

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: P332106

Luminaire Tested: **S123DIW-S340D1030U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332106
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-S340D1030U835-4F0-1E-UDD-F
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5536.6 lumens
Efficiency: N/A
Efficacy: 145.7 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

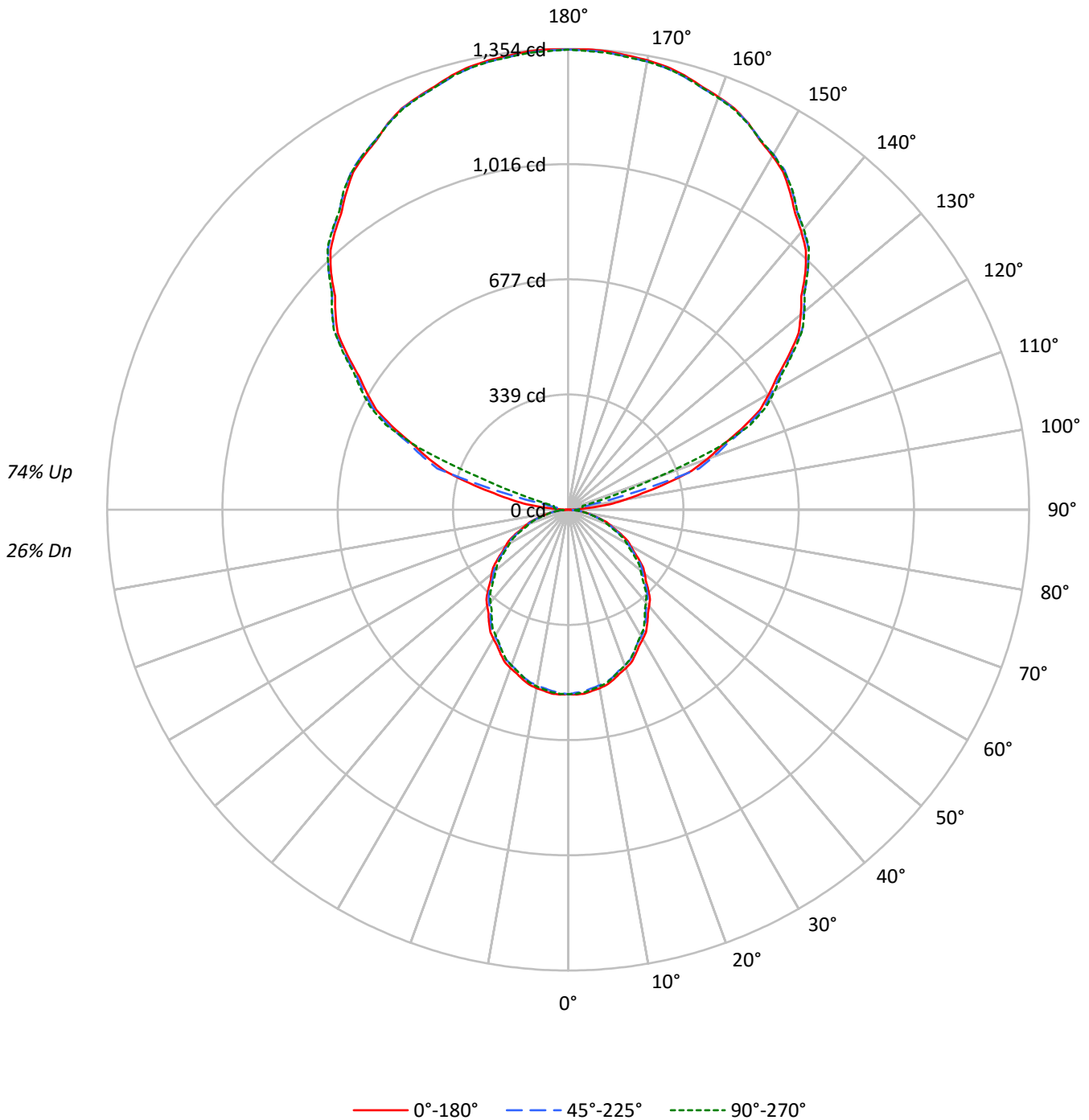
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332106

