

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: P332147-935

Luminaire Tested: **S123DIW-S560D1535U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332147-935
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: S123DIW-S560D1535U935-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6618.8 lumens
Efficiency: N/A
Efficacy: 109.2 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

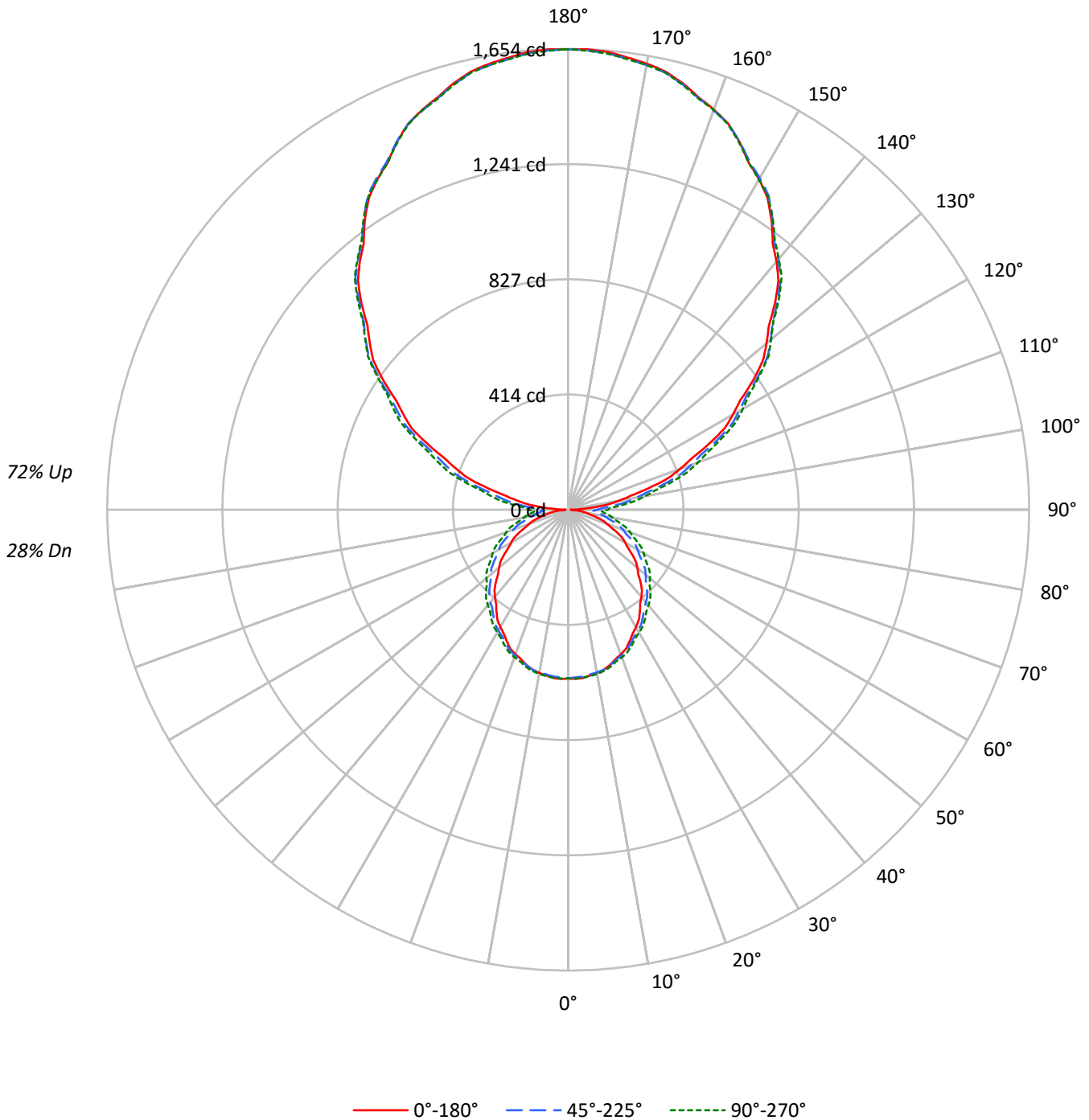
Input Watts (W): 60.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332147-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-D1

