

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: P332141-935

Luminaire Tested: **S123DIW-S560D1320U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332141-935
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-S560D1320U935-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5977.4 lumens
Efficiency: N/A
Efficacy: 111.1 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

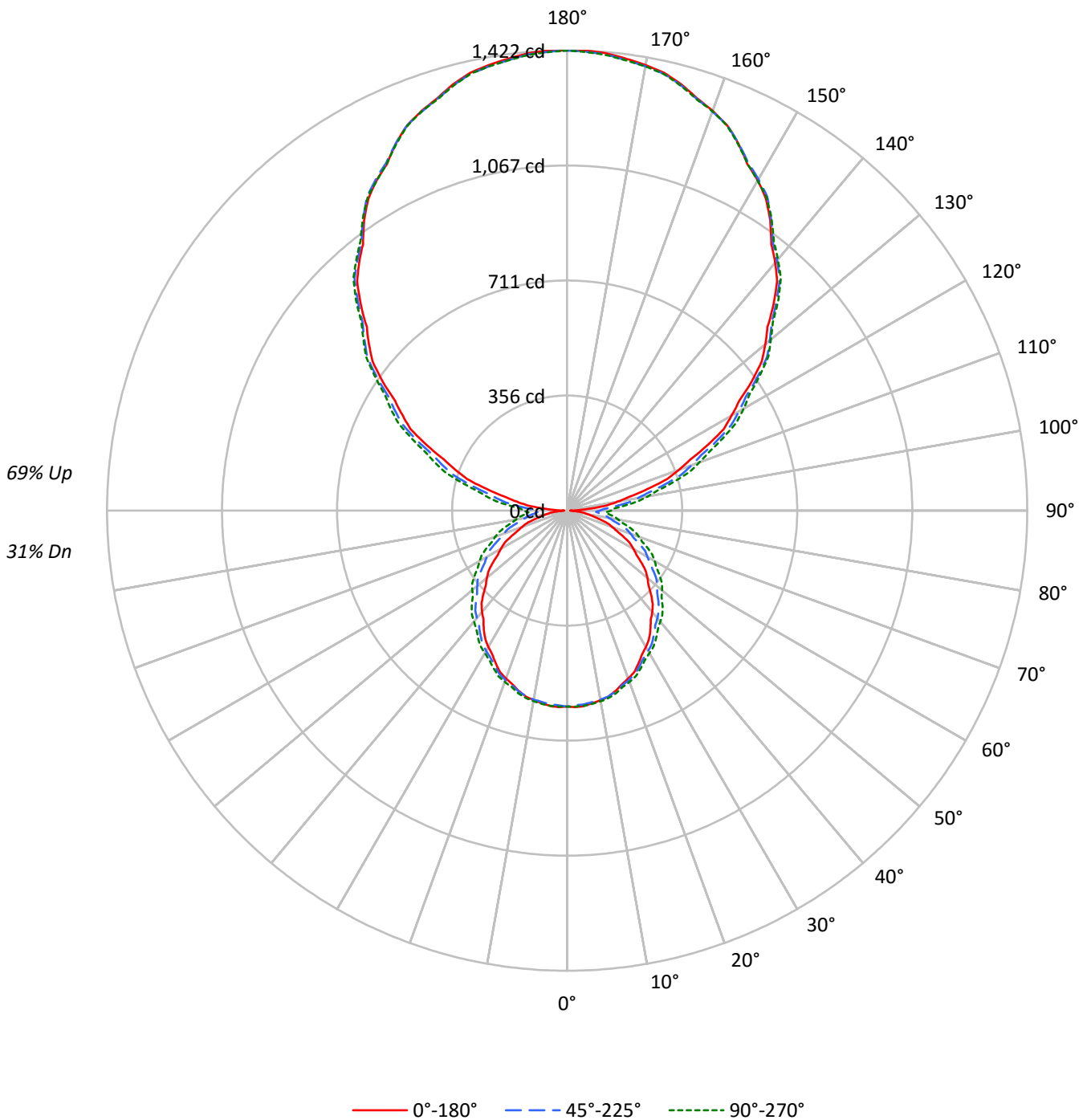
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332141-935

