

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: P331907

Luminaire Tested: **S123DIP-S340D1195U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331907  
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: S123DIP-S340D1195U835-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6183.3 lumens  
Efficiency: N/A  
Efficacy: 146.5 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

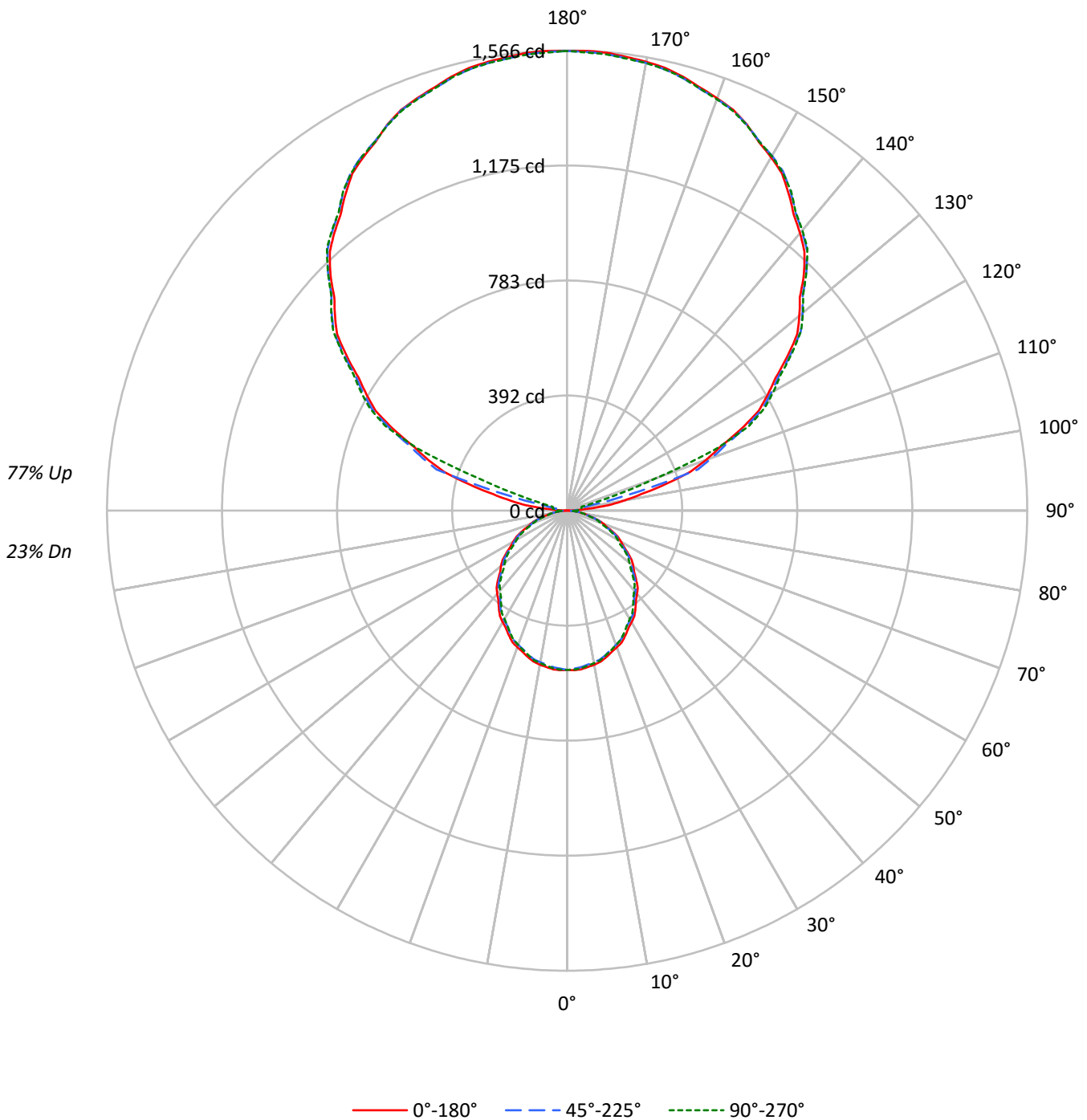
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	89	89	89	89	68	68	68	49	49	49	31	31	31	23
1	92	87	84	80	81	78	75	72	60	58	56	43	42	40	27	27	26	19
2	83	76	70	66	74	68	63	59	52	49	46	38	36	34	24	23	22	16
3	76	67	60	54	67	60	54	49	46	42	39	33	31	28	21	20	19	14
4	69	59	52	46	61	53	46	41	41	36	33	29	27	24	19	17	16	12
5	64	52	45	39	56	47	40	35	36	32	28	26	23	21	17	15	14	10
6	58	47	39	34	52	42	35	30	33	28	24	24	21	18	15	14	12	9
7	54	42	35	29	48	38	31	27	29	25	21	21	18	16	14	12	11	8
8	50	38	31	26	44	34	28	23	27	22	19	20	16	14	13	11	10	7
9	46	35	27	23	41	31	25	21	24	20	17	18	15	13	12	10	9	6
10	43	32	25	20	38	28	22	18	22	18	15	16	13	11	11	9	8	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