CATALOG NUMBER: S123DIW-S340D1030U835-4F0-1E-UDD-F

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	88	84	81	82	79	75	73	61	59	57	45	43	42	30	29	28	21
2	84	77	71	66	75	69	64	60	53	50	47	39	37	35	26	25	24	18
3	77	67	60	55	68	60	54	50	47	43	39	35	32	30	23	21	20	15
4	70	60	52	46	62	53	47	42	42	37	33	31	28	25	21	19	17	13
5	64	53	45	39	57	47	41	36	37	32	29	27	24	22	18	17	15	11
6	59	47	39	34	52	42	36	31	33	28	25	25	21	19	17	15	13	10
7	54	42	35	30	48	38	32	27	30	25	22	22	19	17	15	13	12	9
8	50	38	31	26	45	35	28	24	27	23	19	20	17	15	14	12	10	8
9	47	35	28	23	42	31	25	21	25	20	17	19	15	13	13	11	9	7
10	43	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	9	6

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5833	5833	5833
5°	5861	5780	5820
10°	5821	5729	5766
15°	5753	5665	5675
20°	5674	5573	5577
25°	5567	5462	5451
30°	5450	5340	5299
35°	5327	5210	5143
40°	5199	5067	4990
45°	5057	4937	4816
50°	4915	4776	4642
55°	4731	4609	4468
60°	4545	4413	4273
65°	4378	4200	4070
70°	4135	3959	3783
75°	3780	3643	3489
80°	3409	3267	3236
85°	2989	2878	2766



TEST NUMBER: P332106

CATALOG NUMBER: S123DIW-S340D1030U835-4F0-1E-UDD-F

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.0	0.9
10°-20°	144.1	2.6
20°-30°	212.9	3.8
30°-40°	248.7	4.5
40°-50°	250.0	4.5
50°-60°	219.6	4.0
60°-70°	163.6	3.0
70°-80°	93.2	1.7
80°-90°	30.5	0.6
90°-100°	49.2	0.9
100°-110°	234.3	4.2
110°-120°	562.7	10.2
120°-130°	716.5	12.9
130°-140°	765.6	13.8
140°-150°	715.9	12.9
150°-160°	577.5	10.4
160°-170°	372.7	6.7
170°-180°	128.4	2.3
0°-30°	408.1	7.4
0°-40°	656.8	11.9
0°-60°	1126.5	20.3
0°-90°	1413.9	25.5
90°-120°	846.1	15.3
90°-150°	3044.1	55.0
90°-180°	4123.0	74.5
0°-180°	5536.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	542	542	542	542	542	
5°	542	540	535	539	539	51
15°	516	514	508	512	509	145
25°	469	466	460	460	459	216
35°	405	402	396	394	391	254
45°	332	330	324	319	316	256
55°	252	251	246	241	238	226
65°	172	170	165	161	160	170
75°	91	89	88	85	84	97
85°	24	23	23	22	22	27
90°	1	11	24	28	30	4
95°	61	23	31	38	38	76
105°	299	305	220	52	44	317
115°	562	568	576	586	591	554
125°	792	799	804	806	808	707
135°	985	991	995	998	995	758
145°	1137	1144	1146	1148	1148	711
155°	1252	1251	1252	1256	1250	577
165°	1321	1318	1317	1324	1318	373
175°	1352	1347	1348	1354	1347	129
180°	1352	1352	1352	1352	1352	