CATALOG NUMBER: S123DIW-S560D1320U935-4F0-1E-UDD-D1

Luminous Intensity Polar Plot





TEST NUMBER: P332141-935

CATALOG NUMBER: S123DIW-S560D1320U935-4F0-1E-UDD-D1

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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	31
1	93	88	84	81	83	79	76	73	63	60	58	47	46	44	33	32	31	25
2	84	77	71	65	75	69	64	59	55	51	48	41	39	37	29	27	26	20
3	77	67	60	54	69	61	54	49	48	43	40	36	33	31	25	23	22	17
4	70	59	51	45	63	53	47	41	42	37	34	32	29	26	23	20	19	14
5	64	53	45	39	57	47	40	35	38	33	29	29	25	22	20	18	16	12
6	59	47	39	33	53	42	35	30	34	29	25	26	22	19	18	16	14	11
7	54	42	34	29	49	38	31	26	31	25	22	23	20	17	17	14	12	10
8	50	38	31	25	45	35	28	23	28	23	19	21	18	15	15	13	11	8
9	47	35	27	22	42	31	25	21	25	20	17	20	16	13	14	12	10	8
10	44	32	25	20	39	29	23	18	23	18	15	18	14	12	13	11	9	7

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: P332141-935

CATALOG NUMBER: S123DIW-S560D1320U935-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.4	1.0
10°-20°	163.6	2.7
20°-30°	244.7	4.1
30°-40°	292.2	4.9
40°-50°	305.8	5.1
50°-60°	286.9	4.8
60°-70°	239.6	4.0
70°-80°	171.5	2.9
80°-90°	106.5	1.8
90°-100°	156.8	2.6
100°-110°	324.3	5.4
110°-120°	502.9	8.4
120°-130°	638.1	10.7
130°-140°	705.1	11.8
140°-150°	686.8	11.5
150°-160°	576.8	9.6
160°-170°	383.9	6.4
170°-180°	134.4	2.2
0°-30°	465.7	7.8
0°-40°	758.0	12.7
0°-60°	1350.7	22.6
0°-90°	1868.2	31.3
90°-120°	984.0	16.5
90°-150°	3014.0	50.4
90°-180°	4109.0	68.7
0°-180°	5977.4	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	53	101	127	137	10
95°	73	107	148	172	179	80
105°	256	276	313	331	340	274
115°	478	490	511	527	532	473
125°	696	701	717	726	726	621
135°	902	908	915	922	923	695
145°	1094	1096	1099	1103	1101	683
155°	1252	1252	1253	1257	1250	576
165°	1364	1360	1360	1366	1359	384
175°	1418	1414	1414	1420	1413	135
180°	1422	1422	1422	1422	1422	



TEST NUMBER: P332141-935

CATALOG NUMBER: S123DIW-S560D1320U935-4F0-1E-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°	17.7	25.6	33.3	41.2	49.0	56.9	65.0	73.2	81.3	89.4	94.5
90°	9.7	19.4	29.0	38.7	48.3	58.5	69.2	79.9	90.7	101.3	107.3
92.5°	35.0	43.2	51.4	59.6	67.8	76.4	85.6	94.8	104.0	113.2	118.8
95°	73.1	80.6	88.1	95.5	103.0	111.2	120.5	129.6	138.8	147.9	153.4
97.5°	123.5	129.9	136.4	142.8	149.3	156.7	165.0	173.2	181.6	189.9	195.4
100°	157.8	164.0	170.1	176.3	182.5	189.6	197.6	205.6	213.5	221.5	226.5
102.5°	197.5	202.6	207.7	212.8	217.9	224.6	232.9	241.2	249.4	257.7	262.5
105°	256.5	260.5	264.6	268.5	272.6	278.9	287.4	295.9	304.4	313.0	317.1
107.5°	324.5	327.8	331.1	334.4	337.7	342.8	349.7	356.5	363.3	370.2	375.0
110°	366.9	370.1	373.2	376.3	379.4	384.2	390.5	396.9	403.2	409.6	414.4