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	51.0	0.8
10°-20°	144.1	2.3
20°-30°	212.9	3.4
30°-40°	248.7	4.0
40°-50°	250.0	4.0
50°-60°	219.6	3.6
60°-70°	163.6	2.6
70°-80°	93.2	1.5
80°-90°	31.1	0.5
90°-100°	56.9	0.9
100°-110°	271.0	4.4
110°-120°	650.9	10.5
120°-130°	828.8	13.4
130°-140°	885.6	14.3
140°-150°	828.1	13.4
150°-160°	668.0	10.8
160°-170°	431.1	7.0
170°-180°	148.6	2.4
0°-30°	408.1	6.6
0°-40°	656.8	10.6
0°-60°	1126.5	18.2
0°-90°	1414.5	22.9
90°-120°	978.7	15.8
90°-150°	3521.2	56.9
90°-180°	4769.0	77.1
0°-180°	6183.3	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	13	28	32	35	5
95°	71	27	36	44	44	88
105°	346	352	254	60	51	367
115°	650	657	667	678	683	641
125°	916	925	929	932	934	817
135°	1140	1147	1151	1154	1151	877
145°	1315	1323	1326	1328	1328	823
155°	1449	1447	1448	1453	1446	667
165°	1528	1524	1523	1531	1524	431
175°	1564	1558	1559	1566	1558	149
180°	1564	1564	1564	1564	1564	