TEST NUMBER: P332106

CATALOG NUMBER: S123DIW-S340D1030U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	543.8	543.4	543.1	542.8	542.4	541.8	540.9	540.0	539.1	538.2	539.0
5°	542.4	541.8	541.3	540.8	540.3	539.5	538.3	537.2	536.0	534.9	535.9
7.5°	537.1	536.5	536.0	535.5	535.0	534.1	533.0	531.8	530.6	529.4	530.3
10°	532.6	532.1	531.5	531.0	530.5	529.6	528.2	526.9	525.5	524.2	525.1
12.5°	526.6	526.2	525.7	525.3	524.9	524.0	522.8	521.5	520.2	519.0	519.7
15°	516.3	515.9	515.4	515.0	514.6	513.7	512.4	511.0	509.7	508.4	509.2
17.5°	504.2	503.7	503.2	502.6	502.1	501.2	499.8	498.5	497.1	495.8	496.3
20°	495.3	494.7	494.1	493.4	492.8	491.8	490.5	489.1	487.8	486.5	486.9
22.5°	485.2	484.6	484.0	483.4	482.8	481.8	480.4	479.1	477.7	476.4	476.7
25°	468.7	468.1	467.5	466.9	466.3	465.3	463.9	462.6	461.2	459.9	460.0
27.5°	451.1	450.5	449.9	449.3	448.7	447.7	446.3	444.8	443.4	441.9	442.0
30°	438.5	437.9	437.4	436.9	436.4	435.4	434.0	432.5	431.1	429.6	429.6
32.5°	425.8	425.1	424.4	423.7	423.1	422.1	421.0	419.9	418.8	417.7	417.1
35°	405.4	404.8	404.1	403.5	402.9	401.9	400.6	399.2	397.9	396.5	395.9
37.5°	384.5	383.7	382.9	382.1	381.4	380.3	378.9	377.5	376.2	374.8	374.1
40°	370.0	369.3	368.7	368.1	367.5	366.4	365.0	363.5	362.1	360.6	359.8
42.5°	355.4	354.7	354.0	353.3	352.6	351.5	350.1	348.6	347.2	345.7	344.9
45°	332.2	331.8	331.4	331.0	330.6	329.7	328.3	327.0	325.6	324.3	323.1
47.5°	309.2	308.6	308.0	307.4	306.8	305.9	304.6	303.3	302.1	300.8	299.6
50°	293.5	293.0	292.5	292.0	291.5	290.5	289.2	287.9	286.5	285.2	284.0
52.5°	277.1	276.8	276.4	276.1	275.7	274.8	273.4	272.0	270.6	269.1	268.2
55°	252.1	252.0	251.9	251.8	251.7	250.9	249.6	248.2	246.9	245.6	244.4
57.5°	228.2	227.9	227.5	227.2	226.8	226.1	225.0	223.9	222.9	221.8	220.8
60°	211.1	211.0	210.9	210.8	210.7	210.0	208.7	207.5	206.3	205.0	204.1
62.5°	195.8	195.5	195.3	195.0	194.7	194.0	192.7	191.5	190.2	189.0	188.1
65°	171.9	171.4	170.9	170.4	169.9	169.1	168.1	167.0	166.0	164.9	164.1
67.5°	146.7	146.2	145.8	145.3	144.9	144.2	143.5	142.7	141.9	141.1	140.4
70°	131.4	130.8	130.2	129.5	128.9	128.3	127.7	127.0	126.4	125.8	125.1
72.5°	115.4	114.9	114.5	114.0	113.5	113.0	112.3	111.6	110.9	110.2	109.5
75°	90.9	90.4	90.0	89.6	89.2	88.8	88.5	88.2	87.9	87.6	87.1
77.5°	69.1	68.9	68.7	68.5	68.2	67.9	67.6	67.2	66.8	66.4	66.1
80°	55.0	54.7	54.4	54.1	53.7	53.5	53.3	53.1	52.9	52.7	52.5
82.5°	41.2	41.1	41.1	41.0	40.9	40.9	40.8	40.8	40.8	40.7	40.5
85°	24.2	24.0	23.8	23.6	23.4	23.3	23.3	23.3	23.3	23.3	23.1
87.5°	9.9	10.1	10.3	10.5	10.7	11.0	11.5	12.0	12.5	13.0	13.1
90°	1.0	3.2	5.5	7.7	9.9	12.5	15.4	18.3	21.2	24.1	25.0
92.5°	18.7	18.1	17.4	16.8	16.2	17.0	19.2	21.3	23.5	25.7	27.1
95°	61.3	52.1	43.0	33.8	24.7	21.3	23.8	26.2	28.7	31.1	32.7
97.5°	123.1	119.0	114.9	110.8	106.7	96.6	80.6	64.5	48.4	32.3	34.1
100°	169.7	174.2	178.7	183.1	187.6	172.4	137.6	102.8	68.0	33.1	34.9
102.5°	222.8	226.0	229.2	232.4	235.6	218.2	180.2	142.2	104.1	66.1	60.6
105°	299.3	301.8	304.2	306.7	309.1	300.3	280.2	260.1	240.1	220.0	180.5
107.5°	380.1	382.0	384.0	386.0	387.9	390.5	393.7	396.8	400.0	403.2	374.2
110°	433.9	435.7	437.5	439.3	441.0	443.2	445.6	448.1	450.5	453.0	445.6