TEST NUMBER: P332141-935

CATALOG NUMBER: S123DIW-S560D1320U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	411.6	414.1	416.5	419.0	421.5	425.5	431.3	437.0	442.7	448.4	453.3
115°	477.9	480.4	482.9	485.4	487.9	491.5	496.4	501.1	505.9	510.7	514.4
117.5°	545.2	546.8	548.4	549.9	551.6	554.5	558.8	563.1	567.4	571.7	575.1
120°	586.7	588.9	591.1	593.3	595.6	598.5	602.1	605.6	609.2	612.9	616.0
122.5°	630.4	631.9	633.4	634.9	636.4	639.0	643.0	647.0	650.9	654.9	657.5
125°	696.5	697.3	698.0	698.8	699.6	701.8	705.5	709.3	713.1	716.8	718.9
127.5°	758.2	759.7	761.1	762.5	764.0	766.2	769.1	772.1	775.1	778.1	779.5
130°	799.3	801.2	803.0	804.8	806.7	808.7	810.9	813.0	815.2	817.4	819.2
132.5°	839.9	841.8	843.8	845.8	847.7	849.5	851.4	853.2	855.0	856.8	858.2
135°	902.5	903.9	905.2	906.5	907.8	909.2	910.6	912.0	913.3	914.6	916.3
137.5°	960.4	961.6	962.7	963.8	964.9	966.3	967.9	969.4	970.9	972.5	973.8
140°	1000.1	1001.3	1002.5	1003.8	1005.0	1006.0	1006.7	1007.4	1008.1	1008.7	1010.7
142.5°	1036.7	1037.8	1039.0	1040.1	1041.2	1042.1	1042.6	1043.1	1043.6	1044.2	1045.9
145°	1093.9	1094.2	1094.6	1094.9	1095.3	1095.9	1096.6	1097.3	1098.1	1098.8	1099.8
147.5°	1143.2	1144.2	1145.0	1146.0	1146.9	1147.6	1148.3	1149.0	1149.7	1150.4	1150.8
150°	1178.1	1178.6	1179.1	1179.6	1180.1	1180.6	1181.1	1181.6	1182.1	1182.6	1182.6
152.5°	1206.7	1207.4	1208.1	1208.8	1209.4	1210.0	1210.3	1210.6	1210.9	1211.2	1211.6
155°	1251.8	1251.8	1251.8	1251.8	1251.8	1252.0	1252.2	1252.4	1252.7	1252.9	1254.0
157.5°	1290.2	1290.0	1289.6	1289.3	1289.0	1289.0	1289.2	1289.3	1289.6	1289.8	1290.8
160°	1314.3	1313.9	1313.4	1312.9	1312.3	1312.1	1312.1	1312.1	1312.1	1312.1	1313.4
162.5°	1335.8	1335.1	1334.4	1333.7	1333.0	1332.7	1333.0	1333.2	1333.3	1333.5	1334.8
165°	1363.5	1362.7	1362.0	1361.2	1360.6	1360.1	1360.1	1360.1	1360.1	1360.1	1361.6
167.5°	1385.6	1384.6	1383.6	1382.6	1381.6	1381.2	1381.4	1381.6	1381.8	1382.0	1383.5
170°	1398.1	1397.1	1396.1	1395.2	1394.1	1393.6	1393.6	1393.6	1393.6	1393.6	1395.3
172.5°	1407.9	1407.0	1405.9	1405.0	1403.9	1403.4	1403.4	1403.4	1403.4	1403.4	1405.0
175°	1418.2	1417.2	1416.3	1415.2	1414.2	1413.8	1413.8	1413.8	1413.8	1413.8	1415.2
177.5°	1422.5	1421.7	1420.8	1420.0	1419.3	1418.8	1418.8	1418.8	1418.8	1418.8	1420.0
180°	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6



