

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: P332141-830

Luminaire Tested: **S123DIW-S560D1320U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332141-830
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-S560D1320U830-4F0-1E-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: 6543.5 lumens
Efficiency: N/A
Efficacy: 121.6 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

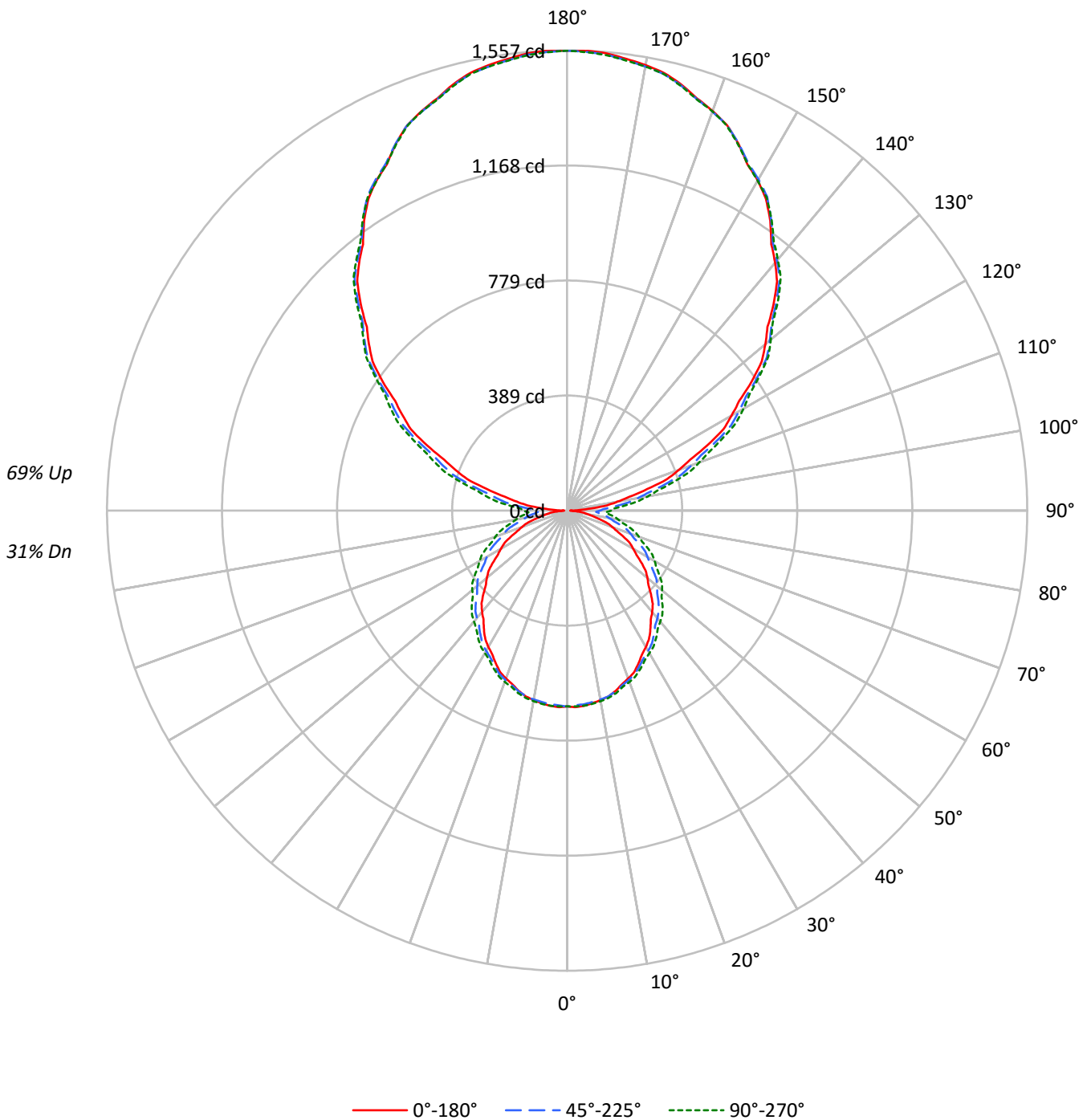
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332141-830

CATALOG NUMBER: S123DIW-S560D1320U830-4F0-1E-UDD-D1

Luminous Intensity Polar Plot





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CATALOG NUMBER: S123DIW-S560D1320U830-4F0-1E-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°	7134	7134	7134
5°	7156	6954	6959
10°	7093	6795	6761
15°	7001	6612	6544
20°	6871	6405	6306
25°	6709	6166	6056
30°	6544	5951	5803
35°	6359	5723	5601
40°	6181	5515	5382
45°	5986	5318	5210
50°	5793	5121	5019
55°	5578	4919	4848
60°	5369	4716	4670
65°	5156	4499	4462
70°	4837	4254	4245
75°	4430	3973	4029
80°	3958	3698	3779
85°	3521	3508	3633