TEST NUMBER: P332106

CATALOG NUMBER: S123DIW-S340D1030U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	485.3	486.9	488.5	490.2	491.8	493.8	496.2	498.7	501.2	503.6	503.7
115°	561.5	562.8	564.1	565.5	566.8	568.5	570.5	572.5	574.5	576.5	578.8
117.5°	635.2	636.8	638.5	640.1	641.8	643.1	644.2	645.2	646.2	647.2	649.0
120°	681.0	683.0	685.0	687.0	689.0	690.4	691.0	691.7	692.4	693.0	694.8
122.5°	727.6	729.2	730.9	732.5	734.2	735.4	736.3	737.1	738.0	738.8	740.1
125°	791.5	793.3	795.0	796.8	798.6	800.0	800.8	801.7	802.6	803.5	804.0
127.5°	853.3	855.1	856.9	858.7	860.5	861.9	863.0	864.1	865.1	866.2	866.9
130°	891.9	893.7	895.5	897.3	899.1	900.4	901.3	902.2	903.1	904.0	904.9
132.5°	928.9	930.7	932.4	934.2	936.0	937.3	938.0	938.7	939.4	940.1	941.0
135°	985.3	986.7	988.0	989.3	990.7	991.8	992.7	993.6	994.5	995.4	996.0
137.5°	1033.5	1035.2	1036.9	1038.6	1040.3	1041.4	1041.9	1042.4	1042.9	1043.4	1044.4
140°	1065.7	1067.0	1068.4	1069.7	1071.0	1072.0	1072.7	1073.4	1074.0	1074.7	1075.6
142.5°	1095.4	1096.7	1098.1	1099.4	1100.8	1101.8	1102.4	1103.1	1103.8	1104.4	1105.2
145°	1137.0	1138.5	1140.1	1141.7	1143.2	1144.2	1144.7	1145.1	1145.6	1146.0	1146.5
147.5°	1176.2	1177.2	1178.2	1179.2	1180.3	1181.0	1181.4	1181.9	1182.3	1182.8	1183.2
150°	1200.3	1200.9	1201.6	1202.3	1202.9	1203.5	1203.9	1204.4	1204.8	1205.3	1205.7
152.5°	1222.0	1222.3	1222.6	1222.9	1223.2	1223.5	1223.8	1224.0	1224.3	1224.6	1225.4
155°	1252.5	1252.0	1251.6	1251.2	1250.7	1250.6	1250.8	1251.0	1251.3	1251.5	1252.6
157.5°	1276.2	1276.2	1276.1	1276.1	1276.0	1275.9	1275.7	1275.4	1275.2	1275.0	1276.3
160°	1290.7	1290.4	1290.2	1290.0	1289.8	1289.5	1289.3	1289.1	1288.9	1288.7	1290.0
162.5°	1304.3	1303.7	1303.2	1302.6	1302.0	1301.6	1301.4	1301.2	1300.9	1300.7	1302.2
165°	1320.8	1320.1	1319.5	1318.8	1318.1	1317.7	1317.4	1317.2	1317.0	1316.8	1318.6
167.5°	1333.6	1332.8	1331.9	1331.0	1330.1	1329.6	1329.6	1329.6	1329.6	1329.6	1331.4
170°	1340.9	1340.0	1339.1	1338.2	1337.3	1336.9	1336.9	1336.9	1336.9	1336.9	1338.6
172.5°	1345.7	1344.6	1343.6	1342.5	1341.4	1341.0	1341.1	1341.3	1341.5	1341.7	1343.5
175°	1351.9	1350.8	1349.7	1348.6	1347.5	1347.0	1347.2	1347.5	1347.7	1347.9	1349.5
177.5°	1353.5	1352.6	1351.8	1350.9	1350.0	1349.6	1349.8	1350.0	1350.1	1350.3	1351.8
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9



