

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: P332146-935

Luminaire Tested: **S123DIW-S560D1535U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332146-935
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: S123DIW-S560D1535U935-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7322.9 lumens
Efficiency: N/A
Efficacy: 120.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

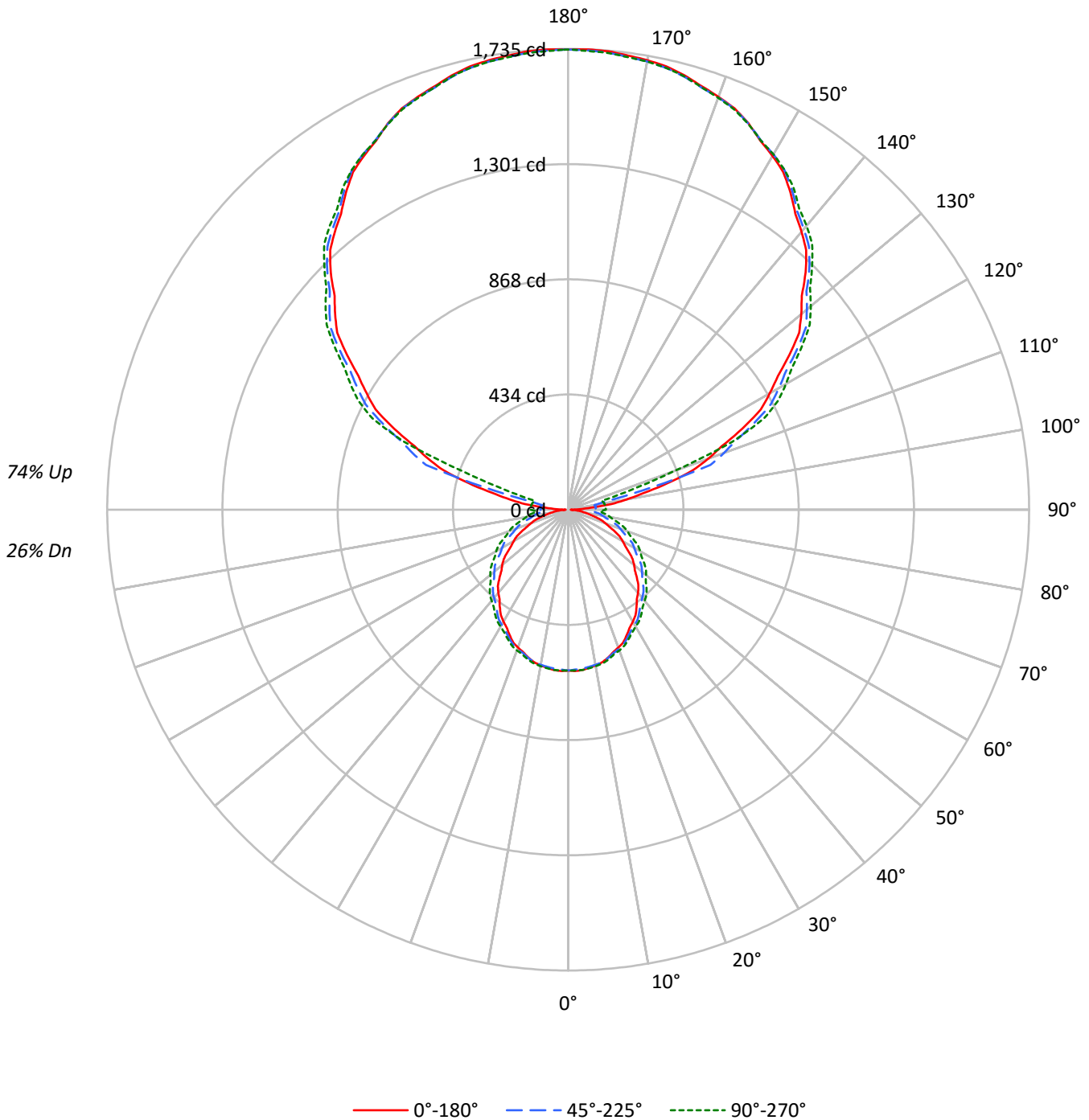
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	92	87	83	80	82	78	75	72	60	58	56	44	42	41	29	28	27	20
2	83	76	70	65	74	68	63	58	52	49	46	38	36	34	25	24	23	17
3	76	66	59	54	67	59	53	48	46	42	38	34	31	28	22	20	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	46	40	35	36	31	28	26	23	21	17	16	14	10
6	58	46	38	33	52	42	35	30	32	27	24	24	20	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	14	12	11	8
8	50	38	30	25	44	34	27	23	26	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	19	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	8	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6518	6518	6518
5°	6537	6352	6357
10°	6480	6207	6175
15°	6395	6040	5978
20°	6277	5850	5760
25°	6129	5632	5532
30°	5977	5436	5300
35°	5809	5228	5116
40°	5647	5038	4917
45°	5468	4857	4759
50°	5291	4678	4584
55°	5097	4494	4428
60°	4906	4308	4266
65°	4710	4109	4076
70°	4418	3885	3878
75°	4048	3629	3679
80°	3620	3378	3451
85°	3222	3204	3317



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.4	0.8
10°-20°	163.6	2.2
20°-30°	244.7	3.3
30°-40°	292.2	4.0
40°-50°	305.8	4.2
50°-60°	286.9	3.9
60°-70°	239.6	3.3
70°-80°	171.5	2.3
80°-90°	107.1	1.5
90°-100°	127.1	1.7
100°-110°	347.4	4.7
110°-120°	752.6	10.3
120°-130°	936.2	12.8
130°-140°	989.2	13.5
140°-150°	919.2	12.6
150°-160°	740.1	10.1
160°-170°	477.6	6.5
170°-180°	164.6	2.2
0°-30°	465.7	6.4
0°-40°	758.0	10.4
0°-60°	1350.7	18.4
0°-90°	1868.9	25.5
90°-120°	1227.1	16.8
90°-150°	4071.7	55.6
90°-180°	5454.0	74.5
0°-180°	7322.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	606	606	606	606	606	
5°	606	605	601	606	606	57
15°	577	579	578	585	584	162
25°	521	527	530	538	538	240
35°	448	459	468	477	480	280
45°	367	383	399	411	417	283
55°	280	302	325	342	348	250
65°	193	219	248	267	274	191
75°	105	136	169	190	198	112
85°	32	65	100	122	129	34
90°	10	55	105	132	142	10
95°	86	63	105	133	141	103
105°	389	412	331	134	130	412
115°	723	740	774	802	813	713
125°	1016	1027	1051	1067	1074	907
135°	1264	1271	1284	1298	1299	973