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**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	10.2	10.5	10.7	11.0	11.4	12.0	12.6	13.2	13.8	13.9
90°	1.2	3.7	6.3	8.9	11.5	14.5	17.8	21.2	24.5	27.9	28.9
92.5°	21.6	20.9	20.2	19.4	18.7	19.6	22.2	24.7	27.2	29.7	31.4
95°	70.9	60.3	49.7	39.1	28.5	24.7	27.5	30.3	33.2	36.0	37.8
97.5°	142.4	137.7	132.9	128.2	123.4	111.8	93.2	74.6	56.0	37.4	39.5
100°	196.3	201.5	206.7	211.8	217.0	199.4	159.2	118.9	78.6	38.3	40.4
102.5°	257.7	261.4	265.1	268.8	272.6	252.4	208.4	164.4	120.4	76.4	70.0
105°	346.2	349.1	351.9	354.7	357.6	347.4	324.1	300.9	277.7	254.4	208.7
107.5°	439.6	441.9	444.2	446.4	448.7	451.7	455.4	459.0	462.7	466.4	432.8
110°	501.9	504.0	506.0	508.1	510.2	512.6	515.5	518.3	521.1	524.0	515.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	561.4	563.2	565.1	567.0	568.8	571.2	574.0	576.9	579.7	582.5	582.7
115°	649.5	651.0	652.5	654.1	655.6	657.6	659.9	662.2	664.6	666.9	669.5
117.5°	734.7	736.6	738.5	740.5	742.4	743.9	745.1	746.3	747.5	748.7	750.7
120°	787.7	790.0	792.4	794.7	797.0	798.6	799.3	800.1	800.9	801.6	803.7
122.5°	841.6	843.5	845.4	847.3	849.3	850.7	851.7	852.7	853.6	854.6	856.1
125°	915.5	917.6	919.6	921.7	923.8	925.3	926.3	927.4	928.4	929.4	930.0
127.5°	987.1	989.1	991.2	993.3	995.3	997.0	998.2	999.5	1000.7	1001.9	1002.8
130°	1031.7	1033.8	1035.8	1037.9	1039.9	1041.5	1042.5	1043.6	1044.6	1045.6	1046.7
132.5°	1074.4	1076.5	1078.6	1080.6	1082.7	1084.1	1085.0	1085.8	1086.6	1087.5	1088.5
135°	1139.7	1141.3	1142.8	1144.4	1145.9	1147.2	1148.3	1149.3	1150.3	1151.4	1152.1
137.5°	1195.5	1197.5	1199.4	1201.4	1203.4	1204.6	1205.2	1205.8	1206.3	1206.9	1208.1
140°	1232.7	1234.2	1235.8	1237.3	1238.9	1240.0	1240.8	1241.6	1242.4	1243.1	1244.2
142.5°	1267.1	1268.6	1270.2	1271.7	1273.3	1274.4	1275.2	1276.0	1276.8	1277.5	1278.4
145°	1315.2	1317.0	1318.8	1320.6	1322.4	1323.6	1324.1	1324.6	1325.1	1325.6	1326.1
147.5°	1360.5	1361.7	1362.9	1364.0	1365.2	1366.1	1366.6	1367.1	1367.6	1368.1	1368.7
150°	1388.4	1389.1	1389.9	1390.7	1391.5	1392.1	1392.6	1393.1	1393.7	1394.2	1394.7
152.5°	1413.5	1413.8	1414.2	1414.5	1414.9	1415.2	1415.5	1415.9	1416.2	1416.5	1417.4
155°	1448.8	1448.3	1447.7	1447.2	1446.7	1446.6	1446.8	1447.1	1447.4	1447.6	1448.9
157.5°	1476.2	1476.1	1476.1	1476.0	1476.0	1475.8	1475.6	1475.3	1475.1	1474.8	1476.4
160°	1492.9	1492.7	1492.4	1492.2	1491.9	1491.6	1491.4	1491.1	1490.9	1490.6	1492.2
162.5°	1508.7	1508.1	1507.4	1506.7	1506.0	1505.6	1505.3	1505.1	1504.8	1504.5	1506.3
165°	1527.8	1527.0	1526.2	1525.5	1524.7	1524.2	1523.9	1523.6	1523.4	1523.1	1525.2
167.5°	1542.7	1541.6	1540.6	1539.6	1538.5	1538.0	1538.0	1538.0	1538.0	1538.0	1540.1
170°	1551.0	1550.0	1549.0	1547.9	1546.9	1546.4	1546.4	1546.4	1546.4	1546.4	1548.4
172.5°	1556.6	1555.4	1554.1	1552.9	1551.6	1551.1	1551.3	1551.5	1551.7	1551.9	1554.0
175°	1563.8	1562.5	1561.2	1559.9	1558.6	1558.1	1558.4	1558.6	1558.9	1559.1	1561.0
177.5°	1565.7	1564.6	1563.6	1562.6	1561.5	1561.1	1561.3	1561.5	1561.7	1561.9	1563.6
180°	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8