TEST NUMBER: P332106

CATALOG NUMBER: S123DIW-S340D1030U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	541.9	541.9	541.9	541.9	541.9	541.9	541.9	541.9
2.5°	539.8	540.7	541.5	541.9	541.8	541.7	541.6	541.5
5°	537.0	538.0	539.1	539.5	539.3	539.1	538.8	538.6
7.5°	531.3	532.2	533.1	533.5	533.4	533.3	533.2	533.0
10°	526.1	527.0	527.9	528.3	528.1	527.9	527.7	527.5
12.5°	520.3	521.0	521.7	522.0	521.9	521.7	521.6	521.5
15°	510.0	510.8	511.7	511.8	511.1	510.5	509.9	509.3
17.5°	496.9	497.5	498.1	498.3	498.0	497.8	497.6	497.4
20°	487.3	487.7	488.1	488.2	487.8	487.5	487.2	486.9
22.5°	477.0	477.4	477.7	477.7	477.3	476.9	476.5	476.1
25°	460.1	460.2	460.3	460.2	459.9	459.6	459.3	459.0
27.5°	442.1	442.2	442.2	442.1	441.7	441.3	440.9	440.5
30°	429.6	429.6	429.6	429.2	428.5	427.8	427.1	426.3
32.5°	416.5	415.9	415.4	414.9	414.5	414.1	413.7	413.3
35°	395.3	394.7	394.0	393.5	393.0	392.4	391.9	391.4
37.5°	373.3	372.6	371.8	371.3	371.0	370.6	370.3	370.0
40°	359.0	358.2	357.3	356.7	356.3	355.9	355.5	355.1
42.5°	344.1	343.2	342.4	341.8	341.4	341.0	340.6	340.1
45°	321.8	320.6	319.3	318.5	317.9	317.4	316.9	316.4
47.5°	298.4	297.2	295.9	295.1	294.6	294.2	293.7	293.3
50°	282.9	281.7	280.6	279.7	279.1	278.5	277.9	277.2
52.5°	267.2	266.2	265.2	264.4	263.8	263.2	262.6	262.0
55°	243.3	242.1	241.0	240.2	239.7	239.1	238.6	238.1
57.5°	219.8	218.7	217.7	216.9	216.3	215.7	215.1	214.5
60°	203.2	202.2	201.3	200.6	200.0	199.5	199.0	198.5
62.5°	187.1	186.2	185.3	184.6	184.3	183.9	183.6	183.2
65°	163.3	162.5	161.6	161.1	160.8	160.4	160.1	159.8
67.5°	139.6	138.9	138.2	137.6	137.2	136.7	136.3	135.9
70°	124.4	123.6	122.9	122.3	121.8	121.3	120.7	120.2
72.5°	108.9	108.2	107.6	107.1	106.9	106.6	106.3	106.0
75°	86.6	86.0	85.5	85.1	84.8	84.5	84.2	83.9
77.5°	65.7	65.4	65.0	64.9	64.9	64.9	64.9	64.9
80°	52.4	52.3	52.2	52.2	52.2	52.2	52.2	52.2
82.5°	40.4	40.2	40.0	39.8	39.8	39.7	39.6	39.5
85°	22.9	22.7	22.5	22.4	22.4	22.4	22.4	22.4
87.5°	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9
90°	25.9	26.8	27.7	28.3	28.8	29.2	29.7	30.1
92.5°	28.6	30.0	31.4	32.3	32.5	32.8	33.1	33.3
95°	34.3	35.8	37.4	38.2	38.2	38.2	38.2	38.2
97.5°	35.9	37.7	39.5	40.5	40.7	40.9	41.2	41.4
100°	36.7	38.5	40.3	41.3	41.5	41.7	42.0	42.2
102.5°	55.0	49.5	43.9	41.4	41.8	42.2	42.6	43.0
105°	141.0	101.4	61.9	42.4	42.9	43.3	43.7	44.2
107.5°	345.2	316.3	287.3	257.9	228.1	198.4	168.6	138.8
110°	438.3	430.9	423.5	403.9	372.0	340.0	308.1	276.2



