

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: P332473-927

Luminaire Tested: **S123RDIW-S1165D460U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332473-927
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123RDIW-S1165D460U927-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4736.1 lumens
Efficiency: N/A
Efficacy: 90.4 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

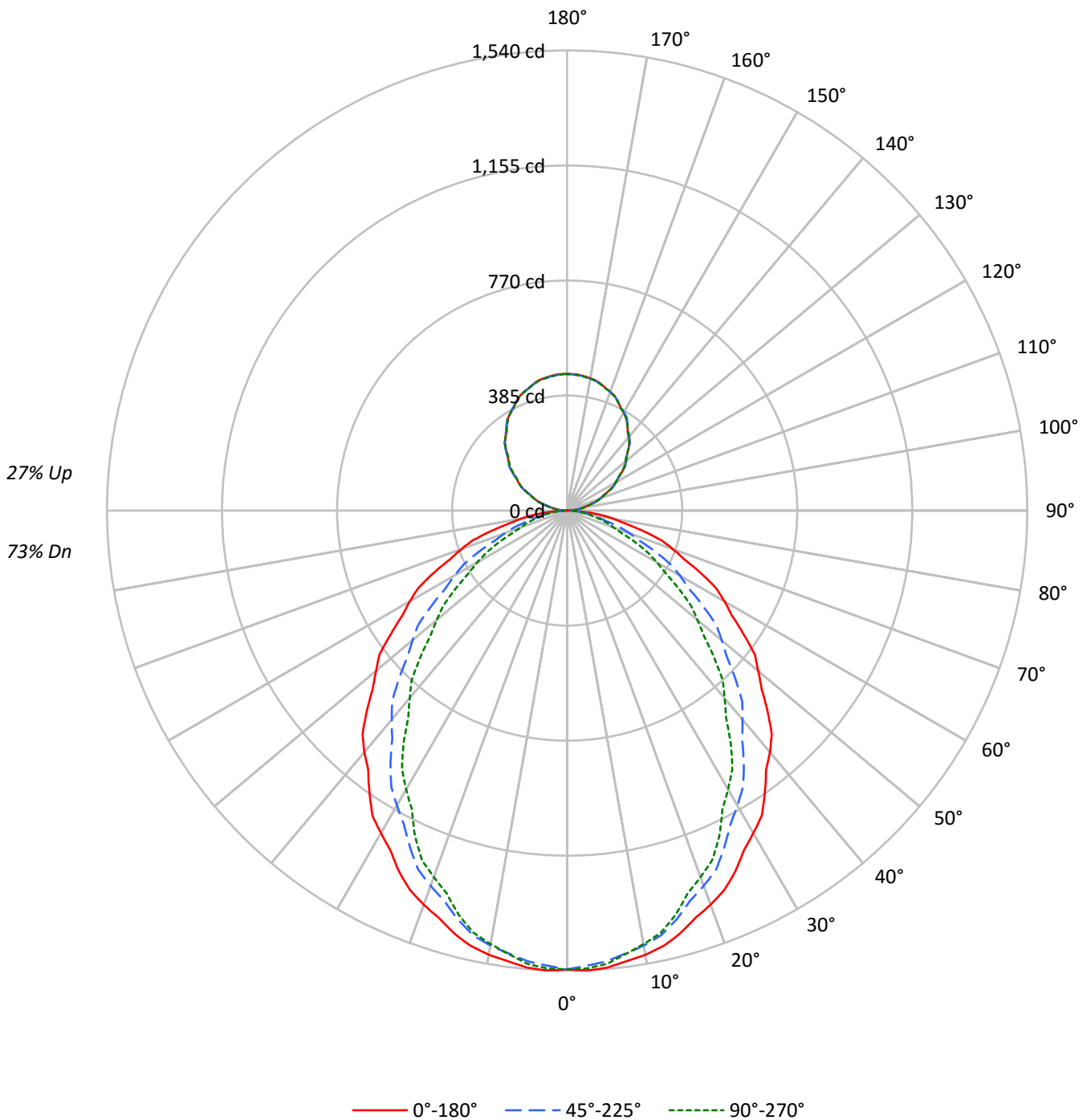
Input Watts (W): 52.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	113	113	113	113	107	107	107	107	96	96	96	86	86	86	77	77	77	73
1	103	99	95	92	98	94	91	88	85	83	80	77	75	73	69	68	66	63
2	95	87	81	76	90	83	78	73	75	71	67	68	65	62	62	59	57	53
3	87	77	70	64	82	74	67	62	67	62	57	61	56	53	55	52	49	46
4	80	69	61	55	75	66	58	53	60	54	49	54	50	46	49	46	42	40
5	73	62	53	47	69	59	51	46	54	48	43	49	44	40	45	41	37	35
6	68	55	47	41	64	53	46	40	49	42	38	45	39	35	41	36	33	31
7	63	50	42	37	60	48	41	36	44	38	34	41	35	32	37	33	30	27
8	59	46	38	33	56	44	37	32	41	34	30	37	32	28	34	30	27	25
9	55	42	35	29	52	41	33	29	38	31	27	35	29	26	32	27	24	22
10	51	39	32	27	49	37	31	26	35	29	25	32	27	23	30	25	22	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	16527	16527	16527
5°	16590	16361	16455
10°	16497	16156	16101
15°	16319	15778	15611
20°	16076	15306	14948
25°	15824	14775	14301
30°	15493	14162	13387
35°	15152	13548	12550
40°	14838	12826	11514
45°	14425	12113	10577
50°	13971	11302	9530
55°	13508	10376	8552
60°	13082	9384	7481
65°	12528	8308	6406
70°	11833	6977	5174
75°	10821	5490	4870
80°	9651	4860	4475
85°	8151	4310	4001



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.2	3.0
10°-20°	401.2	8.5
20°-30°	577.6	12.2
30°-40°	650.7	13.7
40°-50°	622.5	13.1
50°-60°	509.7	10.8
60°-70°	343.9	7.3
70°-80°	173.0	3.7
80°-90°	47.1	1.0
90°-100°	29.8	0.6
100°-110°	89.1	1.9
110°-120°	151.6	3.2
120°-130°	199.4	4.2
130°-140°	224.1	4.7
140°-150°	220.3	4.7
150°-160°	185.4	3.9
160°-170°	123.4	2.6
170°-180°	43.2	0.9
0°-30°	1123.0	23.7
0°-40°	1773.6	37.4
