

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: P332452-840

Luminaire Tested: **S123RDIW-S1000D460U840-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332452-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S1000D460U840-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 460 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5692.6 lumens
Efficiency: N/A
Efficacy: 123.2 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Direct

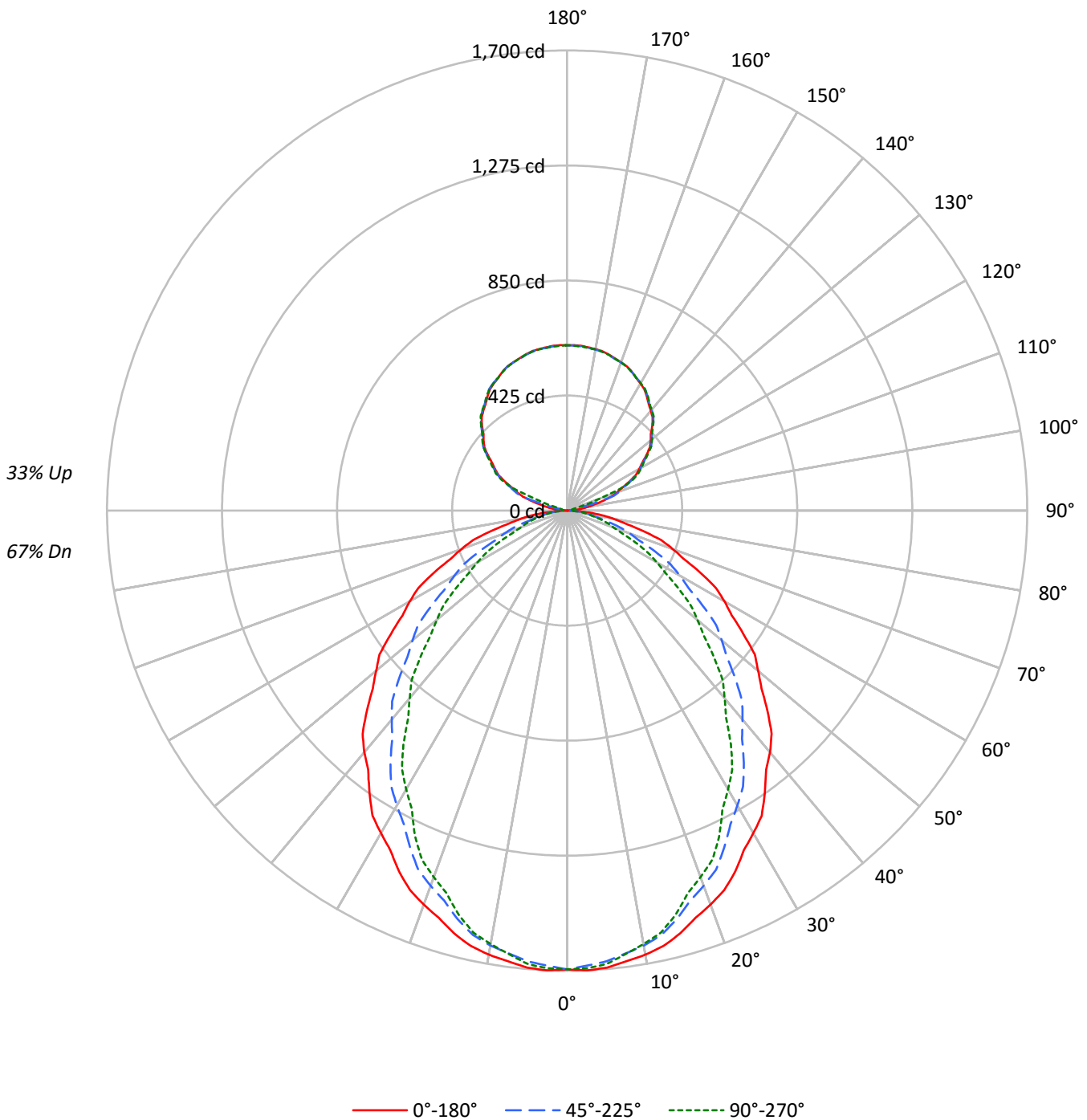
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	111	111	111	105	105	105	105	93	93	93	82	82	82	72	72	72	67
1	102	98	94	91	96	92	89	86	82	80	77	73	71	69	64	63	62	58
2	93	86	80	75	88	81	76	71	73	68	65	65	61	59	57	55	53	49
3	85	76	69	63	80	72	65	60	64	59	55	57	53	50	51	48	45	42
4	78	68	60	54	74	64	57	51	58	52	47	52	47	43	46	42	39	36
5	72	61	52	46	68	58	50	45	52	46	41	46	42	38	42	38	35	32
6	67	55	46	40	63	52	44	39	47	41	36	42	37	33	38	34	31	28
7	62	49	41	36	58	47	40	35	43	37	32	39	34	30	35	31	27	25
8	58	45	37	32	54	43	36	31	39	33	29	35	30	27	32	28	25	23
9	54	41	34	29	51	40	33	28	36	30	26	33	28	24	30	25	22	20
10	50	38	31	26	48	36	30	25	33	28	24	30	25	22	27	23	20	19

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18243	18243	18243
5°	18312	18058	18163
10°	18208	17832	17772
15°	18013	17415	17231
20°	17743	16893	16501
25°	17467	16308	15785
30°	17100	15632	14777
35°	16724	14954	13853
40°	16378	14155	12708
45°	15923	13370	11676
50°	15421	12476	10518
55°	14910	11453	9439
60°	14441	10357	8254
65°	13827	9172	7070
70°	13064	7701	5712
75°	11948	6059	5373
80°	10649	5362	4940
85°	8991	4755	4409



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	159.1	2.8
10°-20°	442.8	7.8
20°-30°	637.6	11.2
30°-40°	718.2	12.6
40°-50°	687.1	12.1
50°-60°	562.6	9.9
60°-70°	379.6	6.7
70°-80°	191.0	3.4
80°-90°	52.2	0.9
90°-100°	22.2	0.4
100°-110°	105.8	1.9
110°-120°	254.2	4.5
120°-130°	323.7	5.7
130°-140°	345.8	6.1
140°-150°	323.4	5.7
150°-160°	260.8	4.6
160°-170°	168.4	3.0
170°-180°	58.0	1.0
0°-30°	1239.5	21.8