TEST NUMBER: P332141-830

CATALOG NUMBER: S123DIW-S560D1320U830-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.8	1.0
10°-20°	179.1	2.7
20°-30°	267.9	4.1
30°-40°	319.9	4.9
40°-50°	334.7	5.1
50°-60°	314.1	4.8
60°-70°	262.3	4.0
70°-80°	187.7	2.9
80°-90°	116.5	1.8
90°-100°	171.6	2.6
100°-110°	355.0	5.4
110°-120°	550.6	8.4
120°-130°	698.5	10.7
130°-140°	771.8	11.8
140°-150°	751.9	11.5
150°-160°	631.4	9.6
160°-170°	420.3	6.4
170°-180°	147.2	2.2
0°-30°	509.8	7.8
0°-40°	829.7	12.7
0°-60°	1478.6	22.6
0°-90°	2045.2	31.3
90°-120°	1077.2	16.5
90°-150°	3299.5	50.4
90°-180°	4498.0	68.7
0°-180°	6543.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	663	663	663	663	663	
5°	664	662	658	663	663	63
15°	632	634	633	640	640	178
25°	570	577	580	589	589	263
35°	491	502	512	522	526	307
45°	401	419	437	450	456	310
55°	306	330	356	375	381	274
65°	212	240	272	292	300	209
75°	115	149	185	208	217	123
85°	35	72	110	133	142	37
90°	11	58	111	139	150	11
95°	80	117	162	188	196	87
105°	281	302	343	362	372	300
115°	523	536	559	577	582	518
125°	762	767	785	794	795	680
135°	988	995	1001	1009	1011	761
145°	1198	1199	1203	1207	1205	748
155°	1370	1370	1372	1376	1368	631
165°	1493	1489	1489	1495	1488	421
175°	1553	1548	1548	1554	1546	147
180°	1556	1556	1556	1556	1556	