0°-60°	2905.8	61.4
0°-90°	3469.9	73.3
90°-120°	270.4	5.7
90°-150°	914.1	19.3
90°-180°	1266.0	26.7
0°-180°	4736.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1535	1535	1535	1535	1535	
5°	1535	1529	1514	1525	1523	146
15°	1464	1450	1416	1410	1401	412
25°	1332	1300	1244	1219	1204	613
35°	1153	1106	1031	979	955	721
45°	948	889	796	727	695	731
55°	720	656	553	483	456	645
65°	492	422	326	268	252	487
75°	260	200	132	120	117	278
85°	66	40	35	32	32	74
90°	0	4	9	10	11	5
95°	21	24	26	28	28	24
105°	81	82	85	85	86	87
115°	153	154	153	153	153	151
125°	223	224	224	222	221	199
135°	290	292	292	290	289	223
145°	352	352	353	353	352	219
155°	402	402	403	404	402	185
165°	438	437	437	439	437	124
175°	456	455	454	456	454	43
180°	457	457	457	457	457	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4
2.5°	1540.4	1539.4	1538.6	1537.7	1536.8	1535.0	1532.4	1529.7	1527.1	1524.4	1526.9
5°	1535.4	1534.0	1532.6	1531.2	1529.9	1527.5	1524.2	1520.8	1517.5	1514.2	1516.7
7.5°	1521.1	1519.7	1518.2	1516.7	1515.2	1512.3	1508.0	1503.6	1499.4	1495.0	1496.4
10°	1509.3	1507.3	1505.4	1503.4	1501.5	1498.0	1493.0	1488.0	1483.0	1478.1	1478.4
12.5°	1492.3	1490.2	1488.0	1485.8	1483.7	1479.6	1473.5	1467.4	1461.3	1455.2	1455.0
15°	1464.4	1461.3	1458.3	1455.2	1452.2	1446.8	1439.1	1431.3	1423.6	1415.9	1414.4
17.5°	1429.3	1425.8	1422.2	1418.6	1415.2	1408.4	1398.6	1388.7	1378.9	1369.0	1366.1
20°	1403.4	1399.0	1394.6	1390.1	1385.7	1378.2	1367.7	1357.2	1346.6	1336.2	1332.5
22.5°	1374.5	1369.4	1364.3	1359.2	1354.2	1346.0	1334.8	1323.7	1312.5	1301.2	1296.8
25°	1332.4	1325.5	1318.6	1311.6	1304.7	1294.9	1282.1	1269.5	1256.7	1244.0	1238.2
27.5°	1281.4	1273.7	1266.1	1258.5	1250.8	1239.9	1225.7	1211.6	1197.4	1183.2	1175.1
30°	1246.5	1238.2	1229.9	1221.5	1213.3	1201.3	1185.9	1170.4	1154.9	1139.4	1130.0
32.5°	1211.6	1202.2	1192.8	1183.4	1174.0	1161.1	1144.7	1128.3	1111.9	1095.6	1085.3
35°	1153.1	1143.1	1133.1	1123.2	1113.3	1099.7	1082.5	1065.4	1048.2	1031.0	1019.1
37.5°	1093.8	1082.8	1071.7	1060.6	1049.6	1034.8	1016.5	998.2	979.9	961.6	948.1