0°-40°	1957.7	34.4
0°-60°	3207.4	56.3
0°-90°	3830.2	67.3
90°-120°	382.2	6.7
90°-150°	1375.1	24.2
90°-180°	1862.0	32.7
0°-180°	5692.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1695	1695	1695	1695	1695	
5°	1695	1687	1671	1683	1681	161
15°	1616	1600	1563	1556	1546	455
25°	1471	1435	1373	1345	1329	676
35°	1273	1221	1138	1081	1054	796
45°	1046	982	878	802	767	807
55°	794	724	610	533	503	712
65°	543	466	360	296	278	537
75°	287	221	146	133	129	306
85°	73	44	38	36	36	82
90°	0	5	11	13	14	5
95°	28	10	14	17	17	34
105°	135	138	99	24	20	143
115°	254	256	260	265	267	250
125°	358	361	363	364	365	319
135°	445	448	450	451	450	343
145°	514	517	518	519	519	321
155°	566	565	565	567	565	261
165°	597	595	595	598	595	169
175°	611	608	609	612	608	58
180°	611	611	611	611	611	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8
2.5°	1700.2	1699.2	1698.3	1697.3	1696.3	1694.4	1691.4	1688.5	1685.6	1682.6	1685.3
5°	1694.8	1693.1	1691.6	1690.1	1688.6	1686.0	1682.3	1678.7	1675.1	1671.3	1674.1
7.5°	1679.0	1677.4	1675.8	1674.1	1672.4	1669.2	1664.5	1659.7	1655.0	1650.2	1651.7
10°	1665.9	1663.8	1661.5	1659.4	1657.3	1653.5	1648.0	1642.4	1637.0	1631.5	1631.8
12.5°	1647.2	1644.8	1642.4	1640.0	1637.6	1633.1	1626.4	1619.6	1613.0	1606.2	1606.0
15°	1616.4	1613.1	1609.6	1606.3	1603.0	1597.0	1588.4	1579.8	1571.3	1562.8	1561.3
17.5°	1577.6	1573.7	1569.8	1565.9	1562.0	1554.6	1543.7	1532.9	1522.0	1511.1	1507.8
20°	1549.0	1544.2	1539.2	1534.4	1529.4	1521.3	1509.6	1498.0	1486.4	1474.8	1470.9
22.5°	1517.1	1511.6	1505.9	1500.3	1494.7	1485.7	1473.3	1461.0	1448.7	1436.3	1431.4
25°	1470.7	1463.1	1455.4	1447.7	1440.2	1429.3	1415.2	1401.2	1387.2	1373.1	1366.7
27.5°	1414.3	1405.9	1397.5	1389.1	1380.6	1368.6	1352.9	1337.3	1321.6	1306.1	1297.1
30°	1375.8	1366.7	1357.6	1348.4	1339.2	1326.1	1309.0	1291.8	1274.8	1257.7	1247.3
32.5°	1337.4	1327.0	1316.6	1306.2	1295.9	1281.6	1263.5	1245.5	1227.3	1209.2	1197.9
35°	1272.7	1261.7	1250.7	1239.8	1228.8	1213.8	1194.9	1175.9	1157.0	1138.0	1124.9
37.5°	1207.3	1195.1	1182.9	1170.6	1158.4	1142.3	1122.1	1101.8	1081.6	1061.4	1046.4