145°	1458	1466	1469	1476	1479	912
155°	1605	1603	1604	1610	1603	739
165°	1693	1689	1688	1697	1689	478
175°	1732	1726	1727	1735	1726	165
180°	1732	1732	1732	1732	1732	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5
2.5°	608.1	607.8	607.4	607.0	606.7	606.1	605.1	604.2	603.2	602.3	603.2
5°	606.1	605.8	605.5	605.3	604.9	604.3	603.5	602.6	601.8	600.8	602.0
7.5°	600.2	600.2	600.3	600.4	600.5	600.0	599.2	598.3	597.4	596.6	598.1
10°	595.0	595.2	595.5	595.8	596.1	595.9	595.1	594.4	593.7	593.0	594.4
12.5°	588.6	589.0	589.4	589.8	590.2	590.2	589.7	589.2	588.7	588.1	589.5
15°	577.1	577.6	578.0	578.4	578.9	579.0	578.9	578.7	578.6	578.4	579.9
17.5°	562.6	563.4	564.4	565.2	566.1	566.5	566.5	566.4	566.4	566.3	567.6
20°	552.1	552.9	553.8	554.7	555.5	556.1	556.5	556.7	557.0	557.3	558.6
22.5°	541.0	541.8	542.7	543.6	544.5	545.1	545.5	546.0	546.4	546.7	548.5
25°	521.1	522.5	524.0	525.5	526.9	527.9	528.3	528.7	529.2	529.6	531.5
27.5°	501.0	502.7	504.4	506.0	507.6	508.9	509.9	510.8	511.8	512.7	514.4
30°	486.7	488.6	490.5	492.5	494.4	495.9	497.1	498.3	499.4	500.6	502.4
32.5°	470.9	473.0	475.2	477.3	479.5	481.3	482.8	484.3	485.9	487.4	489.3
35°	448.5	450.8	453.1	455.6	457.9	460.0	461.9	463.8	465.7	467.6	469.8
37.5°	424.7	427.4	430.0	432.7	435.3	437.8	440.1	442.5	444.8	447.2	449.7
40°	408.9	411.6	414.2	416.8	419.5	422.2	425.2	428.1	431.0	433.9	436.4
42.5°	391.5	394.8	398.0	401.1	404.4	407.5	410.6	413.6	416.7	419.7	422.5
45°	366.7	370.2	373.8	377.3	380.7	384.4	388.1	391.7	395.4	399.0	401.8
47.5°	340.7	344.7	348.7	352.7	356.6	360.8	365.0	369.1	373.3	377.5	380.6
50°	323.8	328.0	332.0	336.1	340.3	344.6	349.1	353.7	358.2	362.7	366.1
52.5°	305.9	310.2	314.6	318.9	323.2	328.0	332.9	337.9	342.9	348.0	351.5
55°	279.7	284.5	289.3	294.1	299.0	304.0	309.4	314.6	319.9	325.1	329.1
57.5°	254.1	259.1	264.2	269.1	274.2	279.7	285.4	291.2	297.0	302.7	306.7
60°	236.1	241.4	246.7	251.9	257.2	262.9	268.9	274.9	280.9	286.9	291.0
62.5°	219.2	224.6	230.1	235.4	240.8	246.7	253.0	259.4	265.8	272.2	276.2
65°	193.2	199.0	204.7	210.4	216.1	222.2	228.7	235.1	241.5	248.0	252.4
67.5°	166.9	173.0	179.0	185.0	191.1	197.4	204.1	210.6	217.1	223.7	228.5
70°	148.4	154.7	161.0	167.3	173.6	180.3	187.3	194.3	201.4	208.4	213.1
72.5°	131.5	137.8	144.1	150.4	156.7	163.5	170.7	178.1	185.3	192.6	197.4
75°	104.9	111.8	118.6	125.5	132.4	139.6	146.9	154.2	161.5	168.8	173.7
77.5°	81.6	88.6	95.6	102.5	109.4	116.6	124.0	131.4	138.8	146.2	151.3