TEST NUMBER: P332141-830

CATALOG NUMBER: S123DIW-S560D1320U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	665.7	665.3	665.0	664.5	664.1	663.5	662.4	661.4	660.3	659.3	660.3
5°	663.5	663.2	662.9	662.6	662.2	661.6	660.6	659.7	658.7	657.7	659.0
7.5°	657.0	657.0	657.1	657.2	657.3	656.9	655.9	655.0	654.0	653.1	654.7
10°	651.3	651.6	651.9	652.2	652.5	652.3	651.5	650.7	649.9	649.1	650.7
12.5°	644.3	644.8	645.3	645.6	646.1	646.1	645.5	645.0	644.4	643.9	645.4
15°	631.8	632.3	632.7	633.2	633.7	633.9	633.7	633.5	633.4	633.2	634.8
17.5°	615.9	616.8	617.8	618.8	619.7	620.2	620.1	620.0	620.0	619.9	621.3
20°	604.4	605.3	606.2	607.2	608.1	608.8	609.2	609.4	609.7	610.1	611.5
22.5°	592.2	593.1	594.1	595.1	596.1	596.7	597.2	597.7	598.1	598.5	600.4
25°	570.4	572.0	573.6	575.2	576.8	577.9	578.3	578.8	579.3	579.8	581.8
27.5°	548.5	550.3	552.1	553.9	555.7	557.1	558.2	559.2	560.2	561.3	563.1
30°	532.8	534.9	537.0	539.1	541.2	542.9	544.1	545.4	546.7	548.0	550.0
32.5°	515.5	517.8	520.2	522.5	524.9	526.9	528.6	530.2	531.9	533.6	535.6
35°	491.0	493.5	496.1	498.7	501.2	503.6	505.7	507.7	509.8	511.9	514.3
37.5°	465.0	467.9	470.7	473.6	476.5	479.3	481.8	484.4	486.9	489.6	492.3
40°	447.6	450.5	453.5	456.3	459.2	462.2	465.4	468.6	471.8	475.0	477.8
42.5°	428.6	432.2	435.6	439.1	442.7	446.1	449.5	452.8	456.2	459.5	462.5
45°	401.4	405.3	409.2	413.0	416.8	420.8	424.8	428.8	432.8	436.8	439.9
47.5°	373.0	377.4	381.7	386.1	390.4	394.9	399.5	404.1	408.7	413.3	416.7
50°	354.5	359.0	363.4	368.0	372.5	377.2	382.2	387.2	392.1	397.1	400.8
52.5°	334.9	339.6	344.4	349.1	353.8	359.0	364.5	369.9	375.4	381.0	384.7
55°	306.1	311.4	316.7	322.0	327.3	332.8	338.7	344.4	350.2	355.9	360.2
57.5°	278.1	283.6	289.2	294.6	300.2	306.1	312.5	318.8	325.1	331.4	335.7
60°	258.4	264.3	270.0	275.8	281.5	287.8	294.4	301.0	307.5	314.1	318.6
62.5°	240.0	245.9	251.8	257.7	263.6	270.0	277.0	284.0	291.0	297.9	302.4
65°	211.5	217.8	224.0	230.4	236.6	243.3	250.3	257.3	264.4	271.5	276.3
67.5°	182.7	189.4	196.0	202.6	209.2	216.1	223.4	230.5	237.7	244.9	250.2
70°	162.5	169.4	176.3	183.1	190.0	197.4	205.0	212.7	220.5	228.2	233.3
72.5°	143.9	150.9	157.8	164.7	171.5	179.0	186.9	194.9	202.8	210.8	216.1
75°	114.8	122.3	129.9	137.4	145.0	152.8	160.8	168.8	176.8	184.8	190.1
77.5°	89.4	97.0	104.6	112.2	119.8	127.6	135.7	143.8	151.9	160.0	165.6
80°	71.4	79.4	87.2	95.1	102.9	111.0	119.3	127.7	136.1	144.4	149.9
82.5°	55.9	63.9	71.8	79.8	87.8	96.0	104.5	113.0	121.5	130.0	135.4
85°	35.3	43.4	51.5	59.5	67.5	75.7	84.3	92.7	101.2	109.7	115.2
87.5°	19.4	28.0	36.5	45.1	53.6	62.3	71.2	80.1	89.0	97.8	103.5
90°	10.7	21.2	31.8	42.3	52.9	64.1	75.8	87.5	99.2	110.9	117.4
92.5°	38.4	47.3	56.3	65.2	74.2	83.6	93.7	103.8	113.9	123.9	130.1
95°	80.0	88.2	96.4	104.5	112.7	121.8	131.9	141.9	151.9	161.9	168.0
97.5°	135.2	142.2	149.3	156.4	163.4	171.5	180.6	189.6	198.8	207.8	213.9
100°	172.8	179.6	186.2	193.0	199.8	207.5	216.3	225.1	233.8	242.5	248.0
102.5°	216.2	221.8	227.3	233.0	238.6	245.9	255.0	264.0	273.1	282.1	287.4
105°	280.8	285.2	289.6	294.0	298.4	305.3	314.6	324.0	333.3	342.6	347.1
107.5°	355.2	358.8	362.5	366.1	369.7	375.2	382.8	390.3	397.8	405.3	410.5
110°	401.6	405.1	408.5	411.9	415.4	420.6	427.5	434.5	441.4	448.4	453.6