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	102	102	102	102	91	91	91	91	71	71	71	53	53	53	36	36	36	28
1	92	88	84	80	82	79	75	72	61	59	57	46	44	43	31	30	29	23
2	84	76	70	65	75	68	63	59	53	50	47	40	37	35	27	25	24	18
3	76	67	60	54	68	60	54	49	47	42	39	35	32	29	24	22	20	15
4	70	59	51	45	62	53	46	41	41	37	33	31	28	25	21	19	17	13
5	64	52	44	38	57	47	40	35	37	32	28	28	24	21	19	17	15	11
6	58	47	39	33	52	42	35	30	33	28	24	25	21	19	17	15	13	10
7	54	42	34	29	48	38	31	26	30	25	21	22	19	16	15	13	12	9
8	50	38	30	25	44	34	28	23	27	22	19	20	17	14	14	12	10	8
9	46	34	27	22	41	31	25	20	25	20	17	19	15	13	13	11	9	7
10	43	31	24	20	39	28	22	18	23	18	15	17	14	12	12	10	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



TEST NUMBER: P332147-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.4	0.9
10°-20°	163.6	2.5
20°-30°	244.7	3.7
30°-40°	292.2	4.4
40°-50°	305.8	4.6
50°-60°	286.9	4.3
60°-70°	239.6	3.6
70°-80°	171.5	2.6
80°-90°	107.1	1.6
90°-100°	171.8	2.6
100°-110°	369.4	5.6
110°-120°	579.6	8.8
120°-130°	739.0	11.2
130°-140°	818.4	12.4
140°-150°	798.3	12.1
150°-160°	670.6	10.1
160°-170°	446.4	6.7
170°-180°	156.3	2.4
0°-30°	465.7	7.0
0°-40°	758.0	11.5
0°-60°	1350.7	20.4
0°-90°	1868.9	28.2
90°-120°	1120.9	16.9
90°-150°	3476.6	52.5
90°-180°	4750.0	71.8
0°-180°	6618.8	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	106	132	142	11
95°	84	119	161	186	194	92
105°	297	317	356	374	383	318
115°	555	567	588	604	609	549
125°	810	814	830	838	838	722
135°	1049	1056	1062	1068	1070	808
145°	1272	1274	1278	1281	1279	794
155°	1455	1456	1457	1461	1453	670
165°	1585	1582	1581	1588	1580	447
175°	1649	1644	1644	1651	1642	157
180°	1653	1653	1653	1653	1653	



TEST NUMBER: P332147-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-D1

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	49.3	57.3	65.6	73.8	82.1	90.2	95.5
90°	9.9	20.0	30.0	40.0	50.1	60.8	72.0	83.3	94.5	105.7	111.8
92.5°	39.4	47.9	56.3	64.7	73.2	82.2	91.7	101.2	110.6	120.2	126.0
95°	83.9	91.6	99.4	107.0	114.8	123.4	132.9	142.4	151.9	161.4	167.0
97.5°	142.5	149.2	155.8	162.5	169.2	176.8	185.3	193.8	202.3	210.9	216.6
100°	182.5	188.9	195.4	201.7	208.2	215.5	223.7	231.9	240.0	248.2	253.4
102.5°	228.7	234.0	239.3	244.5	249.8	256.7	265.2	273.7	282.2	290.8	295.8
105°	297.4	301.5	305.6	309.7	313.7	320.3	329.2	338.1	347.0	355.9	360.0
107.5°	376.6	380.0	383.2	386.6	389.9	395.1	402.2	409.1	416.2	423.2	428.0
110°	425.9	429.1	432.3	435.6	438.8	443.6	450.0	456.5	463.0	469.3	474.3