80°	65.3	72.5	79.6	86.9	94.0	101.4	109.0	116.7	124.3	131.9	136.9
82.5°	51.1	58.4	65.6	72.9	80.2	87.7	95.5	103.2	111.0	118.7	123.7
85°	32.3	39.6	47.0	54.3	61.6	69.1	77.0	84.7	92.5	100.2	105.2
87.5°	17.8	25.7	33.6	41.4	49.2	57.3	65.5	73.8	82.0	90.2	95.4
90°	9.9	19.9	30.0	40.0	50.0	60.6	71.8	83.0	94.2	105.4	111.6
92.5°	32.0	37.6	43.3	49.0	54.7	62.6	72.8	82.9	93.1	103.2	109.9
95°	85.8	79.7	73.8	67.8	61.7	63.9	74.2	84.6	94.9	105.2	111.8
97.5°	164.3	164.2	164.1	163.9	163.8	157.0	143.2	129.5	115.7	102.0	108.7
100°	223.4	233.8	244.3	254.7	265.1	251.4	213.5	175.6	137.8	99.9	106.4
102.5°	290.9	299.3	307.5	315.9	324.3	307.4	265.3	223.2	181.1	138.9	136.0
105°	388.8	395.5	402.2	408.9	415.5	409.1	389.7	370.2	350.8	331.4	284.8
107.5°	491.5	497.1	502.6	508.1	513.6	521.3	531.4	541.5	551.5	561.5	528.3
110°	560.0	565.0	569.9	574.8	579.7	586.7	595.7	604.7	613.7	622.8	617.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	625.9	630.2	634.4	638.6	642.8	649.4	658.1	666.9	675.6	684.4	688.3
115°	722.8	726.3	729.8	733.2	736.8	742.4	750.3	758.1	765.9	773.8	780.2
117.5°	817.2	820.4	823.5	826.8	830.0	834.7	841.0	847.2	853.5	859.8	865.6
120°	875.4	878.7	881.9	885.3	888.6	893.1	898.8	904.5	910.2	915.8	921.5
122.5°	935.0	937.5	940.0	942.5	945.0	949.2	954.8	960.5	966.2	971.9	976.8
125°	1016.2	1018.6	1020.9	1023.1	1025.5	1029.2	1034.7	1040.1	1045.4	1050.9	1054.5
127.5°	1095.5	1097.7	1099.8	1102.0	1104.1	1107.7	1112.6	1117.4	1122.3	1127.2	1131.0
130°	1145.0	1147.1	1149.3	1151.4	1153.6	1156.7	1160.7	1164.8	1168.9	1172.9	1176.9
132.5°	1191.8	1194.1	1196.4	1198.6	1200.8	1203.6	1206.9	1210.1	1213.4	1216.7	1220.5
135°	1264.0	1265.6	1267.2	1268.8	1270.3	1272.5	1275.2	1278.0	1280.7	1283.5	1287.0
137.5°	1325.7	1327.7	1329.8	1331.9	1333.9	1335.8	1337.2	1338.8	1340.3	1341.9	1345.6
140°	1366.3	1368.0	1369.8	1371.5	1373.2	1374.8	1376.1	1377.3	1378.6	1379.9	1383.3
142.5°	1404.5	1406.1	1407.6	1409.3	1410.8	1412.1	1413.1	1414.0	1415.0	1415.9	1418.8
145°	1457.8	1459.6	1461.5	1463.4	1465.2	1466.4	1467.0	1467.5	1468.1	1468.7	1470.4
147.5°	1507.3	1508.6	1509.9	1511.2	1512.5	1513.5	1514.1	1514.7	1515.2	1515.8	1516.7
150°	1538.2	1539.0	1539.9	1540.8	1541.6	1542.3	1542.9	1543.5	1544.0	1544.6	1545.2
152.5°	1566.0	1566.4	1566.8	1567.2	1567.6	1568.0	1568.3	1568.7	1569.0	1569.3	1570.4
155°	1605.1	1604.6	1604.0	1603.4	1602.8	1602.7	1603.0	1603.3	1603.5	1603.8	1605.2
157.5°	1635.5	1635.5	1635.4	1635.3	1635.3	1635.1	1634.8	1634.5	1634.3	1633.9	1635.6