TEST NUMBER: P332106

CATALOG NUMBER: S123DIW-S340D1030U835-4F0-1E-UDD-F

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	503.9	504.0	504.1	500.8	494.1	487.4	480.6	473.9
115°	581.0	583.2	585.5	587.0	587.9	588.8	589.7	590.6
117.5°	650.8	652.6	654.4	655.4	655.5	655.7	655.9	656.1
120°	696.6	698.4	700.2	701.1	701.1	701.1	701.1	701.1
122.5°	741.3	742.6	743.8	744.6	744.7	744.9	745.1	745.3
125°	804.4	804.9	805.3	805.8	806.2	806.6	807.1	807.5
127.5°	867.6	868.3	869.1	869.2	868.7	868.3	867.9	867.4
130°	905.8	906.6	907.5	907.8	907.3	906.9	906.4	906.0
132.5°	941.9	942.8	943.7	943.8	943.2	942.6	942.0	941.3
135°	996.7	997.4	998.0	998.0	997.4	996.7	996.0	995.4
137.5°	1045.5	1046.6	1047.7	1048.0	1047.5	1047.1	1046.6	1046.2
140°	1076.5	1077.4	1078.3	1078.5	1078.1	1077.6	1077.2	1076.7
142.5°	1105.9	1106.6	1107.3	1107.3	1106.7	1106.1	1105.5	1104.8
145°	1146.9	1147.4	1147.8	1148.0	1148.0	1148.0	1148.0	1148.0
147.5°	1183.7	1184.1	1184.6	1184.3	1183.3	1182.2	1181.2	1180.2
150°	1206.2	1206.6	1207.1	1207.0	1206.3	1205.6	1205.0	1204.3
152.5°	1226.2	1227.0	1227.8	1227.7	1226.6	1225.6	1224.6	1223.6
155°	1253.7	1254.8	1256.0	1255.8	1254.5	1253.2	1251.8	1250.5
157.5°	1277.7	1279.0	1280.3	1280.1	1278.4	1276.7	1274.9	1273.2
160°	1291.3	1292.7	1294.0	1293.9	1292.3	1290.8	1289.2	1287.6
162.5°	1303.7	1305.3	1306.8	1306.8	1305.5	1304.1	1302.7	1301.3
165°	1320.3	1322.1	1323.9	1324.0	1322.5	1320.9	1319.3	1317.8
167.5°	1333.2	1335.0	1336.8	1336.8	1335.0	1333.2	1331.4	1329.6
170°	1340.4	1342.2	1344.0	1344.0	1342.2	1340.4	1338.6	1336.9
172.5°	1345.3	1347.0	1348.8	1348.7	1346.8	1344.8	1342.8	1340.9
175°	1351.0	1352.6	1354.2	1354.1	1352.3	1350.5	1348.7	1346.9
177.5°	1353.2	1354.6	1356.0	1355.9	1354.1	1352.3	1350.5	1348.7
180°	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9	1351.9

(END OF REPORT)