TEST NUMBER: P332147-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	477.9	480.4	482.8	485.4	487.9	492.1	497.7	503.5	509.3	515.1	520.1
115°	555.1	557.8	560.3	563.0	565.6	569.3	573.9	578.7	583.3	588.1	591.9
117.5°	633.4	635.1	636.7	638.3	640.1	643.0	647.1	651.3	655.6	659.8	663.2
120°	681.7	684.2	686.6	689.1	691.6	694.5	697.8	701.3	704.6	708.0	711.1
122.5°	732.5	734.2	735.9	737.5	739.2	741.9	745.8	749.6	753.5	757.3	759.8
125°	809.5	810.4	811.3	812.2	813.0	815.3	819.0	822.6	826.3	830.0	831.9
127.5°	881.2	883.0	884.6	886.3	888.0	890.3	893.2	896.0	899.0	901.8	903.1
130°	929.0	931.2	933.3	935.5	937.6	939.8	941.8	943.9	946.0	948.0	949.7
132.5°	976.3	978.5	980.8	983.1	985.3	987.4	989.0	990.8	992.5	994.2	995.5
135°	1049.0	1050.7	1052.2	1053.9	1055.4	1056.9	1058.2	1059.5	1060.8	1062.1	1063.7
137.5°	1116.5	1117.8	1119.1	1120.4	1121.8	1123.3	1124.9	1126.5	1128.3	1129.9	1131.0
140°	1162.7	1164.2	1165.5	1167.0	1168.5	1169.5	1170.3	1171.0	1171.7	1172.4	1174.3
142.5°	1205.2	1206.6	1207.9	1209.3	1210.6	1211.5	1212.1	1212.7	1213.3	1213.9	1215.6
145°	1271.7	1272.1	1272.6	1273.0	1273.4	1274.1	1275.0	1275.8	1276.7	1277.6	1278.4
147.5°	1329.2	1330.2	1331.3	1332.4	1333.4	1334.3	1335.2	1335.9	1336.7	1337.6	1337.9
150°	1369.8	1370.4	1370.9	1371.5	1372.1	1372.6	1373.2	1373.8	1374.3	1374.9	1374.9
152.5°	1403.0	1403.8	1404.6	1405.4	1406.2	1406.8	1407.1	1407.5	1407.8	1408.2	1408.7
155°	1455.4	1455.4	1455.4	1455.4	1455.4	1455.6	1455.9	1456.1	1456.5	1456.7	1457.9
157.5°	1500.1	1499.8	1499.4	1499.1	1498.7	1498.7	1498.9	1499.1	1499.3	1499.6	1500.8
160°	1528.2	1527.6	1527.0	1526.4	1525.9	1525.5	1525.5	1525.5	1525.5	1525.5	1527.0
162.5°	1553.1	1552.3	1551.4	1550.7	1549.9	1549.5	1549.8	1550.1	1550.2	1550.5	1552.0
165°	1585.3	1584.4	1583.6	1582.7	1581.8	1581.4	1581.4	1581.4	1581.4	1581.4	1583.1
167.5°	1611.0	1609.8	1608.7	1607.5	1606.4	1605.9	1606.1	1606.4	1606.6	1606.8	1608.6
170°	1625.5	1624.4	1623.2	1622.0	1620.9	1620.3	1620.3	1620.3	1620.3	1620.3	1622.4
172.5°	1636.9	1635.8	1634.6	1633.5	1632.4	1631.8	1631.8	1631.8	1631.8	1631.8	1633.6
175°	1648.9	1647.8	1646.6	1645.5	1644.3	1643.7	1643.7	1643.7	1643.7	1643.7	1645.5
177.5°	1653.8	1652.9	1652.0	1651.1	1650.1	1649.7	1649.7	1649.7	1649.7	1649.7	1651.1
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8