160°	1654.1	1653.7	1653.5	1653.2	1652.9	1652.6	1652.3	1652.0	1651.7	1651.5	1653.2
162.5°	1671.5	1670.8	1670.1	1669.3	1668.5	1668.0	1667.8	1667.5	1667.2	1666.9	1668.9
165°	1692.6	1691.8	1690.9	1690.1	1689.2	1688.7	1688.3	1688.1	1687.8	1687.5	1689.8
167.5°	1709.1	1708.0	1706.8	1705.7	1704.5	1704.0	1704.0	1704.0	1704.0	1704.0	1706.2
170°	1718.4	1717.3	1716.1	1714.9	1713.8	1713.2	1713.2	1713.2	1713.2	1713.2	1715.5
172.5°	1724.6	1723.2	1721.8	1720.5	1719.1	1718.5	1718.7	1719.0	1719.2	1719.4	1721.7
175°	1732.5	1731.1	1729.7	1728.3	1726.8	1726.2	1726.6	1726.8	1727.1	1727.4	1729.4
177.5°	1734.6	1733.5	1732.3	1731.2	1730.0	1729.6	1729.8	1730.0	1730.3	1730.5	1732.3
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	605.5	605.5	605.5	605.5	605.5	605.5	605.5	605.5
2.5°	604.2	605.1	606.1	606.5	606.3	606.2	606.1	606.0
5°	603.2	604.3	605.5	606.1	605.9	605.7	605.6	605.5
7.5°	599.5	601.0	602.5	603.1	603.0	602.8	602.6	602.4
10°	595.9	597.4	598.8	599.3	599.1	598.8	598.5	598.2
12.5°	590.9	592.2	593.6	594.1	593.8	593.5	593.2	593.0
15°	581.3	582.8	584.3	585.0	584.8	584.6	584.5	584.4
17.5°	568.9	570.2	571.5	572.1	571.9	571.7	571.5	571.3
20°	560.0	561.3	562.6	563.4	563.4	563.6	563.8	563.9
22.5°	550.1	551.8	553.5	554.2	554.1	554.1	554.0	553.9
25°	533.4	535.4	537.3	538.2	538.2	538.2	538.2	538.2
27.5°	516.0	517.6	519.3	520.2	520.3	520.4	520.6	520.6
30°	504.1	505.8	507.6	508.5	508.5	508.5	508.5	508.5
32.5°	491.1	493.0	494.9	496.0	496.4	496.7	497.1	497.4
35°	472.0	474.2	476.4	477.8	478.4	479.0	479.6	480.2
37.5°	452.1	454.6	457.1	458.7	459.1	459.5	460.0	460.5
40°	438.9	441.4	443.9	445.5	446.1	446.7	447.2	447.8
42.5°	425.2	427.9	430.7	432.4	433.3	434.0	434.9	435.7
45°	404.6	407.3	410.2	412.2	413.3	414.5	415.7	416.8
47.5°	383.8	386.9	390.0	392.1	393.0	393.9	394.9	395.7
50°	369.5	372.9	376.3	378.4	379.4	380.5	381.5	382.5
52.5°	355.0	358.4	362.0	364.3	365.6	366.8	368.1	369.4
55°	333.0	337.0	341.0	343.5	344.7	345.9	347.1	348.3
57.5°	310.7	314.7	318.7	321.3	322.7	324.1	325.5	326.8
60°	295.2	299.2	303.3	306.2	307.8	309.4	311.0	312.6
62.5°	280.3	284.5	288.5	291.4	292.8	294.3	295.8	297.3
65°	256.8	261.1	265.6	268.5	270.0	271.5	272.9	274.4
67.5°	233.3	238.2	243.0	246.0	247.2	248.4	249.7	250.9
70°	217.8	222.5	227.2	230.2	231.7	233.2	234.6	236.1
72.5°	202.2	207.0	211.8	215.0	216.5	217.9	219.4	220.8
75°	178.5	183.4	188.2	191.5	193.2	195.0	196.7	198.5
77.5°	156.4	161.4	166.5	169.8	171.2	172.5	173.8	175.2
80°	141.9	146.9	151.9	155.1	156.5	158.0	159.5	160.9