40°	1056.0	1043.8	1031.6	1019.5	1007.3	991.3	971.7	952.0	932.4	912.8	898.3
42.5°	1013.1	1000.9	988.8	976.6	964.4	948.2	927.9	907.5	887.2	867.0	851.2
45°	947.6	935.2	922.7	910.3	897.8	880.9	859.6	838.3	817.0	795.7	779.9
47.5°	882.1	868.5	854.8	841.1	827.4	809.9	788.6	767.3	746.0	724.8	707.6
50°	834.3	821.3	808.3	795.3	782.3	764.6	742.2	719.8	697.4	674.9	657.7
52.5°	791.5	777.4	763.3	749.2	735.0	716.8	694.7	672.5	650.3	628.1	610.3
55°	719.8	706.2	692.6	679.1	665.5	647.0	623.4	599.9	576.4	552.9	536.9
57.5°	653.5	638.7	623.9	609.2	594.4	575.2	551.6	527.9	504.3	480.7	465.5
60°	607.7	592.5	577.3	562.1	546.8	527.7	504.7	481.8	458.8	435.9	420.9
62.5°	561.8	546.6	531.4	516.2	501.0	481.9	458.9	435.9	413.0	390.0	376.0
65°	491.9	476.7	461.4	446.2	431.0	412.6	391.0	369.4	347.8	326.2	312.7
67.5°	421.9	406.5	391.1	375.7	360.4	342.3	321.6	300.9	280.2	259.5	249.4
70°	376.0	361.2	346.2	331.2	316.3	299.1	279.8	260.4	241.1	221.7	212.0
72.5°	330.3	315.5	300.8	286.1	271.3	255.2	237.6	220.0	202.4	184.8	176.9
75°	260.2	247.0	233.7	220.4	207.2	192.9	177.7	162.4	147.2	132.0	129.2
77.5°	196.5	184.5	172.5	160.5	148.5	137.5	127.8	118.0	108.1	98.4	96.9
80°	155.7	144.3	132.9	121.6	110.3	101.7	95.9	90.1	84.3	78.4	77.6
82.5°	116.8	107.0	97.2	87.4	77.6	71.4	68.7	65.9	63.2	60.5	59.7
85°	66.0	59.9	53.8	47.8	41.7	38.2	37.4	36.5	35.7	34.9	34.3
87.5°	24.0	21.7	19.4	17.2	14.9	13.9	14.0	14.3	14.5	14.7	14.5
90°	0.4	1.2	2.0	2.8	3.6	4.4	5.5	6.6	7.6	8.6	9.0
92.5°	8.7	9.3	9.7	10.3	10.9	11.4	12.0	12.6	13.2	13.8	14.0
95°	21.2	21.7	22.3	22.9	23.4	24.0	24.6	25.3	25.9	26.5	26.9
97.5°	37.6	38.0	38.4	38.9	39.3	39.7	40.2	40.6	41.1	41.6	41.9
100°	48.8	49.3	49.7	50.2	50.7	51.2	51.6	52.0	52.4	52.8	53.0
102.5°	61.7	62.0	62.3	62.6	62.9	63.3	63.8	64.3	64.9	65.4	65.7
105°	80.8	81.0	81.1	81.3	81.4	81.8	82.5	83.3	84.0	84.7	84.7
107.5°	102.9	103.0	103.1	103.1	103.3	103.5	103.8	104.0	104.3	104.6	104.9
110°	116.7	116.8	117.0	117.2	117.3	117.5	117.6	117.8	118.0	118.1	118.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	131.0	131.1	131.3	131.3	131.4	131.5	131.5	131.6	131.6	131.6	132.0