TEST NUMBER: P332141-830

CATALOG NUMBER: S123DIW-S560D1320U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	450.5	453.3	455.9	458.6	461.4	465.8	472.1	478.3	484.7	490.9	496.2
115°	523.1	525.9	528.7	531.4	534.1	538.1	543.4	548.6	553.8	559.0	563.2
117.5°	596.8	598.6	600.3	602.0	603.8	607.0	611.7	616.4	621.1	625.8	629.6
120°	642.2	644.7	647.1	649.5	652.0	655.2	659.1	663.0	666.9	670.9	674.3
122.5°	690.1	691.7	693.3	695.0	696.6	699.6	703.9	708.2	712.6	716.9	719.7
125°	762.5	763.4	764.1	765.0	765.8	768.3	772.3	776.5	780.6	784.7	787.0
127.5°	830.0	831.6	833.2	834.7	836.3	838.8	842.0	845.3	848.5	851.8	853.4
130°	875.0	877.0	879.0	881.0	883.1	885.2	887.7	890.0	892.4	894.8	896.8
132.5°	919.5	921.5	923.7	925.9	927.9	930.0	932.0	934.0	935.9	937.9	939.5
135°	988.0	989.5	990.9	992.4	993.8	995.3	996.8	998.3	999.8	1001.3	1003.1
137.5°	1051.4	1052.6	1053.9	1055.1	1056.3	1057.8	1059.5	1061.2	1062.9	1064.6	1066.0
140°	1094.9	1096.2	1097.5	1098.9	1100.2	1101.3	1102.0	1102.8	1103.5	1104.3	1106.5
142.5°	1134.9	1136.1	1137.4	1138.6	1139.8	1140.8	1141.3	1141.9	1142.5	1143.1	1145.0
145°	1197.5	1197.9	1198.3	1198.6	1199.0	1199.7	1200.4	1201.3	1202.1	1202.9	1203.9
147.5°	1251.5	1252.5	1253.5	1254.5	1255.5	1256.3	1257.1	1257.8	1258.6	1259.3	1259.8
150°	1289.7	1290.2	1290.8	1291.3	1291.8	1292.4	1293.0	1293.5	1294.0	1294.6	1294.6
152.5°	1321.0	1321.7	1322.5	1323.2	1324.0	1324.6	1324.9	1325.2	1325.6	1325.9	1326.3
155°	1370.4	1370.4	1370.4	1370.4	1370.4	1370.6	1370.7	1371.0	1371.3	1371.6	1372.7
157.5°	1412.4	1412.1	1411.7	1411.5	1411.1	1411.1	1411.3	1411.5	1411.7	1411.9	1413.1
160°	1438.8	1438.3	1437.8	1437.2	1436.6	1436.3	1436.3	1436.3	1436.3	1436.3	1437.8
162.5°	1462.3	1461.5	1460.8	1460.0	1459.2	1459.0	1459.2	1459.4	1459.6	1459.8	1461.2
165°	1492.6	1491.8	1491.0	1490.2	1489.4	1488.9	1488.9	1488.9	1488.9	1488.9	1490.5
167.5°	1516.8	1515.7	1514.7	1513.5	1512.5	1512.0	1512.2	1512.5	1512.7	1512.9	1514.6
170°	1530.5	1529.5	1528.3	1527.3	1526.2	1525.6	1525.6	1525.6	1525.6	1525.6	1527.5
172.5°	1541.2	1540.2	1539.1	1538.0	1536.9	1536.3	1536.3	1536.3	1536.3	1536.3	1538.0
175°	1552.6	1551.4	1550.4	1549.3	1548.1	1547.7	1547.7	1547.7	1547.7	1547.7	1549.3
177.5°	1557.2	1556.3	1555.4	1554.5	1553.7	1553.2	1553.2	1553.2	1553.2	1553.2	1554.5
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2



TEST NUMBER: P332141-830

CATALOG NUMBER: S123DIW-S560D1320U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	662.8	662.8	662.8	662.8	662.8	662.8	662.8	662.8
2.5°	661.4	662.4	663.5	663.9	663.7	663.6	663.5	663.4
5°	660.3	661.6	662.9	663.5	663.3	663.1	663.0	662.8
7.5°	656.3	657.9	659.6	660.3	660.1	659.9	659.7	659.5
10°	652.3	653.9	655.5	656.1	655.8	655.5	655.2	654.9
12.5°	646.9	648.3	649.8	650.4	650.1	649.7	649.4	649.1
15°	636.4	638.0	639.6	640.4	640.2	640.0	639.9	639.7
17.5°	622.8	624.2	625.7	626.3	626.0	625.8	625.7	625.4
20°	613.0	614.4	615.9	616.7	616.8	617.0	617.2	617.3
22.5°	602.2	604.1	605.9	606.7	606.6	606.5	606.4	606.3
25°	583.9	586.1	588.1	589.2	589.2	589.2	589.2	589.2
27.5°	564.9	566.7	568.4	569.5	569.6	569.7	569.9	570.0
30°	551.9	553.7	555.7	556.7	556.7	556.7	556.7	556.7
32.5°	537.6	539.7	541.8	543.0	543.4	543.8	544.1	544.5
35°	516.7	519.2	521.5	523.0	523.7	524.3	525.0	525.7
37.5°	494.9	497.7	500.4	502.1	502.6	503.0	503.6	504.1
40°	480.5	483.2	486.0	487.7	488.3	489.0	489.6	490.2
42.5°	465.4	468.4	471.5	473.3	474.3	475.1	476.1	476.9
45°	442.9	445.9	449.0	451.2	452.4	453.7	455.1	456.3
47.5°	420.2	423.6	427.0	429.2	430.2	431.2	432.3	433.2
50°	404.4	408.2	411.9	414.2	415.4	416.5	417.6	418.8
52.5°	388.6	392.4	396.2	398.8	400.2	401.5	402.9	404.4
55°	364.6	368.9	373.2	376.1	377.4	378.6	379.9	381.3
57.5°	340.2	344.5	348.8	351.8	353.3	354.8	356.3	357.8
60°	323.1	327.5	332.1	335.2	337.0	338.7	340.4	342.2
62.5°	306.9	311.4	315.8	319.0	320.6	322.2	323.9	325.5
65°	281.1	285.9	290.8	294.0	295.6	297.2	298.8	300.4
67.5°	255.4	260.7	266.0	269.3	270.6	271.9	273.3	274.7
70°	238.5	243.6	248.7	252.0	253.6	255.2	256.8	258.4
72.5°	221.3	226.6	231.9	235.4	237.0	238.6	240.2	241.8
75°	195.4	200.8	206.0	209.6	211.5	213.5	215.4	217.4
77.5°	171.2	176.7	182.3	185.9	187.4	188.8	190.3	191.8
80°	155.3	160.8	166.3	169.8	171.4	173.0	174.6	176.2
82.5°	140.9	146.3	151.7	155.3	156.9	158.5	160.1	161.7
85°	120.6	126.1	131.6	135.1	136.7	138.3	139.9	141.5
87.5°	109.2	114.9	120.6	124.2	125.9	127.6	129.4	131.1
90°	124.0	130.5	137.1	141.5	143.5	145.7	147.9	150.1
92.5°	136.3	142.5	148.7	152.4	153.5	154.7	155.8	156.9
95°	174.1	180.1	186.2	190.0	191.6	193.2	194.8	196.4
97.5°	219.9	225.9	232.0	235.7	237.2	238.7	240.3	241.7
100°	253.4	258.9	264.4	268.2	270.3	272.5	274.7	276.8
102.5°	292.8	298.1	303.4	306.9	308.3	309.8	311.3	312.8
105°	351.7	356.1	360.6	363.8	365.8	367.9	369.9	371.8
107.5°	415.7	420.8	426.0	429.1	430.2	431.3	432.3	433.5
110°	458.9	464.2	469.4	472.4	473.2	473.9	474.7	475.4