TEST NUMBER: P332141-935

CATALOG NUMBER: S123DIW-S560D1320U935-4F0-1E-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°	99.8	105.0	110.1	113.5	115.0	116.6	118.2	119.8
90°	113.3	119.2	125.3	129.2	131.1	133.1	135.1	137.1
92.5°	124.5	130.2	135.9	139.2	140.3	141.3	142.3	143.4
95°	159.0	164.5	170.0	173.6	175.0	176.5	178.0	179.4
97.5°	200.9	206.4	211.9	215.3	216.7	218.1	219.5	220.8
100°	231.5	236.5	241.5	245.0	246.9	248.9	250.9	252.9
102.5°	267.4	272.3	277.2	280.3	281.6	283.0	284.4	285.8
105°	321.2	325.3	329.4	332.3	334.2	336.0	337.9	339.7
107.5°	379.7	384.4	389.2	392.0	393.0	394.0	394.9	396.0
110°	419.2	424.0	428.8	431.5	432.2	432.9	433.6	434.3



TEST NUMBER: P332141-935

CATALOG NUMBER: S123DIW-S560D1320U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	458.2	463.0	468.0	471.0	472.2	473.4	474.6	475.8
115°	518.2	521.9	525.7	528.1	529.0	529.9	530.9	531.8
117.5°	578.6	582.0	585.5	587.4	587.9	588.3	588.8	589.2
120°	619.1	622.2	625.3	627.2	627.7	628.2	628.8	629.3
122.5°	660.1	662.7	665.3	666.8	667.1	667.4	667.8	668.1
125°	721.0	723.1	725.1	726.2	726.3	726.3	726.3	726.3
127.5°	781.1	782.6	784.1	784.8	784.6	784.5	784.4	784.2
130°	821.0	822.8	824.6	825.0	824.2	823.4	822.5	821.7
132.5°	859.7	861.2	862.6	863.2	862.9	862.5	862.2	861.9
135°	918.0	919.6	921.3	922.2	922.5	922.6	922.9	923.2
137.5°	975.0	976.3	977.6	978.1	977.9	977.7	977.5	977.2
140°	1012.7	1014.6	1016.6	1017.1	1016.1	1015.0	1014.1	1013.1
142.5°	1047.7	1049.3	1051.0	1051.6	1051.0	1050.4	1049.8	1049.2
145°	1100.7	1101.6	1102.5	1102.8	1102.3	1102.0	1101.6	1101.1
147.5°	1151.2	1151.5	1151.8	1151.5	1150.6	1149.6	1148.7	1147.7
150°	1182.6	1182.6	1182.6	1182.0	1180.8	1179.6	1178.4	1177.2
152.5°	1211.9	1212.4	1212.7	1212.4	1211.1	1209.9	1208.7	1207.4
155°	1254.9	1255.9	1256.9	1256.5	1254.8	1253.1	1251.3	1249.6
157.5°	1291.8	1292.9	1294.0	1293.7	1292.4	1291.0	1289.6	1288.2
160°	1314.6	1315.9	1317.1	1317.2	1316.2	1315.3	1314.2	1313.2
162.5°	1336.0	1337.3	1338.5	1338.3	1336.8	1335.2	1333.6	1332.0
165°	1363.1	1364.6	1366.1	1366.0	1364.3	1362.5	1360.7	1359.0
167.5°	1385.1	1386.6	1388.2	1388.2	1386.6	1385.1	1383.5	1382.0
170°	1397.1	1398.9	1400.6	1400.6	1398.9	1397.1	1395.3	1393.6
172.5°	1406.5	1408.1	1409.6	1409.5	1407.8	1406.0	1404.3	1402.6
175°	1416.7	1418.2	1419.7	1419.5	1417.8	1416.1	1414.4	1412.6
177.5°	1421.3	1422.5	1423.7	1423.6	1422.1	1420.7	1419.4	1418.0
180°	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6	1421.6

(END OF REPORT)