115°	152.6	152.8	153.0	153.3	153.5	153.6	153.4	153.3	153.1	153.0	153.0
117.5°	174.3	174.4	174.6	174.8	174.9	174.8	174.7	174.4	174.3	174.0	174.0
120°	187.7	188.2	188.7	189.2	189.6	189.7	189.3	188.9	188.5	188.1	188.1
122.5°	201.8	202.2	202.6	202.9	203.2	203.3	203.1	202.9	202.7	202.5	202.2
125°	223.3	223.6	223.8	224.0	224.3	224.3	224.1	223.9	223.8	223.6	223.3
127.5°	243.1	243.6	244.2	244.6	245.2	245.3	245.2	244.9	244.8	244.6	244.2
130°	256.4	257.0	257.6	258.3	258.9	259.0	258.8	258.6	258.3	258.1	257.8
132.5°	269.5	270.1	270.8	271.5	272.1	272.4	272.1	272.0	271.8	271.6	271.2
135°	289.7	290.2	290.7	291.1	291.6	291.8	291.8	291.7	291.6	291.5	291.2
137.5°	308.4	308.8	309.2	309.6	310.0	310.3	310.5	310.7	310.9	311.1	310.8
140°	321.3	321.7	322.1	322.5	322.9	323.1	323.2	323.3	323.4	323.4	323.4
142.5°	333.1	333.5	333.9	334.3	334.7	334.9	335.1	335.3	335.4	335.5	335.4
145°	351.5	351.6	351.8	352.0	352.1	352.3	352.5	352.8	353.0	353.2	353.2
147.5°	367.6	367.8	368.1	368.4	368.7	368.9	369.2	369.4	369.6	369.9	369.9
150°	378.7	378.9	379.1	379.2	379.4	379.5	379.7	379.9	380.0	380.2	380.2
152.5°	387.9	388.2	388.4	388.6	388.8	389.0	389.0	389.2	389.3	389.4	389.5
155°	402.4	402.4	402.4	402.4	402.4	402.5	402.6	402.7	402.7	402.8	403.1
157.5°	414.8	414.7	414.6	414.5	414.4	414.4	414.5	414.5	414.5	414.6	414.9
160°	422.6	422.4	422.2	422.1	421.9	421.8	421.8	421.8	421.8	421.8	422.2
162.5°	429.4	429.2	429.0	428.7	428.6	428.5	428.5	428.6	428.6	428.7	429.1
165°	438.3	438.1	437.8	437.6	437.4	437.3	437.3	437.3	437.3	437.3	437.8
167.5°	445.4	445.1	444.8	444.5	444.2	444.0	444.1	444.2	444.3	444.3	444.8
170°	449.5	449.2	448.9	448.5	448.2	448.1	448.1	448.1	448.1	448.1	448.6
172.5°	452.7	452.3	452.0	451.7	451.3	451.1	451.1	451.1	451.1	451.1	451.7
175°	455.9	455.6	455.3	455.0	454.6	454.5	454.5	454.5	454.5	454.5	455.0
177.5°	457.3	457.0	456.8	456.5	456.3	456.1	456.1	456.1	456.1	456.1	456.5
180°	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4	1535.4