40°	1165.6	1152.2	1138.6	1125.2	1111.8	1094.2	1072.6	1050.9	1029.2	1007.4	991.6
42.5°	1118.2	1104.8	1091.4	1077.9	1064.5	1046.6	1024.2	1001.8	979.4	956.9	939.6
45°	1046.0	1032.2	1018.4	1004.7	991.0	972.4	948.9	925.3	901.8	878.3	860.9
47.5°	973.7	958.6	943.5	928.4	913.3	894.0	870.5	847.0	823.4	799.9	781.0
50°	920.9	906.6	892.2	877.9	863.4	843.9	819.2	794.5	769.7	745.0	726.0
52.5°	873.6	858.1	842.4	826.9	811.3	791.2	766.8	742.3	717.8	693.3	673.6
55°	794.5	779.5	764.5	749.5	734.6	714.1	688.1	662.2	636.2	610.3	592.6
57.5°	721.3	705.0	688.7	672.4	656.1	634.9	608.7	582.7	556.6	530.6	513.8
60°	670.8	654.0	637.1	620.4	603.5	582.5	557.1	531.8	506.4	481.1	464.5
62.5°	620.2	603.4	586.5	569.8	553.0	531.9	506.5	481.2	455.9	430.5	415.0
65°	542.9	526.1	509.3	492.5	475.7	455.4	431.6	407.8	384.0	360.1	345.2
67.5°	465.6	448.7	431.7	414.8	397.8	377.8	355.0	332.1	309.3	286.4	275.3
70°	415.1	398.6	382.1	365.6	349.1	330.2	308.8	287.4	266.0	244.7	234.0
72.5°	364.5	348.3	332.0	315.8	299.5	281.7	262.3	242.9	223.4	204.0	195.2
75°	287.3	272.6	257.9	243.3	228.6	212.9	196.1	179.3	162.5	145.7	142.6
77.5°	216.9	203.6	190.4	177.1	163.9	151.8	141.0	130.2	119.4	108.6	106.9
80°	171.8	159.3	146.7	134.2	121.7	112.3	105.8	99.4	93.0	86.5	85.6
82.5°	129.0	118.2	107.3	96.4	85.6	78.8	75.7	72.8	69.8	66.8	65.8
85°	72.8	66.1	59.4	52.7	45.9	42.1	41.2	40.3	39.4	38.5	37.9
87.5°	26.5	24.0	21.5	19.0	16.6	15.5	15.7	16.0	16.3	16.5	16.3
90°	0.4	1.4	2.4	3.4	4.4	5.7	7.0	8.3	9.6	10.9	11.3
92.5°	8.5	8.2	7.9	7.6	7.3	7.7	8.7	9.6	10.6	11.6	12.2
95°	27.7	23.5	19.4	15.2	11.1	9.6	10.7	11.8	12.9	14.0	14.7
97.5°	55.6	53.7	51.9	50.1	48.2	43.6	36.4	29.1	21.9	14.6	15.5
100°	76.6	78.7	80.7	82.7	84.7	77.9	62.2	46.5	30.7	14.9	15.8
102.5°	100.6	102.1	103.5	105.0	106.4	98.6	81.4	64.2	47.1	29.9	27.4
105°	135.2	136.3	137.4	138.6	139.7	135.6	126.5	117.5	108.5	99.4	81.5
107.5°	171.7	172.6	173.5	174.3	175.2	176.4	177.8	179.3	180.7	182.1	169.1