TEST NUMBER: P332147-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-D1

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	105.9	111.2	114.5	116.1	117.7	119.2	120.8
90°	118.0	124.1	130.3	134.3	136.4	138.4	140.4	142.5
92.5°	131.7	137.5	143.4	146.7	147.7	148.7	149.7	150.8
95°	172.8	178.5	184.2	187.8	189.2	190.7	192.2	193.6
97.5°	222.3	228.0	233.7	237.2	238.6	239.9	241.3	242.6
100°	258.5	263.6	268.7	272.2	274.3	276.4	278.4	280.4
102.5°	300.7	305.7	310.7	313.9	315.3	316.7	318.0	319.3
105°	364.1	368.2	372.3	375.3	377.2	379.1	381.0	382.9
107.5°	432.9	437.7	442.6	445.5	446.4	447.4	448.3	449.3
110°	479.3	484.2	489.2	492.0	492.6	493.2	493.8	494.4



TEST NUMBER: P332147-935

CATALOG NUMBER: S123DIW-S560D1535U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	525.2	530.3	535.4	538.5	539.6	540.8	542.0	543.1
115°	595.6	599.4	603.3	605.6	606.5	607.3	608.3	609.2
117.5°	666.7	670.0	673.5	675.4	675.7	676.1	676.4	676.7
120°	714.2	717.3	720.4	722.1	722.6	723.1	723.5	723.9
122.5°	762.3	764.8	767.3	768.7	769.0	769.1	769.4	769.6
125°	833.8	835.8	837.7	838.5	838.4	838.3	838.2	838.0
127.5°	904.4	905.7	907.0	907.5	907.1	906.8	906.5	906.1
130°	951.3	952.9	954.5	954.8	953.6	952.5	951.4	950.2
132.5°	996.8	998.1	999.4	999.7	999.1	998.6	998.0	997.5
135°	1065.1	1066.6	1068.1	1068.9	1069.1	1069.3	1069.4	1069.5
137.5°	1132.1	1133.2	1134.3	1134.7	1134.3	1133.9	1133.6	1133.2
140°	1176.3	1178.2	1180.1	1180.4	1179.1	1177.8	1176.6	1175.3
142.5°	1217.3	1219.0	1220.6	1221.1	1220.3	1219.4	1218.6	1217.8
145°	1279.4	1280.2	1281.1	1281.3	1280.7	1280.1	1279.5	1279.0
147.5°	1338.3	1338.6	1338.9	1338.5	1337.3	1336.1	1334.9	1333.7
150°	1374.9	1374.9	1374.9	1374.2	1372.8	1371.3	1369.9	1368.5
152.5°	1409.1	1409.5	1410.1	1409.5	1408.1	1406.6	1405.2	1403.8
155°	1459.1	1460.2	1461.4	1460.9	1458.9	1456.9	1454.8	1452.9
157.5°	1502.0	1503.2	1504.4	1504.3	1502.6	1501.0	1499.3	1497.8
160°	1528.4	1529.9	1531.3	1531.5	1530.3	1529.1	1528.0	1526.8
162.5°	1553.3	1554.8	1556.3	1556.1	1554.2	1552.4	1550.5	1548.7
165°	1584.8	1586.6	1588.3	1588.2	1586.1	1584.2	1582.1	1580.1
167.5°	1610.4	1612.2	1613.9	1613.9	1612.2	1610.4	1608.6	1606.8
170°	1624.4	1626.4	1628.4	1628.4	1626.4	1624.4	1622.4	1620.3
172.5°	1635.3	1637.1	1638.9	1638.8	1636.8	1634.8	1632.7	1630.7
175°	1647.2	1648.9	1650.6	1650.5	1648.5	1646.4	1644.4	1642.4
177.5°	1652.4	1653.8	1655.2	1655.1	1653.5	1651.8	1650.3	1648.6
180°	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8	1652.8

(END OF REPORT)