2.5°	1529.3	1531.8	1534.1	1535.2	1534.7	1534.3	1533.8	1533.3
5°	1519.2	1521.7	1524.2	1525.1	1524.6	1524.0	1523.4	1522.9
7.5°	1497.8	1499.2	1500.6	1500.8	1499.8	1498.9	1497.9	1497.0
10°	1478.7	1478.9	1479.2	1478.7	1477.3	1475.9	1474.5	1473.1
12.5°	1454.8	1454.7	1454.5	1453.7	1452.1	1450.4	1448.8	1447.2
15°	1413.1	1411.7	1410.3	1408.7	1406.7	1404.8	1402.8	1400.9
17.5°	1363.2	1360.2	1357.2	1354.4	1351.5	1348.6	1345.8	1342.8
20°	1329.0	1325.3	1321.8	1318.3	1314.9	1311.6	1308.4	1305.0
22.5°	1292.3	1287.9	1283.3	1279.5	1276.4	1273.4	1270.3	1267.2
25°	1232.4	1226.5	1220.8	1216.3	1213.3	1210.2	1207.2	1204.1
27.5°	1167.0	1159.0	1150.9	1144.5	1139.9	1135.3	1130.6	1125.9
30°	1120.5	1111.2	1101.8	1094.9	1090.4	1086.0	1081.6	1077.1
32.5°	1075.0	1064.7	1054.4	1046.9	1042.3	1037.6	1033.0	1028.3
35°	1007.3	995.4	983.5	975.0	970.0	965.0	960.0	955.1
37.5°	934.5	921.1	907.5	897.7	891.6	885.4	879.3	873.1
40°	884.0	869.6	855.2	844.9	838.4	832.1	825.8	819.4
42.5°	835.5	819.8	804.1	793.4	787.7	782.0	776.3	770.6
45°	764.1	748.4	732.6	721.4	714.8	708.1	701.5	694.8
47.5°	690.4	673.3	656.1	644.6	638.7	632.7	626.8	620.9
50°	640.6	623.4	606.3	594.5	588.2	581.8	575.4	569.1
52.5°	592.5	574.6	556.8	545.0	539.3	533.7	528.0	522.3
55°	520.8	504.7	488.7	477.9	472.4	466.8	461.3	455.7
57.5°	450.4	435.1	420.0	410.0	405.4	400.7	395.9	391.3
60°	405.9	391.0	376.0	366.2	361.6	356.8	352.1	347.5
62.5°	361.9	347.8	333.7	324.3	319.3	314.4	309.5	304.6
65°	299.1	285.6	272.0	263.7	260.7	257.6	254.6	251.5
67.5°	239.2	229.1	219.0	212.3	209.1	205.7	202.5	199.2
70°	202.2	192.6	182.9	176.6	173.5	170.5	167.4	164.4
72.5°	169.0	161.1	153.1	148.5	147.3	146.0	144.7	143.5
75°	126.4	123.7	120.9	119.3	118.7	118.2	117.6	117.1
77.5°	95.4	93.9	92.4	91.3	90.8	90.2	89.7	89.1
80°	76.8	76.0	75.1	74.5	73.9	73.4	72.8	72.2
82.5°	58.9	58.1	57.2	56.7	56.6	56.5	56.4	56.3
85°	33.7	33.2	32.6	32.4	32.4	32.4	32.4	32.4
87.5°	14.3	14.2	14.0	13.9	13.7	13.5	13.3	13.2
90°	9.3	9.6	9.9	10.1	10.3	10.5	10.6	10.8
92.5°	14.3	14.6	14.8	14.9	14.8	14.7	14.6	14.5