110°	196.0	196.8	197.6	198.4	199.2	200.2	201.3	202.4	203.5	204.6	201.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.2	219.9	220.7	221.4	222.2	223.1	224.2	225.3	226.4	227.5	227.5
115°	253.6	254.2	254.8	255.4	256.0	256.8	257.7	258.6	259.5	260.4	261.5
117.5°	286.9	287.7	288.4	289.1	289.9	290.5	290.9	291.4	292.0	292.4	293.2
120°	307.6	308.5	309.4	310.3	311.2	311.8	312.1	312.5	312.8	313.1	313.9
122.5°	328.7	329.4	330.1	330.9	331.6	332.2	332.6	333.0	333.4	333.8	334.3
125°	357.5	358.3	359.1	359.9	360.7	361.3	361.7	362.1	362.5	362.9	363.1
127.5°	385.5	386.3	387.1	387.9	388.7	389.3	389.8	390.3	390.8	391.3	391.6
130°	402.9	403.7	404.6	405.4	406.2	406.8	407.2	407.6	408.0	408.3	408.7
132.5°	419.6	420.4	421.2	422.0	422.8	423.3	423.7	424.0	424.3	424.6	425.1
135°	445.0	445.7	446.3	446.9	447.5	448.0	448.4	448.8	449.2	449.6	449.9
137.5°	466.9	467.7	468.4	469.2	469.9	470.4	470.7	470.9	471.1	471.3	471.8
140°	481.4	482.0	482.6	483.2	483.8	484.2	484.5	484.8	485.1	485.4	485.8
142.5°	494.8	495.4	496.0	496.7	497.3	497.7	498.0	498.3	498.6	498.9	499.2
145°	513.6	514.3	515.0	515.7	516.4	516.8	517.1	517.3	517.5	517.7	517.9
147.5°	531.3	531.8	532.2	532.7	533.1	533.5	533.7	533.9	534.1	534.3	534.5
150°	542.2	542.5	542.8	543.1	543.4	543.6	543.8	544.0	544.2	544.4	544.6
152.5°	552.0	552.1	552.3	552.4	552.6	552.7	552.8	552.9	553.0	553.2	553.5
155°	565.7	565.5	565.3	565.2	565.0	564.9	565.0	565.1	565.2	565.3	565.8
157.5°	576.5	576.4	576.4	576.4	576.4	576.3	576.2	576.1	576.0	575.9	576.5
160°	583.0	582.9	582.8	582.7	582.6	582.5	582.4	582.3	582.2	582.1	582.7
162.5°	589.2	589.0	588.7	588.4	588.1	587.9	587.8	587.7	587.6	587.5	588.2
165°	596.6	596.3	596.0	595.7	595.4	595.2	595.1	595.0	594.9	594.8	595.6
167.5°	602.5	602.1	601.7	601.3	600.9	600.7	600.7	600.7	600.7	600.7	601.5
170°	605.7	605.3	604.9	604.5	604.1	603.9	603.9	603.9	603.9	603.9	604.7
172.5°	607.8	607.4	606.9	606.4	605.9	605.7	605.8	605.9	606.0	606.0	606.8
175°	610.7	610.2	609.7	609.2	608.6	608.4	608.5	608.6	608.7	608.8	609.6
177.5°	611.4	611.0	610.6	610.2	609.8	609.7	609.8	609.8	609.9	610.0	610.6
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8	1694.8