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**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°	14.0	14.1	14.3	14.4	14.5	14.6	14.7	14.8
90°	29.9	31.0	32.0	32.8	33.3	33.8	34.3	34.9
92.5°	33.0	34.7	36.4	37.3	37.6	38.0	38.3	38.6
95°	39.6	41.4	43.2	44.1	44.1	44.1	44.1	44.1
97.5°	41.5	43.6	45.7	46.8	47.1	47.4	47.6	47.9
100°	42.5	44.5	46.6	47.8	48.0	48.3	48.5	48.8
102.5°	63.6	57.2	50.8	47.9	48.3	48.8	49.3	49.7
105°	163.0	117.3	71.6	49.1	49.6	50.1	50.6	51.1
107.5°	399.3	365.8	332.3	298.3	263.9	229.4	195.0	160.6
110°	506.9	498.4	489.9	467.2	430.3	393.3	356.4	319.5





TEST NUMBER: P331907

CATALOG NUMBER: S123DIP-S340D1195U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	582.8	583.0	583.2	579.3	571.5	563.7	555.9	548.1
115°	672.0	674.6	677.2	679.0	680.0	681.1	682.1	683.1
117.5°	752.8	754.9	756.9	758.1	758.3	758.5	758.7	758.9
120°	805.8	807.8	809.9	810.9	810.9	810.9	810.9	810.9
122.5°	857.5	859.0	860.4	861.2	861.4	861.6	861.9	862.1
125°	930.5	931.0	931.5	932.0	932.5	933.1	933.6	934.1
127.5°	1003.6	1004.4	1005.2	1005.4	1004.9	1004.4	1003.9	1003.3
130°	1047.7	1048.7	1049.8	1050.0	1049.5	1049.0	1048.5	1048.0
132.5°	1089.5	1090.6	1091.6	1091.7	1091.0	1090.3	1089.6	1088.8
135°	1152.9	1153.7	1154.5	1154.5	1153.7	1152.9	1152.1	1151.4
137.5°	1209.4	1210.6	1211.8	1212.2	1211.7	1211.2	1210.7	1210.1
140°	1245.2	1246.2	1247.3	1247.5	1247.0	1246.5	1246.0	1245.5
142.5°	1279.2	1280.0	1280.8	1280.9	1280.2	1279.4	1278.7	1278.0
145°	1326.7	1327.2	1327.7	1327.9	1327.9	1327.9	1327.9	1327.9
147.5°	1369.2	1369.7	1370.2	1369.9	1368.7	1367.5	1366.3	1365.1
150°	1395.2	1395.7	1396.2	1396.1	1395.3	1394.6	1393.8	1393.0
152.5°	1418.3	1419.3	1420.2	1420.1	1418.9	1417.7	1416.5	1415.3
155°	1450.2	1451.5	1452.8	1452.6	1451.1	1449.6	1448.0	1446.5
157.5°	1477.9	1479.4	1481.0	1480.8	1478.8	1476.7	1474.7	1472.7
160°	1493.7	1495.2	1496.8	1496.7	1494.9	1493.1	1491.2	1489.4
162.5°	1508.1	1509.8	1511.6	1511.6	1510.0	1508.4	1506.8	1505.2
165°	1527.3	1529.3	1531.4	1531.5	1529.7	1527.9	1526.1	1524.3
167.5°	1542.1	1544.2	1546.3	1546.3	1544.2	1542.1	1540.1	1538.0
170°	1550.5	1552.6	1554.6	1554.6	1552.6	1550.5	1548.4	1546.4
172.5°	1556.1	1558.1	1560.2	1560.1	1557.8	1555.6	1553.3	1551.0
175°	1562.8	1564.6	1566.4	1566.2	1564.2	1562.1	1560.1	1558.0
177.5°	1565.2	1566.9	1568.5	1568.3	1566.3	1564.2	1562.1	1560.1
180°	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8	1563.8

(END OF REPORT)