95°	27.2	27.5	27.8	28.0	28.0	28.0	28.0	28.0
97.5°	42.3	42.7	43.0	43.2	43.2	43.2	43.1	43.1
100°	53.2	53.5	53.7	53.9	54.1	54.3	54.4	54.6
102.5°	65.9	66.1	66.4	66.5	66.5	66.4	66.4	66.3
105°	84.7	84.7	84.7	84.8	85.0	85.2	85.3	85.5
107.5°	105.1	105.4	105.6	105.7	105.6	105.5	105.4	105.4
110°	118.7	119.1	119.4	119.5	119.3	119.1	119.0	118.8



TEST NUMBER: P332473-927

CATALOG NUMBER: S123RDIW-S1165D460U927-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	132.4	132.8	133.2	133.3	133.2	133.2	133.2	133.2
115°	153.1	153.2	153.3	153.3	153.2	153.1	153.0	153.0
117.5°	174.0	174.0	174.0	173.9	173.6	173.4	173.2	172.9
120°	188.0	187.9	187.8	187.7	187.5	187.4	187.2	187.0
122.5°	202.1	201.8	201.6	201.5	201.2	201.0	200.7	200.5
125°	223.0	222.7	222.4	222.0	221.7	221.4	221.1	220.8
127.5°	243.8	243.3	242.8	242.4	242.1	241.7	241.3	241.0
130°	257.5	257.1	256.8	256.4	255.9	255.3	254.8	254.1
132.5°	270.8	270.5	270.1	269.7	269.3	268.8	268.4	267.9
135°	290.9	290.6	290.3	290.0	289.9	289.7	289.5	289.4
137.5°	310.5	310.1	309.7	309.4	309.1	308.9	308.6	308.2
140°	323.3	323.2	323.1	322.8	322.3	321.7	321.2	320.6
142.5°	335.3	335.3	335.2	334.9	334.5	334.1	333.7	333.2
145°	353.1	353.0	352.9	352.8	352.4	352.1	351.8	351.5
147.5°	369.9	369.9	369.9	369.6	369.2	368.6	368.1	367.7
150°	380.2	380.2	380.2	379.9	379.5	379.0	378.5	378.0
152.5°	389.6	389.8	389.9	389.8	389.4	388.9	388.5	388.1
155°	403.5	403.8	404.1	403.9	403.4	402.8	402.3	401.7
157.5°	415.3	415.7	416.0	415.9	415.5	415.0	414.5	414.2
160°	422.6	423.0	423.4	423.4	423.1	422.8	422.5	422.2
162.5°	429.5	429.9	430.3	430.2	429.8	429.2	428.7	428.2
165°	438.2	438.7	439.2	439.1	438.6	438.0	437.4	436.9
167.5°	445.3	445.8	446.2	446.2	445.8	445.3	444.8	444.3
170°	449.2	449.7	450.3	450.3	449.7	449.2	448.6	448.1
172.5°	452.2	452.7	453.1	453.1	452.6	452.0	451.5	450.9
175°	455.4	455.9	456.4	456.4	455.8	455.3	454.7	454.2
177.5°	456.9	457.3	457.6	457.6	457.2	456.8	456.3	455.8
180°	457.0	457.0	457.0	457.0	457.0	457.0	457.0	457.0

(END OF REPORT)