2.5°	1688.0	1690.7	1693.3	1694.5	1693.9	1693.5	1693.0	1692.5
5°	1676.9	1679.6	1682.3	1683.4	1682.8	1682.2	1681.6	1681.0
7.5°	1653.3	1654.8	1656.3	1656.6	1655.5	1654.5	1653.5	1652.3
10°	1632.1	1632.4	1632.7	1632.1	1630.5	1629.0	1627.5	1626.0
12.5°	1605.8	1605.7	1605.5	1604.5	1602.8	1600.9	1599.2	1597.4
15°	1559.7	1558.2	1556.7	1554.8	1552.7	1550.5	1548.4	1546.3
17.5°	1504.6	1501.4	1498.1	1494.9	1491.8	1488.5	1485.4	1482.2
20°	1466.8	1462.9	1459.0	1455.1	1451.5	1447.7	1444.1	1440.5
22.5°	1426.4	1421.5	1416.5	1412.3	1409.0	1405.5	1402.1	1398.7
25°	1360.3	1353.8	1347.5	1342.5	1339.2	1335.8	1332.5	1329.1
27.5°	1288.2	1279.3	1270.3	1263.3	1258.2	1253.0	1247.9	1242.8
30°	1236.9	1226.5	1216.1	1208.5	1203.6	1198.7	1193.8	1188.9
32.5°	1186.5	1175.2	1163.8	1155.6	1150.4	1145.3	1140.1	1135.0
35°	1111.8	1098.6	1085.5	1076.2	1070.8	1065.2	1059.8	1054.2
37.5°	1031.6	1016.6	1001.8	990.9	984.1	977.3	970.6	963.8
40°	975.7	959.9	943.9	932.5	925.4	918.5	911.4	904.4
42.5°	922.2	904.8	887.5	875.7	869.4	863.1	856.8	850.5
45°	843.4	826.1	808.6	796.3	788.9	781.6	774.3	767.0
47.5°	762.0	743.2	724.2	711.4	704.9	698.4	691.9	685.3
50°	707.1	688.1	669.2	656.2	649.2	642.2	635.2	628.1
52.5°	654.0	634.3	614.6	601.6	595.3	589.1	582.8	576.4
55°	574.8	557.1	539.4	527.5	521.4	515.2	509.2	503.0
57.5°	497.1	480.3	463.6	452.6	447.5	442.2	437.1	431.8
60°	448.1	431.6	415.1	404.2	399.1	393.8	388.7	383.4
62.5°	399.4	384.0	368.4	357.9	352.5	347.1	341.6	336.2
65°	330.2	315.2	300.2	291.0	287.7	284.4	281.0	277.6
67.5°	264.1	252.9	241.8	234.3	230.8	227.1	223.5	219.9
70°	223.3	212.6	201.9	194.9	191.5	188.1	184.8	181.5
72.5°	186.5	177.7	169.1	164.0	162.6	161.2	159.8	158.3
75°	139.6	136.5	133.5	131.7	131.1	130.4	129.8	129.2
77.5°	105.3	103.6	102.0	100.9	100.3	99.7	99.1	98.5
80°	84.7	83.8	82.9	82.2	81.6	81.0	80.3	79.7
82.5°	64.9	64.0	63.1	62.6	62.5	62.4	62.2	62.1
85°	37.3	36.7	36.1	35.7	35.7	35.7	35.7	35.7
87.5°	16.2	16.0	15.9	15.7	15.5	15.2	15.0	14.8
90°	11.7	12.1	12.5	12.8	13.0	13.2	13.4	13.6