82.5°	128.7	133.6	138.6	141.9	143.4	144.8	146.3	147.7
85°	110.2	115.2	120.2	123.4	124.8	126.3	127.8	129.2
87.5°	100.7	105.8	111.1	114.4	116.1	117.6	119.2	120.8
90°	117.7	123.8	129.9	134.0	136.0	138.1	140.1	142.2
92.5°	116.7	123.4	130.0	134.2	136.0	137.6	139.3	141.0
95°	118.3	124.8	131.4	135.3	136.8	138.3	139.8	141.3
97.5°	115.3	122.0	128.6	132.9	134.6	136.3	138.1	139.8
100°	113.0	119.5	126.1	130.2	131.9	133.6	135.4	137.2
102.5°	133.0	130.0	127.1	126.6	128.5	130.5	132.5	134.5
105°	238.3	191.7	145.3	123.0	124.8	126.7	128.6	130.5
107.5°	495.2	461.9	428.7	393.6	356.8	319.9	283.1	246.2
110°	611.5	605.9	600.2	577.6	537.8	498.1	458.3	418.6



TEST NUMBER: P332146-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	692.2	696.0	699.9	698.2	690.8	683.5	676.1	668.7
115°	786.5	792.9	799.4	803.7	806.0	808.3	810.6	813.0
117.5°	871.3	877.1	882.9	886.5	887.9	889.2	890.6	892.0
120°	927.2	932.8	938.5	941.8	942.9	943.9	944.9	946.0
122.5°	981.6	986.4	991.4	994.4	995.7	996.9	998.2	999.4
125°	1058.2	1061.8	1065.5	1068.1	1069.7	1071.3	1072.9	1074.4
127.5°	1134.9	1138.7	1142.5	1144.6	1145.0	1145.5	1145.9	1146.3
130°	1180.9	1184.7	1188.7	1190.8	1191.1	1191.5	1191.7	1192.1
132.5°	1224.3	1228.1	1231.9	1233.9	1234.2	1234.3	1234.5	1234.7
135°	1290.5	1294.0	1297.5	1299.2	1299.1	1298.9	1298.8	1298.6
137.5°	1349.3	1353.0	1356.6	1358.6	1358.7	1358.9	1359.0	1359.2
140°	1386.6	1389.9	1393.3	1395.1	1395.2	1395.3	1395.5	1395.7
142.5°	1421.7	1424.5	1427.5	1428.8	1428.7	1428.7	1428.7	1428.6
145°	1472.1	1473.9	1475.7	1476.8	1477.4	1478.0	1478.6	1479.2
147.5°	1517.6	1518.5	1519.5	1519.6	1518.7	1517.9	1517.2	1516.4
150°	1545.8	1546.4	1546.9	1546.9	1546.4	1545.8	1545.2	1544.6
152.5°	1571.4	1572.4	1573.5	1573.3	1572.1	1570.8	1569.6	1568.3
155°	1606.7	1608.1	1609.6	1609.4	1607.7	1605.9	1604.2	1602.6
157.5°	1637.4	1639.1	1640.8	1640.5	1638.3	1636.1	1633.8	1631.6
160°	1654.9	1656.6	1658.3	1658.2	1656.1	1654.2	1652.2	1650.2
162.5°	1670.8	1672.8	1674.6	1674.7	1673.0	1671.2	1669.5	1667.7
165°	1692.0	1694.4	1696.7	1696.8	1694.8	1692.8	1690.7	1688.8
167.5°	1708.6	1710.8	1713.1	1713.1	1710.8	1708.6	1706.2	1704.0
170°	1717.8	1720.1	1722.4	1722.4	1720.1	1717.8	1715.5	1713.2
172.5°	1724.0	1726.3	1728.5	1728.5	1726.0	1723.5	1720.9	1718.4
175°	1731.4	1733.4	1735.4	1735.3	1732.9	1730.7	1728.4	1726.1
177.5°	1734.1	1735.9	1737.8	1737.6	1735.3	1733.0	1730.7	1728.5
180°	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5	1732.5

(END OF REPORT)