	477.2	477.2	477.2	477.2	477.2	477.2	477.2

(END OF REPORT)