92.5°	12.9	13.5	14.2	14.5	14.7	14.8	14.9	15.0
95°	15.5	16.2	16.9	17.3	17.3	17.3	17.3	17.3
97.5°	16.3	17.1	17.9	18.3	18.4	18.5	18.6	18.7
100°	16.6	17.4	18.2	18.7	18.8	18.9	19.0	19.1
102.5°	24.8	22.3	19.9	18.7	18.9	19.1	19.2	19.4
105°	63.6	45.8	28.0	19.2	19.4	19.6	19.8	20.0
107.5°	155.9	142.9	129.8	116.5	103.0	89.6	76.1	62.7
110°	197.9	194.6	191.3	182.5	168.0	153.6	139.2	124.8



TEST NUMBER: P332452-840

CATALOG NUMBER: S123RDIW-S1000D460U840-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	227.6	227.6	227.7	226.2	223.2	220.2	217.1	214.1
115°	262.5	263.5	264.5	265.2	265.6	266.0	266.4	266.8
117.5°	294.0	294.8	295.6	296.0	296.1	296.2	296.3	296.4
120°	314.7	315.5	316.3	316.7	316.7	316.7	316.7	316.7
122.5°	334.9	335.5	336.0	336.3	336.4	336.5	336.6	336.7
125°	363.3	363.6	363.8	364.0	364.2	364.4	364.6	364.8
127.5°	391.9	392.2	392.5	392.6	392.4	392.2	392.0	391.8
130°	409.1	409.5	409.9	410.0	409.8	409.6	409.4	409.2
132.5°	425.5	425.9	426.3	426.4	426.1	425.8	425.5	425.3
135°	450.2	450.5	450.8	450.8	450.5	450.2	449.9	449.6
137.5°	472.3	472.7	473.2	473.4	473.2	473.0	472.8	472.6
140°	486.3	486.7	487.1	487.2	487.0	486.8	486.6	486.4
142.5°	499.6	499.9	500.2	500.2	499.9	499.7	499.4	499.1
145°	518.1	518.3	518.5	518.6	518.6	518.6	518.6	518.6
147.5°	534.7	534.9	535.1	534.9	534.5	534.0	533.6	533.1
150°	544.8	545.0	545.2	545.2	544.9	544.6	544.3	544.0
152.5°	553.9	554.2	554.6	554.5	554.1	553.6	553.2	552.7
155°	566.3	566.8	567.3	567.2	566.6	566.0	565.4	564.9
157.5°	577.1	577.7	578.3	578.2	577.4	576.7	575.9	575.1
160°	583.3	583.9	584.5	584.5	583.8	583.1	582.4	581.7
162.5°	589.0	589.7	590.3	590.4	589.7	589.1	588.4	587.8
165°	596.4	597.2	598.0	598.0	597.3	596.7	596.0	595.3
167.5°	602.3	603.0	603.8	603.8	603.0	602.3	601.5	600.7
170°	605.5	606.3	607.1	607.1	606.3	605.5	604.7	603.9
172.5°	607.6	608.4	609.3	609.3	608.3	607.4	606.6	605.7
175°	610.3	611.0	611.7	611.7	610.9	610.1	609.3	608.4
177.5°	611.3	611.9	612.6	612.5	611.7	610.9	610.1	609.3
180°	610.7	610.7	610.7	610.7	610.7	610.7	610.7	610.7

(END OF REPORT)