TEST NUMBER: P332141-830

CATALOG NUMBER: S123DIW-S560D1320U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	501.6	506.9	512.3	515.6	516.9	518.2	519.5	520.8
115°	567.3	571.4	575.5	578.1	579.1	580.1	581.2	582.1
117.5°	633.4	637.2	640.9	643.0	643.6	644.0	644.5	645.0
120°	677.7	681.2	684.6	686.5	687.1	687.7	688.3	688.9
122.5°	722.6	725.5	728.3	729.9	730.3	730.7	731.0	731.4
125°	789.3	791.5	793.8	794.9	795.0	795.0	795.1	795.1
127.5°	855.1	856.7	858.4	859.1	858.9	858.8	858.7	858.5
130°	898.7	900.7	902.7	903.1	902.3	901.4	900.4	899.5
132.5°	941.1	942.7	944.3	945.0	944.6	944.2	943.9	943.5
135°	1004.9	1006.7	1008.5	1009.6	1009.8	1010.0	1010.3	1010.6
137.5°	1067.3	1068.7	1070.2	1070.7	1070.5	1070.3	1070.1	1069.8
140°	1108.6	1110.7	1112.9	1113.4	1112.3	1111.2	1110.1	1109.0
142.5°	1146.9	1148.7	1150.6	1151.2	1150.6	1149.9	1149.2	1148.6
145°	1204.9	1205.9	1206.9	1207.2	1206.7	1206.4	1205.9	1205.4
147.5°	1260.2	1260.6	1260.9	1260.6	1259.5	1258.5	1257.4	1256.4
150°	1294.6	1294.6	1294.6	1293.9	1292.6	1291.3	1290.0	1288.6
152.5°	1326.7	1327.2	1327.6	1327.2	1325.8	1324.5	1323.1	1321.7
155°	1373.8	1374.9	1375.9	1375.5	1373.7	1371.8	1369.8	1367.9
157.5°	1414.2	1415.3	1416.5	1416.3	1414.8	1413.2	1411.7	1410.2
160°	1439.1	1440.5	1441.8	1442.0	1440.9	1439.8	1438.7	1437.6
162.5°	1462.5	1464.0	1465.3	1465.1	1463.4	1461.6	1459.9	1458.1
165°	1492.2	1493.8	1495.4	1495.3	1493.5	1491.6	1489.6	1487.7
167.5°	1516.3	1518.0	1519.7	1519.7	1518.0	1516.3	1514.6	1512.9
170°	1529.5	1531.3	1533.2	1533.2	1531.3	1529.5	1527.5	1525.6
172.5°	1539.7	1541.4	1543.1	1543.0	1541.2	1539.2	1537.3	1535.4
175°	1550.9	1552.6	1554.2	1554.0	1552.1	1550.2	1548.3	1546.4
177.5°	1555.9	1557.2	1558.5	1558.4	1556.8	1555.3	1553.8	1552.3
180°	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2	1556.2

(END OF REPORT)